

## MOT MULTICAST LIQUID COOLED SERIES

The TV transmitters **MOT MULTICAST LIQUID COOLED** can be used as analog and digital transmitters and they can be configured with different input interfaces. They are suitable for DVB-T/H, DVB-T2, ISDB-T/TB and ATSC standards, in addition to PAL and NTSC on its analog version; they also include adaptive pre-correction and a high precision GPS receiver for SFN networks.



### MAIN ADVANTAGES

- High efficiency wideband amplifiers technology.
- Embedded Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter for ISDB-TB.
- Adaptive pre-correction.
- On-board high stability GPS receiver with battery.
- Flexible input interfaces.
- SNMP, web interface and touch screen display.
- Able to meet or exceed all the DTV International Broadcasters requirements.
- More robust and efficient, with a special low-loss design of matching and combining system, together with extremely high efficiency power supplies (over 96% efficiency).
- Compactness: Optimized heatsink and ultra-compact power supplies grant the minimum size of amplifier modules with air cooling systems and a greatly reduced size of the cooling system itself.
- Redundant system for pumping cooling liquid through double pump with switching operation, minimizing cooling leaks.
- **Hot-Swap** system for modules extraction.

### GENERAL CHARACTERISTICS

<b>PRECORRECTION</b>	Lineal an non-lineal adaptive
<b>MER</b>	>36dB for any output power
<b>FREQUENCY AGILITY</b>	Bands I- III-IV-V
<b>FREQUENCY STABILITY</b>	2*10-8@10MHz long period
<b>DIMENSIONS</b>	Standard rack units of 19"
<b>CONTROL</b>	Front panel, web interface, SNMP and GPIO
<b>OPERATING TEMPERATURE</b>	-5 to +40°C
<b>MAXIMUM RELATIVE HUMIDITY</b>	90% without condensation

## MODELS

	DVB, ISDBT output power	ATSC output power	Analog output power	Working band	Nº modules	RF output CNC	Power supply
<b>MOT 10000 MULTICAST LIQUID</b>	5KW rms	6KW rms	10KW ps	IV-V	4	EIA 3+1/8"	Three-phase 208-400V
<b>MOT 12000 MULTICAST LIQUID</b>	6.2KW rms	7.5KW rms	12KW ps	IV-V	6	EIA 3+1/8"	Three-phase 208-400V
<b>MOT 20000 MULTICAST LIQUID</b>	10KW rms	12KW rms	20KW ps	IV-V	8	EIA 3+1/8"	Three-phase 208-400V
<b>MOT 25000 MULTICAST LIQUIDO</b>	12.5KW rms	18KW rms	25KW ps	IV-V	12	EIA 4+1/2"	Three-phase 208-400V
<b>MOT 30000 MULTICAST LIQUID</b>	15KW rms	18KW rms	30KW ps	IV-V	12	EIA 4+1/2"	Three-phase 208-400V
<b>MOT 40000 MULTICAST LIQUID</b>	20KW rms	24KW rms	40KW ps	IV-V	16	EIA 4+1/2"	Three-phase 208-400V
<b>MOT 60000 MULTICAST LIQUID</b>	30KW rms	36KW rms	60KW ps	IV-V	24	EIA 4+1/2"	Three-phase 208-400V

*\*other powers or configurations under request.*

## MODULATOR

	DVB-T/-H/-T2
<b>STANDARD</b>	EN300744, EN302304, EN302755, TS101191, TS102773 (T2-MI), TS102034
<b>INPUTS</b>	4xASI BNC(F) 75 Ohm, 2xRJ45 TSoIP 10/100/1000 Seamless switching between ASI inputs. Hierarchical and not hierarchical (DVB-T)
<b>FFT</b>	1K (DVB-T2), 2K, 4K, 8K, 8K ext. (DVB-T2), 16K & 16K ext. (DVB-T2), 32K & 32K ext. (DVB-T2)
<b>CODE RATE</b>	All modalities available according to the standard Block Short o Normal (DVB-T2) DVB-T: Reed-Solomon (204, 188) DVB-T2: BCH, LDPC
<b>GUARD INTERVAL</b>	1/32, 1/16, 1/8, 1/4, 19/256 (DVB-T2), 19/128 (DVB-T2), 1/128 (DVB-T2)
<b>CONSTELLATION</b>	QPSK, 16QAM, 64QAM, 256QAM (DVB-T2). Rotated and non rotated (DVB-T2)
<b>MISO PROCESSING</b>	Supported

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<b>ISDB-TB</b>	
<b>STANDARD</b>	ABNT NBR 15601, ABNT NBR 15603
<b>INPUTS</b>	4xASI TS/BTS BNC (F), 75 Ohm or 2xASI TS/BTS BNC (F), 75 Ohm & 2xRJ45 TS/BTSoIP 10/100/1000
<b>FFT</b>	Mode 1 (2K), Mode 2 (4K), Mode 3 (8K)
<b>CODE RATE</b>	1/2, 2/3, 3/4, 5/6, 7/8
<b>GUARD INTERVAL</b>	1/4, 1/8, 1/16, 1/32
<b>HIERARCHICAL MODULATION</b>	Up to three layers
<b>CONSTELLATION</b>	QPSK, 16QAM, 64QAM
<b>TIME INTERLEAVER</b>	Supported
<b>PARTIAL RECEPTION</b>	Supported
<b>ATSC</b>	
<b>STANDARD</b>	A/53, A/110
<b>INPUTS</b>	4 x ASI / SMPTE-310M BNC (F) 75 Ohm, 2 x RJ45 TSoIP 10/100/1000
<b>MODULATION</b>	8-VSB
<b>INPUT BIT RATE</b>	19.39 Mbit/s
<b>BANDWIDTH</b>	6MHz
<b>MAX PROCESSING DELAY</b>	Up to 1 second (programmable)
<b>ANALOG</b>	
<b>TV REGULATION</b>	B, G, D, K, M, N, I1
<b>VIDEO INPUTS</b>	CVBS, 4xSDI BNC(F), 75 Ohm
<b>AUDIO INPUTS</b>	Balanced audio 600 Ohm mini XLR(M), SDI embeded
<b>COLOUR STANDARDS</b>	PAL, NTSC
<b>AUDIO STANDARDS</b>	IRT dual sound, FM (-10dB)
<b>VIDEO INPUT</b>	0.5-1.5V
<b>DIFFERENTIAL GAIN</b>	±3%
<b>DIFFERENTIAL PHASE</b>	±3°
<b>LOW FREQUENCY LINEARITY</b>	8%
<b>ICPM</b>	±2"
<b>S/N</b>	>60dB
<b>K FACTOR</b>	2%
<b>20T</b>	3%
<b>SPURIOUS AND HARMONICS</b>	>60dB
<b>CHANNEL INTERMODULATION</b>	>58dB
<b>MODULATION CAPABILITY</b>	±120KHz
<b>MONAURAL INPUT</b>	Programmable 0-12dBm
<b>PRE-EMPHASIS</b>	50/70µs
<b>FREQUENCY RESPONSE</b>	±0.5dB from 30Hz-15KHz
<b>HARMONIC DISTORTION</b>	0.5% from 30Hz-15KHz
<b>AM NOISE</b>	50dB from 30Hz-15KHz

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**GPS**

<b>INPUT CONNECTOR</b>	TNC(F), 50 Ohm
<b>INPUT/OUTPUT MONITOR 10MHz</b>	BNC(F), 75 Ohm
<b>INPUT/OUTPUT MONITOR PPS</b>	BNC(F), 75 Ohm
<b>HOLD-OVER STABILITY</b>	5 $\mu$ s after 5 hours (optional 1 $\mu$ s after 24 hours)

NOTE: These transmitters have to be operated with suitable filters at the RF output, so as to meet the standards and limits for the suppression of out of band emissions.

*\* The images and/or technical specifications are subject to change without previous notice.*

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