

Airborne™ Embedded 802.11b/g SDIO-SPI Radio

WLRG-RA-DP600 Series - SDIO/SPI



High Performance Embedded Radio

Airborne™ is a line of highly integrated 802.11 radios and modules. The Airborne Embedded 802.11b/g SDIO-SPI Radio delivers a high performance, integrated solution for consumer and industrial wireless applications using the latest IEEE 802.11b/g platform. It delivers a cost and space efficient solution, provided by a small profile design and direct down SMT high density connection to the system board.

Interoperable and Advanced Security

The Airborne Embedded 802.11b/g SDIO-SPI Radio is a complete high-speed wireless solution that uses the latest 802.11b/g chipset from Marvell Libertas 88W8686. It provides compatibility with the 802.11b DSSS and 802.11g orthogonal frequency division multiplexing (OFDM) standards. The module includes integrated antenna connectors that provide a direct connection from the radio to the antenna. The module is a true upgrade option - no soldered connections are required. It can be upgraded in the field or added to a managed product configuration.

As the latest addition to the Airborne Radio family the WLRG-RA-DP600 includes support for full speed SDIO (1 & 4 bit) and SPI, through the Quatech standard 30 pin connector.

The WLRG-RA-DP600 family includes full hardware and software support for AES/CCMP, RC4, WEP, WPA and WPA2 encryption. Provision for enterprise level EAP supplicants is fully supported. In addition the module provides the latest 802.11 standards, including QoS and Transit Power Control.

Bluetooth Coexistence is provided via three wire interface, and supports Packet Transfer Arbitration (PTA) as specified in the IEEE802.15.2 standard.

The Airborne Embedded 802.11b/g SDIO-SPI Radio incorporates the most advanced power save technology, enabling original equipment manufacturers (OEMs) to utilize intelligent power control to minimize peak and overall power consumption and maximize battery life.

Quatech provides unparalleled software support to OEMs, including radio drivers for Linux, Windows CE, Windows XP, Windows Mobile 5.0/6.0 and other leading real-time operating systems. OEMs count on Quatech's technical expertise and experience to ease 802.11 radio integration and meet their time-to-market goals.

Applications

Designed specifically with power, performance and flexibility in mind, the Airborne™ family of radios are the wireless choice for machine-to-machine (M2M), Medical, Industrial and Mobile Enterprise applications. Quatech supplies the highest performance M2M WiFi radio products available, these are backed with industry leading support and product warranties. Please contact Quatech for further details and connect with reliability and performance.

KEY FEATURES

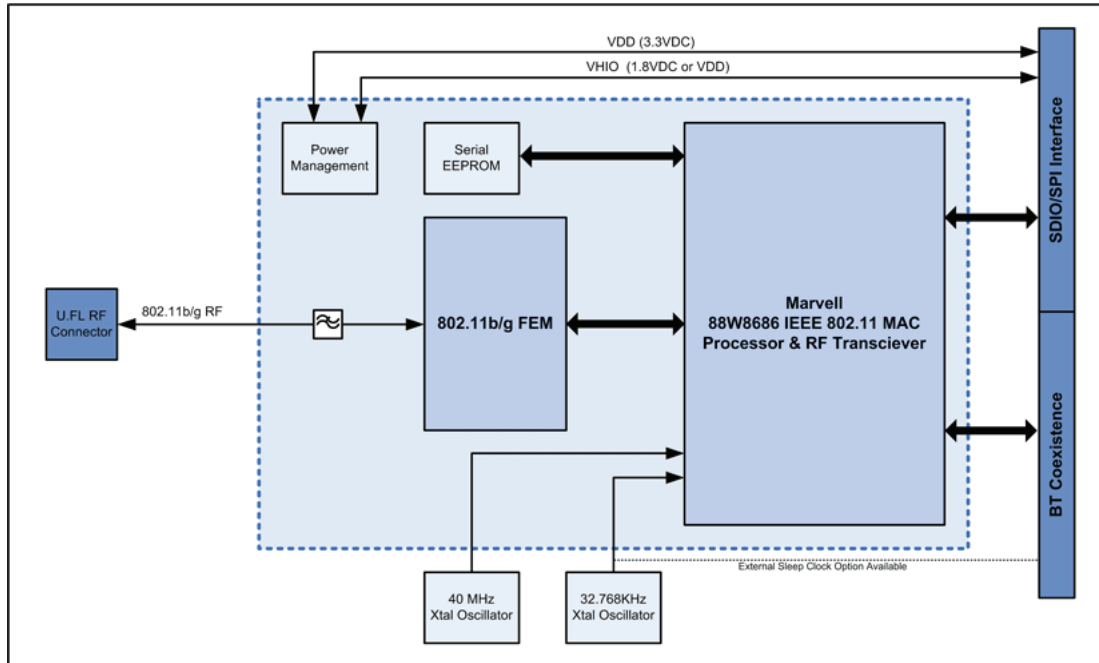
- 802.11b/g radio
- SDIO v1.0 (1 & 4 bit), SPI (1 & 4 bit)
- Based upon Marvell Libertas 88W8686 Chipset
- 30 pin high density SMT connector
- Single U.FL RF connector for 802.11b/g
- Supports WEP, WPA, WPA2 (Home and Enterprise) and 802.1x Supplicants
- Bluetooth Co-existence 3-wire interface through main connector
- Advanced Low power modes
- High vibration mounting holes
- Supports host downloaded radio firmware
- Driver supports for WinCE 5.0, Windows Mobile 5.0/6.0, Linux 2.6 and other embedded OS's
- Small form factor radio module (29mm x 21mm x 6mm)
- RoHS compliant

Model Selection Guide

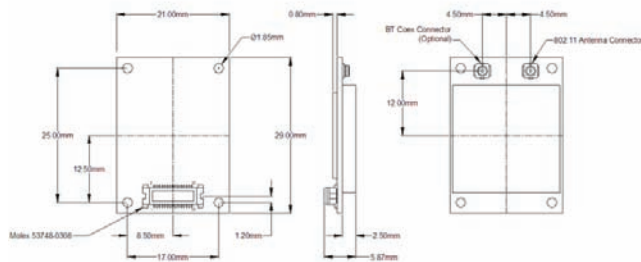


Model No.	WiFi		Interface			Supply		RoHS
	802.11b	802.11g	SDIO	SPI	BT CoX*	VBAT	VHIO	
WLRG-RA-DP601	◆	◆	◆	◆	◆	◆	◆	◆
To evaluate all available features and receive evaluation tools, order below.								
WLEG-RA-DP601	802.11b/g SDIO/SPI Radio Evaluation Kit WLRG-RA-DP601 radio, SDIO Adapter Card, Tools/Documentation CD, Drivers (Windows CE, XP and Linux)							
* Bluetooth Coexistence Support								

Block Diagram



Mechanical Outline



Connectors

Radio Connector	053748-0308 (Molex) 0.50mm (.020") Pitch SlimStack™ Plug, Surface Mount, Dual Row, Vertical, 3.00mm (.118") Stack Height, 30 Circuits
Board Connector	052991-0308 (Molex) 0.50mm (.020") Pitch SlimStack™ Receptacle, Surface Mount, Dual Row, Vertical, 3.00mm (.118") Stack Height, 30 Circuits
RF Connector	U.FL (Hirose) Ultra Small Surface Mount Coaxial Connector

Specifications

Technology	IEEE 802.11b/g, WiFi Compliant
Interfaces	SDIO v1.0 (1&4 bit), SPI (1 & 4 bit), Bluetooth Coexistence
Frequency	2.4-2.4835 GHz (US/Canada/Europe) 2.4-2.497 GHz (Japan)
Modulation Technology	DSSS, CCK, OFDM
Modulation Type	DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM
Network Access Modes	Infrastructure, ad-hoc
Channels	US/Canada - 11 channels Europe - 13 France - 4 channels Japan - 14 channels (13 channels for 'g')
Wireless Data Rates	802.11b - 11,5.5,2,1 Mbs 802.11g - 54,48,36,24,18,12,9,6 Mbs
MAC	CSMA/CA with ACK, RTS, CTS
Sensitivity	-92dBm @ 1Mb/s (802.11b) -85dBm @ 11Mb/s (802.11b) -87dBm @ 6Mb/s (802.11g) -82dBm @ 18Mb/s (802.11g) -75dBm @ 36Mb/s (802.11g) -70dBm @ 54Mb/s (802.11g)
Security Protocols	Disabled, WEP 64 & 128 bit, WPA (TKIP), WPA (AES), WPA2 (AES), 802.1x (EAP) Supplicant
Antenna	U.FL coaxial connectors, 50 ohms, supports diversity
Supply	VDD=3.3VDC +/-10%, VHIO= 3.3VDC+/- 10% or 1.8 VDC+/- 10%
DC Characteristics	802.11g Tx mode current= 161 mA (Typ) 802.11g Rx mode current= 174 mA (Typ) 802.11b Tx mode current= 218 mA (Typ) 802.11b Rx mode current = 146mA (Typ) IEEE Power Save (PSP) Mode = 6mA (Typ) Power Down Mode= 160mA
Operating and Storage Temp	Operating: -30°C to +85° C, Storage -50°C to + 125°C
Connector	30 Pin High density SMT Connector (Molex 53748-0308)
Agency Approvals	FCC Part 15 Class B Sub C Intentional Radiator, IOC RSS-210 (Pending)