PowerVision

DX PLATINUM SERIES

High-Performance DTV Exciter

FEATURES

- Available for leading DTV standards (DVB-T/H, DVB-T2, ATSC, ISDB-T/Tβ)
- Linear and non-linear precorrections
- MFN & SFN operations
- 2 ASI inputs with “seamless” switching
- Low power consumption
- Latest LDMOS technology
- Excellent noise figure
- “Soft-start” circuit
- AGC and ALC circuits
- 10MHz external synchronization
- Compact design
- Ethernet control
- Remote control interface

Options:

- DAP
- Transposer configuration
- N+1 configuration
- GPS receiver
- Battery power supply

DESCRIPTION

The DX PLATINUM SERIES DTV exciter is engineered to be used as a stand-alone transmitter for LPTV installations or to drive high power amplifiers. The high-performance exciter is fully compliant with most leading international DTV standards (DVB-T/H, DVB-T2, ATSC and ISDB-T/Tβ) and capable of Multi Frequency Network (MFN) and Single Frequency Network (SFN) operations. UHF and VHF bI/bIII models are available with output power levels from 2.5W to 80W, depending on the DTV standard and frequency band.

A broadband amplifier, based on the latest LDMOS technology, delivers high efficiency and reliable linear performance over the entire selected frequency band. Easy channel changes and precorrection functions provide excellent performance in any condition.

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Technical Specifications

SIGNAL PROCESSING	
DVB-T2	
Network mode supported	MFN, SFN-SISO, SFN-MISO (selectable)
FFT mode	1K, 2K, 4K, 8K, extended 8K, 16K, extended 16K, 32K, extended 32K
Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Guard interval	1/128, 1/32, 1/16, 19/256, 1/8, 19/128, 1/4
PLP constellation	QPSK, 16QAM, 64QAM, 256QAM (normal or rotated)
L1 post constellation	BPSK, QPSK, 16QAM, 64QAM
FEC	Short (16K), Normal (64K)
Channel bandwidth	10 MHz, 8 MHz, 7 MHz, 6 MHz, 5 MHz, 1.7 MHz
Time interleaving	Adjustable
Pilot pattern	From PP1 to PP8
Input	T2-MI input over ASI Input stream monitoring PCR restamping TS bit rate adaptation
DVB-T/H	
Network mode supported	Hierarchical or non-hierarchical, MFN & SFN (selectable)
FFT mode	2K, 4K, 8K
Guard interval	1/32, 1/16, 1/8, 1/4
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Constellation	QPSK, 16QAM, 64QAM
Hierarchical mode	α = 1, 2, 4 for 16QAM and 64QAM
Channel bandwidth	8 MHz, 7 MHz, 6 MHz, 5 MHz
ISDB-T/Tβ	
Network mode supported	Hierarchical or non-hierarchical, MFN & SFN (IPP packets)
FFT mode	2K, 4K, 8K
Guard interval	1/32, 1/16, 1/8, 1/4
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Constellation	QPSK, 16QAM, 64QAM, DQPSK
Channel bandwidth	6 MHz
Hierarchical mode	Up to 3 layers
Carrier spacing	1 KHz, 2 KHz, 4 KHz
Timer interleaver	0 to 16
SIGNAL INPUTS	
Multiplexed Transport Stream	2 x ASI, BNC female, 75 Ω
HPA feedback (w/ DAP)	BNC female, 50 Ω
TSoIP (for DVB-T, optional)	2 x RJ45
Clock reference	10 MHz Level: -15 dBm to +15 dBm Connector: BNC female, 50 Ω
Time reference - 1 PPS	Amplitude level: LVTTL Trigger: Falling or rising edge (selectable) Connector: BNC female, 50 Ω
Time of day (for DVB-T2)	9600 bps, no parity, 8 bits data, 1 bit stop Connector: 9-pin SUB-D female

CONTROL INTERFACES	
Front panel	LCD display and keys
RS-232 serial port	Connector: 9-pin SUB-D female
RS-485 (electrical)	Connector: 9-pin SUB-D female (optional)
PC graphical interface	Connector: RJ45
RF OUTPUT	
Modulator center frequency	30 MHz to 900 MHz (adjustable)
Spectrum polarity	Inverted or non-inverted
Modulator level	-17 dBm to 0 dBm with 0.1 dB step
Modulator return loss	> 12 dB
Modulator shoulder level	≤ -50 dBc
Modulator spurious level ouside channel	< -50 dB
Modulator MER	≥ 45 dB
Transmitter shoulder level	≤ -38 dBc
Transmitter MER	≥ 35 dB
Amplitude flatness (8 MHz bandwidth)	Center frequency ± 3.8 MHz: ± 0.3 dB
Group delay response (8 MHz bandwidth)	Center frequency ± 3.8 MHz: ± 10 ns
Amplitude flatness (6 MHz bandwidth)	Center frequency ± 2.8 MHz: ± 0.3 dB
Group delay response (6 MHz bandwidth)	Center frequency ± 2.8 MHz: ± 10 ns
Phase noise SSB	10 Hz < -55 dBc/Hz 100 Hz < -85 dBc/Hz 1 KHz < -85 dBc/Hz 10 KHz < -95 dBc/Hz 100 KHz < -113 dBc/Hz 1 MHz < -130 dBc/Hz
NON-LINEAR PRECORRECTION	
Dual Band	
AM / AM	± 6 dB
AM / AM resolution	0.05 dB
AM / PM	± 25 °
AM / PM resolution	0.2 °
LINEAR PRECORRECTION	
Correction points	32
Amplitude correction	± 3 dB
Amplitude resolution	0.1 dB
Group delay correction	± 500 ns
Group delay resolution	10 ns
Peak power clip level	+8 dB to +20 dB (0.1 dB step)
ADAPTIVE PRECORRECTION (Optional)	
Dynamic	9 dB
Linear amplitude	± 3 dB
Linear delay	0 to 3 us
Non-linear phase	180 °
Monitoring	Right and left signal shoulder, DAP status

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SIGNAL PROCESSING	
ATSC STANDARD	
Modulation	8VSB
Network mode supported	MFN & SFN (selectable)
Channel bandwidth	6 MHz
SIGNAL INPUTS	
Multiplexed Transport Stream	2 x ASI, BNC female, 75 Ω
Clock reference	Frequency: 10 MHz Level: 100 mV - 3 Vpp Connector: BNC female, 50 Ω
Time reference - 1PPS	Amplitude level: TTL Trigger: Falling edge Connector: BNC female, 50 Ω
RF OUTPUT	
Modulator center frequency	30 MHz to 1 GHz w/ 1 Hz step
Spectrum polarity	Inverted or non-inverted
Modulator level	-10 dBm to 0 dBm w/ 0.1 dB step
Modulator return loss	> 20 dB
Modulator shoulder level	≤ -55 dBc
Modulator spurious level outside channel	< 60 dB
Modulator MER	≥ 45 dB
Amplitude flatness	Center frequency ± 2.8 MHz: ± 0.3 dB
Group delay response	Center frequency ± 2.8 MHz: ± 10 ns
Phase noise SSB	10 Hz < -60 dBc/Hz 100 Hz < -85 dBc/Hz 1 KHz < -100 dBc/Hz 10 KHz < -105 dBc/Hz 100 KHz < -120 dBc/Hz 1 MHz < -135 dBc/Hz
NON-LINEAR PRECORRECTION	
Curve format	S21 and V0/V1
Amplitude scale	Linear and logarithmic
Correctional points	Max. 256, user-defined position
Gain correction	Max. 12 dB, subject to available headroom
Phase correction	-6° to +30°, subject to available headroom
LINEAR PRECORRECTION	
Correction points	61
Point spacing	1/60 of nominal spectrum bandwidth
Amplitude correction	± 10 dB
Amplitude resolution	0.01 dB
Group delay correction	± 2000 ns
Group delay resolution	1 ns
Peak power clip level	+17 dB to +7 dB (relative to average RMS level)
ADAPTIVE NON-LINEAR PRECORRECTION (Optional)	
Level	-15 dBm to 0 dBm
Frequency	470 MHz to 860 MHz
Spectral regrowth reduction	7 dB ± 2 dB

CONTROL INTERFACES	
Front panel	LCD display and cursor / execute keys
RS-232 serial port	Connector: 9-pin SUB-D female
RS-485 (electrical)	Connector: 9-pin SUB-D female (optional)
WEB interface	Connector: RJ45 for 10/100 Base-T Ethernet
SNMP control interface	Connector: RJ45 for 10/100 Base-T Ethernet
GENERAL	
Exciter connector	N female, 50 Ω
Main AC input power	230 VAC (110 VAC optional)
Operating temperature	-5 °C to +45 °C
Relative humidity	90 %, non-condensing
Cooling	Forced air with DC fans
Dimensions (W x H x D)	432 x 88 x 432 mm
Size	19” 2HE
Weight	12 - 15 Kg (depending on model)

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Technical Specifications

MODEL	BAND	OUTPUT POWER		OUTPUT CONN.	POWER CONSUMPTION	
		DVB-T/H DVB-T2 ISDB-T/T_β	ATSC		DVB-T/H DVB-T2 ISDB-T/T_β	ATSC
DX-2/U-XS	UHF	2.5 W	4 W	N	75 W	80 W
DX-5/U-XS		5 W	8 W		125 W	130 W
DX-10/U-XS		10 W	16 W		175 W	185 W
DX-40/U-XS		50 W	80 W		400 W	500 W
DX-2/3-XS	VHF bIII	2.5 W	4 W	N	75 W	80 W
DX-10/3-XS		10 W	16 W		140 W	150 W
DX-50/3-XS		50 W	80 W		400 W	500 W
DX-2/1-XS	VHF bI	2.5 W	4 W	N	75 W	80 W
DX-10/1-XS		10 W	16 W		140 W	150 W

Model numbers refer to DVB-T. For other DTV standards, add the corresponding extension:
/A ATSC
/T2 DVB-T2
/IS ISDB-T