

## PCM 1 UHF



**Power:** 1 - 1000 W rms

**Typology:** UHF

### MORE INFORMATION

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## OVERVIEW

Multimode, multistandard, multifunction exciter / driver One platform for all broadcasting solutions

The PCM -0 is the odBm driver solution of the PCM family. In just 1U rack module-19"std PCM-1 the a low power transmitter and driver / exciter for your analog / dual mode / digital system up to 60KW.

## FEATURES

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 (ATSC 3.0 READY, only a software update needed)
- Compact solution (UP to 250Wrms in 2RU)
- 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.
- Broader modulator (30-1000MHz) with final stage VHF 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.

It's the cost effective solution for broadcasters which are however transmitting in analog, for broadcasters who are facing the transition from analog to digital without an official digital standard yet, always granting the switch from Analog to Digital via software using the front panel, using LAN connection or remotely even under a time schedule. PCM is finally the solution for broadcasters who are already in digital and need to take advantage of versatility in operation modes, configuration and performance.

PCM can be a system driver, low power transmitter (UP to 250Wrms in 2RU), a regenerative transmitter, translator (integrated DVB-S2 receiver), gapfiller 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 ATV. It supports also DAB DAB+

for digital radio

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.

<b>REVIEW DATA</b>			
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	
Weight		6 kg	
Number of Tx / one rack 36U		More than 10	
<b>DIGITAL MODULATION</b>			
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 SBTVD	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: 7.56Mps / 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.*	
<b>ANALOGUE MODULATION</b>			
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 <sub>pp</sub> ( 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)	

<b>REPEATER</b>		<b>SFN gap-filler</b>	<b>MFN re-transmitter</b>
<i>RF input</i>	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	
<i>Echo Cancellor</i>	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	
<b>SATELLITE TRANSPOSER</b>			
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	
<b>MONITORING</b>			
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	
<b>TIME &amp; REFERENCE</b>			
<i>Built-in ref.</i>	Frequency	10 MHz OCXO	
	Stability	time: max $\pm 10^{-7}$ /year - temperature: max $\pm 2.5 \cdot 10^{-8}$ (-20° to 70°C)	
<i>Ext. ref.</i>	Frequency	10 MHz - 1pps	
	Level	1 V <sub>pp</sub> (0.7 to 1.4 V)	
VCO tuning step		1 Hz	
<b>ENVIRONMENTAL</b>			
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	