

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



Mounting Options and Examples



PMTX-1-UK Front



PMTX-1-UK Rear



Can be mounted on various outdoor structures



Wall-mounted PMTX-1-UK

Specifications Specifications and designs are subject to change without notice

PMIX-IVXEVMP Baffolin, 170-240 MH2 Transmission Standards ATSC, CVP-T, DVB-T, DVB-T, DVB-T, DVB, DAB; DAB*; DTMB; DMB; Analogue RF Channel Bandwidth TV: 6, 7 or 8MHz Number of Transmitters per Unit 1 RF Power Output per Transmitter A toutput of integrated filter: 50W average VSWR Protection Included Mechanical Dimensions 429W x 2800 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) Type N (I) Connector, 50 ohms SAVB/STV2-MI/SMPTB-310M BNC (f), 75 ohms GbE Port (TSoIP) Rj-45 DVB-S/SZ Statellite Receiver Type F, CAM slot included, with Multi-Stream capabilities Environmental Operational Temperature Range Standard X53, A/110 Power Output Stability 4/-0.2 dB typical RF Load Impedance 50 Ohms Operating Load VSWR Up to 1 scond (programmable)	General	
RF Channel Bandwidth TV: 6, 7 or BMHz Number of Transmitters per Unit 1 RF Power Output per Transmitter At output of integrated filter: 50W average VSWR Protection Included Mechankal Dimensions 429W x 2800 x 503H mm Weight 24 kg / 52.9 lbs Power Supply Configuration External DC power source, connected to bottom of unit Power Supply Configuration Retman DC power source, connected to bottom of unit Power Supply Configuration Retman DC power source, connected to bottom of unit Power Supply Configuration Retman DC power source, connected to bottom of unit Power Supply Configuration Retman DC power source, connected to bottom of unit Precorrection Rel Time Adaptive Input Options (per tx module) Type N (f) connector, 50 ohms SAVBTS712-MU/SMPTE-310M BNC (f). 75 ohms SAVBTS712-MU/SMPTE-310M RL (d). 75 ohms SAVBTS712-MU/SMPTE-310M RL (d). 75 ohms SAVBTS712-MU/SMPTE-310M SAVE (f). 75 ohms SAVBTS712-MU/SMPTE-3	RF Output Frequency Range	
Number of Transmitters per Unit 1 RF Power Output per Transmitter At output of integrated filter: SOW average VSWR Protection Included Mechanical Dimensions 429W x 2800 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 Renote Control Web Remote and SNMP Pre-correction Real Time Adaptive Input Options (per tx module) FI PR Input Type N (h connector, 50 ohms ASI/BTS/T2-MI//SMPTE-310M ENC (f), 75 ohms GAE Fort (TSolP) R/45 Dype-SyS2 Statellite Receiver Type F, CAM slot included, with Multi-Stream capabilities Environmental Up to 2,500m AMSL. Derate max. temperature 2*C per 300m of elevation. -2,300m on request -2,300m on request AtSize Addition A/53, A/110 Power Supplicad VSR Up to 1,41 MER 2.8 dB Shoulder Level 5.40 dB Spurious and Harmonics 6048c Meduation &YSB Spurious and Harmonics 6048c <tr< td=""><td>Transmission Standards</td><td>ATSC; DVB-T; DVB-T; DVB-T2; ISDB-Tb; DAB; DAB+; DTMB; DMB; Analogue</td></tr<>	Transmission Standards	ATSC; DVB-T; DVB-T; DVB-T2; ISDB-Tb; DAB; DAB+; DTMB; DMB; Analogue
RF Power Output per Transmitter At output of integrated filter: 50W average VSWR Protection Included Mechanical Dimensions 42W x 2800 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) Type N (f) connector, 50 ohms RF Input Type F, CAM slot included, with Multi-Stream capabilities Environmental Operational Temperature Range Operational Temperature Range Standard range: -20°C to +50°C; options to -40°C available Operational Temperature Range Standard range: -20°C to +50°C; options to -40°C available Operational Temperature Range Standard range: -20°C to +50°C; options to -40°C available Operational Temperature Range Standard range: -20°C to +50°C; options to -40°C available Streactions -2,500m on request Attitude Up to 2,500m ASD Operating Load VSWR Up to 14:1 MER 2 80 dB Shoulder Level S-40 dB Spurious and Harmonics	RF Channel Bandwidth	TV: 6, 7 or 8MHz
VSWR ProtectionIncludedMechanical Dimensions429W x 280D x 503H mmWeight24 kg / 52.9 lbsPower Supply ConfigurationExternal DC power source, connected to bottom of unitPower Supply VoltageDC: 36 to 72VRemote ControlWeb Remote and SNMPPre-correctionReal Time AdaptiveInput Options (per tx module)Type N (f) connector, 50 ohmsBF InputType N (f) connector, 50 ohmsASI//BTS/T2-MII/SMPTE-310MBNC (f), 75 ohmsGBF Port (TSoIP)R] 45DVB-S/S2 Satellite ReceiverType F, CAM slot included, with Multi-Stream capabilitiesEnvironmentalUp to 2.500m AMSL, Derate max, temperature 2*C per 300m of elevation. > 2,500m nequestAltrude2 5,000m AMSL, Derate max, temperature 2*C per 300m of elevation. > 2,500m nequestAttrude2 500m AMSL, Derate max, temperature 2*C per 300m of elevation. > 2,500m nequestAltrude2 8 adBOperating Load VSWRUp to 1.4:1MER2 8 adBShoulder Levels -40 dBSpurious and Harmonics60dBcModulation8-VSBInput BI Rate19.39 Mbi/s/Bandwidth6 MHzMax, Processing DelayUp to 1 second (programmable)Trasport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sTimpetance7 5 ohms, unbalancedInput BI Rate19.39 Mbi/sSingla to Noise, EVM38 dB (typical <10. %)	Number of Transmitters per Unit	1
Mechanical Dimensions429W x 280D x 503H mmWeight24 kg / 52 pl bsPower Supply ConfigurationExternal DC power source, connected to bottom of unitPower Supply VoltageDC: 36 to 72VRemote ControlWeb Remote and SNMPPre-correctionReal Time AdaptiveInput Options (per tx module)Type N (f) connector, 50 ohmsStillyBTS/T2-MI//SMPTE-310MBNC (f), 75 ohmsGBE Port (TSOIP)RJ-45DVB-S/S2 Satellite ReceiverType R (Ad slot included, with Multi-Stream capabilitiesEnvironmentalEnvironmentalOperational Temperature RangeStandard range: -20°C to +50°C; options to -40°C availableRelative Humidity0 to 90% non-condensingAltitude>2,300m AMSL. Derate max. temperature 2°C per 300m of elevation. >>2,500m and requestATSC-10 Specifications+0.2 d B typicalRF Load Impedance50 OhmsOperating Load VSWRUp to 14.1MER> 38 d BShoulder Level< -40 d B	RF Power Output per Transmitter	At output of integrated filter: 50W average
Weight24 kg / 52.9 lbsPower Supply ConfigurationExternal DC power source, connected to bottom of unitPower Supply VoltageDC: 36 to 72VRemote ControlWeb Remote and SNMPPre-correctionReal Time AdaptiveInput Options (per tx module)Real Time AdaptiveRF InputType N (f) connector, 50 ohmsSk/BTS72-MI/SMPTE-310MBNC (f), 75 ohmsGbE Port (TSoIP)RJ-45DVB-S/S2 Statellite ReceiverType F, CAM slot included, with Multi-Stream capabilitiesEnvironmentalOperational Temperature RangeStandard range: -20°C to +50°C; options to -40°C availableRelative Humidity0 to 90% non-condensingAltitude>2,500m on requestStandardA/53, A/110Power Output Stability4/-0.2 dB typicalRE Load Impedance50 OhmsOperational Longedance50 OhmsOperating Load VSWRUp to 1.4:1MER> 38 dBShoulder Level-40 dBSpurious and Harmonics-60dBcSpurious and Harmonics-60dBcModulation8-VSBInput Bit Rate19.39 Mbit/sBandwidth6 MHzMax. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2.x SMPTE-310M or XSI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Bit Rate9.38 dB (typical >40 dB, Spurios)Signal to Noise, EVM>38 dB (typical >40 dB, EVM <2.9 (typical <1.0 %)	VSWR Protection	Included
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Power Supply VoltageDC: 36 to 72VRemote ControlWeb Remote and SNMPRemote ControlReal Time AdaptiveInput Options (per tx module)Real Time AdaptiveRF InputType N (f) connector, 50 ohmsASI/BTX72-MI//SMPTE-310MBNC (f), 75 ohmsGbE Port (TSoIP)RJ-45DVB-S/S2 Satellite ReceiverType F, CAM slot included, with Multi-Stream capabilitiesEnvironmentalUp e S, 262 Satellite ReceiverOperational Temperature RangeStandard range: -20°C to +50°C; options to -40°C availableRelative Humidity0 to 90% non-condensingAltitudeV to 2, 500m AMSL Derate max. temperature 2°C per 300m of elevation. > 2,500m on requestATSC-1.0 SpecificationsV to 2, 500m AMSL Derate max. temperature 2°C per 300m of elevation. > 2,500m on requestATSC-1.0 SpecificationsV to 2, 200m AMSL Derate max. temperature 2°C per 300m of elevation. > 2,500m on requestATSC-1.0 SpecificationsStandardStandardA/S3, A/110Power Output Stability4'-0.2 dB typicalRF Load Impedance50 OhmsOperating Load VSWRUp to 1.4:1MER2 38 dBShoulder Level5-40 dBSpurious and Harmonics-60dBcModulation8-VSBInput Bit Rate19.39 Mbit/sBandwidth6 MHzMax. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Binedance2 hoputs, HD-BN	Weight	24 kg / 52.9 lbs
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Pre-correction Real Time Adaptive Input Options (per tx module) Type N (f) connector, 50 ohms 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	Power Supply Voltage	DC: 36 to 72V
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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 ATSC-1.0 Specifications Standard 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	GbE Port (TSoIP)	RJ-45
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StandardA/53, A/110Power Output Stability+/- 0.2 dB typicalRF Load Impedance50 OhmsOperating Load VSWRUp to 1.4:1MER≥ 38 dBShoulder Level<-40 dB	Altitude	
Power Output Stability+/- 0.2 dB typicalRF Load Impedance50 OhmsOperating Load VSWRUp to 1.4:1MER> 38 dBShoulder Level<-40 dB	ATSC-1.0 Specifications	
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Operating Load VSWRUp to 1.4:1MER> 38 dBShoulder Level< -40 dB	Power Output Stability	+/- 0.2 dB typical
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 %)	RF Load Impedance	50 Ohms
Shoulder Level< -40 dBSpurious and Harmonics-60dBcModulation8-VSBInput Bit Rate19.39 Mbit/sBandwidth6 MHzMax. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sInpedance75 ohms, unbalancedInput Connector2 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 %)	Operating Load VSWR	Up to 1.4:1
Spurious and Harmonics-60dBcModulation8-VSBInput Bit Rate19.39 Mbit/sBandwidth6 MHzMax. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Connector2 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 %)	MER	≥ 38 dB
Modulation8-VSBInput Bit Rate19.39 Mbit/sBandwidth6 MHzMax. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Connector2 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	≤ -40 dB
Input Bit Rate19.39 Mbit/sBandwidth6 MHzMax. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Connector2 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 %)	Spurious and Harmonics	-60dBc
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Max. Processing DelayUp to 1 second (programmable)Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Connector2 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 %)	Input Bit Rate	19.39 Mbit/s
Transport Stream Inputs2 x SMPTE-310M or ASI (user selectable), 19.39Mb/sImpedance75 ohms, unbalancedInput Connector2 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 %)	Bandwidth	6 MHz
Impedance75 ohms, unbalancedInput Connector2 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 %)	Max. Processing Delay	Up to 1 second (programmable)
Input Connector2 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 %)	Transport Stream Inputs	2 x SMPTE-310M or ASI (user selectable), 19.39Mb/s
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)	Impedance	75 ohms, unbalanced
Shoulder Level <-44 dB (Measured per ATSC doc. A/64B)	Input Connector	2 inputs, HD-BNC female (rear of exciter). BNC female (racked systems)
Shoulder Level<-44 dB (Measured per ATSC doc. A/64B)Sideband PerformanceCompliant with FCC emission mask, when measured at the output of GatesAir supplied output filter	Signal to Noise, EVM	>38 dB (typical >40 dB), EVM <2.9 (typical <1.0 %)
Sideband Performance Compliant with FCC emission mask, when measured at the output of GatesAir supplied output filter	Shoulder Level	
Harmonic Radiation & Spurious Meets mask requirements specified in FCC 5th and 6th report and order	Sideband Performance	Compliant with FCC emission mask, when measured at the output of GatesAir supplied output
	Harmonic Radiation & Spurious	Meets mask requirements specified in FCC 5th and 6th report and order

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 100Hz: <-85dBc/Hz 1kHz: <-90dBc/Hz 10kHz: <-95dBc/Hz 100kHz: <-112dBc/Hz 1MHz: <-130dBc/Hz	
Spurious Output	In Band: -68dB (-45dB as measured in 30kHz RBW) Adjacent channels: -68dB (-45dB as measured in 30kHz RBW) 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 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	

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) 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	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	ATSC 1.0 Regenerative (Transposer only), or Direct Baseband Conversion (Zero IF) (Transposer)
Return Loss	> 15 dB
Connector	N (f), 50 Ohm