D-MBR HP

High power, dual band, digital repeater for EMEA and APAC

Key features

- Combines dual bands in one enclosure
- Software Defined Filtering of up to 12 Sub-bands in each Frequency Band
- IMOP algorithm prevents oscillation safely
- Individual Gain and ALC Settings for each sub-band for single and multi-operator applications
- Supports multi operator and multi technology (i.e. GSM, W-CDMA, LTE)

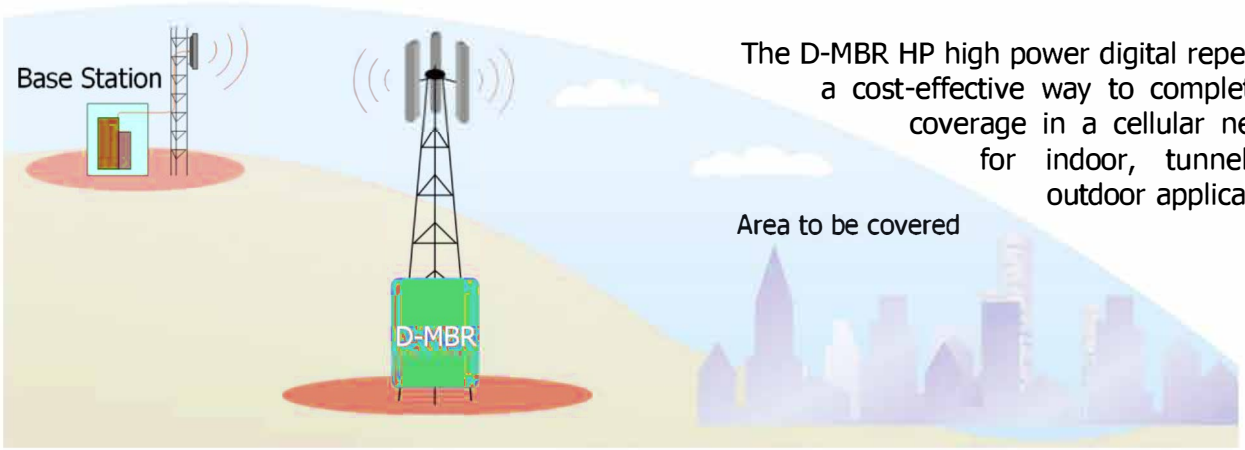
The PBE Axell D-MBR family is specifically designed for outdoor and in building GSM, WCDMA and LTE applications. It supports up to 12 sub bands in each band (with optional for non-contiguous sub-bands). Due to its state of the art DSP filtering, it can support all technologies in the same repeater.

D-MBR fully meets ETSI and 3GPP standard requirements. Highly linear Power Amplifier components (MCPA) and innovative DSP filtering provide top level performance that supports high throughput of the latest EDGE, HSPA and LTE technologies. D-MBR utilizes proprietary IMOP mechanism. This is an innovative algorithm that ensures that the repeater will never oscillate, by measuring the isolation between the donor and service antennas and adjust the gain accordingly.

The low noise figure of the repeater, minimize noise rise at the donor cell site and the IMOP algorithm provides a robust way of dealing with poor isolation margin, protecting the system from oscillation.

The DSP based technology provides a specific gain and power setting for each sub-band. This allows providing different levels according to requested sub band.

D-MBR supports Intuitive web management GUI that can be accessed using any standard browser (no client installation required) through a local or remote connection via a wireless modem. Alarm notifications are sent via SNMP traps or SMS. With the PBE Axell advanced supervision and control management software (AEM), the entire deployment of repeaters can be monitored and controlled



The D-MBR HP high power digital repeater is a cost-effective way to complete the coverage in a cellular network for indoor, tunnel and outdoor applications.

Technical specification

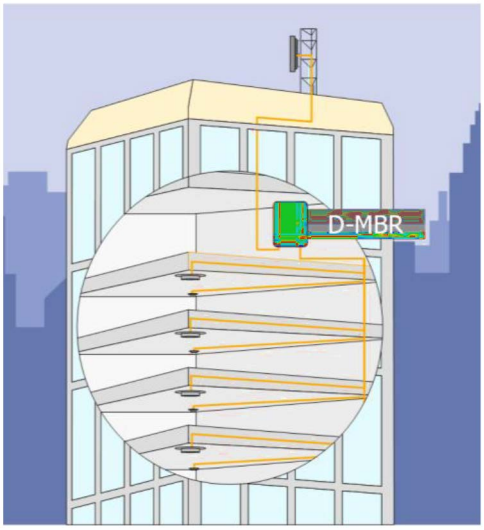
Radio Module for 700 MHz	Uplink	Downlink
Operating Frequency Range	703-733 MHz	758-788 MHz
Composite output power at antenna port (c)	28 dBm	40 dBm
Pass band maximum gain	90 dB	
Gain attenuation range	0-25 dB (in 1 dB steps)	
Pass band ripple	± 2 dB	
Noise Figure @ max gain	4 dB	5 dB
Propagation delay	6 µs	
Standards tested	4G	
Radio Module for 800 MHz	Uplink	Downlink
Operating Frequency Range	832-862 MHz	791-821 MHz
Composite output power at antenna port (c)	28 dBm	40 dBm
Pass band maximum gain	90 dB	
Gain attenuation range	0-25 dB (in 1 dB steps)	
Pass band ripple	± 2 dB	
Noise Figure @ max gain	4 dB	5 dB
Propagation delay	6 µs	
Standards tested	4G	
Radio Module for 900 MHz	Uplink	Downlink
Operating Frequency Range	880-915 MHz	925-960 MHz
Composite output power at antenna port (a)	28 dBm	40 dBm
Pass band maximum gain	90 dB	
Gain attenuation range	0-25 dB (in 1 dB steps)	
Pass band ripple	± 2 dB	
Noise Figure @ max gain	4 dB	5 dB
Propagation delay	7 µs	
Standards tested	4G	
Radio Module for 1800 MHz	Uplink	Downlink
Operating Frequency Range	1710 - 1785 MHz	1805 - 1880 MHz
Composite output power at antenna port (b)	28 dBm	37 dBm
Pass band maximum gain	90 dB	
Gain attenuation range	0-25 dB (in 1 dB steps)	
Pass band ripple	± 2 dB	
Noise Figure @ max gain	4 dB	5 dB
Propagation delay	7 µs	
Standards tested	GSM, 3G, 4G	
Radio Module for 2100 MHz	Uplink	Downlink
Operating Frequency Range	1920-1980 MHz	2110-2170 MHz
Composite output power at antenna port (c)	28 dBm	39 dBm
Pass band maximum gain	90 dB	
Gain attenuation range	0-25 dB (in 1 dB steps)	
Pass band ripple	± 2.5 dB	
Noise Figure @ max gain	3.5 dB	5 dB
Propagation delay	6 µs	
Standards tested	3G	
Radio Module for 2600 MHz	Uplink	Downlink
Operating Frequency Range	2500-2570 MHz	2620-2690 MHz
Composite output power at antenna port (c)	28 dBm	43 dBm
Pass band maximum gain	90 dB	
Gain attenuation range	0-25 dB (in 1 dB steps)	
Pass band ripple	± 2.5 dB	
Noise Figure @ max gain	3.5 dB	5 dB
Propagation delay	6 µs	
Standards tested	4G	

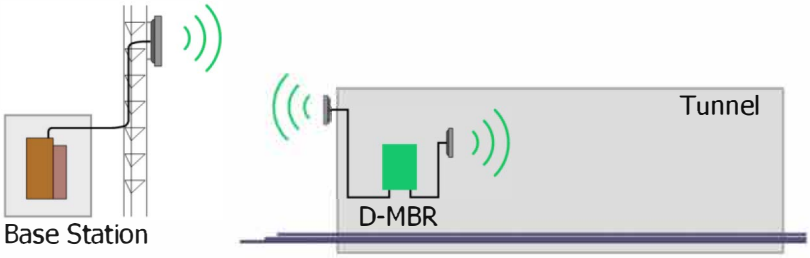
(a) For GSM 900 the maximum composite power is 37 dBm
(b) For GSM 1800 a minimum of 4 carriers (31 dBm/carrier) is required to utilize full DL output power
(c) Not tested for GSM

General electrical		
Number of filters		8 or 12
RF connector		N-Type female
Power Supply		120/230 VAC
Power Consumption		450VA max
Environmental specification		
Operating Temperature Range		-20°C to +50°C
Humidity		0 to 95% RHNC
IP rating		IP 65
Mechanical specification		
Dimensions		540 mm x 382 mm x 313 mm
Installation		wall mount
Weight		34 kg
Compliance		
EU Directives		2014/53/EU Radio Equipment Directive (RED) EU 2015/863 European RoHS 3 directive
Complies with RED	Safety	EN 62368-1
	EMC	EN 301 489-1 EN 301 489-50
	Radio	EN 301 908-1 EN 303 609 (GSM), EN 301 908-11 (3G) EN 301 908-15 (4G)

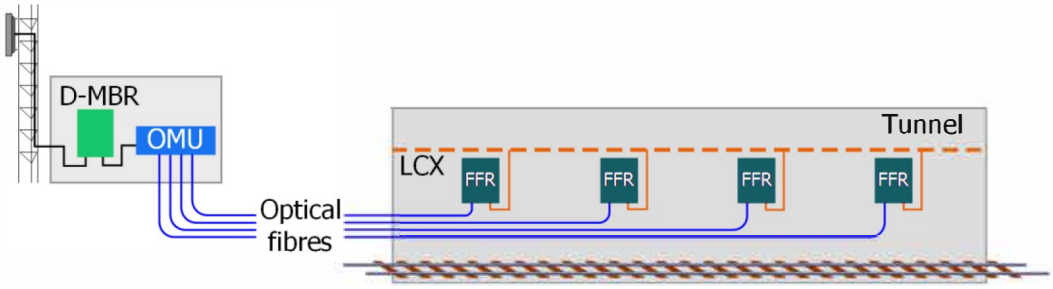
Typical uses for the D-MBR HP

The D-MBR can also be used as an off-air repeater to provide coverage for in-building applications and in shorter tunnels.





Longer tunnels can be covered by connecting the D-MBR to an PBE Axell Optical Master Unit (OMU) that feeds a number of fibre fed repeaters.



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