

# EGATEL® TLWH7900 Series

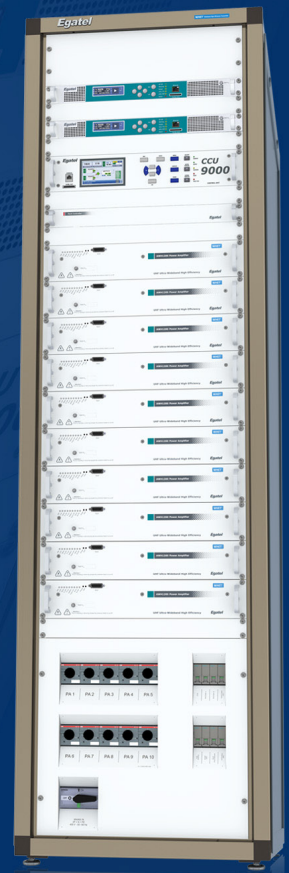
## High Power UHF TV Transmitters

Liquid cooling & Multistandard

**WHET®** Wideband High Efficiency Transmitter

### Superior power density per rack

The best option to cover large areas



TLWH7900 © 2017 Egatel Spain v.1.3

## Egatel



The new TLWH7900 liquid cooled transmitter series represents a step ahead in energy efficiency optimization, giving today's broadcasters a space-saving and cost-efficient solution (30% space reduction as compared with the previous series) and providing an ideal service for the development or extending digital TV networks.

The series employs Wideband Doherty technology with a very careful design oriented to enhance power efficiency, covering with only one single model of amplifier the entire UHF band without the need for tuning or adjustment of any kind; Its compact and modular design facilitates the installation and maintenance tasks, thus significantly reducing the total expenditures over the life of the TV transmitter.

The TLWH7900 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 over the whole UHF band (470 to 800 MHz) with no tuning of adjustments.
- Values up to 38% for COFDM waveforms and 42% for ATSC.
- Hot pluggable power amplifiers (2U) based on LDMOS-50 volt. technology with high power density.
- 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).
- Front panel LCD Display included for measurement/configuration.
- 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 Server.

# 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 <sub>B</sub>	
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 (*)	TLWH7901	TLWH7902	TLWH7903	TLWH7904	TLWH7905	TLWH7908	TLWH7910
Output power before the filter: DVB-T/H/T2, ISDB-T/T <sub>B</sub>	1.2 KWrms	2.3 KWrms	3.6 KWrms	4.7 KWrms	5.8 KWrms	9.3 KWrms	11.5 KWrms
Output power before the filter: ATSC	1.5 KWrms	3 KWrms	4.4 KWrms	5.8 KWrms	7.3 KWrms	11.5 KWrms	14.2 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"
General							
Frequency range	UHF: 470 - 800 MHz (resolution: 1 Hz)						
Channel bandwidth	6, 7, 8 MHz plus 1.7, 5 and 10 MHz for DVB-T2   ISDB-T/T <sub>B</sub> , ATSC: 6 MHz						
Cooling	Liquid - cooled						
Power supply	Three - phase: 400VAC +/- 15%, 47 to 63Hz						
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<sub>B</sub>, TLWH79xxA - ATSC  
Example: TLWH7908B - 9.3 KWrms ISDB-T/T<sub>B</sub>

(\*\*) 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.