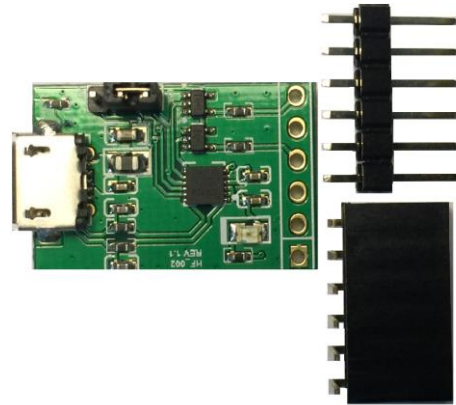


# Future Technology Devices International Limited

## Datasheet

### LC234X Development Module



## 1 Introduction

The LC234X module is a low cost USB to UART bridge using the FTDI FT234XD to transfer data at up to 3M Baud. Ideal for programming Arduino Pro, ESP modules etc., the pinout follows the industry standard FTDI TTL cable interface. In addition to the 4 data lines (RXD, TXD, RTS, CTS) there is also the option to output 5V power to external hardware. The interface IO level may be set to either 3.3V or 5V by an on-board jumper – no soldering / de-soldering required.

The LC234X module's UART interface is mapped to one 1X6 pin header. The module is supplied with one right angle socket and one right angle pin header for maximum flexibility.

Furthermore there is an LED provided to indicate data transmission on the UART signals

## 1.1 Features

The LC234X module utilises the FT234XD from FTDI. For a full list of the FT234XD's features refer to the [FT234XD datasheet](#).

In addition, the LC234X module has the following features:

- Small PCB size as 15.24mm X 22.89mm
- Easy configurable IO voltage interface
- USB 2.0 full speed
- Low supply current: 10mA
- Supported baud rates: 300 bps to 3 Mbps
- Supplied with one right angle socket and one right angle pin header for maximum flexibility.
- Power output to external logic 5V
- -40°C to +85°C operational temperature range
- Full RoHS compliance

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## 2 Typical Applications

- USB to UART bridge
- Debugger / Programmer for embedded MCU e.g. Arduino
- USB IO extender for small 8-bit micro's

### 2.1 Driver Support

The LC234X requires USB drivers (listed below), available free from <http://www.ftdichip.com>, which are used to make the module appear as a virtual COM port (VCP). This allows the user to communicate with the USB interface via a standard PC serial emulation port (for example TTY). Another FTDI USB driver, the D2XX driver, can also be used with application software to directly access the LC234X through a DLL. Both VCP and D2XX drivers support Windows auto-update.

#### **Royalty free VIRTUAL COM PORT (VCP) DRIVERS for...**

- Windows 10 32,64-bit
- Windows 8/8.1 32,64-bit
- Windows 7 32,64-bit
- Windows CE 4.2, 5.0 and 6.0
- Windows Server 2003, 2008 R2, 2012
- Mac OS-X
- Linux 2.4 and greater

#### **Royalty free D2XX Direct Drivers (USB Drivers + DLL S/W Interface)**

- Windows 10 32,64-bit
- Windows 8/8.1 32,64-bit
- Windows 7 32,64-bit
- Windows CE 4.2, 5.0 and 6.0
- Windows Server 2003, 2008 R2, 2012
- MAC OS-X
- Linux 2.4 and greater
- Android(J2xx)

For driver installation, please refer to the installation guides on our website:

<http://www.ftdichip.com/Support/Documents/InstallGuides.htm>

## 3 Ordering Information

<b>Part No.</b>	<b>Description</b>
LC234X	Low cost FT234X USB to UART module

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## 4 Pin Out and Signal Description

### 4.1 Module Description

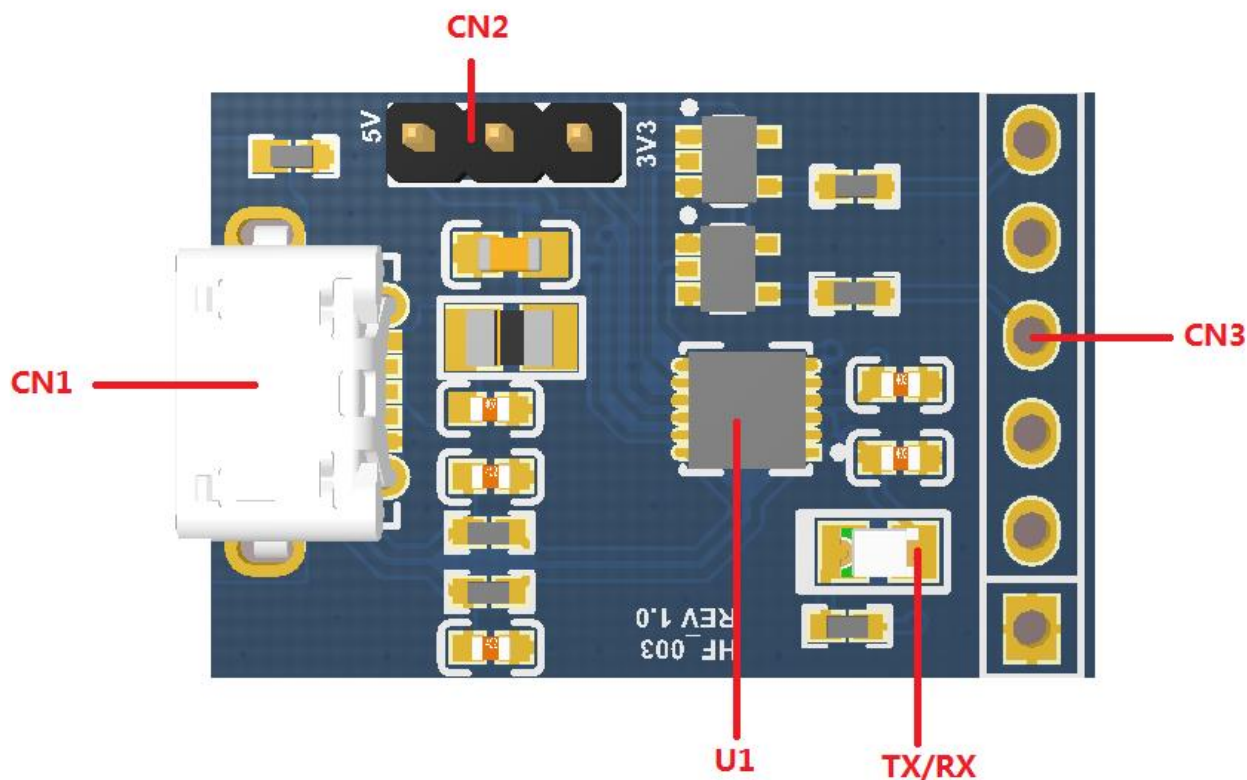


Figure 1 - Module Features

Feature	Reference Designator
Micro USB connector	CN1
IO voltage selection	CN2
6pin 2.54mm pitch connector UART interface	CN3
FT234X USB to serial bridge IC	U1
Green color LED	TX/RX

Table 1 - Module Features & Description

## 4.2 Module Interface Signal Description

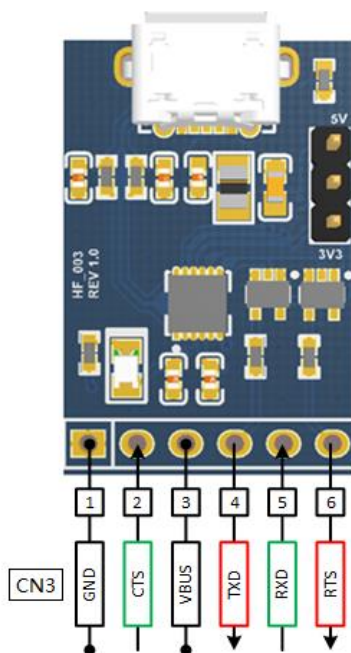


Figure 2 - Module Signal Diagram

The pin description of **CN3** is given in **Table 2**.

Pin No	Pin Name	Type	Description
1	GND	Power	Ground
2	CTS	Input	Clear To Send Control Input/Handshake
3	VBUS	Power	5V Supply
4	TXD	Output	Transmit Asynchronous Data Output
5	RXD	Input	Receiving Asynchronous Data Input
6	RTS	Output	Request To Send Control Output/Handshake Signal

Table 2 – CN3 Pin Description

The LC234X can support both 3.3V and 5V interface, the power jumper selection is through **CN2**. The default jumper setting is in 3.3V interface

Pin Number	Description
1-2	3.3V IO interface (Default)
2-3	5V IO interface

Table 3 – CN2 Jumper Selection

## 5 Devices Characteristics and Ratings

### 5.1 Electrical Specification

Parameter	Value	Unit	Conditions
Storage Temperature	-30°C to 80°C	Degrees C	
Ambient Operating Temperature (Power Applied)	-20°C to 70°C	Degrees C	

**Table 4 – Temperature Parameters**

DC Characteristics (Ambient Temperature = -20°C to +70°C)

IO interface: 5V

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
$V_{bus}$	Output Power Voltage	4.75		5.25	V	
$I_o$	Supply current		450		mA	Assuming connected to direct to a host port or a powered hub, and enumerated
$V_{oh}$	Output Voltage High	3.2	4.1	4.9	V	
$V_{ol}$	Output Voltage Low	0.3	0.4	0.6	V	

**Table 5 – 5V Interface Operating Voltage and Current**

DC Characteristics (Ambient Temperature = -20°C to +70°C)

IO interface: 3V3

Parameter	Description	Minimum	Typical	Maximum	Units	Conditions
$V_{bus}$	Output Power Voltage	4.75		5.25	V	
$I_o$	Supply current		450		mA	Assuming connected to direct to a host port or a powered hub, and enumerated
$V_{oh}$	Output Voltage High	2.2	2.8	3.2	V	
$V_{ol}$	Output Voltage Low	0.3	0.4	0.6	V	

**Table 6 – 3V3 Interface Operating Voltage and Current**

## 6 Board Schematic

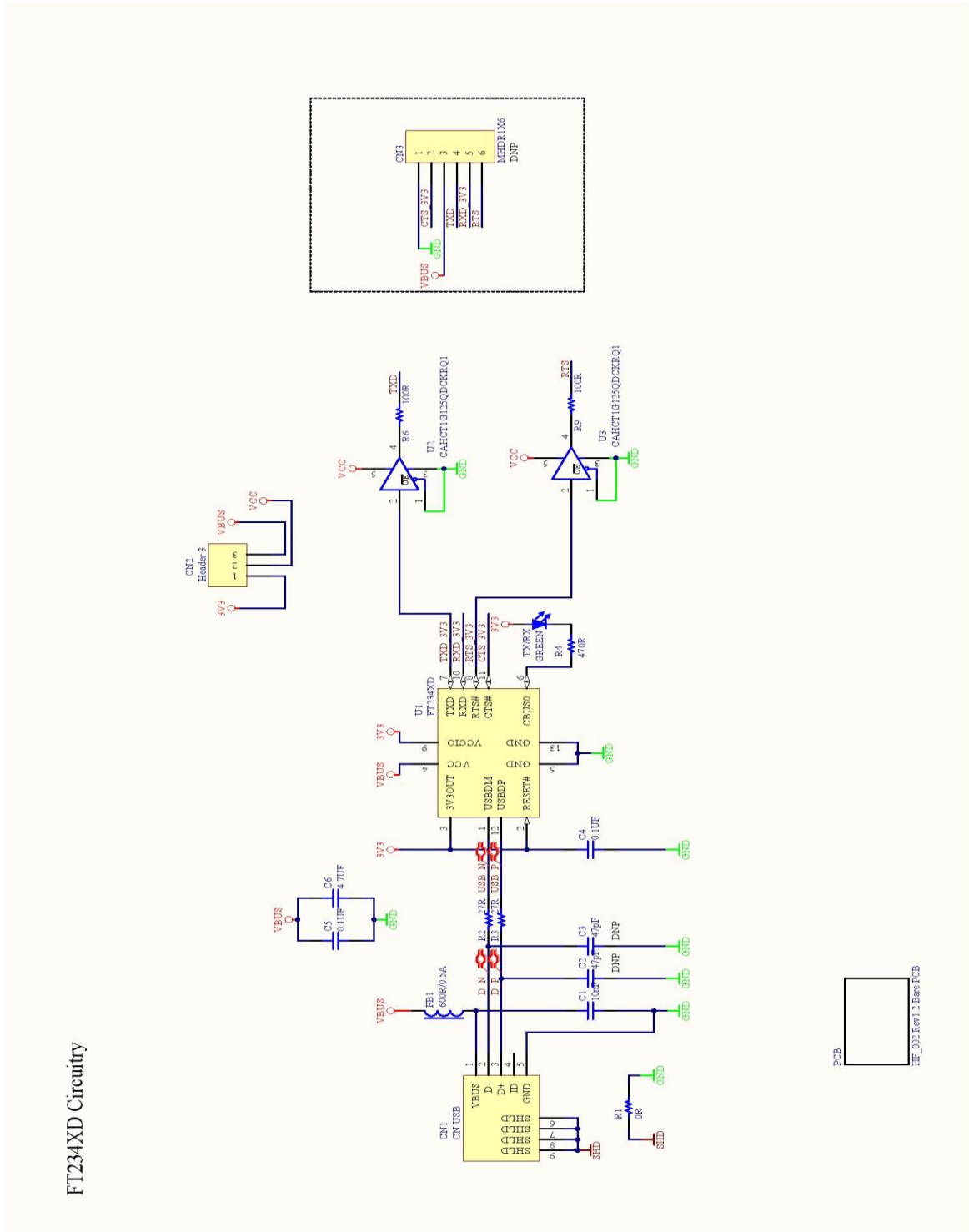
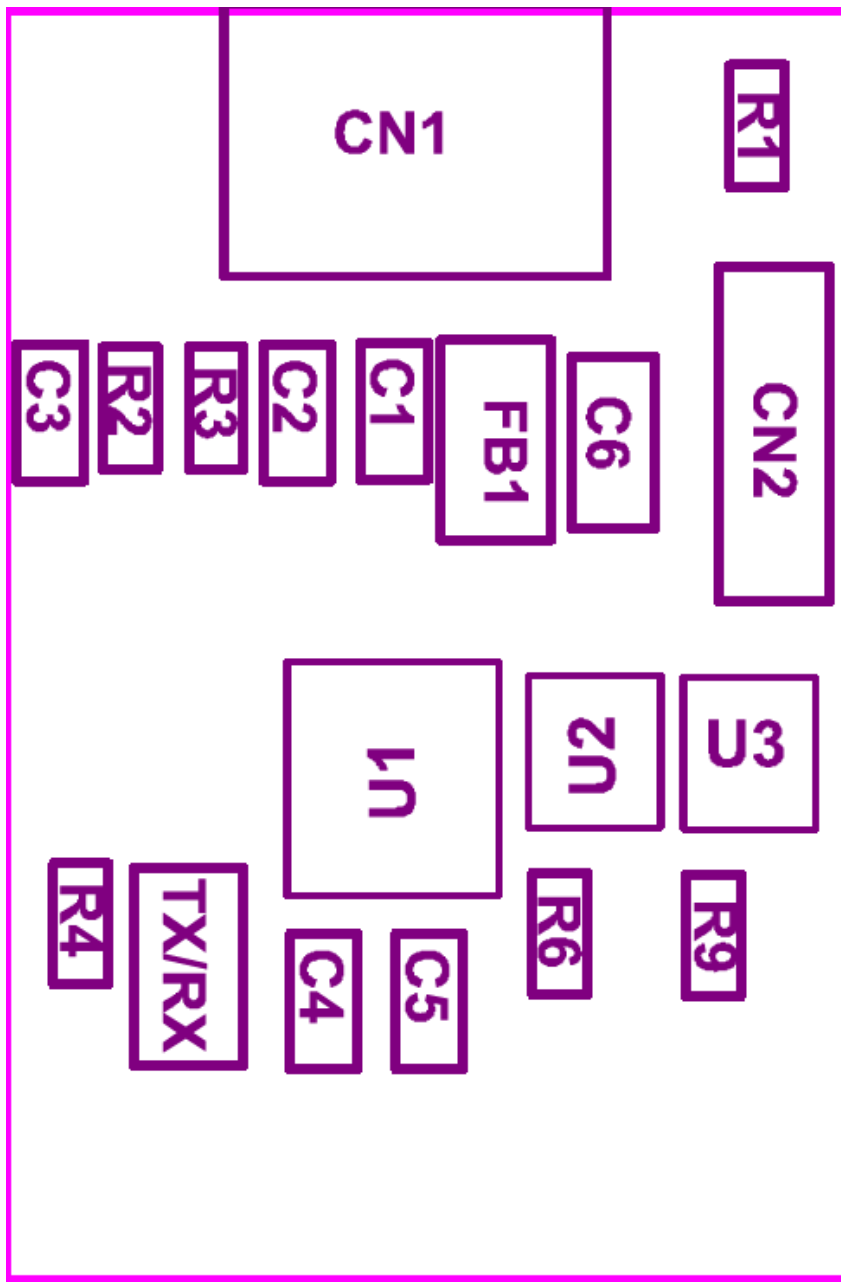


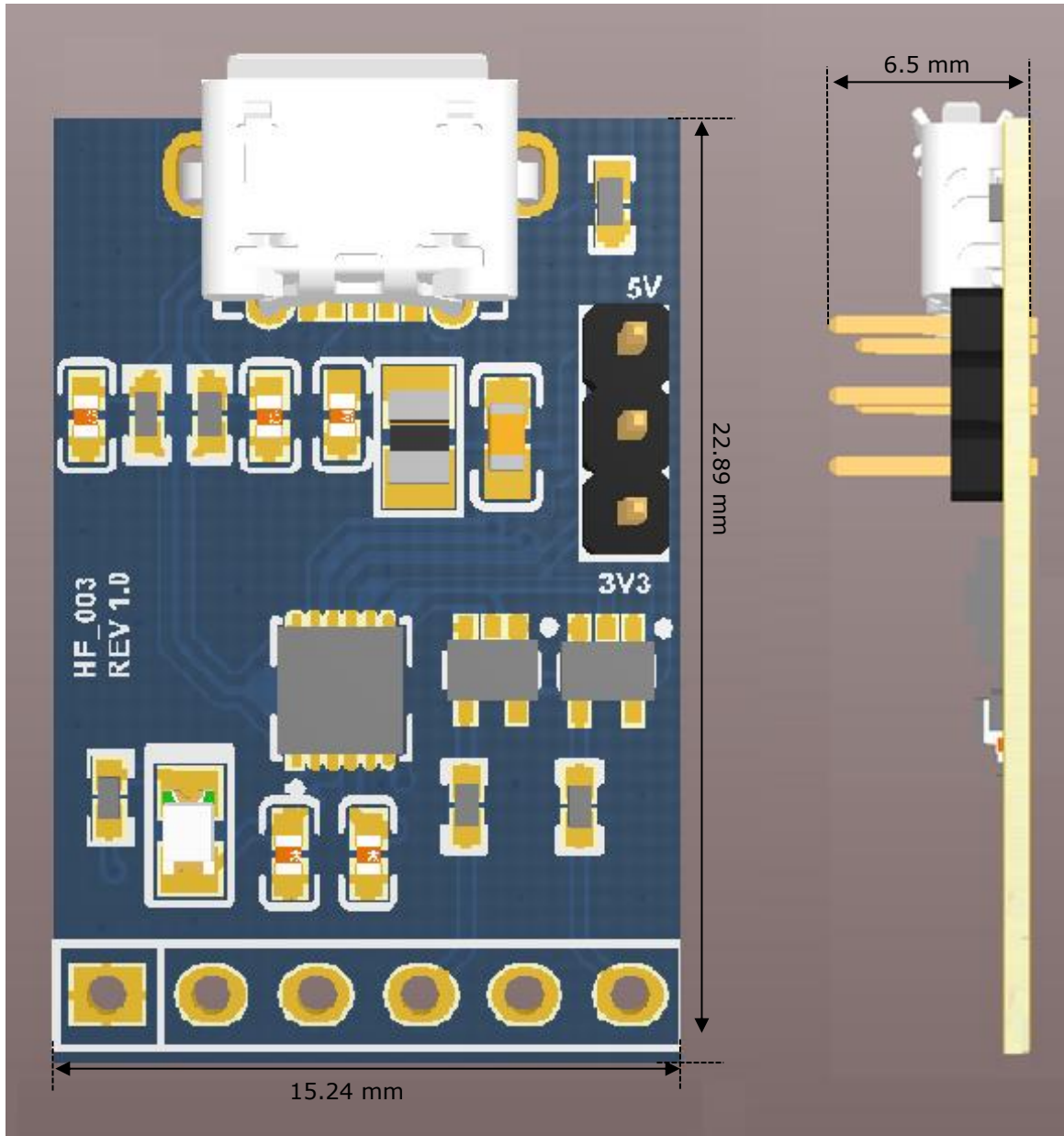
Figure 3 - FT234X Schematics



**Figure 4 - LC234X Module Component Placement**



## 7 Mechanical Dimensions



**Figure 5 - LC234X Module Dimensions**

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## Appendix A – References

### Document References

For module documentations, please refer to URL below:

FT234XD datasheet: [FT234XD Datasheet](#)

### Acronyms and Abbreviations

Terms	Description
LED	Light-emitting diode
UART	Universal Asynchronous Receiver/Transmitter
USB	Universal Serial Bus

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## Appendix C – Revision History

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Document Feedback: [Send Feedback](#)

Revision	Changes	Date
Version 1.0	Initial release	2017-02-21
Version 1.1	Updated release	2017-03-30

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