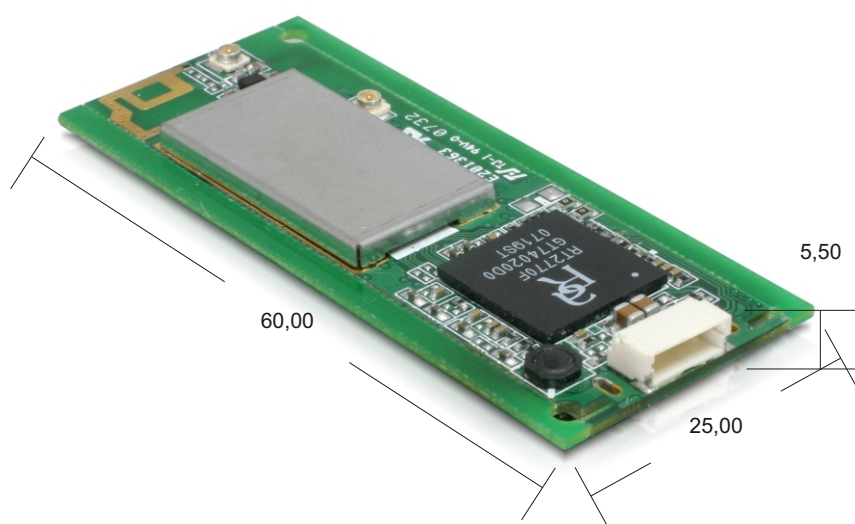


# Specification

## 95820

Delock industry USB WLAN 144Mbps module



date: 16.03.2009

# Specification

## 95820

Delock industry USB WLAN 144Mbps module

### **Contents:**

device overall description

802.11n Wireless LAN

- features
- block diagram
- modulation methods
- channel assignment
- security
- software & OS support
- operating conditions
- antenna connector
- host interface pin definition and mechanic drawing

# Specification

## 95820

Delock industry USB WLAN 144Mbps module

### Device overall description

The 95820 is designed to provide wireless LAN function on a small form factor with USB interface. The wireless LAN function is based on Ralink RT2770 MAC/BBP, RT2720 transceiver and high gain power amplifier, fully comply with current draft IEEE 802.11n and IEEE 802.11 b/g standards.

### Features

- Ralink RT2770 MAC/BBP with RT2720 transceiver
- 1T2R modes
- 11b: 1,2,5.5,11Mbps
- 11g: 6,9,12,24,36,48,54Mbps
- 11n: legacy, mixed and green field modes support  
20/40MHz bandwidth MCS0-7(150Mbps PHY rate support)
- 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

# Specification

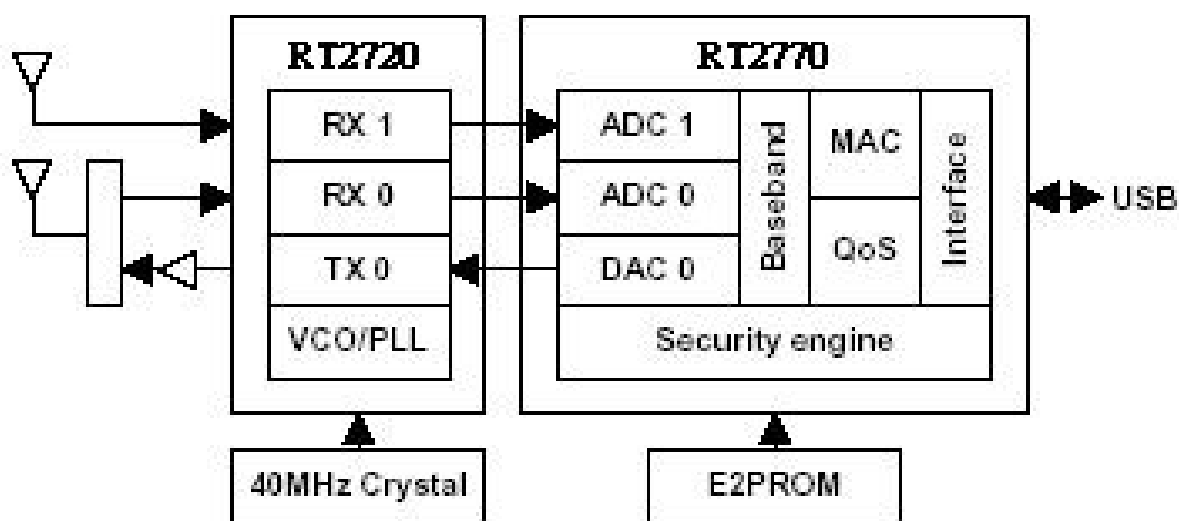
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### 802.11 wireless LAN block diagram

RT2770: Ralink, wireless LAN integrated medium access controller with baseband processor

RT2720: Ralink, 2.4GHz single chip transceiver



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### Channel assignment

| Channel | FCC (US) | IC (CA) | ETSI (EU) | Japan JP) |
|---------|----------|---------|-----------|-----------|
| 1       | x        | x       | x         | x         |
| 2       | x        | x       | x         | x         |
| 3       | x        | x       | x         | x         |
| 4       | x        | x       | x         | x         |
| 5       | x        | x       | x         | x         |
| 6       | x        | x       | x         | x         |
| 7       | x        | x       | x         | x         |
| 8       | x        | x       | x         | x         |
| 9       | x        | x       | x         | x         |
| 10      | x        | x       | x         | x         |
| 11      | x        | x       | x         | x         |
| 12      |          |         | x         | x         |
| 13      |          |         | x         | x         |
| 14      |          |         |           | 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

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### RF Characteristics

| RF characteristics           | minimum | typical    | maximum | units |
|------------------------------|---------|------------|---------|-------|
| PC interface                 |         | USB        |         |       |
| internal antenna impedance   |         | 50         |         | ohms  |
| operating temperature range  | 0       |            | +65     |       |
| storage temperature range    | -20     |            | +85     |       |
| supply voltage               | 4,7     | 5,0        | 5,3     | V     |
| RX supply current (CCK)      | 189     | 194        | 199     | mA    |
| RX supply current (54Mbps)   | 206     | 211        | 216     | mA    |
| RX supply current (300Mbps)  | 264     | 269        | 274     | mA    |
| TX supply current (CCK)      | 298     | 303        | 308     | mA    |
| TX supply current (54Mbps)   | 222     | 227        | 232     | mA    |
| TX supply current (150Mbps)  | 207     | 212        | 217     | mA    |
| Radio off current            |         | 66         |         | mA    |
| RX sensitivity, 11 Mbps(CCK) |         | -87        |         | dBm   |
| RX sensitivity, 54Mbps(OFDM) |         | -72        |         | dBm   |
| TX output power(CCK)         |         | 16.5       |         | 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 |         |       |

# Specification

## 95820

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### Certification

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

### 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                      | 5V $\pm 0,3V$        |
| Operating temperatur range         | 0°C - 85°C           |
| Storage temperature range          | -20°C - 85°C         |
| Relative humidity during operating | 95% (non condensing) |
| Relative humidity during storage   | 95% (non condensing) |

### Antenna connector

Antenna 2x: Hirose CL331-0471-0-10 (UF.FL-R-SMT) or compliance

# Specification

## 95820

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### Host interface pin definition and mechanical drawing

- host interface connector : 6 pin SMT male USB connector
- connector product number (Male): 87213-0600 (connector vendor Aces Electronic CO., LTD.)

|   |               |   |                            |
|---|---------------|---|----------------------------|
| 1 | VCC 5.0       | 2 | DATA-                      |
| 3 | DATA+         | 4 | GND                        |
| 5 | WLAN LED Link | 6 | WLAN FAA<br>disable/enable |

5 low active, connect to LED cathode max. input voltage 3,3V  
6 high voltage to enable RF funktion

cable optional Delock A95835



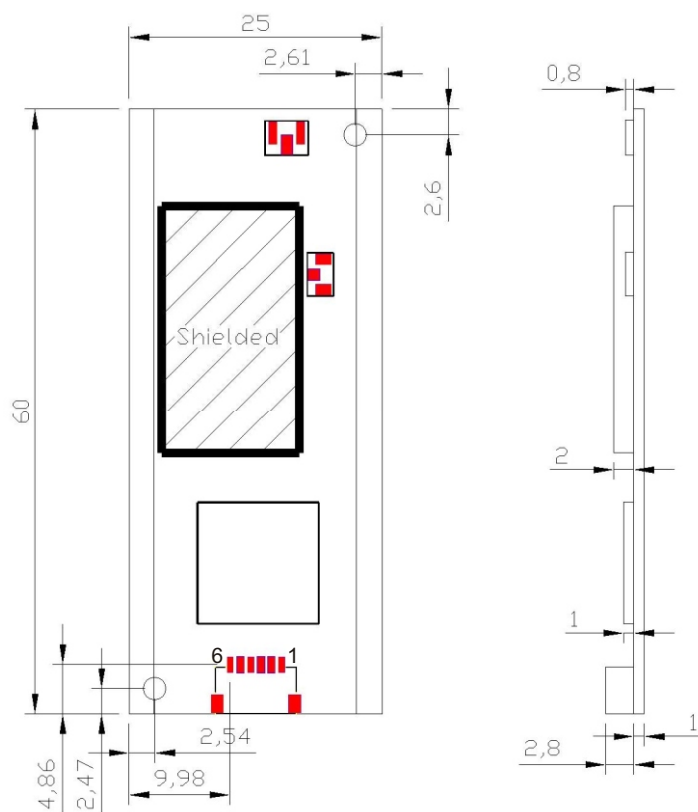


# Specification

## 95820

Delock industry USB WLAN 144Mbps module

### Mechanical drawing



### 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   |

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