

EGATEL® TE9000 Series

Low Power UHF Transmitters

Multistandard transmitters for analog and digital TV:
DVB-T/H, DVB-T2, ISDB-T/T_B, ATSC



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The low power transmitters of TE9000 series integrate a modulator that covers the main analog and digital TV systems, equipped with the latest technology in signal processing ensuring the digital TV signal broadcasting with the highest quality. The power amplifiers are based on LDMOS transistors that provide high linearity.

Its compact and modular design facilitates the installation and maintenance, reducing the cost over the life of the transmitter for the broadcast operator.

They can operate in MFN and SFN digital networks and incorporate the most innovative technologies, offering an unbeatable cost (CAPEX / OPEX) performance ratio.

- Extremely compact design
- Output power (before filter):
1.25 Wrms to 210 Wrms (DVB-T/H/T2, ISDB-T/T_B)
2 Wrms to 250 Wrms (ATSC)
20 W to 500 W (PAL, NTSC)
- Power amplifiers based on LDMOS transistors technology offering high linearity
- Analog and digital modulations (DVB-T/-H/-T2, ISDB-T/-TB, ATSC)
- Frequencies: from 470 MHz to 862 MHz
- Linear and non-linear digital precorrection
- Digital Adaptive Precorrection (opt.)
- Reception option that enables regenerative retransmission or measurement of parameters of the transmitted signal. (Only available for DVB-T)
- N+1 redundancy ready
- Software update via remote control
- Configuration data stored in extractable memory card in order to facilitate maintenance tasks
- Local operation via front display and/or friendly Web Server (opt.)
- Remote interfaces: dry contacts and SNMP / Web Server (opt.)

TECHNICAL SPECIFICATIONS

EXCITER

DVB-T/H/T2	
Standard	EN300744, EN302304, EN302755, TS102831, TS102773 (T2-MI)
ASI Inputs	2xASI BNC (F), 75 ohm / 2xTSolP 10/100/1000 base-T RJ-45
FFT size	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, A/110B:2011, SMPTE-310M
Inputs	2xSMPTE BNC (F), 75 ohm - 2xASI BNC (F), 75 ohm
Constellation	8VSB
Data rate	19.39 Mbits/s
Trellis coding	2/3
Reed-Solomon encoder	207 / 187 / 10
ISDB -T/-TB	
Standard	ARIB STB-B31, TR-B14
Inputs	2xASI BNC (F), 75 ohm
FFT size	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
Analog TV	
Standard	B, G, D, K, M, N, I
Inputs	Video BNC (F), 75 ohm, audio CANON (F), 600 / 10 Kohm
Color systems	PAL, NTSC
Clock and synchronization	
Internal clock	10 MHz
External reference	10 MHz BNC (F)
1pps reference	BNC (F)
SFN	SFN resolution = ±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 (*)	TE9010	TE9050	TE9100	TE9200	TE9500	TE9151	TE9201
Output power before the filter (DVB-T/H/T2, ISDB-T/Tb)	1.25 Wrms	6 Wrms	12 Wrms	25 Wrms	60 Wrms	150 Wrms	210 Wrms
Output power before the filter (ATSC)	2 Wrms	9 Wrms	18 Wrms	35 Wrms	125 Wrms	225 Wrms	250 Wrms
Number of amplifiers	1 (2U, 9.5")			1 (2U, 19")			2 (2x2U, 19")
Number of racks	0 / 1						
Output RF connector	N (F) 50 ohm			7/16" (F) 50 ohm			
Rack	19", optional						
Analog TV	TAE7200	TAE7101	TAE7201	TAE7371			
Output power (combined)	20 W	100 W	200 W	375 W			
Number of amplifiers	1 (2U, 9.5")	1 (2U, 19")			2 (2x2U, 19")		
Number of racks	0 / 1						
Output RF connector	N (H) 50 ohm			7/ 16" (F) 50 ohm			
Rack	19", optional						
General							
Frequency range	UHF: 470 ... 862 MHz (resolution: 1 Hz)						
Channel bandwidth	6, 7, 8 MHz plus 1.7, 5 and 10 MHz for DVB-T2 ISDB-T/Tb, ATSC: 6 MHz						
Dimensions	Exciter: 1U. Amplifier: 2U (specified in the number of amplifiers box). Control Unit (optional): 2U						
Cooling	Forced air						
Power supply	Single - phase: 100VAC ... 240VAC, 47... 63Hz						
Max. installation altitude	2500 m (> 2500 m on request)						

(*) : The models are referenced according to standard: TE9xxx - DVB-T/H/T2, TE9xxxB - ISDB-T/Tb, TExxA - ATSC
 Example : TE9200B - 25 Wrms ISDB-T/Tb

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.