

M-VISION High Efficiency Broadband Doherty



M-VISION Series represents the state of the art of the worldwide TV transmitter technology. In a compact solution **2 RU**, it covers a power range up to 400W rms / 600W p.s. and supports DVB-T/H / T2, ISDB-T/Tb, DTMB, DAB/DAB+/T-DMB, ATSC, PAL and NTSC modulations. Of course, Dual Cast analog and digital configuration is also supported.

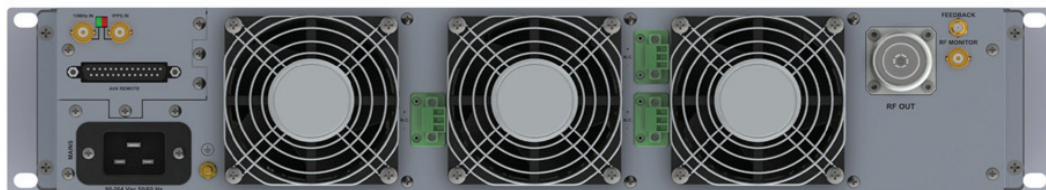
M-VISION offers adaptive pre-correction in both analog and digital configuration.

M-VISION can be a medium power transmitter, a regenerative transmitter or even a transposer, Gap Filler with Single Frequency Echo Canceller (perfect for Single Frequency Network), all in a single hardware.

It can be equipped and configured with different input interfaces (Audio/Video, Satellite Receiver, ASI, Gigabit Ethernet or RF).

M-VISION allows selection of transmission modes remotely using or SNMP commands or TCP/IP using the Web graphic interface. Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.

Thanks to the internal Web server the apparatus can be easily monitored and configured and updated using a LAN connection and a standard Web browser. Moreover, the built-in SNMP agent allows full automated remote control.



MAIN FEATURES

- Compact 2U 19" Rack chassis
- Output Power up to 400W rms in digital or up to 600 W p.s. in analogue
- High efficiency wideband or broadband amplifier technology
- DVB-T/H/T2, ISDB-T/Tb, DTMB, DAB/DAB+/T-DMB, ATSC, PAL, NTSC modulations fully supported
- Embedded Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter for ISDB-Tb
- Adaptive pre-correction circuits
- Powerful echo canceller when OneCompact is used as an on-channel repeater
- On-board high stability GPS / GLONASS receiver with battery
- Flexible input interfaces:
 - 4 x ASI inputs (TS, BTS, T2MI, SMPTE-310M) + Analog input
 - 2 x ASI inputs and 2 x Gigabit Ethernet
 - 1 x DVB-S/S2 Satellite Receiver input
 - 1 x RF input
- SNMP, Web Interface (HTML 5)



SPECIFICATIONS

TRANSMITTERS

UHF digital output power:	up to 400 W rms @ MER 38 dB typ. (DVB, ISDB)
UHF analogue output power:	up to 600 W p.s.
VHF Digital output power:	up to 250 W rms @ MER 37 dB typ. (DVB, IS-DB)
VHF analogue output power:	up to 600 W p.s.
Frequency agility:	UHF Band IV and V or VHF Band III
Frequency resolution:	1 Hz
Pre-correction:	Adaptive
RF connector:	7/16 (f), 50 Ohm

MODULATOR

DVB-T/-H/-T2

Standard:	EN300744, EN302304, EN302755, TS101191, TS102773 (T2-MI), TS102034
Inputs:	4x ASI BNC (f), 75 Ohm or 2x ASI BNC (f), 75 Ohm and 2x RJ45 TS oIP 10/100/1000 Switch seamless between ASI inputs. Hierarchical and not hierarchical (DVB-T)
FFT:	1K (DVB-T2), 2K, 4K, 8K, 8K ext. (DVB-T2), 16K & 16K ext. (DVB-T2), 32K & 32K ext. (DVB-T2)
Code rate:	All modalities available according to the standard Block Short or Normal (DVB-T2) DVB-T: Reed-Solomon (204, 188) DVB-T2: BCH, LDPC
Guard interval:	1/32, 1/16, 1/8, 1/4, 19/256 (DVB-T2), 19/128 (DVB-T2), 1/128 (DVB-T2)
Constellation:	QPSK, 16QAM, 64QAM, 256QAM (DVB-T2). Rotated and non rotated (DVB-T2)
MISO processing:	Supported

ISDB-Tb

Standard:	ABNT NBR 15601, ABNT NBR 15603
Inputs:	4x ASI TS/BTS BNC (f), 75 Ohm or 2x ASI TS/BTS BNC (f), 75 Ohm and 2x RJ45 TS/BTS oIP 10/100/1000
FFT:	Mode 1 (2K), Mode 2 (4K), Mode 3 (8K)
Code rate:	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval:	1/4, 1/8, 1/16, 1/32
Hierarchical modulation:	Up to 3 layers
Constellation:	QPSK, 16QAM, 64QAM
Time interleaver:	Fully supported
Partial reception:	Supported

DAB/DAB+/T-DMB

Standard:	EN 300401, ETS 300 799
Inputs:	4x ETI (NI[G703], NA5376[G704] or NA5592[G704]) BNC (f), 75 Ohm
Transmission modes:	Mode I, II, III, IV (Automatically detected from the ETI stream, or user selectable)
Operation:	MFN or SFN operations

ATSC

Standard:	A/53, A/110
Inputs:	4x ASI / SMPTE-310M BNC (f), 75 Ohm or 2x ASI / SMPTE-310M BNC (f), 75 Ohm and 2x RJ45 TS oIP 10/100/1000
Modulation:	8-VSB
Input bit rate:	19.39 Mbit/s
Bandwidth:	6 MHz
Max processing delay:	Up to 1 second (programmable)

Analogue

Standard:	B, G, D, K, M, N, I
Inputs:	Video BNC (f), 75 Ohm, audio Tini-QG "Mini XLR", 6 Pin (m), 600 Ohm
Color system:	PAL, NTSC

SATELLITE RECEIVER (Option)

Standard:	ETSI EN 300 421 (QPSK) (DVB-S) ETSI EN 302 307 (QPSK, 8PSK, 16APSK) (DVB-S2) ETSI EN 50083-9 (ASI) ETSI EN 50221 (Common Interface)
DVB-S2:	VCM, CCM, Multi Stream and Single Stream, Normal & Short FEC frames

Symbol rate:	1 - 45 Msym/s (DVB-S) 2 - 45 Msym/s (DVB-S2)
Constellation:	QPSK, 8PSK, 16APSK
FEC:	Automatic, all modalities available according to the standard Block Short or Normal DVB-S: Reed-Solomon (204,188) DVB-S2: BCH, LDPC
Roll-Off:	0.2, 0.25, 0.35
Input connector:	F (f), 75 Ohm
Frequency:	L-band 930÷2250 MHz
LNB control voltage:	Off, +13/18 Vdc, 22 kHz, 0.25 A (overload protection)
RF input level:	40 ÷ 100 db/μV (with attenuator)
Output connector:	BNC (f), 75 Ohm
Modality:	188 bytes
Max input bit rate:	80 Mbps (CAM limit: 72 Mbps)
CAM interface:	PCMCIA DVB-CI Common Interface
CAM mode (Conditional Access):	Multicrypt
CAS support:	Mediaguard, Viaccess, Irdeto, Conax, BISS with Professional multiprogram CAM (descrambling of up to 24 Elementary Streams) Betacrypt, Cryptoworks, Nagravision with standard consumer CAM (descrambling of up to 4 services)

GPS / GLONASS (Option)

Input connector:	N (f), 50 Ohm
Input/Monitor output 10 MHz:	BNC (f), 75 Ohm
Input/Monitor output 1 PPS:	BNC (f), 75 Ohm
Phase noise:	-140 dBc/Hz @ 10 kHz -150 dBc/Hz @ 100 kHz
Stability:	1e-12 / 24 H with disciplined OCXO
Hold-over stability:	5 μs after 5 hours (optional 1 μs after 24 hours)

MECHANICAL

Chassis:	2U rack 19"
Width:	482 mm
Height:	87.1 mm
Depth:	460.5 mm without fans
Weight:	14 Kg

CONTROLS

Web GUI	
SNMP	
GPIO	

ENVIRONMENTAL

Operating temperature range:	-5°C ÷ 40°C
Max. relative humidity:	90% non condensing
Max. operating altitude:	2500 m. a.s.l. (>2500 m. optional)

ELECTRICAL

Power supply:	Single Phase 100÷240 V~ 50/60 Hz, IEC320 C20 Plug
Efficiency:	Up to 40% efficiency in digital (UHF models)

NOTES

To comply with the applicable standards and limit values for the suppression of out-of-band emissions (and in the case of digital standards, also for maintaining the required shoulder distance), the transmitter may only be operated with suitable filters at the RF output.

Specifications are subject to change without notice.