SKW72 AP/Repeater/UART WiFi Module Datasheet

Name: 802.11b/g/n AP/Repeater & UART WIFI Module

Model NO.: SKW72

Revision: V1.01

Revision History:

Revision	Description	Approved	Date
V1.01	Initial Release	George	20131121

General Description

The module SKW72 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 and connection to antenna.

The module based on the single chip AR9331 which integrates an 802.11n 1x1 MAC/BB/radio with internal PA and LNA. It supports 802.11n operations up to 72 Mbps for 20 MHz and 150 Mbps for 40 MHz channel respectively, and IEEE 802.11b/g data rates.

The module support AP mode and client mode and repeater mode and UART wifi.

Applications

- AP WIFI
- UART WIFI
- Repeater WIFI
- IP TV
- IP DVD(Internet VOD Player)
- Set Top Box
- Home Gateways
- Gaming Consoles
- DVR

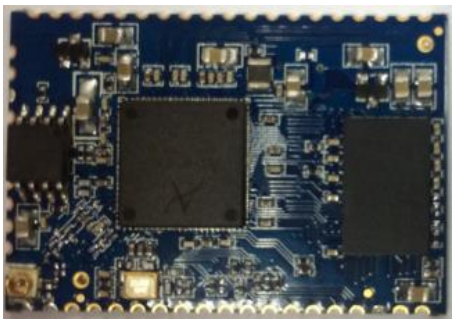

Figure 1: SKW72 Top View

Features

- Compliant to IEEE 802.11b/g/n 1x1WLANs
- DDR2 memory up to 512Mb
- Flash memory up to 64Mb
- 4LAN ports and 1 WAN port
- High-speed UART
- USB 2.0 host device mode support
- Support AP/Client/Repeater mode
- Support UART to wifi transparent
- Security: WEP 64/128, WPA, WPA2, TKIP, AES, WAPI
- RoHS compliance meets environment-friendly requirement.
- 40.5(L) x 27.5(W) x 2.9(H) mm small dimension

Applications Block Diagram

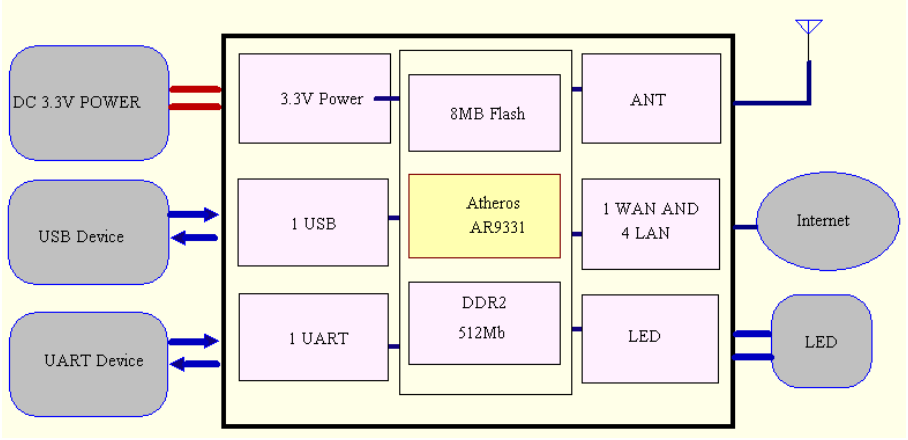

Figure 2: SKW72 Block Diagram

Ordering Information

Module NO.	RF Connector Type	Antenna Option
SKW72_E	IPEX Connector	Ext Antenna
SKW72_P	PCB pin	Ext Antenna

Performance Specification

Hardware Features	
Model	SKW72
Antenna Type	IPEX connector or PCB pin
Chipset solution	AR9331
Voltage	3.3.0V+/-10%
Dimentions(W×D)	40.5mm*27.5mm
Wireless Features	
Wireless Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
Frequency Range	2.400GHz---2.4835GHz
Data Rates	IEEE 802.11 b Standard Mode: 1,2,5.5,11Mbps IEEE 802.11g Standard Mode: 6,9,12,18,24,36,48,54Mbps

	IEEE 802.11n : 65Mbps @ HT20 150Mbps @ HT40
Receiver Sensitivity	135M: -65dBm@10% PER(MCS7) 72.2M: -70dBm@10% PER(MCS7) 54M: -75dBm@10% PER 11M: -86dBm@ 8% PER
Modulation Technique	802.11 Legacy b/g DSSS (DBPSK, DQPSK, CCK) OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
Wireless Security	WPA/WPA2, WEP, TKIP, and AES
Transmit Power	IEEE 802.11n: 14dBm @HT40 MCS7 12dBm@HT20 MCS7 IEEE 802.11g: 15dBm IEEE 802.11b: 18dBm
Work Mode	Ad-Hoc / Infrastructure mode/AP/Repeater/UART

Others

Certification	CE, FCC, RoHS	
Power Consumption@25℃	Status	Average/mA
	Continuous Tx	350
	Power Saving	70
	Note:The maximum current consumption would be impacted by radiation environment and the driver mechanism	
Environment	Operating Temperature: -20℃~70℃ Storage Temperature: -40℃~125℃ Operating Humidity: 10%~90% non-condensing Storage Humidity: 5%~90% non-condensing	

Module Pinout

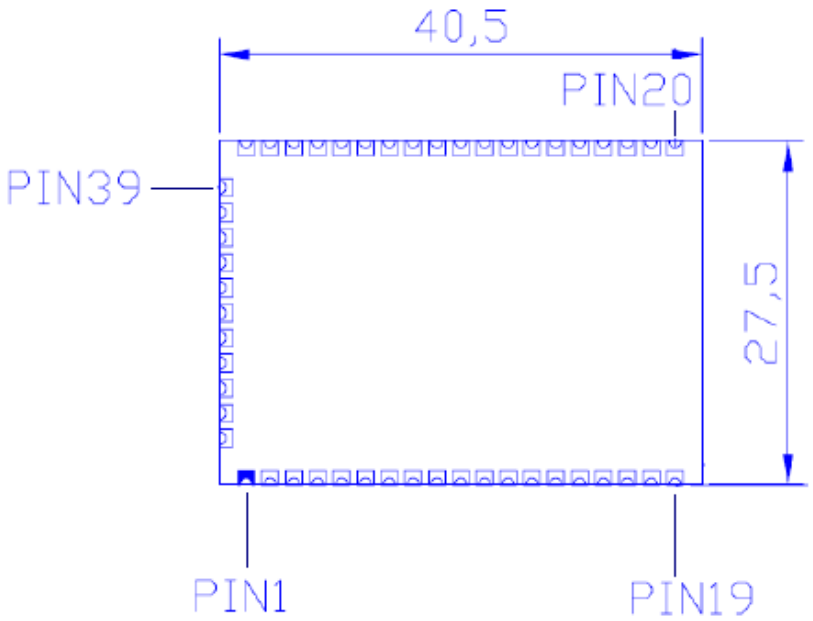

Figure 3: SKW72 Pin Package

Pin Description

1	GND	GROUND
2	ANT	Antenna pin
3	GND	GROUND
4	NC	NC
5	NC	NC
6	NC	NC
7	RESET_CONFIG (UART_CTS) (GPIO_12)	resets the firmware to its default configuration, it has a internal 10k drop down resistance, and trigger while Pulling up
8	LED6 (GPIO_17)	WLAN LED
9	LED5 (GPIO_16)	LAN_PORT3_LED,be free for customer defined.
10	LED4 (GPIO_15)	LAN_PORT2_LED
11	LED3 (GPIO_14)	LAN_PORT1_LED
12	LED7(GPIO_27)	SYSTEM LED
13	LED1 (GPIO_1)	USB LED
14	LED2 (GPIO_13)	LAN_PORT0_LED

15	LED0 (GPIO_0)	Wireless LED
16	UART_RX (SPI_CS1)	Serial data in
17	UART_TX (SPI_CS2)	Serial data out
18	GND	GROUND
19	GND	GROUND
20	WAN_PORT_RX+	WAN port
21	WAN_PORT_RX-	WAN port
22	WAN_PORT_TX+	WAN port
23	WAN_PORT_TX-	WAN port
24	LAN_PORT3_TX+	Ethernet port3
25	LAN_PORT3_TX-	Ethernet port3
26	LAN_PORT3_RX+	Ethernet port3
27	LAN_PORT3_RX-	Ethernet port3
28	LAN_PORT2_RX+	Ethernet port2
29	LAN_PORT2_RX-	Ethernet port2
30	LAN_PORT2_TX+	Ethernet port2
31	LAN_PORT2_TX-	Ethernet port2
32	LAN_PORT1_TX+	Ethernet port1
33	LAN_PORT1_TX-	Ethernet port1
34	LAN_PORT1_RX+	Ethernet port1
35	LAN_PORT1_RX-	Ethernet port1
36	GND	GROUND
37	VDD_3.3V	3.3V input 1000mA, recommended voltage 3.3V,Min2.97V, MAX 3.63V
38	VDD_3.3V	3.3V input 1000mA, recommended voltage 3.3V,Min2.97V, MAX 3.63V
39	VDD_2.0V OUTPUT	Power supply output for peripheral network transformer
40	GND	GROUND
41	LAN_PORT0_RX+	Ethernet port0
42	LAN_PORT0_RX-	Ethernet port0
43	LAN_PORT0_TX+	Ethernet port0
44	LAN_PORT0_TX-	Ethernet port0
45	USB -	USB signal, carries USB data to and from the USB 2.0 PHY
46	USB +	USB signal, carries USB data to and from the USB 2.0 PHY
47	LED8(GPIO_26)	JMP_START LED
48	JUMPSTART (UART_RTS) (GPIO_11)	KEY_INPUT to start WPS function, it has a internal 10k drop down resistance, and trigger while Pulling up
49	GND	GROUND

Module Dimensions

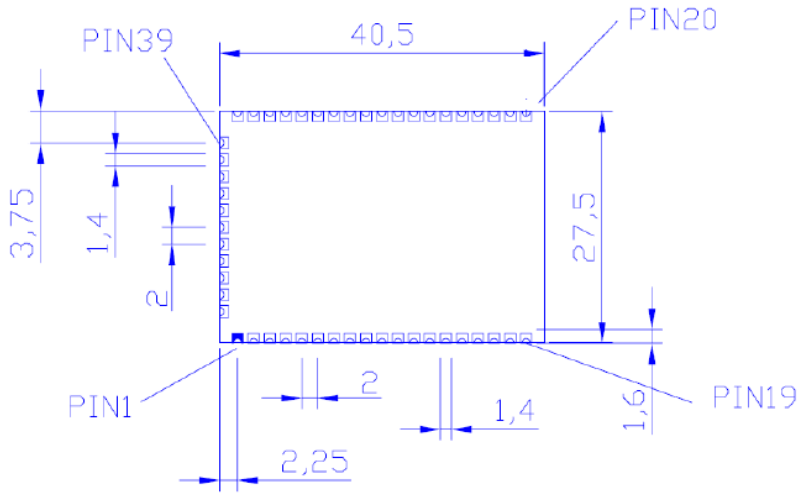

Figure 4: SKW72 dimensions

Manufacturing Process Recommendations

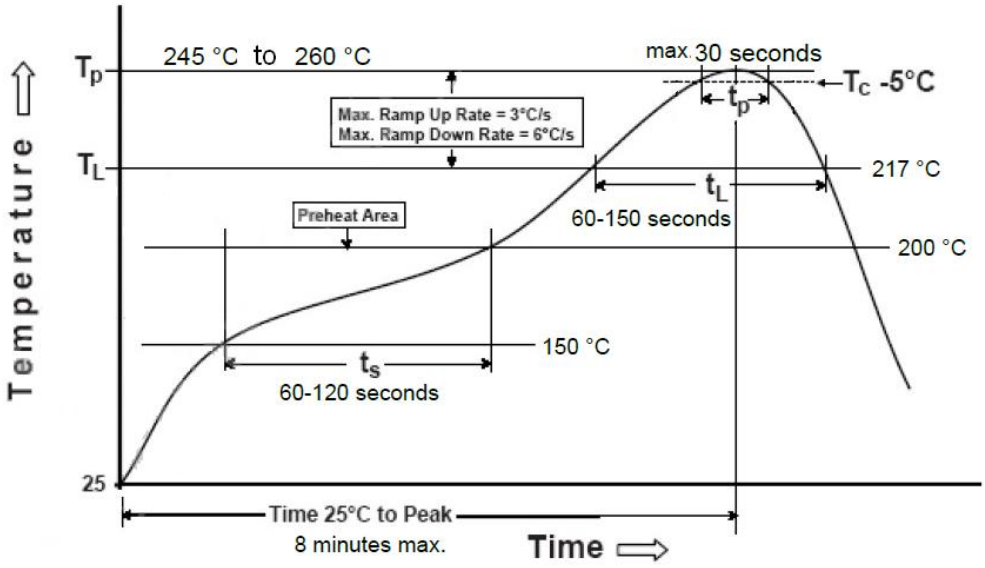

Figure 5: SKW72 Typical Leadfree Soldering Profile

Note: The final soldering temperature chosen at the factory depends on additional external factors like choice of soldering paste，size，thickness and properties of the baseboard，etc. Exceeding the maximum soldering temperature in the recommended soldering profile may permanently damage the module.

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