

PowerTrunk25 RF Unit

Digital P25 Base Station and Repeater

Conventional and trunked modes in VHF/UHF/700/800 MHz



Powerful: The PowerTrunk25™ RF Unit is a high-performance base station/repeater that can function in P25 trunked, conventional, analog or mixed mode. For trunked operation, the PowerTrunk25 RF Unit is the core of the repeater sites in our state-of-the-art infrastructure system. The unit includes a standard IP interface to build up a multi-repeater system or connect to a P25 infrastructure network.

Future proof: Designed to be future proof, the PowerTrunk25 RF Unit has all the necessary hardware to manage a TDMA structure up to four time-slots, requiring only a software upgrade to P25 Phase 2. The real-time operating system in the repeater controller unit enables evolution to future P25 functionalities.

Modular: Each plug-and-play module contains different functional blocks that facilitate maintenance and development. Specific alarms identify malfunctions, thus minimizing in-field repair time. There are independent modules for power supply, unit controller, transmitter exciter, power amplifier, and receiver module — with built-in two-way diversity as standard. For three-way diversity, an additional module can be housed in the rack for frequency reference or a second receiver module. Easy to deploy and maintain, this modular unit can fit in a 19-inch cabinet.

Interoperable: Designed according to P25 CAI standards, the PowerTrunk25 RF Unit is interoperable with any P25-compliant subscriber unit.



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Powerful • Secure • Reliable • Upgradable

Parameter	Frequency Band			
	VHF	UHF	700 MHz	800 MHz
GENERAL				
Modulation	Analog FM / C4FM			
Shared-access method	Frequency Division Multiple Access (FDMA)			
Nominal voltage (DC)	26.4 Vdc (21.1 – 31.7 V)			
Power consumption	500 W (maximum)			
Duty cycle	100% continuous			
Network connection	Ethernet IEEE 802.3u.x			
Antenna connection	Type N			
Temperature range	-22 to +140° F (-30 to + 60° C)			
Humidity	95%			
TRANSMITTER				
Frequency range (MHz)	136-174	380-400, 410-430, 450-470, 470-512	764-776	851-870
Frequency stability	± 0.1 ppm			
Rated power output (W)	100 W			
Power step size	2 dB			
RF output impedance (Ω)	50			
Spurious and harmonic	< -70 dBc (FCC 90.210 compliant)	< -70 dBc (FCC 90.210 compliant)	< -70 dBc (FCC 90.543 compliant)	< -70 dBc (FCC 90.210 compliant)
Channel spacing (KHz)	6.25, 12.5, 25			
Transmit offset frequency	Any		30 MHz	45 MHz
Adjacent channel power ratio	> 67 dB	> 67 dB	> 67 dB (FCC 90.543 compliant)	> 67 dB
Intermodulation attenuation	> 40 dB			
Modulation fidelity (digital)	< 5%			
Modulation limiting (analog)	± 2.5 KHz (12.5 KHz) ± 5 KHz (25 KHz)			
RECEIVER				
Frequency range (MHz)	136-174	380-400, 410-430, 450-470, 470-512	794-806	806-825
Sensitivity	-119 dBm (0.25µV)			
Faded sensitivity	< -108 dBm			
Selectivity (adjacent channel rejection)	Digital > 60dB Analog 12.5 KHz > 45dB Analog 25 KHz > 75dB			
Spurious response rejection	Analog > 75dB / Digital > 90dB			
Intermodulation rejection	Analog > 75dB / Digital > 80dB			
Unwanted conducted emissions	< -57dBm			



PowerTrunk Inc.
 750 Columbus Ave., Suite 11G
 New York, NY 10025
 212.222.4971
 info@powertrunk.net
 www.powertrunk.net
 www.teltronic.es