

## LPTV-8000-T2

### DVB-T2 Low Power DTV Transmitter

The LPTV-8000-T2 LPTV transmitter is a compact and rugged platform designed from the ground up specifically for the low power digital TV market place.



Hitachi-Comark provides high performance and award winning television transmitters that are backed by more than 40 years of leadership in both inductive output tube (IOT) and solid-state broadcast technologies.

The LPTV-8000-T2 is targeted for the low power digital TV market place. It's design is simple, rugged, and reliable for the demands of LPTV. Nominal output power levels include 300W, 600W, 900W, and 1.2kW in UHF. The air-cooled transmitter features the latest 50VDC LDMOS devices for the highest performance. The LPTV-8000-T2 incorporates the latest 1RU DTV advanced exciter platform for precise modulation and RF correction.

#### **EXACT DTV Exciter**

The DTV exciter's core modulation and correction functions are handled by custom firmware that resides on

internal Field Programmable Gate Arrays (FPGA). This architecture provides flexibility so as digital TV standards evolve and change, the processing can be upgraded and adapted to meet these new requirements, simply by loading new firmware.

Beyond the FPGA technology, the exciter platform incorporates a microcontroller for user interface to the monitor and control functions.

#### **DAP Technology Streamlines Performance**

The LPTV-8000-T2 transmitter utilizes industry leading Digital Adaptive Precorrection (DAP) technology, which provides superior performance that is unattainable using any other correction technique.

This technology allows for simple and easy setup and maintenance of a high performance transmitter

system. DAP technology provides unsurpassed digital correction of all distortions created by a DTV transmitter system. These distortions include nonlinear distortions created by active amplifier devices, such as amplitude and phase distortions along with correction for memory effect. Additionally DAP corrects linear distortions created by the transmitter's high-power passive RF system, such as group delay and frequency response distortions maximizing the SNR performance.

#### **Ultra Reliable Amplifier**

The heart of the LPTV-8000-T2 transmitter is the power amplifier. The basic building block is a 6RU amplifier chassis that provides 300W of RF output power. The amplifier chassis uses an over-sized extruded aluminum heat sink core to which the amplifier pallets are mounted. This core is cooled with forced air using dual fans and works in the harshest environmental conditions.

### KEY FEATURES

- ▶ 300W through 1.2kW models, air cooled ~ UHF
- ▶ Uses EXACT-DVB DTV Exciter with FPGA architecture
- ▶ Fully compatible with **DVB-T2** DTV standard
- ▶ *Industry Leading* Digital Adaptive Precorrection (DAP) for both linear and non-linear distortions
- ▶ Dual TS inputs (DVB-ASI), provides seamless A/B input redundancy
- ▶ Software upgradeable (remote or local)
- ▶ Built-in GPS for SFN / Mobile DTV deployments
- ▶ User friendly but advanced WEB GUI local or remote control
- ▶ Optional SNMP client, activated via software license

The amplifier pallets utilize the latest 50VDC LDMOS devices for optimal power capability and linearity. Each amplifier chassis uses a single OEM power supply. The amplifier chassis is user friendly with front panel AC circuit breaker for the power switch. Each amplifier is designed for mounting in a standard EIA 19" equipment rack.

**Seamless TS Input Switching**

The LPTV-8000-T2 features two independent sets of dual (A & B) transport stream (TS) inputs. The dual TS inputs allow signal path diversity (i.e. one ASI TS feed via a fiber link and a second ASI TS feed via a STL microwave). The A & B TS switching can be set for automatic or manual depending on the user's preference.

**Advanced Monitoring & Control**

The LPTV-8000-T2 transmitter incorporates local control and monitoring using a newly enhanced user interface front panel with backlit LCD display, LED's, and menu driven push buttons. Local access includes menus for initial setup, configuration status, and control functions. The front panel displays the forward & reflected power levels, output RF shoulders as well as the SNR performance.

**Web Based Monitor/Control**

The LPTV-8000-T2 includes a built-in Web based user monitor and control interface. Pertinent information is displayed in a user friendly and very intuitive layout. The exciter can be setup in minutes with dedicated menus for operation and control.

**Optional DualCast**

The LPTV-8000-T2 can be configured to broadcast analog TV (PAL B/G standard) for stations that need to go on the air in analog, but switch to DTV later in the future. The EXACT exciter can be licensed {optionally} for PAL analog TV operation. Additionally a license can be ordered for NICAM 728 for digital stereo operation.

**DVB Now and the Future**

The LPTV-8000-T2 is fully compliant with the DVB-T & T2 DTV standards. The EXACT-DVB can also be optionally licensed to support DVB-T2-Lite. The exciter allows simultaneous transmission of DVB-T2-Lite with DVB-T2 Base on the same RF channel, facilitating mobile services.

**SPECIFICATIONS**

**Operating Frequency:**

- UHF B4&5 (470-862 MHz)
- Up to ±50kHz spectrum shifting

**Modulation / Standard:**

- DVB-T: EN-300-744
- DVB-T2: EN-302-755
- DVB-T2 Lite v1.3.1 Appendix I
- 5, 6, 7, or 8MHz RF channel
- Mono or Multi-PLP (≤8)
- QPSK, 16, 64, or 256 QAM
- Normal or Rotated Constellation
- 2MFN, SFN-SISO, SFN-MISO

**T2-MI / MPEG-2 TS Inputs:**

- 2 x DVB-ASI inputs, BNC (f) connector, 75Ω
- TSolP IP Gigabit, RJ-45
- TS encapsulation and FEC decoding (SMPTE-2022)
- Automatic or manual switching between common TS inputs

**RF Output:**

- 300W through 1.2kW
- 7/16 DIN connector, ≤ 600W
- 1-5/8" EIA connector, >600W
- 50Ω impedance
- < ±0.1dB output power stability
- < 0.2 x 10<sup>-7</sup> (with internal 10MHz) frequency stability
- < 0.1 x 10<sup>-7</sup> (with optional internal GPS) frequency stability
- < ±0.5dB amplitude flatness

**Electrical:**

- 180 ~ 264 VAC, 50/60 Hz
- > 0.9 power factor
- Efficiency: up to 25%

**Monitor/Control:**

- Web: Ethernet via RJ-45
- RS-232/RS-485 via DB-9
- LCD/LED front panel user interface

**Environmental & Safety:**

- -10° to 45° C Temp range
- ≤ 95% non-condensing relative humidity
- Air cooled, front to back air flow

**Mechanical (assumes single drive):**

- 19" W x 30" D
- 17.5" H (10RU) for 300W
- 28.0" H (16RU) for 600W\*
- 38.5" H (22RU) for 900W\*
- 49.0" H (28RU) for 1.2kW\*
- 100 lbs / 45.5 kg (300W)
- 164 lbs / 74.4 kg (600W)
- 228 lbs / 103.4 kg (900W)
- 292 lbs / 132.5 kg (1.2kW)
- Excludes rack dimensions / weight
- Excludes dual-exciter option, available on 600W - 1.2kW models

\* ≥600W is available with a rack cabinet, rack is optional on 300W models

**ORDERING INFORMATION / OPTIONS**

Please contact your authorized Hitachi-Comark representative.  
 US Sales 1-800-288-8364 or 413-998-1100  
 Hitachi Kokusai Electric Comark LLC  
 104 Feeding Hills Road  
 Southwick, MA 01077

LPTV-8000-T2-300U → 300W Transmitter, UHF  
 LPTV-8000-T2-600U → 600W Transmitter, UHF  
 LPTV-8000-T2-900U → 1000W Transmitter, UHF  
 LPTV-8000-T2-1200U → 1200W Transmitter, UHF

OPT-LPTV-DD → Option for Dual Drive  
 OPT-LPTV-PAL → Option for PAL Modulation  
 OPT-LPTV-NICA → Option for NICAM 728  
 OPT-LPTV-TSIP → Option for TSolP License  
 OPT-LPTV-SNMP → Option for SNMP License

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