

## Digital TV Transmitters

E-Compact TV • High Efficiency • UHF Broadband • Air Cooled • Low Power



Hitachi's Low Power E-Compact Transmitters offers optimal broadcast characteristics with a power efficiency of up to 24%, exciter integrated amplification system, high robustness, user-friendly WEB interface with block diagram navigation. Its embedded measurement software enables the user to easily control and inspect the digital signal through charts that monitor several transmission parameters, dispensing the need for expensive third part hardware for MER and Transmission Mask measurements. The low power sub-family is comprised by air cooled transmitters, featuring out power of 22Wrms up to 130Wrms.

Through the "Easy Maintenance" concept, the low power sub-family allows easy power module and power supply exchanges, both with plug-in connections, without cables or wiring. Furthermore, E-Compact Line is the only in the market supplying transmitters using the same power supply for devices from 50Wrms to 7.200Wrms, allowing ease of use of the same spare part for the line of equipment from low to high power.

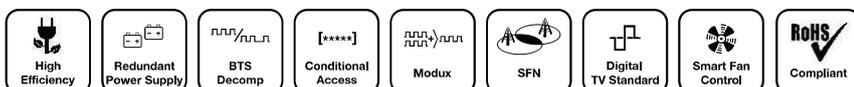
Software upgrades are simple and easy. Demanding nothing more than saving a single file, through the device's WEB interface, which enables the user to make remote software upgrades.

The Low Power 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 Ethernet<sup>1</sup> and ASI inputs.

It has pre-correction circuits, configurable function of decompression of BTS and conditional access module, dispensing the need for other external devices.

### Highlights and Innovations:

- SoC technology:** The optimized hardware features SoC technology (System on Chip), which integrates several system elements in a single chip, resulting in a more compact design offering a higher product reliability.
- 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.
- Power Supply:** easily removable module, featuring plug-in connection, accessed through the front panel.
- DC Power Supply option:** enables usage at +48Vdc and -48Vdc mains.
- Optional Power Supply DC<sup>2</sup>:** Through this option it is possible to use power supply + 48Vdc and -48Vdc.
- Fans:** Easily accessed through front panel, featuring Automatic Fan Speed Control providing low noise levels and increased lifespan.
- Air Filters:** Easily accessed through front panel, washable.
- New WEB Interface:** The WEB Interface was optimized for a better user experience, allowing full access to all measures and alarms, remotely, improving its installation time and reducing management costs.
- Low maintenance cost:** developed and manufactured in Brazil, with local engineering, production and after sales.



Hitachi Kokusai Linear Equipamentos Eletrônicos S/A.

Solutions for Broadcast, Video and Communication from Brazil to the world.



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### E-Compact TV - High Efficiency - UHF Broadband - Air Cooled - Low Power

#### GENERAL FEATURES

- Exciter and Amplifier in a single Rack Unit (1RU);
- Air Cooling;
- Automatic Fan Speed Control providing low noise levels and increased lifespan.
- Power supplies with Power Factor Correction better than 0,9;
- Power Supplies with Easy access through front panel and Plug In connection;
- Plug In Power Amplifier, through rear panel.
- Embedded measures:
  - Constellation with the measure of MER value;
  - Intermodulation with power spectral density graph;
  - Graphs for measurements monitoring in real time.
- New WEB Interface:
  - Enables Import/Export Configuration Presets;
  - Export event log and alarms.
  - Navigation through block diagram.
  - Remote Software Update, through upload;
  - Several User level configurations;
- VSWR and Overdrive protection via hardware with power reduction;
- Software oriented overheating protection for internal modules;
- Automatic Digital Pre-correction (Linear and No-Linear);
- Telemetry: WEB Server/SNMPv2, for local or remote management;
- SFN Operation
- Configurable BTS decompressor, compatible with other compression standards.
- Ethernet<sup>1</sup> Port for TSolP streaming;
- Ethernet<sup>1</sup> Port for WEB and SNMP;
- 02 ASI inputs;
- 02 ASI outputs
- Startup time: <25 seconds;
- Standard Output RF connector: N-Female<sup>3</sup>.

#### INCLUDED

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

#### OPTIONALS

- Telemetry through GPRS interface;
- GPS time base (exciter's internal module);
- Terrestrial reception for UHF retransmission (N-Female Connector);
- Satellite reception DVB-S/S2 (N-Female Connector);
- Conditional Access Module with up to four simultaneous services, and display of up to eight services;
- Output Mask Filter;
- Input 7-pole filter for UHF receiver;
- Redundant Power Supply (EC710LP & EC720LP);
- Assembly: 8RU Rack or Desktop.

#### TECHNICAL TABLE

Model	EC703LP	EC705LP	EC710LP	EC720LP
Output power (B.F. <sup>4</sup> ) ISDB-T	22W	36W	65W	130W
Output power (A.F. <sup>4</sup> ) ISDB-T	15W	25W	50W	100W
Typical MER (dB)	40	38	38	38
AC Mains (43-63Hz)	90 - 240Vac			
AC typical consumption (VA) <sup>5</sup>	255	300	534	689
Environment thermal dissipation (BTU/h) <sup>5</sup>	730	840	1480	1780
Height (Rack Units)	1	1	2	2
Net weight (kg) <sup>6</sup>	44	44	60	61
Rack dimensions	8 Rack Unit (570x900x523mm) - LxPxA			

Communication interface	Ethernet <sup>1</sup> / SNMP
Frequency stability	±1Hz (internal GPS)
Oscillator	PLL synthesized
Power factor	better than 0,9
Operation altitude	up to 2,500m a.s.l. <sup>7</sup>
Ambient operating temperature	25°C Recommended 45°C Maximum
Environment humidity range	0 to 95% (no condensation)

#### BTS, TS or IP INPUT

Format	DVB-ASI 188 / 204 bytes Gigabit Ethernet <sup>1</sup> (IEEE 802.3u) 10Base-T/100Base-TX/1000-Base-T
Connector	BNC-Female RJ45
Impedance	75Ω

#### OUTPUT

Operation frequency	470MHz to 806MHz (UHF)
Bandwidth	6 MHz / 8 MHz
Power	up to 130Wrms before filter
Minimum Operation Power (after filter)	10% of nominal power with 1W step
TV standard	ISDB-T
Intermodulation	-50dB @ ±3,15MHz (BW=6MHz) -50dB @ ±4,20MHz (BW=8MHz)
Harmonics/Spurious	better than -60dBc
MER	34dB to 43dB

#### Remarks / Notes

<sup>1</sup> Ethernet is trademark of Xerox Corporation company.

<sup>2</sup> Available in the models EC703LP and EC705LP.

<sup>3</sup> Optional DIN 7/16" female, EIA 7/8" flanged.

<sup>4</sup> B.F.: Before filter / A.F.: After filter.

<sup>5</sup> May change depending on MER value, channel and output power. For details, consult Hitachi Kokusai Linear.

<sup>6</sup> The rack mount weight, is considering the mask filter.

<sup>7</sup> Altitudes above 2,500m under consultation.  
a.s.l.: above sea level.

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