

MAXIVA[™] UATK ULTRA-COMPACT/ VATK ULTRA-COMPACT

Low Power UHF/VHF Transmitter / Transposer / Gap Filler

The new Maxiva[™] UATK & VATK Ultra Compact family of UHF & VHF solid-state Transmitters, Transposers (Translators) and on-channel Gap-Fillers expands upon the proven foundation of GatesAir low-power systems with PowerSmart® high- efficiency technology. The UATK & VATK products are designed using the latest Kintex modulation hardware and software. The UATK & VATK products support ATSC 1.0, ATSC 3.0 and ISDBTb modulation standards. 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 UATK/VATK 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.

Maxiva[™] UAXT Ultra-Compact/ VAXT Ultra-Compact Product Features

Maxiva UATK/VATK Ultra-Compact Platform includes:

- High efficiency broadband amplifier technology
- Power levels up to 700W (pre-filter average power)
- Frequency agile design
 - UHF Band IV/V, 470 to 702 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 (HTML5)
 - SNMP
- Capable of SFN and MFN Operation
- Automatic Adaptive Pre-correction Circuitry
- GLONASS/GPS Receiver for SFN Timing
- 2x ASI (BNC) & ASI over IP (RJ45)

Transposer / Translator:

- Supports ATSC 3.0, and ISDBTb (COFDM) and ATSC (8VSB) standards.
- Direct baseband conversion (zero IF)
- ATSC (8VSB) Regenerative option available for optimum performance

SFN Gap Filler:

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

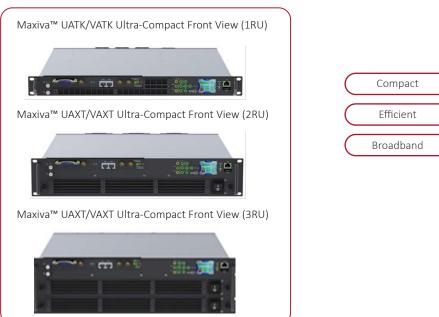
Available Options:

• DVB-S/S2 Satellite Receiver input card (including CAM interface)

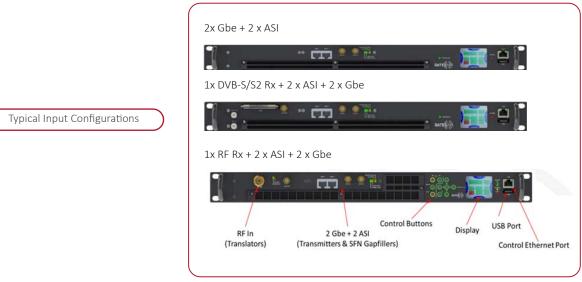


Designed for digital broadcasting, the Maxiva UATK & VATK Ultra-Compact is a platform available in Transmitter, Transposer or SFN Gap Filler configurations for ATSC 1.0, ATSC 3.0, and ISDB-Tb networks. The Maxiva Ultra-Compact Series provides an ideal solution for extending market coverage and filling in coverage gaps in challenging situations, including busy urban areas that require greater building penetration.

The Maxiva UATK & VATK Ultra-Compact family of Transmitters / Transposers / Translators provide efficient and reliable rebroadcast 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.



Maxiva[™] UATK/VATK Ultra-Compact



Maxiva[™] UATK/VATK Ultra-Compact Specifications Specifications and designs are subject to change without notice

General						
RF Output Frequency Range	UAXT Ultra-Compact: UHF Band IV/V, 470 to 702 MHz; VAXT Ultra-Compact: VHF band III, 170-240 MHz					
Transmission Standards	ATSC 1.0, ATSC 3.0 & ISDB-Tb					
RF Channel Bandwidth	TV: 6, 7, or 8 MHz					
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. Factory pre-set to 4% of nominal nameplate power (VSWR = 1.5:1)					
GPS Input	SMA female, 50 ohms, (+5 V DC @ 100 mA max output for active antenna)					
1 PPS Input	BNC female, user selectable 50 ohms or high impedance termination					
10 MHz Reference Frequency Input	BNC Female, 50 Ohms					
Inputs/Outputs						
RF Output Connector	1 x Type N Female, 50 ohms, rear access, 7-16 DIN for > 200 W					
Ethernet (Communications)	1 front, RJ-45					
Control/Monitoring	HMTL5 Web GUI, SNMP V. 2, GPIO					
ASI Inputs	2 Inputs BNC female 75 ohms					
ASI over IP / STLTP	2 inputs, 10/100/1000BaseT					
AC Power						
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					
Redundancy	Redundant power supply optional on some models					
Environmental						
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)					
Transposer and Gap Filler (OFDM-T	V & 8VSB-TV) Performance (Optional RF input Card)					
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 702 MHz					
RF Input Connector	1 x Type N Female, 50 ohms, front access					
RF Input Level	-80 dBm to -20 dBm (Standard Down Converter board)					
	-80 dBm to 0 dBm (ATSC 1.0 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					
Adjacent Channel Rejection Total Delay	> 35 dB < 10 µS					
Total Delay	< 10 µS					

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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) < -60 dBc after mask filter, <-35 dB before mask filter				
Compliance / Certifications					
RoHS 2011/65/EU	ETSI EN 300 744				
Directive 2014/53/EU					
	ETSI EN 302 755				
Safety: EN 60215	ETSI EN 300 401 & ETSI TR101 496-1				
EMC: EN 301-489-1	CE Marked				
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				
MER	≥ 36 dB Typical				
Shoulder Level	≤ -38 dB				
Group delay	2nS, Typical				
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				
MER	≥ 36 dB Typical				
Hierarchical Modulation	Up to 3 layers				
Constellation	QPSK, 16QAM, 64QAM				
Time Interleaver	Supported				
Partial Reception	Supported				
ATSC-1.0 Specifications					
Standard	A/53, A/110				
Power Output Stability	+/- 0.2 dB typical				
RF Load Impedance	50 Ohms				
Shoulder Level	≤ -40 dB				
Modulation	8-VSB				
Input Bit Rate	19.39 Mbit/s				
Bandwidth	6 MHz				
Max. Processing Delay	Up to 1 second (programmable)				
Signal to Noise, EVM	>38 dB (typical >40 dB), EVM <2.9 (typical <1.0 %)				
Shoulder Level	<-38 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				
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Maxiva[™] UATK/VATK Ultra-Compact Models & Power Levels Specifications

Digital TV Model	OFDM Power Before Filter (W) Broadband ¹	OFDM Power Before Filter (W) Wideband ²	8VSB Power Before Filter (W) Broadband ¹	8VSB Power Before Filter (W) Wideband ²	Size	COFDM Broadband Efficiency
UHF Models			·		·	
UATK-15-UC	15		20		1 RU	8%
UATK-30-UC	30		40		1 RU	12%
UATK-50-UC	50		70		1 RU	16.5%
UATK-80-UC	80		130		1 RU	19.5%
UATK-150E-UC	150		150		1 RU	29.5%
UATK-250E-UC	200	300	350	400	2 RU	31%
UATK-400E-UC	400	400	400	400	2 RU	32%
UATK-450E-UC	450	550	700	800	3 RU	33%
UATK-700E-UC	700	750	900	1,000	3 RU	34%
Digital TV Model	Power Before Filter (W) Broadband ¹		Power Before Filter (W) Broadband ¹		Size	Broadband Efficiency
VATK-15-UC	15		20		1 RU	
VATK-30-UC	30		40		1 RU	
VATK-80-UC	80		120		1 RU	17%
VATK-150-UC	150		150		1 RU	29%
VATK-250-UC	250		350		2 RU	31%
VATK-450-UC	450		450		2 RU	39%
VATK-500-UC	500		700		3 RU	40%
VATK-700-UC	700		900		3 RU	41%
Digital TV Model	OFDM Power Before Filter (W) Broadband ¹	OFDM Power Before Filter (W) Wideband ²	8VSB Power Power Before Filter (W) Broadband ¹	8VSB Power Power Before Filter (W) Wideband ²	Size	COFDM Broadband Efficiency
		50		70	1 RU	
VATK-50L-UC		50		70	TRO	
VATK-50L-UC VATK-200L-UC		200		300	2 RU	

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

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