



# MAXIVA™ PMTX-1-UK & PMTX-1-VK

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

GatesAir's new Maxiva™ PMTX-1-UK & VK, is a complete self-contained, outdoor UHF/VHF transmitter system. Housed in a completely environmentally sealed enclosure designed for ISDBT, ATSC-1.0 & 3.0, the PMTX-1-UK & VK utilizes the newest Kintex modulator platform, the system includes many additional 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-UK & VK Product Features

The compact dimensions (429W x 280D x 503H mm) of the Maxiva PMTX-1-UK & VK 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-UK & VK has been engineered to remove heat efficiently from the internal circuitry. The unique design of the PMTX-1-UK & VK 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 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 UHF/VHF 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, and SMPTE-310M – 2 x BNC
  - Gbe port (TS over IP) – 1 RJ45
- 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 (ATSC 1.0)
- Supports : ISDBT / ISDBTb, ATSC-1.0 / ATSC 3.0 additional modulations coming soon.
- 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-UK & PMTX-1-VK

Mounting Options and Examples



PMTX-1-UK  
Front



PMTX-1-UK  
Rear



Can be mounted on various outdoor structures



Wall-mounted PMTX-1-UK

# Maxiva™ PMTX-1-UK & PMTX-1-VK

## Specifications

Specifications and designs are subject to change without notice

| General                         |  |
|---------------------------------|--|
| RF Output Frequency Range       | PMTX-1-UK: UHF Band, 470-700MHz<br>PMTX-1-VK: VHF Band III, 170-240 MHz                          |
| Transmission Standards          | ATSC; DVB-T; DVB-T2; ISDB-Tb; DAB; DAB+; DTMB; DMB; Analogue                                     |
| RF Channel Bandwidth            | TV: 6, 7 or 8MHz   |
| Number of Transmitters per Unit | 1  |
| RF Power Output per Transmitter | At output of integrated filter: 50W average  |
| 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.<br>> 2,500m on request     |
| ATSC-1.0 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                            |

# Maxiva™ PMTX-1-UK & PMTX-1-VK

## Specifications

Specifications and designs are subject to change without notice

| ATSC 3.0 Transmitter Performance |   |
|----------------------------------|---|
| Standard                         | A/300:2021, ATSC 3.0 System / A/322 / A/324 and related standards   |
| Power Output Stability           | +/- 0.2dB typical   |
| RF Load Impedance                | 50 Ohms   |
| Operating Load VSWR              | Up to 1.4:1   |
| MER                              | ≥ 36 dB Typical   |
| Shoulder Level                   | ≤ -38 dB  |
| Spurious and Harmonics           | -60dBc (after mask filter)  |
| Channel Bandwidth                | 6-7-8 MHz   |
| Group delay                      | 2nS, Typical  |
| Phase Noise                      | 10Hz: <-55dBc/Hz<br>100Hz: <-85dBc/Hz<br>1kHz: <-90dBc/Hz<br>10kHz: <-95dBc/Hz<br>100kHz: <-112dBc/Hz<br>1MHz: <-130dBc/Hz        |
| Spurious Output                  | In Band: -68dB (-45dB as measured in 30kHz RBW)<br>Adjacent channels: -68dB (-45dB as measured in 30kHz RBW)<br>All others: -40dB |
| Constellation                    | QPSK, 16QAM, 64QAM, 256QAM & 1024QAM (4096QAM with expansion board)   |
| Code Rate                        | 2/15 to 13/15   |
| Guard Interval                   | GI1_192 to GI12_4864 (Supports SNF applications)  |
| FFT Size                         | 8, 16 & 32  |
| ISDB-Tb Transmitter Performance  |   |
| Standard                         | ABNT NBR 15601, ABNT NBR 15603  |
| Inputs                           | 2x ASI TS/BTS BNC (f), 75 Ohm<br>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   |

# Maxiva™ PMTX-1-UK & PMTX-1-VK

## Specifications

Specifications and designs are subject to change without notice

| 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)<br>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 $\Omega$  |
| 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                        | ISDB-T/Tb, ATSC   |
| Frequency Range                    | 170 to 862 MHz (agile tuning)   |
| Sensitivity                        | -75 to -25 dBm  |
| Selectivity                        | > 60 dB $\pm$ 4.2 MHz   |
| NF (Pi=-50 dBm)                    | < 6 dB  |
| Conversion Type                    | ATSC 1.0 Regenerative (Transposer only), or Direct Baseband Conversion (Zero IF) (Transposer)   |
| Return Loss                        | > 15 dB   |
| Connector                          | N (f), 50 Ohm   |