

SCADAWave Ultra KR30

Spread Spectrum Data Radio

Features:

- Robust, 900MHz spread spectrum technology
- Up to 256kbps over-air data rates
- Powerful 1 Watt transmitter
- Ultra long range high performance receiver
- Dual antennas with independent power settings
- Multistream™ simultaneous data stream support
- KwikStream™ high speed single radio repeater mode
- Configurable as Repeater or Network Bridge
- SCADAWave Manager: user-friendly configuration and diagnostics interface
- 3-Year Warranty (parts and labor)



The SCADAWave Ultra KR30 is Control Microsystems' most cost-effective and compact data radio operating in the license-free 900MHz ISM band. The product is strategically placed far ahead of the competition thanks to many unique features, including LinkXtend™ network bridging and KwikStream™ high-speed repeater capabilities, MultiStream™ simultaneous data stream support and ChannelShare™ collision-avoidance for spontaneous remote transmissions.

The KR30 also boasts a powerful 1-Watt transmitter, a highly sensitive long-range receiver and two independently-powered antenna connections. For added flexibility, the KR30 is available in a standard board-only version for standoff installation (standoffs not included) or within the SOLARPack 410, or with an optional metal enclosure for panel or din-rail mounting.

The Ultra KR30 radio makes use of advanced digital modulation and signal-processing techniques to achieve exceptionally high data throughput efficiency and with its advanced frequency-hopping technology, satisfies the most demanding SCADA requirements. The product is available in a wide range of frequency bands and carries the best warranty in the industry. As with all SCADAWave radio solutions, the KR30 can be rapidly deployed as a permanent or temporary alternative to wired communication networks which are costly to install and difficult to modify.

When integrated into legacy systems or used as the communications backbone of a new system, SCADAWave radios instantly bring up-to-date communication technology and performance to your network.

Applications

Ultra-Series data radio products are used across a wide range of industrial markets in point-to-point and point-to-multipoint applications. They are often used for remote interconnection of PLCs, RTUs, data loggers, and other data monitoring and control devices. The radios are compatible with the powerful SCADAWave E-Series Base Station and Hot Standby unit and is a CSA Class I, Division II-compliant product.

Features

Designed for maximum value and functionality, Control Microsystems has incorporated a wide range of state-of-the-art features in the Ultra KR30:

Data modem: Advanced technology GFSK digital data modem featuring error-checked high data throughput and true 256Kbps over-the-air data rates. User-configurable data ports offer simultaneous data streams, collision avoidance, 256-bit AES encryption (North America/Australia only) and support for Industry-standard protocols including Modbus, DNP3.0 and IEC 60870-5-101.

Radio: High frequency stability and accuracy digital synthesizer providing rapid Tx-Rx turnaround times and greater system capacity with optimized data quality. These highly flexible radios are universally applicable with compliance to FCC and ETSI radio communication regulatory requirements.

Configuration & Management

All SCADAWave radios offer maximum versatility by providing local and over-the-air configuration options.

SCADAWave Manager: As the Network Management and Remote Diagnostics environment for all SCADAWave radios, this tool helps to eliminate system down-time and reduce maintenance costs. The software incorporates a wide range of efficient network management utilities including error rate testing, channel occupancy statistics, and data error statistics. SCADAWave Manager also includes a diagnostics utility that permits monitoring and logging of radio performance parameters for all units in the network.

Design, Environmental and Power

The SCADAWave Ultra KR30 is built using compact, lightweight housings, ensuring maximum reliability together with ease-of-installation and serviceability. Full specification operation is guaranteed over the entire -40 to +70°C [-40 to 158°F] temperature range. Overall power consumption is optimized with a user-controlled smart sleep mode.

SCADAWave Ultra KR30 Specifications

| Functional | |
|---|---|
| Location | Master, remote, repeater or network-bridge |
| Unlicensed Radio Frequency Range | 902-928MHz |
| Operational Modes | Half-duplex, full-duplex |
| RF Channel Data Rate | 32,000/64,000/128,000 or 256,000bps |
| Features | |
| Configuration Interface | SCADAWave Manager: configuration, network management and diagnostic windows GUI software |
| Radio Frequency Accuracy | ± 2.5ppm |
| Transmitter | Power: 0.01 - 1W (+30dBm) 0.5dB steps user-configurable with over-temperature and reverse power protection (VSWR) Modulation: 2 Level GFSK Tx Key-up Time: < 50µS Tx Spurious: <= -50 dBc |
| Receiver | Selectivity: Better than 50dB Intermodulation: Better than 65dB Spurious Response: Better than 70 dB |
| Connections | User Data Port: 2 x RJ45 wired as DCE (modem) (Port B shared with System/Diagnostics connection) System/Diagnostics: 1 x RJ45 wired as DTE (Shared with Push-to-Talk (PTT) input) (Shared with the Port B connection) Antennas: 2 x female type SMA connectors LED Display: Multimode Indicators for Power/Tx, Sync/NoRx, Port A Rx/Tx and Port B Rx/Tx |
| Modem | Data Serial Port A: RS-232 or RS-485, RJ45 600-230,000bps asynchronous Data Serial Port B: RS-232, RJ45 300-38,400bps asynchronous Bit Error Rate: < 1 x 10 ⁻⁶ @ -109dBm Encryption: 256-bit AES encryption (North America/Australia only) Collision Avoidance: Channelshare™ collision avoidance system Firmware: Field-upgradeable Flash memory |
| General | Temperature Range: -40 to +70°C, (-40 to 158°F) operation Power Supply: 10-30Vdc (13.8Vdc nominal) Transmit Current: 400mA (at 13.8Vdc nominal) Receive Current: < 110mA (at 13.8Vdc nominal) Enclosure: Corrosion resistant zinc plated steel with black enamel paint DIN rail mounting clips: 42.5 x 19mm (1.675 x 0.75 inch) Dimensions: 103 x 58 x 41mm (4.03 x 2.27 x 1.60 inches) |
| Diagnostics | Network-wide operation from any remote terminal Non-intrusive protocol - runs simultaneously with the application Over-the-air re-configuration of all parameters Storage of data error and channel occupancy statistics In-built error rate testing capabilities |
| Approvals and Certifications | FCC ID: NI80M900 IC Certification Number: 4630A-0M900 Hazardous Locations – North America: per CSA Std C22.2 No. 213-M1987 / UL1604 Class I, Zone 2, Ex nA IIC Txx / Class I, Zone 2, AEx nA IIC Txx Safety: CSA C22.2 No. 142-M197 and UL-508 in Canada and USA Digital Emissions: FCC Part 15, Subpart B, Class A Verification EN61000-6-4: 2007 Electromagnetic Compatibility Generic Emission Standard Part2: Industrial Environment C-Tick compliance. Registration number N15744 Immunity: EN61000-6-2: 2005 Electromagnetic Compatibility Generic Standards Immunity for Industrial Environments |
| Warranty | 3-Year parts and labor |

Model Code

Tyxx-wxyz represents the part number matrix

| Code T | Select: Model Type |
|---------|---|
| K | K-Series |
| Code y | Select: Unit Type |
| R | Remote Station |
| Code xx | Select: Model Number |
| 30 | Model 30 |
| Code w | Select: Enclosure Type |
| 0 | Board-only version for standoff (not included) and SOLARPack 410 mounting |
| 1 | Enclosure option for panel or DIN rail mounting |
| Code x | Select: Frequency (900MHz bands) |
| B | License-free band 902 to 928 MHz (FCC/IC for North America) - Encryption |
| C | License-free band 915 to 928 MHz (Australia) - Encryption |
| D | License-free band 902 to 915MHz (Brazil) - No Encryption |
| E | License-free band 921 to 928 MHz (New Zealand) - No Encryption |

| Code y | Future Use |
|--------|------------|
| H | No Options |
| Code z | Future Use |
| 0 | No Options |

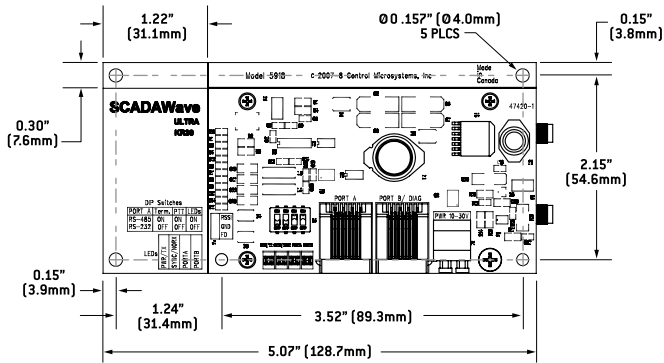
Example: KR30-1BH0 specifies: SCADAWave Ultra-Series KR30 Remote Station, mounted within enclosure, 900MHz band radio with a specific frequency range of 902 to 928MHz.

Accessories (Contact Sales Support Department for up-to-date list)

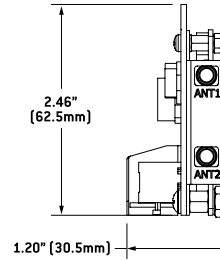
| Description | Part Number |
|--|-------------|
| Programming and Communication Cables | |
| KR30 Port A/DIAG Port (RJ45) to SCADAPack/PC (DE-9F), 10 feet (3m) | 297217 |
| KR30 Port B (only) to SCADAPack/PC (DE-9F), 10 feet (3m) | 297488 |
| Other | |
| SCADAWave Manager Configuration/Diagnostics software package | 297826 |

Physical Dimensions - Spread Spectrum Data Radio - KR30

Board-Only Version

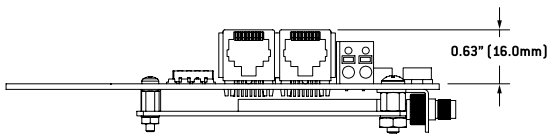


Top View



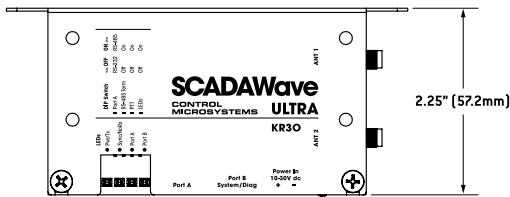
Side View

Front View

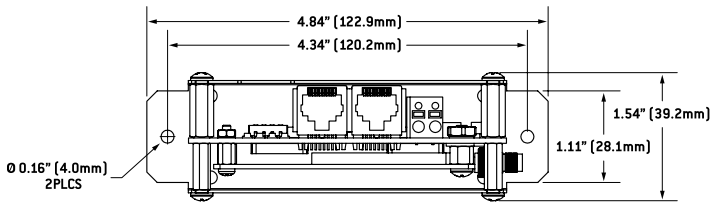


Optional Enclosure Version

Top View



Front View



Bottom View

