

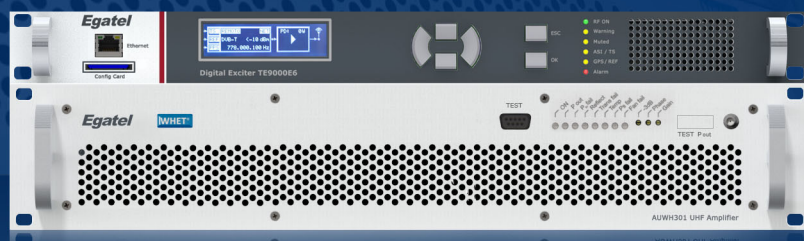
EGATEL® TUWH3000 Series

Medium Power UHF TV Transmitters

WHET® Wideband High Efficiency Transmitter

Efficient, reliable, compact

Maximum flexibility installation and operation



TUWH3000 © 2016 Egatel Spain v.1.1

Egatel



The medium power Wideband High Efficiency TUWH3000 series represents a step ahead in the technology of UHF air cooled transmitters. The Wideband-Doherty technology is applicable to the whole UHF band, therefore, no modifications in the amplifiers are required when the operator needs to change the RF channel.

The new transmitters features a market-leading energy efficiency. They offer an efficiency up to 42%, providing broadcasters with a high economic benefit.

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.

The customer oriented and extremely compact design provides full flexibility and multiple configurations per rack, saving a lot of space in the transmitter site. The rapid and easy startup of the transmitter and the power of the Web Server ensures fast commissioning and easy operation. The different options for redundancy and optimal design of critical modules guarantee continuity of service throughout the life of the transmitter.

- Output power up to 300 Wrms in only 3RU (1U Exciter - 2U Amplifier).
- 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.
- Outstanding compact design that allows to integrate several transmitters with Dual Drive or N+1 redundancy in a single cabinet.
- Digital modulations: (DVB-T/-H/-T2, ISDB-T/-Tb, ATSC).
- Frequencies: from 470 MHz to 800 MHz.
- Digital Adaptive Precorrection.
- High redundancy to ensure maximum reliability.
- N+1 redundancy ready with CCU9000.
- 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	40 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 (*)	TUWH3301	TUWH3201
Output power before the filter: DVB-T/H/T2, ISDB-T/T _B , ATSC	300 Wrms	200 Wrms
Number of amplifiers (**)	1	1
Output RF connector	7/16	7/16
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	
Dimensions (WxHxD mm)	Exciter: 1U + Amplifier: 2U (483 x 133.5 x 444mm)	
Cooling	Air - cooled	
Power supply	Single - phase: 100VAC ... 240VAC, 47... 63Hz	
Max. installation altitude	Up to 2500 m (> 2500 m on request)	

(*) The models are referenced according to standard: TUWH33xx - DVB-T/H/T2, TUWH33xxB - ISDB-T/T_B, TUWH33xxA - ATSC. Example: TUWH3301 - 300 Wrms DVB-T/H/T2

(**) 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.