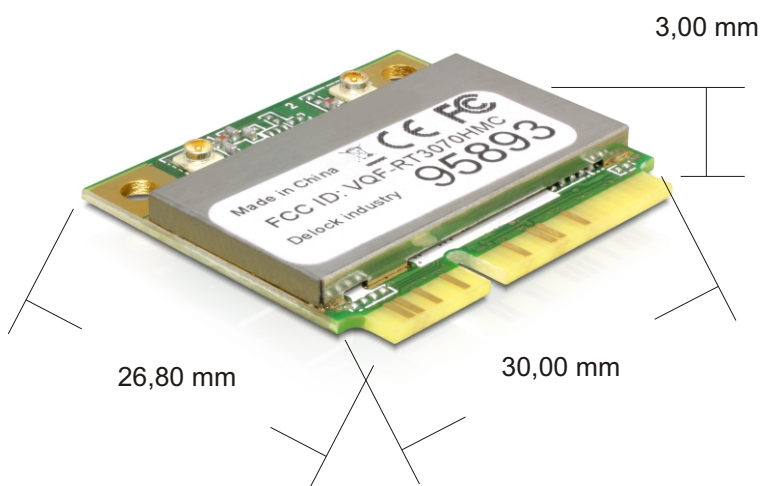


Specification

95893

Delock industry WLAN mini PCI Express 150 Mbps module (USB 2.0) hf



date: 29.06.2010

Specification

95893

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Contents:

- Device overall description
- 802.11 wireless LAN
 - Features
 - Specification compliance
 - Operating conditions
 - Block diagram
 - Channel assignment
 - Mechanical drawing
 - Antenna connector
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 - LED status

Specification

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Device overall description

The 95893 is designed to provide wireless LAN function on a half mini card form factor with USB interface. The wireless LAN function is based on Ralink RT3070 MAC/BBP/transceiver and high gain power amplifier, fully comply with IEEE 802.11n and IEEE 802.11 b/g standards.

Features

- Ralink RT3070 MAC/BBP/transceiver
- 1T1R modes
- 11b: 1,2,5.5,11Mbps
- 11g: 6,9,12,18,24,36,48,54Mbps
- 11n: legacy, mixed and green field modes support 20/40MHz bandwidth MCS0-7(150Mbps PHY rate support)
- Reverse direction grant data flow
- Frame aggregation
- Low power with advanced power management
- WEP 64/128, WPA, WPA2, TKIP, AES
- Cisco CCX support

Specification compliance

- 802.11n
- 802.11b/g
- 802.11i
- 802.11e
- 802.11d
- 802.11h
- 802.11j
- USB2.0

Specification

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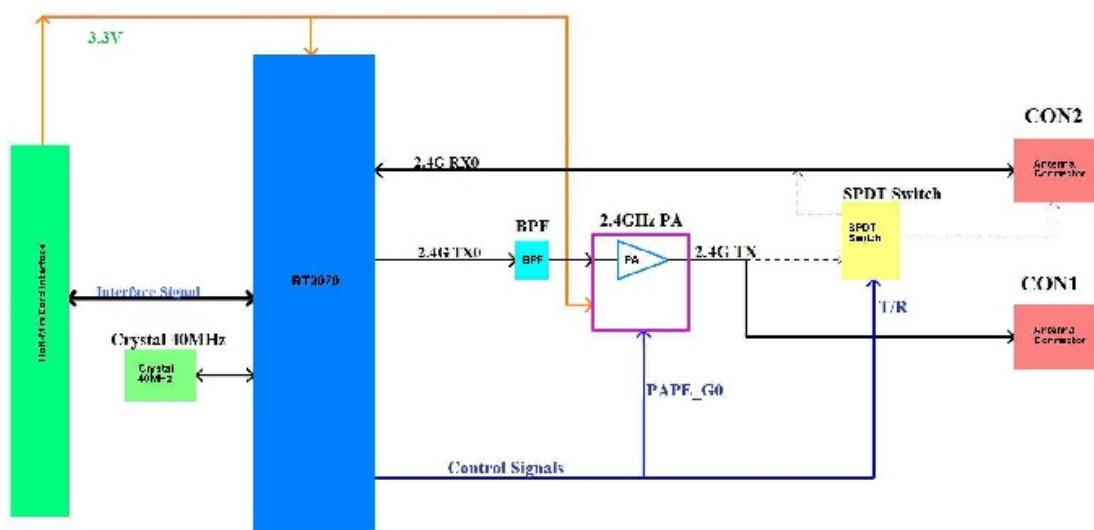
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Operating Conditions

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)

802.11 Wireless LAN Block Diagram

RT3070: Ralink, wireless LAN integrated medium access controller with baseband processor, and 2.4GHz transceiver



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Channel assignment

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

Software & OS support

Operating System	Driver
Windows 2000	Available
Windows XP 32/64	Available
Windows Vista 32/64	Available
Windows 7 32/64	Available
WinCE 5.0 & 6.0	Available
Linux 2.4.x / 2.6.x	Available
MAC OS	Available

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Mechanical Drawing

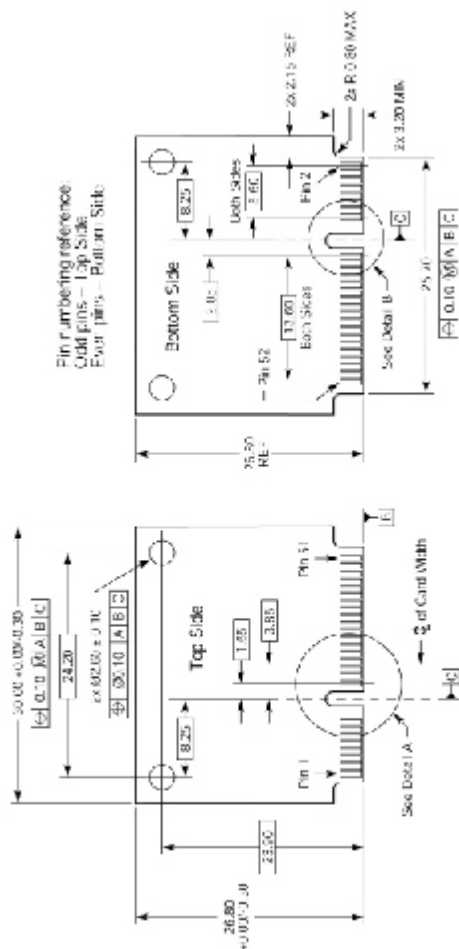


Figure 2-4: Half-Mini Card Top and Bottom

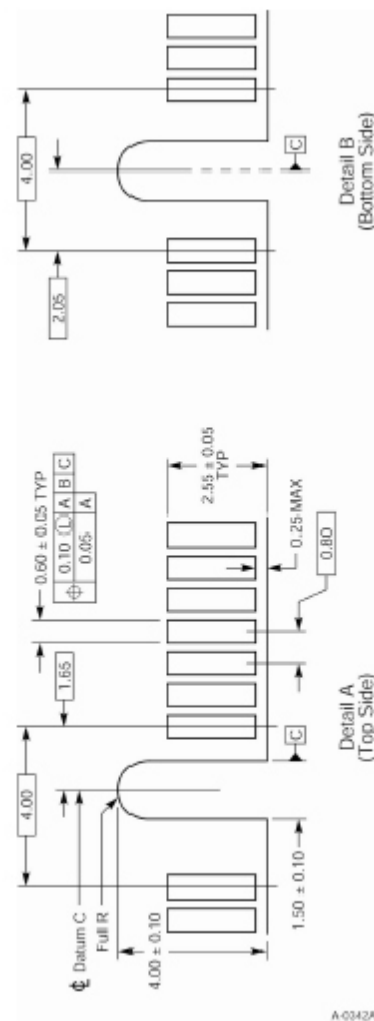
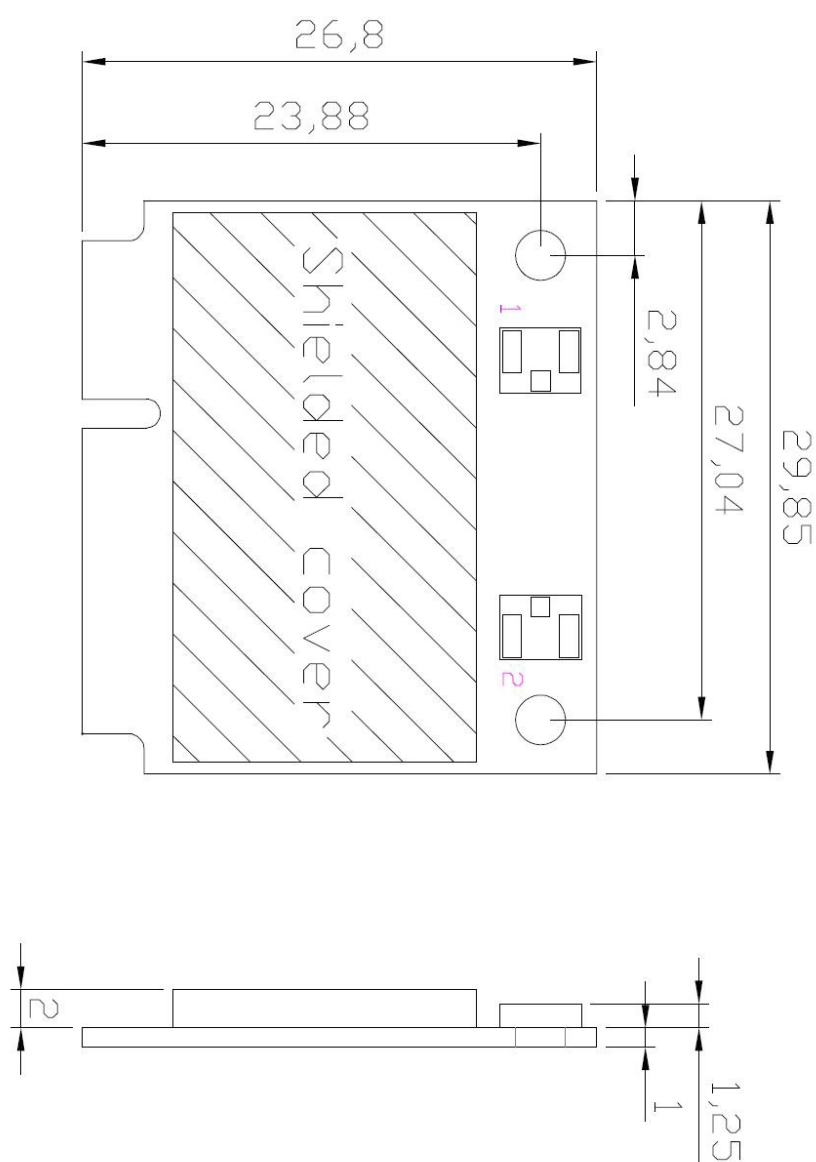


Figure 2-5: Card Top and Bottom Details A and B

Specification

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RF Characteristics

RF Characteristics	Minimum	Typical	Maximum	Units
PC Interface mechanical		Mini PCI Express		
PC Interface electrical		USB 2.0		
Internal Antenna Impedance		50		ohms
Operating Temperature Range	0		65	°C
Storage Temperature Range	-20		85	°C
Supply Voltage	3.0	3,3	3,6	V
RX Supply Current (11b 11Mbps)	188	198	208	mA
Power Consumption	0.6204	653	0.6864	mWatts
RX Supply Current (11g 54Mbps)	203	213	223	mA
Power Consumption	0.6699	703	0.7359	mWatts
RX Supply Current (11n 300Mbps)	242	252	262	mA
Power Consumption	0.7986	832	0.8646	mWatts
TX Supply Current (11b 1Mbps)	284	294	304	mA
Power Consumption	0.9372	970	10.032	mWatts
TX Supply Current (11g 6Mbps)	253	263	273	mA
Power Consumption	0.8349	868	0.9009	mWatts
TX Supply Current (11n 13Mbps)	234	244	254	mA
Power Consumption	0.7722	805	0.8382	mWatts
Radio off Current	48	58	68	mA
Power Consumption	0.1584	191	0.2244	mWatts
RX Sensitivity(11b,11Mbps)	-84	-87		dBm
RX Sensitivity(11g,54Mbps)	-68	-70		dBm
RX Sensitivity (11n,300Mbps)	-62	-65		dBm
TX Output Power(11b,11M)		17		dBm
TX Output Power(11g,54Mbps)		14		dBm
TX Output Power(11n,MCS0)		17		dBm
TX Output Power(11n,MCS15)		14		dBm
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		

Specification

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Pin Definition

Pin #	Name	Pin #	Name
51	Reserved*	52	3,3V
49	Reserved*	50	GND
47	Reserved*	48	Reserved*
45	Reserved*	46	Reserved*
43	Reserved*	44	LED_WLAN#
41	Reserved*	42	Reserved*
39	Reserved*	40	GND
37	Reserved*	38	USB_D+
35	GND	36	USB_D-
33	Reserved*	34	GND
31	Reserved*	32	Reserved*
29	GND	30	Reserved*
27	GND	28	+1,5V
25	Reserved*	26	GND
23	Reserved*	24	Reserved*
21	GND	22	Reserved*
19	Reserved* (UIM_C4)	20	W_DISABLE#
17	Reserved* (UIM_C8)	18	GND
Mechanical Key			
15	GND	16	Reserved*
13	Reserved*	14	Reserved*
11	Reserved*	12	Reserved*
9	GND	10	Reserved*
7	Reserved*	8	Reserved*
5	Reserved*	6	Reserved*
3	Reserved*	4	GND
1	Reserved*	2	3,3V

Specification

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Antenna Connector

Connector	Vendor	Part#
Antenna x2	I-PEX, Hirose	CL331-0471-0-10 (U.FL.-R-SMT) or compliance

LED Status:

LED status	WLAN card activity
on	associated and authenticated but not transmitting or receiving
slow blink	scanning for AP
intermittent blink	activity proportional to transmitting/receiving speed
off	radio off