Connective Peripherals Pte Ltd.

178 Paya Lebar Road, #07-03 Singapore 409030
Tel: + 65 67430980 Fax: + 65 68416071
E-Mail: sales@connectiveperipherals.com Web: http://www. Connectiveperipherals.com

PCN Tracking Number: PCN_CP_002 **Issue Date: 2018-06-27**

Product Change Notification

Product Part Number	ES-U-2101-M	
Description of Change	New USB-UART chipset and associated PCB changes. Addition of RS232 support.	Revision B will begin shipping once current inventory is depleted
Reason for Change	Updated to use new version of the USB-Serial Interface chip and to provide an RS232 mode.	
Detailed Description	The following changes have been made: • The USB-UART chip FT232RL is replaced with FT231XQ. The updated version supports a 512 byte receive buffer and 512 byte transmit buffer utilizing buffer smoothing technology to allow for high data throughput. • The schematic and layout of the internal PCB is accordingly changed for the FT231XQ. • In addition to the existing RS422/485 mode, the updated version adds support for RS232 mode with four signals available (RxD, TxD, RTS, CTS) • The DIP switch and jumper settings have changed to support the RS232 mode. This PCN has details of the new settings.	
Impact to Data sheet	The datasheet now includes a separate section for the ES-U-2101-MB. The updated user guide can be found on the following page: https://www.connectiveperipherals.com/es-u-2101-mb.html	
Benefit of Change	Updated USB-UART chipset and added support of RS232 in addition to the existing RS485/422 modes	
Markings to distinguish revised from:	There are no external changes to the enclosure. The updated version can be identified by the part number: The ES-U-2101-M is replaced by the ES-U-2101-MB	
Sample Availability	Q2 2018	
Risk Assessment, Fit Form and Function & reliability	Not applicable	
PDF Download	https://www.connectiveperipherals.com/product-discontinuance-notices	

Connective Peripherals Pte Ltd.

178 Paya Lebar Road, #07-03 Singapore 409030
Tel: + 65 67430980 Fax: + 65 68416071
E-Mail: sales@connectiveperipherals.com Web: http://www.Connectiveperipherals.com

Additional Information

USB Virtual COM Port Driver Requirements

Windows - The updated model has the same compatibility from Windows 7 up to Windows 10 as the original model.

- For Windows 7 up to Windows 10, use the latest FTDI drivers for both models. These are available on Windows Update or from the *Currently Supported Drivers* table at FTDI VCP Drivers
- Additionally, for legacy Windows XP/Vista, use driver 2.08.24 for both models. This is available from the *No Longer Supported* drivers table at FTDI VCP Drivers

Linux – Many distributions include a sio driver for FTDI chipsets.

- For distributions containing the ftdi_sio and using Kernel 3.0.27 onwards, both models are supported by the sio driver.
- For legacy distributions which include ftdi_sio but have a Kernel older than 3.0.27, only the original model is supported by the OS by default as this pre-dates the FT231X.
  However, an udev rule is provided on the Downloads tab of the product page (see Connective Peripherals) which adds the Product ID of the FT231X (0x6015) to the sio driver. This allows the updated version of the product to work on some legacy Linux versions.

Mac OS X – OS X versions from Mavericks onwards include an Apple-provided driver for FTDI chipsets.

- For OS X Sierra and OS X High Sierra, the driver included with the OS supports both models
- Some older OS X versions post-Mavericks include an FTDI driver supporting the FT232B and FT232R but not supporting the FT231X chipset. In these cases the FTDI-provided VCP driver can be used with the updated product. These are available from the *Currently Supported Drivers* table at FTDI VCP Drivers and can be installed using the procedure explained in the Mac OS X Installation guide

DIP Switch and Jumper Settings

The DIP Switch settings for the updated model are shown below. The settings differ from the original model in order to support RS232.

	Operation Mode	S1	S2	S3	S4
RS232	Standard RS232 Mode	OFF	ON	ON	ON
RS422	4-wire with Handshaking	ON	ON	ON	ON
RS485	Full-Duplex (4-wire)	ON	OFF	ON	ON
	Half-Duplex (2-wire) with Echo	ON	OFF	OFF	ON
	Half-Duplex (2-wire) without Echo	ON	OFF	OFF	OFF

The updated model has 7 jumpers instead of 6 to select biasing and termination. The new jumper assignments are shown below:

JP1 Jumper		Function
1-2	When Closed	Enables Tx+/- termination with 120Ω This jumper should always be populated for RS485
3-4	When Closed	Pull-up Tx+ to VCC via 750Ω bias resistor This jumper should be populated to pull-up Tx+
5-6	When Closed	Pull-down Tx- to GND via 750Ω bias resistor This jumper should be populated to pull-down Tx-
7-8	When Closed	Enables Rx+/- termination with 120Ω This jumper should always be populated for RS422/485 full-duplex mode
9-10	When Closed	Pull-up Rx+ to VCC via 750Ω bias resistor This jumper should be populated to pull-up Rx+.
11-12	When Closed	Pull-down Rx- to GND via 750Ω bias resistor. This jumper should be populated to pull-down Rx-
13-14	When Closed	CTS termination of 120 Ohm. This jumper should always be populated for RS-422 mode.

JP2 enables 5V power output from pin 5 of the terminal block:

JP2 Jumper	Function
Close	Enable the 5V power for an external device
Open	Disable the 5V power (default)

Connector Pinouts

The updated model has an additional RS232 mode featuring signals TxD, RxD, RTS, CTS and GND. The tables below show the pin-outs for DB-9 and Terminal block for each of the available modes.

Pin Number	Pin Type	Description	
1			
2	Input	RxD	Receive Data
3	Output	TxD	Transmit Data
4			
5	Ground	GND	Signal Ground
6			
7	Output	RTS	Request to Send
8	Input	CTS	Clear to Send
9			

RS232 DB-9

Note: The RS232 mode only supports TxD, RxD, RTS, CTS, and GND on the DB-9 as shown in the table above. The other pins of the DB-9 should not be connected to the external RS232 device.

Pin Number	Pin Type	Description	
1			
2	Input	RxD	Receive Data
3	Output	TxD	Transmit Data
4			
5	Power	+5V	DC+5V
6	Ground	GND	Signal Ground

RS232 Terminal Block

Note: The RS232 mode only supports TxD, RxD, +5V and GND on the Terminal Block as shown in the table above. The other pins of the Terminal Block should not be connected to the external RS232 device

Pin Number	Pin Type	Description	
1	Output	TxD-	Transmit Data, negative polarity
2	Output	TxD+	Transmit Data, positive polarity
3	Input	RxD+	Receive Data, positive polarity
4	Input	RxD-	Receive Data, negative polarity
5	Ground	GND	Signal Ground
6	Output	RTS-	Request to Send, negative polarity
7	Output	RTS+	Request to Send, positive polarity
8	Input	CTS+	Clear to Send, positive polarity
9	Input	CTS-	Clear to Send, negative polarity

RS422 DB-9

Pin Number	Pin Type	Description	
1	Output	TxD-	Transmit Data, negative polarity
2	Output	TxD+	Transmit Data, positive polarity
3	Input	RxD+	Receive Data, positive polarity
4	Input	RxD-	Receive Data, negative polarity
5	Power	+5V	DC+5V
6	Ground	GND	Signal Ground

RS422 Terminal Block

Pin Number	Pin Type	Description	
1	Output	TxD-	Transmit Data, negative polarity
2	Output	TxD+	Transmit Data, positive polarity
3	Input	RxD+	Receive Data, positive polarity
4	Input	RxD-	Receive Data, negative polarity
5	Ground	GND	Signal Ground

RS485 Full Duplex DB-9

Pin Number	Pin Type	Description	
1	Output	TxD-	Transmit Data, negative polarity
2	Output	TxD+	Transmit Data, positive polarity
3	Input	RxD+	Receive Data, positive polarity
4	Input	RxD-	Receive Data, negative polarity
5	Power	+5V	DC+5V
6	Ground	GND	Signal Ground

RS485 Full Duplex Terminal Block

Pin Number	Pin Type	Description	
1	Output/Input	Data-	Transmit/Receive Data, negative polarity
2	Output/Input	Data+	Transmit/Receive Data, positive polarity
5	Ground	GND	Signal Ground

RS485 Half Duplex DB-9

Pin Number	Pin Type	Description	
1	Output/Input	TxD-	Transmit/Receive Data, negative polarity
2	Output/Input	TxD+	Transmit/Receive Data, positive polarity
5	Power	+5V	DC+5V
6	Ground	GND	Signal Ground

RS485 Half Duplex Terminal Block