

DIGITAL GAP-FILLERS (SFN REPEATERS) AND TRANSPOSERS (MFN REPEATERS)



1mW to 20Wrms



50W to 150Wrms

VHF / UHF

All standards: DVB-T/H, DVB-T2, ISDB-T, ATSC, DAB

In this **compact** Gap-Filler (only 1RU or 3RU) the echo cancellation algorithm is optimized for each **digital standard** (DVB-T/H, DVB-T2, ISDB-T, ATSC and DAB) so as to get full performance.

It fits an **LCD screen** for local control. The change of frequency is immediate thanks to its **agile** Up-Converter. It can also perform **adaptive pre-correction** in all UHF band.

It offers an outstanding wide dynamic **input range**, from **-75dBm to 0dBm** after the receiving antenna. This allows its use in different environments regarding Output Power, Echoes and out of band signals. And it performs **output power dynamic regulation** to maintain parameters (MER) in case of changing conditions.

The powerful **adaptive Echo Canceller** is able to cancel Echoes up to +18dB higher than the Input power. The minimum attenuation to main echo is **more than 35dB (typically 40dB)**. This means that, in case of having an Echo of +10dB over the signal at the input of the Gap Filler, the Echo at the output will be at least 25dB lower than the Output signal.

As a consequence, amplitude/frequency response is completely flat and provides additional **Adjacent channel filtering** without MER degradation.

OPTIONS

OUTPUT POWER	
P1	1mWrms (DVB-T/T2, ISDB-T, DAB) / 1,5mWrms (ASTC)
P2	75mWrms (DVB-T/T2, ISDB-T, DAB) / 110mWrms (ASTC)
P3	0,5Wrms (DVB-T/T2, ISDB-T) / 1,5Wrms (ASTC)
P4	20Wrms (DVB-T/T2, ISDB-T, ASTC)
P4	75Wrms (DVB-T/T2, ISDB-T) / 100Wrms (ASTC)
P5	100/150Wrms (DVB-T/T2, ISDB-T, DAB, ASTC)

MODULATION	
M1	DVB-T/H, DVB-T2, ISDB-T
M2	ATSC
M3	DAB

OTHER	
O1	Adaptive precorrection
O2	Automatic Switchover unit for dual driver or 1+1
O3	Ethernet interface (RJ45) for control (External unit)
O4	Colour Touchscreen GUI (only ≥50W), comes with option RJ45
O5	Band (Band III or UHF)
O7	O74: 4-cavity output filter O76: 6-cavity output filter

SPECIFICATIONS

General

Output power	1mW - 150Wrms	See options above
Standards	DVB-T/H, DVB-T2, ISDB-T, ATSC, DAB	
Frequency	1mW and 75mWrms: 174-862 MHz (BIII&UHF) 0,5W and 20Wrms: 470-862 MHz (UHF) 50-150Wrms: 174-862 MHz or 470-862 MHz	8 MHz standard. Also 7, 6 & 5 MHz
Connectors	Input: SMA. Output SMA ($\leq 20W$), 7/16 ($\geq 50W$)	Adaptors available

Quality parameters

MER (DVB-T) (at nominal output power)	1mW-75mW > 41 dB 0,5Wrms > 37 dB (41dB with precorrection) 20Wrms > 32 dB (39dB with precorrection) 50-150Wrms > 37dB (with precorrection)	Measured in the worst channel UHF Adaptive precorrection optional
Shoulders (DVB-T) (at nominal output power)	1mW-75mWrms > 50 dB 0,5Wrms > 42 dB (47dB with precorrection) 20Wrms > 35 dB (45dB with precorrection) 50-150Wrms > 40dB (with precorrection)	Measured in accordance with ETSI 101 290 before output filter
Dynamic input range	= 75 dB	From -75 dBm to 0 dBm
Noise Figure	< 4 dB	Receiver at maximum gain
Cancellation of Main Echo	> 35 dB (typically 40dB)	
Image channel rejection	> 90 dB	With standard RF input filter
MER degradation when cancelling echoes	MER degradation is negligible with Echo < 5dB	MER > 32dB with Echo: +10dB (if MER > 34dB without Echo)
Non-essential radiations	< -85 dBc	With respect to r.m.s. power
Short term stability	$\pm 1 \times 10^{-7}$ when locked to VTCXO	$\pm 1 \times 10^{-8}$ with optional OCXO
LO Phase noise	< -90 dBc/Hz @ 1kHz	For UHF (for VHF is even better)
Frequency resolution	1 Hz steps	Based on DDS

Control

Monitoring points	RF level, IF level, LO level	SMA connectors
Local control	LCD and keyboard, RS-232, RS-485 Color touchscreen GUI (option) for $\geq 50W$	Color touchscreen option comes together with RJ45 option
Remote control	1. User console to access all parameters 2. BTESA network management system for minimum data rate (Optional) 3. SNMP agent (Optional)	External unit (1RU) for RJ45 One unit can collect the information of all transmitters in the station and send it remotely

Mechanical and Electrical

Dimensions (WxDxH) (mm) Weight	1mW to 0,5Wrms: 442 x 460 x 44,45 – 5,5 kg 20Wrms: 442 x 480 x 44,45 – 6 kg 50W to 150Wrms: 442 x 480 x 133,35 – 21kg	19", 1RU for $\leq 20W$ 19", 3RU for $\geq 50W$ (4RU with color touchscreen option)
Power supply	110V $\pm 20\%$ / 220V $\pm 20\%$ 50Hz/60Hz and optionally redundant 48VDC	Opt: Both AC and DC inputs can be connected at the same time
Power Factor	> 0.95	Dynamic PF correction
Consumption (DVB-T)	1mWrms: 70VA / 75mWrms: 75VA 0,5Wrms: 110VA / 20Wrms: 220VA 75Wrms: 615VA / 100Wrms: 900VA	Others consult
Temperature range	0° to +45° C	
Humidity	Up to 95%	without condensation
Altitude	Up to 2.500 m above sea level	Higher upon request

Specifications subject to change without notice



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