

# A96T418

## Starter Kit

### STK-A96T418-GDN-A

## Starter Kit H/W Manual

Version 2.03

## Contents

1. Starter Kit Board Overview.....	3
2. E-OCD II Part.....	4
2.1 E-OCD II.....	4
2.1.1 JO1: E-OCD II USB Connector .....	4
2.1.2 P2 (Pin Header): MCU Power Connection .....	4
2.1.3 JO2 (Pin Header): E-OCD II Connector .....	5
2.1.4 JO3 : UART Connector (No function).....	5
2.1.5 P1(Pin Header) : SWD Connector.....	5
3. Device Part.....	6
3.1 Power, E-OCD II Interface and Switch.....	6
3.1.1 J1: External Power (Not Used).....	6
3.1.2 PSW: VDD Power Switch (ON/OFF).....	6
3.1.3 SW1, SW2: Switch .....	7
3.1.4 SW4: DSCL/DSDA OCD Connection-Switch .....	7
3.1.5 J2: E-OCD II Interface .....	7
3.2 LED Display (D2 – D3).....	8
3.2.1 LED Schematic.....	8
3.2.2 LED Pin Assignment.....	8
3.3 Pin Assignment.....	9
4. E-OCD II and MCU Power Connection.....	10
Revision History .....	11

## List of Figures

Figure 1. Starter Kit Board .....	3
Figure 2. UART to USB Section.....	4
Figure 3. Power, E-OCD II Interface and Switch.....	6
Figure 4. LED Display .....	8
Figure 5. LED Schematic .....	8
Figure 6. Pin Header .....	9
Figure 7. E-OCD II and MCU Power Connection to Starter Kit .....	10

## List of Tables

Table 1. Main Features of Starter Kit Board.....	3
Table 2. P2 MCU Power Selector .....	4
Table 3. E-OCD II Writing Interface.....	5
Table 4. JO3 UART Connection .....	5
Table 5. J1 Description and Connection .....	6
Table 6. SW1, SW2 Description and Function .....	7
Table 7. SW4 Description and Function .....	7
Table 8. E-OCD II Debug Interface .....	7
Table 9. LED Pin Description .....	8

## 1. Starter Kit Board Overview

In this chapter, users can see the Starter Kit Board's exterior in Figure 1, and learn the main features of it by reading Table 1.

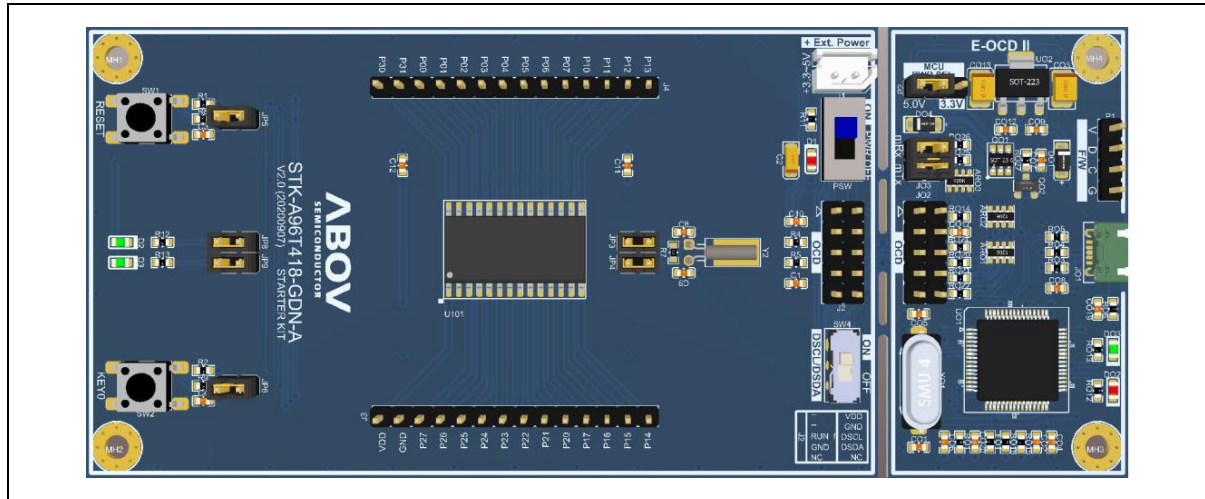


Figure 1. Starter Kit Board

Table 1. Main Features of Starter Kit Board

Main feature	Specifications	Remark
MCU	A96T418	Enhanced 8051
Operating clock	Internal 16MHz	HSI
ROM	32KB flash ROM	Code
IRAM	256B	Data
XRAM	1792B	Data
Communication Port	USB 2.0	Micro USB Type B 5-pin
Input Buttons	1 reset, 1 event input	TACT Switch

## 2. E-OCD II Part

### 2.1 E-OCD II

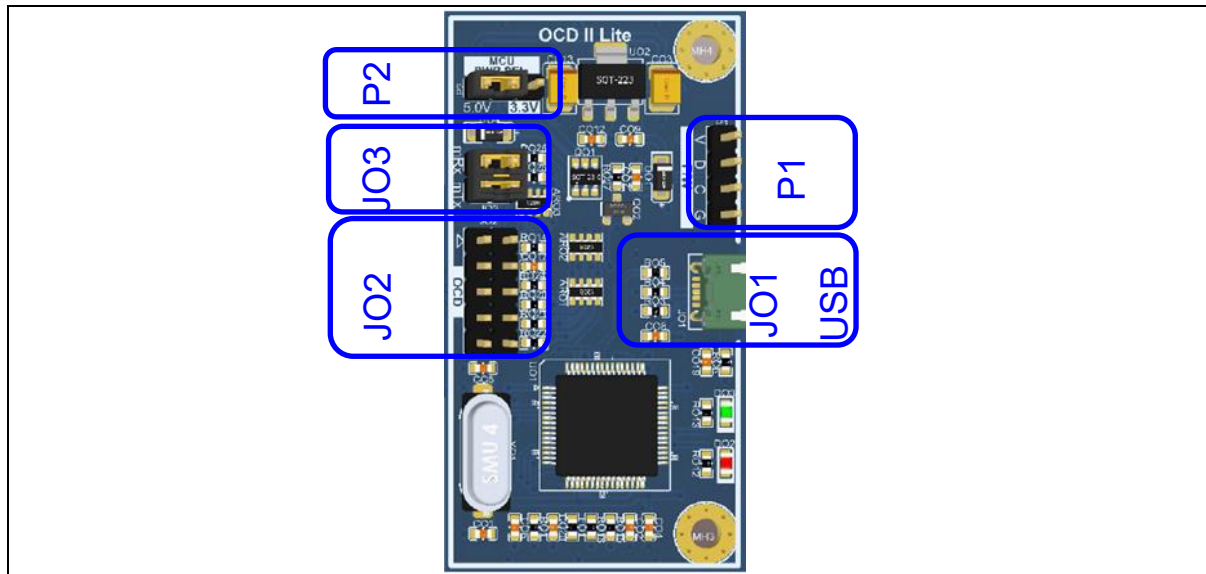


Figure 2. UART to USB Section

#### 2.1.1 JO1: E-OCD II USB Connector

- Micro USB type B
- A 1.5M USB cable is required.
- The E-OCD II is included.

#### 2.1.2 P2 (Pin Header): MCU Power Connection

The operating voltage is different for each device. Refer to the Device spec to use 5V power.

Table 2. P2 MCU Power Selector

P2	VDD	P2	VDD	P2	VDD
	5.0V		3.3V		External Power





### 2.1.3 JO2 (Pin Header): E-OCD II Connector

Table 3. E-OCD II Writing Interface

Pin name	Pin number	Pin number	Pin name
MCU_RxD	1	2	VDD
MCU_RxD	3	4	GND
RUN_flag	5	6	DSCL
GND	7	8	DSDA
NC	9	10	NC

### 2.1.4 JO3 : UART Connector (No function)

Table 4. JO3 UART Connection

JO3(m_RXD)	Pin	Connection
	Short	MCU RXD ← PC TXD
	Open	MCU RXD Open
JO3(m_TXD)	Pin	Connection
	Short	MCU TXD ← PC RXD
	Open	MCU TXD Open

### 2.1.5 P1(Pin Header) : SWD Connector

- It is used to update F/W of E-OCD II
- User should not use it

### 3. Device Part

#### 3.1 Power, E-OCD II Interface and Switch

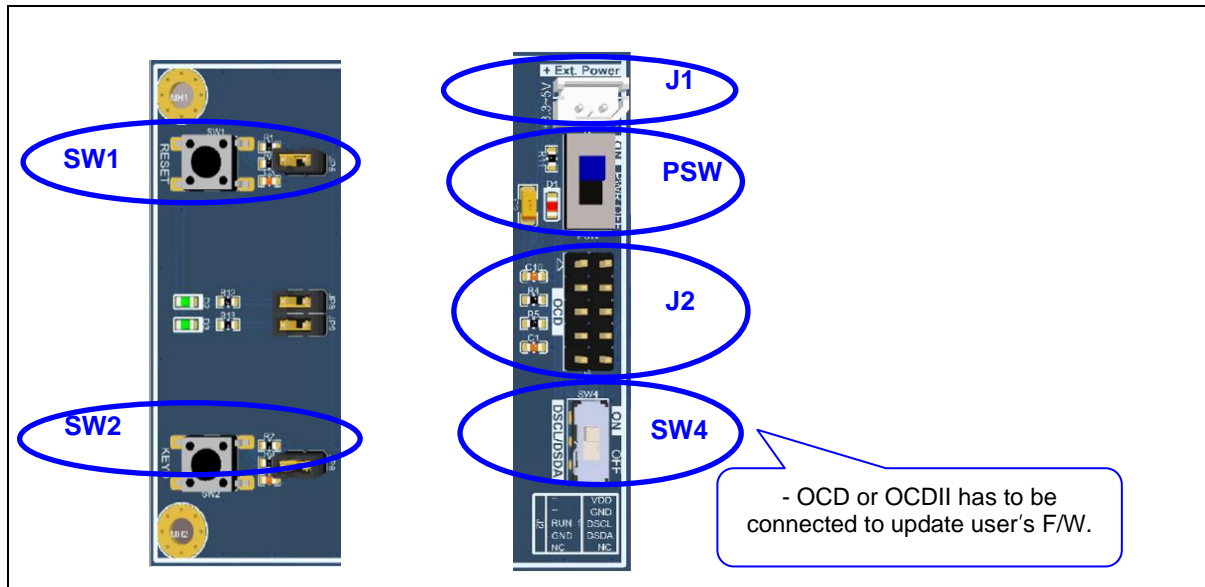



Figure 3. Power, E-OCD II Interface and Switch

##### 3.1.1 J1: External Power (Not Used)

If E-OCD II Power is not used in P2 (Pin Header): MCU Power Connection, Use External Power.

Table 5. J1 Description and Connection

J1	Pin name	Connection
	VDD	+3.3 ~ 5.0V
	GND	0V

##### 3.1.2 PSW: VDD Power Switch (ON/OFF)



Using PSW, users can turn on and turn off the power.

- On : Power on
- Off : Power off

**3.1.3 SW1, SW2: Switch****Table 6. SW1, SW2 Description and Function**

Switch	Function	JUMP
SW1	RESETB(P00)	JP5
SW2	P13	JP6

**3.1.4 SW4: DSCL/DSDA OCD Connection-Switch****Table 7. SW4 Description and Function**

SW4	ON	SW4	OFF
	DSCL/DSDA ON		DSCL/DSDA OFF

**3.1.5 J2: E-OCD II Interface****Table 8. E-OCD II Debug Interface**

Pin name	Pin number	Pin number	Pin name
NC (RXD)	1	2	VDD
NC (TXD)	3	4	GND
RUN_flag	5	6	DSCL
GND	7	8	DSDA
NC	9	10	RESETB

### 3.2 LED Display (D2 – D3)

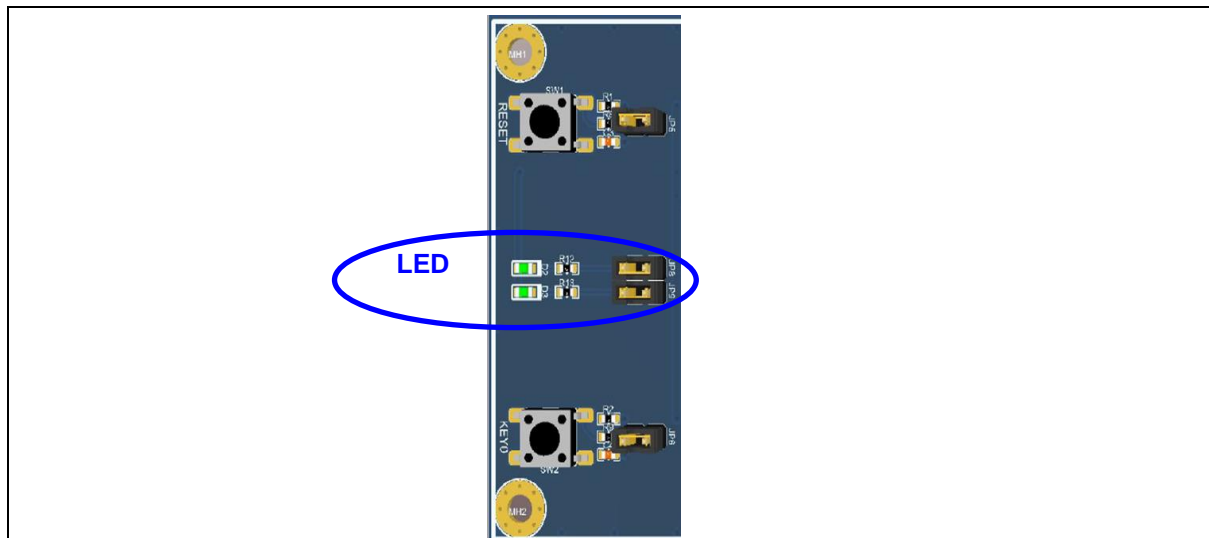


Figure 4. LED Display

#### 3.2.1 LED Schematic

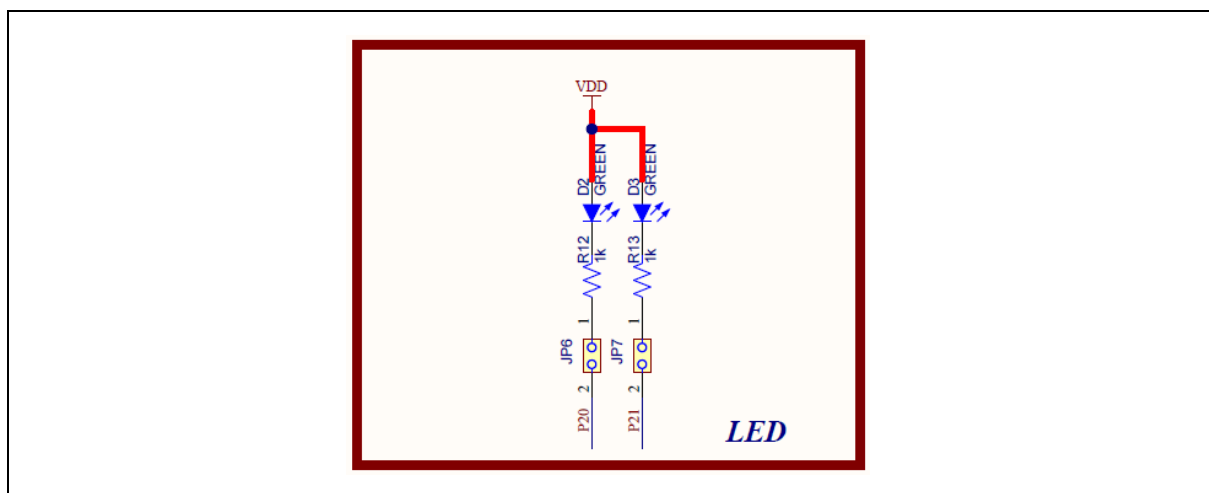


Figure 5. LED Schematic

#### 3.2.2 LED Pin Assignment

Table 9. LED Pin Description

LED name	PORT
D2	P20
D3	P21

### 3.3 Pin Assignment

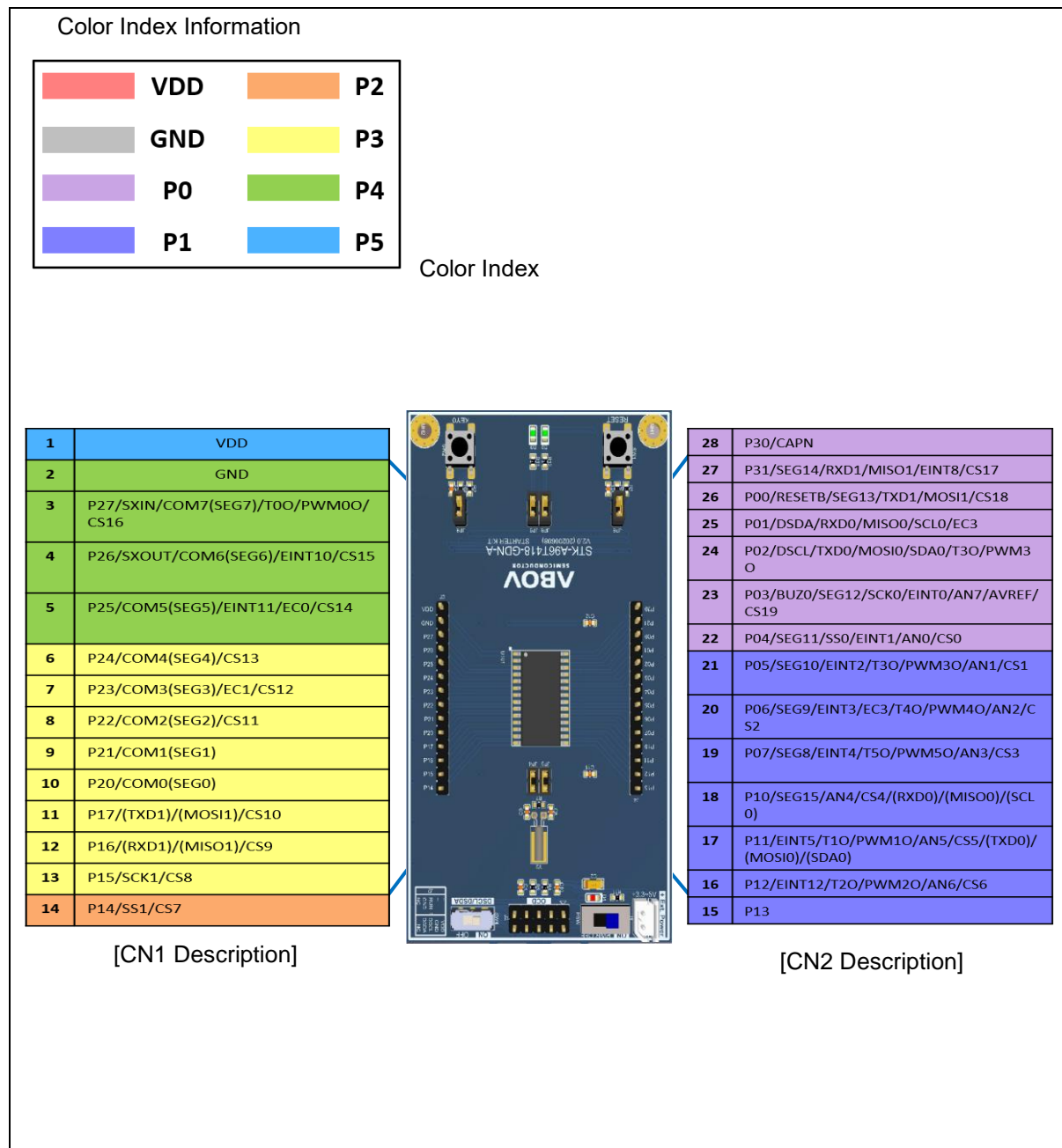


Figure 6. Pin Header

## 4. E-OCD II and MCU Power Connection

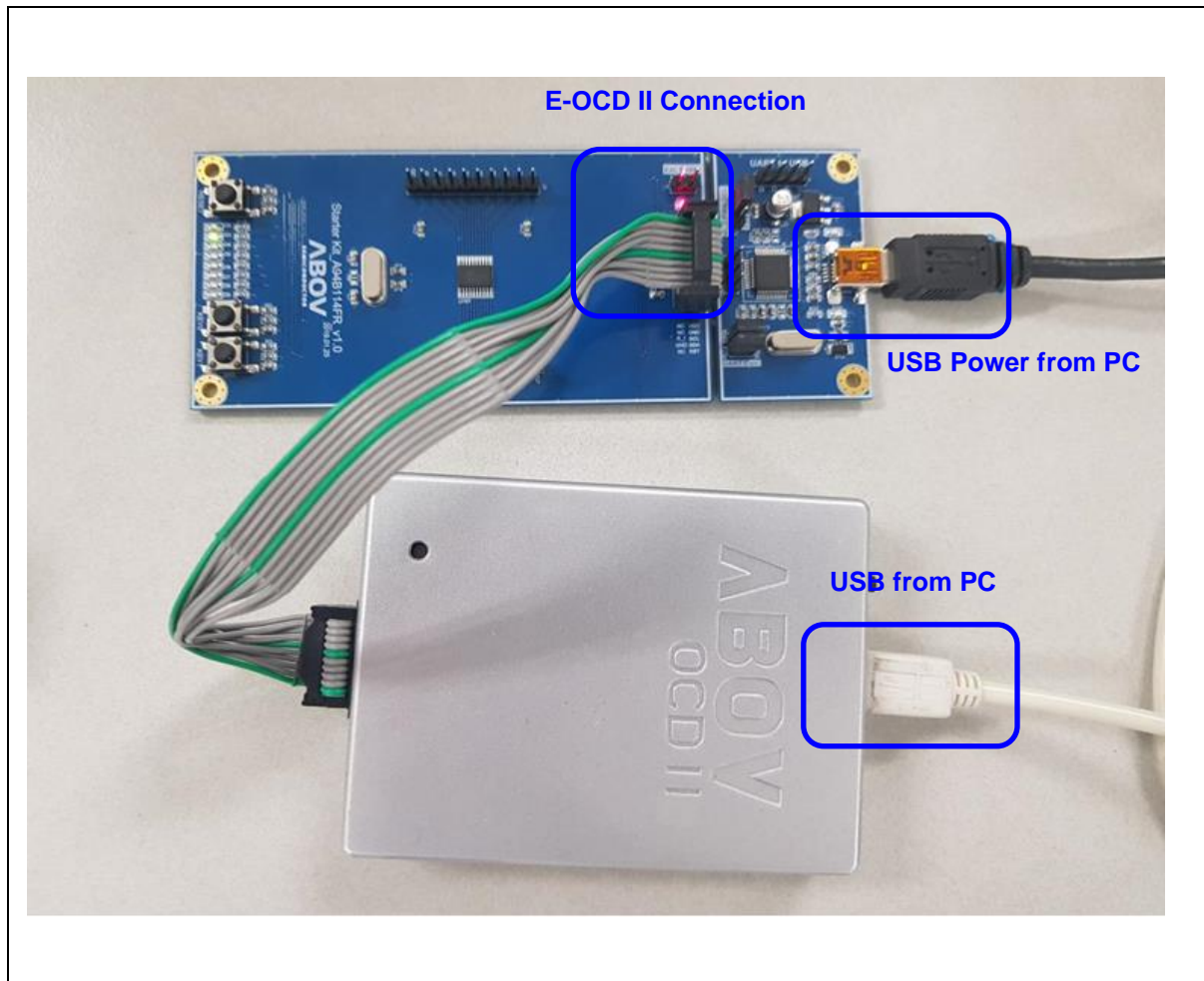


Figure 7. E-OCD II and MCU Power Connection to Starter Kit

## Revision History

Date	Version	Description
20.01.20	1.00	Document created
20.04.27	1.10	H/W design modified to V1.1.
20.07.01	2.00	H/W design modified to V2.0.
21.02.05	2.01	Updated OCD II Lite -> E-OCD II
22.11.21	2.02	Updated font style of this document
24.12.02	2.03	Updated the disclaimer.

**Korea****Regional Office, Seoul**

R&D, Marketing & Sales  
8th Fl., 330, Yeongdong-daero,  
Gangnam-gu, Seoul,  
06177, Korea

Tel: +82-2-2193-2200

Fax: +82-2-508-6903

[www.abovsemi.com](http://www.abovsemi.com)

**HQ, Ochang**

R&D, QA, and Test Center  
93, Gangni 1-gil, Ochang-eup,  
Cheongwon-gun,  
Chungcheongbuk-do,  
28126, Korea

Tel: +82-43-219-5200

Fax: +82-43-217-3534

[www.abovsemi.com](http://www.abovsemi.com)

**Domestic Sales Manager**

Tel: +82-2-2193-2206

Fax: +82-2-508-6903

Email: [sales\\_kr@abov.co.kr](mailto:sales_kr@abov.co.kr)

**Global Sales Manager**

Tel: +82-2-2193-2281

Fax: +82-2-508-6903

Email: [sales\\_gl@abov.co.kr](mailto:sales_gl@abov.co.kr)

**China Sales Manager**

Tel: +86-755-8287-2205

Fax: +86-755-8287-2204

Email: [sales\\_cn@abov.co.kr](mailto:sales_cn@abov.co.kr)

**ABOV Disclaimer****IMPORTANT NOTICE – PLEASE READ CAREFULLY**

ABOV Semiconductor (“ABOV”) reserves the right to make changes, corrections, enhancements, modifications, and improvements to ABOV products and/or to this document at any time without notice. **ABOV DOES NOT GIVE WARRANTIES AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION INCLUDED HEREIN.** Purchasers should obtain the latest relevant information of ABOV products before placing orders. Purchasers are entirely responsible for the choice, selection, and use of ABOV products and ABOV assumes no liability for application assistance or the design of purchasers’ products. **NO LICENSE, EXPRESS OR IMPLIED, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY ABOV HEREIN. ABOV DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES AND SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY INJUIRES OR DAMAGES RELATED TO USE OF ABOV PRODUCTS IN SUCH UNAUTHORIZED APPLICATIONS.** ABOV and the ABOV logo are trademarks of ABOV. For additional information about ABOV trademarks, please refer to [https://www.abov.co.kr/en/about/corporate\\_identity.php](https://www.abov.co.kr/en/about/corporate_identity.php). All other product or service names are the property of their respective owners. Information in this document supersedes and replaces the information previously supplied in any former versions of this document.

© 2020 ABOV Semiconductor – All rights reserved