

DSPbR® Edge™

In-building and In-Tunnel Coverage Enhancement Repeater

Multi-channel

DSPbR Edge



The DSPbR Edge is a compact IP-rated wall, pole or 19" rack mountable, RF-transparent, digital channel selective repeater. It is fully programmable, on a per channel basis, and can provide up to (8) eight RF off-air bi-directional channels in one chassis. Additional channels or frequency bands can be added by expanding to multiple chassis. Stand-alone, point-to-point or point-to-multipoint configurations can be implemented.

Remote or local configuration and status and alarm monitoring and reporting are provided via Ethernet connection or the integral cellular modem using a user-friendly webserver GUI. SNMP Traps, SMS, Email (SMTP) and dry relay contacts are all available for alarm reporting. Alarm inputs are also provided for the monitoring of external equipment cabinet doors and other site alarms (cabinet doors, other site equipment alarms, etc).

The DSPbR Edge is ideal for in-building and in-tunnel coverage rebroadcast and enhancement, with its per-channel user-configurable channel frequency and bandwidth, signal gain, receive signal gating, RF output power and other parameters suiting a wide range of deployment applications. The DSPbR Edge's RF-transparent operation is secure and compatible with most analogue and digital technologies, with network features like encryption and over-the-air-rekeying being passed unchanged.

An optional Trunking Extender feature uses an innovative frequency and control channel manipulation techniques to provide unique coverage enhancement capabilities for P25 Phase I and II networks. The modular architecture of the DSPbR Edge provides user-friendly, convenient and efficient in-field firmware upgrading and equipment maintenance.



Features:

- Analogue and Digital compatible – supports most network technologies
- Secure RF-transparent operation – supports encryption, over-the-air-rekeying, etc
- Up to 8 bi-directional channels per chassis
- On-frequency, frequency-translating or P25 Trunking Extender operation, (in-band or cross-band)
- Programmable parameters per-channel, and independently in uplink and downlink
- Onboard multi-band cellular modem (Wi-Fi and BT in future release)
- Configurable Simulcast RF delay, independently by channel in UL or DL
- AC power supply (and redundant PSU option)
- Compact IP-rated enclosure suits wall, pole or 19in rack mounting

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Technical Specifications

Model Number	DSPbR Edge Series
Available Frequency Bands	400-430, 430-450 or 450-470MHz (other bands under development)
Filtering	Internal (Duplexers) or External (Custom)
Internal Duplexers -if fitted (minimum)	Full Bandpass – 5MHz passband (fixed), 4MHz guardband
External (Custom) Filtering	As required for specific frequencies (contact RFI)
Channel Capacity per Chassis	Up to 8 Bi-Directional
Modes of Operation	On-Frequency, Frequency Translating or P25 Trunking Extender
Maximum Output Power per Channel (typical)	1ch @ 36dBm, 4ch @ +30dBm, 8ch @ +27dBm
Output Power Adjustment Range	Output power per channel +0dB / -20dB (in 1dB steps)
Gain Range (1dB steps) Service & Donor	60-100dB typ.
RF Channel Bandwidth	12.5kHz and 25kHz (contact RFI for other requirements)
RF Group Delay	To suit regulatory or application requirements
Noise Figure (maximum)	6dB @ max. gain
Receiver Sensitivity (typical)	-116dBm @ 12dBS or 5% BER
Tx Spurious Emissions (typical)	-30dBm (ACMA and FCC-compliant)
Maximum Input Power - no damage / normal operation	+10dBm / -25dBm
User Access - Ethernet	3 levels of user name and password control
User Interface - Ethernet	GUI (Web browser enabled Graphical User Interface)
Configuration and Alarm Diagnostics Connectivity	Ethernet port / cellular modem
Alarm Interface Termination Connector	Screw Terminals
System Impedance	50Ω
RF Input (Donor) and Output (Service) Connectors	N (F)
Cellular Modem Connectors	SMA (F)
Power Supply Options	Mains 90-264VAC (single or hot standby PSU)
Input Power	130W (typ) @ 240VAC
Cooling	Passive (convection)
Environmental Protection Rating	IP65
Installation Environment	In-building, In-tunnel or Outdoor
Chassis Earthing	Dual M6 studs
Dimensions (WxDxH)	450x220x660mm / 17.7x8.7x26.0 (unit only) 450x250x660mm / 17.7x9.8x26.0 (inc. wall brackets)
Weight (fully populated)	31.5kgs / 69.5lbs (unit only) 34kgs / 75.0lbs (inc. wall brackets)
Operational Temperature Range	-10°C to +60°C / 14°F to 140°F
Compliances	ACMA AS/NZS4295 AS/NZS4768, FCC AS/NZS60950.1:2011, EN60950-1:2006 RoHS (contact RFI for details of other approvals)