

User Manual

SKW99 WiFi Module

General Description

The module SKW99 compliant to 802.11 b/g/n Wi-Fi Solution for low power, low-cost, and highly integrated AP and consumer electronic devices, the module requiring only a external 3.3V power supply .

The module based on the single chip QCA9531 which integrates an 802.11n MAC/BB/radio with internal PA and LNA. It supports 802.11n operations up to 144 Mbps for 20 MHz and 300 Mbps for 40 MHz channel respectively, and IEEE 802.11b/g data rates.

The module support AP mode and client mode and router mode.

The SKW99 module includes an 802.11n MAC and baseband, a 2.4GHz radio and FEM, a 580MHz MIPS CPU, a 5-port 10/100 fast Ethernet switch. Solution for low power, low-cost, and highly integrated AP router and consumer electronic devices, the module requires only an external 3.3V power supply. It supports 802.11n operating up to 144 Mbps for 20 MHz and 300 Mbps for 40 MHz channel respectively, and IEEE 802.11b/g data rates.

The module supports bridge mode and AP Client mode and Gateway mode. The high performance Module can process advanced applications effortlessly, such as routing, security and VoIP. It also includes a selection of interface to support a variety of applications, such as a USB port for accessing external storage and 3G/TLE modem. Especially in the IOT, a wide range of applications.

Applications

- AP WIFI
- 3G/4G wifi router
- Repeater WIFI
- IP TV
- IP DVD(Internet VOD Player)
- Set Top Box
- Home Gateways

- Gaming Consoles
- DVR

Features

- Compliant to IEEE 802.11b/g/n WLANs
- 2T2R Mode with support for a 300Mbps TX/RX PHY rate.
- DDR2 memory up to 1024Mb
- Flash memory up to 256Mb
- 4LAN ports and 1WAN port
- Support USB 2.0 host device
- Support USB disk.
- Support AP/Client/Router mode
- Security: WEP 64/128, WPA, WPA2, TKIP, AES, WAPI
- RoHS compliance meets environment-friendly requirement.

Module Pinout

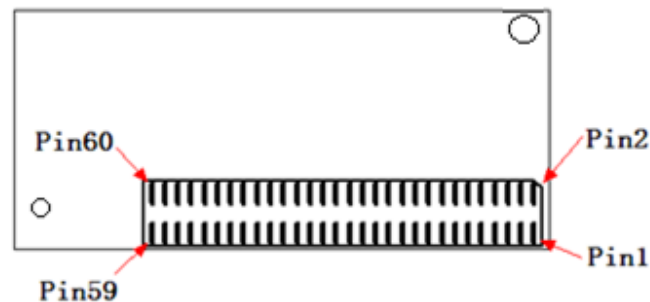
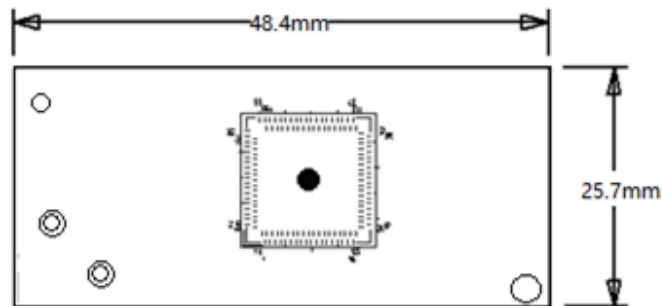


Figure 1: SKW99 Pin Name

Pin Description

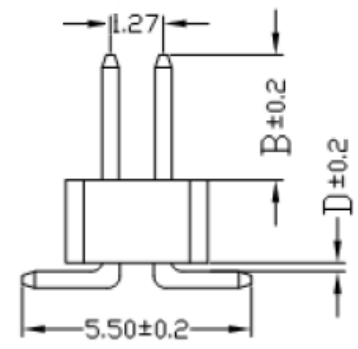
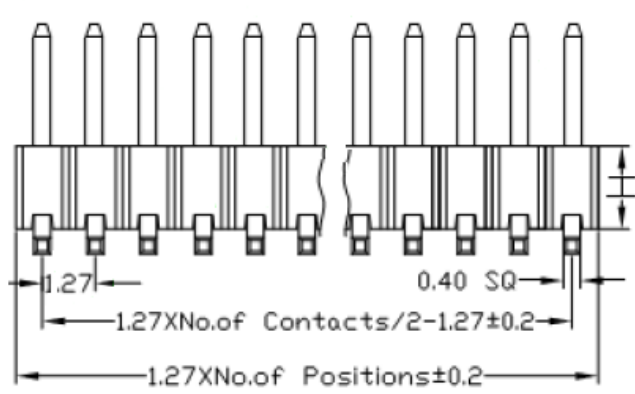
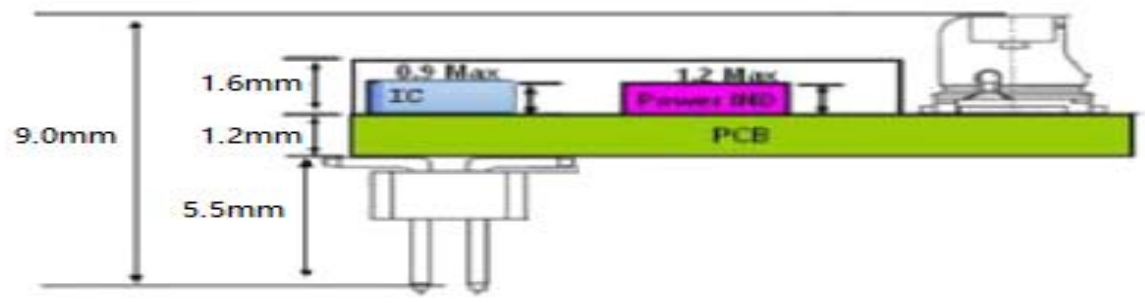
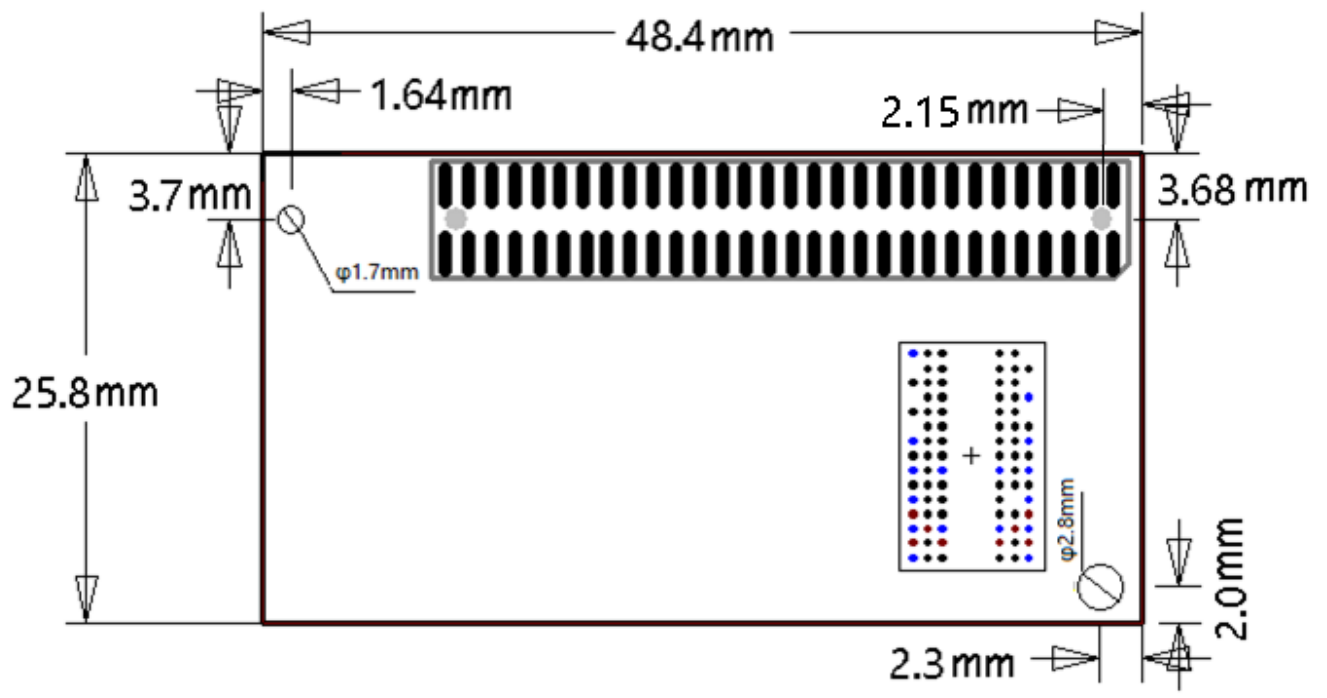
Pin No.	Pin name	Description
1	GND	Groud
2	GND	Groud
3	LAN_PORT3_RX+	Ethernet port
4	LED_LINK4	Port #3 activity LED, GPIO#11
5	LAN_PORT3_RX-	Ethernet port
6	LED_LINK3	Port #2 activity LED, GPIO#14
7	LAN_PORT3_TX+	Ethernet port
8	LED_LINK2	Port #1 activity LED, GPIO#15
9	LAN_PORT3_TX-	Ethernet port
10	GND	Groud
11	GND	Groud
12	LAN_PORT1_TX+	Ethernet port
13	LAN_PORT2_TX+	Ethernet port
14	LAN_PORT1_TX-	Ethernet port
15	LAN_PORT2_TX-	Ethernet port
16	LAN_PORT1_RX+	Ethernet port
17	LAN_PORT2_RX+	Ethernet port
18	LAN_PORT1_RX-	Ethernet port
19	LAN_PORT2_RX-	Ethernet port
20	VDD_3.3V	3.3V input 1000mA, recommended voltage 3.3V,Min2.97V, MAX
21	GND	Ground

22	VDD_3.3V	3.3V input 1000mA, recommended voltage 3.3V,Min2.97V, MAX 3.63V
23	WAN_PORT4_RX+	Ethernet Wan port
24	GPIO_0	GPIO#0
25	WAN_PORT4_RX-	Ethernet Wan port
26	GPIO_1	GPIO#1
27	WAN_PORT4_TX+	Ethernet Wan port
28	GPIO_2	GPIO#2
29	WAN_PORT4_TX-	Ethernet Wan port
30	NC	No Connect
31	LAN_PORT0_RX+	Ethernet port
32	NC	NC
33	LAN_PORT0_RX-	Ethernet port
34	NC	NC
35	LAN_PORT0_TX+	Ethernet port
36	USB +	USB signal, carries USB data to and from the USB 2.0 PHY
37	LAN_PORT0_TX-	Ethernet port
38	USB -	USB signal, carries USB data to and from the USB 2.0 PHY
39	GND	Ground
40	SYSTEM_LED	System LED, GPIO#13
41	VDD_2.0V OUTPUT	Power supply output for peripheral network transformer
42	VDD_2.5V OUTPUT	GPIO voltage output for LED
43	VDD_2.0V OUTPUT	Power supply output for peripheral network transformer
44	RESET	Resets the firmware to its default configuration, it has a internal 10k pull-up resistance, and trigger while Pulling down
45	GND	Ground

46	JUMPSTART (GPIO_17)	KEY_INPUT to start WPS function, it has a internal 10k pull-up resistance, and trigger while Pulling down
47	SPI_MISO	SPI serial interface
48	GND	Ground
49	SPI_CLK	SPI serial interface
50	VDD_3.3V	3.3V input 600mA, recommended voltage 3.3V,Min2.97V, MAX 3.63V
51	SPI_MOSI	SPI serial interface
52	VDD_3.3V	3.3V input 1000mA, recommended voltage 3.3V, Min2.97V, MAX 3.63V
53	LED_LINK1	Port #0 activity LED, GPIO#16
54	LED_WAN	WAN LED, GPIO#4, do not pull up to VDD_3V3
55	WLAN_LED	Wireless LED, GPIO#12
56	NC	No Connect
57	UART_TX	Serial data out, GPIO#10
58	UART_RX	Serial data in, GPIO#9
59	GND	Ground
60	GND	Ground

WARING: GPIO4 do not pull up to VDD_3V3.

PCB Dimensions



Dimension antitheses list

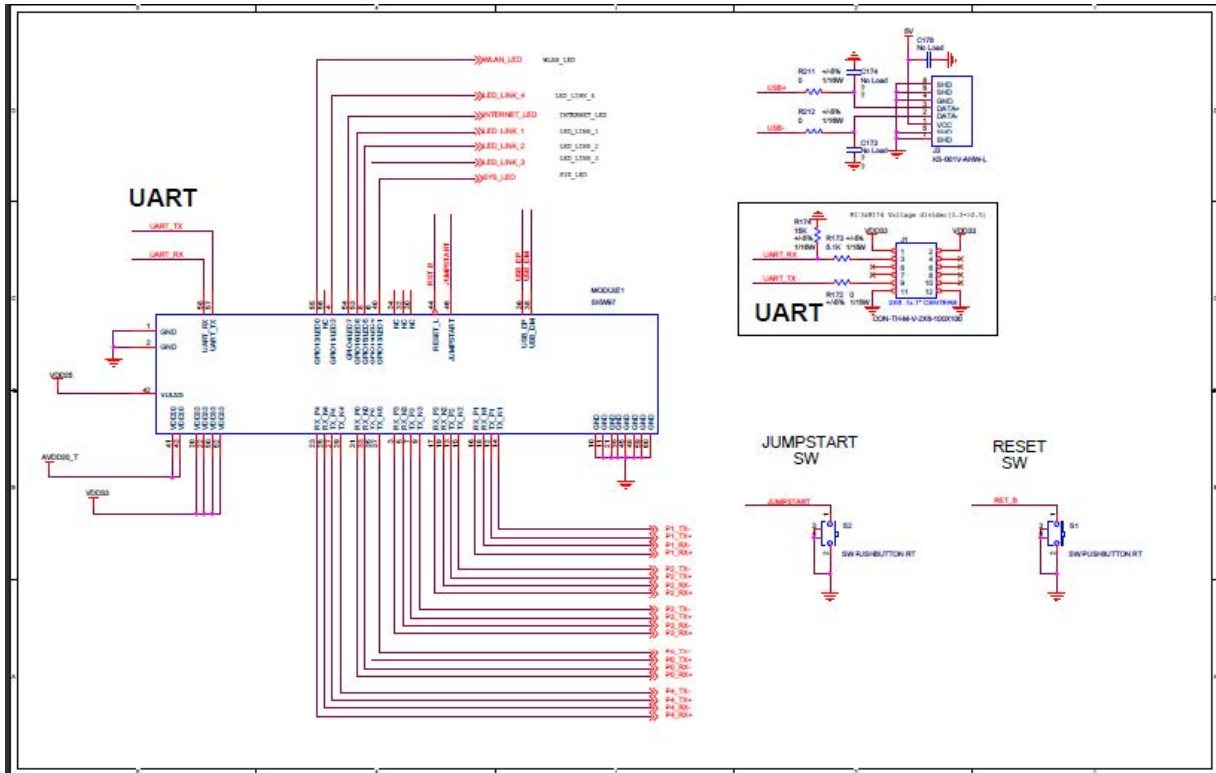
ITEM	D	B	H
Standard	0.4	4.0	1.0

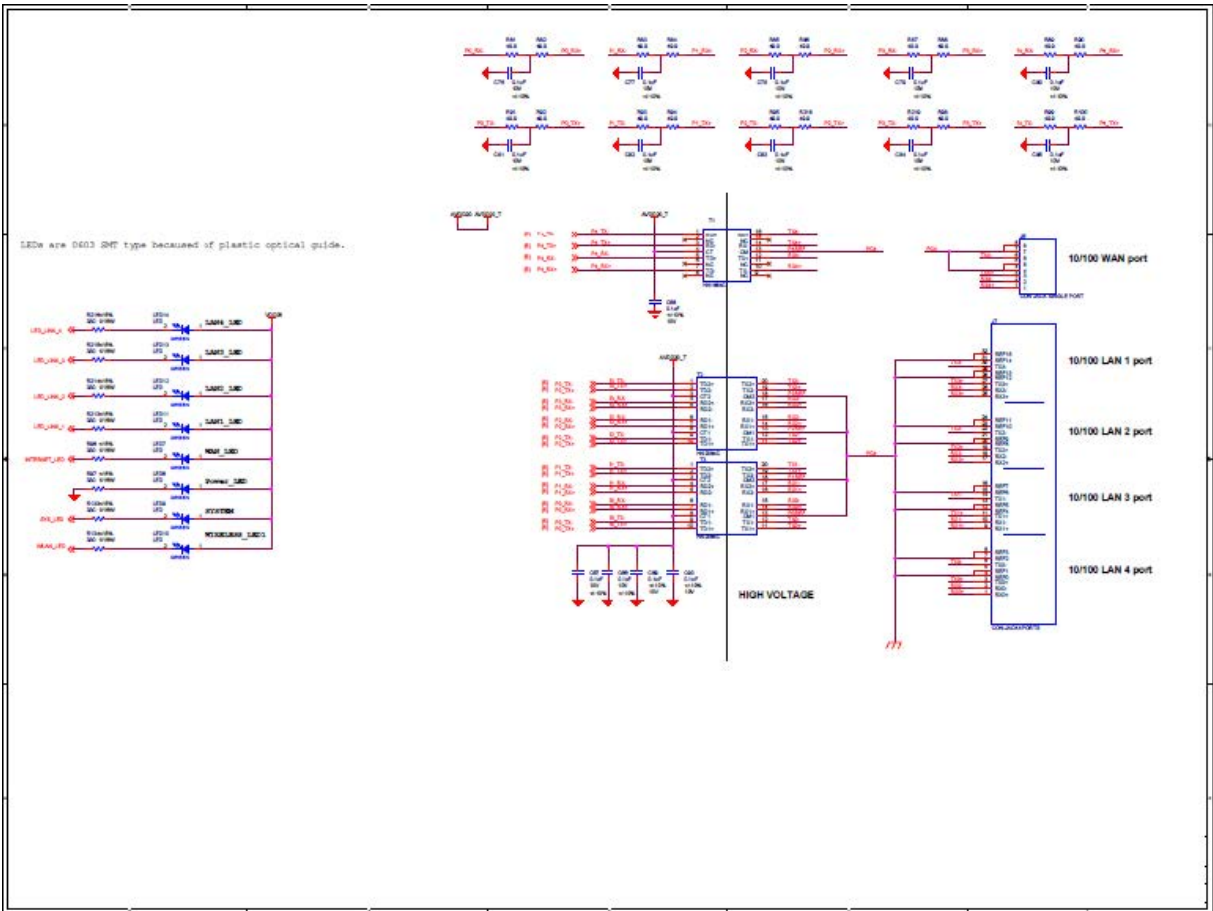
Figure 2: SKW99 Dimensions

Ordering Information

Module No.	Antenna Connector Type	SPI Flash Size
SKW99_8	IPEX Connector	8M Bytes
SKW99_16	IPEX Connector	16M Bytes

Reference design schematic





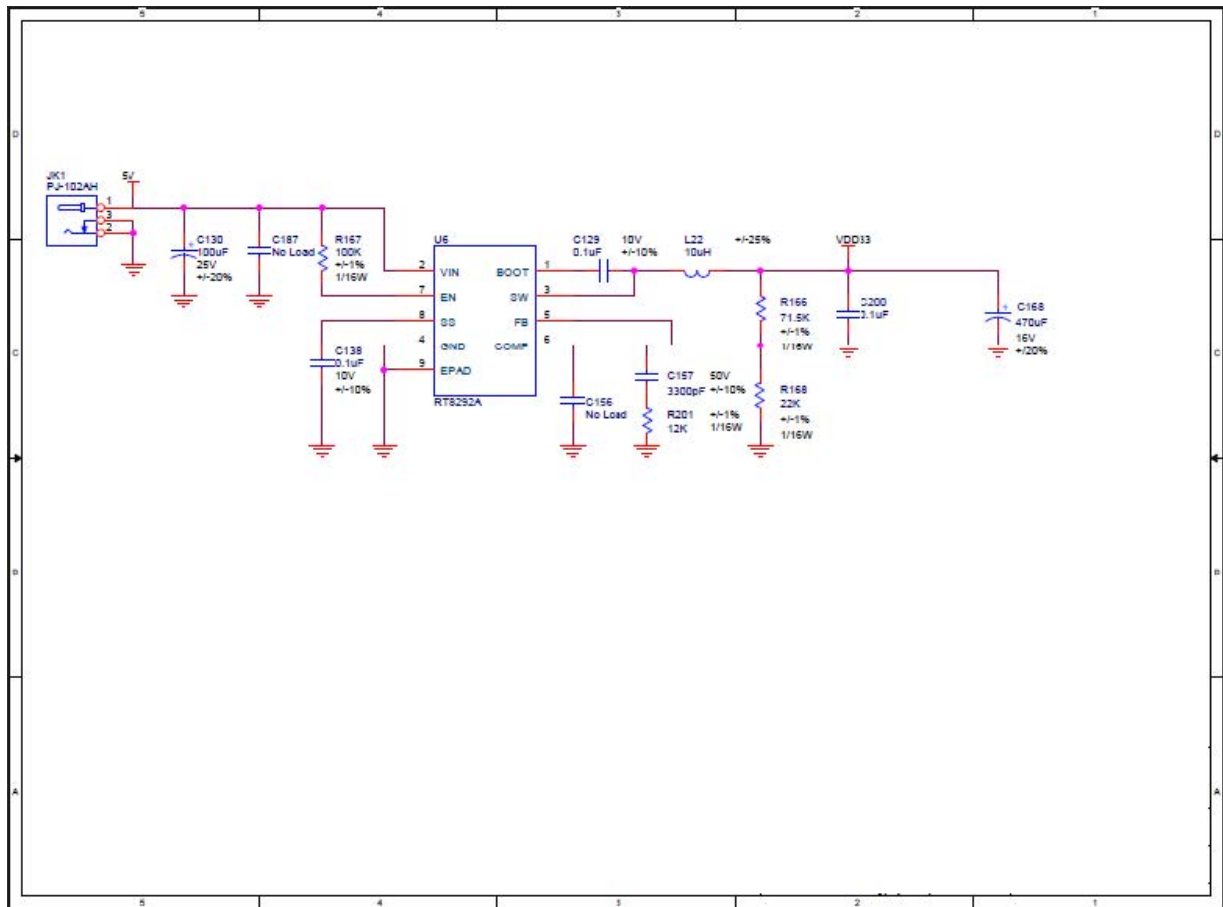


Figure 4: SKW99 Reference design schematic

CE Statement

Herby, SKYLAB M&C Technology Co., Ltd declares that this WiFi Module, SKW99 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10), this product allowed to be used in all EU member states.

Use the WiFi Module in the environment with the temperature between -10°C and 55°C

Operation Frequency: 2412MHz~2472MHz (802.11b/802.11g/802.11n(HT20))

Max output power: 0.0448W

Manufacturer: SKYLAB M&C Technology Co., Ltd

Address: 6 Floor, No.9 Building, Lijincheng Scientific & Technical park, Gongye East Road, Longhua District, Shenzhen, Guangdong, China

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Fax: +860755-83408560

E-mail: sam.chen@skylab.com.cn

FCC Statement

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

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 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.

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

Limited single-modular approval. The module not has its own RF shielding, it is only permitted to be installed in a host that can provide RF shielding and make sure all it complying with all conditions.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label

referring to the enclosed module. This exterior label can use wording such as the following:

Contains Transmitter Module FCC ID: 2ACOE-SKW99” or “Contains FCC ID: 2ACOE-SKW99” Any similar wording that expresses the same meaning may be used.

Declaration of Conformity

I hereby declare that the product

Product:

Product Name: WiFi Module

Model: SKW99

Brand Name: SKYLAB

Hardware Version: V1.0

Software Version: W0143

Antenna Information:

Antenna Gain: 2.5dBi

Antenna Type: External Antenna

Model: SKW99

Brand Name: SKYLAB

Manufacturer: SKYLAB M&C Technology Co., Lt

satisfies all the technical regulations applicable to the product within the scope of Council Directives 2014/35/EU, 2014/30/EU and 2014/53/EU:

EN 60950-1: 2006+A11: 2009+A1:2010+A12:2011+A2:2013

EN62311:2008

Draft ETSI EN 301 489-17 V3.2.0 (2017-03)

Draft ETSI EN 301 489-1 V2.2.0 (2017-03)

Draft ETSI EN 300 328 V2.2.0 (2017-11)

(Title(s) of regulations, standards, etc.)

All essential radio test suites have been carried out.

NOTIFIED BODY: PHOENIX TEST-LAB GmbH

– **Address:**

Köningswinkel 10

D-32825 Blomberg

Germany

Identification Number: 0700

MANUFACTURER or AUTHORISED REPRESENTATIVE:

– **Address:**

SKYLAB M&C Technology Co., Ltd

6 Floor, No.9 Building, Lijincheng Scientific & Technical park, Gongye East Road, Longhua

District, Shenzhen, Guangdong, China

This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorized representative.

Signature:

Samchen.

Nov. 08, 2018

Name	Sam Chen
Position	manager
Company Name	SKYLAB M&C Technology Co., Ltd

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