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 exTra$^{3.0}$ 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 exTra$^{3.0}$ 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 straight-forward 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.

Key features:

- ATSC 1.0/ATSC 3.0 DualCast
- Built-In AGC
- DAP with «Green Adaptive Processing»
- Embedded Power Measurements Unit
- Onboard GPS
- Up to +20dBm output
- Web GUI & SNMP
- Log file

VORTEX II

High-End Rack Modulator/Exciter

Front and rear panels

Specifications[1]

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

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

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

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

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

Monitoring
- o MER, left & right shoulders, forwarded & reflected powers

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

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

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

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

Physical
- o Dimensions: (D x W x H) 250 x 483 x 44 mm
- o Weight: 4.5 Kg
- o Operating temperature range: 0°C to 50°C

Ordering Information

XTTR-VX20-3032	ATSC 3.0 modulator - with UHF output (up to +0dBm), DAP and onboard GPS
XTTR-VX20-4032	ATSC 3.0 exciter - with UHF output (up to +20dBm), DAP and onboard GPS
XTTR-VX20-XX2X	with VHF Band III output
XTTO-VX20-ATS3	ATSC 3.0 software license for VORTEX II
XTTO-VX20-ALP3	ALP software license for VORTEX II
XTTO-VX20-FEC3	FEC software license for VORTEX II
XTTO-VX20-ADV3	Advanced features software license for VORTEX II
XTTO-VX20-EGAP	GAP software license for VORTEX II
XTTO-VX20-AGC0	AGC software license for VORTEX II
XTTO-VX20-SNMP	SNMP Client software license for VORTEX II
XTTO-VX20-ST2L	ST2L output license for VORTEX II
XTTS-FOR0-VX20	One day of Training course

[1] Specifications are not contractual and are subject to revision without notice.

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