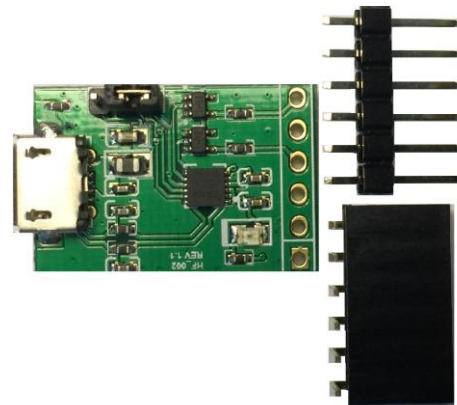# Future Technology Devices International Limited

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

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

Part No.	Description
LC234X	Low cost FT234X USB to UART module

Table of Contents

4 Pin Out and Signal Description

4.1 Module Description
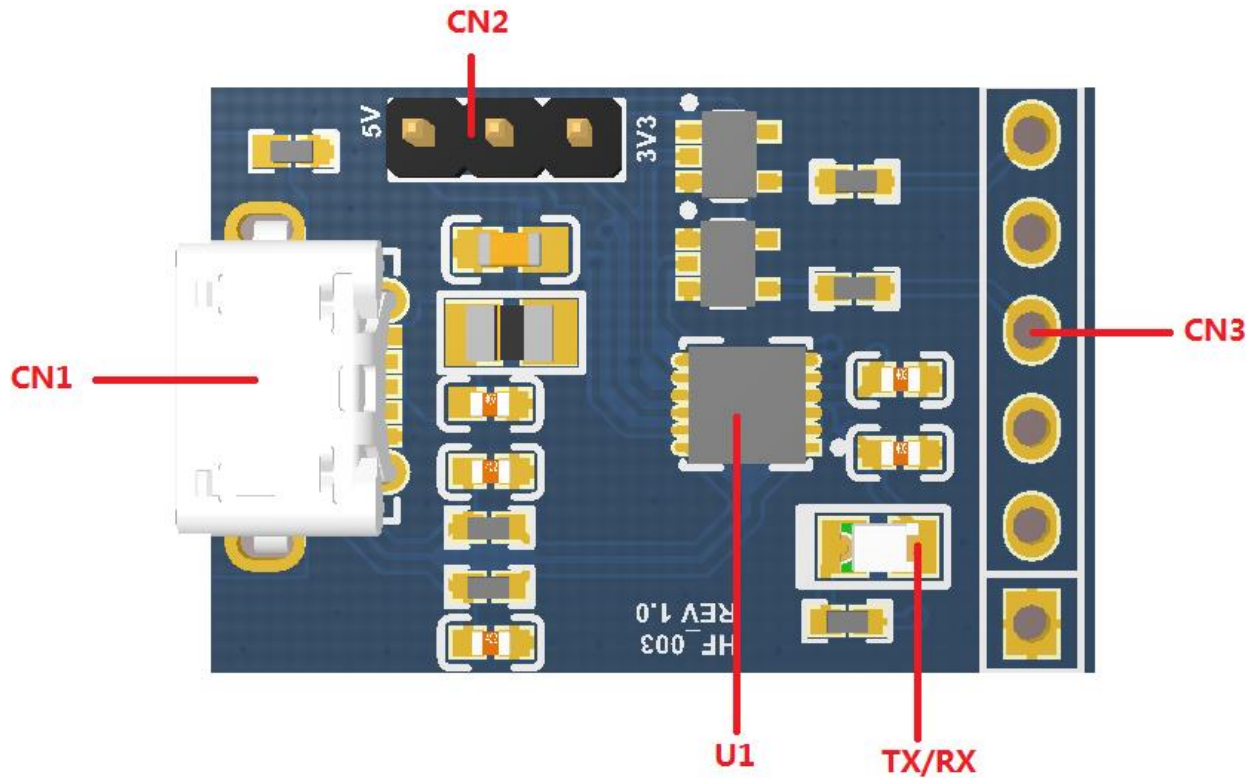
Figure 1 - Module Features

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
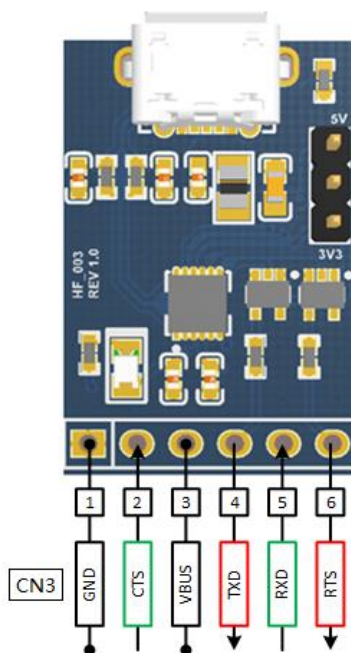
4.2   Module Interface Signal Description

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	

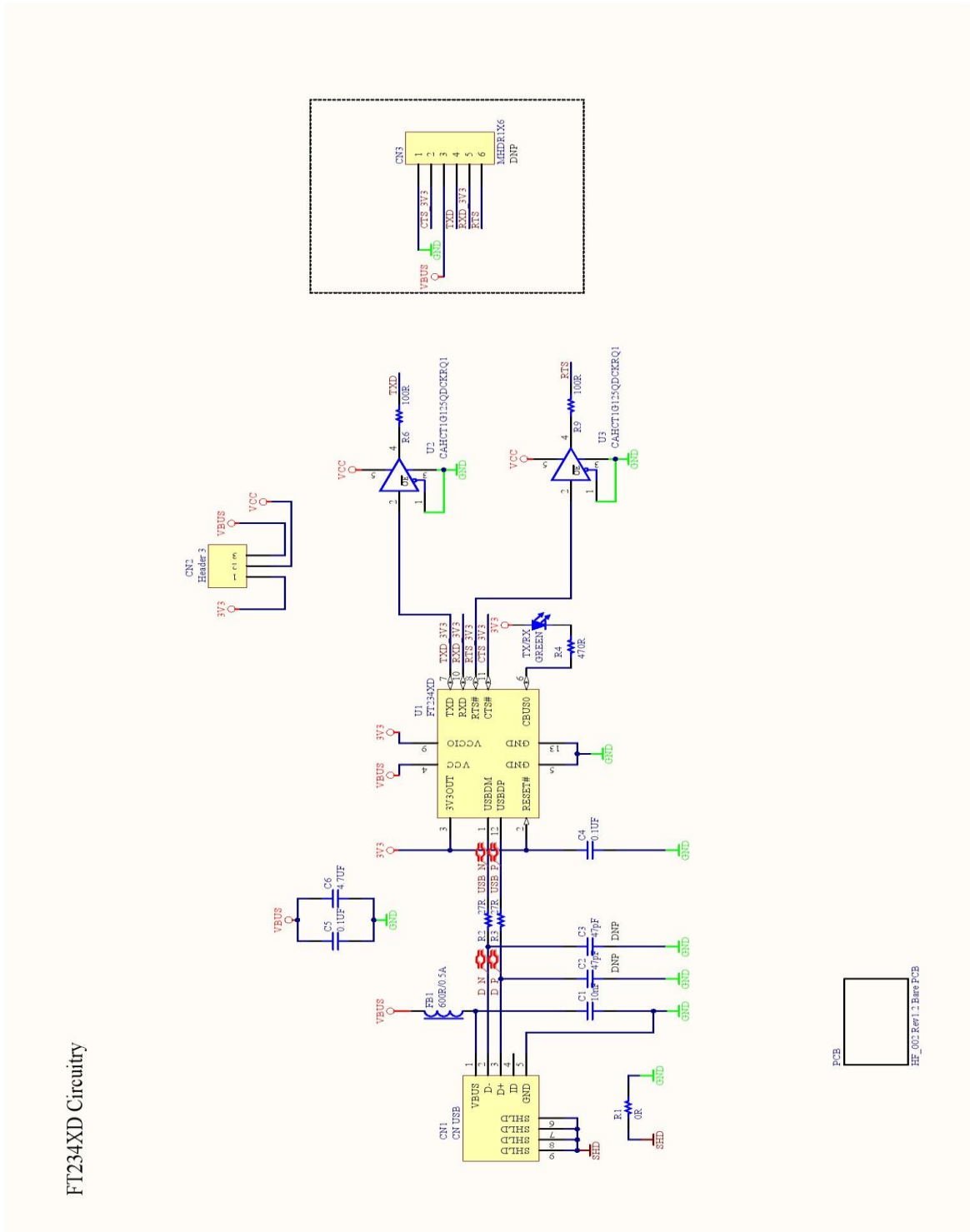**Table 6 – 3V3 Interface Operating Voltage and Current**

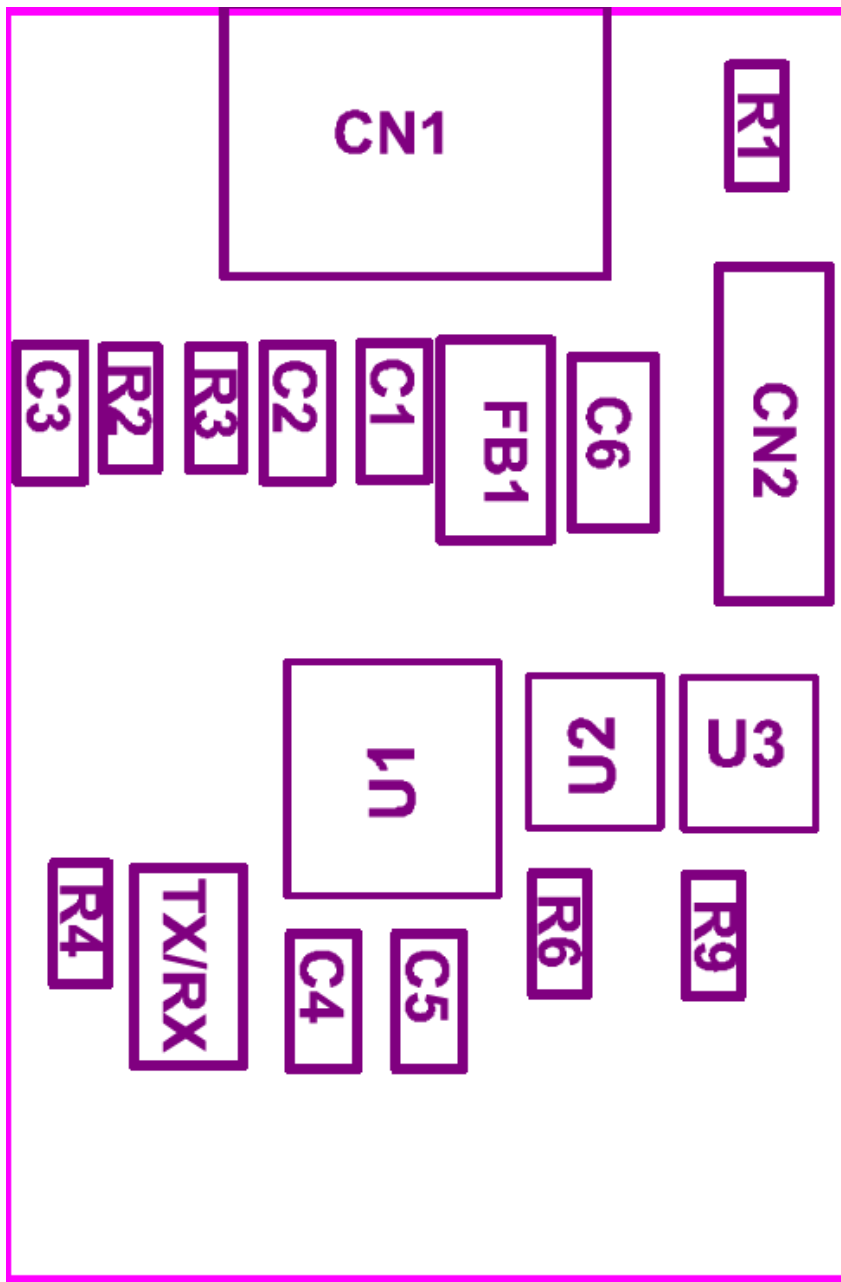# 6 Board Schematic

Figure 3 - FT234X Schematics

Figure 4 - LC234X Module Component Placement
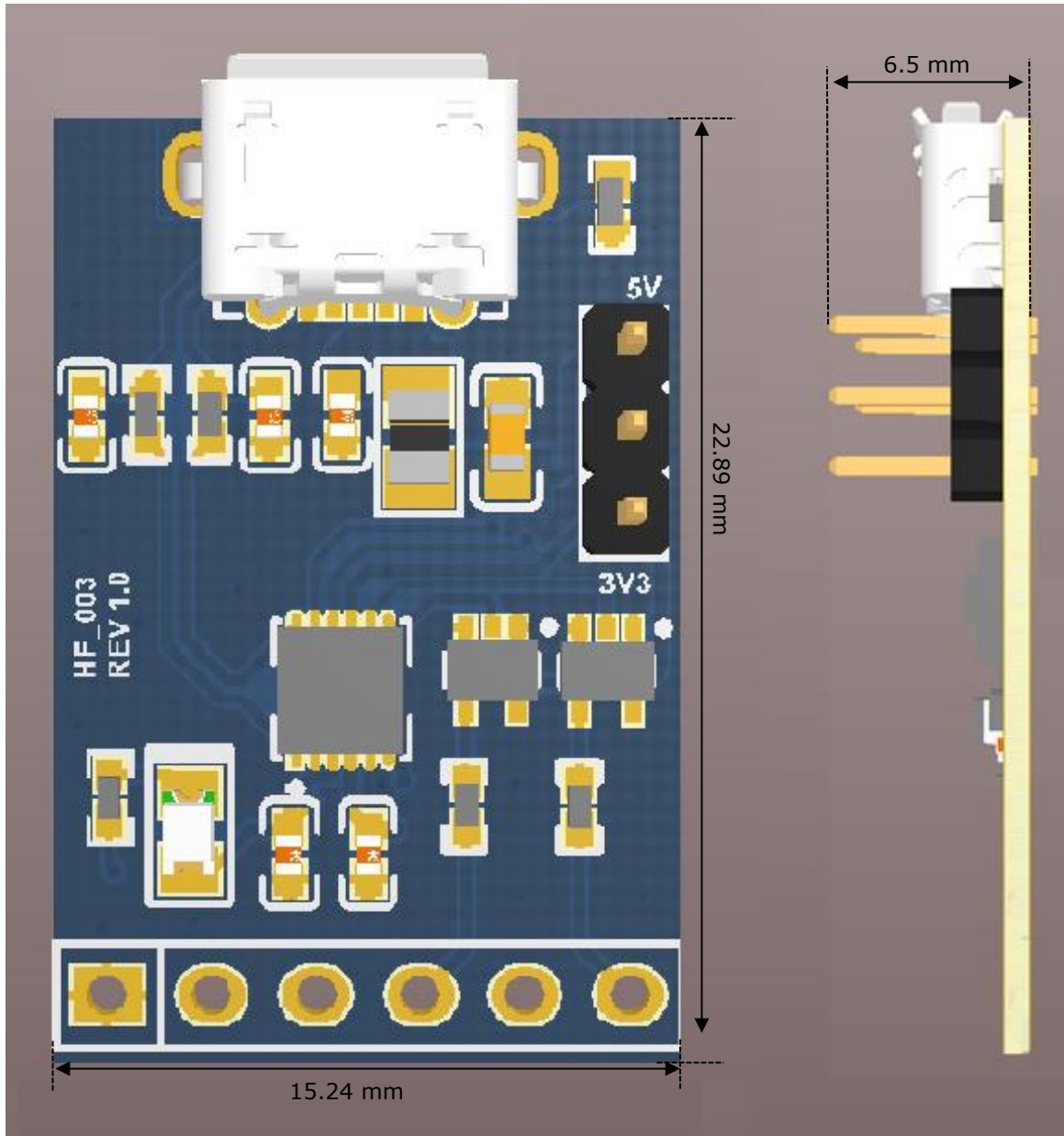
7 Mechanical Dimensions

Figure 5 - LC234X Module Dimensions

8   Contact Information

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Web Site

http://ftdichip.com

Distributor and Sales Representatives

Please visit the Sales Network page of the FTDI Web site for the contact details of our distributor(s) and sales representative(s) in your country.

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

Appendix B - List of Figures and Tables

List of Tables

List of Figures

Appendix C – Revision History

Document Title: LC234X Module Datasheet

Document Reference No.:   FT_001387

Clearance No.:   FTDI#517

Product Page: http://www.ftdichip.com/LC234X.htm

Document Feedback: Send Feedback

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