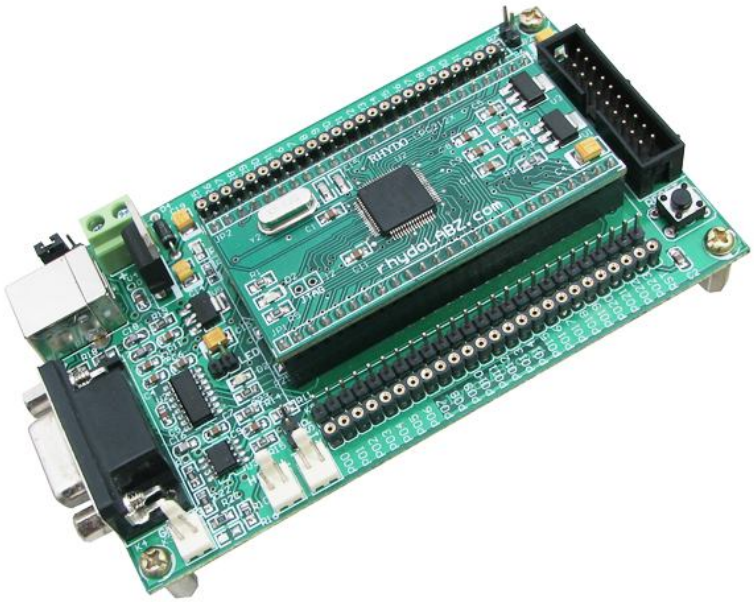
Document : Datasheet
Date : 12-May-08

Model # : QSB - 120

LPC2129
Quick Start Board
User Manual



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CONTENTS

The QsLPC2129 is a Low Cost Development Board that can be used to quickly evaluate and demonstrate the capabilities of NXP LPC 2129 microcontroller. The board is designed to work as a header board with access to all pins for external connection. The board consists of a base board and a header board with microcontroller. Ideally suitable for development purposes.

QsLPC2129 FEATURES

- Compact and Ready to use design
- Professional EMI/RFI Complaint PCB Layout Design for Noise Reduction
- High Quality Two layer PTH PCB

BASE BOARD FEATURES

- Supports LPC2132/38/48* Header Boards
- Includes LPC2129 (with in-built **CAN** peripheral) Header Board
- No separate programmer required (On-Chip Boot loader)
- No Separate power adapter required (USB power source)
- Screw terminal for External power Supply
- Power Supply range of 7V to 20V
- RS-232 Interface for direct connection to PC's serial port (UART 0)
- On Board RS 232 to TTL Converter (UART 1)
- On Board Power LED Indicator
- On Board LED Connected via Jumper to port pin
- On Board Reset button
- All Port Pins available at Berge Strip and at Round Machine-cut female connector
- On Board JTAG Connector for Debugging/Programming
- On Board **CAN** Transceiver
- On Board **CAN** Bus Connector

- Can be used as header board for developing applications
- Power Supply Reverse Polarity Protection
- On Board DB9 Connector
- On Board USB Connector
- On Board 1 Amp Voltage Regulator
- On Board Connector for regulated 3V3 output

HEADER BOARD FEATURES

- Easy
- Includes NXP LPC 2129 Microcontroller with in-built CAN peripheral
- On Board Power LED Indicator
- On Board JTAG Jumper
- On Board 10 MHz Crystal Oscillator
- On Board 32.768 KHz Crystal for RTC
- On Board 3.3V Regulator
- On Board 1.8V Regulator
- On Board Power Supply de-Coupling Capacitors
- All Port Pins available at Berge Strip
- Header Module can be removed for developing your circuit

(***Pin Out in LPC 2129***)

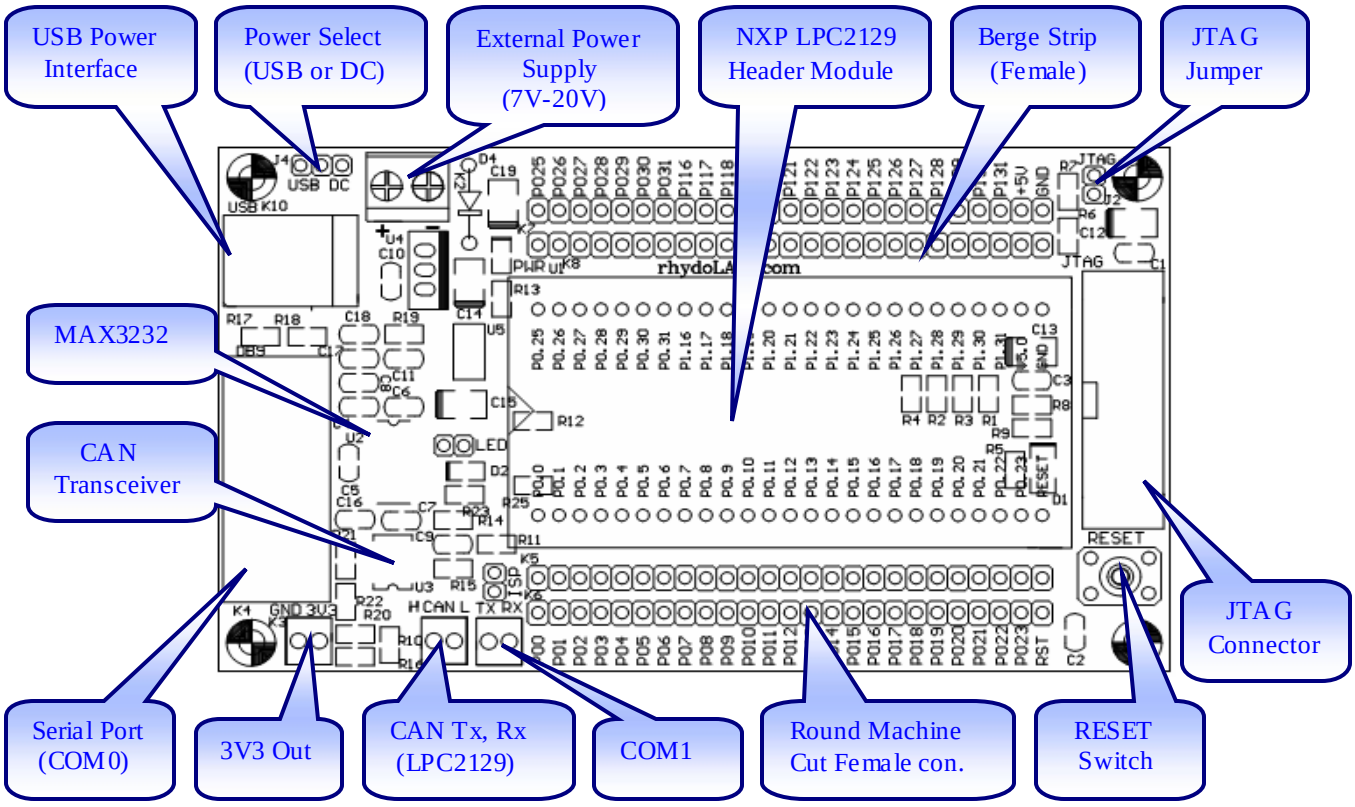
QsLPC2129 PACKAGE INCLUDES

- Fully Assembled and Tested QsLPC2129 Development board
- Software CDROM with
  - Schematic
  - Programming Software
  - Sample Hex Code
  - Example Codes

LPC 2129 SPECIFICATION

- NXP LPC 2129 with 10 MHz Crystal Oscillator (With Boot loader Software)
- High Performance 32-bit ARM7TDMI-S™ CPU
- 256 KB Programmable Flash Memory provides a minimum of 100,000 erase/write cycles and 20 years of data retention.
- 16 KB Data Memory (SRAM)
- In-System/In-Application Programming (ISP/IAP) via on-chip boot-loader software.
- Flash programming takes 1 ms per 512 byte line. Single sector or full chip erase takes 400ms.
- EmbeddedICE-RT interface enables breakpoints and watch points.
- Two interconnected CAN interfaces with advanced acceptance filters
- Four channel 10-bit A/D converter with conversion time as low as 2.44 us.
- Multiple serial interfaces including two UARTs , Fast I^2C (400 kbits/s) and two SPIs
- 60MHz maximum CPU clock available from programmable on-chip Phase-Locked Loop
- Vectored Interrupt Controller with configurable priorities
- Two 32-bit Timers.
- Four Capture and four Compare channels.
- PWM unit with six output pins.
- Real-time clock.
- Watch Dog Timer
- Up to forty-six 5V tolerant general purpose I/O pins.
- Up to nine edge or level sensitive external interrupt pins.
- On-chip crystal oscillator with an operating range of 1MHz to 30MHz.
- Two low power modes - Idle and Power-down.
- Processor wake-up from Power-down mode via external interrupt.
- Individual enable/disable of peripheral functions for power optimization.
- CPU operating voltage range of 1.65V to 1.95V and I/O power supply range of 3.0V to 3.6V

INTERFACE OVERVIEW



POWER SUPPLY

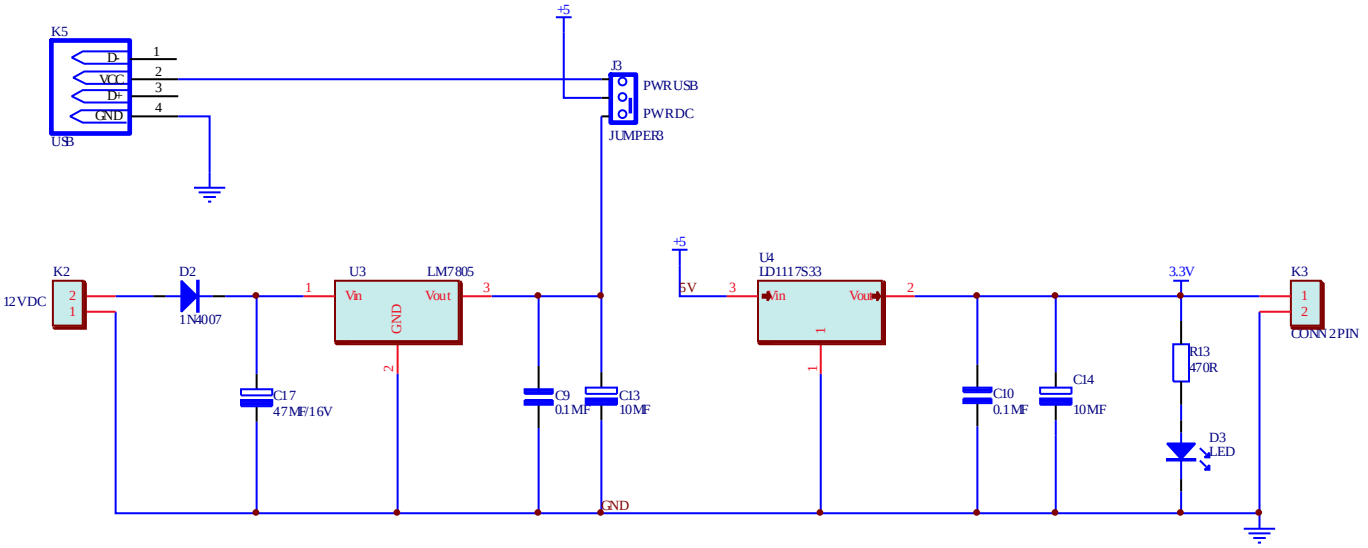
QsLPC2129 Board has two power supplies; you can choose one of the following ways to supply power

(1) Through a Screw Terminal (7V - 20V External DC Power Supply)

(2) Through the motherboard USB port

Note: *For power selection, the appropriate jumper (J4) must be in position.*

The Power Supply circuit is given below:

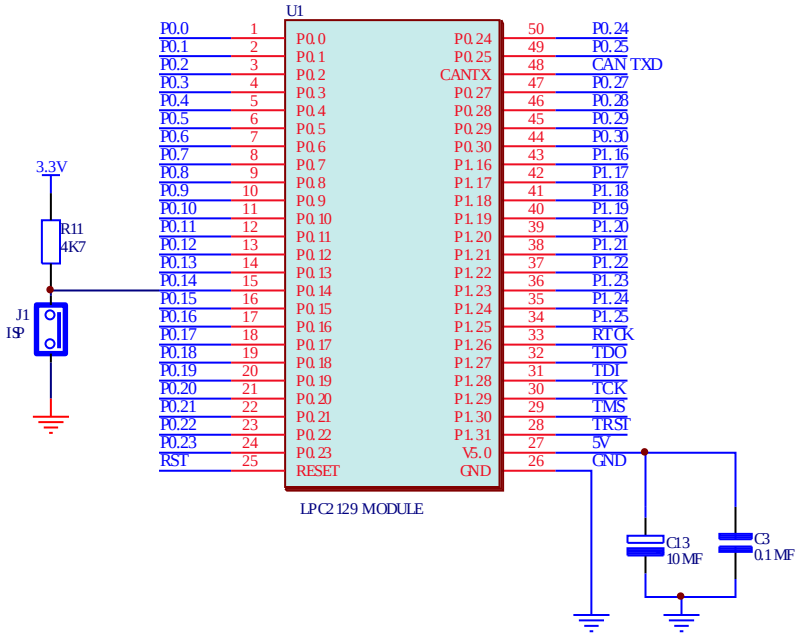


CLOCK SOURCE

QsLPC2129 board uses:

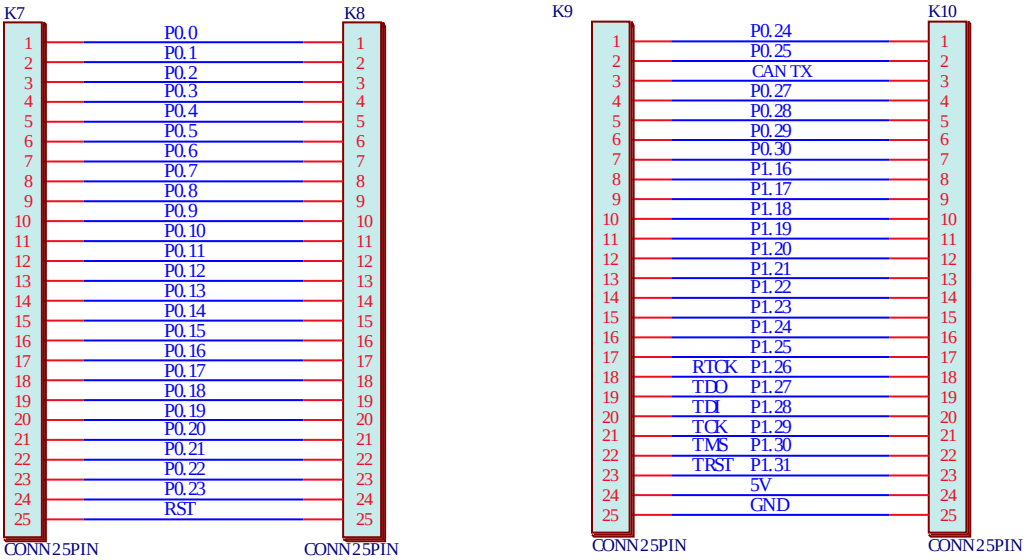
- 10/12 MHz Crystal as the MCU clock source

HEADER BOARD - PIN OUT

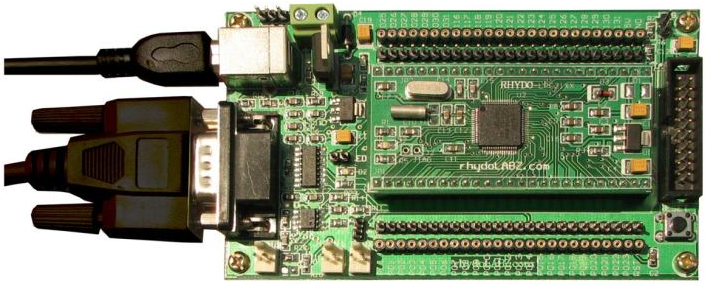


PORT PINS – BERGE STRIP & ROUND MACHINE CUT CONNECTOR

The QsLPC2129 board has all port pins available at Berge strip and at round machine cut female connector. The connection is as given below.

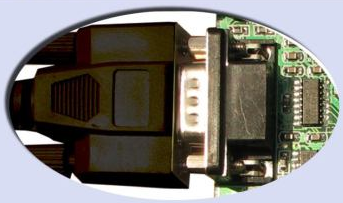


SETTING UP Qs LPC 2129

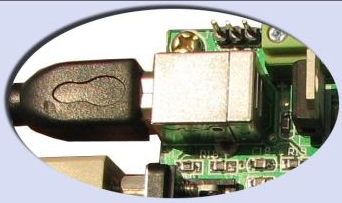


- Power the development board with a USB Cable
- Make sure that the Power-On LED is ON and Jumper in proper position.
- Connect the RS-232 Cable to the COM port of your computer.
- Connect the other end to the Serial Port of your development board

CONNECTIONS



RS232



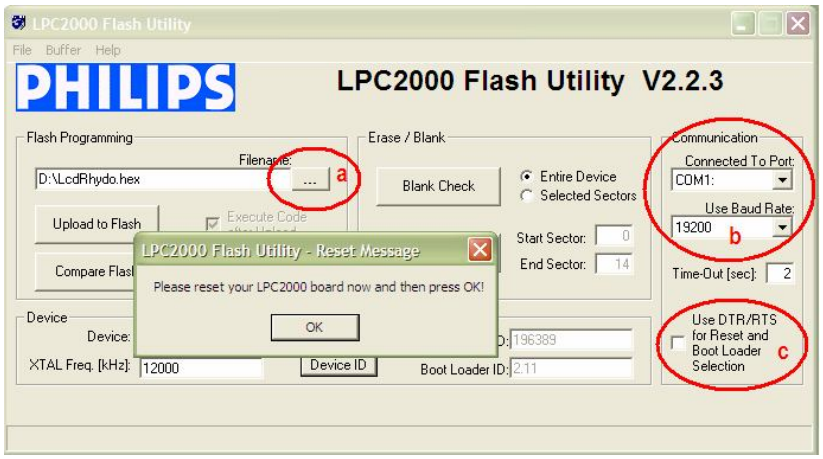
USB POWER

JTAG

PROGRAMMING STEPS

(The Quick Start board uses COM0 for programming)

1. Configure LPC Flash Utility software at the PC side
  a. Browse your hex file here.
  b. Select your COM port and Set baud rate (9600) here.
  c. Disable DTR/RTS for Reset and boot loader selection.
2. Connect system serial port to COM port of Qs LPC 2129 .
*3. **Put jumper** on **ISP***
4. Click "Read Device ID"
*5. The **software prompts you** to reset the quick start board.*
6. Press Reset button and press OK
7. Wait till Device Id is shown
5. Click "Upload to Flash" button in the flash utility software and wait till the programming is over.
6. Remove jumper on ISP
7. Now Reset the quick start board.



***N.B:** If any interface is done using Port0 2 and 3 pins (P0.2,P0.3), the pins have to be externally pulled-up to 3.3V using 4K7 resistor (since these pins are open-drain).*

***Note:** This product has been tested and certified by the company before shipping. Removing or replacing the components from the PCB could damage the product. In this case, the company won't be liable for the damages caused and no replacement/ refunding are entertained. No warranty or guarantee is provided on this product, unless it's specified.*

TECHNICAL SUPPORT

If you are experiencing a problem that is not described in this manual, please contact us. Our phone lines are open from 9:00 AM – 5.00 PM (*Indian Standard Time*) Monday through Saturday excluding holidays. Email can be sent to *support@rhydolabz.com*

LIMITATIONS AND WARRANTEES

This product is intended for personal or lab experimental purpose and in no case should be used where it harmfully effect human and nature. No liability will be accepted by the publisher for any consequence of its use. Use of the product software and or hardware is with the understanding that any outcome whatsoever is at the users own risk. All products are tested for their best performance before shipping, still rhydoLABZ is offering One year Free service warranty (Components cost + Shipping cost will be charged from Customer)

DISCLAIMER

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