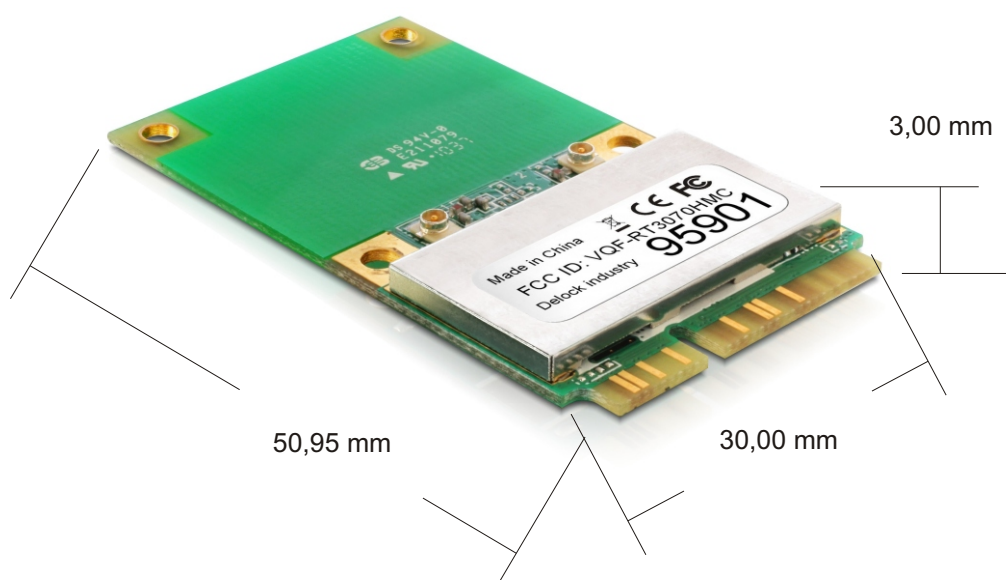


Specification

95901

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



date: 29.06.2010

Specification

95901

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

Contents:

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

Specification

95901

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

Device overall description

The 95901 is designed to provide wireless LAN function on a full 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

95901

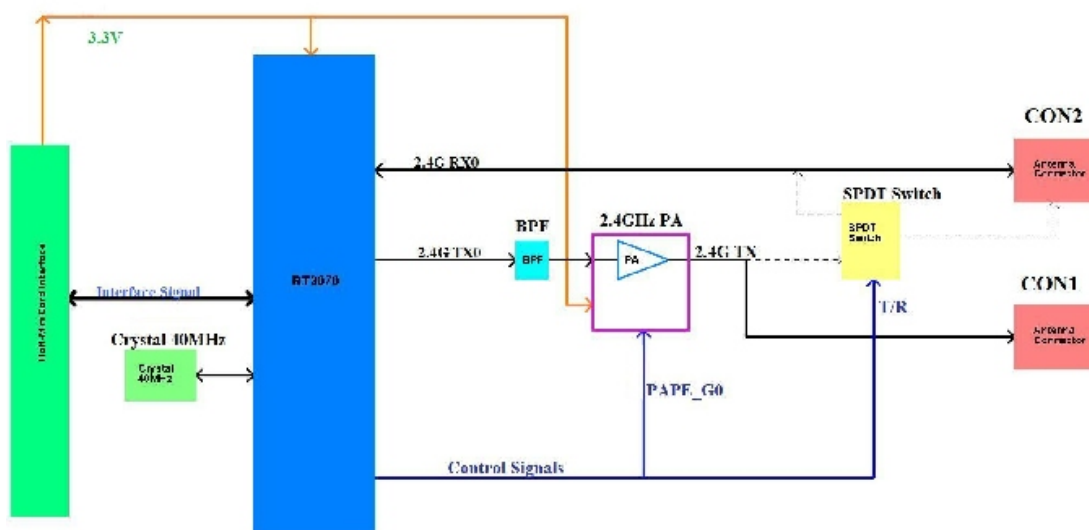
Delock industry WLAN mini PCI Express 150 Mbps module (USB 2.0) fu

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



Specification

95901

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

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 |

Specification

95901

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

Mechanical Drawing

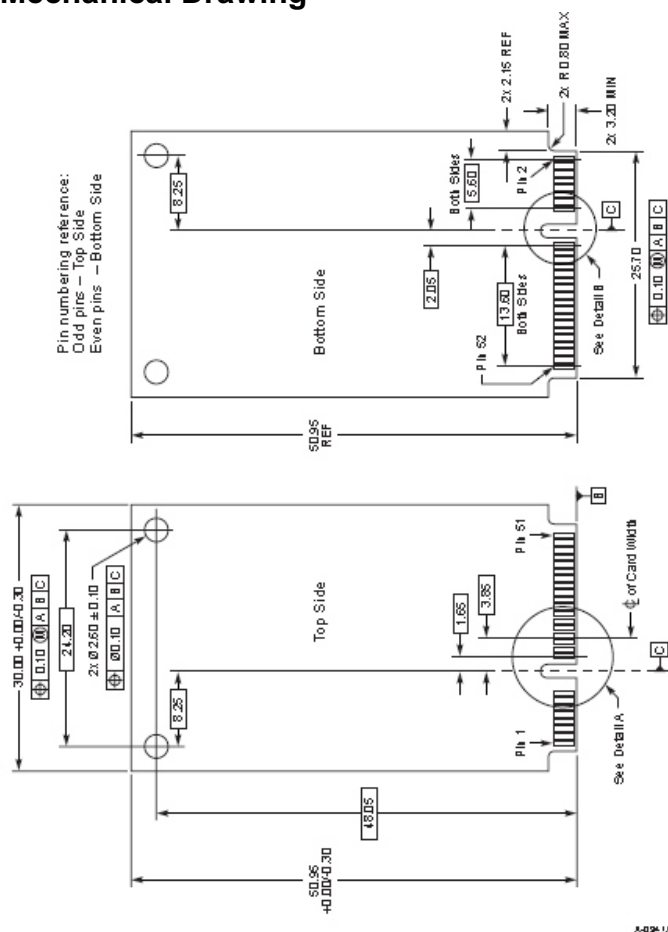


Figure 2-3: Full-Mini Card Top and Bottom

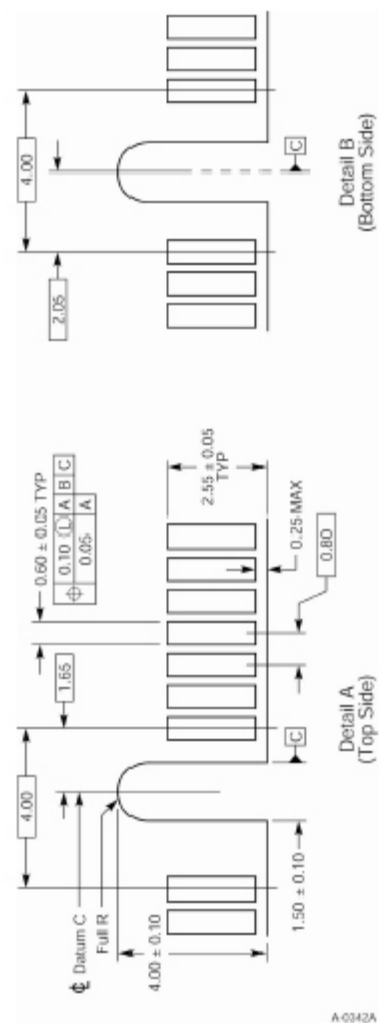


Figure 2-5: Card Top and Bottom Details A and B

Specification

95901

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

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

95901

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

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

95901

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

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 |