# MOT 20 A

The digital TV modulator **MOT 20 A** can be used as an analog and digital transmitter. This device has an analog output power of 20W ps, a digital output power of 5W rms in DVB-T/T2 and ISDBT, and 6W rms in ATSC. It can be configured with different input interfaces and it is suitable for DVB-T/H, DVB-T2, ISDB-T/TB and ATSC standards, in addition of PAL and NTSC on its analog version. It includes adaptive pre-correction and a high precision GPS receiver for SFN networks.

## MAIN ADVANTAGES

- High efficiency wideband amplifiers technology.
- Compatible with PAL, NTSC, DVB-T/H, DVB-T2, ISDB-T/TB and ATSC modulations.
- Multiple modulations available and selectable for the user.
- With Re-Multiplexer/BTS Adapter and Layer Combiner for ISDB-TB.
- Lineal, non-lineal and adaptive pre-correction.
- On-board high stability GPS receiver.
- Flexible input interfaces.
- MFN and SFN modes.
- SNMP, web interface and LC display indicator.

## GENERAL CHARACTERISTICS

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|---|---|
| **ANALOG OUTPUT POWER** | 20W ps |
| **DIGITAL OUTPUT POWER DVB-T/T2, ISDBT-TB** | 5W rms |
| **DIGITAL OUTPUT POWER ATSC** | 6W rms |
| **MER** | >36dB for any output power |
| **FREQUENCY AGILITY** | Bands IV-V |
| **FREQUENCY STABILITY** | 2*10-8@10MHz long period |
| **RF OUTPUT CONNECTOR** | N(F), 50 Ohm |
| **POWER SUPPLY** | Single phase 100-240V, 50/60Hz |
| **AVERAGE CONSUMPTION** | 220V |
| **DIMENSIONS** | One standard rack unit of 19” |
| **CONTROL** | Front panel, web interface, SNMP and GPIO |
| **OPERATING TEMPERATURE** | -5 to +45°C |
| **MAXIMUM RELATIVE HUMIDITY** | 95% without condensation |
| **APPROXIMATE WEIGHT** | 7Kg |

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# MODULATOR

| | |
|---|---|
| **DVB-T/-H/-T2** | |
| **STANDARD** | EN300744, EN302304, EN302755, TS101191, TS102773 (T2-MI), TS102034 |
| **INPUTS** | 4xASI BNC(F), 75 Ohm & 2xRJ45 TSoIP GBE<br>Switch seamless between ASI inputs.<br>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<br>Block Short or Normal (DVB-T2)<br>DVB-T: Reed-Solomon (204, 188)<br>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).<br>Rotated and non rotated (DVB-T2) |
| **MISO PROCESSING** | Supported |
| **ISDB-TB** | |
| **STANDARD** | ABNT NBR 15601, ABNT NBR 15603 |
| **INPUTS** | 4xASI TS/BTS BNC (F), 75 Ohm<br>& 2xRJ45 TS/BTSoIP GBE |
| **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 three layers |
| **CONSTELLATION** | QPSK, 16QAM, 64QAM |
| **TIME INTERLEAVER** | Supported |
| **PARTIAL RECEPTION** | Supported |
| **ATSC** | |
| **STANDARD** | A/53, A/110 |
| **INPUTS** | 4xASI/SMPTE-310M BNC(H), 75Ohm<br>& 2xRJ45 TSoIP GBE |
| **MODULATION** | 8-VSB |
| **INPUT BIT RATE** | 19.39 Mbit/s |
| **BANDWIDTH** | 6MHz |
| **MAX PROCESSING DELAY** | Up to 1 second (programmable) |

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| ANALOG | |
|---|---|
| **TV REGULATION** | B, G, D, K, M, N, I1 |
| **VIDEO INPUTS** | CVBS, 4xSDI BNC(F), 75 Ohm |
| **AUDIO INPUTS** | Balanced audio 600 Ohm mini XLR(M), SDI embebed |
| **COLOUR STANDARDS** | PAL, NTSC |
| **AUDIO STANDARDS** | IRT dual sound, FM (-10dB) |
| **VIDEO INPUT** | 0.5-1.5V |
| **DIFFERENTIAL GAIN** | ±3% |
| **DIFFERENTIAL PHASE** | ±3◦ |
| **LOW FREQUENCY LINEARITY** | 8% |
| **ICPM** | ±2” |
| **S/N** | >60dB |
| **K FACTOR** | 2% |
| **20T** | 3% |
| **SPURIOUS AND HARMONICS** | >60dB |
| **CHANNEL INTERMODULATION** | >58dB |
| **MODULATION CAPABILITY** | ±120KHz |
| **MONAURAL INPUT** | Programmable 0-12dBm |
| **PRE-EMPHASIS** | 50/70µs |
| **FREQUENCY RESPONSE** | ±0.5dB from 30Hz-15KHz |
| **HARMONIC DISTORTION** | 0.5% from 30Hz-15KHz |
| **AM NOISE** | 50dB from 30Hz-15KHz |
| **FM NOISE** | 60dB with de-emphasis |
| **SYNCHRONOUS AM NOISE** | >50dB |

## GPS

| | |
|---|---|
| **INPUT CONNECTOR** | TNC(F), 50 Ohm |
| **INPUT/OUTPUT REFERENCE 10MHz** | BNC(F), 75 Ohm |
| **INPUT/OUTPUT REFERENCE 1PPS** | BNC(F), 75 Ohm |
| **HOLD-OVER STABILITY** | 5µs after 5 hours (optional 1µs 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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