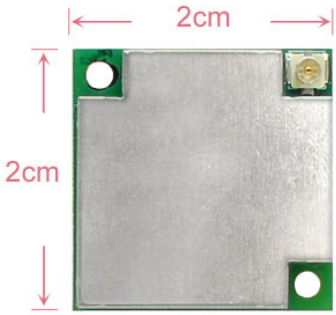
802.11b/g wifi CF module, RoHS compliance

Model: RM5



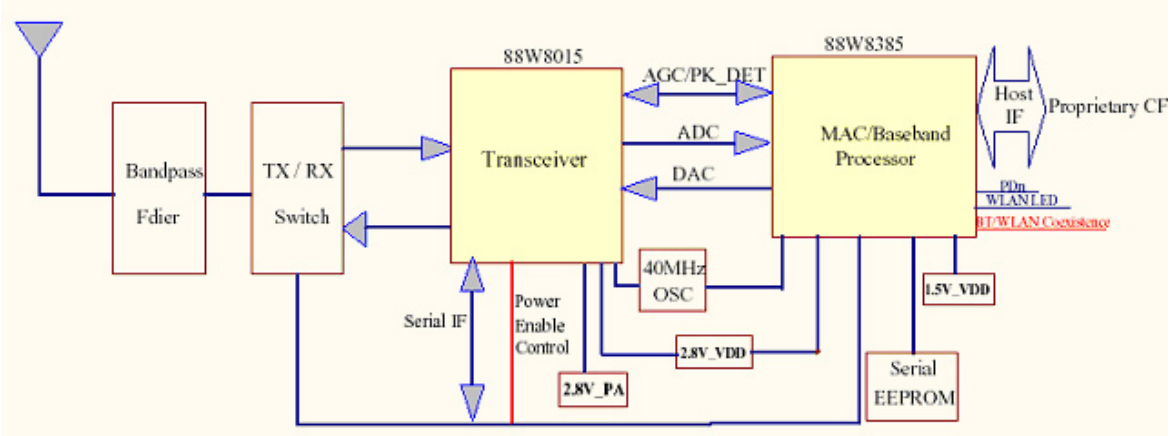
RM5 is an IEEE802.11b/g wifi proprietary CF module in 2.0cm x 2.0cm small form factor designed specifically for integration in application-specific devices (ASDs) used in vertical market. RM5 has Bluetooth coexistence function by directly connect to Bluetooth with another two control signals and no extra pull high /low resistor required. It provides the highest flexibility and extensibility to implement WiFi/ Bluetooth coexistence.

The small 2.0cm x 2.0cm dimension design can be easily integrated into the system with a board-to-board connector. WinCE 4.2/5.0 and Linux driver support enable ASD manufacturers to provide products that enjoy improved innovation and time to market through trouble-free WiFi integration.

Key Features:

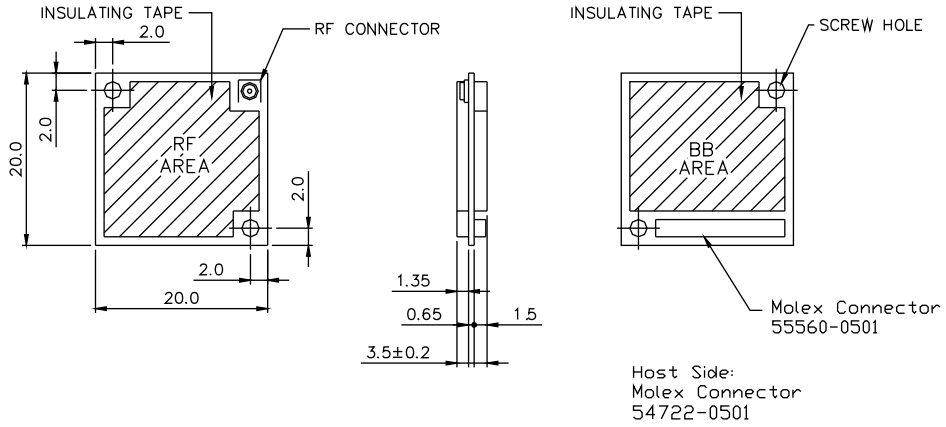
- 2.0cm x 2.0cm small dimension proprietary CF module is ideal for embedding into new ergonomic application-specific devices with a board-to-board connector.
- WinCE4.2/5.0 and Linux driver support assure trouble-free WiFi integration.
- Supports IEEE 802.11g/802.11b auto fallback data rate allowing inter-operability among multiple wifi networks.
- Supports 802.11 power saving mode minimizing overall system power requirements.
- Deep sleep mode support on WinCE5.0 and Linux is ideal for mobile computing applications.
- Ad-Hoc power save mode on WinCE5.0 is ideal for machine-to-machine devices.
- Supports WEP/WPA, WPA2-PSK/AES (on Linux only), IEEE802.1x (EAP-TLS, EAP-TTLS, LEAP), and LEAP providing advanced level of LAN security.
- Supports WiFi and Bluetooth coexistence function on WinCE5.0/Linux providing highest flexibility and extensibility to implement Bluetooth and WiFi integration.
- One Hirose U.FL antenna connector enables receive diversity for flexible RF design.
- RoHS compliance meets environment-friendly requirement.

Hardware Block Diagram



Mechanical Outline

Unit: mm



Specifications:	
Standard Conformance	IEEE 802.11b and IEEE 802.11g
Frequency Range	▪ 11b Mode: 2.400 ~ 2.497 GHz ▪ 11g Mode: 2.400 ~ 2.4836 GHz (US, Canada, ETSI, Japan)
Form Factor	Proprietary Compact Flash
Interface	CF
Operation Voltage	3.3V ±5% DC
Modulation Technique	▪ 802.11b: DSSS with DBPSK, DQPSK, and CCK ▪ 802.11g: ▫ OFDM with BPSK, QPSK, QAM, and 64QAM ▫ DSSS with DBPSK, DQPSK, and CCK
Operating Range **(subject to the environment and antenna)**	▪ Indoor up to 100 meter (328 ft) ▪ Outdoor up to 400 meter (1312 ft)
Power Consumption	▪ 802.11b mode: ▫ FTP Tx: 385mA (typical) ~ 470mA (max) ▫ FTP Rx: 285mA (typical) ~ 350mA (max) ▫ Stand by: 245mA (typical) ~ 285mA (max) ▪ 802.11g mode: ▫ FTP Tx: 285mA (typical) ~ 450mA (max) ▫ FTP Rx: 265mA (typical) ~ 330mA (max) ▫ Stand by: 245mA (typical) ~ 285mA (max) ▪ Power saving: ▫ 50mA (typical) ~ 75mA (max) under Win CE Driver 3.2.8. ▫ 24mA(typical) ~ 30mA(max) under Linux Driver 3.4.0. P2-16 ▪ Deep sleep mode: 5mA (typical) ~ 8mA(max) in Linux system.
Antenna	One UFL ultra-miniature coaxial antenna connectors for diversity receive at 2.4GHz. Use Hirose pigtail to connect to a standard antenna.
B-B Connector	▪ Stacking height 1.5mm, WALN side: Molex 55560-0501 (plug) ▪ Host Side: Molex 54722-0501 (receptacle housing assembly)
Transmit Power Settings	▪ 802.11b: 13±1dBm@1, 2, 5.5, and 11Mbps ▪ 802.11g: 12.5±1.5dBm@6, 9, 12, 18, 24. 48 and 54Mbps
Sensitivity	▪ 802.11b: -89dBm@ 1Mbps, -86dBm@ 2Mbps, -85dBm@ 5.5Mbps, -82dBm@ 11Mbps ▪ 802.11g: -82dBm@ 6Mbps, -81dBm@ 9Mbps, -79dBm@ 12Mbps, -77dBm@ 18Mbps, -74dBm@ 24Mbps, -70dBm@ 36Mbps, -66dBm@ 48Mbps, -65dBm@ 54Mbps
MAC Protocol	CSMA/CA with ACK architecture 32-bit MAC

Specifications:	
Security	▪ 64-bit and 128-bit WEP Encryption ▪ 802.1x Authentication ▪ WPA-PSK/TKIP ▪ WPA2-PSK/AES only on Linux
Power Saving Mode	Support IEEE 802.11 power saving mode (enable or disable)
Deep Sleep Mode	Support on Win CE 5.0 and Linux
Ad-hoc Power Saving Mode	Support on Win CE 5.0
Bluetooth Coexistence	Support on Win CE 5.0 and Linux
802.11d	Support on Linux
Operation Systems Supported	Linux and Win CE 4.2/5.0
Wi-Fi Alliance	WECA compliant
Dimension	20.0mm(L) x 20.0mm(W) x 3.5mm(H)
Storage Temperature Range	-20°C ~ 80°C
Operation Temperature Range	0°C ~ 60°C
EMC Certificate	▪ FCC part 15 (USA) ▪ ETSI EN300 328 (Europe)

Ordering Information:	
RM5	802.11b/g wifi CF module, RoHS compliance
EX-02	CF proprietary to CF Type-I extension board
RM5-SDK1	Evaluation kit, including RM5 CF module and EX-02 extension board.