Cascade

SPEC SHEET

Cascade™ is a software-defined repeater that has been engineered for IP-networked radio solutions with coverage, dependability, and easy management. Cascade has built-in diagnostics, alarms and logging capability; and allows for system parameters to be monitored, configured and upgraded remotely over IP. With P25 CAI, analog and mixed mode capabilities standard; Cascade is the perfect choice for affordable and scalable, conventional public safety radio systems.

FEATURES

- Rack space efficient – 2 x 100W radios occupy only 4RU
- Includes linear amplifier(s), adjustable from 10-100W RF output
- Supports P25 digital, analog narrowband and mixed mode operations
- Built-in IP-based remote configuration and remote site monitoring
- Built-in logging and alarming, with user-definable automated failure mitigation behaviors
- Built-in testing and calibration functionality
- Supports open standard P25 IP Protocols
- Meets or exceeds industry standard regulatory guidelines for performance in a public safety LMR system

Unit Components

TRANSCEIVER (TRx)

- A full duplex software controlled transceiver
- TRx receives, processes and transmits low-powered RF signals to the Power Amplifier
- TRx provides a web interface for remote programing, monitoring and diagnostics
- Fault conditions and diagnostics are monitored and reported to the UI and front-panel LEDs

POWER AMPLIFIER (PA)

- A 100W RMS RF linear amplifier provides the final stage RF amplification
- Software-controlled variable-gain amplifier with an output power range of 10 to 100W (40 to 50dBm) in 1W steps
- Fault conditions and diagnostics are monitored and reported to the UI and the front-panel LEDs

48VDC POWER SUPPLY (PSU)

- DC-DC providing efficiency above 94.5%
- Delivers up to 2x16.7A output current with 48V output
- Operating temperature range: -30°C to 60°C
- Requires DC power input providing -40VDC to -60VDC

SUBRACK

- The Subrack houses and distributes power to all of the Cascade modules
- The Front Interface Board facilitates module communication with an operating temperature range of -30°C to 60°C

Specifications

- Frequency Band: 148-174MHz
- Carrier Frequency Stability: ≤ ± 0.5pp
- Switching Range: Full Band
- Duty Cycle: 100%
- Operating Voltage (Nominal): 48VDC
- Operating Temperature: -30 to 60 °C
- Carrier Frequency Stability: ≤ ± 0.5ppm

Standby Current @48V
Single Channel: <0.8A
Dual Channel: <1.6A

Single Channel Current @48V
100W Avg: <7.5A
10W Avg: <3A

Dual Channel Current @48V
100W Avg: <15A
10W Avg: <6A

Weight
Metric: 20.4 kg
Imperial: 45 lbs

Dual Channel Weight
Metric: 27.6 kg
Imperial: 61 lbs

Dimensions (HxWxD)
Metric: 48.64 x 17.60 x 54.40 cm
Imperial: 19.15 x 6.93 x 21.42 in

ZETRON

Specifications

VHF RECEIVER

Reference Sensitivity:	≤ -120dBm
Adjacent Channel Rejection:	≥ 60dB
Bit Error Rate Floor (P25):	≤ 0.1%
Audio Distortion (Analog):	≤ 2%
Receiver Port Connector:	SMA
Blocking Rejection:	≥100dB
Intermodulation Rejection:	≥ -80dB
Spurious Response Rejection:	≥ -90dB
Conducted Spurious Output Power:	≤ -95dBm

VHF TRANSMITTER

RF Output Power:	100W
Adjacent Channel Power Ratio:	≥ 67dB
Modulation Fidelity (P25):	≤ 2%
Audio Distortion (Analog):	≤ 3%
Transmitter Port Connector:	N
Intermodulation Attenuation:	≥ 70dB
Unwanted Emissions - Conducted Spurs:	≥ 90dBc
VSWR Protection:	Any (with fold-back)

REGULATORY INFORMATION

FCC ID
H4JCASC165B

IC ID
142A-CASC156B

Emissions Designator
11K0F3E
8K10F1D
8K70D1E
8K70D1D
8K70D1W
8K10F1E
8K10F1W

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ZETRON

Always on, always ready

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