The new Maxiva™ UAXT/VAXT Multi-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 and PowerSmart® high-efficiency technology.

Today's broadcasters and network operators are continually searching for more efficient and economical approaches for providing reliable over-the-air transmission. When several DTV channels can be consolidated into one common transmission site, the cost and space requirements for individual equipment per channel can often be very significant. The innovative Multi-Compact architecture allows the possibility of many configurations, with up to 8 independent low power transmitters, transposers or gap fillers, to be configured into a single space-saving chassis. The Maxiva Multi-Compact provides pre-filter power levels up to 15W per module, in a compact and convenient 4RU 19” rack mount package.

Designed for digital or analog broadcasting, the Maxiva Multi-Compact is a platform available in Transmitter, Transposer or SFN Gap Filler configurations for DVB- T/H, DVB-T2, ATSC, ATSC-MDTV, ISDB-Tb and analog networks. The Maxiva Multi-Compact can be configured for up to 8 independent systems, or as N+1, N+2 or N+1/M+1 configurations.

Instead of investing into several separate transmitter units, as well as complex and costly redundancy management systems, broadcasters or network operators can now simply invest into a single 4RU Multi-Compact transmitter and operate up to 7 channels with +1 redundancy in a single compact unit.

Product Features
Maxiva Multi-Compact Platform:
• Up to 15 Watts average power per module
• High efficiency broadband amplifier technology
• Extremely compact 4RU 19” rack mount chassis
• Single chassis configurable for up to 7+1, or 6+2 redundancy configurations
• Several Input interfaces for each transmitter module:
  • 1 x ASI input (TS, BTS, T2MI, SMPTE-310M)
  • 1 x GbE input (TS over IP)
  • Optional: 1 x DVB-S/S2 Satellite Receiver input per slot (including CAM interface and multi-stream capabilities)
  • Optional: 1 x RF receiver input for repeater/gap-filler configuration
• DVB-T/H/T2, ISDB-T/Tb, DAB/DAB+/T-DMB, ATSC and analog modulations fully supported
• Embedded ASI and RF Matrix for redundancy management of each transmitter module
• Embedded Re-Multiplexer/Layer Combiner/TS to BTS (188 to 204 byte) converter for ISDB-Tb
• Adaptive pre-correction circuits
• 2 x hot swappable high stability GPS / GLONASS receivers with battery
• 2 x hot swappable power supplies
• SNMP, Web Interface and Touch Screen display
System Configurations
Some examples of Maxiva UAXT / VAXT Multi-Compact configurations:

UAXT / VAXT Multi-Compact - Primary Components
- Multi-Compact Chassis, 4RU, with 8 slots, to be fitted with plug-in transmitters/transposer/gap filler modules for N+1 or N+2 configurations. Includes 1 power supply, 1 GPS / GLONASS receiver and RF output matrix.
- 15 W UHF Digital TV transmitter plug-in module, with 1x ASI, 1x GbE inputs and ASI matrix (up to 8 per chassis)
- 15 W UHF Digital TV transposer/gap-filler plug-in with echo cancellation

Standard Options & Accessories
- Redundant power supply option (Hot-swappable unit)
- Redundant GPS / GLONASS receiver option (Plug-in board)
- 26 dB LNA GPS / GLONASS antenna. includes mounting kit and 25 meters coaxial cable
- DVB-S/S2 integrated receiver board per slot, single and multi-stream, with CAM slot
- RF integrated receiver board for transposer/gap-filler operation
- DVB-S/S2 integrated input matrix for N+1 or N+2 configuration
- RF integrated input matrix for N+1 or N+2 configuration
- Software option for ISDB-Tb Remux/Layer combiner/ TS to BTS (188 to 204 byte) converter
- Dual-cast software option, adds DVB-T modulation
- Dual-cast software option, adds DVB-T2 modulation
- Dual-cast software option, adds ISDB-T modulation
- Dual-cast software option, adds ATSC modulation
Maxiva™ UAXT / VAXT Multi-Compact

Diagrams / Images

Block Diagram – Multi-Compact Chassis
Maxiva™ UAXT / VAXT Multi-Compact

Specifications
Specifications and designs are subject to change without notice.

General
- **RF Output Frequency Range**
  - UAXT Multi-Compact: UHF Band IV/V, 470 to 862 MHz
  - VAXT Multi-Compact: VHF Band III, 170 to 242 MHz
- **Transmission Standards**
  - ATSC; DVB-T/H; DVB-T; DVB-T2; ISDB-Tb; CTTB
- **RF Channel Bandwidth**
  - 6, 7, or 8 MHz
- **Rated Output Power**
  - 15 W average per channel @ 38 dB MER
- **Output Power Reduction Range**
  - 0 to -10 dB

AC Power
- **AC Power Input**
  - 100 to 240 V AC, 50/60 Hz, IEC320 C14 Plug
- **Power Factor (cos Ø)**
  - > 0.95

Configuration
- **Number of TX Slots**
  - 8 (Hot-swappable modules)
- **Protection/Redundancy**
  - N+1 (up to 7+1), N+2 (up to 6+2), N+1+M+1
- **Frequency Agility**
  - UHF Band IV and V, or VHF Band III (specify band when ordering)
- **Frequency Resolution**
  - 1 Hz
- **Pre-correction**
  - Adaptive
- **RF Output Connector**
  - N Female, 50 Ohm

Modulation Specific Specifications
- **DVB-T/H, DVB-T2:**
  - **Standard**
    - EN300744, EN302304, EN302755, TS101191, TS102773 (T2-MI), TS102034
  - **Inputs**
    - ASI BNC (f), 75 Ohm
    - RJ45 TSoIP 10/100/1000. Hierarchical and non-hierarchical (DVB-T, using TSoIP input)
  - **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)
  - **MISO Processing:**
    - Supported

**ATSC:**
- **Standard:**
  - A/53, A/110
- **Inputs:**
  - ASI / SMPTE-310M BNC (f), 75 Ohm and RJ45 TSoIP 10/100/1000
- **Modulation:**
  - 8-VSB
- **Bandwidth:**
  - 6 MHz
- **Maximum Processing Delay:**
  - Up to 1 second (programmable)
Maxiva™ UAXT / VAXT Multi-Compact

Specifications
Specifications and designs are subject to change without notice.

ISDB-Tb
- **Standard**: ABNT NBR 15601, ABNT NBR 15603
- **Inputs**: ASI TS/BTS BNC Female, 75 Ohm and RJ45 TS/BTSoIP 10/100/1000
- **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 Interleaving**: Fully supported
- **Partial Reception**: Supported

DAB/DAB+/T-DMB
- **Standard**: EN 300401, ETS 300 799
- **Inputs**: ETI (NI[G703], NA5376[G704] or NA5592[G704]) BNC (f), 75 Ohm
- **Transmission Modes**: Mode I, II, III, IV (Automatically detected from the ETI stream, or user selectable)
- **Operation**: MFN or SFN operations

Analog
- **Standards**: Systems B, G, D, K, M, N, I
- **Inputs**: Video: BNC Female, 75 Ohm
- **Audio**: Tini-QG (Mini XLR), 6 Pin Male, 600 Ohm
- **Color System**: PAL, NTSC

Satellite Receiver
- **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 Ms/S (DVB-S), 2 - 45 Ms/S (DVB-S2)
- **Constellation**: QPSK, 8PSK, 16APSK
- **FEC**: Automatic, all modes available according to the std., Block Short or Normal DVB-S: Reed-Solomon (204,188) DVB-S2: BCH, LDPC
- **Roll-Off**: 0.1, 0.2, 0.25
- **Input Connector**: F (f), 75 Ohm
- **Frequency**: L–band: 930MHz to 2,250 MHz
- **LNB Control Voltage**: Off, +13/18 Vdc, 22 kHz, 0.25 A (overload protected)
- **RF Input Level**: 40 - 100 dB/μV (with attenuator)
- **Output Connector**: BNC Female, 75 Ohm
- **Modality**: 188 bytes
- **Max Input bit rate**: 80 Mbps (CAM limit: 72 Mbps)
- **CAM Interface**: 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.)
## Transposer (Translator) / Gap Filler

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RF Input</strong></td>
<td></td>
</tr>
<tr>
<td>Signal Type</td>
<td>One DTV channel (DVB-T/H/T2, ISDB-T/Tb, ATSC)</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>170 - 242 MHz or 470 - 862 MHz</td>
</tr>
<tr>
<td>RF Input Level</td>
<td>-80 dBm to -20 dBm</td>
</tr>
<tr>
<td>Selectivity</td>
<td>&gt; 60 dB @ ± 4.2 MHz</td>
</tr>
<tr>
<td>Noise Factor</td>
<td>&lt; 6 dB</td>
</tr>
<tr>
<td>Conversion type</td>
<td>Direct Baseband Conversion (Zero IF)</td>
</tr>
<tr>
<td>Return loss</td>
<td>&gt; 15 dB</td>
</tr>
<tr>
<td>Connector</td>
<td>N Female, 50 Ohm</td>
</tr>
<tr>
<td><strong>Echo Canceller</strong></td>
<td></td>
</tr>
<tr>
<td>Cancellation level</td>
<td>40 dB, typical</td>
</tr>
<tr>
<td>Cancellation window</td>
<td>20 µs</td>
</tr>
<tr>
<td>Selective cancellation window</td>
<td>1.6 µs (time shift from 2 to 820 µs)</td>
</tr>
<tr>
<td>Doppler cancellation</td>
<td>Yes</td>
</tr>
<tr>
<td>Maximum echo/signal ratio</td>
<td>+15 dB (over the main signal), typical</td>
</tr>
<tr>
<td>Total delay</td>
<td>&lt; 10 µs</td>
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<tr>
<td><strong>GPS / GLONASS Receiver</strong></td>
<td></td>
</tr>
<tr>
<td>Input connector</td>
<td>N Female, 50 Ohm</td>
</tr>
<tr>
<td>Input/Monitor output 10 MHz</td>
<td>BNC Female, 75 Ohm</td>
</tr>
<tr>
<td>Input/Monitor output 1 PPS</td>
<td>BNC Female, 75 Ohm</td>
</tr>
<tr>
<td>Phase noise</td>
<td>-140 dBc/Hz @ 10 kHz</td>
</tr>
<tr>
<td>Stability</td>
<td>1 x e^{-12} / 24 H with disciplined OCXO</td>
</tr>
<tr>
<td>Hold-over stability</td>
<td>5 µS after 5 hours (optional 1 µS after 24 hours)</td>
</tr>
<tr>
<td><strong>Size &amp; Weight</strong></td>
<td></td>
</tr>
<tr>
<td>Chassis</td>
<td>4U rack 19&quot;</td>
</tr>
<tr>
<td>Width</td>
<td>482 mm (18.97&quot;)</td>
</tr>
<tr>
<td>Height</td>
<td>177 mm (6.97&quot;)</td>
</tr>
<tr>
<td>Depth</td>
<td>420 mm (16.54&quot;), without fans</td>
</tr>
<tr>
<td>Weight</td>
<td>25 kg (55.1 lb.)</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>Operational Temperature Range</td>
<td>0° to 45° C (32° to 113° F)</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-40 to +70° C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0 to 90%, non-condensing</td>
</tr>
<tr>
<td>Altitude</td>
<td>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 &gt; 2,500 m on request)</td>
</tr>
<tr>
<td>Cooling Method</td>
<td>Forced air-cooled, internal fans, airflow front to rear</td>
</tr>
<tr>
<td>Acoustic Noise</td>
<td>≤65 dBA (front 1 m)</td>
</tr>
</tbody>
</table>

## Local /Remote Control & Monitoring

- TFT touchscreen, Web GUI (RJ-45), SNMP, GPIO

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