GY7611 USB-I2C Module
User manual

Product Name：GY7611

Manual version：V1.02 (for English)

1. Product Overview

**Specification:**

1）USB to I2C bus interface (I2C master mode).

2）Standard I2C bus protocol, support SM bus.

3）USB is virtual to be a standard COM port

4）USB self powered, and can supply +5V to external device.

5）I2C signal :SCL, SDA, GND.

6）I2C Output is 3.3V TTL，and 5VTTL input tolerance.

7）COM Baud rate support 9600、19200、57600、115200bps.

8）I2C clock value can be set by soft command，can support 1k- 800khz。

Applications:

1)Supply an I2C bus interface for PC.

2)I2C Read or Write by the COM port of PC

3)I2C chip test, such as EEPROM.

4)Very small size, can be setup in the user＇s PCB board.

2. Figure & Structure
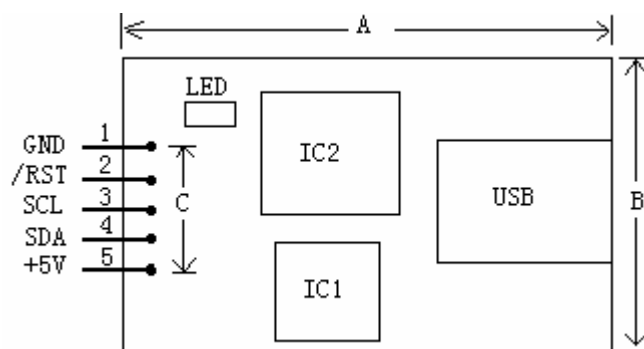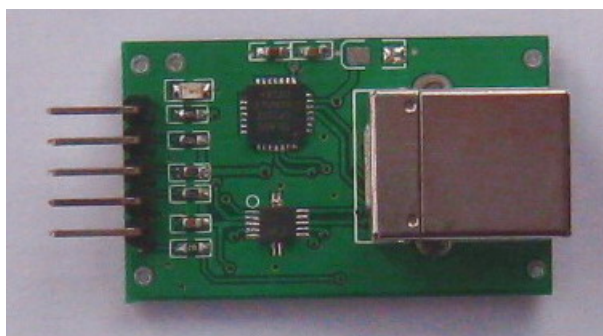
3. Size Description

Name	mil	mm
A	1420	36
B	865	22
C	400	10.16

4. Pin Description

Pin		I/O	Description
1	GND		Power ground, signal ground.
2	/RST	I	Module reset, active is low. If not used, leave it unconnected.
3	SCL	O	I2C clock output. Internal pull up to 3.3V, resistor is 2.7k
4	SDA	I/O	I2C data. Internal pull up to 3.3V, resistor is 2.7k
5	+5V	O	Power output. If not used, leave it unconnected.

5. Electrify Specification

	Min	Normal	Max	备注
VOH	3.0V	3.25V	3.35V	Output(SCL,SDA)
VOL	--	--	0.4V	output(SCL,SDA)
VIH	2.0V	---	5.5V	input(SDA)
VIL	---	---	0.8V	input(SDA)

6. USB Driver & Virtual COM

The GY7611 module provides a complete interface between your PC and the I2C bus device. The module is self powered from the USB interface. And can supply +5V for external circuit or device. The ability of the power can achieve 200mA commonly, and it is depend on the USB power ability of your PC.

The module is an I2C master only, and not to be slave. You can write data to I2C salve, or read data from the slave device by USB cable.

In the operation, the USB interface is as a virtual COM port. So you need to setup the USB driver to

support it. We will supply the driver to you.

Then your application software can operate the USB device as a standard Com port. Drivers are available for Windows, Linux and Mac OSX.

Which COM port?

After installing the drivers, and plugging in the USB-I2C module to a spare USB port, you will want to know which COM port it has been assigned to. This will vary from system to system depending on how many COM ports you currently have installed. To find out where it is, right click on your "My Computer" desktop icon and select the "Device Manager" tab. Now scroll down and open the "Ports (COM & LPT)" tab. You should see the USB serial port listed - COM2 in the example below. If you want to change the COM port number - just right click on it, select properties, select advanced and select the COM port number from the available list.

The COM port should be set up for 8 data bits, no parity and one stop bits, and the baud rate should be the same of the USB-I2C module.

Default Value of USB-I2C module:

After power on, the default parameter for I2C clock is 100 khz.

And the default com baud rate is 115200bps. If you need other baud rate, such as 9600, 19200,115200, etc, please tell us to modify it when you order the product.

7. COM Command

The GY7611 module identifies a command frame by the interval time between the data.

The mean is that the module have not receive the next data after received the previous data, and the waiting time reach to 5ms, then the module will think the previous received bytes will be a complete Frame.

And the first byte of the Frame will indicates the command type.

Frame Header	
0x42	Set the I2C clock value.
0x43	Get the I2C clock value.
0x44	I2C Write or Read command.

Note: the below command and data is Hex Value.

7.1 Set the I2C clock value

#define CMD_SET_CLKVALUE 0x42   //unit kHz

The I2C clock can be set to 1-400 khz.

Format： 42 ＋HighByteCLK＋LowByteCLK

Example：

Command: 42 00 64   set the I2C clock to 0x0064, is 100 khz

Command: 42 01 90   set the I2C clock to 0x0190, is 400 khz

Return value：AA

   If you not set the value, the default I2C clock is 0x0064, is 100 khz

7.2 Get the I2C clock value

#define CMD_GET_CLKVALUE 0x43   //unit kHz

Format: 43

Example:

Command: 43   Return Value:00 64   the current I2C clock is 100khz

Command: 43   Return Value:01 90   the current I2C clock is 400khz

7.3 I2C Write

#define CMD_SEND_DATA   0x44   //I2C Write Command

The GY7611 module will identify the second byte (SlaveAddr＋R/W), if the LSB of the value is 0, then will start a I2C write operation.

Format：

Frame Header	SlaveAddr＋R/W	ROM Addr/data
44	7bit SlaveAddr＋R/W bit 0	Write the values to I2C bus in Sequence

note：the max length for write Frame is 68 bytes

Example： （slaveaddress＋W =0xA0 ）

Command: 44 A0 00 33 44   Return Value: AA   Write to RomAddr:00 and the data is 33,44

Command: 44 A0 00   Return Value: AA   only write 00 to the salve device

If error occurs, the return value will be BB, or no data.

7.4 I2C Read

#define CMD_SEND_DATA   0x44   //I2C Read Command

The GY7611 module will identify the the second byte (SlaveAddr＋R/W), if the LSB of the value is 1, then will start a I2C read operation. The request read length is indicated in the last byte of the Frame.

Format：

Frame Header	SlaveAddr＋R/W	ROM Address	**Request Len -1**
44	7bit SlaveAddr＋R/W bit 1	1-2 bytes commonly	The max Request Len is 128, then the value is 0x7F

Example：（slaveaddress＋R =0xA1 ）

Command: 44 A1 7F   directly read,   (the request read length is 0x7F +1)

           Return value: will be 128 bytes data.

44 A1 00 1F   random address read

           I2C will to write 00 first，and then start read timing, the request read length is 32.

           Return value: will be 32 bytes data

44 A1 00 00 07   random address read (for 2 bytes rom address)

           I2C will to write 00,00 first，and then start read timing, the request read length is 8.

   Return value: will be 8 bytes data

    If error occurs in I2C read, the return value will be BB or no data.

    If the data num you request to read is larger than 128, the return num of data will be 128

8. Application Diagram

    In the application system, your PC connects our GY7611 with USB cable, and the I2C signal connects directly to your slave device. The slave device may be a chip or controller with I2C slave interface.

    For your reference, the diagram is blow:
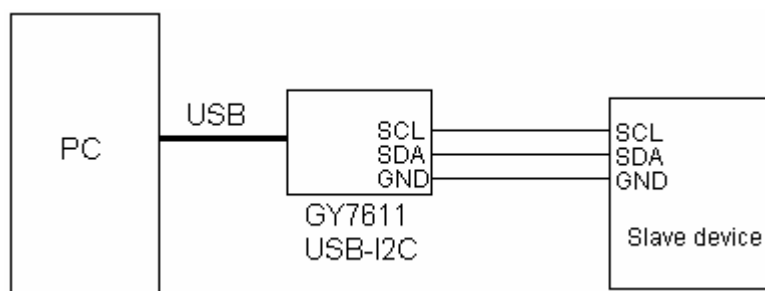
9. Contact Info

    The below is our contact information for ordering and technical support.

Company: Wuhan Glinker Electronics Technologies, Co..Ltd.

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