SD06-S14PXX0000NV1
Product Specification

I think therefore I am.

802.11b/g/n Module

Version 1.0

Document release	Date	Modification	Approved
Version 1.0	2016-04-27	Initial release	

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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1. General Description

The SD06-S14PXX0000NV1is most powerful Low-Power embedded Wi-Fi Module and target to smart household electrical appliance. The module support IEEE 802.11b/g/n protocol, includes a number of TCP/IP-based connectivity protocols along with SSL,enabling a low-cost,low-complexity system to obtain full-featured internet connectivity and reliable information exchange.With SD06-S14PXX0000NV1 module,the traditional devices can easily access to the

wireless network through SDIO.

The module is based on Marvell SD06-S14PXX0000NV1 which is highly integrated, and includes an energy efficient on-board power amplifier and LNA.

2. Module Hardware Overview

2.1 Features

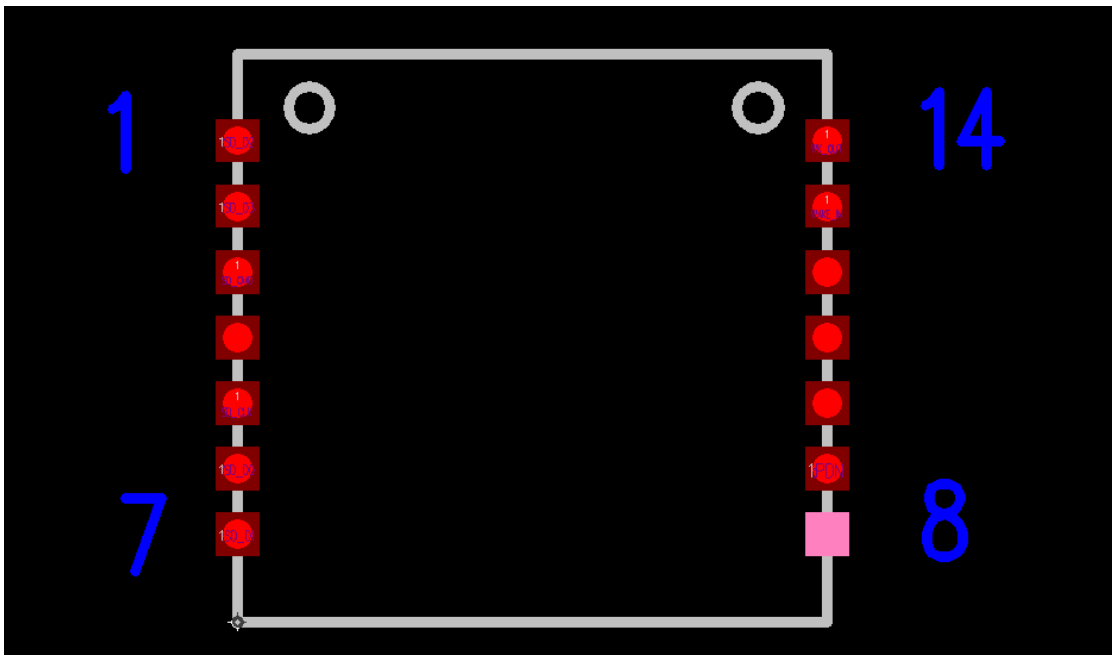
- IEEE802.11b/g/n (1x1) wireless standards
- SD06-S14PXX0000NV1 solutions for smart energy and building automation
- Support work as STA/AP mode
- Support OTA and Remote Firmware Upgrade
- Module is powered by the host with a 3.3V +/- 10% supply.
- One U.FL antenna connector inside the module
- 4 layers through hole PCB design with FR4 material

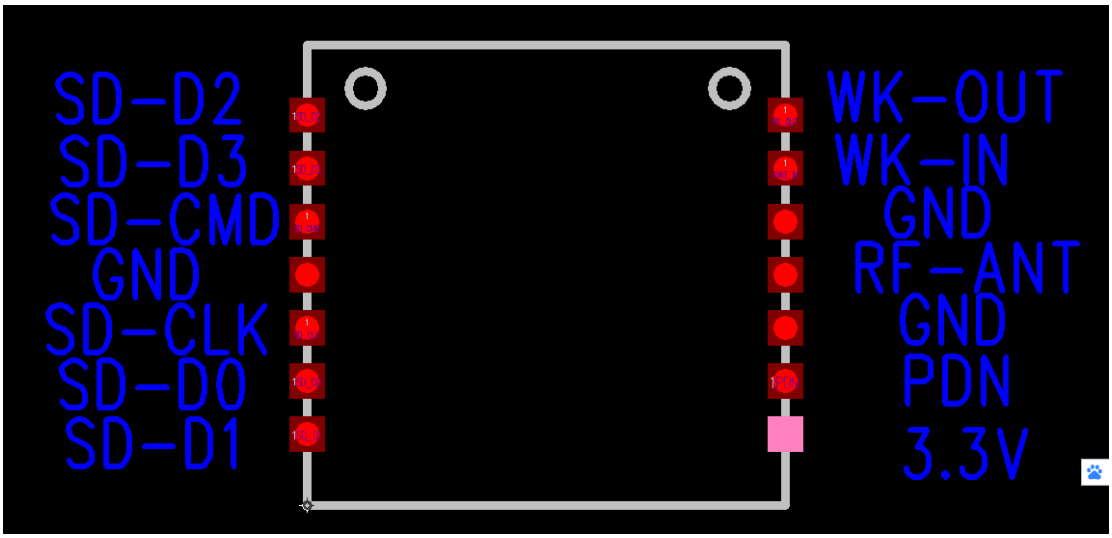
2.2 Interface

- **Interface**
  - **1.5 mm pitch connector**

■ **Antenna: IPEX connector**

◆ **Pin definition**





From Module TOP View

Pin Number	Symbol Name	Status	Pin Description
1	SD-D2	I	SDIO DATA D2

2	SD-D3	I/O	SDIO DATA D3
3	SD-CMD	I/O	SDIO CMD
4	GND	P	GND
5	SD-CLK	I/O	SDIO CLK
6	SD-D0	I/O	SDIO DATA D0
7	SD-D1	I/O	SDIO DATA D1
8	+3.3V	I/O	POWER 3.3V
9	PDN	I/O	General Purpose I/O
10	GND	P	GND
11	RF-ANT		RF-ANT
12	GND	P	
13	WK-IN	I/O	General Purpose I/O
14	WK-OUT	I/O	General Purpose I/O

3.Electrical Specification

`Element	Symbol	Min	Typ	Max	Unit
DC supply voltage	VCC	-	3.3	3.63	(V)

3.1 DC Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
STBY 3.3V	-		3.3	3.63	(V)
	Standby(CHIP_PWD)	--		--	(uA)
	Standby(SUSPEND)	--	10	--	(uA)
	Continuous Tx Current 2.4GHz	--	90		(mA)
	Continuous Rx Current 2.4GHz	--	60		(mA)

3.2 Environment Storage Condition

Environment condition	
Temperature	Operating Temperature: -10 deg.C ~70 deg.C
	Storage Temperature: -55 deg.C ~+125deg.C
Humidity	Operating Humidity: 5% ~95% (Non-condensing)
	Storage Humidity: 5% ~95% (Non-condensing)

4. RF Specification

4. 1 Rx Characteristics

Parameter	Min.	Typ.	Max.	Unit
Rx input frequency range	2.412	-	2.484	GHz
RX Characteristics	Min.	Typ.	Max.	Unit
1.Minimum Input Level Sensitivity				
1) CCK, 1Mbps(PER ≤ 8%)	-	-95	-	dBm
2) CCK, 11Mbps(PER ≤ 8%)	-	-86	-	dBm
3) OFDM, 54Mbps(PER ≤ 10%)	-	-72	-	dBm
4) HT20-MCS7(PER ≤ 10%)	-	-70	-	dBm
5) HT40-MCS7(PER ≤ 10%)	-	-68	-	dBm
2. Maximum Input Level (PER ≤ 8%)				
1) 11Mbps(PER ≤ 8%)	-10	-	-	dBm
2) 54Mbps(PER ≤ 10%)	-20	-	-	dBm
3) HT20-MCS7(PER ≤ 10%)	-20	-	-	

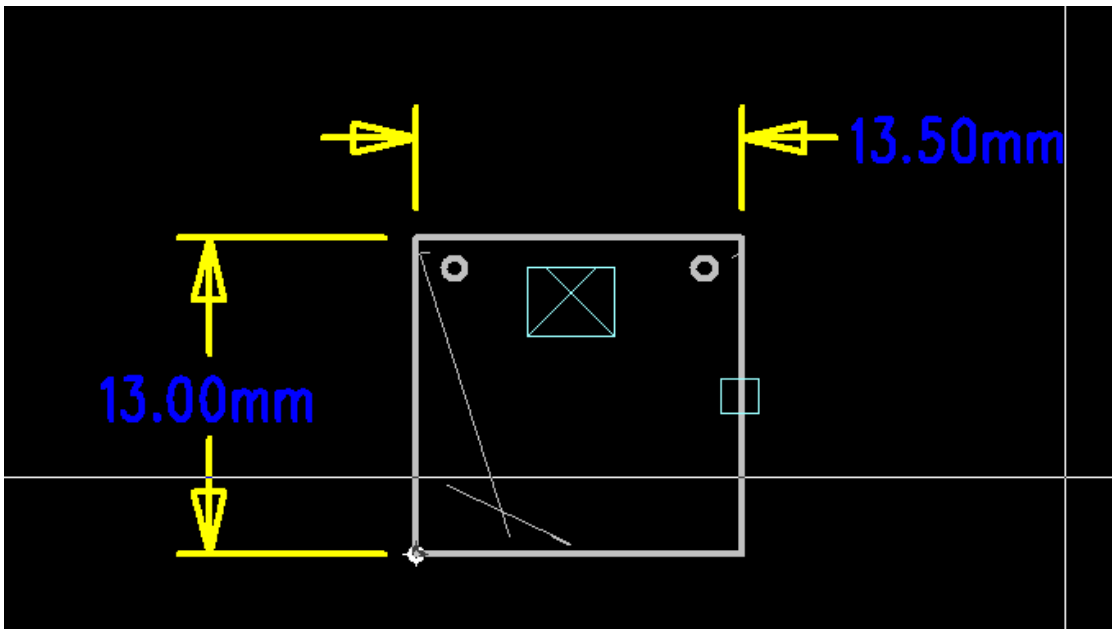
4. 2 Tx Characteristics

Parameter	Min.	Typ.	Max.	Unit
Rx input frequency range	2.412	-	2.484	GHz
TX Characteristics	Min.	Typ.	Max.	Unit
1. Power Levels				
1)Target Power@1Mbps	15.29	16.01	16.78	dBm
2)Target Power@11Mbps	15.16	15.62	16.3	dBm
3)Target Power@54Mbps	14.86	16.18	17.26	dBm
4)Target Power@HT20-MCS0	13.23	13.68	14.11	dBm
5)Target Power@HT20-MCS7	12.86	13.5	14.1	dBm
2. Frequence Error		-		ppm
3. Modulation Accuracy(EVM)@Target Power				
1) 54Mbps	-	-30	-25	dB
2) HT20-MCS7	-	-32	-28	dB
3) HT40-MCS7	-	-33	-28	dB

5.Mechanical Specifications

PCB Assembly Dimension:

- Dimension (L x W x H): L:13mm* W:13.5mm



6.FCC Caution.

1. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

3. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this

equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna. -Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. -Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body .

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter.

The WIFI module is designed to comply with the FCC statement. FCC ID is 2AEU8SD06.

The host system using Linux, should have label indicated it contain modular's FCC ID 2AEU8SD06

This radio module must not installed to co-locate and operating simultaneously with other radios in host system , additional testing and equipment authorization may be required to operating simultaneously with other radio.

Instruction for OEM:

a:Please provide below statement sontheend product user manual or on the product。

b:This LMA does not have RF shielding and is tested and approved as standalone configuration, additional evaluation may be required for any system integrated this radio module.

c:The following regulatory and safety notices must be published in documentation supplied to the end user of the product or system incorporating the WIFI module, in compliance with local regulations. Host system must be labeled with "Contains FCC ID: 2AEU8SD06 ", FCC ID displayed on label.

d: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

e:This radio module must not installed to co-locate and operating simultaneously with other radios in host system ,additional testing and equipment authorization may be required to operating simultaneously with other radio.

f: This module has data buffer.

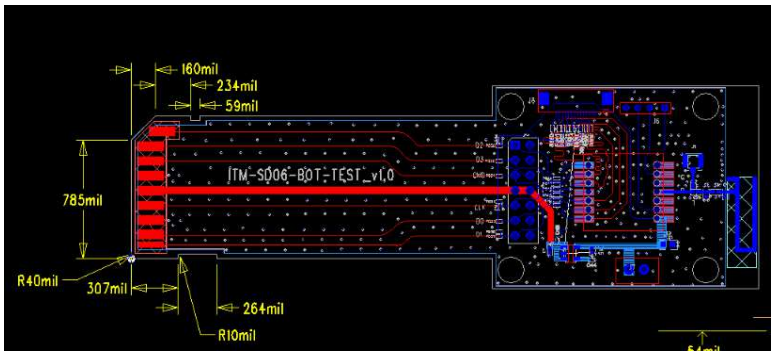
g: This module has internal power regulation inside the chipset.

h: The modular has an integral chip antenna, it's fulfil the requirements of 15.203.

i: The modular is tested in a stand-alone configuration powered by USB Port .

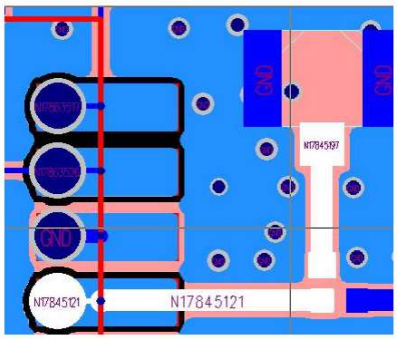
k: The modular complies with any applicable RF exposure requirements.

7.Host Antenna Connectors



Notes:(unless otherwise specified)

1) Finished board thickness to be 54Mils ±5%
2) Soldermask to be LPI.color.green.both sides..
3) Plating:immersion gold over electroless nickel.
   Edge fingers:hard gold(50micro inches gold over 150 micro inches electroless nickel)
4) Silkscreen:Both sides,color:white
5) See drill chart for finished hole sizes
6) Hole tolerance is ±3Mils unless otherwise specified
7) See film for layer sequence
8) This is a 2 layer board
9) Bow and twist..75% max allowable
10)Fabricate per IPC-6012 class 2 (latest revision) unless otherwise specified
11)Material:fr408 or equivalent .Tg=180,Td=360
12)Teardrops:ok to add as needed to Meet .002 min.trace interconnects as per IPC-6012 class 2



Line width 20 mil, and ground plane span 6 mil, 50 ohm impedance。

Top side layer 1 (1/2 oz.Cu foil)
Fr4 – Mils(No critical)
Bottom side layer 2 (1/2 oz.Cu foil)

8.Instructions on the using of the module

This module must not be incorporated into any other device or system without retesting for compliance as a composite system.

Host manufacturers are responsible for additional testing to verify compliance as a composite system. This includes retesting of transmitter module per part 15.31(h) and (k).

When testing the host device for compliance with Part 15 Subpart B, the host manufacturer is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are complaint with the transmitter(s) rule(s).

This module can only be used with a host antenna circuit trace layout design in strict compliance with the instructions provided in this OEM manual