

TV Transmitter - Multi-standard - UHF - 130W_{rms} (DVB) / 200W_{ps} (Analog)



Output filter not shown in the picture

Mini line

TV TX - UHF IV-V -

130W_{rms} (DVB)
200W_{ps} (Analog)

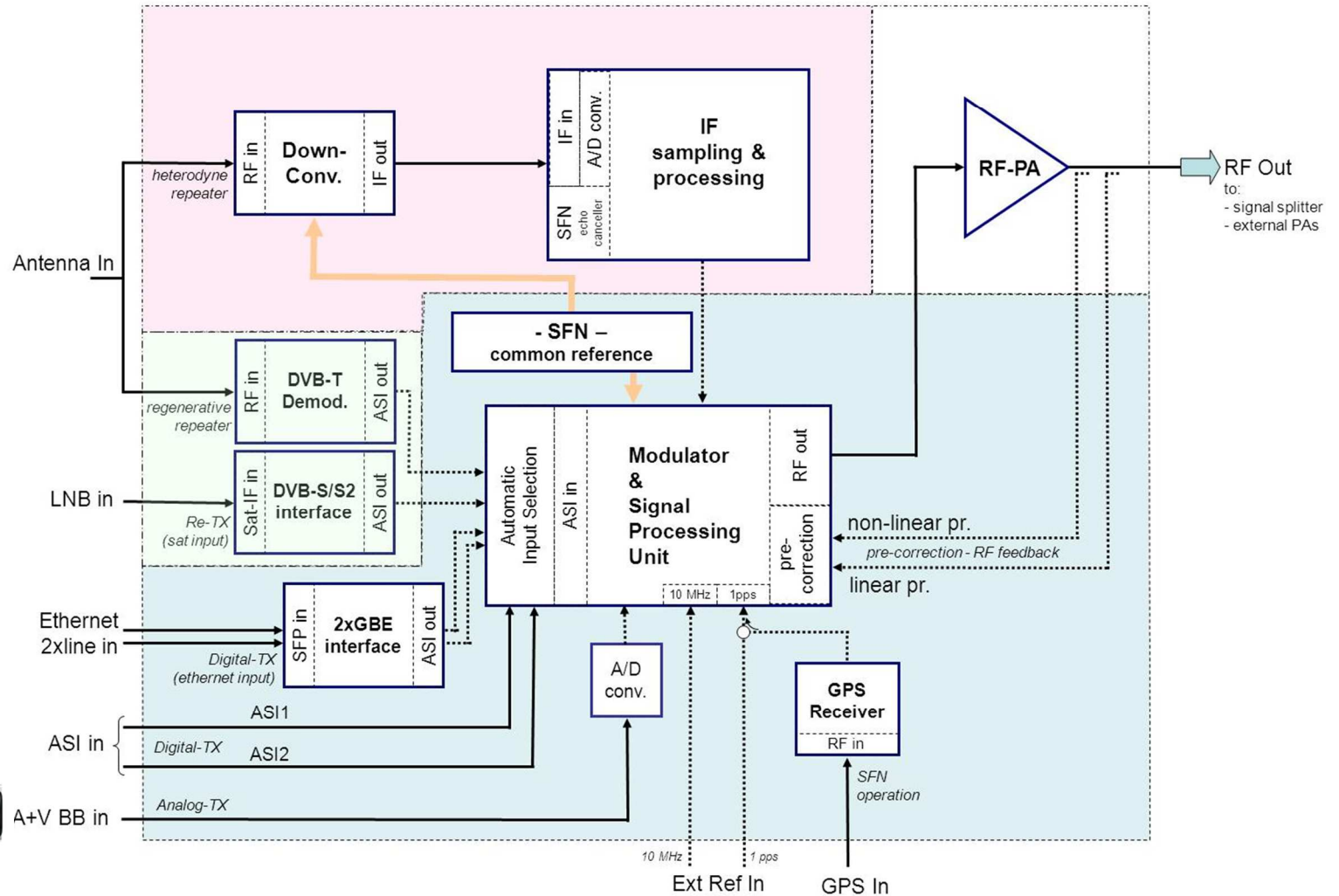
- **Digital/Analog multi-standard Operation**
 - Digital - COFDM: **DVB-T2*** – **DVB-T/H** – **ISDB-T/SBTVD** – **DTMB**
 - Analog: **PAL, NTSC**
- Fully qualified for **SFN**
- Configurable as **Transmitter** or **Repeater***
- **Repeater* configurations:** regenerative -SFN gap-filler (echo canceller)
- 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)



(*) option

Conceptual diagrams

Modulator main board
 SFN gap-filler
 Transmitter/Re-transmitter/Regenerative repeater



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



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Technical Data



Model:		digital COFDM (DVB - ISDB...)	analog (NTSC-PAL)
PCM130/UHF			
RF frequency range (Output)		UHF (470 to 862 MHz)	
RF	Output power (before filter)	130W rms	200W ps
	Output power (after filter)	110W rms*	
	Spurious / Harmonics	EN 302-296-2	
	Shoulders/MER	>40dB / >35 dB	n.a.
Amplification class		A+AB	
System configuration		single drive (others on request)	
RF out connector		Nf 50 Ω	
Mains	Voltage	230 VAC (+/-15%) @ 47 to 63 Hz (single phase)	
	Power consumption **	650W	700W
	Power factor	>0,9	
Cooling system		forced air	
Air flow rate m ³ /h		300	
Size	Width	483mm (19" rack std. module)	
	Height	88mm (2U 19"std. - RF filter not included)	
	Depth	410mm	
Weight		12kg (RF filter not included)	

(*) std. mask - DVB-T power reduction for: - critical mask:-20% - DVB-T2: max 12%

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

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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
ASI inputs		2xASI (BNC f, 75Ω) - hitless switching (SFN)
IP input		2xGBE (ProMPEG Cop3) - Optical-Electrical



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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 _{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 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		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

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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 _{pp} (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)

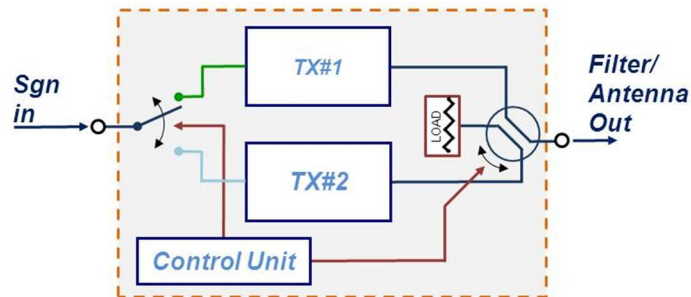
(*) Sea level - max temp derating with altitude: 2.5 C/1000m (**) option

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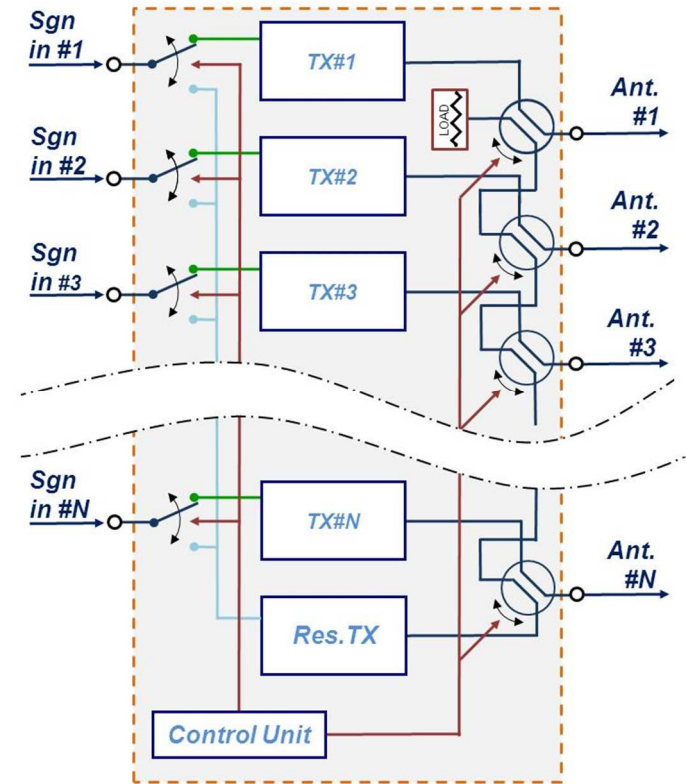
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Redundancy Configurations *

1+1 passive reserve



N+1 passive reserve



(* all redundancy configurations are available as options