

HK NATER TECH LIMITED

AR6302-ITM-SD03 Specification

Customer: _____

Description: AR6302-ITM-SD03 V1.0

Customer P/N: _____

Date: _____

Customer		
Approve	Auditing	Admit

Provider		
Approve	Auditing	Admit

Customer:

Add:

Tel:

Fax:

Attn:

E-mail:

Provider:HK NATER TECH LIMITED

Add: 2F,NO.27,2 Baomin Rd.,Baoan Dist.SZ City,China

Tel:0086-755-61522172/13510620050

Fax:0086-755-61522171

Attn:Lingo

E-mail:hsdgood@163.com

AR6302-M

Product Specification

802.11 b/g/n Module

Version 1.0

[illegible]

General Description

The module AR6302-M is small form factor IEEE 802.11 g/n MAC/baseband/radio optimized for low-power mobile applications. It is the 3rd generation WLAN design in the ROCm® family, employing the world's lowest power consumption WLAN architecture in the smallest possible form factor. The AR6302-M is a single stream 1x1 802.11n implementation providing improved link robustness, extended range, increased throughput and better performance for an unparalleled user experience. The AR6302-M is part of the Align™ product family.

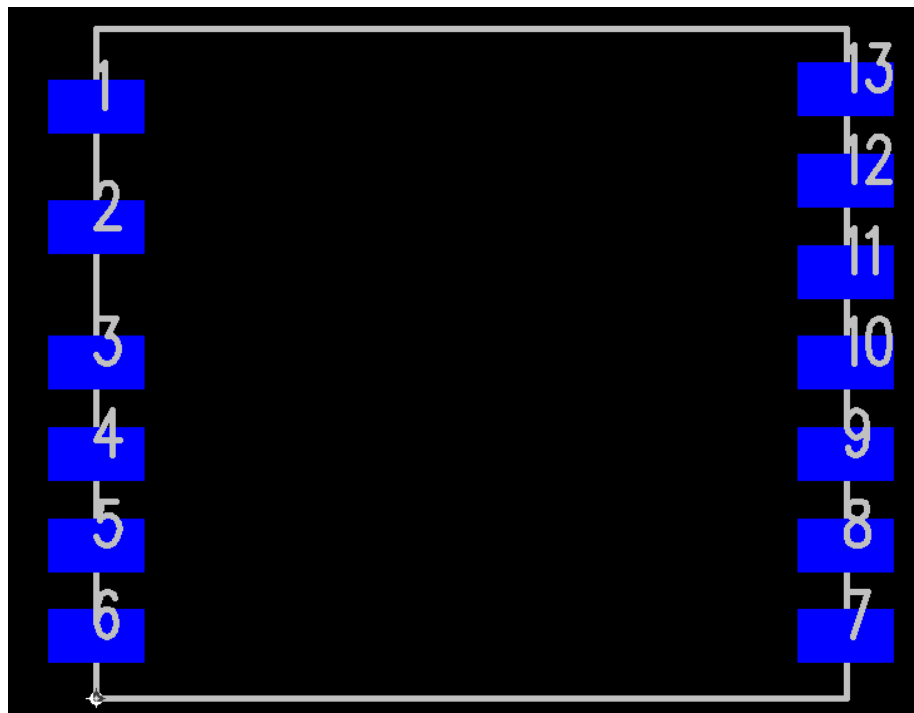
The AR6302-M implements sophisticated design techniques to deliver a solution which will greatly extend the battery life of mobile and embedded systems. It leverages its near-zero power in idle and stand-by modes to enable users to leave WLAN "always-on" without impacting battery life.

The AR6302-M implements Atheros' proprietary Internal Efficient Power Amplifier™ (EPA) technology in CMOS with advanced linearization algorithms and an internal LNA, thereby reducing the BOM costs in the system design. It provides the option for an additional external PA for larger output power if needed. The AR6302-M has additional LDO to provide noise isolation for digital and analog supplies.

Features

- Single stream 802.11n provides highest throughput and superior RF performance for handhelds
- Advanced 1x1 802.11n features:
 - Full/Half Guard Interval
 - Frame Aggregation
 - Space Time Block Coding (STBC)
 - Low Density Parity Check (LDPC) Encoding
- Integrated high-output Atheros Efficient Power Amplifier™ and LNA
- Supports SDIO v2.0 (50MHz, 4-bit and 1-bit)
- Lowest power consumption in the industry with near zero in idle/standby modes, extending battery life
- Integrated on-chip processor to minimize the loading on host processor

Interface



Pin No.	Symbol Name	Status	Description
1	GND	P	Ground
2	ANT	O	RF output,connect to external antenna
3	WOW	O	Advanced interrupt output
4	VDD_IO	I	IO Power supply
5	VDD_3.3V	I	Analog 3.3V supply
6	CHIP_PWD_L	I	Reset signal to power down the module
7	SD_CMD	I/O	SDIO command
8	SD_D3	I/O	SDIO data pin bit3
9	SD_D2	I/O	SDIO data pin bit2
10	SD_D1	I/O	SDIO data pin bit1
11	SD_D0	I/O	SDIO data pin bit0
12	SD_CLK	I	SDIO clock
13	GND	P	Ground

Electrical Specification

DC Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
VDD_IO	IO Power supply	1.71	-	3.46	(V)
VDD_3.3V	Analog 3.3V supply	3.14	3.3	3.46	(V)

Environment Storage Condition

Environment condition	
Temperature	Operating Temperature: -10 deg.C ~70 deg.C
	Storage Temperature: -40 deg.C ~80 deg.C
Humidity	Operating Humidity: 5% ~95% (Non-condensing)
	Storage Humidity: 5% ~95% (Non-condensing)

Receiver Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
F_{RX}	Receive input frequency range		2.412		2.484	GHz
S_{rf}	Sensitivity					
	CCK, 1 Mbps	[1]	-93	-97	-99	dBm
	CCK, 2 Mbps		-89	-93	-95	
	CCK, 5.5 Mbps		-87	-91	-94	
	CCK, 11 Mbps		-85	-89	-91	
	OFDM, 6 Mbps		-89	-93	-95	
	OFDM, 9 Mbps		-88	-92	-94	
	OFDM, 12 Mbps		-87	-91	-93	
	OFDM, 18 Mbps		-84	-88	-91	
	OFDM, 24 Mbps		-81	-85	-87	
	OFDM, 36 Mbps		-78	-82	-84	
	OFDM, 48 Mbps		-73	-77	-79	
	OFDM, 54 Mbps		-72	-76	-78	
	HT20, MCS0		-89	-93	-95	
	HT20, MCS1		-86	-90	-93	
	HT20, MCS2		-84	-88	-90	
	HT20, MCS3		-79	-83	-85	
	HT20, MCS4		-77	-81	-82	
	HT20, MCS5		-72	-76	-78	
	HT20, MCS6		-70	-74	-76	
	HT20, MCS7		-69	-73	-75	
R_{adj}	Adjacent channel rejection					
	OFDM, 6 Mbps	[1]	31	37	39	dB
	OFDM, 54 Mbps		17	21	24	
	HT20, MCS0		31	37	39	
	HT20, MCS7		16	20	22	

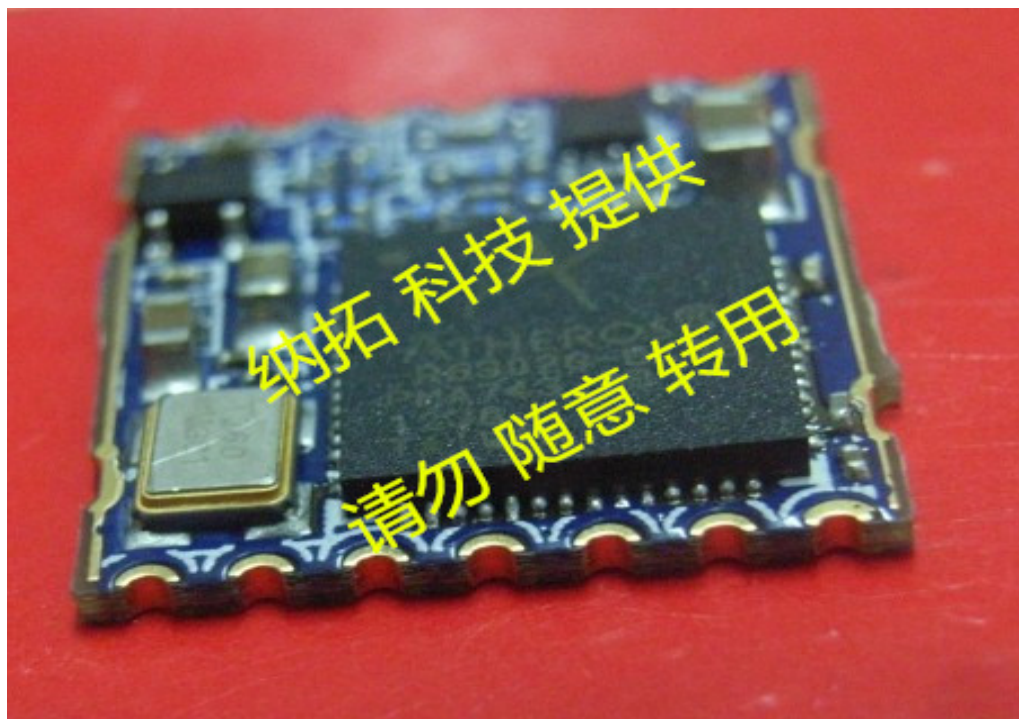
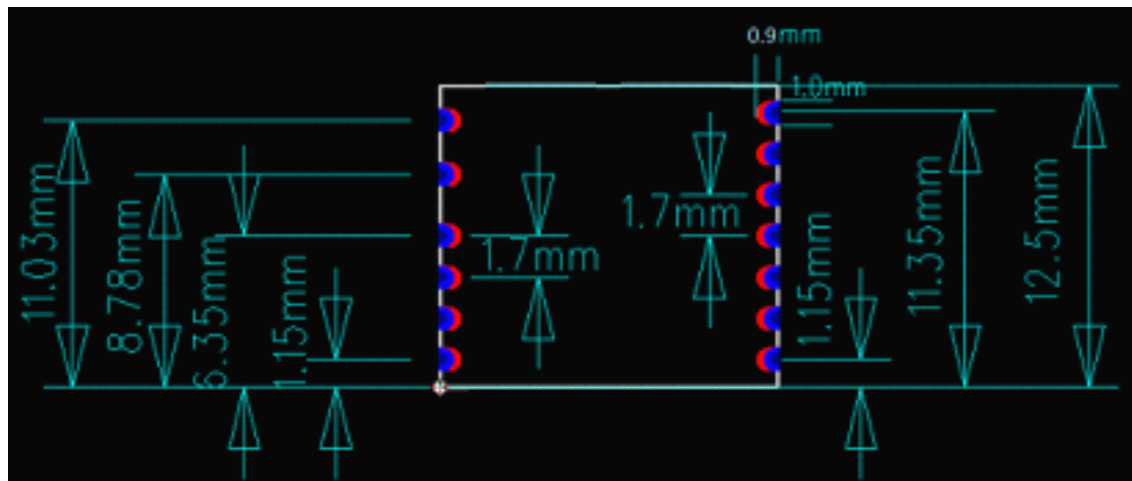
Transmitter Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
F_{tx}	Transmit output frequency range		2.412		2.484	GHz
P_{out}	Output power ^[1]	[2]				
	11b mask compliant	1Mbps	17	18	19	dBm
	11g mask compliant	6Mbps	17.5	19	21	
	11n HT20 mask compliant	MCS0	17	18.5	20	
	11g EVM compliant	54Mbps	15	16	17	
	11n HT20 EVM compliant	MCS7	11	13	16	
A_{pl}	Accuracy of power leveling loop	[3]		±1.5		dB

Mechanical Specifications

PCB Assembly Dimension:

- ◆ Dimension(L x W):14mm*12.5mm
- ◆ PCB: 4 Layer High Tg-FR4 design

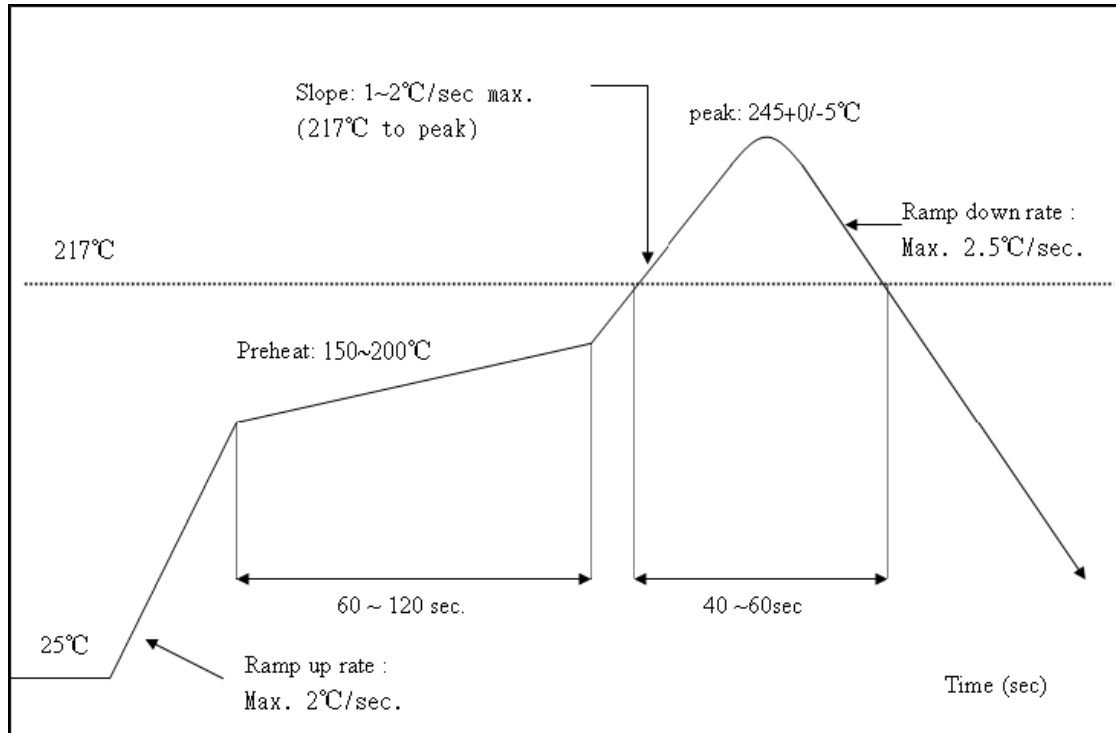


Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : $<250^{\circ}\text{C}$

Number of Times : ≤ 2 times



ENVIRONMENTAL

Operating

Operating Temperature: 0°C to $+70^{\circ}\text{C}$
Relative Humidity: 5-90% (non-condensing)

Storage

Temperature: -40°C to $+80^{\circ}\text{C}$ (non-operating)
Relevant Humidity: 5-95% (non-condensing)

MTBF caculation

Over 150,000hours