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CY7C68013A

Errata Revision: [\*\*]

June 16, 2004

## Errata Document for CY7C68013A rev A [Engineering Samples Only]

This document describes the errata for the EZUSB-FX2LP™ / CY7C68013A. Details include errata trigger conditions, available workarounds, and silicon revision applicability. This document in conjunction with the datasheet for this device to fully describes the device functionality.

Please contact your local Cypress Sales Representative if you have further questions.

### Part Numbers Affected

Part Number	Device Characteristics
CY7C68013A	All Packages

### CY7C68013A Qualification Status

Engineering samples

### CY7C68013A Errata Summary

The following table defines the errata applicable to available CY7C68013A family devices. An "X" indicates that the errata pertains to the selected device.

Note: Errata titles are hyperlinked. Click on table entry to jump to description.

Items	CY7C68013A	Rev Letter	Fix Status
[1]. Debug Register default value	X	A [Engineering Samples]	Will be fixed in next release
[2]. INT5# pin is output.	X	A [Engineering Samples]	Will be fixed in next release
[3]. Corrupted data returned by SUDPTR in response to control transfers.	X	A [Engineering Samples]	Will be fixed in next release

#### 1. Debug Register default value

- **PROBLEM DEFINITION**

The default value of a mis-set Factory register causes jitter noise on the high-speed signals on D+ and D- that may exceed the limits of the USB-IF High-speed signal quality test at corner limits.

- **PARAMETERS AFFECTED**

N/A.

- **TRIGGER CONDITION(S)**

Device reset will reinstate factory register default.

- **SCOPE OF IMPACT**

Resetting the default value on this register causes a condition that may cause the signal quality measurements to have marginal values and may exceed the compliance limits at corner conditions of temperature and voltage.

- **WORKAROUND**

Clear bit 0 of the register located at 0xE6F8. This is a Cypress reserved debug register and is initialized with a mis-set value at reset. To eliminate high-speed eye jitter, firmware initialization code should clear bit0 of this register as follows:

DEBUG &= ~0x01;

DEBUG is defined as 0xE6F8 in the FX2LP frameworks include file - lpregs.h

- **FIX STATUS**

To be fixed in next revision of silicon.

## 2. INT5# pin is output.

- **PROBLEM DEFINITION**

INT5# pin is driven as an output when it should be an input only pin.

- **PARAMETERS AFFECTED**

N/A.

- **TRIGGER CONDITION(S)**

In the 128 pin and 100 pin CY7C68013A devices, INT5# signal has been initialized as an output pin instead of input pin and is driven low.

- **SCOPE OF IMPACT**

INT5# is not usable and should not be driven. It is highly recommended that INT5# not be directly tied to VCC. Although the device still functions properly, driving INT5# with VCC will cause an increase in current draw (approximately 60 mA range). Any existing design that has pulled up this pin with a direct connection to VCC should disconnect this pin from the VCC. If a pull-up resistor was used the pull-up resistor should be removed for the Engineering sample version of the chip. Any design pulling down this pin is not affected.

- **WORKAROUND**

This pin should not be connected to the VCC. Disconnect the INT5# pin from the circuit. If INT5# was used as a functional interrupt in the design there is no workaround.

- **FIX STATUS**

To be fixed in next revision of silicon.

## 3. Corrupted data returned by SUDPTR in response to control transfers.

- **PROBLEM DEFINITION**

The automatic setup data pointer (SUDPTRH/L) is an EZ-USB FX2 feature that automates firmware response to control transfers, such as a Get Device Descriptor request. The firmware should be able to set the autopointer and the SIE should determine the length of the descriptor and packetize it. When the below trigger conditions are met, the data sent in response to control transfers may be corrupted.

- **PARAMETERS AFFECTED**

N/A.

- **TRIGGER CONDITION(S)**

While performing a control transfer with the use of the setup data pointer (SUDPTRH/L), and concurrently transferring data on another endpoint, the potential exists for the data returned in response to the control transfer to be corrupted.

- **SCOPE OF IMPACT**

- Only a potential issue for customers using SUDPTRH/L commands in their FX2 firmware. This is not an issue for all other designs.
- For those designs using SUDPTRH/L, this issue would manifest as a drop from the USB bus.

- **WORKAROUND**

- 1) Unplug and replug the devices under evaluation. This is expected to be a rare occurrence and may be a slight inconvenience in the evaluation. Firmware modification is not required.
- 2) To avoid any potential issues, evaluation firmware may be proactively altered such that the registers SUDPTRH and SUDPTRL are not used. The autopointer can be used in place of the SUDPTRH/L for responses to any control transfer request. In place of SUDPTRH/L, the AUTOPTRnH/L (where n is either 1 or 2) can be used. To perform the equivalent function, the pointer which is loaded into the SUDPTRH/L can be passed to a function as follows:

```
// Send descriptor without using setup data autopointer.  
//
```



```
void sendDescriptor(BYTE xdata *addr)
{
    BYTE len, j;

    if (SETUPDAT[3] == GD_CONFIGURATION || SETUPDAT[3] == GD_OTHER_SPEED_CONFIGURATION)
        len = addr[2];
    else
        len = addr[0];

    AUTOPTR1H = MSB(addr);
    AUTOPTR1L = LSB(addr);

    if (!SETUPDAT[7])
        len = min(len, SETUPDAT[6]);

    while (len)
    {
        for(j=0;j<64;j++)
        {
            EP0BUF[j]=XAUTODAT1;
        }
        EP0BCL = j = min(len, 64);
        len -= j;

        // Wait for the data to go out before we use the buffer again!

        while(EP0CS & bmEPBUSY)
            ;
    }
}
```

- **FIX STATUS**

To be fixed in next revision of silicon.

## References

- [1] Document # 38-08032, CY7C68013A/CY7C68015A EZ-USB FX2LP™ USB Microcontroller High-Speed USB Peripheral Controller



**Document History Page**

Document Title: Errata Document for CY7C68013A rev A Document Number: 38-17024				
REV.	ECN NO.	Issue Date	Orig. of Change	Description of Change
**	233048	See ECN	KKU	Initial Release