



SPECIFICATIONS

**802.11b/g Wireless PCI Express Mini Card
(USB Interface)**

Q802XKG

Ver. 1A1

Date: 03/01/2007

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Approved by :**

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Device Overall Description

The Q802XKG is designed to provide wireless LAN function on a small form factor with USB interface. The wireless LAN function is based on Ralink RT2571W MAC/BBP, RT2528 transceiver and high gain power amplifier, which implements the full IEEE802.11b/g standard data rates up to 54Mbps.

802.11 Wireless LAN

Features

- Ralink RT2571W MAC/BBP with RT2528 Transceiver
- Support IEEE 802.11b compliant DBPSK, DQPSK, CCK modulation
- IEEE802.11b Standard Data Rates: 1, 2, 5.5 and 11Mbps.
- Support IEEE 802.11g compliant DSSS, CCK, OFDM modulation
- IEEE802.11g Standard Data Rates: 6, 9, 12, 18, 24, 36, 48, 54Mbps
- Embedded WEP (64 or 128 bit) engine for enciphering/deciphering of wireless data
- Support TKIP and AES
- Host Interface supports USB 2.0

Specification Compliance

- IEEE 802.11b/g
- USB spec. 2.0

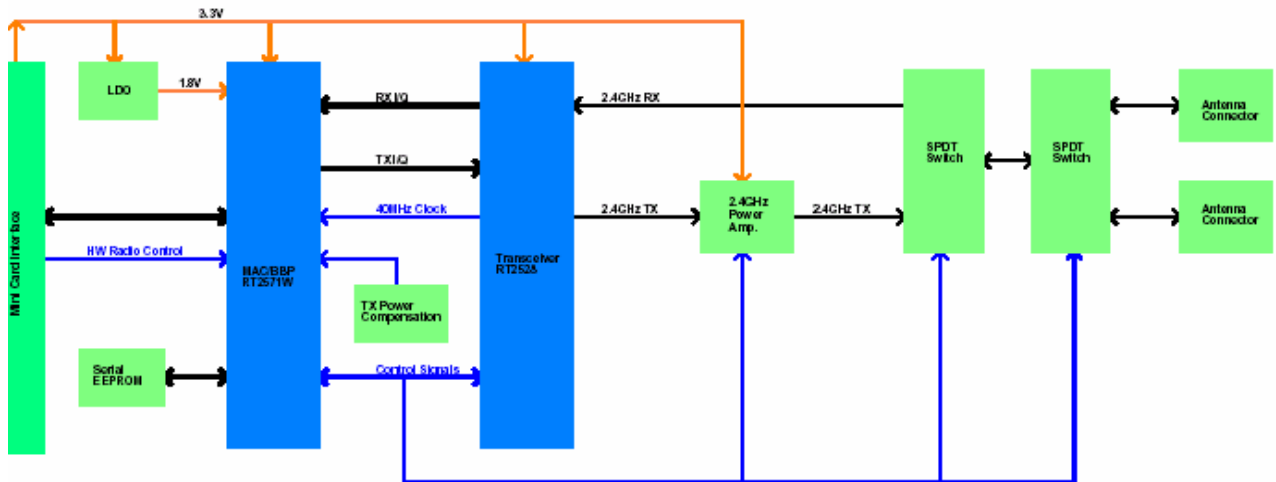
Form factor

- Weight 0.25 oz (7g)
- 50.95mm Length X 30mm Width X 4.75mm Height

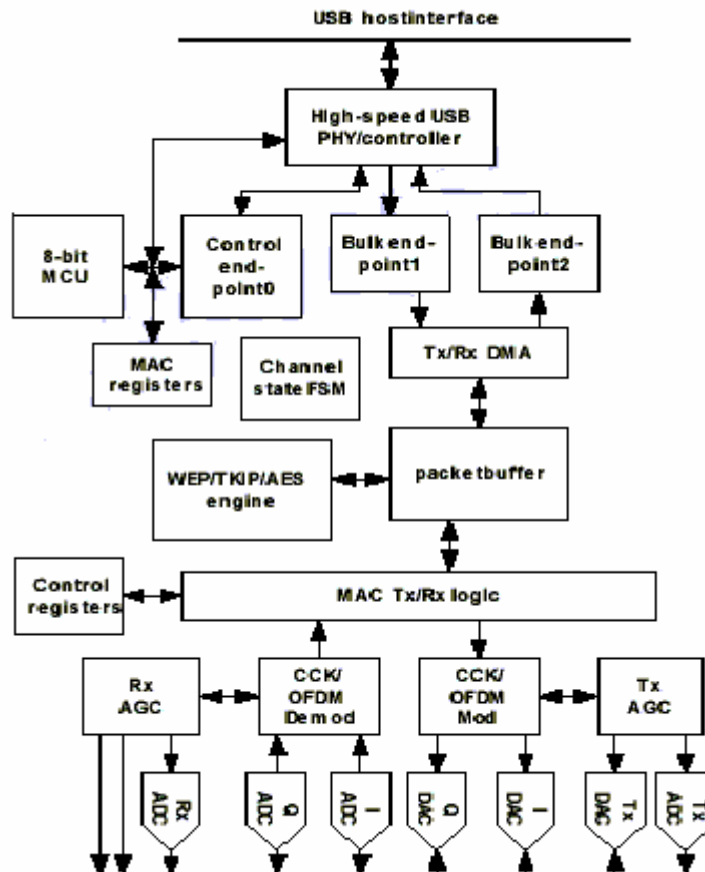
802.11 Wireless LAN Block Diagram

RT2571W: Ralink, Wireless LAN Integrated Medium Access Controller with Baseband Processor

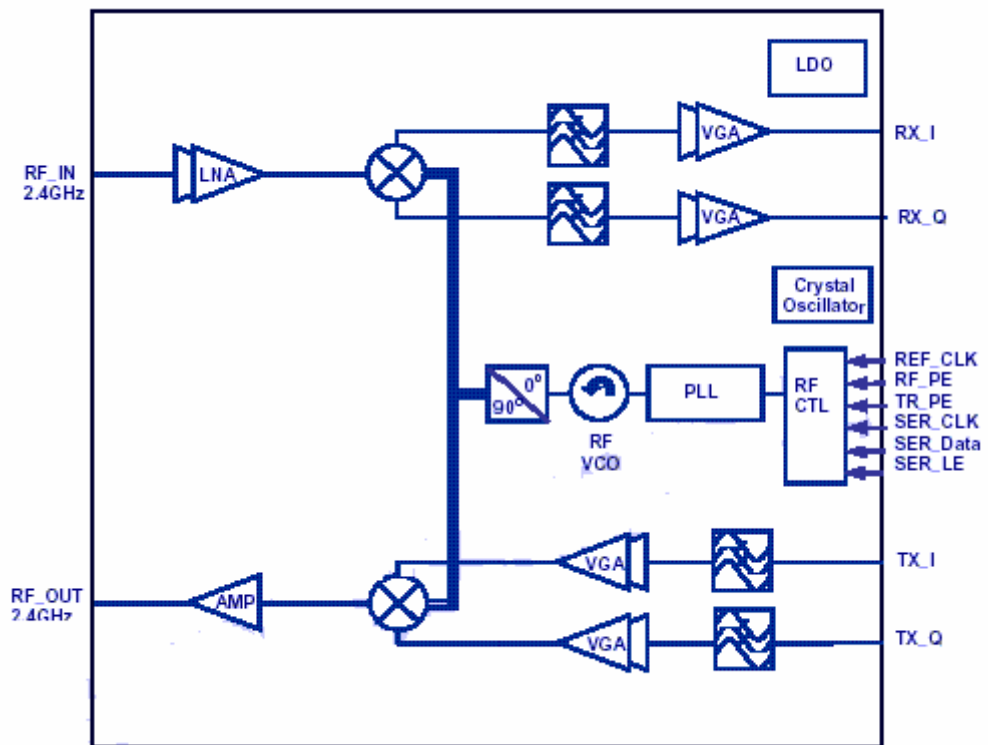
RT2528 : Ralink, 2.4GHz Single chip Transceiver



Ralink RT2571W Chip diagram



Ralink RT2528 Chip diagram



Modulation Methods

DATA BIT RATE	MODULATION and Encoding Rate
802.11b CCK MODES	
1Mbps	BPSK
2Mbps	QPSK
5.5Mbps	QPSK
11Mbps	QPSK
802.11g OFDM MODES	
6Mbps	BPSK
9Mbps	BPSK
12Mbps	QPSK
18Mbps	QPSK
24Mbps	16QAM
36Mbps	16QAM
48Mbps	64QAM
54Mbps	64QAM

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 V1.0, 2.0 and V3.0 Compliant

RF Characteristics

RF Characteristics	Minimum	Typical	Maximum	Units
PC Interface		USB 2.0		
Plug and Play Compatible		Yes		
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)		294		mA
RX Supply Current (OFDM)		299		mA
TX Supply Current (CCK)		381		mA
TX Supply Current (OFDM)		330		mA
Power Save Mode Current		124		mA
H/W Disable Radio operation		112		mA
RX Sensitivity, 11 Mbps(CCK)		-84		dBm
RX Sensitivity, 54Mbps(OFDM)		-70		dBm
TX Output Power(CCK)		18		dBm
TX Output Power(OFDM)		14		dBm
TX Carrier Suppression				dB
TX Spectral Mask (CCK)		PASS		
TX Spectral Mask (OFDM)		PASS		
Preamble Length		Long/Short		

■ Note: Sensitivity based upon 1 kbyte packet length, 8% PER(CCK), single antenna driven, diversity disabled.

Note: Sensitivity based upon 1 kbyte packet length, 10% PER(OFDM), single antenna driven, diversity disabled.

Note: All measurements at the end of 6" of cable through Murata Connector with local diversity option.

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	95% (Non-Condensing)
Relative Humidity during Storage	95% (Non-Condensing)

Antenna Connector

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

Host Interface Pin Definition And Mechanical Drawing

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

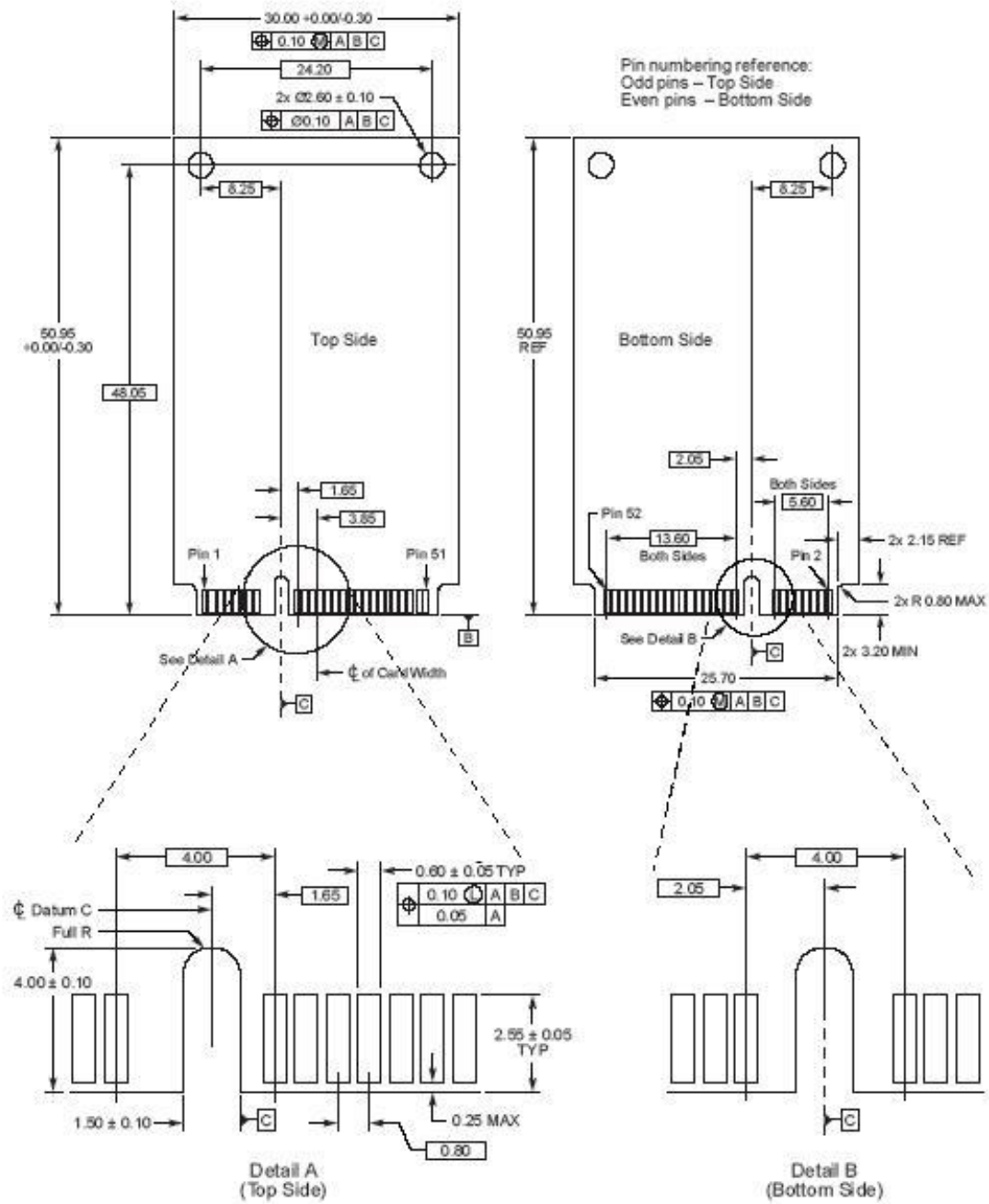
15	GND	16	UIM_VPP
13	REFCLK+	14	UIM_RESET
11	REFCLK-	12	UIM_CLK
9	GND	10	UIM_DATA
7	CLKREQ#	8	UIM_PWR
5	Reserved**	6	1.5V
3	Reserved**	4	GND
1	WAKE#	2	3.3V

Note:

Pin 44 is Low active (connect to LED CATHODE pin; Max Input Voltage 3.3V)

Pin 20 is High voltage to enable Radio operation, Low to disable Radio operation.

Mechanical Drawing



Card Top and Bottom Details A and B

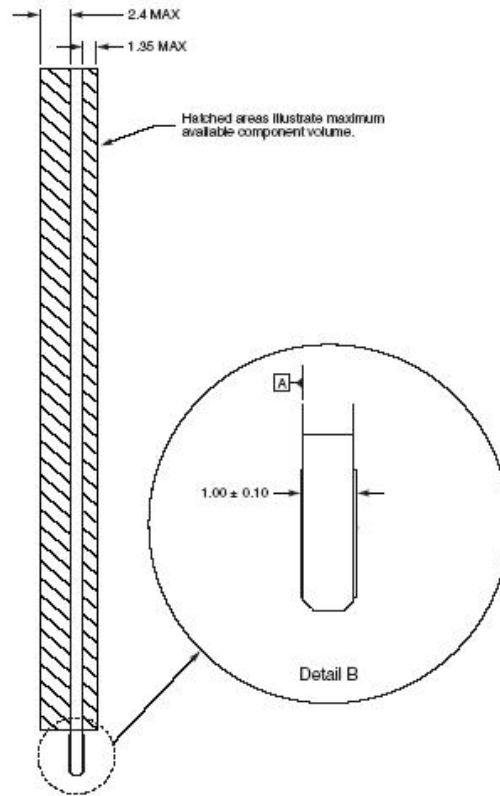


Figure 2-4: Card Edge

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	All other status