Icom America Systems

VHF AND UHF BASE STATION/REPEATER

DRB-25



Project 25 Interoperability. Any Time. Any Place. Anyone.



Simultaneous operation and linking:

– VHF and UHF
– DIGITAL and ANALOG, with autosensing
– Two 512 channel repeaters/bases in one package capable

No Adjustments Necessary
Slide-in Modular Design

analog \ digital

SYSTEMS FOR PEOPLE WHO MAKE SMART CHOICES

P25 Digital and Analog Interoperability,

All in One Box.

KEY FEATURES

- Built-in P25 IMBE vocoding and P25 OFB DES encryption
- Simultaneous operation and linking DIGITAL and ANALOG
- Simultaneous operation and linking VHF and UHF
- Base station/repeater operating modes
- Direct connection to existing tone remote and console systems, PSTN and microwave links
- Multiple call types (including individual calls and group calls)
- IP-enabled providing VoIP and Web-based real-time control and user, Web-diagnostic, monitoring and alarm information using corporate intranets and public internets
- Easy programming via Windows®

The DRB-25 is a compact base station/repeater unit, fully compatible with the APCO Project 25 (P25) standard of secure digital radio. Its high power, features and flexibility make it an ideal building block for conventional radio networks.

The DRB-25 supports simultaneous analog and digital P25 operation. Its cross-band feature permits communication across different bands as well, making the DRB-25 a highly cost effective migration to digital radio.

APPLICATIONS

The DRB-25's modular design and software based features make it an extremely flexible building block for a wide range of network applications.

The DRB-25 can operate in a stand-alone mode or within a conventional network using remote repeaters.

Its compatibility with P25 means that it is ideal for use by public safety organizations requiring a high level of security and interoperability, as well as public utilities (such as power companies) and transport organizations (such as railways).

Available in both VHF and UHF bands the DRB-25 can easily be implemented in a wide range of situations. Interconnection to the PSTN or a microwave bearer is available through a standard 2-wire or 4-wire + E&M interface.

The DRB-25's compact dual radio configuration is a very cost effective solution for remote locations. One channel can be used as a base station or repeater for general communications, while the second channel acts as a link to other base stations or repeaters.

REMOTE CONTROL

Built-in PC Web Server

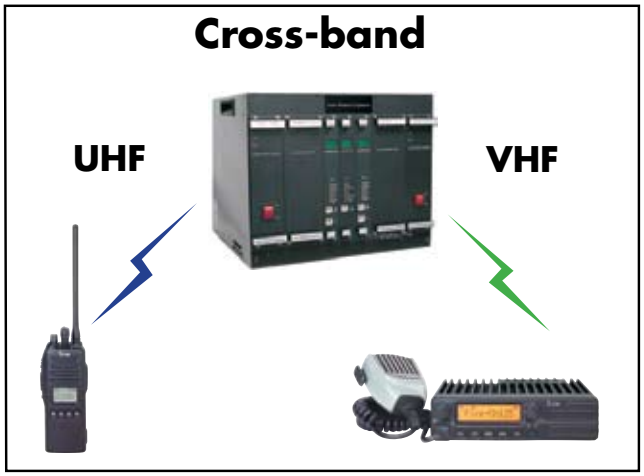
Control / monitor your system remotely via a built-in ethernet port. Watch critical user info, analyze system activity, transmit, receive, perform diagnostics, monitor NAC activity, change channels, view signal levels, and more, all from a PC Web browser.

Fully Software Controlled

The DRB-25's modular design means there's no field tuning, adjustments, or alignments necessary. Once the unit is set to your specifications, any future changes are a simple hot-swap of the appropriate module.

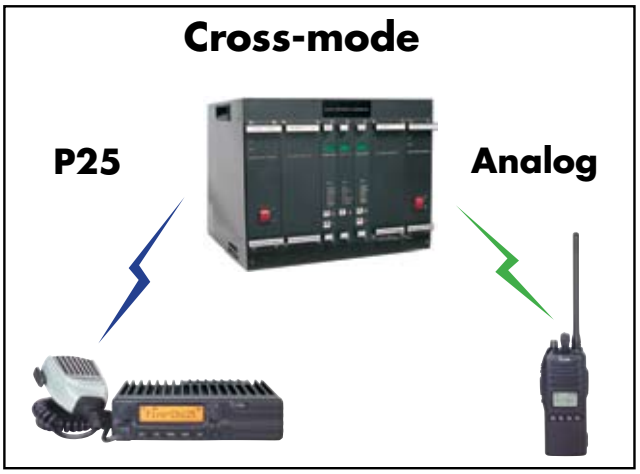
LINKING FLEXIBILITY

The DRB-25 may be configured with one or two independent channels. Each channel may operate as an analog and/or a P25 digital repeater or may also be programmed to auto-sense the mode of a received signal and thus be shared between analog and digital users. With built-in P25 vocoding and DES encryption the DRB-25 may be connected directly to existing tone-based remote and console equipment using 2W and 4W E/M circuits. Direct connection to 2W telephone lines for analog and P25 digital calls is also supported. “IP enabled” connection to corporate intranets and public internets and providing VoIP and control, monitoring and diagnostics through and built-in Web server.



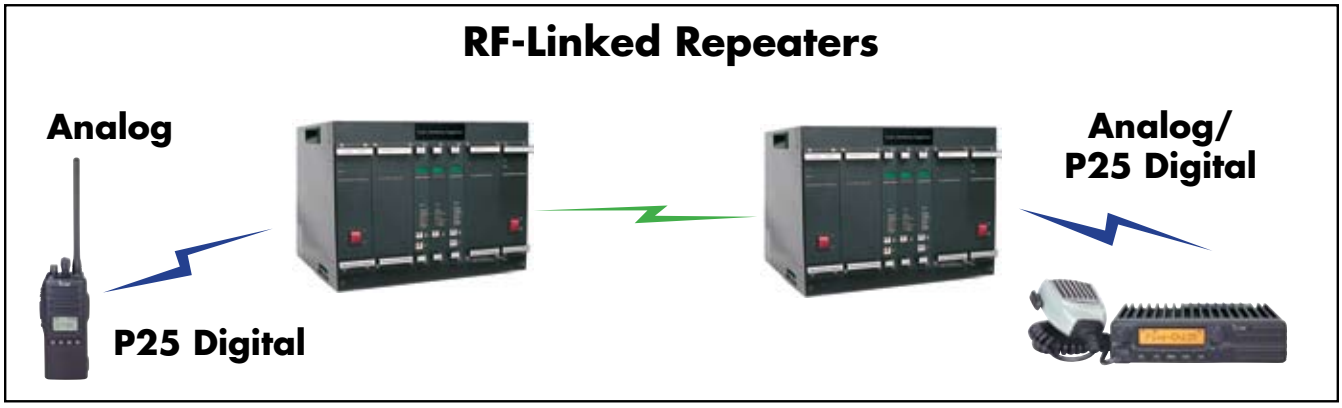
LINK DIFFERENT BANDS

Useful where a VHF repeater is used to provide area coverage and a UHF repeater is used as a control link. The DRB-25 is transparent to CTCSS/CDCSS, P25 signaling and legacy CVSD systems.



LINK DIFFERENT MODES

Applicable during a migration to digital operation or for interoperablity or to provide interoperability between analog and digital users operating in the same geographic area. The users may be operating in different frequency bands.



LINK WIDE AREAS

Two DRB-25s each configured with 2 channels may be used in either analog or digital mode to provide coverage over a wider area. The coverage and linking channels may use different bands. The DRB-25s are transparent to CTSS/CDCSS and P25 signaling.

WESTEL

An IAS partner company

SPECIFICATIONS

FEATURES AND GENERAL

• Analog operation:	Standard
• P25 NB operation:	Standard
• Inbuilt P25 IMBE vocoding:	Standard
• Repeater operation:	Standard
• Base station operation:	Standard
• VoIP and console operation:	Standard
• 12V DC revert:	Standard
• Telephone interconnect, analog:	Standard
• Telephone interconnect, P25 digital:	Standard
• 2/4W EM line interface, analog:	Optional (Multi-mode module)
• Licensed software options:	Link radio, LF-05001 P25 DES-OFB encryption, LF-05002 VoIP, LF-05003 12 kbit/s CVSD repeater, LF-05004
• Programmable channels:	512
• Frequency generation:	Synthesized
• Channel spacing:	12.5 kHz; 15 kHz; 24 kHz; 30 kHz
• Analog modulation:	FM
• Digital modulation:	C4FM
• Operating temperature range:	-30 – +60 C
• Frequency stability:	1 ppm (standard), 0.1 ppm (optional)
• Operating modes:	Simplex/Semi-duplex/Duplex
• Diagnostics:	Inbuilt Web server
• Alarms:	AC/DC power fail, high VSWR, low output power
• Input voltage AC:	110V or 240V
• AC power connector:	IEC type
• Input voltage DC:	13.8V ± 10%
• DC power connector:	Powerpole 45A
• Antenna connectors:	Type N female (Transmit/Receive)
• Antenna impedances:	50 R (Transmit/Receive)

RECEIVER

• Tunable frequency:	VHF: 136 -174 MHz UHF: 380 - 420 MHz, 400 - 470 MHz, 450 - 520 MHz
• Switching bandwidth:	Full sub-band
• Min transmit/receive spacing: for full duplex operation	~700 kHz (VHF), ~2.0 MHz (UHF)
• IF frequencies:	21.4 MHz/450 kHz (VHF), 72 MHz/450 kHz (UHF)
• Demodulation method:	Direct down conversion
• Receive sensitivity:	
Analog (12 dB SINAD)	-118 dBm/0.25 uV (VHF, UHF)
Digital (5% BER)	-118 dBm/0.25 uV (VHF, UHF)
• Adjacent channel rejection:	
25 kHz WB analog (80 dB):	83 dB (VHF), 80 dB (UHF)
12.5 kHz NB analog (60 dB):	70 dB (VHF, UHF)
12.5 kHz NB digital (45 dB):	70 dB (VHF), 65 dB (UHF)
• Spurious and image response rejection:	
WB analog (85 dB):	90 dB (VHF, UHF)
NB analog (75 dB):	90 dB (VHF, UHF)
NB digital (90 dB):	90 dB (VHF, UHF)
• Intermodulation rejection:	
WB analog (70 dB):	85 dB (VHF, UHF)
NB analog (80 dB):	85 dB (VHF, UHF)
NB digital (75 dB):	85 dB (VHF, UHF)
• Audio response: WB and NB analog	+1 dB, -3 dB from 6 dB per octave de-emphasis 0.3 - 3 kHz ref 1 kHz
• Audio distortion:	WB analog, 2%; NB analog, 2%
• Audio input:	Line, 0 dBm (nominal) adjustable Loudspeaker, 1 W into 4 R
• FM hum and noise:	WB analog, 50 dB; NB analog, 45 dB

TRANSMITTER

• Tunable frequency:	VHF 136 – 174 MHz UHF 380 – 420 MHz, 400 – 470 MHz, 450 – 520 MHz
• Switching bandwidth:	Full sub band
• Power output:	VHF, 10 – 100 W UHF, 5 – 50 W *coming soon:100 W* (both adjustable in 1 dB steps)
• Modulation method:	Direct digital synthesis
• Spurious and harmonic attenuation:	100 dB VHF, 90 dB (UHF)
• Maximum deviation:	
WB analog	± 5 kHz
NB analog	± 2.5 kHz
NB digital	± 2.5 kHz
• Audio response:	WB and NB analog, +1, -3 dB from 6 dB per octave pre-emphasis from 0.3 – 3 kHz referenced to 1 kHz
• Audio distortion:	WB analog <2% NB analog <2%
• Audio input:	
Line	0 dBm (nominal) adjustable
Microphone	~100 mV
• Hum and noise:	
WB analog:	50 dB
NB analog:	45 dB
• Emission designators:	
WB analog	16KOF3E
NB analog	11KOF3E
NB digital	8k10F1E

DIMENSIONS, WEIGHT & POWER CONSUMPTION

• Dimensions (w x h x d):	19 x 14 x 17.5 inches 483 x 355 x 440 mm
• Weight:	Single channel, 61 lbs / 28 kg Dual channel, 85 lbs / 39 kg
• Power consumption:	Single channel, standby, 55 W Single channel, transmit, 380 W Dual channel, standby, 81 W Dual channel: transmit 1 channel, 406 W transmit 2 channels, 720 W

Specifications & methods per TIA 102CAAA/CAAB and TIA/EIA603 as applicable *NTTIA requirement for post 1 Jan 06 procurements. Type approvals: FCC ID: P6ZC100066 (VHF), P6ZC100063 (UHF); IC: 5397A-C100066 (VHF); ACA: Yes (UHF); FCC Part 68: ALT-AUS-36133-NI-E

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Systems for People Who Make Smart Choices

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