

# TV Transmitter - UHF

60W<sub>rms</sub> (DVB) / 100W<sub>ps</sub> (Analog)



*Output filter not shown in the picture*

**Compact line**

## TV TX

- UHF IV-V -

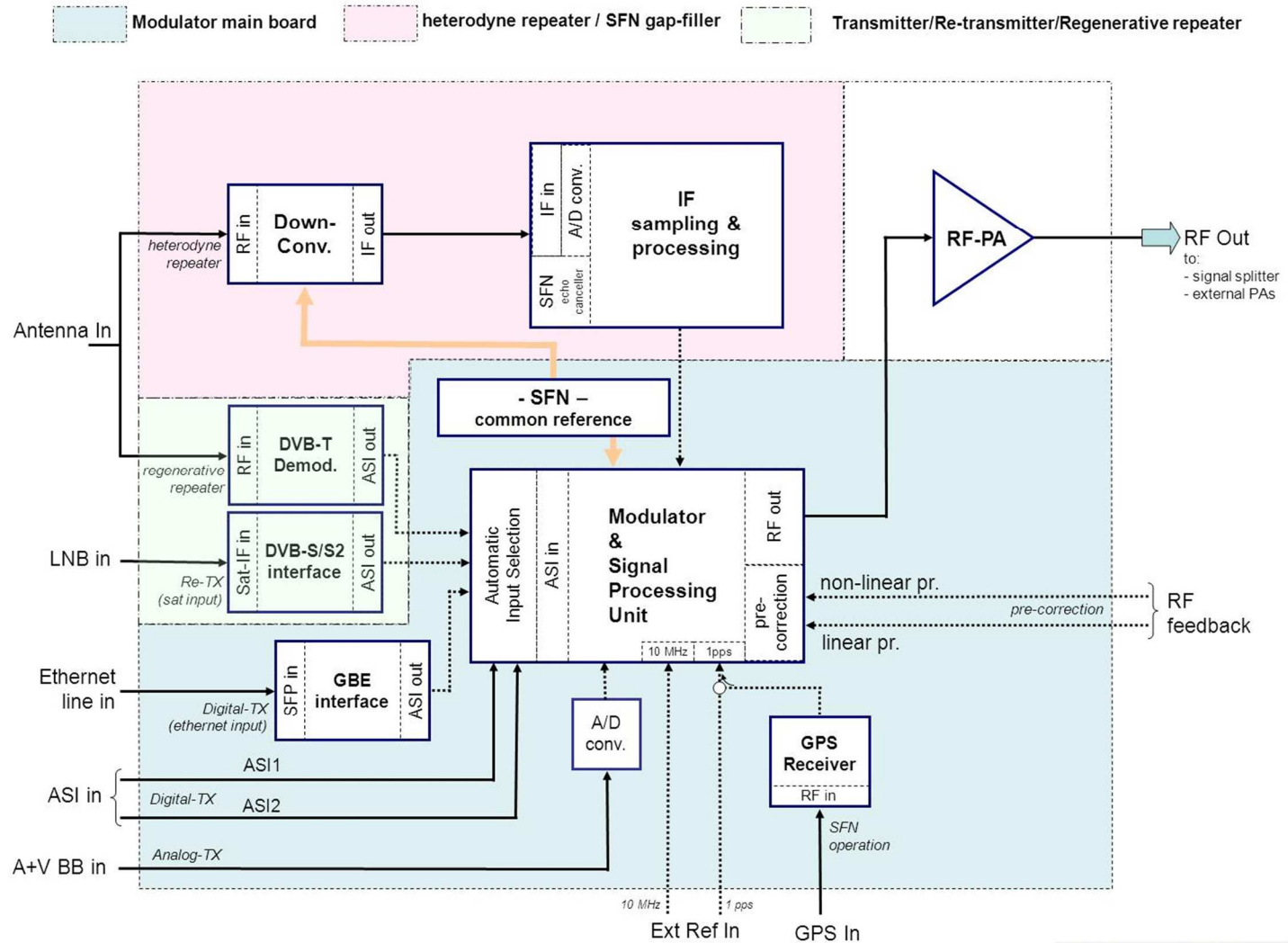
**60W<sub>rms</sub>** (DVB)  
**100W<sub>ps</sub>** (Analog)

- **Digital/Analog multi-standard Operation**
  - Digital - COFDM: **DVB-T2\*** – **DVB-T/H** – **ISDB-T/SBTVD** – **DTMB**
  - Digital - 8-VSB: **ATSC**
  - Analog: **PAL, NTSC**
- Fully qualified for **SFN**
- Configurable as **Transmitter** or **Repeater\***
- **Repeater\* configurations:** regenerative -heterodyne-SFN gap-filler (echo canceller)
- Inputs: **dual ASI / ethernet** (GBE) / **sat\*** (DVB-S2-multistr.-CAM slot) / **off-air\*** (RF)
- **Hitless input switching** (SFN),
- **Frequency agile** - “static” or “adaptive” pre-correction
- **Hierarchical** (DVB-T) ; **Multi-PLP** (DVB-T2); **ONE-SEG** (ISDB-T) transmission
- **Single phase** voltage supply
- **Frequency ref:**
  - built-in **high stability OCXO**,
  - input for optional **external source**
  - **Built-in GPS receiver**
- **Front-panel display** for direct equipment control.
- **SNMP** and **web pages** for external/remote control
- Easy **SW/FW update**
  - remote (Ethernet)
  - local (USB flash key)
  - ASI stream (OTA service)
- Also available : **N-in-one configuration** (N transmitters in a single cabinet)



(\*) option

# Conceptual diagrams - TX based on PCM exciter



Effective use of SFN repeaters requires the appropriate minimum value of out/in isolation and the assessment of the proper signal conditioning (levels, delays) over the coverage



PCM multistandard exciter by SyES

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**Technical  
Data**

Model: <b>SLIM1-01/UHF_PCM+</b>		<b>digital COFDM</b> (DVB - ISDB...)	<b>analog</b> (NTSC-PAL)
RF frequency range (output)		UHF (470 to 862 MHz)	
RF	Output power (before filter)	60W rms	100W ps
	Output power (after filter)	45W rms*	
	Spurious / Harmonics	EN 302-296-2	
	Shoulders/MER	>40dB / >35 dB	n.a.
Amplification class / PA modules		A+AB / no.1 PA (SLIM1+ type)	
System configuration		single drive (others on request)	
RF out connector		Nf 50 Ω	
Mains	Voltage	95 to 260 VAC @ 47 to 63 Hz (single phase)	
	Power consumption **	400W	500W
	Power factor	>0,9	
Cooling system		forced air	
Air flow rate m <sup>3</sup> /h		300	
Size	Width	483 mm (std. 19" rack mounting)	
	Height	88 mm (2U) ***	
	Depth	450 mm	
Weight		13 kg ***	



(\*) standard mask - critical mask implies an output power reduction of about 20%

(\*\*) Power consumption may moderately depend on operation conditions.

(\*\*\*) output filter not included.

# TV TX

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**60W<sub>rms</sub> (DVB)**  
**100W<sub>ps</sub> (Analog)**

## Modulation Data (Digital)

DVB-T	ref. standards	ETS 300 744 / EN 50083-9 / TR 101 190 / TR 101 891
	Hierarchical modes	option
	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- DTV	ref. standards	ATSC DOC.A/53
	RF channel width	6 MHz
ASI inputs		2xASI (BNC f, 75Ω) - hitless switching (SFN)
IP input		GBE (ProMPEG Cop3) - Optical-Electrical



(\* Option)

**TV TX**  
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**Modulation  
Data**  
**(Analog)**

TV System		PAL std. B/G, H, K, I, I1, M, N - NTSC std. M
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 Ω)
	Connector	1xBNC female, 75 Ω
Audio input	Level	6 dBm ± 6 dB (Δf= 25 to 50 kHz )
	Ret. loss	better than -30 dB (40 Hz to 15 kHz) (600 Ω, bal.)
	Connector	1xXLR female, 600 Ω (IRT config. : 2 inputs)



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**RF**  
**Input:**

**Off-air**  
**(repeater\*)**

**Satellite**  
**Receiver\***



operation		Heterodyne - SFN gap-filler	MFN re-transmitter
TV standard		digital - COFDM: DVB -T / DVB-T2	
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 Ω	
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	
SatTV standard		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	

(\*) Option

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## Monitoring & Control

RF Monitoring Connectors		FWD/REF: SMA female , 50 Ω
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

## Frequency References

Built-in ref.	Frequency	10 MHz OCXO
	Stability	time: max $\pm 10^{-7}$ /year - temperature: max $\pm 2.5 \cdot 10^{-8}$ (-20° to 70°C)
Ext. ref.	Frequency	10 MHz - 1pps
	Level	1 V <sub>pp</sub> (0.7 to 1.4 V)
VCO tuning step		1 Hz

## Operating Conditions

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	<4kV (AC) / <1kV (input) - IEC61000-4-4
	surges	<2kV (differential mode) - <4kV (common mode) - IEC61000-4-5
Safety		EN 60215 (IEC 215)



(\* ) Sea level - max temp derating with altitude: 2.5 C/1000m (\*\* ) option