

Microsoft® tech·days | Hong Kong|2012

15 From the Desktop to the Cloud
Years of Turning Vision into Value





Coding4Fun

Matt Valentine
Principal Platform Architect

Ryan Chan
Visual Studio, Product Marketing Manager

Bernard Fung
Developer Evangelist

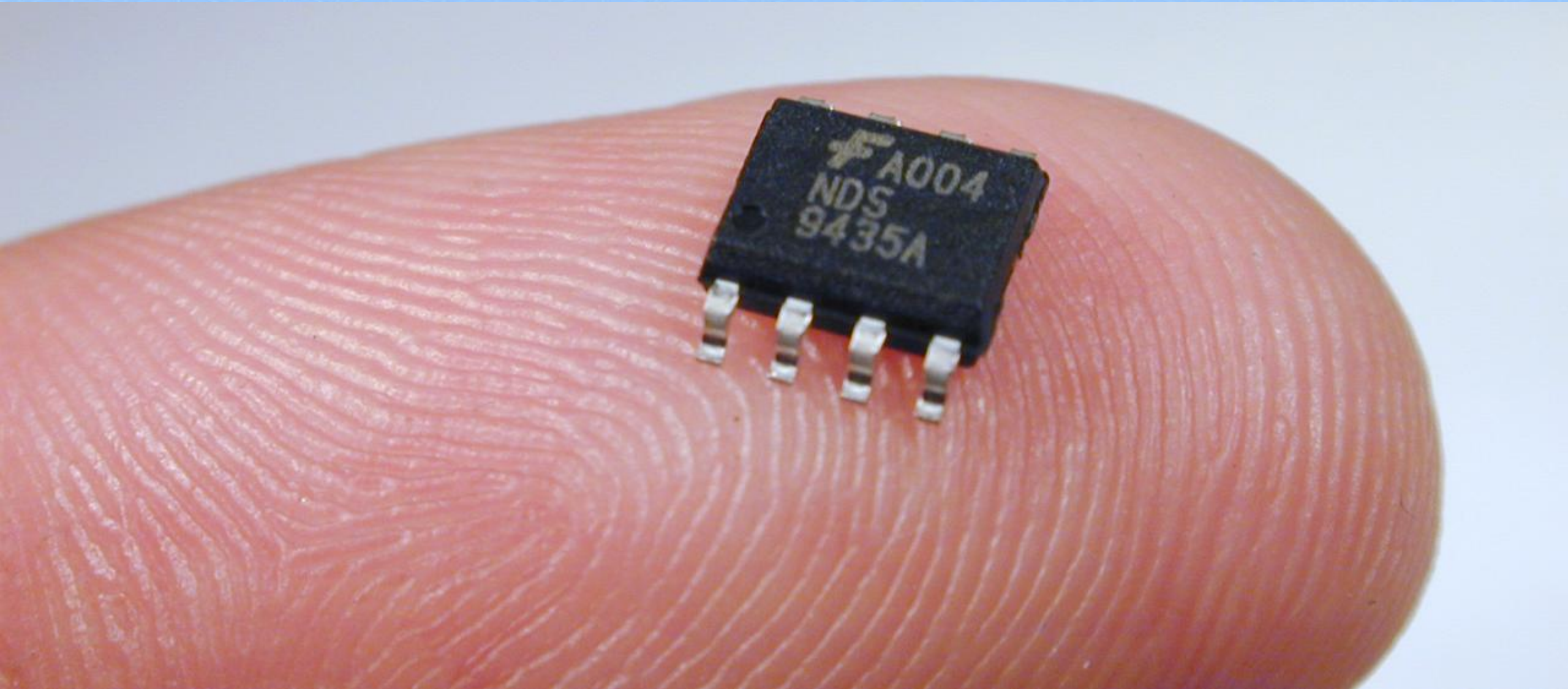


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Coding4Fun

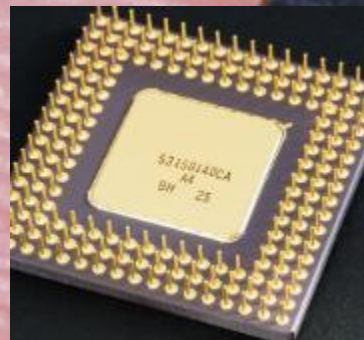
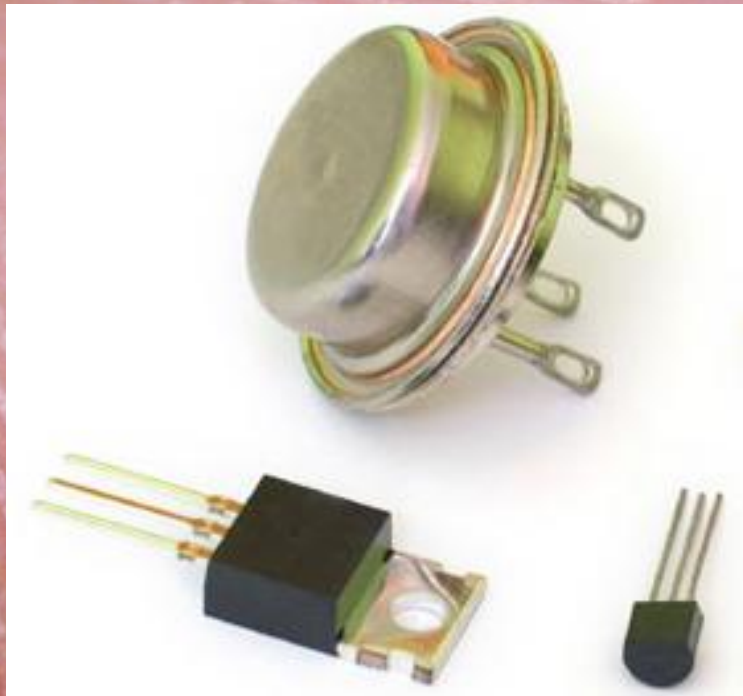
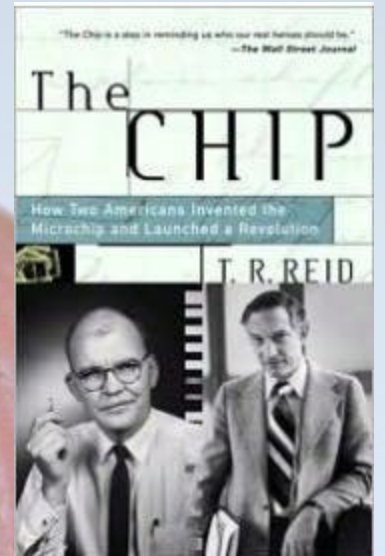
- How we made the Kinerfinator
- Working with Microcontrollers
- Kinect for Windows SDK
- Building a game for Windows Phone in 15min
- Share experiences!

Microelectronics – the Key Driver of IT



Microelectronics – the Key Driver of IT

Transistor = Transfer Resistor
First Silicon Transistor: 1954 by TI
First Metal-Oxide Semiconductor: 1960



Logic gate: up to 20 transistors
Microprocessor: up to 3 bilMOSFETs
Processors: small percentage, big profit

The Chip:
How two Americans
Invented the
Microchip and
Launched a
Revolution



World produces about one billion transistors per person per year – total over 7,000,000,000,000,000,000 transistors

Inception

http://lifehacker.com/5875365/how-to-start-making-your-own-electronics-with-arduino-and-other-peoples-code?utm_source=Lifehacker+Newsletter&utm_ca

How to Start Making Your ...

lifehacker

TOP STORIES

LATEST STORIES TUESDAY, FEB 28, 2012

LOGIN



A Beginner's Guide to Arduino

ARDUINO

How to Start Making Your Own Electronics with Arduino and Other People's Code

BY THORIN KLOSOWSKI JAN 12, 2012 8:00 AM

Share +1 Like 237 55,571 27

GET OUR TOP STORIES FOLLOW LIFEHACKER

WORK-LIFE BALANCE 1,224
Your Boss Is Bad For You: Why Bad Bosses Infect Your Life and What You Can Do to Stop Them

KNOW YOUR RIGHTS 401
How You're Breaking the Law Every Day (and What You Can Do About It)

DIY 319
Make Your Own Phone Stand with the Box Your Phone Came In and Makedo Pins

Inception



ARDUINO HOW TO DIY ELECTRONICS TUTORIALS FEATURE

How to Start Making Your Own Electronics with Arduino and Other People's Code

The annual Consumer Electronics Show is in session, which means thousands of people have descended on Las Vegas to stare at next year's dust-gathering trash. Maybe you can do better. Maybe it's time to check out Arduino.

The word Arduino may conjure up an image of a wide-mouthed geek huddled over a work table, but its simplicity makes it an entry-point into electronics for even the most electronically inept. We'll outline the basics of the Arduino itself, what the crazy jumble of wires means, and then step through how to use other people's code and schematics to build your first electronics project, no programming required.

BY THORIN KLOSOWSKI + JAN 12, 2012 8:00 AM

Share +1 Like 238 55,734 27

GET OUR TOP STORIES FOLLOW LIFEHACKER

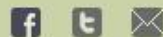


Like Matt Valentine, Nathaniel Hansen and 383,655 others like this.

BY THORIN KLOSOWSKI + JAN 12, 2012 8:00 AM

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It)



Makedo Pins

DIY

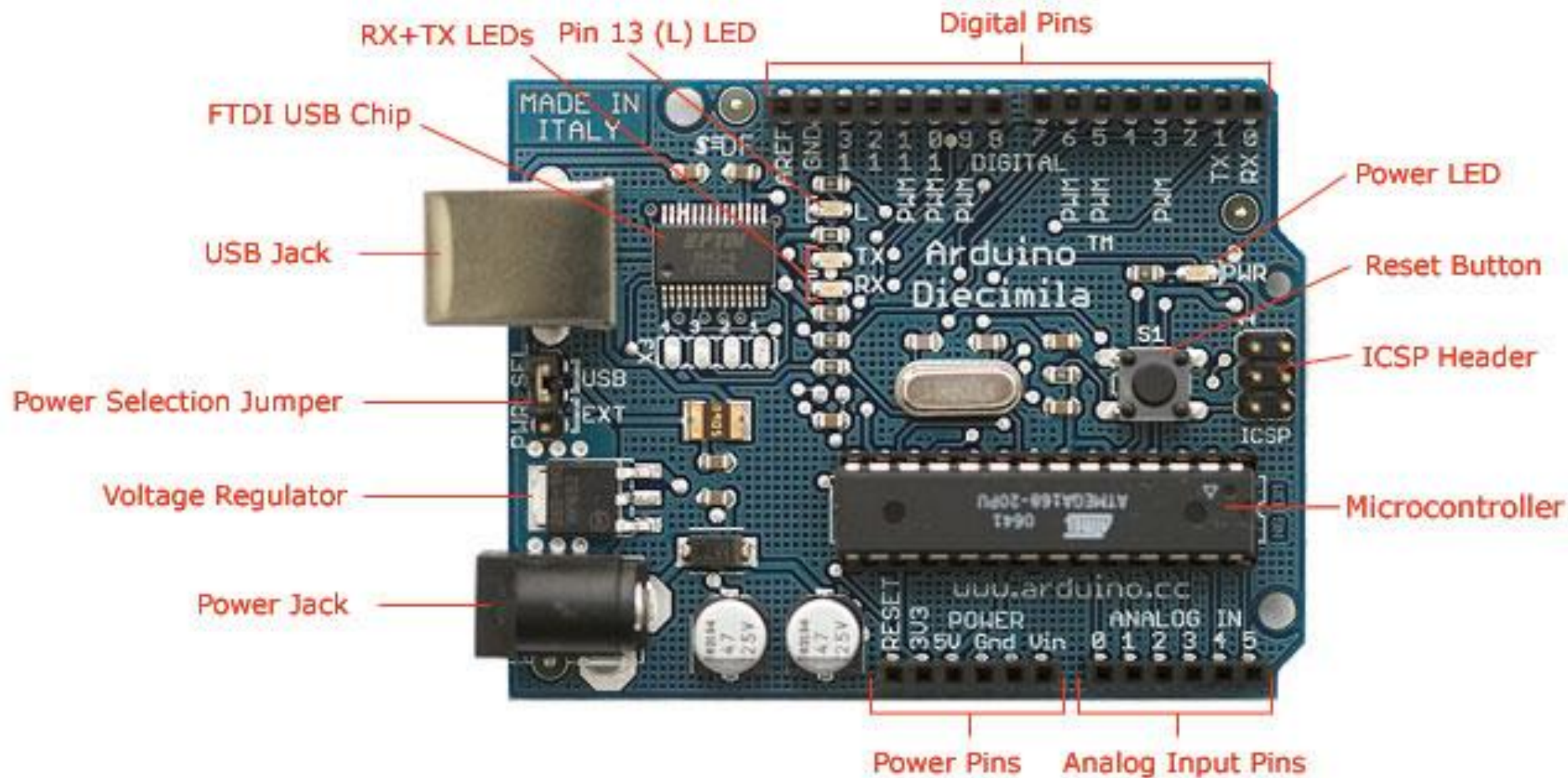
319

Make Your Own Phone Stand with the Box Your Phone Came In and

The Arduino



- Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software.
- It's intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments.
- Arduino can be used to develop interactive objects, taking inputs from a variety of switches or sensors, and controlling a variety of lights, motors, and other physical outputs
- Arduino projects can be stand-alone, or they can be communicate with software running on your computer



Photograph by SparkFun Electronics. Used under the Creative Commons Attribution Share-Alike 3.0 license.

Example Projects



The screenshot shows a web browser window with the address bar containing the URL <http://arduino-projects-here.blogspot.com/2010/10/top-40-arduino-projects-of-web.html>. The page features a dark sidebar on the left with a "Blog Surfer" logo and a list of project titles. The main content area has a white background with a breadcrumb trail, a date, a title, an image, and introductory text.

Blog Surfer

- Arduino HVAC Servo Thermostat/Controller
- Arduino Based Meter - a many LED Driver
- Arduino + Temperature + Humidity
- Arduino EMF (Electromagnetic Field) Detector
- Arduino Home automation
- Simple Arduino Robotics Platform!
- Arduino based serial servo controller
- Connecting GPS-module to Arduino
- Controlling an RGB Led with Arduino and Processing...
- Arduino traffic lights
- Read Email with Arduino and Wave Shield
- Temperature Control For Kitchen Appliances
- Secret Knock Detecting Door Lock
- Representing audio through vibration with Arduino
- How to connect Arduino and RFID
- Logger Shield: Datalogging for Arduino
- Arduino magnetic stripe decoder

Home » [Top 40 Arduino Projects](#) » Top 40 Arduino Projects of the Web

Thursday, October 7, 2010

Top 40 Arduino Projects of the Web



Since we love the ever-popular Arduino, we've scoured the vast reaches of the interweb and unearthed the best Arduino projects just for you. The Arduino is an open source [programming](#) platform which allows you to easily control electronics with a microcontroller – See our [Arduino tutorial](#) to learn all about it.

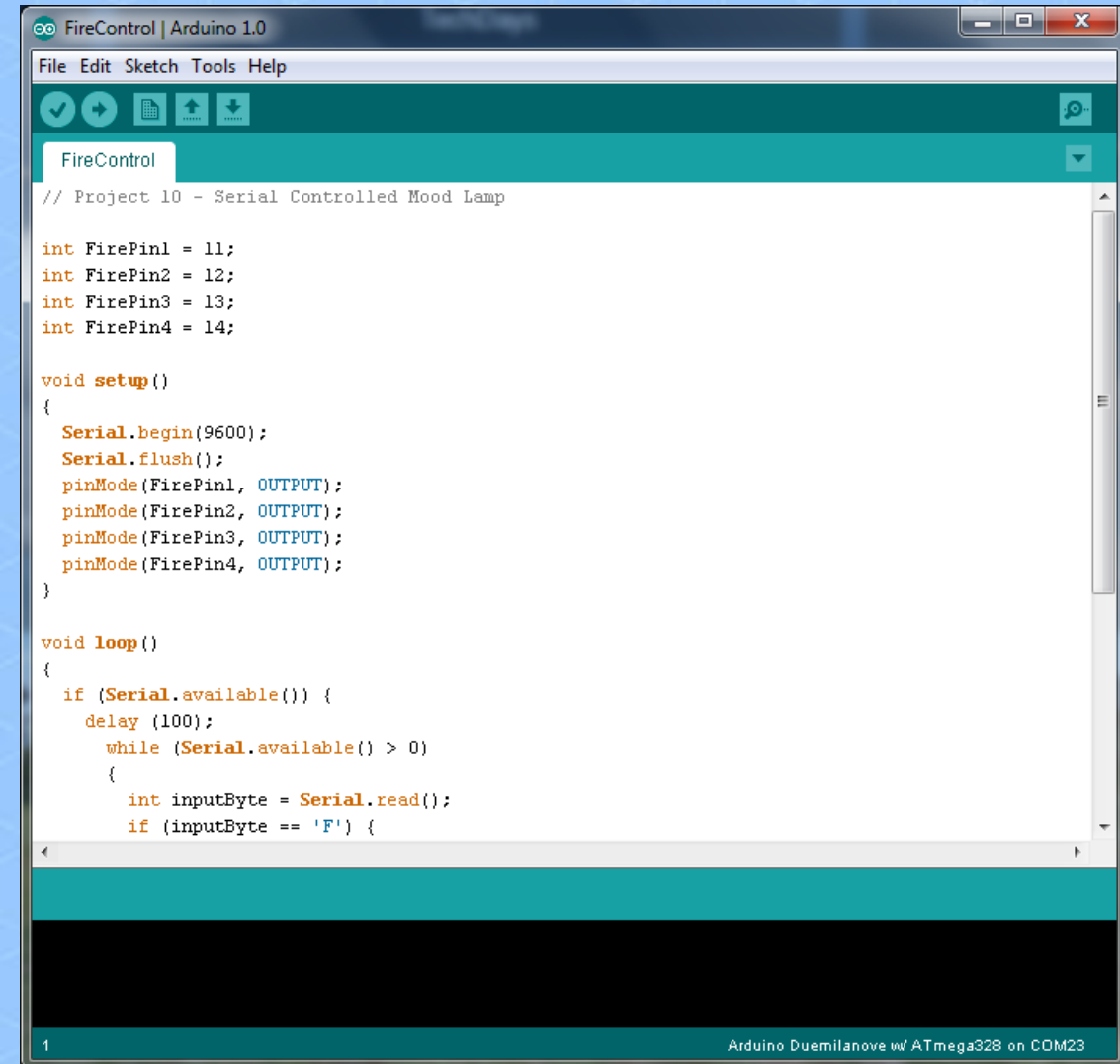
Also! Our [DIY projects store](#) has dirt cheap [LEDs](#), [servo motors](#), [lasers](#), [DIY tools](#), [batteries](#), and more for your DIY projects.

40. [Make a Simple Wall Avoiding Robot](#)
39. [Basic LED Cube - Learn to Make LED Cubes](#)

<http://arduino-projects-here.blogspot.com/2010/10/top-40-arduino-projects-of-web.html>

Arduino Development Environment

- Easy to learn, C-like language
- Arduino programs can be divided in three main parts: structure, values (variables and constants), and functions.
- Compile and write to Arduino
- Implement serial to receive commands from PC



```
FireControl | Arduino 1.0
File Edit Sketch Tools Help
FireControl
// Project 10 - Serial Controlled Mood Lamp

int FirePin1 = 11;
int FirePin2 = 12;
int FirePin3 = 13;
int FirePin4 = 14;

void setup()
{
  Serial.begin(9600);
  Serial.flush();
  pinMode(FirePin1, OUTPUT);
  pinMode(FirePin2, OUTPUT);
  pinMode(FirePin3, OUTPUT);
  pinMode(FirePin4, OUTPUT);
}

void loop()
{
  if (Serial.available()) {
    delay (100);
    while (Serial.available() > 0)
    {
      int inputByte = Serial.read();
      if (inputByte == 'F') {
```

1 Arduino Duemilanove w/ ATmega328 on COM23

Where Can I Get An Arduino?

The screenshot shows the Arduino.HK website interface. The browser address bar displays the URL: <http://arduino.hk/index.php?route=product/category&path=37>. The page title is "Microcontroller Kit".

The website header includes the "ARDUINO.HK" logo, navigation links for "Home", "Log In", "Account", "Basket", and "Checkout", and utility links for "Special Offers", "Bookmark", "Contact", and "Sitemap".

A search bar contains the text "Keywords" and "Microcontroller Kit", with a "Go" button and a link to "Advanced Search". Below the search bar, there are dropdown menus for "English" and "Hong Kong Dollar".

The main content area is titled "MICROCONTROLLER KIT" and features a "Sort By: Default" dropdown menu. It displays a grid of four product listings, each with an image, a "FREE Shipping" banner, a product title, a description, and a price:

- Product 1:** Arduino compatible Kit Mega Kit ATmega 1280 128x64 LCD Kit blue b0 arduino mega 128x64 blue. Price: **HK\$426.56**.
- Product 2:** Arduino compatible ATmega328 DIY Kit lcd LM35 Remote Prototyping ATmega 328 LM35 Remote. Price: **HK\$395.54**.
- Product 3:** Arduino compatible Duemilanove ATmega 328 16x2 LCD Kit Arduino 328 16x2 LCD Kit. Price: **HK\$302.47**.
- Product 4:** Arduino compatible Mega ATmega 1280 128x64 LCD Graphic Starter Kit arduino mega 128x64 lcd kit. Price: **HK\$411.05**.

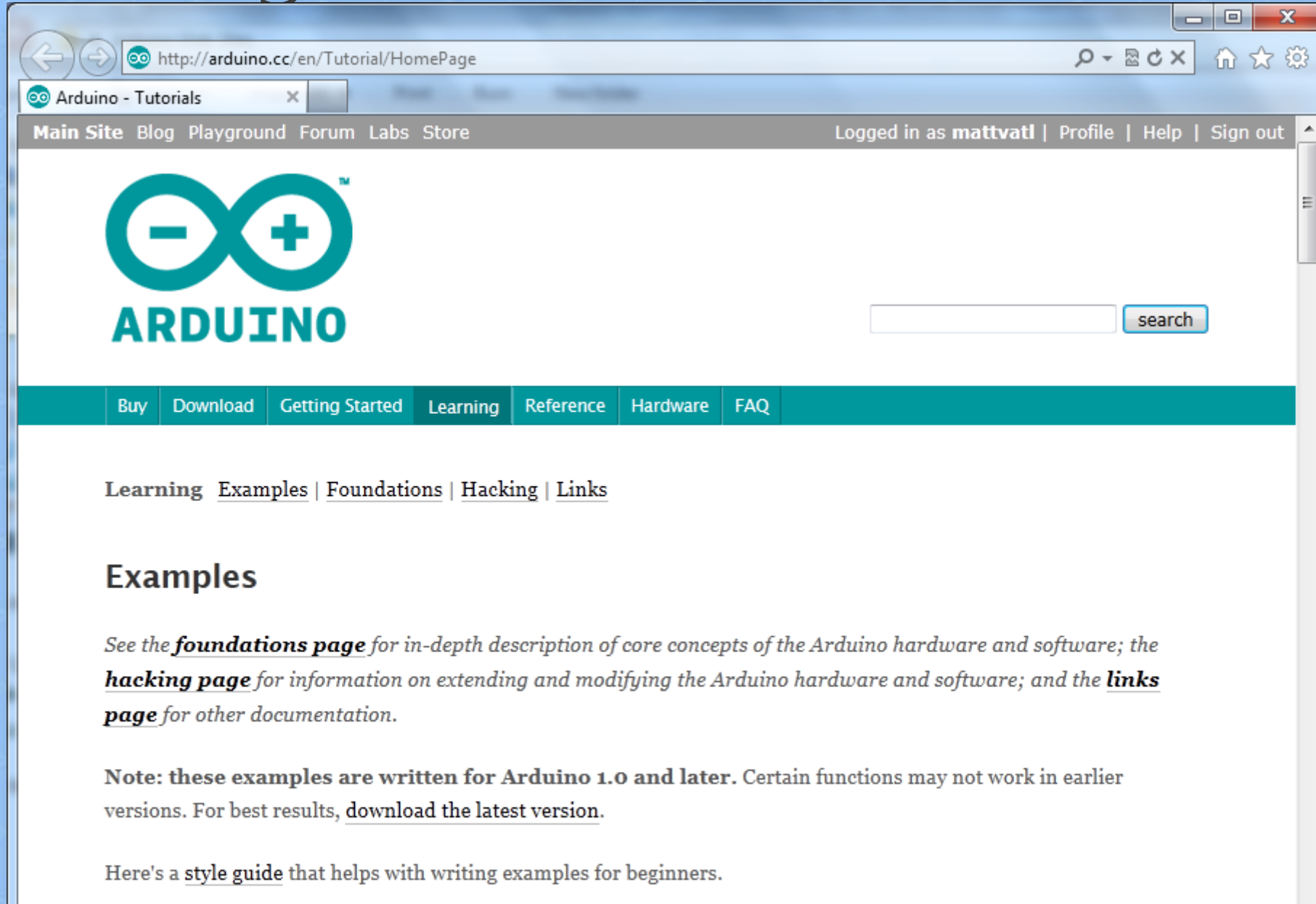
On the left side, there are two sidebar sections:

- CATEGORIES:** A list of links including "ALL Items", "Microcontroller Kit", "Microcontroller Board", "Microcontroller Shield", "LCD", and "Other".
- INFORMATION:** A list of links including "Arduino Getting Started", "16x2 LCD", "128x64 LCD", "IR Remote Library", "Temperature Sensor", "8x8 LED Matrix", "4 Digit 7 Segment LED", "Shipping & Return Policy", "Mail Tracking", "Contact Us", and "Site Map".

On the right side, there is a "SHOPPING CART" section showing "0 items".

Getting Started

Getting Started



The screenshot shows a web browser window displaying the Arduino website. The address bar shows the URL `http://arduino.cc/en/Tutorial/HomePage`. The page header includes navigation links: [Main Site](#), [Blog](#), [Playground](#), [Forum](#), [Labs](#), and [Store](#). It also indicates the user is logged in as `mattvatl` with links for [Profile](#), [Help](#), and [Sign out](#). The main content area features the Arduino logo (an infinity symbol with a minus sign on the left and a plus sign on the right) and the word **ARDUINO** below it. To the right of the logo is a search input field with a `search` button. A teal navigation bar contains links for [Buy](#), [Download](#), [Getting Started](#) (which is highlighted), [Learning](#), [Reference](#), [Hardware](#), and [FAQ](#). Below this bar, the text `Learning` is followed by links for [Examples](#), [Foundations](#), [Hacking](#), and [Links](#). The `Examples` section is titled **Examples** and contains a paragraph: *See the **foundations page** for in-depth description of core concepts of the Arduino hardware and software; the **hacking page** for information on extending and modifying the Arduino hardware and software; and the **links page** for other documentation.* Below this is a **Note**: **these examples are written for Arduino 1.0 and later.** Certain functions may not work in earlier versions. For best results, [download the latest version](#). At the bottom, it says: Here's a [style guide](#) that helps with writing examples for beginners.

Getting Started

http://arduino.cc/en/Tutorial/HomePage

Arduino - Tutorials

Main Site

http://www.ladyada.net/learn/arduino/lesson0.html


Arduino Tutorial - Getting r...

Home About Projects Learn Library Blog Store Forums Custom Search Search

Arduino Tutorial

May 17, 2011 20:07

Lesson 0 - Getting prepared!



Introduction

This lesson won't teach any electronics, really. Its more for making sure that everything is setup and *ready* for the future lessons. It will verify the Arduino is working as intended and that the computer you are using is compatible.

Do you have everything you need?

For this lesson you will need some stuff! Make sure you have this stuff or you will be unable to complete this lesson

Image	Description	Distributor

Intro

[Lesson 0](#)

- [Driver \(Win\)](#)
- [Driver \(Mac\)](#)
- [Driver \(Unix\)](#)

[Lesson 1](#)

[Lesson 2](#)

Getting Started

http://arduino.cc/en/Tutorial/HomePage

Arduino - Tutorials

Main Site

http://www.ladyada.net/learn/arduino/lesson0.html

Arduino Tutorial - Getting r...

JB http://www.jeremyblum.com/2011/01/02/arduino-tutorial-series-it-begins/

JB Tutorial Series for Arduino: ...

JEREMYBLUM.COM v3.0

BLOG PORTFOLIO ABOUT CONTACT

open hardware

IC1

ISD1 P13

TUN R11

R1 R2 R3 R4 R5 R6 R7 R8 R9 R10

me in g+ f t YouTube

PWR +5V GND

JeremyBlum.com
Blog-O-Matic

Tutorial Series for Arduino: It begins.

January 2, 2011 | 24 Comments

SEARCH

Getting Started

The image displays a stack of four overlapping browser windows, illustrating a workflow for finding Arduino resources. The top window shows the Arduino.cc homepage. The second window shows a lesson on ladyada.net. The third window shows a tutorial series by Jeremy Blum. The bottom window shows a YouTube search for 'arduino', with the top result being 'Intro to the Arduino' by makemagazine.

Window 1 (Top): <http://arduino.cc/en/Tutorial/HomePage>

Window 2: <http://www.ladyada.net/learn/arduino/lesson0.html>

Window 3: <http://www.jeremyblum.com/2011/01/02/arduino-tutorial-series-it-begins/>

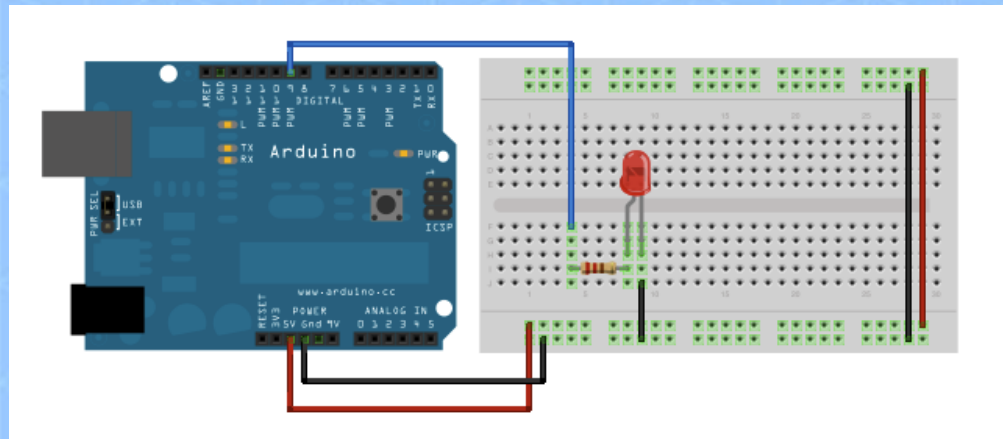
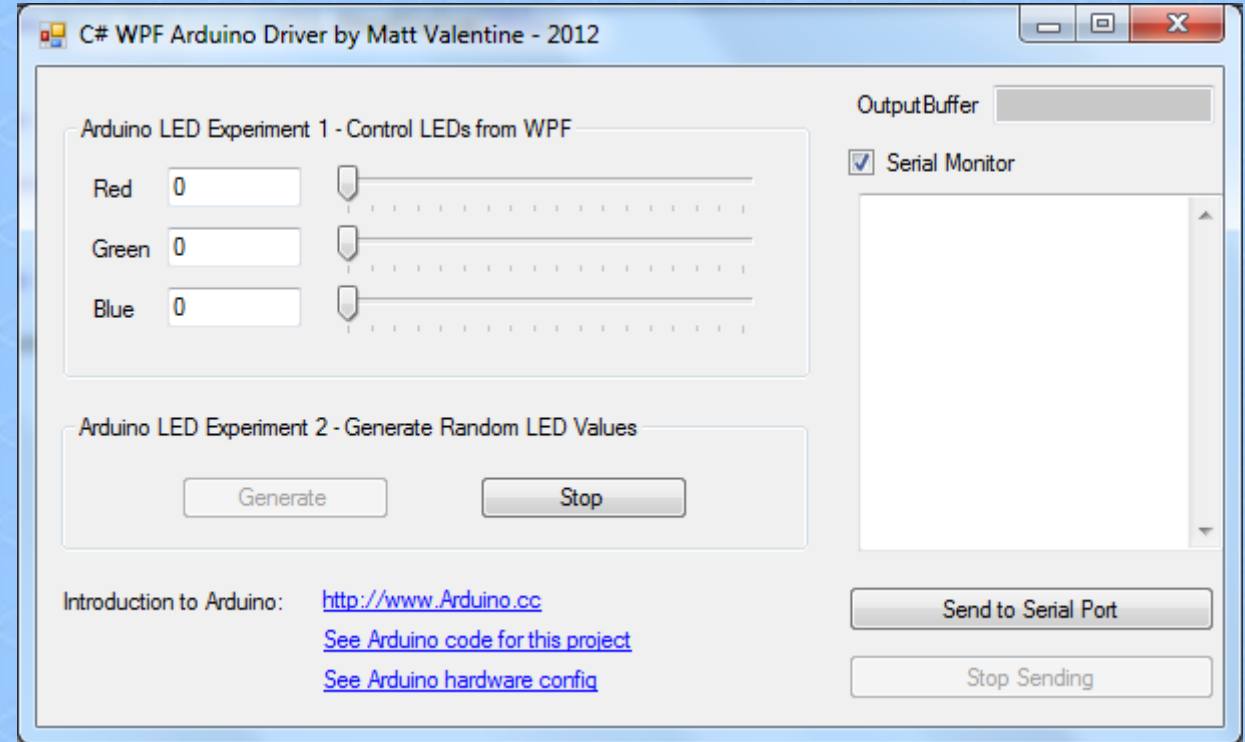
Window 4 (Bottom): http://www.youtube.com/results?search_query=arduino&oq=arduino&aq=f&aqi=g10&aql=&gs_sm=3&gs_upl=1978

YouTube Search Results:

- Intro to the Arduino**
Joe Grand and Bre Pettis bring you another Awesome Electronics Workshop. This week learn about the **Arduino**, an open-source microcontroller board.
by makemagazine | 4 years ago | 290,573 views
- Collin's Lab: USB Hacking with Arduino**
- Featured Videos:**
 - Mindstorm Controlling**
www.dexterindustries.com
integrated the NXT and the
by Dextrindustries views

My First Arduino Project

- Visual Studio 2010 & C#
- Simple wiring
- Serial communications
- C# app sends RGB value and Arduino receives and sets LED
- Multithreading



<http://arduino.cc/forum/index.php/topic,89198.0.html>

My Second Project

My Second Project

The image shows a screenshot of a web browser displaying a blog post. The browser's address bar shows the URL: http://siliconrepublic.blogspot.com/2011/02/arduino-based-pc-ambient-lighting.html?utm_source=Lifehacker+Newsletter&utm_campaign=ce1aebd6b3-UA-14221. The browser window has a single tab titled "Silicon Republic: Arduino B...".

The blog page has a dark background with a colorful, abstract geometric pattern on the left side. At the top, there is a navigation bar with a search icon, a search box, and links for "分享", "檢舉濫用情形", and "下一個網誌". On the right side of the navigation bar, there are links for "建立網誌" and "登入".

The main content area features a large header with the "Silicon Republic" logo (a grid of colored squares) and the site name "Silicon Republic". Below the header is a navigation menu with "Home" and "Project Portfolio" options. The date "TUESDAY, FEBRUARY 8, 2011" is displayed above the main article title, "Arduino Based PC Ambient Lighting".

The article text reads: "I really like the concept of ambient lighting systems which synchronize with entertainment to create a great immersive experience. And since I had a RGB led strip lying around I decided to use my Arduino and a Processing sketch to create such a system for computers which really turned out great!"

Below the text, it says: "Here is a video of my setup and a nice demo of it working with a Star Wars video clip:"

A video player is visible at the bottom of the article, with the title "Arduino based PC ambient lighting" above it. The video player shows a dark scene, likely the ambient lighting setup.

On the right side of the page, there is a "BLOG ARCHIVE" section with a tree view showing posts from 2011 (2), May (1), February (1), and 2010 (2). The February 2011 entry is expanded to show the article "Arduino Based PC Ambient Lighting". Below this is an "ABOUT ME" section featuring a profile picture of a man and the name "Rajarshi Roy", with a link to "View my complete profile".

My Second Project

The image shows a screenshot of a web browser window displaying a YouTube video page. The browser's address bar shows the URL: <http://www.youtube.com/watch?v=rEVSjfAhIdA>. The page title is "My DIY Arduino Ambilight" by the channel "fatbas202". The video player shows a scene with a computer monitor displaying a game interface, illuminated by colorful ambient light (red, green, blue) projected onto the wall. The right sidebar features a list of recommended videos:

- 隆重推介 Galaxy Nexus** by googlenexus, 3,132,440 views, Ad, 0:31
- My DIY Arduino Ambilight** by fatbas202, 6,616 views, 1:09
- philips 52pf19606 ambilight xl** by procentje, 6,526 views, 3:58
- Arduino RGB LED working on breadboard** by johnnybroadway, 32,871 views, 0:17

Demo

Ambilite

Matt Valentine
Principal Platform Architect
Microsoft Corporation



My Third Arduino Project

My Third Arduino Project

The screenshot shows a web browser window displaying the CodePlex project page for 'Coding4Fun Kinect Turret'. The browser's address bar shows the URL 'http://kinectturret.codeplex.com/'. The page header includes the project name 'Coding4Fun Kinect Turret' and the CodePlex logo with the tagline 'Open Source Community'. Navigation links for 'Home', 'Downloads', 'Documentation', 'Discussions', 'Issue Tracker', 'Source Code', 'People', and 'License' are visible. A search bar is present with the text 'Search all CodePlex projects'. Below the navigation, there are links for 'View All Comments', 'Print View', 'Page Info', and 'Change History (all pages)'. The main content area features a 'Home' section with a description of the project: 'From Xbox Live, here is the Coding4Fun Kinect Turret! It uses the Kinect for Windows SDK and uses a combination of skeleton tracking and depth data to defend your office! The project took only a few hours to build and code up.' Below the text is a video thumbnail showing three people (two men and one woman) standing behind a table with a laptop and a Kinect turret. The video title is 'Tech with Tina clip if you missed it on Xbox Live and the Coding4Fun article on how to actually build and code the turret!'. On the right side, there is a sidebar with a 'Follow' button indicating '12 people are following this project', a note that there is no current recommended release, and an 'Activity' section showing statistics: 7 page views, 30 visits, 4 downloads, and N/A application runs over the last 30 days. A 'View Detailed Stats' button is located at the bottom of the activity section.

http://kinectturret.codeplex.com/

Coding4Fun Kinect Turret

CodePlex
Open Source Community

Register | Sign In | CodePlex Home

Search all CodePlex projects Search

Home Downloads Documentation Discussions Issue Tracker Source Code People License RSS

View All Comments | Print View | Page Info | Change History (all pages) Search Wiki & Documentation

Home

From Xbox Live, here is the Coding4Fun Kinect Turret! It uses the Kinect for Windows SDK and uses a combination of skeleton tracking and depth data to defend your office! The project took only a few hours to build and code up.

Head over to Channel9 to check out the Tech with Tina clip if you missed it on Xbox Live and the Coding4Fun article on how to actually build and code the turret!

12 people are following this project (follow)

There is no current recommended release for this Project.

Activity 7 30 All days

Page Views	98
Visits	36
Downloads	4
Application Runs	N/A

View Detailed Stats

My Third Arduino Project

The image shows a screenshot of a web browser window. The address bar displays `http://kinectturret.codeplex.com/`. Below it, a second browser window is open, showing the Channel 9 website. The address bar of the second window displays `http://channel9.msdn.com/Shows/TechWithTina/Use-a-Nerf-Gun-Kinect-Skeletal-Tracking-and-a-Turret-to-protect-your-office`. The page features a navigation bar with the Channel 9 logo, a search bar, and links for "BROWSE", "FORUMS", "CODING4FUN", and "EVENTS". The main content area displays the article title "Use a Nerf Gun, Kinect Skeletal Tracking, and a Turret to protect your office!" with a "Download" button and social media sharing options. A sidebar on the right lists "More episodes in this show" with video thumbnails.

http://kinectturret.codeplex.com/

Coding4Fun Kinect Turret

http://channel9.msdn.com/Shows/TechWithTina/Use-a-Nerf-Gun-Kinect-Skeletal-Tracking-and-a-Turret-to-protect-your-office

Use a Nerf Gun, Kinect Skel...

Follow Us @Ch9 | Subscribe to Channel 9 | Sign In

Channel 9 BROWSE FORUMS CODING4FUN EVENTS

Search this site bing

Shows | Tech With Tina

Use a Nerf Gun, Kinect Skeletal Tracking, and a Turret to protect your office!

Posted: Aug 05, 2011 at 1:38 PM

By: [Clint Rutkas](#), [Dan Fernandez](#), [Tina](#)

★★★★★ (4) | 74,426 Views | 9 Comments

Avg Rating: 5

Tweet 66 Share 147

Download ?

Right click "Save as..."

High Quality WMV (PC, Xbox, MCE)

More episodes in this show

- E3 2011: Designing for Xbox
- E3 2011: Major Nelson talks about cloud storage,...
- Use a Nerf Gun, Kinect

Hypothesis

- Can we manipulate the “real world” using a Kinect?
- The answer....the:

Hypothesis

- Can we manipulate the “real world” using a Kinect?
- The answer....the:

Kinertinator

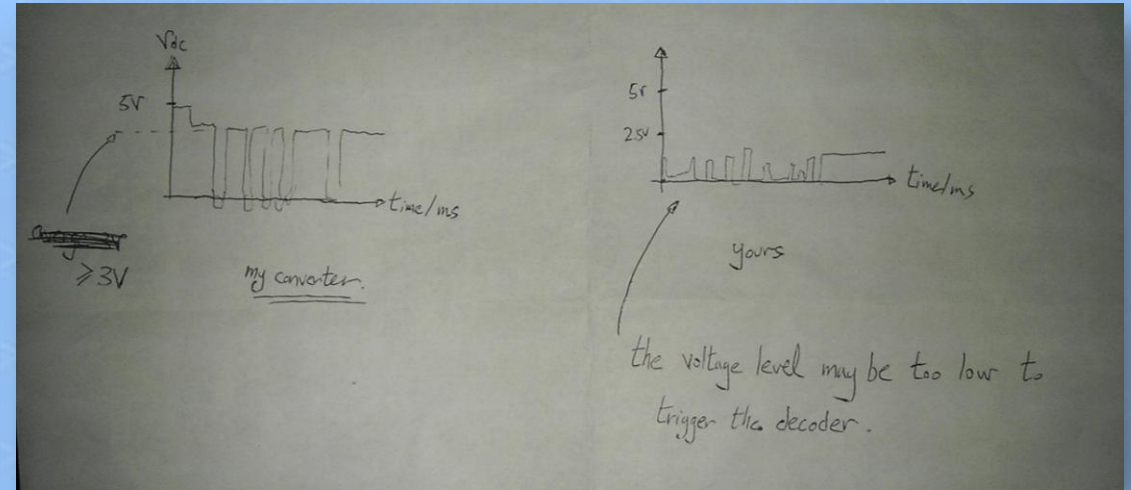
Adventures in Sham Shui Po

SK 成記電業公司
SHING KEE ELECTRONIC CO.

馮祖喬
Mr. Fung

北 MTR 地鐵站 南
鴨寮街 南昌街
河 街 成記 街

地址: 九龍深水埗鴨寮街139A舖
TEL/FAX: 2137 9721 手提電話: 6410 3940
SHOP 139A G/F APLIU ST. SHAM SHU PO KLN.
<http://www.shingkee.iyp.hk>
E-mail: shing_kee@yahoo.com.hk



The Pan Tilt Zoom (PTZ) Motor

- Power Source: 24VAC/50Hz 110VAC/50Hz 230VAC/50Hz (Either)
- Material: ABS High strength plastics
- Turn angle: Pan Max: 355 degree, Tilt: 50 ~ 5 degree
- Limit Stop: Pan Adjustment
- Turn Speed: Pan: 4.5 degree/Sec Tilt: 4 degree/Sec
- **Load: Pan: 7kg Tilt: 4kg**
- Virtual torsion: Pan: 18.8kg.cm Tilt: 26.8kg.cm
- Working Temperature: -10°C ~ 55°C
- Load change: Pan: continuous Tilt: intermittent
- Drive gear: High strength plastics model
- Controller : Input voltage: AC 220v 50Hz
- Output voltage: AC 24v 50Hz / AC 220V 50Hz
- Item Includes: 1 x wall-mounted Indoor PAN/TILT Drive Unit 1 x Controlling instruments
- HK\$350



The Instructions – Simplified Chinese

目录

- 一、概述
- 二、技术参数
- 三、产品特点
- 四、安装示意图
- 五、云台驱动电机
- 六、调整镜头驱动
- 七、改变雨刷驱动
- 八、地址码设置
- 九、通讯特殊协议
- 十、自动识别协议
- 十一、通讯连接
- 十二、常见故障
- 十三、注意事项

室内全方位云台 INDOOR PAN/TILT

技术参数 Parameter

项目 Item	
输入电压 Power Source	24VAC/230VAC
配套电缆 Kit Cable	6×0.5
高度 Height	26.4
W型支架 (L*W)	26.4
底座直径 Diameter	13cm
云台直径 Pan Diameter	13cm
重量 Weight	1.36kg
结构 Material	ABS
转动角度 Turn angle	水平/垂直
转动限制点 Limit Stop	水平/垂直
转动速度 Turn Speed	水平/垂直
载重 Load	水平/垂直
有效扭矩 Virtual torsion	水平/垂直
安装方式 Install Way	正/反
颜色 Color	浅灰色
工作环境温度 Working Temperature	-10°
载重能力变化情况 Load change	水平/垂直
水平俯仰驱动齿轮 Drive gear	高强度

四、安装示意图及说明



五、云台驱动电压选择
本解码器提供24V/AC和220V/AC。通过JP3、JP4、JP5一组共端(常端),另一端(设置端)电压为24V/AC; 插入JP3、JP4、JP5。
> 出厂时,云台驱动电压设定为24V/AC。
**注:使用前请仔细核对云台电机驱动电压。

六、调整镜头驱动电压
镜头驱动电压6V/DC、12V/DC。跳线(T1)为镜头驱动电压跳线,调整电压值。
> 出厂时,镜头驱动电压设定值为6V/DC。

增强12V/DC摄像机电源驱动能力

九、通讯特殊协议及波特率设置

9位DIP拨码开关的1—3位为通讯波特率或特殊协议设置位。具体如下表:

DIP-3位	通信波特率	定义说明	备注
000	2400	自动识别协议	自动识别20多种协议,详见表3
001	4800		
010	9600		
011	-	预留	
100	-	预留	
101	19200	科力矩阵协议	特殊协议,地址从1
110	19200	EE矩阵协议	特殊协议,地址从1
111	-	爱科矩阵协议	特殊协议,地址从0起始

* 出厂设置为自动识别协议状态,通讯波特率为2400

特殊协议列表

协议名称	协议来源	通信系统	备注
爱科	AD	AD、AB、WISH矩阵	地址从0起始
科力	矩阵科力	KONY矩阵	-
EE	北京天地	EE矩阵	-

**协议随时添加,敬请留意

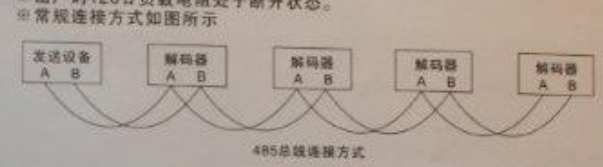
十、自动识别协议列表及特殊协议列表

协议名称	协议来源	DIP对应拨码(4-9)	备注
SYT	沈阳安防	沈阳安防系统及多数硬盘录像系统	控制设备及多种卡
RD140HD900	上海安防	上海城市系统	德加拉/康银卡
Palco-8及变形	Palco	所有硬盘录像系统	多种卡
Palco-8及变形	Palco	所有硬盘录像系统	多种卡
Palco-8及变形	Palco	PIC02000系统	-
CCR-1800	-	NetDVR系统	-
Vison-99	Vison	PIC02000系统	PICASO卡
SPO-1660	-	KODICOM系统	KODICOM卡
PANASONIC	-	IDRS系统	-
HY及特发协议	-	中恒天威/中恒系统	德加拉/康银卡
MN及特发协议	华清光电	中恒天威/中恒系统	德加拉/康银卡
ZR	-	中恒系统	德加拉/康银卡
SAMSUNG	Samsung	多数硬盘录像系统	德加拉/康银卡
CC-800	-	NetDVR系统	PICASO卡
SC-641	Samsung	多数硬盘录像系统	PICASO卡
KALATEL	Kalatel	Sony视频会议	-
NSDDM	-	银河伟业系统	-
YAAN	天津亚安	爱安系统	-
PWT	动力高科	动力高科硬盘	-
SOMNET	北京索耐	SOMNET矩阵	-
爱科协议	天津爱科	银河硬盘	-
KRE-361	-	KODICOM系统	KODICOM卡
JVC	JVC	JVC硬盘	-

**协议随时添加,敬请留意!

十一、通讯连接

本解码器采用标准 RS-485 通讯接口。通常情况下,485 通讯距离可达 1200 米。当计算机与解码器通讯时,应使用有源、具备隔离功能的 232/485 转发器; 通讯线应使用两芯屏蔽线,布线应避开强电或磁场等干扰源; 通讯连接应采用总线方式; 避免星形方式,若无法总线连接,采用星形分支连接时,应尽量保证每个分支线路最短。采用总线方式时,须将最远端解码器的 120 跳线(T2)跳接 120 跳,接通 120Ω 负载电阻,以提高通讯可靠性。
* 出厂时 120Ω 负载电阻处于断开状态。
* 常规连接方式如图所示



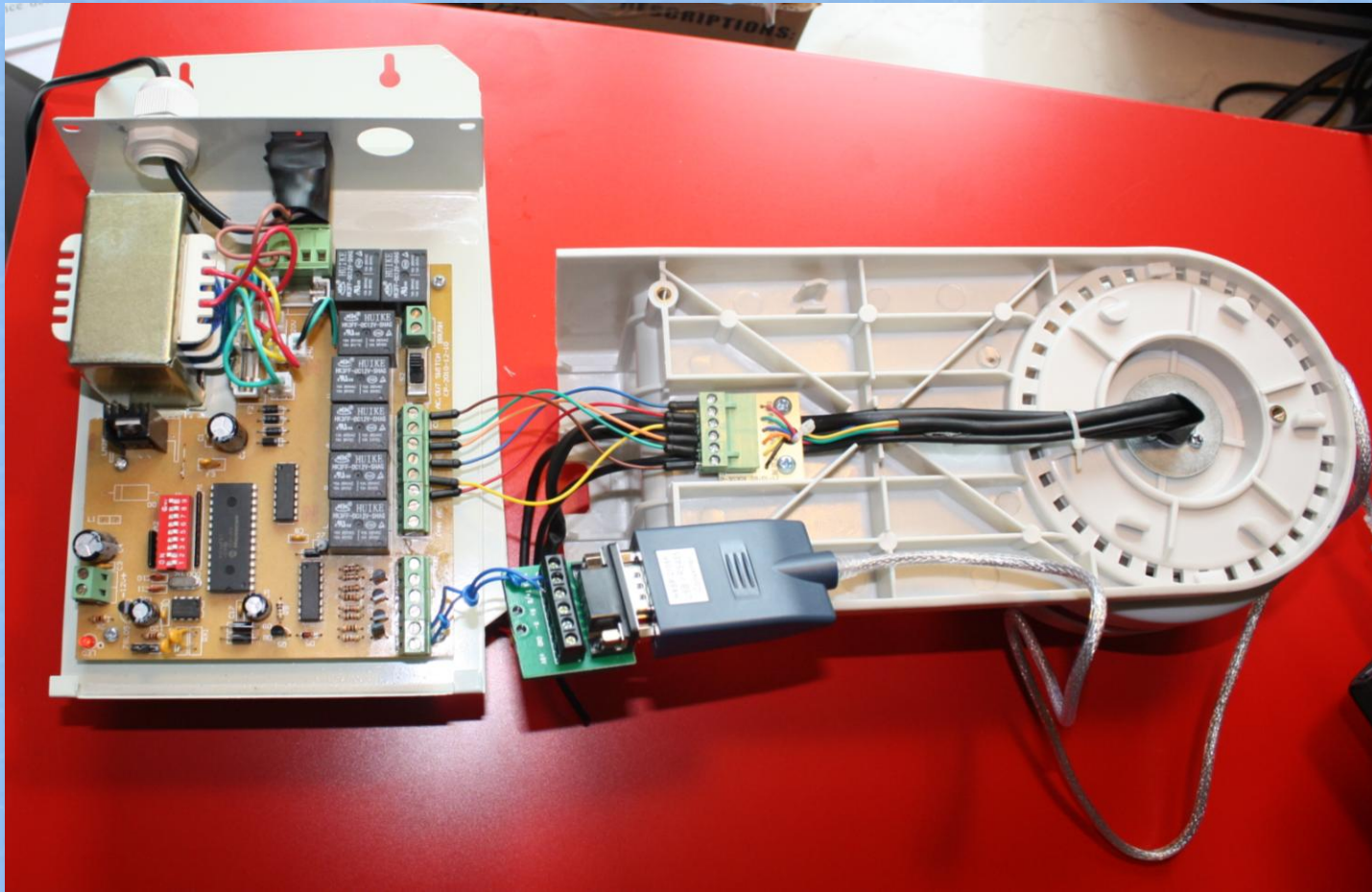
十二、常见故障分析及排除

故障现象	故障分析	故障排除
解码器通电时,电源指示灯不亮。	1. 无 220V 输入 2. 保险丝断 3. 变压器连接插头松动	1. 开关是否置 ON 状态 2. 更换保险丝 3. 重新接好变压器插头
控制解码器无响应。	1. 通讯线连接错误 2. 波特率设置不正确 3. 地址设置不正确	1. 正确接线 2. 正确设置波特率 3. 正确设置地址
控制解码器有时响应,有时不响应。	1. 485 通讯线远端未接 120Ω 负载电阻跳线 2. 通讯采用星形方式连接	1. 最近端解码器跳接 120Ω 跳线,接通 120Ω 负载电阻 2. 改用多路 232/485 驱动器
近期监控正常,远近期或同时多台解码器工作不正常。	232/485 转换设备驱动能力不够。	1. 更换标准的 232/485 转换设备(选用有源的) 2. 选用多路 232/485 驱动器
无摄像机电源输出。	保险丝 1.5A 断	更换保险丝

十三、注意事项

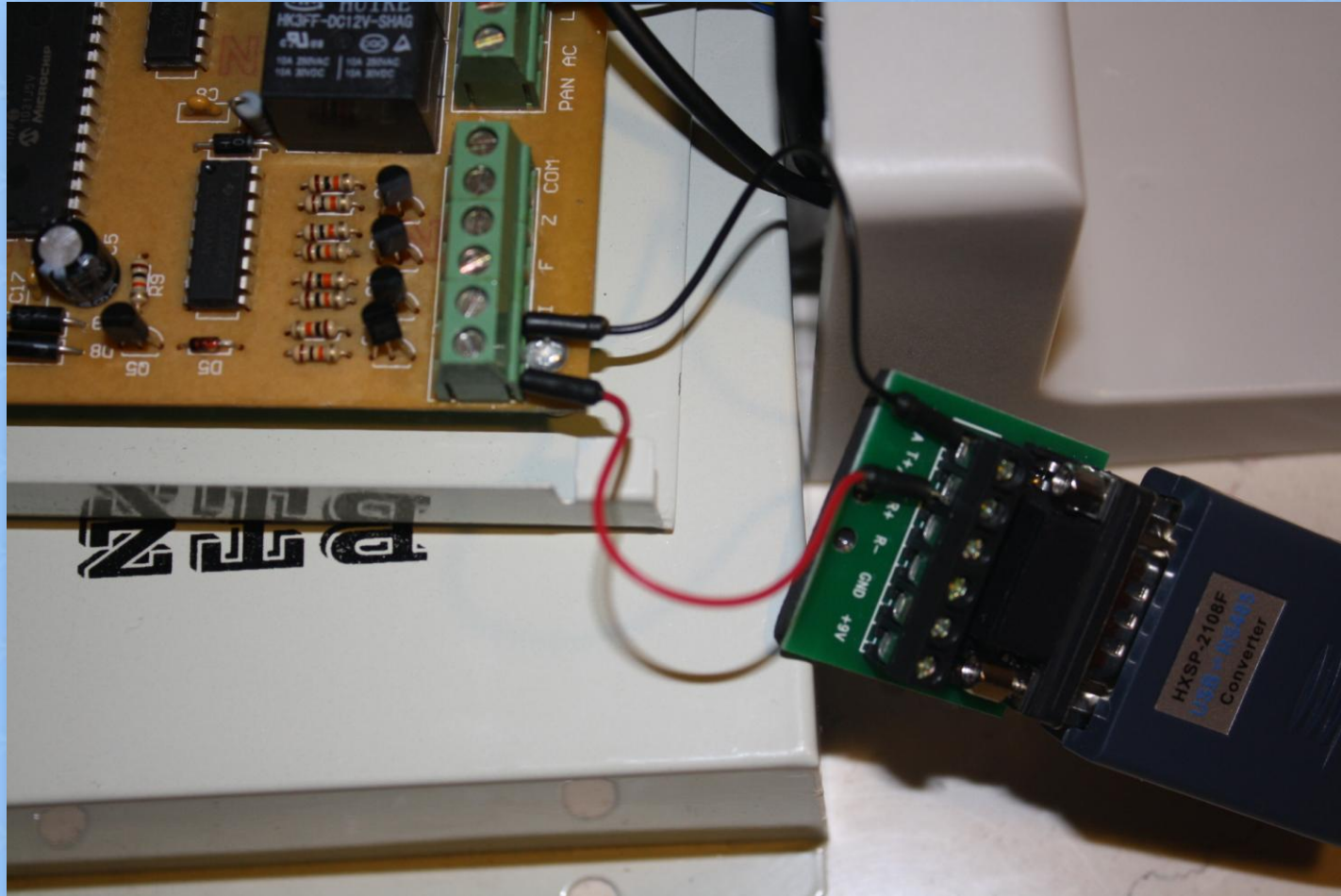
- * 切勿私自拆卸更换器件。
- * 为防止起火或触电,切勿将本机设置于有水或较潮湿的地方。
- * 插电源,请仔细核对解码器输出电压与外面云台等器件电压是否一致。
- * 出厂云台电压设定在 24V/AC,镜头电压设定 12V/DC。
- * 为了安全起见,请在安装解码器或更换保险管时,应将电源切断,并按配备保险丝更换。

Commercial CCTV Decoder



- Power In: 240 VAC
- Power Out: 24 VAC
- Input: 2-wire RS-485
- Output: 6-wires
 - Ground
 - Common
 - Up
 - Down
 - Left
 - Right
- 12VDC Available (not used)
- Camera Controls (not used)
- HK\$350

Hardware Interface: RS-485 (2-Wires)



- RS-485, is a standard defining the electrical characteristics of drivers and receivers for use in balanced digital multipoint systems.
- Security cameras, keypads, thermostats, others.
- EIA-485 only specifies electrical characteristics of the driver and the receiver. It does not specify or recommend any communications protocol.
- Need USB RS-232 (serial port) to RS-485 adapter Hk\$200

Communications Protocol: PELCO D

Pelco-D consists of 7 hexadecimal bytes (all byte data used in this page are in Hexadecimal format unless otherwise noted)

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
Sync	Camera Address	Command 1	Command 2	Data 1	Data 2	Checksum

- Byte 1 (Sync) - the synchronization byte, fixed to FF
- Byte 2 (Camera Address) - logical address of the camera being controlled (Address 1 is 01)
- Byte 3 & 4 (Command 1 and 2) are shown below
- Byte 5 (Data 1) - pan speed, range from 00 (stop) to 3F (high speed) and FF for "turbo" speed (the maximum pan speed that the device can go)
- Byte 6 (Data 2) - tilt speed, range from 00 (stop) to 3F (maximum speed)
- Byte 7 (Checksum) - sum of bytes (excluding the synchronization byte), then modulo 100 (Decimal code: 256)

Command 1 and 2 details

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Command 1	Sense	Reserved	Reserved	Auto / Manual Scan	Camera On/Off	Iris Close	Iris Open	Focus Near
Command 2	Focus Far	Zoom Wide	Zoom Tele	Tilt Down	Tilt Up	Pan Left	Pan Right	Fixed to 0

Example (Command 2):

Pan Left - 0 0 0 0 0 1 0 0, which equals to 04 (both hexadecimal and decimal)

Pelco-D is the popular PTZ camera control protocol used in the CCTV industry

Pelco P and D protocol implementation in C# (well documented, but doesn't work)

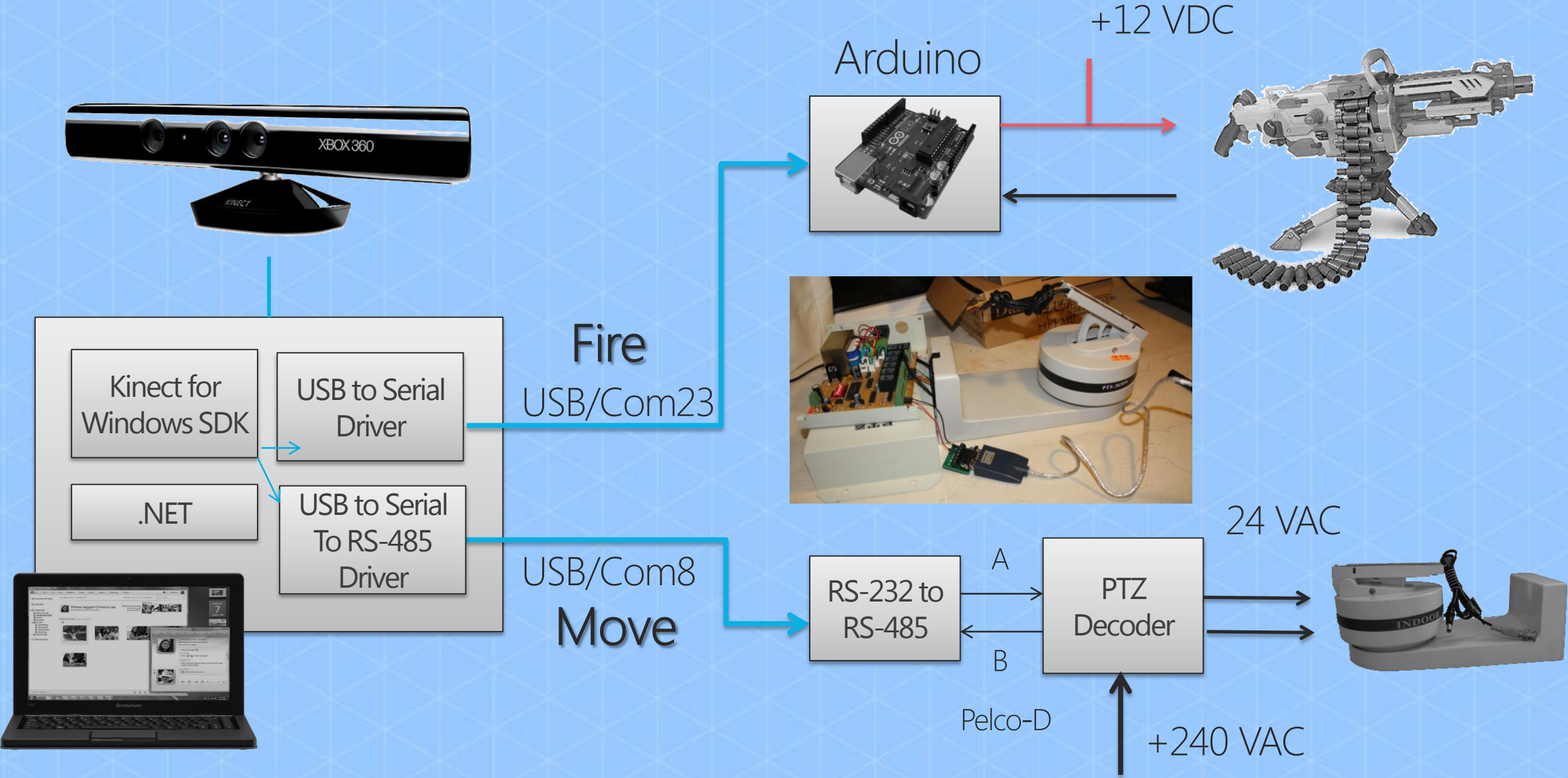
<http://www.codeproject.com/Articles/8034/Pelco-P-and-D-protocol-implementation-in-C>

The Nerf Blaster



- Foam darts
- Belt fed
- 9VDC
- Tripod
- Bad-ass

Kenerfinator Schematic



Demo

A Quick Look At The Code



Demo

The Kinerfinator



Problem #1: PTZ Motor Won't Work

- Mr. Fung explained hardware connections
- Got it home, didn't work
- Brought it back, we couldn't get it to work, suspected USB to RS-232 to RS-485 was faulty
- Mr. Fung got it working in his store
- I swapped wires ($A \rightarrow A, B \rightarrow B$) to ($A \rightarrow B, B \rightarrow A$) and it worked (??)—still don't know why

Problem #2: USB Connection Drops

- When motor was moving, USB connection spontaneously dropped (be-boop)
- Had to re-open serial connection to regain control
- Implemented vigorous debugging: exception handling, result checking, logging, couldn't trap the problem
- Assumed it was a power problem—too much or too little
- Got a powered USB hub—solved the problem

Problem #3: Nerf Gun Won't Shoot

- Simple circuit, simple program..
- When connected to Nerf Blaster....nothing
- Much late-nite research, hypothesis—too much “load”/current for the IC?
- Instead of one “switch” distributed load over 4 “switches”
- It worked

Resources: Hack N Mod

The image shows a screenshot of a web browser displaying the homepage of Hack N Mod. The browser's address bar shows the URL <http://hacknmod.com/>. The website header features the Hack N Mod logo, the tagline "Amazingly Cool Hacks, Mods, and Projects.", and navigation links for "Most Popular", "LED Projects", "HacknMod Store", and "Video Archive". A search bar is located below the header with the text "Search Hacks:" and a "Search!" button. The main content area is divided into two columns. The left column is titled "Featured Hacks" and contains four articles: "Email Text Messages for AT&T, Verizon, T-Mobile, Sprint, Virgin, & more", "How to Shutdown your Computer with a Cell Phone", "Make your own USB LCD controller", and "Download Google Chrome OS (Virtual Machine)". The right column is titled "Subscribe to HacknMod Updates" and includes links for RSS, Twitter (@HacknMod), and a project submission link. It also features a "11168 readers" badge and a "subscribe" button. At the bottom of the page, there is a large green checkmark and a partially visible article titled "DIY Back to the Future Hoverboard using Electromagnets".

http://hacknmod.com/

Hack N Mod - Amazingly C...


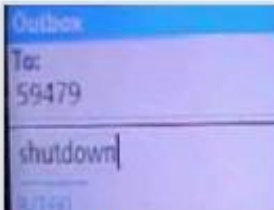


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iLiVid

DIY Back to the Future Hoverboard using Electromagnets

Who doesn't love the Back to the Future series and

Resources: lifehacker



The screenshot shows a browser window with the URL <http://lifehacker.com/>. The page features the 'lifehacker' logo in green, a 'TOP STORIES' button, and a 'LOGIN' link. The main content area displays a featured article titled 'Make Your Own Phone Stand with the Box Your Phone Came In and' by Alan Henry, dated February 28, 2012. The article includes a photo of a white iPhone on a black stand, a small white robot figurine, and a colorful cup. The article has 25 shares and 242 likes. To the right, there is a 'LATEST STORIES' section with two articles: 'ANDROID DOWNLOADS' (Meshin Recall Organizes Multiple Google Calendars and Evernote in One Elegant App) and 'DIY' (Make Your Own Phone Stand with the Box Your Phone Came In and Makedo Pins). The date 'MONDAY, FEBRUARY 27, 2012' is displayed at the bottom.

lifehacker

TOP STORIES

LOGIN

LATEST STORIES

TUESDAY, FEB 28, 2012

TIPS AND DOWNLOADS FOR GETTING THINGS DONE

DIY

Make Your Own Phone Stand with the Box Your Phone Came In and

BY ALAN HENRY

FEB 28, 2012 4:00 AM

Share +1 Like 25 242 1

ANDROID DOWNLOADS 8

Meshin Recall Organizes Multiple Google Calendars and Evernote in One Elegant App

DIY 242

Make Your Own Phone Stand with the Box Your Phone Came In and Makedo Pins

MONDAY, FEBRUARY 27, 2012

Resources: Silicon Republic



The image shows a screenshot of a web browser displaying the homepage of the Silicon Republic blog. The browser's address bar shows the URL <http://siliconrepublic.blogspot.com/>. The page features a dark background with a colorful geometric pattern on the left side. The main heading "Silicon Republic" is prominently displayed in white. Below the heading, there are navigation links for "Home" and "Project Portfolio". The date "MONDAY, MAY 9, 2011" is shown above the main article title "NIXIE TUBES (Part 1)", which is written in yellow. The article's introductory text discusses the author's recent purchase of six IN-14 nixie tubes from eBay and their initial thoughts on how to use them. On the right side of the page, there is a "BLOG ARCHIVE" section with a dropdown menu for the year "2011 (2)", which is expanded to show "May (1)" and "February (1)", with "NIXIE TUBES (Part 1)" listed under May. Below the archive is an "ABOUT ME" section.

http://siliconrepublic.blogspot.com/

Silicon Republic

分享 檢舉濫用情形 下一個網誌» 建立網誌 登

Silicon Republic

Home Project Portfolio

MONDAY, MAY 9, 2011

NIXIE TUBES (Part 1)

I just recently bought six IN-14 nixie tubes from e-bay and was immediately faced with the with the thought: "How am I gonna make these work?" Looking up over the internet, I found rather expensive nixie tube clock controllers and custom nixie tube controller boards. The biggest problem with them is the large pin-count and near 175 V needed to power them. After lots of time searching the net for nixie tube circuits I came up with an idea of a

BLOG ARCHIVE

- ▼ 2011 (2)
 - ▼ May (1)
 - NIXIE TUBES (Part 1)
 - February (1)
- 2010 (2)

ABOUT ME

Lesson Learned

- A voltmeter is critical. An oscilloscope is nice.
- Code is easy, hardware is hard—especially power
- Search is your friend—forums, communities, search
- Investing in error handling now, saves you time later
- Build subsystems separately, test individually, then integrate last
- Debugging: Hypothesis and experiment, go forward or go back
- Persistence and commitment—you have to love problem solving



Coding4Fun

Ryan Chan
Microsoft Corporation



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Coding4Fun

Bernard Fung
Developer Evangelist
Microsoft Corporation



Microsoft®
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Developing a Windows Phone game under 15 minutes

Bernard Fung
Developer Evangelist
Microsoft Corporation



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Agenda

Understanding the Tools

Visual Studio

XNA

Game2D

Developing the Game

Bouncing balls and tiles

Background...

Windows Phone SDK

http://create.msdn.com/en-us/home/getting_started

Windows Phone Emulator

Extensions for XNA Game Studio 4.0

XNA

DirectX – C# library for graphics programming

XNA Framework – APIs and .NET libraries

XNA Game Studio – VS plugins, content pipeline, deployment features

Game2D Engine

Streamlines the process of making 2D action games

Tile based environments, map collision, object collision, simple physics,

Easy particle effects, sound and music

Random int/float generator

Steps...

■ Setting up

- Downloading Game2D.dll
- Opening VS and create project
 - XNA Game Studio 4.0 -> Windows Phone Game (4.0)
- Importing required resources
 - Saving "ball1.png", "block1.png"
 - Adding content
 - Importing the Game2D Library

■ Coding

- Creating a game layer
- Adding a ball
- Moving the ball
- Adding wall collision
- Adding gravity to the ball movement
- Adding tiles and more balls

Microsoft[®]