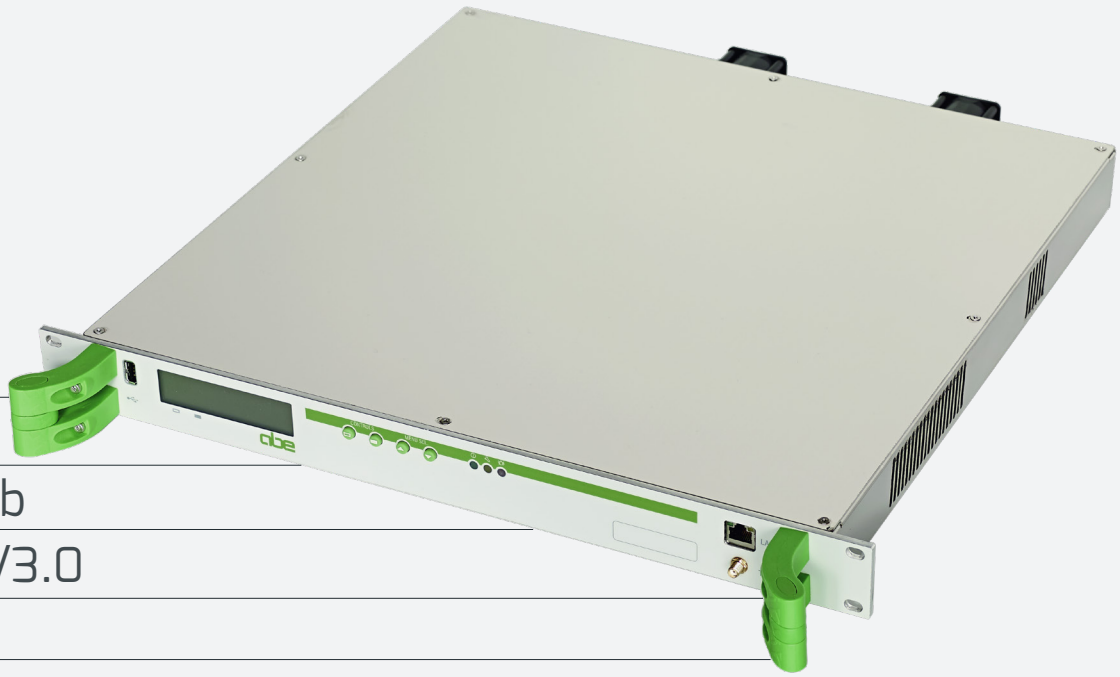
MTX

Low power series - Driving units

MULTISTANDARD DIGITAL & ANALOG
TV TRANSMITTER LINE



DVB-T/H
DVB-T2
ISDB-T/Tb
ATSC 1.0/3.0
DTMB
ANALOG
MULTISTANDARD

The high quality, professional and cost-effective solution

High reliability and compact size

Low power consumption

High performance digital & analog

Low cost of ownership

MTX

Low power series - Driving units

The MTX Series of Low Power Transmitter - Transposer is a professional product line, suitable for the integration in both analog and digital TV transmission networks (DVB-T/H, DVB-T2, ISDB-T/Tb and others, operating both MFN and SFN).

The equipment is fully contained in a **single 19" rack drawer** and is capable, with its **internal RF power amplifier**, to provide up to 10Wavg digital output (higher power on request) or 50Wp.s. in analog mode.

Featuring **modular construction** – with easily removable modules/boards having RF internal isolation – the MTX series exploits the advantages of **state of the art technological solutions** to achieve **high reliability** and comprehensive system flexibility – all at reduced size.

The transmitter is equipped with a **direct digital synthesis modulator** with the possibility to select any output frequency in the operating frequency range with 1Hz resolution.

For digital modulations, it is possible to equip the Transmitter with the **adaptive non-linear precorrection** module to automatically improve the MER. Also **adaptive linear precorrection** is available for specific configurations.

The **GNSS receiver** option, specifically developed for the timing function, provides time and frequency signals (1pps and 10MHz) necessary for the synchronization of the transmitter when operating in **SFN Mode**. This is a new concept Timing Reference GNSS Locked generator with unique special features, with proprietary algorithms, to prevent network de-synchronization and is also available in redundant configuration.

Maintenance as well as channel changing operations are simple and easy to perform.
Careful product design brings **high versatility**, enhanced by the provision of specific options and giving compliance with major world **digital and analog** terrestrial **TV broadcasting standards**.

SEVERAL **INTERFACE TYPES** ARE AVAILABLE FOR **DIFFERENT CONFIGURATIONS**

ADC

Analog to Digital Converter
Video/Audio analog inputs for analog modulation standards

ASI

Asynchronous Serial Interface

SAT/DTT

Satellite and Terrestrial receiver
Available standards: DVB-S/S2, DVB-T/T2, ISDB-T/Tb

CAM

Conditional Access Module
able to decrypt encoded Transport Streams

DVB-S/S2

Multistream Satellite receiver
Up to 32APSK modulation scheme

Ethernet

T.S. over IP
able to receive MPEG Transport Streams (encapsulation ProMpeg COP#3 rel.2)

GNSS

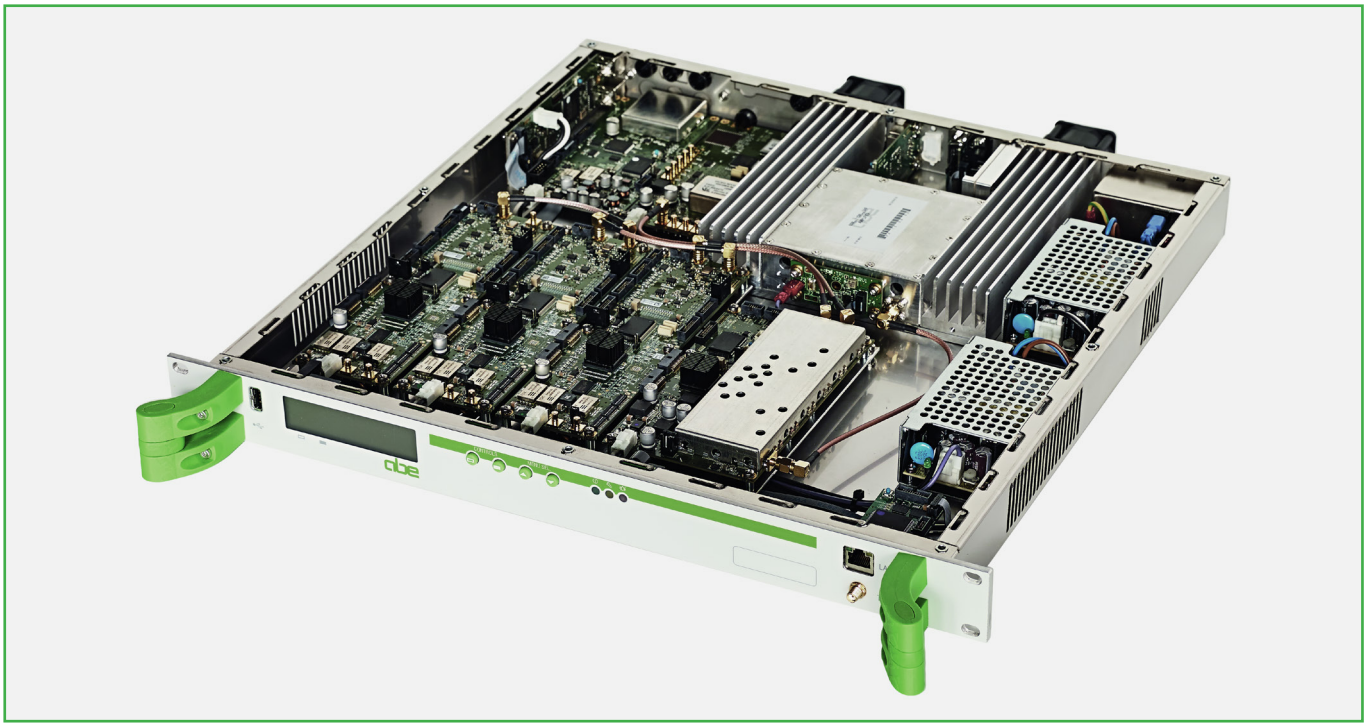
GPS-GLONASS receiver
for SFN applications

APD

Adaptive Linear and Non-Linear Pre-corrector

PRODUCT SKILLS

- Comprehensive monitoring, alarm and protection circuits, including a Power Amplifier **fold-back** function to reduce output power before tripping off, due to high VSWR, heat-sink over-temperature or overdrive
- **Warm-up** & **Soft-start** to avoid output power surges
- **MFN** and **SFN** operation
- Efficient air cooling system with long life blowers
- **Output filters** to comply with the emission mask specification requested
- High reliability and extremely **compact size (19" 1U)**
- MTX Multistandard Multimode modulator allow **dualcast operation** (analog and digital multistandard) and can be supplied with various options and in several configurations to satisfy Customer's need (wide choice of input interfaces, **linear and non-linear precorrection** with option for adaptive)
- Internal TV test pattern generator (color bars, red page, black page) for analog operation
- User Friendly **local and remote control** includes on-board display, WEB server, SNMP
- **ALC** (Automatic Level Control) to stabilize the Power Amplifier's RF output level over a limited range
- Remote or USB software upgrade available
- Available as OEM unit



SUSTAINABILITY
We design and build high performance and environmentally friendly equipment

MADE IN ITALY
Design and manpower are 100% Italian to guarantee quality and assistance

SOLIDITY
Being in the broadcast industry for over forty years is the most obvious proof of our seriousness

TECHNOLOGY
We believe it is essential to increase our technological know-how every day to provide excellent products

MTX

Low power series - Driving units

TECHNICAL SPECIFICATIONS

Output frequency range	VHF BI, BIII or UHF, according to the model
Output impedance	50Ω
Spurious, harmonics and out of channel IMD products	≤ -60dB (with RF output filter)
Frequency stability (-5 to +45°C)	≥ ±250Hz; option: GNSS locked reference for better than 1Hz stability
DIGITAL OPERATION SPECIFICATIONS	
Output power (before output filter)	up to 10Wavg (tol.+0/-0.5dB) according to the model
Transmission standard	DVB-T/H; DVB-T2; ISDB-T/Tb; ATSC; other on request
Intermodulation products (shoulders before output filter)	According to the model and output power typ. ≤42dB with reference to emission channel centre power density
MER – Modulation Error Ratio	According to the model and output power (min. ≥35dB) typ. ≥40dB in driving unit configuration @ low power
Input interface options	**ASI** - MPEG/DVB and BTS Transport Stream - 75Ω BNC Female **Ethernet** - MPEG TS over IP (as per Pro-MPEG CoP#3 release 2) **DVB-S/S2 receiver** - 950-2150MHz, all modulation schemes, code rates and roll-off factors, Multistream, PL scrambling decoding with gold code (CAM option) **DVB-T/T2, ISDB-T/Tb receiver** - VHF and UHF (CAM option)
Input switching	Automatic near-seamless switching between first and second priority. Option for seamless switching
ANALOG OPERATION SPECIFICATIONS	
Output power (after output filter)	up to 50Wp.s. (tol.+0/-0.5dB) according to the model
Transmission standard	B, G, D, H, I, K, K1, M or N - PAL, Secam and NTSC
In band intermodulation products	≤-56dB (typ. ≤-60dB – Test: V.C. -8dB; S.C. -10dB; C.S. -16dB)
Video input	1Vpp (75Ω BNC-f) – video processing include ALC and signal reconstruction
Transmitted Video quality parameters	Differential gain: within ≤±5% (typ. ≤±1%); Differential phase: ≤±3° (typ. ≤±1°) 2T K rating: ≤2% (typ. ≤1%); Random noise (weighted typical): ≤-60dB; Group delay response (V.C. to C.S.): Within ±40nS (typ. ≤±20nS) Amplitude / frequency response: (V.C. to C.S.): Within ±1dB (typ. ≤±0.2dB)
Audio input	0dBm (adjustable) 600 Ω bal. / unbal.
Audio options	Stereo / dual sound IRT; BTSC and other on request
Transmitted Audio quality parameters	Amplitude / frequency response: ±1dB (typ. ±0.5dB); Harmonic distortion: ≤0.4%
GENERAL SPECIFICATIONS	
Power supply	90-264Vac single phase. Other on request
Remote control interface options	RS485; Ethernet 10/100 Base-T (SNMP - web server) Remote firmware upgrade: supported
Housing	Rack drawer 19" 1U
Operating temperature range	-5 to +45°C
Maximum operative humidity	90% non condensing

ABE ELETTRONICA
Via Leonardo da Vinci, 224 - 24043 Caravaggio (BG) - Italy
Tel. +39 0363 35 10 07 - Fax +39 0363 50 756 - mail@abe.it - **www.abe.it**