

DTV LC HPA 1K-10K

High Power Liquid Cooled Transmitter with Integrated Cooling System

Main Characteristics

- High efficiency, low power consumption
- Configurations: Stand Alone, 1+1, N+1 up to 7+1
- Available in all analogue standards
(PAL, SECAM, NTSC) with digital processing for high performances
- Available in all digital standards
(DVB-T/T2, ISDB-T/Tb, ATSC)
- Available in band III - IV - V.
- Integrated cooling system with redundancy dual pump and temperature flow control
- Anti-Condensation protection system
- High Efficiency Heat exchange ($\Delta t < 6^\circ$)
- Air detector in the hydraulic system
- Hot swap pluggable RF power amplifiers
- Low insertion loss output RF combiner
- Liquid Cooled Unbalance Dummy Load
- Hi efficiency adaptive precorrector
- IP-to-ASI input optional
- Quick installation (4 man-hours)
- Low acoustic noise, <55dbA
- WEB server SNMP



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GENERAL

Frequency Range	Band I, III, IV, V
Channel Bandwidth	6, 7, 8 MHz
RF Load Impedance	50 ohms, 1:1 VSWR over any single TV channel
RF Output Connector	1-5/8 in. (4 mm), 3-1/8 in. (8 mm)

AC MAINS

AC Line Voltage	3-phase 50/60 Hz, 380 to 415 V
AC Line Variation	10% to -15%
Power Factor	> 0.97
Power Efficiency	see Power Table

ENVIRONMENTAL

Altitude	Up to 4,000m above sea level
Ambient Temperature	0° to 45° C at sea level
Humidity	Up to 95%, non-condensing
Cooling Method	Forced Air
Acoustic Noise	< 65 dBA (measured 1m in front of cabinet)

ANALOG

Tv Standards	B/G/D/K/K1/M/N
Colour Systems	PAL, NTSC
Video Input Interfaces	2 BNC 75Ω, 1Vpp±6 dB.
Modulation Depth	5÷15 %
Audio Input Interfaces	2 XLR 600Ω/5 KΩ, balanced / unbalanced, 0dBm -6dB +21dB
Audio encoder mode	Mono/Stereo/Dual Sound
Fm Deviation	Up to 100 KHz (200 KHz for standard M), Hard Limiter 1KHz step
Power Output	see Power Table
Output Power Reduction	0 to -10dB

MECHANICAL	Dimensions (WxHxD)	Weight (approx.)
DTV LC HPA 1.5K	mm 600x2100x1200	Kg 335
DTV LC HPA 2.0K	mm 600x2100x1200	Kg 373
DTV LC HPA 2.5K	mm 600x2100x1200	Kg 413
DTV LC HPA 5.0K	mm 600x2100x1200	Kg 580
DTV LC HPA 7.0K	mm 600x2100x1200	Kg 580

COFDM: DVB-T/T2, ISDB-T/Tb (SBTVD)

Systems	ISDB-T, ISDB-Tb, DVB-T, DVB-T2
Digital Inputs	ISDB-T/Tb: 3 BNC 75Ω ASI (BTS Compliant) DVB-T/T2: 2 BNC 75 Ω, DVB-ASI (Hierarchical) IP-To-ASI: RJ45
Crest Factor	Maximum 13 dB
Shoulder Level	> 40dB
MER	> 37dB
Harmonics (before filter)	< -40dB
Central Carrier Suppression	> 75dB
Frequency Stability (without ext. ref.)	± 150 Hz/month
Frequency Offsets	1 Hz resolution
MPEG packet length	188/204 byte packets, continuous and burst
Network Operations	MFN, SFN
Optional Output filter (NCM) with insertion loss	0.3 dB @ F.C. 0.7 dB @ F.C. ± 3.8 MHz
Power Output	see Power Table
Output Power Reduction	0 to -10 dB

8-VSB: ATSC

System	ATSC A-53, 8-VSB DTV standard
Digital Input	2 BNC 75 Ω ASI (SMPTE 310M)
Internal Precise Frequency input	10 MHz (I)
Internal Gps Receiver	Optional
Phase Noise	< 104 dBc/Hz @ 20 kHz offset (ATSC A/64)
Pilot Frequency Stability	Less than ±150 Hz/month Less than ±3 Hz with internal or external PFC
Harmonic Radiation and Spurious	Meets mask requirements specified in FCC 5th and 6th report and order
Sideband Performance	Compliant with FCC radiation mask, when measured at the output of optional output filter
Optional output filter with insertion loss	0,3 dB @ F.C. 0,5 dB @ F.C. ± 2,7 Mhz
Power Output	see Power Table
Output Power Reduction	0 to -10 dB

Power Table

Number of Amplifiers	Analogic		DVB-T/T2, ISDB-T/Tb		ATSC	
	Max Output (Wps)	Efficiency	Max Output (Wrms)	Efficiency (Doherty)	Max Output (Wrms)	Efficiency (Doherty)
2	4200	65%	1700	38%	2500	42%
3	6400	65%	2500	38%	4000	42%
4	8500	65%	3300	38%	5000	42%
6	13000	65%	5000	38%	7000	42%
8	17000	65%	6600	38%	9000	42%