Future Technology Devices International Ltd.

TN_135 FT200XD Errata Technical Note

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Version 1.5

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The intention of this errata technical note is to give a detailed description of known functional or electrical issues with the FTDI FT200XD devices.
The current revision of the FT200XD is **revision D, released November 2012.**

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1   FT200XD Revision

FT200XD part numbers are listed in **Table 1.** The letter at the end of date code identifies the device revision.

The current revision of the FT200XD is **revision D, released November 2012.** At the time of releasing this Technical Note there are no known issues with this silicon revision.

Part Number	Package
FT200XD	10 pin DFN

Table 1 FT200XD Part Numbers

This errata technical note covers the revisions of FT200XD listed in **Table 2**.

Revision	Notes
A	First device revision. Never sold publicly.
B	Second device revision. Launched 28 February 2012
C	Third device version. Released 11th June 2012
D	Forth device version. Released 6th November 2012

Table 2 FT200XD 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
USB 3.0 Hosts	USB 3.0 Host occasional interoperability	A, B and C

Table 3 Functional Errata

2.1 Errata History Table – Electrical and Timing 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
3V3OUT does not start with load	During enumeration when load is connected to 3V3OUT no output voltage is present	A, B, C and D

Table 4 Electrical and Timing Errata

3   Functional Problems of FT200XD

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.

NB. It is the presence of this data pattern on the USB bus regardless of whether the data is intended for the FT200XD or other devices (e.g. a broadcast) on the bus that forces the suspend state.

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 5.

Package	Applicable (Yes/No)
FT200XD	Y

Table 5

3.1.2 USB 3.0 Hosts

Introduction:

An issue has been identified where the FT200XD will not enumerate when connected to certain USB 3.0 Hosts. So far FTDI have identified **ONE** such host.

Problem:

Certain USB 3.0 Hosts exhibit reduced reset recovery times after a USB reset, which can at times be faster or close to the USB 2.0 specification limit. The USB 2.0 specification states a USB reset recovery time of 10ms and in general almost all hosts allocate a much longer period than this. The FT200XD device may not enumerate if the reset recovery time is reduced.

This issue has been seen on one USB 3.0 Host controller and has not been seen on a USB 2.0 Host controller or other USB 3.0 Host controllers.

Workaround:

Reconnect the device to a USB 2.0 host. This issue has been seen only on one particular USB 3.0 Host controllers.

Package specific:

The effected packages are listed in Table 6.

Package	Applicable (Yes/No)
FT200XD	Y

Table 6

3.2 Revision B

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.

NB. It is the presence of this data pattern on the USB bus regardless of whether the data is intended for the FT200XD or other devices (e.g. a broadcast) on the bus that forces the suspend state .

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 work-aoround the chip will never enter lower powered suspend. However the keep awake current will be approximately 3mA.

To enable keep awake function in EEPROM, one of the CBUS pins needs to be configured as Keep-Awake#. This pin then needs to be tied to ground. 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)
FT200XD	Y

Table 7

3.2.2 USB 3.0 Hosts

Introduction:

An issue has been identified where the FT200XD will not enumerate when connected to certain USB 3.0 Hosts. So far FTDI have identified **ONE** such host.

Problem:

Certain USB 3.0 Hosts exhibit reduced reset recovery times after a USB reset, which can at times be faster or close to the USB 2.0 specification limit. The USB 2.0 specification states a USB reset recovery time of 10ms and in general almost all hosts allocate a much longer period than this. The FT200XD device may not enumerate if the reset recovery time is reduced.

This issue has been seen on one USB 3.0 Host controller and has not been seen on a USB 2.0 Host controller or other USB 3.0 Host controllers.

Workaround:

Reconnect the device to a USB 2.0 host. This issue has been seen only on one particular USB 3.0 Host controllers.

Package specific:

The effected packages are listed in Table 8.

Package	Applicable (Yes/No)
FT200XD	Y

Table 8

3.3 Revision C

3.3.1 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.

NB. It is the presence of this data pattern on the USB bus regardless of whether the data is intended for the FT200XD or other devices (e.g. a broadcast) on the bus that forces the suspend state

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

Package specific:

The effected packages are listed in Table 9.

Package	Applicable (Yes/No)
FT200XD	Y

Table 9

3.3.2 USB 3.0 Hosts

Introduction:

An issue has been identified where the FT200XD will not enumerate when connected to certain USB 3.0 Hosts. So far FTDI have identified **ONE** such host.

Problem:

Certain USB 3.0 Hosts exhibit reduced reset recovery times after a USB reset, which can at times be faster or close to the USB 2.0 specification limit. The USB 2.0 specification states a USB reset recovery time of 10ms and in general almost all hosts allocate a much longer period than this. The FT200XD device may not enumerate if the reset recovery time is reduced.

This issue has been seen on one USB 3.0 Host controller and has not been seen on a USB 2.0 Host controller or other USB 3.0 Host controllers.

Workaround:

Reconnect the device to a USB 2.0 host. This issue has been seen only on one particular USB 3.0 Host controllers.

Package specific:

The effected packages are listed in Table 10.

Package	Applicable (Yes/No)
FT200XD	Y

Table 10

3.4 Revision D

No known issues at revision D.

4 Electrical and Timing specification deviations of FT200XD

4.1 Revision A

4.1.1 3V3OUT

Introduction:

The FT200XD has a 3V3OUT pin to allow users to power external circuits with 3.3 volts.

Problem:

During enumeration when a load is applied to the 3V3OUT pin, no output voltage is present.

Workaround:

The external circuitry must be powered off during enumeration of the FT200XD. A power Mosfet can be used in conjunction with the PWREN# pin. PWREN# is used to show enumeration has been successful and the external circuity can now be switched on.

Package specific:

The effected packages are listed in Table 11.

Package	Applicable (Yes/No)
FT200XD	Y

Table 11

4.2 Revision B

4.2.1 3V3OUT

Introduction:

The FT200XD has a 3V3OUT pin to allow users to power external circuits with 3.3 volts.

Problem:

During enumeration when a load is applied to the 3V3OUT pin, no output voltage is present.

Workaround:

The external circuitry must be powered off during enumeration of the FT200XD. A power Mosfet can be used in conjunction with the PWREN# pin. PWREN# is used to show enumeration has been successful and the external circuity can now be switched on.
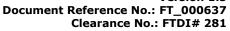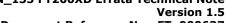
Package specific:

The effected packages are listed in Table 12.

Package	Applicable (Yes/No)
FT200XD	Y

Table 12

4.2.2 Internal 3V3 Regulator

Introduction:

The FT200XD 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. This issue will be corrected at silicon revision C.

Package specific:

The effected packages are listed in Table 13.

Package	Applicable (Yes/No)
FT200XD	Y

Table 13

4.3 Revision C

4.3.1 3V3OUT

Introduction:

The FT200XD has a 3V3OUT pin to allow users to power external circuits with 3.3 volts.

Problem:

During enumeration when a load is applied to the 3V3OUT pin, no output voltage is present.

Workaround:

The external circuitry must be powered off during enumeration of the FT200XD. A power Mosfet can be used in conjunction with the PWREN# pin. PWREN# is used to show enumeration has been successful and the external circuity can now be switched on.

Package specific:

The effected packages are listed in Table 14.

Package	Applicable (Yes/No)
FT200XD	Y

Table 14

4.4 Revision D

4.4.1 3V3OUT

Introduction:

The FT200XD has a 3V3OUT pin to allow users to power external circuits with 3.3 volts.

Problem:

During enumeration when a load is applied to the 3V3OUT pin, no output voltage is present.

Workaround:

The external circuitry must be powered off during enumeration of the FT200XD. A power Mosfet can be used in conjunction with the PWREN# pin. PWREN# is used to show enumeration has been successful and the external circuity can now be switched on.

Package specific:

The effected packages are listed in Table 11.

Package	Applicable (Yes/No)
FT200XD	Y

Table 15

5 FT200XD Package Markings

FT200XD is available in a RoHS Compliant 10 pin DFN package. An example of the markings on the package is shown in Figure 5.1.

Figure 5-1 Package Markings – FT200XD

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Appendix C – Revision History

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Version 1.0	First Release	09/03/2012
Version 1.1	Added rev C and Updated China address	11/06/2012
Version 1.2	Added USB data transfer issue	11/07/2012
Version 1.3	Added USB 3.0 hosts and note to Problem section of USB data transfer	11/07/2012
Version 1.4	Added revision D – no known issues, updated contact information	10/06/2013
Version 1.5	Added	