



# Maxiva™ UAXT Ultra-Compact/ VAXT Ultra-Compact

Low Power UHF/VHF Transmitter / Transposer / Gap Filler



The new Maxiva™ UAXT & VAXT UltraCompact family of UHF solid-state Transmitters, Transposers (Translators) and on-channel Gap-Fillers expands upon the proven foundation of GatesAir low-power systems and

PowerSmart® high-efficiency technology. It provides today's digital broadcaster with a suite of compatible products to accommodate any coverage application, along with unmatched performance, reliability and quality. The Maxiva UAXT/VAXT Ultra-Compact family further extends the capabilities of the Maxiva series, providing a single family of transmission products suitable for all broadcast applications. The Maxiva Ultra-Compact provides pre-filter power levels up to 700W, in an exceptionally compact and space saving 1, 2 or 3 RU packages.

Designed for digital and analogue broadcasting, the Maxiva UAXT/VAXT Ultra-Compact is a platform available in Transmitter, Transposer or SFN Gap Filler configurations for DVB-T, DVB-T2, ATSC, ISDB-Tb, NTSC and PAL analogue networks. The Maxiva Ultra-Compact Series provides an ideal solution for extending market coverage and filling in coverage gaps in challenging situations, including busy urban areas that require greater building penetration.

The Maxiva UAXT & VAXT Ultra-Compact family of Transmitters / Transposers / Translators provide efficient and reliable re-broadcast of the received signal in a space saving, reliable and robust package. The Gap Filler configuration adds a powerful echo cancellation feature to deliver exceptional on-channel performance. This combination of products enables broadcasters to address any network coverage requirement.

## Product Features

### Maxiva UAXT/VAXT Ultra-Compact Platform:

- High efficiency broadband amplifier technology
- Power levels up to 700W (pre-filter average power)
- Frequency agile design
  - UHF Band IV/V, 470 to 810 MHz
  - VHF Band III, 170-240 MHz
  - VHF Band I, 54 to 88MHz
- Extremely compact, space-saving, 1, 2 or 3 RU 19" chassis
- Full local/remote control capability including:
  - Local touch-screen display
  - Web GUI interface
  - SNMP
- Capable of SFN and MFN Operation
- Automatic Adaptive Pre-correction Circuitry

### Transposer / Translator:

- Supports Analogue, COFDM and ATSC standards
- Direct baseband conversion (zero IF)
- Regenerative option available for optimum performance

### SFN Gap Filler:

- Includes a powerful echo cancellation circuit, 15dB of Gain Margin
- Low processing delay, < 10 μS
- Cancellation window 20 μS
- Selective cancellation window range 1.6 μS to 820 μS
- MER degradation < 2dB

### Available Options

- Glonass/GPS Receiver for SFN Timing
- ASI over IP
- EDI/ETI inputs for DAB/DAB+

## Maxiva™ UAXT/VAXT Ultra-Compact



Maxiva™ UAXT/VAXT Ultra-Compact Front View (1RU)



Maxiva™ UAXT/VAXT Ultra-Compact Rear View (1RU)



Maxiva™ UAXT/VAXT Ultra-Compact Front View (2RU)



Maxiva™ UAXT/VAXT Ultra-Compact Front View (3RU)

Compact

Efficient

Broadband

### Typical Input Configurations



4 x ASI + Analogue



1x DVB-S/S2 Rx



1x DVB-S/S2 Rx + 4 x ASI + Analogue



1x RF



2x Gbe + 2 x ASI



1x DVB-S/S2 Rx + 2 x ASI + 2 x Gbe

## Maxiva™ UAXT/VAXT Ultra-Compact

### Specifications

Specifications and designs are subject to change without notice

<b>General</b>	
RF Output Frequency Range	UAXT Ultra-Compact: UHF Band IV/V, 470 to 810 MHz; VAXT Ultra-Compact: VHF band III, 170-240 MHz
Transmission Standards	ATSC; DVB-T; DVB-T; DVB-T2; ISDB-Tb; DAB, DAB+, CTTB and DMB
RF Channel Bandwidth	TV: 6, 7, or 8 MHz; DAB/DAB+: 1.5MHz
Rated Output Power	Up to 700 Watts (before mask filter)
Output Power Reduction Range	0 to -10 dB
VSWR	Protected against open or short circuit, all phase angles. Capable of operation into infinite VSWR with user-adjustable fold back threshold. Factory pre-set to 4% of nominal nameplate power (VSWR = 1.5:1)
<b>External Inputs</b>	
GPS Input	SMA female, 50 ohms, (+5 V DC @ 100 mA max output for active antenna)
1 PPS Input	3NC female, user selectable 50 ohms or high impedance termination
10 MHz Reference Frequency Input	BNC Female, 50 Ohms
<b>Inputs/Outputs</b>	
RF Input Connector	1 x Type N Female, 50 ohms, front access
RF Output Connector	1 x Type N Female, 50 ohms, rear access, 7-16 DIN for 600 W
Ethernet	1 front, RJ-45
Control/Monitoring	TFT LCD Color Touchscreen, Web GUI, SNMP V. 2, GPIO
ASI/T2MI Inputs	2 or 4 Inputs BNC female 75 ohms according to EN 50083-9 (for DVB-H 2 main/2 hierarchical
ASi over IP (optional)	2 inputs, 10/100/1000BaseT
<b>AC Power</b>	
AC Power Input	100 to 240 V AC, 50/60 Hz, IEC320 C14 Plug, 380 V 3 Phase, 4 Wire 1 RU Module Optional
Power Factor ( cos Ø )	> 0.95
<b>Environmental</b>	
Operational Temperature Range	0° to 45° C (32° to 113° F)
Storage Temperature Range	-40 to +70° C
Relative Humidity	0 to 90%, non-condensing
Altitude	Up to 2,500 m (8,202 ft) above sea level, derate 2° C (3.6° F) per 300 m (984 ft) of elevation. (Altitude > 2,500 m on request)
Cooling Method	Forced air-cooled, internal fans, airflow front to rear
Acoustic Noise	≤65 dBA (front 1 m)
Physical Dimensions (H X W x D)	1RU x 19" rack (dimensions: 44 H x 482 W x 461 D mm) 2RU x 19" rack (dimensions: 87 H x 482 W x 461 D mm) 3RU x 19" rack (dimensions: 132 H x 482 W x 461 D mm)
<b>Transposer and Gap Filler (OFDM-TV &amp; ATSC) Performance</b>	
Power Output Stability	±0.5 dB
RF Load Impedance	50 ohms
Operating Load VSWR	Up to 1.4:1 at full power
RF Input Frequency Range	Band III 168 to 242 MHz, or Band IV/V 470 to 862 MHz
RF Input	Type N-Female, 50 ohms, front access
RF Input Level	-80 dBm to -20 dBm (Standard Down Converter board) -80 dBm to 0 dBm (Regenerative Down Converter board)
Selectivity	> 60 dB @ ± 4.2 MHz
Noise Factor	< 6 dB
Adaptive Echo Cancellation	Standard (applies to Gap Filler only)
Gain Margin	> -15 dB typical
Adjacent Channel Rejection	> 35 dB

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Total Delay	< 10 $\mu$ S
Echo Cancellation Window Size	20 $\mu$ S
Selective Cancellation Window	1.6 $\mu$ S (time shift from 2 to 820 $\mu$ S)
Doppler Cancellation	Yes
MER	Up to 34 dB, dependent on input MER
MER Degradation	< 2 dB degradation referenced to input, at <34 dB input MER
Response Variation	0.2 dB, typical
Spurious Output	< -60 dBc (after mask filter)
Harmonics	< -60 dBc after mask filter, <-35 dB before mask filter
<b>Compliance / Certifications</b>	
RoHS 2011/65/EU	DVB-T: ETSI EN 300 744
Directive 2014/53/EU	DVB-T2: ETSI EN 302 755
Safety: EN 60215	DAB/DAB+/DMB: ETSI EN 300 401 & ETSI TR101 496-1
EMC: EN 301-489-1	CE Marked
<b>Analogue Specifications</b>	
Frequency Bands	UAXT-UC: UHF Band- 470-806 MHz VAXT-UC: VHF Band III- 170-240MHz VAXTE-L: VHF Band I- 54-88MHz
Analogue Standards	B, G, D, K, M, N, I
Color System	NTSC, PAL
Output Power	Power levels per table below
Sound Power	-10dB relative to vision peak sync
<b>Vision Performance</b>	
Inputs	Video: BNC (f), 75 Ohm Audio: Tini-Q6 "Mini XLR", 6 Pin (m), 600 Ohm
Frequency Stability	2.3 x 10 <sup>-7</sup> / Month
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
<b>Sound Performance</b>	
Audio Input Level	0 to +10dBm, 600 Ohms
Pre-emphasis	As required by system standard (50 $\mu$ S / 75 $\mu$ S)
Frequency Response	± 0.5dB, 40Hz to 15kHz
Harmonic Distortion	< 0.5%
FM Signal to Noise Ratio	> 60dB after de-emphasis
AM Synchronous Noise	-40dB r.m.s.at 400Hz, ±25kHz deviation
NICAM Sound	Integrated NICAM encoder available - specifications available on request

## Maxiva™ UAXT/VAXT Ultra-Compact Models & Power Levels

Digital TV Model	OFDM ] Power Before Filter (W) Broadband <sup>1</sup>	OFDM Power Before Filter (W) Wideband <sup>2</sup>	ATSC Power Power Before Filter (W) Broadband <sup>1</sup>	ATSC Power Power Before Filter (W) Wideband <sup>2</sup>	Analogue TV Model	Analogue Power Before Filter (W) Peak Sync	Size
<b>UHF Models</b>							
UAXT-15-UC	15	----	20	----	UAXT-AN-50-UC	50	1 RU
UAXT-30-UC	30	----	40	----	UAXT-AN-70-UC	70	1 RU
UAXT-50-UC	50	----	70	----	UAXT-AN-125-UC	125	1 RU
UAXT-80-UC	80	----	130	----	UAXT-AN-220-UC	220	1 RU
UAXT-130-UC	130	----	130	----	----	----	1 RU
UAXT-150-UC	150	----	150	----	UAXT-AN-250-UC	250	1 RU
UAXT-200-UC	200	----	300	----	UAXT-AN-600-UC	600	2 RU
UAXT-350-UC-2U	350	----	400	----	----	----	2 RU
UAXT-350-UC-3U	350	----	600	----	UAXT-AN-1200-UC	1200	3 RU
UAXT-600-UC	600	----	750	----	----	----	2 RU
UAXT-300-UC	250	300	350	400	----	----	2 RU
UAXT-400-UC	400	400	400	400	UAXT-AN-600-UC	600	2 RU
UAXT-550-UC	450	550	700	800	----	----	3 RU
UAXT-700-UC	650	700	900	1,000	UAXT-AN-1200-UC	1200	3 RU
<b>VHF Band III Models</b>							
Digital TV Model	OFDM Power Before Filter (W) Broadband <sup>1</sup>	DAB Power (MER ≥33dB) (W)	ATSC Power Power Before Filter (W) Broadband <sup>1</sup>	ATSC Power Power Before Filter (W) Wideband <sup>2</sup>	Analogue TV Model	Analogue Power Before Filter (W) Peak Sync	Size
VAXT-80-UC	80	80	120	----	VAXT-AN-200-UC	200	1 RU
VAXT-150-UC	150	150	150	----	VAXT-AN-250-UC	250	1 RU
VAXT-250-UC	250	300	350	----	VAXT-AN-600-UC	600	2 RU
VAXT-450-UC	450	450	450	----	----	----	2 RU
VAXT-500-UC	500	550	700	----	VAXT-AN-1200-UC	1200	3 RU
VAXT-700-UC	700	750	900	----	VAXT-AN-1500-UC	1500	3 RU
<b>VHF Band I Models</b>							
Digital TV Model	OFDM Power Before Filter (W) Broadband <sup>1</sup>	OFDM Power Before Filter (W) Wideband <sup>2</sup>	ATSC Power Power Before Filter (W) Broadband <sup>1</sup>	ATSC Power Power Before Filter (W) Wideband <sup>2</sup>	Analogue TV Model	Analogue Power Before Filter (W) Peak Sync	Size
VAXT-50L-UC	----	50	----	70	VAXT-AN-125L-UC	125	1 RU
VAXT-200L-UC	----	200	----	300	VAXT-AN-600L-UC	600	2 RU
VAXT-400L-UC	----	400	----	400	VAXT-AN-1200L-UC	1200	3 RU

1 Broadband PA's cover the frequency band with a one PA type

2 Wideband PA's cover the frequency band with two PA types