RadioCom™

BTR–1 and TR–1
1 to 1 UHF – Frequency Agile, Digitally Encrypted Wireless Intercom

The Radiocom™ BTR-1 and TR-1 system is a UHF synthesized wireless intercom system that incorporates the latest digital audio modulation and encryption for improved audio response, while providing secure communications.

The BTR-1 and TR-1 system is a 1 to 1 configuration (one beltpack to one base) and will provide systems that are suited to stand-alone operation or interfaced with Audiocom, RTS and Clear-Com 2-Wire intercom systems as well as RTS™ Matrix and other 4-Wire intercom communication systems. The system will also incorporate multi-channel operation, allowing the beltpack operator to choose between one and six separate audio channels (intercom lines), or a mix of some (or all) of these audio channels, with the base tracking the beltpack selection.

FEATURES

SYSTEM

1 to 1 configuration (one beltpack to one base station) in full duplex mode, and multiple beltpacks per base in half-duplex mode with "First On-Latch Out" feature.

PHYSICAL

The BTR-1 Base Station fits a half-rack format conserving space. The TR-1 beltpacks are small in size and utilize a light weight and durable die cast magnesium housing. Both BTR-1 and TR-1 are easy to use. Customized menus will allow access to all of the powerful features available on this new system.

BASE STATION

The base station is provided with a backlit LCD allowing users to monitor beltpack status as well as program the base station frequencies and audio channel settings. It also has a relay contact closure, as well as intercom Loop through jacks (D-sub connector) for connecting multiple 2-wire units together. The Base station can accept up to 4 lines of 2-wire intercom via XLR and up to 6-lines of 2-wire intercom via 15-pin D-sub connector.

CLEARSCAN

Enhanced ClearScan™ function on base station and beltpack to automatically find the best channel (frequency) on which to operate.

INTELLIGENT POWER CONTROL

The TR-1 Beltpack will detect when it is within close proximity to it's BTR-1 Base station and will intelligently reduce it's own transmitter output by 10db. This eliminates "near - far" desensing problems experienced in other wireless intercom systems.

2-WIRE FUNCTIONALITY

2-wire functionality allows users to select their own mix of up to 6 intercom lines on each audio channel (up to 3 channels) at the TR-1 beltpack.

FM-1 SYSTEM MANAGER

The System Manager (FM-1) provides an interface that enables frequency plans and system configurations to be easily updated.

ACS-101 ANTENNA COMBINER - SPLITTER

The ACS-101 provides up to ten BTR-1 Transmit and Receive Antenna feeds to one Transmit and one Receive (not 10Rx and 10Tx).

TELEX.

BTR-1 SPECIFICATIONS

RF Frequency Range	470-608 MHZ (TV CH14-35) in 18MHz Tx Bands
	614-740 MHz (TV CH 38-58) in 18 MHz RxBands
Power Requirements	12-15 Volts AC/DC
Temperature Range	-4°F to 130°F (-20°C to 55°C)
Dimensions	8.25"W x 1.72"H x 9.00 " D (20.9 cm x 4.4 cm x 22.9 cm)
Weight	3lbs 8oz (3.4kg)
Transmit Antenna	½ Wave (supplied) TNC Male Connector
Receive Antenna	½ Wave (supplied) TNC Male Connector
Relay Contact	Dry contact, rated at 4A 30vDC Max
Microphone Audio Input	30-3500 Ohms
Microphone Input Sensitivity	7.8mV
Local Headset Output	40mW output into 150 ohms (1% distortion)

2-WIRE INPUT/OUTPUT (TELEX/RTS/CLEAR-COM)

Telex	Input/Output level adjustable (1VrmsTypical) Line impedance 300 ohms
RTS	Input/Output level adjustable (0.775 VrmsTypical) Line impedance 200 ohms
Clear-Com	Input/Output level adjustable (1VrmsTypical) Line impedance 200 ohms

4-WIRE INPUT/OUTPUT (RTS)

4-Wire Input	Level Adjustable (2Vrms typical)
4-Wire Output	Level Adjustable (2Vrms typical)

BTR-1 TRANSMITTER SPECIFICATIONS

Type	Synthesized Transmitter, 720 channels
Transmit Power	50mW Max (High), 5mW (Normal)
RF Frequency Stability	0.005%
Frequency Response	100Hz - 7000Hz ±2dB
Radiated Harmonics & Spurious	Exceeds FCC Specifications

BTR-1 RECEIVER SPECIFICATIONS

RF Sensitivity	<0.7 uV for 12dB SINAD
Squelch Threshold	20dB SINAD (about 1.0 uV)
Signal to Noise Ratio	95dB
IF Selectivity	3dB at 230KHz (System Specification)
Image Rejection	70dB or better
Squelch Quieting	90dB
RF Frequency Stability	0.005%
Distortion	<1% at peak level

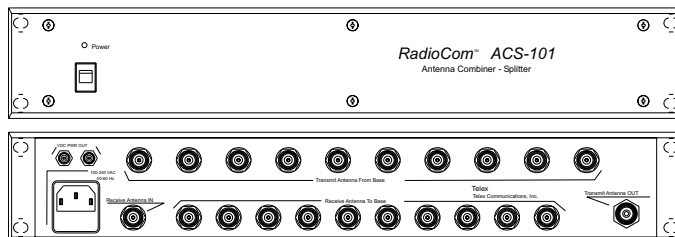## TR-1 SPECIFICATIONS

RF Frequency Range	470-608 MHz (TV CH14-36) in 18MHz Rx Bands
	614-740 MHz (TV CH38-58) in 18MHz Tx Bands
Power Requirements	6 "AA" cells, Alkaline or Nickel Metal Hydride
Battery Life	Alkaline 10-12 hours continuous duty
	Nickel Metal Hydride 8-10 hours continuous duty
Temperature Range	-4°F to 130°F (-20°C to 55°C)
Dimensions	3.75"W x5.10" H x 1.65" D (9.5 cm x 12.9 cm x 4.2 cm)
Weight	15 oz (425 g) with alkaline batteries
Transmit Antenna	¼ Wave (supplied) Screw type, replaceable
Receive Antenna	¼ Wave (supplied) Screw type, replaceable
Microphone Input Sensitivity	7.8 mV Gain Max
Local Headset Output	40mW output into 150 ohms (1% distortion)

TR-1 TRANSMITTER SPECIFICATIONS

Type	Synthesized Transmitter, 720 channels
Transmit Power	50mW Max, Selectable
RF Frequency Stability	0.0005%
Frequency Response	100Hz - 7000Hz ±2dB
Radiated Harmonics & Spurious	Exceeds FCC Specifications

TR-1 RECEIVER SPECIFICATIONS
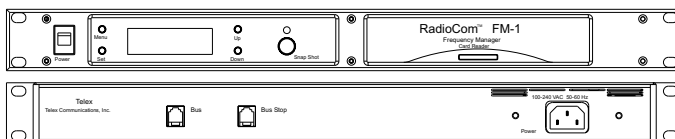
Type	Dual Conversion Superheterodyne, FSK
RF Sensitivity	<0.7 uV for 12dB SINAD
Squelch Threshold	20dB SINAD (about 1.0uV
Signal to Noise Ratio	95dB
IF Selectivity	3dB at 230 KHz (System Specification)
Image Rejection	70dB or better
Squelch Quieting	90dB
RF Frequency Stability	0.005%
Distortion	<1% at peak level

FEATURES:

- The ACS-101 Antenna Combiner - Splitter provides up to ten BTR-1 transmit and receive antenna feeds to one transmit and one receive antenna

- Provides power for up to 10 BTR-1 base stations

- Frequency Range 470 - 608Tx and 614-740 MHz Rx

- 2 Rack Units Tall.

FEATURES:

- The System Manager (FM-1) provides an interface to a BTR-1 system that will enable frequency and system configurations to be easily maintained and updated.

- Utilize Multi-Media Card (MMC) for memory interface to BTR-1 system including frequencies and systems settings.

- 1 Rack Unit Tall

Preliminary Information