



### Pericom ReDriver I2C Configuration GUI Utility User Guide By Lingsan Quan

## • Introduction

This user guide introduces the procedures for I2C configuration of PI2EQX8804/8864EVB using GY7501A USBtoI2C tool.

Below is the information required before you start.

- ➢ GY7501A USB-I2C Adapter
- > GY7501A setup driver, File folder name is *GY7501A\_windows driver*.
- Pericom Redriver I2C Configuration GUI software, File folder name is *Pericom ReDriver I2C Configuration GUI Utility software*. It includes two items below.

1, GUI software, Pericom ReDriver I2C Configuration GUI.exe

2, USB/I2C .dll file, SiUSBXp.dll and VCI\_GYI2C.dll

Note, Item1 and Item2 MUST be in same file folder.

## • GY7501A USB-I2C Tool Setup

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#### **Setup Procedures:**

- 1) Connect GY7501A USB-I2C adapter to USB port in computer
- 2) Go to Control Panel and find Device Manager. The new device-GY7501A is found as below.

Ę	⋛通	▶ 通用串行总线控制器									
	્યું	GY7501									
	÷	· Intel (R)	ICH9	Family	USB	Universal	Host	Controller	-	2934	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Intel (R)	ICH9	Family	USB	Universal	Host	Controller	-	2935	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Intel (R)	ICH9	Family	USB	Universal	Host	Controller	-	2936	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Intel (R)	ICH9	Family	USB	Universal	Host	Controller	-	2937	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Intel (R)	ICH9	Family	USB2	Enhanced	Host	Controller	-	293A	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Intel (R)	ICH9	Family	USB2	Enhanced	Host	Controller	-	293C	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·USB Comp	osite	Device							
	÷	USB Comp	osite	Device							

- 3) Double click its name and follow the instructions to install its driver in the folder-*GY7501A\_windows driver*.
- 4) New device will be shown below. The setup is completed.







#### **Running GUI Utility Software:**

- 1) Open *Pericom ReDriver I2C Configuration GUI Utility software* folder in its directory.
- 2) Double Click "*Pericom ReDriver I2C Configuration GUI Utility.exe*" button.



3) The window will show below.



4) Click and hit "OK" buttion to run PI2EQX88x4 redriver I2C configuration. There are total 5 blocks in the windows.

A: for GY7501A USB-I2C Adapter connection

- **B:** for ReDriver I2C address selection
- **C: for Bit function selection of register**
- **D:** for Read/Write function
- **E:** Tool connection status



Application\_Note

🖉 Pericom Redriver I2C Configuration GUI										
I2C Address: COBAD Apply Connect A Disconnect Copyright 2011. Pericom Semiconductor Corp. Version 1.0.										
Channel A Channel B Loopback Input Signal Thresh Lane Selection: AO  Apply C Signal Control Setting	Apply to All CH_A									
SEL1: C Low @ High Input Equalization SEL0: C Low @ High	SEL1         SEL0         @4.0GHz         Application recommendation           0         0         8.1dB         shorter than 12inch trace           0         1         11.0dB         between 12inch and 18inch trace           1         0         13.1dB         between 18inch and 24inch trace           1         1         16.1dB         between 24inch and 32inch trace									
P1: C Low @ High Output Pre-emphasis PO: C Low @ High	P1         P0         Typical Gain @5.0bps         Application recommendation           0         0         +3dB									
Output Swing SO: C Low @ High	S0         Vdiffpk-pk         Application recommendation           0         0.825V         Low EMI application           1         1.1V         Normal application									
Function Enable Setting Receiver Detect 🔽 Output Disable 🗖	PD# 🗖 Bypass 🗖 Reset# 🗖									
Signal Detect Status D 🔴 🔴 🔴 🔴	BO B1 B2 B3 Read									
Keceiver Detect Status 🔮 🔮 🥮 🥮 🥮 🥮 🖤 🖤 🦉 🦉 🦉 🦉 🦉 🍟 🌾 🦉 👘 🖉 👘 🦉 👘 🖉 👘 👘 🖉 👘 👘 👘 👘 👘 👘 👘 🖉 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘										
Msg     Addr     Message Data for All the Bytes       1     2       3     4       5     5       6     7       8     5	Message Data from All the Bytes									
Connection Sta	tus E I2C Speed: 100khz									

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#### **GUI Utility Configuration Steps:**

1) Click "Connect" button in **Block A** when GY7501A USB-I2C Adapter is connected. ("Disconnect" button to disable it).



2) Select the I2C address in **Block B** per the application. There are total 8 addresses in pull-down button such as C0/C2/C4/C6 and E0/E2/E4/E6.



Once any address is selected, you MUST click "Apply" Button to apply the default setting in **Block D**. For example below, C0/C2/C4/C6 are selected and applied.

Msg	Addr	Message Data for All the Bytes	Message Data from All the Bytes
1	CO	00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00	
2	C2	00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00	
3	C4	00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00	
4	C6	00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00	
5			
6		C0/C2/C4/C6 are selected	
7			
8			

3) Any register setting change can be decided in Block C. Once new configuration is selected, you MUST click "Apply" or "Apply to All\_A/B" button and the new setting will be shown in Block D. Remark1: "Apply" means the modified setting only for some channel selected. "Apply to All\_A/B" means the modified setting for all channel A or B. for example below.

I2C Address: CO  Apply Connect Disconnect								
Channel A Channel B Loopback Input Signal Threshold								
Lane Selection: A0								
-Signal Control Setting								
Input Equalization (SEL1: C Low) C Click "Apply" only for AC								
SELD: Channel								
P1: C Low C High P1 P0 Typical Gain @5.0bps 								
Output Pre-emphasis         PO:         C         Low $\bullet$ High $0$ $+0.75dB$ 1         1         0 $+0.75dB$ 1 $1$ $+0.375dB$								
S0 Vdiffpk-pk Application								
Output Swing SU: C Low (* High 0 0.825V Low EMI 1 1.1V Normal a								
Function Enable Setting								
Receiver Detect 🔽 PD# 🗌 Bypa								
Output Disable 🔽 Reset# 🔽								
AD A1 A2 A3 B0 B1 B2 B3								
Signal Detect Status 🛛 🧶 🧶 🔴 🔴 🔴								
Receiver Detect Status 🛛 🔴 🔴 🔴 🔴 🔴								
Message Write/Read Action								
Msg   Addr   Message Data for All the Bytes   Message Data from Al								
1 CO 00 00 F8 00 FF FF F (38)8 F8 F8 F8 F8 F8 F8 60								



Application\_Note

Channel A Channel B Loopba	ck   Input Signal Thr	eshold
Lane Selection: AO	<ul> <li>Apply</li> </ul>	[Apply to All CH_A]
Signal Control Setting		
Input Equalization	L1: • Low O High	Click "Apply to All       tion recommendation         CH_A" for all Channel A       than 12inch trace         1       1         1       16.1dB         between 24inch and 32inch trace
P1: Output Pre-emphasis PO:	C Low © High C Low © High	P1         P0         Typical Gain @5.0bps         Application recommendation           0         0         +3dB         +3dB           0         1         +1.5dB         +1.5dB           1         0         +0.75dB         Selection based on system debug           1         1         +0.375dB         Selection based on system debug
Output Swing SO:	C Low 🕫 High	S0         Vdiffpk-pk         Application recommendation           0         0.825V         Low EMI application           1         1.1V         Normal application
Function Enable Setting Rece	eiver Detect 🔽	PD# 🔽 Bypass 🗖
Outp	put Disable 🥅	Reset# 🗾
Signal Detect Status	A0 A1 A2 A3	BO B1 B2 B3 Read
Receiver Detect Status		🔴 🔴 💭 🦉 Write
Message Write/Read Action		
Msg Addr Message Data for A	All the Bytes	Message Data from All the Bytes
1 CO 00 00 F8 00 FF FF	FIC38 38 38 38 78 F8	3 F8 F8 00

**Remark2:** Channel B, Loopback and Input Signal Threshold have the same action for the setting change if needed.

#### **GUI Utility Write/Read Steps:**

1) When the configuration is ok. Click "Write" button in **Block D** for all the selected I2C address write action.

Sign Rece Mess	hal Det eiver I sage Wr	.ect Status letect Status rite/Read Action	AO //	A1 A1	2	13 ●	во ● ●	B1	B2 ● ●	B3	Read
Msg	Addr	Message Data for Al	l the D	Bytes				Mes	ssage	Data from .	All the Bytes
1	CO	00 00 F8 00 FF FF F	F 38 3	3 38 3	8 F8	F8 F8	F8 00				
2	C2	00 00 F8 00 FF FF F	F F8 F8	3 <b>F</b> 8 F	8 <b>F</b> 8	F8 F8	F8 00				
3	C4	00 00 F8 00 FF FF F	F F8 F8	3 <b>F</b> 8 F	8 F8	F8 F8	F8 00				
4	C6	00 00 F8 00 FF FF F	F F8 F	3 F8 F	8 F8	F8 F8	F8 00				

Remark: Once the write is ok, the status in Block E will show "write ok" information below. Or else the error window below will pop up.



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Application\_Not I2C Speed: 100khz Write ok! Pericom ReDriver I2C Configuration GUI Utility Write fail 猫定 2) Before Read action, the I2C address in **Block B** must be selected (*Don't need to click "Apply"* button). And then click "Read" button for that I2C address read action. I2C Configuration for PI2EQX8804 Copyright 2011. Pericom Semiconductor Corp. Disconnect I2C Address: C6 Version 1.0. **-**Apply Channel A Channel B Loopback Input Signal Threshold Lane Selection: BO Apply to All CH\_B Apply Signal Control Setting SEL0 @4.0GHz SEL1 Application recommendation High 8.1dB shorter than 12inch trace SEL1: C Low 0 0 Input Equalization 0 1 11.0dB between 12inch and 18inch trace SELO: C Low 💽 Hì sh 1 0 13.1dB between 18inch and 24inch trace 16.1dB between 24inch and 32inch trace 1 1 P1 P0 Typical Gain @5.0bps Application recommendation C Low 🖲 High P1: 0 +3dB +1.5dB 1 Output Pre-emphasis Selection based on system debug PO: C Low 💽 High +0.75dB +0.375dB S0 Application recommendation Vdiffpk pk S0: C Low 🖲 High 0.825V Output Swing 0 Low EMI application 1 1.1V Normal application Function Enable Setting Receiver Detect 🔽 PD# Bypas. Output Disable Reset# 🕅 AO A1 Å2 A3 BO B1 <u>B2</u> **B**3 Read Signal Detect Status Receiver Netect Status Write Message Write/Read Action Msg Addr Message Data for All the Bytes Message Data from All the Bytes 00 00 F8 00 FF FF FF 38 38 38 38 F8 F8 F8 F8 00 CO 00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00 00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00 C2 C4 C6 00 00 F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8 F8 00 <del>450 FE F8 00 FF FF FF F8 F8 F8 F8 F8 F8 F8 F8</del>

In Block D, there are LED lights to show the values in Byte0 and Byte1 of redriver.



# Application\_Note

#### Hooking up GY7501A USB-I2C Adapter

There are four signals (SDA, SCL, GND, VCC) connected to GY7501A and PI2EQX88x4 EVB.





The signals should be connected as below: SDA  $\rightarrow$  SDA of JP1 on PI2EQX88x4 EVB SCL  $\rightarrow$  SCL of JP1 on PI2EQX88x4 EVB GND  $\rightarrow$  Ground of JP1 on PI2EQX88x4 EVB 3.3V  $\rightarrow$  VCC of JP1 on PI2EQX88x4 EVB

The following graph shows the tool connection.

