

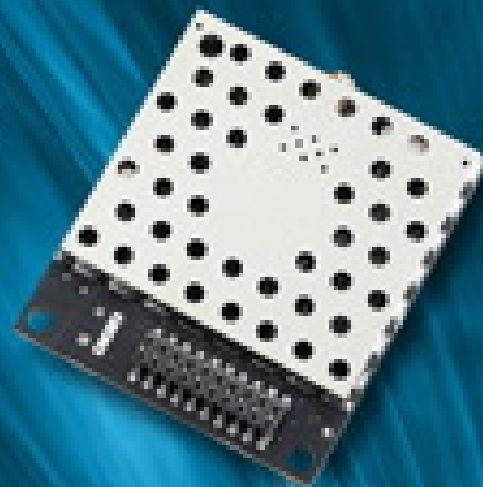
# The fastest way to wireless.

Compact AC4490 900MHz transceivers can replace miles of cable in harsh industrial environments. Using field-proven FHSS technology that needs no additional site licensing\*, AC4490s reject interference, enable co-located system operation, increase output power and maintain data integrity.

AC4490s feature drop-in installation and a number of on-the-fly control commands, providing OEMs with a versatile interface for any application. They can be used as direct wire replacements, requiring no special host software for communication. All frequency hopping, synchronization and RF system data transmission/reception is performed by the transceiver.

AC4490 modules are socket-compatible with AeroComm's 2.4GHz AC4424 transceivers, enabling OEMs to design once and subsequently interchange radios to accommodate new markets, regulations and environments.

Developer tools and integration support back every transceiver line. Let AeroComm help you find the best fit for your application.



## AC4490 Highlights

- **Lowest cost** one-watt module available.
- **"Long range"** mode enables 40 miles.
- High 900MHz data rate: **115.2 Kbps**.
- Small form factor: **1.65 x 1.9 inches**.
- Operates in **-40°C to +80°C** temperatures.
- Variable output power: **5mW to 1000mW**.

## Applications

## Specifications



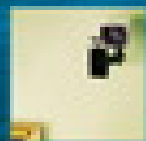
### Recreation Areas

- Golf cart tracking
- Score keeping
- Order entry
- Irrigation systems
- Grounds maintenance



### Utilities Management

- Automatic meter reading
- Load profiling, forecasting
- Data management
- Tampering alerts
- Real-time support



### Commercial Buildings

- Security & fire alarms
- Lighting controls
- Surveillance
- Building automation
- HVAC controls



### Fleet Telemetry

- Vehicle tracking
- Cargo data
- Weigh scales
- Maintenance logs
- Mapping



### Field Surveillance

- SCADA
- Oil & gas
- Water & wastewater
- Tank monitoring
- Activity alarms

PARAMETER	AC4490-200	AC4490-1000
<b>Interface</b>	20-pin mini connector	20-pin mini connector
<b>Frequency</b> (software selectable)	902-928 MHz (U.S)**	902-928 MHz (U.S)**
<b>Modulation</b>	FHSS FSK	FHSS FSK
<b>Serial interface options</b>	3V or 5V TTL	3V TTL
<b>Serial interface data rate</b>	Up to 115.2 Kbps	Up to 115.2 Kbps
<b>Output power</b> (w/ 3dBi antenna)	5mW-200mW variable	5mW-1000mW variable
<b>Power consumption</b> ††	68 mA typical	650 mA typical
<b>Channels</b>	Up to 48 (U.S.)**	Up to 32 (U.S.)**
<b>Security</b>	One-byte system ID, DES	One-byte system ID, DES
<b>Voltage</b>	3.3V-5.5V	pin 10: 3.3V-5.5V pin 11: 3.3V +/-3%
<b>Sensitivity</b>	-110 dB in "long range" mode	-110 dB in "long range" mode
<b>Range</b>	Up to 4 miles (6.5 km)	Up to 20 miles (32 km)
<b>Temperature</b>	-40° to +80°C	-40° to +80°C
<b>Humidity</b> (non-condensing)	10% to 90%	10% to 90%
<b>Dimensions</b>	1.90 x 1.65 x 0.20 inches (49 x 42 x 5 mm)	1.90 x 1.65 x 0.20 inches (49 x 42 x 5 mm)
<b>Weight</b>	< 0.75 oz (< 21 g)	< 0.75 oz (< 21 g)
<b>Antenna</b>	Integral and external dipole	External dipole

\* 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 (e.g. Australia and Europe), please contact AeroComm directly.

† Although AC4490 radios will not talk to AC4424 radios, socket-compatibility allows for interchanging the modules network-wide.

†† Power consumption assumes 50% transmitter on-time.

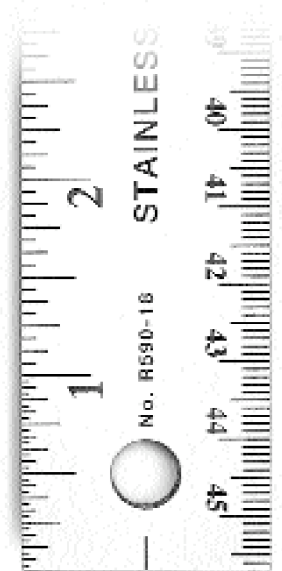
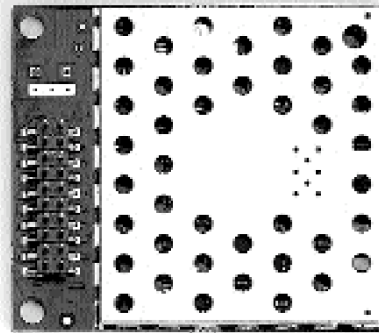


# Flexible RF Protocol

AeroComm's embedded transparent protocol simplifies the OEM's integration process by allowing for drop-in installation. As each transceiver receives raw data, it manages over-the-air protocol to assure successful communication. Headers, data packet length, and CRCs are not needed.

RF232 supports simple cable-replacement to complex peer-to-peer configurations. Broadcast communication to all transceivers or address packets to a specific destination using unique MAC addresses embedded in each transceiver.

AC4490, Actual Size



## Protocol Features

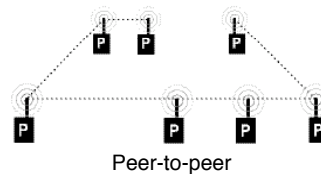
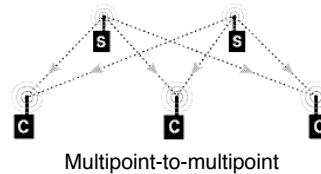
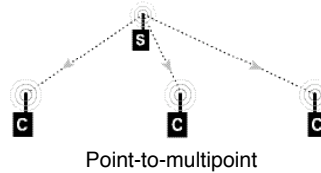
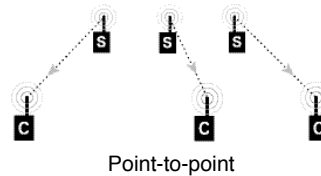
### RF PROTOCOL MODES

- a) **Communication**  
Unicast (one-to-one addressing)  
Broadcast (one-to-many addressing)
- b) **Acknowledgement mode (ACK)**  
API with hardware and/or software ACK indication
- c) **One-beacon mode**
- d) **Dynamic radio data table**  
Retains data from up to 12 transceivers

### INTERFACE PROTOCOL

- a) **On-the-fly transceiver configuration**  
Destination address  
RF transmit power  
Co-located servers  
RF Channel  
Broadcast/addressed
- b) **Raw data or transmit/receive API**
- c) **9-bit serial interface mode**
- d) **Long range mode**  
Enables sensitivity control
- e) **Generic A/D, D/A generic I/Os**
- f) **Variable baud rate**
- g) **RF packet size, timeout control**
- h) **Onboard temperature sensor**
- i) **Handshaking**  
CTS/RTS  
Full modem-mode available
- j) **In-range indicator**
- k) **Error detection**  
Onboard CRC  
Duplicate packet filtering
- l) **Data encryption standard (DES)**

## RF Architectures



## Placing Orders

Select features from the list below to identify the appropriate part number. More product lines are available for industrial & commercial applications. Contact AeroComm Sales for details: toll-free 1-800-492-2320, email [sales@aerocomm.com](mailto:sales@aerocomm.com).

### PART NUMBERS

#### AC4490-200M

900MHz transceiver, 3.3V-5.5V, TTL serial\*, 5-200mW, -40° to +80° C, MMCX antenna

#### AC4490-200A

900MHz transceiver, 3.3V-5.5V, TTL serial\*, 5-200mW, -40° to +80° C, integral antenna

#### AC4490-1000M

900MHz transceiver, 3.3V, TTL serial\*, 5-1000mW, -40° to +80° C, MMCX antenna

#### AC4490-1x1

See AC4490-1x1 datasheet

\* RS485 interface available.