

EGATEL® TLWH7900E Series

High Power UHF TV Transmitters

Liquid cooling & Multistandard

WHET® Wideband High Efficiency Transmitter

Improved power density per rack and efficiency

The best option to cover large areas



TLWH7900E © 2019 Egatel Spain v.1.2

Egatel



The new TLWH7900E liquid cooled transmitter series represents a step ahead in energy efficiency optimization, giving today's broadcasters a space-saving and cost-efficient solution and providing an ideal service for the development or extending digital TV networks.

The series employs asymmetric ultrawideband Doherty technology with a very careful design oriented to enhance power efficiency, covering with only one single model of amplifier from 470 to 700 MHz without the need for tuning or adjustment of any kind. Its compact and modular design facilitates the installation and maintenance tasks and the automatic efficiency optimization system.

The TLWH7900E series supports a wide range of modulation standards including DVB-T/H, DVB-T2, ATSC or ISDB-T/Tb and multiple configurations, making it suitable for any broadcast network topology.

- High energy efficiency inside UHF band (470 to 700 MHz) with no tuning of adjustments.
- Values up to 42% for COFDM (cooling included).
- Automatic efficiency optimization.
- Hot-pluggable power amplifiers (2U) based on LDMOS-50 volt, asymmetric ultrawideband Doherty technology.
- Compact design for easy installation in confined spaces.
- Liquid cooling system to dissipate heat efficiently and noiseless.
- Digital modulations: (DVB-T/-H/-T2, ISDB-T/-Tb, ATSC).
- "Output channel" and "Impulse channel response" show via web server.
- Digital Adaptive Precorrection.
- High redundancy to ensure maximum reliability. N+1 redundancy ready.
- Multiple options for local operation: through the display of the exciter/Control Unit or Web Server..
- Wide range of possibilities for remote monitoring: dry contacts and SNMP/Web
- Standalone Control unit module with front panel LCD Display included for measurement/ configuration.

TECHNICAL SPECIFICATIONS

EXCITER

DVB-T/H/T2	
Standard	EN300744, EN302304, EN302755, TS 102831, TS 102 773 (T2-MI)
Inputs	2xASI BNC (F), 75 ohm / 2xTSolP 10/100/1000 RJ45.
FFT	1K (DVB-T2), 2K, 4K, 8K, 16K (DVB-T2), 32K (DVB-T2)
Code rate	1/2, 2/3, 3/4, 5/6, 3/5 (DVB-T2), 4/5 (DVB-T2)
Guard interval	1/32, 1/16, 1/8, 1/4, 19/256 (DVB-T2), 19/128 (DVB-T2), 1/128 (DVB-T2)
Constellation	QPSK, 16QAM, 64QAM, 256QAM (DVB-T2). Rotated and non rotated (DVB-T2)
ATSC	
Standard	ATSC A/53, A/54, A/64, A/153, A/110B, SMPTE-310M
Inputs	2xSMPTE BNC (F), 75 ohm - 2xASI BNC (F), 75 ohm
Constellation	8VSB
Symbol rate	10.76 Msymbols/s
Data rate	19.39 Mbits/s
Trellis coding	2/3
Reed-Solomon encoder	207 / 187 / 10
ISDB -T/-T _B	
Standard	ARIB STB-B31, TR-B14
Inputs	2xASI BNC (F), 75 ohm
FFT	2K, 4K, 8K
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/4, 1/8, 1/16, 1/32
Carrier spacing	4 KHz, 2 KHz, 1 KHz
Hierarchical modulation	Up to 3 layers
Constellation	QPSK, 16QAM, 64QAM, DQPSK
Clock and synchronization	
Internal clock	10 MHz
External reference	10 MHz BNC (F). Impedance = 50 ohm / high (configurable). Level = -5 to +10 dBm
1pps reference	BNC (F). Impedance = 50 ohm / high (configurable)
SFN	Resolution SFN = ±100 ns. SFN configurable delay = ±500 ms
Local and remote control	
Display	Local operation through the display and keyboard located on the front panel
RJ-45	Remote network management and local operation interface (Web Server and/or SNMP agent)
Parallel interface	Floating contacts for messages and commands

UHF TRANSMITTER

Digital TV (*)	TLWH7901E	TLWH7902E	TLWH7903E	TLWH7904E	TLWH7905E	TLWH7908E	TLWH7910E
Output power before filter: DVB-T/H/T2, ISDB-T/T _B , ATSC	1.5 KWrms	3 KWrms	4.4 KWrms	5.8 KWrms	7.3 KWrms	11.5 KWrms	14.4 KWrms
Number of amplifiers (**)	1	2	3	4	5	8	10
Output RF connector	EIA 1 5/8"			EIA 3 1/8"			EIA 3 1/8" EIA 4 1/2"
Frequency range	UHF: 470 - 700 MHz (resolution: 1 Hz)						
Channel bandwidth	6, 7, 8 MHz plus 1.7, 5 and 10 MHz for DVB-T2 ISDB-T/T _B , ATSC: 6 MHz						
Cooling	Liquid - cooled						
Power supply	Three - phase: 400VAC +/- 15%, 47 to 63Hz (other on request)						
Max. installation altitude	Up to 3000 m (> 3000 m on request)						

(*) The models are referenced according to standard: TLWH79xx - DVB-T/H/T2, TLWH79xxB - ISDB-T/T_B, TLWH79xxA - ATSC
Example: TLWH7908B - 9.3 KWrms ISDB-T/T_B

(**) Other configurations of output power and number of amplifiers, on request.

Remark: To comply with the out-of-band emissions regulations and with the required shoulder attenuation, the RF output of the transmitters must be connected to an appropriate filter.