

UHF Digital TV Transmitters

E-Compact TV • High Efficiency • Air Cooling • Medium Power



Hitachi's E-Compact Transmitter Series offers optimal broadcasting features with power efficiency up to 38%. The simplicity of its configuration and operation allows a fast startup and its high robustness ensures a smooth and safe operation. Its Medium Power sub-family is comprised of air cooled transmitters with output powers (before filter) of 200W and 400W in ISDB-Tb / DVB-T2 standards, and 225W and 450W in the ATSC standard.

The E-compact Medium Power Series can be assembled in three versions: rack, structural frame or table top. A compact design offers a small installation footprint. The 19", 2RU PA offers excellent power density, transmitting up to 450Wrms.

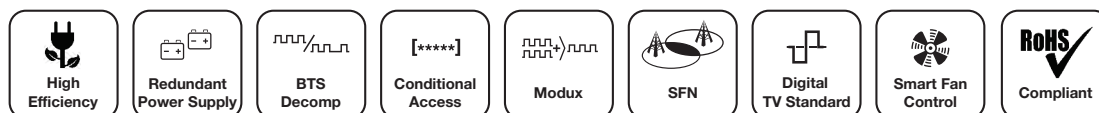
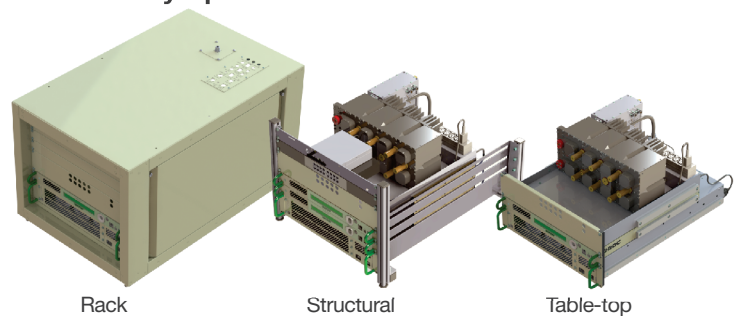
Developed with Doherty Technology, it provides high efficiency and consumption cost reduction of up to 50% when compared to conventional transmitters.

The E-Compact line astonishes with its transmission versatility, either operating in SFN or in MFN retransmissions. The retransmission signal can be received through Satellite or Terrestrial tuners and through Ethernet² and ASI inputs. The EX8001 exciter features pre-correction, BTS decompression, and conditional access module, dispensing the need for other external devices.

Medium Power E-Compact Highlights:

- Doherty Amplification Technology.
- Energy Saving.
- Power supply redundancy (up to 100%).
- Quick-plug for Power Supplies, through front panel, hot-swappable.
- Automatic Fan Speed Control providing low noise levels and increased lifespan.
- Easy access Fan bank and washable air filters;
- Real time A-DPD: A resource that applies, automatically, the device's pre-correction on every output power fluctuations related to user adjustments and/or failure. Taking less than two seconds to recover MER values,
- it's the fastest tool in the market.

Assembly Options:



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GENERAL SPECIFICATIONS

- IP Input;
- Modular power amplifiers;
- High efficiency with Doherty Technology;
- Air Cooling;
- Redundant & Hot swappable³ Power supplies;
- Automatic Fan Speed Control: low noise levels, energy saving and increased lifespan;
- Power Supply with Power Factor Correction ≥ 0.9 ;
- Measurements and Alarms through front display and keyboard or via web;
- VSWR and Overdrive protection via hardware with power reduction;
- Software oriented overheating protection for internal modules;
- Automatic Digital Pre-correction (Linear and Non-Linear);
- Telemetry: WEB Server/SNMP, for local or remote management;
- AGING transistor compensation via exciter's front panel;
- Automatic GM compensation with temperature;
- Gain and Phase adjustments per drawer;
- SFN Operation;
- BTS decompression;

INCLUDED

- General Control Software, WEB Server and SNMP;
- USB communication Drivers;
- PT-BR, US-EN or ESP manuals (digital formats).
- Passive elements kit: Low-pass filter, before and after-filter probes.

OPTIONALS³

- Telemetry through GPRS interface;
- Double Exciter;
- Instrumental embedded via software;
- GPS time base (exciter's internal module);
- Terrestrial reception for UHF retransmission (N-Female Connector);
- Satellite reception (DVB-S/S2) for UHF retransmission (N-Female Connector);
- Conditional Access Module with up to four simultaneous services, and display of up to eight services;
- 8-pole Output filter for critical mask (50dB) OU 6-pole Output filter for sub-critical mask(43dB);
- Input 7-pole filter for UHF receiver;
- RF Output connectors: DIN 7/16" female (standard), EIA 7/8" flanged, EIA 7/8" unflanged or N-Female;
- Assembly: 8RU Rack, Structural or Table-top;
- Redundant Power Supply;

Model	EC702MP		EC704MP	
	B.F. ⁸	A.F. ⁸	B.F. ⁸	A.F. ⁸
Output power (W) ⁷	200	150	400	300
ISDB-T / DVB-T2	225	170	450	350
ATSC				
AC mains (43 to 63Hz)	M220 B220		M220 B220	
Output connector ⁹	N Female		N Female	
Typical AC consumption (W) ⁷				
ISDB-T / DVB-T2	600		1,200	
ATSC	750		1,500	
Typical heat dissipation (BTU/h) ⁷				
ISDB-T / DVB-T2	1,400		2,800	
ATSC	1,750		3,500	
Optional rack dimensions (RU)	8		8	
Rack total width (mm)	570		570	
Rack total depth (mm)	900		900	
Transmitter weight with rack (kg)	64		65	

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Communication Interfaces	USB / Ethernet ¹ / SNMP
Frequency Stability	± 1 Hz (internal GPS)
Oscillator	PLL synthesized
Power Factor	Better than 0.9
Operation Altitude	up to 2,500m a.s.l. ⁵
Environment temperature range	from 0°C to +45°C
Environmental Humidity range	from 0 to 95% (non-condensing)

BTS, TS or IP INPUTS

Formats	DVB-ASI 188 / 204 bytes Ethernet ¹ (IEEE 802.3u) 10Base-T/100Base-TX
Connector	BNC-Female RJ45
Impedance	75 Ω

OUTPUT

Operation Frequency	470MHz to 806MHz (UHF)
Bandwidth	6 / 7 / 8 MHz
Power	up to 550Wrms after filter
TV Standard	ISDB-T, ATSC and DVB-T2
Intermodulation	-43dB @ $\pm 3,15$ MHz (BW=6MHz) -50dB @ $\pm 3,15$ MHz (BW=6MHz) -50dB @ $\pm 4,2$ MHz (BW=8MHz)
Harmonics / spurious	better than -60dBc
MER ⁶	35dB up to 38dB

POWER PROGRAMMING TABLE (AFTER FILTER)⁷

Model	Standard TV	Rated Power	Minimum Operation Power	Power Step
EC702MP	ISDB-T / DVB-T2	150 W	10 W	10 W
	ATSC	170 W	20 W	10 W
EC704MP	ISDB-T / DVB-T2	300 W	30 W	10 W
	ATSC	350 W	40 W	10 W

Remarks / Notes

¹ Ethernet is a registered trademark of Xerox Corporation.

² Default for the EC704MP.
Optional for the EC702MP.

Removing/inserting of the power supply can be done while the equipment is in operation, but as long as the frontal AC switch on the power supply being removed / inserted is off.

³ Contact Hitachi Kokusai Linear for optionals availability in each standard.

⁴ DVB-CA Standard (conditional access)
- DVB Common-Interface (DVB-CI)
Module with PCMCIA CAM slot (Irdeto, Conax descramblers) – SMARTCARD and CAM not included.

⁵ Altitudes above 2.500m under consultation.
a.s.l.: above sea level.

⁶ May change depending on MER value, channel and filter.

⁷ B.F.: Before Filter | A.F.: After Filter.