

E-Compact MP UHF Digital TV Transmitters

E-Compact TV • High Efficiency • UHF • Air Cooled • Doherty Technology

ISDB-T 150 to 300 Watts RMS
ATSC 3.0 150 to 300 Watts RMS
ATSC 1.0 170 to 350 Watts RMS
DVB-T2 150 to 300 Watts RMS



Highlights:

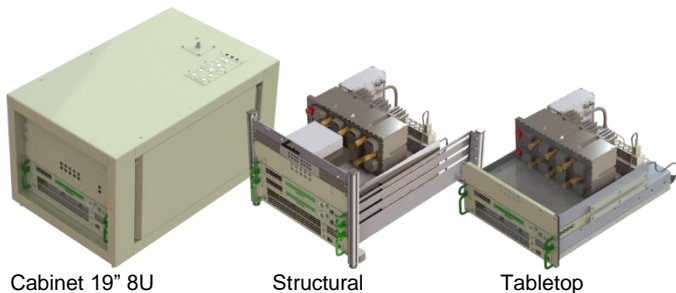
- 215 to 400 Watts RMS ISDB-T / ATSC 3.0 / DVBT-2 (Before Filter);
- 225 to 450 Watts RMS ATSC 1.0 (Before Filter);
- UHF: 470 to 806MHz (Channel 14 to Channel 69);
- Single 2U Compact Power Amplifier Drawer up to 450 WRMS;
- Power Amplifier Drawer with Doherty Technology Transistors, efficiency up to 38%;
- Compact structure, 19" 8U cabinet mounting, Structural and Tabletop;
- Easy Maintenance concept, Powers Supply Units featuring Plug-In connection, no wiring or cables required;
- Air Cooled: Cooling fans with rotation control as a function of temperature, increasing life span and reducing acoustic noise. Easy access for fan cleaning. Washable Protective Screens;
- Real Time A-DPD, Automatic digital pre-correction applied whenever changes occur in the output power of the equipment, recovering MER values in less than two seconds;
- Highly versatile, it operates in SFN and MFN;
- Inputs: ASI, TSoIP, Satellite Tuner and Terrestrial Tuner;
- Configurable BTS decompression function;
- Mounting Options:

Included:

- Main Control Software, WEB Server and SNMP⁷;
- USB Communications Driver;
- RF Output with Sample Probe to monitor the RF Output signal after the RF Mask Filter;
- Sample probe before RF Mask Filter inside Power Amplifier Drawer;
- Control Module or Exciter Drawer;
- User Guide in digital media;

Optional:

- UHF 8-Pole or 6-Pole Bandpass Filter
- Telesupervision Module, Telemetry though GPRS;
- Double Exciter. Two Control Module or Two Exciter (Main and Backup) for Exciter Redundancy;
- Ethernet¹ Switch Module (Double Exciter);
- Instrumental embedded via software;
- Reference clock by GPS time base;
- UHF terrestrial tuner receiver (ISDB-T);
- DVB-S / DVB-S2 Satellite tuner receiver;
- DVB-S / DVB-S2 Satellite tuner receiver CAS⁶ (Conditional Access System);
- License for BISS-1 decryption with up to eight services available on the display.
- Printed user Guide;



Cabinet 19" 8U

Structural

Tabletop



E-Compact
Less energy. More power.

Empresa Certificada
ISO 9001
 10 anos de certificação

General Specifications

- One Power Amplifier Drawer: 215 to 400W RMS @ ISDB-T, ATSC 3.0 and DVB-T2 / 225 to 450W RMS @ ATSC 1.0;
- High efficiency with Doherty technology;
- Transistor AGING compensation via exciter's front panel;
- Automatic GM compensation with temperature;
- Air cooled;
- Fans speed rotation automatic control: decrease noise levels, saving of electrical energy and life span increase;
- Powers Supplies featuring Plug-In connection, no wiring or cables required;
- Power Factor Correction better than 0.95;
- Measurements and alarms through front display and keypad or remotely (via WEB)*;
- Main Control Software, WEB Server and SNMP*;
- USB communication Drivers;
- Hardware Protection of VSWR and overdrive;
- Software Protection against module' overheat;
- Ethernet¹ port for Web and SNMP management*;
- Telemetry: Web server and SNMPv2 for local or remote management* (optional);
- SFN Operation;
- Automatic Digital Pre-distortion (Linear and Non-Linear);
- Configurable BTS decompressor compatible with most compression standards;
- IP Input: Ethernet¹ port for TS over IP streaming;
- 2 ASI inputs, 2 ASI outputs;
- RF output connector: N female or DIN 7/16 or EIA 7/8;
- Passive elements: Low-pass filter, before and after-filter probes;
- Double Control Module or Exciter with Ethernet¹ Switch (optional);
- Software Instrumental embedded (optional);
- Reference clock by GPS time base;
- UHF terrestrial tuner receiver, ISDB-T UHF receiver and demodulator for terrestrial signal retransmission;
- Satellite Tuner Receiver, DVB-S / DVB-S2 L-band receiver and demodulator for satellite signal retransmission;
- Conditional Access System (Satellite Tuner Receiver) with four simultaneous services and display availability of up to eight services on display, compatible with IRDETO, CONAX, NAGRAVISION and VERIMATRIX cards. (cards not included)*;
- Optional license for BISS-1 decryption with up to eight services available on the display.

RF Performance

Modulation Standard	ISDB-T ATSC 3.0 A/300 ATSC 1.0 A/53 DVB-T2		
Output Power (Before Filter)	EC702MP	EC704MP	
ISDB-T / DVB-T2 / ATSC 3.0 ATSC1.0	215 W 225 W	400 W 450 W	
Output Power (After Filter)	EC702MP	EC704MP	
ISDB-T / DVB-T2 / ATSC 3.0 ATSC	150 W 170 W	300 W 350 W	
Minimum operating power	EC702MP	EC704MP	
ISDB-T / DVB-T2 / ATSC 3.0 ATSC	10 W 20 W	30 W 40W	
RF Output Regulation	≤± 0.1 dB		
Operation Frequency	470 MHz to 806 MHz (UHF) Channel 14 to Channel 69		
Bandwidth	6 MHz / 8MHz		
MER Performance ⁵	ISDB-T ATSC 3.0 ATSC1.0 DVB-T2	≥35dB ≥33dB ≥36dB ≥34dB	
Harmonics/Spurious	better than -60dBc		
Intermodulation	-50dB @ ±3,15MHz (BW=6MHz) -50dB @ ±4,20MHz (BW=8MHz)		
Oscillator	Synthesized by PLL		
Frequency Stability	±1Hz (with internal GPS)		
50Ω RF Output Connector	N DIN 7/16" EIA 7/8" EIA 1-5/8"		

Notes:

¹Ethernet is a trademark of Xerox Corporation.

²Above 8200ft on request.

³ASL: Above Sea Level.

⁴Electric grid on request

⁵May change depending on MER value, channel and output power.

⁶ SMARTCARD not included. Compatible with IRDETO, CONAX, NAGRAVISION an VERIMATRIX systems.

⁷Consult factory when using transmitter's web interface on same network as a multicast stream.

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The product specifications are subject to change without previous notice. The image hereby presented has solely illustrative purposes.

Electrical Features

Power Requirement ⁴ (specify configuration at equipment purchase order)	EC702MP Single-Phase (M110) Single-Phase (M220) Biphasic (B220)	EC704MP Single-Phase (M220) Biphasic (B220)
AC Power	EC702MP 100~254VAC	EC704MP 180~254VAC
AC mains Frequency	43 to 63Hz	
Power Factor Correction	Typical 0.95, minimum 0.9	
Typical Consumption ⁵ ISDB-T / DVB-T2 / ATSC 3.0 ATSC 1.0	EC702MP 600 W 680 W	EC704MP 1200 W 1400 W
Dissipação Térmica Típica ⁵ ISDB-T / DVB-T2 / ATSC 3.0 ATSC 1.0	EC702MP 1530 BTU/h 1740 BTU/h	EC704MP 3050 BTU/h 3550 BTU/h

Inputs: BTS, TS, TSolP and Sync

ASI	DVB-ASI 188 / 204 bytes BNC-F 75Ω
IP	Ethernet ¹ (IEEE 802.3u 10 Base-T / 100Base-TX RJ45)
10MHz (reference)	BNC-F 50Ω
1PPS (reference)	
GPS Antenna (optional)	SMA-F 50Ω
Sample Before Filter	
Sample After Filter	
Satellite Tuner (optional)	L Band DVB-S / DVB-S2 Connector: SMA-F Impedance: 75Ω
UHF Tuner Terrestrial (optional)	UHF Band ISDB-T Connector: SMA-F Impedance: 50Ω

Interfaces


Monitor / Control Interface	Web GUI and SNMP: Ethernet ¹ via RJ-45
Communication Interfaces	USB / Ethernet ¹ / SNMP
Format	Ethernet ¹ (IEEE 802.3u) 10Base-T/100Base-TX

Mechanical Features

Equipment Weight:	EC702MP	EC704MP	
Cabinet 19" 8U mounting	64 Kg	65 Kg	
Structural mounting	53 Kg	54 Kg	
Tabletop mounting	44 Kg	45 Kg	
Dimensions:	Rack 8U	Estrutural	Mesa
Width:	570 mm	550 mm	484 mm
Length:	900 mm	700 mm	633 mm
Height:	660 mm	440 mm	311 mm

Environment Features

Operation altitude	up to 8200ft ² ASL ³
Environment temperature range	+32°F to +113°F (+77°F recommended) 0°C to +45°C (+25°C recommended)
Environment humidity range	0 to 95% (non-condensing)
Power Amplifier Cooling	Forced ambient air, front to back flow using integral high volume fans

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REV07 – ENG-US - JAN/2021