

### THE FASTEST WAY TO WIRELESS

Designed to provide OEMs with license-free communications over long distances, Laird Technologies' AC4868 provides an affordable alternative to products operating in the saturated 433MHz band. The fully certified 868MHz radio module delivers 250mW of output power and is ideal for industrial European applications where reliable data deployment is crucial.

The AC4868 supports a host of communication architectures including point-to-point, point-to-multipoint, and peer-to-peer. Its dynamic serial firmware manages difficult over-the-air issues such as error detection, multipath concerns, link verification, and interference. It is simply the best price/performance 868MHz module available.

AC4868 modules are socket-compatible with Laird Technologies' 900MHz and 2.4GHz radio modules, enabling OEMs to design once and subsequently interchange radios to accommodate new markets, regulations and environments\*\*. European approval allows use of the radio module in both mobile and fixed installations without further licensing requirements.

### FEATURES

- Approved for European use
- Seamless cable-to-radio module replacement
- High 868MHz data rate: 57.6 kbps
- Small form factor: 49 x 42 x 5mm
- Operates in -40°C to +80°C temp. range
- 250mW enables up to 15 km range

### MARKETS

- Recreation
- Pool and Spa Control
- Point of Sale
- Gaming Devices
- Utility Management

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### FLEXIBLE RF PROTOCOL

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

### SPECIFICATIONS

Parameter	AC4868-250
Interface	20-pin mini connector
Frequency	869.40-869.65MHz
Modulation	SF FSK
Serial interface options	3V TTL
Serial interface data rate	Up to 57.6 Kbps
Output power (w/ 2dBi antenna)	250mW variable
Current consumption (transmit/receive)	240mA/36mA
Security	One-byte system ID
Sensitivity (w/ 2dBi antenna)	-103 dBm typical @28.8 Kbps
Voltage	Pin 10: 3.3-5.5V +/-50mV ripple Pin 11: 3.3V +/-3%, +/-100mV ripple
Range	Up to 15 km line of sight
Temperature	-40° to +80°C
Humidity (non-condensing)	10% to 90%
Dimensions	49 x 42 x 5 mm (1.90 x 1.65 x 0.20")
Weight	< 0.75 oz (< 21 g)
Antenna	External MMCX connector

\*The 868MHz frequency band is approved in Europe as an unlicensed spectrum subject to approval by device.

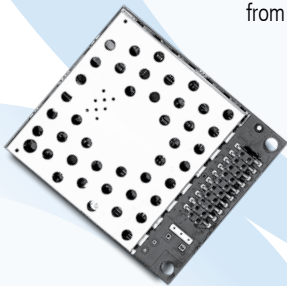
\*\*Although AC4868 radios will not talk to AC4490 radios, socket-compatibility allows for interchanging the modules network-wide.

### RF PROTOCOL MODES

- a) Communication
  - Unicast (one-to-one addressing)
  - Broadcast (one-to-multiple addressing)
- b) Acknowledgement mode (ACK)
  - API with hardware/software
  - ACK indication

### INTERFACE PROTOCOL

- a) On-the-fly radio module configuration:
  - Destination address
  - RF transmit power
  - Broadcast/addressed
- b) 9-bit serial interface mode
- c) A/D, D/A generic I/Os
- d) Variable baud rate
- e) RF packet size, timeout control
- f) Onboard temperature sensor
- g) Handshaking, CTS/RTS
- h) In-range indicator
- i) Error detection:
  - Onboard CRC
  - Duplicate packet filtering
- j) Data encryption standard (DES)



The details contained within the document are subject to change. Download the product specification from [www.lairdtech.com/wireless](http://www.lairdtech.com/wireless) for the most current specification.

LWS-SPEC-AC4868 0109

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