

## 1. Product specifications



### A. Basic Hardware Specifications

Basic hardware specifications for the CM-9.04 (types A and B).

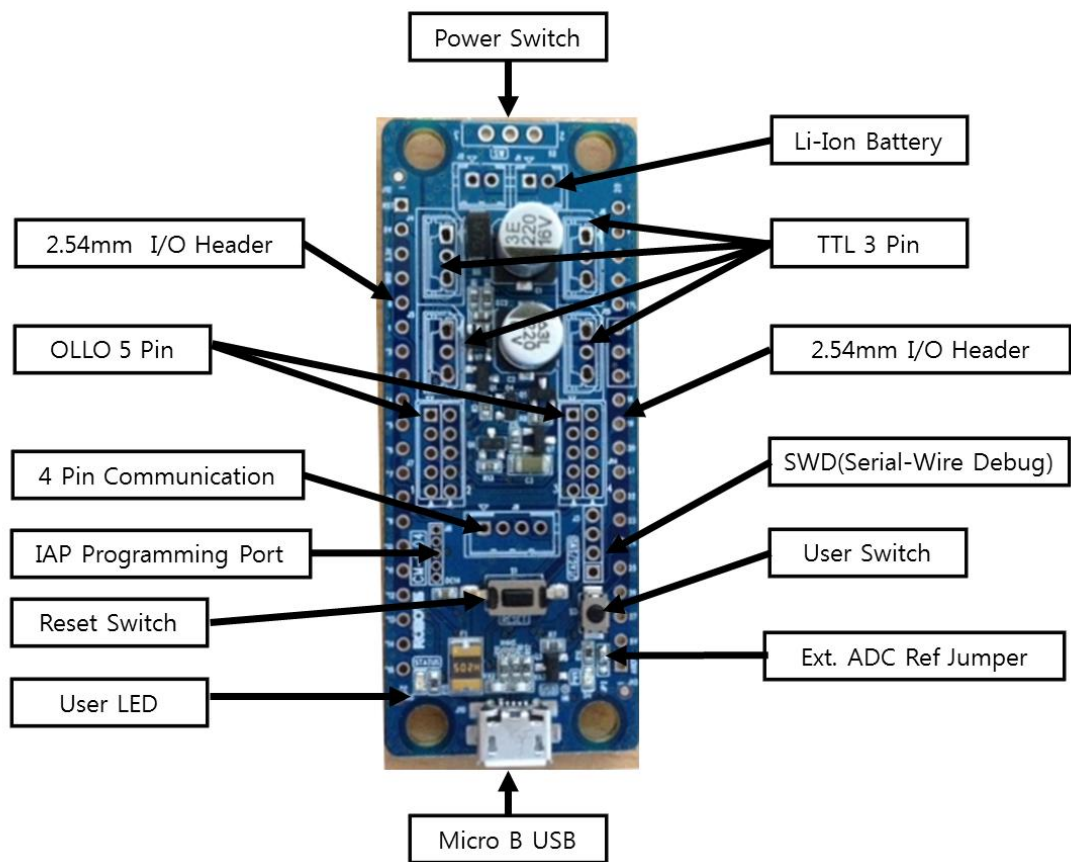
<b>CM-9.04</b>	
<b>CPU</b>	STM32F103CB (ARM Cortex-M3)
<b>Op Voltage</b>	5V~16V( USB 5V, DXL 12V, 7.4V)
<b>I/O</b>	GPIO 26
<b>Timer</b>	8
<b>Analog In(ADC)</b>	10(12bit)
<b>Analog Out(DAC)</b>	X
<b>Flash</b>	128 Kbytes
<b>SRAM</b>	20 Kbytes
<b>Clock</b>	72Mhz(9 X 8Mhz)
<b>USB</b>	1(2.0 FS)
<b>CAN</b>	1
<b>USART</b>	3
<b>SPI</b>	2
<b>I2C(TWI)</b>	2
<b>Debug</b>	JTAG & SWD
<b>DMA</b>	7ch
<b>3 Pin TTL</b>	4(AX12 Compatible 3Pin)
<b>4 Pin RS485</b>	X
<b>Mini 3Pin TTL</b>	4(AX12 Compatible 3Pin)
<b>OLLO 5PIN</b>	4
<b>External ADC Ref</b>	YES(Maximum 5V)
<b>DC Jack</b>	NO
<b>S/W</b>	ROBOTIS CM9
<b>SIZE</b>	27mm X 66.5 mm
<b>Price</b>	Around 10\$

## B. A/B Type

The CM-9.04 A and B types differ on the mounted connectors. For type A simply solder the desired connectors. For type B all connector are already pre-soldered so there is no need solder additional connectors.

	Type A	Type B
Picture		
20Pin Header	X	2
Power Switch	X	1
2Pin Battery(Li-Ion)	2	2
JTAG	X	1
5Pin Sensor	4	4
TTL 3 Pin	1	4
4Pin Comm.	X	1

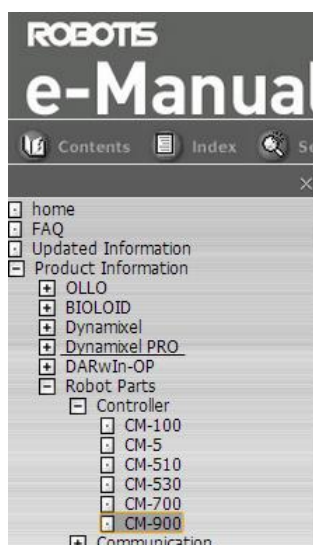
## 2. CM-9.04 Layout



## 3. Downloading CM-9 Software and USB driver Installation

### A. Download CM-9 software

Go to [support.robotis.com](http://support.robotis.com) and expand the node tree as shown below.



Download the package according to the computer's OS; then decompress the package.

## Download CM-900 software

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The CM-900 uses the ROBOTIS CM-9 developmental environment to improve user experience.

[Windows XP, Vista, 7, 8]

[ROBOTIS\\_CM9-v1.0.0-windows.zip](#)

[Mac OS X] Tested in OS X 10.6.8

[ROBOTIS\\_CM9-v1.0.0-macosx.dmg](#)

[Linux 64bit] Tested in Ubuntu 12.04

[ROBOTIS\\_CM9-v1.0.0-linux64.tar.gz](#)

[Linux 32bit] Tested in Ubuntu 10.10

[ROBOTIS\\_CM9-v1.0.0-linux32.tar.gz](#)

## B. USB driver installation

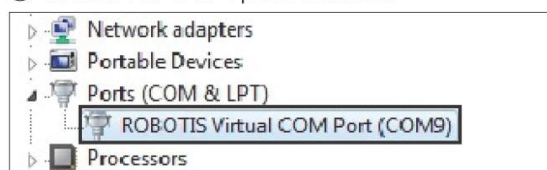
- There is no need to install drivers for Linux and Mac OS.
- Windows 8 startup settings → disable driver signature enforcement

① Driver installation ready after the CM-9.04 is connected to the PC via USB cable

② Choose ROBOTIS\drivers directory ③ Choose “install this driver software anyways”

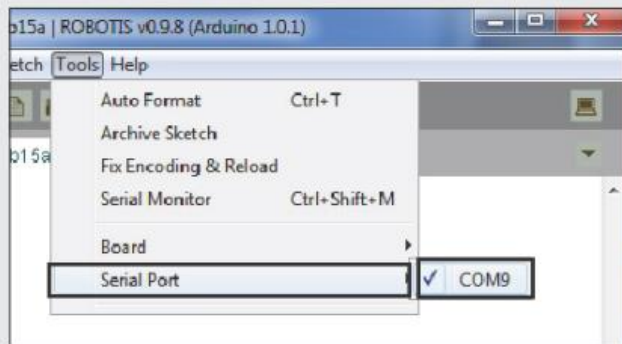


④ Check for COM port number

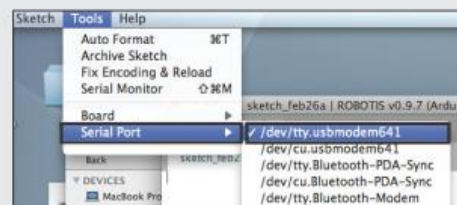


#### 4. How to use the CM-9 Software

- ① Connect the **CM-9.04** to the PC via USB cable
- ② Double click on ROBOTIS CM-9.exe to start program
- ③ Go to “Tools”->”Serial Port” and select the correct port number (refer to Windows Device Manager)

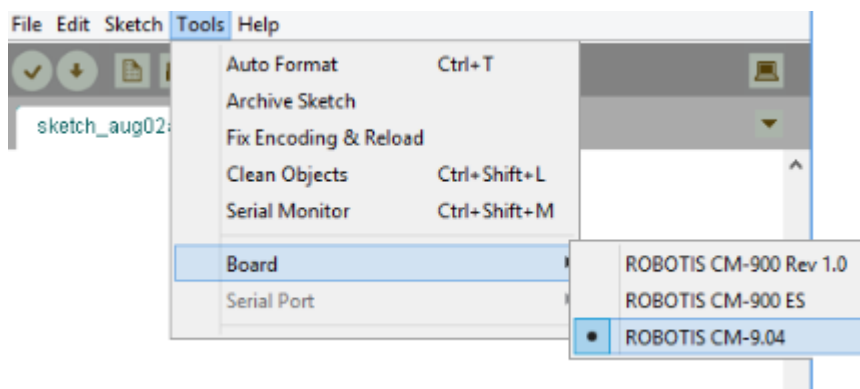


-Linux : Select the '/dev/ttyACMx'

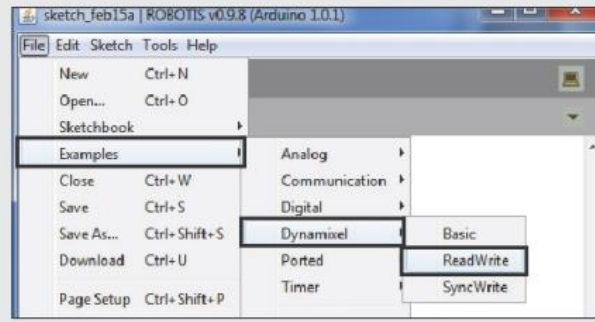


-Mac OS X : Select the '/dev/tty.usbmodemXXX'

- ④ Select the corresponding hardware version

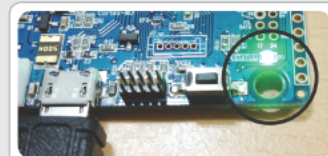
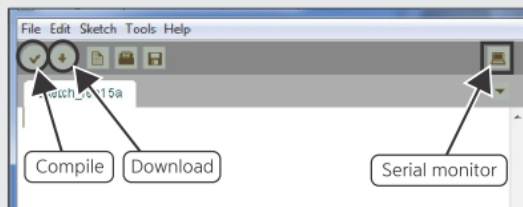


⑤ Pick any example



⑥ Choose 1 of the 2 buttons

- Check compilation button
- Download compilation button → flash download
- The examples are read-only



The LED remains on during download

⑦ Check USB data via serial monitor

