



SPECIFICATIONS

802.11 b/g/n Wireless PCI Express Mini Card

Q802XKN

Ver. 1A

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Approved by :

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Device Overall Description

The Q802XKN is designed to provide wireless LAN function on a small form factor with PCI Express interface. The wireless LAN function is based on Ralink RT2890 MAC/BBP, RT2820 transceiver and high gain power amplifier, fully comply with current draft IEEE 802.11n and IEEE 802.11 b/g standards.

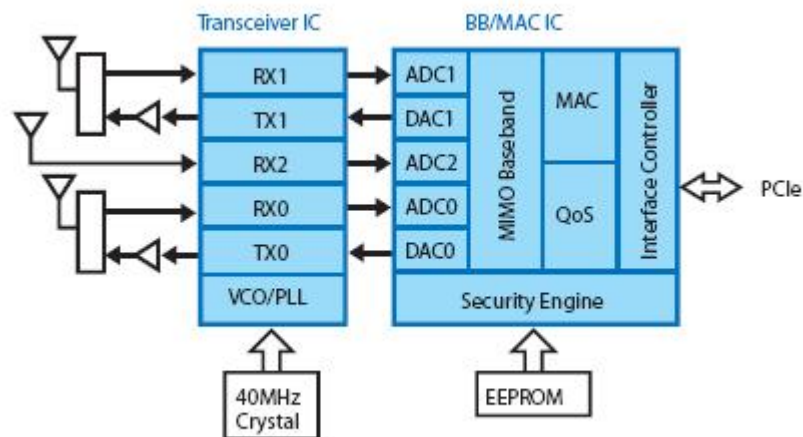
Features

- Ralink RT2890 MAC/BBP with RT2820 Transceiver
- 11b: 1,2,5.5,11Mbps
- 11g: 6,9,12,24,36,48,54Mbps
- 11n (20MHz): MCS0-15, 32 with Short Guard Interval Support (up to 144Mbps)
- 11n (40MHz): MCS0-15, 32 with Short Guard Interval Support (up to 300Mbps)
- RTS/CTS
- MSDU/PSDU aggregation
- Block Ack
- Reverse Direction Data Flow
- Link Adaptation
- Hardware WEP, TKIP, AES Engines
- EAP – TLS, TTLS, LEAP, PEAP
- WPA1/2 – PSK (WPA Home)
- WPA1/2 – 802.1x (WPA Enterprise)
- Roaming

802.11 Wireless LAN Block Diagram

RT2890: Ralink, Wireless LAN Integrated Medium Access Controller with Baseband Processor

RT2820: Ralink, 2.4GHz Single chip Transceiver



Channel Assignment

Channel	Frequency	FCC (US)	IC (CA)	ETSI (EU)	Japan (JP)
1	2412MHz	X	X	X	X
2	2417MHz	X	X	X	X
3	2422MHz	X	X	X	X
4	2427MHz	X	X	X	X
5	2432MHz	X	X	X	X
6	2437MHz	X	X	X	X
7	2442MHz	X	X	X	X
8	2447MHz	X	X	X	X
9	2452MHz	X	X	X	X
10	2457MHz	X	X	X	X
11	2462MHz	X	X	X	X
12	2467MHz			X	X
13	2472MHz			X	X
14	2484MHz				X

KEY:

US = United States, CA = Canada, EU = European Countries (except France and Spain)

JP = Japan

Many countries and region are currently revising the channel assignment.

X = Supported

Security

- Complete Security Features - WEP 64/128, WPA, WPA2, 802.1x, and 802.11i
- Cisco CCS Compliant

Certification

- WHQL
- Cisco CCX
- Wi-Fi Certification: 802.11 b/g, 802.11n, WPA, WPA2, WMM, WMM-PS

Software & OS support

Operating System	Driver
Windows 98SE	Available
Windows Me	Available
Windows 2000 / XP	Available
Windows Vista	Available
Linux 2.6.x	Available
MAC OS 10.3 & 10.4	Available
Wince 5.0 & 6.0	Available

Operating Conditions

Voltage Range	3.3V +-0.3V
Operating Temperature Range	0°C - 65°C
Storage Temperature Range	-20°C - 85°C
Relative Humidity during Operating	Max. 95% (Non-Condensing)
Relative Humidity during Storage	Max. 95% (Non-Condensing)

Antenna Connector

Connector	Vendor	Part#
Antenna *3	Hirose	CL331-0471-0-10 (U.FL-R-SMT), or compliance

Pin Definition

Pin #	Name	Pin #	Name
51	Reserved*	52	+3.3V
49	Reserved*	50	GND
47	Reserved*	48	+1.5V
45	Reserved*	46	LED_WPAN#
43	Reserved*	44	LED_WLAN#
41	Reserved*	42	LED_WWAN#
39	Reserved*	40	GND
37	Reserved*	38	USB_D+
35	GND	36	USB_D-
33	PETp0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PERp0	26	GND
23	PERn0	24	+3.3Vaux
21	GND	22	PERST#
19	Reserved*** (UIM_C4)	20	W_DISABLE#
17	Reserved*** (UIM_C8)	18	GND

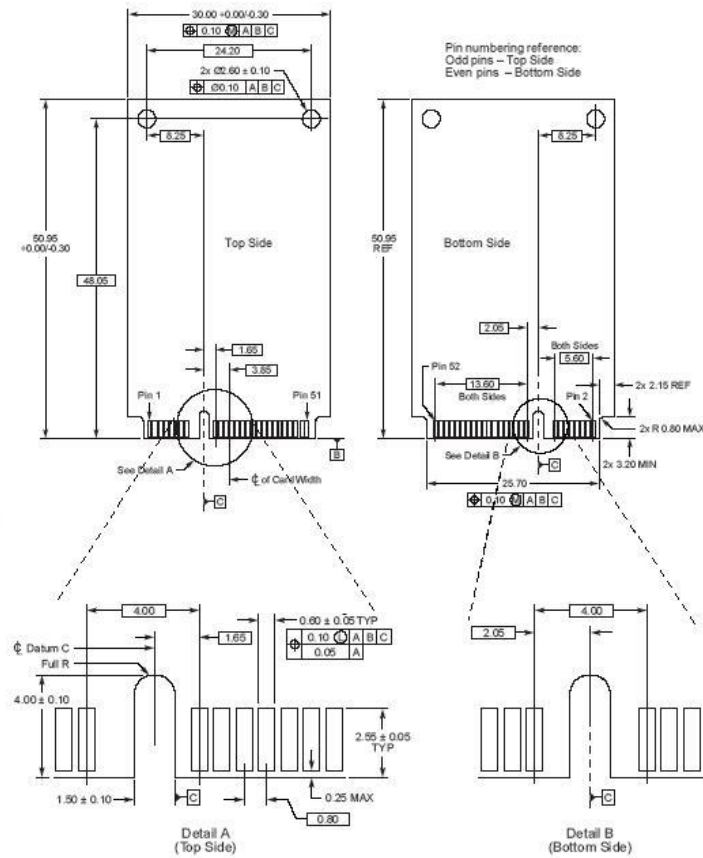
Mechanical Key			
15	GND	16	UIM_VPP
13	REFCLK+	14	UIM_RESET
11	REFCLK-	12	UIM_CLK
9	GND	10	UIM_DATA
7	CLKREQ#	8	UIM_PWR
5	Reserved**	6	1.5V
3	Reserved**	4	GND
1	WAKE#	2	3.3V

RF Characteristics

RF Characteristics	Minimum	Typical	Maximum	Units
PC Interface		Mini PCIe		
Internal Antenna Impedance		50		ohms
Operating Temperature Range	0		+65	°C
Storage Temperature Range	-10		+85	°C
Supply Voltage	3.0	3.3	3.6	V
RX Supply Current (CCK)	365	370	375	mA
RX Supply Current (54Mbps)	397	398	400	mA
RX Supply Current (300Mbps)	490	493	496	mA
TX Supply Current (CCK)	437	440	443	mA
TX Supply Current (54Mbps)	429	432	435	mA
TX Supply Current (300Mbps)	520	524	528	mA
Radio off Current		74		mA
RX Sensitivity, 11 Mbps(CCK)		-90		dBm
RX Sensitivity, 54Mbps(OFDM)		-78.5		dBm
TX Output Power(CCK)		17		dBm
TX Output Power(OFDM)		13.5		dBm
TX Carrier Suppression				dB
TX Spectral Mask (CCK)		PASS		
TX Spectral Mask (OFDM)		PASS		
TX Spectral Mask (11n,20M)		PASS		
TX Spectral Mask (11n,40M)		PASS		
Preamble Length		Long/Short		

Mechanical Drawing

Dimension: 50.95 (L) x 30.00(W) mm



Card Top and Bottom Details A and B

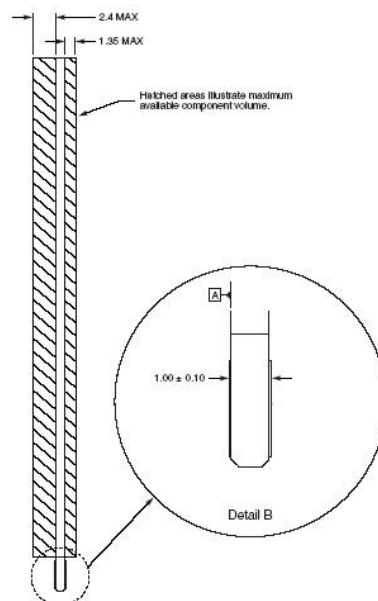


Figure 2-4: Card Edge

LED Status:

LED status	WLAN card activity
LED on	Associated, and authenticated but not transmitting or receiving
LED Slow Blink	Scanning for AP
LED Intermittent Blink	Activity proportional to transmitting/receiving speed
LED off	Radio off