How to Add FTDI-based Adapters

Many adapters use FTDI FT2232 or other similar chip as MCU. CooCox Users can customize FTDI-based adapters.

In the target folder of CoIDE and CoFlash's installation, **\config\adapter** is a folder for configuring adapters. To add an adapter, you just need to modify files in the folder properly.

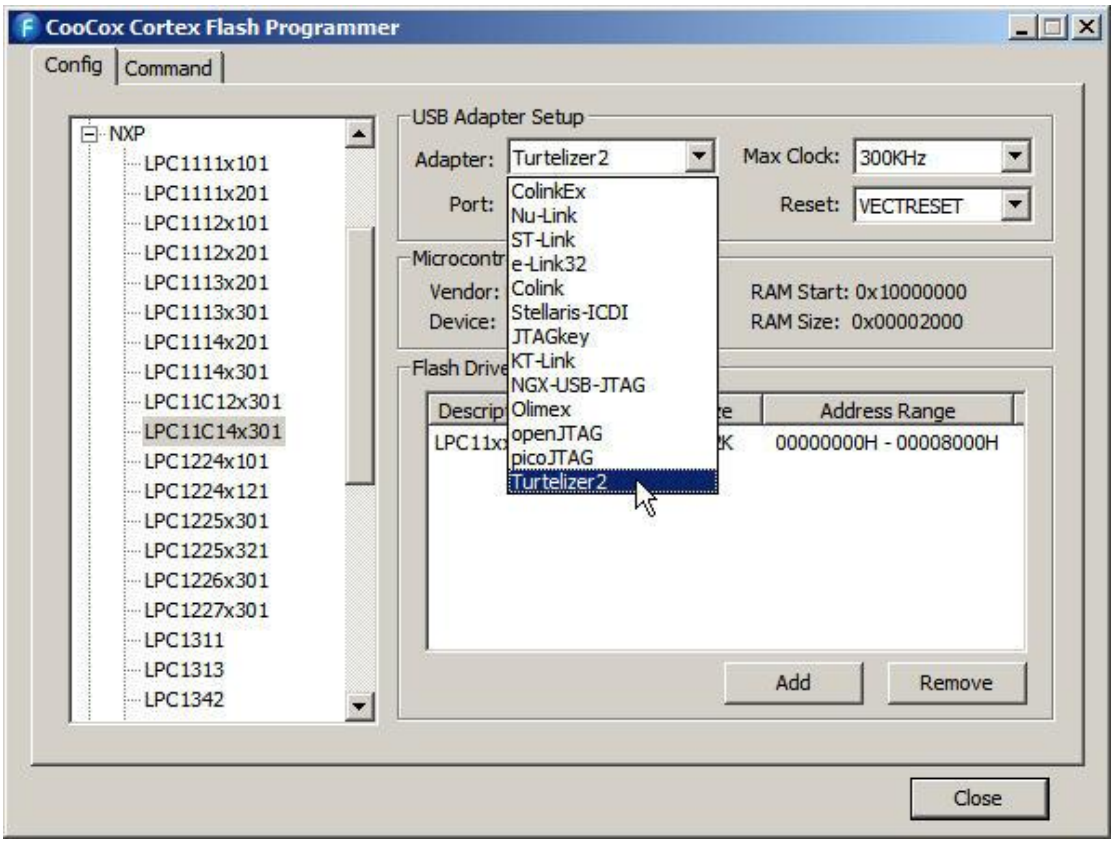
I. Add FTDI-based adapters to CoFlash

For example, to add adapter Turtelizer2, the steps are as follows:

1. **Add the line below to file adapterlist.xml**
   <adapter name="Turtelizer2 " config="Turtelizer2.xml"/>

2. **Copy icdi.xml and rename it Turtelizer2.xml**

3. **Open the file, modify adapter name to "Turtelizer2" and modify adapter vendor**
   Then in the adapter dropdown list of CoFlash, you will see the added Turtelizer2 as below.



To make it work normally in CoFlash, you just need one more step.
Notice: Currently CoIDE just support JTAG mode of the FTDI-based adapters.

4. Modify the "mask" and "value" parameters of transactions

FT2232-based adapters are all under the FTDI MPSSE Mode. This mode uses Channel A of the chip, which has 8 + 4 IOs. Apart from TMS, TDI, TDO, TCK, some of other IOs are to ENABLE / DISABLE the control signals, some are to set the LEDs ON / OFF. Different adapters have different IO mappings.
In a transaction, "mask" configures IO, 1 is OUTPUT, and 0 is INPUT. One bit corresponds to one IO.

Bit 11	10	9	8
ACBUS3	ACBUS2	ACBUS1	ACBUS0

7	6	5	4	3	2	1	Bit 0
ADBUS7	ADBUS6	ADBUS5	ADBUS4	ADBUS3	ADBUS2	ADBUS1	ADBUS0
				TMS	TDO	TDI	TCK

For the function of other bits, please refer to corresponding manual of the adapter.

1) In **open** transaction, configure the lower 4 bits as the table below:

	ADBUS3	ADBUS2	ADBUS1	ADBUS0
Function	TMS	TDO	TDI	TCK
Mask	1	0	1	1
Value	0	0	0	0

Besides, enable JTAG_EN signal, light some Status LEDs, disable Reset signal...

2) In **close** transaction, disable JTAG_EN signal, and set the other bits to INPUT mode.

3) In **reset** transaction, configure TMS, TDO, TDI, TCK, JTAG_EN the same as 1), set Reset Control IO to OUTPUT mode and enable the signal, light some Status LEDs.

4) In **busy** transaction, light one busy LED, and configure TMS,

TDO, TDI, TCK, JTAG_EN the same as 1).

II. Add FTDI-based adapters to CoIDE

Since the download & debug function is different from that of CoFlash, the above method will not add the adapter to the adapter dropdown list.

Users can modify “mask” and “value” parameters of an existed adapter, and select it as a replacement.

After your successful test of downloading and debugging, please send the XML file to Master@coocox.com. We will add support for the adapter to benefit more users. Thanks for your support and contribution!