

CMN-16 Module CMN-C6SC



Sync Short Range Modem Card



DESCRIPTION

- CMN-C6SC, Synchronous Short Range Modem Card, is a module for mounting in the CMN-16 rack, and is compatible with SRM-5SC and SRM-6SC. The modem is used for local data distribution, connecting full or half duplex synchronous terminals or controllers to computers.
- CMN-C6SC operates over unconditioned 4-wire dedicated lines, for distances up to 11.5 km (7.1 miles), depending on the wire gauge and data rate (see *Tables 1 and 2*).
- Four LED indicators are provided to facilitate diagnostics: Power, Data Carrier Detect, Receive and Transmit Data.
- Transmit timing is provided by three alternative sources:
 - Internal oscillator
 - External clock, or
 - Loopback clock derived from the receive signal.
- The modem's carrier is strap-selectable for either continuous operation for point-to-point applications, switched operation for multipoint applications, or for passing control signals end-to-end. Switched operation is controlled by the RTS signal.
- CMN-C6SC features a switch-selectable DTE/DCE option. This allows it to also operate as a DTE for connection to another DCE (such as a multiplexer port), without the use of a cross cable.
- The low transmit level minimizes crosstalk onto adjacent circuits within the same cable. Data is transmitted and received using a

balanced interface, ensuring high immunity to circuit noise.

- The dedicated line is coupled through isolation transformers which, in conjunction with other circuitry, protect against AC or DC overvoltages.

SPECIFICATIONS

- **Data Rates**
Up to 19.2 kbps, selectable by rotary switch

Table 1. Approximate Range for Point to Point Configuration

Data Rate	19 AWG (0.9 mm)		24 AWG (0.5 mm)		26 AWG (0.4 mm)	
	km	miles	km	miles	km	miles
19.2	8.0	5.0	4.5	2.8	3.5	2.0
9.6	9.0	5.6	5.0	3.1	4.0	2.5
4.8	10.5	6.0	6.0	3.8	4.8	3.0
1.2-2.4	11.5	6.5	6.5	4.0	5.0	3.0

Table 2. Approximate Range for Multipoint Configuration (24 AWG)

Data Rate	Number of Slaves					
	3		5		7	
kbps	km	mile	km	miles	km	miles
19.2	3.2	2.0	2.0	1.2	1.7	1.0
9.6	3.5	2.1	2.5	1.5	2.0	1.2
4.8	4.0	2.5	2.7	1.6	2.3	1.4
1.2-2.4	4.5	2.8	3.0	1.8	2.6	1.6

FEATURES

- Synchronous transmission
- Compatible with SRM-5SC and SRM-6SC
- Data rates up to 19.2 kbps
- Full or half duplex, point-to-point or multipoint
- Internal or external clock
- Transmission range up to 11.5 km (7.1 miles)
- Transformer isolated

- **Transmission Line**
4-wire, unconditioned telephone line (two twisted pairs)
- **Transmission Mode**
Synchronous, full or half duplex, 4-wire operation
- **Transmission Control**
DCD (Circuit 109) turns on after recognizing the receive signal from the line
CTS (Circuit 106) turns on 8 or 50 msec (selectable) after the terminal raises RTS (Circuit 105)

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● **Indicators**

PWR	Green	Power
XMT	Yellow	Transmit Data
RCV	Yellow	Receive Data
DCD	Yellow	Data Carrier Detect

● **Transmission Level**

0 dBm

● **Transmission Range**

Up to 11.5 km (7.1 miles)
(see *Tables 1 and 2*)

● **Transmission Interface**

EIA RS-232-C/ITU V.24, integral 25-pin connector, female

● **Line Interface**

RJ-45 jack

● **Power Requirement**

0.25W

● **Physical**

Length: 177 mm / 6.9 in
Width: 67 mm / 2.6 in
Height: 15 mm / 0.6 in
Weight: 90g / 3.3 oz

● **Environment**

Temperature: 0-50°C / 32-122°F
Humidity: Up to 90%,
non-condensing

Table 3. Strap/Switch Selection

Strap Identity	Function	Positions	Factory Setting
Data Rate	Select	0 - 19.2	
	Data	1 - 14.4	
	Transmit	2 - 9.6	9.6
	Rate	3 - 7.2	
		4 - 4.8	
		5 - 3.6	
	6 - 2.4		
	7 - 1.8		
	8 - 1.2		
Clock	Select	External	
	Timing	Internal	Internal
	Source	Receive	
Carrier	Selects	ON	ON
	Carrier	Controlled	
	Constantly	ON or	
	Controlled	by RTS	
RTS/CTS	Selects	8 msec	8 msec
S Delay	RTS/CTS	50 msec	
	Delay		

Table 4. RJ-45 Pin Assignment

Pin No.	Pin Assignment
1	N.C.
2	Ground
3	Receive-
4	Transmit-
5	Transmit+
6	Receive+
7, 8	N.C.

ORDERING

CMN-C6SC

Sync Short Range Modem Card for CMN-16 Rack

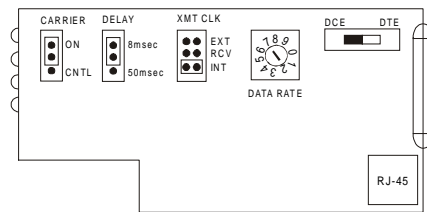


Figure 2. Strapping Diagram

INSTALLATION

1. CMN-C6SC is factory set to DCE. For DTE operation, set the switch to DTE position (see *Figure 1*).

DCE Position		DTE Position	
TD 2	→ XMT	TD 2	← RCV
RD 3	← RCV	RD 3	→ XMT
RTS 4	→ RTS	RTS 4	← DCD Circuit
CTS 5	→ CTS	CTS 5	
DSR 6	← +V	DSR 6	
DCD 8	← DCD Circuit	DCD 8	→ To Modem
TCLK 15	← From Modem	TCLK 15	→ To Modem
RCLK 17	← From Modem	RCLK 17	→ From Modem
DTR 20		DTR 20	← +V
ECLK 24	← To Modem	ECLK 24	→ To Modem

Figure 1. DCE/DTE Connection

2. Set the data rate to the application requirements using the rotary switch (see *Table 3 and Figure 2*).

3. Insert the card through the rear of CMN-16.
4. Install the front panel which is supplied with the card.
5. Prepare the line cable connecting the XMT pair on the CMN-C6SC modem to the RCV pair on the remote SRM-5SC or SRM-5SC.
6. Connect the RS-232/V.24 cable to the 25-pin socket.
7. Connect the line cable to the RJ-45 jack (see *Figure 3 and Table 4*).

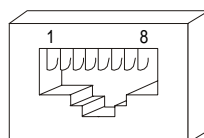


Figure 3. RJ-45 Socket



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