1   Introduction

1.1 General Description

WiReach BK is a secure serial-to-Wireless LAN device server module that also acts as a bridge to connect serial devices to 802.11b/g Wireless LANs. It includes the iChip™ CO2144 IP Communication Controller™ chip and Marvell 88W8686 WiFi chipset. It is packaged in RoHS-compliant ultra-slim form factor and uses an industry standard pin-out.

WiReach BK offers much more than many other device servers on the market. It acts as a security gap between the application and the network; supports up to 10 simultaneous TCP/UDP sockets; two listening sockets; a web server with two websites; SMTP and POP3 clients; MIME attachments; FTP and TELNET clients, and SerialNET™ mode for serial-to-IP bridging.

WiReach BK supports the SSL3/TLS1 protocol for secure sockets, HTTPS and FTPS, WEP, WPA and WPA2 WiFi encryption.

WiReach BK minimizes the need to redesign the host device hardware. It easily inserts into headers on the host PCB and connects to an external antenna. Minimal or no software configuration is needed for WiReach BK to access the Wireless LAN.

Connect One's high-level AT+i™ API eliminates the need to add WiFi drivers, security and networking protocols and tasks to the host application. The AT+i SerialNET operating mode offers a true plug-and-play mode that eliminates any changes to the host application.

WiReach BK firmware – the IP stack and Internet configuration parameters – are stored in an external flash memory. The module is power-efficient: the core operates at 1.2V, while I/Os operate at 3.3V. Power Save mode further reduces power consumption.

1.2 Hardware Description

- Size: 46.2 x 25.4 x 5.0 mm
- (46.2 x 25.4 x 6mm with shielding option)
- Core CPU: 32-bit RISC ARM7TDMI, low-leakage, 0.13 micron, running at 48MHz
- Operating Voltage: +3.58V+/-5%
- Operating Humidity: 90% maximum (non-condensing)
- Operating Temperature Range: -20° to 75°C (-4° to 167°F)
- Power Consumption:
  Transmit – 250mA @16dbm
  235mA @12dbm (typical)
  Receive – 190mA (typical)
  Power Save mode – 8mA
- RF Connector: U.FL of Hirose
- Connector: Low profile 70 pin (Molex #53748-0708)
- Host Interface: TTL Serial and USB device.
- RoHS-compliant; lead-free

1.3 Performance Specifications

- Host Data Rate: up to 3Mbps in serial mode
- Serial Data Format (AT+i mode): Asynchronous character; binary; 8 data bits; no parity; 1 stop bit
- SerialNET mode: Asynchronous character; binary; 7 or 8 data bits; odd, even, or no parity; 1 stop bit
- Flow Control: Hardware (-RTS, -CTS) and software flow control.