Trio KR9OOP & KR24OP Spread Spectrum Data Radio

Features:

900MHz and 2.4GHz frequency-hopping spread spectrum technology

- Advanced security with AES 256-bit encryption
- High data throughput with up to 256kbps over-air data rates
- Powerful 1 Watt transmitter (900MHz model)
- Ultra long range high-performance receiver
- Dual antennas with independent power settings
- Multistream[™] simultaneous data stream support
- KwikStream™ high-speed single radio repeater mode
- LinkXtend™ network bridge functionality
- Flexible mounting options for panel, din-rail and SOLARPack
- TView+ user friendly configuration and diagnostics interface
- 3-Year Warranty (parts and labor)



The KR900P & KR240P also boast a powerful 1W (900MHz), 0.5W (2.4GHz), 100mW (2.4GHz Europe ETSI) transmitter, a highly sensitive long-range receiver and two independently-powered antenna connections. For added flexibility, the KR900P & KR240P radios are available in a standard board-only version for standoff installation (standoffs not included) or within the S0LARPack 210 and 410, or with an optional metal enclosure for panel or din-rail mounting.

The radios make 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 KR900P & KR240P radios are available in a wide range of frequency bands and carries the best warranty in the industry.

As with all Trio radio solutions, the KR900P and KR240P 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, Trio radios instantly bring up-to-date communication technology and performance to your network.

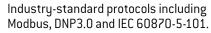
Applications

Trio K-Series radios 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 Trio E-Series Base Station and Hot-Standby unit and is a CSA Class I, Division II-compliant product (900MHz only, 0.5W 2.4GHz pending approval).

Features

Designed for maximum value and functionality, Control Microsystems has incorporated a wide range of state-of-theart features in the KR900P & KR240P:

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



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

TView+: As the Network Management and Remote Diagnostics environment for all Trio 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. TView+ 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 KR900P & KR240P are 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.



Specifications

specifications			
Functional			
Location	Master, remote, repeat	_	
		pecific and 2.4GHz ISM band versions available	
Operational Modes	Half-duplex, full-duplex		
RF Channel Data Rate	32,000/64,000/128,0	00 or 256,000bps	
Features			
Configuration Interface	TView+: configuration, network management and diagnostic windows GUI software		
Radio Frequency Accuracy	±2.5ppm		
Transmitter	Power: Modulation: Tx Key-up Time: Tx Spurious:	+30dBm, 0.01 - 1W (900MHz) +27dBm, 0.01 - 0.5W (2.4GHz), limited to 20dBm max., 100mW (ETSI version) 0.5db steps, user-configurable 2 Level GFSK $<$ 50 μ S <= -50 dBc	
Receiver	Selectivity: Intermodulation: Spurious Response:	Better than 50dB Better than 65dB Better than 70 dB	
Connections	User Data Port: System/Diagnostics: Antennas: LED Display:	2 x RJ45 wired as DCE (modem) [Port B shared with System/Diagnostics connection] 1 x RJ45 wired as DTE [Shared with Push-to-Talk (PTT) input) [Shared with the Port B connection] 2 x female type SMA connectors Multimode Indicators for Power/Tx, Sync/NoRx, Port A Rx/Tx and Port B Rx/Tx	
Modem	Data Serial Port A: Data Serial Port B: Bit Error Rate: Encryption: Collision Avoidance: Firmware:	RS-232 or RS-485, RJ45 600-230,000bps asynchronous RS-232, RJ45 300-38,400bps asynchronous <1 x 10-6 @ −109dBm 256-bit AES encryption (North America/Australia only) Channelshare™ collision avoidance system Field-upgradeable Flash memory	
General	Temperature Range: Power Supply: Transmit Current: Receive Current: Enclosure: DIN rail mounting clips: Dimensions:	$ -40 \text{ to } +70^{\circ}\text{C}, \left[-40 \text{ to } 158^{\circ}\text{F} \right] \text{ operation} \\ 10\text{-}30\text{Vdc} \left[13.8\text{Vdc nominal} \right] \\ 400\text{mA} \left[\text{at } 13.8\text{Vdc nominal} \right] \\ <110\text{mA} \left[\text{at } 13.8\text{Vdc nominal} \right] \\ \text{Corrosion resistant zinc plated steel with black enamel paint} \\ 42.5 \times 19\text{mm} \left[1.675 \times 0.75 \text{ inch} \right] \\ 103 \times 58 \times 41\text{mm} \\ \left[4.03 \times 2.27 \times 1.60 \text{ inches} \right] $	
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	IC: Hazardous Locations – North America: Europe:	RSS 139 (RSS 210) cCSA _{US} , suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations (900MHz only, 0.5W 2.4GHz pending approval) Temperature Code T4 per CSA Std C22.2 No. 213-M1987 / UL1604 ATEX: II 3G Ex nA IIC T4 per EN 60079-15, protection type n (Zone 2) (2.4GHZ 100mW ETSI version only)	
	Safety: Digital Emissions: Immunity:	CSA C22.2 No. 142-M1987 and UL916 in Canada and USA. 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 EN61000-6-2: 2005 Electromagnetic Compatibility Generic Standards Immunity for Industrial Environments	
Warranty	3-Year parts and labor		
	- 1 - 2.10 2.10 10.00		

Model Code

Code T	Select: Model Type
K	K-Series
Code y	Select: Unit Type
R	Remote Station
Code xx	Select: Model Number
900	900 MHz
240	2.4GHz
Code w	Select: Enclosure Type
0	Board-only version for standoff (not included) and SOLARPack 210 or 410 mounting
1	Enclosure option for panel or DIN rail mounting
Code x	Select: Frequency (900MHZ and 2.4GHz bands)
В	License-free band 902 to 928 MHz (FCC/IC for North America) - Encryption
С	License-free band 915 to 928 MHz (Australia) - Encryption
D	License-free band 915 to 928MHz (Brazil) - No Encryption
E	License-free band 921 to 928 MHz (New Zealand) - No Encryption
J	License-free band 2.4GHz (ETSI, ATEX for Europe) - No Encryption
K	License-free band 2.4GHz no Hazloc (North America, Australia) - Encryption
L	License-free band 2.4GHz no Hazloc (Outside of Europe, Canada, US, Australia) - No encryption

Tyxx-wxyz represents the part number matrix

Code y	Future Use
Н	No Options
Code z	Future Use
0	No Options

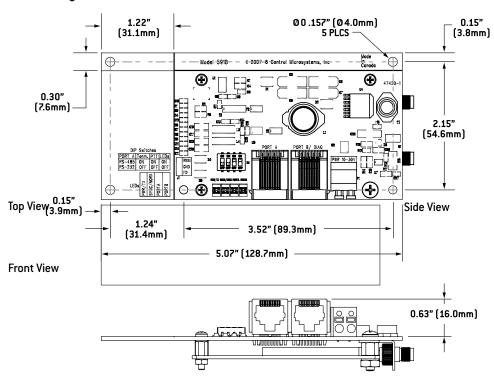
Example: KR30-1BH0 specifies: Trio K-Series KR900 Remote Station, mounted within enclosure, 900MHz band radio with a specific frequency range of 902 to 928MHz.

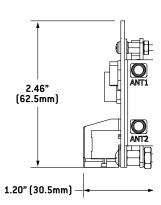
Accessories (Contact Sales Support Department for up-to-date list)

Description	Part Number	
Programming and Communication Cables		
KR900P & KR240P Port A/DIAG Port (RJ45) to SCADAPack/PC (DE-9F), 10 feet (3m)	297217	
KR900P & KR240P Port B (only) to SCADAPack/PC (DE-9F), 10 feet (3m)	297488	
Other		
TView+ Configuration/Diagnostics software package	297826	

Physical Dimensions - Spread Spectrum Data Radio - KR9OOP | KR24OP

Board-Only Version





Optional Enclosure Version

Top View

