

BROADCAST RANGE**DVB-T 300mW, 1W, 2W, 5W, 10W,
20W and 50W TRANSMITTERS****Technical description**

Transmitter equipments from the Broadcast range are developed to expand DTT covering areas where direct terrestrial signal reception is not possible.

In Broadcast range there are seven power options: 300mW, 1W, 2W, 5W, 10W, 20W and 50W. Equipments are placed into a 19" subrack and the complete system comprises one or two power supply units working in redundancy (optional). Each transmitter consists of DVB-T modulator module and power amplifier.

A 19" subrack can house up to three 300mW, 1W, 2W or 5W transmitters and up to two 10W, 20W or 50W ones. The multiplexing system can be integrated in a 19" subrack.

Main Characteristics

- Output power*: 300mW, 1W, 2W, 5W, 10W, 20W and 50W.
- Developed following the ETS 300 744 DVB-T standard.
- Redundant ASI inputs.
- Very low phase noise oscillators with DDS technology.
- LDMOS amplifiers.
- Frequency agility.
- Low consumption.
- Local management using an external programmer.
- Optional remote management (Ethernet, serial communication, GPRS/HSDPA, electrical relays interfaces).
- Synchronization through a single GPS or double one working in redundancy.
- Electromagnetic compatibility and safety according to EC regulation norms.
- Optional power supply redundancy through the UCA.
- Independent switching off through the UCA.

* Output power level after filter combiner (2 dB losses)



Three multiplex
300mW, 1W, 2W or
5W modular DVB-T
transmitter



Two multiplex 10W,
20W or 50W modular
DVB-T transmitter

DVB-T 300mW, 1W and 2W TRANSMITTERS | REFERENCES AND SPECIFICATIONS

References	853021	853022	853023	853001	853002	853003	853004	853005	853006
Denomination	TXGB 1C-300mW	TXGB 2C-300mW	TXGB 3C-300mW	TXGB 1C-1W	TXGB 2C-1W	TXGB 3C-1W	TXGB 1C-2W	TXGB 2C-2W	TXGB 3C-2W
VF (Forced ventilation)				853015	853016	853017			

TECHNICAL SPECIFICATIONS

DVB-T Modulator. Modes

FFT	2K, 8K
Guard interval	1/4, 1/8, 1/16, 1/32
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Constellation	QPSK, 16 QAM, 64 QAM
Network	MFN & SFN
Bandwidth	6, 7, 8 MHz

DVB-T Modulator. Inputs

MPEG2	2 ASI (with redundancy), female BNC 75 Ω
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10MHZ (SFN) SYNCHRONIZATION INPUT

Connector	BNC female (back of module)
Input level range	-10 to +10 dBm
Impedance	50 Ω

1 PPS SYNCHRONIZATION INPUT

Connector	BNC female (back of module)
Level	0 - 5 V
Trigger	Selected by rise-edge or fall-edge

Local Oscillators

Phase noise	≥90 dBc/Hz @ 1kHz
Frequency steps	1 Hz
Frequency stability with temperature (-10 to 60°C) (without GPS external input)	± 1 x 10 ⁻⁶ (-10 to +60°C) (standard) ± 5 x 10 ⁻⁹ (-10 to +60°C) (optional)
Frequency stability for a year (without GPS external input)	± 1 x 10 ⁻⁶ (standard) ± 5 x 10 ⁻⁸ (optional)

RF output

Frequency range	470 – 860 MHz
Output power (after filter combiner)*	300mW 1W 2W
Distance to the shoulders	>38 dB
MER	>34 dB
Power stability	≤ ± 0'5 dB
Return losses	> 20 dB
Spurious emissions out of channel	< -60 dBc
Impedance	50 Ω
Connector	BNC Female

Power test output

Coupling	27 ± 3dB
Connector	Female BNC

IF test output

Output level	-35 dBm
Central frequency	36'15 MHz
Connector	Female SMB

Local oscillator test output

Output level	-30 ± 3 dBm
Connector	Female SMB

Status indicators

DVB-T Modulator module	LED (green, yellow and red)
Green	Normal work
Yellow	Output power level decreasing more than 3dB. Error in the ASI signals. No 10MHz external signal (GPS). Error in the 1 pps signal. Error in MIP. No output level (FI) in the modulator. Decoupling of local oscillators. High reflected power. High temperature. Power amplifier control currents out of range.
Red	Output power level decreasing more than 6dB.
Power amplifier module	Green light: Switched on in normal work; blinking if alarms.

General

Control and monitoring	RS-232, Ethernet, Relays, GSM/GPRS
Input voltage range	220 Vac ± 15%
Consumption	31W 62W 93W 36W 72W 108W 36W 72W 108W
Temperature range	0 to 45°C
Power factor	0'6
Dimensions (width / height / depth)	19" / 5HU / 250 mm
Weight	6kg 7'5kg 10kg 6kg 7'5kg 10kg 6kg 7'5kg 10kg
Ventilation	Passive Passive (active as option) Passive

* Output power level after filter combiner (2 dB losses). The output power at the amplifier's output connector is 501mW (27dBm) for the 300mW transmitter, 1'6W (32dBm) for the 1W transmitter and 3'2W (35dBm) for the 2W transmitter.

References	853012	853013	853014	853010	853011	853018	853019		
Denomination	TXGB(VF) 1C-5W	TXGB(VF) 2C-5W	TXGB(VF) 3C-5W	TXGB 1C-10W	TXGB 2C-10W	TXGB 1C-20W	TXGB 2C-20W	TXGB 1C-50W	TXGB 2C-50W
Passive ventilation	853007	853008	853009						

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Input level range	-10 to +10 dBm								
Impedance	50 Ω								
1 PPS SYNCHRONIZATION INPUT									
Connector	BNC female (back of module)								
Level	0 - 5 V								
Trigger	Selected by rise-edge or fall-edge								
Local Oscillators									
Phase noise	≥90 dBc/Hz @ 1kHz								
Frequency steps	1 Hz								
Frequency stability with temperature (-10 to 60°C) (without GPS external input)	± 1 x 10e-6 (-10 to +60°C) (standard) ± 5 x 10e-9 (-10 to +60°C) (optional)								
Frequency stability for a year (without GPS external input)	± 1 x 10e-6 (standard) ± 5 x 10e-8 (optional)								
RF output									
Frequency range	470 – 860 MHz								
Output power (after filter combiner)*	5W			10W			20W		50W
Distance to the shoulders	>38 dB								
MER	>34 dB								
Power stability	≤ ± 0'5 dB								
Return losses	> 20 dB								
Spurious emissions out of channel	< -60 dBc								
Impedance	50 Ω								
Connector	BNC Female					Type N Female			
Power test output									
Coupling	27 ± 3dB								
Connector	Female BNC								
IF test output									
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General									
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Input voltage range	220 Vac ± 15%								
Consumption	90W	180W	270W	130W	260W	200W	400W	400W	800W
Temperature range	0 to 45°C								
Power factor	0'6								
Dimensions (width / height / depth)	19" / 5HU / 250 mm								
Weight	6kg	8'5kg	13kg	9kg	14'5kg	9kg	14'5kg	9kg	14'5kg
Ventilation	Active (passive as option)					Active (forced ventilation)			

* Output power level after filter combiner (2dB losses). The output power at the amplifier's output connector is 7'9W (39dBm) for the 5W transmitter, 15'8W (42 dBm) for the 10W transmitter, 31'6W (45 dBm) for the 20W transmitter and 80W (49 dBm) for the 50W transmitter.