



Make the RCX Great Again

INTRODUCTION: MAKE THE RCX GREAT AGAIN



RCX PROGRAMMING LESSON

Using the RCX in FLL 2018-19

INTO ORBIT™

- There is a rumor that to make the *INTO ORBIT* FLL season more authentic, only technology similar to that which was used in the original Apollo missions can be used.
- Therefore, only the RCX can be used, not the EV3 nor even NXT.
- It is in your best interest to learn the RCX in the off-season.



Why the RCX?



- You probably have some lying around in your robotics lab. Why let them sit there in the dust?
- If you don't have some, they are inexpensive to purchase. Imagine how many RCX sets you can buy for the price of one EV3 set!
- Keep it Simple Silly (KISS). There is not need for the LCD screen, gyro sensors, extra ports.
- Infrared is way better technology than bluetooth or USB.
- It's the 20th anniversary of MINDSTORMS! Time to go retro and bring back 1998 MINDSTORMS and some old computers back to life.
- Yellow is by far the best color. It is the color of the Sun and brings life to people on Earth.
- It really is the best of the three MINDSTORMS systems. So, why wouldn't you.



Lesson Objectives

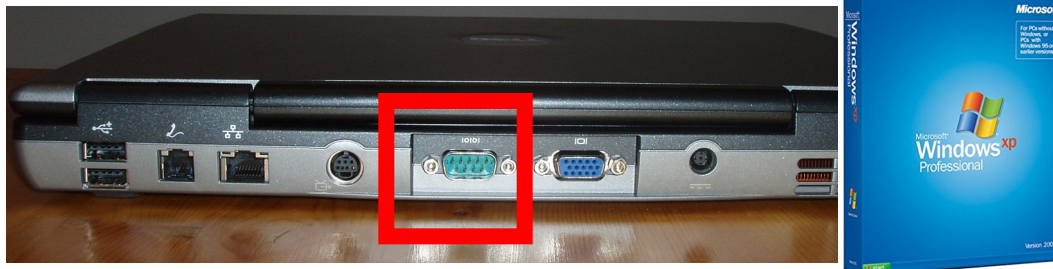
1. Revive your old Windows XP PC
2. Install Robot Invention System 2.0

Get your RCX Out of the Basement

For this lesson you will need the following:

1. RCX Brick (1.0, 1.5, or 2.0) from the Robot Invention System Set
2. Serial IR Tower with cable
3. Dust off your Laptop/PC with a Serial Port
4. Windows XP install disc
5. CD image of RIS 2.0 from <https://www.mediafire.com/folder/ohsruj4zmjy9g#718o6673jhpn9>
6. You may have to buy these off eBay

Note: you probably should install Firefox (a modern browser) because IE6 won't download these files, because it is too antiquated.



Install Windows XP on your PC (If not done so already)!

- Everyone knows that Windows XP is superior so we recommend you install it

- If you prefer, Windows 98SE or ME are also recommended by LEGO® and Microsoft. You can get a free copy at <https://winworldpc.com/home>

- Everyone loves using outdated OS's. 3% of the market still uses them.

- Insert the CD and follow the install instructions, wiping out all your existing data on your hard drive!

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Windows XP Professional Setup

The following list shows the existing partitions and
unpartitioned space on this computer.

Use the UP and DOWN ARROW keys to select an item in the list.

• To set up Windows XP on the selected item, press ENTER.
• To create a partition in the unpartitioned space, press C.
• To delete the selected partition, press D.

130552 MB Disk 0 at Id 0 on bus 0 on atapi [MBR]
E: Partition1 [Unknown]          200 MB < 200 MB free>
F: Partition2 [Unknown]        102400 MB < 102400 MB free>
  Unpartitioned space           128 MB
C: Partition3 [Unknown]        27824 MB < 27823 MB free>

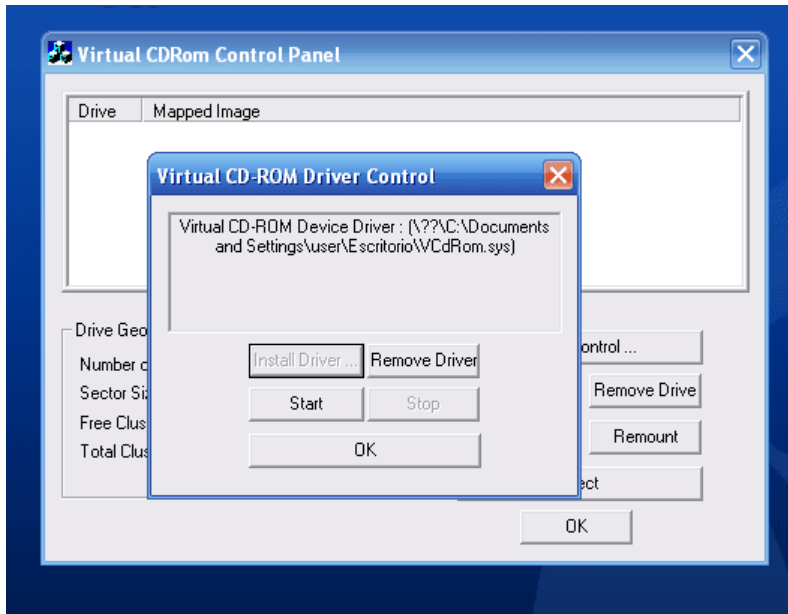
ENTER=Install  D=Delete Partition  F3=Quit
```

Get a ISO Reader for your new Windows XP PC

- Download the file:
<https://www.microsoft.com/en-us/download/details.aspx?id=38780>

- Use it to mount the ISO file you downloaded for RIS 2.0

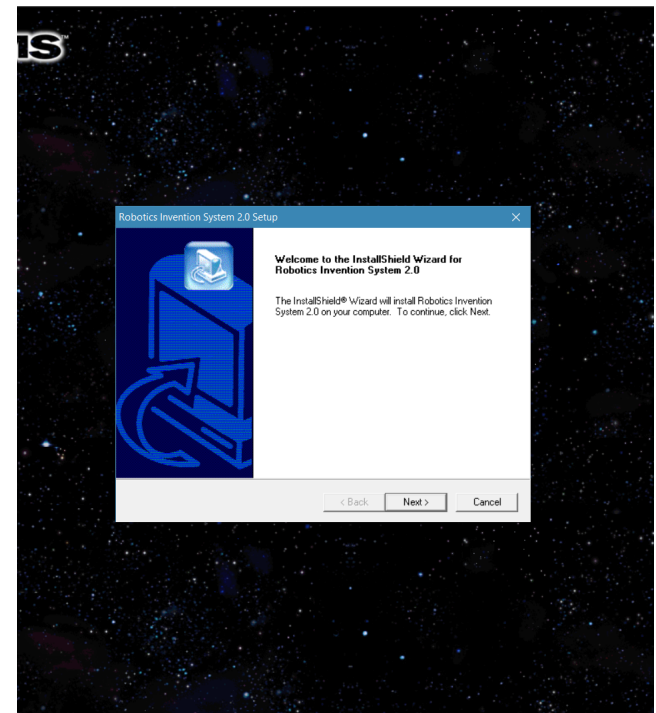
- You will need to “install driver” in the panel first



INSTALL RIS 2.0

- Run Setup.exe in the new drive (mounted iso) that is found in Windows Explorer
- Follow the instructions to install!!!

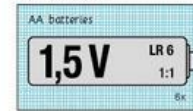
layout.bin	1/16/2008 4:45 AM	BIN File	1 KB
logobloc.ini	1/16/2008 4:45 AM	Configuration setti...	1 KB
LTower.cat	1/16/2008 4:45 AM	Security Catalog	1 KB
LTower.chm	1/16/2008 4:45 AM	Compiled HTML H...	21 KB
LTower.cpl	1/16/2008 4:45 AM	Control panel item	92 KB
LTower.inf	1/16/2008 4:45 AM	Setup Information	4 KB
LTower.sys	1/16/2008 4:45 AM	System file	37 KB
LTSetup.dll	1/16/2008 4:45 AM	Application extens...	48 KB
probe.exe	1/16/2008 4:45 AM	Application	36 KB
Probe.ini	1/16/2008 4:45 AM	Configuration setti...	1 KB
Probe.ist	1/16/2008 4:45 AM	IST File	1 KB
ReadMe.txt	1/16/2008 4:45 AM	Text Document	24 KB
ReinstallUsbTower.exe	1/16/2008 4:45 AM	Application	44 KB
RIS2.ico	1/16/2008 4:45 AM	Icon	4 KB
ris2std.ini	1/16/2008 4:45 AM	Configuration setti...	1 KB
setup.bmp	1/16/2008 4:45 AM	BMP File	69 KB
Setup.exe	1/16/2008 4:45 AM	Application	53 KB
Setup.ini	1/16/2008 4:45 AM	Configuration setti...	1 KB
setup.inx	1/16/2008 4:45 AM	INX File	153 KB
TowerApi.dll	1/16/2008 4:45 AM	Application extens...	64 KB
Vision Command Updater.exe	1/16/2008 4:45 AM	Application	3,655 KB



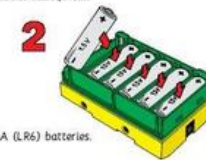
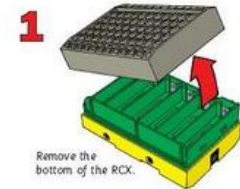
Setup RIS 2.0

- Follow the onscreen instructions.
- Plug in the IR tower with a 9V battery
- Turn on the RCX and update the firmware
- If you are lucky, everything will work perfectly!
- Remember to put 6 AA's into your RCX!

Battery installation for the RCX



Instructions for use of battery box:
Never mix different types of batteries or old and new batteries in one battery box. Always remove the batteries from the battery box for long-term storage or if they have reached the end of their life. Liquid leaking from dead batteries will damage the battery box. Rechargeable batteries can be used but power may be reduced. Do not recharge the batteries in the battery box. Rechargeable batteries are only to be charged under adult supervision.



Success At Last!

- Now, you have your fully functioning programming environment.
- Download programs to your RCX through an extremely slow IR tower (learn patience, young Padawan)!
- Have Fun!



IMPORTANT NOTICE

After playing around with the RCX, we have found it to be superior to the newer platforms. Therefore, from now on, we will only be making lessons for the RCX System

CREDITS

- Author: Sanjay and Arvind Seshan
- More lessons are available at [RCX Lessons.com](https://rcxlessons.com)



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