

Future Technology Devices International Ltd.

TN_140 FT231X Errata Technical Note

Document Reference No.: FT_000642

Version 1.2

Issue Date: 2012-07-12

The intention of this errata technical note is to give a detailed description of known functional or electrical issues with the FTDI FT231X devices.

The current revision of the FT231X is **revision C, released June 2012.**

Future Technology Devices International Limited (FTDI)

Unit1, 2 Seaward Place, Centurion Business Park, Glasgow G41 1HH United Kingdom

Tel.: +44 (0) 141 429 2777 Fax: + 44 (0) 141 429 2758

E-Mail (Support): support1@ftdichip.com Web: <http://www.ftdichip.com>

Copyright © 2012 Future Technology Devices International Limited

TABLE OF CONTENTS

1	FT231X Revision	2
2	Errata History Table – Functional Problems	3
2.1	Errata History Table – Programming Issues	3
2.2	Errata History Table – Electrical and Timming Specification Deviations.	3
3	Functional Problems of FT230X	5
3.1	Revision A.....	5
3.1.1	USB Data Transfer	5
3.1	Revision B.....	6
3.1.1	USB Data Transfer	6
3.2	Revision C.....	7
3.2.1	USB Data Transfer	7
4	Programming Issues of FT230X	8
4.1	Revision A.....	8
4.1.1	Default VCP Setting is Disabled	8
4.2	Revision B.....	9
4.2.1	Default VCP Setting is Disabled	9
4.3	Revision C.....	9
5	Electrical and Timing specification deviations of FT231X	10
5.1	Revision A.....	10
5.2	Revision B.....	10
5.2.1	Internal 3V3 Regulator.....	10
6	FT231X Package Markings	11
7	Contact Information	12
	Appendix C – Revision History	13

1 FT231X Revision

FT231X part numbers are listed in **Table 1**. The letter at the end of date code identifies the device revision.

The current revision of the FT231X is **revision C, released June 2012**. At the time of releasing this Technical Note there is one known issues with this silicon revision.

Part Number	Package
FT231XQ	20 pin QFN
FT231XS	20 pin SSOP

Table 1 FT231X Part Numbers

This errata technical note covers the revisions of FT231X listed in **Table 2**.

Revision	Notes
A	First device revision. Never sold publicly.
B	Second device revision. Launched 28 February 2012
C	Third device revision, Launched 11th June 2012

Table 2 FT231X Revisions

2 Errata History Table – Functional Problems

Functional Problem	Short description	Errata occurs in device revision
USB Data Transfer	Transfer of data over USB stops unexpectedly	A, B and C

Table 3 Functional Errata

2.1 Errata History Table – Programming Issues

Functional Problem	Short description	Errata occurs in device revision
FT230X	Default VCP setting is disabled	A, B

Table 4 Programming Errata

2.2 Errata History Table – Electrical and Timming Specification Deviations.

Deviations	Short description	Errata occurs in device revision
Fault with internal 3V3 regulator.	Device VCC is designed to operate between 3V3 and 5V however with this errata the supply should not be set below 4.3V for correct operation.	B

Table 5 Electrical and Timing Errata

3 Functional Problems of FT230X

3.1 Revision A

3.1.1 USB Data Transfer

Introduction:

An issue has been identified where the transfer of data over USB stops unexpectedly.

Problem:

The device is put into suspend mode during a transfer of certain data patterns most notable with binary zeros. This can halt the data transfer in certain circumstances and will require the device to be re-enumerated to recover.

Workaround:

This issue can be avoided by utilising the keep awake function of the chip. This will disable the USB suspend function of the chip and is therefore an intermediate workaround until revision D silicon is released with a permanent fix.

NB. With the workaround the chip will never enter lower powered suspend. However the keep awake current will be approximately 3mA.

To enable the keep awake function in the EEPROM, one of the CBUS pins needs to be configured as Keep-Awake#. This pin then needs to be tied to ground on the PCB. The [FT_Prog](#) utility can be used to configure the CBUS pin.

Package specific:

The effected packages are listed in Table 6.

Package	Applicable (Yes/No)
FT231XQ	Y
FT231XS	Y

Table 6

3.1 Revision B

3.1.1 USB Data Transfer

Introduction:

An issue has been identified where the transfer of data over USB stops unexpectedly.

Problem:

The device is put into suspend mode during a transfer of certain data patterns most notable with binary zeros. This can halt the data transfer in certain circumstances and will require the device to be re-enumerated to recover.

Workaround:

This issue can be avoided by utilising the keep awake function of the chip. This will disable the USB suspend function of the chip and is therefore an intermediate workaround until revision D silicon is released with a permanent fix.

NB. With the workaround the chip will never enter lower powered suspend. However the keep awake current will be approximately 3mA.

To enable the keep awake function in the EEPROM, one of the CBUS pins needs to be configured as Keep-Awake#. This pin then needs to be tied to ground on the PCB. The [FT_Prog](#) utility can be used to configure the CBUS pin.

Package specific:

The effected packages are listed in Table 7.

Package	Applicable (Yes/No)
FT231XQ	Y
FT231XS	Y

Table 7

3.2 Revision C

3.2.1 USB Data Transfer

Introduction:

An issue has been identified where the transfer of data over USB stops unexpectedly.

Problem:

The device is put into suspend mode during a transfer of certain data patterns most notable with binary zeros. This can halt the data transfer in certain circumstances and will require the device to be re-enumerated to recover.

Workaround:

This issue can be avoided by utilising the keep awake function of the chip. This will disable the USB suspend function of the chip and is therefore an intermediate workaround until revision D silicon is released with a permanent fix.

NB. With the workaround the chip will never enter lower powered suspend. However the keep awake current will be approximately 3mA.

To enable the keep awake function in the EEPROM, one of the CBUS pins needs to be configured as Keep-Awake#. This pin then needs to be tied to ground on the PCB. The [FT_Prog](#) utility can be used to configure the CBUS pin.

Package specific:

The effected packages are listed in Table 8.

Package	Applicable (Yes/No)
FT231XQ	Y
FT231XS	Y

Table 8

4 Programming Issues of FT230X

4.1 Revision A

4.1.1 Default VCP Setting is Disabled

Introduction:

The FT230X stores several configuration values in the MTP. The VCP driver is intended to be enabled with the FT230X.

Problem:

An incorrect value for the VCP driver was programmed into the MTP on some production runs.

Workaround:

Use FT_Prog or a custom D2XX program to change the MTP setting to enable loading of the VCP driver.

This setting has been corrected in all Rev C devices.

Package specific:

The effected packages are listed in Table 9.

Package	Applicable (Yes/No)
FT231XQ	Y
FT231XS	Y

Table 9

4.2 Revision B

4.2.1 Default VCP Setting is Disabled

Introduction:

The FT230X stores several configuration values in the MTP. The VCP driver is intended to be enabled with the FT230X.

Problem:

An incorrect value for the VCP driver was programmed into the MTP on some production runs.

Workaround:

Use FT_Prog or a custom D2XX program to change the MTP setting to enable loading of the VCP driver.

This setting has been corrected in all Rev C devices.

Package specific:

The effected packages are listed in Table 10.

Package	Applicable (Yes/No)
FT231XQ	Y
FT231XS	Y

Table 10

4.3 Revision C

No known programming issues at Revision C

5 Electrical and Timing specification deviations of FT231X

5.1 Revision A

No known issues at revision A

5.2 Revision B

5.2.1 Internal 3V3 Regulator

Introduction:

The FT231X uses an internal regulator to generate 3V3 from a 5V source (VCC). The source should be variable from 3V3 to 5V.

Problem:

The VCC supply to the regulator must not drop below 4.3V for the correct 3V3 regulated output to be produced.

Workaround:

VCC must not be supplied below 4.3V.

Package specific:

The effected packages are listed in Table 11.

Package	Applicable (Yes/No)
FT231XQ	Y
FT231XS	Y

Table 11

6 FT231X Package Markings

FT231X is available in a RoHS Compliant package, 20 pin QFN and 16 pin SSOP. An example of the markings on the package is shown in Figure 5.1.

20

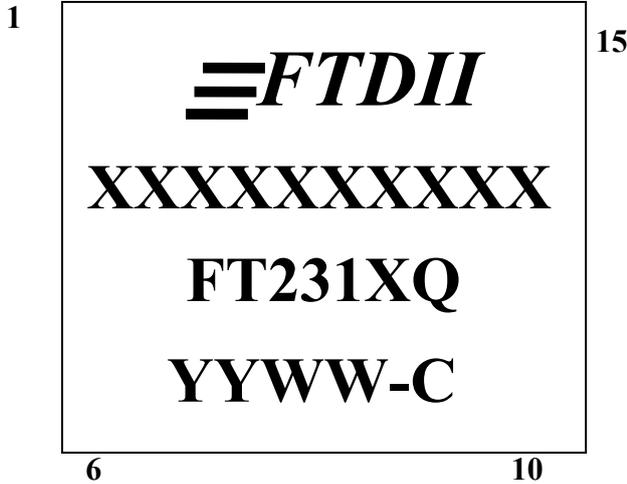


Figure 6-1 Package Markings – FT231XQ

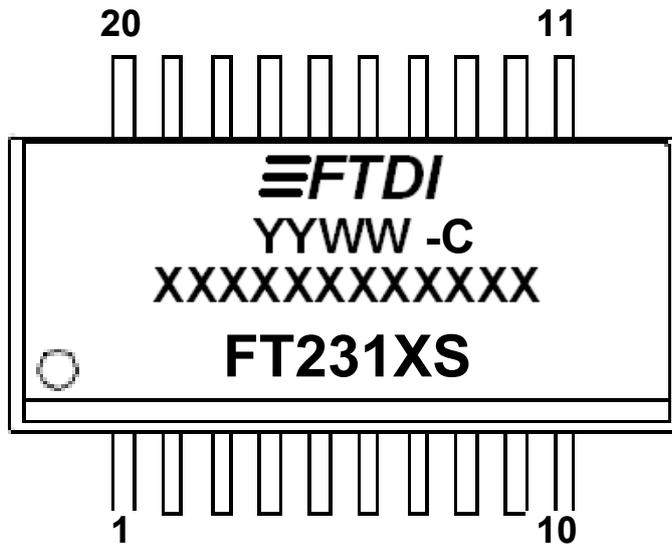


Figure 6-2 Package Markings – FT231XS

The date code format is **YYWW** where WW = 2 digit week number, YY = 2 digit year number. This is followed by the revision number.

The code **XXXXXXXXXX** is the manufacturing LOT code

7 Contact Information

Head Office – Glasgow, UK

Future Technology Devices International Limited
Unit 1, 2 Seaward Place, Centurion Business Park
Glasgow G41 1HH
United Kingdom
Tel: +44 (0) 141 429 2777
Fax: +44 (0) 141 429 2758

E-mail (Sales) sales1@ftdichip.com
E-mail (Support) support1@ftdichip.com
E-mail (General Enquiries) admin1@ftdichip.com

Branch Office – Hillsboro, Oregon, USA

Future Technology Devices International Limited
(USA)
7235 NW Evergreen Parkway, Suite 600
Hillsboro, OR 97123-5803
USA
Tel: +1 (503) 547 0988
Fax: +1 (503) 547 0987

E-Mail (Sales) us.sales@ftdichip.com
E-Mail (Support) us.support@ftdichip.com
E-Mail (General Enquiries) us.admin@ftdichip.com

Branch Office – Taipei, Taiwan

Future Technology Devices International Limited
(Taiwan)
2F, No. 516, Sec. 1, NeiHu Road
Taipei 114
Taiwan, R.O.C.
Tel: +886 (0) 2 8791 3570
Fax: +886 (0) 2 8791 3576

E-mail (Sales) tw.sales1@ftdichip.com
E-mail (Support) tw.support1@ftdichip.com
E-mail (General Enquiries) tw.admin1@ftdichip.com

Branch Office – Shanghai, China

Future Technology Devices International Limited
(China)
Room 1103, No. 666 West Huaihai Road,
Shanghai, 200052
China
Tel: +86 21 62351596
Fax: +86 21 62351595

E-mail (Sales) cn.sales@ftdichip.com
E-mail (Support) cn.support@ftdichip.com
E-mail (General Enquiries) cn.admin@ftdichip.com

Web Site

<http://ftdichip.com>

System and equipment manufacturers and designers are responsible to ensure that their systems, and any Future Technology Devices International Ltd (FTDI) devices incorporated in their systems, meet all applicable safety, regulatory and system-level performance requirements. All application-related information in this document (including application descriptions, suggested FTDI devices and other materials) is provided for reference only. While FTDI has taken care to assure it is accurate, this information is subject to customer confirmation, and FTDI disclaims all liability for system designs and for any applications assistance provided by FTDI. Use of FTDI devices in life support and/or safety applications is entirely at the user's risk, and the user agrees to defend, indemnify and hold harmless FTDI from any and all damages, claims, suits or expense resulting from such use. This document is subject to change without notice. No freedom to use patents or other intellectual property rights is implied by the publication of this document. Neither the whole nor any part of the information contained in, or the product described in this document, may be adapted or reproduced in any material or electronic form without the prior written consent of the copyright holder. Future Technology Devices International Ltd, Unit 1, 2 Seaward Place, Centurion Business Park, Glasgow G41 1HH, United Kingdom. Scotland Registered Company Number: SC136640

Appendix C – Revision History

Document Title: TN_140 FT231X Errata Technical Note
Document Reference No.: FT_000642
Clearance No.: FTDI# 286
Product Page: <http://www.ftdichip.com/FT-X.htm>
Document Feedback: [Send Feedback](#)

Version 1.0	First Release	09/03/2012
Version 1.1	Added VCP MTP setting corrections Updated China address Added Rev C release	11/06/2012
Version 1.2	Added USB data transfer issue and corrected programming issues	12/07/2012