

Technical Specification Datasheet

Trio

Wireless communication for telemetry and remote SCADA solutions



Trio



Versatile and reliable long-reach data radios

- Licensed and license-free frequency band models
- Offering multiple connectivity and design options
- Implementing smart radio technologies for optimal network performance

Which Trio model is right for my application?









Trio radios are broadly split into licensed and unlicensed frequency models with each further divided into Ethernet & Serial and Serial only interfaced models.

The following chart may be used to determine the appropriate Trio radio to fit your needs. Further technical information is found in the specifications section.



Trio radios are available in a range of hardware components that are optimised for your specific communication needs.

Trio Radio Selection Chart

	License-free						Licensed							
														
Interface														
Ethernet + Serial	✓	✓						✓			✓		✓	
Serial Only			✓	✓	✓	✓	✓		✓		✓		✓	✓
Frequency Band														
450MHz							✓	✓	✓	✓	✓	✓	✓	✓
900MHz	✓		✓		✓	✓								
2.4GHz		✓		✓										
Radio Type														
Remote	✓	✓	✓	✓	✓	✓	✓	✓						✓
Base									✓	✓				
Hot Standby											✓	✓		
Package														
Board Only						✓								
Standalone	✓	✓	✓	✓	✓		✓	✓						✓
Rack									✓	✓	✓	✓		
Encryption *	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unique Features														
KwikStream™ High Speed Repeater mode	✓	✓	✓	✓	✓	✓								
LinkXtend™ Dual Antenna Network Bridging	✓	✓	✓	✓	✓	✓								
ChannelShare™ Collision Avoidance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SmartPath™ Enhanced Redundancy	✓	✓	✓	✓	✓	✓								
Multistream™ Simultaneous Data Stream			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Approvals														
FCC/IC/ACA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hazardous Area	✓	✓	✓	✓	✓	✓	✓	✓						✓
ETSI		✓		✓			✓	✓	✓	✓	✓	✓	✓	✓

* Export restrictions may apply.

License-free feature overview



License-Free J & K-Series data radios

Common Features

- Configurable operational profiles: access point, remote, bridge, repeater
- KwikStream™ high-speed single radio repeater mode
- Dual antenna LinkXtend™ technology increases usable range
- Repeater and Bridge units support locally connected user devices
- ChannelShare™ collision avoidance for unsolicited remote transmissions allowing simultaneous polling and spontaneous reporting
- SmartPath™ Technology for enhanced redundancy in network configuration
- License-free operation in the 900MHz and 2.4GHz ISM frequency bands
- Robust, frequency-hopping, spread-spectrum technology for superior interference immunity
- 1 Watt (+30dBm) maximum allowable transmitter power (500mW with 2.4GHz version)
- High VSWR protection (900MHz version only)
- Compatible with Trio TView+ Diagnostics for stand-alone network management
- Spectrum Analyser and Channel Lockout facilities
- 256-bit AES data encryption (export restrictions may apply)
- Reliable operation in environmental extremes: -40°C to +70°C (-40°F to +158°F)

J-Series Ethernet & serial data radio

JR900 | JR240

- 900MHz version: 512kbps high speed over-air data rate or 256kbps for longer range. 2.4GHz version: 256kbps
- Dual Independent Ethernet ports (Auto MDI/MIDX)
- MAC address based filtering to reduce traffic on air (Smart peer-to-peer repeating – manual configuration of peer to peer not required)
- Legacy RS-232 serial support via embedded terminal servers (UDP/TCP)
- SNMP Access to Radio Diagnostics
- Telnet and Serial console based Management Interface
- Compact, rugged alloy housing
- 10-30VDC power supply
- Dual industry-standard TNC antenna connectors

K-Series serial data radio

KR900 | KR240

Common Features:

- 256kbps high speed over-air data rate (can be reduced to 128k, 64k or 32k for longer range)
- Advanced error free data delivery with CRC plus selectable FEC and ARQ
- Suitable for most industry standard data protocols. e.g. Modbus, DNP3, IEC870-5-101, etc.
- MultiStream™ simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network - compatible with Trio E-Series and M-Series
- Flexible data stream routing providing optimum radio channel efficiency

KB900 | KB240 (Board only)

KP900 | KP240 (Enclosure)

- Dual, independent, user-configurable data ports
- Selectable 300-230 kbps asynchronous RS-232 and RS-485 interfaces
- Mounting options for DIN-Rail and Solar

Licensed feature overview



E-Series Ethernet/Serial and M-Series Serial Data Radios

Common Features –

Serial MR450 | ER450 | EB450 | EH450

- Compatible with most industry-standard data protocols, e.g. Modbus, DNP3, IEC870, SEL mirrored bits, etc.
- Multistream™ simultaneous data streams allow for multiple vendor devices/protocols to be transported on the one radio network
- Internal repeater operation – single radio store and forward
- Channelshare™ unique integrated C/DSMA collision avoidance technology permits simultaneous polling and spontaneous alarm reporting operation in the same system
- Remote, fully transparent Network Management and Diagnostics
- Dual, independently configurable data ports and separate system port

Common Features –

Ethernet & Serial ER45e | EB45e | EH45e

- Independent Ethernet & serial ports
- Ethernet Port 10/100Mbps (auto MDIX sensing) IEEE 802.3
- Selectable 300 – 38.4 kbps asynchronous RS-232 interface
- Legacy RS-232 serial support via embedded terminal server (UDP/TCP)
- Separate on-line system port avoids the need to interrupt user data for configuration access
- Maximum narrowband channel utilization with smart peer-to-peer repeating, broadcast filtering and data compression
- Advanced commissioning tools and remote diagnostics including SNMP
- RS-232 serial support via embedded terminal server (UDP/TCP)

E-Series

Common Features –

ER450 | ER45e | EB450 | EB45e | EH450 | EH45e

- 380 – 518MHz (various sub-frequency bands available)
- Selectable 300 – 57.6 kbps asynchronous RS-232 interface
- True 19,200 bps over-air data rates in 12.5kHz FCC channels (also 9600 bps)
- 128-bit AES encryption (export restrictions may apply)
- 12.5 or 25kHz channel operation

- Fast data turnaround
- Compatible with legacy systems (Non Packet Digital and Bell 202 Modes)
- Full specification operation from -30°C to + 60°C (-22°F to + 140°F)
- VSWR protection

Remote ER450 | ER45e

- 5 Watt transmitter output
- Simplex, Half Duplex and Full Duplex (Full Duplex with ERFD450 option)
- Rugged die-cast alloy chassis
- DIN-rail mounting kit option
- Multi-function LED Display

Base Radios EB450 | EB45e

- 5 Watt or 20 Watt transmitter output with 100% duty cycle
- 19" 2RU rack mount
- Extensive front panel LED display
- Internal (compact) or external duplexer options
- Digital inputs and outputs

Hot Standby Radios EH450 | EH45e

- 5 Watt or 20 Watt transmitter output with 100% duty cycle
- Auto change-over on failure of Tx Power, DC Voltage, Data Errors and Receive Failure
- Remote monitoring, control and changeover of duplicated base/repeater stations
- Hot swappable modular 19" 5RU rack mount
- Extensive front panel LED display
- Internal (compact) and external duplexer options
- Digital inputs and outputs

M-Series serial

MR450

- 395-520 MHz operation
- 0.1 to 5 watt transmitter output power
- Simplex or half duplex operation with any Tx-Rx splits
- One model suitable for 12.5 and 25 kHz channel spacing
- User configurable 300-38,400 bps RS-232 port
- DIN Rail mounting kit option
- Rugged die-cast alloy chassis

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License-free

Trio JR900 | JR240

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Licensed

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Product Data Sheet Trio JR900 | JR240

Specifications



Trio JR900 | JR240

Radio

Frequency Range	902-928MHz or 2.4-2.48335GHz, (region-specific versions available)
Frequency Accuracy	±2.5ppm (900MHz) ±3.0ppm (2.4GHz)
Radio Modes	Half Duplex, Pseudo Full Duplex
Configuration	All configuration via embedded HTML interface & Telnet console interface
Selectivity	Better than 50dB
Spurious Response	Better than 70dB
Tx Power	<ul style="list-style-type: none"> 900MHz : 0.01 - 1W (+30dBm) 0.5dB steps configurable with over-temperature and high VSWR protection 2.4GHz : 0.01 - 500mW (+27dBm) 0.5dB steps configurable with over-temperature protection.
Modulation	2 Level GFSK

Connections

Ethernet Port	2 x RJ45: 10/100 Mbps (auto-MDIX sensing) compliant with IEEE 802.3
Serial Data Ports	1 x RS232 DB9 female connector providing 2 x RS-232 3-wire serial ports (shared connector). 600-115,200 bps asynchronous
Serial Data Port Flow Control	CTS-RTS [Serial Port A only] or 3-wire interface
Antenna	2 x TNC female bulkhead connectors for LinkXtend or separate TX/RX antennas
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs and LAN LEDs

Ethernet

Ethernet Protocols	Ethernet/IP (including UDP, TCP, DHCP, ARP, ICMP, STP, IGMP, SNMP & TFPT)
Ethernet Repeating	Automatic and Self Learning Peer to Peer repeating
Compression	Automatic Ethernet data compression
Terminal Server	Legacy RS-232 serial support via embedded terminal server (UDP/TCP)
DHCP Modes	Auto and Manual
SNMP	SNMP V1/V2 RFC 1213-compliant & radio diagnostics parameters

Specifications continue on the next page

Product Data Sheet Trio JR900 | JR240

Specifications

> Trio JR900 JR240	
Modem	
RF Channel Data Rate	900MHz version - 512kbps or 256kbps, 2.4GHz version - 256kbps
Bit Error Rate	256kbps: < 1x10 ⁻⁶ @ -102dBm and 512kbps: < 1x10 ⁻⁶ @ -92dBm
Operating Modes	Access Point, remote, repeater or network-bridge
Network Types	Point-to-Point, Point-to-Multipoint, Point-to-Multipoint with Repeaters / Store n' Forward, Mesh
Channelshare™	Trio's unique supervisory collision avoidance system
SmartPath™	Technology for enhanced redundancy in network configuration (Mesh)
Firmware	Local and over-the-air flash-based firmware
Security	
Encryption*	256-bit AES
HTML Interface	Password Protected
Trusted Unit	Optional Trusted Access point-Trusted Remote operation
Diagnostics	
Diagnostics Overview	<ul style="list-style-type: none"> • Network Management & Remote Diagnostics with no software installation required • Network-wide operation from any remote terminal • Non intrusive protocol – runs simultaneously with the application • SNMP Access to Radio Diagnostics • Spectrum Analyser and Channel Lockout facilities (Telnet/Text Interface) • Fully compatible with TView+ Network Management Software • Diagnostics parameters available <ul style="list-style-type: none"> • Transmitter Power • Received Signal Strength • DC Supply Voltage • Received Frequency Error • Radio Temperature
General	
Operating Temperature Range	-40 to + 70°C (-40 to +158°F)
Power Supply	13.8Vdc nominal (10-30Vdc)
Transmit Current	<ul style="list-style-type: none"> • 900MHz : 800mA nominal @ 1W • 2.4GHz : 800mA nominal @ 0.5W
Receive Current	<150mA nominal @ 13.8Vdc
Housing & Dimensions	Rugged die-cast, 100 x 34 x 165mm, (4.0 x 1.4 x 6.5in.)
Mounting	Integrated Mounting Holes or DIN Rail mounting (optional)
Weight	0.5kg (1.1lbs.)
Warranty	3 years on parts and labor
Approvals and Certifications	
Europe (ETSI)	ETSI EN60950, EN50392 EN300328 EN301489 (2.4GHz only)
FCC	FCC PART 15
Industry Canada	IC RSS210
Australia	ACMA AS/NZS 4268
Hazardous Locations	<ul style="list-style-type: none"> • 900MHz : CSA Class I, Division II, G r oups (A,B,C,D) for Hazardous Locations ANSI/UL equivalent) • 2.4GHz : ATEX II 3G Ex nA IIC T4
* Export restrictions may apply. Contact your local representative for more details.	
Note: Not all product features are available in every mode of operation.	
Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com .	

Product Data Sheet Trio J-Series Model Code

	TBURJRxxx-aabbcode represents the part number matrix
Model	Model Type
TBURJ	J-Series
Code	Select: Unit Type
R	Base/Remote/Repeater Station with full enclosure
Code	Select: Generic Frequency Band
900	900MHz
240	2.4GHz
Code	Select: Frequency
	900MHz Frequency Band
00	License-free band 902 to 928MHz (FCC/IC - Requires Encryption for Canada and USA)
01	License-free band 915 to 928MHz (Requires Encryption for Australia)
05	License-free band 921 to 928MHz (New Zealand)
	2.4GHz Frequency Band
00	License-free band 2.4GHz, 500mW (Requires Encryption for North America & Australia)
01	License-free band 2.4GHz, ETSI/100mW, ATEX (Europe)
Note: Other frequency bands available upon request.	
Code	Select: RF Channel Data Rate & Bandwidth (Internal Modem)
002	900MHz : 256Kbps to 512Kbps , 2.4GHz : 256Kbps
Code	Select: Encryption
D	No Encryption
E	Encryption*
Code	Select: Approvals
H	Hazardous Environment CSA Class 1 Div 2
A	ATEX
Code	Future Option
0	None

Example: TBURJR900-00002EH0 specifies: Trio JR900 Remote Ethernet Station, 900MHz band with a specific frequency range of 902 to 928MHz, a 256kbps modem, Encryption and Class1 Div2 rating.

Communications Standards:

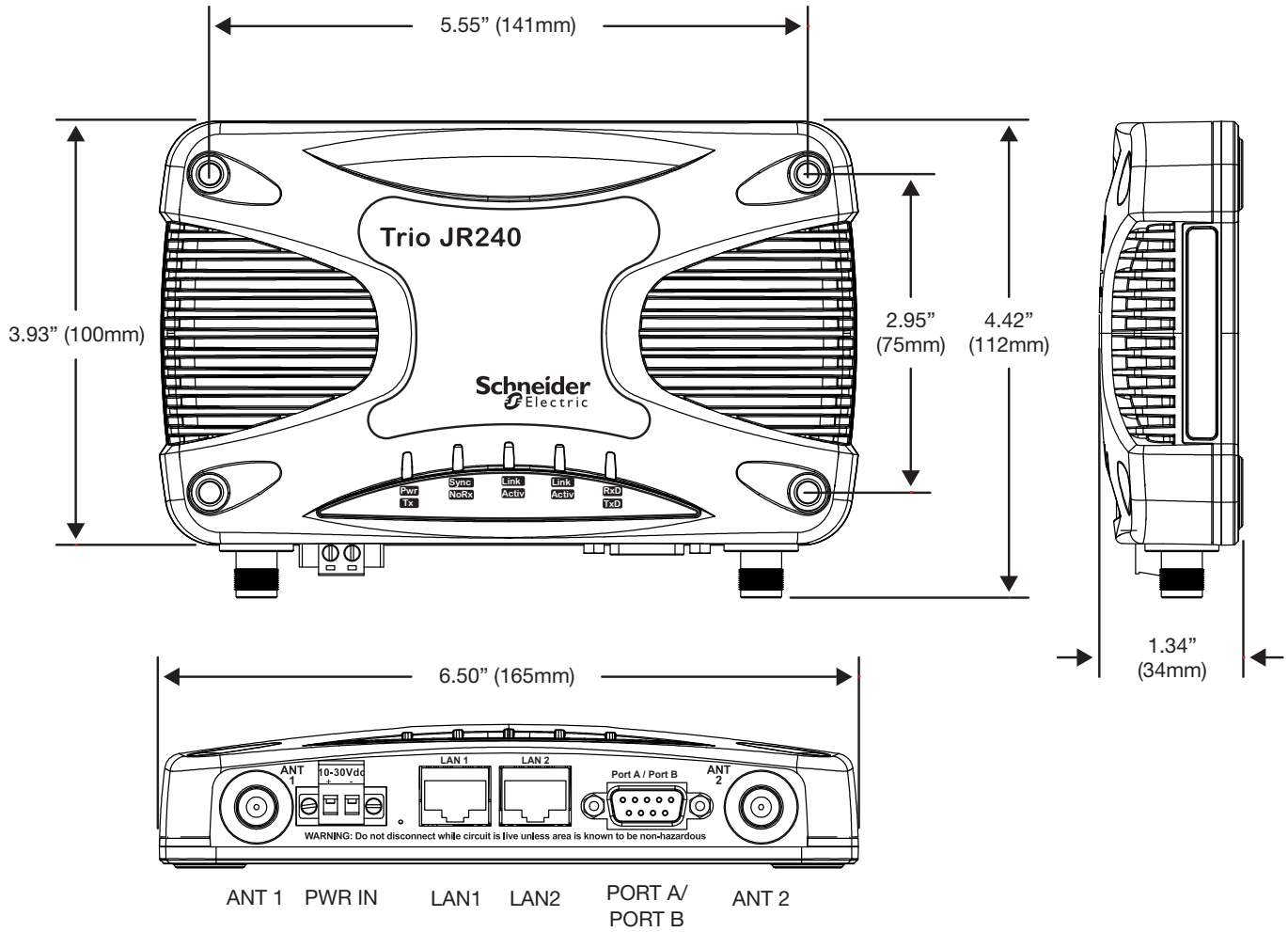
FCC – Federal Communications Commission (USA)
 IC – Industry Canada
 ETSI – European Telecommunication Standards Institute
 ACMA – Australian Communications & Media Authority

Contact your local sales office for accessories

* Export restrictions may apply. Contact factory for details.

Product Data Sheet Trio JR900 | JR240

Dimensions



Product Data Sheet Trio KR900 | KR240 Specifications



Trio KR900 | KR240

Radio

Frequency Range	902-928MHz or 2.4-2.48335GHz, (region-specific versions available)
Frequency Accuracy	±2.5ppm (900MHz) ±3.0ppm (2.4GHz)
Radio Modes	Half Duplex, Pseudo Full Duplex
Configuration	All configuration via Windows based software
Selectivity	Better than 50dB
Spurious Response	Better than 70dB
Tx Power	<ul style="list-style-type: none"> 900MHz : 0.01 - 1W (+30dBm) 0.5dB steps configurable with over-temperature and high VSWR protection 2.4GHz : 0.01 - 500mW (+27dBm) 0.5dB steps configurable with over-temperature protection.
Modulation	2 Level GFSK

Connections

Serial Data Port A	1 x RS232/RS485 RJ-45. 600-230,000bps asynchronous
Serial Data Port B	1 x RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Port Flow Control	Configurable hardware / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on Master synchronisation or from user data output.
System Port	1 x RS232 RJ45: 19,200bps, for configuration and diagnostics
Antenna	2 x TNC female bulkhead connectors for LinkXtend or separate TX/RX antennas
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B)

Modem

RF Channel Data Rate	32,000/64,000/128,000 or 256,000bps
Bit Error Rate	Max sensitivity 1×10^{-6} @ -108dBm
Operating Modes	Master, remote, repeater or network-bridge
Network Types	Point-to-Point, Point-to-Multipoint, Point-to-Multipoint with Repeaters / Store n' Forward, Mesh
Channelshare™	Trio's unique supervisory collision avoidance system
MultiStream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
SmartPath™	Technology for enhanced redundancy in network configuration (Mesh)
Firmware	Local and over-the-air flash-based firmware

Security

Encryption*	256-bit AES
Password Protection	Password protected configuration sessions
Trusted Unit	Optional Trusted Access point-Trusted Remote operation

* Export restrictions may apply. Contact factory for details.

Specifications continue on the next page.

Product Data Sheet Trio KR900 | KR240

Specifications



Trio KR900 | KR240

Diagnosics

Diagnosics Overview	<ul style="list-style-type: none"> • TView+ configuration, network management and diagnostic Windows GUI software • Spectrum Analyser and Channel Lockout facilities • Network-wide operation from any remote terminal • Non intrusive protocol – runs simultaneously with the application • Over-the-air re-configuration of user parameters. • Storage of data error and channel occupancy statistics • In-built Error Rate testing capabilities • Diagnostics parameters available <ul style="list-style-type: none"> • Transmitter Power • Received Signal Strength • DC Supply Voltage • Received Frequency Error • Radio Temperature
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General

Operating Temperature Range	-40 to + 70°C (-40 to +158°F)
Power Supply	10-30Vdc (13.8Vdc nominal)
Transmit Current	<ul style="list-style-type: none"> • 900MHz : 500mA nominal @ 1W • 2.4GHz : 800mA nominal @ 0.5W
Receive Current	<ul style="list-style-type: none"> • 900MHz: <120mA nominal @ 13.8Vdc • 2.4GHz: <100mA nominal @ 13.8Vdc
Sleep Mode	Software Controlled
Housing & Dimensions	Rugged die-cast, 100 x 34 x 165mm (4.0 x 1.4 x 6.5in.)
Mounting	Integrated Mounting Holes or DIN Rail mounting (optional)
Weight	0.5kg (1.1lbs.)
Warranty	3 years on parts and labor

Approvals and Certifications

Europe (ETSI)	ETSI EN60950, EN50392 EN300328 EN301489 (2.4GHz only)
FCC	FCC PART 15
Industry Canada	IC RSS210
Australia	ACMA AS/NZS 4268
Hazardous Locations	<ul style="list-style-type: none"> • 900MHz : CSA Class I, Division II, Groups (A,B,C,D) for Hazardous Locations ANSI/UL equivalent) • 2.4GHz : ATEX II 3G Ex nA IIC T4

Note: Not all product features are available in every mode of operation.

Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.

Product Data Sheet Trio KP & KB-Series Specifications

> Trio KP900 | KP240 | KB900 | KB240

Radio

Frequency Range	902-928MHz or 2.4-2.48335GHz, (region-specific versions available)
Frequency Accuracy	±2.5ppm (900MHz) ±3.0ppm (2.4GHz)
Radio Modes	Half Duplex, Pseudo Full Duplex
Configuration	All configuration via Windows based software
Selectivity	Better than 50dB
Spurious Response	Better than 70dB
Tx Power	<ul style="list-style-type: none"> 900MHz : 0.01 - 1W (+30dBm) 0.5dB steps configurable with over-temperature and high VSWR protection 2.4GHz : 0.01 - 500mW (+27dBm) 0.5dB steps configurable with over-temperature protection.
Modulation	2 Level GFSK

Connections

Serial Data Port A	1 x RS232/RS485 RJ-45. 600-230,000bps asynchronous
Serial Data Port B	1 x RS232 RJ-45. 300-38,400bps asynchronous (shared with System Port)
Serial Data Port Flow Control	Configurable hardware (Serial Data Port A only) / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on Master synchronisation or from user data output.
System Port	1 x RS232 RJ45: 19,200bps, for configuration and diagnostics (shared with Serial Data Port B)
Antenna	2 x SMA female bulkhead connectors for LinkXtend or separate TX/RX antennas
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B)

Modem

RF Channel Data Rate	32,000/64,000/128,000 or 256,000bps
Bit Error Rate	Max sensitivity < 1×10^{-6} @ -108dBm
Operating Modes	Master, remote, repeater or network-bridge
Network Types	Point-to-Point, Point-to-Multipoint, Point-to-Multipoint with Repeaters / Store n' Forward, Mesh
Channelshare™	Trio's unique supervisory collision avoidance system
MultiStream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
SmartPath™	Technology for enhanced redundancy in network configuration (Mesh)
Firmware	Local and over-the-air flash-based firmware

Security

Encryption*	256-bit AES
Password Protection	Password protected configuration sessions
Trusted Unit	Optional Trusted Access point-Trusted Remote operation

* Export restrictions may apply. Contact factory for details.

Specifications continue on the next page

Product Data Sheet Trio KP & KB-Series Specifications



KP900 | KP240 | KB900 | KB240

Diagnostics

Diagnostics Overview	<ul style="list-style-type: none"> • TView+ configuration, network management and diagnostic Windows GUI software • Spectrum Analyser and Channel Lockout facilities • Network-wide operation from any remote terminal • Non intrusive protocol – runs simultaneously with the application • Over-the-air re-configuration of user parameters. • Storage of data error and channel occupancy statistics • In-built Error Rate testing capabilities • Diagnostics parameters available <ul style="list-style-type: none"> • Transmitter Power • Received Signal Strength • DC Supply Voltage • Received Frequency Error • Radio Temperature
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General

Operating Temperature Range	-40 to + 70°C (-40 to +158°F)
Power Supply	10-30Vdc (13.8Vdc nominal)
Transmit Current	<ul style="list-style-type: none"> • 900MHz : 500mA nominal @ 1W • 2.4GHz : 800mA nominal @ 0.5W
Receive Current	<ul style="list-style-type: none"> • 900MHz: <110mA nominal @ 13.8Vdc • 2.4GHz: <100mA nominal @ 13.8Vdc
Sleep Mode	Software Controlled
Housing & Dimensions	<ul style="list-style-type: none"> • KPxxx : Corrosion resistant zinc plated steel with black enamel paint 130 x 39 x 56mm (5.1 x 1.5 x 2.2in.) • KBxxx : Bare board 129 x 31 x 55mm (5.08 x 1.22 x 2.17in.)
Mounting	Integrated Mounting Holes or DIN Rail mounting (optional)
Weight	0.5kg (1.1lbs.)
Warranty	3 years on parts and labor

Approvals and Certifications

IC	RSS 139 (RSS 210)
Hazardous Locations – North America	CSA _{US} , suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations (900MHz only) Temperature Code T4 per CSA Std C22.2 No. 213-M1987 / UL1604
Europe	ATEX: II 3G Ex nA IIC T4 per EN 60079-15, protection type n (Zone 2) (2.4GHz 100mW ETSI version only)
Safety	CSA C22.2 No. 142-M1987 and UL916 in Canada and USA
EMC	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

Note: Not all product features are available in every mode of operation.

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Product Data Sheet Trio KR900 | KR240 | KP900 | KP240 | KB900 | KB240 Model Code

	TBURKyx-aaabbbcode represents the part number matrix
Model	Model Type
TBURK	K-Series
Code	Select: Unit Type
R	Remote station with full enclosure for panel or DIN rail mounting (DIN rail mounting bracket sold separately)
P	Remote station with compact enclosure for panel or DIN rail mounting (DIN rail clips sold separately)
B	Remote station, board-only version for standoff mounting (standoffs not included)
Code	Select: Generic Frequency Band
900	900MHz
240	2.4GHz
Code	Select: Frequency
	900MHz Frequency Band
00	License-free band 902 to 928 MHz (FCC/IC)
01	License-free band 915 to 928 MHz (ACMA)
05	License-free band 921 to 928 MHz (New Zealand)
	2.4 GHz Frequency Band
00	License-free band 2.4GHz, 500mW (FCC/IC/AUS)
01	License-free band 2.4GHz, 100mW (ETSI)
Note: Other frequency bands available upon request.	
Code	Select: RF Channel Data Rate & Bandwidth (Internal Modem)
001	32Kbps to 256Kbps
Code	Select: Encryption (subject to country of use)
D	No encryption* (standard on all shipments outside of USA, Canada and Australia)
E	Encryption* (standard within USA, Canada and Australia)
Code	Select: Approvals
H	CSA Hazardous Environment Class 1, Div 2 (standard on KR900 KP900 KB900)
A	ATEX II 3G, Ex nA IIC T4 compliance (standard on KR240 KP240 KB240)
Code	Future Option
0	None

* Export restrictions may apply. Contact factory for details.

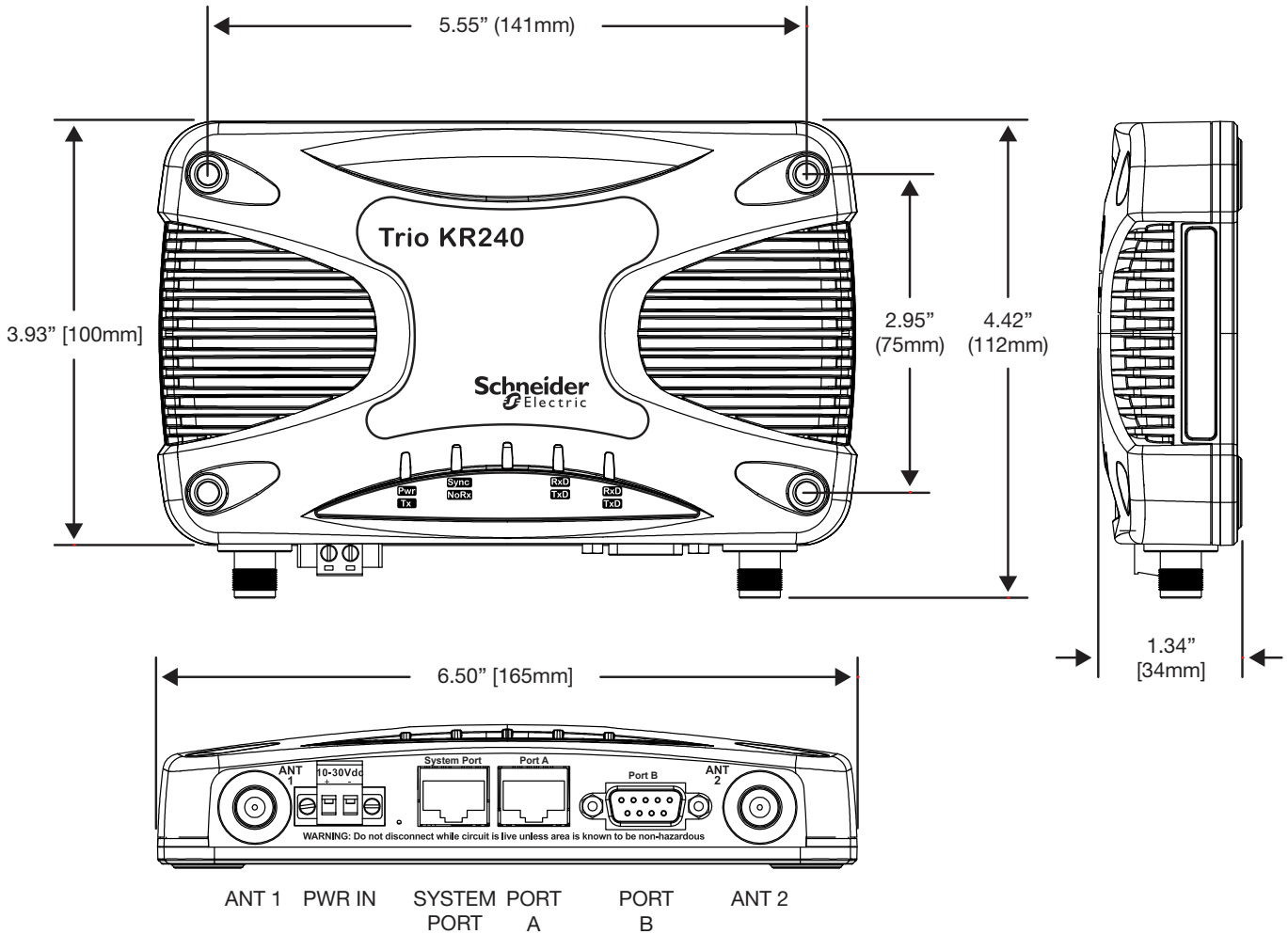
Example: TBURKR900-00001EH0 specifies Trio KR900 Remote Station, License-free band 902 to 928 MHz (FCC/IC), 32kbps to 256kbps, Encryption and CSA Hazardous Area Approved

Communications Standards:

FCC – Federal Communications Commission (USA)
 IC – Industry Canada
 ETSI – European Telecommunication Standards Institute
 ACMA – Australian Communications Authority

Product Data Sheet Trio KP900 | KP240 | KB900 | KB240
 Dimensions

KR900 | KR240



Product Data Sheet Trio ER45e | ER450 Specifications



Trio ER45e

Radio

Frequency Range	370-520MHz (various frequency sub-bands available)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	Dual synthesizer, 6.25kHz channel step
Channel Spacing	12.5 or 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<= 1ppm/annum
Radio Modes	Simplex, Half duplex or Full duplex (with optional full duplex kit)
Configuration	All configuration via Windows based software

Transmitter

Tx Power	0.05 to 5W (+17 to +37dBm) +/- 1dB configurable with over-temperature and high VSWR protection
Modulation	Configurable narrow band digitally filtered binary GMSK or 4 level FSK
Tx Keyup Time	<1ms
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line on Data Port / System Port Override

Receiver

Sensitivity	-118dBm for 12 dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 70dB
Spurious Response	Better than 70dB
AFC Tracking	Digital receiver frequency tracking
Mute	Configurable digital mute

Connections

Serial Data Port	1 x RS232 DB9 female DCE. 300-38,400 bps asynchronous
Serial Data Port Flow Control	Configurable hardware / software / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	1 x RS232 RJ45, 19,200bps, for configuration and diagnostics
Ethernet Port	1 x RJ45: 10/100 Mbps (auto-MDIX sensing) compliant with IEEE 802.3
Antenna	1 x N female bulkhead (Half-Duplex) or separate N (Tx) and SMA (Rx) connectors (Full Duplex)
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs and LAN LEDs

Ethernet

Ethernet Protocols	Ethernet/IP (including UDP, TCP, DHCP, ARP, ICMP, STP, IGMP, SNMP & TFTP)
Ethernet Repeating	Automatic and Self Learning Peer to Peer repeating
Ethernet Traffic Filtering	Configurable: No Filtering / Unicast Traffic & ARP Only / Unicast Traffic Only
Compression	Automatic Ethernet data compression
Terminal Server	Legacy RS-232 serial support via embedded terminal server (UDP/TCP)
DHCP Modes	Auto and Manual
SNMP	SNMP V1/V2 RFC 1213-compliant
Modbus Gateway	Configurable Modbus TCP/IP to Modbus Serial Gateway

Specifications continue on the next page

Product Data Sheet Trio ER45e | ER450

Specifications



Trio ER45e

Modem

RF Channel Data Rate [#]	<ul style="list-style-type: none"> Radio Model F01 : FCC (IC) 9600bps (12.5kHz) & 19200bps (12.5kHz) North America Radio Model F02 : 19200bps (25kHz) Radio Model E01 : ETSI 4800bps (12.5kHz) & 9600bps (12.5kHz) Europe Radio Model A01 : ACMA 4800bps (12.5kHz) / 9600bps (12.5kHz) Australia Radio Model A02 : ACMA 19200bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -111dBm (4800bps), < 1x10 ⁻⁶ @ -110dBm (9600bps), < 1x10 ⁻⁶ @ -106dBm (19,200 bps)
Operating Modes	Base, remote, repeater or store n' forward
Channelshare™	Trio's unique supervisory collision avoidance system
MultiStream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Data Turnaround Time	<10mS
Firmware	Local and over-the-air flash-based firmware upgradeable patches with support for broadcast updates

Security

Encryption*	128-bit AES
Password Protection	Password protected configuration sessions

Diagnostics

Diagnostics Overview	<ul style="list-style-type: none"> TView+ configuration, network management and diagnostic Windows GUI software Network-wide operation from any remote terminal Non intrusive protocol – runs simultaneously with the application Over-the-air re-configuration of user parameters. Storage of data error and channel occupancy statistics In-built Error Rate testing capabilities Diagnostics parameters available <ul style="list-style-type: none"> Transmitter Power Received Signal Strength DC Supply Voltage Received Frequency Error Radio Temperature
----------------------	--

General

Operating Temperature Range	-30°C to +70°C (-22°F to +158°F)
Power Supply	13.8Vdc nominal (10-16Vdc)
Transmit Current	750mA nominal @ 1W, 1600mA nominal @5W
Receive Current	<180mA nominal @ 13.8Vdc
Shutdown Mode	External control, < 10mA
Housing & Dimensions	Rugged die-cast, 170 x 150 x 42mm (6.7 x 5.9 x 1.65in.), with mounting plate 190 x 150 x 47mm (7.5 x 5.9 x 1.85in.)
Mounting	Fitted mounting plate (standard) or DIN Rail mounting (optional)
Weight	1.3kg (2.9lbs.)
Warranty	3 years on parts and labor

Approvals and Certifications

Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)
Hazardous Locations	CSA Class I, Division II, Groups (A,B,C,D) for Hazardous Locations ANSI/UL equivalent)

* Export restrictions may apply. Contact your local representative for more details.

Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details

Note: Not all product features are available in every mode of operation.

Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.

Product Data Sheet Trio ER45e | ER450 Specifications



Trio ER450

Radio

Frequency Range	370-520MHz (various sub-frequency bands available)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	Dual synthesizer, 6.25kHz channel step
Channel Spacing	12.5 or 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<= 1ppm/annum
Radio Modes	Simplex, Half duplex or Full duplex (with optional full duplex kit)
Configuration	All configuration via Windows based software

Transmitter

Tx Power	0.05 to 5W (+17 to +37dBm) +/- 1dB configurable with over-temperature and high VSWR protection
Modulation	Configurable narrow band digitally filtered binary GMSK or 4 level FSK
Tx Keyup Time	<1mS
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line (Port A or B) / System Port Override

Receiver

Sensitivity	-118dBm for 12dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 70dB
Spurious Response	Better than 70dB
AFC Tracking	Digital receiver frequency tracking
Mute	Configurable digital mute

Connections

Serial Data Port A	RS232 DB9 female DCE. 600-57,600bps asynchronous
Serial Data Port B	RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Port Flow Control	Configurable hardware / software / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	1 x RS232 RJ45: 19,200bps, for configuration and diagnostics
Antenna	1 x N female bulkhead (Half-Duplex) or separate N (Tx) and SMA (Rx) connectors (Full Duplex)
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B)

Specifications continue on the next page

Product Data Sheet Trio ER45e | ER450

Specifications

> Trio ER450	
Modem	
RF Channel Data Rate [#]	<ul style="list-style-type: none"> Radio Model F01 : FCC (IC) 9600bps (12.5kHz) & 19200bps (12.5kHz) North America Radio Model F02 : 19200bps (25kHz) Radio Model E01 : ETSI 4800bps (12.5kHz) & 9600bps (12.5kHz) Europe Radio Model A01 : ACMA 4800bps (12.5kHz) / 9600bps (12.5kHz) Australia Radio Model A02 : ACMA 19200bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -111dBm (4800bps), < 1x10 ⁻⁶ @ -110dBm (9600bps), < 1x10 ⁻⁶ @ -106dBm (19,200bps)
Operating Modes	Base, remote, repeater or store n' forward
Data Buffer	16kbyte of on-board RAM
Channelshare™	Trio's unique supervisory collision avoidance system
Multistream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Data Turnaround Time	<10mS
Firmware	Local flash-based firmware updates
Security	
Encryption*	128-bit AES
Password Protection	Password protected configuration sessions
Diagnostics	
Diagnostics Overview	<ul style="list-style-type: none"> TView+ configuration, network management and diagnostic Windows GUI software Network-wide operation from any remote terminal Non intrusive protocol – runs simultaneously with the application Over-the-air re-configuration of user parameters. Storage of data error and channel occupancy statistics In-built Error Rate testing capabilities Diagnostics parameters available <ul style="list-style-type: none"> Transmitter Power Received Signal Strength DC Supply Voltage Received Frequency Error Radio Temperature
General	
Operating Temperature Range	-30°C to +70°C (-22°F to +158°F)
Power Supply	13.8Vdc nominal (10-16Vdc)
Transmit Current	750mA nominal @ 1W, 1600mA nominal @5W
Receive Current	<125mA nominal @ 13.8Vdc
Shutdown Mode	External control, < 10mA
Housing & Dimensions	Rugged die-cast, 170 x 150 x 42mm (6.7 x 5.9 x 1.65in.), with mounting plate 190 x 150 x 47mm (7.5 x 5.9 x 1.85in.)
Mounting	Fitted mounting plate (standard) or DIN Rail mounting (optional)
Weight	1.27kg (2.8lbs.)
Warranty	3 years on parts and labor
Approvals and Certifications	
Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)
Hazardous Locations	CSA Class I, Division II, Groups (A,B,C,D) for Hazardous Locations ANSI/UL equivalent)
<p>* Export restrictions may apply. Contact your local representative for more details. [#] Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details</p> <p>Note: Not all product features are available in every mode of operation.</p> <p>Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.</p>	

Product Data Sheet Trio ER45e | ER450

Model Code

	TBURER45x-aabbbcode represents the part number matrix
Model	Trio Radio ER450 & ER45e
TBURE	E-Series
Code	Select: Unit Type
R	Remote Station with full enclosure
Code	Select: Generic Frequency Band
45	370 to 518 MHz
Code	Select: Data Ports
0	Two serial ports
E	One Ethernet & one serial port
Code	Frequency (400MHz bands) - Frequency to be specified at time of order
A6	370 to 400 MHz (Tx & Rx) - Frequencies to be specified at time of order
B3	395 to 426 MHz (Tx & Rx) - Frequencies to be specified at time of order
B4	413 to 447 MHz (Tx & Rx) - Frequencies to be specified at time of order
B5	433 to 450 MHz (Tx & Rx) - Frequencies to be specified at time of order
C1	436 to 467 MHz (Tx & Rx) - Frequencies to be specified at time of order
C2	450 to 487 MHz (Tx & Rx) - Frequencies to be specified at time of order
C3	473 to 518 MHz (Tx & Rx) - Frequencies to be specified at time of order
Code	Select: RF Channel Data Rate & Bandwidth (Internal Modem)
F01	FCC (IC) 9600 / 19k2bps, 12.5kHz – provides M-Series 003 compatability
F02	FCC (IC) 19k2bps, 25kHz – Not for sale in North America
E01	ETSI 9600bps, 12.5kHz – provides M-Series 004 compatability
A01	ACMA 4800 / 9600bps, 12.5kHz – provides M-Series 001/002 compatability
A02	ACMA 9600 / 19K2bps, 25kHz
Code	Select: Encryption (subject to country of use)
D	No Encryption
X	No Encryption, full duplex option - requires external duplexer
E	Encryption*
Y	Encryption*, full duplex option - requires external duplexer
Code	Select: Hazardous Area Approvals
H	Hazardous Environment Class 1 Div 2 Groups A, B, C & D
Code	Hot Standby Configuration
0	Not used

Example: TBURER450-A6F01EH0 specifies: Trio ER450 remote station, two serial ports, frequencies to be specified at time of order, FCC (IC) 9600/19k2bps, 12.5kHz, Encryption, Class 1 Div 2.

Communications Standards:

FCC – Federal Communications Commission (USA)

IC – Industry Canada

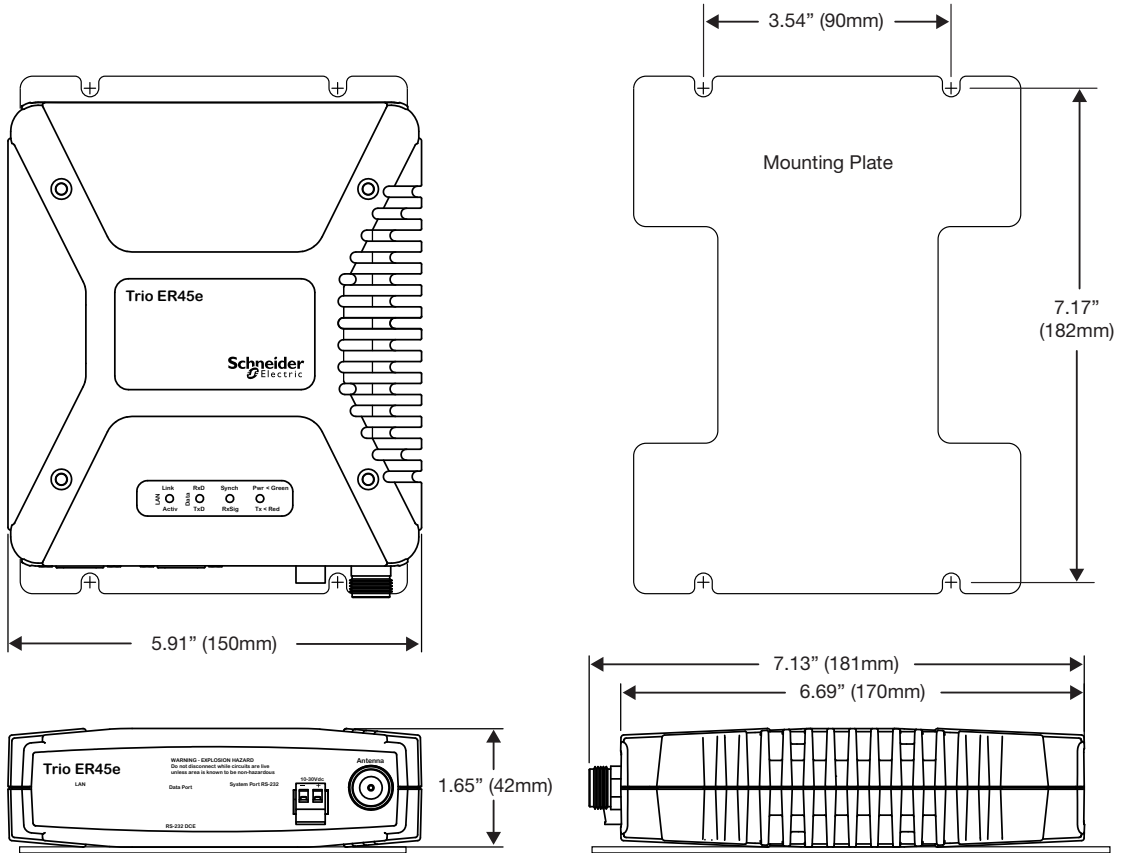
ETSI – European Telecommunication Standards Institute

ACMA – Australian Communications and Media Authority

* Export restrictions may apply. Contact your local representative for more details.

Note: Some radio models may not be available in your country. Local and regulatory conditions may determine the performance and suitability of the radio in different countries. It is the responsibility of the buyer to ensure the radio model meets the regulatory conditions required. Contact your local Schneider Electric sales office for more details.

Product Data Sheet Trio ER45e | ER450 Dimensions



Product Data Sheet Trio EB450 & EB45e Specifications



Trio EB450

Radio

Frequency Range	380-520MHz (various sub-frequency bands available)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	Dual synthesizer, 6.25kHz channel step
Channel Spacing	12.5 or 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<= 1ppm/annum
Radio Modes	Full and Half duplex, Simplex (Simplex requires separate TX/RX antennas)
Duplexer	Optional external duplexer available for single antenna operation
Configuration	All configuration via Windows based software

Transmitter

Tx Power	<ul style="list-style-type: none"> 5W Model : 1W to 5W (+30 to +37dBm) +/- 1dB configurable with over-temperature and high VSWR protection 20W Model : 5W to 20W (+30 to +43dBm) +/- 1dB configurable with over-temperature and high VSWR protection
Modulation	Configurable narrow band digitally filtered binary GMSK or 4 level FSK
Tx Keyup Time	< 2mS
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line (Port A or B) / System Port Override

Receiver

Sensitivity	-118dBm for 12dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 70dB
Spurious Response	Better than 70dB
AFC Tracking	Digital receiver frequency tracking
Mute	Configurable digital mute

Connections

Serial Data Port A	RS232 DB9 female DCE. 600-57,600bps asynchronous
Serial Data Port B	RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Port Flow Control	Configurable hardware / software / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	2 x RS232 RJ45 (Front & Rear): 19,200bps, for configuration and diagnostics
Digital I/O	2 Inputs monitored by TView+ Diagnostics Software, 2 outputs user-configurable by TView+ Diagnostics Software
Antenna	2 x N female bulkhead (separate Tx and Rx ports)
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B) Bargraphs Indicators for Supply Volts, Tx Power, Drive Power, Receive Signal Strength and Frequency Error

Specifications continue on the next page

Product Data Sheet Trio EB450 & EB45e Specifications

> Trio EB450	
Modem	
RF Channel Data Rate [#]	<ul style="list-style-type: none"> • Radio Model F01 : FCC (IC) 9600bps (12.5kHz) & 19200bps (12.5kHz) North America • Radio Model F02 : 19200bps (25kHz) • Radio Model E01 : ETSI 4800bps (12.5kHz) & 9600bps (12.5kHz) Europe • Radio Model A01 : ACMA 4800bps (12.5kHz) / 9600bps (12.5kHz) Australia • Radio Model A02 : ACMA 19200bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -111dBm (4800bps), < 1x10 ⁻⁶ @ -110dBm (9600bps), < 1x10 ⁻⁶ @ -106dBm (19,200bps)
Operating Modes	Base, remote, repeater or store n' forward
Data Buffer	16kbyte of on-board RAM
Channelshare™	Trio's unique supervisory collision avoidance system
Multistream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Data Turnaround Time	<10mS
Firmware	Local flash-based firmware updates
Security	
Encryption*	128-bit AES
Password Protection	Password protected configuration sessions
Diagnostics	
Diagnostics Overview	<ul style="list-style-type: none"> • TView+ configuration, network management and diagnostic Windows GUI software • Network-wide operation from any remote terminal • Non intrusive protocol – runs simultaneously with the application • Over-the-air re-configuration of user parameters. • Storage of data error and channel occupancy statistics • In-built Error Rate testing capabilities • Diagnostics parameters available <ul style="list-style-type: none"> • Transmitter Power • Received Signal Strength • DC Supply Voltage • Received Frequency Error • Radio Temperature
General	
Operating Temperature Range	-30°C to +60°C (-22°F to +140°F)
Power Supply	13.8Vdc nominal (11-16Vdc)
Transmit Current	<ul style="list-style-type: none"> • 5W Version: 1.3A nominal @ 1W, 2.5A nominal @ 5W • 20W Version: 2.7A nominal @ 5W, 4.7A nominal @ 20W
Receive Current	< 350mA nominal @ 13.8Vdc
Dimensions	<ul style="list-style-type: none"> • 5W: 19" 2 RU rack mount, 483 x 90 x 414 mm including heat-sink (19 x 3.5 x 16.3in.) • 20W: 19" 2 RU rack mount, 483 x 90 x 446 mm including heat-sink (19 x 3.5 x 17.6in.)
Weight	5kg (11lbs.) excluding optional duplexer
Approvals and Certifications	
Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)
<p>* Export restrictions may apply. Contact your local representative for more details. [#] Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details</p> <p>Note: Not all product features are available in every mode of operation.</p> <p>Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.</p>	

Product Data Sheet Trio EB450 & EB45e Specifications

> Trio EB45e	
Radio	
Frequency Range	380-520MHz (various sub-frequency bands available)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	Dual synthesizer, 6.25kHz channel step
Channel Spacing	12.5 or 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<= 1ppm/annum
Radio Modes	Full and Half duplex, Simplex (Simplex requires separate TX/RX antennas)
Duplexer	Optional external duplexer available for single antenna operation
Configuration	All configuration via Windows based software
Transmitter	
Tx Power	<ul style="list-style-type: none"> 5W Model : 1W to 5W (+30 to +37dBm) +/- 1dB configurable with over-temperature and high VSWR protection 20W Model : 5W to 20W (+30 to +43dBm) +/- 1dB configurable with over-temperature and high VSWR protection
Modulation	Configurable narrow band digitally filtered binary GMSK or 4 level FSK
Tx Keyup Time	< 2mS
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line (Port A or B) / System Port Override
Receiver	
Sensitivity	-118dBm for 12dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 70dB
Spurious Response	Better than 70dB
AFC Tracking	Digital receiver frequency tracking
Mute	Programmable digital mute
Connections	
Serial Data Port	RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Port Flow Control	Configurable hardware / software / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	2 x RS232 RJ45 (Front & Rear): 19,200bps, for configuration and diagnostics
Ethernet Port	1 x RJ45: 10/100 Mbps (auto-MDIX sensing) compliant with IEEE 802.3
Digital I/O	2 Inputs monitored by TView+ Diagnostics Software, 2 outputs user-configurable by TView+ Diagnostics Software
Antenna	2 x N female bulkhead (separate Tx and Rx ports)
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B) Bargraphs Indicators for Supply Volts, Tx Power, Drive Power, Receive Signal Strength and Frequency Error
Ethernet	
Ethernet Protocols	Ethernet/IP (including UDP, TCP, DHCP, ARP, ICMP, STP, IGMP, SNMP & TFPT)
Ethernet Repeating	Automatic and Self Learning Peer to Peer repeating
Ethernet Traffic Filtering	Configurable: No Filtering / Unicast Traffic & ARP Only / Unicast Traffic Only
Compression	Automatic Ethernet data compression
Terminal Server	Legacy RS-232 serial support via embedded terminal server (UDP/TCP)
DHCP Modes	Auto and Manual
SNMP	SNMP V1/V2 RFC 1213-compliant
Modbus Gateway	Configurable Modbus TCP/IP to Modbus Serial Gateway
Specifications continue on the next page	

Product Data Sheet Trio EB450 & EB45e Specifications

> Trio EB45e	
Modem	
RF Channel Data Rate [#]	<ul style="list-style-type: none"> • Radio Model F01 : FCC (IC) 9600bps (12.5kHz) & 19200bps (12.5kHz) North America • Radio Model F02 : 19200bps (25kHz) • Radio Model E01 : ETSI 4800bps (12.5kHz) & 9600bps (12.5kHz) Europe • Radio Model A01 : ACMA 4800bps (12.5kHz) / 9600bps (12.5kHz) Australia • Radio Model A02 : ACMA 19200bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -111dBm (4800bps), < 1x10 ⁻⁶ @ -110dBm (9600bps), < 1x10 ⁻⁶ @ -106dBm (19,200bps)
Operating Modes	Base, remote, repeater or store n' forward
Channelshare™	Trio's unique supervisory collision avoidance system
Multistream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Data Turnaround Time	<10mS
Firmware	Local and over-the-air flash-based firmware upgradeable patches with support for broadcast updates
Security	
Encryption*	128-bit AES
Password Protection	Password protected configuration sessions
Diagnostics	
Diagnostics Overview	<ul style="list-style-type: none"> • TView+ configuration, network management and diagnostic Windows GUI software • Network-wide operation from any remote terminal • Non intrusive protocol – runs simultaneously with the application • Over-the-air re-configuration of user parameters. • Storage of data error and channel occupancy statistics • In-built Error Rate testing capabilities • Diagnostics parameters available <ul style="list-style-type: none"> • Transmitter Power • Received Signal Strength • DC Supply Voltage • Received Frequency Error • Radio Temperature
General	
Operating Temperature Range	-30°C to +60°C (-22°F to +140°F)
Power Supply	13.8Vdc nominal (11-16Vdc)
Transmit Current	<ul style="list-style-type: none"> • 5W Version: 1.3A nominal @ 1W, 2.5A nominal @ 5W • 20W Version: 2.7A nominal @ 5W, 4.7A nominal @ 20W
Receive Current	< 350mA nominal @ 13.8Vdc
Dimensions	<ul style="list-style-type: none"> • 5W: 19" 2 RU rack mount, 483 x 90 x 414 mm including heat-sink (19 x 3.5 x 16.3in.) • 20W: 19" 2 RU rack mount, 483 x 90 x 446 mm including heat-sink (19 x 3.5 x 17.6in.)
Weight	5.25kg (11.6lbs) excluding optional duplexer
Approvals and Certifications	
Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)
<p>* Export restrictions may apply. Contact your local representative for more details. [#] Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details</p> <p>Note: Not all product features are available in every mode of operation.</p> <p>Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.</p>	

Product Data Sheet Trio EB450 & EB45e

Model Code

	TBUREB45x-aabbbcode represents the part number matrix
Model	Trio Radio EB450 & EB45e
TBURE	E-Series
Code	Select: Unit Type
B	Base / Repeater Station
Code	Select: Generic Frequency Band
45	380 to 518 MHz
Code	Select: Data Ports
0	Two serial ports
E	One Ethernet & one serial port
Code	Frequency (400MHz bands)
A6	370 to 400 MHz (Tx & Rx) - Frequencies to be specified at time of order
B3	395 to 426 MHz (Tx & Rx) - Frequencies to be specified at time of order
B4	413 to 447 MHz (Tx & Rx) - Frequencies to be specified at time of order
B5	433 to 450 MHz (Tx & Rx) - Frequencies to be specified at time of order
C1	436 to 467 MHz (Tx & Rx) - Frequencies to be specified at time of order
C2	450 to 487 MHz (Tx & Rx) - Frequencies to be specified at time of order
C3	473 to 518 MHz (Tx & Rx) - Frequencies to be specified at time of order
Code	Select: RF Channel Data Rate & Bandwidth (Internal Modem)
F01	FCC (IC) 9600 / 19k2bps, 12.5kHz – provides M-Series 003 compatability
F02	FCC (IC) 19k2bps, 25kHz – Not for sale in North America
E01	ETSI 9600bps, 12.5kHz – provides M-Series 004 compatability
A01	ACMA 4800 / 9600bps, 12.5kHz – provides M-Series 001/002 compatability
A02	ACMA 9600 / 19K2bps, 25kHz
Code	Select: Diagnostics & Encryption
D	Diagnostics Only (No Encryption)
E	Diagnostics & Encryption*
Code	Select: Options
0	Separate Tx & Rx Antenna Ports
A	20W RF Power Output
Code	Hot Standby Configuration
0	Not used

Communications Standards:

FCC – Federal Communications Commission (USA)

IC – Industry Canada

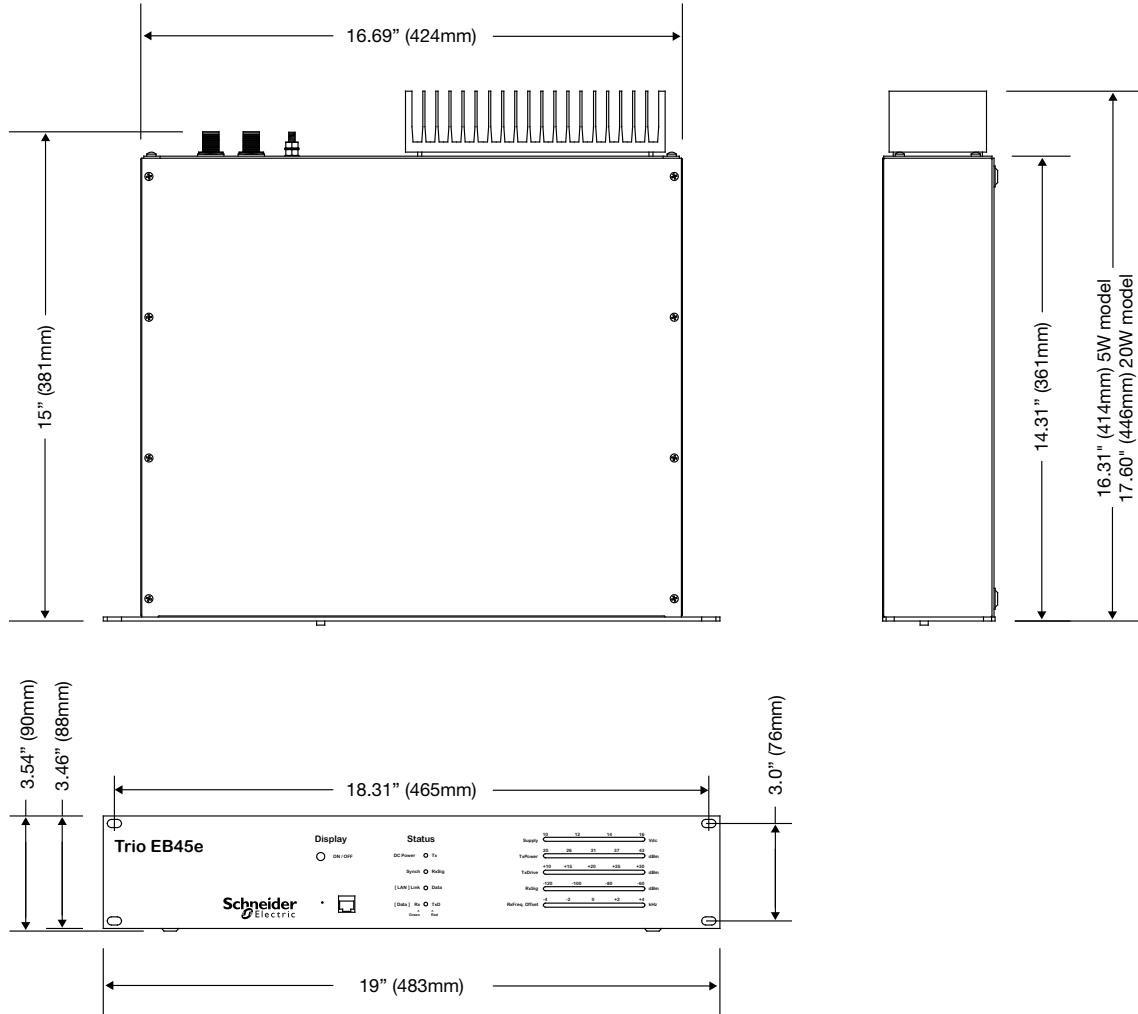
ETSI – European Telecommunication Standards Institute

ACMA – Australian Communication s and Media Authority

* Export restrictions may apply. Contact your local representative for more details.

Note: Some radio models may not be available in your country. Local and regulatory conditions may determine the performance and suitability of the radio in different countries. It is the responsibility of the buyer to ensure the radio model meets the regulatory conditions required. Contact your local Schneider Electric sales office for more details.

Product Data Sheet Trio EB450 & EB45e Dimensions



Product Data Sheet Trio EH450 & EH45e Specifications



Trio EH450

Radio

Frequency Range	380-520MHz (various sub-frequency bands available)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	Dual synthesizer, 6.25kHz channel step
Channel Spacing	12.5 or 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<= 1ppm/annum
Radio Modes	Full Duplex
Duplexer	Optional external duplexer available for single antenna operation
Configuration	All configuration via Windows based software

Transmitter

Tx Power	<ul style="list-style-type: none"> 5W Model : 1W to 5W (+30 to +37dBm) +/- 1dB configurable with over-temperature and high VSWR protection 20W Model : 5W to 20W (+30 to +43dBm) +/- 1dB configurable with over-temperature and high VSWR protection
Modulation	Configurable narrow band digitally filtered binary GMSK or 4 level FSK
Tx Keyup Time	< 2mS
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line (Port A or B) / System Port Override

Receiver

Sensitivity	-118dBm for 12dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 70dB
Spurious Response	Better than 70dB
AFC Tracking	Digital receiver frequency tracking
Mute	Programmable digital mute

Connections

(for each Base within the Hot Standby configuration)

Serial Data Port A	RS232 DB9 female DCE. 600-57,600bps asynchronous
Serial Data Port B	RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Port Flow Control	Configurable hardware / software / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	2 x RS232 RJ45 (Front & Rear): 19,200bps, for configuration and diagnostics
Digital I/O	2 Inputs monitored by TView+ Diagnostics Software, 2 outputs user-configurable by TView+ Diagnostics Software
Antenna	2 x N female bulkhead (separate Tx and Rx ports)
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B) Bargraphs Indicators for Supply Volts, Tx Power, Drive Power, Receive Signal Strength and Frequency Error

Specifications continue on the next page

Product Data Sheet Trio EH450 & EH45e Specifications



Trio EH450

Modem

RF Channel Data Rate [#]	<ul style="list-style-type: none"> Radio Model F01 : FCC (IC) 9600bps (12.5kHz) & 19200bps (12.5kHz) North America Radio Model F02 : 19200bps (25kHz) Radio Model E01 : ETSI 4800bps (12.5kHz) & 9600bps (12.5kHz) Europe Radio Model A01 : ACMA 4800bps (12.5kHz) / 9600bps (12.5kHz) Australia Radio Model A02 : ACMA 19200bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -111dBm (4800bps), < 1x10 ⁻⁶ @ -110dBm (9600bps), < 1x10 ⁻⁶ @ -106dBm (19,200bps)
Operating Modes	Base, remote, repeater
Data Buffer	16kbyte of on-board RAM
Channelshare™	Trio's unique supervisory collision avoidance system
Multistream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Data Turnaround Time	<10mS
Firmware	Local flash-based firmware updates

Security

Encryption*	128-bit AES
Password Protection	Password protected configuration sessions

Hot Standby Controller

Change-over control	Manual (forced) / automatic / remote (software driven)
Alarm Monitoring	Tx Power Failure / Receiver Failure / Received Signal Frequency Error / Data Corruption / DC Power Supply Fail

Diagnostics

Diagnostics Overview	<ul style="list-style-type: none"> TView+ configuration, network management and diagnostic Windows GUI software Network-wide operation from any remote terminal Non intrusive protocol – runs simultaneously with the application Over-the-air re-configuration of user parameters. Storage of data error and channel occupancy statistics In-built Error Rate testing capabilities Diagnostics parameters available <ul style="list-style-type: none"> Transmitter Power Received Signal Strength DC Supply Voltage Received Frequency Error Radio Temperature
----------------------	--

General

Operating Temperature Range	-30°C to +60°C (-22°F to +140°F)
Power Supply	13.8Vdc nominal (11-16Vdc)
Transmit Current	<ul style="list-style-type: none"> 5W Version: 2.0A nominal @ 1W, 3.2A nominal @ 5W 20W Version: 3.4A nominal @ 5W, 5.4A nominal @ 20W
Receive Current	< 1A nominal @ 13.8Vdc
Dimensions	Hot Standby is configured using 2 x EB45x (19" 2 RU each) plus 1 x Hot Standby Controller (19" 1 RU each) for a total of 19" 5RU's <ul style="list-style-type: none"> 5W: 19" 5 RU rack mount 485 x 225 x 420mm including heat-sink (19 x 8.9 x 16.5in.) 20W: 19" 5 RU rack mount 485 x 225 x 446 mm including heat-sink (19 x 8.9 x 17.5in.)
Weight	12.7kg (28lbs) excluding optional duplexer

Approvals and Certifications

Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)

* Export restrictions may apply. Contact your local representative for more details.

Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details

Note: Not all product features are available in every mode of operation.

Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com.

Product Data Sheet Trio EH450 & EH45e Specifications



Trio EH45e

Radio

Frequency Range	380-520MHz (various sub-frequency bands available)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	Dual synthesizer, 6.25kHz channel step
Channel Spacing	12.5 or 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<= 1ppm/annum
Radio Modes	Full Duplex
Duplexer	Optional external duplexer available for single antenna operation
Configuration	All configuration via Windows based software

Transmitter

Tx Power	<ul style="list-style-type: none"> 5W Model : 1W to 5W (+30 to +37dBm) +/- 1dB configurable with over-temperature and high VSWR protection 20W Model : 5W to 20W (+30 to +43dBm) +/- 1dB configurable with over-temperature and high VSWR protection
Modulation	Configurable narrow band digitally filtered binary GMSK or 4 level FSK
Tx Keyup Time	< 2mS
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line (Port A or B) / System Port Override

Receiver

Sensitivity	-118dBm for 12dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 70dB
Spurious Response	Better than 70dB
AFC Tracking	Digital receiver frequency tracking
Mute	Programmable digital mute

Connections (for each Base within the Hot Standby configuration)

Serial Data Port	RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Port Flow Control	Configurable hardware / software / 3-wire interface
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	2 x RS232 RJ45 (Front & Rear): 19,200bps, for configuration and diagnostics
Ethernet Port	1 x RJ45: 10/100 Mbps (auto-MDIX sensing) compliant with IEEE 802.3
Digital I/O	2 Inputs monitored by TView+ Diagnostics Software, 2 outputs user-configurable by TView+ Diagnostics Software
Antenna	2 x N female bulkhead (separate Tx and Rx ports)
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B) Bargraphs Indicators for Supply Volts, Tx Power, Drive Power, Receive Signal Strength and Frequency Error

Ethernet

Ethernet Protocols	Ethernet/IP (including UDP, TCP, DHCP, ARP, ICMP, STP, IGMP, SNMP & TFPT)
Ethernet Repeating	Automatic and Self Learning Peer to Peer repeating
Ethernet Traffic Filtering	Configurable: No Filtering / Unicast Traffic & ARP Only / Unicast Traffic Only
Compression	Automatic Ethernet data compression
Terminal Server	Legacy RS-232 serial support via embedded terminal server (UDP/TCP)
DHCP Modes	Auto and Manual
SNMP	SNMP V1/V2 RFC 1213-compliant
Modbus Gateway	Configurable Modbus TCP/IP to Modbus Serial Gateway

Specifications continue on the next page

Product Data Sheet Trio EH450 & EH45e Specifications

> Trio EH45e	
Modem	
RF Channel Data Rate [#]	<ul style="list-style-type: none"> Radio Model F01 : FCC (IC) 9600bps (12.5kHz) & 19200bps (12.5kHz) North America Radio Model F02 : 19200bps (25kHz) Radio Model E01 : ETSI 4800bps (12.5kHz) & 9600bps (12.5kHz) Europe Radio Model A01 : ACMA 4800bps (12.5kHz) / 9600bps (12.5kHz) Australia Radio Model A02 : ACMA 19200bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -111dBm (4800bps), < 1x10 ⁻⁶ @ -110dBm (9600bps), < 1x10 ⁻⁶ @ -106dBm (19,200bps)
Operating Modes	Base, remote, repeater
Channelshare™	Trio's unique supervisory collision avoidance system
Multistream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Data Turnaround Time	<10mS
Firmware	Local and over-the-air flash-based firmware upgradeable patches with support for broadcast updates
Security	
Encryption*	128-bit AES
Password Protection	Password protected configuration sessions
Hot Standby Controller	
Change-over control	Manual (forced) / automatic / remote (software driven)
Alarm Monitoring	Tx Power Failure / Receiver Failure / Received Signal Frequency Error / Data Corruption / DC Power Supply Fail
Diagnostics	
Diagnostics Overview	<ul style="list-style-type: none"> TView+ configuration, network management and diagnostic Windows GUI software Network-wide operation from any remote terminal Non intrusive protocol – runs simultaneously with the application Over-the-air re-configuration of user parameters. Storage of data error and channel occupancy statistics In-built Error Rate testing capabilities Diagnostics parameters available <ul style="list-style-type: none"> Transmitter Power Received Signal Strength DC Supply Voltage Received Frequency Error Radio Temperature
General	
Operating Temperature Range	-30°C to +60°C (-22°F to +140°F)
Power Supply	13.8Vdc nominal (11-16Vdc)
Transmit Current	<ul style="list-style-type: none"> 5W Version: 2.0A nominal @ 1W, 3.2A nominal @ 5W 20W Version: 3.4A nominal @ 5W, 5.4A nominal @ 20W
Receive Current	< 1A nominal @ 13.8Vdc
Dimensions	Hot Standby is configured using 2 x EB45x (19" 2 RU each) plus 1 x Hot Standby Controller (19" 1 RU each) for a total of 19" 5RU's <ul style="list-style-type: none"> 5W: 19" 5 RU rack mount 485 x 225 x 420mm including heat-sink (19 x 8.9 x 16.5in.) 20W: 19" 5 RU rack mount 485 x 225 x 446 mm including heat-sink (19 x 8.9 x 17.5in.)
Weight	12.7kg (28lbs) excluding optional duplexer
Approvals and Certifications	
Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)
* Export restrictions may apply. Contact your local representative for more details.	
# Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details	
Note: Not all product features are available in every mode of operation.	
Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit www.schneider-electric.com .	

Product Data Sheet Trio EH450 & EH45e

Model Code

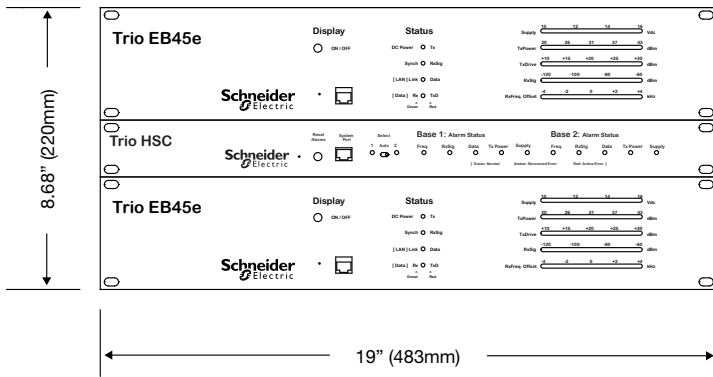
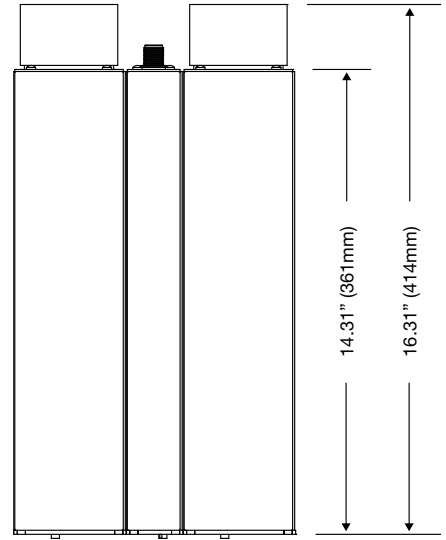
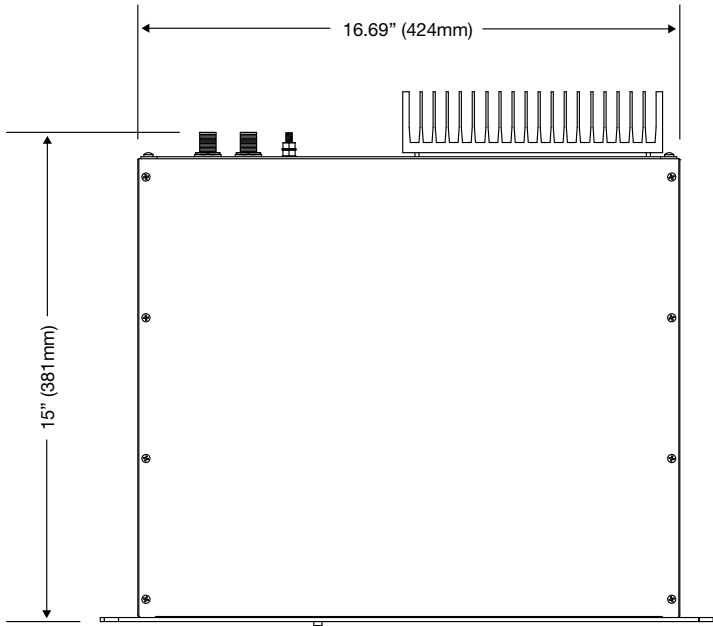
	TBUREH45x-aabbbcd represents the part number matrix
Model	Trio Radio ER450 & ER45e
TBURE	E-Series
Code	Select: Unit Type
H	Hot Standby Base / Repeater
Code	Select: Generic Frequency Band
45	370 to 518 MHz
Code	Select: Data Ports
O	Two serial ports
E	One Ethernet & one serial port
Code	Frequency (400MHz bands)
A6	370 to 400 MHz (Tx & Rx) - Frequencies to be specified at time of order
B3	395 to 426 MHz (Tx & Rx) - Frequencies to be specified at time of order
B4	413 to 447 MHz (Tx & Rx) - Frequencies to be specified at time of order
B5	433 to 450 MHz (Tx & Rx) - Frequencies to be specified at time of order
C1	436 to 467 MHz (Tx & Rx) - Frequencies to be specified at time of order
C2	450 to 487 MHz (Tx & Rx) - Frequencies to be specified at time of order
C3	473 to 518 MHz (Tx & Rx) - Frequencies to be specified at time of order
Code	Select: RF Channel Data Rate & Bandwidth (Internal Modem)
F01	FCC (IC) 9600 / 19k2bps, 12.5kHz – provides M-Series compatability
F02	FCC (IC) 19k2bps, 25kHz – Not for sale in North America
E01	ETSI 9600bps, 12.5kHz
A01	ACMA 4800 / 9600bps, 12.5kHz - provides M-Series compatability
A02	ACMA 9600 / 19k2bps, 25kHz
Code	Select: Diagnostics & Encryption
D	Diagnostics Only (No Encryption)
E	Diagnostics & Encryption*
Code	Select: Options
0	Separate Tx & Rx Antenna Ports
A	20W RF Power Output
Code	Hot Standby Configuration
A	Separate Tx & Rx Antenna ports with RF switching via Hot Standby Controller
B	Dual Redundant External Duplexers (not included) with no RF switching via Hot Standby Controller

Example: TBUREH450-C2F01E0A specifies: Trio EH450 hot standby base / repeater, two serial ports, frequencies to be specified at time of order, FCC (IC) 9600/19k2bps, 12.5kHz, Diagnostics & Encryption, separate Tx & Rx Ports

Contact your local sales office for accessories

* Export restrictions may apply. Contact factory for details.

Product Data Sheet Trio EH450 & EH45e Dimensions



Product Data Sheet Trio MR450

Specifications



Trio MR450

Radio

Frequency Range	395-470MHz (M-Band) or 450-520MHz (H-Band)
Frequency Splits	Various Tx/Rx frequency splits - configurable
Channel Selection	6.25kHz channel step
Channel Spacing	12.5 and 25kHz
Frequency Accuracy	±1ppm, -30 to +60°C (-22 to 140°F) ambient
Aging	<=1ppm/annum
Radio Modes	Simplex and Half duplex
Configuration	All configuration via Windows based software

Transmitter

Tx Power	0.1 to 5W (+20 to +37dBm) +/- 1dB configurable with over-temperature protection
Modulation	Configurable narrow band digitally filtered binary GMSK
Timeout Timer	Configurable 0 to 255 seconds
Tx Spurious	<= -37dBm
PTT Control	Auto (Data) / RTS line

Receiver

Sensitivity	-116dBm for 12dB SINAD
Selectivity	Better than 60dB
Intermodulation	Better than 65dB
Spurious Response	Better than 70dB
Mute	Configurable digital mute

Connections

Serial Data Port	RS232 DB9 female DCE. 300-38,400bps asynchronous
Serial Data Interface	3-wire data interface (TxD, RxD & GND)
Serial Data Port DCD Control	Configurable DCD operation : activated on RF carrier or from user data output
System Port	RS232 19,200bps (Shared on Data Port), for configuration and diagnostics. Y-Cable supplied for separating Serial Data Port & Systems Port
Antenna	1 x N female bulkhead
Power	2-pin locking, mating connector supplied
LED Display	Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs

Modem

RF Channel Data Rate [#]	<ul style="list-style-type: none"> Radio Model 003 : FCC (IC) 9600bps (12.5kHz) North America Radio Model 004 : ETSI 4800bps (12.5kHz) Europe Radio Model 001 : ACMA 2400bps (12.5kHz) / 4800bps (25kHz) Australia Radio Model 002 : ACMA 4800bps (12.5kHz) / 9600bps (25kHz) Australia
Typical Bit Error Rate [#]	< 1x10 ⁻⁶ @ -117dBm (2400bps), < 1x10 ⁻⁶ @ -116dBm (4800bps), < 1x10 ⁻⁶ @ -107dBm (9600bps)
Operating Modes	Base, remote, repeater or store n' forward
Data Buffer	8kbyte of on-board RAM
Channelshare™	Trio's unique supervisory collision avoidance system
Multistream™	Simultaneous data stream delivery allows for multiple vendor devices/protocols to be transported on the one radio network
Firmware	Local flash-based firmware updates

Diagnostics

Diagnostics Overview	<ul style="list-style-type: none"> TView+ configuration, network management and diagnostic Windows GUI software Network-wide operation from any remote terminal Non intrusive protocol – runs simultaneously with the application Over-the-air re-configuration of user parameters. Storage of data error and channel occupancy statistics In-built Error Rate testing capabilities Diagnostics parameters available <ul style="list-style-type: none"> Transmitter Power Received Signal Strength DC Supply Voltage Radio Temperature
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Specifications continue on the next page

Product Data Sheet Trio MR450 Specifications



Trio MR450

General

Operating Temperature Range	-30°C to +60°C (-22°F to +140°F)
Power Supply	13.8Vdc nominal (10-16Vdc)
Transmit Current	600mA nominal @ 1W, 1500mA nominal @ 5W
Receive Current	<170mA nominal @ 13.8Vdc
Sleep Mode	Externally controlled sleep mode (13mA @ 13.8Vdc) with 75mS start up time (available only when sleep mode option board is fitted)
Housing & Dimensions	Rugged die-cast, 154 x 102 x 29mm (6.1 x 4.1 x 1.2in.)
Mounting	Integral mounting feet (standard) or DIN Rail mounting (optional)
Weight	0.32kg (0.71lbs)
Warranty	3 years on parts and labor

Approvals and Certifications

Europe (ETSI)	ETSI EN300113, EN301489, EN60950
FCC	FCC PART 15, PART 90
Industry Canada	IC RS119, ICES-001
Australia	ACMA AS4295-1995 (Data)
Hazardous Locations	CSA Class I, Division II, Groups (A,B,C,D) for Hazardous Locations ANSI/UL equivalent)

* Export restrictions may apply. Contact your local representative for more details.

Local radio regulatory requirements may dictate the actual RF channel data rate and Bit Error Rates available. Contact your local representative for more details

Note: Not all product features are available in every mode of operation.

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Product Data Sheet Trio MR450

Model Code

	TBURMR450-aabbcbde represents the part number matrix
Model	Model Type
TBURM	M-Series
Code	Select: Unit Type
R	Remote Station with full enclosure
Code	Select: Generic Frequency Band
450	380 to 520MHz
Code	Select: Frequency (400MHz bands)
M	395 to 470MHz (Tx & Rx)
H	450 to 520MHz (Tx & Rx)
Code	Select: RF Channel Data Rate & Bandwidth (Internal Modem)
001	ACMA 2400bps 12.5KHz / 4800bps 25KHz (Australia)
002	ACMA 4800bps 12.5KHz / 9600bps 25KHz (Australia)
003	FCC (IC) 9600bps 12.5KHz (North America)
004	ETSI 4800bps 12.5KHz (Europe)
Code	Select: Diagnostics
D	Diagnostics Only
L	Sleep Mode Module & Diagnostics
Code	Select: Hazardous Area Approvals
H	Hazardous Environment Class1 Div2
Code	Select: Hot Standby Configurations
O	None

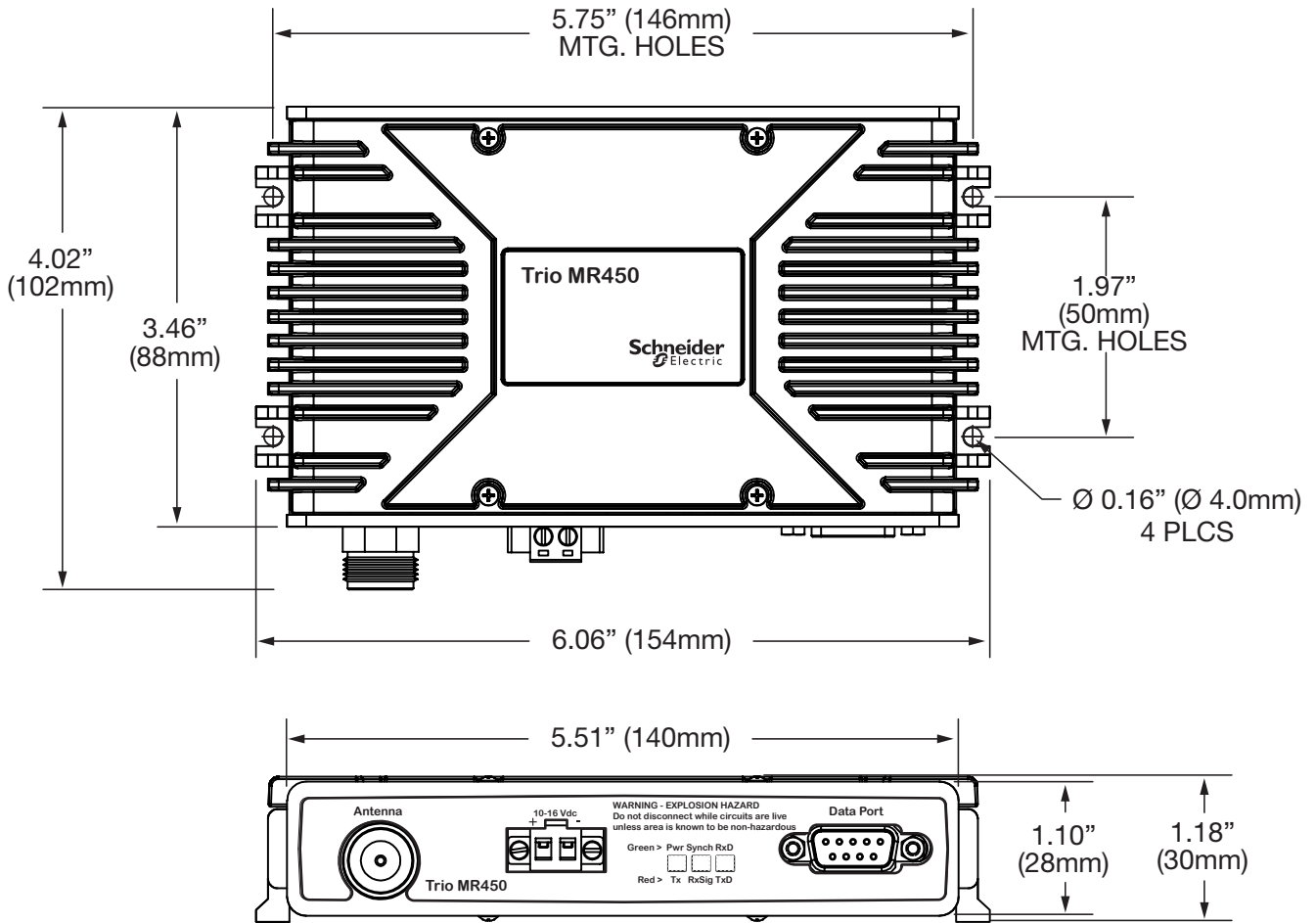
Example: TBURMR450-M003DH0 specifies: Trio M-Series, Remote Station, Generic 450MHz band with a specific frequency range of 400 to 470MHz, a 9600bps modem with a bandwidth of 12.5kHz, Diagnostics, Class1 Div2.

Communications Standards:

FCC – Federal Communications Commission (USA)
 IC – Industry Canada
 ETSI – European Telecommunication Standards Institute
 ACMA – Australian Communications and Media Authority

Contact your local sales office for accessories

Product Data Sheet Trio M-Series
Dimensions





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