

220MHz POSITIVE TRAIN CONTROL AMPLIFIER

TRL-220-L for Positive Train Control *Tunnel* Systems

FEATURES and BENEFITS

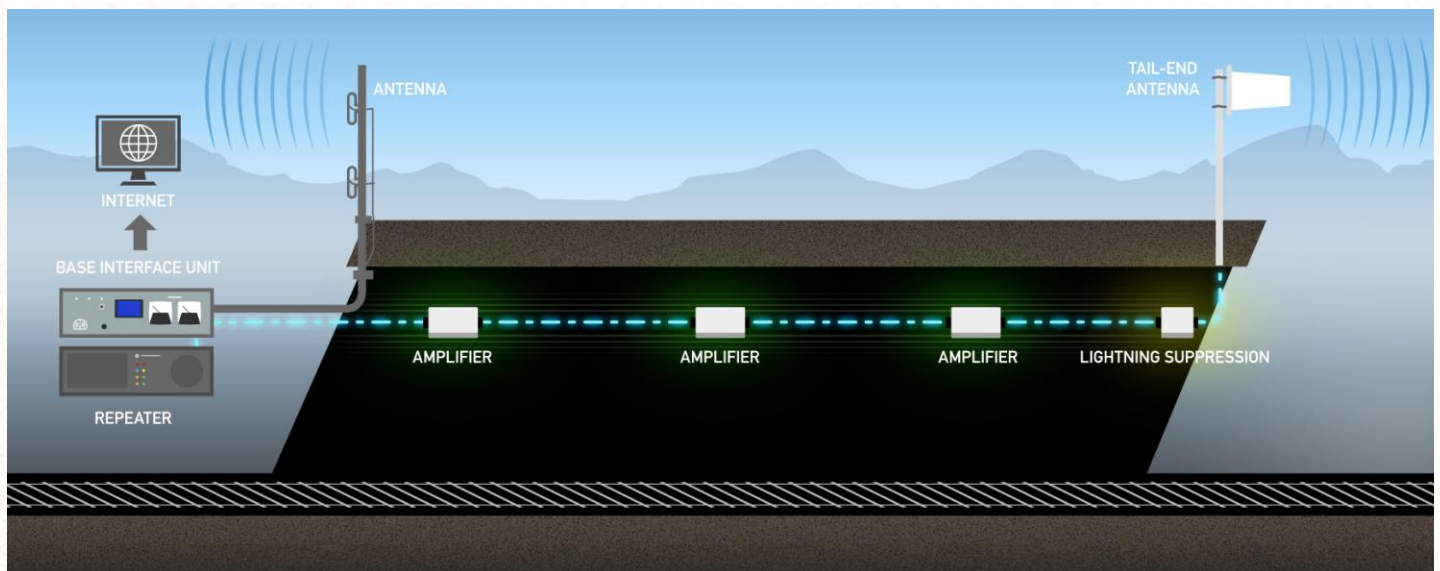
- Tested and compatible with Positive Train Control systems (G.E.T.S.™ and METEORCOMM™)
- High-linearity Bi-Directional Amplifier
- Low-distortion amplification of complex waveforms
- Highly configurable
- Compatible with Tunnel's IT based TMS Diagnostic & Monitoring system for local and remote use



Part Number TRL-220-L

Overview of 220MHz Tunnel Link™ Communication and Control System

System components: Repeater, Base Interface Unit, 220MHz Amplifier(s), Radiating coaxial cable, and Surface Antennas





220 MHz AMPLIFIER, TRL-220-L

U.S. Patent Number 6041216 A

SPECIFICATIONS

Electrical Specifications (typical), TR-220-L Positive Train Control Amplifier

Bandwidth, Rx, Tx (adjustable)	219-223 MHz
Gain, Rx, Tx (adjustable)	10-30 dB, depending on configuration
Noise figure, Rx, Tx	4 dB
Output power at 1 dB compression (P1dB), Tx	+17 dBm
TMS Remote diagnostics, local and network compatible (IP) remote read capable	TMS, uplink option for simplex polling, RX RSSI, Po, VDC
Error Vector Magnitude Single Amplifier(EVM) with p/4 DQPSK modulation @ Pout = 0 dBm; source EVM = 0.5%,	<.5% (below test instrument read threshold)
Error Vector Magnitude (EVM) 10-amp system with p/4 DQPSK modulation @ Pout = +10 dBm; source EVM = 0.5%, Tx	2% (typical performance of) with Pout = +10 dBm (Demonstrated 8% in 34 amplifier chain)
Impedance	50 Ω
DC power, Tx	+10 to +28 VDC 100 mA, w/o TMS 130 mA, w/TMS

Electrical Specifications (typical), TR-IFU2-220-RR-28V, BASE INTERFACE UNIT

RF Input	2 W to 5 W
PTC Transceiver Interface	Type N
Impedance	50 Ω
AC/DC power configurable	120VAC/30VDC
DC Current	4 A, typical
External RF Port for In-Tunnel Amplifier Chain; Block & Clamp Interface	1

TMS & TMS NET Specifications (typical)

Remote diagnostics	Tunnel Monitoring System (TMS), uplink option
Remote control	Software Defined Amplifier (SDA) option
Network Interface	TR-TMS-Net option
Size	1 Rack X19"X 24"



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