

# SKW73 2x2 MIMO WLAN

## Module Datasheet

Name: 802.11b/g/n 2x2 MIMO WiFi AP/Router Module

Model No.: SKW73

Revision: V2.03

### Revision History

Revision	Description	Approved	Date
V1.01	Initial Release	George	20130928
V2.01	Update Ordering Information	George	20150721
V2.02	Add GPIO Information And Update Ordering Information,	George	20150923
V2.03	Update certification information	George	20170831

## Contents

1. General Description .....	3
2. Applications .....	3
3. Features.....	3
4. Application Block Diagram .....	4
5. Interfaces .....	4
USB .....	4
WAN/LAN .....	4
6. Module Specifications .....	5
7. Module Pinout and Pin Description .....	6
Module Pinout .....	6
Pin Description .....	6
8. PCB Footprint and Dimensions .....	8
9. Electrical Characteristics .....	8
10. Manufacturing Process Recommendations .....	10
11. Ordering Information.....	11
12. Contact Information .....	11

## 1. General Description

The SKW73 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 and security. 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.

## 2. Applications

- ◆ USB WiFi Camera
- ◆ WIFI Gateway
- ◆ WiFi AP
- ◆ 3G/4G WiFi Router
- ◆ WiFi AP client
- ◆ Building Automation
- ◆ Home Automation
- ◆ Industry Control

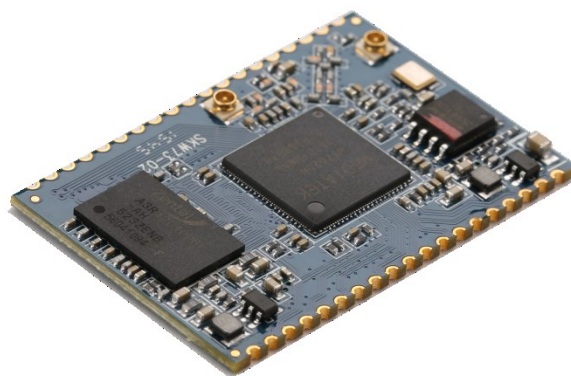


Figure 1: SKW73 Top View

## 3. Features

- ◆ Compliant to IEEE 802.11b/g/n.
- ◆ 2T2R mode with support for a 300Mbps PHY data rate.
- ◆ DDR2 memory up to 512Mb.
- ◆ Flash memory up to 128Mb.
- ◆ 2 LAN ports and 1 WAN port.
- ◆ Support USB 2.0 slave device for USB disk and USB 3G/4G dongle and USB camera.
- ◆ Support SD card.
- ◆ Security: WEP64/128, TKIP, AES, WPA, WPA2, WAPI.
- ◆ Support AP/Client/Router mode.
- ◆ RoHS compliance meets environment-friendly requirement.
- ◆ FCC, CE compliance.
- ◆ 40.5mm(L) x 27.5mm(W) x 2.8mm(H) dimension.

## 4. Application Block Diagram

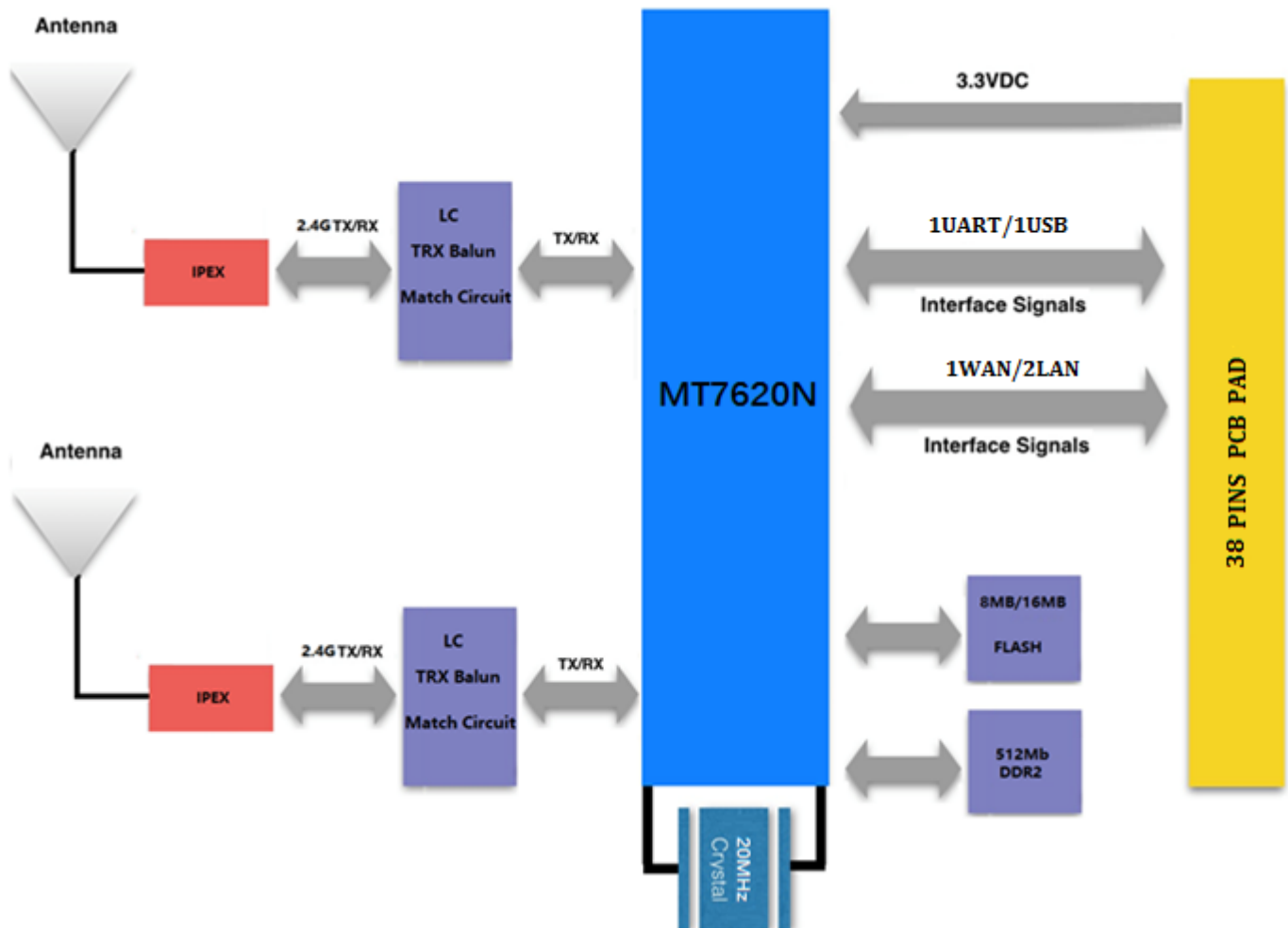


Figure 2: SKW73 Block Diagram

## 5. Interfaces

### USB

The USB interface support USB slave devices for USB disk and USB 3G/4G dongle and USB camera.

### WAN/LAN

The SKW73 module integrates 3-port 10/100Mbps fast Ethernet switch.

## 6. Module Specifications

Hardware Features	
Model	SKW73
Antenna Type	IPEX
Chipset Solution	
Voltage	3.3V±10%
Dimension(L×W×H)	40.5mm*27.5mm*2.8mm
Wireless Features	
Wireless Standards	IEEE 802.11b/g/n
Frequency Range	2.412GHz-2.484GHz
Data Rates	IEEE 802.11b : 1,2,5.5,11Mbps
	IEEE 802.11g : 6,9,12,18,24,36,48,54Mbps
	IEEE 802.11n : MCS0--MCS7 @ HT20
	MCS0--MCS7 @ HT40
Receiver Sensitivity	HT40 MCS7 : -70dBm@10% PER(MCS7)
	HT20 MCS7 : -73dBm@10% PER(MCS7)
	54M: -77dBm@10% PER
	11M: -89dBm@ 8% PER
Modulation Technique	DSSS (DBPSK, DQPSK, CCK)
	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
Wireless Security	WPA/WPA2, WEP, TKIP and AES, WPS2.0, WAPI
Transmit Power	IEEE 802.11n: 14dBm @HT20/40 MCS7
	IEEE 802.11g: 15dBm @54MHz
	IEEE 802.11b: 18dBm @11MHz
Work Mode	Bridge/Gateway/AP Client
Others	
Certification	RoHS
Environment	Operating Temperature: -20°C~55°C
	Storage Temperature: -40°C~125°C

	Operating Humidity: 10%~90% non-condensing
	Storage Humidity: 5%~90% non-condensing

## 7. Module Pinout and Pin Description

### Module Pinout:

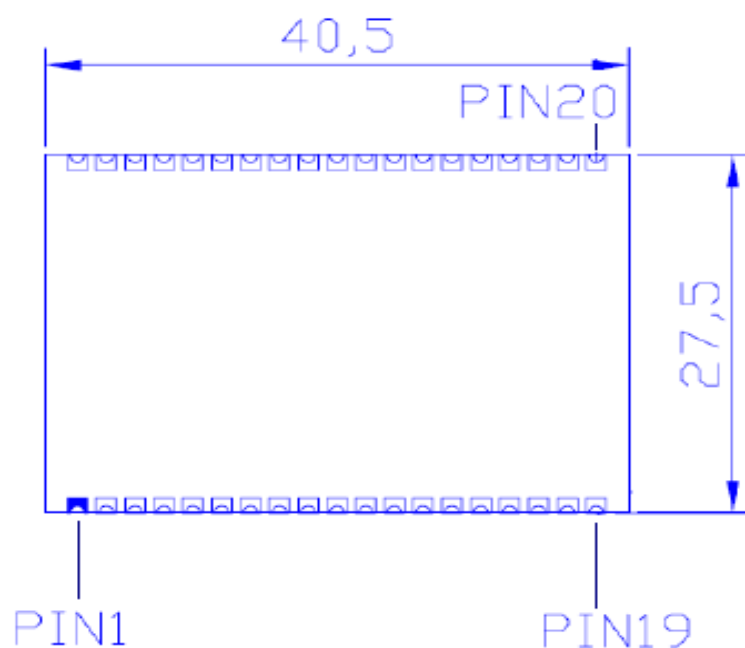


Figure 3: SKW73 Pin Package

### Pin Description:

1	GND	GROUND
2	RF1	WIFI RF PIN
3	GND	GROUND
4	NC	NC
5	NC	NC
6	LED6	WLAN LED
7	LED5	LAN_PORT3_LED
8	LED4	LAN_PORT0_LED
9	LED3	LAN_PORT1_LED

10	LED2	LAN_PORT2_LED
11	LED1	WAN_PORT_LED
12	WPS_CONFIG	Module WPS Input(Active Low Status)
13	RESET_CONFIG	Module Reset Input(Active Low Status)
14	NC	NC
15	NC	NC
16	NC	NC
17	NC	NC
18	NC	NC
19	NC	NC
20	GND	GROUND
21	UART_TX	UART Serial Data Output
22	UART_RX	UART Serial Data Input
23	LAN_PORT2_RX+	Ethernet Port2
24	LAN_PORT2_RX-	Ethernet Port2
25	LAN_PORT2_TX+	Ethernet Port2
26	LAN_PORT2_TX-	Ethernet Port2
27	LAN_PORT3_TX+	Ethernet Port3
28	LAN_PORT3_TX-	Ethernet Port3
29	LAN_PORT3_RX+	Ethernet Port3
30	LAN_PORT3_RX-	Ethernet Port3
31	WAN_PORT_RX+	WAN Port
32	WAN_PORT_RX-	WAN Port
33	WAN_PORT_TX+	WAN Port
34	WAN_PORT_TX-	WAN Port
35	USB +	USB signal, carries USB data to and from the USB 2.0 PHY
36	USB -	USB signal, carries USB data to and from the USB 2.0 PHY
37	GND	GROUND
38	VDD_3.3V	3.3V input 1000mA, recommended voltage 3.3V,Min2.97V,

## 8. PCB Footprint and Dimensions

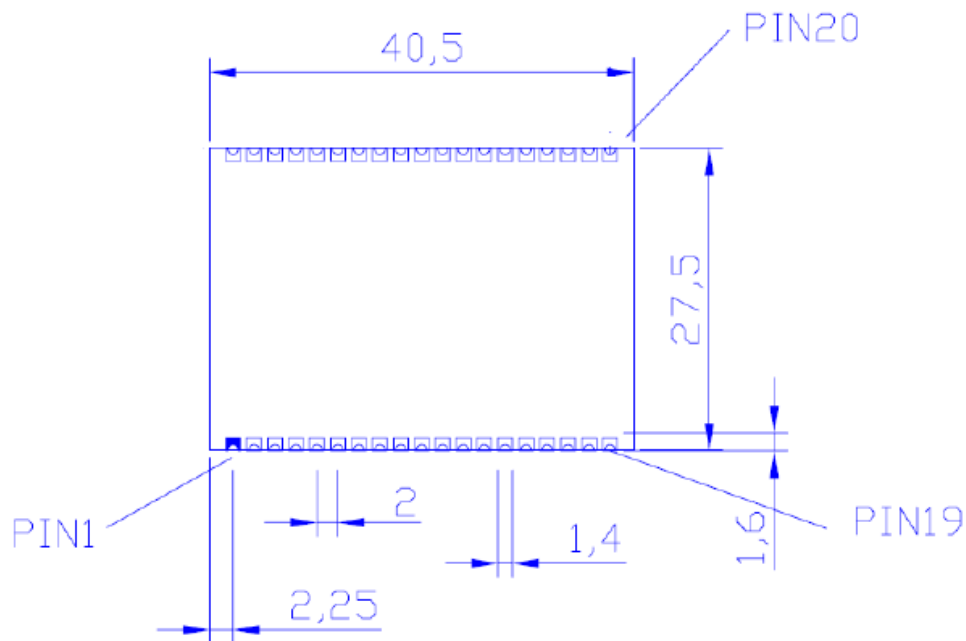


Figure 4: SKW73 Recommend PCB Footprint

## 9. Electrical Characteristics

### a) Absolute Maximum Ratings

Parameter	Condition	Min.	Typ.	Max.	Unit
Storage temperature range		-40		125	°C
ESD Protection	VESD	/		2000	V
Supply voltage	VDD_3.3V	0		3.6	V
Voltage on any I/O pin		-0.3		3.63	V

Table9-1: Absolute Maximum Ratings



**b) Recommended Operation Ratings**

Parameter	Symbol	Min.	Typ.	Max.	Unit
Extended temp.	TA	-20		55	°C
Power Supply	VDD_3.3V	2.97	3.3	3.63	V
Input Low Voltage	VIL	-0.3		0.8	V
Input High Voltage	VIH	2		3.63	V

**Table9-2: Operating Conditions**

**c) Measurement Conditions**

System State	Current (Typ.)@3.3V
Standby	190 mA
Transmit (2.4g; +15 dBm @ TX HT20 MCS7.)	410 mA
Transmit (2.4g; +18 dBm @ 11b 11Mbps.)	460 mA

**Table9-3: Power Consumption in Different States**

## 10. Manufacturing Process Recommendations

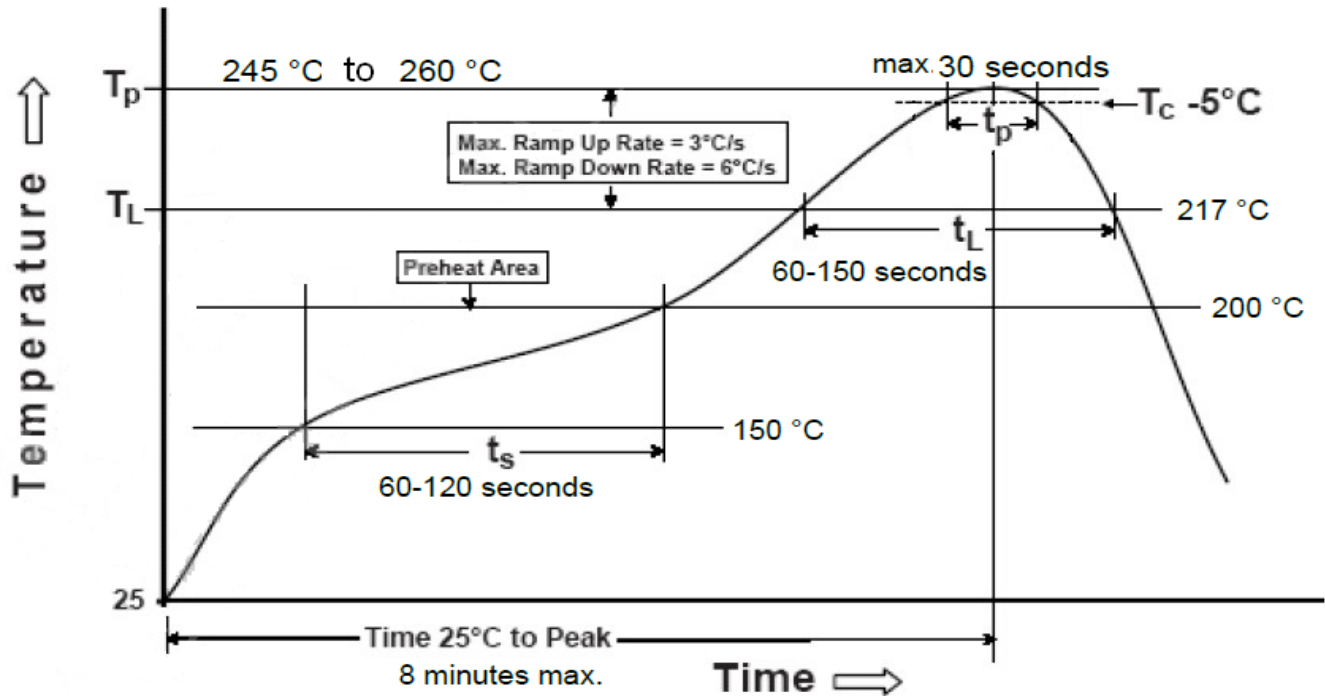


Figure 5: SKW73 Typical Lead-free Soldering Profile

**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.

## 11. Ordering Information

Module No.	Antenna Connector Type	SPI Flash Size
SKW73_E8	IPEX Connector	8M Bytes
SKW73_E16	IPEX Connector	16M Bytes

## 12. Contact Information

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