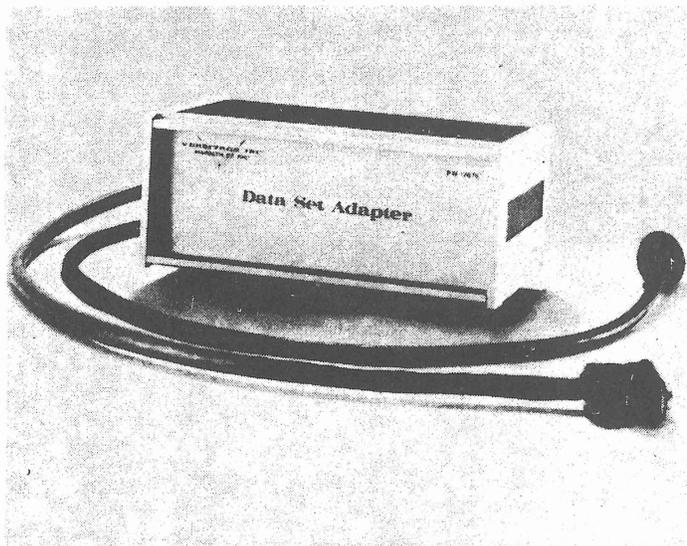


MODEL R42M  
DATA SET ADAPTER  
MIL-STD-188C/EIA RS-232C

INTERFACE CONVERSION

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1. GENERAL

1.01 The Model R42M Data Set Adapter allows Bell System or other data sets having an EIA RS-232C interface to be used with military data terminals having a MIL-STD-188C interface. The R42M is required because of the lower signal voltages, tighter signal restraints and reversed data signalling sense of the military data terminal.

1.02 The four signals affected are receive data, transmit data, receive signal element timing and transmit signal element timing. Individual internal switches provide for polarity selection of each signal and for selection of the transmit timing from either the terminal or communications source. All other signals are passed directly through the R42M.

1.03 The Adapter is equipped with standard 25 and 15 pin terminal connectors, and a cable with an EIA connector for the data set. It also connects in series with the data set power, thus eliminating the use of a separate power cable. Installation requires just a few minutes. Standard Bell System Data Test Sets such as the 914 type can be connected to, and operated through the R42M.

2. SPECIFICATIONS

SPEED

2.01 0 to 9600 BPS, synchronous or non-synchronous data.

COMPATIBILITY

2.02 Operates with the following Bell data sets (or equivalents): All 100 Series, 201, 202, 208 and 209.

INPUT SIGNALS

2.03 +6 volt MIL-STD-188C, EIA RS-232C. Impedance 100K minimum. Maximum input voltage +30 volts.

OUTPUT SIGNALS

2.04 +6 volt MIL-STD-188C, EIA RS-232C compatible. Impedance 75 ohms. Short circuit protected.

PHASE

2.05 Switch programmable for receive data, transmit data, receive signal element timing and transmit signal element timing.

TIMING SELECTION

2.06 Switch selection of transmit signal element timing from the communications equipment source or the processing terminal source.

POWER

2.07 115 VAC, 50/60 Hz, 3 watts.

DIMENSIONS

2.08 4" (10.2 cm) H, 9" (22.9 cm) W,  
5" (12.7 cm) D.

WEIGHT

2.09 4 pounds (1.8 kg).

OPERATING TEMPERATURE

2.10 0°C to 70° C.

AFFECTED SIGNALS		
Signal	EIA Desig.	Bell Desig.
Transmit Data	BA	SD
Receive Data	BB	RD
Transmit Signal Element Timing (Terminal Source OR Transmit Signal Element Timing (Communications Source)	DA	SCTE
Receive Signal Element Timing	DB	SCT
	DD	SCR

3. ORDERING PROCEDURE

3.01 This offering has been assigned USOC VG90V. Sales should specify under the remarks section of the USSO that a R42M Data Set Adapter is required to adapt the Mil. Std. 188C interface to the EIA 232 interface of the data set. Include in the order that the R42M "can be obtained from Versitron Inc.; 6310 Chillum Place, Northwest; Washington, D.C. 20011."

4. ENGINEERING

4.01 Insure that the associated company provides their Western Distributing House with the ordering information underlined in the preceding paragraph. The COLR should reflect that the Bell System service terminates in a R42M Data Auxilliary Set. Options must also be provided.

5. INSTALLATION INSTRUCTIONS

5.01 The following procedure is recommended:

- (1) Remove the top two screws on the back of the adapter and slide the top off.
- (2) Operate the toggle switch to the "DA" position for external transmitter timing (SCTE) or to the "DB" position for internal transmitter timing (SCT).
- (3) Set the four polarity switches located on the circuit board per engineering instruction. (The normal polarity of these switches is as follows:)

EIA Desig.	Signal	Switch Position
BA	Transmitted Data	180°
BB	Receive Data	180°
DB	Transmitter Signal Element Timing (Data Communications Equipment Source)	0°
or DA*	or Transmitter Signal Element Timing (Data Processing Terminal Equipment Source)	or 0°
DD	Receiver Signal Element Timing	0°

\*Dependent on toggle switch setting in step #2.

A drawing of the polarity switch is shown in Figure 1.

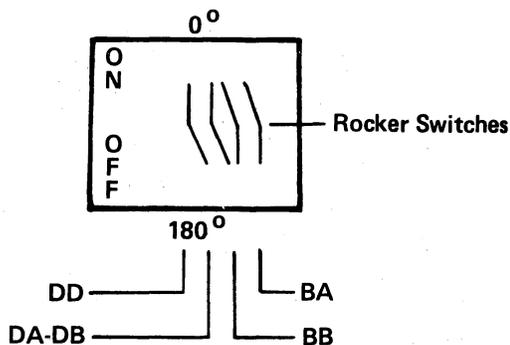


Figure 1

•With the switches in the above positions the signal voltages on the send and receive data leads are inverted and the signalling voltages on the timing leads are not inverted.

•This switch configuration assures the mark and space signal conditions will be consistent on both the EIA and Mil. Std. sides of the converter.

•Unusual circumstances might dictate different settings for the polarity switches. This could occur when the mark/space conventions are EIA in the terminal equipment at one end of the circuit and Mil. Std. on the other end of the circuit. Also, some Government equipment has options to change the polarity of the clocking signal, and appropriate switch settings must be employed to match the data set and terminal equipment timing.

•At the interface connectors of the R42M unit, the four data set leads treated are electrically similar to the EIA signal except the rise time is slower and the voltage tolerance requirements are tighter.

•The data signals will normally have the same options at each end of the circuit.

(4) Disconnect power cord connector from the Data Set.

(5) Connect the Data Set power cord into the Hubbell connector socket on the rear of the R42M unit.

(6) Connect the Hubbell connector on the end of the 3 foot cable into the power socket of the Data Set. (See Note for installation involving Bell 209 Data Sets.)

(7) Connect the 25 pin connector on the end of the 3 foot cable into the customer interface connector on the Data Set.

(8) Connector customer's 25 pin and/or 15 pin interface connectors, as required, into the appropriate connector on the rear of R42M unit. (See Figure 2 and Figure 3).

Note: Where a Bell 209 Data Set is involved, each port of the data set would require a R42M adapter. In this case, the Hubbell connector on the end of the 3 foot cable connects into the Hubbell connector socket on the rear of the next R42M unit. Connect the Hubbell connector on the end of the 3 foot cable of the last R42M adapter into the power socket of the data set.

INSTALLATION DATA

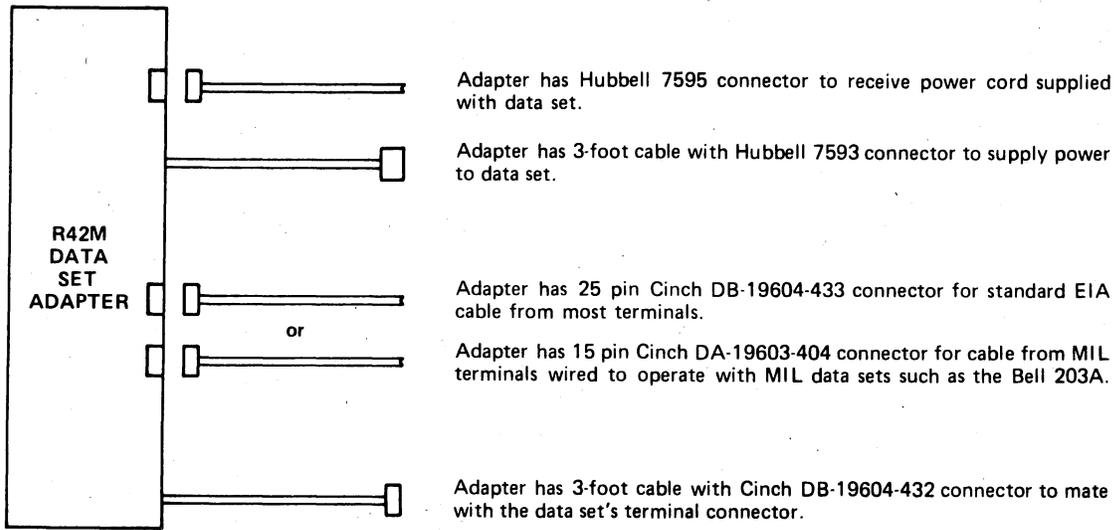


Figure 2

6. MAINTENANCE

6.01 The signals appearing on the 25 pin connector on the R42M unit have the same pin assignment as the customer interface jack on the Data Set.

6.02 The signals appearing on the 15 pin connector on the R42M unit have the same pin assignment as the Mil. Std. 15 pin interface connector on the Bell 203A Data Set. (See Figure 4.)

6.03 Standard Bell System Data Test Sets such as the 914 type can be connected into the 25-pin connector of the R42M. The test set will perform as if it was connected to the customer interface connector on the Data Set.

6.04 A schematic drawing of the R42M is shown in Figure 5.

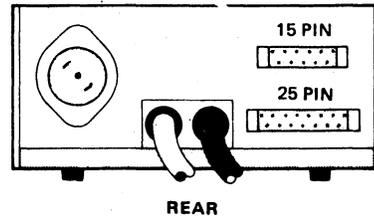


Figure 3

Signal Pin	Ground Pin	Data Set 203-Type Nomenclature
-	1	FG (Frame Ground)
2	9	SD (Send Data)
3	10	RD (Receive Data)
13	6	SCR (Serial Clock Receive)
15	8	SCT (Serial Clock Transmit)
4	11	SCTE (Serial Clock Transmit External)
5,7,12,14		Unassigned

Figure 4

