

KENWOOD



DMR

Infrastructure Solutions for

Digital Mobile Radio (DMR) Systems



KA-160/450/500

DMR Tier 2, Tier 3 & P25

KAIROS DMR Tier 2, Tier 3 & P25 simulcast repeaters are the perfect platform for any DMR or P25 application, from simple standalone sites to large nationwide systems. Ideal for utilities, energy, education and manufacturing organizations, KAIROS Conventional/Trunked simulcast is a great fit for organizations that require wide area communications with limited frequencies.

Multi-protocol

- KAIROS repeater supports Analog, DMR Tier 2 & Tier 3, Paging (both Analog and POCSAG), and P25 Conventional protocols. Automatically switches between analog and digital modulation, according to the type of incoming signal.

IP Multisite Multicast & Simulcast

- Fully IP-based distributed network architecture supporting multi site, multi protocol network solutions in multicast or simulcast mode of operation.

RF Linking

- Provides RF backhaul among sites where the IP backbone is not available, carrying analog and digital signals. IP, UHF, and VHF links can be mixed in a single network.

System Redundancy

- Supports flexible redundancy design as either 1+1 (Main + Standby) or with backup Primary functionality (a Secondary station that automatically replaces the failed main Primary, restoring all network functions).



Soft Diversity Reception

- KAIROS soft diversity receiver technology allows for enhanced coverage and improved signal reception in RF fading conditions.

Powerful Remote Control

- The remote control tool also ensures secure software upgrades, diagnoses IP backbone issues, and continuously assesses the health of the entire radio system. KAIROS also integrates directly with 3rd party network management systems using the standard SNMP protocol.

Light and Ruggedized

- Compact and lightweight. Thanks to its environmental robustness, KAIROS can perform in harsh site conditions.

Reliable

- KAIROS repeaters come standard with various reliability schemes including automatic protection schemes such as power range control, reverse polarity protection, peak and transient handling, soft start, current limiting and RF power limiting capabilities.

KAIROS Specifications

General			
Available Models	KA-160	KA-450	KA-500
Frequencies available	136-174 MHz	400-470 MHz	450-512 MHz
Protocols	DMR/Analog/ Paging (both Analog & POCSAG)/ P25 Phase 1 Conventional	DMR/Analog/ Paging (both Analog & POCSAG)/ P25 Phase 1 Conventional	DMR
Channelization	12.5 kHz/25 kHz (25 kHz not available in US)		
RF Output power	1-25 W / 100% duty cycle / selectable per channel (Higher RF output power available through standard external PA options in catalog)		
Synthesis step	50Hz		
Frequency stability	0.5p.p.m. (without GPS)		
Synchronization sources from	Internal, GPS/GLONASS, 2-wire, Digital RX, External, PTP based on IEEE1588 v2		
Operating temperature	-22°F to +140°F (-30°C to +60°C)		
Power supply (negative ground)	Minimum: 11V Typical: 13.8V Maximum: 15V		
Power consumption	TX: 60 W @25W RF / RX: 5 W @Main+Div enabled		
Dimensions & weight	6.3 x 7.9 x 1.8 in. (160 x 200 x 45 mm) / 2.98 lbs. (1.35 kg)		
Audio lines	2 x (4-wire + E&M) - 1 x timeslot		
LAN port	Ethernet 10BT/100TX (auto MDI/MDI X) on an RJ45 socket		
Aux I/O	3xIO + 2xAnalog input		
Transmitter All Models			
Output power at connector	1/5/10/15/20/25W		
Connector	SMA		
Available modulation	FM, PM, GFSK, 4FSK, 2DFSK		
Modulation Bandwidth	0 - 5000Hz		
Transmitting duty cycle	Continuous 100%		
Adjacent Channel Noise	-75dBc @ 25kHz / -65 dBc @ 12.5kHz		
FM distortion	< 1.5%		
Noise	-56 dBp @ 25kHz / -50 dBp @ 12.5kHz		
Frequency Stability (without GPS)	0.5ppm (without digital correction)		
Receiver All Models			
Maximum Sensitivity	-116 dBm @ 20 dBp SINAD -118 dBm @ 5% BER without diversity - 121 dBm @ 5% BER with diversity		
Operating Max input	-10 dBm		
Max input w/o permanent damage	+10 dBm		
Received signal bandwidth	0 - 5000 Hz		
Co-channel protection	8 dB @ 25kHz / 12 dB @ 12.5 kHz		
Adjacent channel selectivity	73 dB @ 25kHz / 65 dB @ 12.5 kHz		
Blocking protection	80 dB		
Intermodulation protection	75 dB		
Distortion	< 2% @ 1kHz		