

My favorite quote from my 4 year old daughter is, "if it works, who cares?" - **drwisley** [\[more\]](#)



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Pixy I2C

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02-11-2015, 06:12 PM

#1

[mikefas](#)

Registered User
TERR FRC #3104

Join Date: Feb 2015
Location: us
Posts: 2

Pixy I2C

I am trying to figure out how to interface a Pixy Camera with our Roborio using the i2C port. Does anyone have experience with the Pixy or i2C communications?

Also, can we instead use an Arduino as a mediator, we already wrote the code for the Arduino and It would be easier to do it via the Arduino to Roborio if possible.



02-11-2015, 06:18 PM

#2

[Rakusan2](#)

Registered User
AKA: Tomas Rakusan
TERR FRC #3571 (Milton Mustangs)
Team Role: Programmer

Join Date: May 2014
Rookie Year: 2011
Location: Milton, ON, Canada
Posts: 23

Re: Pixy I2C

My team got the Arduino communicating with the roborio over I2C using the following code on the roborio

Code:

```
//this is outside a method
I2C Wire = new I2C(Port.kOnboard, 4);

//this is inside a method
if (Global.driver.Buttons.Back.changedDown) {
    String WriteString = "go"; //this is being sent to the Arduino
    char[] CharArray = WriteString.toCharArray();
    byte[] WriteData = new byte[CharArray.length];
    for (int i = 0; i < CharArray.length; i++) {
        WriteData[i] = (byte) CharArray[i];
    }
    Wire.transaction(WriteData, WriteData.length, null, 0);
}
```

And this code on the Arduino which was made to turn on an LED when it received the message "go"

Code:

```
#include <Wire.h>

void setup()
{
    pinMode (13, OUTPUT);
    Wire.begin(4); // join i2c bus with address #4
    Wire.onReceive(receiveEvent); // register event
}

void loop()
{
    delay(100);
}

// function that executes whenever data is received from master
// this function is registered as an event, see setup()
void receiveEvent(int howMany)
{
    String LED = "";

    while ( Wire.available() > 0 )
    {
        char n=(char)Wire.read();
    }
}
```

```

    if ((int)n > ((int)(' ')))
    LED += n;
}

if (LED == "go")
{
    digitalWrite (13, HIGH);
}

```

Last edited by Rakusan2 : 02-11-2015 at 06:19 PM. Reason: spelling mistake



02-12-2015, 07:58 AM

#3

[gpetilli](#)
Registered User
FRC #1559

Join Date: Jan 2009
Location: Victor, NY
Posts: 289

Re: Pixy I2C

We are using pixy to lock onto yellow totes in AUTO. My team found it easier to decode packets via the serial port (connected to roboRIO) than the I2C. We can share code if you need it.



02-12-2015, 08:16 AM

#4



[matthewdenny](#)
Registered User
FRC #6054 (Dukes)
Team Role: Mentor

Join Date: Jan 2012
Rookie Year: 2012
Location: United States
Posts: 334

Re: Pixy I2C

I'd be interested in the code.



02-12-2015, 09:32 AM

#5

[mikefas](#)
Registered User
FRC #3104

Join Date: Feb 2015
Location: us
Posts: 2

Re: Pixy I2C

That would be great, if serial is possible it would be a lot easier.



02-13-2015, 10:25 AM

#6

[AlexanderTheOK](#)
Guy
no team

Join Date: Jan 2014
Rookie Year: 2012
Location: Los Angeles
Posts: 176

Re: Pixy I2C

I would also like to see said code.



02-13-2015, 03:57 PM

#7



[2B || !2B](#)
/* No Comment */
FRC #1559 (DevilTech)
Team Role: Programmer

Join Date: Apr 2013
Rookie Year: 2013
Location: New York
Posts: 19

Re: Pixy I2C

Hi there. Here is what our team is using to pry information out of the pixy. I hope this helps! I'm not sure why the code block is anti-tabbing...

(the code gpetilli mentioned)

Code:

```

import edu.wpi.first.wpilibj.SerialPort;
import edu.wpi.first.wpilibj.SerialPort.Port;
//Warning: if the pixy is plugged in through mini usb, this code WILL NOT WORK b/
public class Pixy {

```

```

SerialPort pixy;
Port port = Port.kMXP;
PixyPacket[] packets;
PixyException pExc;
String print;
public Pixy() {
    pixy = new SerialPort(19200, port);
    pixy.setReadBufferSize(14);
    packets = new PixyPacket[7];
    pExc = new PixyException(print);
}
//This method parses raw data from the pixy into readable integers
public int cvt(byte upper, byte lower) {
    return (((int)upper & 0xff) << 8) | ((int)lower & 0xff);
}
public void pixyReset(){
    pixy.reset();
}
//This method gathers data, then parses that data, and assigns the ints to global
public PixyPacket readPacket(int Signature) throws PixyException {
    int Checksum;
    int Sig;
    byte[] rawData = new byte[32];
    try{
        rawData = pixy.read(32);
    } catch (RuntimeException e){
    }
    if(rawData.length < 32){

```

Code:

```

public class PixyException extends Exception {
    public PixyException(String message){
        super(message);
    }
}

```

Code:

```

public class PixyPacket {
    public int X;
    public int Y;
    public int Width;
    public int Height;
}

```

There are no brakes on the software train

Last edited by 2B || !2B : 02-13-2015 at 04:01 PM. Reason: I forgot to mention something.



02-14-2015, 09:13 AM

#8

[gsampel](#)

Registered User
 FRC #3104 (Cyber Rams)
 Team Role: Programmer

Join Date: Feb 2015
 Rookie Year: 2011
 Location: Stamford, CT
 Posts: 3

Re: Pixy I2C

2B || !2B ,
 I am the lead programmer on Mike's team, thank you so much for your code, We are cutting it a little close to the deadline and this definitely helps.
 Also, awesome name.
 Thanks,
 gsampel



02-14-2015, 10:46 AM

#9

[gsampel](#)

Registered User
 FRC #3104 (Cyber Rams)
 Team Role: Programmer

Join Date: Feb 2015
 Rookie Year: 2011
 Location: Stamford, CT
 Posts: 3

Re: Pixy I2C

How exactly do we wire the Pixy, the stock cable does not seem like the correct one to connect directly to the RoboRio

02-14-2015, 08:01 PM

gpetilli
Registered User
FRC #1559

Re: Pixy I2C

Quote:

Originally Posted by **gsampel**
How exactly do we wire the Pixy, the stock cable does not seem like the correct one to connect directly to the RoboRio

In case you are a newer team, you can remove the roboRIO from your robot before you bag it and work on code any time there is a competition anywhere (Typically next 6 Thur, Fri, Sat).

Look at the Pixy Docs - i dont remember if they call it rs232 or serial port. roboRIO also has a serial port. I will ask our electrical team to post more details as to what they did.

02-14-2015, 08:11 PM

gsampel
Registered User
FRC #3104 (Cyber Rams)
Team Role: Programmer

Re: Pixy I2C

Is this the sort of thing were we can put together our own cable, or will we need to use the actual serial cable? I don't think we have one, so we would have to make one, probably out of a few scrapped PWM cables. I would find it really helpful to see a picture of your connection or what cable you used.
thanks,
gsampel

02-15-2015, 06:54 AM

gpetilli
Registered User
FRC #1559

Re: Pixy I2C

Quote:

Originally Posted by **gsampel**
*Is this the sort of thing were we can put together our own cable, or will we need to use the actual serial cable? I don't think we have one, so we would have to make one, probably out of a few scrapped PWM cables. I would find it really helpful to see a picture of your connection or what cable you used.
thanks,
gsampel*

yes, you can make your own cable. I seem to remember needing the hook the PIXY up via USB to a laptop to turn on the serial output. Serial outputs have multiple names so look for serial, uart, or rs232.

03-19-2015, 06:54 PM

Sayol4
Registered User
FRC #1153

Re: Pixy I2C

Does anyone have a picture or instructions on how to connect the pixy to the Roborio using the ribbon cables?

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