

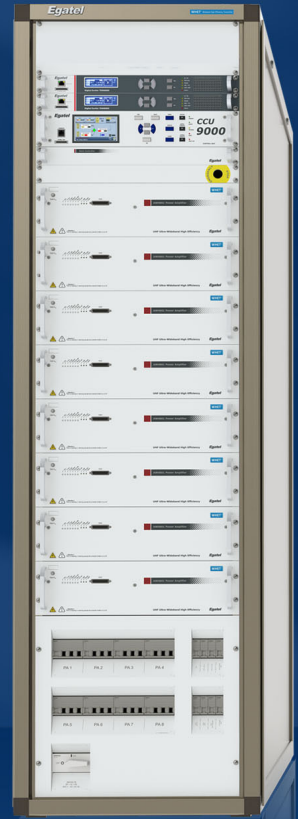
EGATEL® TLWH7800 Series

High Power UHF TV Transmitters

WHET® Wideband High Efficiency Transmitter

WIDEBAND - HIGH EFFICIENCY

Liquid - cooled & multistandard:
DVB-T/H, DVB-T2, ISDB-T/T_B, ATSC



TLWH7800 © 2016 Egatel Spain v.1.3

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The new Wideband - High Efficiency TLWH7800 Series represents a step ahead in the technology of high power UHF liquid cooled transmitters. For the first time the Doherty technology becomes Wideband, meaning that it is applicable to the whole UHF band. Therefore, no modifications in the amplifiers are required when the operator needs to change the RF channel.

TLWH7800 Series provides the optimal solution to operators that want to deploy or extend a digital broadcast network with HDTV, DTV and mobile TV channels globally. They offer an outstanding efficiency up to 42%, enabling a high economic benefit to broadcasters.

They are equipped with the most advanced technology in signal processing and the power amplifiers are based on LDMOS transistors - 50 volt. characterized by a high power density.

They feature a power-to-size and performance-to-reliability ratios that allow the signal broadcasting with the highest quality. Its compact and modular design as well as its high energy efficiency facilitate the installation and maintenance, thus significantly reducing the total expenditures over the life of the transmitter for the broadcast operator.

- High energy efficiency over the whole UHF band to minimize consumption and OPEX. Values up to 38% for COFDM waveforms and 42% for ATSC.
- Power amplifiers 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/-T_B, ATSC).
- Frequencies: from 470 MHz to 800 MHz.
- Digital Adaptive Precorrection.
- High redundancy to ensure maximum reliability.
- N+1 redundancy ready.
- Multiple options for local operation: through the display of the exciter, a Control Unit or Web Server (opt.).
- Wide range of possibilities for remote monitoring: dry contacts and SNMP / Web Server (opt.).

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 (*)	TLWH7802	TLWH7803	TLWH7804	TLWH7805	TLWH7808	TLWH7816
Output power before the filter: DVB-T/H/T2, ISDB-T/T _B	1.7 KWrms	2.5 KWrms	3.3 KWrms	4.2 KWrms	6.5 KWrms	12.5 KWrms
Output power before the filter: ATSC	2.5 KWrms	3.7 KWrms	5 KWrms	6.2 KWrms	10 KWrms	19.5 KWrms
Number of amplifiers (**)	2	3	4	5	8	16
Number of racks	1					2
Output RF connector	EIA 1 5/8"		EIA 1 5/8" or 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 _B , 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: TLWH78xx - DVB-T/H/T2, TLWH78xxB - ISDB-T/T_B, TLWH78xxA - ATSC
Example: TLWH7808B - 6.5 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.