



Successfully manufactures broadcasting equipment since over 30 years.

PCM 1 Exciter UHF



The **PCM 1 Exciter UHF** : Multimode, Multistandard, Multifunction Exciter.
One platform for all broadcasting needs.

The **PCM 1 UHF Exciter** is the 0 dBm Exciter solution of the Syes PCM family. In just 1U rack module-19"std PCM-1 the Exciter for your analog / dual mode / digital system capable to manage transmitter complex system up to 80 kWrms (DTV).

FEATURES

Multimode platform – same hardware: System Exciter, low power transmitter, heterodyne transposer, regenerative transmitter, translator (integrated DVB-S2 receiver), gap filler and Single Frequency Echo Canceller.

- *Multistandard Transmitter: All digital / All analog in the same hardware (ATSC 3.0 ready)*
- Compact solution (UP to 80 Wrms in 1RU)
- *Multimode platform: same hardware: System driver, low power transmitter, heterodyne transposer, regenerative transmitter, translator (integrated DVB-S2 receiver), Gap filler and Single Frequency Echo Canceller*
- Compact solution AB class Transmitter
- Base inputs: 2x ASI Hitless switch, 2x SAT (S2 with CAMSlot), 2x Ethernet Hitless switch
- Regenerative and SFN Gap filler functionality
- Freq. agile with static or adaptive pre-correction (Linear and non linear)
- BUILT in GPS receiver for SFN Applications
- Easy to use: web graphic interface GUI response
- Broader modulator (30-1000MHz) with final stage VHF, VHF-I or UHF

DESCRIPTION

The PCM line is the result of more than 30 years of research and experience of our company.

PCM line represents the state of the art of the RF transmitter technology. It's the unique investment exciter thanks to its capability to modulate in all Digital standard, TV and Radio as the TV analog too.

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PCM platform allows the standard change via software, it's the perfect solution for broadcasters who are already in digital and need to take advantage of versatility in operation modes, configuration and performance, it's the perfect solution for broadcasters who are still working on the digital transition. PCM can be an exciter, low power transmitter (UP to 200Wrms in 2RU), a regenerative transmitter, translator (integrated DVB-S2 receiver), Gap filler and Single Frequency Echo Canceller (perfect for Single Frequency Network), all in a single hardware.

PCM already implements DVB-T/T2, ATSC /MH, ISDB-T/Tb, DAB, DTMB and all Analog standards.

PCM always embeds linear and non-linear pre-correction to optimize the global system performance. Pre-correction can be static, i.e. based on pre-stored tables, or adaptive, with real-time evaluation and compensation of possible distortions in the amplification.

PCM can be configured as managed remotely, using a dry contact, via SNMP commands, via TCP/IP or graphic user interface designed by us using whatever of the common web browsers.

PCM allows a total remote control of itself and its functionality by serial protocols or TCP/IP ports. Our platform can easily monitored / configured and updated using a LAN connection or a USB Key.

TECHNICAL SPECIFICATIONS

RF frequency range (output)		UHF Band IV & V (470MHz-860MHz)	
RF	Output power	1 Wrms COFDM 1 Wrms ATSC	2 W p.s.
	Spurious / Harmonics	EN 302-296-2	
	Shoulders/MER	>40dB / >35 dB	n.a.
Mains	Voltage	90 to 264 VAC @ 47 to 63 Hz (single phase – autorange p.s.)	
	Power consumption	140 W	140 W
Cooling system /Air flow rate m3/h		forced air / 60 m3/h	
Size	Width/Height/ Depth	483 mm / 44 mm / 450 mm	



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Weight		6 kg
Number of Tx / one rack 36U		More than 10
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
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)
ATSC 8VSB	RF channel width	6 MHz
	Standards	ATSC DOC.A/53
	Modulation mode	8-VSB
DTMB	Channel spacing	6 MHz
	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
	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 OXCO
	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		4000 m a.s.l.
Immunity	bursts	
	surges	
Safety		EN 60215 (IEC 215), EN301-489-1, FCC-73, ISO9001-2010 R&TTE 1999/5/EC, RoHS 2002/95/EC