

# Trio Data Radios

## Wireless Accessories

### Product at a glance

Schneider Electric offers a complementary suite of wireless accessories to facilitate the deployment of both licensed and license-free Trio™ Data Radios.

Whether you need antennas or cables, DIN rail mounting brackets or lightning surge arrestors, Schneider Electric can help to provide a solution to meet your needs.

# Trio Data Radios

## Wireless Accessories

### Antenna Kits

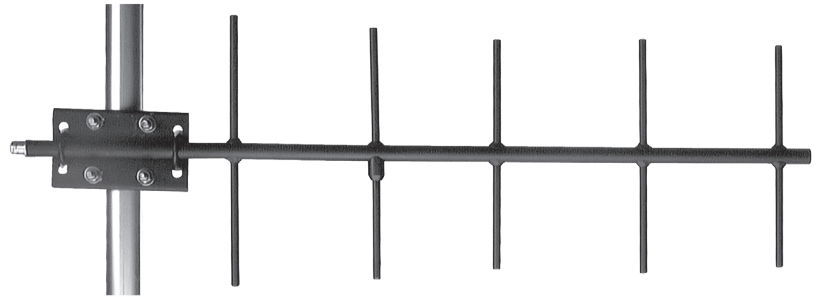
Antenna Kits are packaged to include the most common bill of materials required for a variety of applications and are ordered using a single order code. See the descriptions below for details of each kit.

- Licensed UHF remote sites with directional (Yagi) antennas
- License-free 915 MHz or 2.4 GHz remote sites with directional (Yagi) antennas
- License-free 915 MHz or 2.4 GHz base/repeater sites with Omni-directional (Omni) antennas

Each antenna kit includes : 1 x Antenna (+ clamp),  
1 x Lightning Arrestor, 1 x RF Jumper Lead and  
1 x RF Adapter

Note : The RF Adapter may not be required,  
depending on specific radio model.

Note: The antenna feeder cable is NOT included  
in the kit. Antenna feeder cable type and length  
will depend on the specific site requirements, and  
can be ordered separately.



# Trio Data Radios

## Wireless Accessories

### Accessory Kits - Suitable for use with Trio Q, E and M Data Radios

#### Licensed UHF directional (Yagi) antenna kits

Order Code	Antenna Model	Lightning Arrestor	RF Jumper Lead	Adaptor	Notes
TBUM420YA-09NY	TBUMANTY-09-420	TBUMLT-ARRES-TYPEA	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-NM	Yagi - Aluminium, 7-Element, 9 dBd gain, 406...440 MHz
TBUM460YA-09NY	TBUMANTY-09-460	TBUMLT-ARRES-TYPEA	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-NM	Yagi - Aluminium, 7-Element, 9 dBd gain, 450...470 MHz

### Accessory Kits - Suitable for use with Trio O, J & K Data Radios

#### License-free 915 MHz / 2.4 GHz directional (Yagi) antenna kits

Order Code	Antenna Model	Lightning Arrestor	RF Jumper Lead	Adaptor	Notes
TBUM915YA-06NY	TBUMANTY-06-915	TBUMLT-ARRES-TYPEA	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-SMM	Yagi - Aluminium, 3-Element, 6 dBd gain, 902...928 MHz
TBUM915YA-10NY	TBUMANTY-10-915	TBUMLT-ARRES-TYPEA	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-SMM	Yagi - Aluminium, 7-Element, 10 dBd gain, 902...928 MHz
TBUM2G4YA-13NY	TBUMANTY-13-2G4	TBUMLT-ARRES-TYPEB	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-SMM	Yagi - Enclosed Radome, 13 dBd (15 dBi) gain, 2.4 GHz

#### License-free 915 MHz / 2.4 GHz Omni-directional (Omni) antenna kits

Order Code	Antenna Model	Lightning Arrestor	RF Jumper Lead	Adaptor	Notes
TBUM915OM-03NY	TBUMANTO-03-915	TBUMLT-ARRES-TYPEA	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-SMM	Omni - Fiberglass, 3 dBd gain, 902...928 MHz
TBUM915OM-06NY	TBUMANTO-06-915	TBUMLT-ARRES-TYPEA	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-SMM	Omni - Fiberglass, 6 dBd gain, 902...928 MHz
TBUM2G4OM-08NY	TBUMANTO-08-2G4	TBUMLT-ARRES-TYPEB	TBUMRFJP-TNC-N-1M	TBUMRFAPT-TNCF-SMM	Omni - Fiberglass, 8 dBd (10 dBi) gain, 2.4...2.5 GHz

# Trio Data Radios

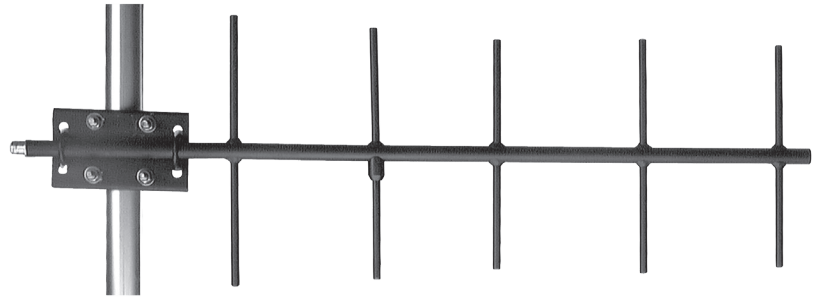
## Wireless Accessories

### UHF directional (Yagi) Antennas

UHF directional (Yagi) antennas are suitable for installation with Trio M & Q Data Radios in the 400 MHz to 520 MHz UHF frequency band. These antennas are ideally suited for use in Point-to-Point (PTP) links or at remote sites in Point-to-Multipoint (PTMP) systems.

Both high, medium and low gain antennas are available in a range of pre-tuned frequencies for fast delivery or alternatively, antennas can be manufactured to custom frequencies.

All UHF directional antennas are constructed for maximum performance and durability, including welded elements to minimise corrosion and generation of intermodulation products, and a corrosion-inhibiting protective finish. Each antenna has a short RF tail with inline N-Female connector and is supplied with a suitable heavy duty mounting bracket.



# Trio Data Radios

## Wireless Accessories

### UHF directional (Yagi) Antennas

#### RF/Electrical Specifications

Order Code	Gain	Frequency Range (MHz)	Bandwidth (MHz)	VSWR	Impedance ( $\Omega$ )	Vertical Beamwidth (deg)	Horizontal Beamwidth (deg)	Front to Back Ratio
TBUMANTY-06-4CM	6 dBd	400...520 MHz	5% of range	<1.5:1	50	63°	98°	13 dB
TBUMANTY-09-420	9 dBd	406...440 MHz	34 MHz	<1.5:1	50	45°	52°	>15 dB
TBUMANTY-09-460	9 dBd	450...470 MHz	20 MHz	<1.5:1	50	45°	50°	20 dB
TBUMANTY-09-4CM <sup>1</sup>	9 dBd	400...520 MHz	5% of range	<1.5:1	50	47°	56°	18 dB
TBUMANTY-12-420	12 dBd	403...430 MHz	27 MHz	<1.5:1	50	39°	44°	20 dB
TBUMANTY-12-460	12 dBd	450...480 MHz	30 MHz	<1.5:1	50	39°	44°	20 dB

#### Mechanical Specifications

Order Code	Construction	Length	Weight	Elements	Wind Load @ 160Km/h (100 mph)	Wind Gust Rating	Notes
TBUMANTY-06-4CM	Aluminum	70 cm (28 in.)	0.5 kg (1 lbs)	3	40 N (9 lbs)	160 Km/h (100 mph)	Includes short cable tail + N-Female termination + Bracket Type E
TBUMANTY-09-420	Aluminum	86 cm (34 in.)	0.95 kg (2 lbs)	5	56 N (12.6 lbs)	160 Km/h (100 mph)	Includes 0.6 m/2 ft. cable tail + N-Female termination + Bracket Type D
TBUMANTY-09-460	Aluminum	106 cm (42 in.)	1.36 kg (3 lbs)	7	79.8 N (17.94 lbs)	160 Km/h (100 mph)	Includes 0.6 m/2 ft. cable tail + N-Female termination + Bracket Type D
TBUMANTY-09-4CM <sup>1</sup>	Aluminum	135 cm (53 in.)	0.8 kg (1.8 lbs)	6	71 N (15.9 lbs)	160 Km/h (100 mph)	Includes short cable tail + N-Female termination + Bracket Type E
TBUMANTY-12-420	Aluminum	182 cm (72 in.)	1.8 kg (4 lbs)	11	94.5 N (21.25 lbs)	160 Km/h (100 mph)	Includes 0.6 m/2 ft. cable tail + N-Female termination + Bracket Type D
TBUMANTY-12-460	Aluminum	182 cm (72 in.)	1.8 kg (4 lbs)	11	94.5 N (21.25 lbs)	160 Km/h (100 mph)	Includes 0.6 m/2 ft. cable tail + N-Female termination + Bracket Type D

Note 1: Tx/Rx Center Frequencies are required to be supplied on order.

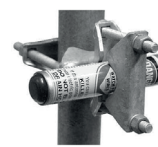
#### Antenna Brackets

The type of bracket supplied with an antenna is specified within the notes section of the corresponding antenna. Brackets are not sold separately.

Type D



Type E



# Trio Data Radios

## Wireless Accessories

### UHF Omni-directional (Omni) Antennas

UHF Omni-directional (Omni) antennas are available for use with Trio M & Q Data Radios in the 400 MHz to 520 MHz UHF frequency band. These antennas are ideally suited for use in Base/ Repeater applications or where peer-to-peer communication is required on simplex (single frequency) systems.

Two gain options are available in a range of pre-tuned frequencies for fast lead times. Alternatively, antennas can be manufactured to custom frequencies which are required to be supplied at the time of order.

All UHF directional antennas are constructed for maximum performance and durability, with 5/6 dBd base antennas being encapsulated in a heavy duty fiberglass radome with a thick walled aluminium mounting base for reliable long term use. All models are DC grounded.



# Trio Data Radios

## Wireless Accessories

### UHF Omni-Directional Antennas

#### RF/Electrical Specifications

Order Code	Gain	Frequency Range	Bandwidth	VSWR	Impedance ( $\Omega$ )	Vertical Beamwidth (deg)
TBUMANTO-00-410	0 dBd	380...440 MHz	13 MHz	<1.5:1	50	76°
TBUMANTO-00-485	0 dBd	450...520 MHz	13 MHz	<1.5:1	50	76°
TBUMANTO-05-415	5 dBd	406...416 MHz	10 MHz	<1.5:1	50	27°
TBUMANTO-05-425	5 dBd	420...430 MHz	10 MHz	<1.5:1	50	27°
TBUMANTO-05-455	5 dBd	450...460 MHz	10 MHz	<1.5:1	50	27°
TBUMANTO-05-465	5 dBd	460...470 MHz	10 MHz	<1.5:1	50	27°
TBUMANTO-06-4CM <sup>1</sup>	6 dBd	380...520 MHz	10 MHz	<1.5:1	50	14°


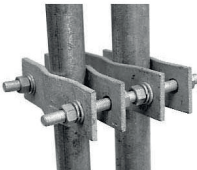

#### Mechanical Specifications

Order Code	Construction	Length	Weight	Notes
TBUMANTO-00-410	Stainless Steel Whip	40 cm (15.7 in.)	0.3 kg (0.3 lbs)	Includes 5 m (16 ft.) RG58 cable (terminated into Antenna) + N-Male connector (loose) + Bracket Type A
TBUMANTO-00-485	Stainless Steel Whip	40 cm (15.7 in.)	0.3 kg (0.3 lbs)	Includes 5 m (16 ft.) RG58 cable (terminated into Antenna) + N-Male connector (loose) + Bracket Type A
TBUMANTO-05-415	Fiberglass (Aluminium Base)	170 cm (67 in.)	2.04 kg (4.5 lbs)	Includes 40 cm (16 in.) cable tail with N-Female termination + Bracket Type C
TBUMANTO-05-425	Fiberglass (Aluminium Base)	170 cm (67 in.)	2.04 kg (4.5 lbs)	Includes 40 cm (16 in.) cable tail with N-Female termination + Bracket Type C
TBUMANTO-05-455	Fiberglass (Aluminium Base)	170 cm (67 in.)	2.04 kg (4.5 lbs)	Includes 40 cm (16 in.) cable tail with N-Female termination + Bracket Type C
TBUMANTO-05-465	Fiberglass (Aluminium Base)	170 cm (67 in.)	2.04 kg (4.5 lbs)	Includes 40 cm (16 in.) cable tail with N-Female termination + Bracket Type C
TBUMANTO-06-4CM <sup>1</sup>	Fiberglass (Aluminium Base)	310 cm (122 in.)	1.5 kg (3.3 lbs)	N-Female termination + two Brackets Type B

Note 1: Frequencies are required to be specified at time of order.

#### Antenna Brackets

The type of bracket supplied with an antenna is specified within the notes section of the corresponding antenna. Brackets are not sold separately.

Type A	Type B	Type C
		

# Trio Data Radios

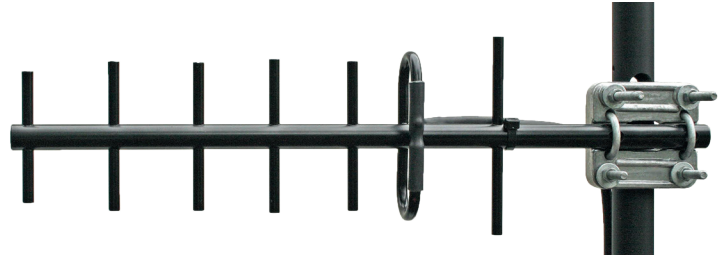
## Wireless Accessories

### License-free ISM Band directional (Yagi) Antennas

ISM directional (Yagi) antennas are available for use with Trio O, J & K Data Radios for use in the 915 MHz and 2.4 GHz license-free ISM frequency bands. These antennas are ideally suited for use in Point-to-Point (PTP) links or at remote sites in Point-to-Multipoint (PTMP) systems.

Both high, medium and low gain antennas are available in a range of pre-tuned frequencies for fast lead times.

All ISM directional antennas are constructed for maximum performance and durability. 915 MHz models include welded elements to minimise corrosion and generation of intermodulation products, and a corrosion-inhibiting protective finish. 2.4 GHz models feature a robust mounting structure for consistent performance regardless of weather conditions.





# Trio Data Radios

## Wireless Accessories

### ISM Directional Yagi Antennas

#### RF/Electrical Specifications

Order Code	Gain	Frequency Range	Bandwidth	VSWR	Impedance ( $\Omega$ )	Vertical Beamwidth (deg)	Horizontal Beamwidth (deg)	Front to Back Ratio
TBUMANTY-06-915	6.5 dBd	902...928 MHz	26 MHz	1.5:1	50	62°	110°	15 dB
TBUMANTY-10-915	10 dBd	902...928 MHz	26 MHz	1.5:1	50	46°	56°	20 dB
TBUMANTY-12-915	12 dBd	902...928 MHz	26 MHz	1.5:1	50	34°	40°	20 dB
TBUMANTY-08-2G4	8 dBd (10 dBi)	2.4...2.48 GHz	80 MHz	1.5:1	50	55°	55°	23 dB
TBUMANTY-13-2G4	13 dBd (15 dBi)	2.4...2.48 GHz	80 MHz	1.5:1	50	30°	30°	30 dB

#### Mechanical Specifications

Order Code	Construction	Length	Weight	Elements	Wind Load (100 mph/160 Km/h)	Wind Gust Rating	Notes
TBUMANTY-06-915	Aluminum	31 cm (12 in.)	0.7 kg (1.5 lbs)	3	16.3 N (3.68 lbs)	200 Km/h (125 mph)	Includes 0.6 m (2 ft.) cable tail + N-Female termination + Bracket Type D
TBUMANTY-10-915	Aluminum	60 cm (24 in.)	0.9 kg (2 lbs)	7	33.3 N (7.5 lbs)	200 Km/h (125 mph)	Includes 0.6 m (2 ft.) cable tail + N-Female termination + Bracket Type D
TBUMANTY-12-915	Aluminum	91 cm (36 in.)	1.1 kg (2.5 lbs)	11	52.75 N (11.86 lbs)	200 Km/h (125 mph)	Includes 0.6 m (2 ft.) cable tail + N-Female termination + Bracket Type D
TBUMANTY-08-2G4	UV Resistant Plastic Enclosure	11.5 cm (4.5 in.)	0.5 kg (1 lbs)	Enclosed	25.8 N (5.8 lbs)	200 Km/h (125 mph)	Includes 0.45 m (1.5 ft.) cable tail + N-Female termination + Mounting Bracket
TBUMANTY-13-2G4	UV Resistant Plastic Enclosure	35 cm (14 in.)	0.5 kg (1 lbs)	Enclosed	81.4 N (18.3 lbs)	200 Km/h (125 mph)	Includes 0.45 m (2 ft.) cable tail + N-Female termination + Mounting Bracket

#### Antenna Brackets

The type of bracket supplied with an antenna is specified within the notes section of the corresponding antenna. Brackets are not sold separately.

#### Type D



# Trio Data Radios

## Wireless Accessories

### License-free ISM Band Omni-Directional Antennas

ISM Omni-directional antennas are available for use with Trio O, J & K Data Radios for use in the 915 MHz and 2.4 GHz license-free ISM frequency bands. These antennas are ideally suited for use as the 'Point' in Point-to-Multipoint (PTMP) systems.



# Trio Data Radios

## Wireless Accessories

### ISM Omni-Directional Antennas

#### RF/Electrical Specifications

Order Code	Gain	Frequency Range	Bandwidth	VSWR (typical)	Impedance ( $\Omega$ )	Vertical Beamwidth (deg)
TBUMANTO-03-915	3 dBd	902...928 MHz	26 MHz	1.5:1	50	40°
TBUMANTO-06-915	6 dBd	902...928 MHz	26 MHz	1.5:1	50	30°
TBUMANTO-06-2G4	6 dBd	2.4...2.5 GHz	100 MHz	1.5:1	50	13°
TBUMANTO-08-2G4	8 dBd	2.4...2.5 GHz	100 MHz	1.5:1	50	9°

#### Mechanical Specifications

Order Code	Construction	Length	Weight	Notes
TBUMANTO-03-915	Aluminum (Base)/ Fiberglass	48 cm (19 in.)	0.57 kg (1.25 lbs)	N-Female termination + Bracket Type D
TBUMANTO-06-915	Aluminum (Base)/ Fiberglass	154 cm (61 in.)	0.57 kg (1.25 lbs)	N-Female termination + Bracket Type F
TBUMANTO-06-2G4	Fiberglass Radome	55 cm (22 in.)	0.22 kg (0.50 lbs)	N-Female termination + Bracket Type G
TBUMANTO-08-2G4	Fiberglass Radome	93 cm (37 in.)	0.29 kg (0.65 lbs)	N-Female termination + Bracket Type G

#### Antenna Brackets

The type of bracket supplied with an antenna is specified within the notes section of the corresponding antenna. Brackets are not sold separately.

Type D	Type F	Type G
		

# Trio Data Radios

## Wireless Accessories

### Demonstration ISM Omni-Directional Antennas

ISM Omni-directional whip antennas are available for use with Trio J & K Data Radios in the 915 MHz and 2.4 GHz ISM frequency bands. These antennas are ideally suited for demonstrations.



#### RF/Electrical Specifications

Order Code	Frequency Range	VSWR (typical)	Nominal Gain
TBUMANTW-00-915	902...928 MHz	<1.9:1	1.5 dBi
TBUMANTW-00-2G4	2.4...2.48 GHz	<1.9:1	1.5 dBi

#### Mechanical Specifications

Order Code	Construction	Length	Cable Tail / Termination
TBUMANTW-00-915	Copper (Core) / Polyurethane Sleeve	23 cm (9 in.)	End Fed / TNC-Male
TBUMANTW-00-2G4	Copper (Core) / Polyurethane Sleeve	18 cm (7 in.)	End Fed / TNC-Male

# Trio Data Radios

## Wireless Accessories

### UHF Bandpass Duplexer Filters

UHF bandpass duplexers are high performance filters providing a full bandpass response for Base/Repeater/ Link applications. They are manufactured from a

single high quality alloy block using precision milling techniques. A silver-plated finish on the housing and all connectors helps to ensure excellent Passive Inter- Modulation (PIM) performance and high reliability.



UHF Bandpass Duplexers are available in pre-tuned configurations for common SCADA bands or alternatively they can be manufactured to custom frequencies which are required to be supplied at the time of order.

The duplexer is attached to a 19 in. rack mounting plate which be removed for stand-alone mounting configurations.

### Duplexers

#### RF/Electrical Specifications (Nominal Values)

Order Code	Operating Frequency	Passband Width	Passband Ripple	Insertion Loss	Tx-Rx Isolation	Return Loss (VSWR)
TBUMDUPLXBP410-1A	404...405 MHz & 413.5...414.5 MHz	1 MHz	<1 dB	<2 dB (typical)	>80 dB @ 5 MHz Tx-Rx	>18 db (1.28:1) (typical)
TBUMDUPLXBP460-2A	450.5...451.5 MHz & 460...461 MHz	1 MHz	<1 dB	<2 dB (typical)	>80 dB @ 5 MHz Tx-Rx	>18 db (1.28:1) (typical)
TBUMDUPLXBP4XXCOA <sup>1</sup>	370...520 MHz custom tuned	1 MHz	<1 dB	<1.5 dB (typical)	>75 dB @ 5 MHz Tx-Rx	>18 db (1.28:1) (typical)

#### Mechanical Specifications

Order Code	Construction	Connectors	Mounting Style	Size (WxDxH)	Weight	Notes
TBUMDUPLXBP410-1A	Silver-Plated, Milled Single Block	N-Female	2RU 19 in. Rack Mount	48.3 x 14.0 x 8.9 cm (19 x 5.5 x 3.5 in.)	3 kg (6.6 lbs)	Trio Duplexer BAND PASS PreTuned 404...405 MHz/ 413.5...414.5 MHz 19 in. 2RU
TBUMDUPLXBP460-2A	Silver-Plated, Milled Single Block	N-Female	2RU 19 in. Rack Mount	48.3 x 14.0 x 8.9 cm (19 x 5.5 x 3.5 in.)	3 kg (6.6 lbs)	Trio Duplexer BAND PASS PreTuned 451.5...452.5 MHz/ 461...462 MHz 19 in. 2RU
TBUMDUPLXBP4XXCOA <sup>1</sup>	Silver-Plated, Milled Single Block	N-Female	2RU 19 in. Rack Mount	48.3 x 14.0 x 8.9 cm (19 x 5.5 x 3.5 in.)	3 kg (6.6 lbs)	Trio Duplexer BAND PASS 400...520 MHz

Note 1: Frequencies are required to be specified at time of order.

# Trio Data Radios

## Wireless Accessories

### RF cables, adapters and surge protection

#### RF Adaptors – Specifications

Order Code	Notes
TBUMRFAPT-TNCF-NM	Trio RF Adapter TNC-Female to N-Male
TBUMRFAPT-TNCF-SMM	Trio RF Adapter TNC-Female to SMA-Male
TBUMRFAPT-NF-NF	Trio RF Adapter N-Female to N-Female - Flange Mount

#### Cable Feeder Tail Cables – Specifications

Order Code	Notes
TBUMRFJP-TNC-N-05M	Trio RF Cable Feeder Tail 0.5 m (1.5 ft.) - TNC-Male to N-Male
TBUMRFJP-TNC-N-1M	Trio RF Cable Feeder Tail 1 m (3 ft.) - TNC-Male to N-Male
TBUMRFJP-N-N-1M	Trio RF Cable Feeder Tail 1 m (3 ft.) - N-Male to N-Male
TBUMRFJP-SMA-N-1M	Trio RF Cable Feeder Tail 1 m (3 ft.) - SMA-Male to N-Male
TBUMRFJP-DUPLX-BP	Trio Band Pass Duplexer Cable Kit 1 m (3 ft.) - Double-Screened RF223/U with N-Male to N-Male (QTY of 2). Suits TBUMDUPLXBPxxx

Note : TBUMRFJP-xxxxxxx RF Cable Feeder Tails are short flexible RF cables that facilitate tight bend radius cable routes, typically found when connecting the radio to a lightning surge arrester.

#### RF Cable Antenna Feedline Cables – Specifications

Order Code	Notes
TBUMRFANT-99F30M-B	Trio RF Cable Antenna Feedline 30 m (99 ft.), 13 mm (0.5 in.) Heliax N-Male To N-Male (LDF-450 or equivalent)
TBUMRFANT-75F22M-B	Trio RF Cable Antenna Feedline 22 m (75 ft.), 13 mm (0.5 in.) Heliax N-Male To N-Male (LDF-450 or equivalent)
TBUMRFANT-75F22M-A	Trio RF Cable Antenna Feedline 22 m (75 ft.), 10 mm (0.4 in.) N-Male To N-Male (LMR-400 or equivalent)
TBUMRFANT-50F15M-A	Trio RF Cable Antenna Feedline 15 m (50 ft.), 10 mm (0.4 in.) N-Male To N-Male (LMR-400 or equivalent)
TBUMRFANT-25F7M-A	Trio RF Cable Antenna Feedline 7 m (25 ft.), 10 mm (0.4 in.) N-Male To N-Male (LMR-400 or equivalent)
TBUMRFANT-10F3M-A	Trio RF Cable Antenna Feedline 3 m (10 ft.), 10 mm (0.4 in.) N-Male To N-Male (LMR-400 or equivalent)

# Trio Data Radios

## Wireless Accessories

### RF cables, adapters and surge protection (continued)

#### Approximate cable attenuation per unit length<sup>3</sup>

Order Code	150 MHz		450 MHz		900 MHz		2500 MHz	
	dB/100 ft.	dB/100 m	dB/100 ft.	dB/100 m	dB/100 ft.	dB/100 m	dB/100 ft.	dB/100 m
TBUMRFANT-xxxxxx-A 10 mm (0.4 in.)	1.5	5.0	2.7	8.9	3.9	12.8	6.8	22.2
TBUMRFANT-xxxxxx-B 13 mm (0.5 in.) Helix	0.8	2.7	1.5	4.8	2.1	6.9	3.6	12.0

Note 3 : Cable attenuation figures do not include attenuation (due to RF connectors) of approximately 0.2 dB per connector.

### Lightning Arrestors

#### Specifications

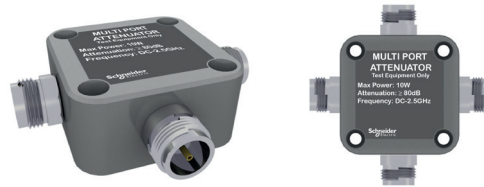
Order Code	Frequency range	Protected Side Connector	Surge Side Connector	Mounting Style	VSWR	Notes
TBUMLT-ARRES-TYPEA	125 MHz...1GHz	N-Female	N-Female	Bulkhead with right angle bracket	1.1:1	Turn-on: 600 Vdc ±20%
TBUMLT-ARRES-TYPEB	2...6 GHz	N-Female	N-Female	Bulkhead inline (no bracket)	1.3:1	Surge: 10 kA IEC 61000-4-5 8/20 μs waveform

# Trio Data Radios

## Wireless Accessories

### Test Equipment and Mounting Kits

Multiport RF Attenuators are available to provide a suitable radio path when performing bench tests. This test equipment is designed to simulate RF link loss while providing 50 Ω termination.



### RF Attenuators for radio link bench testing – Specifications

Order Code	No. of Ports	Connection	Frequency Range	Max Power Input	Attenuation Between Ports	Notes
TBUM4PORTATTEN	4	N-Type [F]	0...2.5 GHz	10 W	Approx: 80...100 dB	4-Port Attenuator for bench testing
TBUM6PORTATTEN	6	N-Type [F]	0...2.5 GHz	10 W	Approx: 80...100 dB	6-Port Attenuator for bench testing
TBUM12PORTATTEN	12	N-Type [F]	0...2.5 GHz	10 W	Approx: 80...100 dB	12-Port Attenuator for bench testing



### Mounting Kits – Specifications

Order Code	Product Compatibility	Notes
TBUMDIN-KIT-TYPEA	JR900/JR240/KR900/KR240/MR450/QR450	DIN rail mounting kit for QR, KR, JR & MR Series Trio Radios. Refer to user manual for details.
TBUMDIN-KIT-TYPEC	KP900/KP240	DIN rail mounting kit for KP Series Trio Radios
TBUMMNTKIT-ERQR	QR450	Trio mounting plate/adaptor conversion kit – ER to QR



# Trio Data Radios

## Wireless Accessories

Software CD, data cables, mounting kits and spare parts

### Data and configuration cables – Specifications

Order Code	Notes
TBUMPROG-TVIEW	Trio Configuration Software (E, M, K Series) including TBUMCAB-TVIEWCABKT
TBUMCAB-TVIEWCABKT	Trio Configuration Cable kit for E, KR, KB, KP and M Series Data Radios
TBUMCAB-DRPROG	Trio Configuration Cable for D-Series Data Radios
TBUMPWR-CABDR-1.5	Trio Power Lead for D Series DR450 / DR900, 1.5 m (5 ft.)
TBUMPROG-SR	Trio Configuration Software and Cable - S Series Windows-based
TBUMCAB-SER-ADP-A	Trio M, J, Q Series Serial/System Port Adaptor
TBUMCAB-SER-ADP-B	Trio K Series Port A RJ45 to DB9 Female Serial Adaptor and Patch Cable, 2 m (6.5 ft.)
TBUMCAB-QH-HSC	Trio Q QH/HSC Cable Kit (All Options)
TBUM297217	Trio KP/KB Configuration & Port A cable [RJ45 to DE9S (Female), Null Modem (Tx, Rx, Gnd), 3 m (10 ft.)]
TBUM297245	Ethernet Cable, RJ45 to RJ45, 1.8 m (6 ft.)
TBUM297488	Trio KP/KB Port B cable [Connectivity to SCADAPack/PC, Port B to DE9S (Tx,Rx,Gnd), 3 m (10 ft.)]
TBUM297820	Trio DE9 port cable [Connectivity to SCADAPack/PC, DE9P to DE9S (Tx, Rx, Gnd), 3 m (10 ft.)]
TBUM297821	Trio DE9 port cable [Connectivity to SCADAPack, DE9P to RJ45 (Tx, Rx, Gnd), 3 m (10 ft.)]
TBUM297822	Trio RJ45 Serial port [Connectivity to SCADAPack, RJ45 to RJ45 (Tx, Rx, Gnd), 3 m (10 ft.)]

### Fuses – Specifications

Order Code	Product Compatibility	Fuse Rating	Notes
TBUMPWR-FUSE-QR	QR450	7 A	Trio Fuse Kit for Trio QR Radios, includes 10 fuses
TBUMPWR-FUSE-QB	QB450, QP450	12 A	Trio Fuse Kit for Trio QB/QP Radios, includes 10 fuses
TBUMPWR-FUSE-ERM	ER450, ER45e, MR450	5 A	Trio Fuse Kit for Trio E and M Series, includes 10 fuses
TBUMPWR-FUSE-JRKR	J-Series, K-Series	3 A	Trio Fuse Kit for Trio J and K Series, includes 10 fuses

### Power Plugs – Specifications

Order Code	Product Compatibility	Notes
TBUMPWR-PLUG-E-HAZ	E-Series	Trio Mating DC power plug kit for Trio E Series, includes 10 plugs
TBUMPWR-PLUG-MJK	M-Series, J-Series & K-Series	Trio Mating DC power plug kit for Trio M/J/K Series, includes 10 plugs
TBUMPWR-PLUG-QB	QB450	Trio Mating DC and IO power plug kit for Trio QB/QP450, includes 2 x10 way plugs + 2 x14 way plugs. Suitable for 2 separate QB/QP.
TBUMPWR-PLUG-QR-A	QR450	Trio Mating DC power plug kit for Trio QR450, includes 10 plugs

# Trio Data Radios

## Wireless Accessories

**Note:** Specifications in this data sheet are nominal performance metrics.

**Disclaimer:**

The information provided in this document contains general descriptions and/or technical characteristics of the performance of the described products or services. For detailed specification, performance and instruction of use, refer to corresponding Catalogs and user guides if available.

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