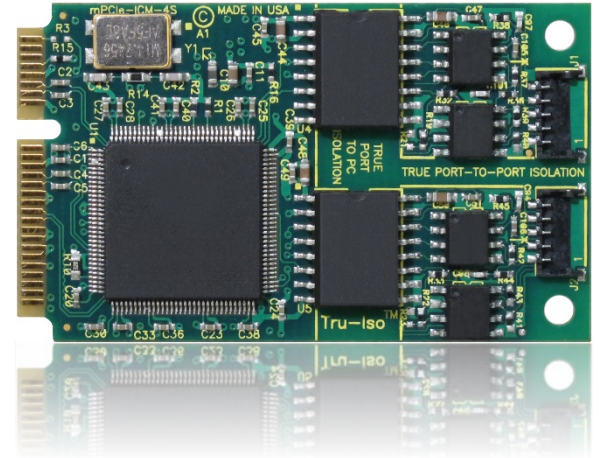## FEATURES

MODELS mPCIe-ICM485-4 AND mPCIe-ICM485-2

- PCI EXPRESS MINI CARD (mPCIe) TYPE F1, WITH LATCHING I/O CONNECTORS
- FOUR AND TWO-PORT RS485 mPCIe SERIAL CARDS WITH OPTIONAL DB9M CONNECTIVITY
- 500V ISOLATION PORT-TO-PORT AND 1500V ISOLATION PORT-TO-COMPUTER ON ALL SIGNALS
- HIGH PERFORMANCE 16C950 CLASS UARTs WITH 128-BYTE FIFO FOR Tx AND Rx BUFFERING
- SUPPORTS DATA COMMUNICATION RATES AS HIGH AS 3MBPS – *12MHZ* WITH CUSTOM CRYSTAL
- PORT-BY-PORT CUSTOMER CONFIGURABLE TERMINATION
- 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 9-BIT DATA MODE
- RoHS AND INDUSTRIAL TEMP (-40°C TO 85°C) *BOTH* STANDARD

FUNCTIONAL DESCRIPTION

The mPCIe-ICM485-4 family of cards feature high performance 16C950-class UARTs. Available in 4-port and 2-port versions, each port is capable of communication 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 *12Mbps!*).

Tru-Iso™ port-to-port and port-to-PC isolation provides a robust solution to common signal level and grounding issues when using long cables to connect computers and other powered devices - up to 500V of difference between pins on adjacent ports, and 1500V between each port and the host computer.

Communication is possible either with custom application software, with off-the-shelf applications (such as HyperTerminal), or with provided samples and utilities, including WinRISC™ ("Windows Really Incredibly Simple Communication").

The serial ports on the device are accessed using a low-profile, latching, 5-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 labelling, and more. We will work with you to provide *exactly* what is required.
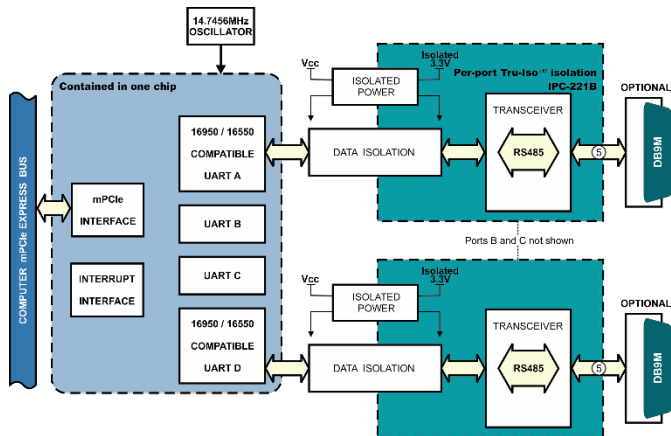
ACCESSORIES

Available accessories include:	
CAB-mPCIe-ICM2S	Two port DB-9 cable accessory kit
CAB-mPCIe-ICM4S	Four port DB-9 cable accessory kit
ADAP-9	DB-9 Screw Terminal Accessory
mPCIe-HDW-KIT2	2mm mounting hardware
mPCIe-HDW-KIT2.5	2.5mm mounting hardware
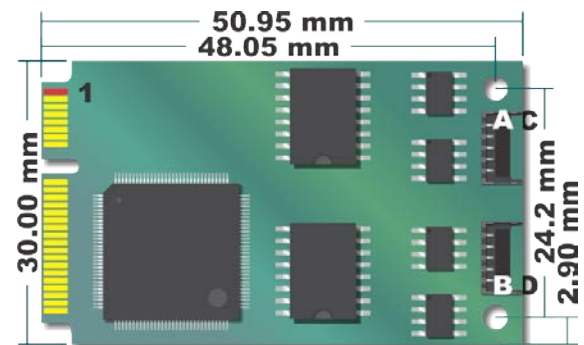
SOFTWARE

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.

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

PCI Express Mini Card	Type F1 "Full Length" V1.2

Communications Interface

Connector	I/O	Hirose DF57-5P-1.2V 5-pin, latching
	Mating	Hirose DF57H-5S-1.2C
Serial Ports		4 (or 2) RS-485
UART		Quad 16C950
	FIFO	128-byte transmit & receive
Baud Rates		up to 3MBaud advanced-prescaler allows a wide variety of unusual baud rates to be achieved. Up to 12Mbps via custom crystal option
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		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)
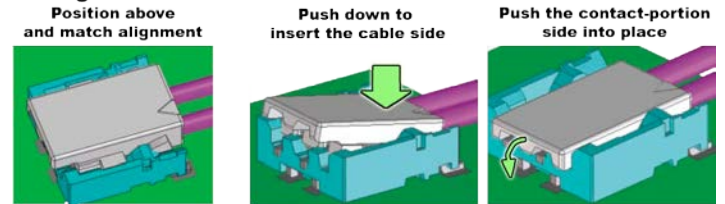
Physical

Weight		6.4 grams
Size	Length	50.95mm (2.006")
	Width	30.00mm (1.181")

Isolation

Tru-Iso™	IPC-221B
port-to-PC	1500 V peak (AC or DC)
port-to-port	500 V peak (AC or DC)

Careful attention has been paid to isolation design, including extensive keep-out zones and hand-routed circuit paths, as well as component and material selection.

DB-9 Male Pin	485
1	
2	
3	Rx/Tx+
4	Rx/Tx-
5	GND
6	
7	
8	
9	

Note 1: pin 4 and pin 7 are connected.

Signal Definitions	
Signal	Meaning
	no connect
Rx/Tx+	Dif. half-duplex +
Rx/Tx-	Dif. half-duplex -

DSub 9-pin Male
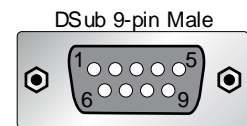
ORDERING GUIDE

mPCIe-ICM485-4	4-port RS-485 PCI Express Mini Card
mPCIe-ICM485-2	2-port RS-485 PCI Express Mini Card

SHIPS STANDARD WITH INDUSTRIAL OPERATING TEMPERATURE AND ROHS