

# Micron® Xccela™ Flash (MT35X) Development Kit

## Quick Start Guide for ZedBoard™

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## Introduction

This guide provides the information needed to connect, boot, and access configuration commands for Micron's **Xccela** Flash MT35X memory (packaged on a TBGA-24B installed on a dedicated daughterboard) to a ZedBoard evaluation and development board.

**Quad-SPI NOR (MT25Q) Instructions:** The daughterboard also supports Micron's Quad-SPI NOR (MT25Q) memory. Follow these instructions, except download different software (**config-MT25Q\_1.8.zip** or **config-MT25Q\_3.0.zip**) and user manual (**ZedBoard User Manual–Quad SPI NOR Flash (MT25Q).pdf**).

## Items Required

- **Xccela** Flash MT35X (contact your local Micron representative for samples)
- ZedBoard
- 24-ball TBGA daughterboard
- SD card with configuration files
- Universal serial port tool
- PC with Microsoft Windows® 7 or higher

## Related Documents








- Micron® **Xccela**™ Flash (MT35X) Development Kit User Guide for ZedBoard™
- Micron® Quad SPI NOR (MT25Q) Development Kit User Guide for ZedBoard™

Questions about the development kit can be sent to [norsupport@micron.com](mailto:norsupport@micron.com).

# Download the Software and Connect the Board

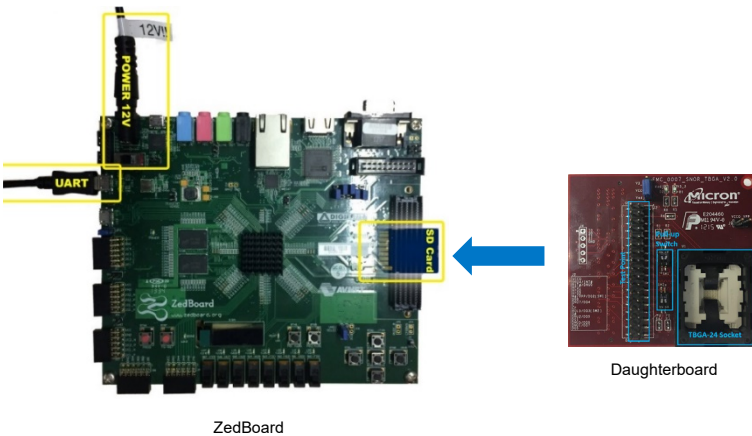
- 1 Download the software (**config—MT35X\_1.8.zip** for **MT35XU** series or **MT35X\_3.0.zip** for **MT35XL** series) and the user manual (**ZedBoard User Manual—Xccela Octal SPI NOR Flash (MT35X).pdf**) from [www.xccela.org/resource](http://www.xccela.org/resource).
- 2 Unzip the files onto an SD card.

The software (config—MT35X\_1.8/3.0.zip) contains the files needed to boot up the ZedBoard. These files must be stored in a FAT32-formatted SD card: Linux kernel, Ramdisk rootfs, device tree, boot images and testing bench-related files.

Name	Type
 bench.uramdisk.image.gz	Compressed File (GZ)
 BOOT.BIN	BIN File
 devicetree.dtb	DTB File
 init.sh	SH File
 ulmage	File
 ulmage1	File
 uramdisk.image.gz	Compressed File (GZ)

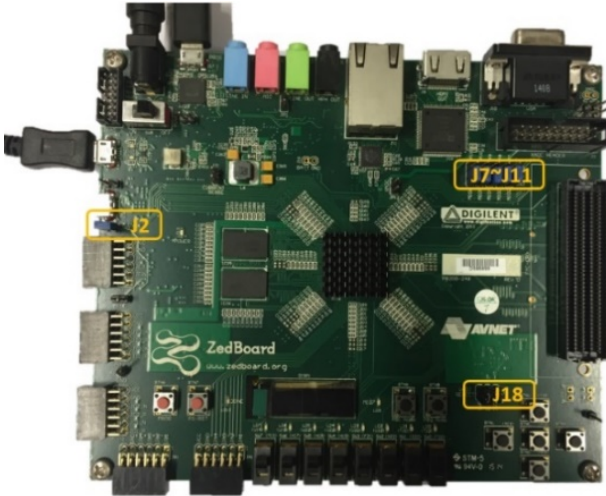
**NOTE:** Do not rename the boot files; these file names must remain as displayed.

- 3 Attach the daughterboard to the ZedBoard.



## Set Jumpers and Connections

To boot the ZedBoard, several jumpers and connections must be configured as described below. Follow these instructions **before** powering on the board.



- 1 Connect J2.
- 2 Configure JP7, JP8, JP9, JP10 and JP11 as follows:

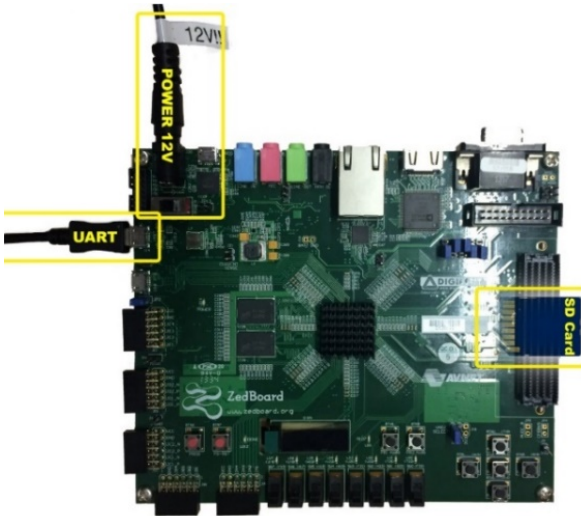
Jumper	JP7	JP8	JP9	JP10	JP11
Setting	GND	GND	3V3	3V3	GND

- 3 Set J18 to **1V8** or **3V3** according to the operating power of your SPI-NOR device.

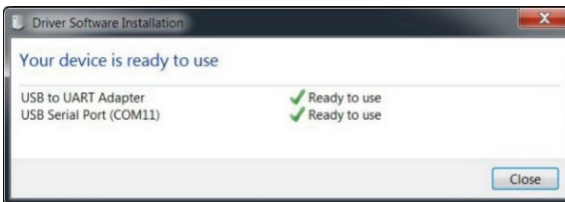


# Power On the ZedBoard

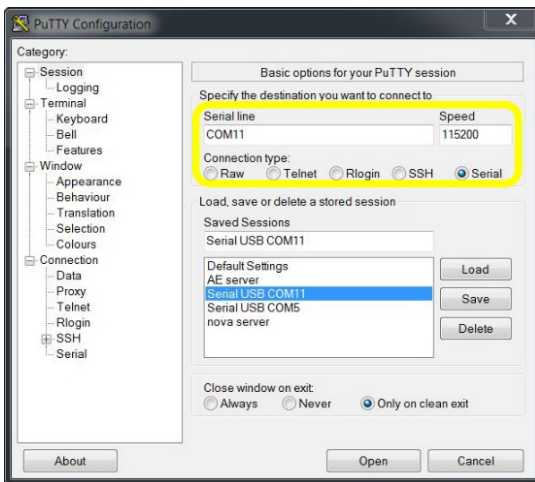
- 1 Plug in the SD card, USB cable (for the serial port), and DC adapter as shown below.



- 2 Switch on power by SW8.
- 3 If this is the first time inserting the USB port, the driver automatically downloads and installs. After the driver installs successfully, the USB port maps to a serial port (for example, COM11).



- 4 Open the serial port tool, and then configure the port number to the USB serial port mapped in the previous step (for example, COM11).
- 5 Set the baud rate to **115200**.



6 If this is the first time booting the ZedBoard, run the following two commands to set up the system boot environment, and then power down the board. **Skip these three steps if you've previously booted the ZedBoard.**

- Press any key when the message **Hit any key to stop autoboot** appears.
- `env default -f -a`
- `env save`

```
U-Boot 2017.01-03236-g77845a3-dirty (Mar 07 2019 - 13:18:39 +0100)
Model: Zynq Zed Development Board
Board: Xilinx Zynq
DRAM: ECC disabled 512 MiB
MMC: sdhci@e0100000: 0 (SD)
SF: Detected s25f1256s_64k with page size 256 Bytes, erase size 64 KiB, total 64 MiB
In: serial@e0001000
Out: serial@e0001000
Err: serial@e0001000
Model: Zynq Zed Development Board
Board: Xilinx Zynq
Net: ZYNQ_GEM: e000b000, phyaddr 0, interface rgmii-id
eth0: ethernet@e000b000
Hit any key to stop autoboot: 0
Zynq> env default -f -a
# Resetting to default environment
Zynq> env save
Saving Environment to SPI Flash...
SF: Detected s25f1256s_64k with page size 256 Bytes, erase size 64 KiB, total 64 MiB
Erasing SPI flash...writing to SPI flash...done
Zynq>
```

7 Power on the ZedBoard.

When the **XCCELA>>** prompt appears after the Micron welcome screen (it may take a few seconds), the system boots successfully and enters the SPI NOR test bench.



# Command Help

- 1 Type **HELP** and then press enter to obtain all supported commands for Micron's **Xccela** SPI NOR device.

```
XCCELA>>> HELP
Xccela SPI NOR ZedBoard Test Bench:
HELP -- print help information
RDID -- read device id
RDSFDP [addr] [length] -- read serial flash discovery parameter
RDSR -- read status register
WRSR [sr value] -- write status register
RDVCR -- read volatile configure register
WRVCR [VCR address] [VCR value] -- write volatile configure register
RDNVCR -- read non-volatile configure register
WRNVCR [NVCR address] [NVCR value] -- write non-volatile configure register
RDFSR -- read flag status register
CLRFSS -- clear flag status register
FRD [CAD] [addr] [addrLen] [len] -- Extended SDR or Octal DDR fast read from target address
DFRD [CAD] [addr] [addrLen] [len] -- Extended DDR or Octal DDR fast read from target address
SE [addr] [addrLen] [type] -- sector, subsector or bulk erase at target address
ESE [startSec] [stopSec] [addrLen] [verify] -- multi-sector erase with pre-defined sector range
PP [CAD] [addr] [addrLen] [len] [pattern] [verify] -- extended SDR or Octal DDR page program from target address with given pattern
TUNING [mode=Free] [addrLen] [method] -- one-key tuning implementation
OCTALVFY [address] [addrLen] [length] [pattern] [print] -- Octal mode program and read verify (DDR) from target address with given pattern
RESET -- software reset sNOR device
STATUS -- display controller status
```

- 2 Type **-H** and then press enter to obtain command details.  
(For example, type **FRD -H** to obtain information for the page program command.)

```
XCCELA>>> FRD -H
Usage: FRD [CAD] [address] [addrLen] [length]
      [CAD] Command-Address-Data: 1-1-1, 1-1-8, 1-8-8, 8-8-8
      [address] destination address
      [addrLen] address length in byte
      [length] read length in byte
Info: Extended SDR or Octal DDR fast read from target address
```

- 3 For additional details, see the user manual.

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