



에이디반도체

Touch IC Market Leader

IC Eval. Kit MCU B/D User Guide

2020. 12. 24 Rev.5
Application 1 Team
Park Byoung Bae

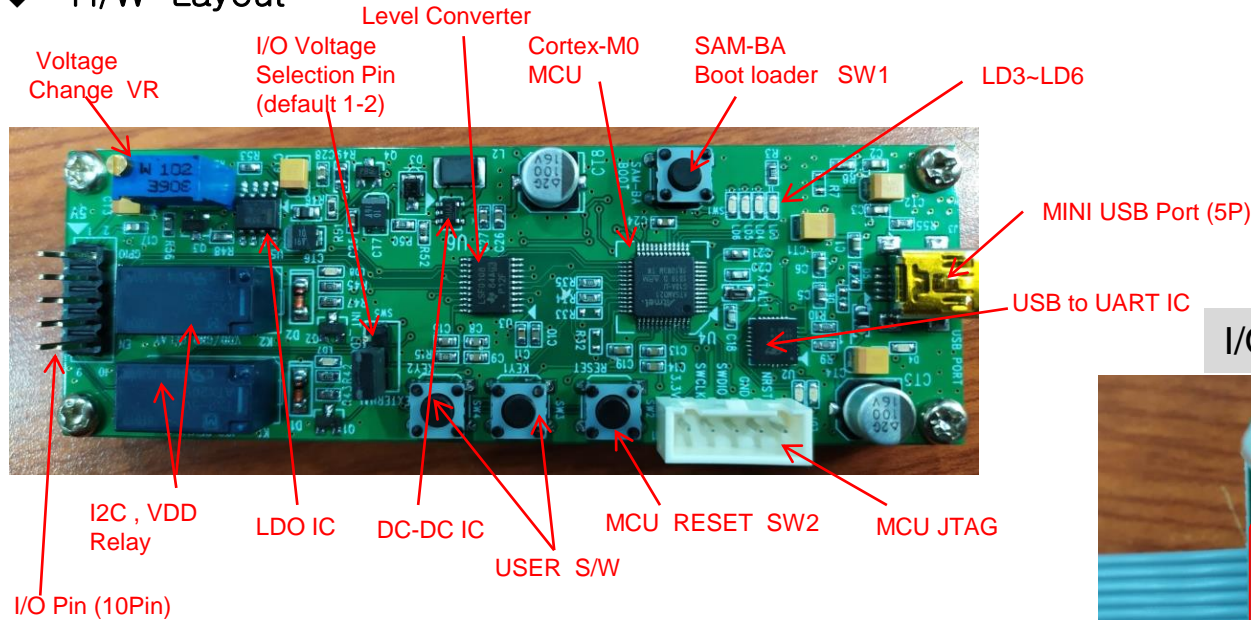
작 성	팀 장	상무	대표이사

AD Semiconductor

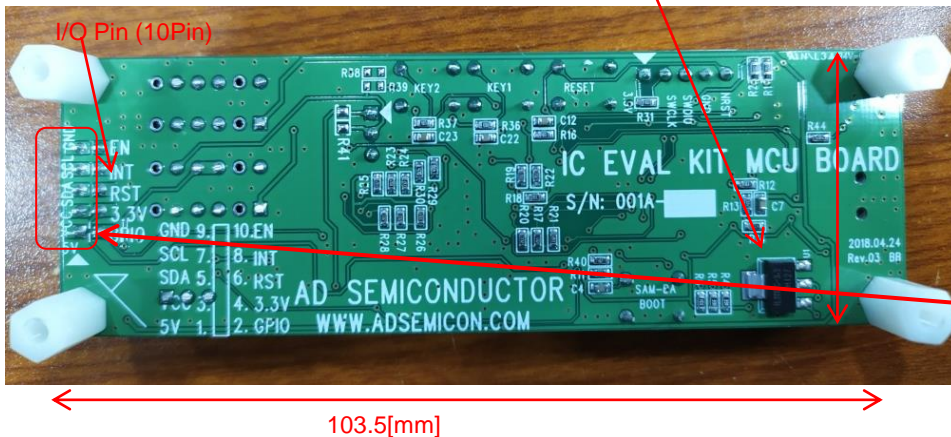
www.adsemicon.com

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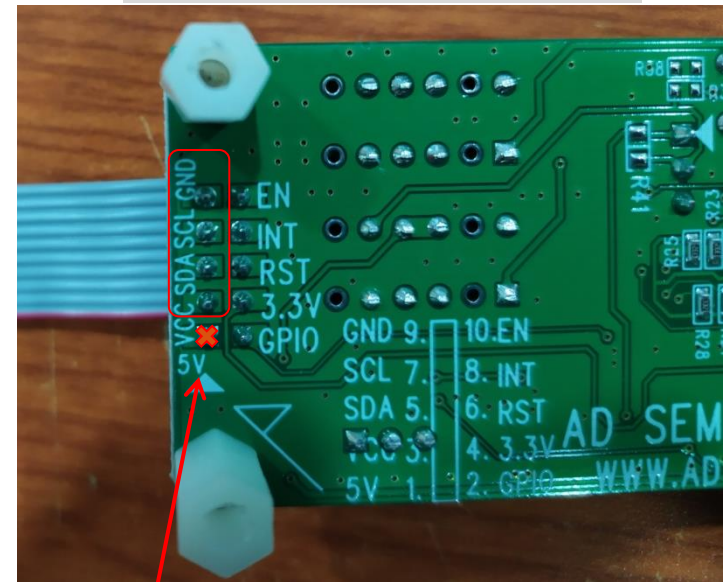
◆ H/W Layout



LDO (.3.3V)
(USB chip, MCU, Level Converter IC)



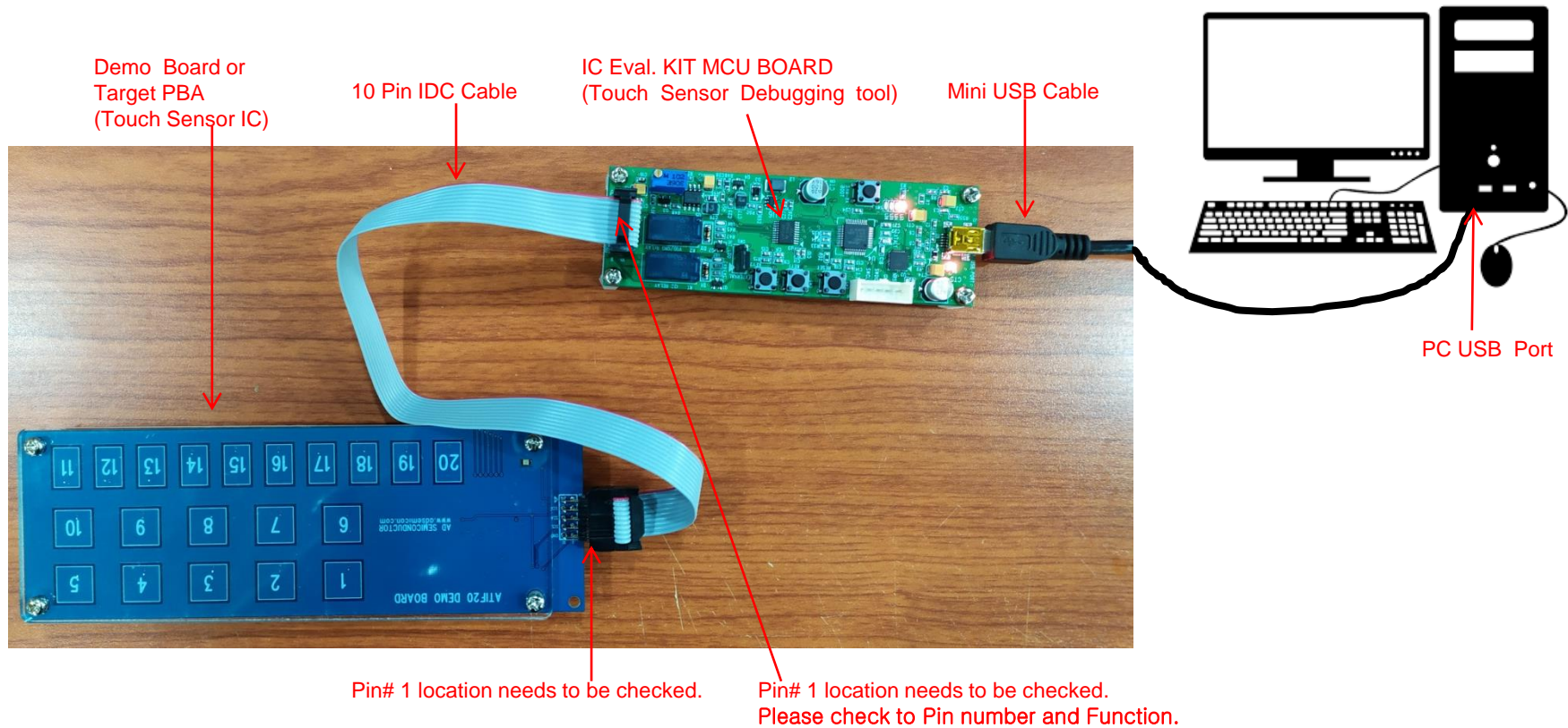
I/O Connector (Bottom View)



PIN 1:5V Output - Do not Connect
PIN 3:VDD Output (Supply to IC & PBA)
PIN 5:SDA
PIN 7:SCL
PIN 9:GND

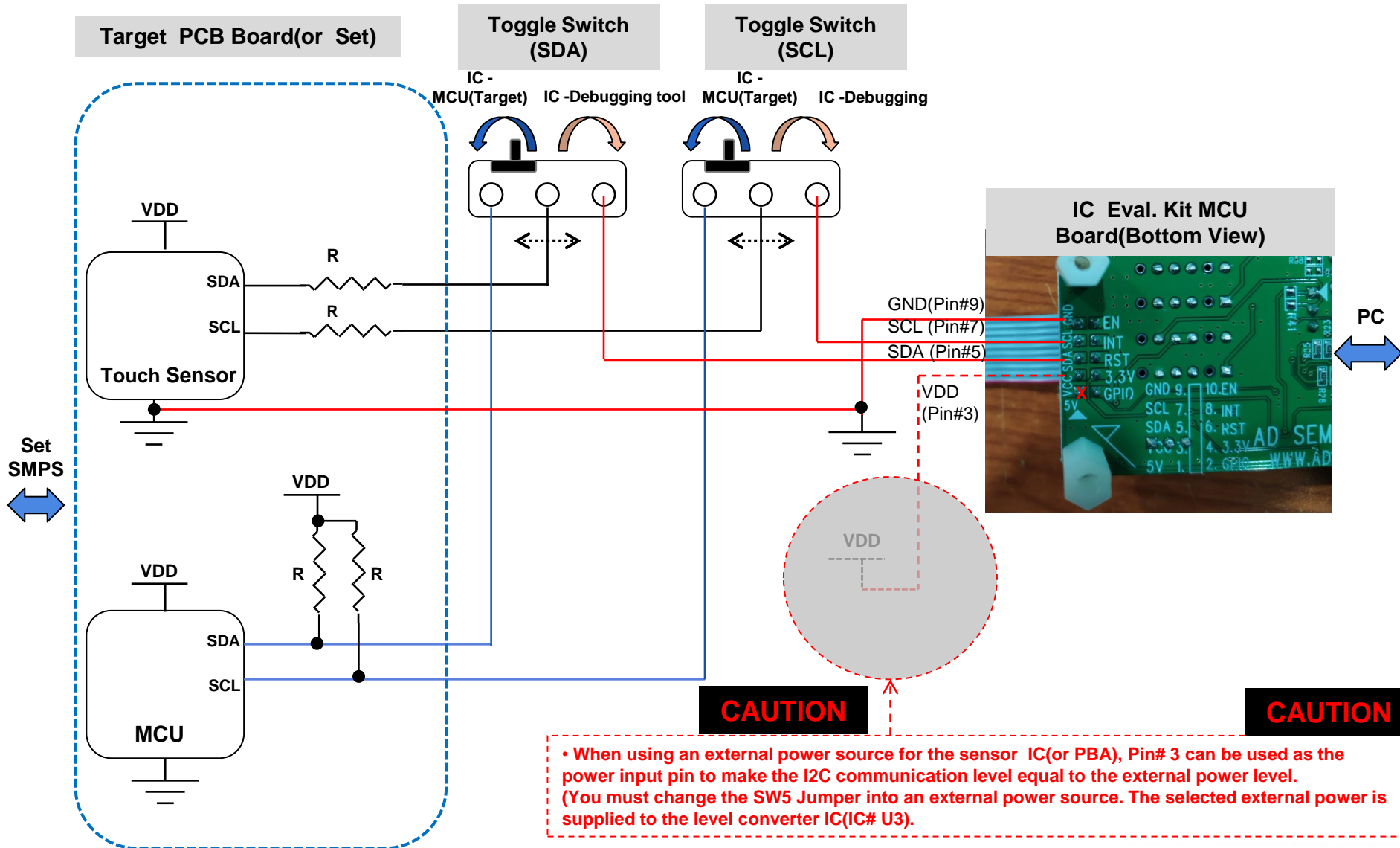
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◆ H/W Setup (IC Demo Board)



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◆ H/W Setup Example (Touch Sensor IC Debugging)



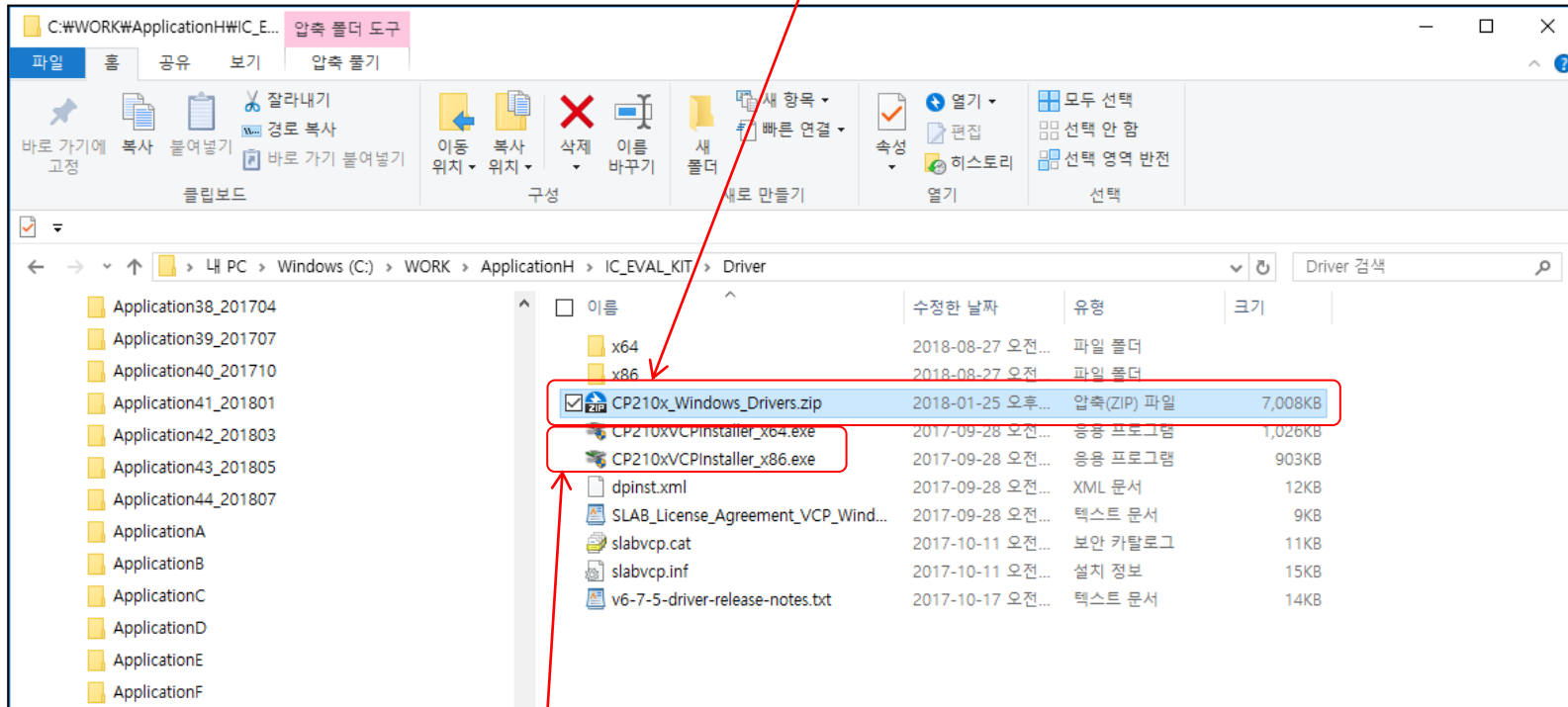
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◆ Windows driver Install guide for IC Eval. Kit MCU Board

1, Connect IC Eval. KIT MCU Board to PC using USB Cable.

2, Unzip the file to a temporary directory.

- Driver S/W (Zip or Exe file)
- Depending on the driver and PC OS Version filename is different.



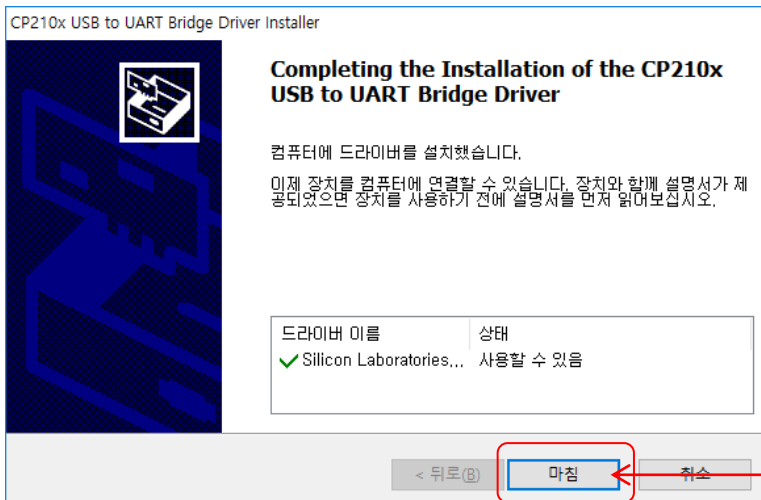
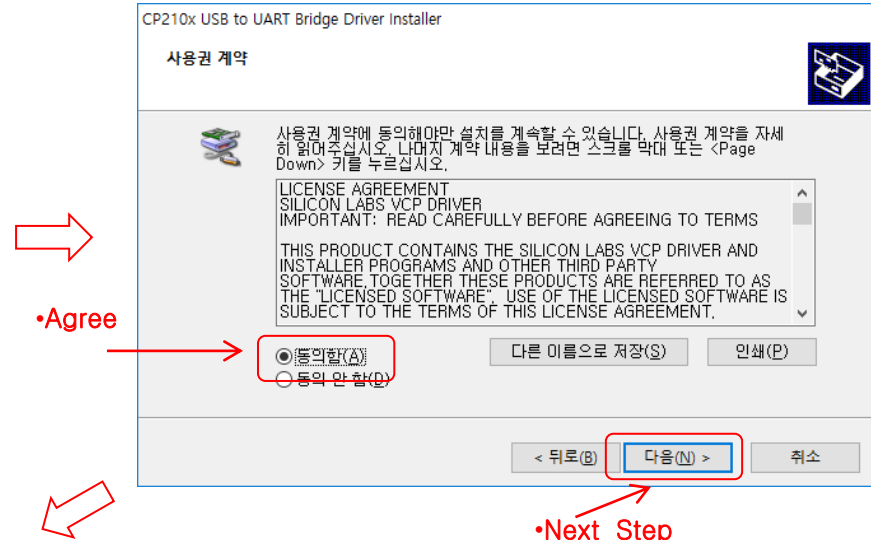
- 32bit Windows = file name ~_x86
- 64bit Windows = file name ~_x64

3, After extracting, select the file suitable for Windows version and start Driver install.

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◆ Windows driver Install guide for IC Eval. Kit MCU Board

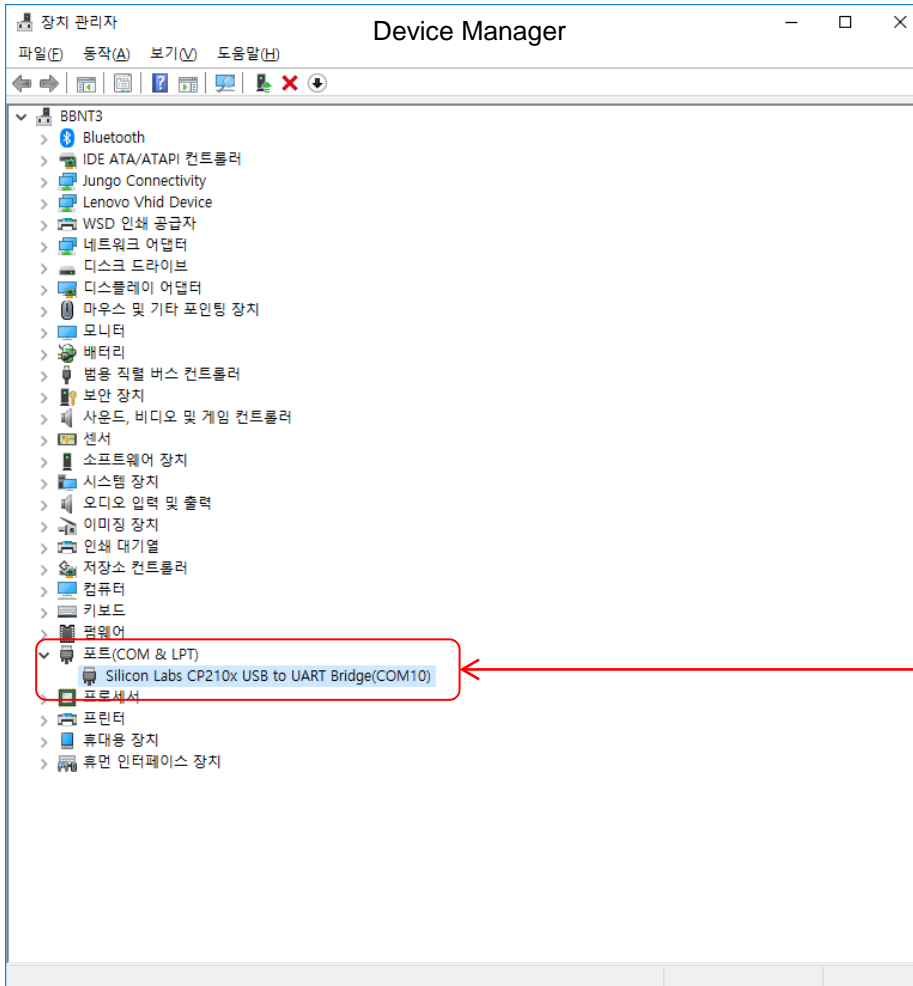
4, start install



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◆ Windows driver Install guide for IC Eval. Kit MCU Board

5, Driver install finish, Go to Windows START Menu -> Device Manager -> Port (COM & LPT) -> Silicon Lab CP210x ~ COM Port (COMx)



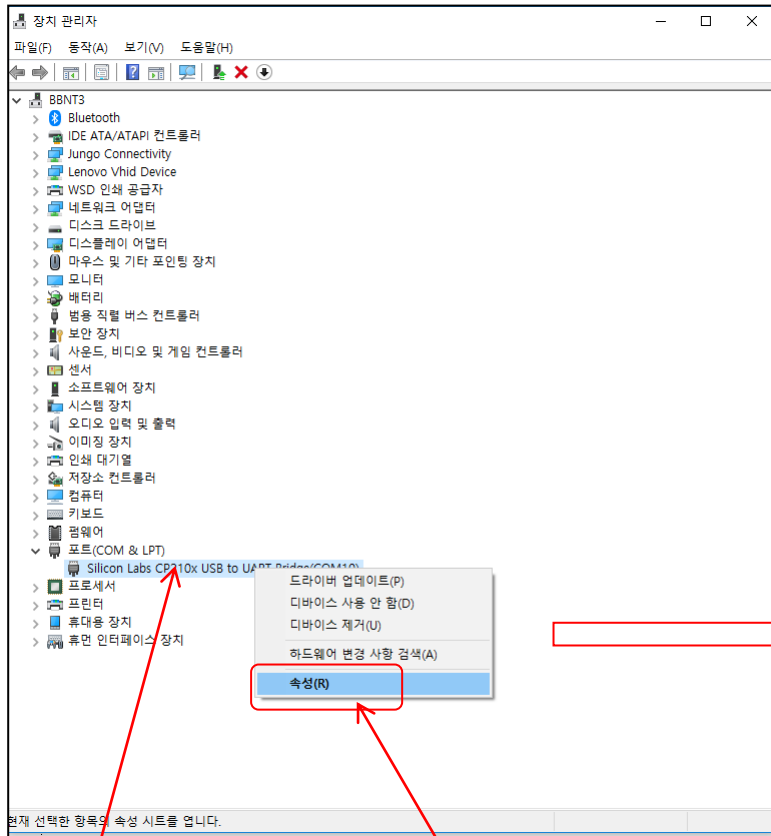
- MCU Board is recognized as COM Port.
- COM port number can be different for each computer.

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◆ Windows driver Install guide for IC Eval. Kit MCU Board

6, Right click the COM Port. -> Properties Menu -> Properties windows -> setting port -> speed = 115200bps ->OK

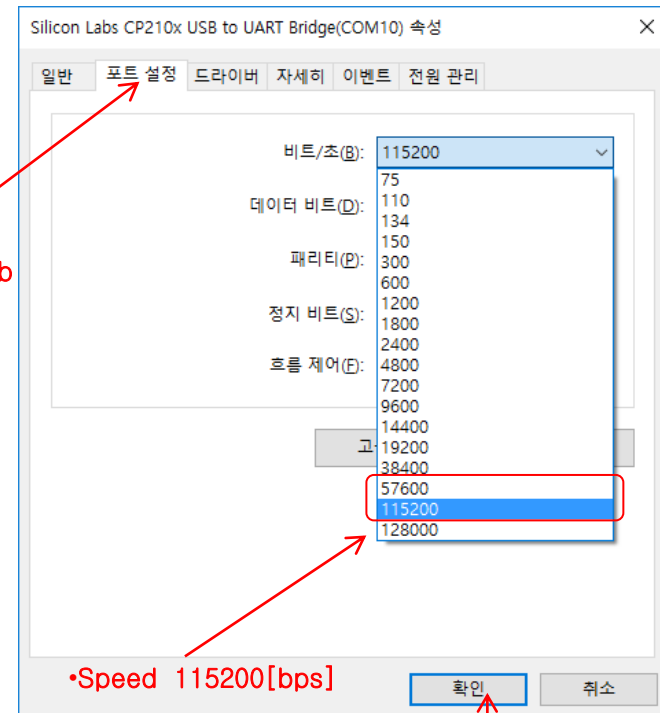
7, Driver installation complete, Run the PC UI PGM of the Touch Sensor IC.



• Right click the COM Port

• Properties -> Properties Windwos

• Port
Setting Tab



•Speed 115200[bps]

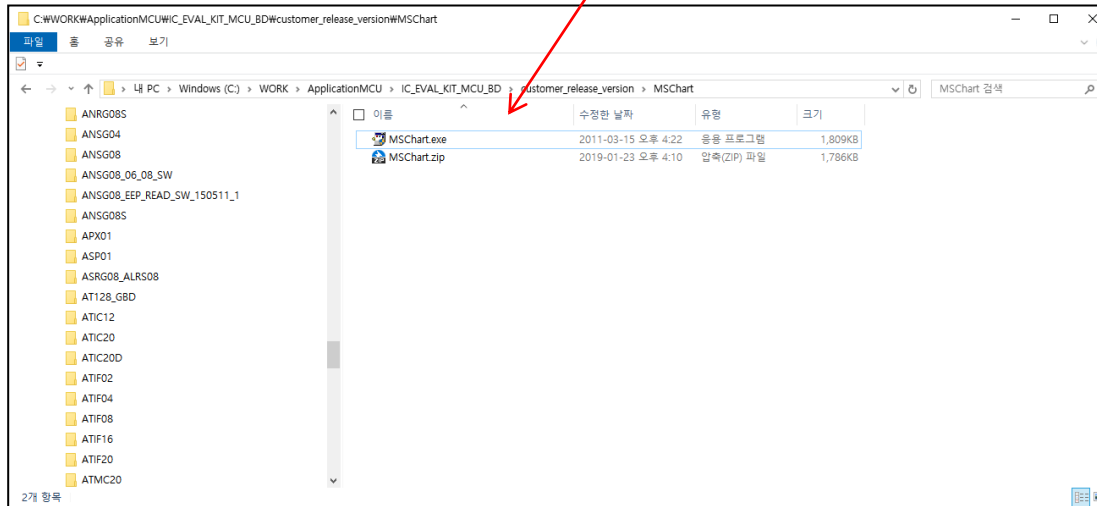
• OK

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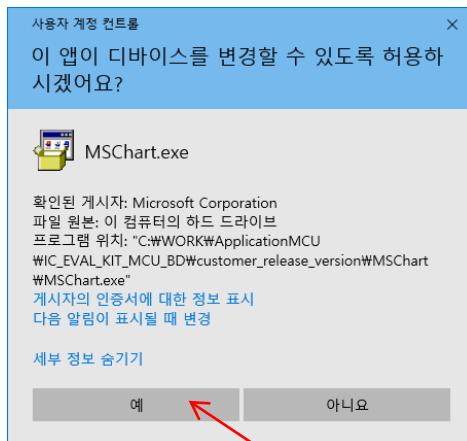
◆ MS Chart install (Installation may not be necessary depending on the PC UI)

- 1, unzip to the MSChart.zip file.
- 2, double Click MSChart.exe

• MSChart install program



- 3, Select 'YES' when security related messages occur.

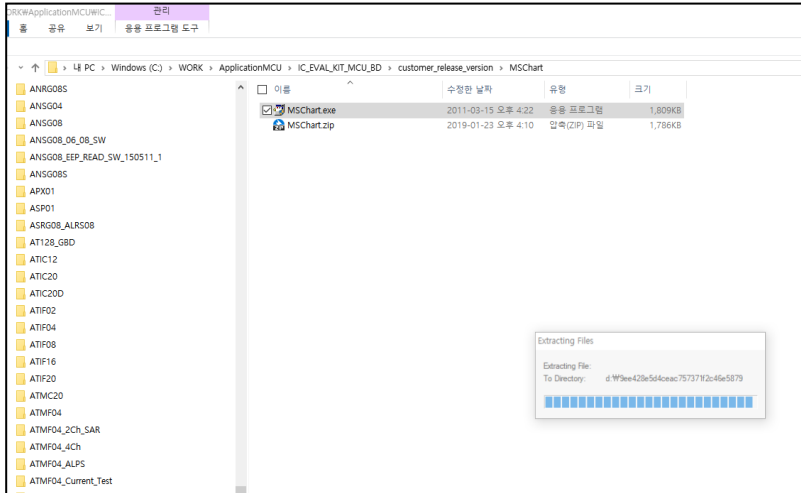


• YES (OK, Agree)

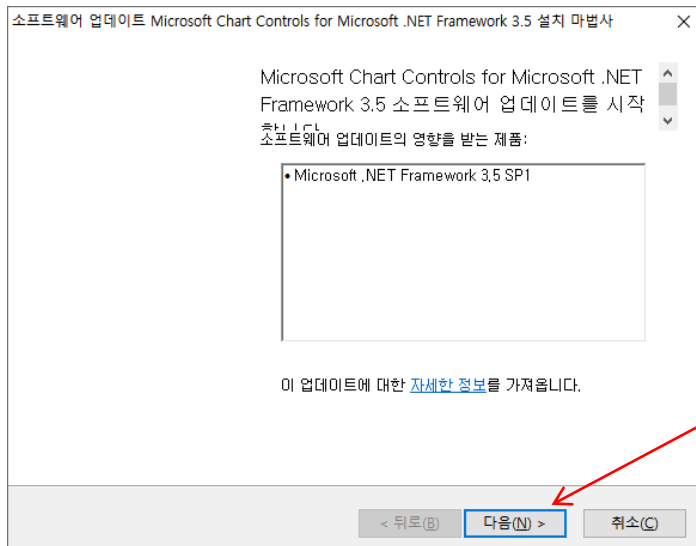
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◆ MS Chart install (Installation may not be necessary depending on the PC UI)

4, It will automatically uncompress and the installation window will appear.



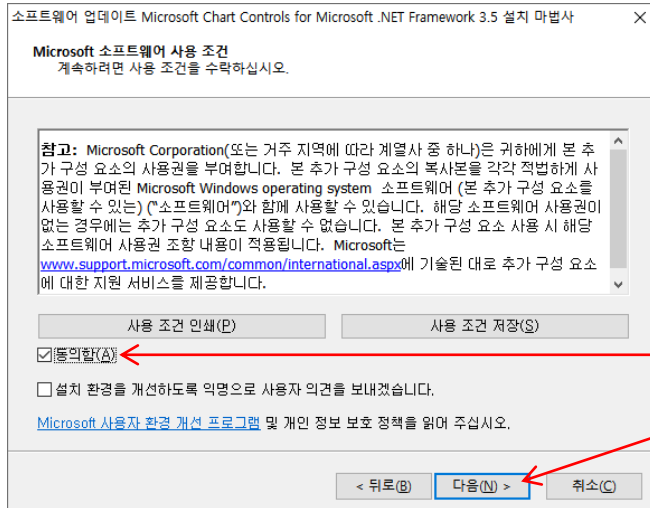
5, When the installation window appears, click the NEXT button.



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◆ MS Chart install (Installation may not be necessary depending on the PC UI)

6, After checking the Software License Agreement Agree button, proceed to the next step.



• Please check Agree button (Agree OK)

• NEXT

7, Press the Finish button to complete the installation.

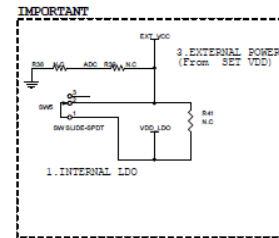
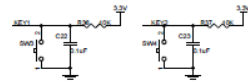
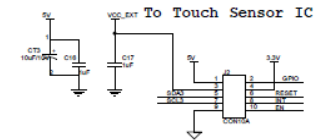
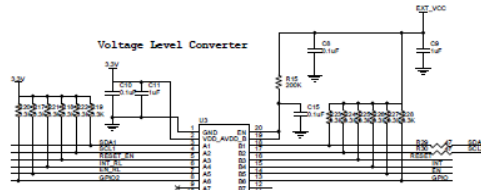
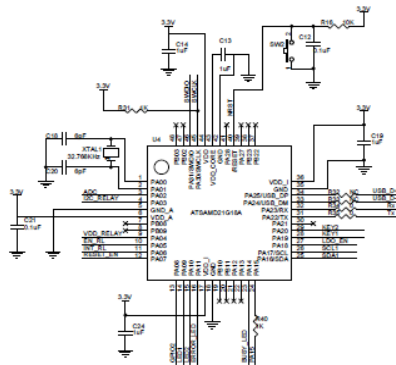
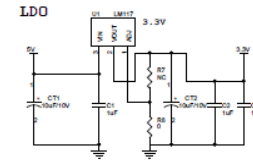
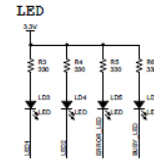
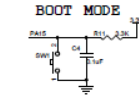
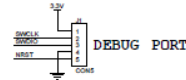
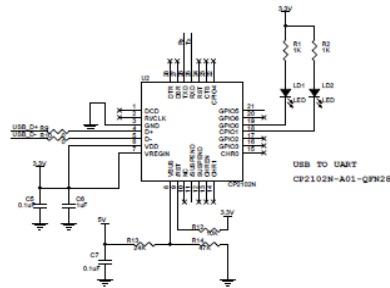


• Finish

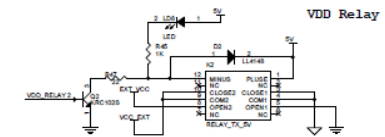
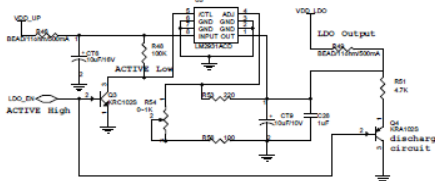
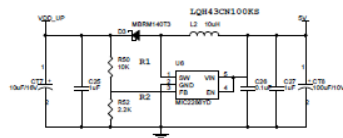
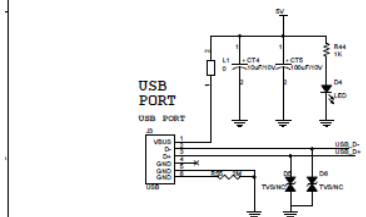
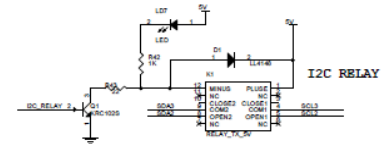
MCU B/D User Guide

◆ H/W Schematic

IC DEVELOPMENT KIT MCU BOARD (ATSAMD21G18A , CP2102N, DC-DC)



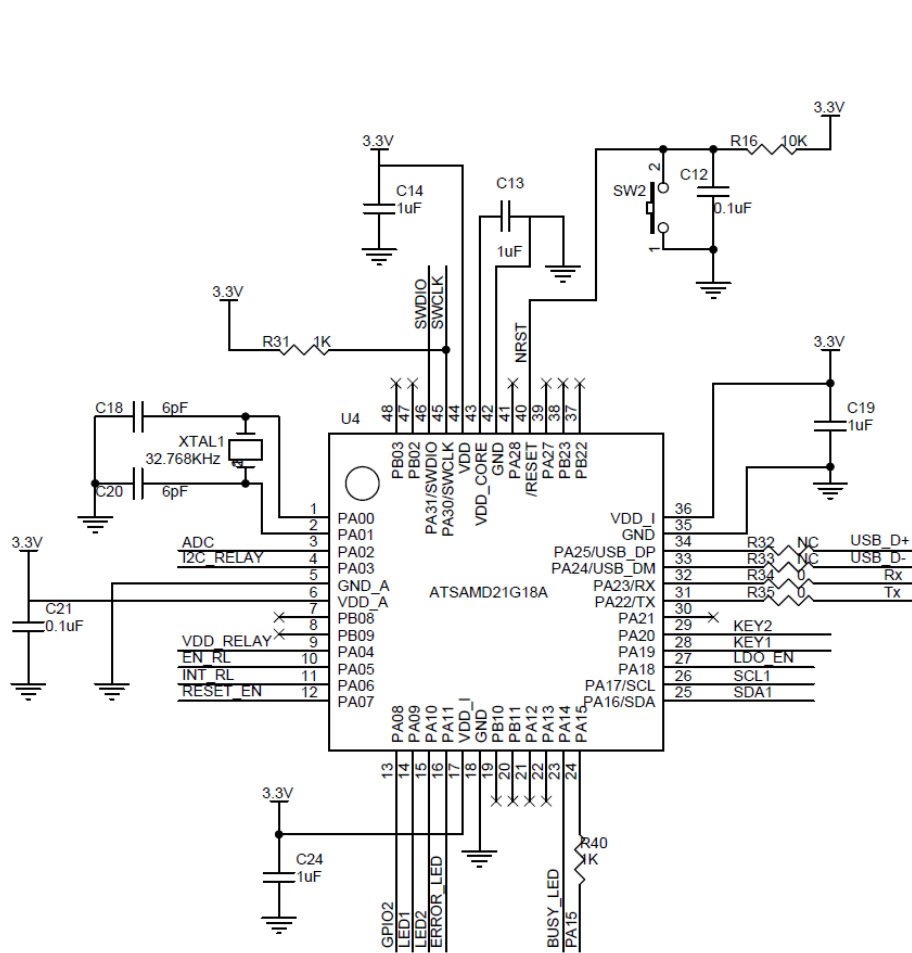
I2C Debug: VCC_EXT (1.8-5V), SDA, SCL, GND
OR SDA, SCL, GND, VCC_EXT -> 5V or 3.3V Pin



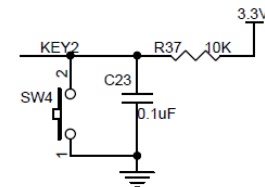
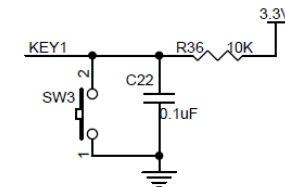
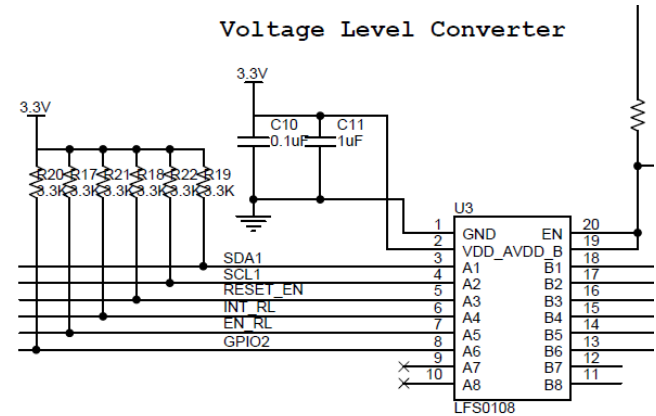
REMARK

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◆ H/W Schematic (MCU & Voltage Level Converter)

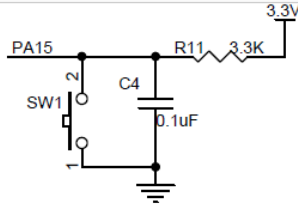


Voltage Level Converter

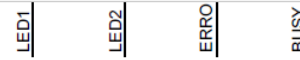


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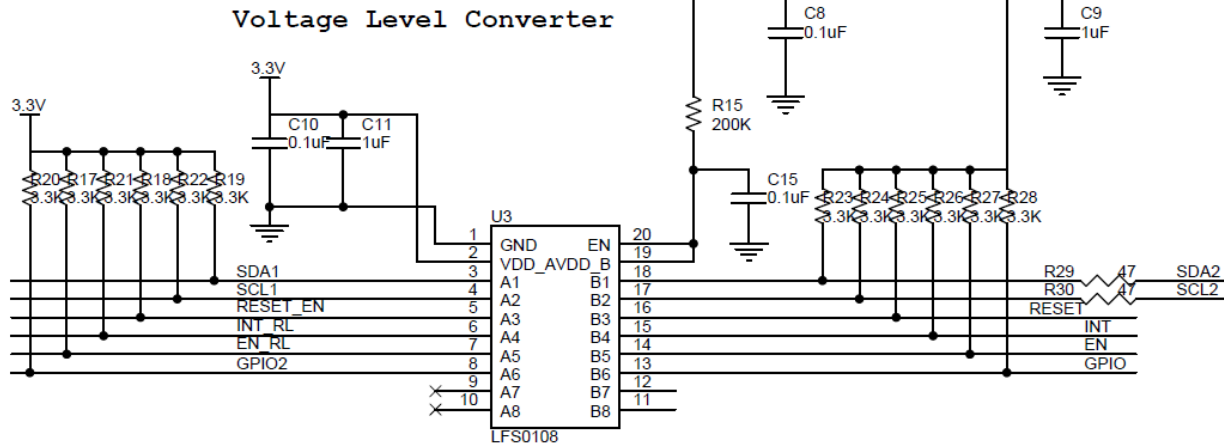
◆ H/W Schematic (Voltage level Converter)



BOOT: PA15 Low = Bootloader

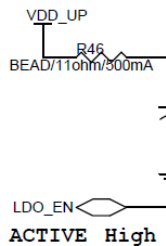
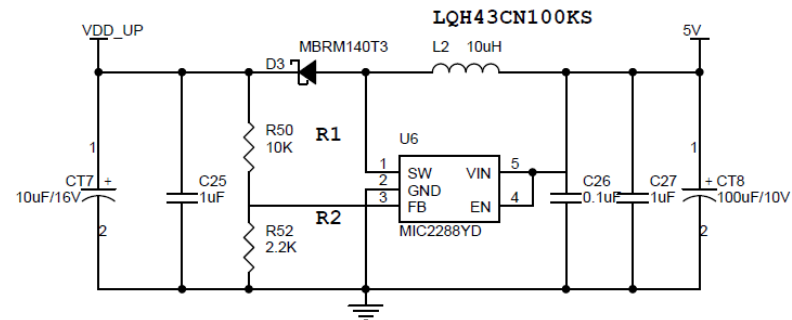
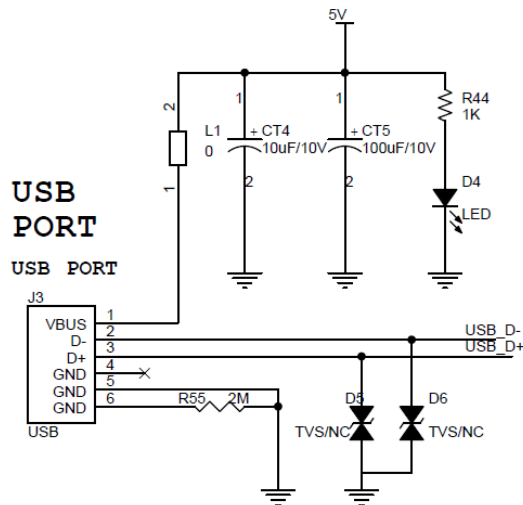
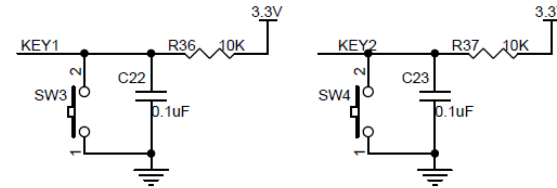
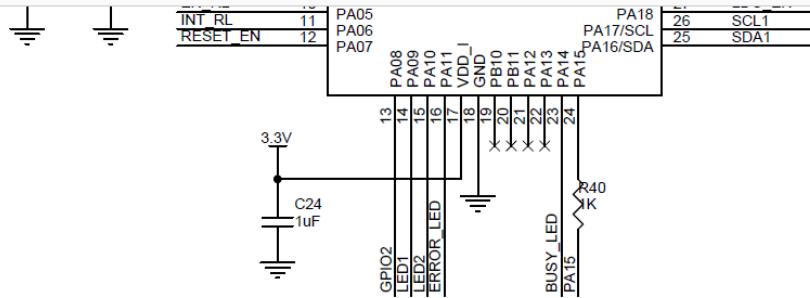


- * Supply VDD pin for I2C Voltage Level Convert IC
- When changing voltage, I2C communication voltage level is also changed.
- * if you change SW5 Jumper, you can use external voltage.



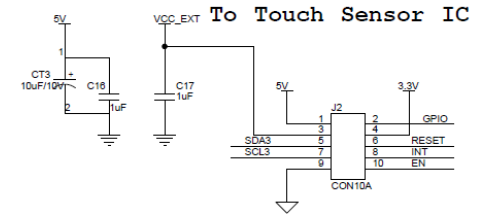
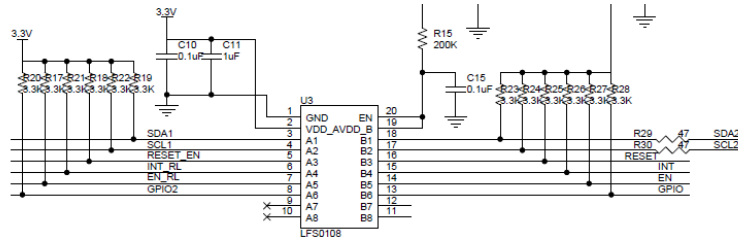
MCU B/D User Guide

◆ H/W Schematic (USB Port & DC-DC IC)



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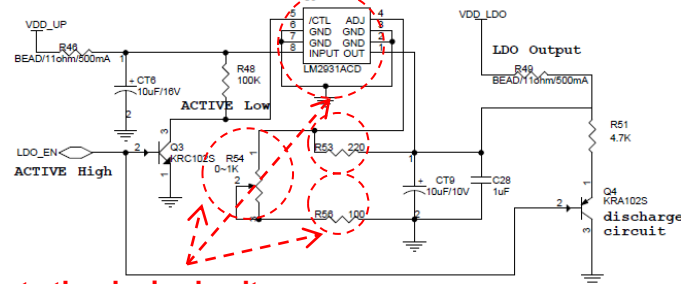
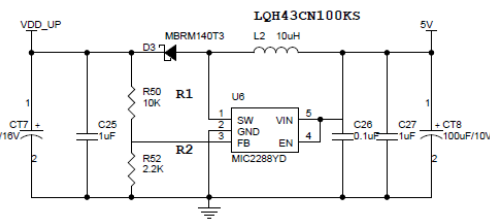
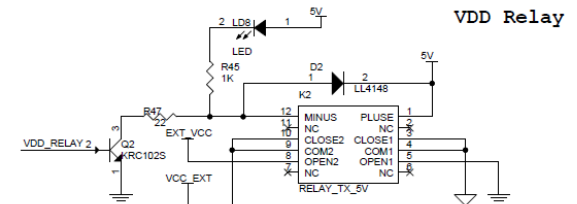
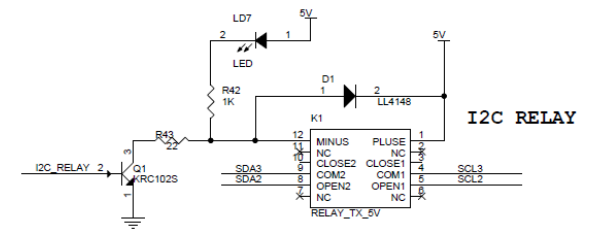
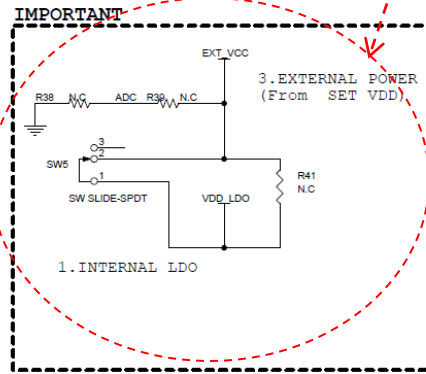
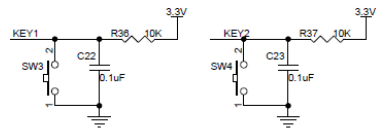
◆ H/W Schematic (LDO, Relay, I/O Port)



•When changing voltage, I2C communication voltage level is also changed.

*if you change SW5 Jumper, you can use external voltage.

I2C Debug: VCC_EXT(1.8~5V), SDA, SCL, GND
OR SDA,SCL, GND, VCC_EXT -> 5V or 3.3V Pin

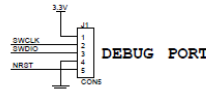
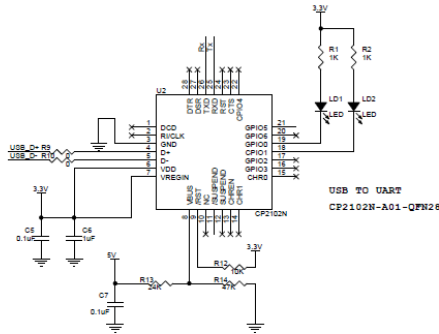


• If the variable resistor does not generate the desired voltage, change the values of resistors R53, R56, and R54.
(Refer to ON Semi. LM2931ACD LDO IC Spec)

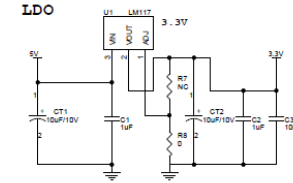
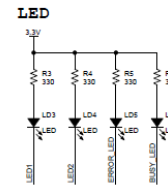
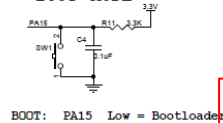
MCU B/D User Guide

◆ H/W Schematic (USB to UART, MCU JTAG, LDO, LED)

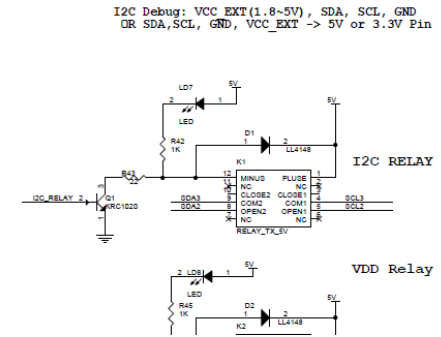
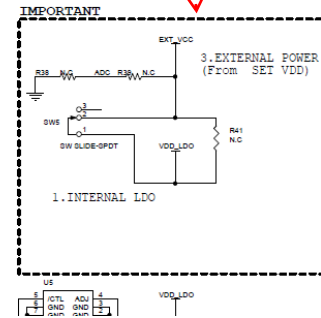
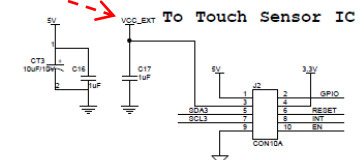
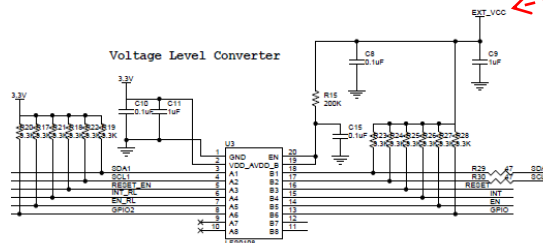
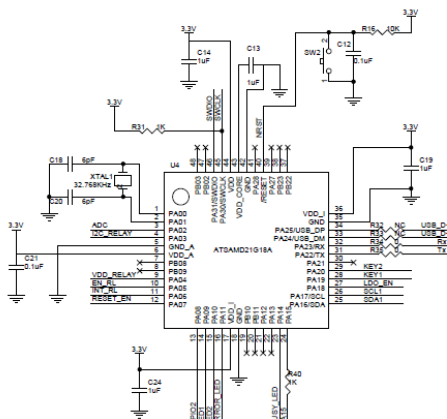
IC DEVELOPMENT KIT MCU BOARD (ATSAMD21G18A , CP2102N, DC-DC)



BOOT MODE



• When using an external power source for the sensor IC(or PBA), Pin# 3 can be used as the power input pin to make the I2C communication level equal to the external power level.
(You must change the SW5 Jumper into an external power source. The selected external power is supplied to the level converter IC(IC# U3).



MCU B/D User Guide

◆ For more information, please visit:

- **Silabs CP2102N USB to UART IC Driver (IC Eval. Kit MCU Board Driver)**
<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>
- Microchip(ATMEL) ATSAMD21G18A-AU MCU
<https://www.microchip.com/wwwproducts/en/ATSAMD21G18>
- ON Semi LM2931 LDO Voltage Regulator IC
<https://www.onsemi.com/pub/Collateral/LM2931-D.PDF>
- TI LSF0108PWR Level Translator IC
<http://www.ti.com/lit/ds/symlink/lfs0102.pdf>
- Microchip MIC2288YD5-TR DC/DC Switching Regulator IC
<https://www.microchip.com/wwwproducts/en/MIC2288>
- IC Eval. Kit MCU BOARD Set
<http://www.adsemicon.com>



R&D Center / Production Center

7F ACE HIGH-END Tower II, 61, Digital-ro 26-gil, Guro-gu, Seoul, Korea 152-848 Tel. +82-2-6340-1509 Fax. +82-2-6340-1539

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