ARM LPC2148 Development Board-Mini

2018

OVERVIEW

ARM LPC2148 Mini Development Board is a miniature and powerful hardware platform to evaluateLPC2148 Flash memory microcontroller. The ARM LPC2148 Board contains all hardware components that are required in a single-chip LPC2148 controller system plus 2 COM port for serial RS232 interface.

KEY FEATURES OF LPC2148 DEVELOPMENT BOARD-MINI

1.Compact design and user friendly

2.LPC 2148 is integrated onto the board

3.No separate Programmer required (Built in Bootloader)

4.On-board 12 MHz crystal for controller

5.Multiple power input options (USB, , DC barrel jack) with jumper selection

7.On-board 5V and 3.3V reg 3.3 and 5V output available on berg strip

9.Power indication LED(Red)

10. LCD & Zigbee can be easily interfaced through on-board connectors

13.Potentiometer for LCD contrast control , On-board buzzer

15.4 on-board switches including a reset switch

16.4 on-board SMD LED s connected to port pins via jumpers

17.Potentiometer connected to ADC ,Temperature sensor LM35

20.All port pins are accessible through both male & female berg strips

21.UART0 communication DB9 connector and on-board connector

22.UART0 on can be used in 3.3V and 5V levels(with jumper selection)

23.UART1 communication possible through berg strip connector

26.32.768 kHz crystal for internal RTC

27.Battery holder for external battery used to power RTC

28.Multiple programming options – USB, Serial port

29.Programmer switch to select 2 programming modes :

•Auto - no reset, no ISP jumper JUMPER J27 for more details see images

•Manual - Press reset switch, use ISP switch

INTERFACE OVERVIEW

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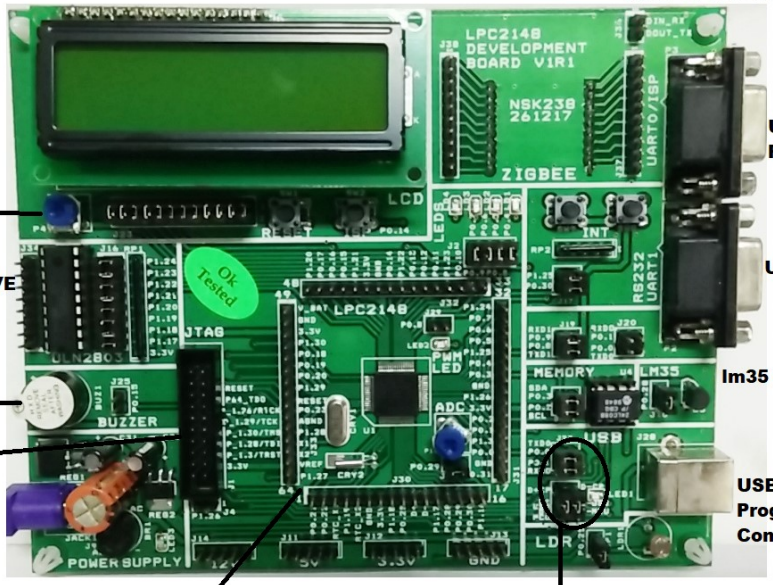


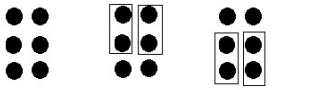
Jumper Shorted function

J17 - Int Switch	J29- P0.8 Pwm to Led	J14 - 12v
J2 - 4 Led Array	J7-P0.29 Adc to Pot	J11 - 5 V
J36 - Xbee Tx Rx out		J12 - 3.3V
J19 - Uart 1 to RS232		J13 - GND
J20 - Uart 0 to Rs232		
J10 - Lm35 Temp Sensor		
JP1 - LDR sensor		

Jumpers For USB ISP Programming & On chip USB

Jumper - CP Side - ISP Program
Jumper MCU Side- On Chip USB

J27 - Shorted to use USP ISP connection thru Uart 0



LPC2148 PROGRAMMING PROCEDURE

In programming procedure there are two ways to program the LPC2148.

1. Automatic mode
2. Manual mode

Automatic mode :

The simplest way is automatic mode, In automatic mode there will be no need of manual switching the ISP button to low for entering into programming mode during reset. This process will automatically done by USB flasher.

There are few simple steps to follow:

STEP: 1

- Connect the jumpers for TXD andRXD pins
- Connect the jumpers for USB toCP pins as shown in the picture

STEP: 2

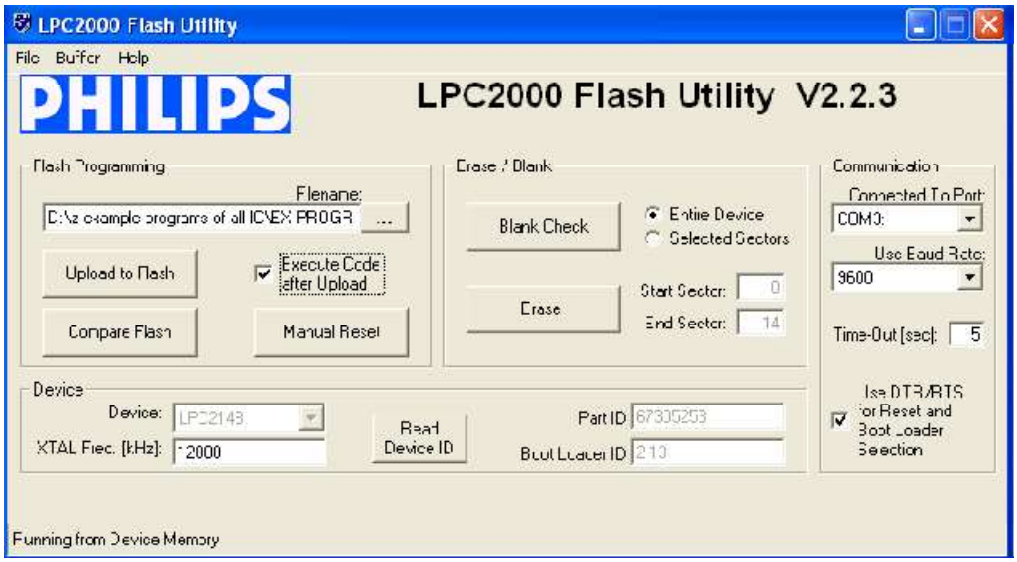
- Connect to USB for Power Input.

NOTE: LPC2148 Board Can Work either in 12V AC/DC or USB Power, Do not connect both

STEP: 3

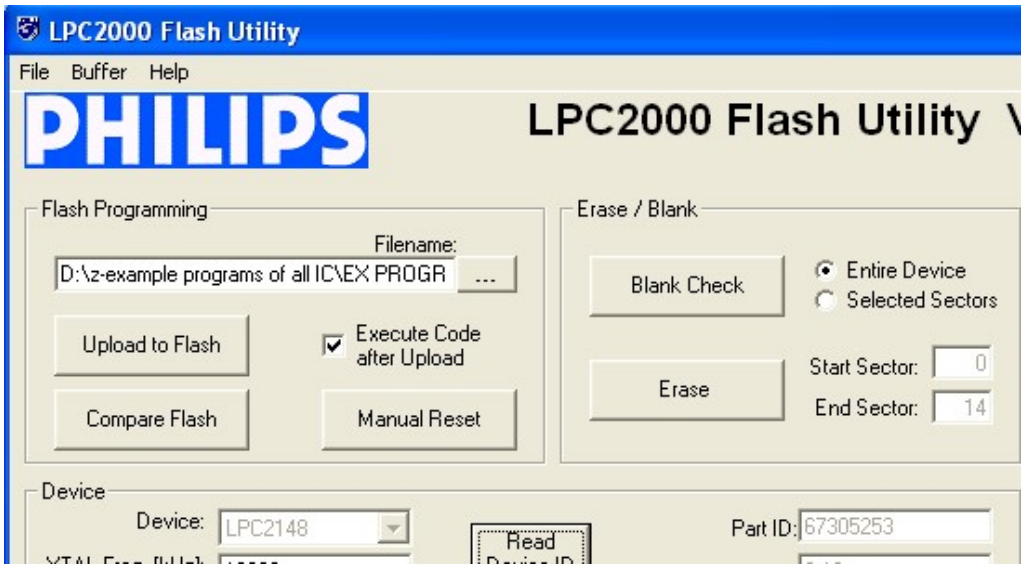
- Select Correct COM port Number, BAUD RATE(9600) and XTAL Frequency(12000). COM Port can be identified in Device Manager (My Computer → Properties) in PC.
- Do not select Device, Part Id and Bootloader Id, It Will automaticallyIdentify.
- Enable DTR/RTS For Reset and Bootloader Selection.
- Enable Execute code after upload.

STEP: 4



STEP: 4

- Click Read Device Id. – DON'T TRY TO SELECT DEVICE

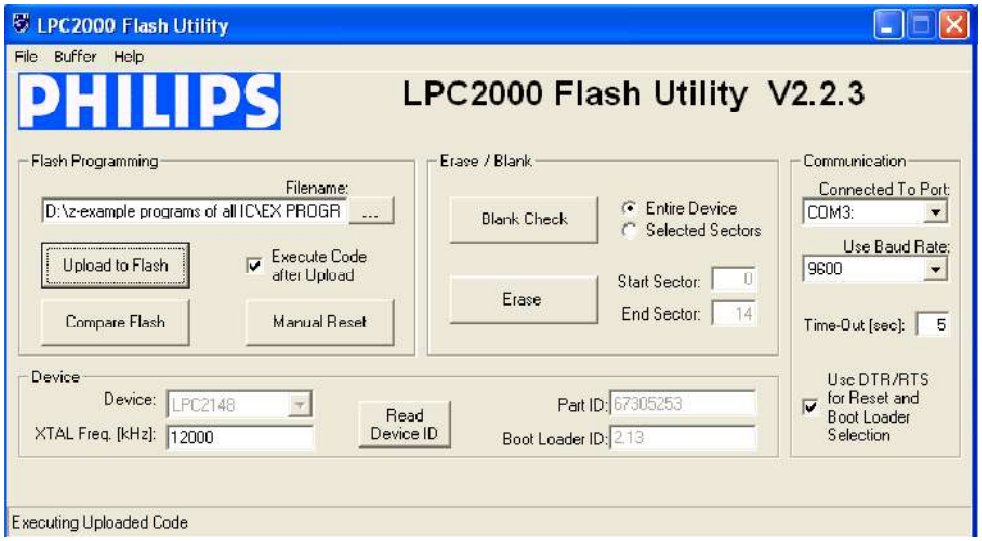


- Device, Part Id and Bootloader Id is Read Successfully.

STEP: 5

- Select the HEX File and click Upload to flash.

- The code will start to execute after uploading.



Manual mode :

STEP: 1

- Remove the jumpers JP2 J 27 while communicating through **COM0/ISP Port** to PC via RS232 Port.

STEP: 2

- Supply Input Voltage 12V AC/DC {or} Connect to USB for Power Input.

STEP: 3

Connect **LPC2148 – COM0/ISP Port** to PC via RS232 Port. If RS232 Port is not available in your PC, use USB to UART Converter.

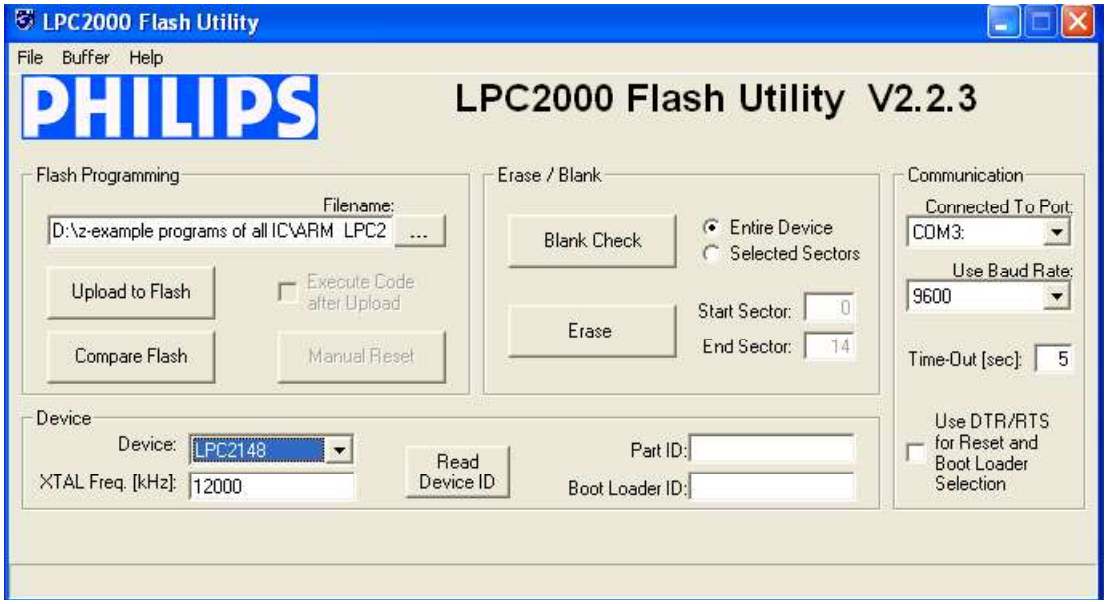
STEP: 3

In Flash Utility

- Select Correct COM port Number, BAUD RATE(9600) and XTAL Frequency(12000).

COM Port can be identified in Device Manager (My Computer · Properties) in PC.

- Do not select Device, Part Id and Bootloader Id, It Will automatically Identify.
- Disable DTR/RTS for Reset and Bootloader Selection.



STEP: 4 How to Enter into ISP mode manually

・・・ Click Read Device Id.

If p0.14 is pulled low during RESET, it will enter into ISP mode In ISP only we can Flash, Read, and verify hex file. The bootloader uses UART#0 for downloading new program (Hex code) into the processor FLASH. If the processor samples P0.14 low after reset the bootloader is entered, else the application code is executed.

・・・ It will ask for “Please Reset Your Lpc2000 Board”.