MODELS M.2-COM-4SM, M.2-COM-4S, M.2-COM232-4 AND M.2-COM-2SM, M.2-COM-2S, M.2-COM232-2

FEATURES

- M.2 CARD 2260/2280 SIZE, WITH B & M KEYS AND LATCHING I/O CONNECTORS
- FOUR AND TWO-PORT MPCIE SERIAL CARDS WITH OPTIONAL DB9M CONNECTIVITY
- FOUR SOFTWARE SELECTABLE SERIAL TYPES: RS-232, RS-422, AND RS-485 (2WIRE & 4WIRE)
- "SM" MODELS SUPPORT ALL 3 SERIAL TYPES. "S" MODELS SUPPORT RS-422 AND RS-485
- HIGH PERFORMANCE 16C950 CLASS UARTS WITH 128-BYTE FIFO FOR TX AND RX BUFFERING
- SUPPORTS DATA COMMUNICATION RATES TO 921.6KBPS IN RS232 – AS HIGH AS 3MBPS IN DIFFERENTIAL MODES – *10MHZ* WITH CUSTOM CRYSTAL OPTION
- PORT-BY-PORT FIELD SELECTABLE TERMINATION FOR RS422 & RS485 APPLICATIONS
- VIRTUALLY ANY CUSTOM BAUD RATE MAY BE CONFIGURED BY THE USER VIA REGISTER SETTINGS, NO CUSTOM OSCILLATOR NEEDED
- ±15KV ESD PROTECTION ON ALL SIGNAL PINS
- SUPPORTS CTS, RTS, 9-BIT DATA MODE, HALF-DUPLEX AND FULL-DUPLEX COMMUNICATIONS
- RoHS AND INDUSTRIAL TEMP (-40°C TO 85°C) *BOTH* STANDARD

FUNCTIONAL DESCRIPTION

The M.2-COM-4SM family of cards feature high performance 16C950-class UARTs. Available in 4-port and 2-port versions, each port is capable of communication speeds up to 921.6kbps in RS-232 (differential modes support speeds as high as 3Mbps) and has 128-byte deep transmit and receive FIFOs. Large FIFOs protect against data loss in multitasking operating systems, reduce CPU utilization, and improve data throughput, while reducing or eliminating inter-character or inter-packet pauses. The advanced integrated circuit with pre-scalar supports a wide variety of custom baud rates, and any rates not otherwise achievable can be supported via a custom factory-installed crystal oscillator (up to *10Mbps!*).

RS-232, RS-422, or RS-485 can be software selected, per port, and the selection is stored in non-volatile memory for future use. If you don't need that much flexibility you can order versions with only RS422/485 or even pure RS232. The RS232 ports provided by the card are 100% compatible with every other industry-standard serial COM device, supporting TX, RX, RTS, and CTS. RS422 mode uses the same transceivers as the RS-485 specification, allowing perfect 4-wire RS-422 and RS-485 compatibility – and the device supports full-duplex RS-485 4-wire.

The serial ports on the device are accessed using a low-profile, latching, 6-pin Hirose connector. Optional breakout cables are available, and bring each port connection to a panel-mountable DB9-M connector

SPECIAL ORDER

Please contact ACCES with your precise requirement. Examples of special orders would be custom oscillators, conformal coating, custom software or product labeling, and more. We will work with you to provide *exactly* what is required.
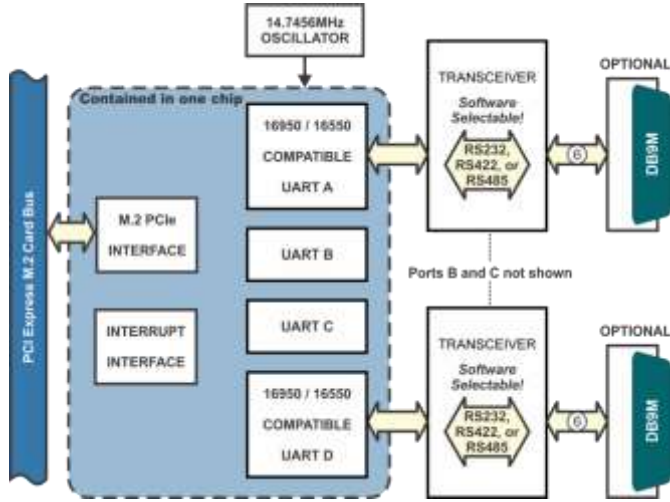

ACCESSORIES

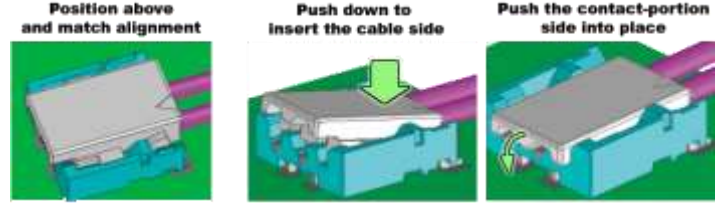| Available accessories include:	
CAB-M.2-COM2	Two port DB-9 cable accessory kit
CAB-M.2-COM4	Four port DB-9 cable accessory kit
ADAP-9	DB-9 Screw Terminal Accessory
M.2-HDW-KIT2	2mm mounting hardware
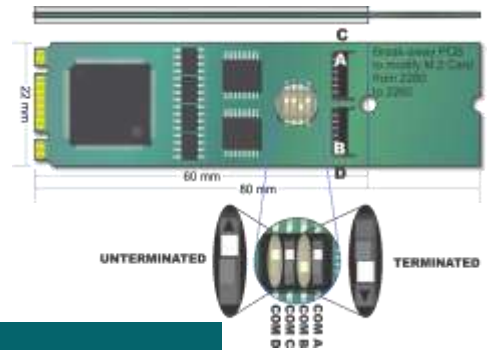
SOFTWARE

A complete driver support package is provided including an easy-to-use Windows terminal program for testing your COM ports. This simplifies the verification of proper COM port operation. The card installs as standard COM ports in all operating systems including DOS, Linux (including Mac OS X) and 32-bit and 64-bit Windows. Additional drivers may be available for a wide variety of operating systems including Windows CE, please contact the factory for compatibility with your specific OS. ACCES is also now offering a VxWorks driver/library for the ultimate real-time process monitoring and control solution.

Mating
- Position above and match alignment
- Push down to insert the cable side
- Push the contact-portion side into place

Un-Mating
- Engage lever
- Pull up to release the simple lock
- Continue lifting, the reinforced lock is released

PC Interface

M.2 Card	2260/2280 size with B & M keys

Communications Interface

Connector	I/O	Hirose DF57-6P-1.2V 6-pin, latching
	Mating	Hirose DF57H-6S-1.2C
Serial Ports		4 (or 2)
software selected serial type (per port, stored in EEPROM)	-4SM (-2SM)	RS-422, RS-485, and RS-232
	-4S (-2S)	RS-422 and RS-485
	232-4 (232-2)	RS-232 only
UART		Quad 16C950
FIFO		128-byte transmit & receive
Baud Rates	RS-232	up to 921.6k baud in RS-232
	RS-422 / RS-485	up to 3MBaud in differential modes
	Custom crystal options	Up to 10Mbps
		advanced-prescaler allows a wide variety of unusual baud rates to be achieved.
Character length		5, 6, 7, 8 bits (contact factory for assistance with 9-bit data)
Parity		Even, Odd, None, Mark, Space
Stop Interval		1, 1½, 2 bits
Flow Control	RS-232	RTS/CTS, Xon/Xoff, None
	RS-422, RS-485	Xon / Xoff, None

Environmental

Temperature	Operating	-40° to 85°C
	Storage	-65° to 150°C
Humidity		5% to 95%, non-condensing
Power required		+3.3VDC @ 1.6W (typical)
ESD Protection		±15kV on all signal pins (IEC 61000)

PHYSICAL

Weight		6.0 grams
Size	Length	60mm/80mm
	Width	22mm

DB-9M Pin	232	422	485
1		Tx-	
2	RX	Tx+	
3	TX	Rx+	Rx/Tx+
4	RTS[1]	Rx-	Rx/Tx-
5	GND	GND	GND
6			
7	RTS	Rx-[1]	
8	CTS		
9			

Note 1: pins 4 and 7 are connected.

Hirose 6-pin	232	422	485
1	GND	GND	GND
2	Tx	Rx+	Rx/Tx+
3	Rx	Tx+	
4	RTS	Rx-	Rx/Tx-
5	CTS		
6		Tx-	

Signal Definitions	
Signal	Meaning
	no connect
RX	Receive Data
TX	Transmit Data
GND	Signal Ground
RTS	Request To Send
CTS	Clear To Send
Tx-	Diff. full-duplex TX -
Tx+	Diff. full-duplex TX+
Rx+	Diff. full-duplex Rx+
Rx-	Diff. full-duplex Rx-
Rx/Tx+	Diff. half-duplex +
Rx/Tx-	Diff. half-duplex -
Rx- RTS	Pins 4 and 7 are connected, so these signals are duplicates to be ignored.

DSub 9-pin Male
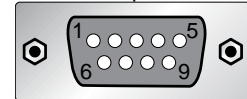
ORDERING GUIDE

Model	Type	Ports	RS-232	RS-422	RS-485
M.2-COM-4SM	M.2 Card	4	Yes	Yes	Yes
M.2-COM-2SM	M.2 Card	2	Yes	Yes	Yes
M.2-COM-4S	M.2 Card	4		Yes	Yes
M.2-COM-2S	M.2 Card	2		Yes	Yes
M.2-COM232-4	M.2 Card	4	Yes		
M.2-COM232-2	M.2 Card	2	Yes		

SHIPS STANDARD WITH INDUSTRIAL OPERATING TEMPERATURE AND ROHS