



# ***WaveStar*<sup>®</sup> Optical Line System (OLS) 1.6T (400G/800G)**

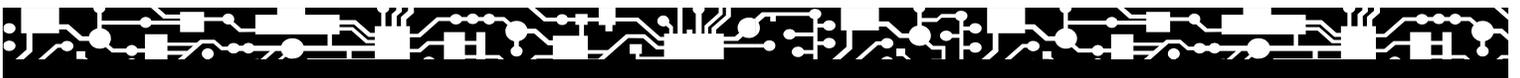
## **Applications Ordering Guide (AOG)**

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# About this information product

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- Purpose** This Applications Ordering Guide (AOG) provides specific information about how to order components for Release 6.2 of the *WaveStar*<sup>®</sup> Optical Line System (OLS) 1.6T (400G/800G).
- Reason for reissue** This guide is being reissued to provide new information about Release 6.2 of the *WaveStar* OLS 1.6T, including DCMs for the OA3L circuit pack.
- Safety labels** Refer to the *WaveStar*<sup>®</sup> OLS 1.6T (400G/800G) *User/Service Manual*(365-575-715R6.2) for safety label information.
- Intended audience** This guide is primarily for network planners and designers, technical and customer support teams, and account executives, but it may be used by anyone desiring specific information about how to order components of Lucent Technologies' *WaveStar*<sup>®</sup> OLS 1.6T. The user of this guide should be familiar with the corresponding release of the *WaveStar*<sup>®</sup> OLS 1.6T (400G/800G) *Applications Planning Guide (APG)* (365-575-713R6.2).
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**How to use this information product**

This guide is organized to allow a user to order items for a *WaveStar* OLS 1.6T C-Band system and a *WaveStar* OLS 1.6T L-Band system. Bay layouts for each application are found in Chapter 6 of the APG. C+L Separator/Combiner (CLSC) units are listed in Chapter 4 of this guide. The CLSC units are only required for one of the systems (either C-Band or L-Band) and are placed in the system that is first populated (either C-Band or L-Band). The Universal (SC) connection is supplied with an SC connection that can be converted to other connector types by using the appropriate connector.

- [Chapter 1, “Ordering Network Elements”](#), gives ordering information for network elements of the *WaveStar* OLS 1.6T, both C-Band and L-Band.
- [Chapter 2, “Bays”](#), gives ordering information for *WaveStar* OLS 1.6T bays for C-Band and L-Band systems.
- [Chapter 3, “Kits”](#), gives ordering information for *WaveStar* OLS 1.6T kits available for all systems.
- [Chapter 4, “Discretely Orderable Items”](#), gives ordering information for the discretely orderable items for C-Band and L-Band *WaveStar* OLS 1.6T.
- [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#), gives ordering information for the various optical translator units available for the C-Band *WaveStar* OLS 1.6T.
- [Chapter 6, “OTUs \(L-Band\) for the WaveStar® OLS 1.6T”](#), gives ordering information for the optical translator units available for the L-Band *WaveStar* OLS 1.6T.
- [Appendix A, “C-Band and Common Orderable Equipment Comcodes by Item Name”](#), lists the C-Band comcodes, including common items for both C-Band and L-Band.
- [Appendix B, “L-Band Specific Orderable Equipment Comcodes by Item Name”](#), lists the L-Band specific equipment.
- [Appendix C, “Orderable Equipment by Comcode”](#), lists all orderable items by comcode.
- [Appendix D, “Recommended Sparing Levels”](#), gives the recommended sparing level for all items.
- [Appendix E, “On-Line Ordering Tools”](#), describes the On-Line ordering tool for *WaveStar*® OLS 1.6T.
- The “Glossary” defines many terms used in this guide.

**Conventions used** The following conventions/definitions are used within this guide:

- *Italics* are used for emphasis

**Related documentation** The *WaveStar* OLS 1.6T AOG is part of a series of supporting guides. The documents in the series are as follows:

Select Code	Document Title
365-575-713R6.2	<i>WaveStar</i> ®OLS 1.6T (400G/800G) Applications Planning Guide (APG)
365-575-714R6.2	<i>WaveStar</i> OLS 1.6T (400G/800G) Applications Ordering Guide (AOG)
365-575-715R6.2	<i>WaveStar</i> ®OLS 1.6T (400G/800G) User/Services Manual (U/SM)
365-575-716R6.2	<i>WaveStar</i> ®OLS 1.6T (400G/800G) Operations Systems Engineering Guide (OSEG)
365-575-717R6.2	<i>WaveStar</i> ®OLS 1.6T (400G/800G) Installation Manual (IM)
365-575-718R6.2	<i>WaveStar</i> ®OLS 1.6T (400G/800G) System Turn-up Services (STS)
365-575-719R6.2	<i>WaveStar</i> ®OLS 1.6T (400G/800G) Installation Manual and System Turn-up Services
365-575-793	<i>WaveStar</i> ®OLS 1.6T (400G/800G) Long Single Span Application and Raman Shelf Offering
Comcode 109249029	<i>WaveStar</i> ®OLS 1.6T (400G/800G) Software Release Description (SRD)

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# 1 Ordering Network Elements

## Overview

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**Purpose** This chapter provides information on ordering Network Elements (NEs) for C-Band and L-Band WaveStar® OLS 1.6T systems.

Note that CLSC units are only required for one of the systems (either C-Band or L-Band), and are placed in the system that is populated first (either C-Band or L-Band).

The Universal (SC) connection is supplied with an SC connection that can be converted to other connector types.

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# Getting Organized

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**Introduction** This chapter lists items needed to order a complete C-Band or L-Band Network Element (NE).

The user of this guide is assumed to be familiar with the *WaveStar® OLS 1.6T Applications Planning Guide (APG)*. The APG describes how the OLS system operates, illustrates the bay layout for a variety of applications, discusses Engineering Rules, and lists the technical specifications for each component of the system

An OLS system is described as a type of NE (i.e., an End Terminal or Ring Terminal). Users can determine the number of bays required by referring to Chapter 2 of this guide.

Each NE type requires circuit packs, fibers, and Lightguide BuildOuts (LBO). To assist users, Lucent has bundled several kits of circuit packs, fibers and LBOs. These kits are described in Chapter 3.

Application- and configuration-dependent discretely orderable items are listed in Chapter 4. These include the Optical Redundancy Switch (ORS) circuit packs and the C+L Separator/Combiner (CLSC). CLSC is required in only one of the systems (either the C-Band or L-Band). If you plan to deploy 1.6T capacity, place the CLSC in the system that will be populated first (either C-Band or L-Band).

Each network deploys Optical Translator Units (OTUs). Signal and application type determine the type and number of OTUs required. Chapter 5 describes OTUs for C-Band systems and Chapter 6 describes OTUs for L-Band systems.

Use the checklist that follows to determine that all orderable components of a WaveStar® OLS 1.6T have been considered before an order is placed. Although not all-encompassing, this checklist should help identify all WaveStar®-specific components.

**Checklist** [Table 1-1, “Recommended Items to be Ordered” \(1-3\)](#) is a list of items to order. Review this checklist before placing a WaveStar® OLS 1.6T order.

**Table 1-1 Recommended Items to be Ordered**

<b>Item</b>	<b>Chapters</b>	<b>Done</b>
Identify Framework (Bays) Required	1 and 2	
Identify Framework for Repeater (Shelf) Required	1 and 2	
Identify Circuit Pack Kits Required	3	
Identify OAs Required	4	
Identify Optional Circuit Packs Required	4	
Identify OTUs Required	5 (C-Band) and 6 (L-Band)	
Identify LBO Kits Required	3	
Identify DCMs Required	4	
Identify Cabling Kits and Discrete Cables Required	3 and 4	
Identify External Fibers Required	3	
Identify Required Accessories	4	
Address local issues	—	



## 2-Fiber End Terminal

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**Bay Frameworks** [Table 1-2, “Bays Required for a 2-Fiber End Terminal” \(1-4\)](#) is a list of bays to order when equipping a 2-Fiber End Terminal. Refer to Chapter 6 of the *WaveStar® OLS 1.6T APG* for the bay layout of a 2-Fiber End Terminal.

**Table 1-2 Bays Required for a 2-Fiber End Terminal**

Bay Type	Framework	Drawing Number	List/Group <sup>2</sup>	Quantity
System	Seismic (Lucent)	J69002A-1	List 21	1
	Seismic (ETSI)	J69002A-1	List 31	
Growth <sup>1</sup>	Seismic (Lucent)	J69002A-1	List 23	2
	Seismic (ETSI)	J69002A-1	List 33	

**Notes:**

1. The number of Growth Bays needed is determined by the number of OTUs.
2. List definitions are found in Chapter 2.

**Circuit Pack Kits** Refer to [Table 1-3, “Circuit Pack Kits Required for a 2-Fiber End Terminal” \(1-4\)](#) for the list of circuit pack kits to order when equipping a 2-Fiber End Terminal.

**Table 1-3 Circuit Pack Kits Required for a 2-Fiber End Terminal**

Item	Ordering Information		Quantity
	Drawing Number	List/Group	
System Bay Common Circuit Packs C-Band	ED8C904-30	Group 7 <sup>1,2</sup>	1

**Table 1-3 Circuit Pack Kits Required for a 2-Fiber End Terminal (continued)**

Item	Ordering Information		Quantity
	Drawing Number	List/Group	
System Bay Common Circuit Packs L-Band	ED8C904-30	Group 51 <sup>1,2</sup>	1

**Notes:**

1. Group 7 and Group 51 definition are found in Chapter 3.
2. The circuit packs in the groups can also be ordered separately. Moreover, if SUPVY3 (Group 7) is being used, then circuit packs for the System Bay must be ordered separately.

**Discrete Circuit Packs**

[Table 1-4, “Discrete Circuit Packs Required for a 2-Fiber End Terminal” \(1-5\)](#) is a list of discrete circuit packs to order when equipping a 2-Fiber End Terminal. C-Band and L-Band specific packs are labelled accordingly, and no label means the packs are common to both systems.

**Table 1-4 Discrete Circuit Packs Required for a 2-Fiber End Terminal**

Item	Connector	CP Code	Comcode	Qty	Where Used
OA1 C-Band	LC	WSA031	108249988	2	System Bay
	Universal (SC)	WUA031	108595828		
OA1L L-Band	LC	WNA031	108653130	2	System Bay
	Universal (SC)	WRA031	108655155		
OA3L	LC	WNA401	108881640		System Bay
	Universal (SC)	WRA401	108881665		

**Table 1-4 Discrete Circuit Packs Required for a 2-Fiber End Terminal (continued)**

Item	Connector	CP Code	Comcode	Qty	Where Used
BOS2		WSA002	108655937	2	One in each Growth Bay
ODU2C <sup>1</sup> , sC-Band		WSA205	108711839	1	System Bay
ODU22 <sup>1</sup> , sL-Band		WNA205	108892894	1	System Bay
OMU2 <sup>1</sup> , sC-Band		WSC202	108250119	1	System Bay
OMU2 <sup>1</sup> , sL-Band		WNC202	108675281	1	System Bay
Filler Blank <sup>4</sup>			848203618	as needed	
SUPVY3(with Long Reach Transmitter <sup>3</sup> C-Band)		WSA012	108410275	1	Replaces SUPVY1B
CLSC-S <sup>4</sup>	LC	WSA142	108748914	1	System Bay Shelf 2, Slot5
	Universal (SC)	WUA142	108749284		
ORS <sup>5</sup> C-Band	LC	WSA022	108873829		See APG for placement

**Notes:**

1. OMU2, ODU2, OMU2L, and ODU22 are only required for systems using 41–80 wavelengths.
2. One filler blank is required for each empty slot in the shelf.
3. SUPVY3 is only required for spans of more than 32dB loss.
4. Only required in 1.6T applications.
5. Contact Customer Team for lead time for circuit packs.

- Add OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#) for C-Band information. Refer to [Chapter 6, “OTUs \(L-Band\) for the WaveStar® OLS 1.6T”](#) for L-Band information.
- Drop OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#) for C-Band information. Refer to [Chapter 6, “OTUs \(L-Band\) for the WaveStar® OLS 1.6T”](#) for L-Band information.
- 4:1 10G MUX OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#), for C-Band 4:1 10G MUX OTUs information.
- Common Fiber and Equipment** [Table 1-5, “Common Fiber and Equipment Kits Required for a 2-Fiber End Terminal” \(1-7\)](#) is a list of Common Fiber and Equipment Kits to order when equipping a 2-Fiber End Terminal.

**Table 1-5 Common Fiber and Equipment Kits Required for a 2-Fiber End Terminal**

Bay		Ordering Information		
Type	Number	Drawing Number	List/Group <sup>1</sup>	Quantity
System	1	ED8C904-30	Group 21	1
Growth	2	ED8C904-30	Group 33	1
Growth	3	ED8C904-30	Group 35	1

**Notes:**

1. Group definitions are found in Chapter 3.

**Fiber Kits for C+L Separator/Combiner**

[Table 1-6, “Fiber Kits for CLSC” \(1-7\)](#) is a list of Kits for the CLSC.

**Table 1-6 Fiber Kits for CLSC**

Item	Comcode	Quantity
C+L 2-Fiber Ring Terminal (Full Add/Drop)	108773987	1
C+L Completion Kit	108740019	1

**Notes:**

1. Kit contents are found in Chapter 3.

**Dispersion Compensation Modules**

The amount of dispersion compensation required is dependent upon system configuration, and may be calculated using the WaveStar® Span Engineering Tool (WaveSET). Users may also refer to Chapter 5 of the *WaveStar® OLS 1.6T APG*.

Refer to [Chapter 4, “Discretely Orderable Items”](#), Dispersion Compensation Modules section, for a list of available Dispersion Compensation Modules and corresponding ordering information.

**Required Lightguide Buildout (LBO) Kits**

[Table 1-7, “Required LBO Kits for a 2-Fiber End Terminal” \(1-8\)](#) is a list of Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber End Terminal.

**Table 1-7 Required LBO Kits for a 2-Fiber End Terminal**

Application	Bay/Shelf Type and Number	Quantity of LBO kit by Comcode		
		108359415	108359407	108359399
2 Fiber End Terminal	System (Bay#1)	1	1	—
	Growth (Bay #2)	—	3	—
	Growth (Bay #3)	—	3	—

**Notes:**

1. Kit contents are found in Chapter 3.

**Optional Lightguide Buildout (LBO) Kits**

[Table 1-8, “Optional LBO Kits for a 2-Fiber End Terminal” \(1-8\)](#) is a list of Optional Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber End Terminal. In addition to the LBOs in Table 1-7 if you are using the Universal (SC) connector, kits from the following table need to be ordered, one per bay type.

**Table 1-8 Optional LBO Kits for a 2-Fiber End Terminal**

Kit	Bay		Kit Number		
	Type	Number	Connector	Comcode	Quantity
U-LBO Kit 1	System	1	ST	108728973	2
U-LBO Kit 2	System	1	SC	108728981	2

**Table 1-8 Optional LBO Kits for a 2-Fiber End Terminal (continued)**

Kit	Bay		Kit Number		
	Type	Number	Connector	Comcode	Quantity
U-LBO Kit 3	System	1	FC	108728999	2
U-LBO Kit 1	Growth	2,3	ST	108728973	6 (3 per Bay)
U-LBO Kit 2	Growth	2,3	SC	108728981	6 (3 per Bay)
U-LBO Kit 3	Growth	2,3	FC	108728999	6 (3 per Bay)

**Installer Cables** [Table 1-9, “Installer Cables Required for a 2-Fiber End Terminal” \(1-9\)](#) is a list of Installer Cables to order when equipping a 2-Fiber End Terminal.

**Table 1-9 Installer Cables Required for a 2-Fiber End Terminal**

Cable	Ordering Information			
	Drawing	Length Suffix		
		50'	150'	300'
Orderwire 1 (OW1)	ED7G050-21	G1A	G2A	G3A
Office Alarms	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 1	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 2	ED7G050-21	G10A	G11A	G12A
Remote Restart	ED7G050-21	G20A	G21A	G22A

**External Fiber** The exact quantities and lengths of External Fibers are dependent upon system configuration. Refer to [Chapter 4, “Discretely Orderable Items”](#), External Fiber section, for a list of available External Fibers and corresponding ordering information.

**Accessories** [Table 1-10, “Orderable Accessories for a 2-Fiber End Terminal” \(1-10\)](#) is a list of accessories for a 2-Fiber End Terminal.

**Table 1-10 Orderable Accessories for a 2-Fiber End Terminal**

<b>Item</b>	<b>Comcode</b>	<b>MFG Part #</b>
DANTEL Interface Voice-Data Orderwire Kit	407790286	D18-05547-04
70 ft LAN Cable	848615712	—



## 2-Fiber Ring Terminal (Full Add/Drop)

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**Bay Frameworks** [Table 1-11, “Bays Required for a 2-Fiber Ring Terminal” \(1-11\)](#) is a list of Bays to order when equipping a 2-Fiber Ring Terminal. Refer to Chapter 6 of the *WaveStar® OLS 1.6T APG* for bays layout of a 2-Fiber Ring Terminal.

**Table 1-11 Bays Required for a 2-Fiber Ring Terminal**

Bay Type	Framework	Drawing Number	List/Group <sup>2</sup>	Quantity
System	Seismic (Lucent)	J69002A-1	List 21	1
	Seismic (ETSI)	J69002A-1	List 31	
Complementary	Seismic (Lucent)	J69002A-1	List 22	1
	Seismic (ETSI)	J69002A-1	List 32	
Growth <sup>1</sup>	Seismic (Lucent)	J69002A-1	List 23	Up to 4
	Seismic (ETSI)	J69002A-1	List 33	

**Notes:**

1. The number of growth bays needed is determined by the number of OTUs.
2. List definitions are found in Chapter 2.

**Circuit Pack Kits** [Table 1-12, “Circuit Pack Kits Required for a 2-Fiber Ring Terminal” \(1-12\)](#) is a list of circuit pack kits to order when equipping a 2-Fiber Ring Terminal.

**Table 1-12 Circuit Pack Kits Required for a 2-Fiber Ring Terminal**

Item	Ordering Information		Quantity
	Drawing Number	List/Group <sup>1, 2</sup>	
System and Complimentary Bay Common Circuit Packs C-Band	ED8C904-30	Group 8	1
System and Complimentary Bay Common Circuit Packs L-Band	ED8C904-30	Group 52	1

**Notes:**

- Group 8 and Group 52 definition are found in Chapter 3.
- The circuit packs in the groups can also be ordered separately. Moreover, if SUPVY3 (Group 8) is used, then circuit packs for the system bay must be ordered separately.

**Discrete Circuit Packs**

[Table 1-13, “Discrete Circuit Packs Required for a 2-Fiber Ring Terminal” \(1-12\)](#) is a list of discrete circuit packs to order when equipping a 2-Fiber Ring Terminal. C-Band and L-Band specific packs are labelled accordingly, and the absence of a label indicates the packs are common to both systems.

**Table 1-13 Discrete Circuit Packs Required for a 2-Fiber Ring Terminal**

Item	Connector	CP Code	Comcode	Qty	Where Used
OA1 C-Band	LC	WSA031	108249988	4	2 System Bay, 2 Complimentary
	Universal (SC)	WUA031	108595828		

**Table 1-13 Discrete Circuit Packs Required for a 2-Fiber Ring Terminal (continued)**

Item	Connector	CP Code	Comcode	Qty	Where Used
OA1L L-Band	LC	WNA031	108653130	4	2 System Bay, 2 Complementary
	Universal (SC)	WRA031	108655155		
OA3L	LC	WNA401	108881640		
	Universal (SC)	WRA401	108881665		
BOS2	—	WSA002	108655937	4	One in each Growth Bay
ODU2 <sup>1,5</sup> C-Band	—	WSA205	108711839	2	1 System Bay, 1 Complementary
ODU22 <sup>1,5</sup> L-Band	—	WNA205	108892894	2	1 System Bay, 1 Complementary
OMU2 <sup>1,5</sup> C-Band	—	WSC202	108250119	2	1 System Bay, 1 Complementary
OMU2L <sup>1,5</sup> L-Band	—	WNC202	108675281	2	1 System Bay, 1 Complementary
Filler Blank <sup>4</sup>	—	—	848203618	as needed	—
SUPVY3 <sup>3</sup> C-Band	—	WSA012	108410275	1	Replaces SUPVY1B
CLSC-S <sup>4</sup>	LC	WSA142	108748914	2	1 System Bay, 1 Complementary
	Universal (SC)	WUA142	108749284		

**Table 1-13 Discrete Circuit Packs Required for a 2-Fiber Ring Terminal (continued)**

Item	Connector	CP Code	Comcode	Qty	Where Used
ORS <sup>5</sup> C-Band	LC	WSA022	108873829		See APG for placement

**Notes:**

1. OMU2, ODU2, OMU2L, and ODU22 are only required for systems using 41–80 wavelengths.
2. One filler blank is required for each empty slot in the shelf.
3. SUPVY3 is only required for spans of more than 32dB Loss.
4. Only required in 1.6T applications.
5. Contact Customer Team for lead time for circuit packs.

**Add OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#) for C-Band information. Refer to [Chapter 6, “OTUs \(L-Band\) for the WaveStar® OLS 1.6T”](#) for L-Band information.

**Drop OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#), for C-Band information. Refer to [Chapter 6, “OTUs \(L-Band\) for the WaveStar® OLS 1.6T”](#) for L-Band information.

**4:1 10G MUX OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#), for C-Band 4:1 10G MUX OTU information.

**Common Fiber and Equipment** [Table 1-14, “Common Fiber and Equipment Kits Required for a 2-Fiber Ring Terminal” \(1-15\)](#) for the list of Common Fiber and Equipment Kits to order when equipping a 2-Fiber Ring Terminal.

**Table 1-14 Common Fiber and Equipment Kits Required for a 2-Fiber Ring Terminal**

Bay		Ordering Information		
Type	Number	Drawing Number	List/Group <sup>1</sup>	Quantity
System and Complementary	1, 2	ED8C904-30	Group 23	2 (1 per Bay)
Growth	3, 4	ED8C904-30	Group 35	2 (1 per Bay)
Growth	5, 6	ED8C904-30	Group 37	2 (1 per Bay)

**Notes:**

1. Group definitions are found in Chapter 3.

**Fiber Kits for C+L Separator/Combiner**

[Table 1-15, “Fiber Kits for CLSC” \(1-15\)](#) is a list of Kits for the CLSC for 2-Fiber Ring Terminal.

**Table 1-15 Fiber Kits for CLSC**

Item	Comcode	Quantity
C+L 2-Fiber Ring Terminals	108773987	2
C+L Completion Kit	108740019	2

**Notes:**

1. Kit contents are found in Chapter 3.

**Dispersion Compensation Modules**

The amount of dispersion compensation required is dependent upon system configuration, and may be calculated using the WaveStar® Span Engineering Tool (WaveSET), or see Chapter 5 of the APG.

Refer to [Chapter 4, “Discretely Orderable Items”](#) for a list of available Dispersion Compensation Modules and corresponding ordering information.

**Required Lightguide Buildout (LBO) Kits**

[Table 1-16, “ Required LBO Kits for a 2-Fiber Ring Terminal” \(1-16\)](#) is a list of Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber Ring Terminal.

**Table 1-16 Required LBO Kits for a 2-Fiber Ring Terminal**

Application	Bay/Shelf Type and Number	Quantity of LBO kit by Comcode		
		108359415	108359407	108359399
2-Fiber Ring Terminal	System-(Bay#1)	1	1	—
	Complementary (Bay #2)	1	2	—
	Growth-(Bay #3)	—	3	—
	Growth-(Bay #4)	—	3	—
	Growth-(Bay #5)	—	3	—
	Growth-(Bay #6)	—	3	—

**Notes:**

- Kit contents are found in Chapter 3.

**Optional Lightguide Buildout (LBO) Kits****[Table 1-17, “Optional LBO Kits for a 2-Fiber Ring Terminal” \(1-16\)](#)**

is a list of Optional Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber Ring Terminal. If you are using the Universal (SC) connector, kits from the following table need to be ordered, one per bay type (in addition to the LBOs in Table 1-6).

**Table 1-17 Optional LBO Kits for a 2-Fiber Ring Terminal**

Kit	Bay		Kit Number		
	Type	Number	Connector	Comcode	Quantity
U-LBO Kit 1	System	1	ST	108728973	2
U-LBO Kit 2	System	1	SC	108728981	2
U-LBO Kit 3	System	1	FC	108728999	2

**Table 1-17 Optional LBO Kits for a 2-Fiber Ring Terminal (continued)**

Kit	Bay		Kit Number		
	Type	Number	Connector	Comcode	Quantity
U-LBO Kit 1	Complementary	2	ST	108728973	3
U-LBO Kit 2	Complementary	2	SC	108728981	3
U-LBO Kit 3	Complementary	2	FC	108728999	3
U-LBO Kit 1	Growth	3,4,5,6	ST	108728973	12 (3 per Bay)
U-LBO Kit 2	Growth	3,4,5,6	SC	108728981	12 (3 per Bay)
U-LBO Kit 3	Growth	3,4,5,6	FC	108728999	12 (3 per Bay)

**Notes:**

- Kit contents are found in Chapter 3.

**Installer Cables** Refer to [Table 1-18, “Installer Cables Required for a 2-Fiber Ring Terminal” \(1-17\)](#) for the list of Installer Cables to order when equipping a 2-Fiber Ring Terminal.

**Table 1-18 Installer Cables Required for a 2-Fiber Ring Terminal**

Cable	Ordering Information			
	Drawing	Length Suffix (ft)		
		50	150	300
Orderwire 1 (OW1)	ED7G050-21	G1A	G2A	G3A
Office Alarms	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 1	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 2	ED7G050-21	G10A	G11A	G12A
Remote Restart	ED7G050-21	G20A	G21A	G22A

**External Fiber** The exact quantities and lengths of External Fibers are dependent upon system configuration. Refer to [Chapter 4, “Discretely Orderable Items”](#), for a list of available External Fibers and corresponding ordering information.

**Accessories** [Table 1-19, “Orderable Accessories for a 2-Fiber Ring Terminal” \(1-18\)](#) lists available accessories for a 2-Fiber Ring Terminal.

**Table 1-19 Orderable Accessories for a 2-Fiber Ring Terminal**

Item	Comcode	MFG Part #
DANTEL Interface Voice-Data Orderwire Kit	407790286	D18-05547-04
70 ft LAN Cable	848615712	—



## 2-Fiber Ring Terminal (4-Channel Wavelength Add/Drop Type 2)

**Bay Framework** [Table 1-20, “Bay Frameworks for a 2-Fiber Ring Terminal WAD Type 2” \(1-19\)](#) is a list of Bay Frameworks to order when equipping a 2-Fiber WAD Type 2 Terminal. Refer to Chapter 6 of the *WaveStar® OLS 1.6T APG* for bay layouts of a 2-Fiber WAD Type 2 Terminal. Note that WAD Type 2 is available for C-Band systems only.

**Table 1-20 Bay Frameworks for a 2-Fiber Ring Terminal WAD Type 2**

Bay Type	Framework	Drawing Number	List/Group <sup>1</sup>	Quantity
System	Seismic (Lucent)	J69002A-1	List 21	1
	Seismic (ETSI)	J69002A-1	List 31	

**Notes:**

- List definitions are found in Chapter 2.

**Circuit Pack Kits** [Table 1-21, “Circuit Pack Kits Required for a 2-Fiber WAD Type 2 Terminal” \(1-19\)](#) is a list of circuit pack kits to order when equipping a 2-Fiber WAD Type 2 Terminal.

**Table 1-21 Circuit Pack Kits Required for a 2-Fiber WAD Type 2 Terminal**

Item	Ordering Information		Quantity
	Drawing Number	List/Group	
System Bay Common Circuit Packs	ED8C904-30	Group 4 <sup>1,2</sup>	1

**Notes:**

- Group 4 definition is found in Chapter 3.
- The circuit packs in the group can also be ordered separately. Moreover, if SUPVY3 is used, then circuit packs for the system bay must be ordered separately.

**Discrete Circuit Packs** [Table 1-22, “Discrete Circuit Packs Required for a 2-Fiber WAD Type 2 Terminal” \(1-20\)](#) for the list of discrete circuit packs to order when equipping a 2-Fiber WAD Type 2 Terminal.

**Table 1-22 Discrete Circuit Packs Required for a 2-Fiber WAD Type 2 Terminal**

Item	Connector	CP Code	Comcode	Qty	Where Used
OA1	LC	WSA031	108249988	2	Shelf 3, Slots 10-12; Shelf 1, Slots1-3
	Universal (SC)	WUA031	108595828		
OA1 (WAD Type 2)	LC (for WAD Type 2 receive)	WSA032	108249996	2	Shelf 3, Slots 1-3; Shelf 1, Slots 5-7
	Universal SC (for WAD Type 2 receive)	WUA032	108886847		
Wave-length Add/Drop (WAD5)	LC	WSA305	108250077	—	—
	Universal (SC)	WUA305	108586173		
Wave-length Add/Drop (WAD6)	LC	WSA306	108250085	—	—
	Universal (SC)	WUA306	108586181		
Filler Blank <sup>1</sup>	—	—	848203618	as needed	—
SUPVY <sup>3</sup>	—	WSA012	108410275	1	Replaces SUPVY1B
CLSC-S <sup>3</sup>	LC	WSA142	108748914	2	Shelf 3, Slot 4 and 9
	Universal (SC)	WSA142	108749284		

**Table 1-22 Discrete Circuit Packs Required for a 2-Fiber WAD Type 2 Terminal (continued)**

Item	Connector	CP Code	Comcode	Qty	Where Used
ORS 4C-Band	LC	WSA022	108873829	—	See APG for placement

**Notes:**

1. One filler blank is required for each empty slot in the shelf.
2. SUPVY3 is only required for spans of more than 30dB Loss.
3. Only required in 1.6T applications.
4. Contact Customer Team for lead time for circuit pack.

**Add OTUs** Up to four (4) OTUs may be selected from those listed in [Table 1-23, “OTUs for Use with WAD5” \(1-21\)](#) through [Table 1-24, “OTUs for Use with WAD6” \(1-22\)](#), for equipping a 2-Fiber WAD Type 2 Terminal.

**WAD5**

[Table 1-23, “OTUs for Use with WAD5” \(1-21\)](#) is a list of compatible OTUs to order when using the WAD5 circuit pack.

**Table 1-23 OTUs for Use with WAD5**

Connector	OTU	CP Code	Comcode
LC	OTU30	WSPG01B	109042846
	OTU30	WSPG02B	109042853
	OTU 70 <sup>1</sup>	WS2A02 <sup>2</sup>	108780933
	OTU70 <sup>1</sup>	WS2A06 <sup>2</sup>	108780974
	OTU 70 <sup>1</sup>	WS2A10 <sup>2</sup>	108781030
	OTU70 <sup>1</sup>	WS2A14 <sup>2</sup>	108781071
Universal (SC)	OTU30	WUPG01B	109043406
	OTU30	WUPG02B	109043414

**Notes:**

1. OTU 70 is the 4:1 10G MUX OTU (Refer to Chapter 5 for more

information).

2. Contact Customer Team for lead time for circuit pack.

### WAD6

Refer to [Table 1-24, “OTUs for Use with WAD6” \(1-22\)](#) for the list of compatible OTUs to order when using the WAD6 circuit pack.

**Table 1-24 OTUs for Use with WAD6**

Connector	OTU	CP Code	Comcode
LC	OTU30	WSPG11B	109042945
	OTU30	WSPG12B	109042952
	OTU 70 <sup>1</sup>	WS2A04 <sup>2</sup>	108780958
	OTU 70 <sup>1</sup>	WS2A08 <sup>2</sup>	108780990
	OTU70 <sup>1</sup>	WS2A12 <sup>2</sup>	108781055
	OTU70 <sup>1</sup>	WS2A16 <sup>2</sup>	108781097
Universal (SC)	OTU30	WUPG11B	109043505
	OTU30	WUPG12B	109043513

**Notes:**

1. OTU 70 is the 4:1 10G MUX OTU (Refer to Chapter 5 for more information).
2. Contact Customer Team for lead time for circuit pack.

### Drop OTUs

The number of Drop OTUs must equal the number of frequency-specific Add OTUs ordered. Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#), for Drop OTU comcode information. The 4:1 MUX OTU (OTU 70) is a bidirectional circuit pack and will not need a Drop OTU (refer Chapter 5 for more information).

### Common Fiber and Equipment

[Table 1-25, “Common Fiber and Equipment Required for a 2-Fiber Ring Terminal WAD Type 2” \(1-23\)](#) is a list of Common Fiber and Equipment Kits to order when equipping a 2-Fiber WAD Type 2 Terminal.

**Table 1-25 Common Fiber and Equipment Required for a 2-Fiber Ring Terminal WAD Type 2**

Bay		Ordering Information		
Type	Number	Drawing Number	List/Group <sup>1</sup>	Quantity
System	1	ED8C904-30	Group 25	1

**Notes:**

1. Group definitions are found in Chapter 3.

**Fiber Kits for C+L Separator/Combiner**

[Table 1-26, “Fiber Kits for CLSCs” \(1-23\)](#) is a list of Kits for the CLSC for 2-Fiber WAD Type 2 Terminal.

**Table 1-26 Fiber Kits for CLSCs**

Item	Comcode	Quantity
C+L 4-Channel Add/Drop Terminals	108774001	1
C+L Completion Kit	108774019	2

**Notes:**

1. Kit contents are found in Chapter 3.

**Dispersion Compensation Modules**

The amount of dispersion compensation required is dependent upon system configuration, and may be calculated using the WaveStar® Span Engineering Tool (WaveSET), or you may refer to Chapter 5 of the *WaveStar® OLS 1.6T APG*.

Refer to [Chapter 4, “Discretely Orderable Items”](#), for a list of available Dispersion Compensation Modules and corresponding ordering information.

**Required Lightguide Buildout (LBO) Kits**

[Table 1-27, “ Required LBO Kits for a 2-Fiber WAD Type 2 Terminal” \(1-24\)](#) is a list of Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber WAD Type 2 Terminal.

**Table 1-27 Required LBO Kits for a 2-Fiber WAD Type 2 Terminal**

Application Bay/Shelf Type and Number		Quantity of LBO kit by Comcode		
		108359415	108359407	108359399
2 Fiber WAD Type 2 Terminal	System (Bay 1)	1	1	1

**Notes:**

1. Kit contents are found in Chapter 3.

**Optional Lightguide  
Buildout (LBO) Kits**

[Table 1-28, “Optional LBO Kits for a 2-Fiber WAD Type 2 Terminal” \(1-24\)](#) is a list of Optional Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber WAD Type 2. The LBO kits are used with the Universal Connector (SC). For systems using Universal Connector (SC), in addition to the LBOs in Table 1-31, kits from the following table need to be ordered.

**Table 1-28 Optional LBO Kits for a 2-Fiber WAD Type 2 Terminal**

Kit	Bay		Kit Number		
	Type	Number	Connector	Comcode	Quantity
U-LBO Kit 1	System	1	ST	108728973	3
U-LBO Kit 2	System	1	SC	108728981	3
U-LBO Kit 3	System	1	FC	108728999	3

**Notes:**

1. Kit contents are found in Chapter 3.

**Installer Cables**

[Table 1-29, “Installer Cables Required for a 2-Fiber WAD Type 2 Terminal” \(1-25\)](#) is a list of installer cables to order when equipping a 2-Fiber WAD Type 2 Terminal.

**Table 1-29 Installer Cables Required for a 2-Fiber WAD Type 2 Terminal**

Cable	Ordering Information			
	Drawing	Length Suffix		
		50'	150'	300'
Orderwire 1 (OW1)	ED7G050-21	G1A	G2A	G3A
Office Alarms	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 1	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 2	ED7G050-21	G10A	G11A	G12A
Remote Restart	ED7G050-21	G20A	G21A	G22A

**External Fiber** The exact quantities and lengths of External Fibers are dependent upon system configuration. Refer to [Chapter 4, “Discretely Orderable Items”](#), for a list of available External Fibers and corresponding ordering information.

**Accessories** [Table 1-30, “Orderable Accessories for a 2-Fiber WAD Type 2 Terminal” \(1-25\)](#) gives ordering information for the DANTEL kit.

**Table 1-30 Orderable Accessories for a 2-Fiber WAD Type 2 Terminal**

Item	Comcode	MFG Part #
DANTEL Interface Voice-Data Orderwire Kit	407790286	D18-05547-04



## 2-Fiber Repeater

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**Bay Frameworks** [Table 1-31, “Bay Frameworks Required for a 2-Fiber Repeater” \(1-26\)](#) is a list of Bay Frameworks to order when equipping a 2-Fiber Repeater. Refer to Chapter 6 of the *WaveStar® OLS 1.6T APG* for the bay layout of a 2-Fiber Repeater.

**Table 1-31 Bay Frameworks Required for a 2-Fiber Repeater**

Bay Type	Bay Framework	Drawing Number	List/Group <sup>1</sup>	Quantity
Repeater Shelf		J69002A-1	List 37	1

**Notes:**

- List definitions are found in Chapter 2.

**Circuit Pack Kits** [Table 1-32, “Circuit Pack Kits Required for a 2-Fiber Repeater” \(1-26\)](#) is a list of circuit pack kits to order when equipping a 2-Fiber Repeater.

**Table 1-32 Circuit Pack Kits Required for a 2-Fiber Repeater**

Item	Ordering Information		Quantity
	Drawing Number	List/Group	
Repeater Shelf Circuit Packs C-Band	ED8C904-30	Group 5 <sup>1,2</sup>	1
Repeater Shelf Circuit Packs L-Band	ED8C904-30	Group 55 <sup>1,2</sup>	1

**Notes:**

- Groups 5 and 55 definitions are found in Chapter 3.
- The circuit packs in the groups can also be ordered separately. Moreover, if SUPVY3 (Group 5) is being used, then circuit packs for the System Bay must be ordered separately.

**Discrete Circuit Packs** [Table 1-33, “Discrete Circuit Packs Required for a 2-Fiber Repeater” \(1-27\)](#) for the list of discrete circuit packs to order when equipping a

2-Fiber Repeater.

**Table 1-33 Discrete Circuit Packs Required for a 2-Fiber Repeater**

Item	Connector	CP Code	Comcode	Quantity
OA1 (OA–C-Band)	LC	WSA031	108249988	2
	Universal (SC)	WUA031	108595828	
OA1L (OA–L-Band)	LC	WNA031	108653130	2
	Universal (SC)	WRA031	108655155	
OA3L	LC	WNA401	108881640	
	Universal (SC)	WRA401	108881665	
Filler Blank <sup>1</sup>			848203618	as needed
Supervisory Pack (with Long Reach Transmitter SUPVY3) <sup>2</sup>		WSA012	108410275	1
C+L Separator/Combiner Double (CLSC-D) <sup>3</sup>	LC	WSA143	108748930	1
	Universal (SC)	WUA143	108749292	

**Notes:**

1. One filler blank is required for each empty slot in the shelf.
2. SUPVY3 is only required for spans of more than 30dB Loss.
3. Only required in 1.6T applications.

**Add OTUs** Add OTUs are not required for this application.

**Drop OTUs** Drop OTUs are not required for this application.

**Common Fiber and Equipment** [Table 1-34, “Common Fiber and Equipment Required for a 2-Fiber Repeater” \(1-28\)](#) is a list of components to order when equipping a

2-Fiber Repeater.

**Table 1-34 Common Fiber and Equipment Required for a 2-Fiber Repeater**

Bay		Ordering Information		
Type	Number	Drawing Number	List/Group <sup>1</sup>	Quantity
Repeater Shelf		ED8C904-30	Group 24	1

**Notes:**

1. Group definitions are found in Chapter 3.

**Fiber Kits for C+L Separator/Combiner**

[Table 1-35, “Fiber Kits for CLSCs” \(1-28\)](#) is a list of kits for the 2-Fiber Repeater.

**Table 1-35 Fiber Kits for CLSCs**

Item	Comcode	Quantity
C+L Repeater	108773995	1
C+L Completion Kit	108740019	1

**Notes:**

1. Kit contents are found in Chapter 3.

**Dispersion Compensation Modules**

The amount of Dispersion Compensation required is dependent upon system configuration, and may be calculated using the WaveStar® Span Engineering Tool (WaveSET). Users may also refer to Chapter 5 of the *WaveStar® OLS 1.6T APG*.

Refer to [Chapter 4, “Discretely Orderable Items”](#), for a list of available Dispersion Compensation Modules and corresponding ordering information.

**Required Lightguide Buildout (LBO) Kits**

[Table 1-36, “Required LBO Kits for a 2-Fiber Repeater” \(1-29\)](#) is a list of Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber Repeater.

**Table 1-36 Required LBO Kits for a 2-Fiber Repeater**

Application Bay/Shelf Type and Number		Quantity of LBO kit by Comcode		
		108359415	108359407	108359399
2-Fiber Repeater	Repeater Shelf	1		

**Notes:**

1. Kit contents are found in Chapter 3.

**Optional Lightguide  
Buildout (LBO) Kits**

[Table 1-37, “Optional LBO Kits for a 2-Fiber Repeater” \(1-29\)](#) is a list of Optional Lightguide Buildout (LBO) Kits to order when equipping a 2-Fiber Repeater. In addition to the LBOs in Table 1-40 if you are using the Universal (SC) connector, kits from the following table need to be ordered.

**Table 1-37 Optional LBO Kits for a 2-Fiber Repeater**

Kit	Bay		Kit Number		
	Type	Number	Connector	Comcode	Quantity
U-LBO Kit 1	Repeater Shelf	1	ST	108728973	1
U-LBO Kit 2	Repeater Shelf	1	SC	108728981	1
U-LBO Kit 3	Repeater Shelf	1	FC	108728999	1

**Notes:**

1. Kit contents are found in Chapter 3.

**Installer Cables**

[Table 1-38, “Installer Cables Required for a 2-Fiber Repeater” \(1-29\)](#) is a list of Installer Cables to order when equipping a 2-Fiber Repeater.

**Table 1-38 Installer Cables Required for a 2-Fiber Repeater**

Cable	Ordering Information			
	Drawing	Length Suffix (ft)		
		50	150	300
Orderwire 1 (OW1)	ED7G050-21	G1A	G2A	G3A

**Table 1-38 Installer Cables Required for a 2-Fiber Repeater (continued)**

Cable	Ordering Information			
	Drawing	Length Suffix (ft)		
		50	150	300
Office Alarms	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 1	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 2	ED7G050-21	G10A	G11A	G12A
Remote Restart	ED7G050-21	G20A	G21A	G22A

**External Fiber** The exact quantities and lengths of External Fibers are dependent upon system configuration. Refer to [Chapter 4, “Discretely Orderable Items”](#), for a list of available External Fibers and corresponding ordering information.

**Accessories** [Table 1-39, “Orderable Accessories for a 2-Fiber Repeater” \(1-30\)](#) is a list of accessories for a 2-Fiber Repeater, including ordering information.

**Table 1-39 Orderable Accessories for a 2-Fiber Repeater**

Item	Comcode	MFG Part #
DANTEL Interface Voice-Data Orderwire Kit	407790286	D18-05547-04

□



# 2 Bays

## Overview

---

**Purpose** This chapter provides information on bays.

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<a href="#"><u>List 37 — Repeater Shelf</u></a>	<a href="#"><u>2-13</u></a>



# Engineering and Installation Drawing

## Overview

---

**Purpose** This section provides information on Drawing J69002A-1.



## Drawing for Bays

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**Drawing J69002A-1** Drawing J69002A-1 is the Customer Engineering and Installation Drawing. This is the top-level drawing available for the WaveStar® OLS 1.6T, and is a reference when ordering an entire WaveStar® OLS 1.6T.

### List Descriptions

Refer to [Table 2-1, “J69002A-1 List Information” \(2-3\)](#) for information about each List included on Drawing J69002A-1.

**Table 2-1 J69002A-1 List Information**

List Number	Bay Type	Framework Type
21	System	Lucent Seismic
22	Complementary	Lucent Seismic
23	Growth	Lucent Seismic
31	System	2200 mm ETSI Seismic
32	Complementary	2200 mm ETSI Seismic
33	Growth	2200 mm ETSI Seismic
37	Repeater Shelf	



# Lucent Seismic Bays

## Overview

---

**Purpose** This section provides information on Lucent Seismic Bays.



## List 21 — System Bay

---

**Description** List 21 is the reference when ordering the Bay, Wiring, and Equipment for a Lucent Seismic System Bay.

**Applications** A System Bay is required in all 2-Fiber applications.

**Bay Components** This System Bay includes the following items:

- Complementary Shelf Assembly
- Fan Tray Assembly
- System Shelf Assembly
- Heat Baffle Cover and Air Filter Assembly
- Bay Controller Shelf Assembly
- Air Intake Assembly
- DCM Housing Assembly
- Fiber Tray Assembly



## List 22 — Complementary Bay

---

- Description** List 22 is the reference when ordering the Bay, Wiring, and Equipment for a Lucent Seismic Complementary Bay.
- Applications** A Complementary Bay is used in 2-Fiber applications.
- Bay Components** This Complementary Bay includes the following items:
- Complementary Shelf Assembly
  - Fan Tray Assembly
  - Complementary Shelf Assembly
  - Heat Baffle Cover and Air Filter Assembly
  - Bay Control Shelf Assembly
  - Air Intake Assembly
  - DCM Housing Assembly
  - Fiber Tray Assembly



## List 23 — Growth Bay

---

**Description** List 23 is the reference when ordering the Bay, Wiring, and Equipment for a Lucent Seismic Growth Bay.

**Applications** A Growth Bay is used to accommodate additional OTUs in 2-Fiber applications.

**Bay Components** This Growth Bay includes the following items:

- Complementary Shelf Assembly
- Fan Tray Assembly
- Bay Control Shelf Assembly
- Heat Baffle Cover and Air Filter Assembly
- Complementary Shelf Assembly
- Fan Tray Assembly
- Air Intake Assembly
- Fiber Tray Assembly



# 2200 mm ETSI Seismic Bays

## Overview

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**Purpose** This section provides information on 2200 mm ETSI Seismic Bays.



## List 31 — System Bay

---

**Description** List 31 is the reference when ordering the Bay, Wiring, and Equipment for a 2200 mm ETSI Seismic System Bay.

**Applications** A System Bay is required in all 2-Fiber applications.

**Bay Components** This System Bay includes the following items:

- Complementary Shelf Assembly
- Fan Tray Assembly
- System Shelf Assembly
- Heat Baffle Cover and Air Filter Assembly
- Bay Controller Shelf Assembly
- Air Intake Assembly
- DCM Housing Assembly
- Fiber Tray Assembly



## List 32 — Complementary Bay

---

**Description** List 32 is the reference when ordering the Bay, Wiring, and Equipment for a 2200 mm ETSI Seismic Complementary Bay

**Applications** A Complementary Bay is used in 2-Fiber applications.

**Bay Components** This Complementary Bay includes the following items:

- Two (2) Complementary Shelf Assemblies
- Fan Tray Assembly
- Heat Baffle Cover and Air Filter Assembly
- Bay Controller Shelf Assembly
- Air Intake Assembly
- DCM Housing Assembly
- Fiber Tray Assembly



## List 33 — Growth Bay

---

**Description** List 33 is the reference when ordering the Bay, Wiring, and Equipment for a 2200 mm ETSI Seismic Growth Bay.

**Applications** A Growth Bay is used to accommodate additional OTUs in 2-Fiber applications.

**Bay Components** This Growth Bay includes the following items:

- Two (2) Complementary Shelf Assemblies
- Two (2) Fan Tray Assemblies
- Bay Controller Shelf Assembly
- Heat Baffle Cover and Air Filter Assembly
- Air Intake Assembly
- Fiber Tray Assembly



# Miscellaneously Mounted Repeater Shelf

## Overview

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**Purpose** This section provides information on the Miscellaneously Mounted Repeater Shelf.



## List 37 — Repeater Shelf

---

**Description** List 37 is the reference when ordering the Framework, Wiring, and Equipment for a Miscellaneously Mounted Repeater Shelf.

**Applications** A Repeater Shelf is required for 2-Fiber Repeater applications.

**Mounting** This equipment can be mounted on previously installed Lucent Seismic or ETSI Seismic Frames or other similar Frames.

**Shelf Components** This Repeater Shelf includes the following items:

- Repeater Shelf Assembly
- Two (2) Heat Baffle Assemblies
- DCM Housing Assembly







# 3 Kits

## Overview

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**Purpose** This chapter provides kit ordering information.

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# Reference Drawing ED8C904-30

## Overview

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**Purpose** This section provides information on Drawing ED8C904-30.



## Kit Items Reference Drawing

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**Drawing ED8C904-30** Drawing ED8C904-30 is the reference when ordering kit items for use with the WaveStar® OLS 1.6T System.

### Kit Items

The following items may be found as kits on drawing ED8C904-30:

- Common Circuit Packs
- Common Fiber and Equipment
- Lightguide Buildouts
- Linear Tilt Filters
- Red Fibers
- Yellow Fibers

### Ordering

When ordering some kit items, both the Drawing Number and the Group Number must be specified. For example:

- ED8C904-30, G4
- ED8C904-30, G101



# Common Circuit Pack Kits

## Overview

---

**Purpose** This section provides information on common circuit pack kits.

### Common C-Band Circuit Pack Kit Applications

[Table 3-1, “ED8C904-30 Common C-Band Circuit Pack Kit Applications” \(3-5\)](#) gives information regarding the specific applications of each common circuit pack Kit included on Drawing ED8C904-30 for C-Band configurations.

**Table 3-1 ED8C904-30 Common C-Band Circuit Pack Kit Applications**

Group	Description	Applicable Bay(s)
7	2-Fiber End Terminal	System
8	2-Fiber Ring Terminal	System and Complementary
4	2-Fiber WAD Terminal (Type 2)	System
5	2-Fiber Repeater	Repeater Shelf

**Notes:**

1. Additional circuit packs will be needed (i.e., OAs and OTUs). Refer to Chapter 1 as well as Chapters 4 and 5 for more information.

### Common L-Band Circuit Pack Kit Applications

[Table 3-2, “ED8C904-30 Common L-Band Circuit Pack Kit Applications” \(3-5\)](#) gives information regarding the specific applications of each Common Circuit Pack Kit included on Drawing ED8C904-30 for L-Band configurations.

**Table 3-2 ED8C904-30 Common L-Band Circuit Pack Kit Applications**

Group	Description	Applicable Bay(s)
51	2-Fiber End Terminal	System
52	2-Fiber Ring Terminal	System and Complementary

**Table 3-2 ED8C904-30 Common L-Band Circuit Pack Kit Applications (continued)**

<b>Group</b>	<b>Description</b>	<b>Applicable Bay(s)</b>
55	2-Fiber Repeater	Repeater Shelf

**Notes:**

1. Additional circuit packs will be needed (i.e., OAs and OTUs). Refer to Chapter 1 as well as Chapters 4 and 6 for more information.



## Group 7

---

**Description** Group 7 includes the common circuit packs required for a System Bay used in a 2-Fiber End Terminal with up to 80 channel capacity in C-Band configuration.

**Components** Refer to [Table 3-3, “Group 7 Components” \(3-7\)](#) for the list of Group 7 components.

**Table 3-3 Group 7 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	3
MEMFLASH-CARD	MEM	848732251	1
SUPVY1B	WSA013	108534785	1
4:1 OMON1B	WSA020B	109056705	1
E11	WSB001	108250093	1
ODU1C	WSA204	108711821	1
OMU1	WSC201	108250101	1



## Group 51

---

**Description** Group 51 includes the common circuit packs required for a System Bay used in a 2-Fiber End Terminal with up to 80 channel capacity in L-Band configuration.

**Components** Refer to [Table 3-4, “Group 51 Components” \(3-8\)](#) for a list of circuit packs used in L-Band configurations.

**Table 3-4 Group 51 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	3
Memory Flash Card	MEM	848732251	1
SUPVY1L	WNA010	108653163	1
4:1 OMON1L	WNA020B	109056713	1
EI1	WSB001	108250093	1
ODU21	WNA204	108892878	1
OMU1L	WNC201	108675273	1



## Group 8

---

**Description** Group 8 includes the circuit packs required for a System Bay and Complementary Bay used in a 2-Fiber Ring Terminal with up to 80 channel capacity in C-Band configuration.

**Components** Refer to [Table 3-5, “Group 8 Components” \(3-9\)](#) for the list of Group 2 components.

**Table 3-5 Group 8 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	4
Flash Memory Card	MEM	848732251	1
SUPVY1B	WSA013	108534785	1
EI1	WSB001	108250093	1
ODU1C	WSA204	108711821	2
OMU1	WSC201	108250101	2
4:1 OMON1B	WSA020B	109056705	1

**Quantity per Bay** A maximum of one Group 8 Kit may be installed per System Bay and Complementary Bay.



## Group 52

---

**Description** Group 52 includes the circuit packs required for a System Bay and Complementary Bay used in a 2-Fiber Ring Terminal with up to 80 channel capacity in an L-Band configuration.

**Components** Refer to [Table 3-6, “Group 52 Components” \(3-10\)](#) for a list of Group 52 components.

**Table 3-6 Group 52 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	4
Flash Memory Card	MEM	848732251	1
SUPVY1L	WNA010	108653163	1
EI1	WSB001	108250093	1
ODU21	WNA204	108892878	2
OMU1L	WNC201	108675273	2
4:1 OMON1L	WNA020B	109056713	1

**Quantity per Bay** A maximum of one Group 52 Kit may be installed per System Bay and Complementary Bay.



## Group 4

---

**Description** Group 4 includes the circuit packs required for a System Bay used in a 2-Fiber Ring Terminal (2-Fiber 4-Channel WAD Type 2).

**Components** Refer to [Table 3-7, “Group 4 Components” \(3-11\)](#) for the list of Group 4 components.

**Table 3-7 Group 4 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	3
SUPVY1B	WSA013	108534785	1
4:1 OMON1B	WSA020B	109056705	1
EI1	WSB001	108250093	1
Memory Flash Card	MEM	848732251	1

**Quantity per Bay** A maximum of one Group 4 Kit may be installed per System Bay.



## Group 5

---

**Description** Group 5 includes the circuit packs required for a 2-Fiber Repeater in a C-Band configuration.

**Components** Refer to [Table 3-8, “Group 5 Components” \(3-12\)](#) for the list of Group 5 components for one miscellaneous mounted repeater shelf.

**Table 3-8 Group 5 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	1
Memory Flash Card	MEM	848732251	1
SUPVY1B	WSA013	108534785	1
OMON1B	WSA020B	109056705	1
EI1	WSB001	108250093	1

**Quantity per Shelf** A maximum of one Group 5 Kit may be installed per Repeater Shelf.



## Group 55

---

**Description** Group 55 includes the circuit packs required for a 2-Fiber Repeater in an L-Band configuration.

**Components** Refer to [Table 3-9, “Group 55 Components” \(3-13\)](#) for the list of Group 55 components for one miscellaneous mounted repeater shelf.

**Table 3-9 Group 55 Components**

Circuit Pack	CP Code	Comcode	Quantity
BOS2	WSA002	108655937	1
Memory Flash Card	MEM	848732251	1
SUPVY1L	WNA010	108653163	1
4:1 OMON1L	WNA020B	108653171	1
EI1	WSB001	109056713	1

**Quantity per Shelf** A maximum of one Group 55 Kit may be installed per Repeater Shelf.



# Common Fiber and Equipment Kits

## Overview

---

**Purpose** This section provides information on common fiber and equipment kits.

**Group Descriptions** Refer to [Table 3-10, “ED8C904-30 Common Fiber and Equipment Kit Applications” \(3-14\)](#) for information regarding the specific applications of each Common Fiber and Equipment Kit included on Drawing ED8C904-30.

**Table 3-10 ED8C904-30 Common Fiber and Equipment Kit Applications**

Group	Description	Where Used in Bays
21	2-Fiber End Terminal	System
23	2-Fiber Ring Terminal	System <i>and</i> Complementary
24	2-Fiber Repeater	Shelf
25	2-Fiber WAD Terminal (Type 2)	System
33	2-Fiber End Terminal	Growth (Bay #2)
35	2-Fiber End Terminal <i>or</i> 2-Fiber Ring Terminal	Growth (Bay #3) Growth (Bays #3, #4)
37	2-Fiber Ring Terminal	Growth (Bays #5, # 6, # 7)



## Group 21

---

**Description** Group 21 includes the fiber and equipment required for a System Bay used in a 2-Fiber End Terminal.

**Components** Refer to [Table 3-11, “Group 21 Components” \(3-15\)](#) for the list of Group 21 components.

**Table 3-11 Group 21 Components**

Item	Comcode	Quantity
Cable, Lightguide Interconnect	108341447	12
Simplex Red Fiber Kit for 2-Fiber End Terminal	848606588	1
Label, End, and Ring Terminal Fiber Jumper Labels	848220083	1
Label, End, and Ring Terminal Fiber Jumper Labels L-Band	848636395	1
Label, Designation Growth Bay Numerical	848220307	1
Assemblies, Cable	ED7G050-20, G20	1
Assemblies, Cable	ED7G050-20, G22	1
Assemblies, Cable	ED7G050-20, G23	1
Assemblies, Cable L-Band	ED7G050-20, G24	1

**Where Used** A Group 21 Kit is used with the following items:

- J69002A-1 List 21 — System Bay, Lucent Seismic Network Bay Framework
- J69002A-1 List 31 — System Bay, ETSI Seismic Cabinet



## Group 23

---

**Description** Group 23 includes the fiber and equipment required for the System and Complementary Bays in a 2-Fiber Ring Terminal.

**Components** Refer to [Table 3-12, “Group 23 Components” \(3-16\)](#) for the list of Group 23 components.

**Table 3-12 Group 23 Components**

Item	Comcode	Quantity
Cable, Lightguide Interconnect	108341447	36
Simplex Red Fiber Kit for 2-Fiber Ring Terminal	848606596	1
Label, End and Ring Terminal Fiber Jumper Labels	848220083	1
Label, End and Ring Terminal Fiber Jumper Labels, L-Band	848636395	1
Label, Designation Growth Bay Numerical	848220307	1
Label, Designation Complementary Bay Numerical	848220299	1
Assemblies, Cable	ED7G050-20, G20	1
Assemblies, Cable	ED7G050-20, G22	1
Assemblies, Cable	ED7G050-20, G23	1
Assemblies, Cable	ED7G050-20, G24	1
Assemblies, Cable	ED7G050-20, G25	1
Assemblies, Cable	ED7G050-20, G26	1

**Where Used** A Group 23 Kit is used with the following items:

- J69002A-1 List 21 — System Bay, Lucent Seismic Network Bay Framework  
J69002A-1 List 22 — Complementary Bay, Lucent Seismic Network Bay Framework
- J69002A-1 List 31 — System Bay, ETSI Seismic Cabinet  
J69002A-1 List 32 — Complementary Bay, ETSI Seismic Cabinet

□

## Group 24

---

**Description** Group 24 includes the fiber and equipment required for a Miscellaneously Mounted Repeater Shelf used in a 2-Fiber Repeater.

**Components** Refer to [Table 3-13, “Group 24 Components” \(3-17\)](#) for the list of Group 24 components for one miscellaneously mounted repeater shelf.

**Table 3-13 Group 24 Components**

Item	Comcode	Quantity
Simplex Red Fiber Kit for 2-Fiber Repeater	848606604	1
Label, Repeater and 4 Channel Add/Drop Fiber Jumper Labels	848220091	1

**Where Used** A Group 24 Kit is used with the following items:

- J69002A-1 List 37 — Miscellaneously Mounted Repeater Shelf



## Group 25

---

**Description** Group 25 includes the fiber and equipment required for a System Bay used in a 2-Fiber [4 Channel Add/Drop (WAD)] Type 2.

**Components** Refer to [Table 3-14, “Group 25 Components” \(3-18\)](#) for the list of Group 25 components.

**Table 3-14 Group 25 Components**

Item	Comcode	Quantity
Cable, Lightguide Interconnect	108341447	16
Simplex Red Fiber Kit for 2-Fiber WAD Terminal	848606612	1
Label, Repeater and 4 Channel Add Drop Fiber Jumper Cables	848220091	1
Assemblies, Cable	ED7G050-20, G20	1

**Where Used** A Group 25 Kit is used with the following items:

- J69002A-1 List 21 — System Bay, Lucent Seismic Network Bay Framework
- J69002A-1 List 31 — System Bay, ETSI Seismic Cabinet



## Group 33

---

**Description** Group 33 includes the fiber and equipment required for Growth Bay #2 when used in a 2-Fiber End Terminal.

**Components** Refer to [Table 3-15, “Group 33 Components” \(3-19\)](#) for the list of Group 33 components.

**Table 3-15 Group 33 Components**

Item	Comcode	Quantity
Cable, Lightguide Interconnect	108341447	36

**Where Used** A Group 33 Kit is used with the following items:

- J69002A-1 List 13 — Growth Bay, Lucent Seismic Network Bay Framework
- J69002A-1 List 33 — Growth Bay, ETSI Seismic Cabinet



## Group 35

---

**Description** Group 35 includes the fiber and equipment required for any of the following:

- Growth Bay #3 of a 2-Fiber End Terminal
- Growth Bay #3 or #4 of a 2-Fiber Ring Terminal

**Components** Refer to [Table 3-16, “Group 35 Components” \(3-20\)](#) for the list of Group 35 components.

**Table 3-16 Group 35 Components**

Item	Comcode	Quantity
Cable, Lightguide Interconnect	108341454	36

**Where Used** A Group 35 Kit is used with the following items:

- J69002A-1 List 13 — Growth Bay, Lucent Seismic Network Bay Framework
- J69002A-1 List 33 — Growth Bay, ETSI Seismic Cabinet



## Group 37

---

**Description** Group 37 includes the fiber and equipment required for any of the following:

- Growth Bay 5, 6, or 7 of a 2-Fiber Ring Terminal

**Components** Refer to [Table 3-17, “Group 37 Components” \(3-21\)](#) for the list of Group 37 components.

**Table 3-17 Group 37 Components**

Item	Comcode	Quantity
Cable, Lightguide Interconnect	108341462	36

**Where Used** A Group 37 Kit is used with the following items:

- J69002A-1 List 13 — Growth Bay, Lucent Seismic Network Bay Framework
- J69002A-1 List 33 — Growth Bay, ETSI Seismic Cabinet



# Lightguide Buildout Kits

## Overview

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**Purpose** This section provides information on Lightguide Buildout Kits.



## LBO Kit 1

---

**Description** LBO Kit 1 includes the equipment required to provide a Lightguide Buildout set with LC Connector Terminations.

**Comcode** The Comcode for LBO Kit 1 is 108359415.

**Components** Refer to [Table 3-18, “LBO Kit 1 Components” \(3-23\)](#) for the list of LBO Kit 1 components.

**Table 3-18 LBO Kit 1 Components**

Description	Comcode	Quantity
0.5 dB LBO	108355363	2
1.0 dB LBO	108355371	4
1.5 dB LBO	108355389	2
2.0 dB LBO	108349457	4
2.5 dB LBO	108349440	2
3.0 dB LBO	108288481	4
3.5 dB LBO	108288440	2
4.0 dB LBO	108357963	2
4.5 dB LBO	108357971	2
5.0 dB LBO	108288473	2
5.5 dB LBO	108357989	2
6.0 dB LBO	108349432	4
6.5 dB LBO	108357997	2
7.0 dB LBO	108288465	2
7.5 dB LBO	108358003	2
8.0 dB LBO	108358011	2
8.5 dB LBO	108358029	2
9.0 dB LBO	108358037	4
9.5 dB LBO	108358045	2
10.0 dB LBO	108288457	4
11.0 dB LBO	108358078	4
18.0 dB LBO	108358193	2

**Table 3-18 LBO Kit 1 Components (continued)**

Description	Comcode	Quantity
19.0 dB LBO	108358201	2



## LBO Kit 2

---

**Description** LBO Kit 2 includes the equipment required to provide a Lightguide Buildout set with LC Connector Terminations.

**Comcode** The Comcode for LBO Kit 2 is 108359407.

**Components** Refer to [Table 3-19, “KIT 2 Components” \(3-25\)](#) for the list of LBO Kit 2 components.

**Table 3-19 KIT 2 Components**

Description	Comcode	Quantity
0.5 dB LBO	108355363	4
1.0 dB LBO	108355371	4
1.5 dB LBO	108355389	4
2.0 dB LBO	108349457	4
2.5 dB LBO	108349440	4
3.0 dB LBO	108288481	6
3.5 dB LBO	108288440	4
4.0 dB LBO	108357963	4
4.5 dB LBO	108357971	4
5.0 dB LBO	108288473	6
5.5 dB LBO	108357989	4
6.0 dB LBO	108349432	4
6.5 dB LBO	108357997	4
7.0 dB LBO	108288465	2
7.5 dB LBO	108358003	4
8.0 dB LBO	108358011	2
8.5 dB LBO	108358029	2
9.0 dB LBO	108358037	2
9.5 dB LBO	108358045	2
10.0 dB LBO	108288457	4
11.0 dB LBO	108358078	2
12.0 dB LBO	108288094	2

**Table 3-19 KIT 2 Components (continued)**

<b>Description</b>	<b>Comcode</b>	<b>Quantity</b>
13.0 dB LBO	108358128	2
14.0 dB LBO	108288144	4
15.0 dB LBO	108358169	4
20.0 dB LBO	108358219	2



## LBO Kit 3

---

**Description** LBO Kit 3 includes the equipment required to provide a Lightguide Buildout set with LC Connector Terminations.

**Comcode** The Comcode for LBO Kit 3 is 108359399.

**Components** Refer to [Table 3-20, “LBO Kit 3 Components” \(3-27\)](#) for the list of LBO Kit 3 components.

**Table 3-20 LBO Kit 3 Components**

Description	Comcode	Quantity
1.0 dB LBO	108355371	4
2.0 dB LBO	108349457	4
3.0 dB LBO	108288481	4
4.0 dB LBO	108357963	2
5.0 dB LBO	108288473	2
6.0 dB LBO	108349432	4
9.0 dB LBO	108358037	2
10.0 dB LBO	108288457	2
11.0 dB LBO	108358078	2
18.0 dB LBO	108358193	2
19.0 dB LBO	108358201	2



## Universal LBO Kit 1 (UST1)

---

**Description** UST1 includes the equipment required to provide a Universal Lightguide Buildout set with ST Connector Terminations. Universal LBO Kit 1 (UST1) provides sufficient equipment to accommodate two (2) Optical Amplifiers or two (2) Wavelength Add/Drop (WAD) circuit packs.

**Comcode** The Comcode for UST1 is 108728973.

**Components** Refer to [Table 3-21, “UST1 Components” \(3-28\)](#) for list of UST1 components.

**Table 3-21 UST1 Components**

Description	Comcode	Quantity
0.0 dB LBO	108795354	2
1.2 dB LBO	108572199	4
2.0 dB LBO	108572207	4
3.0 dB LBO	108053059	2
6.0 dB LBO	108053177	2
9.0 dB LBO	108053174	2
10.0 dB LBO	108053190	2
11.0 dB LBO	108053208	2
18.0 dB LBO	108053265	2
20.0 dB LBO	108053273	2



## Universal LBO Kit 2 (USC1)

---

**Description** USC1 includes the equipment required to provide a Universal Lightguide Buildout set with SC Connector Terminations. USC1 provides sufficient equipment to accommodate two (2) Optical Amplifiers or two (2) Wavelength Add/Drop (WAD) circuit packs.

**Comcode** The Comcode for USC1 is 108728981.

**Components** Refer to [Table 3-22, “USC1 Components” \(3-29\)](#) for the list of USC1 components.

**Table 3-22 USC1 Components**

Description	Comcode	Quantity
0.0 dB LBO	108708951	2
1.2 dB LBO	108538760	4
2.0 dB LBO	108538778	4
3.0 dB LBO	108314469	2
6.0 dB LBO	108314527	2
9.0 dB LBO	108314584	2
10.0 dB LBO	108314600	2
11.0 dB LBO	108440496	2
18.0 dB LBO	108440553	2
20.0 dB LBO	108440561	2



## Universal LBO Kit 3 (UFC1)

---

**Description** UFC1 includes the equipment required to provide a Universal Lightguide Buildout set with FC Connector Terminations. UFC1 provides sufficient equipment to accommodate two (2) Optical Amplifiers or two (2) Wavelength Add/Drop (WAD) circuit packs.

**Comcode** The Comcode for UFC1 is 108728999.

**Components** Refer to [Table 3-23, “UFC1 Components” \(3-30\)](#) for the list of UFC1 components.

**Table 3-23 UFC1 Components**

Description	Comcode	Quantity
0.0 dB LBO	108385485	2
1.2 dB LBO	108385493	4
2.0 dB LBO	108385501	4
3.0 dB LBO	108107053	2
6.0 dB LBO	108107111	2
9.0 dB LBO	108107178	2
10.0 dB LBO	108107194	2
11.0 dB LBO	108107202	2
18.0 dB LBO	108107269	2
20.0 dB LBO	108107277	2



# Red Fiber Kits

## Overview

---

**Purpose** This section provides information on Red Fiber kits, which are used to form internal system connection.

**Available Kits** Refer to [Table 3-24, “Simplex Red Fiber Kits” \(3-31\)](#) for a list of available Simplex Red Fiber Kits by application and the corresponding Comcode.

**Table 3-24 Simplex Red Fiber Kits**

Application	Comcode
2-Fiber End Terminal	108615808
2-Fiber Ring Terminal	108773581
2-Fiber Repeater	108384355
2-Fiber WAD Terminal	109023812



## 2-Fiber End Terminal Red Fiber Kit

---

**Kit 108615808 Components** Refer to [Table 3-25, “Simplex Red Fiber Kit 108615808 Components” \(3-32\)](#) for the list of items included in this kit.

**Table 3-25 Simplex Red Fiber Kit 108615808 Components**

Item Description	Quantity	Comcode
16.5 in Simplex LC-LC Red Fiber	2	108463522
20.5 in Simplex LC-LC Red Fiber	1	108463548
25.0 in Simplex LC-LC Red Fiber	1	108463589
32.7 in Simplex LC-LC Red Fiber	2	108463670
35.5 in Simplex LC-LC Red Fiber	2	108463738
45.5 in Simplex LC-LC Red Fiber	1	108627928
47.5 in Simplex LC-LC Red Fiber	1	108463886
50.0 in Simplex LC-LC Red Fiber	1	108627944
55.0 in Simplex LC-LC Red Fiber	1	108463928
60.0 in Simplex LC-LC Red Fiber	2	108463969
61.5 in Simplex LC-LC Red Fiber	1	108463977
72.0 in Simplex LC-LC Red Fiber	2	108464025
85.0 in Simplex LC-LC Red Fiber	1	108464033
20.5 in Simplex LC-ST Red Fiber	1	108607276
85.0 in Simplex LC-ST Red Fiber	1	108607573
20.5 in Simplex LC-FC Red Fiber	1	108607250
85.0 in Simplex LC-FC Red Fiber	1	108607565
20.5 in Simplex LC-SC Red Fiber	1	108607268
85.0 in Simplex LC-SC Red Fiber	1	108607540



## 2-Fiber Ring Terminal Red Fiber Kit

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**Kit 108773581 Components** Refer to [Table 3-26, “Simplex Red Fiber Kit 108773581 Components” \(3-33\)](#) for the list of items included in this kit.

**Table 3-26 Simplex Red Fiber Kit 108773581 Components**

Item Description	Quantity	Comcode	Tube Assignment Number
16.5 in Simplex LC-LC Red Fiber	4	108463522	—
20.5 in Simplex LC-LC Red Fiber	2	108463548	—
25.0 in Simplex LC-LC Red Fiber	2	108463589	—
32.7 in Simplex LC-LC Red Fiber	4	108463670	—
35.5 in Simplex LC-LC Red Fiber	4	108463738	—
45.5 in Simplex LC-LC Red Fiber	2	108627928	—
47.5 in Simplex LC-LC Red Fiber	3	108463886	—

**Table 3-26 Simplex Red Fiber Kit 108773581 Components  
 (continued)**

<b>Item Description</b>	<b>Quantity</b>	<b>Comcode</b>	<b>Tube Assignment Number</b>
50.0 in Simplex LC-LC Red Fiber	2	108627944	—
53.5 in Simplex LC-LC Red Fiber	1	108463910	—
55.0 in Simplex LC-LC Red Fiber	1	108463928	—
60.0 in Simplex LC-LC Red Fiber	1	108463969	—
72.0 in Simplex LC-LC Red Fiber	4	108464025	—
85.0 in Simplex LC-LC Red Fiber	2	108464033	—
106.0 in Simplex LC-LC Red Fiber	2	108607201	T1
106.0 in Simplex LC-LC Red Fiber	1	108607201	T2

**Table 3-26 Simplex Red Fiber Kit 108773581 Components  
 (continued)**

<b>Item Description</b>	<b>Quantity</b>	<b>Comcode</b>	<b>Tube Assignment Number</b>
108.0 in Simplex LC-LC Red Fiber	2	108464066	T3
108.0 in Simplex LC-LC Red Fiber	1	108464066	T4
110.0 in Simplex LC-LC Red Fiber	1	108464074	T2
112.0 in Simplex LC-LC Red Fiber	1	108464082	T4
20.5 in Simplex LC-ST Red Fiber	2	108607276	—
85.0 in Simplex LC-ST Red Fiber	2	108607573	—
20.5 in Simplex LC-FC Red Fiber	2	108607250	—
85.0 in Simplex LC-FC Red Fiber	2	108607565	—
20.5 in Simplex LC-SC Red Fiber	2	108607268	—

**Table 3-26 Simplex Red Fiber Kit 108773581 Components (continued)**

Item Description	Quantity	Comcode	Tube Assignment Number
85.0 in Simplex LC-SC Red Fiber	2	108607540	—
124.5 in Simplex LC-SC Red Fiber	2	108783374	T5
124.5 in Simplex LC-SC Red Fiber	1	108783374	T6
128.5 in Simplex LC-SC Red Fiber	1	108783382	T6

Refer to [Table 3-27, “Tube Comcode Components” \(3-36\)](#) for a list of applicable components. Tubes are used for running fibers to adjacent bays.

**Table 3-27 Tube Comcode Components**

Tube Number	Comcode	Length (in)
T1	848482634	44.7
T2	848482634	44.7
T3	848482634	44.7
T4	848482634	44.7
T5	848482642	61.5
T6	848482642	61.5



## 2-Fiber Repeater Red Fiber Kit

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**Kit 108384355 Components** Refer to [Table 3-28, “Simplex Red Fiber Kit 108384355 Components” \(3-37\)](#) for the list of items included in this kit.

**Table 3-28 Simplex Red Fiber Kit 108384355 Components**

Item Description	Quantity	Comcode
16.5 in Simplex LC-LC Red Fiber	2	108463522
20.5 in Simplex LC-LC Red Fiber	2	108463548
22.0 in Simplex LC-LC Red Fiber	1	108463555
25.0 in Simplex LC-LC Red Fiber	1	108463589
26.5 in Simplex LC-LC Red Fiber	1	108463605
27.5 in Simplex LC-LC Red Fiber	1	108463621
28.5 in Simplex LC-LC Red Fiber	2	108463639
31.0 in Simplex LC-LC Red Fiber	2	108463654
33.5 in Simplex LC-LC Red Fiber	1	108463696
40.0 in Simplex LC-LC Red Fiber	1	108463829
50.0 in Simplex LC-LC Red Fiber	1	108627944
55.0 in Simplex LC-LC Red Fiber	1	108627951



## 2-Fiber WAD Terminal Red Fiber Kit

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**Kit 109023812 Components** Refer to [Table 3-29, “Simplex Red Fiber Kit 109023812 Components” \(3-38\)](#) for the list of items included in this kit.

**Table 3-29 Simplex Red Fiber Kit 109023812 Components**

Item Description	Quantity	Comcode
16.5 in Simplex LC-LC Red Fiber	8	108463522
22.0 in Simplex LC-LC Red Fiber	1	108463555
23.0 in Simplex LC-LC Red Fiber	2	108627902
25.0 in Simplex LC-LC Red Fiber	1	108463589
26.5 in Simplex LC-LC Red Fiber	1	108463605
28.5 in Simplex LC-LC Red Fiber	2	108463639
32.7 in Simplex LC-LC Red Fiber	4	108463670
35.5in Simplex LC-LC Red Fiber	2	108463738
38.0 in Simplex LC-LC Red Fiber	2	108463811
45.5 in Simplex LC-LC Red Fiber	1	108627928
50.0 in Simplex LC-LC Red Fiber	1	108627944
53.5 in Simplex LC-LC Red Fiber	1	108463910
55.0 in Simplex LC-LC Red Fiber	3	108463928
58.0 in Simplex LC-LC Red Fiber	2	108463936
60.0 in Simplex LC-LC Red Fiber	1	108463969
63.5 in Simplex LC-LC Red Fiber	1	108463993
65.0 in Simplex LC-LC Red Fiber	4	108607532
68.5 in Simplex LC-LC Red Fiber	2	108464009
72.0 in Simplex LC-LC Red Fiber	5	108464025
94.0 in Simplex LC-LC Red Fiber	1	109034298
22.0 in Simplex LC-ST Red Fiber	1	108783077
26.5 in Simplex LC-ST Red Fiber	1	108607300
32.7 in Simplex LC-ST Red Fiber	2	108607367
38.0 in Simplex LC-ST Red Fiber	2	108783101
72.0 in Simplex LC-ST Red Fiber	1	108783135
94.0 in Simplex LC-ST Red Fiber	1	109034322

**Table 3-29 Simplex Red Fiber Kit 109023812 Components  
(continued)**

<b>Item Description</b>	<b>Quantity</b>	<b>Comcode</b>
22.0 in Simplex LC-FC Red Fiber	1	108783192
26.5 in Simplex LC-FC Red Fiber	1	108607284
32.7 in Simplex LC-FC Red Fiber	2	108607342
38.0 in Simplex LC-FC Red Fiber	2	108783226
72.0 in Simplex LC-FC Red Fiber	1	108783259
94.0 in Simplex LC-FC Red Fiber	1	109034306
22.0 in Simplex LC-SC Red Fiber	1	108783390
26.5 in Simplex LC-SC Red Fiber	1	108607292
32.7 in Simplex LC-SC Red Fiber	2	108607359
38.0 in Simplex LC-SC Red Fiber	2	108783424
72.0 in Simplex LC-SC Red Fiber	1	108783457
94.0 in Simplex LC-SC Red Fiber	1	109034314



## C+L Red Fiber Kits

### Overview

---

**Purpose** This section provides information on C+L Red Fiber kits.

**Available Kits** Refer to [Table 3-30, “Simplex Red Fiber Kits” \(3-40\)](#) for a list of available C+L Simplex Red Fiber Kits, by application, and the corresponding Comcode.

**Table 3-30 Simplex Red Fiber Kits**

Application	Comcode
C+L 2-Fiber Ring Terminals	108773987
C+L Repeater Kit	108773995
C+L 4-Channel Add/Drop Terminals	108774001
C+L Completion Kit	108774019



## C+L Full Add/Drop Terminals

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**Kit 108773987 Components** Refer to [Table 3-31, “C+L Full Add/Drop Terminal Kit 108773987 Components” \(3-41\)](#) for the list of items included in C+L Full Add/Drop Terminal Red Fiber Kit 108773987.

**Table 3-31 C+L Full Add/Drop Terminal Kit 108773987 Components**

Item Description	Quantity	Comcode
61.5 in Simplex LC-LC Red Fiber	1	108463997
70.5 in Simplex LC-LC Red Fiber	1	108783317
61.5 in Simplex LC-ST (EP) Red Fiber	1	108783119
70.5 in Simplex LC-ST (EP) Red Fiber	1	108783127
61.5 in Simplex LC-SC Red Fiber	1	108783432
70.5 in Simplex LC-SC Red Fiber	1	108783440
61.5 in Simplex LC-FC Red Fiber	1	108783234
70.5 in Simplex LC-FC Red Fiber	1	108783242



## C+L Repeaters

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**Kit 108773995 Components** Refer to [Table 3-32, “C+L Repeater Terminal Kit 108773995 Components” \(3-42\)](#) for the list of items included in C+L Repeater Red Fiber Kit 108773995.

**Table 3-32 C+L Repeater Terminal Kit 108773995 Components**

Item Description	Quantity	Comcode
22.0 in Simplex LC-LC Red Fiber	1	108463555
26.0 in Simplex LC-LC Red Fiber	1	108627910
26.5 in Simplex LC-LC Red Fiber	1	108463605
31.0 in Simplex LC-LC Red Fiber	1	108463654
22.0 in Simplex LC-ST (EP) Red Fiber	1	108783077
26.0 in Simplex LC-ST (EP) Red Fiber	1	108783085
26.5 in Simplex LC-ST (EP) Red Fiber	1	108607300
31.0 in Simplex LC-ST (EP) Red Fiber	1	108783093
22.0 in Simplex LC-SC Red Fiber	1	108783390
26.0 in Simplex LC-SC Red Fiber	1	108783408
26.5 in Simplex LC-SC Red Fiber	1	108607292
31.0 in Simplex LC-SC Red Fiber	1	108783416
22.0 in Simplex LC-FC Red Fiber	1	108783192
26.0 in Simplex LC-FC Red Fiber	1	108783200
26.5 in Simplex LC-FC Red Fiber	1	108607284
31.0 in Simplex LC-FC Red Fiber	1	108783218



## C+L 4-Channel Add/Drop Terminals

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**Kit 108774001 Components** Refer to [Table 3-33, “C+L Full Add/Drop Terminal Kit 108774001 Components” \(3-43\)](#) for the list of items included in C+L 4-Channel Add/Drop Terminal Red Fiber Kit 108774001.

**Table 3-33 C+L Full Add/Drop Terminal Kit 108774001 Components**

Item Description	Quantity	Comcode
72.0 in Simplex LC-LC Red Fiber	2	108464025
76.5 in Simplex LC-LC Red Fiber	2	108783325
72.0 in Simplex LC-ST (EP) Red Fiber	2	108783135
76.5 in Simplex LC-ST (EP) Red Fiber	2	108783143
72.0 in Simplex LC-SC Red Fiber	2	108783457
76.5 in Simplex LC-SC Red Fiber	2	108783465
72.0 in Simplex LC-FC Red Fiber	2	108783259
76.5 in Simplex LC-FC Red Fiber	2	108783267



## C + L Completion Fiber Kit

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**Kit 108774019 Components** Refer to [Table 3-34, “C+L Completion Terminal Kit 108774019 Items” \(3-44\)](#) for the list of items included in C+L 4-Channel Add/Drop Terminal Red Fiber Kit 108774019.

**Table 3-34 C+L Completion Terminal Kit 108774019 Items**

Item Description	Quantity	Comcode
25 Feet, Simplex LC-LC (EP) Red Fiber	2	10878333
50 Feet, Simplex LC-LC (EP) Red Fiber	2	108783341
100 Feet, Simplex LC-LC (EP) Red Fiber	2	108783358
200 Feet, Simplex LC-LC (EP) Red Fiber	2	108783366
25 Feet, Simplex LC-ST Red Fiber	2	108783150
50 Feet, Simplex LC-ST Red Fiber	2	108783168
100 Feet, Simplex LC-ST Red Fiber	2	108783176
200 Feet, Simplex LC-ST Red Fiber	2	108783184
25 Feet, Simplex LC-SC Red Fiber	2	108783473
50 Feet, Simplex LC-SC Red Fiber	2	108783481
100 Feet, Simplex LC-SC Red Fiber	2	109783499
200 Feet, Simplex LC-SC Red Fiber	2	108783507
25 Feet, Simplex LC-FC Red Fiber	2	108783275
50 Feet, Simplex LC-FC Red Fiber	2	108783283
100 Feet, Simplex LC-FC Red Fiber	2	108783291
200 Feet, Simplex LC-FC Red Fiber	2	108783309



# Yellow Fiber Kits

## Overview

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**Purpose** This section provides information on Yellow Fiber kits, which are used for OTU connections and external system connections.



## Overview

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**Available Kits** Refer to [Table 3-35, “Duplex Yellow Fiber Kits” \(3-46\)](#) for the list of available Duplex Yellow Fiber Kits, by length, and the corresponding Comcode.

**Table 3-35 Duplex Yellow Fiber Kits**

Description	Quantity/Kit	Comcode
15 Feet, Duplex LC-LC Yellow Fiber	12	108408352
20 Feet, Duplex LC-LC Yellow Fiber	12	108408360
25 Feet, Duplex LC-LC Yellow Fiber	12	108408378
30 Feet, Duplex LC-LC Yellow Fiber	12	108408386
35 Feet, Duplex LC-LC Yellow Fiber	12	108408394

**Fiber Comcodes** Refer to [Table 3-36, “LC-LC Duplex Yellow Fibers” \(3-46\)](#) for Comcode information for fibers contained in the Yellow Fiber kits. This information may be helpful when ordering additional/replacement Duplex LC-LC Yellow Fibers.

**Table 3-36 LC-LC Duplex Yellow Fibers**

Description	Comcode
15 Feet, Duplex LC-LC Yellow Fiber	108341447
20 Feet, Duplex LC-LC Yellow Fiber	108341454
25 Feet, Duplex LC-LC Yellow Fiber	108341462
30 Feet, Duplex LC-LC Yellow Fiber	108341470
35 Feet, Duplex LC-LC Yellow Fiber	108341488





# 4 Discretely Orderable Items

## Overview

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**Purpose** This chapter provides information on discretely orderable items.

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## Circuit Packs

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### Bay, Overhead, and System (BOS) Controllers

Refer to [Table 4-1, “Orderable BOS Controllers” \(4-2\)](#) for a list of comcodes for each available BOS Controller circuit pack.

**Table 4-1 Orderable BOS Controllers**

Circuit Pack	Circuit Pack Code	Comcode
BOS2	WSA002	108655937

### External Interface (EI)

Refer to [Table 4-2, “Orderable EI Circuit Packs” \(4-2\)](#) for a list of comcodes for each available EI circuit pack.

**Table 4-2 Orderable EI Circuit Packs**

Circuit Pack	Circuit Pack Code	Comcode
EI1	WSB001	108250093

### Optical Amplifiers (C-Band)

Refer to [Table 4-3, “Orderable OAs \(C-Band\)” \(4-2\)](#) for a list of comcodes for available OA circuit packs.

**Table 4-3 Orderable OAs (C-Band)**

Circuit Pack	Connector	Circuit Pack Code	Comcode
OA1 (C-Band)	LC	WSA031	108249988
	Universal (SC)	WUA031	108595828
	LC (for WAD Receive)	WSA032	108249996
	Universal (SC) (for WAD Receive) <sup>1</sup>	WUA032	108886847

**Notes:**

- This OA1 is configured with an 8 dB LBO.

### Optical Amplifiers (L-Band)

Refer to [Table 4-4, “Orderable OA1L \(L-Band\)” \(4-3\)](#) for a list of comcodes for available OA circuit packs.

**Table 4-4 Orderable OA1L (L-Band)**

Circuit Pack	Connector	Circuit Pack Code	Comcode
OA1L	LC	WNA031	108653130
	Universal (SC)	WRA031	108653155
OA3L	LC	WNA401	108881640
	Universal (SC)	WRA401	108881665

**Optical Demultiplexer Unit (C- Band)**

Refer to [Table 4-5, “Orderable ODU \(C- Band\)” \(4-3\)](#) for a list of comcodes for each available ODU.

**Table 4-5 Orderable ODU (C- Band)**

Circuit Pack	Circuit Pack Code	Comcode
ODU1C (C-Band)	WSA204	108711821
ODU2C (C-Band)	WSA205 <sup>1</sup>	108711839

**Notes:**

1. Contact Customer Team for lead time for circuit pack.

**Optical Demultiplexer Unit (L-Band)**

Refer to [Table 4-6, “Orderable ODU L-Band” \(4-3\)](#) for a list of comcodes for each available ODU.

**Table 4-6 Orderable ODU L-Band**

Circuit Pack	Circuit Pack Code	Comcode
ODU21 (L-Band)	WNA204	108892878
ODU22 (L-Band)	WNA205 <sup>1</sup>	108892894

**Notes:**

1. Contact Customer Team for lead time for circuit pack.

**4:1 Optical Monitor (OMON1B)**

Refer to [Table 4-7, “Orderable OMON Circuit Packs \(C-Band\)” \(4-4\)](#) for a list of comcodes for each available OMON circuit pack.

**Table 4-7 Orderable OMON Circuit Packs (C-Band)**

Circuit Pack	Circuit Pack Code	Comcode
4:1 OMON1B (C-Band)	WSA020B	109056705

**4:1 Optical Monitor  
(OMON1L)**

Refer to [Table 4-8, “Orderable OMON1L \(L-Band\)” \(4-4\)](#) for a list of comcodes for each available OMON.

**Table 4-8 Orderable OMON1L (L-Band)**

Circuit Pack	Circuit Pack Code	Comcode
4:1 OMON1L (L-Band)	WNA020B	109056713

**Optical Multiplexer Unit  
(C-Band)**

Refer to [Table 4-9, “Orderable OMU C-Band” \(4-4\)](#) for a list of comcodes for each available OMU.

**Table 4-9 Orderable OMU C-Band**

Circuit Pack	Circuit Pack Code	Comcode
OMU1 (C-Band)	WSC201	108250101
OMU2 (C-Band)	WSC202 <sup>1</sup>	108250119

**Notes:**

1. Contact Customer Team for lead time for circuit pack.

**Optical Multiplexer Unit  
(L-Band)**

Refer to [Table 4-10, “Orderable OMU \(L-Band\)” \(4-4\)](#) for a list of Comcodes for each available OMU.

**Table 4-10 Orderable OMU (L-Band)**

Circuit Pack	Circuit Pack Code	Comcode
OMU1L (L-Band)	WNC201	108675273
OMU2L (L-Band)	WNC202 <sup>1</sup>	108675281

**Notes:**

1. Contact Customer Team for lead time for circuit pack.

**SUPVY Circuit Pack (C-Band)**

Refer to [Table 4-11, “Orderable SUPVY Circuit Packs \(C-Band\)” \(4-5\)](#) for a list of comcodes for each available SUPVY circuit pack.

**Table 4-11 Orderable SUPVY Circuit Packs (C-Band)**

Circuit Pack	Circuit Pack Code	Comcode
SUPVY1B	WSA013	108534785
SUPVY3 <sup>1</sup>	WSA012	108410275

**Notes:**

1. SUPVY3 is only required for spans of more than 32dB Loss.

**SUPVY (L-Band)**

Refer to [Table 4-12, “Orderable SUPVY Circuit Packs \(L-Band\)” \(4-5\)](#) for a list of Comcodes for each available SUPVY circuit pack.

**Table 4-12 Orderable SUPVY Circuit Packs (L-Band)**

Circuit Pack	Circuit Pack Code	Comcode
SUPVY1L	WNA010	108653163

**ORS (C-Band Only)**

Refer to [Table 4-13, “ORS” \(4-5\)](#) for the comcode for the available ORS circuit pack (C-Band only).

**Table 4-13 ORS**

Circuit Pack	Circuit Pack Code	Comcode
ORS	WSA022 <sup>1</sup>	108873829

**Notes:**

1. Contact Customer Team for lead time for circuit pack.

**WAD Circuit Packs (C-Band Only)**

Refer to [Table 4-14, “Orderable WAD Circuit Packs” \(4-5\)](#) for a list of comcodes for each available WAD circuit pack (C-Band only).

**Table 4-14 Orderable WAD Circuit Packs**

CP	Add/Drop Frequencies (THz)				Connector	CP Code	Comcode
	1	2	3	4			
WAD5 (OC-192/STM-64)	195.200	195.400	195.600	195.800	LC	WSA305	108250077
					Universal	WUA305	108586173

**Table 4-14 Orderable WAD Circuit Packs (continued)**

CP	Add/Drop Frequencies (THz)				Connector	CP Code	Comcode
	1	2	3	4			
WAD6 (OC-192/ STM-64)	195.100	195.300	195.500	195.700	LC	WSA306	108250085
					Univer- sal	WUA306	108586181

**OTUs** Refer to [Chapter 5, “OTUs \(C-Band\) for the WaveStar® OLS 1.6T”](#) for a list of comcodes for each available OTU for C-Band. Refer to [Chapter 6, “OTUs \(L-Band\) for the WaveStar® OLS 1.6T”](#) for a list of comcoders for each available OTU for L-Band.

**C+L Separator /Combiner (CLSC)** Refer to [Table 4-15, “Orderable C+L Separator/Combiner \(CLSC\) \(4-6\)”](#) for a list of comcodes for each available C+L Separator/Combiner circuit pack.

**Table 4-15 Orderable C+L Separator/Combiner (CLSC)**

Circuit Pack	Connector	Circuit Pack Code	Comcode
CLSC-S	LC	WSA142	108748914
	Universal (SC)	WUA142	108749284
CLSC-D	LC	WSA143	108748930
	Universal (SC)	WUA143	108749292



## Dispersion Compensation Modules (DCM) C-Band

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**Description** A C-Band DCM optically compensates for the natural optical spreading of a transmitted optical spectrum caused by chromatic dispersion.

**Orderable DCMs** Refer to [Table 4-16, “Orderable DCMs C-Band” \(4-7\)](#) for a list of comcodes for each available DCM.

**Table 4-16 Orderable DCMs C-Band**

CP Code	Description	Comcode
DCM-2.5	Fiber Optic DCM — 2.5 km	108402595
DCM-5.0	Fiber Optic DCM — 5.0 km	108402603
DCM-7.5	Fiber Optic DCM — 7.5 km	108402611
DCM-10	Fiber Optic DCM — 10.0 km	108402629
DCM-20	Fiber Optic DCM — 20.0 km	108402637
DCM-30	Fiber Optic DCM — 30.0 km	108402645
DCM-40	Fiber Optic DCM — 40.0 km	108402652
DCM-50	Fiber Optic DCM — 50.0 km	108402660
DCM-60	Fiber Optic DCM — 60.0 km	108402678
DCM-70	Fiber Optic DCM — 70.0 km	108402686
DCM-80	Fiber Optic DCM — 80.0 km	108402694
DCM-90	Fiber Optic DCM — 90.0 km	108402702
DCM-100	Fiber Optic DCM — 100 km	109047944

**Table 4-16 Orderable DCMs C-Band (continued)**

<b>CP Code</b>	<b>Description</b>	<b>Comcode</b>
DCMLS40	Fiber Optic DCM — 40.0 km for LS fiber type	109042655
DCMLS60	Fiber Optic DCM — 60.0 km for LS fiber type	109042663

**Important!** The required amount of dispersion compensation is dependent upon the route and fiber along the route. Use the WaveStar® Span Engineering Tool (WaveSET) to determine the required DCM values. Users may also refer to Chapter 5 of the APG. For DCM information for LS fibers, see Table 4-17 or contact your Customer Team representative.



## Dispersion Compensation Modules (DCM) L-Band

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**Description** An L-Band DCM optically compensates for the natural optical spreading of a transmitted optical spectrum caused by chromatic dispersion.

**Orderable DCMs** Refer to [Table 4-17, “Orderable DCMs L-Band” \(4-9\)](#) for a list of comcodes for each available DCM.

**Table 4-17 Orderable DCMs L-Band**

CP Code	Description	Comcode
DCML-2.5	Fiber Optic DCM — 2.5 km	109054460
DCML-5.0	Fiber Optic DCM — 5.0 km	109054478
DCML-7.5	Fiber Optic DCM — 7.5 km	109054486
DCML-10	Fiber Optic DCM — 10.0 km	109054494
DCML-12.5	Fiber Optic DCM — 12.5 km	109054502
DCML-15	Fiber Optic DCM — 15.0 km	109054510
DCML-17.5	Fiber Optic DCM — 17.5 km	109054528
DCML-20	Fiber Optic DCM — 20.0 km	109054536
DCML-22.5	Fiber Optic DCM — 22.5 km	109054544
DCML-25	Fiber Optic DCM — 25.0 km	109054585
DCML-27.5	Fiber Optic DCM — 27.5 km	109054551
DCM-NZDSF5L <sup>1</sup>	Fiber Optic DCM-5.0 km for NZDSF fiber	109097766
DCM-NZDSF10L <sup>1</sup>	Fiber Optic DCM-10.0 km for NZDSF fiber	109085647

**Table 4-17 Orderable DCMs L-Band (continued)**

CP Code	Description	Comcode
DCM-NZDSF20L <sup>1</sup>	Fiber Optic DCM-20.0 km for NZDSF fiber	109085654
DCM-NZDSF30L <sup>1</sup>	Fiber Optic DCM-30.0 km for NZDSF fiber	109085662
DCM-NZDSF40L <sup>1</sup>	Fiber Optic DCM-40.0 km for NZDSF fiber	109085670
DCM-NZDSF50L <sup>1</sup>	Fiber Optic DCM-50.0 km for NZDSF fiber	109085688
DCM-NZDSF60L	Fiber Optic DCM-60.0 km for NZDSF fiber	109085696
DCM-NZDSF70L <sup>1</sup>	Fiber Optic DCM-70.0km for NZDSF fiber	109085704
DCM-NZDSF80L	Fiber Optic DCM-80.0 km for NZDSF fiber	109085712
DCM-NZDSF90L <sup>1</sup>	Fiber Optic DCM-90.0 km for NZDSF fiber	109085738
DCM-NZDSF100L	Fiber Optic DCM-100.0 km for NZDSF fiber	109085746

**Notes:**

1. Contact Customer Team for lead time for circuit pack.

**Important!** The required amount of dispersion compensation is dependent upon the route and fiber along the route. For DCM information for LS fibers, contact your Customer Team representative.

**DCMs for OA3L**

Refer to [Table 4-18, “Orderable OA3L DCM Comcodes” \(4-10\)](#) for a list of DCM comcode(s).

**Table 4-18 Orderable OA3L DCM Comcodes**

CP Code	Description	Comcode
DCM-SSMF2.5L	Fiber Optic DCM — 2.5 km for SSMF fiber	109085753
DCM-SSMF5.0L	Fiber Optic DCM — 5.0 km for SSMF fiber	109085761

**Table 4-18 Orderable OA3L DCM Comcodes (continued)**

<b>CP Code</b>	<b>Description</b>	<b>Comcode</b>
DCM-SSMF7.5L	Fiber Optic DCM — 7.5 km for SSMF fiber	109085779
DCM-SSMF10L	Fiber Optic DCM — 10.0 km for SSMF fiber	109085787
DCM-SSMF20L	Fiber Optic DCM — 20.0 km for SSMF fiber	109085795
DCM-SSMF30L	Fiber Optic DCM — 30.0 km for SSMF fiber	109085803
DCM-SSMF40L	Fiber Optic DCM — 40.5 km for SSMF fiber	109085829
DCM-SSMF50L	Fiber Optic DCM — 50.0 km for SSMF fiber	109085837
DCM-SSMF60L	Fiber Optic DCM — 60.0 km for SSMF fiber	109085845
DCM-SSMF70L	Fiber Optic DCM — 70.0 km for SSMF fiber	109085852
DCM-SSMF80L	Fiber Optic DCM — 80.0 km for SSMF fiber	109085860
DCM-SSMF90L <sup>1</sup>	Fiber Optic DCM-90.0 km for SSMF fiber	109085878
DCM-SSMF100L <sup>1</sup>	Fiber Optic DCM-100.0 km for SSMF fiber	109085886

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



## System Bay Installers Cables

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**Related Configurations** This cabling information applies to all new System Bay Frameworks that are delivered as part of the following orderable items:

- J69002A-1 List 21
- J69002A-1 List 31

**System Shelf** Refer to [Table 4-19, “System Bay \(System Shelf\) Installers Cables” \(4-12\)](#) for a list of required Installers Cables for the System Bay (System Shelf).

**Table 4-19 System Bay (System Shelf) Installers Cables**

Cable	Drawing	Length Suffix (ft) or Comcode				
		50	100	150	200	300
Order Wire 1 (OW1)	ED7G 050-21	G1A	—	G2A	—	G3A
Order Wire 2 (OW2)	ED7G 050-21	G1A	—	G2A	—	G3A
Office Alarms	ED7G 050-21	G10A	—	G11A	—	G12A
Miscellaneous Discrete 1	ED7G 050-21	G10A	—	G11A	—	G12A
Miscellaneous Discrete 2	ED7G 050-21	G10A	—	G11A	—	G12A
Remote Restart	ED7G 050-21	G20A	—	G21A	—	G22A
OS	—	848555660	848555678	848555686	848555694	848555702

**Power Cables** The power feeder cables that connect the System Bay to the  $-48 V_{DC}$  (or  $-60 V_{DC}$ ) power source must be provided by the customer. The System Bay includes two (2) pressure termination connectors for these feeders:

- One connector terminates the  $-48A/-48A_{RTN}$  leads.
- One connector terminates the  $-48B/-48B_{RTN}$  leads.

For bay connections, depending upon the voltage drop requirements, #6 Gauge wire through 4/0 Gauge wire can be terminated in the power termination connectors, and run directly into the BDFB or power plant without any splices. For proper strain relief, the #6 Gauge through #1 Gauge cables must be Tray Cable (TC) cables that have both conductors housed in the same sheath. For the larger 1/0 Gauge through 4/0 Gauge cables, Cable Tray Rated (CT) cable must be used that is fabricated with a single conductor in each sheath. If larger gauge cable is required, typical splice methods must be employed.

Refer to [Table 4-20, “System Bay Termination-Compliant Power Cables” \(4-13\)](#) for orderable power cable types that comply with System Bay termination requirements.

**Table 4-20 System Bay Termination-Compliant Power Cables**

Conductor Size		Cable Type	Sheath Color	Comcode	Quantity Required
Gauge	Area				
#6	15 mm <sup>2</sup>	Tray Cable	Red	407012699	1 each
		Tray Cable	Blue	407012715	
#4	21 mm <sup>2</sup>	Tray Cable	Red	407012723	1 each
		Tray Cable	Blue	407012731	
1/0	40 mm <sup>2</sup>	Cable Tray Rated	Blue, Grey, Green, Red, Black, Red with Tracer, Blue with Tracer	KS24194, L3	4 total, each of a different color
2/0	68 mm <sup>2</sup>	Cable Tray Rated			
3/0	85 mm <sup>2</sup>	Cable Tray Rated			
4/0	100 mm <sup>2</sup>	Cable Tray Rated			

Power Feeder Cables for the System Bay may also be ordered using drawing number ED8C900-28.

For ease in identifying feeders, it is recommended that the sheath colors of the System Bay's power cables follow Intrabay Power Wiring conventions:

- For TC cables:
  - Use Red Sheath for the -48A/-48A<sub>RTN</sub> leads.
  - Use Blue Sheath for -48B/-48B<sub>RTN</sub> leads.
- For CT cables:
  - Use Red Sheath for the -48A lead.
  - Use Red With Tracer Sheath for the -48A<sub>RTN</sub> lead.
  - Use Blue Sheath for the -48B lead.
  - Use Blue With Tracer Sheath for the -48B<sub>RTN</sub> lead.

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## Complementary Bay Installers Cables

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**Related Configurations** This cabling information applies to all new Complementary Bays that are delivered as part of the following orderable items:

- J69002A-1 List 22
- J69002A-1 List 32

**Bay Controller Shelf** Installers cables and ID plug adaptors (used to identify Bay location) for the Complementary Bay (Bay Controller Shelf) are included in the following kit:

- Cable Kit 848241626

Refer to [Table 4-21, “Cable Kit 848241626 Components” \(4-15\)](#) for a list of cables and plug adaptors included in Cable Kit 848241626.

**Table 4-21 Cable Kit 848241626 Components**

Cable	Drawing	Group Number
Bay Controller Patch Cable		
Cable Assembly Adaptor ID Plug	ED7G050-20	Group 41
ID Plug Adapter (Bay 2)	ED7G050-20	Group 22
ID Plug Adapter (Bay 3)	ED7G050-20	Group 23
ID Plug Adapter (Bay 4)	ED7G050-20	Group 24

**Power Cabling** The power feeder cables that connect the Complementary Bay to the  $-48 V_{DC}$  (or  $-60 V_{DC}$ ) power source must be provided by the customer. The Complementary Bay includes two (2) pressure termination connectors for these feeders:

- One connector terminates the  $-48A/-48A_{RTN}$  leads.
- One connector terminates the  $-48B/-48B_{RTN}$  leads.

For bay connections, depending upon the voltage drop requirements, #6 Gauge wire through 4/0 Gauge wire can be terminated in the power termination connectors, and run directly into the BDFB or power plant without any splices. For proper strain relief, the #6 Gauge through #1 Gauge cables must be Tray Cable (TC) cables that have both conductors housed in the same sheath. For the larger 1/0 Gauge through 4/0 Gauge cables, Cable Tray Rated (CT) cable must be used that is fabricated with a single conductor in each sheath.

If larger gauge cable is required, typical splice methods must be employed.

Refer to [Table 4-22, “Complementary Bay Termination-Compliant Power Cables” \(4-16\)](#) for orderable power cable types that comply with Complementary Bay termination requirements.

**Table 4-22 Complementary Bay Termination-Compliant Power Cables**

Conductor Size		Cable Type	Sheath Color	Comcode	Quantity Required
Gauge	Area				
#6	15 mm <sup>2</sup>	Tray Cable (TC)	Red	407012699	1 each
		Tray Cable (TC)	Blue	407012715	
#4	21 mm <sup>2</sup>	Tray Cable (TC)	Red	407012723	1 each
		Tray Cable (TC)	Blue	407012731	
1/0	40 mm <sup>2</sup>	Cable Tray Rated (CT)	Blue, Grey, Green, Red, Black, Red with Tracer, Blue with Tracer	KS24194, L3	4 total, each of a different color
2/0	68 mm <sup>2</sup>	Cable Tray Rated (CT)			
3/0	85 mm <sup>2</sup>	Cable Tray Rated (CT)			
4/0	100 mm <sup>2</sup>	Cable Tray Rated (CT)			

Power Feeder Cables for the Complementary Bay may also be ordered using drawing number ED8C900-28.

For ease in identifying feeders, it is recommended that the sheath colors of the Complementary Bay's power cables follow Intrabay Power Wiring conventions:

- For TC cables:
  - Use Red Sheath for the -48A/-48A<sub>RTN</sub> leads.
  - Use Blue Sheath for -48B/-48B<sub>RTN</sub> leads.
- For CT cables:
  - Use Red Sheath for the -48A lead.
  - Use Red With Tracer Sheath for the -48A<sub>RTN</sub> lead.
  - Use Blue Sheath for the -48B lead.
  - Use Blue With Tracer Sheath for the -48B<sub>RTN</sub> lead.

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## Growth Bay Installers Cables

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**Related Configurations** This cabling information applies to all new Growth Bay Frameworks that are delivered as part of the following orderable items:

- J69002A-1 List 23
- J69002A-1 List 33

**Bay Controller Shelf** Installers Cables and ID Plug Adapters (used to identify Bay location) for the Growth Bay (Bay Controller and Complementary Shelves) are included in the following Kit:

- Cable Kit 848242012

Refer to [Table 4-23, “Cable Kit 848242012 Components” \(4-18\)](#) for a list of cables and plug adapters included in Cable Kit 848242012.

**Table 4-23 Cable Kit 848242012 Components**

Cable	Drawing	Group Number
Bay Controller Patch Cable		
Cable Assembly Adaptor ID Plug	ED7G050-20	Group 42
ID Plug Adapter (Bay 2)	ED7G050-20	Group 22
ID Plug Adapter (Bay 3)	ED7G050-20	Group 23
ID Plug Adapter (Bay 4)	ED7G050-20	Group 24
ID Plug Adapter (Bay 5)	ED7G050-20	Group 25
ID Plug Adapter (Bay 6)	ED7G050-20	Group 26
ID Plug Adapter (Bay 7)	ED7G050-20	Group 27
ID Plug Adapter (Bay 8)	ED7G050-20	Group 28
ID Plug Adapter (Bay 9)	ED7G050-20	Group 29
ID Plug Adapter (Bay 10)	ED7G050-20	Group 30
ID Plug Adapter (Bay 11)	ED7G050-20	Group 31
ID Plug Adapter (Bay 12)	ED7G050-20	Group 32

**Power Cabling** The power feeder cables that connect the Growth Bay to the  $-48 V_{DC}$  (or  $-60 V_{DC}$ ) power source must be provided by the customer. The

Growth Bay includes four (4) pressure termination connectors that each terminates two (2) pairs of conductors:

- One connector terminates the -48A1/-48A1<sub>RTN</sub> leads.
- One connector terminates the -48A2/-48A2<sub>RTN</sub> leads.
- One connector terminates the -48B1/-48B1<sub>RTN</sub> leads.
- One connector terminates the -48B2/-48B2<sub>RTN</sub> leads.

For bay connections, depending upon the voltage drop requirements, #6 Gauge wire through 4/0 Gauge wire can be terminated in the power termination connectors, and run directly into the BDFB or power plant without any splices. For proper strain relief, the #6 Gauge through #1 Gauge cables must be Tray Cable (TC) cables that have both conductors housed in the same sheath. For the larger 1/0 Gauge through 4/0 Gauge cables, Cable Tray Rated (CT) cable must be used that is fabricated with a single conductor in each sheath. If larger gauge cable is required, typical splice methods must be employed.

Refer to [Table 4-24, “Growth Bay Termination-Compliant Power Cables” \(4-19\)](#) for orderable power cable types that comply with Growth Bay termination requirements.

**Table 4-24 Growth Bay Termination-Compliant Power Cables**

Conductor Size		Cable Type	Sheath Color	Comcode	Quantity Required
Gauge	Area				
#6	15 mm <sup>2</sup>	Tray Cable (TC)	Red	407012699	2 each
		Tray Cable (TC)	Blue	407012715	
#4	21 mm <sup>2</sup>	Tray Cable (TC)	Red	407012723	2 each
		Tray Cable (TC)	Blue	407012731	

**Table 4-24 Growth Bay Termination-Compliant Power Cables (continued)**

Conductor Size		Cable Type	Sheath Color	Comcode	Quantity Required
Gauge	Area				
1/0	40 mm <sup>2</sup>	Cable Tray Rated (CT)	Blue, Grey, Green, Red, Black, Red with Tracer, Blue with Tracer	KS24194, L3	8 total, that is, 2 each of four (4) different colors
2/0	68 mm <sup>2</sup>				
3/0	85 mm <sup>2</sup>				
4/0	100 mm <sup>2</sup>				

Power Feeder Cables for the Growth Bay may also be ordered using drawing number ED8C900-28.

For ease in identifying feeders, it is recommended that the sheath colors of the Growth Bay's power cables follow Intrabay Power Wiring conventions:

- For TC cables:
  - Use Red Sheath for the -48A/-48A<sub>RTN</sub> leads.
  - Use Blue Sheath for -48B/-48B<sub>RTN</sub> leads.
- For CT cables:
  - Use Red Sheath for the -48A lead.
  - Use Red With Tracer Sheath for the -48A<sub>RTN</sub> lead.
  - Use Blue Sheath for the -48B lead.
  - Use Blue With Tracer Sheath for the -48B<sub>RTN</sub> lead.

#### Optional Extended Length LAN Cable

An optional 70 ft. LAN cable is available for bay connections. Order by Comcode 848615712.



## Repeater Shelf Installers Cables

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**Related Configurations** This cabling information applies to all new Repeater bay frameworks that are delivered as part of the following orderable items:

- J69002A-1 List 37

**Repeater Shelf** Refer to [Table 4-25, “Repeater Shelf Installers Cables” \(4-21\)](#) for a list of required Installers Cables for the Repeater Shelf.

**Table 4-25 Repeater Shelf Installers Cables**

Cable	Drawing	Length Suffix		
		50'	150'	300'
Order Wire 1 (OW1)	ED7G050-21	G1A	G2A	G3A
Order Wire 2 (OW2)	ED7G050-21	G1A	G2A	G3A
Office Alarms	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 1	ED7G050-21	G10A	G11A	G12A
Miscellaneous Discrete 2	ED7G050-21	G10A	G11A	G12A
Remote Restart	ED7G050-21	G20A	G21A	G22A

**Power Cabling** The power feeder cables that connect the Repeater Shelf to the  $-48 V_{DC}$  (or  $-60 V_{DC}$ ) power source must be provided by the customer. The Repeater Shelf is equipped with two (2) 15-ft long Tray Cable (TC) stubs which may be spliced to the power feeder cables:

- One spliced to the  $-48A/-48A_{RTN}$  leads
- One spliced to the  $-48B/-48B_{RTN}$  leads

For bay connections, depending upon the voltage drop requirements, #6 Gauge wire through 4/0 Gauge wire can be terminated in the power termination connectors, and run directly into the BDFB or power plant without any splices. For proper strain relief, the #6 Gauge through #1 Gauge cables must be Tray Cable (TC) cables

that have both conductors housed in the same sheath. For the larger 1/0 Gauge through 4/0 Gauge cables, Cable Tray Rated (CT) cable must be used that is fabricated with a single conductor in each sheath. If larger gauge cable is required, typical splice methods must be employed.

Refer to [Table 4-26, “Repeater Shelf Termination-Compliant Power Cables” \(4-22\)](#) for orderable power cable types that comply with Repeater Shelf termination requirements.

**Table 4-26 Repeater Shelf Termination-Compliant Power Cables**

Conductor Size		Cable Type	Sheath Color	Comcode	Quantity Required
Gauge	Area				
#6	15 mm <sup>2</sup>	Tray Cable (TC)	Red	407012699	1 each
		Tray Cable (TC)	Blue	407012715	
#4	21 mm <sup>2</sup>	Tray Cable (TC)	Red	407012723	1 each
		Tray Cable (TC)	Blue	407012731	

**Table 4-26 Repeater Shelf Termination-Compliant Power Cables (continued)**

Conductor Size		Cable Type	Sheath Color	Comcode	Quantity Required
Gauge	Area				
1/0	40 mm <sup>2</sup>	Cable Tray Rated (CT)	Blue,Grey, Green, Red, Black,	KS24194, L3	4 total, each of a different color
2/0	68 mm <sup>2</sup>	Cable Tray Rated (CT)	Red with Tracer, Blue with Tracer		
3/0	85 mm <sup>2</sup>	Cable Tray Rated (CT)			
4/0	100 mm <sup>2</sup>	Cable Tray Rated (CT)			

Power Feeder Cables for the Repeater Shelf may also be ordered using drawing number ED8C900-28.

For ease in identifying feeders, it is recommended that the sheath colors of the Repeater Shelf's power cables follow Intrabay Power Wiring conventions:

- For TC cables:
  - Use Red Sheath for the -48A/-48A<sub>RTN</sub> leads.
  - Use Blue Sheath for -48B/-48B<sub>RTN</sub> leads.
- For CT cables:
  - Use Red Sheath for the -48A lead.
  - Use Red With Tracer Sheath for the -48A<sub>RTN</sub> lead.
  - Use Blue Sheath for the -48B lead.
  - Use Blue With Tracer Sheath for the -48B<sub>RTN</sub> lead.

**Alternate Power Cabling**

The two (2) TC stubs may be removed and replaced with two (2) each TC cables of the appropriate gauge which run directly from the power source to the Repeater Shelf.

Refer to [Table 4-27, “Required Tools for Alternate Power Cabling for Repeater Shelves” \(4-24\)](#) for additional tools required for this installation.

**Table 4-27 Required Tools for Alternate Power Cabling for Repeater Shelves**

Item/Part Number	Manufacturer	Quantity Required
DIE/D654	W.T. Story Inc.	1
Crimping Tool/TBM6S (Standard industry crimping tool)	Thomas & Betts	1



## External Fiber

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### Maximum Quantity per Application

The following items must be considered when ordering external fiber for a WaveStar® OLS 1.6T system:

- External fiber for each system can be hybrid fibers with an LC connector on one end, and the appropriate connector on the other end.
- Length of each fiber depends upon the system interface setup. Excess fiber length for these fibers must not be stored in the WaveStar® OLS 1.6T bays.
- These fibers must be 1.6 mm in diameter for appropriate dressing with the WaveStar® OLS 1.6T system.

Refer to [Table 4-28, “Maximum Quantity of External Fibers Required by Application” \(4-25\)](#) for the maximum quantities of external fiber that is required by each system application.

**Table 4-28 Maximum Quantity of External Fibers Required by Application**

Application	Fiber Quantity (max)
2-Fiber End Terminal	162
2-Fiber Ring Terminal	324
2-Fiber Repeater	4
2-Fiber WAD Terminal	22

### Ordering External Fiber

Refer to [Table 4-29, “External Simplex Yellow Fiber Cables” \(4-25\)](#) for complete information required when ordering external fiber.

**Table 4-29 External Simplex Yellow Fiber Cables**

Length (Feet)	Comcode
5 Feet, Simplex Yellow Fiber, LC-ST	108108820
10 Feet, Simplex Yellow Fiber, LC-ST	108108853
15 Feet, Simplex Yellow Fiber, LC-ST	108108861
20 Feet, Simplex Yellow Fiber, LC-ST	108108879
25 Feet, Simplex Yellow Fiber, LC-ST	108108887
30 Feet, Simplex Yellow Fiber, LC-ST	108108895
35 Feet, Simplex Yellow Fiber, LC-ST	108108903

**Table 4-29 External Simplex Yellow Fiber Cables (continued)**

<b>Length (Feet)</b>	<b>Comcode</b>
40 Feet, Simplex Yellow Fiber, LC-ST	108108911
50 Feet, Simplex Yellow Fiber, LC-ST	108108937
75 Feet, Simplex Yellow Fiber, LC-ST	108108945
100 Feet, Simplex Yellow Fiber, LC-ST	108108960
X <sup>1</sup> Feet, Simplex Yellow Fiber, LC-ST	107815896
5 Feet, Simplex Yellow Fiber, LC-SC	108113861
10 Feet, Simplex Yellow Fiber, LC-SC	108113895
15 Feet, Simplex Yellow Fiber, LC-SC	108113903
20 Feet, Simplex Yellow Fiber, LC-SC	108113911
25 Feet, Simplex Yellow Fiber, LC-SC	108113929
30 Feet, Simplex Yellow Fiber, LC-SC	108113937
35 Feet, Simplex Yellow Fiber, LC-SC	108113945
40 Feet, Simplex Yellow Fiber, LC-SC	108113952
50 Feet, Simplex Yellow Fiber, LC-SC	108113960
75 Feet, Simplex Yellow Fiber, LC-SC	108113978
100 Feet, Simplex Yellow Fiber, LC-SC	108113986
X <sup>1</sup> Feet, Simplex Yellow Fiber, LC-SC	107815912
5 Feet, Simplex Yellow Fiber, LC-FC	108153750
10 Feet, Simplex Yellow Fiber, LC-FC	108153784
15 Feet, Simplex Yellow Fiber, LC-FC	108153792
20 Feet, Simplex Yellow Fiber, LC-FC	108153800
25 Feet, Simplex Yellow Fiber, LC-FC	108153818
30 Feet, Simplex Yellow Fiber, LC-FC	108153826
X <sup>1</sup> Feet, Simplex Yellow Fiber, LC-FC	108153941
35 Feet, Simplex Yellow Fiber, LC-FC	108153834
40 Feet, Simplex Yellow Fiber, LC-FC	108153891
50 Feet, Simplex Yellow Fiber, LC-FC	108153909
75 Feet, Simplex Yellow Fiber, LC-FC	108153925
100 Feet, Simplex Yellow Fiber, LC-FC	108153933

**Notes:**

1. Length to be specified when ordering the fiber.



## Orderable Software

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**Description** Practice 365-575-772 is the primary reference when ordering software for the WaveStar® OLS 1.6T system.

**Components** Refer to [Table 4-30, “Orderable Items” \(4-28\)](#) for the list of orderable items.

**Table 4-30 Orderable Items**

Item	Description
For Initial Applications:	
109249904	Assembly and Equipment for Release 6.2 WaveStar® OLS 1.6T on CD-ROM.
For Upgrade Applications:	
109249920	Assembly and Equipment for Release 6.2 WaveStar® OLS 1.6T on CD-ROM.

**Customer Documentation** The Customer Documentation CD-ROM is included with items received when ordering either 109249904–Initial Applications or 109249920–Upgrade Applications. Additional copies of the customer documentation on CD-ROM are available by ordering comcode 109249938. The WaveStar® OLS 1.6T Software Release Description (SRD) may be ordered with comcode 109249029.



## Accessories

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**DANTEL Orderwire Shelf** The DANTEL Orderwire Shelf provides a 64 kb/s interface to the WaveStar® OLS 1.6T system. It is shipped separately, and does not mount in a WaveStar® OLS 1.6T bay.

The Orderwire shelf is optional and is available from either Lucent Technologies or DANTEL, Inc.

Refer to [Table 4-31, “DANTEL Orderwire Ordering Information” \(4-29\)](#) for complete ordering information.

**Table 4-31 DANTEL Orderwire Ordering Information**

Item	Lucent Comcode	DANTEL Part #
DANTEL Interface Voice-Data Orderwire Kit	407790286	D18-05547-04







# 5 OTUs (C-Band) for the WaveStar® OLS 1.6T

## Overview

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**Purpose** This chapter provides information on C-Band OTUs. Add OTUs are required in an end, ring, or WAD terminal at the transmit side. Drop OTUs are required in end, ring, or WAD terminal at the receive side. 4:1 10G MUX OTUs (OTU70s) are used on the add side to multiplex up to four OC-48/STM-16 channels into one OC-192/STM-64 channel, and on the drop side to demultiplex an OC-192/STM-64 channel into four OC-48/STM-16 channels.

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# LC Connectors

## Overview

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**Purpose** This section provides information on LC Connectors.



## OC-48/STM-16 (OTU1)

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**Ordering Information** Refer to [Table 5-1, “OTU1 \(LC Connector\)” \(5-4\)](#) for ordering information for OC-48/STM-16 OTUs (OTU1) with LC Connectors.

**Table 5-1 OTU1 (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WSNB20	108250333
9195	9215	WSNB40	108250531
9200	9220	WSNB10	108250234
9205	9225	WSNB30	108250432
9230	9250	WSNB19	108250325
9235	9255	WSNB39	108250523
9240	9260	WSNB09	108250226
9245	9265	WSNB29	108250424
9270	9290	WSNB18	108250317
9275	9295	WSNB38	108250515
9280	9300	WSNB08	108250218
9285	9305	WSNB28	108250416
9310	9330	WSNB17	108250309
9315	9335	WSNB37	108250507
9320	9340	WSNB07	108250200
9325	9345	WSNB27	108250408
9350	9370	WSNB16	108250291
9355	9375	WSNB36	108250499
9360	9380	WSNB06	108250192
9365	9385	WSNB26	108250390
9390	9410	WSNB15	108250283
9395	9415	WSNB35	108250481
9400	9420	WSNB05	108250184

**Table 5-1 OTU1 (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9405	9425	WSNB25	108250382
9430	9450	WSNB14	108250275
9435	9455	WSNB34	108250473
9440	9460	WSNB04	108250176
9445	9465	WSNB24	108250374
9470	9490	WSNB13	108250267
9475	9495	WSNB33	108250465
9480	9500	WSNB03	108250168
9485	9505	WSNB23	108250366
9510	9530	WSNB12	108250259
9515	9535	WSNB32	108250457
9520	9540	WSNB02	108250150
9525	9545	WSNB22	108250358
9550	9570	WSNB11	108250242
9555	9575	WSNB31	108250440
9560	9580	WSNB01	108250143
9565	9585	WSNB21	108250341

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-48/STM-16 Through (OTU2)

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**Ordering Information** Refer to [Table 5-2, “OTU2 \(LC Connector\)” \(5-6\)](#) for ordering information for OC-48/STM-16 Through OTUs with LC Connectors.

**Table 5-2 OTU2 (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WSMB20	108374018
9195	9215	WSMB40	108374216
9200	9220	WSMB10	108373911
9205	9225	WSMB30	108374117
9230	9250	WSMB19	108374000
9235	9255	WSMB39	108374208
9240	9260	WSMB09	108373903
9245	9265	WSMB29	108374109
9270	9290	WSMB18	108373994
9275	9295	WSMB38	108374190
9280	9300	WSMB08	108373895
9285	9305	WSMB28	108374091
9310	9330	WSMB17	108373986
9315	9335	WSMB37	108374182
9320	9340	WSMB07	108373887
9325	9345	WSMB27	108374083
9350	9370	WSMB16	108373978
9355	9375	WSMB36	108374174
9360	9380	WSMB06	108373879
9365	9385	WSMB26	108374075
9390	9410	WSMB15	108373960
9395	9415	WSMB35	108374166
9400	9420	WSMB05	108373861
9405	9425	WSMB25	108374067

**Table 5-2 OTU2 (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9430	9450	WSMB14	108373952
9435	9455	WSMB34	108374158
9440	9460	WSMB04	108373853
9445	9465	WSMB24	108374059
9470	9490	WSMB13	108373945
9475	9495	WSMB33	108374141
9480	9500	WSMB03	108373846
9485	9505	WSMB23	108374042
9510	9530	WSMB12	108373937
9515	9535	WSMB32	108374133
9520	9540	WSMB02	108373838
9525	9545	WSMB22	108374034
9550	9570	WSMB11	108373929
9555	9575	WSMB31	108374125
9560	9580	WSMB01	108373820
9565	9585	WSMB21	108374026

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-192/STM-64 OTUs (OTU30)

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**Ordering Information** Refer to [Table 5-3, “OTU30 \(LC Connector\)” \(5-8\)](#) for ordering information for OTU30 circuit packs with LC Connectors.

**Table 5-3 OTU30 (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WSPG20B	109043034
9195	9215	WSPG40B	109043232
9200	9220	WSPG10B	109042937
9205	9225	WSPG30B	109043133
9230	9250	WSPG19B	109043026
9235	9255	WSPG39B	109043224
9240	9260	WSPG09B	109042929
9245	9265	WSPG29B	109043125
9270	9290	WSPG18B	109043018
9275	9295	WSPG38B	109043216
9280	9300	WSPG08B	109042911
9285	9305	WSPG28B	109043117
9310	9330	WSPG17B	109043000
9315	9335	WSPG37B	109043208
9320	9340	WSPG07B	109042903
9325	9345	WSPG27B	109043109
9350	9370	WSPG16B	109042994
9355	9375	WSPG36B	109043190
9360	9380	WSPG06B	109042895
9365	9385	WSPG26B	109043091
9390	9410	WSPG15B	109042986
9395	9415	WSPG35B	109043182
9400	9420	WSPG05B	109042887
9405	9425	WSPG25B	109043083

**Table 5-3 OTU30 (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9430	9450	WSPG14B	109042978
9435	9455	WSPG34B	109043174
9440	9460	WSPG04B	109042879
9445	9465	WSPG24B	109043075
9470	9490	WSPG13B	109042960
9475	9495	WSPG33B	109043166
9480	9500	WSPG03B	109042861
9485	9505	WSPG23B	109043067
9510	9530	WSPG12B	109042952
9515	9535	WSPG32B	109043158
9520	9540	WSPG02B	109042853
9525	9545	WSPG22B	109043059
9550	9570	WSPG11B	109042945
9555	9575	WSPG31B	109043141
9560	9580	WSPG01B	109042846
9565	9585	WSPG21B	109043042

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-192/STM-64 Through (OTU31)

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**Ordering Information** [Table 5-4, “OTU31 \(LC Connector\)” \(5-10\)](#) lists ordering information for OTU31 circuit packs with LC Connectors.

**Table 5-4 OTU31 (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WSRG20B	109045393
9195	9215	WSRG40B	109045591
9200	9220	WSRG10B	109045294
9205	9225	WSRG30B	109045492
9230	9250	WSRG19B	109045385
9235	9255	WSRG39B	109045583
9240	9260	WSRG09B	109045286
9245	9265	WSRG29B	109045484
9270	9290	WSRG18B	109045377
9275	9295	WSRG38B	109045575
9280	9300	WSRG08B	109045278
9285	9305	WSRG28B	109045476
9310	9330	WSRG17B	109045369
9315	9335	WSRG37B	109045567
9320	9340	WSRG07B	109045260
9325	9345	WSRG27B	109045468
9350	9370	WSRG16B	109045351
9355	9375	WSRG36B	109045559
9360	9380	WSRG06B	109045252
9365	9385	WSRG26B	109045450
9390	9410	WSRG15B	109045344
9395	9415	WSRG35B	109045542
9400	9420	WSRG05B	109045245
9405	9425	WSRG25B	109045443

**Table 5-4 OTU31 (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9430	9450	WSRG14B	109045336
9435	9455	WSRG34B	109045534
9440	9460	WSRG04B	109045237
9445	9465	WSRG24B	109045435
9470	9490	WSRG13B	109045328
9475	9495	WSRG33B	109045526
9480	9500	WSRG03B	109045229
9485	9505	WSRG23B	109045427
9510	9530	WSRG12B	109045310
9515	9535	WSRG32B	109045518
9520	9540	WSRG02B	109045211
9525	9545	WSRG22B	109045419
9550	9570	WSRG11B	109045302
9555	9575	WSRG31B	109045500
9560	9580	WSRG01B	109045203
9565	9585	WSRG21B	109045401

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## High Speed Broadband (HSBB) (OTU40)

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**Ordering Information** Refer to [Table 5-5, “OTU40 \(LC Connector\)” \(5-12\)](#) for ordering information for OTU40 circuit packs with LC Connectors.

**Table 5-5 OTU40 (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WSJB20	108564139
9195	9215	WSJB40	108564337
9200	9220	WSJB10	108564030
9205	9225	WSJB30	108564238
9230	9250	WSJB19	108564121
9235	9255	WSJB39	108564329
9240	9260	WSJB09	108564022
9245	9265	WSJB29	108564220
9270	9290	WSJB18	108564113
9275	9295	WSJB38	108564311
9280	9300	WSJB08	108564014
9285	9305	WSJB28	108564212
9310	9330	WSJB17	108564105
9315	9335	WSJB37	108564303
9320	9340	WSJB07	108564006
9325	9345	WSJB27	108564204
9350	9370	WSJB16	108564097
9355	9375	WSJB36	108564295
9360	9380	WSJB06	108563990
9365	9385	WSJB26	108564196
9390	9410	WSJB15	108564089
9395	9415	WSJB35	108564287
9400	9420	WSJB05	108563982
9405	9425	WSJB25	108564188

**Table 5-5 OTU40 (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9430	9450	WSJB14	108564071
9435	9455	WSJB34	108564279
9440	9460	WSJB04	108563974
9445	9465	WSJB24	108564170
9470	9490	WSJB13	108564063
9475	9495	WSJB33	108564261
9480	9500	WSJB03	108563966
9485	9505	WSJB23	108564162
9510	9530	WSJB12	108564055
9515	9535	WSJB32	108564253
9520	9540	WSJB02	108563958
9525	9545	WSJB22	108564154
9550	9570	WSJB11	108564048
9555	9575	WSJB31	108564246
9560	9580	WSJB01	108563941
9565	9585	WSJB21	108564147

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## 4:1 10G MUX OTU (OTU70)

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**Ordering Information** Refer to [Table 5-6, “OTU70 \(LC Connector\)” \(5-14\)](#) for ordering information for OTU70 circuit packs with LC connectors.

**Table 5-6 OTU70 (LC Connector)**

Frequency <sup>1</sup>	CP Code <sup>2</sup>	Comcode
9585	WS2A01	108780909
9580	WS2A02	108780933
9575	WS2A03	108780941
9570	WS2A04	108780958
9565	WS2A05	108780966
9560	WS2A06	108780974
9555	WS2A07	108780982
9550	WS2A08	108780990
9545	WS2A09	108781006
9540	WS2A10	108781030
9535	WS2A11	108781048
9530	WS2A12	108781055
9525	WS2A13	108781063
9520	WS2A14	108781071
9515	WS2A15	108781089
9510	WS2A16	108781097
9505	WS2A17	108781105
9500	WS2A18	108781113
9495	WS2A19	108781121
9490	WS2A20	108781139
9485	WS2A21	108781147
9480	WS2A22	108781154
9475	WS2A23	108781162
9470	WS2A24	108781170
9465	WS2A25	108781188
9460	WS2A26	108781196

**Table 5-6 OTU70 (LC Connector) (continued)**

Frequency <sup>1</sup>	CP Code <sup>2</sup>	Comcode
9455	WS2A27	108781204
9450	WS2A28	108781212
9445	WS2A29	108781220
9440	WS2A30	108781238
9435	WS2A31	108781246
9430	WS2A32	108781253
9425	WS2A33	108781261
9420	WS2A34	108781279
9415	WS2A35	108781287
9410	WS2A36	108781295
9405	WS2A37	108781303
9400	WS2A38	108781311
9395	WS2A39	108781329
9390	WS2A40	108781337
9385	WS2A41	108781345
9380	WS2A42	108781352
9375	WS2A43	108781360
9370	WS2A44	108781378
9365	WS2A45	108781386
9360	WS2A46	108781394
9355	WS2A47	108781402
9350	WS2A48	108781410
9345	WS2A49	108781428
9340	WS2A50	108781436
9335	WS2A51	108781444
9330	WS2A52	108781451
9325	WS2A53	108781469
9320	WS2A54	108781477
9315	WS2A55	108781485
9310	WS2A56	108781493

**Table 5-6 OTU70 (LC Connector) (continued)**

<b>Frequency<sup>1</sup></b>	<b>CP Code<sup>2</sup></b>	<b>Comcode</b>
9305	WS2A57	108781501
9300	WS2A58	108781519
9295	WS2A59	108781527
9290	WS2A60	108781535
9285	WS2A61	108781543
9280	WS2A62	108781550
9275	WS2A63	108781568
9270	WS2A64	108781576
9265	WS2A65	108781584
9260	WS2A66	108781592
9255	WS2A67	108781600
9250	WS2A68	108781618
9245	WS2A69	108781626
9240	WS2A70	108781634
9235	WS2A71	108781642
9230	WS2A72	108781659
9225	WS2A73	108781667
9220	WS2A74	108781675
9215	WS2A75	108781683
9210	WS2A76	108781691
9205	WS2A77	108781709
9200	WS2A78	108781717
9195	WS2A79	108781725
9190	WS2A80	108781733

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead time for circuit packs.



## Drop OTUs (OTUD1, OTUD30, OTUD40)

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**Ordering Information** Refer to [Table 5-7, “Drop Side OTUs \(LC Connector\)” \(5-17\)](#) for ordering information for Drop Side OTUs with LC Connectors.

**Table 5-7 Drop Side OTUs (LC Connector)**

Circuit Pack	Application	CP Code	Comcode
OTUD1	OC-48/STM-16	WSMD1	108250127
OTUD30	OC-192/ STM-64 w/v2.1 ASIC	WSRH1B	109076927
OTUD40	HSBB	WSHD1	108564642



# Universal Connections

## Overview

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**Purpose** This section provides information on Universal Connectors. Note that the Universal Connector circuit packs are supplied with an SC customer connection. The SC connection can be converted to other connector types by using the appropriate connector from LBOs listed in Appendix A (Table A-10).



# OC-48/STM-16 (OTU1)

**Ordering Information** Refer to [Table 5-8, “OTU1 \(Universal Connector\)” \(5-19\)](#) for ordering information for OTU1 circuit packs with Universal Connectors (supplied with SC Connector).

**Table 5-8 OTU1 (Universal Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WUNB20	108433236
9195	9215	WUNB40	108433442
9200	9220	WUNB10	108433137
9205	9225	WUNB30	108433335
9230	9250	WUNB19	108433228
9235	9255	WUNB39	108433434
9240	9260	WUNB09	108433129
9245	9265	WUNB29	108433327
9270	9290	WUNB18	108433210
9275	9295	WUNB38	108433426
9380	9300	WUNB08	108433111
9285	9305	WUNB28	108433319
9310	9330	WUNB17	108433202
9315	9335	WUNB37	108433400
9320	9340	WUNB07	108433103
9325	9345	WUNB27	108433301
9350	9370	WUNB16	108433194
9355	9375	WUNB36	108433392
9360	9380	WUNB06	108433095
9365	9385	WUNB26	108433293
9390	9410	WUNB15	108433186
9395	9415	WUNB35	108433384
9400	9420	WUNB05	108433087

**Table 5-8 OTU1 (Universal Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9405	9425	WUNB25	108433285
9430	9450	WUNB14	108433178
9435	9455	WUNB34	108433376
9440	9460	WUNB04	108433079
9445	9465	WUNB24	108433277
9470	9490	WUNB13	108433160
9475	9495	WUNB33	108433368
9480	9500	WUNB03	108433061
9485	9505	WUNB23	108433269
9510	9530	WUNB12	108433152
9515	9535	WUNB32	108433350
9520	9540	WUNB02	108433053
9525	9545	WUNB22	108433251
9550	9570	WUNB11	108433145
9555	9575	WUNB31	108433343
9560	9580	WUNB01	108433046
9565	9585	WUNB21	108433244

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-192/STM-64 OTUs (OTU30)

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**Ordering Information** Refer to [Table 5-9, “OTU30 \(Universal Connector\)” \(5-21\)](#) for ordering information for OTU30 circuit packs with Universal Connectors (supplied with SC connectors).

**Table 5-9 OTU30 (Universal Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WUPG20B	109043596
9195	9215	WUPG40B	109043794
9200	9220	WUPG10B	109043497
9205	9225	WUPG30B	109043695
9230	9250	WUPG19B	109043588
9235	9255	WUPG39B	109043786
9240	9260	WUPG09B	109043489
9245	9265	WUPG29B	109043687
9270	9290	WUPG18B	109043570
9275	9295	WUPG38B	109043778
9280	9300	WUPG08B	109043471
9285	9305	WUPG28B	109043679
9310	9330	WUPG17B	109043562
9315	9335	WUPG37B	109043760
9320	9340	WUPG07B	109043463
9325	9345	WUPG27B	109043661
9350	9370	WUPG16B	109043554
9355	9375	WUPG36B	109043752
9360	9380	WUPG06B	109043455
9365	9385	WUPG26B	109043653
9390	9410	WUPG15B	109043547
9395	9415	WUPG35B	109043745
9400	9420	WUPG05B	109043448

**Table 5-9 OTU30 (Universal Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9405	9425	WUPG25B	109043646
9430	9450	WUPG14B	109043539
9435	9455	WUPG34B	109043737
9440	9460	WUPG04B	109043430
9445	9465	WUPG24B	109043638
9470	9490	WUPG13B	109043521
9475	9495	WUPG33B	109043729
9480	9500	WUPG03B	109043422
9485	9505	WUPG23B	109043620
9510	9530	WUPG12B	109043513
9515	9535	WUPG32B	109043703
9520	9540	WUPG02B	109043414
9525	9545	WUPG22B	109043612
9550	9570	WUPG11B	109043505
9555	9575	WUPG31B	109043703
9560	9580	WUPG01B	109046409
9565	9585	WUPG21B	109043604

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



# High Speed Broadband (HSBB) (OTU40)

**Ordering Information** Refer to [Table 5-10, “OTU40 \(Universal Connector\)” \(5-23\)](#) for ordering information for OTU40 circuit packs with Universal Connectors (supplied with SC Connector).

**Table 5-10 OTU40 (Universal Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9190	9210	WUJB20	108589029
9195	9215	WUJB40	108589235
9200	9220	WUJB10	108588922
9205	9225	WUJB30	108589136
9230	9250	WUJB19	108589011
9235	9255	WUJB39	108589227
9240	9260	WUJB09	108588906
9245	9265	WUJB29	108589128
9270	9290	WUJB18	108589003
9275	9295	WUJB38	108589219
9380	9300	WUJB08	108588898
9285	9305	WUJB28	108589110
9310	9330	WUJB17	108588997
9315	9335	WUJB37	108589201
9320	9340	WUJB07	108588880
9325	9345	WUJB27	108589094
9350	9370	WUJB16	108588989
9355	9375	WUJB36	108589193
9360	9380	WUJB06	108588872
9365	9385	WUJB26	108589086
9390	9410	WUJB15	108588971
9395	9415	WUJB35	108589185
9400	9420	WUJB05	108588856

**Table 5-10 OTU40 (Universal Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9405	9425	WUJB25	108589078
9430	9450	WUJB14	108588963
9435	9455	WUJB34	108589177
9440	9460	WUJB04	108588849
9445	9465	WUJB24	108589060
9470	9490	WUJB13	108588955
9475	9495	WUJB33	108589169
9480	9500	WUJB03	108588831
9485	9505	WUJB23	108589052
9510	9530	WUJB12	108588948
9515	9535	WUJB32	108589151
9520	9540	WUJB02	108588823
9525	9545	WUJB22	108589045
9550	9570	WUJB11	108588930
9555	9575	WUJB31	108589144
9560	9580	WUJB01	108588815
9565	9585	WUJB21	108589037

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## Drop OTUs (OTUD1, OTUD30, OTUD40)

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**Ordering Information** Refer to [Table 5-11, “Drop Side OTUs \(Universal Connector\)” \(5-25\)](#) for ordering information for Drop Side OTUs with Universal Connectors (supplied with SC Connector).

**Table 5-11 Drop Side OTUs (Universal Connector)**

Circuit Pack	Application	CP Code	Comcode
OTUD1	OC-48/STM-16	WUMD1	108433004
OTUD30	OC-192/ STM-64 w/v2.1 ASIC	WURH1B	109076935
OTUD40	HSBB	WUHD1	108607920







# 6 OTUs (L-Band) for the WaveStar® OLS 1.6T

## Overview

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**Purpose** This chapter provides information on OTU for L-Band. Add OTUs are required in end/ring terminal at the transmit side. Drop OTUs are required in an end/ring terminal at the receive side.

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# LC Connectors

## Overview

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**Purpose** This section provides information on LC Connectors.



# OC-48/STM-16 (OTU1L)

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**Ordering Information** Refer to [Table 6-1, “OTU1L \(LC Connector\)” \(6-3\)](#) for ordering information for OTU1L circuit packs with LC Connectors.

**Table 6-1 OTU1L (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WNNB01	108691916
8980	9000	WNNB02	108691924
8940	8960	WNNB03	108691932
8900	8920	WNNB04	108691940
8860	8880	WNNB05	108691957
8820	8840	WNNB06	108691965
8780	8800	WNNB07	108691973
8740	8760	WNNB08	108691981
8700	8720	WNNB09	108691999
8660	8680	WNNB10	108692005
9010	9030	WNNB11	108692013
8970	8990	WNNB12	108692021
8930	8950	WNNB13	108692039
8890	8910	WNNB14	108692047
8850	8870	WNNB15	108692054
8810	8830	WNNB16	108692062
8770	8790	WNNB17	108692070
8730	8750	WNNB18	108692088
8690	8710	WNNB19	108692096
8650	8670	WNNB20	108692104

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-48/STM-16 Through (OTU2L)

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**Ordering Information** Refer to [Table 6-2, “OTU2L \(LC Connector\)” \(6-4\)](#) for ordering information for OTU1L circuit packs with LC Connectors.

**Table 6-2 OTU2L (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WNMB01	108702101
8980	9000	WNMB02	108702119
8940	8960	WNMB03	108702127
8900	8920	WNMB04	108702135
8860	8880	WNMB05	108702143
8820	8840	WNMB06	108702150
8780	8800	WNMB07	108702168
8740	8760	WNMB08	108702176
8700	8720	WNMB09	108702184
8660	8680	WNMB10	108702192
9010	9030	WNMB11	108702200
8970	8990	WNMB12	108702218
8930	8950	WNMB13	108702226
8890	8910	WNMB14	108702234
8850	8870	WNMB15	108702242
8810	8830	WNMB16	108702259
8770	8790	WNMB17	108702267
8730	8750	WNMB18	108702275
8690	8710	WNMB19	108702283
8650	8670	WNMB20	108702291

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-192/STM-64 OTUs (OTU30L)

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**Ordering Information** Refer to [Table 6-3, “OTU30L \(LC Connector\)” \(6-5\)](#) for ordering information for OTU30L circuit packs with LC Connectors.

**Table 6-3 OTU30L (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WNPG01B	109044099
8980	9000	WNPG02B	109044107
8940	8960	WNPG03B	109044115
8900	8920	WNPG04B	109044123
8860	8880	WNPG05B	109044131
8820	8840	WNPG06B	109044149
8780	8800	WNPG07B	109044156
8740	8760	WNPG08B	109044164
8700	8720	WNPG09B	109044172
8660	8680	WNPG10B	109044180
9010	9030	WNPG11B	109044098
8970	8990	WNPG12B	109044206
8930	8950	WNPG13B	109044214
8890	8910	WNPG14B	109044222
8850	8870	WNPG15B	109044230
8810	8830	WNPG16B	109044248
8770	8790	WNPG17B	109044255
8730	8750	WNPG18B	109044263
8690	8710	WNPG19B	109044271
8650	8670	WNPG20B	109044289
9025	9045	WNPG21B <sup>2</sup>	109044495
8985	9005	WNPG22B <sup>2</sup>	109044503
8945	8965	WNPG23B <sup>2</sup>	109044511
8905	8925	WNPG24B <sup>2</sup>	109044529

**Table 6-3 OTU30L (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
8865	8885	WNPG25B <sup>2</sup>	109044537
8825	8845	WNPG26B <sup>2</sup>	109044545
8785	8805	WNPG27B <sup>2</sup>	109044552
8745	8765	WNPG28B <sup>2</sup>	109044560
8705	8725	WNPG29B <sup>2</sup>	109044578
8665	8685	WNPG30B <sup>2</sup>	109044586
9015	9035	WNPG31B <sup>2</sup>	109044594
8975	8995	WNPG32B <sup>2</sup>	109044602
8935	8955	WNPG33B <sup>2</sup>	109044610
8895	8915	WNPG34B <sup>2</sup>	109044628
8850	8875	WNPG35B <sup>2</sup>	109044636
8815	8835	WNPG36B <sup>2</sup>	109044644
8775	8795	WNPG37B <sup>2</sup>	109044651
8735	8755	WNPG38B <sup>2</sup>	109044669
8695	8715	WNPG39B <sup>2</sup>	109044677
8655	8675	WNPG40B <sup>2</sup>	109044685

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



## OC-192/STM-64 Through OTU (OTU31L)

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**Ordering Information** Refer to [Table 6-4, “OTU31L \(LC Connector\)” \(6-7\)](#) for ordering information for OTU31L circuit packs with LC Connectors.

**Table 6-4 OTU31L (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WNRG01B	109044768
8980	9000	WNRG02B	109044776
8940	8960	WNRG03B	109044784
8900	8920	WNRG04B	109044792
8860	8880	WNRG05B	109044800
8820	8840	WNRG06B	109044818
8780	8800	WNRG07B	109044826
8740	8760	WNRG08B	109044834
8700	8720	WNRG09B	109044842
8660	8680	WNRG10B	109044859
9010	9030	WNRG11B	109044867
8970	8990	WNRG12B	109044875
8930	8950	WNRG13B	109044883
8890	8910	WNRG14B	109044891
8850	8870	WNRG15B	109044909
8810	8830	WNRG16B	109044917
8770	8790	WNRG17B	109044925
8730	8750	WNRG18B	109044933
8690	8710	WNRG19B	109044941
8650	8670	WNRG20B	109044958
9025	9045	WNRG21B <sup>2</sup>	109044966
8985	9005	WNRG22B <sup>2</sup>	109044974
8945	8965	WNRG23B <sup>2</sup>	109044982
8905	8925	WNRG24B <sup>2</sup>	109044990

**Table 6-4 OTU31L (LC Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
8865	8885	WNRG25B <sup>2</sup>	109045005
8825	8845	WNRG26B <sup>2</sup>	109045013
8785	8805	WNRG27B <sup>2</sup>	109045021
8745	8765	WNRG28B <sup>2</sup>	109045039
8705	8725	WNRG29B <sup>2</sup>	109045047
8665	8685	WNRG30B <sup>2</sup>	109045054
9015	9035	WNRG31B <sup>2</sup>	109045070
8975	8995	WNRG32B <sup>2</sup>	109045088
8935	8955	WNRG33B <sup>2</sup>	109045096
8895	8915	WNRG34B <sup>2</sup>	109045104
8850	8875	WNRG35B <sup>2</sup>	109045112
8815	8835	WNRG36B <sup>2</sup>	109045120
8775	8795	WNRG37B <sup>2</sup>	109045146
8735	8755	WNRG38B <sup>2</sup>	109045153
8695	8715	WNRG39B <sup>2</sup>	109045161
8655	8675	WNRG40B <sup>2</sup>	109045179

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



## OC-192/STM-64 Through OTU (OTU31L)

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**Ordering Information** Refer to [Table 6-4, “OTU31L \(LC Connector\)” \(6-7\)](#) for ordering information for OTU31L circuit packs with Universal Connectors (SC).

**Table 6-5 OTU31L (Universal Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WNRJ01B	109003707
8980	9000	WNRJ02B	109003707
8940	8960	WNRJ03B	109003715
8900	8920	WNRJ04B	109003723
8860	8880	WNRJ05B	109003731
8820	8840	WNRJ06B	109003749
8780	8800	WNRJ07B	109003764
8740	8760	WNRJ08B	109003772
8700	8720	WNRJ09B	109003962
8660	8680	WNRJ10B	109003970
9010	9030	WNRJ11B	109003996
8970	8990	WNRJ12B	109004010
8930	8950	WNRJ13B	109004044
8890	8910	WNRJ14B	109004069
8850	8870	WNRJ15B	109004101
8810	8830	WNRJ16B	109004119
8770	8790	WNRJ17B	109004127
8730	8750	WNRJ18B	109004135
8690	8710	WNRJ19B	109004150
8650	8670	WNRJ20B	109004165
9025	9045	WNRJ21B <sup>2</sup>	109004184
8985	9005	WNRJ22B <sup>2</sup>	109004192
8945	8965	WNRJ23B <sup>2</sup>	109004200

**Table 6-5 OTU31L (Universal Connector) (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
8905	8925	WNRJ24B <sup>2</sup>	109004218
8865	8885	WNRJ25B <sup>2</sup>	109004218
8825	8845	WNRJ26B <sup>2</sup>	109004259
8785	8805	WNRJ27B <sup>2</sup>	109004267
8745	8765	WNRJ28B <sup>2</sup>	109004275
8705	8725	WNRJ29B <sup>2</sup>	109004283
8665	8685	WNRJ30B <sup>2</sup>	109004291
9015	9035	WNPJ31B <sup>2</sup>	109004309
8975	8995	WNRJ32B <sup>2</sup>	109004317
8935	8955	WNRJ33B <sup>2</sup>	109004325
8895	8915	WNRJ34B <sup>2</sup>	109004333
8850	8875	WNRJ35B <sup>2</sup>	109004341
8815	8835	WNRJ36B <sup>2</sup>	109004358
8775	8795	WNRJ37B <sup>2</sup>	109004358
8735	8755	WNRJ38B <sup>2</sup>	109004374
8695	8715	WNRJ39B <sup>2</sup>	109004382
8655	8675	WNRJ40B <sup>2</sup>	109004390

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



# High Speed Broadband (HSBB) (OTU40L)

**Ordering Information** Refer to [Table 6-6, “OTU40L \(LC Connector\)” \(6-11\)](#) for ordering information for OTU40L circuit packs with LC Connectors.

**Table 6-6 OTU40L (LC Connector)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WNJB01	108691510
8980	9000	WNJB02	108691528
8940	8960	WNJB03	108691536
8900	8920	WNJB04	108691544
8860	8880	WNJB05	108691551
8820	8840	WNJB06	108691569
8780	8800	WNJB07	108691577
8740	8760	WNJB08	108691585
8700	8720	WNJB09	108691593
8660	8680	WNJB10	108691601
9010	9030	WNJB11	108691619
8970	8990	WNJB12	108691627
8930	8950	WNJB13	108691635
8890	8910	WNJB14	108691643
8850	8870	WNJB15	108691650
8810	8830	WNJB16	108691668
8770	8790	WNJB17	108691676
8730	8750	WNJB18	108691684
8690	8710	WNJB19	108691692
8650	8670	WNJB20	108691700

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## Drop OTUs (OTUD1, OTUD30,OTUD40)

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**Ordering Information** Refer to [Table 6-7, “Drop Side OTUs \(LC Connector\)” \(6-12\)](#) for ordering information for Drop Side OTU circuit packs with LC Connectors.

**Table 6-7 Drop Side OTUs (LC Connector)**

Circuit Pack	Application	CP Code	Comcode
OTUD1	OC-48/STM-16	WSMD1	108250127
OTUD30	OC-192/ STM-64	WSYH1	108775339
OTUD40	HSBB	WSHD1	108564642



# Universal Connections

## Overview

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**Purpose** This section provides information on Universal Connectors (SC). Note that the Universal Connector (SC) circuit packs are supplied with an SC customer connection. The SC connection can be converted to other connector types by using the appropriate connector from LBOs listed in Appendix A (Table A-10).



# OC-48/STM-16 (OTU1L)

**Ordering Information** Refer to [Table 6-8, “OTU1L \[Universal Connector \(SC\)\]” \(6-14\)](#) for ordering information for OTU1L circuit packs with Universal Connector (SC).

**Table 6-8 OTU1L [Universal Connector (SC)]**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WRNB01	108690488
8980	9000	WRNB02	108690496
8940	8960	WRNB03	108690504
8900	8920	WRNB04	108690512
8860	8880	WRNB05	108690520
8820	8840	WRNB06	108690538
8780	8800	WRNB07	108690546
8740	8760	WRNB08	108690553
8700	8720	WRNB09	108690561
8660	8680	WRNB10	108690579
9010	9030	WRNB11	108690587
8970	8990	WRNB12	108690595
8930	8950	WRNB13	108690603
8890	8910	WRNB14	108690611
8850	8870	WRNB15	108690629
8810	8830	WRNB16	108690637
8770	8790	WRNB17	108690645
8730	8750	WRNB18	108690652
8690	8710	WRNB19	108690660
8650	8670	WRNB20	108690678

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



# OC-192/STM-64 OTUs (OTU30L)

**Ordering Information** Refer to [Table 6-9, “OTU30L \[Universal Connector \(SC\)\]” \(6-15\)](#) for ordering information for OTU30L circuit packs with Universal Connector (SC)

**Table 6-9 OTU30L [Universal Connector (SC)]**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WRPG01B	109043893
8980	9000	WRPG02B	109043901
8940	8960	WRPG03B	109043919
8900	8920	WRPG04B	109043927
8860	8880	WRPG05B	109043935
8820	8840	WRPG06B	109043943
8780	8800	WRPG07B	109043950
8740	8760	WRPG08B	109043968
8700	8720	WRPG09B	109043976
8660	8680	WRPG10B	109043984
9010	9030	WRPG11B	109043992
8970	8990	WRPG12B	109044008
8930	8950	WRPG13B	109044016
8890	8910	WRPG14B	109044024
8850	8870	WRPG15B	109044032
8810	8830	WRPG16B	109044040
8770	8790	WRPG17B	109044057
8730	8750	WRPG18B	109044065
8690	8710	WRPG19B	109044073
8650	8670	WRPG20B	109044081
9025	9045	WRPG21B <sup>2</sup>	109044099
8985	9005	WRPG22B <sup>2</sup>	109044107
8945	8965	WRPG23B <sup>2</sup>	109044115

**Table 6-9 OTU30L [Universal Connector (SC)] (continued)**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
8905	8925	WRPG24B <sup>2</sup>	109044123
8865	8885	WRPG25B <sup>2</sup>	109044131
8825	8845	WRPG26B <sup>2</sup>	109044149
8785	8805	WRPG27B <sup>2</sup>	109044156
8745	8765	WRPG28B <sup>2</sup>	109044164
8705	8725	WRPG29B <sup>2</sup>	109044172
8665	8685	WRPG30B <sup>2</sup>	109044180
9015	9035	WRPG31B <sup>2</sup>	109044198
8975	8995	WRPG32B <sup>2</sup>	109044206
8935	8955	WRPG33B <sup>2</sup>	109044214
8895	8915	WRPG34B <sup>2</sup>	109044222
8850	8875	WRPG35B <sup>2</sup>	109044230
8815	8835	WRPG36B <sup>2</sup>	109044248
8775	8795	WRPG37B <sup>2</sup>	109044255
8735	8755	WRPG38B <sup>2</sup>	109044263
8695	8715	WRPG39B <sup>2</sup>	109044271
8655	8675	WRPG40B <sup>2</sup>	109044289

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



# High Speed Broadband (HSBB)(OTU40L)

**Ordering Information** Refer to [Table 6-10, “OTU40L \[Universal Connector \(SC\)\]” \(6-17\)](#) for ordering information for OTU1L circuit packs with Universal Connect (SC)

**Table 6-10 OTU40L [Universal Connector (SC)]**

Abbreviated Frequencies (Printed on Faceplate) <sup>1</sup>		CP Code	Comcode
1	2		
9020	9040	WRJB01	108691114
8980	9000	WRJB02	108691122
8940	8960	WRJB03	108691130
8900	8920	WRJB04	108691148
8860	8880	WRJB05	108691155
8820	8840	WRJB06	108691163
8780	8800	WRJB07	108691171
8740	8760	WRJB08	108691189
8700	8720	WRJB09	108691197
8660	8680	WRJB10	108691205
9010	9030	WRJB11	108691213
8970	8990	WRJB12	108691221
8930	8950	WRJB13	108691239
8890	8910	WRJB14	108691247
8850	8870	WRJB15	108691254
8810	8830	WRJB16	108691262
8770	8790	WRJB17	108691270
8730	8750	WRJB18	108691288
8690	8710	WRJB19	108691296
8650	8670	WRJB20	108691304

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## Drop OTUs (OTUD1, OTUD30, OTUD40)

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**Ordering Information** Refer to [Table 6-11, “Drop Side OTUs \(Universal Connector\)” \(6-18\)](#) for ordering information for Drop Side OTUs with Universal Connectors (SC).

**Table 6-11 Drop Side OTUs (Universal Connector)**

Circuit Pack	Application	CP Code	Comcode
OTUD1	OC-48/STM-16	WUMD1	108433004
OTUD30	OC-192/STM-64	WUYH1	108775354
OTUD40	WUHD1	WUHD1	108607920





# Appendix A: C-Band and Common Orderable Equipment Comcodes by Item Name

## Overview

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**Purpose** This chapter provides information on ordering equipment Comcodes by Item name.

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## Accessories

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**Ordering Information** Refer to [Table A-1, “Accessory Ordering Information” \(A-3\)](#) for information on ordering accessories. These are Common for C-Band and L-Band.

**Table A-1 Accessory Ordering Information**

Item	Comcode	MFG Part#
DANTEL Interface Voice-Data Orderwire Kit	407790286	D18-05547-04
70ft LAN Cable	848615712	



# Bays

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**Ordering Information** Refer to [Table A-2, “Bays” \(A-4\)](#) for information on ordering accessories. These are common for C-Band and L-Band.

**Table A-2 Bays**

Bay Description	Comcode
System Bay	848482808
Growth Bay	848482824
Repeater Shelf	848482840



## Blank Filler Panels

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**Ordering Information** Refer to [Table A-3, “Blank Filler Ordering Information” \(A-5\)](#) for ordering information. These are common for C-Band and L-Band.

**Table A-3 Blank Filler Ordering Information**

Item	Comcode
Blank Filler	848203618



## Controller Circuit Packs

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**Ordering Information** Refer to [Table A-4, “WaveStar® OLS 1.6T Controller Circuit Pack Comcodes” \(A-6\)](#) for Controller Circuit Pack Comcode(s). These are common for C-Band and L-Band.

**Table A-4 WaveStar® OLS 1.6T Controller Circuit Pack Comcodes**

CP	CP Code	Comcode
BOS2	WSA002	108655937



# Dispersion Compensation Modules

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**Ordering Information** Refer to [Table A-5, “WaveStar® OLS 1.6T DCM Comcodes” \(A-7\)](#) for a list of DCM comcode(s). These are C-Band only.

**Table A-5 WaveStar® OLS 1.6T DCM Comcodes**

CP Code	Description	Comcode
DCM-2.5	Fiber Optic DCM — 2.5 km	108402595
DCM-5.0	Fiber Optic DCM — 5.0 km	108402603
DCM-7.5	Fiber Optic DCM — 7.5 km	108402611
DCM-10	Fiber Optic DCM — 10.0 km	108402629
DCM-20	Fiber Optic DCM — 20.0 km	108402637
DCM-30	Fiber Optic DCM — 30.0 km	108402645
DCM-40	Fiber Optic DCM — 40.0 km	108402652
DCM-50	Fiber Optic DCM — 50.0 km	108402660
DCM-60	Fiber Optic DCM — 60.0 km	108402678
DCM-70	Fiber Optic DCM — 70.0 km	108402686
DCM-80	Fiber Optic DCM — 80.0 km	108402694
DCM-90	Fiber Optic DCM — 90.0 km	108402702
DCM-100	Fiber Optic DCM — 100 km	109047944
DCMLS40	Fiber Optic DCM — 40.0 km for LS fiber type	109042655
DCMLS60	Fiber Optic DCM — 60.0 km for LS fiber type	109042663

**Notes:**

1. For DCM information for LS fibers, please contact the Customer Service Team.



## External Interface (EI)

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**Ordering Information** Refer to [Table A-6, “WaveStar® OLS 1.6T External Interface Comcodes” \(A-9\)](#) for a list of External Interface circuit pack comcode(s). This is common for C-Band and L-Band.

**Table A-6 WaveStar® OLS 1.6T External Interface Comcodes**

CP	CP Code	Comcode
EI1	WSB001	108250093



## Fan Tray Assembly

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**Ordering Information** Refer to [Table A-7, “Fan Tray Assembly Ordering Information” \(A-10\)](#) for Fan Tray Ordering information. This is common for C-Band and L-Band.

**Table A-7 Fan Tray Assembly Ordering Information**

Description	Drawing	Comcode
Fan Tray Assembly	WP-50132, List 10	408186799



# Filters

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**Ordering Information** Refer to [Table A-8, “Filter Ordering Information” \(A-11\)](#) for Filter ordering information. This is common for C-Band and L-Band.

**Table A-8 Filter Ordering Information**

Description	Comcode
Air Filter	407967967



## Lightguide Buildouts

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**Kit Ordering Information** Refer to [Table A-9, “LBO Kit Comcodes” \(A-12\)](#) for a list of Lightguide Buildout Kit Comcodes. These are common for C-Band and L-Band.

**Table A-9 LBO Kit Comcodes**

<b>Kit Number</b>	<b>Comcode</b>
LBO Kit 1	108359415
LBO Kit 2	108359407
LBO Kit 3	108359399
Universal LBO Kit 1	108728973
Universal LBO Kit 2	108728981
Universal LBO Kit 3	108728999

**Individual LBO Ordering Information** Refer to [Table A-10, “Individual LBO Comcodes” \(A-12\)](#) for a list of Lightguide Buildout (LBO) Comcode(s). These are common for C-Band and L-band.

**Table A-10 Individual LBO Comcodes**

<b>LBO Value</b>	<b>CP</b>	<b>Connector</b>	<b>Comcode</b>
0.0 dB	Universal LBO	FC	106795404
0.0 dB	Universal LBO	SC	106708951
0.0 dB	Universal LBO	ST	106795354
0.5 dB	LBO	LC	108355363
1.0 dB	LBO	LC	108355371
1.2 dB	Universal LBO	FC	108385493
1.2 dB	Universal LBO	SC	108538760
1.2 dB	Universal LBO	ST	108572199
1.5 dB	LBO	LC	108355389
2.0 dB	Universal LBO	FC	108385501
2.0 dB	LBO	LC	108349457
2.0 dB	Universal LBO	SC	108538778
2.0 dB	Universal LBO	ST	108572207

**Table A-10 Individual LBO Comcodes (continued)**

<b>LBO Value</b>	<b>CP</b>	<b>Connector</b>	<b>Comcode</b>
2.5 dB	LBO	LC	108349440
3.0 dB	Universal LBO	FC	108107053
3.0 dB	LBO	LC	108288481
3.0 dB	Universal LBO	SC	108314469
3.0 dB	Universal LBO	ST	108053059
3.5 dB	LBO	LC	108288440
4.0 dB	Universal LBO	FC	108107079
4.0 dB	LBO	LC	108357963
4.0 dB	Universal LBO	SC	108314485
4.0 dB	Universal LBO	ST	108053075
4.5 dB	LBO	LC	108357971
5.0 dB	Universal LBO	FC	108107095
5.0 dB	LBO	LC	108288473
5.0 dB	Universal LBO	SC	108314501
5.0 dB	Universal LBO	ST	108053091
5.5 dB	LBO	LC	108357989
6.0 dB	Universal LBO	FC	108107111
6.0 dB	LBO	LC	108349432
6.0 dB	Universal LBO	SC	108314527
6.0 dB	Universal LBO	ST	108053117
6.5 dB	LBO	LC	108357997
7.0 dB	LBO	LC	108288465
7.5 dB	LBO	LC	108358003
8.0 dB	LBO	LC	108358011
8.5 dB	LBO	LC	108358029
9.0 dB	Universal LBO	FC	108107178
9.0 dB	LBO	LC	108358037
9.0 dB	Universal LBO	SC	108314584
9.0 dB	Universal LBO	ST	108053174
9.5 dB	LBO	LC	108358045

**Table A-10 Individual LBO Comcodes (continued)**

<b>LBO Value</b>	<b>CP</b>	<b>Connector</b>	<b>Comcode</b>
10.0 dB	Universal LBO	FC	108107194
10.0 dB	LBO	LC	108288457
10.0 dB	Universal LBO	SC	108314600
10.0 dB	Universal LBO	ST	108053190
11.0 dB	Universal LBO	FC	108107202
11.0 dB	LBO	LC	108358078
11.0 dB	Universal LBO	SC	108440496
11.0 dB	Universal LBO	ST	108053208
12.0 dB	LBO	LC	108358094
13.0 dB	LBO	LC	108358128
14.0 dB	LBO	LC	108358144
15.0 dB	Universal LBO	FC	108107244
15.0 dB	LBO	LC	108358169
15.0 dB	Universal LBO	SC	108440538
15.0 dB	Universal LBO	ST	108053240
18.0 dB	Universal LBO	FC	108107269
18.0 dB	LBO	LC	108358193
18.0 dB	Universal LBO	SC	108440553
18.0 dB	Universal LBO	ST	108053265
19.0 dB	LBO	LC	108358201
20.0 dB	Universal LBO	FC	108107277
20.0 dB	LBO	LC	108358219
20.0 dB	Universal LBO	SC	108440561
20.0 dB	Universal LBO	ST	108053273

□

# Memory Card

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**Ordering Information** Refer to [Table A-11, “Memory Card Ordering Information” \(A-15\)](#) for Memory Card ordering information. This is common for C-Band and L-Band.

**Table A-11 Memory Card Ordering Information**

Description	CP	Comcode
Memory, Flashcard	MEM	848732251



## Optical Amplifier Circuit Pack

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**Ordering Information** Refer to [Table A-12, “WaveStar® OLS 1.6T OA Comcodes” \(A-16\)](#) for a list of OA circuit pack comcode(s). These are C-Band only.

**Table A-12 WaveStar® OLS 1.6T OA Comcodes**

CP	Connector	CP Code	Comcode
OA1	LC	WSA031	108249988
	Universal (SC)	WUA031	108595828
	LC (for WAD Receive)	WSA032	108249996
	Universal (SC) (for WAD Receive)	WUA032	108886847



## Optical Demultiplexer Units

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**Ordering Information** Refer to [Table A-13, “WaveStar® OLS 1.6T ODU Comcodes” \(A-17\)](#) for a list of ODU circuit pack comcode(s). These are C-Band only.

**Table A-13 WaveStar® OLS 1.6T ODU Comcodes**

CP	CP Code	Comcode
ODU1C	WSA204	108711821
ODU2C <sup>1</sup>	WSA205	108711839

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



## Optical Monitor Circuit Pack

---

**Ordering Information** Refer to [Table A-14, “WaveStar® OLS 1.6T OMON Comcodes” \(A-18\)](#) for a list of OMON circuit pack comcode(s). These are C-Band only.

**Table A-14 WaveStar® OLS 1.6T OMON Comcodes**

CP	CP Code	Comcode
OMON1B	WSA020B	109056705



## Optical Multiplexer Units

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**Ordering Information** Refer to [Table A-15, “WaveStar® OLS 1.6T OMU Comcodes” \(A-19\)](#) for a list of OMU circuit pack comcode(s). These are C-Band only.

**Table A-15 WaveStar® OLS 1.6T OMU Comcodes**

CP	CP Code	Comcode
OMU1	WSC201	108250101
OMU2 <sup>1</sup>	WSC202	108250119

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



## C+L Separator/Combiner

---

**Ordering Information** Refer to [Table A-16, “Orderable CLSC” \(A-20\)](#) for a list of CLSC circuit pack comcode(s). These are common for C-Band and L-Band.

**Table A-16 Orderable CLSC**

Circuit Pack	Connector	Circuit Pack Code	Comcode
CLSC-S	LC	WSA142	108748914
	Universal (SC)	WUA142	108749284
CLSC-D	LC	WSA143	108748930
	Universal (SC)	WUA143	108749292



## Optical Redundancy Switch (ORS)

---

**Ordering Information** Refer to [Table A-17, “ORS Ordering Information” \(A-21\)](#) for ORS circuit packs ordering information. This is C-Band only.

**Table A-17 ORS Ordering Information**

Description	CP	Comcode
ORS	WSA022 <sup>1</sup>	108873829

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



## Optical Translator Drop Units

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**Ordering Information** Refer to [Table A-18, “WaveStar® OLS 1.6T OTU Drop Comcodes” \(A-22\)](#) for a list of Optical Translator Drop Unit circuit pack comcode(s).

**Table A-18 WaveStar® OLS 1.6T OTU Drop Comcodes**

Application	CP	Connector	CP Code	Comcode
OC-48/STM-16 <sup>1</sup>	OTUD1	LC	WSMD1	108250127
		Universal (SC)	WUMD1	108433004
OC-192/STM-64	OTUD30	LC	WSYH1	108775339
		Universal (SC)	WUYH1	108775354
HSBB <sup>1</sup>	OTUD40	LC	WSHD1	108564642
		Univer- sal(SC)	WUHD1	108607920

**Notes:**

1. These packs are common for C-Band and L-Band.



## OTU1 — OC-48/STM-16 with LC Connectors

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**Ordering Information** Refer to [Table A-19, “OTU1 with LC Connector Comcodes” \(A-23\)](#) for a list of Comcodes for OTU1 circuit packs with LC Connectors. These packs are C-Band only.

**Table A-19 OTU1 with LC Connector Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU1	9190	9210	WSNB20	108250333
OTU1	9195	9215	WSNB40	108250531
OTU1	9200	9220	WSNB10	108250234
OTU1	9205	9225	WSNB30	108250432
OTU1	9230	9250	WSNB19	108250325
OTU1	9235	9255	WSNB39	108250523
OTU1	9240	9260	WSNB09	108250226
OTU1	9245	9265	WSNB29	108250424
OTU1	9270	9290	WSNB18	108250317
OTU1	9275	9295	WSNB38	108250515
OTU1	9280	9300	WSNB08	108250218
OTU1	9285	9305	WSNB28	108250416
OTU1	9310	9330	WSNB17	108250309
OTU1	9315	9335	WSNB37	108250507
OTU1	9320	9340	WSNB07	108250200
OTU1	9325	9345	WSNB27	108250408
OTU1	9350	9370	WSNB16	108250291
OTU1	9355	9375	WSNB36	108250499
OTU1	9360	9380	WSNB06	108250192
OTU1	9365	9385	WSNB26	108250390
OTU1	9390	9410	WSNB15	108250283
OTU1	9395	9415	WSNB35	108250481
OTU1	9400	9420	WSNB05	108250184
OTU1	9405	9425	WSNB25	108250382
OTU1	9430	9450	WSNB14	108250275

**Table A-19 OTU1 with LC Connector Comcodes (continued)**

<b>CP</b>	<b>Freq 1<sup>1</sup></b>	<b>Freq 2<sup>1</sup></b>	<b>CP Code</b>	<b>Comcode</b>
OTU1	9435	9455	WSNB34	108250473
OTU1	9440	9460	WSNB04	108250176
OTU1	9445	9465	WSNB24	108250374
OTU1	9470	9490	WSNB13	108250267
OTU1	9475	9495	WSNB33	108250465
OTU1	9480	9500	WSNB03	108250168
OTU1	9485	9505	WSNB23	108250366
OTU1	9510	9530	WSNB12	108250259
OTU1	9515	9535	WSNB32	108250457
OTU1	9520	9540	WSNB02	108250150
OTU1	9525	9545	WSNB22	108250358
OTU1	9550	9570	WSNB11	108250242
OTU1	9555	9575	WSNB31	108250440
OTU1	9560	9580	WSNB01	108250143
OTU1	9565	9585	WSNB21	108250341

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OTU1 — OC-48/STM-16 with Universal Connectors (SC)

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**Ordering Information** Refer to [Table A-20, “OTU1 with Universal Connector \(SC\) Comcodes” \(A-25\)](#) for a list of Comcodes for OTU1 Circuit Packs with Universal Connectors. Note that the Universal Connector circuit packs are supplied with an SC customer connection. The SC connection can be converted to other connector types if needed by using the appropriate connector from [Table A-10, “Individual LBO Comcodes” \(A-12\)](#). These packs are C-Band only.

**Table A-20 OTU1 with Universal Connector (SC) Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU1	9190	9210	WUNB20	108433236
OTU1	9195	9215	WUNB40	108433442
OTU1	9200	9220	WUNB10	108433137
OTU1	9205	9225	WUNB30	108433335
OTU1	9230	9250	WUNB19	108433228
OTU1	9235	9255	WUNB39	108433434
OTU1	9240	9260	WUNB09	108433129
OTU1	9245	9265	WUNB29	108433327
OTU1	9270	9290	WUNB18	108433210
OTU1	9275	9295	WUNB38	108433426
OTU1	9280	9300	WUNB08	108433111
OTU1	9285	9305	WUNB28	108433319
OTU1	9310	9330	WUNB17	108433202
OTU1	9315	9335	WUNB37	108433400
OTU1	9320	9340	WUNB07	108433103
OTU1	9325	9345	WUNB27	108433301
OTU1	9350	9370	WUNB16	108433194
OTU1	9355	9375	WUNB36	108433392
OTU1	9360	9380	WUNB06	108433095
OTU1	9365	9385	WUNB26	108433293
OTU1	9390	9410	WUNB15	108433186
OTU1	9395	9415	WUNB35	108433384

**Table A-20 OTU1 with Universal Connector (SC) Comcodes  
(continued)**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU1	9400	9420	WUNB05	108433087
OTU1	9405	9425	WUNB25	108433285
OTU1	9430	9450	WUNB14	108433178
OTU1	9435	9455	WUNB34	108433376
OTU1	9440	9460	WUNB04	108433079
OTU1	9445	9465	WUNB24	108433277
OTU1	9470	9490	WUNB13	108433160
OTU1	9475	9495	WUNB33	108433368
OTU1	9480	9500	WUNB03	108433061
OTU1	9485	9505	WUNB23	108433269
OTU1	9510	9530	WUNB12	108433152
OTU1	9515	9535	WUNB32	108433350
OTU1	9520	9540	WUNB02	108433053
OTU1	9525	9545	WUNB22	108433251
OTU1	9550	9570	WUNB11	108433145
OTU1	9555	9575	WUNB31	108433343
OTU1	9560	9580	WUNB01	108433046
OTU1	9565	9585	WUNB21	108433244

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OTU2 — OC-48/STM-16 Through with LC Connectors

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**Ordering Information** Refer to [Table A-21, “OTU2 with LC Connector Comcodes” \(A-27\)](#) for a list of comcodes for OTU2 circuit packs with LC connectors. These packs are C-Band only.

**Table A-21 OTU2 with LC Connector Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU2	9190	9210	WSMB20	108374018
OTU2	9195	9215	WSMB40	108374216
OTU2	9200	9220	WSMB10	108373911
OTU2	9205	9225	WSMB30	108374117
OTU2	9230	9250	WSMB19	108374000
OTU2	9235	9255	WSMB39	108374208
OTU2	9240	9260	WSMB09	108373903
OTU2	9245	9265	WSMB29	108374109
OTU2	9270	9290	WSMB18	108373994
OTU2	9275	9295	WSMB38	108374190
OTU2	9280	9300	WSMB08	108373895
OTU2	9285	9305	WSMB28	108374091
OTU2	9310	9330	WSMB17	108373986
OTU2	9315	9335	WSMB37	108374182
OTU2	9320	9340	WSMB07	108373887
OTU2	9325	9345	WSMB27	108374083
OTU2	9350	9370	WSMB16	108373978
OTU2	9355	9375	WSMB36	108374174
OTU2	9360	9380	WSMB06	108373879
OTU2	9365	9385	WSMB26	108374075
OTU2	9390	9410	WSMB15	108373960
OTU2	9395	9415	WSMB35	108374166
OTU2	9400	9420	WSMB05	108373861
OTU2	9405	9425	WSMB25	108374067
OTU2	9430	9450	WSMB14	108373952

**Table A-21 OTU2 with LC Connector Comcodes (continued)**

<b>CP</b>	<b>Freq 1<sup>1</sup></b>	<b>Freq 2<sup>1</sup></b>	<b>CP Code</b>	<b>Comcode</b>
OTU2	9435	9455	WSMB34	108374158
OTU2	9440	9460	WSMB04	108373853
OTU2	9445	9465	WSMB24	108374059
OTU2	9470	9490	WSMB13	108373945
OTU2	9475	9495	WSMB33	108374141
OTU2	9480	9500	WSMB03	108373846
OTU2	9485	9505	WSMB23	108374042
OTU2	9510	9530	WSMB12	108373937
OTU2	9515	9535	WSMB32	108374133
OTU2	9520	9540	WSMB02	108373838
OTU2	9525	9545	WSMB22	108374034
OTU2	9550	9570	WSMB11	108373929
OTU2	9555	9575	WSMB31	108374125
OTU2	9560	9580	WSMB01	108373820
OTU2	9565	9585	WSMB21	108374026

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OTU40 — High Speed Broadband (HSBB) with LC Connectors

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**Ordering Information** Refer to [Table A-22, “OTU40 with LC Connector Comcodes” \(A-29\)](#) for a list of comcodes for OTU40 circuit packs with LC Connectors. These are C-Band only.

**Table A-22 OTU40 with LC Connector Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU40	9190	9210	WSJB20	108564139
OTU40	9195	9215	WSJB40	108564337
OTU40	9200	9220	WSJB10	108564030
OTU40	9205	9225	WSJB30	108564238
OTU40	9230	9250	WSJB19	108564121
OTU40	9235	9255	WSJB39	108564329
OTU40	9240	9260	WSJB09	108564022
OTU40	9245	9265	WSJB29	108564220
OTU40	9270	9290	WSJB18	108564113
OTU40	9275	9295	WSJB38	108564311
OTU40	9280	9300	WSJB08	108564014
OTU40	9285	9305	WSJB28	108564212
OTU40	9310	9330	WSJB17	108564105
OTU40	9315	9335	WSJB37	108564303
OTU40	9320	9340	WSJB07	108564006
OTU40	9325	9345	WSJB27	108564204
OTU40	9350	9370	WSJB16	108564097
OTU40	9355	9375	WSJB36	108564295
OTU40	9360	9380	WSJB06	108563990
OTU40	9365	9385	WSJB26	108564196
OTU40	9390	9410	WSJB15	108564089
OTU40	9395	9415	WSJB35	108564287
OTU40	9400	9420	WSJB05	108563982
OTU40	9405	9425	WSJB25	108564188
OTU40	9430	9450	WSJB14	108564071

**Table A-22 OTU40 with LC Connector Comcodes  
(continued)**

<b>CP</b>	<b>Freq 1<sup>1</sup></b>	<b>Freq 2<sup>1</sup></b>	<b>CP Code</b>	<b>Comcode</b>
OTU40	9435	9455	WSJB34	108564279
OTU40	9440	9460	WSJB04	108563974
OTU40	9445	9465	WSJB24	108564170
OTU40	9470	9490	WSJB13	108564063
OTU40	9475	9495	WSJB33	108564261
OTU40	9480	9500	WSJB03	108563966
OTU40	9485	9505	WSJB23	108564162
OTU40	9510	9530	WSJB12	108564055
OTU40	9515	9535	WSJB32	108564253
OTU40	9520	9540	WSJB02	108563958
OTU40	9525	9545	WSJB22	108564154
OTU40	9550	9570	WSJB11	108564048
OTU40	9555	9575	WSJB31	108564246
OTU40	9560	9580	WSJB01	108563941
OTU40	9565	9585	WSJB21	108564147

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OTU40 — High Speed Broadband (HSBB) with Universal Connectors (SC)

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**Ordering Information** Refer to [Table A-23, “OTU40 with Universal Connector \(SC\) Comcodes” \(A-31\)](#) for a list of comcodes for OTU40 circuit packs with Universal Connectors. Note that the Universal connector circuit packs are supplied with an SC customer connection. The SC connection can be converted to other connector types if needed by using the appropriate connector from [Table A-10, “Individual LBO Comcodes” \(A-12\)](#). These are C-Band only.

**Table A-23 OTU40 with Universal Connector (SC) Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU40	9190	9210	WUJB20	108589029
OTU40	9195	9215	WUJB40	108589235
OTU40	9200	9220	WUJB10	108588922
OTU40	9205	9225	WUJB30	108589136
OTU40	9230	9250	WUJB19	108589011
OTU40	9235	9255	WUJB39	108589227
OTU40	9240	9260	WUJB09	108588906
OTU40	9245	9265	WUJB29	108589128
OTU40	9270	9290	WUJB18	108589003
OTU40	9275	9295	WUJB38	108589219
OTU40	9280	9300	WUJB08	108588898
OTU40	9285	9305	WUJB28	108589110
OTU40	9310	9330	WUJB17	108588997
OTU40	9315	9335	WUJB37	108589201
OTU40	9320	9340	WUJB07	108588880
OTU40	9325	9345	WUJB27	108589094
OTU40	9350	9370	WUJB16	108588989
OTU40	9355	9375	WUJB36	108589193
OTU40	9360	9380	WUJB06	108588872
OTU40	9365	9385	WUJB26	108589086
OTU40	9390	9410	WUJB15	108588971

**Table A-23 OTU40 with Universal Connector (SC)  
Comcodes (continued)**

<b>CP</b>	<b>Freq 1<sup>1</sup></b>	<b>Freq 2<sup>1</sup></b>	<b>CP Code</b>	<b>Comcode</b>
OTU40	9395	9415	WUJB35	108589185
OTU40	9400	9420	WUJB05	108588856
OTU40	9405	9425	WUJB25	108589078
OTU40	9430	9450	WUJB14	108588963
OTU40	9435	9455	WUJB34	108589177
OTU40	9440	9460	WUJB04	108588849
OTU40	9445	9465	WUJB24	108589060
OTU40	9470	9490	WUJB13	108588955
OTU40	9475	9495	WUJB33	108589169
OTU40	9480	9500	WUJB03	108588831
OTU40	9485	9505	WUJB23	108589052
OTU40	9510	9530	WUJB12	108588948
OTU40	9515	9535	WUJB32	108589151
OTU40	9520	9540	WUJB02	108588823
OTU40	9525	9545	WUJB22	108589045
OTU40	9550	9570	WUJB11	108588930
OTU40	9555	9575	WUJB31	108589144
OTU40	9560	9580	WUJB01	108588815
OTU40	9565	9585	WUJB21	108589037

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OTU30 —OC-192/STM-64 OTUs

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**Ordering Information** Refer to [Table A-24, “OC-192/STM-64 OTUs \(OTU30\) \(LC Connector\)” \(A-33\)](#) for ordering information for OC-192/STM-64 OTUs (OTU30) with LC Connectors. These packs are C-Band only.

**Table A-24 OC-192/STM-64 OTUs (OTU30) (LC Connector)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU30	9190	9210	WSPG20B	109042846
OTU30	9195	9215	WSPG40B	109042853
OTU30	9200	9220	WSPG10B	109042861
OTU30	9205	9225	WSPG30B	109042887
OTU30	9230	9250	WSPG19B	109042895
OTU30	9235	9255	WSPG39B	109042903
OTU30	9240	9260	WSPG09B	109042911
OTU30	9245	9265	WSPG29B	109042929
OTU30	9270	9290	WSPG18B	109042937
OTU30	9275	9295	WSPG38B	109042945
OTU30	9280	9300	WSPG08B	109042952
OTU30	9285	9305	WSPG28B	109042952
OTU30	9310	9330	WSPG17B	109042960
OTU30	9315	9335	WSPG37B	109042978
OTU30	9320	9340	WSPG07B	109042986
OTU30	9325	9345	WSPG27B	109042994
OTU30	9350	9370	WSPG16B	109043000
OTU30	9355	9375	WSPG36B	109043018
OTU30	9360	9380	WSPG06B	109043026
OTU30	9365	9385	WSPG26B	109043034
OTU30	9390	9410	WSPG15B	109043042
OTU30	9395	9415	WSPG35B	109043059
OTU30	9400	9420	WSPG05B	109043067
OTU30	9405	9425	WSPG25B	109043075
OTU30	9430	9450	WSPG14B	109043083

**Table A-24 OC-192/STM-64 OTUs (OTU30) (LC Connector) (continued)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU30	9435	9455	WSPG34B	109043091
OTU30	9440	9460	WSPG04B	109043109
OTU30	9445	9465	WSPG24B	109043117
OTU30	9470	9490	WSPG13B	109043125
OTU30	9475	9495	WSPG33B	109043133
OTU30	9480	9500	WSPG03B	109043141
OTU30	9485	9505	WSPG23B	109043158
OTU30	9510	9530	WSPG12B	109043166
OTU30	9515	9535	WSPG32B	109043174
OTU30	9520	9540	WSPG02B	109043182
OTU30	9525	9545	WSPG22B	109043190
OTU30	9550	9570	WSPG11B	109043208
OTU30	9555	9575	WSPG31B	109043216
OTU30	9560	9580	WSPG01B	109043224
OTU30	9565	9585	WSPG21B	109043232

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate. An abbreviation of 9190 is equivalent to a frequency of 191.90 THz (add a "1" in front of the 9190 and move the decimal two places to the left).



## OTU30 — OC-192/STM-64 with Universal Connectors (SC)

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**Ordering Information** Refer to [Table A-25, “OTU30 with Universal Connector Comcodes” \(A-35\)](#) for a list of Comcodes for OC-192/STM-64 OTU30 Circuit Packs with Universal Connectors. Note that the Universal connector circuit packs are supplied with an SC customer connection. The SC connection can be converted to other connector types if needed by using the appropriate connector from [Table A-10, “Individual LBO Comcodes” \(A-12\)](#). These packs are C-Band only.

**Table A-25 OTU30 with Universal Connector Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU30	9190	9210	WUPG20B	109043406
OTU30	9195	9215	WUPG40B	109043414
OTU30	9200	9220	WUPG10B	109043422
OTU30	9205	9225	WUPG30B	109043430
OTU30	9230	9250	WUPG19B	109043448
OTU30	9235	9255	WUPG39B	109043455
OTU30	9240	9260	WUPG09B	109043463
OTU30	9245	9265	WUPG29B	109043471
OTU30	9270	9290	WUPG18B	109043489
OTU30	9275	9295	WUPG38B	109043497
OTU30	9280	9300	WUPG08B	109043505
OTU30	9285	9305	WUPG28B	109043513
OTU30	9310	9330	WUPG17B	109043521
OTU30	9315	9335	WUPG37B	109043539
OTU30	9320	9340	WUPG07B	109043547
OTU30	9325	9345	WUPG27B	109043554
OTU30	9350	9370	WUPG16B	109043562
OTU30	9355	9375	WUPG36B	109043570
OTU30	9360	9380	WUPG06B	109043588
OTU30	9365	9385	WUPG26B	109043596
OTU30	9390	9410	WUPG15B	109043604
OTU30	9395	9415	WUPG35B	109043612

**Table A-25 OTU30 with Universal Connector Comcodes (continued)**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU30	9400	9420	WUPG05B	109043620
OTU30	9405	9425	WUPG25B	109043638
OTU30	9430	9450	WUPG14B	109043646
OTU30	9435	9455	WUPG34B	109043653
OTU30	9440	9460	WUPG04B	109043661
OTU30	9445	9465	WUPG24B	109043679
OTU30	9470	9490	WUPG13B	109043687
OTU30	9475	9495	WUPG33B	109043695
OTU30	9480	9500	WUPG03B	109043703
OTU30	9485	9505	WUPG23B	109043711
OTU30	9510	9530	WUPG12B	109043729
OTU30	9515	9535	WUPG32B	109043737
OTU30	9520	9540	WUPG02B	109043745
OTU30	9525	9545	WUPG22B	109043752
OTU30	9550	9570	WUPG11B	109043760
OTU30	9555	9575	WUPG31B	109043778
OTU30	9560	9580	WUPG01B	109043786
OTU30	9565	9585	WUPG21B	109043794

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate. An abbreviation of 9190 is equivalent to a frequency of 191.90 THz (add a "1" in front of the 9190 and move the decimal two places to the left).



## OTU31 — OC-192/STM-64 Through with LC Connectors

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**Ordering Information** Refer to [Table A-26, “OTU31 with LC Connector Comcodes” \(A-37\)](#) for a list of Comcodes for OC-192/STM-64 Through OTU31 Circuit Packs with LC Connectors. These packs are C-Band Only.

**Table A-26 OTU31 with LC Connector Comcodes**

CP	Freq 1 <sup>1</sup>	Freq 2 <sup>1</sup>	CP Code	Comcode
OTU31	9190	9210	WSRG20B	109045203
OTU31	9195	9215	WSRG40B	109045211
OTU31	9200	9220	WSRG10B	109045229
OTU31	9205	9225	WSRG30B	109045237
OTU31	9230	9250	WSRG19B	109045245
OTU31	9235	9255	WSRG39B	109045252
OTU31	9240	9260	WSRG09B	109045260
OTU31	9245	9265	WSRG29B	109045278
OTU31	9270	9290	WSRG18B	109045286
OTU31	9275	9295	WSRG38B	109045294
OTU31	9280	9300	WSRG08B	109045302
OTU31	9285	9305	WSRG28B	109045310
OTU31	9310	9330	WSRG17B	109045328
OTU31	9315	9335	WSRG37B	109045336
OTU31	9320	9340	WSRG07B	109045344
OTU31	9325	9345	WSRG27B	109045351
OTU31	9350	9370	WSRG16B	109045369
OTU31	9355	9375	WSRG36B	109045377
OTU31	9360	9380	WSRG06B	109045385
OTU31	9365	9385	WSRG26B	109045393
OTU31	9390	9410	WSRG15B	109045401
OTU31	9395	9415	WSRG35B	109045419
OTU31	9400	9420	WSRG05B	109045427
OTU31	9405	9425	WSRG25B	109045435
OTU31	9430	9450	WSRG14B	109045443

**Table A-26 OTU31 with LC Connector Comcodes (continued)**

<b>CP</b>	<b>Freq 1<sup>1</sup></b>	<b>Freq 2<sup>1</sup></b>	<b>CP Code</b>	<b>Comcode</b>
OTU31	9435	9455	WSRG34B	109045450
OTU31	9440	9460	WSRG04B	109045468
OTU31	9445	9465	WSRG24B	109045476
OTU31	9470	9490	WSRG13B	109045484
OTU31	9475	9495	WSRG33B	109045492
OTU31	9480	9500	WSRG03B	109045500
OTU31	9485	9505	WSRG23B	109045518
OTU31	9510	9530	WSRG12B	109045526
OTU31	9515	9535	WSRG32B	109045534
OTU31	9520	9540	WSRG02B	109045542
OTU31	9525	9545	WSRG22B	109045559
OTU31	9550	9570	WSRG11B	109045567
OTU31	9555	9575	WSRG31B	109045575
OTU31	9560	9580	WSRG01B	109045583
OTU31	9565	9585	WSRG21B	109045591

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate. An abbreviation of 9190 is equivalent to a frequency of 191.90 THz (add a "1" in front of the 9190 and move the decimal two places to the left).



## 4:1 10G MUX OTU (OTU70)

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**Ordering Information** Refer to [Table A-27, “OTU70 \(LC Connector\)” \(A-39\)](#) for ordering information for OTU70 circuit packs with LC connectors. These packs are C-Band only.

**Table A-27 OTU70 (LC Connector)**

CP	Frequency <sup>1</sup>	CP Code	Comcode
OTU70	9585	WS2A01 <sup>2</sup>	108780909
OTU70	9580	WS2A02 <sup>2</sup>	108780933
OTU70	9575	WS2A03 <sup>2</sup>	108780941
OTU70	9570	WS2A04 <sup>2</sup>	108780958
OTU70	9565	WS2A05 <sup>2</sup>	108780966
OTU70	9560	WS2A06 <sup>2</sup>	108780974
OTU70	9555	WS2A07 <sup>2</sup>	108780982
OTU70	9550	WS2A08 <sup>2</sup>	108780990
OTU70	9545	WS2A09 <sup>2</sup>	108781006
OTU70	9540	WS2A10 <sup>2</sup>	108781030
OTU70	9535	WS2A11 <sup>2</sup>	108781048
OTU70	9530	WS2A12 <sup>2</sup>	108781055
OTU70	9525	WS2A13 <sup>2</sup>	108781063
OTU70	9520	WS2A14 <sup>2</sup>	108781071
OTU70	9515	WS2A15 <sup>2</sup>	108781089
OTU70	9510	WS2A16 <sup>2</sup>	108781097
OTU70	9550	WS2A17 <sup>2</sup>	108781105
OTU70	9500	WS2A18 <sup>2</sup>	108781113
OTU70	9495	WS2A19 <sup>2</sup>	108781121
OTU70	9490	WS2A20 <sup>2</sup>	108781139
OTU70	9485	WS2A21 <sup>2</sup>	108781147
OTU70	9480	WS2A22 <sup>2</sup>	108781154
OTU70	9475	WS2A23 <sup>2</sup>	108781162
OTU70	9470	WS2A24 <sup>2</sup>	108781170
OTU70	9465	WS2A25 <sup>2</sup>	108781188

**Table A-27 OTU70 (LC Connector) (continued)**

<b>CP</b>	<b>Frequency<sup>1</sup></b>	<b>CP Code</b>	<b>Comcode</b>
OTU70	9460	WS2A26 <sup>2</sup>	108781196
OTU70	9455	WS2A27 <sup>2</sup>	108781204
OTU70	9450	WS2A28 <sup>2</sup>	108781212
OTU70	9445	WS2A29 <sup>2</sup>	108781220
OTU70	9440	WS2A30 <sup>2</sup>	108781238
OTU70	9435	WS2A31 <sup>2</sup>	108781246
OTU70	9430	WS2A32 <sup>2</sup>	108781253
OTU70	9425	WS2A33 <sup>2</sup>	108781261
OTU70	9420	WS2A34 <sup>2</sup>	108781279
OTU70	9415	WS2A35 <sup>2</sup>	108781287
OTU70	9410	WS2A36 <sup>2</sup>	108781295
OTU70	9405	WS2A37 <sup>2</sup>	108781303
OTU70	9400	WS2A38 <sup>2</sup>	108781311
OTU70	9395	WS2A39 <sup>2</sup>	108781329
OTU70	9390	WS2A40 <sup>2</sup>	108781337
OTU70	9385	WS2A41 <sup>2</sup>	108781345
OTU70	9380	WS2A42 <sup>2</sup>	108781352
OTU70	9375	WS2A43 <sup>2</sup>	108781360
OTU70	9370	WS2A44 <sup>2</sup>	108781378
OTU70	9365	WS2A45 <sup>2</sup>	108781386
OTU70	9360	WS2A46 <sup>2</sup>	108781394
OTU70	9355	WS2A47 <sup>2</sup>	108781402
OTU70	9350	WS2A48 <sup>2</sup>	108781410
OTU70	9345	WS2A49 <sup>2</sup>	108781428
OTU70	9340	WS2A50 <sup>2</sup>	108781436
OTU70	9335	WS2A51 <sup>2</sup>	108781444
OTU70	9330	WS2A52 <sup>2</sup>	108781451
OTU70	9325	WS2A53 <sup>2</sup>	108781469
OTU70	9320	WS2A54 <sup>2</sup>	108781477
OTU70	9315	WS2A55 <sup>2</sup>	108781485

**Table A-27 OTU70 (LC Connector) (continued)**

CP	Frequency <sup>1</sup>	CP Code	Comcode
OTU70	9310	WS2A56 <sup>2</sup>	108781493
OTU70	9305	WS2A57 <sup>2</sup>	108781501
OTU70	9300	WS2A58 <sup>2</sup>	108781519
OTU70	9295	WS2A59 <sup>2</sup>	108781527
OTU70	9290	WS2A60 <sup>2</sup>	108781535
OTU70	9285	WS2A61 <sup>2</sup>	108781543
OTU70	9280	WS2A62 <sup>2</sup>	108781550
OTU70	9275	WS2A63 <sup>2</sup>	108781568
OTU70	9270	WS2A64 <sup>2</sup>	108781576
OTU70	9265	WS2A65 <sup>2</sup>	108781584
OTU70	9260	WS2A66 <sup>2</sup>	108781592
OTU70	9255	WS2A67 <sup>2</sup>	108781600
OTU70	9250	WS2A68 <sup>2</sup>	108781618
OTU70	9245	WS2A69 <sup>2</sup>	108781626
OTU70	9240	WS2A70 <sup>2</sup>	108781634
OTU70	9235	WS2A71 <sup>2</sup>	108781642
OTU70	9230	WS2A72 <sup>2</sup>	108781659
OTU70	9225	WS2A73 <sup>2</sup>	108781667
OTU70	9220	WS2A74 <sup>2</sup>	108781675
OTU70	9215	WS2A75 <sup>2</sup>	108781683
OTU70	9210	WS2A76 <sup>2</sup>	108781691
OTU70	9205	WS2A77 <sup>2</sup>	108781709
OTU70	9200	WS2A78 <sup>2</sup>	108781717
OTU70	9195	WS2A79 <sup>2</sup>	108781725
OTU70	9190	WS2A80 <sup>2</sup>	108781733

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead time for circuit packs

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## Power Line Filter Assemblies

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**Ordering Information** Refer to [Table A-28, “Power Line Filter Assembly Comcodes” \(A-42\)](#) for Power Line Filter Assembly ordering information. These are common for C-Band and L-Band.

**Table A-28 Power Line Filter Assembly Comcodes**

Description	Comcode
Power Line Filter Assembly for Lucent ETSI Seismic Bays	108344557
Power Line Filter Assembly for Lucent Seismic Bays.	848242715



## Red Fibers

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**Kit Ordering Information** Refer to [Table A-29, “Red Fiber Kit Comcodes” \(A-43\)](#) for comcode information for Red Fiber kits. These are common for C-Band and L-Band.

**Table A-29 Red Fiber Kit Comcodes**

Application	Comcode
Simplex Red Fiber Kit for 2-Fiber End Terminal	108615508
Simplex Red Fiber Kit for 2-Fiber Ring Terminal	108773581
Simplex Red Fiber Kit for 2-Fiber Repeater	108384355
Simplex Red Fiber Kit for 2-Fiber WAD Terminal	109023812
Simplex Red Fiber Kit for C+L 2-Fiber Full Add/Drop Terminal	108773987
Simplex Red Fiber Kit for C+L 2-Fiber Repeater	108773995
Simplex Red Fiber Kit for 2-Fiber 4-Channel WAD Terminal	108774001
Simplex Red Fiber Kit for Completion	108774019
Simplex Red Fiber Kit for C+L 40-Channel WAD Terminal	109158428

**Fiber Ordering Information** Refer to [Table A-30, “Simplex Red Fiber Comcodes” \(A-43\)](#) for comcode information for Simplex Red Fibers. These are common for C-Band and L-Band.

**Table A-30 Simplex Red Fiber Comcodes**

Item Description	Comcode
16.5 in Simplex LC-LC Red Fiber	108463522
20.5 in Simplex LC-LC Red Fiber	108463548
22.0 in Simplex LC-LC Red Fiber	108463555
25.0 in Simplex LC-LC Red Fiber	108463589
26.5 in Simplex LC-LC Red Fiber	108463605
27.5 in Simplex LC-LC Red Fiber	108463621
28.5 in Simplex LC-LC Red Fiber	108463639
31.0 in Simplex LC-LC Red Fiber	108463654

**Table A-30 Simplex Red Fiber Comcodes (continued)**

<b>Item Description</b>	<b>Comcode</b>
32.7 in Simplex LC-LC Red Fiber	108463670
33.5 in Simplex LC-LC Red Fiber	108463696
35.5 in Simplex LC-LC Red Fiber	108463738
38.0 in Simplex LC-LC Red Fiber	108463811
40.0 in Simplex LC-LC Red Fiber	108463829
47.5 in Simplex LC-LC Red Fiber	108463886
51.5 in Simplex LC-LC Red Fiber	108463894
53.5 in Simplex LC-LC Red Fiber	108463910
55.0 in Simplex LC-LC Red Fiber	108463928
58.0 in Simplex LC-LC Red Fiber	108463936
60.0 in Simplex LC-LC Red Fiber	108463969
61.5 in Simplex LC-LC Red Fiber	108463977
63.5 in Simplex LC-LC Red Fiber	108463993
68.5 in Simplex LC-LC Red Fiber	108464009
72.0 in Simplex LC-LC Red Fiber	108464025
85.0 in Simplex LC-LC Red Fiber	108464033
100.5 in Simplex LC-LC Red Fiber	108464041
104.5 in Simplex LC-LC Red Fiber	108464058
108.0 in Simplex LC-LC Red Fiber	108464066
110.0 in Simplex LC-LC Red Fiber	108464074
112.0 in Simplex LC-LC Red Fiber	108464082
114.0 in Simplex LC-LC Red Fiber	108464090
127.0 in Simplex LC-LC Red Fiber	108464108
132.0 in Simplex LC-LC Red Fiber	108464116
137.0 in Simplex LC-LC Red Fiber	108464124
158.0 in Simplex LC-LC Red Fiber	108464132
162.0 in Simplex LC-LC Red Fiber	108464140
102.0 in Simplex LC-LC Red Fiber	108607193
106.0 in Simplex LC-LC Red Fiber	108607201
106.0 in Simplex LC-LC Red Fiber	108607207

**Table A-30 Simplex Red Fiber Comcodes (continued)**

<b>Item Description</b>	<b>Comcode</b>
122.0 in Simplex LC-LC Red Fiber	108607219
151.0 in Simplex LC-LC Red Fiber	108607227
155.0 in Simplex LC-LC Red Fiber	108607243
20.5 in Simplex LC-FC Red Fiber	108607250
20.5 in Simplex LC-SC Red Fiber	108607268
20.5 in Simplex LC-ST Red Fiber	108607276
26.5 in Simplex LC-FC Red Fiber	108607284
26.5 in Simplex LC-SC Red Fiber	108607292
26.5 in Simplex LC-ST Red Fiber	108607300
28.5 in Simplex LC-FC Red Fiber	108607318
28.5 in Simplex LC-SC Red Fiber	108607326
28.5 in Simplex LC-ST Red Fiber	108607334
32.7 in Simplex LC-FC Red Fiber	108607342
32.7 in Simplex LC-SC Red Fiber	108607359
32.7 in Simplex LC-ST Red Fiber	108607367
33.5 in Simplex LC-FC Red Fiber	108607508
33.5 in Simplex LC-SC Red Fiber	108607516
33.5 in Simplex LC-ST Red Fiber	108607524
65.0 in Simplex LC-LC Red Fiber	108607532
85.0 in Simplex LC-SC Red Fiber	108607540
85.0 in Simplex LC-FC Red Fiber	108607565
85.0 in Simplex LC-ST Red Fiber	108607573
23.0 in Simplex LC-LC Red Fiber	108627902
45.5 in Simplex LC-LC Red Fiber	108627928
50.0 in Simplex LC-LC Red Fiber	108627944
55.0 in Simplex LC-LC Red Fiber	108627951

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## Supervisory Pack

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**Ordering Information** Refer to [Table A-31, “WaveStar® OLS 1.6T Supervisory Circuit Pack Comcodes” \(A-46\)](#) for a list of Supervisory circuit pack comcode(s). These are C-Band only.

**Table A-31 WaveStar® OLS 1.6T Supervisory Circuit Pack Comcodes**

CP	CP Code	Comcode
SUPVY1B	WSA013	108534785
SUPVY3	WSA012	108410275



## 4-Channel Wavelength Add/Drop Units

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**Ordering Information** Refer to [Table A-32, “WaveStar® OLS 1.6T WAD5/6 Comcodes” \(A-47\)](#) for a list of Wavelength Add/Drop (WAD) circuit pack comcode(s). These are C-Band only.

**Table A-32 WaveStar® OLS 1.6T WAD5/6 Comcodes**

CP	Add/Drop Frequencies (THz)				Connector	CP Code	Comcode
	1	2	3	4			
WAD5 OC-192/STM-64	195.200	195.400	195.600	195.800	LC	WSA305	108250077
					Univer- sal (SC)	WUA305	108586173
WAD6 OC-192/STM-64	195.100	195.300	195.500	195.700	LC	WSA306	108250085
					Univer- sal (SC)	WUA306	108586181



## Yellow Fibers

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**Kit Ordering Information** Refer to [Table A-33, “Yellow Fiber Kit Comcodes” \(A-48\)](#) for the list of Yellow Fiber kit comcodes. These are common for C-Band and L-Band.

**Table A-33 Yellow Fiber Kit Comcodes**

Description	Comcode
15 Feet, Duplex LC-LC Yellow Fiber	108408352
20 Feet, Duplex LC-LC Yellow Fiber	108408360
25 Feet, Duplex LC-LC Yellow Fiber	108408378
30 Feet, Duplex LC-LC Yellow Fiber	108408386
35 Feet, Duplex LC-LC Yellow Fiber	108408394

**Ordering Information** Refer to [Table A-34, “Yellow Fiber Comcode Information” \(A-48\)](#) for Yellow Fiber comcode information. These are common for C-Band and L-Band.

**Table A-34 Yellow Fiber Comcode Information**

Description	Comcode
10 Feet, Simplex Yellow Fiber, LC-FC	108153784
10 Feet, Simplex Yellow Fiber, LC-SC	108113895
10 Feet, Simplex Yellow Fiber, LC-ST	108108853
100 Feet, Simplex Yellow Fiber, LC-FC	108153933
100 Feet, Simplex Yellow Fiber, LC-SC	108113986
100 Feet, Simplex Yellow Fiber, LC-ST	108108960
15 Feet, Duplex LC-LC Yellow Fiber	108341447
15 Feet, Simplex Yellow Fiber, LC-FC	108153792
15 Feet, Simplex Yellow Fiber, LC-SC	108113903
15 Feet, Simplex Yellow Fiber, LC-ST	108108861
20 Feet, Duplex LC-LC Yellow Fiber	108341454
20 Feet, Simplex Yellow Fiber, LC-FC	108153800
20 Feet, Simplex Yellow Fiber, LC-SC	108113911
10 Feet, Simplex Yellow Fiber, LC-FC	108153784

**Table A-34 Yellow Fiber Comcode Information (continued)**

<b>Description</b>	<b>Comcode</b>
100 Feet, Simplex Yellow Fiber, LC-FC	108153933
100 Feet, Simplex Yellow Fiber, LC-SC	108113986
15 Feet, Simplex Yellow Fiber, LC-FC	108153792
20 Feet, Simplex Yellow Fiber, LC-FC	108153800
20 Feet, Simplex Yellow Fiber, LC-ST	108108879
25 Feet, Duplex LC-LC Yellow Fiber	108341462
25 Feet, Simplex Yellow Fiber, LC-FC	108153818
25 Feet, Simplex Yellow Fiber, LC-SC	108113929
25 Feet, Simplex Yellow Fiber, LC-ST	108108887
30 Feet, Duplex LC-LC Yellow Fiber	108341470
30 Feet, Simplex Yellow Fiber, LC-FC	108153826
30 Feet, Simplex Yellow Fiber, LC-SC	108113937
30 Feet, Simplex Yellow Fiber, LC-ST	108108895
35 Feet, Duplex LC-LC Yellow Fiber	108441488
35 Feet, Simplex Yellow Fiber, LC-FC	108153834
35 Feet, Simplex Yellow Fiber, LC-SC	108113945
35 Feet, Simplex Yellow Fiber, LC-ST	108108903
40 Feet, Simplex Yellow Fiber, LC-FC	108153891
40 Feet, Simplex Yellow Fiber, LC-SC	108113952
40 Feet, Simplex Yellow Fiber, LC-ST	108108911
5 Feet, Simplex Yellow Fiber, LC-FC	108153750
5 Feet, Simplex Yellow Fiber, LC-SC	108113861
5 Feet, Simplex Yellow Fiber, LC-ST	108108820
50 Feet, Simplex Yellow Fiber, LC-FC	108153909
50 Feet, Simplex Yellow Fiber, LC-SC	108113960
50 Feet, Simplex Yellow Fiber, LC-ST	108108937
75 Feet, Simplex Yellow Fiber, LC-FC	108153925
75 Feet, Simplex Yellow Fiber, LC-SC	108113978
75 Feet, Simplex Yellow Fiber, LC-ST	108108945
X <sup>1</sup> Feet, Simplex Yellow Fiber, LC-FC	108153941

**Table A-34 Yellow Fiber Comcode Information (continued)**

Description	Comcode
X <sup>1</sup> Feet, Simplex Yellow Fiber, LC-SC	107815912
X <sup>1</sup> Feet, Simplex Yellow Fiber, LC-ST	107815896

**Notes:**

1. Length to be specified when ordering the fiber.





# Appendix B: L-Band Specific Orderable Equipment Comcodes by Item Name

## Overview

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**Purpose** This chapter lists L-Band specific equipment items by name, circuit pack codes and comcodes are included.

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<a href="#">High Speed Broadband (HSBB) (OTU40L)</a>	<a href="#">B-20</a>



## Dispersion Compensation Modules (DCMs)

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**Ordering Information** Refer to [Table B-1, “WaveStar® OLS 1.6T DCM Comcodes” \(B-2\)](#) for a list of DCM comcode(s).

**Table B-1 WaveStar® OLS 1.6T DCM Comcodes**

CP Code	Description	Comcode
DCML-2.5	Fiber Optic DCM — 2.5 km	109054460
DCML-5.0	Fiber Optic DCM — 5.0 km	109054478
DCML-7.5	Fiber Optic DCM — 7.5 km	109054486
DCML-10	Fiber Optic DCM — 10.0 km	109054494
DCML-12.5	Fiber Optic DCM — 12.5 km	109054502
DCML-15	Fiber Optic DCM — 15.0 km	109054510
DCML-17.5	Fiber Optic DCM — 17.5 km	109054528
DCML-20	Fiber Optic DCM — 20.0 km	109054536
DCML-22.5	Fiber Optic DCM — 22.5 km	109054544
DCML-25	Fiber Optic DCM — 25.0 km	109054585
DCML-27.5	Fiber Optic DCM — 27.5 km	109054551
DCM-NZDSF5L <sup>1</sup>	Fiber Optic DCM-5.0 km for NZDSF fiber	109097766
DCM-NZDSF10L <sup>1</sup>	Fiber Optic DCM-10.0 km for NZDSF fiber	109085647
DCM-NZDSF20L <sup>1</sup>	Fiber Optic DCM-20.0 km for NZDSF fiber	109085654

**Table B-1 WaveStar® OLS 1.6T DCM Comcodes (continued)**

<b>CP Code</b>	<b>Description</b>	<b>Comcode</b>
DCM-NZDSF30L <sup>1</sup>	Fiber Optic DCM-30.0 km for NZDSF fiber	109085662
DCM-NZDSF40L <sup>1</sup>	Fiber Optic DCM-40.0 km for NZDSF fiber	109085670
DCM-NZDSF50L <sup>1</sup>	Fiber Optic DCM-50.0 km for NZDSF fiber	109085688
DCM-NZDSF60L	Fiber Optic DCM-60.0 km for NZDSF fiber	109085696
DCM-NZDSF70L <sup>1</sup>	Fiber Optic DCM-70.0 km for NZDSF fiber	109085704
DCM-NZDSF80L	Fiber Optic DCM-80.0 km for NZDSF fiber	109085712
DCM-NZDSF90L <sup>1</sup>	Fiber Optic DCM-90.0 km for NZDSF fiber	109085738
DCM-NZDSF100L	Fiber Optic DCM-100.0 km for NZDSF fiber	109085746

**Notes:**

1. Contact Customer Team for lead time for circuit pack.
2. For DCM information for LS fibers, please contact your account representative.



## Optical Amplifiers

**Ordering Information** Refer to [Table B-2, “Orderable Optical Amplifiers \(L-Band\)” \(B-4\)](#) for a list of comcodes for available OA circuit packs.

**Table B-2 Orderable Optical Amplifiers (L-Band)**

Circuit Pack	Connector	Circuit Pack Code	Comcode
OA1L	LC	WNA031	108653130
	Universal (SC)	WRA031	108653155
OA3L	LC	WNA401	108881640
	Universal (SC)	WRA401	108881665

**Orderable DCMs for OA3L (SSMF)** Refer to for a list of comcodes for available DCMs for OA3L.

Refer to [Table B-3, “Orderable OA3L DCM Comcodes” \(B-4\)](#) for a list of DCM comcode(s).

**Table B-3 Orderable OA3L DCM Comcodes**

CP Code	Description	Comcode
DCM-SSMF2.5L	Fiber Optic DCM — 2.5 km for SSMF fiber	109085753
DCM-SSMF5.0L	Fiber Optic DCM — 5.0 km for SSMF fiber	109085761
DCM-SSMF7.5L	Fiber Optic DCM — 7.5 km for SSMF fiber	109085779
DCM-SSMF10L	Fiber Optic DCM — 10.0 km for SSMF fiber	109085787
DCM-SSMF20L	Fiber Optic DCM — 20.0 km for SSMF fiber	109085795
DCM-SSMF30L	Fiber Optic DCM — 30.0 km for SSMF fiber	109085803
DCM-SSMF40L	Fiber Optic DCM — 40.5 km for SSMF fiber	109085829
DCM-SSMF50L	Fiber Optic DCM — 50.0 km for SSMF fiber	109085837

**Table B-3 Orderable OA3L DCM Comcodes (continued)**

<b>CP Code</b>	<b>Description</b>	<b>Comcode</b>
DCM-SSMF60L	Fiber Optic DCM — 60.0 km for SSMF fiber	109085845
DCM-SSMF70L	Fiber Optic DCM — 70.0 km for SSMF fiber	109085852
DCM-SSMF80L	Fiber Optic DCM — 80.0 km for SSMF fiber	109085860
DCM-SSMF90L <sup>1</sup>	Fiber Optic DCM-90.0 km for SSMF fiber	109085878
DCM-SSMF100L <sup>1</sup>	Fiber Optic DCM-100.0 km for SSMF fiber	109085886

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



## Optical Demultiplexer Units

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**Ordering Information** Refer to [Table B-4, “Orderable Optical Demultiplexer Units \(ODU\)” \(B-6\)](#) for a list of Comcodes for each available ODU.

**Table B-4 Orderable Optical Demultiplexer Units (ODU)**

Circuit Pack	Circuit Pack Code	Comcode
ODU21	WNA204	108892878
ODU22 <sup>1</sup>	WNA205	108892894

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



# Optical Monitor Circuit Pack

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**Ordering Information** Refer to [Table B-5, “WaveStar® OLS 1.6T OMON Comcodes” \(B-7\)](#) for a list of OMON circuit pack comcode(s).

**Table B-5 WaveStar® OLS 1.6T OMON Comcodes**

CP	CP Code	Comcode
OMON1L	WNA020B	109056713



## Optical Multiplexer Units

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**Ordering Information** Refer to [Table B-6, “Orderable OMUs” \(B-8\)](#) for a list of comcodes for each available OMU.

**Table B-6 Orderable OMUs**

Circuit Pack	Circuit Pack Code	Comcode
OMU1L	WNC201	108675273
OMU2L <sup>1</sup>	WNC202	108675281

**Notes:**

1. Contact Customer Team for lead time for circuit pack.



## Drop OTUs

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**Ordering Information** Refer to [Table B-7, “WaveStar® OLS 1.6T OTUD Comcodes” \(B-9\)](#) for a list of Drop OTU circuit pack comcode(s).

**Table B-7 WaveStar® OLS 1.6T OTUD Comcodes**

Application	CP	Connector	CP Code	Comcode
OC-48/STM-16 <sup>1</sup>	OTUD1	LC	WSMD1	108250127
		Universal (SC)	WUMD1	108433004
OC-192/STM-64 <sup>2</sup>	OTUD30	LC	WSYH1	108775339
		Univer-sal(SC)	WUYH1	108775354
HSBB <sup>1</sup>	OTUD40	LC	WSHD1	108564642
		Univer-sal(SC)	WUHD1	108607920

**Notes:**

1. These packs are common for C-Band and L-Band.
2. These packs are L-Band only.



## OTU1L — OC-48/STM-16 with LC Connecters

**Ordering Information** Refer to [Table B-8, “OTU1L \(LC Connector\)” \(B-10\)](#) for ordering information for OTU1L circuit packs with LC Connector.

**Table B-8 OTU1L (LC Connector)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU1L	9020	9040	WNNB01	108691916
OTU1L	8980	9000	WNNB02	108691924
OTU1L	8940	8960	WNNB03	108691932
OTU1L	8900	8920	WNNB04	108691940
OTU1L	8860	8880	WNNB05	108691957
OTU1L	8820	8840	WNNB06	108691965
OTU1L	8780	8800	WNNB07	108691973
OTU1L	8740	8760	WNNB08	108691981
OTU1L	8700	8720	WNNB09	108691999
OTU1L	8660	8680	WNNB10	108692005
OTU1L	9010	9030	WNNB11	108692013
OTU1L	8970	8990	WNNB12	108692021
OTU1L	8930	8950	WNNB13	108692039
OTU1L	8890	8910	WNNB14	108692047
OTU1L	8850	8870	WNNB15	108692054
OTU1L	8810	8830	WNNB16	108692062
OTU1L	8770	8790	WNNB17	108692070
OTU1L	8730	8750	WNNB18	108692088
OTU1L	8690	8710	WNNB19	108692096
OTU1L	8650	8670	WNNB20	108692104

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OTU1L — OC-48/STM-16 with Universal Connectors (SC)

**Ordering Information** Refer to [Table B-9, “OTU1L \[Universal Connector \(SC\)\]” \(B-11\)](#) for ordering information for OTU1L circuit packs with Universal Connectors (SC).

**Table B-9 OTU1L [Universal Connector (SC)]**

CP	Feq1 <sup>1</sup>	Feq2 <sup>1</sup>	CP Code	Comcode
OTU1L	9020	9040	WRNB01	108690488
OTU1L	8980	9000	WRNB02	108690496
OTU1L	8940	8960	WRNB03	108690504
OTU1L	8900	8920	WRNB04	108690512
OTU1L	8860	8880	WRNB05	108690520
OTU1L	8820	8840	WRNB06	108690538
OTU1L	8780	8800	WRNB07	108690546
OTU1L	8740	8760	WRNB08	108690553
OTU1L	8700	8720	WRNB09	108690561
OTU1L	8660	8680	WRNB10	108690579
OTU1L	9010	9030	WRNB11	108690587
OTU1L	8970	8990	WRNB12	108690595
OTU1L	8930	8950	WRNB13	108690603
OTU1L	8890	8910	WRNB14	108690611
OTU1L	8850	8870	WRNB15	108690629
OTU1L	8810	8830	WRNB16	108690637
OTU1L	8770	8790	WRNB17	108690645
OTU1L	8730	8750	WRNB18	108690652
OTU1L	8690	8710	WRNB19	108690660
OTU1L	8650	8670	WRNB20	108690678

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-48/STM-16 Through (OTU2L)

**Ordering Information** Refer to [Table B-10, “OTU2L \(LC Connector\)” \(B-12\)](#) for ordering information for OTU2L circuit packs with LC Connectors.

**Table B-10 OTU2L (LC Connector)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU2L	9020	9040	WNMB01	108702101
OTU2L	8980	9000	WNMB02	108702119
OTU2L	8940	8960	WNMB03	108702127
OTU2L	8900	8920	WNMB04	108702135
OTU2L	8860	8880	WNMB05	108702143
OTU2L	8820	8840	WNMB06	108702150
OTU2L	8780	8800	WNMB07	108702168
OTU2L	8740	8760	WNMB08	108702176
OTU2L	8700	8720	WNMB09	108702184
OTU2L	8660	8680	WNMB10	108702192
OTU2L	9010	9030	WNMB11	108702200
OTU2L	8970	8990	WNMB12	108702218
OTU2L	8930	8950	WNMB13	108702226
OTU2L	8890	8910	WNMB14	108702234
OTU2L	8850	8870	WNMB15	108702242
OTU2L	8810	8830	WNMB16	108702259
OTU2L	8770	8790	WNMB17	108702267
OTU2L	8730	8750	WNMB18	108702275
OTU2L	8690	8710	WNMB19	108702283
OTU2L	8650	8670	WNMB20	108702291

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## OC-192/STM-64 OTUs (OTU30L)

**Ordering Information** Refer to [Table B-11, “OTU30L \(LC Connector\)” \(B-13\)](#) for ordering information for OTU30L circuit packs with LC Connectors.

**Table B-11 OTU30L (LC Connector)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU30L	9020	9040	WNPG01B	109044495
OTU30L	8980	9000	WNPG02B	109044305
OTU30L	8940	8960	WNPG03B	109044313
OTU30L	8900	8920	WNPG04	109044321
OTU30L	8860	8880	WNPG05	109044339
OTU30L	8820	8840	WNPG06	109044347
OTU30L	8780	8800	WNPG07	108707894
OTU30L	8740	8760	WNPG08	108707902
OTU30L	8700	8720	WNPG09	108707910
OTU30L	8660	8680	WNPG10	108707928
OTU30L	9010	9030	WNPG11	108707936
OTU30L	8970	8990	WNPG12	108707944
OTU30L	8930	8950	WNPG13	108707951
OTU30L	8890	8910	WNPG14	108707969
OTU30L	8850	8870	WNPG15	108707977
OTU30L	8810	8830	WNPG16	108707985
OTU30L	8770	8790	WNPG17	108707993
OTU30L	8730	8750	WNPG18	108708009
OTU30L	8690	8710	WNPG19	108708017
OTU30L	8650	8670	WNPG20	108708025
OTU30L	9025	9045	WNPG21B <sup>2</sup>	109044495
OTU30L	8985	9005	WNPG22B <sup>2</sup>	109044503
OTU30L	8945	8965	WNPG23B <sup>2</sup>	109044511
OTU30L	8905	8925	WNPG24B <sup>2</sup>	109044529
OTU30L	8865	8885	WNPG25B <sup>2</sup>	109044537
OTU30L	8825	8845	WNPG26B <sup>2</sup>	109044545

**Table B-11 OTU30L (LC Connector) (continued)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU30L	8785	8805	WNPG27B <sup>2</sup>	109044552
OTU30L	8745	8765	WNPG28B <sup>2</sup>	109044560
OTU30L	8705	8725	WNPG29B <sup>2</sup>	109044578
OTU30L	8665	8685	WNPG30B <sup>2</sup>	109044586
OTU30L	9015	9035	WNPG31B <sup>2</sup>	109044594
OTU30L	8975	8995	WNPG32B <sup>2</sup>	109044602
OTU30L	8935	8955	WNPG33B <sup>2</sup>	109044610
OTU30L	8895	8915	WNPG34B <sup>2</sup>	109044628
OTU30L	8850	8875	WNPG35B <sup>2</sup>	109044636
OTU30L	8815	8835	WNPG36B <sup>2</sup>	109044644
OTU30L	8775	8795	WNPG37B <sup>2</sup>	109044651
OTU30L	8735	8755	WNPG38B <sup>2</sup>	109044669
OTU30L	8695	8715	WNPG39B <sup>2</sup>	109044677
OTU30L	8655	8675	WNPG40B <sup>2</sup>	109044685

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



## OC-192/STM-64 OTUs (OTU30L)

**Ordering Information** Refer to [Table B-12, “OTU30 \(Universal Connector\)” \(B-15\)](#) for ordering information for OTU30L with Universal Connectors (SC).

**Table B-12 OTU30 (Universal Connector)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU30L	9020	9040	WRPG01	109043893
OTU30L	8980	9000	WRPG02	109043901
OTU30L	8940	8960	WRPG03B	109043919
OTU30L	8900	8920	WRPG04B	109043927
OTU30L	8860	8880	WRPG05B	109043935
OTU30L	8820	8840	WRPG06B	109043943
OTU30L	8780	8800	WRPG07B	109043950
OTU30L	8740	8760	WRPG08B	109043968
OTU30L	8700	8720	WRPG09B	109043976
OTU30L	8660	8680	WRPG10B	109043984
OTU30L	9010	9030	WRPG11B	109043992
OTU30L	8970	8990	WRPG12B	109044008
OTU30L	8930	8950	WRPG13B	109044016
OTU30L	8890	8910	WRPG14B	109044024
OTU30L	8850	8870	WRPG15B	109044032
OTU30L	8810	8830	WRPG16B	109044040
OTU30L	8770	8790	WRPG17B	109044057
OTU30L	8730	8750	WRPG18B	109044065
OTU30L	8690	8710	WRPG19B	109044073
OTU30L	8650	8670	WRPG20B	109044081
OTU30L	9025	9045	WRPG21B <sup>2</sup>	109044099
OTU30L	8985	9005	WRPG22B <sup>2</sup>	109044107
OTU30L	8945	8965	WRPG23B <sup>2</sup>	109044115
OTU30L	8905	8925	WRPG24B <sup>2</sup>	109044123
OTU30L	8865	8885	WRPG25B <sup>2</sup>	109044131
OTU30L	8825	8845	WRPG26B <sup>2</sup>	109044149

**Table B-12 OTU30 (Universal Connector) (continued)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU30L	8785	8805	WRPG27B <sup>2</sup>	109044156
OTU30L	8745	8765	WRPG28B <sup>2</sup>	109044164
OTU30L	8705	8725	WRPG29B <sup>2</sup>	109044172
OTU30L	8665	8685	WRPG30B <sup>2</sup>	109044180
OTU30L	9015	9035	WRPG31B <sup>2</sup>	109044198
OTU30L	8975	8995	WRPG32B <sup>2</sup>	109044206
OTU30L	8935	8955	WRPG33B <sup>2</sup>	109044214
OTU30L	8895	8915	WRPG34B <sup>2</sup>	109044222
OTU30L	8850	8875	WRPG35B <sup>2</sup>	109044230
OTU30L	8815	8835	WRPG36B <sup>2</sup>	109044248
OTU30L	8775	8795	WRPG37B <sup>2</sup>	109044255
OTU30L	8735	8755	WRPG38B <sup>2</sup>	109044263
OTU30L	8695	8715	WRPG39B <sup>2</sup>	109044271
OTU30L	8655	8675	WRPG40B <sup>2</sup>	109044289

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



## OC-192/STM-64 Through OTU (OTU31L)

**Ordering Information** Refer to [Table B-13, “OTU31L \(LC Connector\)” \(B-17\)](#) for ordering information for OTU31L circuit packs with LC Connectors.

**Table B-13 OTU31L (LC Connector)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>2</sup>	CP Code	Comcode
OTU31L	9020	9040	WNRG01B	109044768
OTU31L	8980	9000	WNRG02B	109044776
OTU31L	8940	8960	WNRG03B	109044784
OTU31L	8900	8920	WNRG04B	109044792
OTU31L	8860	8880	WNRG05B	109044800
OTU31L	8820	8840	WNRG06B	109044818
OTU31L	8780	8800	WNRG07B	109044826
OTU31L	8740	8760	WNRG08B	109044834
OTU31L	8700	8720	WNRG09B	109044842
OTU31L	8660	8680	WNRG10B	109044859
OTU31L	9010	9030	WNRG11B	109044867
OTU31L	8970	8990	WNRG12B	109044875
OTU31L	8930	8950	WNRG13B	109044883
OTU31L	8890	8910	WNRG14B	109044891
OTU31L	8850	8870	WNRG15B	109044909
OTU31L	8810	8830	WNRG16B	109044917
OTU31L	8770	8790	WNRG17B	109044925
OTU31L	8730	8750	WNRG18B	109044933
OTU31L	8690	8710	WNRG19B	109044941
OTU31L	8650	8670	WNRG20B	109044958
OTU31L	9025	9045	WNRG21B <sup>2</sup>	109044966
OTU31L	8985	9005	WNRG22B <sup>2</sup>	109044974
OTU31L	8945	8965	WNRG23B <sup>2</sup>	109044982
OTU31L	8905	8925	WNRG24B <sup>2</sup>	109044990
OTU31L	8865	8885	WNRG25B <sup>2</sup>	109045005
OTU31L	8825	8845	WNRG26B <sup>2</sup>	109045013

**Table B-13 OTU31L (LC Connector) (continued)**

CP	Freq1 <sup>1</sup>	Freq2 <sup>2</sup>	CP Code	Comcode
OTU31L	8785	8805	WNRG27B <sup>2</sup>	109045021
OTU31L	8745	8765	WNRG28B <sup>2</sup>	109045039
OTU31L	8705	8725	WNRG29B <sup>2</sup>	109045047
OTU31L	8665	8685	WNRG30B <sup>2</sup>	109045054
OTU31L	9015	9035	WNPG31B <sup>2</sup>	109045070
OTU31L	8975	8995	WNRG32B <sup>2</sup>	109045088
OTU31L	8935	8955	WNRG33B <sup>2</sup>	109045096
OTU31L	8895	8915	WNRG34B <sup>2</sup>	109045104
OTU31L	8850	8875	WNRG35B <sup>2</sup>	109045112
OTU31L	8815	8835	WNRG36B <sup>2</sup>	109045120
OTU31L	8775	8795	WNRG37B <sup>2</sup>	109045146
OTU31L	8735	8755	WNRG38B <sup>2</sup>	109045153
OTU31L	8695	8715	WNRG39B <sup>2</sup>	109045161
OTU31L	8655	8675	WNRG40B <sup>2</sup>	109045179

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Contact Customer Team for lead times for circuit packs.



## High Speed Broadband (HSBB) (OTU40L)

**Ordering Information** Refer to [Table B-14, “OTU40L \(LC Connector\)” \(B-19\)](#) for ordering information for OTU40L circuit packs with LC Connectors.

**Table B-14 OTU40L (LC Connector)**

CP	Freq <sup>2</sup> <sup>1</sup>	CP Code	Comcode
OTU40L	9040	WNJB01	108691510
OTU40L	9000	WNJB02	108691528
OTU40L	8960	WNJB03	108691536
OTU40L	8920	WNJB04	108691544
OTU40L	8880	WNJB05	108691551
OTU40L	8840	WNJB06	108691569
OTU40L	8800	WNJB07	108691577
OTU40L	8760	WNJB08	108691585
OTU40L	8720	WNJB09	108691593
OTU40L	8680	WNJB10	108691601
OTU40L	9030	WNJB11	108691619
OTU40L	8990	WNJB12	108691627
OTU40L	8950	WNJB13	108691635
OTU40L	8910	WNJB14	108691643
OTU40L	8870	WNJB15	108691650
OTU40L	8830	WNJB16	108691668
OTU40L	8790	WNJB17	108691676
OTU40L	8750	WNJB18	108691684
OTU40L	8710	WNJB19	108691692
OTU40L	8670	WNJB20	108691700

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.



## High Speed Broadband (HSBB) (OTU40L)

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**Ordering Information** Refer to [Table B-15, “OTU40L \[Universal Connector \(SC\)\]” \(B-20\)](#) for ordering information for OTU40L circuit packs with Universal Connectors (SC).

**Table B-15 OTU40L [Universal Connector (SC)]**

CP	Freq1 <sup>1</sup>	Freq2 <sup>1</sup>	CP Code	Comcode
OTU40L	9020	9040	WRJB01	108691114
OTU40L	8980	9000	WRJB02	108691122
OTU40L	8940	8960	WRJB03	108691130
OTU40L	8900	8920	WRJB04	108691148
OTU40L	8860	8880	WRJB05	108691155
OTU40L	8820	8840	WRJB06	108691163
OTU40L	8780	8800	WRJB07	108691171
OTU40L	8740	8760	WRJB08	108691189
OTU40L	8700	8720	WRJB09	108691197
OTU40L	8660	8680	WRJB10	108691205
OTU40L	9010	9030	WRJB11	108691213
OTU40L	8970	8990	WRJB12	108691221
OTU40L	8930	8950	WRJB13	108691239
OTU40L	8890	8910	WRJB14	108691247
OTU40L	8850	8870	WRJB15	108691254
OTU40L	8810	8830	WRJB16	108691262
OTU40L	8770	8790	WRJB17	108691270
OTU40L	8730	8750	WRJB18	108691288
OTU40L	8690	8710	WRJB19	108691296
OTU40L	8650	8670	WRJB20	108691304

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.





# Appendix C: Orderable Equipment by Comcode

## Overview

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**Purpose** This appendix provides a list of orderable equipment sorted by comcode number.

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# Orderable Equipment by Comcode

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## **Comcodes List**

Table C-1 is a list of orderable equipment sorted numerically by comcode.

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
106708951	0.0 dB LBO with SC Connectors				
106795354	0.0 dB LBO with ST Connectors				
106795404	0.0 dB LBO with FC Connectors				
107815896	X <sup>2</sup> ft Simplex Fiber, LC-ST				
107815912	X <sup>2</sup> ft Simplex Fiber, LC-SC				
108053059	3.0 dB LBO with ST Connectors				
108053075	4.0 dB LBO with ST Connectors				
108053091	5.0 dB LBO with ST Connectors				
108053117	6.0 dB LBO with ST Connectors				
108053174	9.0 dB LBO with ST Connectors				
108053190	10.0 dB LBO with ST Connectors				
108053208	11.0 dB LBO with ST Connectors				
108053240	15.0 dB LBO with ST Connectors				
108053265	18.0 dB LBO with ST Connectors				
108053273	20.0 dB LBO with ST Connectors				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108072489	C1101A-2, SM Duplex Low Profile Adapter				
108107053	3.0 dB LBO with FC Connectors				
108107079	4.0 dB LBO with FC Connectors				
108107095	5.0 dB LBO with FC Connectors				
108107111	6.0 dB LBO with FC Connectors				
108107178	9.0 dB LBO with FC Connectors				
108107194	10.0 dB LBO with FC Connectors				
108107202	11.0 dB LBO with FC Connectors				
108107244	15.0 dB LBO with FC Connectors				
108107269	18.0 dB LBO with FC Connectors				
108107277	20.0 dB LBO with FC Connectors				
108108705	1.67 ft Simplex Fiber, LC-ST				
108108713	4.7 ft Simplex Fiber, LC-ST				
108108812	4 ft Simplex Fiber, LC-ST				
108108820	5 ft Simplex Fiber, LC-ST				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108108838	6 ft Simplex Fiber, LC-ST				
108108846	8 ft Simplex Fiber, LC-ST				
108108853	10 ft Simplex Fiber, LC-ST				
108108861	15 ft Simplex Fiber, LC-ST				
108108879	20 ft Simplex Fiber, LC-ST				
108108887	25 ft Simplex Fiber, LC-ST				
108108895	30 ft Simplex Fiber, LC-ST				
108108903	35 ft Simplex Fiber, LC-ST				
108108911	40 ft Simplex Fiber, LC-ST				
108108937	50 ft Simplex Fiber, LC-ST				
108108945	75 ft Simplex Fiber, LC-ST				
108108960	100 ft Simplex Fiber, LC-ST				
108113853	4 ft Simplex Fiber, LC-SC				
108113861	5 ft Simplex Fiber, LC-SC				
108113879	6 ft Simplex Fiber, LC-SC				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108113887	8 ft Simplex Fiber, LC-SC				
108113895	10 ft Simplex Fiber, LC-SC				
108113903	15 ft Simplex Fiber, LC-SC				
108113911	20 ft Simplex Fiber, LC-SC				
108113929	25 ft Simplex Fiber, LC-SC				
108113937	30 ft Simplex Fiber, LC-SC				
108113945	35 ft Simplex Fiber, LC-SC				
108113952	40 ft Simplex Fiber, LC-SC				
108113960	50 ft Simplex Fiber, LC-SC				
108113978	75 ft Simplex Fiber, LC-SC				
108113986	100 ft Simplex Fiber, LC-SC				
108153727	3 ft Simplex Fiber, LC-FC				
108153735	4.17 ft Simplex Fiber, LC-FC				
108153743	4 ft Simplex Fiber, LC-FC				
108153750	5 ft Simplex Fiber, LC-FC				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108153768	6 ft Simplex Fiber, LC-FC				
108153776	8 ft Simplex Fiber, LC-FC				
108153784	10 ft Simplex Fiber, LC-FC				
108153792	15 ft Simplex Fiber, LC-FC				
108153800	20 ft Simplex Fiber, LC-FC				
108153818	25 ft Simplex Fiber, LC-FC				
108153826	30 ft Simplex Fiber, LC-FC				
108153834	35 ft Simplex Fiber, LC-FC				
108153891	40 ft Simplex Fiber, LC-FC				
108153909	50 ft Simplex Fiber, LC-FC				
108153925	75 ft Simplex Fiber, LC-FC				
108153933	100 ft Simplex Fiber, LC-FC				
108153941	X <sup>2</sup> ft Simplex Fiber, LC-FC				
108249970	Optical Monitor Circuit Pack	OMON1			WSA020
108249988	Optical Amplifier with LC Connectors	OA1			WSA031

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108249996	Optical Amplifier with LC Connectors for WAD Receive	OA1			WSA032
108250077	OC-192/STM-64 Wavelength Add/Drop with LC Connectors	WAD5			WSA305
108250085	OC-192/STM-64 Wavelength Add/Drop with LC Connectors	WAD6			WSA306
108250093	External Interface	EI1			WSB001
108250101	Optical Multiplexer Unit 1	OMU1			WSC201
108250119	Optical Multiplexer Unit 2	OMU2			WSC202 <sup>3</sup>
108250127	OC-48/STM-16 Drop OTU with LC Connectors	OTUD1			WSMD1
108250143	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9560	9580	WSNB01
108250150	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9520	9540	WSNB02
108250168	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9480	9500	WSNB03
108250176	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9440	9460	WSNB04
108250184	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9400	9420	WSNB05

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108250192	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9360	9380	WSNB06
108250200	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9320	9340	WSNB07
108250218	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9380	9300	WSNB08
108250226	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9240	9260	WSNB09
108250234	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9200	9220	WSNB10
108250242	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9550	9570	WSNB11
108250259	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9510	9530	WSNB12
108250267	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9470	9490	WSNB13
108250275	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9430	9450	WSNB14
108250283	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9390	9410	WSNB15
108250291	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9350	9370	WSNB16

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108250309	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9310	9330	WSNB17
108250317	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9270	9290	WSNB18
108250325	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9230	9250	WSNB19
108250333	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9190	9210	WSNB20
108250341	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9565	9585	WSNB21
108250358	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9525	9545	WSNB22
108250366	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9485	9505	WSNB23
108250374	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9445	9465	WSNB24
108250382	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9405	9425	WSNB25
108250390	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9365	9385	WSNB26
108250408	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9325	9345	WSNB27

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108250416	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9285	9305	WSNB28
108250424	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9245	9265	WSNB29
108250432	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9205	9225	WSNB30
108250440	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9555	9575	WSNB31
108250457	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9515	9535	WSNB32
108250465	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9475	9495	WSNB33
108250473	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9435	9455	WSNB34
108250481	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9395	9415	WSNB35
108250499	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9355	9375	WSNB36
108250507	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9315	9335	WSNB37
108250515	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9275	9295	WSNB38

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108250523	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9235	9255	WSNB39
108250531	OC-48/STM-16 Add OTU with LC Connectors	OTU1	9195	9215	WSNB40
108288440	3.5 dB LBO with LC Connectors				
108288457	10.0 dB LBO with LC Connectors				
108288465	7.0 dB LBO with LC Connectors				
108288473	5.0 dB LBO with LC Connectors				
108288481	3.0 dB LBO with LC Connectors				
108314469	3.0 dB LBO with SC Connectors				
108314485	4.0 dB LBO with SC Connectors				
108314501	5.0 dB LBO with SC Connectors				
108314527	6.0 dB LBO with SC Connectors				
108314584	9.0 dB LBO with SC Connectors				
108314600	10.0 dB LBO with SC Connectors				
108341447	15 Feet, Duplex LC-LC Yellow Fiber				
108341454	20 Feet, Duplex LC-LC Yellow Fiber				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108341462	25 Feet, Duplex LC-LC Yellow Fiber				
108341470	30 Feet, Duplex LC-LC Yellow Fiber				
108341488	35 Feet, Duplex LC-LC Yellow Fiber				
108344557	Power Line Filter Assembly for Lucent ETSI Seismic Bays.				
108349432	6.0 dB LBO with LC Connectors				
108349440	2.5 dB LBO with LC Connectors				
108349457	2.0 dB LBO with LC Connectors				
108355363	0.5 dB LBO with LC Connectors				
108355371	1.0 dB LBO with LC Connectors				
108355389	1.5 dB LBO with LC Connectors				
108357963	4.0 dB LBO with LC Connectors				
108357971	4.5 dB LBO with LC Connectors				
108357989	5.5 dB LBO with LC Connectors				
108357997	6.5 dB LBO with LC Connectors				
108358003	7.5 dB LBO with LC Connectors				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108358011	8.0 dB LBO with LC Connectors				
108358029	8.5 dB LBO with LC Connectors				
108358037	9.0 dB LBO with LC Connectors				
108358045	9.5 dB LBO with LC Connectors				
108358078	11.0 dB LBO with LC Connectors				
108358094	12.0 dB LBO with LC Connectors				
108358128	13.0 dB LBO with LC Connectors				
108358144	14.0 dB LBO with LC Connectors				
108358169	15.0 dB LBO with LC Connectors				
108358193	18.0 dB LBO with LC Connectors				
108358201	19.0 dB LBO with LC Connectors				
108358219	20.0 dB LBO with LC Connectors				
108359399	LBO Kit 3 with LC Connectors				
108359407	LBO Kit 2 with LC Connectors				
108359415	LBO Kit 1 with LC Connectors				

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108373820	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9560	9580	WSMB01
108373838	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9520	9540	WSMB02
108373846	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9480	9500	WSMB03
108373853	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9440	9460	WSMB04
108373861	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9400	9420	WSMB05
108373879	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9360	9380	WSMB06
108373887	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9320	9340	WSMB07
108373895	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9280	9300	WSMB08
108373903	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9240	9260	WSMB09
108373911	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9200	9220	WSMB10
108373929	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9550	9570	WSMB11

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108373937	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9510	9530	WSMB12
108373945	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9470	9490	WSMB13
108373952	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9430	9450	WSMB14
108373960	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9390	9410	WSMB15
108373978	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9350	9370	WSMB16
108373986	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9310	9330	WSMB17
108373994	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9270	9290	WSMB18
108374000	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9230	9250	WSMB19
108374018	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9190	9210	WSMB20
108374026	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9565	9585	WSMB21
108374034	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9525	9545	WSMB22

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108374042	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9485	9505	WSMB23
108374059	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9445	9465	WSMB24
108374067	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9405	9425	WSMB25
108374075	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9365	9385	WSMB26
108374083	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9325	9345	WSMB27
108374091	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9285	9305	WSMB28
108374109	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9245	9265	WSMB29
108374117	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9205	9225	WSMB30
108374125	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9555	9575	WSMB31
108374133	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9515	9535	WSMB32
108374141	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9475	9495	WSMB33

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108374158	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9435	9455	WSMB34
108374166	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9395	9415	WSMB35
108374174	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9355	9375	WSMB36
108374182	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9315	9335	WSMB37
108374190	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9275	9295	WSMB38
108374208	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9235	9255	WSMB39
108374216	OC-48/STM-16 Through OTU with LC Connectors	OTU2	9195	9215	WSMB40
108384355	Simplex Red Fiber Kit for 2 Fiber Repeater				
108385493	1.2 dB LBO with FC Connectors				
108385501	2.0 dB LBO with FC Connectors				
108402595	Fiber Optic DCM — 2.5 km				DCM-2.5
108402603	Fiber Optic DCM — 5.0 km				DCM-5.0
108402611	Fiber Optic DCM — 7.5 km				DCM-7.5

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108402629	Fiber Optic DCM — 10.0 km				DCM-10
108402637	Fiber Optic DCM — 20.0 km				DCM-20
108402645	Fiber Optic DCM — 30.0 km				DCM-30
108402652	Fiber Optic DCM — 40.0 km				DCM-40
108402660	Fiber Optic DCM — 50.0 km				DCM-50
108402678	Fiber Optic DCM — 60.0 km				DCM-60
108402686	Fiber Optic DCM — 70.0 km				DCM-70
108402694	Fiber Optic DCM — 80.0 km				DCM-80
108402702	Fiber Optic DCM — 90.0 km				DCM-90
109085753	Fiber Optic DCM for SSMF— 2.5 km				DCM-SSMF2.5L
109085761	Fiber Optic DCM for SSMF— 5.0 km				DCM-SSMF5L
109085779	Fiber Optic DCM for SSMF— 7.5 km				DCM-SSMF7.5L
109085787	Fiber Optic DCM for SSMF— 10.0 km				DCM-SSMF10L
109085795	Fiber Optic DCM for SSMF— 20.0 km				DCM-SSMF20L
109085803	Fiber Optic DCM for SSMF— 30.0 km				DCM-SSMF30L

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109085829	Fiber Optic DCM for SSMF — 40.0 km				DCM-SSMF40L
109085837	Fiber Optic DCM for SSMF — 50.0 km				DCM-SSMF50L
109085845	Fiber Optic DCM for SSMF — 60.0 km				DCM-SSMF60L
109085852	Fiber Optic DCM for SSMF — 70.0 km				DCM-SSMF70L
109085860	Fiber Optic DCM for SSMF— 80.0 km				DCM-SSMF80L
109085878	Fiber Optic DCM for SSMF — 90.0 km				DCM-SSMF90L
109085886	Fiber Optic DCM for SSMF— 100.0 km				DCM-SSMF100L
108408352	15 Feet, Duplex LC-LC Yellow Fiber Kit				
108408360	20 Feet, Duplex LC-LC Yellow Fiber Kit				
108408378	25 Feet, Duplex LC-LC Yellow Fiber Kit				
108408386	30 Feet, Duplex LC-LC Yellow Fiber Kit				
108408394	35 Feet, Duplex LC-LC Yellow Fiber Kit				
108410275	Supervisory Pack with Long Reach Transmitter	SUPVY3			WSA012

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108433004	OC-48/STM-16 Drop OTU with Universal Connectors (SC)	OTUD1			WUMD1
108433046	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9560	9580	WUNB01
108433053	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9520	9540	WUNB02
108433061	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9480	9500	WUNB03
108433079	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9440	9460	WUNB04
108433087	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9400	9420	WUNB05
108433095	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9360	9380	WUNB06
108433103	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9320	9340	WUNB07
108433111	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9380	9300	WUNB08
108433129	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9240	9260	WUNB09
108433137	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9200	9220	WUNB10

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108433145	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9550	9570	WUNB11
108433152	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9510	9530	WUNB12
108433160	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9470	9490	WUNB13
108433194	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9350	9370	WUNB16
108433178	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9430	9450	WUNB14
108433186	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9390	9410	WUNB15
108433202	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9310	9330	WUNB17
108433210	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9270	9290	WUNB18
108433228	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9230	9250	WUNB19
108433236	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9190	9210	WUNB20
108433244	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9565	9585	WUNB21

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108433251	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9525	9545	WUNB22
108433269	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9485	9505	WUNB23
108433277	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9445	9465	WUNB24
108433285	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9405	9425	WUNB25
108433293	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9365	9385	WUNB26
108433301	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9325	9345	WUNB27
108433319	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9285	9305	WUNB28
108433327	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9245	9265	WUNB29
108433335	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9205	9225	WUNB30
108433343	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9555	9575	WUNB31
108433350	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9515	9535	WUNB32

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108433368	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9475	9495	WUNB33
108433376	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9435	9455	WUNB34
108433384	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9395	9415	WUNB35
108433392	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9355	9375	WUNB36
108433400	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9315	9335	WUNB37
108433426	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9275	9295	WUNB38
108433434	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9235	9255	WUNB39
108433442	OC-48/STM-16 Add OTU with Universal Connectors (SC)	OTU1	9195	9215	WUNB40
108440496	11.0 dB LBO with SC Connectors	—	—	—	—
108440538	15.0 dB LBO with SC Connectors	—	—	—	—
108440553	18.0 dB LBO with SC Connectors	—	—	—	—
108440561	20.0 dB LBO with SC Connectors	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108463522	16.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463548	20.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463555	22.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463589	25.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463605	26.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463621	27.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463639	28.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463654	31.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463670	32.7 in Simplex LC-LC Red Fiber	—	—	—	—
108463696	33.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463738	35.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463811	38.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463829	40.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463886	47.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463894	51.5 in Simplex LC-LC Red Fiber	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108463910	53.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463928	55.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463936	58.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463969	60.0 in Simplex LC-LC Red Fiber	—	—	—	—
108463977	61.5 in Simplex LC-LC Red Fiber	—	—	—	—
108463993	63.5 in Simplex LC-LC Red Fiber	—	—	—	—
108464009	68.5 in Simplex LC-LC Red Fiber	—	—	—	—
108464025	72.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464033	85.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464041	100.5 in Simplex LC-LC Red Fiber	—	—	—	—
108464058	104.5 in Simplex LC-LC Red Fiber	—	—	—	—
108464066	108.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464074	110.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464082	112.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464090	114.0 in Simplex LC-LC Red Fiber	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108464108	127.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464116	132.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464124	137.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464132	158.0 in Simplex LC-LC Red Fiber	—	—	—	—
108464140	162.0 in Simplex LC-LC Red Fiber	—	—	—	—
108534785	Supervisory Pack 1B	SUPVY1B	—	—	WSA013
108538760	1.2 dB LBO with SC Connectors	—	—	—	—
108538778	2.0 dB LBO with SC Connectors	—	—	—	—
108563941	High Speed Broadband Add OTU with LC Connectors	OTU40	9560	9580	WSJB01
108563958	High Speed Broadband Add OTU with LC Connectors	OTU40	9520	9540	WSJB02
108563966	High Speed Broadband Add OTU with LC Connectors	OTU40	9480	9500	WSJB03
108563974	High Speed Broadband Add OTU with LC Connectors	OTU40	9440	9460	WSJB04
108563982	High Speed Broadband Add OTU with LC Connectors	OTU40	9400	9420	WSJB05

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108563990	High Speed Broadband Add OTU with LC Connectors	OTU40	9360	9380	WSJB06
108564006	High Speed Broadband Add OTU with LC Connectors	OTU40	9320	9340	WSJB07
108564014	High Speed Broadband Add OTU with LC Connectors	OTU40	9280	9300	WSJB08
108564022	High Speed Broadband Add OTU with LC Connectors	OTU40	9240	9260	WSJB09
108564030	High Speed Broadband Add OTU with LC Connectors	OTU40	9200	9220	WSJB10
108564048	High Speed Broadband Add OTU with LC Connectors	OTU40	9550	9570	WSJB11
108564055	High Speed Broadband Add OTU with LC Connectors	OTU40	9510	9530	WSJB12
108564063	High Speed Broadband Add OTU with LC Connectors	OTU40	9470	9490	WSJB13
108564071	High Speed Broadband Add OTU with LC Connectors	OTU40	9430	9450	WSJB14
108564089	High Speed Broadband Add OTU with LC Connectors	OTU40	9390	9410	WSJB15
108564097	High Speed Broadband Add OTU with LC Connectors	OTU40	9350	9370	WSJB16

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108564105	High Speed Broadband Add OTU with LC Connectors	OTU40	9310	9330	WSJB17
108564113	High Speed Broadband Add OTU with LC Connectors	OTU40	9270	9290	WSJB18
108564121	High Speed Broadband Add OTU with LC Connectors	OTU40	9230	9250	WSJB19
108564139	High Speed Broadband Add OTU with LC Connectors	OTU40	9190	9210	WSJB20
108564147	High Speed Broadband Add OTU with LC Connectors	OTU40	9565	9895	WSJB21
108564154	High Speed Broadband Add OTU with LC Connectors	OTU40	9525	9545	WSJB22
108564162	High Speed Broadband Add OTU with LC Connectors	OTU40	9485	9505	WSJB23
108564170	High Speed Broadband Add OTU with LC Connectors	OTU40	9445	9465	WSJB24
108564188	High Speed Broadband Add OTU with LC Connectors	OTU40	9405	9425	WSJB25
108564196	High Speed Broadband Add OTU with LC Connectors	OTU40	9365	9385	WSJB26
108564204	High Speed Broadband Add OTU with LC Connectors	OTU40	9325	9345	WSJB27

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108564212	High Speed Broadband Add OTU with LC Connectors	OTU40	9285	9305	WSJB28
108564220	High Speed Broadband Add OTU with LC Connectors	OTU40	9245	9265	WSJB29
108564238	High Speed Broadband Add OTU with LC Connectors	OTU40	9205	9225	WSJB30
108564246	High Speed Broadband Add OTU with LC Connectors	OTU40	9555	9575	WSJB31
108564253	High Speed Broadband Add OTU with LC Connectors	OTU40	9515	9535	WSJB32
108564261	High Speed Broadband Add OTU with LC Connectors	OTU40	9475	9495	WSJB33
108564279	High Speed Broadband Add OTU with LC Connectors	OTU40	9435	9455	WSJB34
108564287	High Speed Broadband Add OTU with LC Connectors	OTU40	9395	9415	WSJB35
108564295	High Speed Broadband Add OTU with LC Connectors	OTU40	9355	9375	WSJB36
108564303	High Speed Broadband Add OTU with LC Connectors	OTU40	9315	9335	WSJB37
108564311	High Speed Broadband Add OTU with LC Connectors	OTU40	9275	9295	WSJB38

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108564329	High Speed Broadband Add OTU with LC Connectors	OTU40	9235	9255	WSJB39
108564337	High Speed Broadband Add OTU with LC Connectors	OTU40	9195	9215	WSJB40
108564642	High Speed Broadband Drop OTU with LC Connectors	OTUD40	—	—	WSHD1
108572199	1.2 dB LBO with ST Connectors	—	—	—	—
108572207	2.0 dB LBO with ST Connectors	—	—	—	—
108586173	OC-192/STM-64 Wavelength Add/Drop with Universal Connectors (SC)	WAD5	—	—	WUA305
108586181	OC-192/STM-64 Wavelength Add/Drop with Universal Connectors (SC)	WAD6	—	—	WUA306
108588815	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9560	9580	WUJB01
108588823	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9520	9540	WUJB02
108588831	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9480	9500	WUJB03

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108588849	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9440	9460	WUJB04
108588856	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9400	9420	WUJB05
108588872	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9360	9380	WUJB06
108588880	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9320	9340	WUJB07
108588898	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9380	9300	WUJB08
108588906	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9240	9260	WUJB09
108588922	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9200	9220	WUJB10
108588930	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9550	9570	WUJB11
108588948	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9510	9530	WUJB12

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108588955	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9470	9490	WUJB13
108588963	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9430	9450	WUJB14
108588971	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9390	9410	WUJB15
108588989	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9350	9370	WUJB16
108588997	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9310	9330	WUJB17
108589003	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9270	9290	WUJB18
108589011	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9230	9250	WUJB19
108589029	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9190	9210	WUJB20
108589037	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9565	9585	WUJB21

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108589045	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9525	9545	WUJB22
108589052	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9485	9505	WUJB23
108589060	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9445	9465	WUJB24
108589078	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9405	9425	WUJB25
108589086	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9365	9385	WUJB26
108589094	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9325	9345	WUJB27
108589110	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9285	9305	WUJB28
108589128	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9245	9265	WUJB29
108589136	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9205	9225	WUJB30

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108589144	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9555	9575	WUJB31
108589151	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9515	9535	WUJB32
108589169	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9475	9495	WUJB33
108589177	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9435	9455	WUJB34
108589185	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9395	9415	WUJB35
108589193	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9355	9375	WUJB36
108589201	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9315	9335	WUJB37
108589219	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9275	9295	WUJB38
108589227	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9235	9255	WUJB39

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108589235	High Speed Broadband OTU with Universal Connectors (SC)	OTU40	9195	9215	WUJB40
108595828	Optical Amplifier with Universal Connectors (SC)	OA1	—	—	WUA031
108607193	102.0 in Simplex LC-LC Red Fiber	—	—	—	—
108607207	106.0 in Simplex LC-LC Red Fiber	—	—	—	—
108607219	122.0 in Simplex LC-LC Red Fiber	—	—	—	—
108607227	151.0 in Simplex LC-LC Red Fiber	—	—	—	—
108607243	155.0 in Simplex LC-LC Red Fiber	—	—	—	—
108607250	20.5 in Simplex LC-FC Red Fiber	—	—	—	—
108607268	20.5 in Simplex LC-SC Red Fiber	—	—	—	—
108607276	20.5 in Simplex LC-ST Red Fiber	—	—	—	—
108607284	26.5 in Simplex LC-FC Red Fiber	—	—	—	—
108607292	26.5 in Simplex LC-SC Red Fiber	—	—	—	—
108607300	26.5 in Simplex LC-ST Red Fiber	—	—	—	—
108607318	28.5 in Simplex LC-FC Red Fiber	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108607326	28.5 in Simplex LC-SC Red Fiber	—	—	—	—
108607334	28.5 in Simplex LC-ST Red Fiber	—	—	—	—
108607342	32.7 in Simplex LC-FC Red Fiber	—	—	—	—
108607359	32.7 in Simplex LC-SC Red Fiber	—	—	—	—
108607367	32.7 in Simplex LC-ST Red Fiber	—	—	—	—
108607508	33.5 in Simplex LC-FC Red Fiber	—	—	—	—
108607516	33.5 in Simplex LC-SC Red Fiber	—	—	—	—
108607524	33.5 in Simplex LC-ST Red Fiber	—	—	—	—
108607532	65.0 in Simplex LC-LC Red Fiber	—	—	—	—
108607540	85.0 in Simplex LC-SC Red Fiber	—	—	—	—
108607565	85.0 in Simplex LC-FC Red Fiber	—	—	—	—
108607573	85.0 in Simplex LC-ST Red Fiber	—	—	—	—
108607920	High Speed Broadband Drop OTU with Universal Connectors (SC)	OTUD40	—	—	WUHD1
108615808	Simplex Red Fiber Kit for 2 Fiber End Terminal	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108615881	Simplex Red Fiber Kit for 2 Fiber Ring Terminal	—	—	—	—
108615899	Simplex Red Fiber Kit for 2 Fiber WAD Terminal	—	—	—	—
108627902	23.0 in Simplex LC-LC Red Fiber	—	—	—	—
108627928	45.5 in Simplex LC-LC Red Fiber	—	—	—	—
108627944	50.0 in Simplex LC-LC Red Fiber	—	—	—	—
108627951	55.0 in Simplex LC-LC Red Fiber	—	—	—	—
108653130	OA1L (L-Band) with LC Connectors	OA1L	—	—	WNA031
108653155	OA1L (L-Band) with Universal (SC) Connectors	OA1L	—	—	WRA031
108881640	OA3L (L-Band) with LC Connectors	OA3L	—	—	WNA401
108881665	OA3L (L-Band) with Universal (SC) Connectors	OA3L	—	—	WRA401
108653163	SUPVY1L (L-Band)	SUPVY1L	—	—	WNA010
108653171	OMON1L (L-Band)	OMON1L	—	—	WNA020
108655937	Bay, Overhead, and System Controller	BOS2	—	—	WSA002
108675273	OMU1L (L-Band)	OMU1L	—	—	WNC201
108675281	OMU2L (L-Band)	OMU2L	—	—	WNC202 <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108690488	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	9020	9040	WRNB01
108690496	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8980	9000	WRNB02
108690504	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8940	8960	WRNB03
108690512	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8900	8920	WRNB04
108690520	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8860	8880	WRNB05
108690538	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8820	8840	WRNB06
108690546	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8780	8800	WRNB07
108690553	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8740	8760	WRNB08
108690561	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8700	8720	WRNB09

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108690579	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8660	8680	WRNB10
108690587	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	9010	9030	WRNB11
108690595	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8970	8990	WRNB12
108690603	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8930	8950	WRNB13
108690611	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8890	8910	WRNB14
108690629	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8850	8870	WRNB15
108690637	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8810	8830	WRNB16
108690645	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8770	8790	WRNB17
108690652	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8730	8750	WRNB18

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108690660	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8690	8710	WRNB19
108690678	OC-48/STM-16 OTU1L with Universal (SC) Connectors	OTU1L	8650	8670	WRNB20
108691114	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	9020	9040	WRJB01
108691122	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8980	9000	WRJB02
108691130	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8940	8960	WRJB03
108691148	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8900	8920	WRJB04
108691155	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8860	8880	WRJB05

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108691163	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8820	8840	WRJB06
108691171	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8780	8800	WRJB07
108691189	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8740	8760	WRJB08
108691197	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8700	8720	WRJB09
108691205	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8660	8680	WRJB10
108691213	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	9010	9030	WRJB11
108691221	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8970	8990	WRJB12

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108691239	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8930	8950	WRJB13
108691247	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8890	8910	WRJB14
108691254	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8850	8870	WRJB15
108691262	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8810	8830	WRJB16
108691270	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8770	8790	WRJB17
108691288	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8730	8750	WRJB18
108691296	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8690	8710	WRJB19

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108691304	High Speed Broadband (HSBB) (OTU40L) with Universal (SC) Connectors	OTU40L	8650	8670	WRJB20
108691510	High Speed Broadband OTU with LC Connectors	OTU40L	9020	9040	WNJB01
108691528	High Speed Broadband OTU with LC Connectors	OTU40L	8980	9000	WNJB02
108691536	High Speed Broadband OTU with LC Connectors	OTU40L	8940	8960	WNJB03
108691544	High Speed Broadband OTU with LC Connectors	OTU40L	8900	8920	WNJB04
108691551	High Speed Broadband OTU with LC Connectors	OTU40L	8860	8880	WNJB05
108691569	High Speed Broadband OTU with LC Connectors	OTU40L	8820	8840	WNJB06
108691577	High Speed Broadband OTU with LC Connectors	OTU40L	8780	8800	WNJB07
108691585	High Speed Broadband OTU with LC Connectors	OTU40L	8740	8760	WNJB08
108691593	High Speed Broadband OTU with LC Connectors	OTU40L	8700	8720	WNJB09

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108691601	High Speed Broadband OTU with LC Connectors	OTU40L	8660	8680	WNJB10
108691619	High Speed Broadband OTU with LC Connectors	OTU40L	9010	9030	WNJB11
108691627	High Speed Broadband OTU with LC Connectors	OTU40L	8970	8990	WNJB12
108691635	High Speed Broadband OTU with LC Connectors	OTU40L	8930	8950	WNJB13
108691643	High Speed Broadband OTU with LC Connectors	OTU40L	8890	8910	WNJB14
108691650	High Speed Broadband OTU with LC Connectors	OTU40L	8850	8870	WNJB15
108691668	High Speed Broadband OTU with LC Connectors	OTU40L	8810	8830	WNJB16
108691676	High Speed Broadband OTU with LC Connectors	OTU40L	8770	8790	WNJB17
108691684	High Speed Broadband OTU with LC Connectors	OTU40L	8730	8750	WNJB18
108691692	High Speed Broadband OTU with LC Connectors	OTU40L	8690	8710	WNJB19
108691700	High Speed Broadband OTU with LC Connectors	OTU40L	8650	8670	WNJB20

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108691916	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	9020	9040	WNNB01
108691924	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8980	9000	WNNB02
108691932	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8940	8960	WNNB03
108691940	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8900	8920	WNNB04
108691957	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8860	8880	WNNB05
108691965	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8820	8840	WNNB06
108691973	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8780	8800	WNNB07
108691981	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8740	8760	WNNB08
108691999	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8700	8720	WNNB09
108692005	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8660	8680	WNNB10
108692013	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	9010	9030	WNNB11

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108692021	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8970	8990	WNNB12
108692039	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8930	8950	WNNB13
108692047	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8890	8910	WNNB14
108692054	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8850	8870	WNNB15
108692062	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8810	8830	WNNB16
108692070	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8770	8790	WNNB17
108692088	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8730	8750	WNNB18
108692096	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8690	8710	WNNB19
108692104	OC-48/STM-16 (OTU1L) with LC Connector	OTU1L	8650	8670	WNNB20
109044768	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	9020	9040	WNRG01B
109044776	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8980	9000	WNRG02B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044784	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8940	8960	WNRG03B
109044792	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8900	8920	WNRG04B
109044800	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8860	8880	WNRG05B
109044818	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8820	8840	WNRG06B
109044826	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8780	8800	WNRG07B
109044834	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8740	8760	WNRG08B
109044842	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8700	8720	WNRG09B
109044859	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8660	8680	WNRG10B
109044867	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	9010	9030	WNRG11B
109044875	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8970	8990	WNRG12B
109044883	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8930	8950	WNRG13B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044891	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8890	8910	WNRG14B
109044909	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8850	8870	WNRG15B
109044917	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8810	8830	WNRG16B
109044925	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8770	8790	WNRG17B
109044933	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8730	8750	WNRG18B
109044941	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8690	8710	WNRG19B
109044958	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8650	8670	WNRG20B
108702101	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	9020	9040	WNMB01
108702119	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8980	9000	WNMB02
108702127	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8940	8960	WNMB03
108702135	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8900	8920	WNMB04

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108702143	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8860	8880	WNMB05
108702150	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8820	8840	WNMB06
108702168	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8780	8800	WNMB07
108702176	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8740	8760	WNMB08
108702184	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8700	8720	WNMB09
108702192	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8660	8680	WNMB10
108702200	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	9010	9030	WNMB11
108702218	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8970	8990	WNMB12
108702226	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8930	8950	WNMB13
108702234	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8890	8910	WNMB14
108702242	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8850	8870	WNMB15

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108702259	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8810	8830	WNMB16
108702267	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8770	8790	WNMB17
108702275	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8730	8750	WNMB18
108702283	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8690	8710	WNMB19
108702291	OC-48/STM-16 Through (OTU2L) with LC Connector	OTU2L	8650	8670	WNMB20
109044495	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	9020	9040	WNPG01B
109044305	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8980	9000	WNPG02B
109044313	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8940	8960	WNPG03B
109044321	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8900	8920	WNPG04
109044339	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8860	8880	WNPG05
109044347	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8820	8840	WNPG06

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108707894	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8780	8800	WNPG07
108707902	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8740	8760	WNPG08
108707910	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8700	8720	WNPG09
108707928	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8660	8680	WNPG10
108707936	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	9010	9030	WNPG11
108707944	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8970	8990	WNPG12
108707951	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8930	8950	WNPG13
108707969	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8890	8910	WNPG14
108707977	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8850	8870	WNPG15
108707985	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8810	8830	WNPG16
108707993	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8770	8790	WNPG17

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108708009	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8730	8750	WNPG18
108708017	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8690	8710	WNPG19
108708025	OC-192/STM-64 (OTU30L) with LC connector	OTU30L	8650	8670	WNPG20
109043893	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	9020	9040	WRPG01B
109043901	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8980	9000	WRPG02B
109043919	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8940	8960	WRPG03B
109043927	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8900	8920	WRPG04B
109043935	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8860	8880	WRPG05B
109043943	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8820	8840	WRPG06B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043950	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8780	8800	WRPG07B
109043968	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8740	8760	WNPG08
109043976	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8700	8720	WRPG09B
109043984	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8660	8680	WRPG10B
109043992	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	9010	9030	WRPG11B
109044008	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8970	8990	WRPG12B
109044016	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8930	8950	WRPG13B
109044024	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8890	8910	WRPG14B
109044032	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8850	8870	WRPG15B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044040	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8810	8830	WRPG16B
109044057	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8770	8790	WRPG17B
109044065	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8730	8750	WRPG18B
109044073	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8690	8710	WRPG19B
109044081	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connector	OTU30L	8650	8670	WRPG20B
108711821	Optical Demultiplexer 1	ODU1C	—	—	WSA204
108711839	Optical Demultiplexer 2	ODU2C	—	—	WSA205 <sup>3</sup>
108714163	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9565	9585	WUPG21
108714171	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9525	9545	WUPG22
108714189	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9485	9505	WUPG23

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108714197	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9445	9465	WUPG24
108714205	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9405	9425	WUPG25
108714213	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9365	9385	WUPG26
108714221	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9325	9345	WUPG27
108714239	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9285	9305	WUPG28
108714247	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9245	9265	WUPG29
108714254	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9205	9225	WUPG30
108714262	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9555	9575	WUPG31
108714270	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9515	9535	WUPG32
108714288	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9475	9495	WUPG33
108714304	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9435	9455	WUPG34

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108714312	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9395	9415	WUPG35
108714320	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9355	9375	WUPG36
108714338	OC-192/STM-64 Add OTU with Universal Connectors (SC)	OTU30	9315	9335	WUPG37
108728973	Universal LBO Kit 1, UST1	UST1	—	—	—
108728981	Universal LBO Kit 2, USC1	USC1	—	—	—
108728999	Universal LBO Kit 3, UFC1	UFC1	—	—	—
108748914	C+L Separator/Combiner Single with LC Connectors	CLSC- S	—	—	WSA142
108748930	C+L Separator/Combiner Double with LC Connectors	CLSC - D	—	—	WSA143
108749284	C+L Separator/Combiner Single with Universal Connectors (SC)	CLSC - S	—	—	WSA142
108749292	C+L Separator/Combiner Double with Universally Connectors (SC)	CLSC - D	—	—	WSA143

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108762667	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9525	9545	WSRG22
108762675	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9485	9505	WSRG23
108762683	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9445	9465	WSRG24
108762691	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9405	9425	WSRG25
108762709	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9365	9385	WSRG26
108762725	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9325	9345	WSRG27
108762733	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9285	9305	WSRG28
108762741	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9245	9265	WSRG29
108762758	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9205	9225	WSRG30
108762766	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9555	9575	WSRG31
108762774	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9515	9535	WSRG32

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108762782	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9475	9495	WSRG33
108762790	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9435	9455	WSRG34
108762808	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9395	9415	WSRG35
108762816	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9355	9375	WSRG36
108762824	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9315	9335	WSRG37
108762857	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9275	9295	WSRG38
108762865	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9235	9255	WSRG39
108762873	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9195	9215	WSRG40
108762659	OC-192/STM-64 Through OTU with LC Connectors	OTU31	9565	9585	WSRG21
109076935	OC-192/STM-64 Drop OTU (OTUD30) with LC Connectors	OTUD30	—	—	WSYH1
109076935	OC-192/STM-64 Drop OTU (OTUD30) with Universal (SC) Connectors	OTUD30	—	—	WUYH1

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108780909	4:1 10G MUX OTU with LC Connector	OTU70	9585	—	WS2A01 <sup>3</sup>
108780933	4:1 10G MUX OTU with LC Connector	OTU70	9580	—	WS2A02 <sup>3</sup>
108780941	4:1 10G MUX OTU with LC Connector	OTU70	9575	—	WS2A03 <sup>3</sup>
108780958	4:1 10G MUX OTU with LC Connector	OTU70	9570	—	WS2A04 <sup>3</sup>
108780966	4:1 10G MUX OTU with LC Connector	OTU70	9565	—	WS2A05 <sup>3</sup>
108780974	4:1 10G MUX OTU with LC Connector	OTU70	9560	—	WS2A06 <sup>3</sup>
108780982	4:1 10G MUX OTU with LC Connector	OTU70	9555	—	WS2A07 <sup>3</sup>
108780990	4:1 10G MUX OTU with LC Connector	OTU70	9550	—	WS2A08 <sup>3</sup>
108781006	4:1 10G MUX OTU with LC Connector	OTU70	9545	—	WS2A09 <sup>3</sup>
108781030	4:1 10G MUX OTU with LC Connector	OTU70	9540	—	WS2A10 <sup>3</sup>
108781048	4:1 10G MUX OTU with LC Connector	OTU70	9535	—	WS2A11 <sup>3</sup>
108781055	4:1 10G MUX OTU with LC Connector	OTU70	9530	—	WS2A12 <sup>3</sup>
108781063	4:1 10G MUX OTU with LC Connector	OTU70	9525	—	WS2A13 <sup>3</sup>
108781071	4:1 10G MUX OTU with LC Connector	OTU70	9520	—	WS2A14 <sup>3</sup>
108781089	4:1 10G MUX OTU with LC Connector	OTU70	9515	—	WS2A15 <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108781097	4:1 10G MUX OTU with LC Connector	OTU70	9510	—	WS2A16 <sup>3</sup>
108781105	4:1 10G MUX OTU with LC Connector	OTU70	9505	—	WS2A17 <sup>3</sup>
108781113	4:1 10G MUX OTU with LC Connector	OTU70	9500	—	WS2A18 <sup>3</sup>
108781121	4:1 10G MUX OTU with LC Connector	OTU70	9495	—	WS2A19 <sup>3</sup>
108781139	4:1 10G MUX OTU with LC Connector	OTU70	9490	—	WS2A20 <sup>3</sup>
108781147	4:1 10G MUX OTU with LC Connector	OTU70	9485	—	WS2A21 <sup>3</sup>
108781154	4:1 10G MUX OTU with LC Connector	OTU70	9480	—	WS2A22 <sup>3</sup>
108781162	4:1 10G MUX OTU with LC Connector	OTU70	9475	—	WS2A23 <sup>3</sup>
108781170	4:1 10G MUX OTU with LC Connector	OTU70	9470	—	WS2A24 <sup>3</sup>
108781188	4:1 10G MUX OTU with LC Connector	OTU70	9465	—	WS2A25 <sup>3</sup>
108781196	4:1 10G MUX OTU with LC Connector	OTU70	9460	—	WS2A26 <sup>3</sup>
108781204	4:1 10G MUX OTU with LC Connector	OTU70	9455	—	WS2A27 <sup>3</sup>
108781212	4:1 10G MUX OTU with LC Connector	OTU70	9450	—	WS2A28 <sup>3</sup>
108781220	4:1 10G MUX OTU with LC Connector	OTU70	9445	—	WS2A29 <sup>3</sup>
108781238	4:1 10G MUX OTU with LC Connector	OTU70	9440	—	WS2A30 <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108781246	4:1 10G MUX OTU with LC Connector	OTU70	9435	—	WS2A31 <sup>3</sup>
108781253	4:1 10G MUX OTU with LC Connector	OTU70	9430	—	WS2A32 <sup>3</sup>
108781261	4:1 10G MUX OTU with LC Connector	OTU70	9425	—	WS2A33 <sup>3</sup>
108781279	4:1 10G MUX OTU with LC Connector	OTU70	9420	—	WS2A34 <sup>3</sup>
108781287	4:1 10G MUX OTU with LC Connector	OTU70	9415	—	WS2A35 <sup>3</sup>
108781295	4:1 10G MUX OTU with LC Connector	OTU70	9410	—	WS2A36 <sup>3</sup>
108781303	4:1 10G MUX OTU with LC Connector	OTU70	9405	—	WS2A37 <sup>3</sup>
108781311	4:1 10G MUX OTU with LC Connector	OTU70	9400	—	WS2A38 <sup>3</sup>
108781329	4:1 10G MUX OTU with LC Connector	OTU70	9395	—	WS2A39 <sup>3</sup>
108781337	4:1 10G MUX OTU with LC Connector	OTU70	9390	—	WS2A40 <sup>3</sup>
108781345	4:1 10G MUX OTU with LC Connector	OTU70	9385	—	WS2A41 <sup>3</sup>
108781352	4:1 10G MUX OTU with LC Connector	OTU70	9380	—	WS2A42 <sup>3</sup>
108781360	4:1 10G MUX OTU with LC Connector	OTU70	9375	—	WS2A43 <sup>3</sup>
108781378	4:1 10G MUX OTU with LC Connector	OTU70	9370	—	WS2A44 <sup>3</sup>
108781386	4:1 10G MUX OTU with LC Connector	OTU70	9365	—	WS2A45 <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108781394	4:1 10G MUX OTU with LC Connector	OTU70	9360	—	WS2A46 <sup>3</sup>
108781402	4:1 10G MUX OTU with LC Connector	OTU70	9355	—	WS2A47 <sup>3</sup>
108781410	4:1 10G MUX OTU with LC Connector	OTU70	9350	—	WS2A48 <sup>3</sup>
108781428	4:1 10G MUX OTU with LC Connector	OTU70	9345	—	WS2A49 <sup>3</sup>
108781436	4:1 10G MUX OTU with LC Connector	OTU70	9340	—	WS2A50 <sup>3</sup>
108781444	4:1 10G MUX OTU with LC Connector	OTU70	9335	—	WS2A51 <sup>3</sup>
108781451	4:1 10G MUX OTU with LC Connector	OTU70	9330	—	WS2A52 <sup>3</sup>
108781469	4:1 10G MUX OTU with LC Connector	OTU70	9325	—	WS2A53 <sup>3</sup>
108781477	4:1 10G MUX OTU with LC Connector	OTU70	9320	—	WS2A54 <sup>3</sup>
108781485	4:1 10G MUX OTU with LC Connector	OTU70	9315	—	WS2A55 <sup>3</sup>
108781493	4:1 10G MUX OTU with LC Connector	OTU70	9310	—	WS2A56 <sup>3</sup>
108781501	4:1 10G MUX OTU with LC Connector	OTU70	9305	—	WS2A57 <sup>3</sup>
108781519	4:1 10G MUX OTU with LC Connector	OTU70	9300	—	WS2A58 <sup>3</sup>
108781527	4:1 10G MUX OTU with LC Connector	OTU70	9295	—	WS2A59 <sup>3</sup>
108781535	4:1 10G MUX OTU with LC Connector	OTU70	9290	—	WS2A60 <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108781543	4:1 10G MUX OTU with LC Connector	OTU70	9285	—	WS2A61 <sup>3</sup>
108781550	4:1 10G MUX OTU with LC Connector	OTU70	9280	—	WS2A62 <sup>3</sup>
108781568	4:1 10G MUX OTU with LC Connector	OTU70	9275	—	WS2A63 <sup>3</sup>
108781576	4:1 10G MUX OTU with LC Connector	OTU70	9270	—	WS2A64 <sup>3</sup>
108781584	4:1 10G MUX OTU with LC Connector	OTU70	9265	—	WS2A65 <sup>3</sup>
108781592	4:1 10G MUX OTU with LC Connector	OTU70	9260	—	WS2A66 <sup>3</sup>
107871600	4:1 10G MUX OTU with LC Connector	OTU70	9255	—	WS2A67 <sup>3</sup>
108781618	4:1 10G MUX OTU with LC Connector	OTU70	9250	—	WS2A68 <sup>3</sup>
108781626	4:1 10G MUX OTU with LC Connector	OTU70	9245	—	WS2A69 <sup>3</sup>
108781634	4:1 10G MUX OTU with LC Connector	OTU70	9240	—	WS2A70 <sup>3</sup>
108781642	4:1 10G MUX OTU with LC Connector	OTU70	9235	—	WS2A71 <sup>3</sup>
108781659	4:1 10G MUX OTU with LC Connector	OTU70	9230	—	WS2A72 <sup>3</sup>
108781667	4:1 10G MUX OTU with LC Connector	OTU70	9225	—	WS2A73 <sup>3</sup>
108781675	4:1 10G MUX OTU with LC Connector	OTU70	9220	—	WS2A74 <sup>3</sup>
108781683	4:1 10G MUX OTU with LC Connector	OTU70	9215	—	WS2A75 <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108781691	4:1 10G MUX OTU with LC Connector	OTU70	9210	—	WS2A76 <sup>3</sup>
108781709	4:1 10G MUX OTU with LC Connector	OTU70	9205	—	WS2A77 <sup>3</sup>
108781717	4:1 10G MUX OTU with LC Connector	OTU70	9200	—	WS2A78 <sup>3</sup>
108781725	4:1 10G MUX OTU with LC Connector	OTU70	9195	—	WS2A79 <sup>3</sup>
108781733	4:1 10G MUX OTU with LC Connector	OTU70	9190	—	WS2A80 <sup>3</sup>
108819285	23.0 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819293	24.5 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819301	26.0 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819319	27.5 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819327	29.0 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819335	40.5 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819343	42.0 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819350	43.5 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819368	45.0 in Simplex LC-LC Yellow Fiber	—	—	—	—
108819376	46.5 in Simplex LC-LC Yellow Fiber	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
108873829	Optical Redundancy Switch LC Connector	ORS	—	—	WSA022 <sup>3</sup>
108886847	Optical Amplifier with Universal Connectors (SC) for WAD Receive	OA1	—	—	WUA032
108892878	ODU21 (L-Band)	ODU21	—	—	WNA204
108892894	ODU22 (L-Band)	ODU22	—	—	WNA205 <sup>3</sup>
109042655	Fiber Optic DCM — 40.0 km for LS fiber type	DCMLS40	—	—	DCMLS40
109042663	Fiber Optic DCM — 60.0 km for LS fiber type	DCMLS60	—	—	DCMLS60
109042846	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9580	9560	WSPG01B
109042853	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9540	9520	WSPG02B
109042861	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9500	9480	WSPG03B
109042879	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9460	9440	WSPG04B
109042887	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9420	9400	WSPG05B
109042895	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9380	9360	WSPG06B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109042903	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9340	9320	WSPG07B
109042911	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9300	9280	WSPG08B
109042929	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9260	9240	WSPG09B
109042937	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9220	9200	WSPG10B
109042945	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9570	9550	WSPG11B
109042952	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9530	9510	WSPG12B
109042960	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9490	9470	WSPG13B
109042978	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9450	9430	WSPG14B
109042986	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9410	9390	WSPG15B
109042994	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9370	9350	WSPG16B
109043000	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9330	9310	WSPG17B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043018	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9290	9270	WSPG18B
109043026	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9250	9230	WSPG19B
109043034	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9210	9190	WSPG20B
109043042	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9585	9565	WSPG21B
10903059	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9545	9525	WSPG22B
109043067	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9505	9485	WSPG23B
109043075	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9465	9445	WSPG24B
109043083	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9425	9405	WSPG25B
109043091	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9385	9365	WSPG26B
109043109	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9345	9325	WSPG27B
109043117	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9305	9285	WSPG28B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043125	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9265	9245	WSPG29B
109043133	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9225	9205	WSPG30B
109043141	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9575	9555	WSPG31B
109043158	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9535	9515	WSPG32B
109043166	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9495	9475	WSPG33B
109043174	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9455	9435	WSPG34B
109043082	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9415	9395	WSPG35B
109043190	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9375	9355	WSPG36B
109043208	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9335	9315	WSPG37B
109043216	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9295	9275	WSPG38B
109043224	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9255	9235	WSPG39B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043232	OTU30 (OC-192 ADD w/v2.1 ASIC) LC Connector	OTU30	9215	9195	WSPG40B
109043406	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9580	9560	WUPG01B
109043414	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9540	9520	WUPG02B
109043422	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9500	9480	WUPG03B
109043430	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9460	9440	WUPG04B
109043448	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9420	9400	WUPG05B
109043455	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9380	9360	WUPG06B
109043463	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9340	9320	WUPG07B
109043471	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9300	9280	WUPG08B
109043489	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9260	9240	WUPG09B
109043497	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9220	9200	WUPG10B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043505	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9570	9550	WUPG11B
109043513	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9530	9510	WUPG12B
109043521	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9490	9470	WUPG13B
109043539	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9450	9430	WUPG14B
109043547	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9410	9390	WUPG15B
109043554	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector		9370	9350	WUPG16B
109043562	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9330	9310	WUPG17B
109043570	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9290	9270	WUPG18B
109043588	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9250	9230	WUPG19B
109043596	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9210	9190	WUPG20B
109043604	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9585	9565	WUPG21B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043612	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9545	9525	WUPG22B
109043620	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9505	9485	WUPG23B
109043638	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9465	9445	WUPG24B
109043646	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9425	9405	WUPG25B
109043653	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9385	9365	WUPG26B
109043661	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9345	9325	WUPG27B
109043679	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9305	9285	WUPG28B
109043687	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9265	9245	WUPG29B
109043695	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9225	9205	WUPG30B
109043703	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9575	9555	WUPG31B
109043711	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9535	9515	WUPG32B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109043729	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9495	9475	WUPG33B
109043737	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9455	9435	WUPG34B
109043745	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9415	9395	WUPG35B
109043752	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9375	9355	WUPG36B
109043760	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9335	9315	WUPG37B
109043778	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9295	9275	WUPG38B
109043786	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9255	9235	WUPG39B
109043794	OTU30 (OC-192 ADD w/v2.1 ASIC) Universal Connector	OTU30	9215	9195	WUPG40B
109044099	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	9025	9045	WRPG21B <sup>3</sup>
109044107	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8985	9005	WRPG22B <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044115	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8945	8965	WRPG23B <sup>3</sup>
109044123	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8905	8925	WRPG24B <sup>3</sup>
109044131	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8865	8885	WRPG25B <sup>3</sup>
109044149	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8825	8845	WRPG26B <sup>3</sup>
109044156	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8785	8805	WRPG27B <sup>3</sup>
109044164	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8745	8765	WRPG28B <sup>3</sup>
109044172	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8705	8725	WRPG29B <sup>3</sup>
109044180	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8665	8685	WRPG30B <sup>3</sup>
109044198	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	9015	9035	WRPG31B <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044206	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8975	8995	WRPG32B <sup>3</sup>
109044214	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8935	8955	WRPG33B <sup>3</sup>
109044222	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8895	8915	WRPG34B <sup>3</sup>
109044230	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8850	8875	WRPG35B <sup>3</sup>
109044248	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8815	8835	WRPG36B <sup>3</sup>
109044255	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8775	88795	WRPG37B <sup>3</sup>
109044263	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8735	8755	WRPG38B <sup>3</sup>
109044271	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8695	88715	WRPG39B <sup>3</sup>
109044289	OC-192/STM-64 OTU (OTU30L) with Universal (SC) Connectors	OTU30L	8655	8675	WRPG40B <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044495	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	9025	9045	WNPG21B <sup>3</sup>
109044503	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8985	9005	WNPG22B <sup>3</sup>
109044511	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8945	8965	WNPG23B <sup>3</sup>
109044529	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8905	8925	WNPG24B <sup>3</sup>
109044537	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8865	8885	WNPG25B <sup>3</sup>
109044545	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8825	8845	WNPG26B <sup>3</sup>
109044552	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8785	8805	WNPG27B <sup>3</sup>
109044560	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8745	8765	WNPG28B <sup>3</sup>
109044578	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8705	8725	WNPG29B <sup>3</sup>
109044586	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8665	8685	WNPG30B <sup>3</sup>
109044594	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	9015	9035	WNPG31B <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044602	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8975	8995	WNPG32B <sup>3</sup>
109044610	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8935	8955	WNPG33B <sup>3</sup>
109044628	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8895	8915	WNPG34B <sup>3</sup>
109044636	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8850	8875	WNPG35B <sup>3</sup>
109044644	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8815	8835	WNPG36B <sup>3</sup>
109044651	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8775	8795	WNPG37B <sup>3</sup>
109044669	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8735	8755	WNPG38B <sup>3</sup>
109044677	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8695	8715	WNPG39B <sup>3</sup>
109044685	OC-192/STM-64 (OTU30L) with LC Connector	OTU30L	8655	8675	WNPG40B <sup>3</sup>
109044966	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	9025	9045	WNRG21B <sup>3</sup>
109044974	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8985	9005	WNRG22B <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109044982	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8945	8965	WNRG23B <sup>3</sup>
109044990	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8905	8925	WNRG24B <sup>3</sup>
109045005	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8865	8885	WNRG25B <sup>3</sup>
109045013	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8825	8845	WNRG26B <sup>3</sup>
109045021	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8785	8805	WNRG27B <sup>3</sup>
109045039	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8745	8765	WNRG28B <sup>3</sup>
109045047	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8705	8725	WNRG29B <sup>3</sup>
109045054	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8665	8685	WNRG30B <sup>3</sup>
109045070	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	9015	9035	WNRG31B <sup>3</sup>
109045088	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8975	8995	WNRG32B <sup>3</sup>
109045096	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8935	8955	WNRG33B <sup>3</sup>

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109045104	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8895	8915	WNRG34B <sup>3</sup>
109045112	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8850	8875	WNRG35B <sup>3</sup>
109045120	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8815	8835	WNRG36B <sup>3</sup>
109045146	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8775	8795	WNRG37B <sup>3</sup>
109045153	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8735	8755	WNRG38B <sup>3</sup>
109045161	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8695	8715	WNRG39B <sup>3</sup>
109045179	OC-192/STM-64 OTU (OTU31L) (LC Connector)	OTU31L	8655	8675	WNRG40B <sup>3</sup>
109045203	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9560	9580	WSRG01B
109045211	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9520	9540	WSRG02B
109045229	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9480	9500	WSRG03B
109045237	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9440	9460	WSRG04B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109045245	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9400	9420	WSRG05B
109045252	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9360	9380	WSRG06B
109045260	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9320	9340	WSRG07B
109045278	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9280	9300	WSRG08B
109045286	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9240	9260	WSRG09B
109045294	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9200	9220	WSRG10B
109045302	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9550	9570	WSRG11B
109045310	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9510	9530	WSRG12B
109045328	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9470	9490	WSRG13B
109045336	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9430	9450	WSRG14B
109045344	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9390	9410	WSRG15B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109045351	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9350	9370	WSRG16B
109045369	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9310	9330	WSRG17B
109045377	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9270	9290	WSRG18B
109045385	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9230	9250	WSRG19B
109045393	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9190	9210	WSRG20B
109045401	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9565	9585	WSRG21B
109045419	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9525	9545	WSRG22B
109045427	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9485	9505	WSRG23B
109045435	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9445	9465	WSRG24B
109045443	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9405	9425	WSRG25B
109045450	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9365	9385	WSRG26B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109045468	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9325	9345	WSRG27B
109045476	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9285	9305	WSRG28B
109045484	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9245	9265	WSRG29B
109045492	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9205	9225	WSRG30B
109045500	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9550	9575	WSRG31B
109045518	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9515	9535	WSRG32B
109045526	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9475	9495	WSRG33B
109045534	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9435	9455	WSRG34B
109045542	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9395	9415	WSRG35B
109045559	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9355	9375	WSRG36B
109045567	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9315	9335	WSRG37B

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109045575	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9275	9295	WSRG38B
109045583	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9235	9255	WSRG39B
109045591	OTU31 (OC-192 THRU w/v2.1 ASIC) LC Connector	OTU31	9195	9215	WSRG40B
109047944	Fiber Optic DCM — 100 km	DCM-100	—	—	DCM-100
109054460	Fiber Optic DCM — 2.5 km	DCML-2.5	—	—	DCML-2.5
109054478	Fiber Optic DCM — 5.0 km	DCML-5.0	—	—	DCML-5.0
109054486	Fiber Optic DCM—7.5 km	DCML-7.5	—	—	DCML-7.5
109054494	Fiber Optic DCM—10 km	DCML-10	—	—	DCML-10
109054502	Fiber Optic DCM—12.5 km	DCML-12.5	—	—	DCML-12.5
109054510	Fiber Optic DCM—15 km	DCML-15	—	—	DCML-15
109054528	Fiber Optic DCM—17.5 km	DCML-17.5	—	—	DCML-17.5
109054536	Fiber Optic DCM—20 km	DCML-20	—	—	DCML-20
109054544	Fiber Optic DCM—22.5 km	DCML-22.5	—	—	DCML-22.5
109054551	Fiber Optic DCM—27.5 km	DCML-27.5	—	—	DCML-27.5

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109054585	Fiber Optic DCM—25 km	DCML-25	—	—	DCML-25
109056705	OMON1B	OMON1B	—	—	WSA020B
109056713	OMON1L	OMON1L	—	—	WNA020B
109076927	OTUD30 (OC-192 DROP w/v2.1 ASIC) LC Connector	OTUD30	—	—	WSRH1B
109076935	OTUD30 (OC-192 DROP w/v2.1 ASIC) Universal Connector	OTUD30	—	—	WURH1B
109085647	Fiber Optic DCM-10.0 km for NZDSF fiber	DCM-NZDSF10L <sup>3</sup>	—	—	DCM-NZDSF10L <sup>3</sup>
109085654	Fiber Optic DCM-20.0 km for NZDSF fiber	DCM-NZDSF20L <sup>3</sup>	—	—	DCM-NZDSF20L <sup>3</sup>
109085662	Fiber Optic DCM-30.0 km for NZDSF fiber	DCM-NZDSF30L <sup>3</sup>	—	—	DCM-NZDSF30L <sup>3</sup>
109085670	Fiber Optic DCM-40.0 km for NZDSF fiber	DCM-NZDSF40L <sup>3</sup>	—	—	DCM-NZDSF40L <sup>3</sup>
109085688	Fiber Optic DCM-50.0 km for NZDSF fiber	DCM-NZDSF50L <sup>3</sup>	—	—	DCM-NZDSF50L <sup>3</sup>
109085696	Fiber Optic DCM-60.0 km for NZDSF fiber	DCM-NZDSF60L	—	—	DCM-NZDSF60L
109085704	Fiber Optic DCM-70.0 km for NZDSF fiber	DCM-NZDSF70L <sup>3</sup>	—	—	DCM-NZDSF70L <sup>3</sup>
109085712	Fiber Optic DCM-80.0 km for NZDSF fiber	DCM-NZDSF80L	—	—	DCM-NZDSF80L
109085738	Fiber Optic DCM-90.0 km for NZDSF fiber	DCM-NZDSF90.0 <sup>3</sup>	—	—	DCM-NZDSF90.0 <sup>3</sup>
109085746	Fiber Optic DCM-100.0 km for NZDSF fiber	DCM-NZDSF100L	—	—	DCM-NZDSF100L

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
109088351	OC-192/STM-64 Add OTU with LC Connector	OTU30	9350	9360	WSPGA1B <sup>3</sup>
109088377	OC-192/STM-64 Add OTU with Universal Connector (SC)	OTU30	9350	9360	WUPGA1B <sup>3</sup>
109088385	OC-192/STM-64 Add OTU with LC Connector	OTU30	9210	9220	WSPGA2B <sup>3</sup>
109088393	OC-192/STM-64 Add OTU with Universal Connector (SC)	OTU30	9210	9220	WUPGA2B <sup>3</sup>
109088401	OC-192/STM-64 Through OTU with LC Connector	OTU31	9350	9360	WRSGT1B <sup>3</sup>
109088419	OC-192/STM-64 Through OTU with LC Connector	OTU31	9210	9220	WRSGT2B <sup>3</sup>
109097766	Fiber Optic DCM- 5.0 km for NZDSF fiber	DCM-NZDSF5L <sup>3</sup>	—	—	DCM-NZDSF5L <sup>3</sup>
109249029	Software Release Description for Release 6.2	—	—	—	—
109249938	NE Software CD for Release 6.2	—	—	—	—
109249979	Documentation CD for Release 6.2	—	—	—	—
407790286	DANTEL Interface Voice-Data Orderwire Kit, Dantel Item D18-05547-04	—	—	—	—
407967967	Air Filter	—	—	—	—
408186799	Fan-Tray Assembly	—	—	—	—

**Table C-1 Numerical List of WaveStar® OLS 1.6T Comcodes (continued)**

Comcode	Description	CP	Frequency <sup>1</sup>		CP Code
			1	2	
848220083	Label, End and Ring Terminal Fiber Jumper Labels	—	—	—	—
848220091	Label, Repeater and 4 Channel Add/Drop Fiber Jumper Labels	—v	—	—	—
848220299	Label, Designation Complementary Bay Numerical	—	—	—	—
848220307	Label, Designation Growth Bay Numerical	—	—	—	—
848242715	Power Line Filter Assembly for Lucent Seismic Bays.	—	—	—	—
848615712	70 ft Optional LAN Cable	—	—	—	—
848732251	Memory, Flashcard	MEM	—	—	—

**Notes:**

1. This frequency is abbreviated to fit on the circuit pack faceplate.
2. Length to be specified when ordering the fiber.
3. Contact Customer Team for lead time for circuit packs.







# Appendix D: Recommended Sparing Levels

## Overview

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**Purpose** This appendix provides information on the recommended sparing guidelines.

**Contents**

<a href="#">General Information</a>	<a href="#">D-2</a>
<a href="#">Circuit Pack Sparing: Part 1</a>	<a href="#">D-3</a>
<a href="#">Circuit Pack Sparing: Part 2</a>	<a href="#">D-6</a>



## General Information

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**Sparing OTUs** The WaveStar® OLS 1.6T system may utilize any or all of the following OTU circuit packs:

- OTU1
- OTU2
- OTU30B
- OTU31B
- OTU40
- OTU70

Spares for these items are stocked by individual codes depending upon specific functions.



# Circuit Pack Sparing: Part 1

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## **Recommended Sparing Levels: Part 1**

Table D-1 gives the recommended sparing levels for each circuit pack from 1 to 250 in service in the WaveStar® OLS 1.6T.

**Table D-1 Recommended Circuit Pack Sparing Levels: Part 1**

Circuit Pack	Number of Circuit Packs in Service								
	1	10	25	50	75	100	150	200	250
OMU1/OMU1L	1	1	1	1	1	2	2	3	3
OMU2/OMU2L	1	1	1	1	1	2	2	3	3
ODU1C/ODU21	1	1	1	1	2	2	3	3	3
ODU2C/ODU22	1	1	1	1	2	2	3	3	3
OA1/OA1L/OA3L	1	1	2	3	3	3	4	4	4
EI	1	1	1	1	1	1	1	2	3
BOS2	1	1	1	2	2	3	3	3	3
OMON1/OMON1L	1	1	1	1	2	2	3	3	3
SUPVY1B/SUPVY3/SUPVY1L	1	1	1	1	2	2	3	3	3
OTU1/OTU1L	1	1	1	2	3	3	3	3	3
OTUD1	1	1	1	2	2	3	3	3	3
OTU2/OTU2L	1	1	1	2	3	3	3	3	3
OTU30/OTU30L	1	1	2	3	3	3	4	4	4
OTUD30	1	1	2	3	3	3	3	4	4
OTU31/OTU31L	1	1	2	3	3	3	4	4	4
OTU40/OTU40L	1	1	1	2	3	3	3	3	3
OTUD40	1	1	1	2	2	3	3	3	3
OTU70	1	1	2	3	3	3	4	4	5
ORS	1	1	2	3	3	3	3	4	4
Fan	1	1	1	1	1	1	1	2	3
Power Filter	1	1	1	1	1	1	1	1	1
DCM Module	1	1	1	1	1	1	1	1	1
Dust Filter	1	3	4	5	6	7	9	10	11
CLCS-S	1	1	1	1	1	1	1	1	1
CLCS-D	1	1	1	1	1	1	1	1	1



## Circuit Pack Sparing: Part 2

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### **Recommended Sparing Levels: Part 2**

Refer to Table D-2, "Recommended Circuit Pack Sparing Levels: Part 2" (D-4) for the recommended sparing level of each circuit pack from 300 to 100 000 in service in the WaveStar® OLS 1.6T.

**Table D-2 Recommended Circuit Pack Sparing Levels: Part 2**

Circuit Pack	Number of Circuit Packs in Service								
	300	500	750	1000	2000	5000	10000	50000	100000
OMU1/OMU1L3		3	3	4	5	7	9	24	40
OMU2/OMU2L3		3	3	4	5	7	9	24	40
ODU1/ODU21 3 /ODU1C		3	4	4	5	8	11	32	55
ODU2/ODU22 3		3	4	4	5	8	11	32	55
OA1/OA1L/OA3L		5	6	7	10	17	27	97	181
EI	2	3	3	3	4	5	7	15	24
BOS2	3	4	4	5	6	9	13	40	69
OMON1/OMON1L		3	4	4	5	8	11	32	55
SUPVY1B/SUPVY3/SUPVY1L3			4	4	5	8	11	32	55
OTU1/OTU1L 4		4	5	5	7	11	17	55	97
OTUD1	3	4	5	5	7	10	15	47	83
OTU2/OTU2L 4		4	5	5	7	11	17	55	97
OTU30/OTU30L		5	6	7	10	16	26	90	168
OTUD30	4	5	6	6	9	14	22	76	140
OTU31/OTU31L		5	6	7	10	16	26	90	168
OTU40/OTU40L		4	5	5	7	11	17	55	97
OTUD40	3	4	5	5	7	10	15	47	83
OTU70	5	6	7	8	12	21	34	126	235
ORS	4	5	6	6	9	14	22	76	140
Fan	2	3	3	3	4	5	7	15	24
Power Filter	1	2	2	3	3	4	5	9	13
DCM Module	1	1	1	1	1	2	3	4	5
Dust Filter	12	17	22	26	44	93	173	766	1484

**Table D-2 Recommended Circuit Pack Sparing Levels: Part 2 (continued)**

Circuit Pack	Number of Circuit Packs in Service										
	300	500	750	1000	2000	5000	10000	50000	100000		
CLCS-S	1	1	1	2	3	3	4	7	9		
CLCS-D	1	2	2	3	3	4	5	9	13		

**Recommended Sparing  
Levels: 30-Day Lead Time,  
Part 1**

Refer to Table D-3, "Recommended Circuit Pack Sparing Levels: 30-Day Lead Time, Part 1" (D-5) for the recommended sparing level of each circuit pack from 1 to 250 in service in the WaveStar® OLS 1.6T for a 30-Day lead time.

**Table D-3 Recommended Circuit Pack Sparing Levels: 30-Day Lead Time, Part 1**

Circuit Pack	Number of Circuit Packs in Service								
	1	10	25	50	75	100	150	200	250
OMU1/OMU1L	1	1	1	2	3	3	3	3	3
OMU2/OMU2L	1	1	1	2	3	3	3	3	3
ODU1C/ODU21	1	1	2	3	3	3	3	4	4
ODU2C/ODU22	1	1	2	3	3	3	3	4	4
OA1/OA1L/OA3L	1	2	3	4	4	4	5	6	6
EI	1	1	1	1	2	2	3	3	3
BOS2	1	1	2	3	3	3	4	4	4
OMON1/OMON1L	1	1	2	3	3	3	3	4	4
SUPVY1B/SUPVY3/SUPVY1LI	1	1	2	3	3	3	3	4	4
OTU1/OTU1L	1	2	3	3	3	4	4	4	5
OTUD1	1	1	2	3	3	3	4	4	5
OTU2/OTU2L	1	2	3	3	3	4	4	4	5
OTU30/OTU30L	1	2	3	4	4	4	5	6	6
OTUD30	1	2	3	3	4	4	5	5	6
OTU3/OTU31L	1	2	3	4	4	4	5	6	6
OTU40/OTU40L	1	2	3	3	3	4	4	4	5
OTUD40	1	1	2	3	3	3	4	4	5
OTU70	1	3	3	4	4	5	6	7	7
ORS	1	2	3	3	4	4	5	5	6
Fan	1	1	1	1	2	2	3	3	3
Power Filter	1	1	1	1	1	1	2	2	2
DCM Module	1	1	1	1	1	1	1	1	1
Dust Filter	1	4	6	9	10	12	16	19	22
CLCS-S	1	1	1	1	1	1	1	1	1
CLCS-D	1	1	1	1	1	1	2	2	2

**Recommended Sparing  
Levels: 30-Day Lead Time,  
Part 2**

Refer to Table D-4, "Recommended Circuit Pack Sparing Levels—30-Day Lead Time: Part 2" (D-6) for the recommended sparing level of each circuit pack from 300 to 100 000 in service in the WaveStar® OLS 1.6T system for a 30-Day Lead Time.

**Table D-4 Recommended Circuit Pack Sparing Levels: 30-Day Lead Time, Part 2**

Circuit Pack	Number of Circuit Packs in Service								
	300	500	750	1000	2000	5000	10000	50000	100000
OMU1/OMU1L4		4	5	5	6	11	17	55	97
OMU2/OMU2L4		4	5	5	6	11	17	55	97
ODU1C/ODU2H		5	6	6	9	14	22	76	140
ODU2C/ODU2H		5	6	6	9	14	22	76	140
OA1/OA1L/OA3L		9	11	13	19	37	63	261	496
EI	3	3	4	4	5	8	11	32	55
BOS2	4	5	6	7	10	17	27	97	181
OMON1/OMON1L		5	6	6	9	14	22	76	140
SUPVY1B/SUPVY3/SUPVY1L5			6	6	9	14	22	76	140
OTU1/OTU1L 5		6	8	9	13	22	37	140	261
OTUD1	5	6	7	8	11	20	32	119	221
OTU2/OTU2L 5		6	8	9	13	22	37	140	261
OTU30/OTU30E		8	10	12	18	35	59	241	457
OTUD30	6	8	9	11	16	30	50	201	380
OTU31/OTU31E		8	10	12	18	35	59	241	457
OTU40/OTU40E		6	8	9	13	22	37	140	261
OTUD40	5	6	7	8	11	20	32	119	221
OTU70	8	10	13	15	23	46	80	340	650
ORS	6	8	9	11	16	30	50	201	380
Fan	3	3	4	4	5	8	11	32	55
Power Filter	2	3	3	3	4	5	7	17	27
DCM Module	1	1	1	1	2	3	3	5	7
Dust Filter	25	36	48	61	110	250	474	2195	4308
CLCS-S	2	2	3	3	3	4	5	11	17

**Table D-4 Recommended Circuit Pack Sparing Levels: 30-Day Lead Time, Part 2 (continued)**

Circuit Pack	Number of Circuit Packs in Service									
	300	500	750	1000	2000	5000	10000	50000	100000	
CLCS-D	2	3	3	3	4	5	7	17	27	

**Recommended Sparing  
Levels: 64-Day Lead Time,  
Part 1**

Refer to Table D-5, "Recommended Circuit Pack Sparing Levels—64-Day Lead Time: Part 1" (D-7) for the recommended sparing level of each circuit pack from one (1) to 250 in service in the WaveStar® OLS 1.6T system for a 64-day lead time.

**Table D-5 Recommended Circuit Pack Sparing Levels: 64-Day Lead Time, Part 1**

Circuit Pack	Number of Circuit Packs in Service								
	1	10	25	50	75	100	150	200	250
OMU1/OMU1L	1	1	2	3	3	3	4	4	4
OMU2/OMU2L	1	1	2	3	3	3	4	4	4
ODU1C/ODU21	1	2	3	3	3	4	4	5	5
ODU2C/ODU22	1	2	3	3	3	4	4	5	5
OA1/OA1L/OA3L	1	3	4	5	5	6	7	8	9
EI	1	1	1	2	3	3	3	3	3
BOS2	1	2	3	3	4	4	5	5	6
OMON1/OMON1L	1	2	3	3	3	4	4	5	5
SUPVY1B/SUPVY3/SUPVY1L		2	3	3	3	4	4	5	5
OTU1/OTU1L	1	3	3	4	4	5	5	6	7
OTUD1	1	2	3	3	4	4	5	6	6
OTU2/OTU2L	1	3	3	4	4	5	5	6	7
OTU30/OTU30L	1	3	4	4	5	6	7	8	9
OTUD30	1	3	3	4	5	5	6	7	8
OTU31/OTU31L	1	3	4	4	5	6	7	8	9
OTU40/OTU40L	1	3	3	4	4	5	5	6	7
OTUD40	1	2	3	3	4	4	5	6	6
OTU70	1	3	4	5	6	7	8	9	10
ORS									
Fan	1	1	1	2	3	3	3	3	3
Power Filter	1	1	1	1	2	2	3	3	3
DCM Module1	1	1	1	1	1	1	1	1	1
Dust Filter	1	6	9	13	16	20	26	32	37
CLCS-S	1	1	1	1	1	1	2	2	2
CLCS-D	1	1	1	1	2	2	3	3	3

**Recommended Sparing  
Levels: 64-Day Lead Time,  
Part 2**

Refer to Table D-6, "Recommended Circuit Pack Sparing Levels: 64 Day Lead Time, Part 2" (D-8) for the recommended sparing level of each circuit pack from 300 to 10 000 in service in the WaveStar® OLS 1.6T system for a 64-day lead time.

**Table D-6 Recommended Circuit Pack Sparing Levels: 64-Day Lead Time, Part 2**

Circuit Pack	Number of Circuit Packs in Service								
	300	500	750	1000	2000	5000	10000	50000	100000
OMU1/OMU1L5		6	7	7	10	18	29	102	192
OMU2/OMU2L5		6	7	7	10	18	29	102	192
ODU1C/ODU2B		7	8	9	13	23	39	148	277
ODU2C/ODU2B		7	8	9	13	23	39	148	277
OA1/OA1L/OA3D		13	17	20	33	67	122	527	1015
EI	4	4	5	6	7	12	18	58	102
BOS2	6	7	9	10	16	29	48	192	361
OMON1/OMON1L		7	8	9	13	23	39	148	277
SUPVY1B/SUPVY3/SUPVY1L7			8	9	13	23	39	148	277
OTU1/OTU1L 7		9	11	13	20	39	67	277	527
OTUD1	7	8	10	12	18	34	58	235	445
OTU2/OTU2L 7		9	11	13	20	39	67	277	527
OTU30/OTU30B		12	16	19	31	62	113	486	938
OTUD30	9	11	14	17	27	53	94	403	772
OTU31/OTU31B		12	16	19	31	62	113	586	935
OTU40/OTU40Z		9	11	13	20	39	67	277	527
OTUD40	7	8	10	12	18	34	58	235	445
OTU70	12	16	20	25	41	85	157	691	1337
ORS	9	11	14	17	27	53	94	403	772
Fan	4	4	5	6	7	12	18	58	102
Power Filter	3	3	4	4	5	7	10	29	48
DCM Module	1	1	2	2	3	3	4	7	10
Dust Filter	43	64	90	117	216	503	968	4588	9056
CLCS-S	3	3	3	3	4	6	7	18	29

**Table D-6 Recommended Circuit Pack Sparing Levels: 64-Day Lead Time, Part 2 (continued)**

Circuit Pack	Number of Circuit Packs in Service									
	300	500	750	1000	2000	5000	10000	50000	100000	
CLCS-D	3	3	4	4	5	7	10	29	48	







# Appendix E: On-Line Ordering Tools

## Overview

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**Purpose** This appendix provides information on the on-line ordering tools available.

**Contents**

<a href="#">Virgos</a>	<a href="#">E-2</a>
<a href="#">TIPSYS</a>	<a href="#">E-3</a>



# Virgos

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**What is Virgos?** The VIRGOS (Video Interactive Regional Generation of Specification) system is an Expert System used in the North American region that was developed to assist Regional Equipment Engineers in specification writing. VIRGOS provides an operating environment in which a detailed library of rules can be specified. The rules drive a series of questions, displayed on a screen, which prompt the user to provide engineering data unique to a particular customer need. Master specifications provide a structured set of rules for a given product line and are prepared by switchboard, power, and cable engineers. Through screen sessions the VIRGOS Masters library of rules systematically queries the user for data which is used in preparing detailed engineering specifications and establishing orders and quotes for bid preparation..



# TIPSYS

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**What is Tipsys?** The TIPSYS (Transmission Information and Projecting System) is used in Europe to assist engineers in translating user demands through questions and heuristics into a functional system. The questions generated for the user are in English and provide information about prices, power consumption, transportation, weight, spare parts, etc. TIPSYS enables a substantial quality improvement and a reduction of the processing time for a tender, as well as for order clearing, when compared with manual processing.

The TIPSYS main objective is to help translate customer needs into specifications, and can perform the following tasks: commercial support (bid and proposal), logistic support (product information for the factory), information management (maintaining links with other information systems).







# Glossary

## A ABN

Abnormal (condition).

### **Access Identifier (AID)**

A unique identifier used to address equipment slots and ports, as well as facility tributaries, that are defined for the OLS architecture.

### **ACO**

Alarm Cutoff

### **AGNE**

Alarm Gateway Network Element

### **AID**

Access Identifier

### **AIM**

Alarm Indication Message

### **AIS**

Alarm Indication Signal

### **Alarm**

A visible or audible signal that indicates a communication, equipment, or processing failure has occurred.

### **Alarm Cut-Off (ACO)**

A push-button switch on the indicator strip that can be used to retire an audible office alarm.

### **Alarm Gateway Network Element (AGNE)**

A defined Network Element in an alarm group through which members of the alarm group exchange information.

**Alarm Indication Signal (AIS)**

A code transmitted downstream in a digital network indicating that an upstream failure has been detected and alarmed if the upstream alarm has not been suppressed.

**Alarm List**

A status report that lists active alarms on the network element.

**Alarm Log**

A history of the setting and clearing of system alarms on the network element.

**Alarm Severity**

An attribute defining the priority of the alarm message. The way alarms are processed depends on the severity.

**Alarm Suppression**

Selective removal of alarm messages from being forwarded to the GUI or to network management layer OSs.

**Alarm Throttling**

A feature that automatically or manually suppresses autonomous messages that are not priority alarms.

**Aligning**

Indicating the head of a virtual container by means of a pointer, for example, creating an Administrative Unit (AU) or a Tributary Unit (TU).

**Alternate Mark Inversion (AMI)**

A line code that employs a ternary signal to convert binary digits, in which successive binary ones are represented by signal elements that are normally of alternative positive and negative polarity but equal in amplitude, and in which binary zeros are represented by signal elements that have zero amplitude.

**American Standard Code for Information Interchange (ASCII)**

A standard 7-bit code that represents letters, numbers, punctuation marks, and special characters in the interchange of data among computing and communications equipment.

**Amplitude**

Amplitude is a measure of the intensity of the wave and is defined as the distance from the center of the wave to its peak (half the distance from peak to peak).

**APD**

Avalanche Photo Diode

**APSD**

Automatic Power Shutdown

**Area**

A group of nodes in which there is only IS-IS Level 1 routing of traffic. Nodes in an Area do not maintain detailed routing information to nodes outside the area.

**Area Address**

A variable length quantity consisting of the entire high order part of the Network Service Access Point (NSAP) excluding the 6 byte System Identifier (SID) and Selector (SEL). Used for interarea routing through the Level 2 subdomain.

**Area ID**

A user provisionable four digit (Hex) number that is used for IS-IS routing purposes in a network.

**Asynchronous**

Refers to network elements that are not timed from references traceable to a single Stratum-1 source.

**Attribute**

Alarm indication level: critical, major, minor, or no alarm.

**AUTO**

Automatic

**Automatic (AUTO)**

One possible state of a port or slot. When a port is in the AUTO state and a good signal is detected, the port automatically enters the IS (in-service) state. When a slot is in the AUTO state and a circuit pack is detected, the slot automatically enters the EQ (equipped) state.

**Automatic Power Shutdown (APSD)**

A safety procedure automatically performed by the OLS when a loss of optical power occurs. APSD powers down the Optical Amplifier to safe, Class 1 levels then restarts it once the system has been repaired or links have been re-established.

**Automatic Protection Switch**

A protection switch that occurs automatically in response to an automatically detected fault condition.

**Avalanche Photo Diode (APD)**

APD is a receiver that translates optical signals back to electrical pulses.

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**B Backup**

The backup and restoration features provide the capability to recover from loss of NE data because of such factors as human error, power failure, NE design flaws, and software bugs.

**Bandwidth**

The difference in Hz between the highest and lowest frequencies in a transmission channel. The data rate that can be carried by a given communications circuit.

**Baud Rate**

Transmission rate of data (bits per second) on a network link.

**Bay**

A hardware frame in which shelves are mounted and housed.

**BCLAN**

Board Controller Local Area Network

**BER**

Bit Error Rate

**BES**

Bursty Errored Second Count

**Bidirectional Line**

A transmission path consisting of two fibers that handle traffic in both the transmit and receive directions.

**BIP-N**

Bit Interleaved Parity

**Bit**

The smallest unit of information in a computer, with a value of either 0 or 1.

**Bit Error Rate (BER)**

BER measures how accurately a bit stream is transmitted through a system. It measures how many bits are received in error compared to how many are sent.

**Bit Error Rate Threshold**

The point at which an alarm is issued for bit errors.

**Bit Interleaved Parity-N (BIP-N)**

A method of error monitoring over a specified number of bits (BIP-3 or BIP-8).

**Board Controller Local Area Network (BCLAN)**

The internal local area network that provides communications between the line and board controllers on the circuit packs associated with a high-speed line.

**BOS**

Bay/Overhead/System controller

**BRM**

Bit Rate Map

**Broadband Communications**

Voice, data, and/or video communications at greater than 2 Mb/s rates.

**BW**

bandwidth

**Byte**

Refers to a group of eight consecutive binary digits.

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**C C+L Separator/Combiner (CLSC) Apparatus Units**

The CLSC apparatus unit combines two independent DWDM line systems (one using the C-band, and the other using the L-band) onto a single fiber pair. In transmission paths, Single C+L Separator and Combiner (CLSC-S) and Double C+L Separator and Combiner (CLSC-D) apparatus units are used for C+L applications. CLSC-S is used in terminal systems, and CLSC-D is used in repeater/ring sites.

**CCITT**

Comité Consultatif International Télégraphique et Téléphonique. See ITU-T.

**CD-ROM**

compact disk–read-only memory

**Central Office (CO)**

A building where common carriers terminate customer circuits.

**Channel**

A sub-unit of transmission capacity within a defined higher level of transmission capacity.

**Circuit Pack (CP)**

A single field-replaceable electronic or opto-electronic unit. It comprises mechanical piece-parts, electronic components, and their associated connections and performs a specific function.

**CIT**

Craft Interface Terminal

**CIT-PC**

PC Based Craft Interface Terminal

**CLEI**

Common Language Equipment Identifier

**Closed Ring Network**

A network formed of a ring-shaped configuration of network elements. Each network element connects to two others, one on each side.

**CLSC**

C+L Separator and Combiner apparatus unit

**CLSC-D**

C+L Separator and Combiner apparatus unit with Double Separator and Combiner functions

**CLSC-S**

C+L Separator and Combiner apparatus unit with Single Separator and Combiner functions

**CMISE**

Common Management Information Service Element

**CMS**

See customer maintenance signal

**CO**

Central Office

**CO-LAN**

central office local area network

**Coding Violation (CV)**

A performance monitoring parameter indicating that bipolar violations of the signal have occurred.

**Collocated**

Located in the same Central Office

**Comcode**

Lucent Technologies ordering code for cables and other equipment.

**Common Language Equipment Identifier (CLEI)**

Codes that are assigned by Bellcore to provide a standard method of identifying telecommunications equipment in a uniform, feature-oriented language. Bellcore GR-485-CORE specification contains generic guidelines for Common Language Equipment Coding Processes and Guidelines.

**Common Management Information Service Element (CMISE)**

Entities that the Common Management Information Protocol (CMIP) uses to communicate. CMISE exchanges network management information between two management systems, or between a management system and an application. CMIP/CMISE is designed for OSI networks,

but it is transport independent.

**Concatenation**

A procedure whereby multiple virtual containers are associated one with each other resulting in a combined capacity that can be used as a single container across which bit sequence integrity is maintained.

**Configuration Management (CM)**

Subsystem that configures the network and processes messages from the network.

**Consultative Committee for the International Telephone and Telegraph (CCITT)**

International Telephone and Telegraph Consultative Committee — An international advisory committee under United Nations' sponsorship that has composed and recommended for adoption worldwide standards for international communications. Recently changed to the International Telecommunications Union Telecommunications Standards Sector (ITU-TSS).

**CPM**

Cross Phase Modulation (same as XPM)

**CR**

Critical (alarm)

**Craft Interface Terminal (CIT)**

The user interface terminal that meets OLS minimum requirements and is used by craft personnel to communicate with a network element.

**Craft Interface Terminal - Personal Computer (CIT- PC)**

A personal computer that meets OLS minimum requirements and is used by craft personnel to communicate with a network element.

**CRC**

Cyclic Redundancy Check

**Critical (CR)**

Alarm that indicates a severe, service-affecting condition.

**CS&O**

Lucent Technologies Customer Support and Operations

**CTAM**

Customer Technical Assistance Management

**CTNEQPT**

Facility/circuit interconnection equipment failure. This condition type is for internal optical LOS defects (fiber connections) between CPs.

**Current Value**

The value currently assigned to a provisionable parameter.

**CV**

Coding Violation

**CVS**

Coding Violation Count - Section Near End

**Cyclic Redundancy Check (CRC)**

A method of error detection using cyclic redundancy code. A CRC value is generated at the transmitting terminal, based on the contents of the message transmitted. An identical CRC generation is performed at the receiving terminal and if it does not match, the message was received incorrectly.

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**D Data**

A collection of system parameters and their associated values.

**Data Communication Network (DCN)**

The Data Communication Network (DCN) supports communications between WaveStar® OLS 1.6T and the network management system (SNMS). OSI based networks, formed by Q-LAN and SDL overhead bytes, performs the communications between the SNMSs and the manages NEs (OLS).

**Data Communications Channel (DCC)**

The embedded overhead communications channel in the synchronous line, used for end-to-end communications and maintenance. The DCC carries alarm, control, and status information between network elements in a synchronous network.

**Data Communications Equipment (DCE)**

The equipment that provides the signal conversion and coding between the data terminating equipment and the line. The DCE may be separate equipment or a part of the data terminating equipment.

**Data Terminating Equipment (DTE)**

The equipment that originates data for transmission and accepts transmitted data.

**dB**

Decibels

**dBm**

Decibels relative to 1 milli-watt

**DCC**

Data Communications Channel

**DCE**

Data Communications Equipment

**DCM**

Dispersion Compensation Module

**DCN**

Data Communication Network

**DCN**

Refer to Data Communication Network

**DDM-2000**

Lucent Technologies SONET-ready network multiplexer that can function as a lightwave terminal. It is designed primarily for loop feeder and interoffice applications that will work in existing asynchronous as well as the emerging SONET networks.

**Dedicated Protection Ring (DP-Ring)**

A protection method used in ISM Network Elements.

**Default**

An operation or value that the system or application assumes, unless a user makes an explicit choice.

**Default Provisioning**

The parameter values that are preprogrammed as shipped from the factory.

**Demultiplexer**

A device that splits a combined signal into individual signals at the receiver end of transmission.

**Demultiplexing**

A process applied to a multiplexed signal for recovering signals combined within it and for restoring the distinct individual channels of these signals.

**Dense Wavelength Division Multiplexing (DWDM)**

Transmitting two or more signals of different wavelengths simultaneously over a single fiber.

**Designated Router**

Function of the IS-IS protocol. A Pseudo or Virtual node on the LAN subnet, which assumes much of the routing tasks for the LAN circuit. One of the physical nodes does the actual work. This node is the Designated Router (DR). Election of the DR depends first on the circuit

priority and second on the SID (or MAC address).

### **Designated Router Priority**

The routing priority level assigned to a node. The value of this parameter is used for the selection of the designated router per area on a LAN. The node with the highest priority will fulfill the designated router function. If two nodes that the same priority level, then the SID (MAC address) is used to select a designated router.

### **DFB**

Distributed Feed Back

### **Digital Link**

A transmission span such as a point-to-point 2 Mb/s, 34 Mb/s, 140 Mb/s, VC12, VC3 or VC4 link between controlled network elements. The channels within a digital link are insignificant.

### **Digital Multiplexer**

Equipment that combines several digital signals into a single composite digital signal by time-division multiplexing.

### **Directory Service Network Element (DS-NE)**

A designated network element that is responsible for administering a database that maps network element names (TIDs) to addresses [NSAPs (network service access points)]. There can be one DS-NE per ring.

### **Directory System Agent (DSA)**

The Directory System Agent maintains the directory database and accesses the directory database on behalf of the requesting directory user agent; resides on SNMS.

### **Dispersion**

The phenomenon in which different wavelengths or different polarizations of light travel at different speeds through a fiber optic cable.

### **Dispersion Compensation Fiber (DCF)**

A special fiber with high negative value of dispersion. It is used as an inline pre- or post-equalization in the form of a fiber spool placed at the end of a link.

### **Dispersion Compensation Module (DCM)**

The Dispersion Compensating Module (DCM) is used to overcome chromatic dispersion limits of the transmission fiber. The DCM is a passive module containing dispersion compensation fiber that offsets the outside fiber plant.

### **Dispersion Shifted Fiber**

Optical fiber that uses a different internal configuration, which changes the chromtic dispersion point to 1330/1550 nm minimum dispersion wavelength.

**Divergence**

When the OA provides unequal amplification of incoming wavelengths, the result is a power divergence between wavelengths.

**DLP**

Detail Level Procedure

**Domain**

A set of OLS nodes/entities that are interconnected to perform some specific function in a network (for example, manager-domain where all nodes are managed by the same manager or group of managers.)

**Doping**

The addition of impurities to a substance in order to attain desired properties.

**DRAM**

Dynamic Random Access Memory

**Drop Side Signal**

An optical signal suitable for transmission over OLS.

**DS-NE**

Directory Service Network Element

**DS3**

Digital Signal Level 3 (44.736 Mb/s)

**DSA**

Refer to Directory System Agent.

**DSF**

Dispersion Shifted Fiber

**DTE**

Data Terminating Equipment

**Dual Ring Interworking**

A configuration of two ring networks that share two common nodes. DRI permits a circuit with one termination in one ring and one termination in another ring to survive a loss-of-signal failure of the shared node that is currently carrying service for the circuit.

**DWDM**

Dense Wavelength Division Multiplexing

**Dynamic Random Access Memory (DRAM)**

RAM which requires electronic refresh cycles every few milliseconds to preserve its data.

**Dynamic Routing on a LAN**

No pre-defined ethernet address is used for routing from SNMS to a managed NE. The IS on the LAN that receives the messages will notify the ES (SNMS) when a better route is available.

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**E EC-1**

Electrical Carrier level-1 signal

**ECI**

Equipment Catalog Item

**EDFA**

Erbium Doped Fiber Amplifier

**EEPROM**

Electrically Erasable Programmable Read-Only Memory

**EI**

External Interface

**Electrical Carrier Level- 1 (EC-1)**

An STS-1 signal that has been shaped and encoded for transmission over electrical media.

**Electromagnetic Compatibility (EMC)**

A measure of equipment tolerance to external electromagnetic fields.

**Electromagnetic Interference (EMI)**

High-energy, electrically induced magnetic fields that cause data corruption in cables passing through the fields.

**Electromagnetic Spectrum**

The different wavelengths of light in the visible spectrum (light the human eye can see), that appear as different colors.

**Electronic Industries Association (EIA)**

A trade association of the electronic industry that establishes electrical and functional standards.

**Electrostatic Discharge (ESD)**

Static electrical energy potentially harmful to circuit packs and humans.

**EMC**

Electromagnetic Compatibility

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**EMI**

Electromagnetic Interference

**EML**

Electro-absorption Modulated Laser

**End Terminal**

The OLS equipment that terminates up to eighty (80) optical line signals.

**Engineering Rules**

A set of rules that determine OLS system configuration possibilities based on fiber type, OA, rate and number of wavelengths. These rules determine the maximum loss per span that can be tolerated, the maximum distance between spans allowed and the maximum number of spans that can be supported.

**EOL**

End Of Life

**EQ**

Equipped

**Equipped (EQ)**

A memory administrative state for slots.

**Erbium**

A soft rare earth element used in metallurgy and nuclear research.

**Erbium Doped Fiber Amplifier (EDFA)**

An amplifier that performs by having a light signal pass through a section of erbium- doped fiber and using the laser pump diode to amplify the signal.

**Errored Seconds (ES)**

A performance monitoring parameter.

**ES**

Errored Seconds

**ESD**

Electrostatic Discharge

**ESS**

Errored Second Count - Section Near End

**ET**

End Terminal

**Event**

1. A fault, inconsistency, or communication problem. 2. An autonomous message put out by the system to indicate that a fault or inconsistency has occurred; messages appear in a craft interface window as they occur and can indicate trouble or be solely informational.

**Express Traffic**

In a WAD site, wavelengths going between two co-located OLS end terminals without going through an LCT.

---

**F Failures in Time (FIT)**

Circuit pack failure rates per  $10^9$  hours as calculated using the method described in *Reliability Prediction Procedure for Electronic Equipment*, Issue 4, September 1992.

**Far End (FE)**

Any other network element in a maintenance subnetwork other than the one the user is at or working on. Also called remote.

**Far-End Receive Failure (FERF)**

An indication returned to a transmitting Network Element that the receiving Network Element has detected an incoming section failure. Also known as RDI (Remote Detect Indication).

**Far-End-Block Error (FEBE)**

An indication returned to the transmitting terminal that an errored block has been detected at the receiving terminal. A block is a specified grouping of bits.

**Fault**

Term used when a circuit pack has a hard (not temporary) fault and cannot perform its normal function.

**Fault Management**

Collecting, processing, and forwarding of autonomous messages from network elements.

**FDI**

Forward Defect Indicator

**FE ACTY**

Far-End Activity

**FEBE**

Far-End-Block Error

**FEC**

Forward Error Correction

**FERF**

Far End Receive Failure. See RDI.

**FIT**

Failures in Time

**Forward Error Correction (FEC)**

A technique used for error detection and correction in which the transmitting host computer includes some number of redundant bits in the payload (data field) of a block or frame of data. The receiving device uses those bits to detect, isolate and correct any errors created in transmission. FEC avoids having to retransmit information which incurred errors in network transit.

**Frequency**

The frequency of a wave indicates how frequently it cycles or changes. It is the number of cycles per one second intervals. Frequency is usually measured in Hertz.

**FTP**

file transfer protocol

**FWM**

Four Wave Mixing

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**G Gateway Network Element (GNE)**

A Gateway Network Element (GNE) is a WaveStar® OLS 400G node that has a physical attachment to the SNMS to support the access of the remote Network Elements. The number of remote NEs a GNE can serve is specified in terms of the number of OSI stack associations the GNE can support without running out of local resources.

**GB**

gigabyte

**Gb/s**

Gigabits per second

**GHz**

Gigahertz

**GNE**

Gateway Network Element

**GUI**

Graphical User Interface

---

## **H High Speed Broadband (HSBB) Optical Translator Unit**

The High Speed Broadband Optical Translator Unit (HSBB OTU) translates incoming wavelengths into those compatible with the OLS 400G. The HSBB OTU is capable of handling SONET/SDH and other asynchronous optical signals within the broadband range.

### **Hop**

Span across a LAN or between Nodes, such as from an End Terminal to a Repeater, or from Repeater to Repeater.

### **HSBB**

High Speed Broadband

### **Hz**

Hertz

---

## **I IAOLAN**

IntraOffice Local Area Network

### **IEC**

International Electrotechnology Commission or Interexchange Carrier

### **In-Service (IS)**

A memory administrative state for ports. IS refers to a port that is fully monitored and alarmed.

### **Intermediate System**

A node in the OLS network that performs the router and forwarding function. An OLS node behaves both as an ES as well as an IS node.

### **Intermediate System to Intermediate System (IS-IS)**

IS-IS is a routing exchange protocol (OSI Network Layer Routing Protocol).

### **IR**

Intermediate Reach

### **IS**

In Service

### **IS Level 1**

All nodes in a single Area use IS-IS Level 1 OSI routing protocol for routing traffic.

### **IS Level 2**

IS-IS protocol is provisioned when the number of OLS nodes has exceeded the maximum level of nodes that can be managed and the nodes are separated into Areas. IS Level 2 is used for

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communication between Areas. IS Level 2 protocol works only between OLS nodes that are designated as Level 2 nodes.

**IS-IS**

Intermediate System to Intermediate System

**ITCO**

Independent Telephone Company

**ITU-T**

International Telecommunications Union–Telecommunications

**IXC**

Interexchange Carrier

**IXL**

Index List

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**J Jitter**

Jitter is defined as short-term variations of the significant instants of a digital signal from their ideal positions in time.

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**K Kb/s**

Kilobits per second

**km**

kilometer

**Krypton line**

1547.82 nm —wavelength used in a standard laser source.

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**L LAN**

Local Area Network

**LBC**

Laser bias current

**LBC-P**

Laser Bias Current for Pump

**LBC-SU**

Laser Bias Current - Supervisory

**LBFC**

Laser backface currents

**LBFC-P**

Laser Backface Current for Pump

**LBO**

Lightguide Build-Out

**LC**

Lucent - made connector, 0.1 dB typical loss

**Lead time**

The amount of time that passes between placement of a product order and receipt of the product.

**LEC**

Local exchange carrier

**LED**

Light-emitting diode

**Level 1 Node**

A Level 1 Node has the capability of communicating with all Level 1 Nodes in the Area of which it is a member. Level 1 Nodes cannot communicate with nodes outside of its own area. The Node can be an external router or an OLS 400G.

**Level 1 Ring**

A Level 1 Ring is composed of only Level 1 Nodes. A Level 2 Node performing as both a Level 2 Node and a Level 1 Node can be part of the Level 1 Ring.

**Level 2 Node**

A Level 2 Node can communicate with other Level 2 Nodes in its subdomain. This provides the ability for communications between Areas via the Level 2 Nodes. In addition, the Level 2 Node communicates with the Level 1 Nodes in its Area. The Node can be an external router or OLS 400G.

**Level 2 Ring**

A set of Level 2 Nodes located within the same routing domain that connects all areas of the OLS network.

**Level 2 Subdomain**

A set of Level 2 Nodes located within the same routing domain that connects all areas of the OLS network.

**LFA**

Loss of Frame Assignment

**LGX**

Lightguide cross-connect.

**Lightguide Build-Out (LBO)**

An adapter for the lightguide fiber jumpers between the LGX, OLS, and OT equipment. It is also used on equipment within the network element. It performs signal attenuation and guarantees the proper signal level to OLS and OT equipment.

**Line**

*1.* An optical transmission line. In T1/Bellcore terminology, "line" refers to a transmission medium, together with the associated high speed equipment, required to provide the means of transporting information between two consecutive network elements; one originates the line signal while the other terminates it. *2.* "Line" also indicates a fiber pair. When used in this document, the following is assumed: 1 line = 2 fibers, 4 line = 8 fibers.

**Line Build-out (LBO)**

An attenuator placed between a Lightwave system and the LGX (equivalent.) It guarantees the optical level will be below the receiving equipment's maximum received power requirements.

**LIU**

Line Interface Unit

**Local Area Network (LAN)**

A communications network that covers a limited geographic area, is privately owned and user administered, is mostly used for internal transfer of information within a business, is normally contained within a single building or adjacent group of buildings, and transmits data at a very rapid speed.

**Local Traffic**

All wavelengths being added/dropped through LCTs or OTs at a WAD site.

**LOF**

Loss of Frame

**Long Reach (LR)**

A standard for optics, concerning transmitters and receivers in a system and ensuring that transmission can be maintained for long distances (tens of kilometers). This standard constrains the output power of the transmitter and the sensitivity of the receiver for long-haul applications (up to 80 km) without the need for regeneration.

**LOS**

Loss of Signal

**Loss Budget**

Loss (in dB) of optical power due to the span transmission medium (includes fiber loss and splice losses).

**Loss of Frame (LOF)**

A failure to synchronize to an incoming signal.

**Loss of Pointer (LOP)**

A failure to extract good data from a signal payload.

**Loss of Signal (LOS)**

The complete absence of an incoming signal.

**Low Speed Broadband (LSBB) Optical Translator Unit**

The Low Speed Broadband (LSBB) Optical Translator Unit (OTU20) consists of two independent optical translators each operating at bit rates from 45 Mb/s to 750 Mb/s. The OTU receives two compatible optical signals between 1300 nm and 1565 nm, and converts them into electrical signals, which are then amplified and regenerated. These electrical signals are then converted back into optical signals and are transmitted in the 1550 nm band.

**LSBB**

Low Speed Broadband

---

**M Maintenance Subnetwork**

A group of network elements that are connected either in an open ring with an End Terminal at each end, or a closed ring via an optical supervisory data link. A network topology map of the maintenance subnetwork can be generated via any one of the network elements in the local transmission ring.

**Menu**

A set of possible values for a parameter.

**MHz**

megahertz

**Midspan Meet**

The capability to interface between two lightwave terminals of different vendors. This applies to high speed optical interfaces.

**MJ**

Major (alarm)

**mm**

Micrometer

**MN**

Minor (alarm)

**Mode**

A discrete optical wave that can propagate through a fiber.

**MTBF**

Mean Time Between Failures

**MTBMA**

Mean Time Between Maintenance Activities

**Multimode Fiber (MMF)**

A fiber with a core (the glass center of the fiber which light travels through) larger than Single Mode Fiber so that more than one wave can pass through it. It is primarily deployed for short distances.

**Multiplexing**

The process of combining several distinct digital signals into a single composite digital signal.

**MZ**

Mach-Zender

---

**N NA**

Not Alarmed

**NE**

Network Element

**NE ACTY**

Near-End Activity

**NEBS**

Network Equipment-Building System

**Network Element (NE)**

A node in a telecommunication network that supports network transport services and is directly manageable by a management system.

**Network Monitoring and Analysis (NMA)**

An operations system designed by Telcordia which is used to monitor network facilities.

**Network Service Access Point Address (NSAP Address)**

An automatically assigned number that uniquely identifies a Network Element for the purposes of routing DCC messages.

**NG-OLS**

Next Generation Optical Line System

**nm**

Nanometer (10<sup>-9</sup> meters)

**NMA**

Network Monitoring and Analysis System

**NMON**

Not Monitored

**Node**

An End System and/or Intermediate System in a DCN. Examples of Lucent Nodes are OLS 400G and SNMS.

**Non-revertive switching**

In non-revertive switching, a working and stand-by line exist on the network. When a protection switch occurs, the standby line is selected to support traffic, thereby becoming the working line. The original working line then becomes the stand-by line. This status remains in effect even when the fault clears. That is, there is no automatic switch back to the original status.

**Not Monitored (NMON)**

A memory administrative state for ports.

**NR**

Not Reported

**NRZ**

Non-return to zero

**NSA**

Nonservice Affecting

**NSAP Address**

Network Service Access Point Address

**NZDSF**

Non-Zero Dispersion Shifted Fiber

- 
- O**
    - O&M**  
Operation and Maintenance
  
    - O&M**  
Operation and Maintenance
  
    - OA**  
Optical Amplifier
  
    - OALAN**  
Overhead Access Local Area Network
  
    - OAM&P**  
Operations, Administration, Maintenance, and Provisioning
  
    - OC, OC-n**  
Optical Carrier
  
    - OCAIM**  
optical channel alarm indication message
  
    - OCHAN**  
Optical Channel
  
    - ODU**  
Optical Demultiplexer
  
    - OLS**  
Optical Line System
  
    - OMON**  
Optical Monitoring Circuit
  
    - OMU**  
Optical Multiplexer Unit
  
    - OOF**  
Out-of-Frame
  
    - OOS**  
Out-of-Service
  
    - OOS-MA**  
out of service—manual

**Open Ring Network**

Network formed of a point-to-point configuration of systems.

**Open System Interconnection Data Communication Network (OSI DCN)**

based on the OSI 7-Layer protocol for transfer of data between systems.

**Open Systems Interconnection (OSI)**

Referring to the OSI reference model, a logical structure for network operations standardized by the International Standards Organization (ISO).

**Operations Interface**

Any interface providing you with information on the system behavior or control. These include the equipment LEDs, interface strip, CIT, office alarms, and all telemetry interfaces.

**Operations Interworking**

The capability to access, operate, provision, and administer remote systems through craft interface access from any site in a SONET network or from a centralized operations system.

**Operations System (OS)**

A central computer-based system used to provide operations, administration, and maintenance functions.

**OPR**

Optical Power Received - Optics

**OPROOS**

Out-of-Service

**OPT**

Optical Power Transmitted - Optics

**Optical Amplifier (OA)**

The Optical Amplifier operates in the 1530 nm to 1563 nm band (191.850 THz - 195.900 THz range), and provides a uniform gain for up to 80 channels.

**Optical Carrier (OC, OC-n)**

The optical signal that results from an optical conversion of an STS signal; that is, OC-1 from STS-1 and OC-n from STS-n.

**Optical Carrier 12/Synchronous Transport Module 4 (OC12/STM4)**

The OC12/STM4 port unit provides a bidirectional port at the OC-12 rate.

**Optical Carrier 192/Synchronous Transport Module 64 (OC192/STM64)**

The OC192/STM64 port unit provides a bidirectional port which is provisionable at either the OC-192- or STM-64-rate.

**Optical Carrier 48/Synchronous Transport Module 16 (OC48/STM16)**

The OC48/STM16 port unit provides a bidirectional port which is provisionable at either the OC-48- or STM-16-rate.

**Optical Channel (OCHAN)**

An OC-N/STM-N wavelength within an optical line signal. Multiple channels, differing by 1.5m in wavelength, are multiplexed into one signal.

**Optical Demultiplexer (ODU)**

An ODU takes the OLS optical signal and separates it into its component signals; up to eighty (80) discrete signals may be extracted.

**Optical Line ID**

A portion of the supervisory signal that identifies optical lines to prevent wrong connections between sites.

**Optical Line Signal**

A multiplexed optical signal containing eight wavelengths or channels.

**Optical Line System (OLS)**

A lightwave transmission system that can multiplex up 8, 16, 80 or more wavelengths, transmit the resulting multiplexed signal, and then demultiplex the signal at the other end.

**Optical Line System (OLS) End Terminal**

Terminal equipment consisting of a co-located Optical Multiplexer Unit (OMU) and Optical Demultiplexer Unit (ODU) for bidirectional transmission, Optical Amplifiers (OA), and OLS Telemetry packs.

**Optical Line System (OLS) Repeater Terminal**

Bidirectional terminal consisting of a pair of Optical Amplifiers (OA) and the corresponding OLS telemetry packs.

**Optical Line System (OLS) Subnetwork**

All dual-facing end terminals and OLS repeaters interconnected with each other. The dual-facing shelf feature extends the access domain beyond the end terminals.

**Optical Monitoring Circuit (OMON)**

The OMON determines the number of channels (wavelengths) present in the WaveStar® OLS 1.6T system, and the output power of each channel present.

**Optical Multiplexer Unit (OMU)**

An OMU takes up to 80 Low Speed Broadband (LSBB), High Speed Broadband (HSBB), or OC-48/STM-16 signals and combines them into a single signal.

**Optical Section**

Refer to *Span*.

**Optical Translator Unit (OTU)**

OTUs translate incoming optical signals to wavelengths compatible with OLS.

**Optical WAD**

Refer to *Wavelength Add/Drop*.

**Orderwire**

A section of the supervisory signal that is used for communication between sites.

**Original Value Provisioning**

The original values are preprogrammed at the factory. These values can be overridden using local or remote provisioning.

**OS**

Operations System

**OSI**

Open System Interface

**OSI DCN**

Open System Interconnection Data Communication Network

**OSNR**

Optical Signal to Noise Ratio

**OSNR-C**

Optical Signal to Noise Ratio - Channel

**OSS**

Operations Support System

**OT**

Optical Translator

**OTCTL**

Optical Translator Controller

**OTPM**

Optical Translator Port Module

**OTU**

Optical Translator Unit

**Out-of-Service (OOS)**

The circuit pack is not providing its normal service function (removed from either the working or protection state) either because of a system problem or because the pack has been removed from service.

**Outage**

A disruption of service that lasts for more than 1 second.

**Overhead Access Local Area Network (OALAN)**

The internal local area network that provides communications between the System Controller circuit pack and the Overhead Controller circuit pack.

**OW**

OrderWire

---

**P Parallel Telemetry**

A set of alarms and status information reported to an operations center.

**Parameter**

A variable that is given a value for a specified application. A constant, variable, or expression that is used to pass values between components.

**Parity Check**

Tests whether the number of ones (or zeros) in an array of binary bits is odd or even; used to determine that the received signal is the same as the transmitted signal.

**Path Overhead (POH)**

Overhead assigned to and transported with the payload until the payload is demultiplexed. It is used for functions that are necessary to transport the payload.

**PC**

standard-type connector, 0.3 dB typical loss

**PCM**

Pulse Code Modulation

**Performance Monitoring (PM)**

Measures the quality of service and identifies any degrading or marginally operating systems (before an alarm would be generated).

**PID**

Private Identifier (Password)

**PIN**

A type of photodiode.

**Platform**

In OLS, a platform is a family of equipment and software configurations designed to support a particular application.

**Plesiochronous**

Refers to network elements involved in multiple digital synchronous circuits running at different clock rates.

**PM**

Performance Monitoring

**POH**

Path Overhead

**Port**

A system interface for transmission, as input, output, or bidirectional.

**PRD**

Product Requirements Document

**Preprovisioning**

The capability to provision a slot before installing a circuit pack.

**Private Identifier (PID)**

Password

**Proactive Maintenance**

Refers to the process of detecting degrading conditions not severe enough to initiate protection switching or alarming, but indicative of an impending signal fail or signal degrade defect.

**Protection Switching**

The switching of traffic from a malfunctioning line to one that is working.

**PROTN**

Protection

**Provisioning**

Assigning a value to a system parameter.

**Pump Laser Efficiency (PLE)**

The PLE provides an indication of the level of performance of pump lasers of the OA.

**PWR**

Power

---

**Q QOS**

Quality of Service

---

**R RCV**

Receive

**RDI**

Remote defect indicator

**Reactive Maintenance**

Refers to discovering defects/failures and then clearing them.

**Regeneration**

The process of reconstructing a digital signal to eliminate the effects of noise and distortion.

**Remote defect indicator (RDI)**

Previously called far-end-receive failure (FERF), an indication returned to a transmitting terminal that the receiving terminal has detected an incoming section failure.

**Remote failure indication (RFI)**

Previously called yellow signals, a signal that alerts upstream STS-1 path terminating equipment that a down stream failure has been alarmed along the STS-1 path. This action prevents multiple alarms from being activated for the same failure and ensures that craft will be dispatched to the correct location of the failure.

**Repeater**

A repeater is an optical device that receives an optical signal, amplifies it and re-transmits it.

**Repeater Terminal**

In OLS, a bidirectional terminal consisting of a pair of optical amplifiers and the corresponding telemetry packs.

**RF**

Radio Frequency

**RFI**

Remote failure indication

---

**Ring**

A series of nodes connected in a "ring" topology so that if there is a failure of a node or a link, traffic can be routed in the opposite direction of the failure and reach all nodes on the ring.

**RM ACTY**

Remote Activity

**Router**

An interface between two networks. While routers are like bridges, they work differently. Routers provide more functionality than bridges. For example, they can find the best route between any two networks, even if there are several different networks in between. Routers also provide network management capabilities such as load balancing, partitioning of the network, and trouble-shooting.

**Routing Domain**

A collection of End Systems and Intermediate Systems which operate according to the same routing procedures and which is operated by a single administrative authority.

**RPP**

Reliability Prediction Procedure

**RT**

Remote Terminal

**RTAC**

Regional Technical Assistance Center

**Rx**

receive

---

**S SA**

Service Affecting

**SBS**

Stimulated Brillouin Scattering

**SC U-LBO**

SC Universal Line-Build-Out

**SD**

Signal Degrade

**SDH**

Synchronous Digital Hierarchy

**SDL**

Supervisory Data Link

**Section Overhead (SOH)**

Capacity added to either an AU-4 or assembly of AU-3s to create an STM-1. Contains always STM-1 framing and optionally maintenance and operational functions. SOH can be subdivided in MSOH (multiplex section overhead) and RSOH (regenerator section overhead).

**SEFS**

Severely Errored Frame Seconds

**SEL**

NSAP Selector is used to differentiate multiple access points (NSAPs) for the same network element whose network name is the Network Entity Title.

**SES**

Severely Errored Seconds

**SESP**

P-bit Severely Errored Seconds

**Severely Errored Frame Seconds (SEFS)**

A performance-monitoring parameter.

**Severely Errored Seconds (SES)**

This performance monitoring parameter is a second in which a signal failure occurs, or more than a preset amount of coding violations (dependent on the type of signal) occur.

**Severely Errored Seconds - P-bit (SESP)**

A performance-monitoring parameter.

**SF**

Signal Fail

**SID**

System Identifier

**Signal to Noise ratio (SNR)**

The relative strength of signal compared to noise.

**Single Mode Fiber (SMF)**

A fiber that has a core (the glass center of the fiber which light travels through) which is small enough so that only one wave can pass through it. This is the only fiber used for long distance optical communication.

**Single-ended Operations**

The single-ended operations capability provides operations support from a single location to remote network elements (NEs) in the same SONET subnetwork. With this capability you can perform operations, administration, maintenance, and provisioning on a centralized basis. The remote NEs can be those that are specified for the current release.

**Site Address**

The unique address for each regenerator or terminal in a repeater span.

**SNMS**

Subnetwork Management System.

**SNR**

Signal to Noise ratio

**SNR-C**

Signal-to-Noise Ratio-Optical Channel

**SONET**

Synchronous Optical Network

**Span**

An uninterrupted bidirectional fiber section between two network elements. Spans can be measured in distance (Kilometers) or in the amount of loss that exists in the span (dB).

**Span Growth**

A type of growth in which one wavelength is added to all lines before the next wavelength is added.

**Span Loss**

Loss (in dB) of optical power due to the span transmission medium (includes fiber loss and splice losses).

**SPE**

Synchronous Payload Envelope

**SPM**

Self Phase Modulation

**SPR-C**

Signal Power Received - Optical Channel

**SPR-P**

Signal power - Pilot Channel

**SPR-SU**

Signal Power Received - Supervisory

**SPT-C**

Signal Power Transmitted - Optical Channel

**SPT-SU**

Signal power Transmitted - Supervisory

**SSMF**

Standard Single Mode Fiber

**ST**

standard-type connector, 0.3dB typical loss

**STM-n**

Synchronous Transport Module level n

**STS, STS-n**

Synchronous Transport Signal

**Subnetwork**

A collection of nodes connected by a single transmission medium.

**Subnetwork Management System (SNMS)**

An element management system that supports various WaveStar® OLS 1.6T network elements.

**Supervisory Signal**

An optical signal originating with the telemetry circuit pack that is used to communicate maintenance information.

**Suppression**

A process where service-affecting alarms that have been identified as an "effect" are not displayed to a user.

**SUPVY**

Supervisory

**Synchronous**

Network elements that are timed from references traceable to a single Stratum-1 source.

**Synchronous Digital Hierarchy (SDH)**

A family of digital transmission rates from 51.84 Mb/s to 9.953 Gb/s that allows the interconnection of transmission products around the world.

**Synchronous Network**

The synchronization of transmission systems with payloads to a master (network clock that can be traced to a single reference clock).

**Synchronous Optical Network (SONET)**

A family of fiber optic transmission rates from 51.84 Mb/s to 13.22 Gb/s that allows the interworking of transmission products from multiple vendors.

**Synchronous Payload Envelope (SPE)**

A 125-microsecond frame structure composed of STS path overhead and bandwidth for the payload.

**Synchronous Transfer Mode (STM)**

Transport and switching method that depends on information occurring in regular and fixed patterns.

**Synchronous Transport Signal (STS, STS-n)**

The basic logical building block signal with a rate of 51.840 Mb/s for an STS-1 signal and a rate of n times 51.840 Mb/s for an STS-n signal.

**SYSCTL**

System Controller

**SYSTEMEM**

System Memory

**System Controller (SYSCTL)**

System Controllers are the central processing unit of a system.

**System Identifier (SID)**

Part of NSAP used for intra-Area routing to the destination Node in the destination Area when the Area address part is the address for that Area.

**System Memory (SYSTEMEM)**

SYSTEMEM is where the system software is stored.

---

**T T1X1 and T1M1**

The ANSI committees responsible for telecommunications standards.

**TA**

Technical Advisory

**TABS**

Telemetry Asynchronous Byte Serial (Protocol)

**TAP**

Trouble Analysis Procedure

**Target Identifier (TID)**

A provisionable parameter used to identify an FT-2000 *OC-48/STM-16* Lightwave network element. Typically, the TID is the common language location identifier (CLLI<sup>TM</sup>) of the FT-2000 1x1 End Terminal, FT-2000 Add/Drop-Rings Terminal, and FT-2000 Repeater Bays.

**TCA**

Threshold-Crossing Alert

**TCP/IP**

Transmission Control Protocol/Internet Protocol

**TDM**

time division multiplexing

**Threshold-Crossing Alert (TCA)**

A condition set when a counter exceeds a user-selected high or low threshold. A TCA does not generate an alarm but is available on demand through the CIT.

**THz**

Terahertz ( $10^{12}$  Hz)

**TID**

Target Identifier

**Time Division Multiplexing (TDM)**

The process of combining a number of lower speed lines into a higher speed line by allocating a short piece of time to each signal.

**TL1**

Transaction Language 1

**TOD**

Time of Day

**TOP**

Task Oriented Procedure

**TOPR-OL**

Total Power Received - Optical Line

**TOPT-OL**

Total Power Transmitted - Optical Line

**Transaction Language 1 (TL1)**

A machine-to-machine communications language that is a subset of CCITT's human-machine language.

**Transmission Control Protocol/Internet Protocol (TCP/IP)**

A networking protocol that provides communication across interconnected networks between computers with diverse hardware architectures and various operating systems.

**Transport Service Bridge (TSB)**

Used internally by an NE to provide direct connectivity with the SNMS via the TCP/IP network to exchange network operation and management information. OLS 400G supports an internal RFC 100g TSB function between OS(s) and NEs for customers that wish to use a TCP/IP network for transporting OSI application messages.

**TrueWave® Fiber**

Non-zero dispersion-shifted fiber manufactured by Lucent Technologies (previously referred to as DEB fiber).

**TSB**

Transport Service Bridge

**TTL**

transistor logic

**Tx**

Transmit

---

**U UAS**

Unavailable Seconds

**UBob**

universal build out block

**Unavailable Seconds (UAS)**

In performance monitoring, the count of seconds in which a signal is declared failed or in which 10 consecutively severely errored seconds (SES) occurred, until the time when 10 consecutive non-SES occur.

**Upgrade**

An upgrade is the addition of new capabilities (features). This requires new software and may require new hardware.

---

**V Value**

A number, text string, or other menu selection associated with a parameter.

**VOA**

Variable Optical Attenuator

---

**W WAD**

Wavelength Add/Drop

**Wave Division Multiplexing (WDM)**

WDM merges optical traffic onto one common fiber. It allows high flexibility in expanding bandwidth. It reduces costly mux/demux function, and reuses existing optical signals.

**Wavelength**

A wavelength is the length of a single wave (measured from crest to crest or trough to trough, for example) or the distance a wave travels in the time it takes to complete one cycle.

Wavelengths are usually expressed in micrometers (mm) or nanometers (nm). Wavelength is often abbreviated by the Greek symbol lamda ( $\lambda$ ).

**Wavelength Add/Drop (WAD)**

The process of adding and dropping wavelengths to provide more efficient transmission. For example, a central office contains two or more OLS end terminals, some wavelengths can be added and dropped locally while others go express between the end terminals by means of OTs.

**Wavelength Blocking**

At a WA/D site with branching, if a wavelength goes express between two co-located OLS end terminals, that wavelength can only be added or dropped at the third co-located end terminal.

Wavelength interchange permits the wavelength on the third end terminal to be converted into an available wavelength at the other two end terminals.

**Wavelength Growth**

A type of growth in which all eight wavelengths are added to a single line before more lines are added.

**Waves**

A wave is an oscillation or movement that transfers energy from point to point. Mathematically, it is described in terms of its frequency, amplitude, and velocity; and it can be visualized as a moving swell or succession of curves.

**WaveWrapper**

The Lucent proprietary format of transporting optical channels. The WaveWrapper format raises the bit rate by factor of 15/14 and adds optical channel overhead and FEC check bytes.

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### **Wideband Communications**

Voice, data, and/or video communications at digital rates from DS0 to DS1 rates (64Kb/s to 1544Kb/s)

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#### **X XPM**

Cross Phase Modulation (same as CPM)

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#### **Z ZDW**

Zero dispersion wavelength

#### **Zero Dispersion Shifted Fiber (DSF)**

DSF where the zero dispersion point is shifted from 1310nm to 1550 nm. It is best suited for applications involving single channel transmission at 1550 nm, providing the benefits of zero dispersion as well as taking advantage of the lower attenuation wavelength.



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