Connective Peripherals Pte Ltd

USB2-H-100X-M FAMILY Hi-Speed USB to Multi-Ports RS232 Adapter

Datasheet

Document Reference No.: CP_000010

Part Number				
USB2-H-1016-M	USB2-H-1008-M	USB2-H-1004-M	USB2-H-1002-M	USB2-H-1001-M

Version 1.1

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The USB2-H-100X-M family provide a simple method of adapting legacy serial devices with RS232 interfaces to modern USB ports by incorporating the FTDI's Hi-Speed USB bridge chips.

The adaptor which is contained within a metal enclosure is either USB powered or externally powered (depends on the number of ports) and can supply an output of +5VDC @ up to 80mA on the 5mm terminal block connectors (1- and 2-port models) or 30mA on the Pin 9 of DB9 connectors. Indicator LEDs provide functional status.

The USB2-H-100X-M family have been tested to be compliant with both FCC Part 15 Subpart B and European EMC Directive.

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1 Introduction

1.1 Functional Description

The USB2-H-100X-M modules are a family of communication devices. This model, USB2-H-100X-M, provides a simple method of adapting many legacy RS232 serial devices to a modern USB port. This is accomplished by incorporating the industry standard FTDI USB2.0 Hi-Speed serial bridge chip.

The integrated electronics of the USB2-H-100X-M utilise the FTDI FT4232H, FT2232H or FT232H plus RS232 level shifters and TXD/RXD LEDs to provide a visual indication of data traffic through the module. The following diagrams show images of the modules in the USB2-H-100X-M family:

Figure 1.1 - USB2-H-1001-M

Figure 1.2 - USB2-H-1002-M

Figure 1.3 - USB2-H-1004/1008/1016-M

The modules use a standard USB-B device connector for connection to an upstream host or hub port. RS232-level signals, including modem handshake signals, are available on an industry-standard DE-9P connector, the single and dual port modules also provide a 5mm terminal block connector, as an alternative interface for connecting the module. The maximum RS232-level data rate is 1Mbps for each port.

The USB2-H-100X-M module requires USB device drivers, available free from http://www.ftdichip.com/Drivers/VCP.htm, which are used to make the USB2-H-100X-M appear as Virtual COM Ports (VCP). This allows existing serial communications software, such as HyperTerminal, to exchange data through the USB2-H-100X-M to a legacy RS232 peripheral device.

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1.2 LED Description

The USB2-H-100X-M has three coloured LEDs to indicate a valid link as well as data traffic according to the following table:

LED Colour	Function	Description	LED quantity
Yellow	Enumerated	ON when USB2-H-100X-M is configured and ready	1
Red	TxD Activity	Flashes when data is transmitted from the USB2-H-100X-M to the attached RS232 device	Each port has one TXLED
Green	RxD Activity	Flashes when data is received from the attached RS232 device to the USB2-H-100X-M.	Each port has one RXLED

Table 1.1 – LED Description

1.3 Block Diagram

1.3.1 Single Port Block Diagram

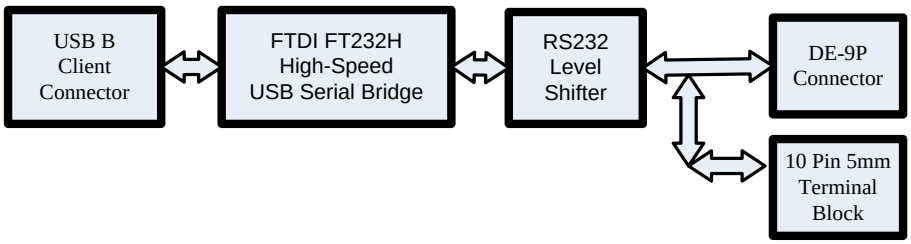

Figure 1.4 - USB2-H-1001-M Block Diagram

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1.3.2 Dual Port Block Diagram

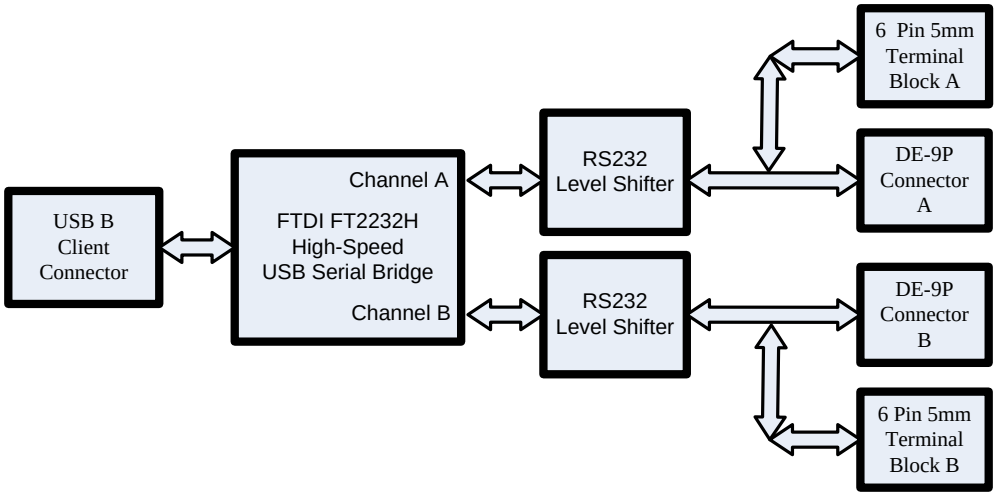

Figure 1.5 - USB2-H-1002-M Block Diagram

1.3.3 Four, Eight and Sixteen Ports Block Diagram

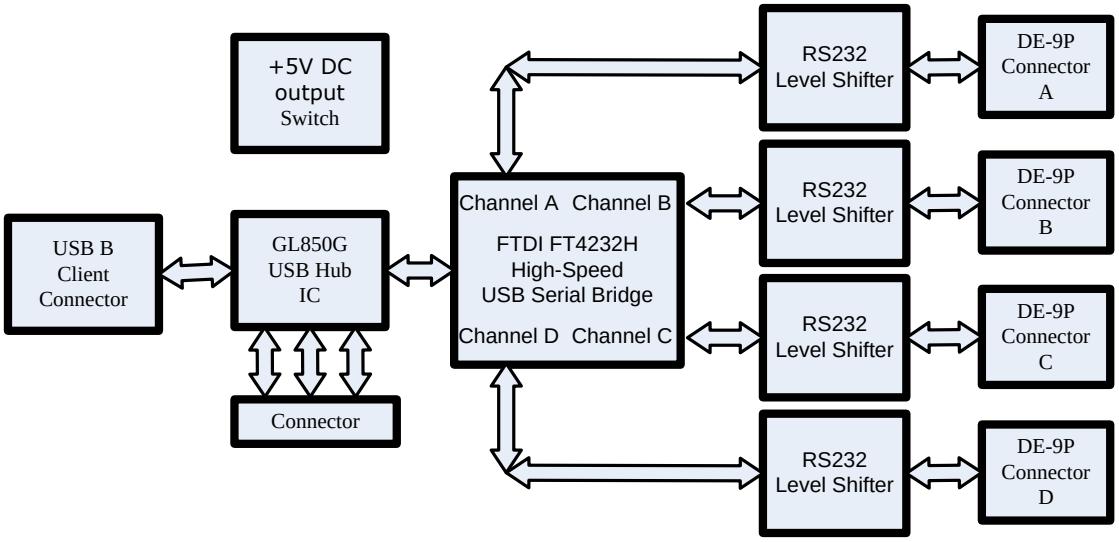

Figure 1.6 - USB2-H-1004/1008/1016-M Main Board Block Diagram

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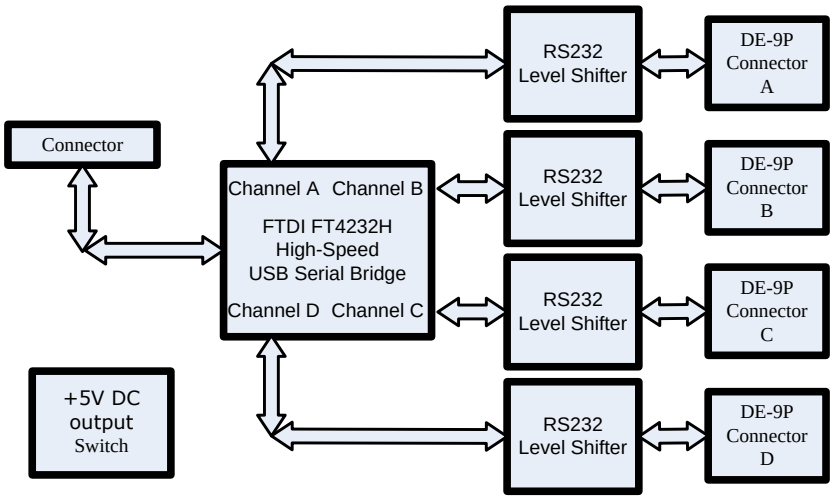

Figure 1.7 - USB2-H-1008/1016-M Daughter Board Block Diagram

1.3.4 Block description

USB B Client Connector

This connector provides the interface for connection to a USB Host or Hub port. The maximum cable length is 5 meters, according to the USB 2.0 specification.

Genesys GL850G

The Genesys GL850G is an advanced version Hub solution which fully complies with Universal Serial Bus Specification Revision 2.0.

FTDI FT4232H

The FTDI FT4232H provides the Hi-Speed USB-to-Quad Channel Serial conversion. Operating system device drivers are required in order to work with the FT4232H to provide the quad Virtual COM Port serial interfaces.

FTDI FT2232H

The FTDI FT2232H provides the Hi-Speed USB-to-Dual Channel Serial conversion. Operating system device drivers are required in order to work with the FT2232H to provide the dual Virtual COM Port serial interfaces.

FTDI FT232H

The FTDI FT232H provides the Hi-Speed USB-to-Single Channel Serial conversion. Operating system device drivers are required in order to work with the FT232H to provide the one Virtual COM Port serial interface.

RS232 Level Shifter

The RS232 level shifter converts the signals provided by the Hi-Speed USB-to-Serial conversion of FTDI into the voltage levels required by RS232 devices.

DE-9P Connector (Male)

The DE-9P connector is configured in an industry standard (TIA/EIA-574) pin-out to provide connection to RS232 peripherals through standard cables. See section 2.1.2

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5mm Terminal Block

The 5mm terminal block connectors provide the connection to RS232 peripherals devices and can be used instead of the DE-9P connector shared by the same port.

+5V DC Output Switch

The switch can be used to disable/enable the +5VDC output to an external application.

Main Board

This is used on the 4 and 16 ports product. When the product has 4-ports it uses a main board, when the product has 16-ports it uses two main boards.

Daughter board

This is used on the 8 and 16 ports product. A single daughter board is used for 8-port adapters. Two daughter boards are use for 16-port adapters.

1.4 Features

- RS-232 serial ports bridged to Hi-Speed USB 2.0 interface.
- Easy plug & play installation and RS-232 device connection
- Provides USB2.0 Hi-Speed (480Mbps) interface and works with USB 1.1, 2.0 and 3.0 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 standard Windows COM ports
- 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
- FIFO: USB2-H-1004/1008/1016-M - FT4232H 2K byte transmit buffer, 2K byte receive buffer

  USB2-H-1002-M - FT2232H 4K byte transmit buffer, 4K byte receive buffer

  USB2-H-1001-M - FT232H 1K byte transmit buffer, 1K byte receive buffer
- RS-232 data signals: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
- Single, dual and quad Ports product are Powered by USB port. No external power adapter is required. Note that they can also be powered from external power adapter.
- Serial port speed up to 1Mbps
- Serial Communication Parameters
  - Parity: None, Even, Odd
  - Data bits: 7, 8
  - Flow control: RTS/CTS , DTR/DSR, X-ON/X-OFF, None
- Standard DE-9P male connectors
- LEDs indicate USB Enumeration, RxD, TxD for monitoring port status & easy diagnostics
- Operating temperature of -40°C to +85°C
- 5mm terminal block connectors
- +5V DC power output for external devices,
  - The maximum current of 4, 8 and 16 port adapters are 30mA

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- The maximum current of 1 and 2 port adapters are 80mA

Note. Windows CE5.0 can only support COM0 to COM9 ports. When the FTDI COM ports are over the Windows CE available COM ports, it is not possible to use the larger USB2-H-100X-M modules.

Note: HyperTerminal is no longer provided with Windows 7/Vista.

1.5 Performance Figures

Parameter	Performance
USB Interface	480Mbps USB 2.0 Hi-Speed
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_VCP_Baud_Rates

Table 1.2 - Performance Figures

Part Number	Description
USB2-H-1016-M	Hi-Speed USB to 16-Port RS232 module
USB2-H-1008-M	Hi-Speed USB to 8-Port RS232 module
USB2-H-1004-M	Hi-Speed USB to quad-Port RS232 module
USB2-H-1002-M	Hi-Speed USB to dual-Port RS232 module
USB2-H-1001-M	Hi-Speed USB to single-Port RS232 module

Table 1.3 - Ordering Information

1.6 Hardware Configurations

Insert the A-plug of the USB cable into an available USB Host or Hub port. Insert the B-plug of the USB cable into the B-receptacle on the USB2-H-100X-M.

1.6.1 Wiring

RS232 interfaces have followed a standard 9-pin configuration on a D-sub connector since the mid-1980s. The USB2-H-100X-M family follows this standard as a Data Terminal Equipment (DTE) device. If the RS232 equipment being connected is a Data Communication Equipment (DCE) device, it's typical that a straight-through cable can be used.

DTE Pin Number	Signal Name	DCE Pin Number
1	DCD = Data Carrier Detect	1
2	RXD = Receive Data	2
3	TXD = Transmit Data	3

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4	DTR = Data Terminal Ready	4
5	GND = RS232 signal ground	5
6	DSR = Data Set Ready	6
7	RTS = Request To Send	7
8	CTS = Clear To Send	8
9	RI = Ring Indicator	9

Table 1.4 – RS232 DTE to DCE connection with straight-through cable

If any USB2-H-100X-M module is connected to another DTE device, a serial "null-modem" cable should be used. A null-modem cable handles connecting output signals to the corresponding input signals on the other end. Table 2.2 shows a typical null-modem cable. Note that RI and DCD are not always used.

DTE Pin Number	Signal Name	DTE Pin Number
2	RXD = Receive Data	3
3	TXD = Transmit Data	2
4	DTR = Data Terminal Ready	6
5	GND = RS232 signal ground	5
6	DSR = Data Set Ready	4
7	RTS = Request To Send	8
8	CTS = Clear To Send	7

Table 1.5 – RS232 DTE to DTE connection with null-modem cable

Some serial devices may require certain handshake signals be connected. Refer to your device manual for cabling details.

Switch Setting

5V Out:

On the USB2-H-1004/1008/1016-M, the RI pin of each channel can alternatively be used to output a +5V, 30mA supply if the RI function is not required. This +5V supply is available after the USB2-H-1004/1008/1016-M are fully enumerated and device drivers are loaded.

The USB2-H-1004-M, USB2-H-1008-M and USB2-H-1016-M have a +5V Output disable/enable switch per port. This can be configured as shown in the following table:

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SW Position		Ports Position	Open (off)	Closed (on)	SW Position		Ports Position
4 Ports product			5V Out Disable	5V Out Enable	16 Ports product		
SW1	1	CH4			SW1	1	CH4
	2	CH3				2	CH3
	3	CH2				3	CH2
	4	CH1				4	CH1
8 Ports product					SW2	1	CH8
SW1	1	CH4				2	CH7
	2	CH3				3	CH6
	3	CH2				4	CH5
	4	CH1			SW3	1	CH 12
SW2	1	CH8				2	CH 11
	2	CH7				3	CH 10
	3	CH6				4	CH 9
	4	CH5			SW4	1	CH 16
						2	CH 15
						3	CH 14
						4	CH 13

Table 1.6 – Switch Setting Configuration of the 4, 8 and 16 ports product

The single and dual port models don't have the switch as the +5V output is only available on the terminal block on these models. They can provide a 5V output with a maximum current of 80mA (when using USB BUS power), or when using the external power adapter the maximum current can be increased.

1.7 Device Driver Installation

The USB2-H-100X-M Series adaptor drivers are available for download from here.

1.7.1 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-100X-M Series to a computer running Windows Vista. Additional installation options are noted below:

Installation Executable on Windows 10

1) Login to your system as Administrator, or a user with Administrator rights.

2) Prior to connecting the USB2-H-100X-M Series to the USB Host or Hub port, download the latest device driver version from here.

Operating System	Release Date	x86 (32-bit)	x64 (64-bit)	Comments
Windows*	2011-04-12	2.08.14	2.08.14	2.08.14 WHQL Certified Available as setup executable Release Notes
	2011-08-26	2.08.17 (Beta)	2.08.17 (Beta)	2.08.17 Beta Version Release Notes

3) Run this executable to install the device drivers.

4) Connect the USB2-H-100X-M Series 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.

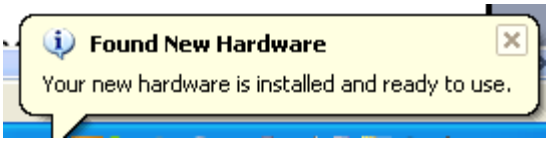

Figure 1.8 - Hardware Ready

Windows Update shown on Windows 10

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

1) Connect the USB2-H-100X-M Series 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 1.9 – Found New Hardware Wizard

3) Select one of the "Yes" choices and click "Next".

4) The following screen appears:

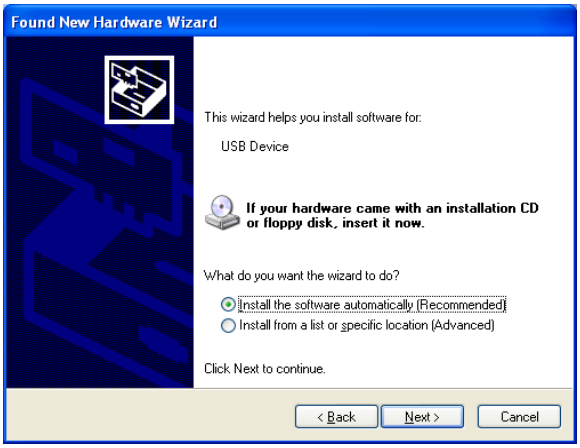

Figure 1.10 – Automatic Install

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

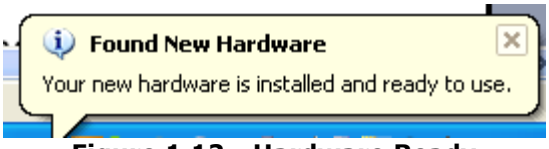

Figure 1.12 - Hardware Ready

COM Port Assignment

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

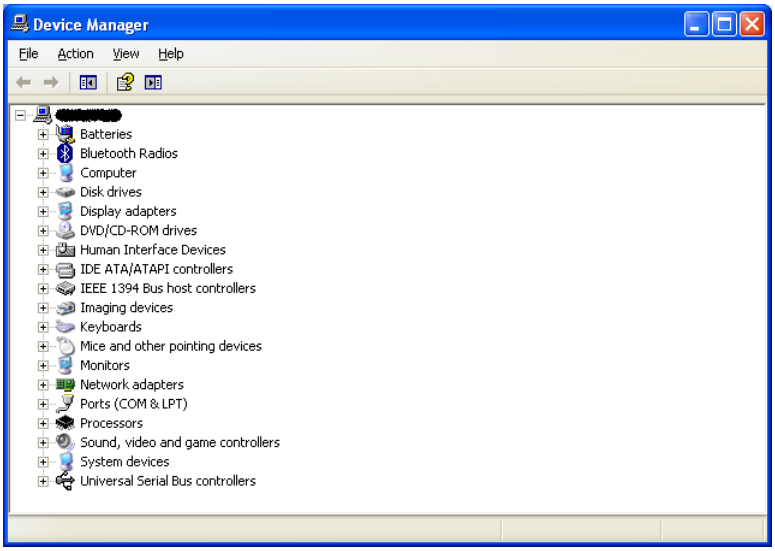

Figure 1.13 - Device Manager

Click on the Plus "+" sign next to the Ports tree to list the available COM port. You will see "USB Serial Port", followed by a COMn assignment. In the figure below, the USB2-H-100X-M-Dual port are assigned to COM3 and COM4, so how many COM Ports are assigned will depend on your device.

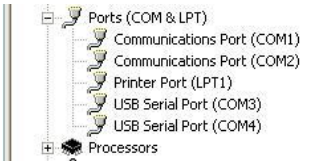

Figure 1.14 - COM Port Assignment

Use this COM port number with your application software in order to access the USB2-H-100X-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 Device Manager listing above, right-click on the USB Serial Port and select Properties.

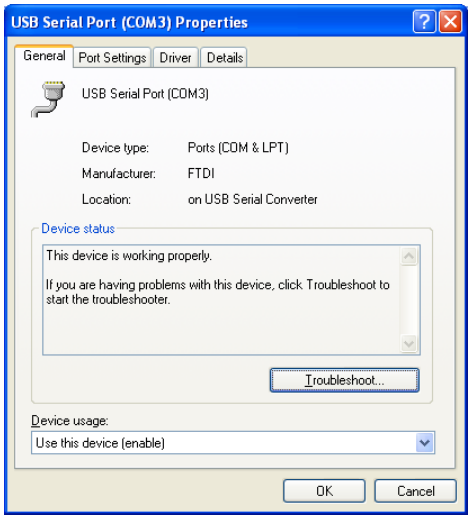

Figure 1.15 – Access COM Port Properties

Next, click on the "Port Settings" tab.

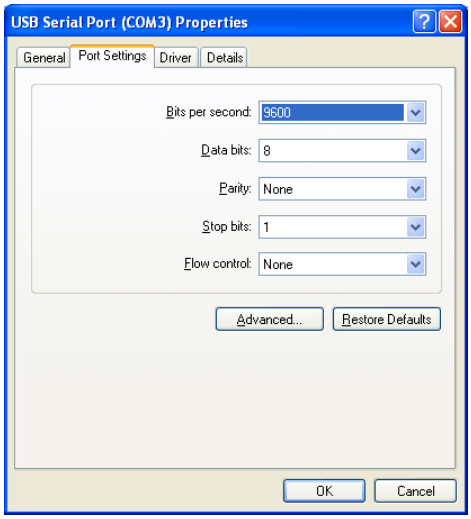

Figure 1.16 - Settings Tab

Then click on the "Advanced…" button.

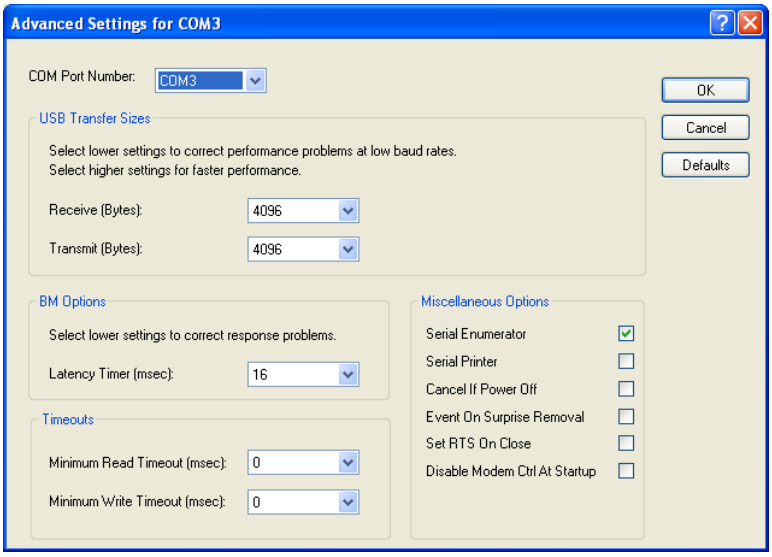

Figure 1.17 - Advanced Options

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.

1.7.2 Mac OS X, Linux, Windows CE

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

The Windows CE5.0 can only support COM0 to COM9, When the FTDI COM ports are over the Windows CE available COM ports, and it is not possible to use FTDI COM port.

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2 Connections

2.1 External Connectors

2.1.1 USB

The USB2-H-100X-M family are a downstream USB 2.0 High-speed Device. A standard USB Series "B" receptacle is mounted inside the USB2-H-100X-M-FAMILY to facilitate connection 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 2.1 – USB "B" Receptacle Pin-Out

2.1.2 RS232

The RS232 port is configured as Data Terminal Equipment (DTE), with a 9-contact D-Sub Pin connector. Pin assignments are according to TIA/EIA-574 which formally defines the assignments for a COM port found on many personal computers.

Pin Number	Pin Type	Description
1	Input	DCD = Data Carrier Detect
2	Input	RXD = Receive Data
3	Output	TXD = Transmit Data
4	Output	DTR = Data Terminal Ready
5	Ground	GND = RS232 signal ground
6	Input	DSR = Data Set Ready
7	Output	RTS = Request To Send
8	Input	CTS = Clear To Send
9	Input or PWR output	RI = Ring Indicator or +5V DC output
Shield	Case Ground	Drain = typically connected to the host PC case

Table 2.2 – DE-9P RS232 Pin-Out

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In addition, the RI Pin of 4, 8 and 16 Ports can provide +5VDC to an external device with a maximum current draw of 30mA once the 4, 8 and 16 Port products have been enumerated by the system. Pin 9 of single and dual port models only have the RI function.

2.1.3 5mm Terminal Block

The Single and Dual port products also provide another access port, a 5mm terminal block connector. This is shown in the following table:

Single Port Terminal Block

Single Port Terminal Block		
Terminal Block Pin Number	**Pin Type**	**Description**
1	Input	DCD = Data Carrier Detect
2	Input	RXD = Receive Data
3	Output	TXD = Transmit Data
4	Output	DTR = Data Terminal Ready
5	Ground	GND = RS232 signal ground
6	Input	DSR = Data Set Ready
7	Output	RTS = Request To Send
8	Input	CTS = Clear To Send
9	Input	RI = Ring Indicator
10	PWR output	+5V DC output

Table 2.3 – USB2-H-1001-M Terminal Block interface

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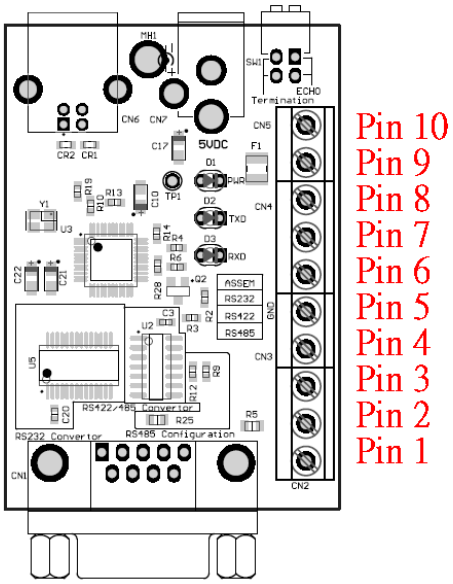

Figure 2.1 - USB2-H-1001-M Terminal Block Connector Assignment

Dual Port Terminal Block

Dual Port Terminal Block		
Terminal Block Pin Number (Channel 1 and Channel 2)	**Pin Type**	**Description**
1	Output	TXD = Transmit Data
2	Input	RXD = Receive Data
3	Output	RTS = Request To Send
4	Input	CTS = Clear To Send
5	PWR output	+5V DC output
6	Ground	GND = RS232 signal ground

Table 2.4 –USB2-H-1002-M Terminal Block interface

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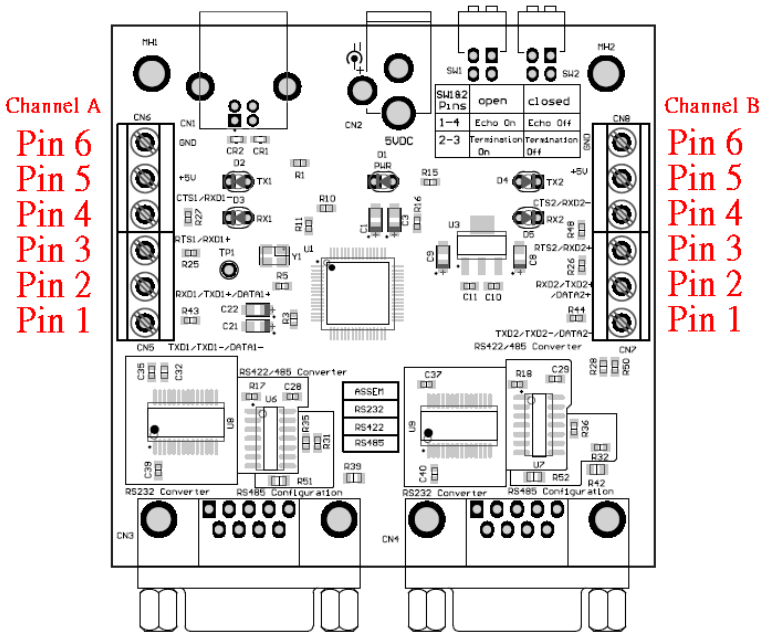

Figure 2.2 - USB2-H-1002-M Terminal Block Connector Assignment

In addition, one pin of the terminal block connector can provide +5VDC to an external device with a maximum current draw of 80mA once the USB2-1001/1002-M has been enumerated by the system.

3 Electrical details

3.1 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.
1 port	I_{cc}	USB current		68	69	mA	***Does not include power supplied to external device when RI pin is configured for +5V output
2 ports				105	125		
4 ports				150	170		

Table 3.1 - USB Electrical Details

3.2 5V Power Adapter

Parameter		Description	Minimum	Typical	Maximum	Units	Conditions
5V Power adapter_VCC		Power Voltage	4.75	5	5.25	V	Adapter provide 5V 2A of power.
8 ports	Icc	Power adapter current		375	395	mA	***Does not include power supplied to external device when RI pin is configured for +5V output
16 ports				675	695		

Table 3.2 - 5V Power Adapter Electrical Details

3.3 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 3.3 - RS232 Electrical Details

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4 Physical Environment Details

4.1 Storage

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

Table 4.1 - Storage Temperature

4.2 Operating Temperature

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

Table 4.2 - Operating Temperature

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5 Physical Dimensions

All dimensions are in mm, and the tolerances are +/-0.1mm.

5.1 USB2-H-1001-M Dimension

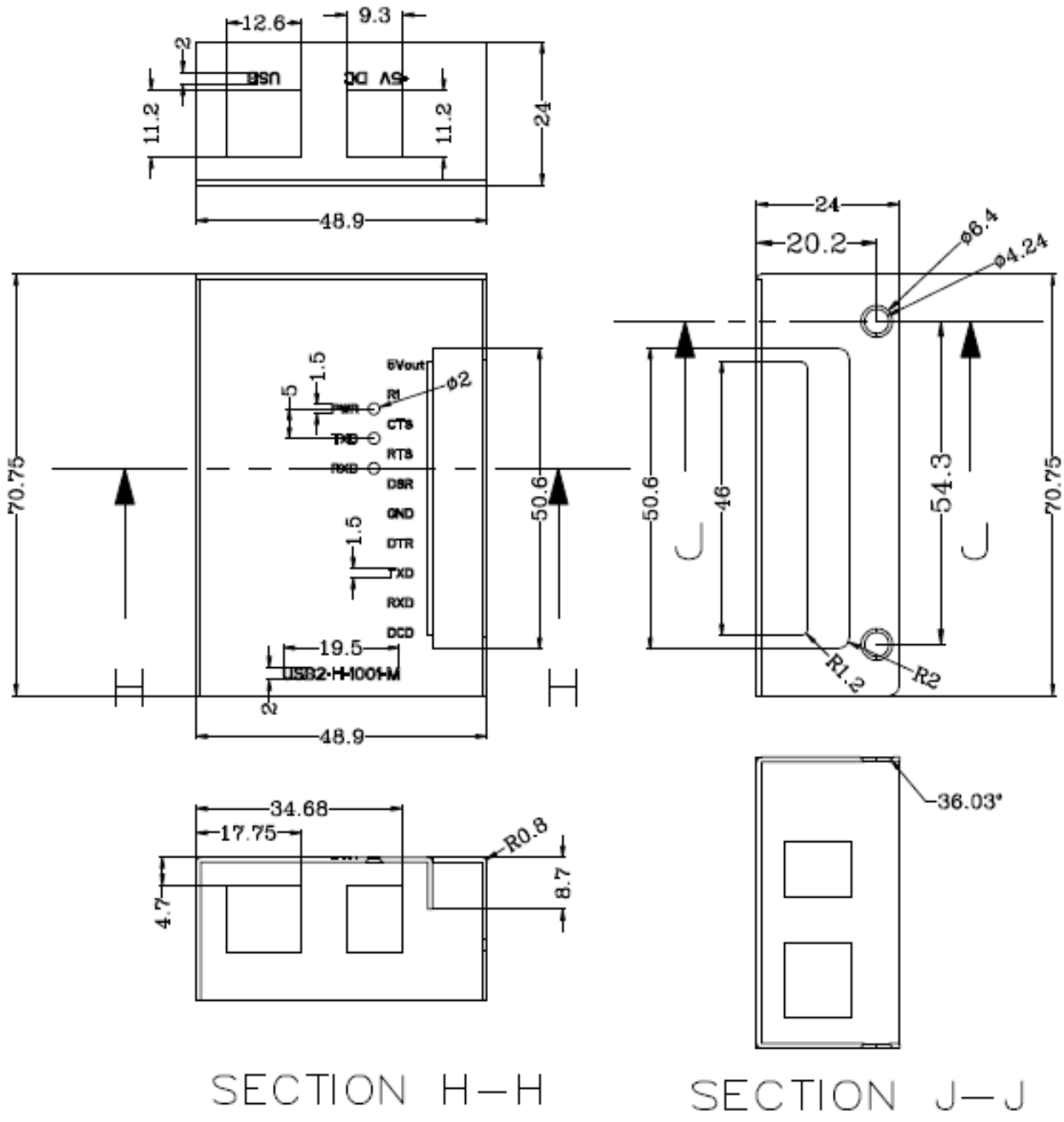

Figure 5.1 - USB2-H-1001-M Top Cover Dimensions

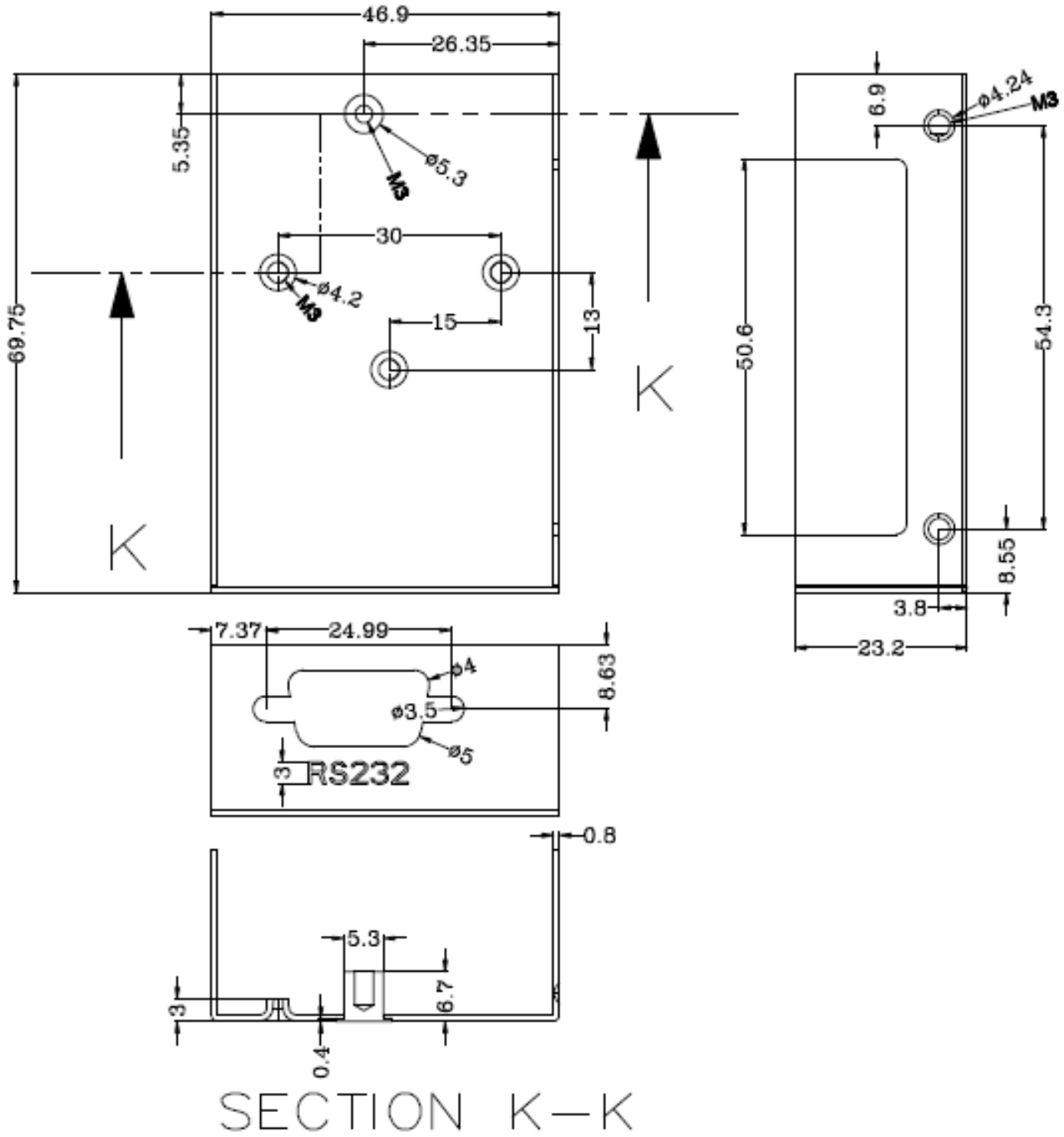

Figure 5.2 - USB2-H-1001-M Bottom Cover Dimensions

5.2 USB2-H-1002-M Dimension

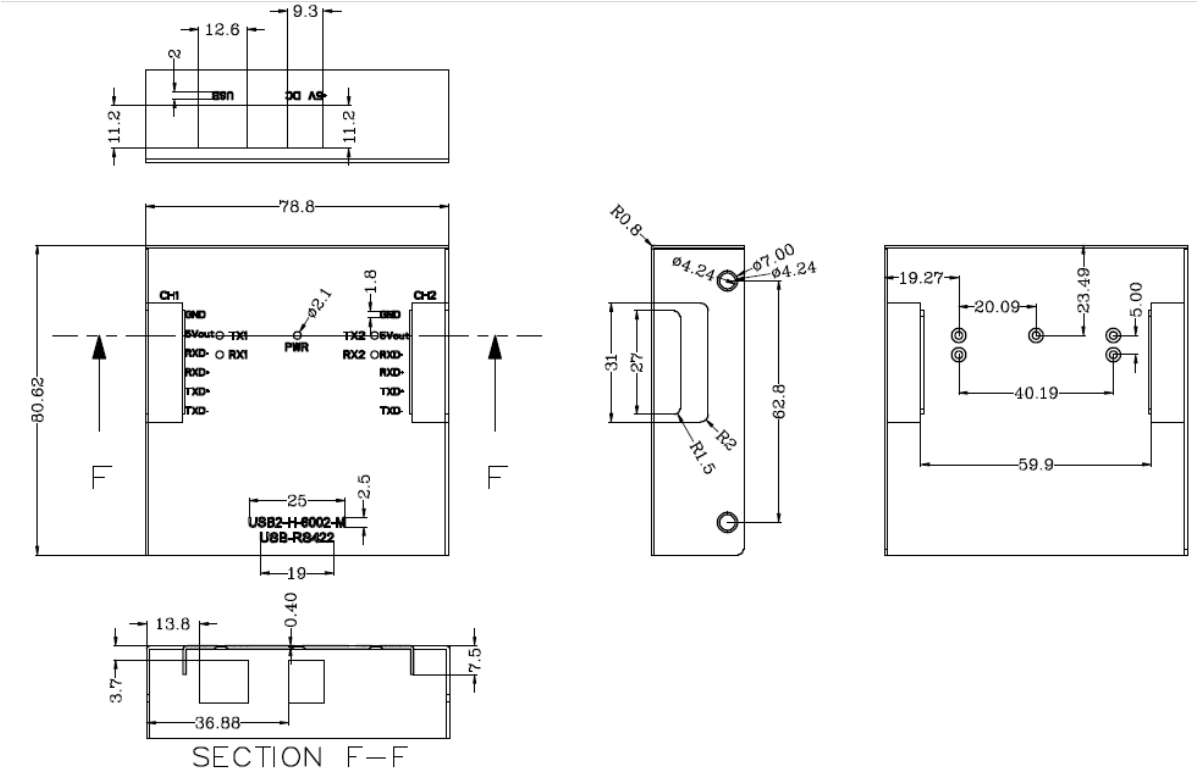

Figure 5.3 - USB2-H-1002-M Top Cover Dimensions

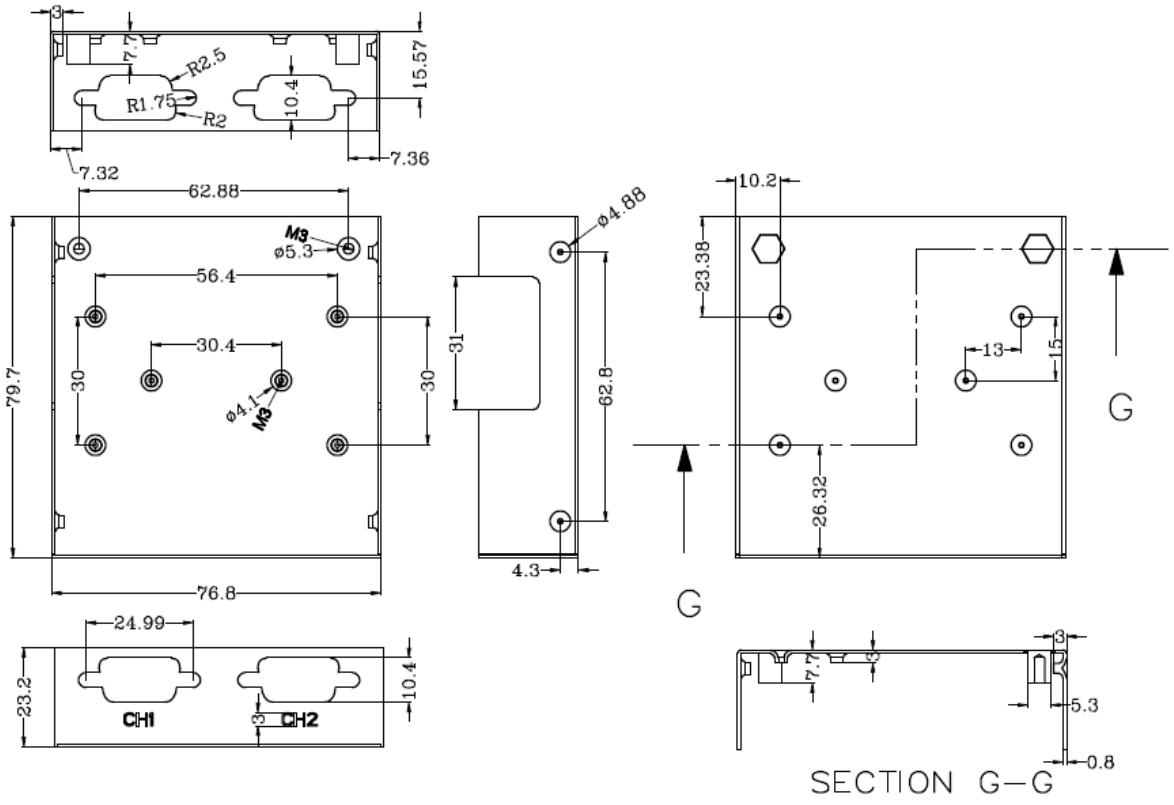

Figure 5.4 - USB2-H-1002-M Bottom Cover Dimensions

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5.3 USB2-H-1004-M Dimension

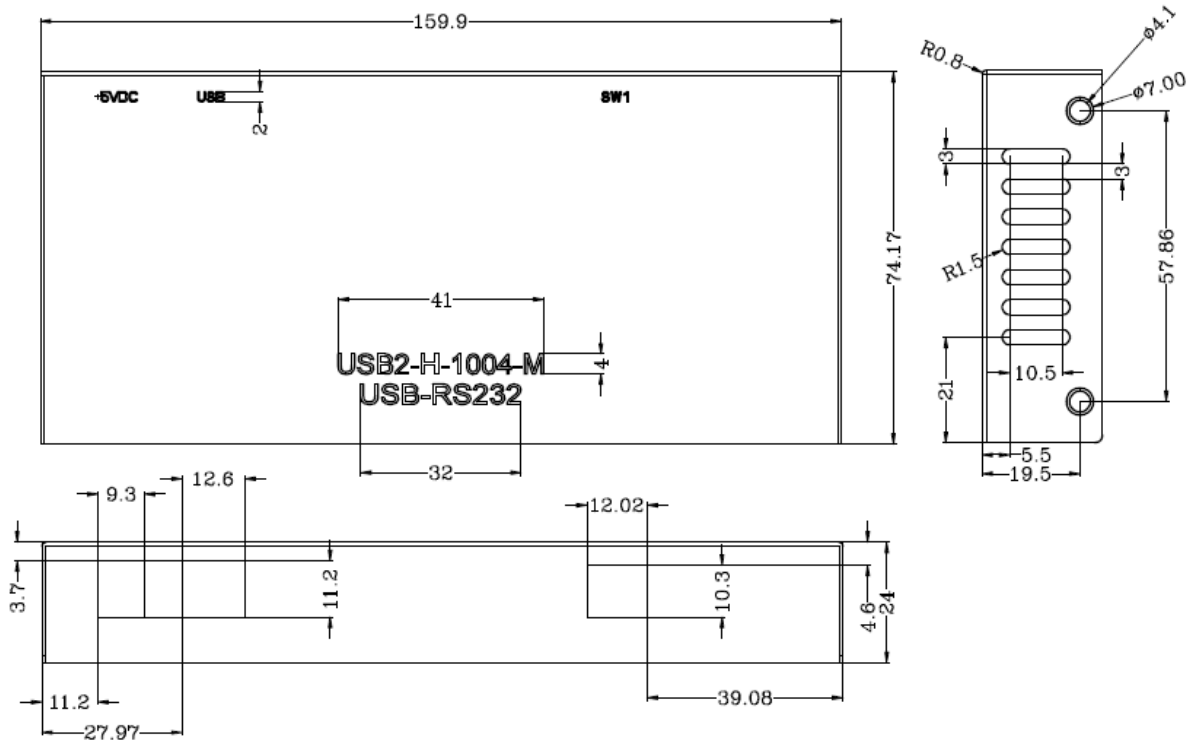

Figure 5.5 - USB2-H-1004-M Top Cover Dimensions

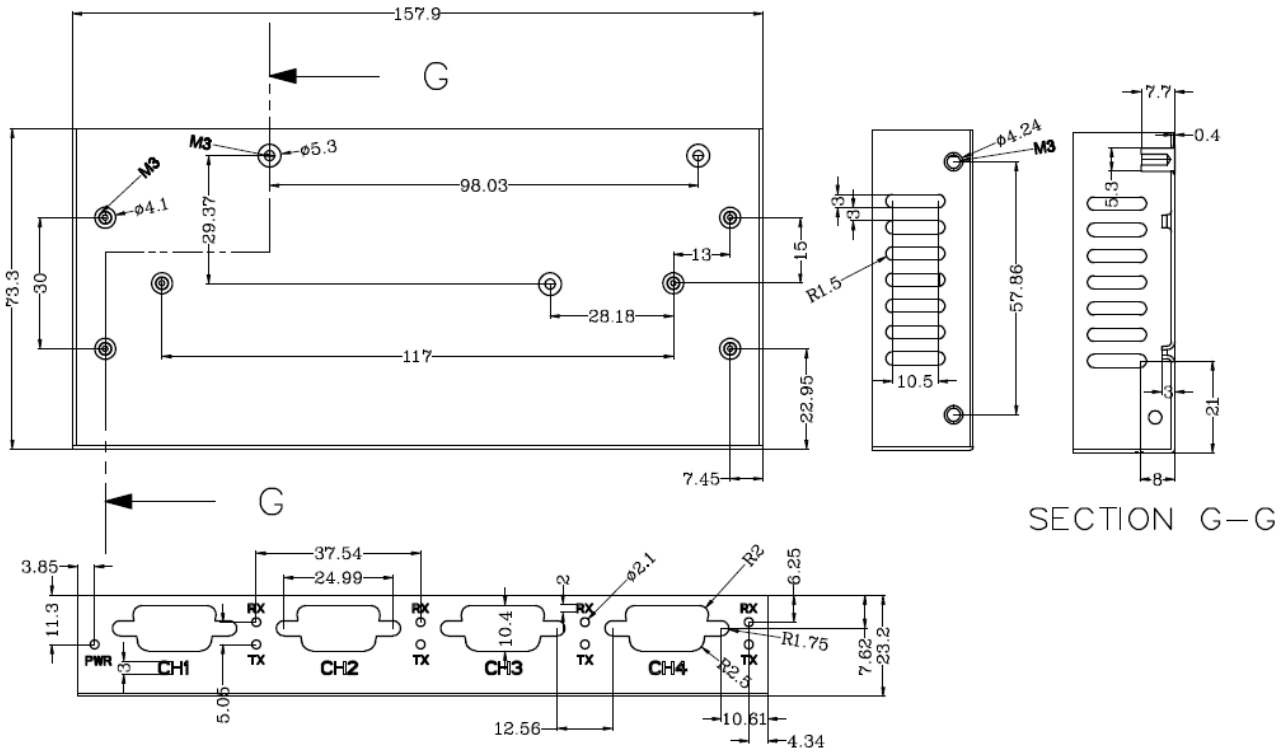

Figure 5.6 - USB2-H-1004-M Bottom Cover Dimensions

5.4 USB2-H-1008-M Dimension

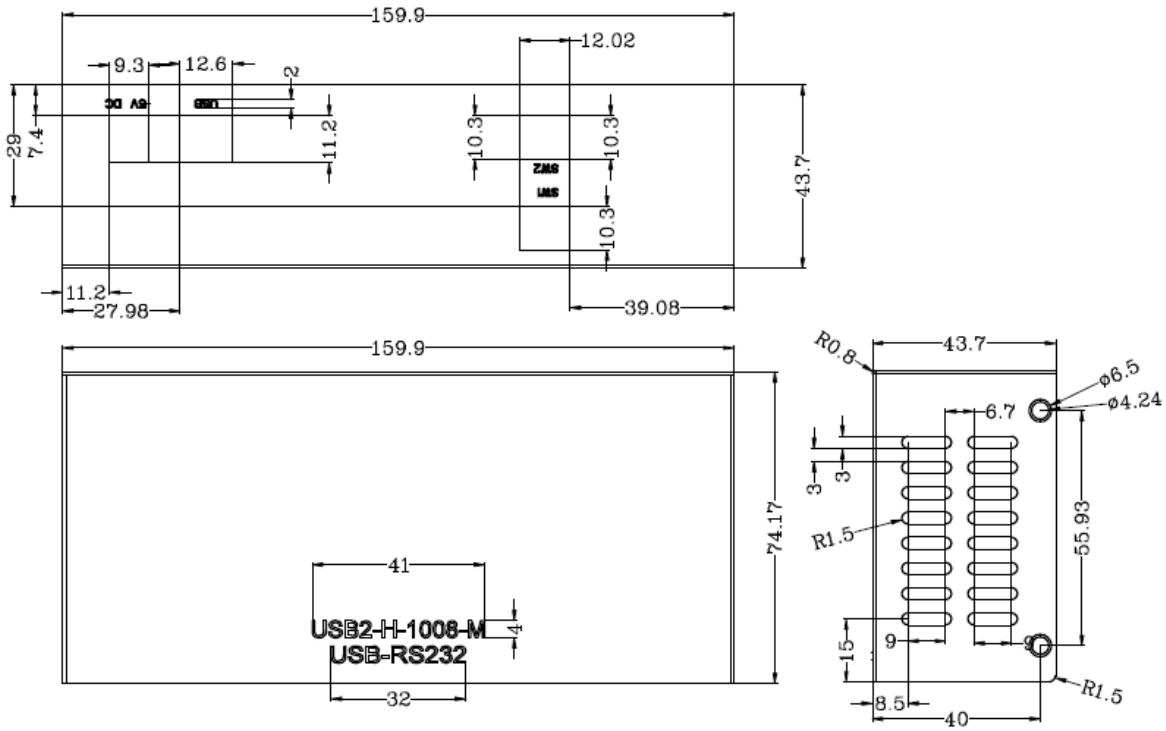

Figure 5.7 - USB2-H-1008-M Top Cover Dimensions

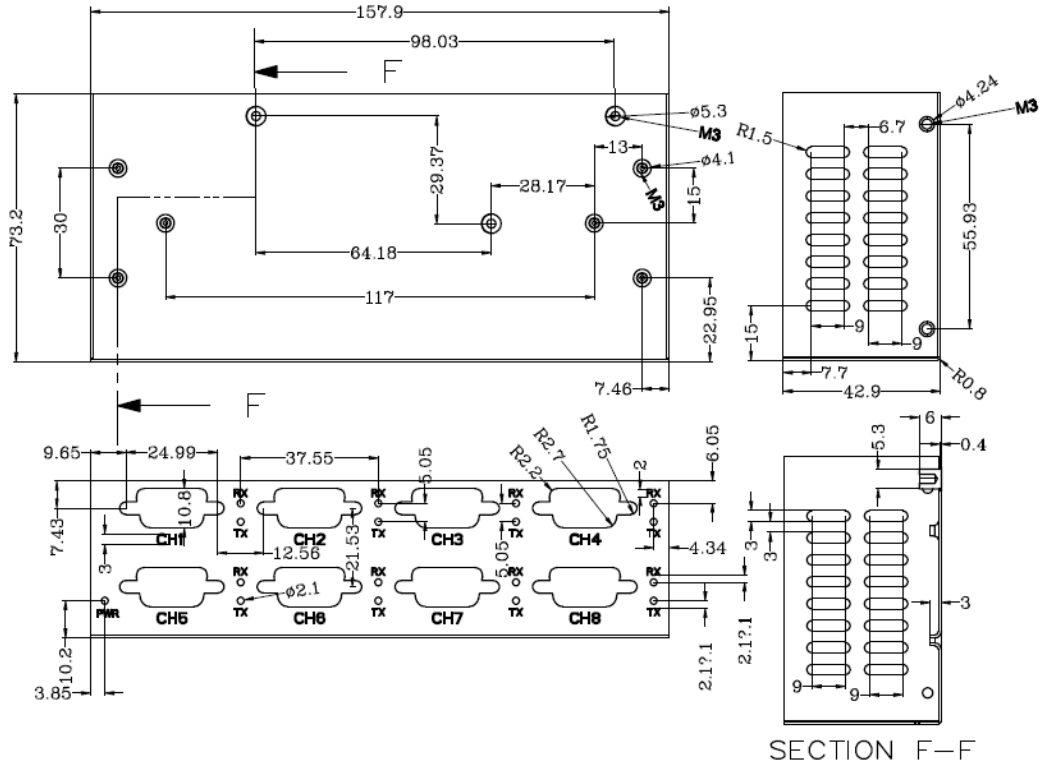

Figure 5.8 - USB2-H-1008-M Bottom Cover Dimensions

5.5 USB2-H-1016-M Dimension

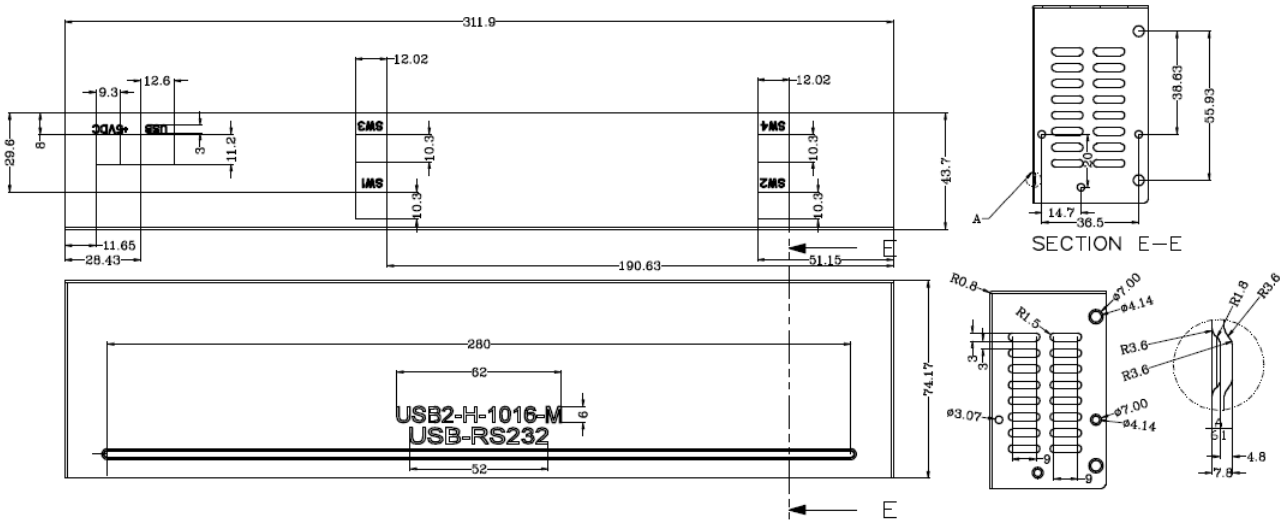

Figure 5.9 - USB2-H-1016-M Top Cover Dimensions

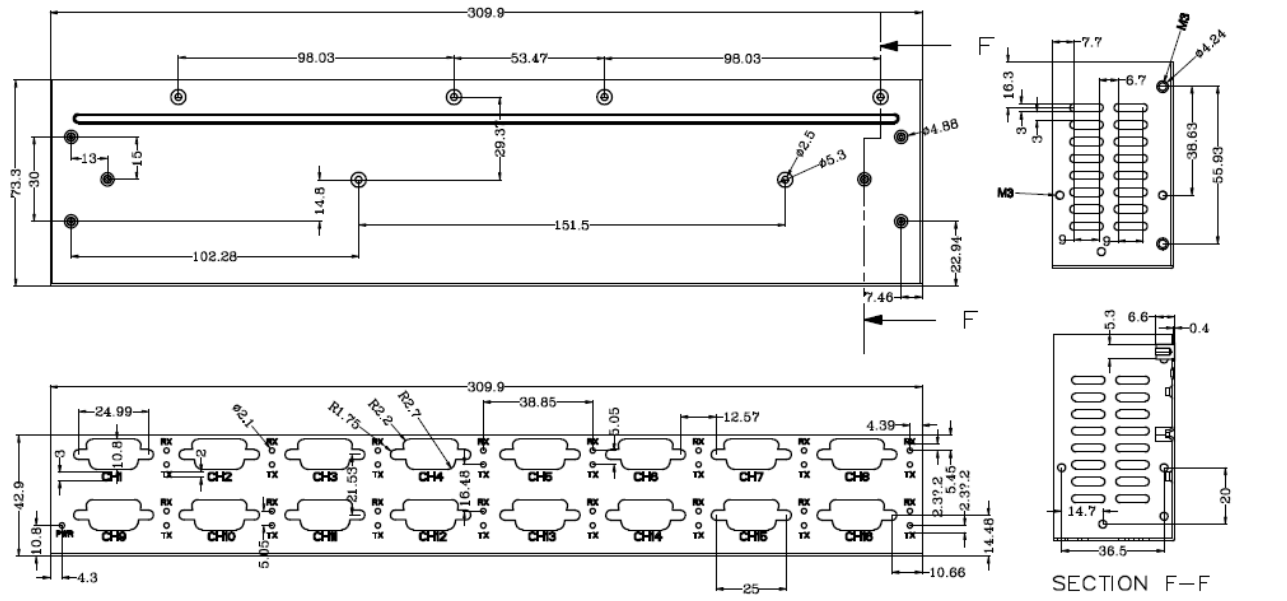

Figure 5.10 - USB2-H-1016-M Bottom Cover Dimensions

6 Environmental Approvals & Declarations

6.1 EMI Compatibility

FCC and CE

The USB2-H-100X-M FAMILY 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.

6.2 Safety

The USB2-H-100X-M-FAMILY is defined as a Limited Power Supply (LPS) device, with operating voltages under 60VDC.

6.3 Environmental

The USB2-H-100X-M-FAMILY is a lead-free device that complies with the following environmental directives: RoHS, WEEE, REACH, PFOS and DecaBDE.

6.4 Reliability

The USB2-H-100X-M-FAMILY is designed as a robust USB-Serial module for use in many environments. There are no user-serviceable parts. Any failure will require a replacement of the unit.

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6.5 Import / Export Information

Import / Export Information	
Country of Origin	China
Harmonized Code	8471-80-1000
Product Description	USB to RS232 Development Module, Single/Dual/Quad/Eight/Sixteen COM Port
USA ECCN	EAR99 – No License Required

Table 6.1 - Import / Export Information

7 Troubleshooting

7.1 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.

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 not 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.

7.2 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://ftdichip.com/Documents/InstallGuides.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 buffer size and/or latency timer to smaller values. These values can be adjusted through the advanced driver options as noted in Figure 2.10. 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 RS232 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 RS232 device and *uncheck the Serial Enumerator* option, also found on the advanced driver options screen in Figure 2.10.
- COM PORT IN USE: Windows keeps track of all COM port assignments. If multiple FTDI Chip 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://ftdichip.com/Documents/InstallGuides.htm.

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7.3 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

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

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Appendix B – Revision History

Revision	Changes	Date
1.0	Initial release	2012-01-19
1.1	Re-branding to reflect the migration of the product to Connective Peripherals name – changed logo, copyright, contact information and all internal hyperlinks.	2019-03-07

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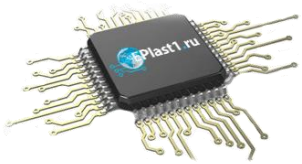
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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