



Successfully manufactures broadcasting equipment since over 30 years.

V75 04 UHF SD PCM PPT (high efficiency)





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6000 Wrms COFDM, 6500 Wrms ATSC and 10000 W p.s. Liquid cooled rack solution based on one driver and four amplifiers, using High efficiency PPT™ technology multimode and multistandard.

The V75_04_UHF_SD_PCM PPT (**PPT= Passive Peak Tracking** - registered proprietary mark, patent pending), is the liquid power transmitter solution from Supreme line. 44 rack module-19"std is capable on an overall efficiency of a single final stage around 42% and the efficiency of the whole transmitter is about 38%.

The V75 Amplifiers: high power, liquid cooled, compact design: up to 1,7kW rms / 2,5 kW p.s in only 3 RU working in CLASS AB, high efficiency PPT class, strong and reliable, over 5000 amplifiers delivered on the same type of design.

Extremely high MTBF with fault rate less than 1% /year.

Thermal design with amplitude and phase compensated board: really hot pluggable modules, no re-adjustment needed

Clever liquid cooling plant: works only if needed, coolant flow temperature compensated, maximize efficiency and reliability, minimize operating costs. Up to 20kW p.s. / 12 kW rms in one single cabinet (including the redundant liquid cooling system).

Key facts:

- Multimode platform - same hardware: System driver, low power transmitter, heterodyne transposer, regenerative transmitter, translator (integrated DVB-S2 receiver), gapfiller and Single Frequency Echo Canceller
- Multistandard Transmitter: All digital / All analog in the same hardware
- UP to 6500Wrms / 10000Wps
- Power-optimized adaptive cooling - integrated coolant circulation system
- 2x INPUT= SAT (S2 with CAMSlot), Ethernet, ASI= Hitless switch
- Regenerative and SFN Gapfiller functionality
- Freq. agile with static or adaptive pre-correction
- BUILT in GPS receiver
- Easy to use: web graphic interface GUI response.
- Several transmitters can be housed in one single rack , sharing redundant liquid cooling system

The liquid cooled high efficiency SyES transmitters line - Supreme line, have excellent performance matches with ease of operation and reliability, providing the ideal solution for high-power TV stations.

Top-level output power in compact size: up to 12kW rms per cabinet, with integrated cooling circulation system to simplify equipment installation and handling.

Transmitter configurations are based on a combination of high gain amplifiers, V75 type, directly fed by the exciter. Each module includes a dedicated power supply. The choice of redundancy configurations includes dual drive (exciter std-by), passive reserve (1+1 or n+1) and active reserve.

The equipment parts are installed in 19" cabinets, featuring a remarkably short overall depth.

The RF filter is installed within or outside the cabinet, depending on the configuration and on the specific operation requirements.

Coolant circulation is carried out by redundant pumps, typically integrated in the transmitter cabinet, connected to outdoor heat exchanger(s).

Coolant flow, as well as fan speed of the heat exchanger, are adaptively controlled according to the actual cooling needs.

The coolant type, non-toxic and easy to dispose of, also allows for long service intervals and optimally preserves the cooling circuit parts.

Equipment operation is supervised by the SyES designed control unit.

REVIEW DATA

RF frequency range (output)		UHF Band IV & V (470MHz-860MHz) WB or 3 NB 1st 470 MHz ... 575 MHz 2nd 566 MHz ... 680 MHz 3rd 670 MHz ... 792 MHz	
RF	Output power	6400 Wrms COFDM 6800 Wrms ATSC	10000 W p.s.
	Spurious / Harmonics	EN 302-296-2	
	Shoulders/MER	>40dB / >35 dB	n.a.
Mains	Voltage	400 Vac ±15% @ 47 to 63 Hz (three phase - autorange p.s.)	
	Power consumption	17150 W	n.a.
Cooling system /Liquid flow rate l/min		Liquid / 40 l/min	
Size	Width/Height/ Depth	600 mm / 2300 mm / 1100 mm (15 U used)	
Weight		340 kg	
Number of Tx / one rack 44U		Max 2	
DIGITAL MODULATION			
DVB-T	ref. standards	ETS 300 744 / EN 50083-9 / TR 101 190 / TR 101 891	
	RF channel width	6 MHz, 7 MHz, 8 MHz	
DVB-T2	ref. standards	EN 302 755, TS 102 831, T2-MI	
	Streams	Single stream (System A) or up to 8-PLPs (System B)	
	RF channel width	6 MHz, 7 MHz, 8 MHz	



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ISDB-T SBTV D	ref. standards	ABNT NBR 15601 - ARIB STD B31	
	Multiple segment operation	total 13 segments, distributed over the existing layers (1seg supported)	
	RF channel width	6 MHz	
ATSC 8VSB	Standards	ATSC DOC.A/53	
	Modulation mode	8-VSB	
	Channel spacing	6 MHz	
DTMB	Standard	DTMB (GB20200/2006)	
	Symbol rate / Modulation	Symbol rate: 7.56MSPS / TDS-OFDM	
	Channel bandwidth	8 MHz or 6 MHz	
Inputs		2xASI (BNC f, 75W) - seamless/hitless switching (SFN) / BTS / SMPTE / T2 MI / AA/VV	
IP input		2xGbE (ProMPEG Cop3) - Electrical + 1XSFP GbE - Opt./Elec.*	
ANALOGUE MODULATION			
TV System		PAL std. B/G, H, K, I, I1, M, N - NTSC std. M - SECAM D/K	
Ref. Standard		ITU-R BT.470-6	
Audio system		MONO/ IRT	
Video input	Level	1V _{pp} (0.5 to 2 V)(DC component level in the range -5 to 5 V)	
	Ret. loss	better than -30 dB (0 to 6 MHz) (75 W)	
	Connector	1xBNC female, 75 W	
Audio input	Level	6 dBm ± 6 dB (Df= 25 to 50 kHz)	
	Ret. loss	better than -30 dB (40 Hz to 15 kHz) (600 W, bal.)	
	Connector	DB9 with patch cable for 2xXLR female, 600 W (IRT config. : 2 inputs)	
REPEATER		SFN gap-filler	MFN re-transmitter
RF input	RFin frequency range	146 to 861 MHz	
	Input level	-10dBm to -60dBm	-20dBm to -70dBm (QEF reception)
	Input ret. loss	better than -16 dB	
	RF in connector	N female, 50 W	
Echo Canceller	residual echo suppression	up to more than 30 dB (30dB are obtained at 0dB input echo)	n.a.
Noise figure		max 10 dB	max 8 dB
immunity to other chan	N+1	OFDM/OFDM > 30 dB	
	others	OFDM/OFDM > 40 dB	
SATELLITE TRANSPOSER			
SatTV standard		DVB-S — DVB-S2 - EN300421	
Frequency range		950 - 2150 MHz	
Signal level		-65 to -25 dBm	
Connector - Cond. Access		SMA f - CAM slot	
LNB control		available, through RF input PS, polarity / band selection: by standard 13/18VDC and 22kHz signalling	
MONITORING			
RF Monitoring Connectors		FWD/REF: SMA female , 50 W	
Local Control		front panel (keys/display/USB port) / standard web browser	
Remote Control	Netw. Mgmt.	web browser / SNMP agent - upgrade also through ASI TS (OTA)	
	Direct signalling	IEC 60864-1	
TIME & REFERENCE			
Built-in ref.	Frequency	10 MHz OCXO	
	Stability	time: max ±10 ⁻⁷ /year - temperature: max ±2.5 10 ⁻⁸ (-20° to 70°C)	
Ext. ref.	Frequency	10 MHz - 1pps	
	Level	1 V _{pp} (0.7 to 1.4 V)	
VCO tuning step		1 Hz	
ENVIRONMENTAL			
Operating temp. range		0° to 50°C*	
Max rel. air humidity		95% @ 30°C, no condensation	
Max altitude		3000 m a.s.l.	
Immunity	bursts		
	surges		
Safety		EN 60215 (IEC 215)	