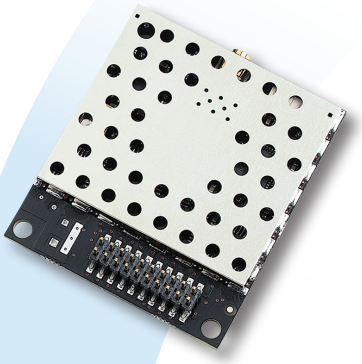
Laird TECHNOLOGIES

Innovative **Technology**
for a **Connected** World

AC4790
900MHz Radio Module



THE FASTEST WAY TO WIRELESS

The high-performance AC4790 radio modules utilize Laird Technologies' "masterless" protocol, allowing each radio module to communicate with any other in-range radio module for true peer-to-peer operation.

Using field-proven 900MHz FHSS technology that needs no additional site licensing*, AC4790s reject interference, enable co-located system operation, and ensure data integrity.

The AC4790's protocol features a dynamic addressing scheme, that simplifies node-to-node communication. The radio module enables identification of the most efficient transmission path, so OEMs can design routing sequences that optimize the RF network. This makes the AC4790 ideal for a wide variety of industrial applications that must rely on smooth, constant data flow.

Developer tools and comprehensive technical support are available to aid integration. Let Laird Technologies help you find the best fit for your application.

FEATURES

- True peer-to-peer protocol
- Ultra-fast sync time (25 msec)
- Small form factor: 1.65 x 1.9 inches
- API commands to control packet routing
- Software-adjustable sensitivity
- Network node discovery
- Variable output power: 5mW to 1000mW
- Range up to 20 miles

MARKETS

- Commercial Buildings
- Field Surveillance
- Utility Management
- Recreation
- Fleet Telemetry

global solutions: local support™

USA: +1.800.492.2320
Europe: +44.1628.858.940
Asia: +852.2268.6567

wirelessinfo@lairdtech.com
www.lairdtech.com/wireless

Laird TECHNOLOGIES®

Innovative **Technology** for a **Connected** World

AC4790
900MHz Radio Module

FLEXIBLE RF PROTOCOL

Laird Technologies' RF232™ embedded transparent protocol simplifies the OEM's integration process by providing drop-in installation. As each radio module receives raw data, it manages the over-the-air protocol to assure successful communication. Headers, data packet length, and CRCs are not required. The AC4790's flexible "masterless" topology supports simple cable-replacement up to complex peer-to-peer configuration. It allows you to broadcast to all radio modules or address packets to a specific destination using unique MAC addresses embedded in each radio module.

SPECIFICATIONS

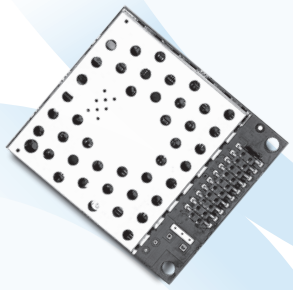
Parameter	AC4790–200	AC4790–1000
Interface	20-pin mini connector	20-pin mini connector
Frequency (software selectable)	902-928 MHz (U.S)**	902-928 MHz (U.S)**
Modulation	FHSS FSK	FHSS FSK
Serial interface options	3.3V or 5V TTL	3.3V TTL
Serial interface data rate	Up to 115.2 Kbps	Up to 115.2 Kbps
Output power (w/ 3dBi antenna)	5mW-200mW variable	5mW-1000mW variable
Current consumption (Tx/Rx)	68 mA / 30 mA typical	650 mA typical / 30mA typical
Channels	Up to 48 (U.S.)**	Up to 32 (U.S.)**
Security	One-byte system ID, DES	One-byte system ID, DES
Voltage	3.3V-5.5V	pin 10: 3.3V-5.5V; pin 11: 3.3V +/-3%
Sensitivity (adjustable)	-99 dB, -110dB	-99 dB, -110 dB
Range (line-of-sight)	Up to 4 miles (up to 6.5 km) with external antenna	Up to 20 miles (up tp 32 km) with high-gain antenna
Temperature	-40° to +80°C	-40° to +80°C
Humidity (non-condensing)	10% to 90%	10% to 90%
Dimensions	1.90 x 1.65 x 0.20" (49 x 42 x 5 mm)	1.90 x 1.65 x 0.20" (49 x 42 x 5 mm)
Weight	< 0.75 oz (< 21 g)	< 0.75 oz (< 21 g)
Antenna	Integral or external antenna††	External antenna††

*The 900MHz frequency band is approved in the Americas and Australia as an unlicensed spectrum subject to approval by device.

**For products and specifications suited to non-U.S. countries, please contact Laird Technologies directly.

†Current consumption assumes 50% transmitter on-time.

††Higher-gain antennas optional.



The details contained within the document are subject to change. Download the product specification from www.lairdtech.com/wireless for the most current specification.

RF PROTOCOL MODES

a) Communication
   Unicast (one-to-one addressing)
   Broadcast (one-to-multiple addressing)
b) Acknowledgement mode (ACK)
   API with hardware and/or software
   ACK indication
c) Ultra-fast sync time:
   Up to 25 simultaneous conversations
   Intelligent self-extending session time requires only one 25 msec sync
d) Sense adjust software-controlled RF desensitizer wards off interference
e) Random back-off
f) Network node discovery
g) Dynamic radio data table:
   Retains data from up to 8 radio modules

INTERFACE PROTOCOL

a) On-the-fly radio module configuration:
   Full API control
   Destination address
   RF transmit power
   RF channel
   Broadcast/addressed
b) Raw data or transmit/receive API
c) Long range mode, enables sensitivity control
d) A/D, generic digital I/Os
e) Variable baud rate
f) RF packet size, timeout control
g) Onboard temperature sensor
h) Handshaking, CTS/RTS
i) Session indicator
j) Error detection
   Onboard CRC
   Duplicate packet filtering
k) Data encryption standard (DES)

LWS-SPEC-AC4790 0209

Any information furnished by Laird Technologies and its agents is believed to be accurate and reliable. Responsibility for the use and application of Laird Technologies materials rests with the end user since Laird Technologies and its agents cannot be aware of all potential uses. Laird Technologies makes no warranties as to the fitness, merchantability, or suitability of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies terms and conditions of sale in effect from time to time, a copy of which will be furnished upon request. For further information please visit our website at www.lairdtech.com. Alternatively contact: wirelessinfo@lairdtech.com. Bluetooth® is a trademark owned by Bluetooth SIG, Inc., USA and licensed to Laird Technologies.

© 2009 All Rights Reserved. Laird Technologies is a registered trademark of Laird Technologies, Inc.