

EGATEL® MRD5000 Series

Microtransposers / Gap - fillers

DVB-T/H, DVB-T2, ISDB-T/TB, ATSC

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The MRD5000 micro-transposer / gap-filler series allows for a simple and affordable extension of coverage in MFN / SFN networks. Each channel is composed of a single module and up to seven channels can be delivered within a standard 19" 6U height frame. The reception / transmission channels are fully programmable in a very easy and fast way. The high selectivity allows to work in presence of adjacent channels; besides, it optionally incorporates a digital processing echo-canceller that effectively decreases the bandpass ripple resulting from an inadequate isolation between transmission and reception antenna systems. The control unit demodulates and measures the BER in all transmitted channels and also provides through the external display a comprehensive management of the system. It allows either remote control or monitoring via free contacts, GSM modem / SNMP or Web Server.

- Up to seven modules in a 19" - 6U frame.
- Output power (before filter):
DVB-T/H/T2, ISDB-T/TB:
- MRD5010: 0.3 Wrms / 1.25 Wrms / 2.5 Wrms
- MRD5050: 6 Wrms
ATSC:
- MRD5010: 0.45 Wrms / 2 Wrms / 3.75 Wrms
- MRD5050: 9 Wrms
- High sensitivity and selectivity (> 40 dB to \pm 4.2 MHz).
- Input / Output frequency continuous tuning between 470 and 862 MHz without readjustments.
- MFN and SFN modes.
- Non-linear precorrector with independent adjustments AM / AM and AM / PM.
- Linear precorrection with amplitude - frequency response and group delay correction.
- Highly stable internal frequency reference with the possibility of external synchronization.
- IF input / output connectors externally accessible.
- High performance echo canceller (opt.).
- Antioscillation system (SAO) with automatic regulation of output power.
- Integrated control unit with BER measurement in all the transmitted channels.
- Only one 24 VDC reference supply voltage for all modules. Redundance (opt.)
- Configurable via easy - to - use push - buttons / display.
- N+1 redundancy (opt.) (MRD5000N series).
- Remote control and monitoring via potential free contacts or GSM / GPRS modem, SNMP.
- Web browser optional (through CCU5000).

TECHNICAL SPECIFICATIONS

MICRO - TRANSPOSER / GAP - FILLER (MRD5010/MRD5050)

RF input		
Signal type	One DTV channel	
Frequency band	470 - 862 MHz (continuous tuning)	
Sensitivity	-75 ... -20 dBm	
Selectivity (Pi = -40 dBm)	> 40 dB ± 4.2 MHz / > 80 dB ± 4.2 MHz (with echo canceller)	
Noise figure	< 6 dB (Pin < -47 dBm)	
RF / IF conversion	Simple conversion	
Connector	BNC (F) 50 ohm	
Return losses	> 18 dB	
Echo canceller		
Cancellation level	> 30 dB	
Maximum echo level	+15 dBc (main signal)	
Delay	4.5 us	
Cancellation window	7.7 us	
RF output		
Signal type	One DTV channel	
Frequency band	470 ... 862 MHz	
Output power by model (before filter) (*)	MRD5010	MRD5050
- DVB-T/H/T2, ISDB-T/TB	0.3 / 1.25 / 2.5 Wrms	6 Wrms
- ATSC	0.45 / 2 / 3.75 Wrms	9 Wrms
Output power stability	< ± 0.2 dB	
Intermodulation	> 40 dB (MRD5010) / > 38 dB (MRD5050)	
Connector	N (F) 50 ohm	
Return losses	> 18 dB	
Clock and synchronization		
Internal reference	10 MHz	
External reference	10 MHz. Level: 100 mV - 3 Vpp. Connector: SMA (F)	
General		
Temperature	0 ... 45°C	
Relative humidity	95% max. (non - condensing)	
Supply voltage	24 Vdc	
Consumption	23 W / 31 W (MRD5010) with / without canceller - 45 W / 53 W (MRD5050) with / without canceller	
Cooling	Convection / Forced air	
Dimensions (H x D x W)	262 x 250 x 45 mm	
Weight	1.5 Kg approx.	

HOUSING FRAME

Input RF splitter (opt.)	
Number of inputs / Number of outputs	1 to 3 / 7 + 3 of test (max.)
Insertion losses	4 ... 9 dB (depending of number of outputs)
Output combiner (opt.)	
Number of inputs / Number of outputs	6 max. Connector BNC (F) - 50 ohm / 2 max. Connector N (F) - 50 ohm
Insertion losses	1 dB max.
Aux. outputs	-30 dBc
Power supply	
P.S. units	1 (2 optional).
Input / Output voltage	90 - 264 VAC / 24 VDC
Max. power per unit	240 W / 500 W
General	
Dimensions	19" - 6U (10U opt.)
Weight	20 Kg max.
Configuration	Wall mounting, outdoor cabinet or 19" rack

CONTROL UNIT CCU5000

RF Inputs (2X)	
Level	-30 ... -0 dBm
BER post Viterbi	1xE-1 ... 1xE-6
Supervision	Dry contacts, GSM / SNMP / Web Server (opt.)
Power consumption	24 Vdc - 3 W
Dimensions (H x D x W)	262 x 230 x 45 mm
Weight	1.3 Kg

(*) The models are referenced according to standard: MRD50x0 - DVB-T/H/T2, MRD50x0B - ISDB-T/TB, MRD50x0A - ATSC
Example: MRD5050B - 6 Wrms ISDB-T/TB

Remark: To comply with the out-of-band emissions regulations and with the required shoulder attenuation, the RF output of the micro devices must be connected to an appropriate filter.