**Technical description**

Gap filler equipments from the Broadcast range are developed to expand the DTT covering area where the direct signal from a transmitter is not correctly received.

In Broadcast range there are six power options: 300mW, 1W, 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 gap filler consists of DVB-T channel processor module and power amplifier.

A 19” subrack can house up to three 300mW, 1W or 5W gap fillers 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, 5W, 10W, 20W and 50W.
- Developed following the ETS 300 744 DVB-T standard.
- MFN and SFN compatible.
- Redundant ASI inputs.
- Very low phase noise oscillators with DDS technology.
- High rejection to adjacent channels.
- Optional echo canceller.
- LDMOS amplifiers.
- Frequency agility.
- Low consumption.
- Local management using an external programmer.
- Optional remote management (Ethernet, serial communication, GPRS/HSDPA, electrical relays interfaces).
- 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 300mW, 1W or 5W modular DVB-T gap fillers

Two 10W, 20W or 50W modular DVB-T gap fillers
**DVB-T 300mW, 1W y 5W GAP FILLERS**

**REFERENCES AND SPECIFICATIONS**

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<th>References with DAE</th>
<th>RXGB</th>
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### Composition
- **Power supply unit**: 1 1 1 1 1 1 1 1 1
- **Channel processor**: 1 2 3 1 2 3 1 2 3
- **Power amplifier**: 1 2 3 1 2 3 1 2 3

### RF Input
- **Frequency range**: 1 UHF Channel (CCIR 8MHz)
- **Input signal range**: -70 to -20 dBm
- **Noise figure**: 8 dB
- **Return losses**: 20 dB
- **Adjacent channel rejection**: 80 dB
- **Impedance**: 50 Ω
- **Connector**: BNC Female

### IF Input
- **Input signal range**: -30 to -10 dBm
- **Input central frequency**: 36'125 MHz
- **Connector**: BNC Female

### Oscillators
- **Phase noise**: > 90 dBc/Hz @ 1KHz
- **Frequency steps**: 1 Hz
- **Frequency stability with temperature**: ± 1 x 10e-6 (-10 to 60ºC) (standard), ± 5 x 10e-0 (-10 to 60ºC) (optional)
- **Frequency stability for a year**: ± 1 x 10e-6 (standard), ± 5 x 10e-8 (optional)

### RF Output
- **Frequency range**: 470 – 860 MHz
- **Output power (after filter combiner)***: 300mW 1W 5W
- **Distance to the shoulders**: >38 dB
- **Power stability**: ± 0’5 dB
- **Phase noise**: > 90 dBc/Hz @ 1KHz (MFN mode) (In SFN mode is negligible)
- **Return losses**: >20 dB
- **Spurious emissions out of channel**: <60 dBc
- **Impedance**: 50 Ω
- **Connector**: BNC Female

### Power test output
- **Coupling**: 27 ± 3 dB
- **Connector**: BNC Female

### External reference input (optional)
- **Frequency**: 10 MHz
- **Input level range**: -10 to +10 dBm
- **Connector**: BNC Female

### IF test output
- **Output level**: -30 ± 3 dBm
- **Connector**: SMB Female

### Local oscillator test output
- **Output level**: -30 ± 3 dBm
- **Connector**: SMB Female

### General
- **Control and monitoring**: Ethernet, serial communication, GSM/GPRS, electrical relays
- **Input voltage range**: 220 Vac ± 15%
- **Consumption**: 31W 62W 93W 36W 72W 108W 90W 180W 270W
- **Temperature range**: 0 to 45ºC
- **Power factor**: 0’6
- **Dimensions (width / height / depth)**: 19” / 5HU / 250 mm
- **Weight**: 6kg 7’5kg 10kg 6kg 7’5kg 10kg 6kg 8’5kg 13kg
- **Ventilation**: Passive Passive (active as option) Active (passive as option)
- **Echo canceller**: Gain margin (signal - echo) -15dB
- **Cancellation window**: 0 · 8 µs
- **Output power adaptive regulation**: Yes

* Output power level after filter combiner (2 dB losses). The output power at the amplifier's output connector is 501mW (27dBm) for the 300mW gap filler, 1’6W (32dBm) for the 1W gap filler and 7’9W (39dBm) for the 5W gap filler.
Output power level after filter combiner (2dB losses). The output power at the amplifier’s output connector is 15’8W (42 dBm) for the 10W gap-filler, 31’6W (45 dBm) for the 20W gap-filler and 80W (49 dBm) for the 50W gap-filler.

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### References and Specifications

<table>
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<th>Denomination</th>
<th>RXGB 1C-10W</th>
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**RF Input**
- Frequency range: 1 UHF Channel (CCIR 8MHz)
- Input signal range: -70 to -20 dBm
- Noise figure: 8 dB
- Return losses: 20 dB
- Frequency image rejection: 90 dB
- Adjacent channel rejection: 80 dB
- Impedance: 50 Ω
- Connector: BNC Female

**IF Input**
- Input signal range: -30 to -10 dBm
- Input central frequency: 36’125 MHz
- Connector: BNC Female

**Local Oscillators**
- Phase noise: > 90 dBc/Hz @ 1kHz
- Frequency steps: 1 Hz
- Frequency stability with temperature (-10 to 60°C): ± 1 x 10e-6 (-10 to 60°C) (standard) ± 5 x 10e-6 (-10 to 60°C) (optional)
- Frequency stability for a year: ± 1 x 10e-6 (standard) ± 5 x 10e-8 (optional)

**RF Output**
- Frequency range: 470 – 860 MHz
- Output Power (after filter combiner)*: 10W 20W 50W
- Distance to the shoulders: >38 dB
- Power stability: ± 0.5 dB
- Phase noise: > 90 dBc/Hz @ 1kHz (MFN mode) (In SFN mode is negligible)
- Return losses: >20 dB
- Spurious emissions out of channel: < -60 dBc
- Impedance: 50 Ω
- Connector: BNC Female

**Power Test Output**
- Coupling: 27 ± 3 dB
- Connector: BNC Female

**External Reference Input (optional)**
- Frequency: 10 MHz
- Input level range: -10 to +10 dBm
- Connector: BNC Female

**IF Test Output**
- Output level: -30 ± 3 dBm
- Connector: SMB Female

**Local Oscillator Test Output**
- Output level: -30 ± 3 dBm
- Connector: SMB Female

**General**
- Control and monitoring: Ethernet, RS232, GSM/GPRS, relays
- Input voltage range: 220 Vac ± 15%
- Consumption: 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: 9kg 14.5kg 9kg 14.5kg 9kg 14.5kg
- Ventilation: Active (forced ventilation)
- Echo Canceller
- Gain margin (signal - echo): -15 dB
- Cancelation window: 0 - 8 µs
- Output power adaptive regulation: Yes

* Output power level after filter combiner (2dB losses). The output power at the amplifier’s output connector is 15’8W (42 dBm) for the 10W gap-filler, 31’6W (45 dBm) for the 20W gap-filler and 80W (49 dBm) for the 50W gap-filler.