

HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

AR9331模块承认书

客户名称

Customer: _____

样品名称

Description: AR9331 Module VER: 1.2

客户料号

Customer P/N: _____

日期

Date: _____

客户栏 Customer		
核准Approve	审核Auditing	承认Admit

供应商栏 Provider		
核准Approve	审核Auditing	承认Admit

客户名称:

公司地址:

电话:

传真:

联系人:

供方名称: 香港纳拓科技有限公司

公司地址: 深圳市宝安区宝民二路贤基大厦1B25

电话: 0755-61522172/13510620050

传真: 0755-61522171

联系人: 王先生

尊敬的客户: 请收到我公司样品承认书三日内传首页, 谢谢!

HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

General Description

The module of AR9331 is a complete, small form factor 802.11 b/g/n Wi-Fi Solution optimized for low power, low-cost, and highly integrated AP and consumer electronic devices, the module integrates all Wi-Fi functionality in a package friendly to low-cost PCB design, requiring only a few 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 at the same time and include mass service application software to reduce the research and design work of customer.

Features

- MIPS 24K processor operating at up to 400 Mhz.
- DD2 memory up to 512 Mb.
- SPI NOR Flash memory up to 64Mb.
- 4LAN ports and 1 WAN port
- High-speed UART for console support
- I2S audio interface
- USB 2.0 host/device mode support
- GPIO/LED support
- SPI support.

HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

Radio Receiver Characteristics for 2.4 GHz Operation

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
F_{rx}	Receiver input frequency range	5 MHz center frequency	2.412	—	2.472	GHz
NF	Receive chain noise figure (max gain)				—	
		LNA1 (Tx/Rx shared)	—	5.0	—	
S_{rf}	Sensitivity ^[1]					
	CCK, 1 Mbps	See Note ^[2]	-80	-93	—	dBm
	CCK 11 Mbps		-76	-87	—	
	OFDM, 6 Mbps		-82	-88	—	
	OFDM, 54 Mbps		-65	-74	—	
	HT20, MCS0, 1 stream, 1 Tx, 1 Rx	See Note ^[2]	-82	-88	—	dBm
	HT20, MCS7, 1 stream, 1 Tx, 1 Rx		-64	-71	—	
	HT40, MCS0, 1 stream 1 Tx, 1 Rx	See Note ^[2]	-79	-85	—	dBm
	HT40, MCS7, 1 stream 1 Tx, 1 Rx		-61	-69	—	
IP1dB	Input 1 dB compression (min. gain)	—	—	-4	—	dBm
IIP3	Input third intercept point (min. gain)	—	—	5.5	—	dBm
Z_{RFin_input}	Recommended LNA differential drive impedance	LNA2	—	27-j5	—	Ω
ER_{phase}	I, Q phase error	—	—	0.15	—	°
ER_{amp}	I, Q amplitude error	—	—	1.0	—	dB
R_{adj}	Adjacent channel rejection					
	OFDM, 6 Mbps	10 to 20 MHz ^[3]	16	34	—	dB
	OFDM, 54 Mbps		-1	19	—	
	HT20, MCS0		16	34	—	dB
	HT20, MCS7		-2	18	—	
TR_{powup}	Time for power up (from synthesizer)	—	—	1.5	—	μs

HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

Transmitter Characteristics for 2.4 GHz Operation

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
F _{tx}	Transmit output frequency range	5 MHz center frequency	2.412	—	2.472	GHz
P _{out}	Mask Compliant CCK output power	See Note ^[1]	—	19.5	—	dBm
	Mask Compliant OFDM output power					
	802.11g BPSK 6 Mbps	See Note ^[2]	—	20	—	dBm
	HT20, MCS0		—	19	—	
	HT40, MCS0		—	16	—	
	EVM Compliant OFDM output power					
	802.11g 64 QAM 54 Mbps	See Note ^[1]	—	19	—	dBm
	HT20, MCS7		—	17	—	
	HT40, MCS7		—	16	—	
SP _{gain}	PA gain step	See Note ^[2]	—	0.5	—	dB
A _{pl}	Accuracy of power leveling loop	See Notes ^{[3][4]}	—	±0.5	—	dB
Z _{RFout_load}	Recommend differential PA load impedance	See Note ^[5]	—	12+j13	—	Ω
OP1dB	Output P1dB (max. gain)	2.442 GHz	—	21	—	dBm
OIP3	Output third order intercept point (max. gain)	2.442 GHz	—	31	—	dBm
SS	Sideband suppression	—	—	-37	—	dBc
RS	Synthesizer reference spur	—	—	-62	—	dBc
TT _{powup}	Time for power up (from synthesizer on)	—	—	1.5	—	μs

HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

Pin Description

Pin No.	Name	Description
1	GND	GROUND
2	ANTENNA	Customer can select connection point, top or side
3	GND	GROUND
4	SPI_MOSI	SPI serial interface
5	SPI_CLK	SPI serial interface
6	SPI_MISO	SPI serial interface
7	RESET_CONFIG	resets the firmware to its default configuration when pushed
8	LED6	WLAN LED
9	LED5	LAN_PORT3_LED
10	LED4	LAN_PORT2_LED
11	LED3	LAN_PORT1_LED
12	GPIO_22	KEY_INPUT
13	GPIO_23	KEY_INPUT
14	LED2	LAN_PORT0_LED
15	LED0	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+	Ethernet port
21	WAN_PORT_RX-	Ethernet port
22	WAN_PORT_TX+	Ethernet port
23	WAN_PORT_TX-	Ethernet port
24	LAN_PORT3_TX+	Ethernet port
25	LAN_PORT3_TX-	Ethernet port
26	LAN_PORT3_RX+	Ethernet port
27	LAN_PORT3_RX-	Ethernet port
28	LAN_PORT2_RX+	Ethernet port
29	LAN_PORT2_RX-	Ethernet port
30	LAN_PORT2_TX+	Ethernet port
31	LAN_PORT2_TX-	Ethernet port
32	LAN_PORT1_TX+	Ethernet port
33	LAN_PORT1_TX-	Ethernet port
34	LAN_PORT1_RX+	Ethernet port
35	LAN_PORT1_RX-	Ethernet port
36	GND	GROUND
37	VDD_3.3V	3.3V input 1000mA
38	VDD_3.3V	3.3V input 1000mA

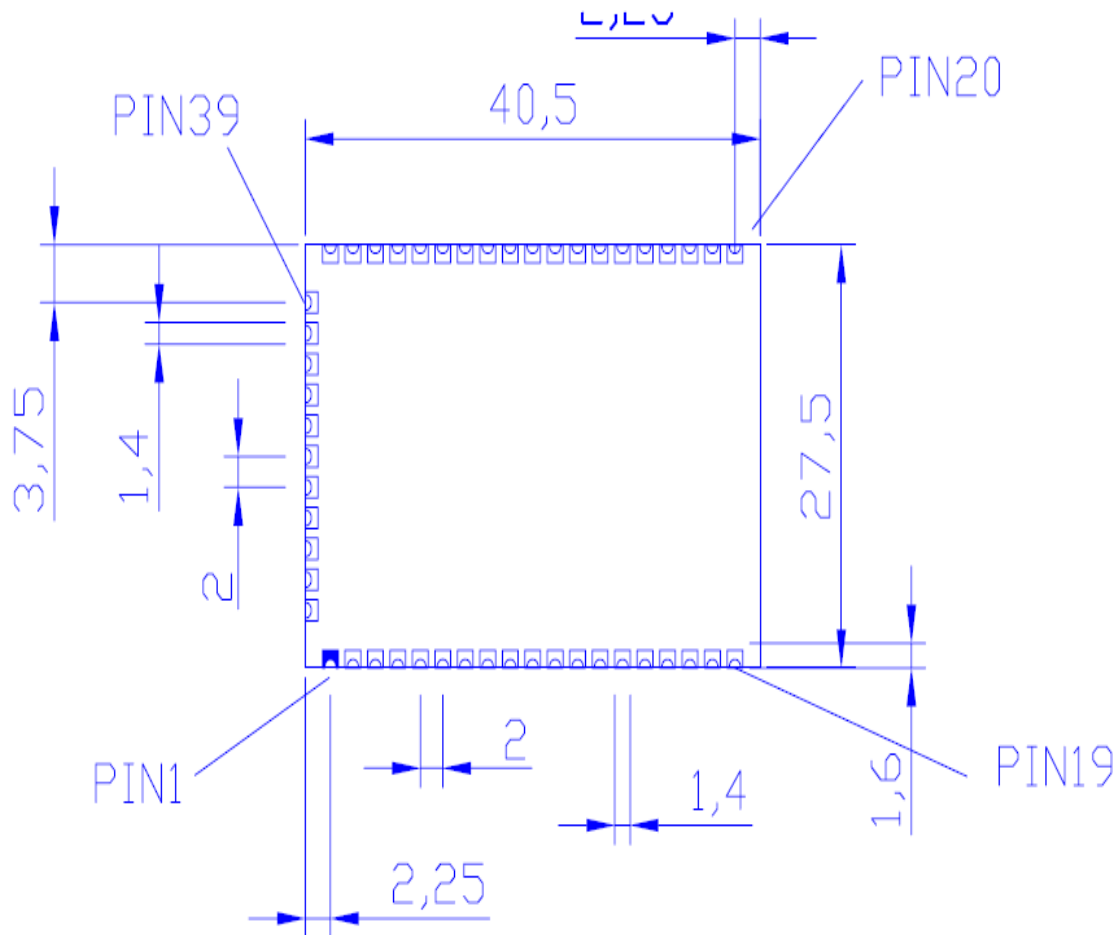
HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

39	VDD_2.0V OUTPUT	Power supply output for peripheral network transformer
40	GND	GROUND
41	LAN_PORT0_RX+	Ethernet port
42	LAN_PORT0_RX-	Ethernet port
43	LAN_PORT0_TX+	Ethernet port
44	LAN_PORT0_TX-	Ethernet port
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	JUMP START LED
48	JUMPSTART UART_RTS)	KEY_INPUT

Dimensions and Footprint - Top View

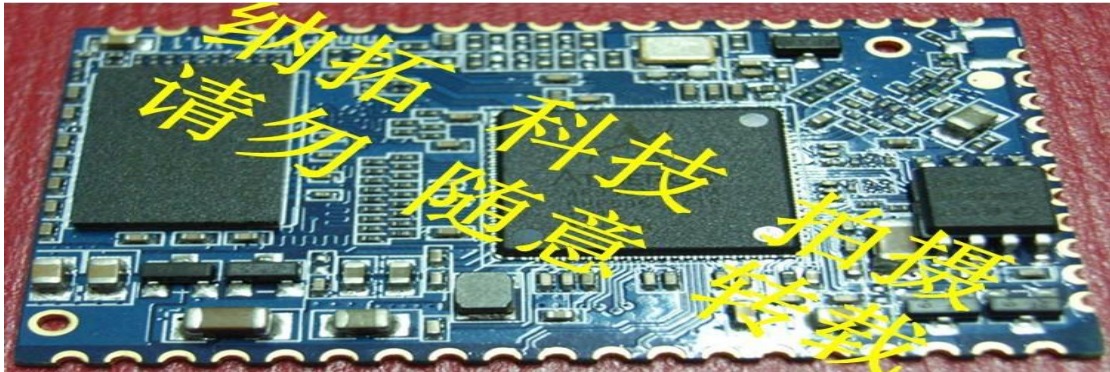


HK NATER TECH LIMITED

香港纳拓科技有限公司

无线路由器/无线 AP/无线网桥/无线 CPE/对讲机/无线通信模块 方案商

- 以下是模块的实物图!



- 以下是模块和底板一起的demo图!



- 以下是量产时的拼板图!

