Vortex II
ATSC3.0 High-End Exciter

Key Benefits

- Most advanced ATSC 3.0 technology
- ATSC 1.0 to ATSC 3.0 DualCast modulation core
- Top class of RF signal performances
- Straightforward integration within transmitter
- Dedicated to ATSC 3.0 commercial roll-outs

Description

Vortex II comes as a very optimized and unique platform supporting the ATSC 3.0 terrestrial TV standard. With this new product, TeamCast is sharing its experience in designing and operating the 3nd Generation of ATSC Terrestrial Standards. Vortex II succeeds to its predecessor, the exTra3.0 exciter, the first generation of ATSC 3.0 introduced by TeamCast at the genesis of this new standard on the market. This early period has been very important for TeamCast to be now in position to propose on the market a very optimized and future proof exciter product for this new standard. Whereas exTra3.0 model was addressing the demand for early tests & trials, Vortex II is dedicated to commercial ATSC 3.0 roll-outs worldwide.

Vortex II comes as a 1-RU rack exciter that supports both ATSC 1.0 and ATSC 3.0 modulation waveforms on the same hardware platform. It has been especially designed to meet early ATSC 3.0 adopters’ plan to commercially deploy this new terrestrial TV unmatched technology. It also meets transmitter manufacturer’s demand for integrating a “ready-to-use” and straightforward high-end exciter within their new ATSC 3.0 transmitter designs.

Fully controlled via a friendly WEB GUI and via SNMP, Vortex II features some very unique functionalities dedicated to control the transmitter such as a Power Measurement Unit (measuring in real-time the forward and reflected power levels), the TX power ON/OFF control system and the Automatic Gain Control (AGC) mechanism. Vortex II Digital Adaptive Precorrection circuits, powered by TeamCast GAP® - Green Adaptive Processing algorithm, permits transmitters operation very close to their saturation limit, with unequalled RF signal performances and allowing significant gain in transmitter Power Efficiency. One of the key characteristics concerns the high number of the Gigabit Ethernet ports being available on the product to anticipate any future use of redundant or regional IP streams.
VORTEX II
High-End Rack Modulator/Exciter

Specifications

1. Standards
   - ATSC 1.0: A/53, A/54, A/64
   - ATSC 3.0: TG3/S32, Physical layer, STL

2. ASI Stream Interfaces (ATSC 1.0)
   - 2 x ASI input BNC connector - 75 Ω
   - 1 x ASI output BNC connector - 75 Ω
   - 188/204 Bytes - 80 Mbps maxi. Packet/burst mode

3. Gigabit Streaming Input (ATSC 3.0)
   - 4 x 1000 base-T RJ45 ports
   - Protocols: UDP, IP, IGMP (V2 & V3)
   - STL interface
   - Built-in ALP Encapsulation

4. RF Outputs
   - UHF output: 470 MHz to 862 MHz - 6 MHz BW
   - Up to 20 dBm - N connector 50 Ω
   - Low level (-20 dB) output available for monitoring - SMA connector 50 Ω

5. AGC Feature
   - Based on VDC (external sensor) or RF input - user selectable
   - User-configurable AGC high limit and starting delay
   - Reflected Power protection mechanism

6. Monitoring
   - MER, left & right shoulders, forwarded & reflected powers

7. Clock and Synchronization
   - 10 MHz & 1 PPS input/output
   - Onboard GPS

8. Stream Process and Modulation
   - Stream input redundancy management
   - 8 levels VSB trellis for ATSC 1.0 transmission
   - MFN or SFN operating for ATSC 3.0
   - Test modes: PRBS, Sinus, Spectrum Gap and Null Symbol insertion

9. Digital Adaptive Precorrection
   - Linear DAP: Amplitude ±3 dB, Delay 0 to 3 μs
   - Linear Sharp Filter Profile
   - Non Linear DAP: Phase ±180°
   - Crest Factor Reduction (PAPR) and Protection clipping
   - 2 x RF feedback inputs for DAP: -15 dBm to -5 dBm - SMA connector 50 Ω
   - GAP® option

10. Control & Monitoring
    - 2 + 1 x Ethernet Control ports
    - Web GUI and SNMP
    - Log file
    - LCD Front Panel Display
    - 2x GPIn & 4x GPOut ports for external switch and PA control

11. Physical
    - Dimensions: (D x W x H) 250 x 483 x 44 mm
    - Weight: 4.5 Kg

Ordering Information

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<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>XTTR-VX20-3032</td>
<td>ATSC 3.0 modulator - with UHF output (up to +0dBm), DAP and onboard GPS</td>
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<tr>
<td>XTTR-VX20-4032</td>
<td>ATSC 3.0 exciter - with UHF output (up to +20dBm), DAP and onboard GPS</td>
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<td>XTTR-VX20-X022</td>
<td>with VHF Band III output</td>
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<td>SNMP Client software license for VORTEX II</td>
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<td>XTTS-FOR0-VX20</td>
<td>One day of Training course</td>
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Specifications subject to change

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