Connective Peripherals Pte Ltd

USB2-H-9004-M Hi-Speed USB to 4-Port RS232/RS485 Adaptor

Data Sheet

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The USB2-H-9004-M provides a simple method of adapting legacy serial devices with RS232 and RS485 interfaces to modern USB ports by incorporating the FTDI FT4232H Hi-Speed USB bridge chip.

The adaptor, which is contained within a metal case, can be externally powered and can supply an output of +5VDC @ up to 250mA on the 5mm terminal block connectors. Indicator LEDs provide functional status.

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1 Introduction

1.1 Functional Description

The USB2-H-9004-M adaptor is a USB to quad interface RS232 or RS485 level serial UART adaptor incorporating FTDI's FT4232H Hi-Speed USB2.0 (480Mb/s) to quad serial UART interface IC device. The FT4232H handles all the USB signaling and protocols. The adaptor is housed in a metal enclosure and provides a fast, simple way to connect devices with an RS232 or RS485 interface to USB.

The integrated electronics of the USB2-H-9004-M utilise the FTDI FT4232H and includes RS485 level shifters and RS232 level shifters plus TXD/RXD LEDs to provide a visual indication of data traffic through the adaptor. Selection of RS232 or RS485 signalling is made using DIL switches on the front of the adaptor. Each of the quad channels can be independently configured as either RS232 or RS485.

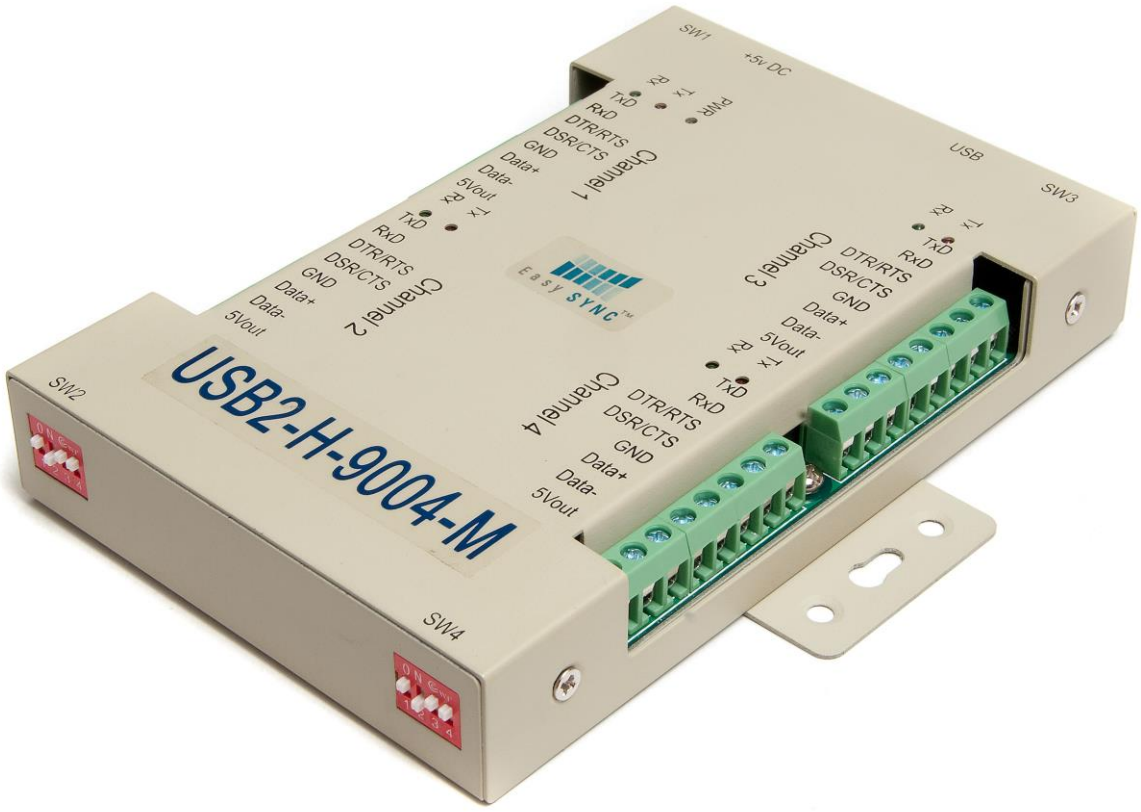

Figure 1.1 USB2-H-9004-M

Flexible mounting allows the USB2-H-9004-M to be used in a variety of applications, from a portable adaptor to accompany a laptop to permanent installations in industrial, commercial and retail locations.

The metal enclosure incorporates a standard USB-B client connector for connection to an upstream host or hub port. RS232 and RS485-level signals are available on four 5mm terminal block connectors. The maximum RS485-level data rate is 10Mbps and the maximum RS232-level data rate is 1Mbps.

The adaptor can be independently powered using an external +5V DC (1A) power supply which connects via a 2.1mm jack socket. It can also be powered from the USB interface if required.

The USB2-H-9004-M adaptor requires USB device drivers, available free from http://www.ftdichip.com/Drivers/VCP.htm. These are used to make the USB2-H-9004-M appear as a

Virtual COM Port (VCP). This allows existing serial communications software, such as HyperTerminal, to exchange data through the USB2-H-9004-M to a legacy RS485 or RS232 peripheral device.

1.2 LED Description

The USB2-H-9004-M uses 9 LEDs to indicate a valid link as well as data traffic according to the following table:

LED Color	Function	Description	Quantity
Yellow	PWR	ON when USB2-H-9004-M is powered, configured and ready for use.	1
Red	TxD Activity	Flashes when data is transmitted from the USB2-H-9004-M to the attached RS232 or RS485 device. One LED for each UART channel	4
Green	RxD Activity	Flashes when data is transmitted from the attached RS232 or RS485 device to the USB2-H-9004-M. One for each UART channel.	4

Table 1.1 – LED Description

1.3 Block Diagram

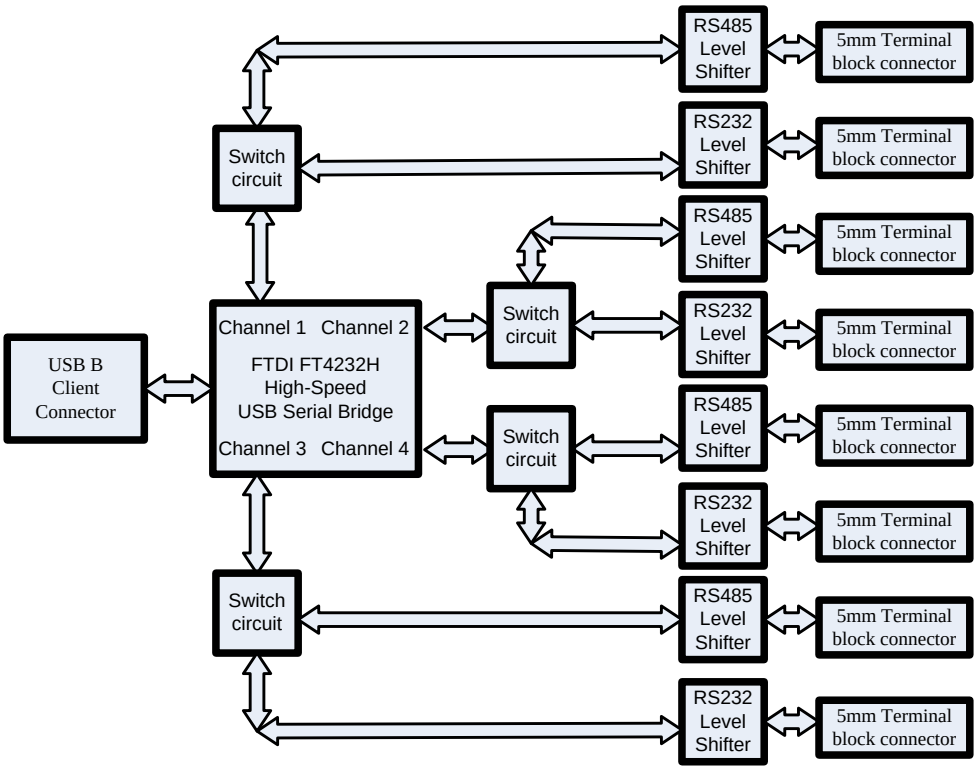

Figure 1.2 USB2-H-9004-M Block Diagram

1.3.1 Block description

USB standard B Client Connector

USB B Client Connector
This connector provides the interface for connection to a USB Host or Hub port. A standard "A to B" cable is provided, though one of a different length may also be used. The maximum cable length is 5 meters, according to the USB 2.0 specification.

FTDI FT4232H
FT4232H Hi-Speed USB2.0 (480Mb/s) is a quad serial UART interface IC device. Operating system device drivers are required in order to work with the FT4232H to provide the Virtual COM Port serial functionality.

Quad RS485 Level Shifter
The RS485 level shifter converts the signals provided by the FT4232H into the voltage levels required by RS485 devices.

RS485 connectors
Four 3 pin 5mm terminal block connectors provide the connection to RS485 peripherals devices. These are CN5 for channel 1, CN8 for channel 2, CN11 for channel 3 and CN14 for channel 4 (The RS485 and RS232 share the same GND pin which is the middle pin of these connectors).

Quad RS232 Level Shifter
The RS232 level shifter converts the signals provided by the FT4232H into the voltage levels required by RS232 devices.

RS232 Connectors
Four 8 pin 5mm terminal block connectors provide the connection to RS232 peripherals devices. These are made up from 3 connectors CN3, 4, 5 for channel 1, CN6, 7, 8 for channel 2, CN9, 10, 11 for channel 3 and CN12, 13, 14 for channel 4 The RS232 and RS485 share the same GND pin.

Switching circuit
The switching circuit configures which mode, RS232 or RS485, is set for each channel. The switches SW1 to SW4 also enable or disable certain functions.

1.4 Features

- Adds quad RS-232 or RS-485 serial port by connecting to a USB 2.0 Hi-Speed interface.
- RS-485 Echo and non-Echo modes selection.
- RS-485 Termination ON and Termination OFF mode selection.
- Easy plug & play installation and RS-232/RS-485 device connection
- Provide USB2.0 Hi-Speed(480Mbps) interface and works with USB 1.1 & 2.0 Host and Hub ports
- Industry Standard FTDI chip set & device drivers for maximum compatibility
- Microsoft Windows® WHQL-certified, Mac OS X, Linux and Windows CE device drivers
- Installs as a standard Windows COM port
- COM port number can be changed to any available COM port number, to support HyperTerminal, or any other serial communications software application running in Windows
- Supports Windows 7.0. Server 2008, 2003, Vista, XP, 2000, Linux, Mac OS X
- FIFO: 2k byte transmit buffer, 2k byte receive buffer
- RS-485 data signals: Data+, Data-, GND
- RS-232 data signals: TxD, RxD, DTR or RTS, DSR or CTS, GND
- Selectable +5VDC Power source from USB port or external power adaptor.
- +5VDC output at 250mA. (total on 4 ports)
- Set in RS232 mode, the serial port operates up to 1Mbps
- Set in RS485 mode, the serial port operates up to 10Mbps
- Serial Communication Parameters
    - Parity: None, Even, Odd
    - Data bits: 7, 8
    - Flow control: X-ON/X-OFF, None (set in RS485 mode)
    - Flow control: RTS/CTS , DTR/DSR, X-ON/X-OFF, None(set in RS232 mode)
- LEDs indicate RxD, TxD and power for monitoring port status.
- Operating temperature of -40°C to +85°C
- USB cable of 0.9 meter included
- FCC and CE approved (submitted for test at time of writing datasheet).

1.5 Performance Figures

Parameter	Performance
USB Interface	480Mbps USB 2.0 Hi-Speed
RS485 Interface	Standard Windows baud rates (300bps to 921.6Kbps) Custom baud rates (300bps to 10Mbps) through baud rate aliasing. See FTDI Application Note AN_120: Aliasing Baud Rates
RS232 Interface	Standard Windows baud rates (300bps to 921.6Kbps) Custom baud rates (300bps to 1Mbps) through baud rate aliasing. See FTDI Application Note: AN_120: Aliasing Baud Rates

Table 1.2 - Performance Figures

1.6 Ordering Information

Part Number	Description
USB2-H-9004-M	Hi-Speed USB to 4-Port RS232/RS485 adaptor with metal case

Table 1.3 - Ordering Information

2 Installation

2.1 Hardware Configuration

The USB2-H-9004-M supports 4 serial channels. All 4 can be independently set as either RS232 or RS485. Channel configuration is done using switches SW1 to SW4. Various jumpers also allow power supply source and pull-up/pull-down termination resistors.

Switch SW1 to SW4 Settings

The default SWx switch settings enable RS485 mode. This can be changed as shown in the following table:

SW1 Position Channel 1 configuration	SW2 Position Channel 2 configuration	SW3 Position Channel 3 configuration	SW4 Position Channel 4 configuration	Open (off)	Closed (on)
1	1	1	1	RS232 mode	RS485 mode
2	2	2	2	RS485 Echo enabled	RS485 Echo disabled
3	3	3	3	120R Termination resistor enabled	120R Termination resistor disabled
4	4	4	4	5V Out Disable	5V Out Enable

Table 2.1 –Switch Setting Configuration of the USB2-H-9004-M

The following gives a brief description of SW1 to SW4 switches.

Modes:
The USB2-H-9004-M can be configured as either an RS232 or RS485 serial interface.

Echo:
When the serial interface is set to RS485, then echo can be enabled or disabled.

Termination:
The USB2-H-9004-M has a 120Ω termination resistor which can be switched in or out of the circuit when the channel is used in RS485 mode.

5V Out:
This +5V supply is available after the USB2-H-9004 is fully enumerated and device drivers are loaded.

Jumper Settings

There are various jumpers on the adaptor PCB. These can be used to select the functions described in the following table:

Channel	Jumper	Connections made	Function
All	JP1	1-2	Power supplied from USB Host 5V

		2-3 **(default)**	Power supplied from +5V power jack input.
1	JP2	connected **(default)**	Connects the +5V output onto the channel 1 output pin if the +5V has been enabled. Requires Position 4 of SW1 closed.
		not connected	Disconnects the +5V output onto the channel 1 output pin if the +5V has been enabled.
	JP6	connected **(default)**	750Ω pull-up bias resistor on channel 1 RS485 Data + is connected in circuit
		not connected	750Ω pull-up bias resistor on channel 1 RS485 Data + is NOT connected in circuit
	JP7	connected **(default)**	750Ω pull-down bias resistor on channel 1 RS485 Data - is connected in circuit
		not connected	750Ω pull-down bias resistor on channel 1 RS485 Data - is NOT connected in circuit
2	JP3	connected **(default)**	Connects the +5V output onto the channel 2 output pin if the +5V has been enabled. Requires Position 4 of SW2 closed.
		not connected	Disconnects the +5V output onto the channel 2 output pin if the +5V has been enabled.
	JP8	connected **(default)**	750Ω pull-up bias resistor on channel 2 RS485 Data + is connected in circuit
		not connected	750Ω pull-up bias resistor on channel 2 RS485 Data + is NOT connected in circuit
	JP9	connected **(default)**	750Ω pull-down bias resistor on channel 2 RS485 Data - is connected in circuit
		not connected	750Ω pull-down bias resistor on channel 2 RS485 Data - is NOT connected in circuit
3	JP4	connected **(default)**	Connects the +5V output onto the channel 3 output pin if the +5V has been enabled. Requires position 4 of SW3 closed.
		not connected	Disconnects the +5V output onto the channel 3 output pin if the +5V has been enabled.
	JP10	connected **(default)**	750Ω pull-up bias resistor on channel 3 RS485 Data + is connected in circuit
		not connected	750Ω pull-up bias resistor on channel 3 RS485 Data + is NOT connected in circuit
	JP11	connected **(default)**	750Ω pull-down bias resistor on channel 3 RS485 Data - is connected in circuit

		not connected	750Ω pull-down bias resistor on channel 3 RS485 Data - is NOT connected in circuit
4	JP5	connected **(default)**	Connects the +5V output onto the channel 4 output pin if the +5V has been enabled. Requires Position 4 of SW4 closed.
		not connected	Disconnects the +5V output onto the channel 4 output pin if the +5V has been enabled.
	JP12	connected **(default)**	750Ω pull-up bias resistor on channel 4 RS485 Data + is connected in circuit
		not connected	750Ω pull-up bias resistor on channel 4 RS485 Data + is NOT connected in circuit
	JP13	connected **(default)**	750Ω pull-down bias resistor on channel 4 RS485 Data - is connected in circuit
		not connected	750Ω pull-down bias resistor on channel 4 RS485 Data - is NOT connected in circuit

Table 2.2 –Jumper Selection of USB2-H-9004-M

2.1.1 Mounting

The USB2-H-9004-M can be wall mounted using the mechanical metal brackets.
This is shown in the following figure -

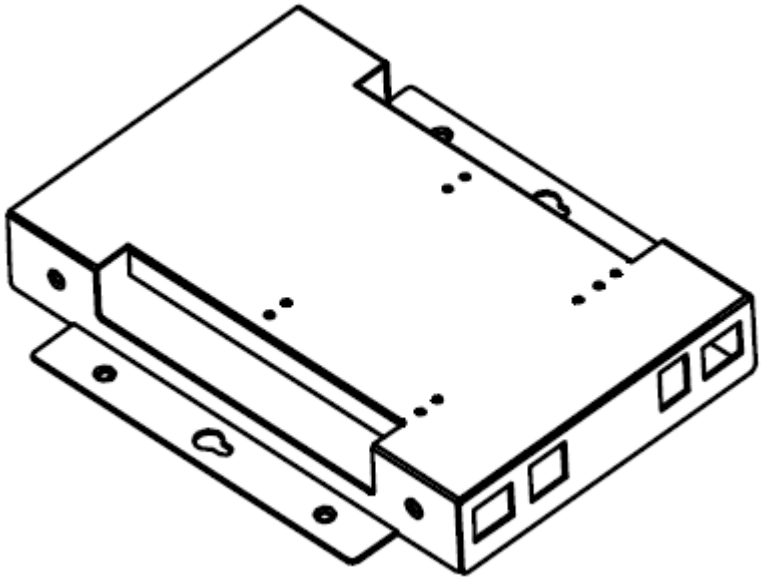

Figure 2.1 - USB2-H-9004-M Brackets

2.2 Device Driver Installation

The USB2-H-9004-M adaptor drivers are available for download from:
http://www.ftdichip.com/Drivers/VCP.htm.

2.2.1 Microsoft Windows

With the device drivers being Windows Hardware Quality Labs (WHQL) certified, they are also available through download directly from the Microsoft® Windows® Update service. This is the best choice when connecting the USB2-H-9004-M to a computer running Windows Vista. Additional installation options are noted below:

Installation Executable on Windows XP

1) Login to your system as Administrator, or a user with Administrator rights.
2) Prior to connecting the USB2-H-9004-M to the USB Host or Hub port, download the latest device driver version from http://www.ftdichip.com/Drivers/VCP.htm.
3) Run this executable to install the device drivers.
4) Connect the USB2-H-9004-M to your computer. A notification will appear near the task bar indicating that new hardware has been installed and is ready for use. It is normal if this notice appears twice.

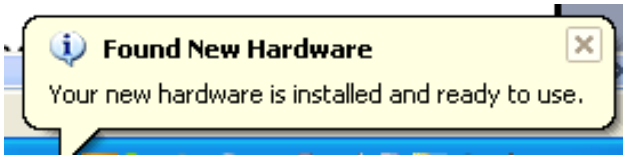

Figure 2.2 - Hardware Ready

Windows Update shown on Windows XP

You must have an active Internet connection and the Windows Update Service enabled.

1) Connect the USB2-H-9004-M to your USB Host or Hub.
2) The "Found New Hardware" Wizard will appear. The first dialog should ask whether it is acceptable to use the Windows Update Service to find the device driver.

Figure 2.3 – Found New Hardware Wizard

3) Select one of the "Yes" choices and click "Next".
4) The following screen appears:

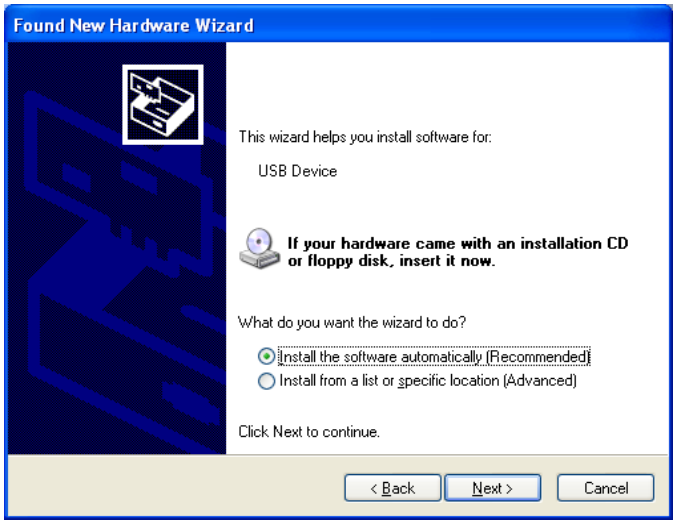

Figure 2.4 – Automatic Install

5) Wait while the driver is found, downloaded, and installed. This step may take a couple minutes depending on the Internet speed.

6) After the files are found and installed, click "Finish" to complete the installation.

Figure 2.5 - Complete Hardware Installation

7) Steps 2 through 6 will repeat. The first time installs the basic USB Serial Converter in the USB device tree. The second time installs the Virtual COM Port layer in the Ports tree and assigns the COM port number.

8) Steps 2 through 7 will repeat for each channel of the USB2-H-9004-M.

9) When both portions of the device driver have been installed successfully, the following message will appear, indicating that the device is ready.

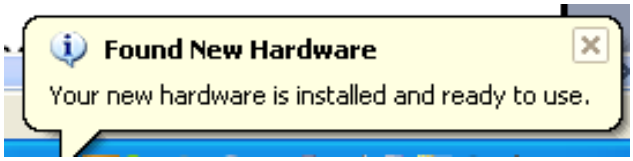

Figure 2.6 - Hardware Ready

COM Port Assignment

Next, to determine which COM port has been assigned, open the Windows Device Manager from the System Control Panel.

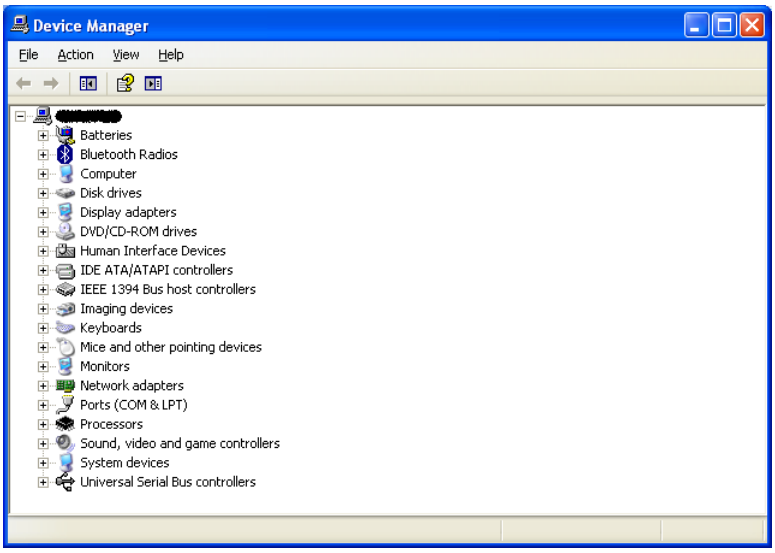

Figure 2.7 - Device Manager

Click on the Plus "+" sign next to the Ports tree to list the available COM port. You will see Connective Peripherals "USB COM Port", followed by a COMn assignment. And four additional Connective Peripherals USB Serial Converters, namely "USB Serial Converter A" ,"USB Serial Converter B" ,"USB Serial Converter C" and "USB Serial Converter D".

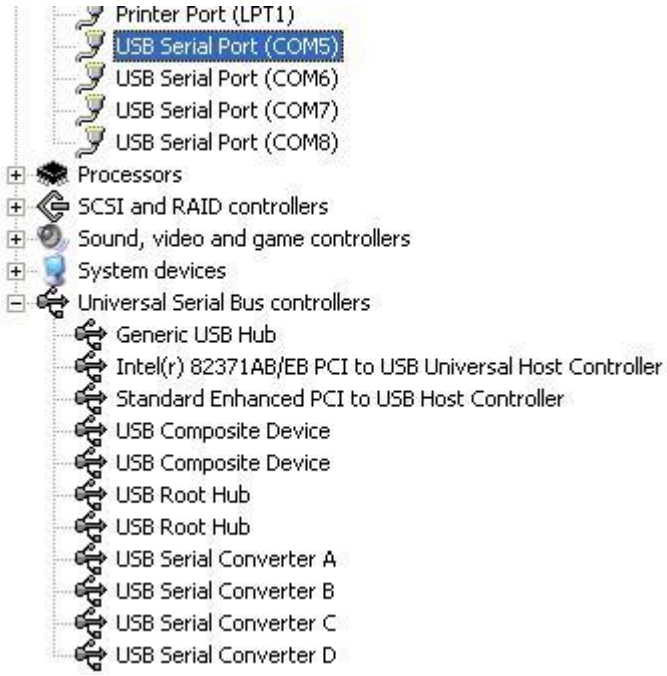

Figure 2.8 - COM Port Assignment

To determine which COM port has been assigned to Converter A, B, C or D, the cursor point to the USB Serial Port (COM5), (COM6), (COM7), (COM8), then right-click on it and select "Properties", it shows their relationship to the Converter A, B, C or D.

In the figure below, the Converter A is assigned to COM5, Converter B is assigned to COM6, Converter C is assigned to COM7 and Converter D is assigned to COM8.

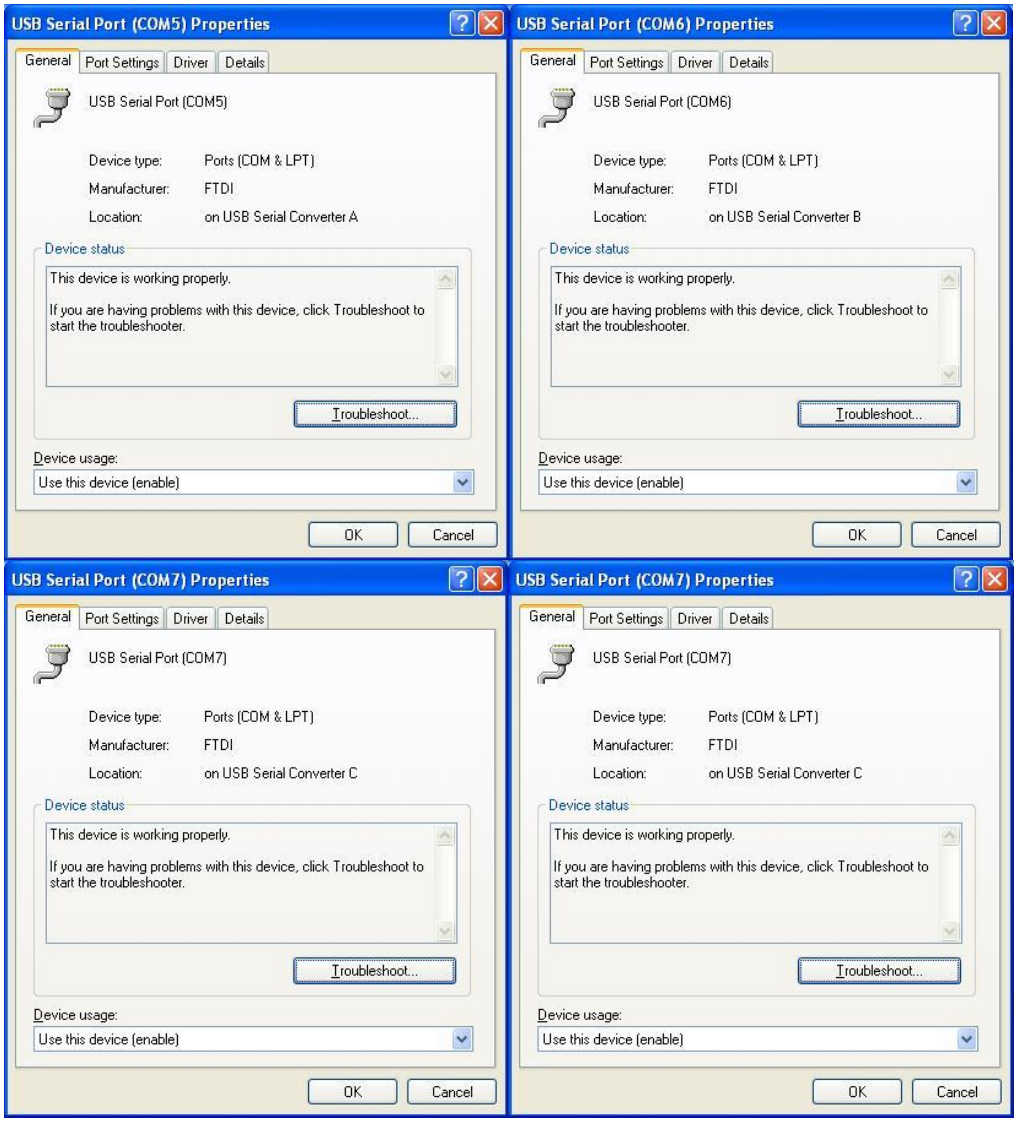

Figure 2.9 – COM Port Assignment and Properties

Use this COM port number with your application software in order to access the USB2-H-9004-M.

If an application requires use of a different COM port number, the assignment may be changed through the Advanced Driver Options settings.

From the above "Properties", click on the "Port Settings" tab.

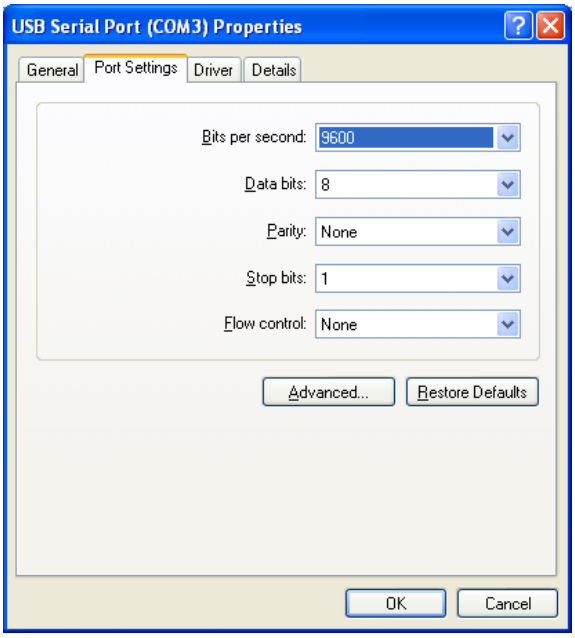

Figure 2.10 - Settings Tab

Then click on the "Advanced…" button.

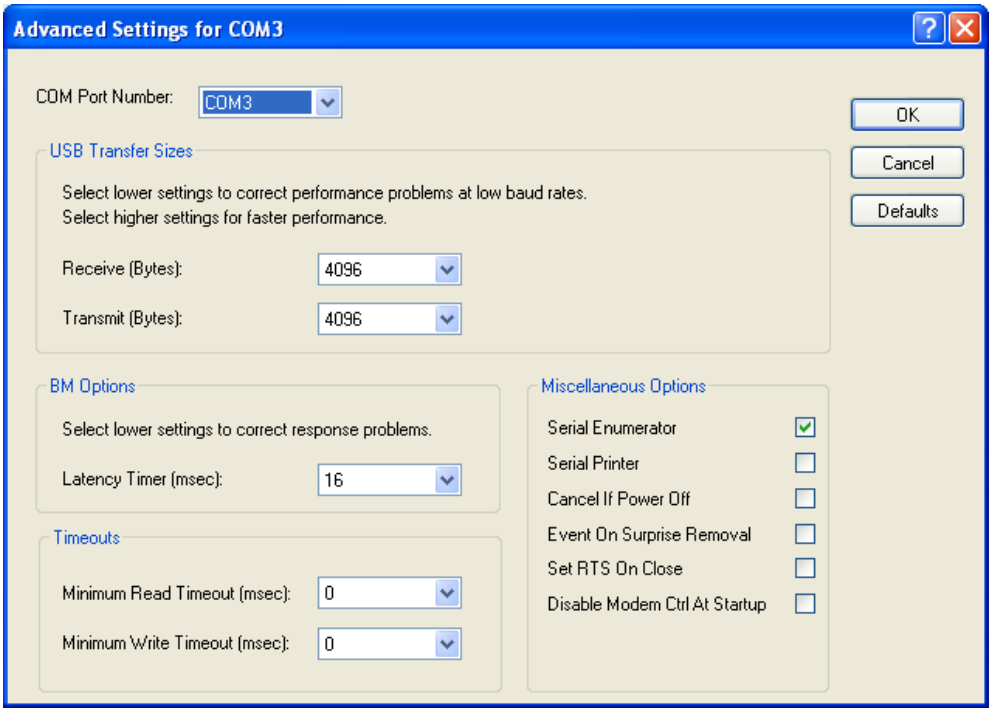

Figure 2.11 - Advanced Options

This will display the various advanced settings. Note the COM port assignment in the upper left. Clicking on the drop-down list will display the available port numbers. Select one that is not in use and click OK on each dialog box to activate the selection. Windows will remember this COM port number.

2.2.2 Mac OS X, Linux, Windows CE

Device drivers and FTDI installation guides for Mac OS X, Linux and Windows CE are available for download on the Connective Peripherals web site. Follow the respective FTDI installation guides for the chosen operating system.

3 Connections

3.1 External Connectors

3.1.1 USB

The USB2-H-9004-M is a downstream USB 2.0 Device and is connected via a standard USB-B client connector to an upstream USB Host or Hub.

Pin Number	Pin Type	Description
1	Power	VBUS – USB Power provided from upstream USB Host or Hub
2	Bidirectional	D– = USB data signal, negative polarity
3	Bidirectional	D+ = USB data signal, positive polarity
4	Ground	GND = USB signal ground
Shield	Case Ground	Drain = typically connected to the host PC case

Table 3.1 – USB B Receptacle Pin-Out

3.1.2 RS232 Connections

Each RS232 port is connected through a 5mm terminal block connector. This is shown in the following table:

Terminal Block Pin Number (Channel 1 to Channel 4)	Pin Type	Description
1	Output	TXD = Transmit Data
2	Input	RXD = Receive Data
3	Output	DTR or RTS = Data Set Ready or Request To Send
4	Input	DSR or CTS = Data Carrier Detect or Clear To Send
5	Ground	GND = RS232 signal ground
8	PWR output	+5V DC output

Table 3.2 – Connections required for RS232 serial interface

3.1.3 RS485 Connections

Each RS485 port is connected through a 5mm terminal block connector. This is shown in the following table:

Terminal Block Pin Number (Channel 1 to Channel 4)	Pin Type	Description
5	GND	GND
6	Input/Output	DATA+
7	Input/Output	DATA-
8	PWR output	+5V DC output depending on SW settings and jumper settings

Table 3.3 – Connector of RS485 Pin-Out

4 Electrical details

4.1 USB

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
USB_VCC	Input Power Voltage*	4.25	5.0*	5.25	V	*Present when USB cable is attached and USB Host or Hub powered.
I_{cc}	USB current***		100	150	mA	***Does not include power supplied to external device through +5V output

Table 4.1 - USB Electrical Details

4.2 RS232

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
V_{trans}	Transmitter output voltage swing	± 5			V	RL = 3KΩ
V_{rec}	Receiver input voltage range	±2.4		±25	V	Input resistance = 3KΩ to 7KΩ
	ESD HBM		±15		KV	RS-232 Inputs and Outputs

Table 4.2 - RS232 Electrical Details

4.3 RS485

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
Receiver Input						
VCM	Common-mode input voltage range	-7	+12		V	
IN	Input Current			1.0	mA	VIN = +12V
				-0.8		VIN = -7V
VTH	Differential Threshold Voltage,VTH	-0.2		+0.2	V	
VIHYST	Input Hysteresis		20		mV	

RIN	Input Resistance, RIN	12	15		kΩ	
Transmitter Output						
VOD	Differential Output Voltage, dVOD	1.5		5	V	With RL = 54Ω. CL = 50pF *
ESD Tolerance						
ESD HBM	RS485 Inputs and Outputs		±15		kV	
EN61000-4-2ContactDischarge	RS-485 Inputs and Outputs		±8		kV	
EN61000-4-2AirGapDischarge	RS-485 Inputs and Outputs		±15		kV	

Table 4.3 – RS485 Electrical Details

4.4 PSU Input

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
Vin	Power supply input		5.0		V	Maximum of 1A

Table 4.4 – PSU Input Details

4.5 Power Output

The USB2-H-9004-M provides a +5V DC for an external device that requires power. The maximum allowable current that can be supplied from the USB bus is 500mA, including the circuitry of the USB2-H-9004-M itself. Up to 250mA (total on 4 ports) may be used by the external devices.

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
I_O	Output Power Current	0		250	mA	total available current for 4 ports

Table 4.5 - Power Output Option

5 Mechanical Details

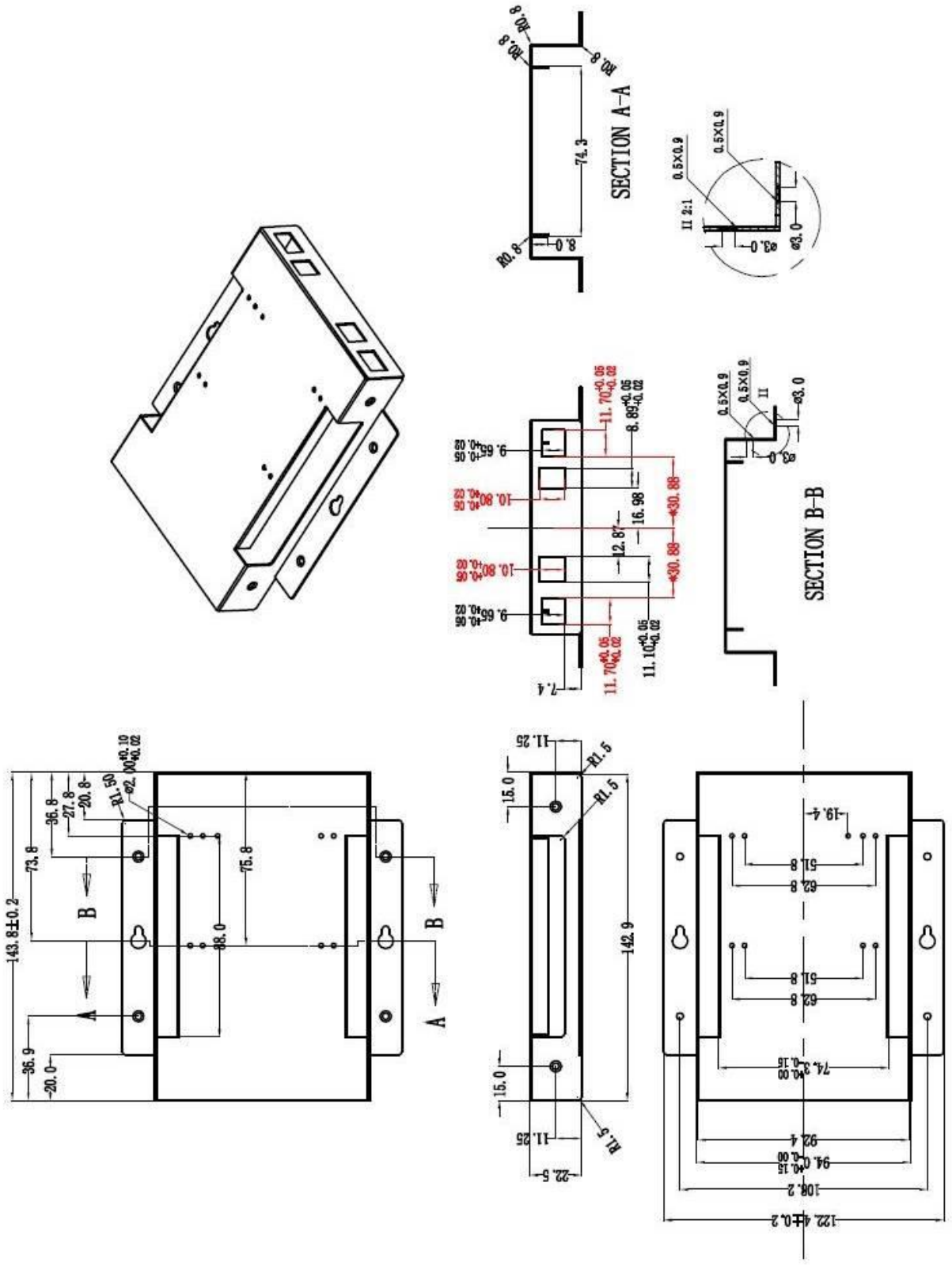

Table 5.1 - USB2-H-9004-M Case Dimensions - top

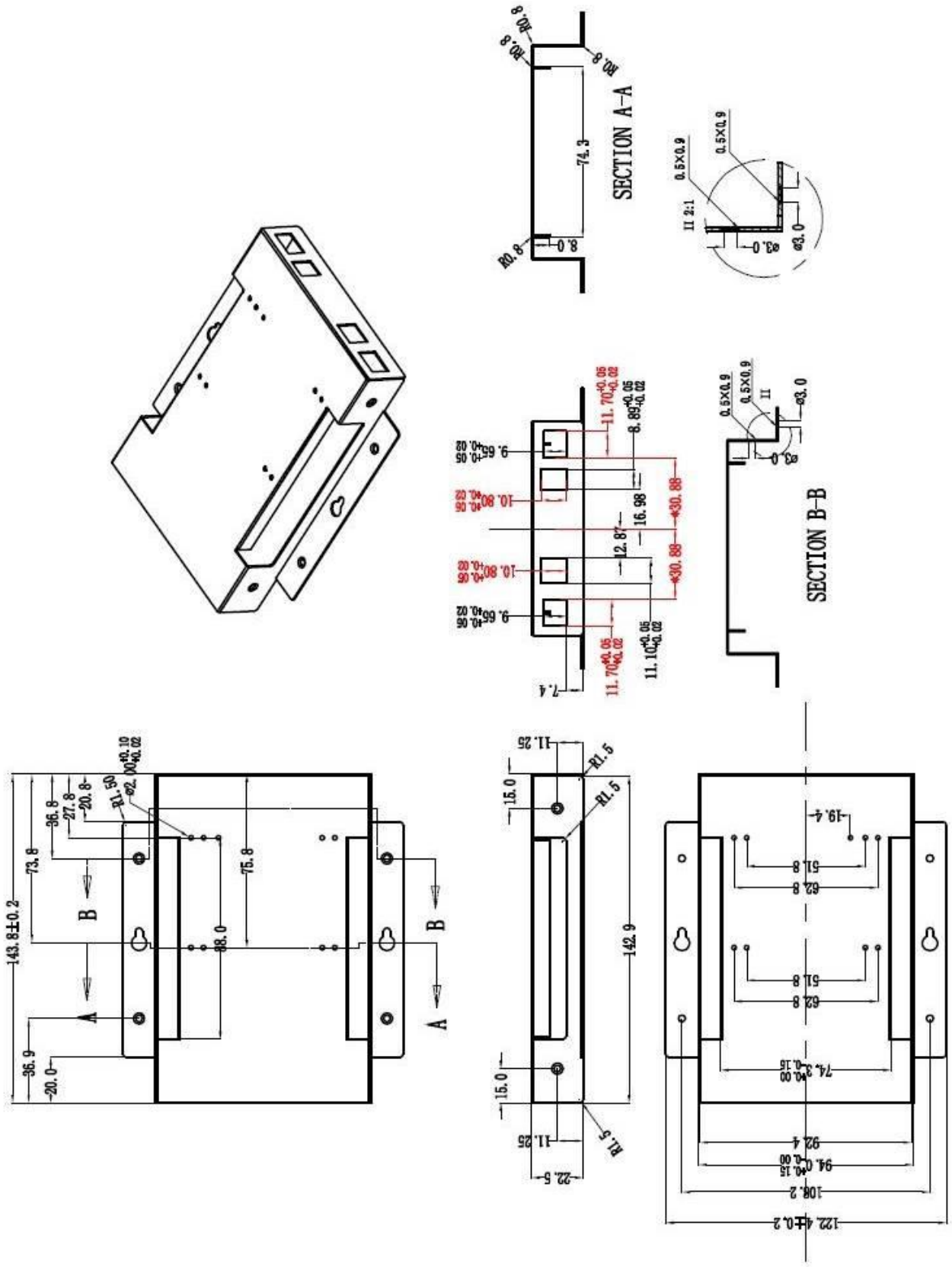

Table 5.2 - USB2-H-9004-M Case Dimensions - bottom

6 Physical Environment Details

6.1 Storage Temperature

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
T	Storage Temperature Range	-65		+150	°C	

Table 6.1 - Storage Temperature

6.2 Operating Temperature

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
T	Operating Temperature Range	–40		+85	°C	5% to 95% RH, non condensing

Table 6.2 - Operating Temperature

7 Environmental Approvals & Declarations

7.1 EMI Compatibility

FCC and CE

The USB2-H-9004-M has been tested to be compliant with both FCC Part 15 Subpart B and European EMC Directive.

CE

NOTE: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FC

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

7.2 Safety

The USB2-H-9004-M is defined as Limited Power Supply (LPS) device, with operating voltages under 60VDC.

7.3 Environmental

The USB2-H-9004-M is a lead-free device that complies with the following environmental directives: RoHS, WEEE, REACH, PFOS and DecaBDE.

7.4 Reliability

The USB2-H-9004-M is designed as a robust USB-Serial adaptor for use in many environments. There are no user-serviceable parts. Any failure will require a replacement of the unit.

7.4.1 MTTF

The Mean Time To Failure is calculated at TBD hours.

7.5 Import / Export Information

Import / Export Information	
Country of Origin	China
Harmonized Code	8471.80.1000
Product Description	USB to RS232/RS485 Computer Adaptor, Quad Ports
USA ECCN	EAR99 – No License Required

Table 7.1 - Import / Export Information

8 Troubleshooting

8.1 Hardware

Cables are the most common sources of trouble with external devices.

Check the following:

- USB cable is properly inserted at both ends
- Computer power is ON
- Computer is not in Sleep or Standby
- If a USB Hub is used, be sure it is set for "Self-Powered" operation
- If a USB Hub is used, be sure all cables are properly inserted
- If all the above are OK, the Yellow LED should be lit, indicating the device has been recognized by the USB subsystem.

RS485 cables – check the following:

- Check for specific handshake requirements of your RS485 peripheral.
- Because there are no handshake signals, ensure the application is set to "No Hardware Handshake", or equivalent.
- Test the port with a loop-back connector. Connect DATA+ to DATA+, DATA- to DATA-. Use a simple terminal program to check that data is transmitted and received.

RS232 cables – check the following:

- Output signals (TXD, RTS, DTR) are connected to the respective inputs (RXD, CTS, DSR) in each direction.
- Check for specific handshake requirements of your RS232 peripheral.
- If handshake signals are note used, ensure the application is set to "No Hardware Handshake", or equivalent.

Test the port with a loop-back connector. Connect TXD to RXD, RTS to CTS and DTR to DSR. Use a simple terminal program to check that data is transmitted and received.

8.2 Device Driver

Ensure the latest device driver is in use. See http://www.ftdichip.com/Drivers/VCP.htm..

If other devices with FTDI chips are installed in the system, check with all manufacturers of these devices for the latest device drivers.

See the FTDI installation guides for additional details: http://www.ftdichip.com/FTDocuments.htm

Common Windows Device Driver Troubles:

- DEVICE TIMES OUT: The default settings of the device driver assume typical data transfers of hundreds to thousands or more bytes at a given time. Some applications, such as a GPS device, only send data in short packets, often only a few bytes. If this is the case, it may be necessary to adjust the driver's buffer size and/or latency timer to smaller values. These values can be adjusted through the advanced driver options as noted in Figure 2.12. The buffer size can be reduced to 64 bytes. The latency timer can be set as low as 2ms. A setting of 1ms will cause unnecessary USB traffic and could adversely affect data transmission.
- ERRATIC MOUSE POINTER: The device driver defaults to query an attached device to find out whether it is a mouse or modem, consistent with native COM port operation. Some RS485 peripherals constantly send short packets of data, causing the host system to "think" a mouse or modem has been attached. These short packets will interfere with normal mouse operation causing the pointer to jump around the screen. If this happens, disconnect the RS485 device and

uncheck the Serial Enumerator option, also found on the advanced driver options screen in Figure 2.11.

- COM PORT IN USE: Windows keeps track of all COM port assignments. If multiple products have been connected to a single system, the COM port number will increase, even if the other devices are not attached. If the higher COM port assignments are not acceptable for the application, known unused COM port numbers should be uninstalled according to the FTDI installation guide: http://www.ftdichip.com/FTDocuments.htm

8.3 Technical Support

Technical support may be obtained from your nearest Connective Peripherals office. See details below.

E-Mail (Support): support@connectiveperipherals.com

Web: http://www.connectiveperipherals.com/products

9 Contact Information

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Web Shop URL http://www.connectiveperipherals.com

Appendix A - List of Figures and Tables

List of Figures

List of Tables

Appendix B - Revision History

Revision	Changes	Date
1.0	Initial release	2010-09-08
1.1	Re-branding to reflect the migration of the product from EasySync to Connective Peripherals name – logo change, copyright changed, contact information Changed, all internal hyperlinks changed.	2019-03-20

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

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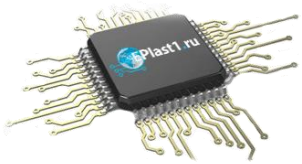
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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