

uSD-15x15 Adapter Board

for AW-AM457-S-uSD and AW-AM457-D-uSD

User Guide

Rev. D

(For Standard)

Revision History

Version	Revision Date	Description	Initials	Approved
A	2020/06/16	<ul style="list-style-type: none"> ● Initial Version 	Renton Tao	N.C. Chen
B	2020/07/03	<ul style="list-style-type: none"> ● Update EVB Kits Content 	Renton Tao	N.C. Chen
C	2020/08/21	<ul style="list-style-type: none"> ● Update 2.3 Schematics and 2.4 Placement ● Update the photo of 2.2 HW introduction ● Remove the content of PCM UART extension adapter board in 3. EVB Kits Contents 	Renton Tao	N.C. Chen
D	2020/11/03	<ul style="list-style-type: none"> ● Add model name and update product photo ● Revise pin No. of UART J10 ● Add pin description of J12 for JTAG 	Roger Liu	N.C. Chen

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1. Introduction

AzureWave provides uSD-15x15 adapter board with Wi-Fi/BT module solutions for NXP i.MX RT and i.MX 6/7/8 Evaluation Kits. The uSD-15x15 adapter board supports AW-AM457-S and AW-AM457-D (w/ NXP W8978, Wi-Fi + BT solutions).

- Wi-Fi through uSD interface
- BT through UART interface

Main chip	AzureWave Module	uSD Adaptor Board
NXP W8978	AW-AM457-D	AW-AM457-D-uSD
NXP W8978	AW-AM457-S	AW-AM457-S-uSD

1.1 Supported I/O to host

- Micro-SD (uSD) interface for Wi-Fi.
- Arduino headers for Bluetooth through UART interface.
- FFC connector for UART, PCM, and other control signal.
- Embedded UART-to-USB IC as an option for UART.
- Other debug and power interface.

1.2 Supported I/O signal level

I/O\ voltage level	1.8V	3.3V
SDIO(3.0/2.0)	V	V
UART	N/A	V

1.3 Supported RF standards

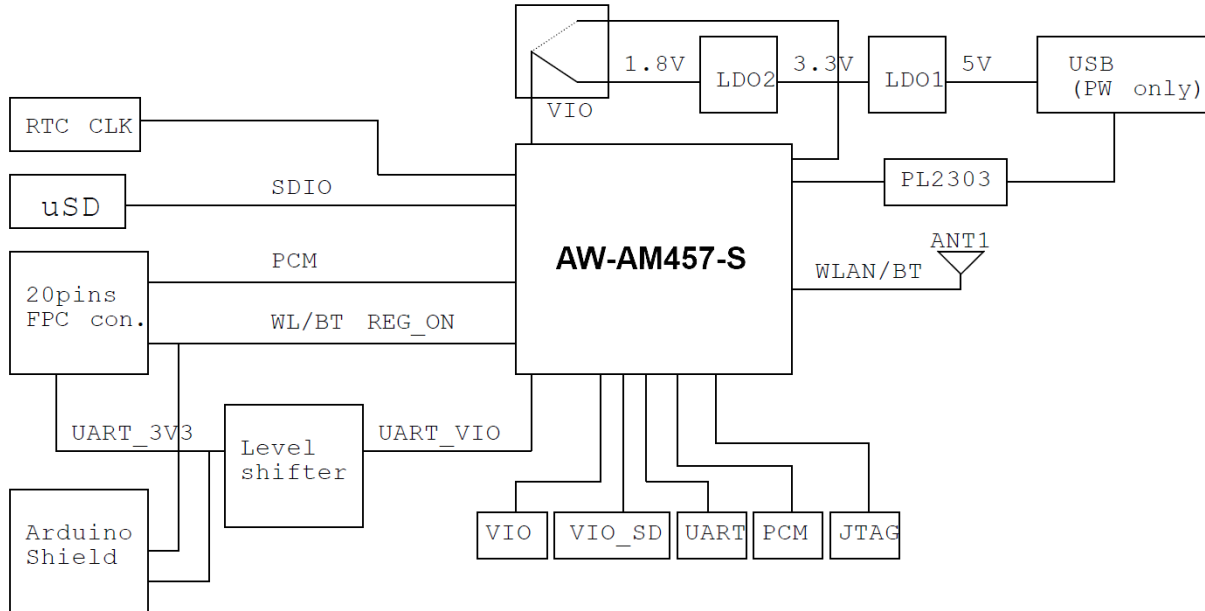
Model \ Standards	Wi-Fi*	BT*	Remark
AW-AM457-S	1x1 Wi-Fi 4 (2.4/5GHz)	5.0	Single antenna
AW-AM457-D	1x1 Wi-Fi 4 (2.4/5GHz)	5.0	Dual antenna

*Connecting with i-pex gen 4 RF connector

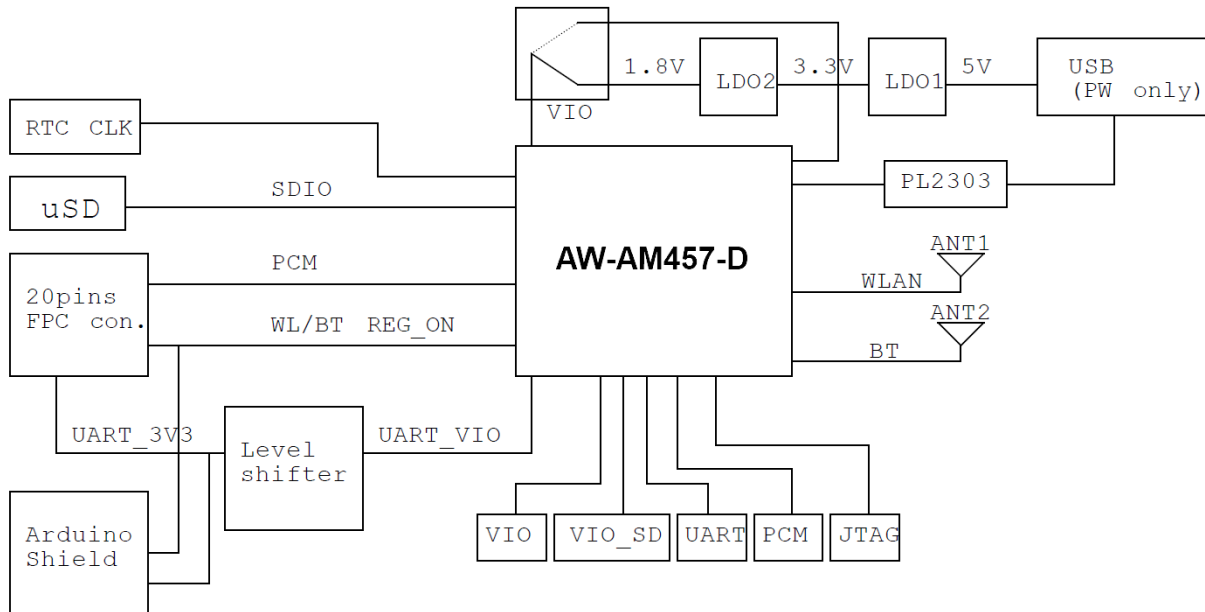
2. uSD-15x15 Adapter Board

2.1 Block Diagram

For AW-AM457-S



For AW-AM457-D



2.2 HW Introduction

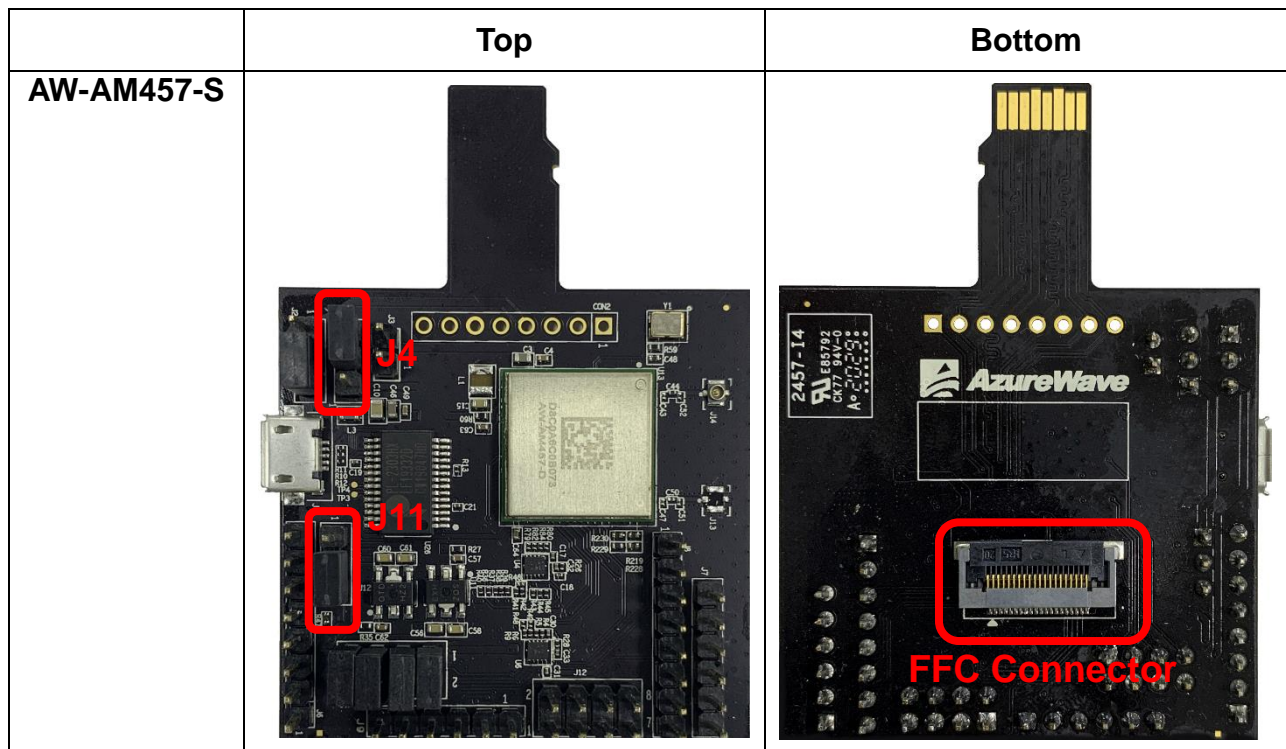
VIO_SD voltage level options

- For 3.3V supply, please connect J11 (2-3).
- For 1.8V supply, please connect J11 (1-2).

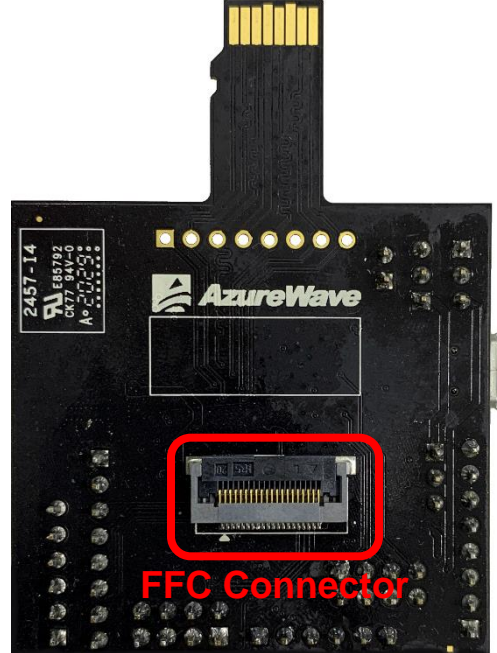
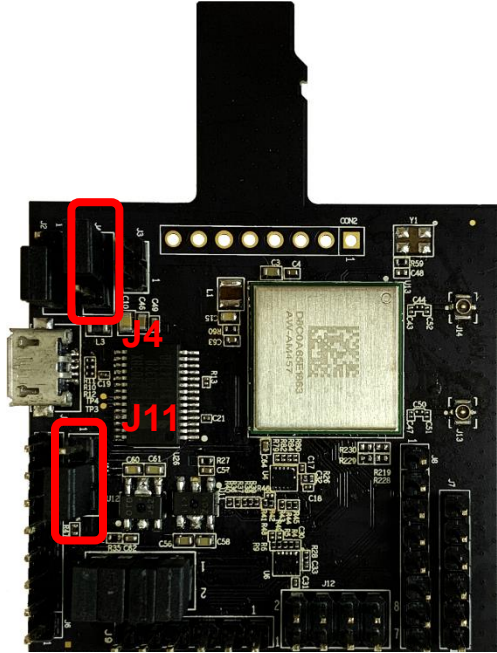
VIO voltage level options

- For 3.3V supply, please connect J4 (2-3).
- For 1.8V supply, please connect J4 (1-2).

UART signal and 3.3V power source is configured from FFC connector at BOT side as default.



AW-AM457-D



By using headers for Bluetooth through UART interface

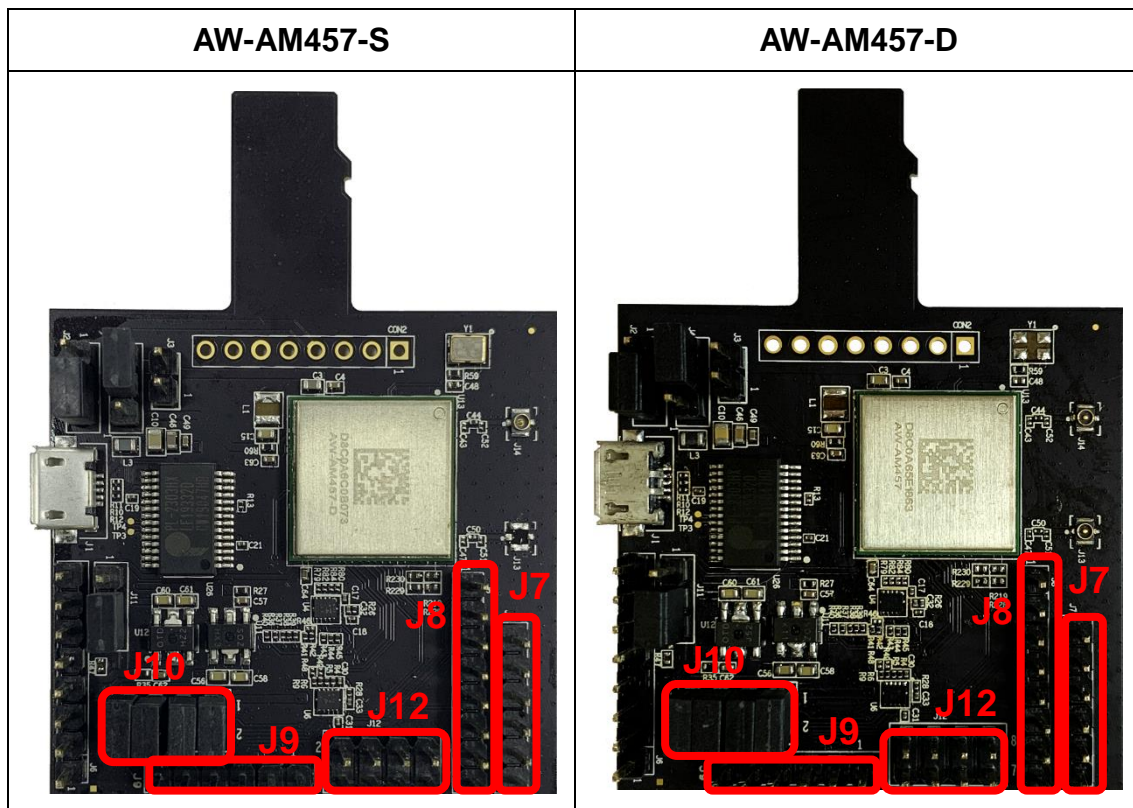
- UART_RTS: J7 (pin 3) or J10 (pin 6)
- UART_TXD: J8 (pin 1) or J10 (pin 4)
- UART_CTS: J7 (pin 4) or J10 (pin 8)
- UART_RXD: J8 (pin 2) or J10 (pin 2)

By using headers for Bluetooth audio through PCM interface

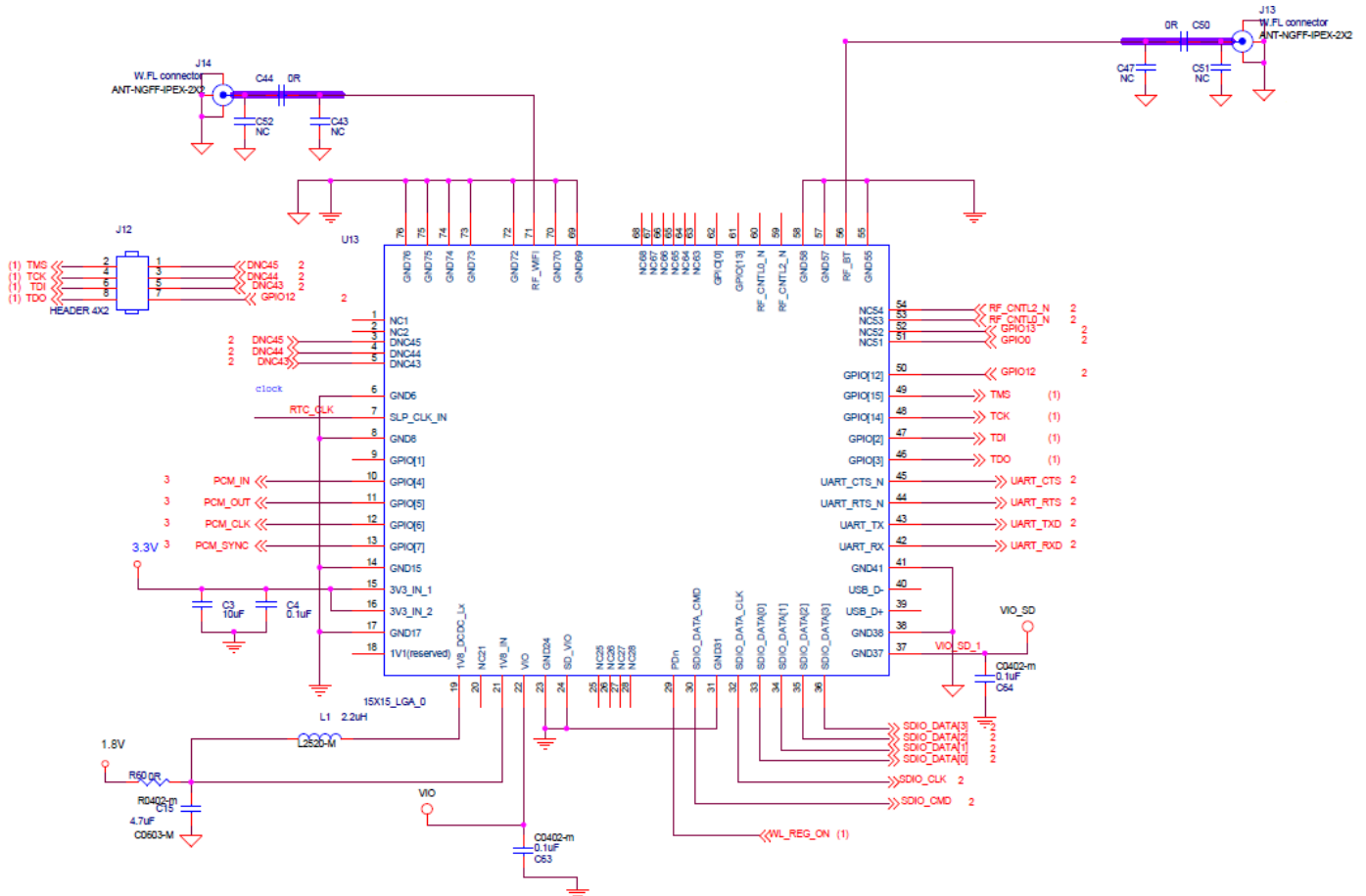
- PCM_IN: J9 (pin 1)
- PCM_OUT: J9 (pin 2)
- PCM_SYNC: J9 (pin 3)
- PCM_CLK: J9 (pin 4)

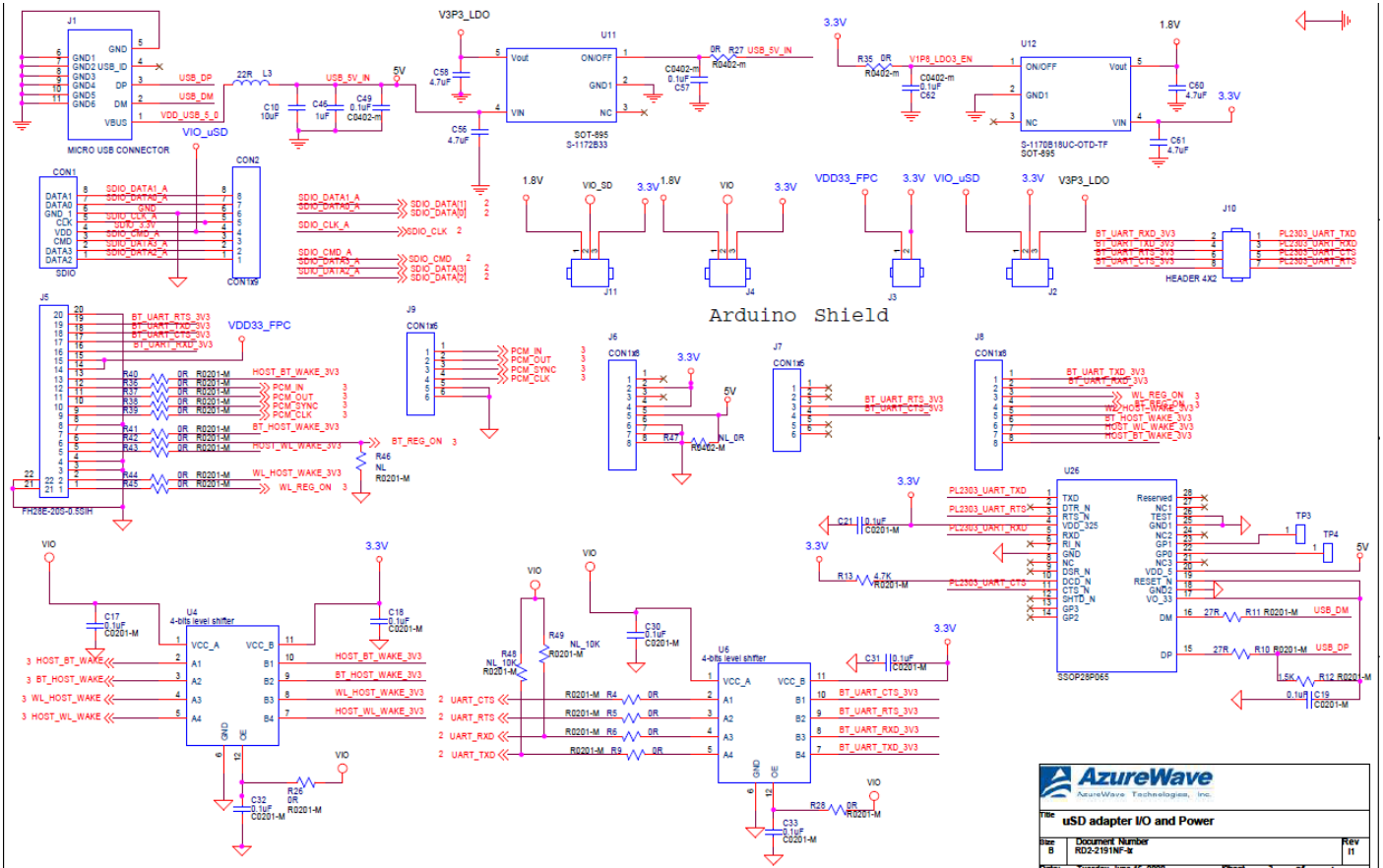
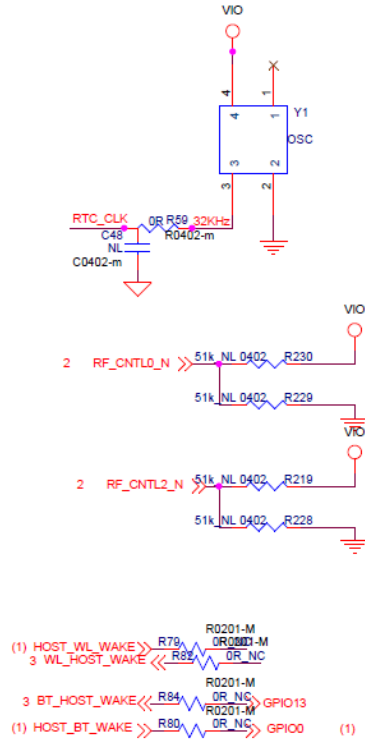
By using headers for JTAG

- TMS: J12 (pin 2)
- TCK: J12 (pin 4)
- TDI: J12 (pin 6)
- TDO: J12 (pin 8)

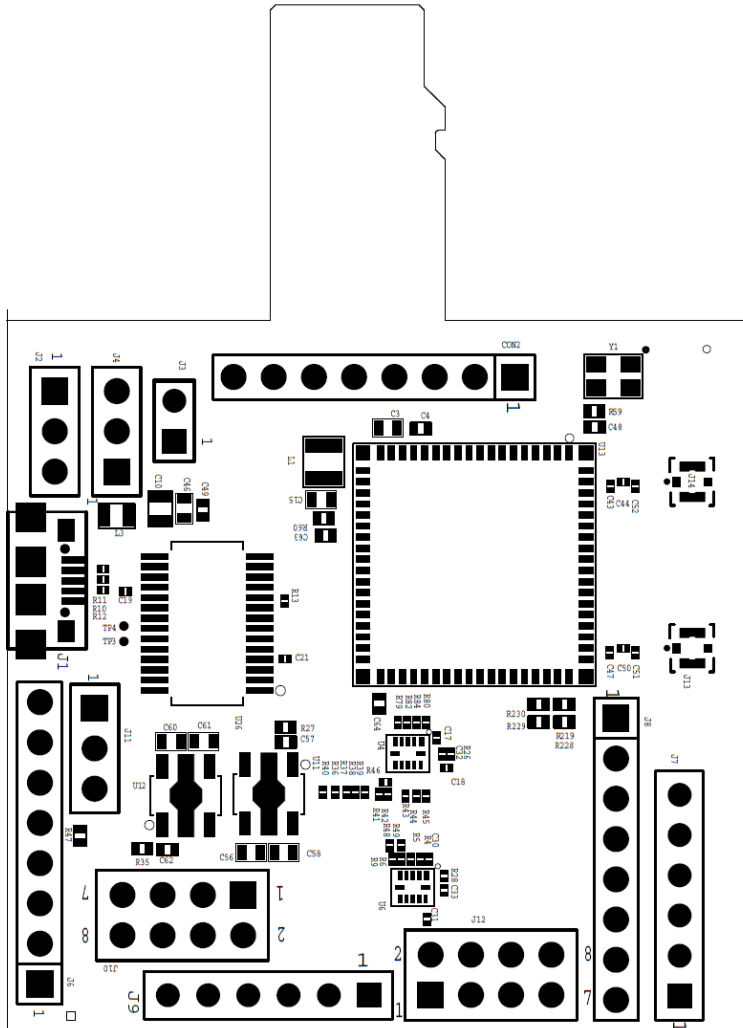


2.3 Schematics

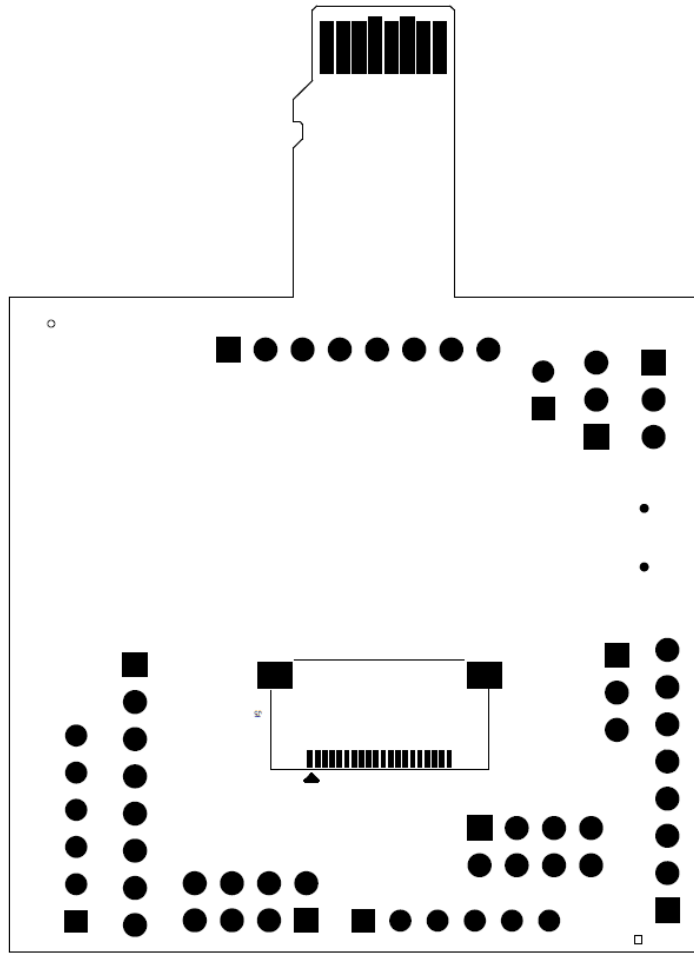




2.4 Placement

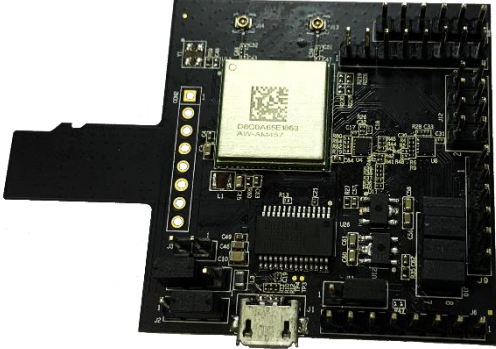




TOP View



BOT View

3. EVB Kits Contents

Content	Description
	<p>AW-AM457-S-uSD or AW-AM457-D-uSD</p>
	<p>75mm, 20 contacts, 0.5mm pitch FFC Cable</p>
	<p>PIFA Antenna</p> <ul style="list-style-type: none"> ● Radiation: Directional ● 3D Peak Gain: <ul style="list-style-type: none"> ■ 2.98dBi (2.4~2.5GHz) ■ 5.16dBi (4.9~5.9GHz) ● Polarization: Linear Vertical ● Connector: IPEX-4 Compatible ● Operating Temp: -20°C ~ +65°C ● Storage Temp: -30°C ~ +75°C