



# Cable Assembly

Graphics Client DTE/DB9M Serial Adapter, Ports 1 & 2

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ORIGINATOR Andrew Kidder	SIGNATURE	DATE _/_/___
ENGINEERING MANAGER Alain G. Philippe	SIGNATURE	DATE _/_/___
MANUFACTURING MANAGER Robert Davis	SIGNATURE	DATE _/_/___
CONFIGURATION MANAGER Mark D. Miles	SIGNATURE	DATE _/_/___

**1.0 PURPOSE**

This document describes how to build a cable that breaks out two DB9M plugs suitable for use as standard DB9 RS-232 serial ports from the Graphics Client 2x20 2mm connector J7.

The cable includes a loopback of DCD/DTR/DSR (on the non-Graphics Client side) for full null-modem connectivity. A null-modem cable is required to connect to a PC.

The unused conductors of this cable can also be used for prototyping of other I/O functions on J7 (e.g. keypad/digital I/Os, RS-485/422).

**2.0 TOOLS REQUIRED**

- 2.1 IDC crimper
- 2.2 Wire cutters
- 2.3 Label printer

**3.0 BILL OF MATERIALS:**

ITEM	QTY	ADS PART NO.	DESCRIPTION
1	1/2	610110-0209A	Samtec 40-pin connector and ribbon cable, P/N TCDS-20-D-24.00-01-N (connectors on both ends, 24-inch; cut cable into two 12-inch lengths)
2	2 ea.	210020-00904	DB9 plug for ribbon cable attachment, AMP #747321-4 or equivalent

**4.0 ASSEMBLY INSTRUCTIONS:**

- 4.1 Separate wires 1-20 in ribbon cable (Item 1) from each other. Pull apart as short a length as practical (usually about 1.5 inches).
- 4.2 Trim off ribbon cable wires that won't be used in the cable (1, 3, 5, ..., 17, 19).
- 4.3 Lay separated wires onto DB9 connectors as shown in the following table. Note that pins 1, 4 and 6 of both DB9s will require loopback wires. You can use one of the wires clipped off in the previous step.

<i>Signal</i>	<i>J7</i>	<i>Serial 1</i>	<i>Serial 2</i>
	<i>2mm 30-pin</i>	<i>DB9M</i>	<i>DB9M</i>
<i>RXD1</i>	12	2	
<i>TXD1</i>	14	3	
<i>CTS1</i>	16	8	
<i>RTS1</i>	18	7	
<i>GNDCOM1</i>	20	5	
<i>DCD, DTR, DSR</i>		1, 4, 6	
<i>(n/c)</i>		9	
<i>RXD2</i>	2		2
<i>TXD2</i>	4		3
<i>CTS2</i>	6		8
<i>RTS2</i>	8		7
<i>GNDCOM2</i>	10		5
<i>DTR, DSR</i>			1, 4, 6
<i>(n/c)</i>		9	

- 4.4 Crimp each of the DB9 connectors. Use wire strain relief, if available.
- 4.5 Place a permanent adhesive label on the cable that specifies the cable assembly part number. You may have to use a band of clear tape wrapped around the cable to hold the label in place.
- 4.6 Place a label on each of the DB9 connectors indicating "Serial 1" and "Serial 2".

#### 5.0 REVISION HISTORY

LTR	DESCRIPTION	DATE	APPROVAL
1	Draft	10/4/99	
2	Add pin 1 (DCD) to loopback wires Clarify some wording	10/12/99	ak
A	Add ADS P/N for Samtec cable Initial release	12/30/99	ak