

Introduction

The A96L116 Starter Kit makes it easy to develop applications when using the A96L116FRN general-purpose microcontroller with M8051 core. The A96L116 Starter Kit includes everything needed for both beginners and experienced users to get started their development quickly.

This A96L116 Starter Kit contains an A96L116FRN in 20-TSSOP package, an ABOV E-OCD II debugger embedded debug tool, LEDs, push buttons, and a micro-B USB connector. Also, this starter kit has expansion header connectors for either user function circuits or specialized function boards for the A96L116 device on the board.

The A96L116 Starter Kit comes with the ABOV software libraries and examples available with the reference software package.

Figure 1. Starter Kit Board

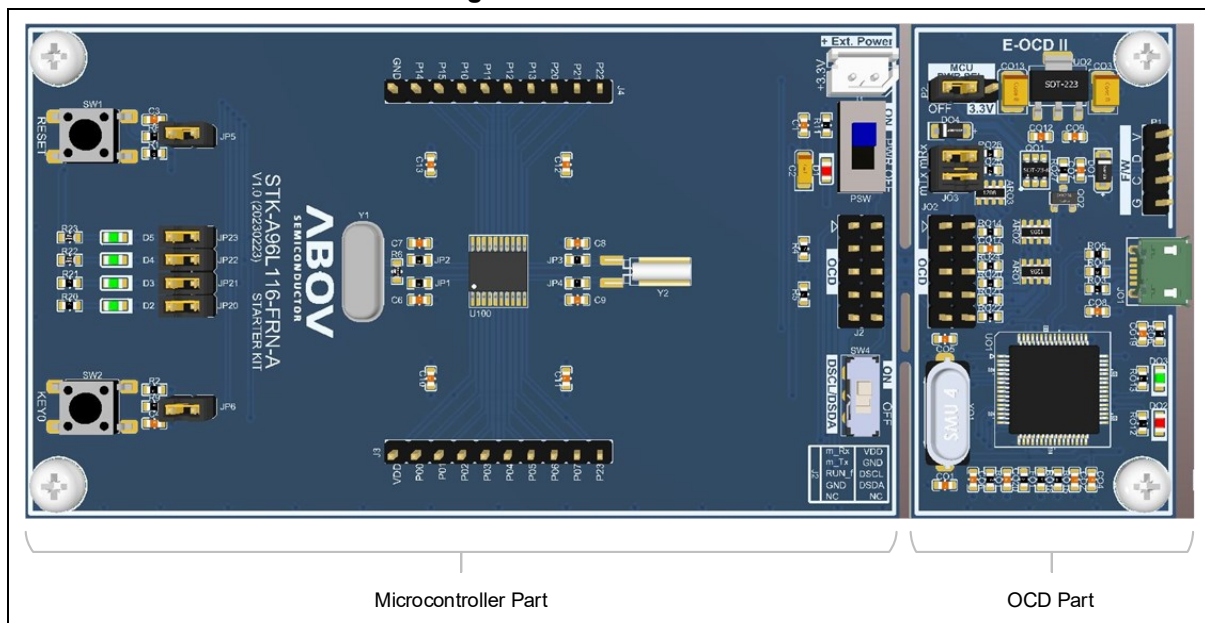


Table 1. Main Features of Starter Kit Board

Main feature		Specifications	Remark
Microcontroller		A96L116FRN	M8051, 20-TSSOP
Operating Clock		Internal 40 kHz Internal 16 MHz External 32.768 kHz External 8 MHz	LFIRC (LSI) HFIRC (HSI) SX-tal (LSE) X-tal (HSE)
Flash Memory	Code	16 KB	-
	Data	256 bytes	-
IRAM		256 bytes	Data
XRAM		768 bytes	Data
Communication port		USB 2.0	Micro USB Type B 5-pin
Debugging port		OCD	10-pin connector
Input buttons		1 reset and 1 event input	TACT switch

Reference Document

The following documents are available on www.abovsemi.com.

- A96L116 User's Manual
- A96L116 Datasheet

For information on StarterKit-A96L116FRN relevant technical materials, visit our official website.

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1. Ordering Information

To order the Starter Kit board product for the microcontroller, refer to Table 2.

Additional information about the Starter Kit board, please visit ABOV website (www.abovsemi.com).

Table 2. Ordering Information

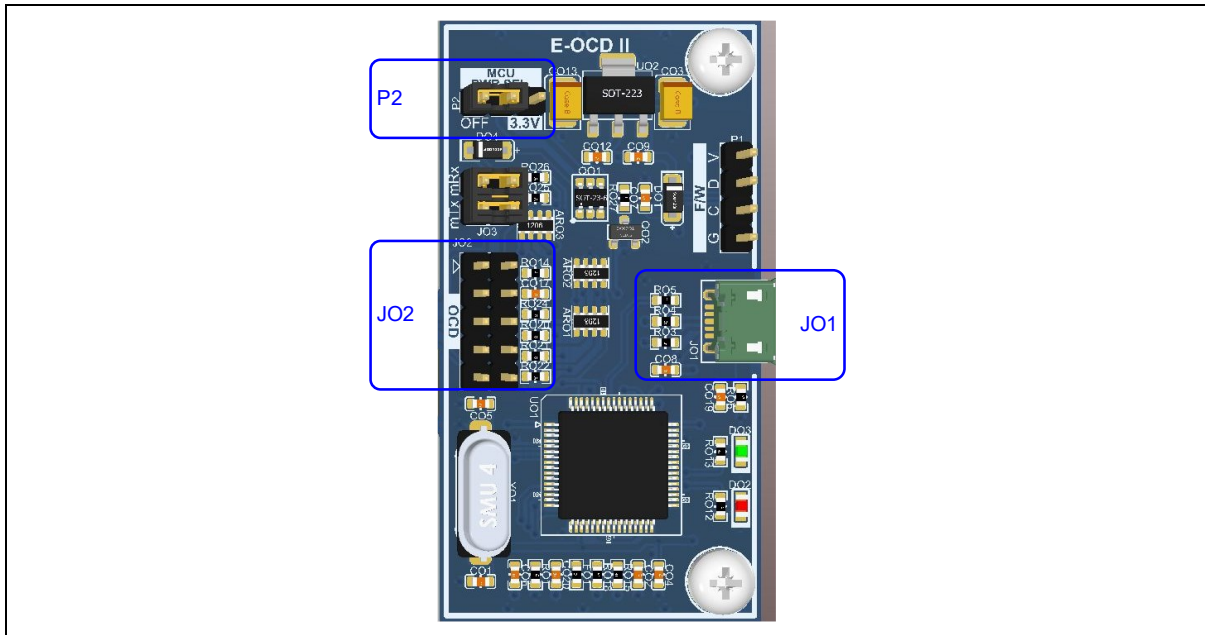
Order Code	Board Name	Microcontroller
StarterKit-A96L116FRN	STK-A96L116-FRN-A	A96L116FRN

2. Hardware Configuration: OCD Part

In this chapter, OCD part of the Starter Kit board is described.

2.1 OCD Part

Figure 2. OCD Part of Starter Kit





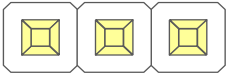
2.1.1 JO1: E-OCD II USB Connector

- Micro USB type B
- USB cable for connection to host computer

2.1.2 P2 (pin header): Microcontroller Power Selector

The operating voltage is different for each device. Refer to the appropriate device specifications.

Table 3. Microcontroller Power Selector (P2)

P2 state	VDD
	OFF
	3.3 V
	External Power

2.1.3 JO2 (pin header): OCD Debug Interface Connector

Table 4. JO2: OCD Debug Interface

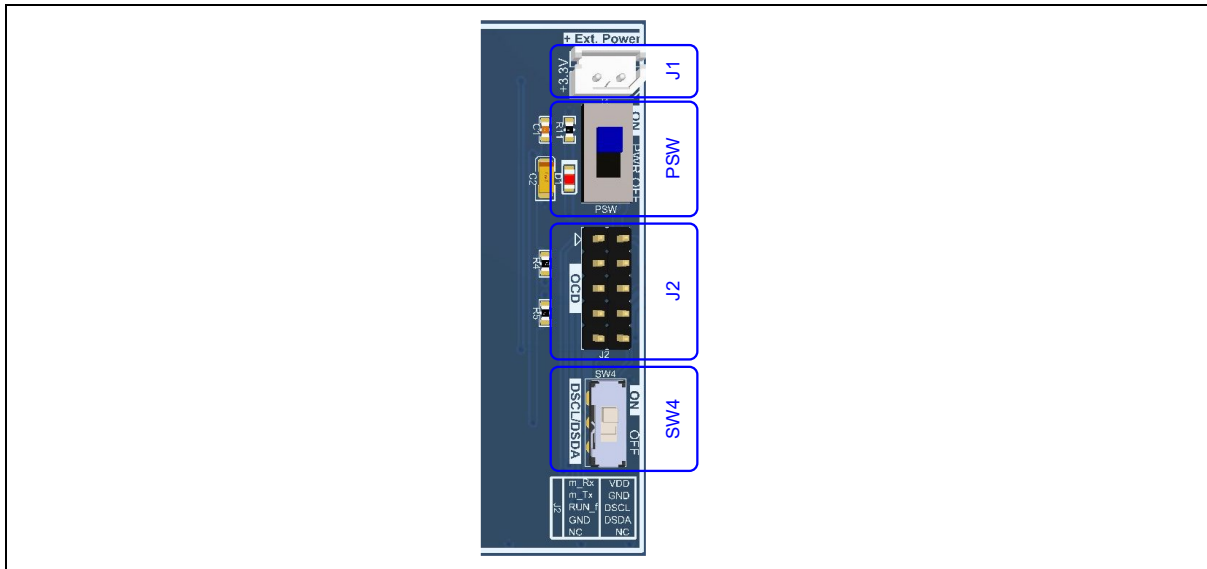
Pin Name	Pin Number	Pin Number	Pin Name
m_Rx (Not used)	1	2	VDD
m_Tx (Not used)	3	4	GND
RUN_f (Not used)	5	6	DSCL
GND	7	8	DSDA
N.C.	9	10	RESETB

3. Hardware Configuration: Microcontroller Part

This chapter describes the power, switches, and LEDs on the Starter Kit board.

3.1 Power, OCD Interface and Switch

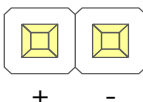
Figure 3. Power, OCD Interface and Switches



3.1.1 J1: External Power

J1 is the external power connector for the microcontroller part. If the microcontroller part does not use power of the OCD part, it uses external power through the J1 connector.



Table 5. Description of Power Supply Connector (J1)

J1	Pin Name	Description
	VDD	2.7 to 3.6 V
	GND	Ground (0 V)

3.1.2 PSW: External Power Switch

PSW is the power switch, which turns the external power from J1 on or off for the microcontroller part.

Table 6. PSW: External Power Switch

PSW State	ON	PSW State	OFF
	External power on		External power off

3.1.3 J2: OCD Debug Interface Connector

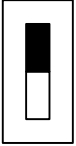

Table 7. J2: OCD Debug Interface

Pin Name	Pin Number	Pin Number	Pin Name
m_Rx (Not used)	1	2	VDD
m_Tx (Not used)	3	4	GND
RUN_f (Not used)	5	6	DSCL
GND	7	8	DSDA
N.C.	9	10	RESETB

3.1.4 SW4: DSCL/DSDA OCD Connection Switch

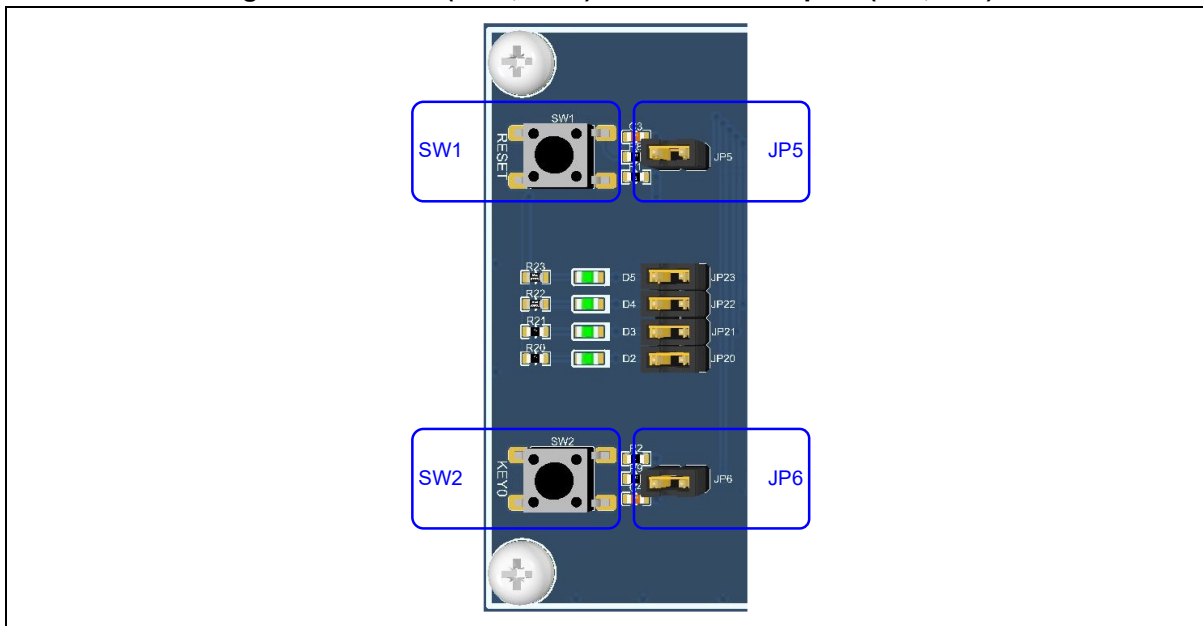
The DSCL and DSDA pins are OCD (On-Chip Debug) signals for clock and data respectively and are used as debug interfaces.

Table 8. DSCL/DSDA OCD Connection Switch

SW4 State	ON	SW4 State	OFF
	DSCL/DSDA pins are connected to OCD interface		DSCL/DSDA pins are disconnected from OCD interface

3.2 RESETB Button and User Button

Figure 4. Buttons (SW1, SW2) and Button Jumpers (JP5, JP6)



3.2.1 SW1, SW2, JP5, JP6: Buttons and Button Jumpers

Table 9. Description of Buttons (SW1, SW2)

Switch	Function	Connection Pin
SW1	External reset input switch	RESETB (P10) connected by JP5
SW2	External user input switch	P13 connected by JP6

Table 10. Usage of RESET Button Jumper (J5)

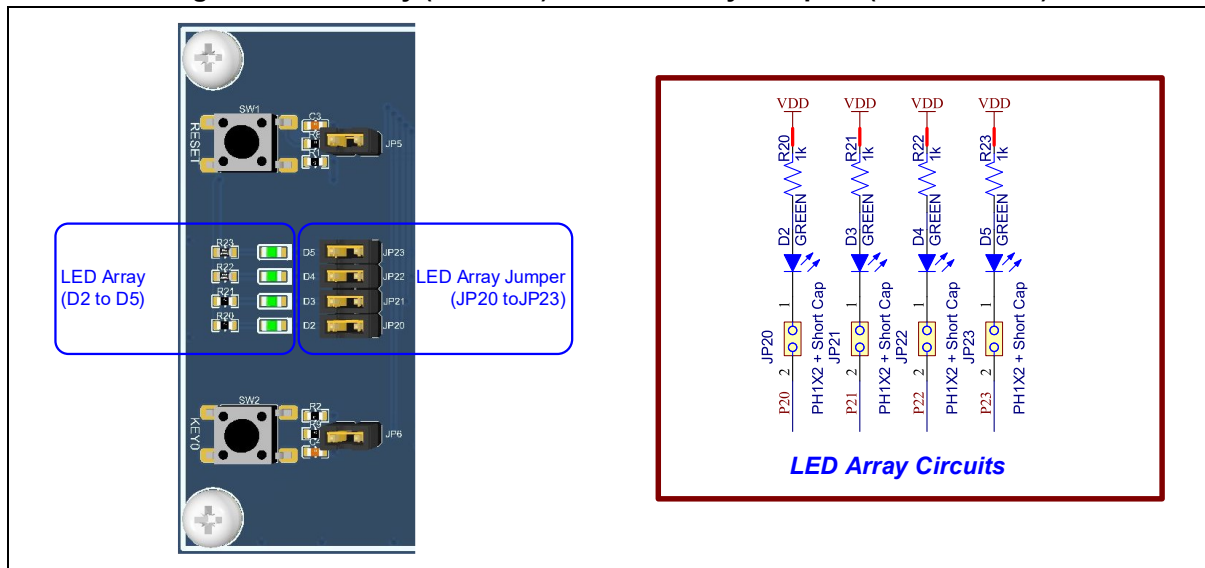
J5	Connection Status	Description
	Short	Connected to nRESET (P10) pin
	Open	Not connected to SW1

Table 11. Usage of User Button Jumper (J6)

J6	Connection Status	Description
	Short	Connected to P13 pin
	Open	Not connected to SW2

3.3 LED Array and LED Array Jumpers

Figure 5. LED Array (D2 to D5) and LED Array Jumpers (JP20 to JP23)





3.3.1 LED Array Pin Assignment

Table 12. Description of LED Array and Jumpers (D2 to D5)

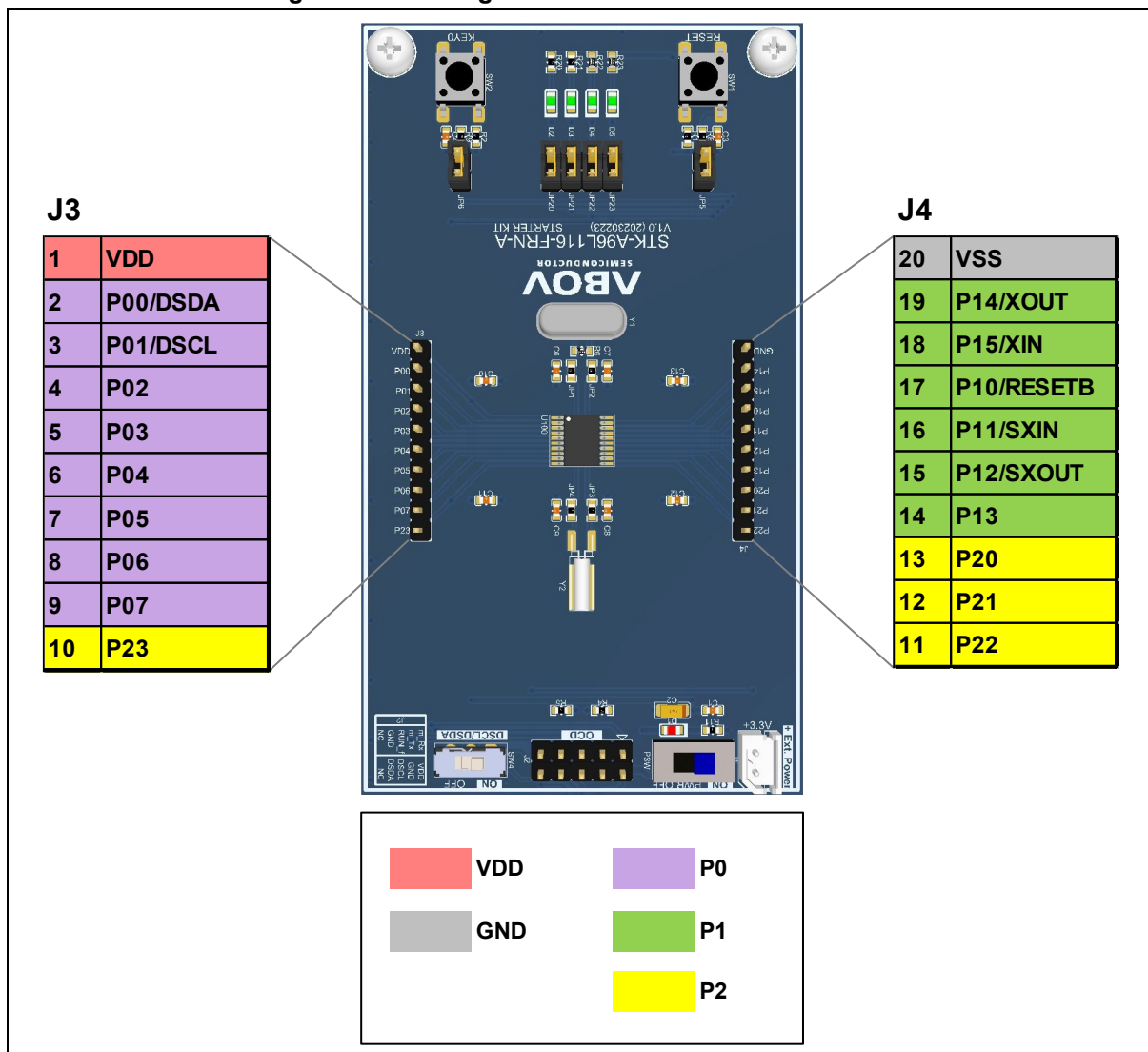
LED Name	LED Connection	Connected Pin
D2	JP20	P20
D3	JP21	P21
D4	JP22	P22
D5	JP23	P23

Table 13. Usage of LED Array Jumpers (JP20 to JP23)

JP20 to JP23	Connection Status	Description
	Short	Use LED
	Open	Not use LED

3.4 Pin Assignment

Figure 6. Pin Assignment of Starter Kit-A96L116FRN



Revision History

Revision	Date	Notes
1.00	Jan. 30, 2024	Initial release

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