MAXIVA™ PMTX-1

Low-Power UHF/VHF Outdoor Transmitter / Transposer / Gap-Filler

GatesAir's new Maxiva™ PMTX-1, is a complete self-contained, outdoor UHF/VHF transmitter system. Housed in a completely environmentally sealed enclosure, the PMTX-1 includes many options, allowing configuration flexibility for many applications.

The unit is capable of being configured as a transmitter, transposer (translator), or gap-filler. Waste heat is efficiently dissipated via the metal housing and heatsink; there is no active cooling and no fans. This allows the unit to be mounted on a variety of structures, including tower, legs, poles, or building walls. For regions with extreme climate conditions, options for ambient air temperatures up to +50°C (122°F) and down to -40°C (-40°F) are available.

Maxiva™ PMTX-1 Product Features

The compact dimensions (429W x 280D x 503H mm) of the Maxiva PMTX-1 chassis are key to this unique design, allowing installation on a wide variety of outdoor poles, or mast structures. Access is via a lockable and sealed door. The sealed metal housing of the PMTX-1 has been engineered to remove heat efficiently from the internal circuitry. The unique design of the PMTX-1 provides a high level of installation versatility, allowing it to be installed on virtually any suitable outdoor structure.

This versatile unit does not require a building, shelter, or any additional outdoor enclosure. The totally sealed metal case has been designed specifically for outdoor environmental conditions, providing protection from all humidity levels, precipitation, and wide temperature extremes.

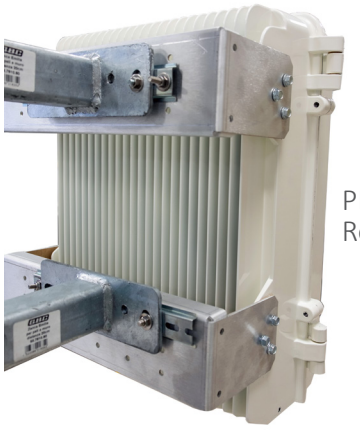
The unit can be configured and operated as a 50W digital / 100W analogue transmitter, gap-filler or transposer, with various input options. A satellite receiver card with CAM slot is also available. The unit includes an internal UHF or VHF mask filter, (for ATSC - low power Simple or Low power stringent mask only). The external power source requirement is 36-72 VDC (External power supplies are available separately).

- Compact chassis: 429W x 280D x 503H mm
- Outdoor, pole-mounted, using adapter plate
- Output Power (Post-Filter): 50W rms digital or 100W analogue
- Input interface options:
  - ASI, BTS, T2MI, SMPTE-310M
  - Gbe port (TS over IP)
  - EDI/ETI inputs for DAB/DAB+
- DVB-S/S2 Satellite Receiver input available (including CAM interface)
- RF receiver input for Transposer/Gap-Filler configuration (Direct Conversion – zero IF)
- Regenerative receiver input option for Transposer
- Supports DVB-T/H, ISDB-T/Tb, DVB-T2, ATSC, DAB/DAB+ & Analogue modulations
- Embedded Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter for ISDB-Tb
- Adaptive pre-correction circuits
- Optional High stability GPS / GLONASS receiver with battery
- SNMP, Web User Interface

Maxiva™ PMTX-1-U & PMTX-1-V

Mounting Options and Examples

PMTX-1
Front



PMTX-1
Rear

Can be mounted on various outdoor structures

Wall-mounted PMTX-1

Maxiva™ PMTX-1-U & PMTX-1-V

Specifications

Specifications and designs are subject to change without notice

General	
RF Output Frequency Range	PMTX-1-U: UHF Band, 470-700MHz PMTX-1-V: VHF Band III, 170-240 MHz
Transmission Standards	ATSC; DVB-T; DVB-T; DVB-T2; ISDB-Tb; DAB; DAB+; DTMB; DMB; Analogue
RF Channel Bandwidth	TV: 6, 7 or 8MHz DAB/DAB+: 1.5MHz
Number of Transmitters per Unit	1
RF Power Output per Transmitter	At output of integrated filter: 50W average DTV, 100W analogue p.s.
VSWR Protection	Included
Mechanical Dimensions	429W x 280D x 503H mm
Weight	24 kg / 52.9 lbs
Power Supply Configuration	External DC power source, connected to bottom of unit
Power Supply Voltage	DC: 36 to 72V
Remote Control	Web Remote and SNMP
Pre-correction	Real Time Adaptive
Input Options (per tx module)	
RF Input	Type N (f) connector, 50 ohms
ASI/BTS/T2-MI//SMPTE-310M	BNC (f), 75 ohms
GbE Port (TSoIP)	RJ-45
DVB-S/S2 Satellite Receiver	Type F, CAM slot included, with Multi-Stream capabilities
Environmental	
Operational Temperature Range	Standard range: -20°C to +50°C; options to -40°C available
Relative Humidity	0 to 90% non-condensing
Altitude	Up to 2,500m AMSL. Derate max. temperature 2°C per 300m of elevation. > 2,500m on request
DVB-T/T2 Transmitter Performance	
Standard	EN300744, EN302304, EN302755, TS101191, TS102773 (T2-MI), TS102034
Power Output Stability	+/- 0.2dB typical
RF Load Impedance	50 Ohms
Operating Load VSWR	Up to 1.4:1
MER	≥ 38 dB
Shoulder Level	≤ -39 dB
Spurious and Harmonics	-60dBc (after mask filter)
Channel Bandwidth	6-7-8 MHz
FFT	1K (DVB-T2), 2K, 4K, 8K, 8K ext. (DVB-T2), 16K & 16K ext. (DVB-T2), 32K & 32K ext. (DVB-T2)
Code Rate	All modes 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)
SFN	Complies to ETSI EN 101 191
ISDB-Tb Transmitter Performance	
Standard	ABNT NBR 15601, ABNT NBR 15603

Maxiva™ PMTX-1-U & PMTX-1-V

Specifications

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Inputs	4x ASI TS/BTS BNC (f), 75 Ohm or 2x ASI TS/BTS BNC (f), 75 Ohm and 2x RJ45 TS/BTS oIP
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	Supported
Partial Reception	Supported
ATSC Specifications	
Standard	A/53, A/110
Power Output Stability	+/- 0.2 dB typical
RF Load Impedance	50 Ohms
Operating Load VSWR	Up to 1.4:1
MER	≥ 38 dB
Shoulder Level	≤ -40 dB
Spurious and Harmonics	-60dBc
Modulation	8-VSB
Input Bit Rate	19.39 Mbit/s
Bandwidth	6 MHz
Max. Processing Delay	Up to 1 second (programmable)
Transport Stream Inputs	2 x SMPTE-310M or ASI (user selectable), 19.39Mb/s
Impedance	75 ohms, unbalanced
Input Connector	2 inputs, HD-BNC female (rear of exciter). BNC female (racked systems)
Signal to Noise, EVM	>38 dB (typical >40 dB), EVM <2.9 (typical <1.0 %)
Shoulder Level	<-44 dB (Measured per ATSC doc. A/64B)
Sideband Performance	Compliant with FCC emission mask, when measured at the output of GatesAir supplied output filter
Harmonic Radiation & Spurious	Meets mask requirements specified in FCC 5th and 6th report and order
DAB/DAB+ Specifications (PMTX-1-V for DAB Band III)	
Standard	EN300401, ETS 300 799
Inputs	ETI (NI[G703], NA5376[G704] or NA5592[G704]) BNC (f), 75 Ohm or 2x ETI BNC (f), 75 Ohm or 2x EDI (ETSI TS 102 693) RJ45 10/100/1000 Seamless switch between any input
Transmission Modes	Mode I, II, III, IV (Automatically detected from the ETI stream, or user selectable)
MER	>36dB
Operation	MFN or SFN operations
Analogue Specifications	
Frequency Bands	PMTX-1-U: UHF Band, 470-700MHz or PMTX-1-V: VHF Band III, 170-240 MHz
Analogue Standards	B, G, D, K, M, N, I
Color System	NTSC, PAL
Sound Power	-10dB relative to vision peak sync, software adjustable

Maxiva™ PMTX-1-U & PMTX-1-V

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Vision Performance	
Inputs	Video: BNC (f), 75 Ohm Audio: Tini-Q6 “Mini XLR”, 6 Pin (m), 600 Ohm
Differential Gain	3%
Differential Phase	3°
LF Linearity	5%
ICPM	±3°
2T K factor	3% or less
Spurious Emissions	-60dB, or better, relative to peak vision power, measured after GatesAir supplied filter
Harmonics	-60dB, or better, relative to peak vision power, measured after GatesAir supplied filter
In-Channel Intermodulation Distortion	-57dB, or better
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 Msymb/s (DVB-S) 2 - 45 Msymb/s (DVB-S2)
Constellation	QPSK, 8PSK, 16APSK
FEC	Automatic, All modes 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 Ω
Frequency	L–band, 930–2250 MHz
LNB Control Voltage	Off, +13/18 Vdc, 22 KHz, 0.25 A (overload protection)
ASI Output	Standard ASI–C MPEG–2 ISO / IEC 13818–1
Output Connector	BNC, 75 Ohm internal
Modality	188 bytes
Max. Input Bitrate	80 Mbps (CAM limit: 72 Mbps)
CAMInterface	PCMCIA DVB-CI Common Interface
CA Mode (Conditional Access)	Multicrypt, Simulcrypt
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).
RF Input (Transposer / Gap-Filler)	
Signal Type	DVB-T/H/T2, ISDB-T/Tb, ATSC
Frequency Range	170 to 862 MHz (agile tuning)
Sensitivity	-75 to -25 dBm
Selectivity	> 60 dB ± 4.2 MHz
NF (Pi=-50 dBm)	< 6 dB
Conversion Type	Regenerative (Transposer only), or Direct Baseband Conversion (Zero IF) (Transposer)
Return Loss	> 15 dB
Connector	N (f), 50 Ohm