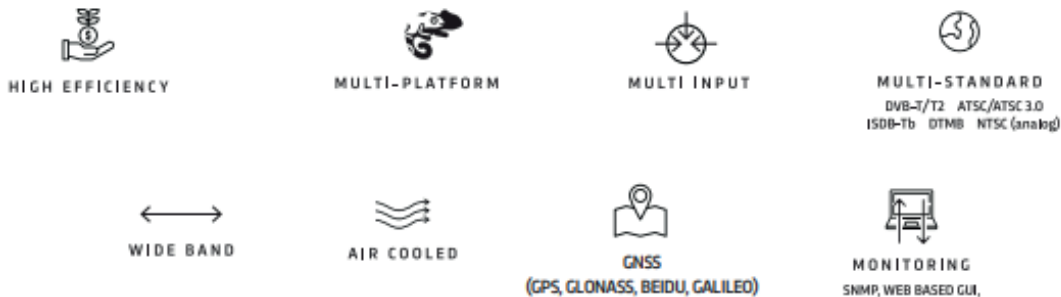


250W COFDM, 250W ATSC, 350Wps, 300W DAB

250 W VHF-BIII TV TRANSMITTER



TV/DAB TRANSMITTER



- ☐ Multistandard: ATSC (including ATSC3.0), ISDB-Tb (ABNT NBR 15.601), DTMB, DVB-T/T2, Analog.
- ☐ 2x ASI with Hitless switch, 2x IP Ethernet, A/V for analog broadcasting.
- ☐ The most advanced manual, automatic and adaptive linear and nonlinear pre-corrector.
- ☐ Fully frequency agile without need for any tuning or trimming.
- ☐ ON Board GNSS receiver (GPS, GLONASS, BEIDU, GALILEO).
- ☐ USB input to fast save/load configurations.
- ☐ Highest performances in terms of MER, BER and shoulders.
- ☐ Nr. 2 Independent temperature controlled low-noise fans.
- ☐ Use of tools is reduced almost to zero including pallets replacement.
- ☐ Remote control via SNMP, friendly web browser GUI, no need of plug-in or apps, dry contacts.
- ☐ Over temperature protection.
- ☐ VSWR and overpower protection by hardware and software with automatic power reduction.
- ☐ Automatic reboot in case of electricity failure.
- ☐ Alarm history available on web interface and through SNMP.
- ☐ Fully solid-state power amplifier module.
- ☐ Dual Plug-In Power Supply

The PCM 250 VHF is the air cooled VHF TV/DAB Transmitter PCM line.

250 Wrms COFDM, 250 Wrms ATSC, 350 W p.s. and 300 Wrms DAB.

Low Consumption, Compact and Easy to maintain, with a clear and intuitive design, it is Syes next generation of air cooled transmitters, available in band I, III and IV-V.

The PCM family is designed to be the most efficient, robust and high performance transmitters of the digital era.

TV
AIR COOLED

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TECHNICAL SPECIFICATIONS

RF OUTPUT

Output power*	- Up to 250 Wrms COFDM - Up to 250 Wrms ISDB-Tb - Up to 250 Wrms ATSC - Up to 350 Wp.s. ANALOG - Up to 300 Wrms DAB
Spurious / Harmonics	EN 302-296-2
Shoulders/MER	Typical: >50dB/>37dB after the filter (ABNT NBR 15.601)
Connector	N(f) or other specified in the project
Bandwidth	VHF Band BIII (170MHz-230MHz)
Frequency stability	+/-1 Hz
Final Stage	N° 2 final pallets
Amplification Class:	HE class / Doherty Technology
Output Impedance	50 Ohms

GENERAL

<u>Mechanical</u>	
Composition	Stand alone transmitter 2 S.U.
Dimensions (WxHxD mm)	482 mm / 88 mm / 500 mm
Weight	12 kg
<u>Cooling</u>	
Cooling System	Air Cooled
Cooling redundancy	Dual fan
<u>Environmental</u>	
Relative humidity	95% max. (non-condensing)
Operation temperature range	0° to 50°C
Storage temperature range	-20° to 70°C
Max. installation altitude	4.800 m a.s.l. (higher altitudes kit on request)
<u>Power supply & Safety</u>	
Voltage (options)	- 100 to 240 VAC - 90-264 Wide Range @ 47 to 63 Hz (auto range p.s.) power factor > 0.98
Safety /EMC	EN 60215 (IEC 215), EN301-489-53, FCC-73, IS09001-2010. RED 2014/53/UE, RoHS 2002/93/EC
Power Supply	2x power supplies in hot plug-in configuration 1+1 power supply redundancy configuration available
Additional Information	Total power capacity of the power supplies > 20% of the consumption of the transmitter operating in maximum power Input over voltage and power surge protection system Output over voltage and power surge protection system

*: Power outputs are subject to change due to out-of-band regulations and the required shoulder attenuation / MER, voltage, channel of operation and type of RF output filter.

** : HE High Efficiency Syes transmitting platform are WIDE BAND native, without any need for software or hardware change, tuning or other setting. Efficiency depends on several parameters such as operating standard and frequency, output power settings, spectrum performances, environmental conditions etc.

SYES

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DTV MODULATIONS

ATSC 3.0													
Standard	ATSC 3.0: TG3/S32 Physical Layer. STL												
Inputs ****	2xASI BNC (H) , ohm / 2xTSolP 10/100/1000 RJ45.												
Guard interval	192, 384, 512, 768, 1024, 1536, 2048, 2432, 3072, 3648, 4096 and 4864												
Code Rate/ Constellation	2 / 15	3 / 15	4 / 15	5 / 15	6 / 15	7 / 15	8 / 15	9 / 15	10 / 15	11 / 15	12 / 15	13 / 15	14 / 15
QPSK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16QAM			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
64QAM			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
256QAM			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1024QAM				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4096QAM					✓	✓	✓	✓	✓	✓	✓	✓	✓

DVB-T/-H-T2													
Standard	EN300744. EN302304. EN302755. TS 102831. TS 102 773 (T2-MI)												
Inputs ****	2*ASI BNC, 75 ohm / 3xTSolP 10/100/1000 RJ45.												
FFT Size	1K (DVB-T2), 2K, 4K, 8K, 16K (DVB-T2), 32K (DVB-T2) incl. ext. carrier modes												
Code rate	1/2, 2/3, 3/4, 5/6, 3/5 (DVB-T2). 4/5 (DVB-T2) plus 1/3, 2/5 for T2 Lite												
Guard interval	1/32, 1/16, 1/8, 1/4, 19/256 (DVB-T2), 19/128 (DVB-T2), 1/128 (DVB-T2)												
Constellation	QPSK, 16QAM, 64QAM, 256QAM (DVB-T2). Rotated and no rotated (DVB-T2)												

ISDB-Tb													
Standard	ARIB STB-B31, TR-B14												
Inputs ****	2xASI BNC, 75 ohm / 3xTSolP 10/100/1000 RJ45												
FFT Size	2K, 4K, 8K												
Code rate	1/2, 2/3, 3/4, 5/6, 7/8												
Guard interval	1/4, 1/8, 1/16, 1/32												
Hierarchical Transmission	Up to 3 layers												
Constellation	QPSK, 16QAM, 64QAM												

ATSC													
Standard	ATSC A/53. A/54. A/64. A/153. A/110B. SMPTE-310M												
Inputs ****	2xASI BNC (F)>. 75 ohm /2xTSolP 10/100/1000 RJ45.												
Constellation	8VSB												
Symbol rate	0.76 Msmblos/s												
Data rate	19.39 Mbits/s												
Trellis coding	2/3												
Reed-Solomon encoder	207 / 187 / 10												

DAB													
Standard	DAB, DAB+												
Ref. Standard	EN 3000401, EN 302077-2, EN 300799, DMB, TS 102428												
Inputs	2xASI hitless switching (SFN), 2xGBE (EDI ProMPEG COP3) - Electrical + 1xSFP GBE (Opt./Elec)												
DAB modes	I, II, III, IV												
RF channel Bandwidth	1.536 MHz blocks												
Efficiency	Better than 40%												

DIGITAL ADAPTIVE PRECORRECTION (REAL TIME)													
Type	Linear / non linear; selectable												
Clipping	12 dB												
Operation mode	Continuous / Automatic (triggering: time/shoulder level)												
Precorrection status	Running/Stopped												
PAPR	Provided												

*** Type and number of inputs depends on Exciter HW configuration

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ANALOGUE MODULATIONS

Standard	PAL std. B/G, H, K, 1, 11, M, N - NTSC Std. M - SECAM D/K
Ref. Standard	ITU-R BT.470-6
Audio	Stereo or Mono IRT
Modulation /amplification	Common
Video input	1V pp (0.5 to 2 V) (OC component level in the range -5 to 5 V) - Ret. loss better than -30 dB (0 to 6 MHz) (75 W)
Audio input	6 dBm $\pm$ 6 dB (Df= 25 to 50 kHz) - Ret. loss: better than -30 dB (40 Hz to 15 kHz) (600 W, bai.)
Video Connector	1xBNC female. 75 Ohm
Audio Connector	DB9 with patch cable for 2xXLR female, 600 W (IRT config.: 2 inputs)

REPEATER AND TRANSPOSER

Type	SFN gap filler, transposer and MFN re transmitter
RF input	N-Connector
Rfm frequency range	146 to 861 MHz
Input level	-10dBm to -60dBm (SFN Gap filler) -20dBm to -70dBm (QEF reception)
Input ret. Loss	better than -16 dB
RF in connector	N type . 50 Ohm
Echo cancellation	Resilient to static and dynamic echoes
Residual echo suppression	up to more than 30 dB (30dB are obtained at 0dB input echo)
Noise figure	max 10 dB (SFN Gap filler) max 8 dB (Transposer)
Immunity to other channel	
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 (Ku band)
Signal level	-65 to -25 dBm
Connector	SMA f - CAM slot (Cond. Access)
LNB control	Available through RF input. PS, polarity / band selection: by standard 13/18VDC and 22kHz signaling

CLOCK AND SYNCHRONIZATION

Interna clock	OCXO single oven or dual oven (optional)
External 10 MHz reference Input	BNC (F). Impedance: 50 ohm / high (selectable). Level: -5 to +10 dBm
External 1pps reference Input	BNC (F). Impedance: 50 ohm / high (selectable)
SFN	SFN resolution 1100 ns SFN configurable delay $\pm$ 500 ms
Stability	time: max $\pm$ 10-7 /year - temperature: max $\pm$ 2.5 10-8 (-20°C to +70 °C)

MONITORING

LC Display (LCD)	Local operation through LCD display front panel keyboard measurements (forward power, reflected power, voltage, current, temperature, amplifier power and others) and controls in the menu.
Front RJ-45	Local operation through a Web Server Graphical User Interface, Remote Network management (via SNMP)
Rear RJ-45	Local operation through a Web Server Graphical User Interface, Remote Network management (via SNMP)
GUI	Web Server Graphical User Interface xHTML based
SNMP	V2c / V3 provided
Communication Interface	USB, ETHERNET
Others	Forward and reflected power monitoring, analogic output with female conector DB type with 50mV to 7V range.

SY
Yes

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