



TAKTA
ELECTRONIC RESEARCH &
PRODUCTION Co.
I R I B

TKP -84 Series

Low/Medium - Power

DVB-T/T2 Digital TV Transmitter



Main Features

- Air cooled
- Dual Transmitter with (1+1) configuration
- Separated system control unit
- Adaptive digital correction (ADC)
- GSM modem for remote monitoring
- Graphical touch screen display

Main Features of Transmitters at a Glance.

More than 35 years of experience

Takta Co. has many years of experience in production of solid-state transmitters. We have successfully developed Low-Power and Medium-Power digital TV transmitting equipments which are easy maintenance and high performance.

The TKP-84 Series consist of 10w, 50w, 100w, 200w, 400w,600w,1000w,1300w and 2000w with air-cooled technology and can be mounted in 19inch rack since no need of blower.

Easy Channel setting

The TKP-84 Series have been equipped by a synthesized local oscillator that covers the entire UHF band and automatic tuning for any UHF channel through internal upload setting, it means no need for channel-specific components.

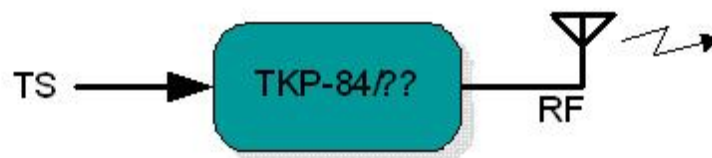
TKP-84 series lineup

■ Transmitter

The TKP-84 series consist of **One-Case Transmitters** and **Two-Case Transmitters**.

■ One-Case Transmitter

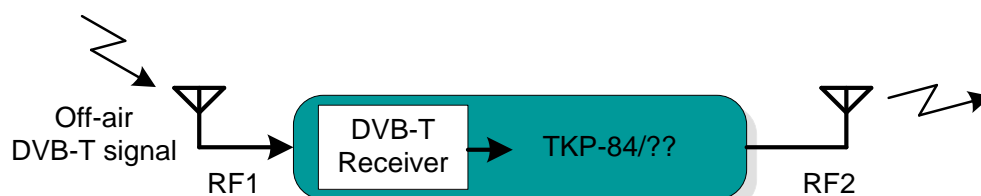
All parts of transmitter are integrated into single unit that directly converts standard TS input signals into a RF output with power range of 10w to 100w.



Single Unit, Dual Transmitter

■ One-Case Re-Transmitter

The re-transmitter features error correction during demodulation of off-air broadcast input signals. These signals are then remodulated onto a different frequency or the same frequency, making gap filler and a multi-frequency network possible.

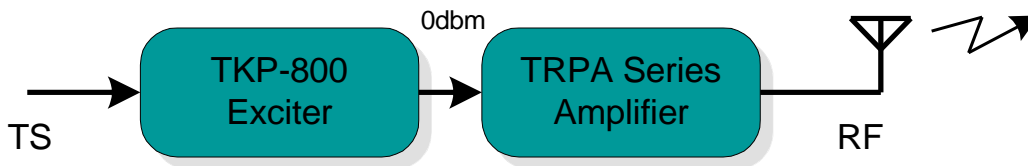


Single Exciter, Dual Exciter

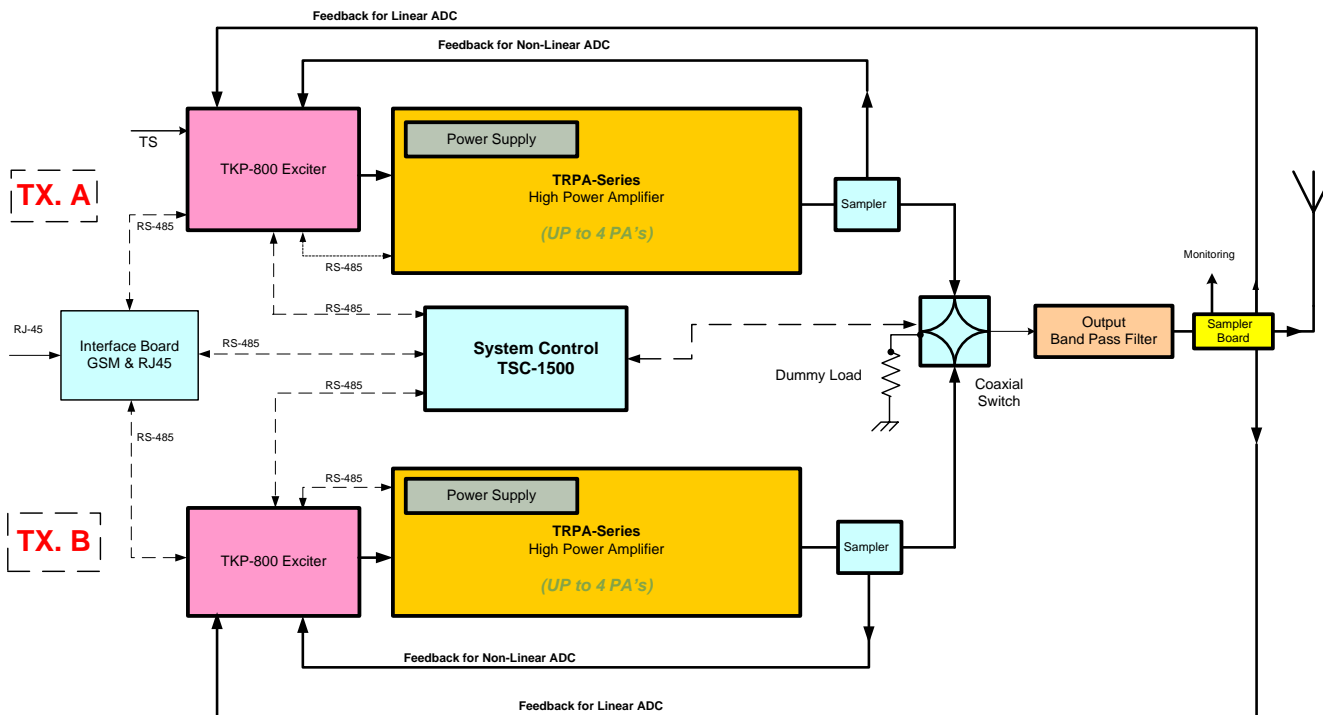
■ Two-Case Transmitter

The transmitter consists of exciter unit and power amplifier unit separately.

The exciter unit directly converts TS input into RF output with 0dbm level and the power amplifier unit is a high gain and high power with 0dbm input.



■ Dual Transmitter configuration (1+1)



■ Exciter TKP-800

The compact TKP-800 DVB-T/T2 digital exciter is packed with TAKTA state-of-the-art technology. A synthesizer is tuned to all UHF-band signals enabling full-band direct conversion to a RF output. Higher or lower bit rates are modified to usable bit rates for flexible bit-rate adaptability. Using the MIP created by the SFN adapter, seamless ASI switching can be performed.

Features:

- TR101290 First Priority monitoring of MPEG-2 TS inputs
- Sophisticated management of input substitution(redundancy switching)
- Adaptive Linear and non-linear pre-correction for optimization of transmitter performance
- Frequency agile RF output supporting any frequency from 30mhz to 1000mhz insteps of 1Hz
- On-Line SW/FW upgrading via Ethernet



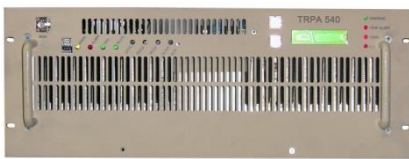
TKP- 800 DVB-T/T2 Exciter

■ Adaptive Digital Corrector (ADC)

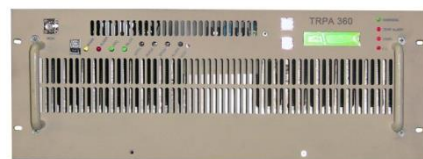
The ADC board automatically generates correction factors of non-linearity and linear distortion and updates the correction table without interrupting program service. Optimum signal quality and service coverage are maintained, protected from the effects of ambient temperature, aging and other factors. The ADC board is integrated inside of the modulator main board and can be used to generate the correction factor for preset correction. Furthermore, the ADC board is capable of analyzing feedback signals from the TX output, including IMD level, MER value and other graphical data. The automatic adjustment of the IMD/MER values greatly reduces the time required for maintenance.

■ Power Amplifier Unit (PA)

The TRPA Series power amplifier employs NXP LDMOS (Lateral Diffused Metal Oxide Semiconductors) output devices. The highly efficient broadband solid-state amplifier offers high linearity and superior reliability, along with three PA configurations — TRPA180 (180W), TRPA360 (360W) and TRPA540 (540W). Each amplifier features wideband capability, covering UHF band frequencies from 470 – 862MHz, while keeping gain levels constant. A cooling system and power supply module are integrated into the unit. Furthermore, protection and monitoring circuits are built-in.



540w output amplifier (TRPA540)

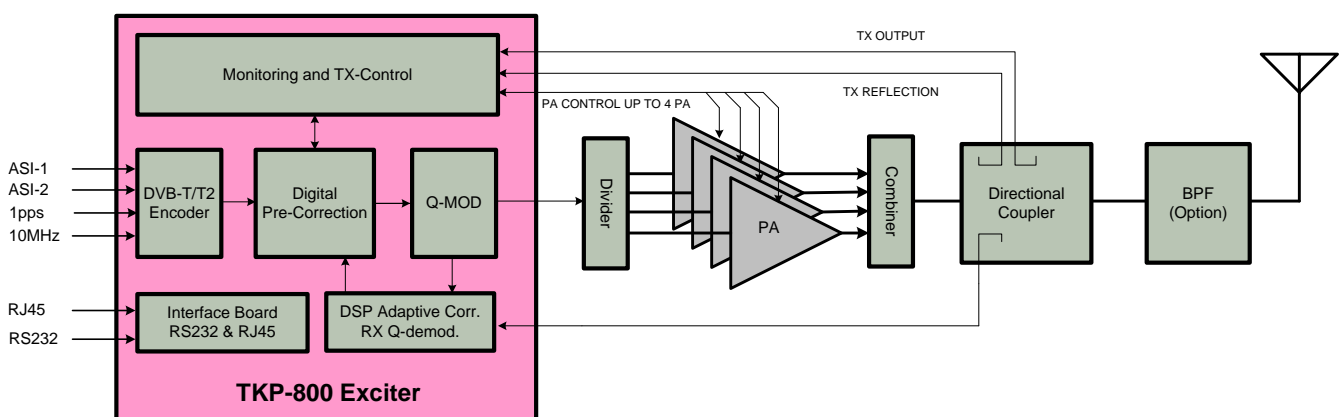


360w output amplifier (TRPA360)



180w output amplifier (TRPA180)

■ Transmitter Standard Configuration(DVB-T/T2)



TKP-84 Series Lineup

Output Power

Power	Type
10W	R10
50W	R50
100W	R100
200W	R200
400W	R400
600W	R600
1000W	1R0
1300W	1R3
2000W	2R0

Configuration

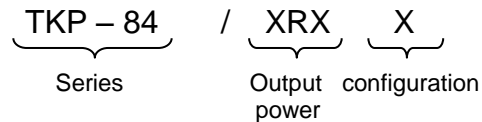
S: Single Transmitter with Single Exciter

PE: Single Transmitter with Dual Exciter and Single PA

P: Single Transmitter with Dual Exciter and Multiple PAs

M: Dual Transmitters with Passive Reserve Operation

R: Re-transmitter



INPUT	
ASI Input	2 x DVB ASI, 270Mbps Serial 75Ω BNC (1 for HP, 1 for LP)
Reference	10MHz, 0dBm ±3dB, 50Ω BNC (N/A when internal GPS receiver exists)
1pps Input (GPS ANT Input)	1Hz, TTL level, 50Ω BNC (when optional internal GPS receiver is employed, this input is used for GPS ANT input, 50Ω TNC-female)
DVB-T/T2 RF Signal (for Re-transmitter)	RF: Band III, IV, V, -20dBm ~ -75dBm, 50Ω BNC (there are two RF inputs for antenna diversity type)

REMOTE CONTROL	
GSM Modem	GSM band
RS-232C	RS-232C, D-sub male, 9-pin
Ethernet	TCP/IP, 10/100BASE-T, RJ-45

OUTPUT	
RF OUT	50Ω N female: 10W/50W/100W 50Ω 7/16 DIN female: 200W/400W/600W 50Ω 1kw/1.3kw/2kw 1-5/8" EIA: with Filter & Rack IMP ≤ -38dB, MER ≥ 36dB Exciter output: 0dBm, 50Ω N Frequency stability: ≤ ±1x10 ⁻⁷ (without external reference)
RF Monitor	More than 0dBm, 50Ω BNC
Local Monitor	Center frequency of RF output, 0dBm, CW, 50Ω BNC
Reference Output	10MHz, 0dBm, 50Ω BNC

OTHERS	
Power Supply	110/220/230V, single-phase, 3-phase 380v/400v 4 wire standard
Voltage Fluctuation	±15%
Power Supply Frequency	50/60Hz ±2%
Ambient Temperature	0° to +45°
Relative Humidity	≤90%

Dimensions & Weight

Component		Size WxDxH (mm)	Weight (kg)
Exciter	TKP-800	480 x 430 x 88 (2U)	6.5
	TRPA180	480 x 645 x 124 (3U)	27
PA	TRPA360	480 x 645 x 177 (4U)	30
	TRPA540	480 x 645 x 177(4U)	32

Note: Optional items of TKP-800 EXCITER is as follows:

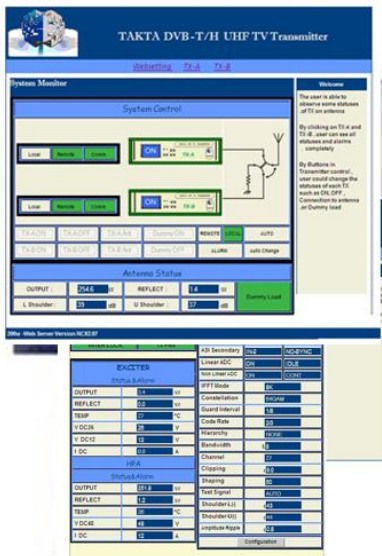
- (1) Option ADC [Adaptive Digital Correction board]
- (2) Option GPS [Integrated GPS receiver board]
- (3) Option RX [Integrated DVB-T/T2 receiver for re-transmitter system]
- (4) Option GSM modem

Other optional items

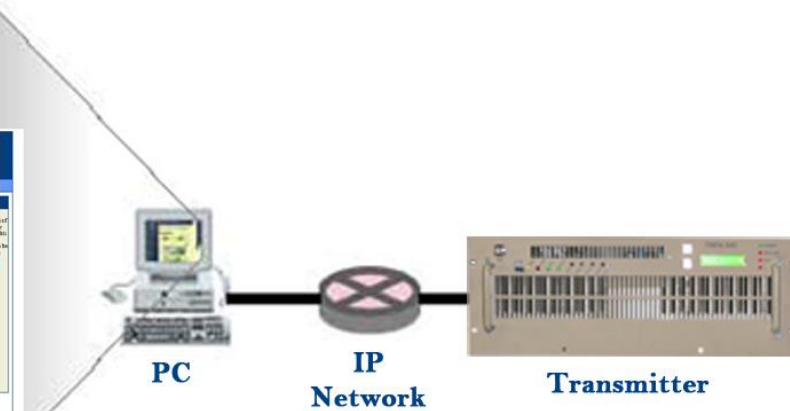
- (1) Option GPS ANT [GPS antenna, RF cable and mount accessories]
- (2) Option RACK [19inch Cabinet Rack (Size: W583xD950xH1900mm) with PDB Panel]
- (3) Option RACK PANEL [Door panel and exhaust fan for RACK to reduce acoustic noise]

■ Remote Control/Monitoring

The TKP-800 exciter is equipped with an IP network interface which allows the checking of signal quality via a web browser. High-level, cost-efficient maintenance is possible as special measurement equipment is not required.



Sample View of TX Status Monitoring



TKP -84 Series Low/Medium – Power DVB-T/T2 Digital TV Transmitter

Output Power	Model Name	Equipment Configuration					One-Case Transmitter	System Control Unit	Power Supply	Rack
		TKP-800 Exciter	Exciter Switch	TRPA						
				TRPA180	TRPA360	TRPA540				
10w	TKP-84/R10S						1		220v/Single phase	
	TKP-84/R10M						1x2	1	220v/Single phase	19-inch Rack
50w	TKP-84/R50S						1		220v/Single phase	
	TKP-84/R50M						1x2	1	220v/Single phase	19-inch Rack
100w	TKP-84/R100S1						1		220v/Single phase	
	TKP-84/R100M1						1x2	1	220v/Single phase	19-inch Rack
100w	TKP-84/R100S	1		1					220v/Single phase	
	TKP-84/R100PE	2	1	1					220v/Single phase	
	TKP-84/R100M	1x2		1x2				1	220v/Single phase	19-inch Rack
200w	TKP-84/R200S	1			1				220v/Single phase	
	TKP-84/R200P	2	1	2					220v/Single phase	
	TKP-84/R200PE	2	1		1				220v/Single phase	
	TKP-84/R200M	1x2			1x2			1	220v/Single phase	19-inch Rack
400w	TKP-84/R400S	1				1			220v/Single phase	
	TKP-84/R400PE	2	1			1			380v/ 3- phase	
	TKP-84/R400P	2	1	3					380v/ 3- phase	
	TKP-84/R400M	1x2				1x2		1	380v/ 3- phase	19-inch Rack
600w	TKP-84/R600S	1			2				380v/ 3- phase	
	TKP-84/R600P	2	1		2				380v/ 3- phase	
	TKP-84/R600M	1x2			2x2			1	380v/ 3- phase	19-inch Rack
1000w	TKP-84/1R0S	1				2			380v/ 3- phase	
	TKP-84/1R0P	2	1			2			380v/ 3- phase	
	TKP-84/1R0M	1x2				2x2		1	380v/ 3- phase	19-inch Rack
1300w	TKP-84/1R3S	1				3			380v/ 3- phase	
	TKP-84/1R3P	2	1			3			380v/ 3- phase	
	TKP-84/1R3M	1x2				3x2		1	380v/ 3- phase	19-inch Rack
2000w	TKP-84/2R0S	1				4			380v/ 3- phase	
	TKP-84/2R0P	2	1			4			380v/ 3- phase	
	TKP-84/2R0M	1x2				4x2		1	380v/ 3- phase	19-inch Rack

<Note> *1) BPF and rack are optional items.
*2) Output power level before reaching output filter.



Tel: +98 21 88037007-8
Fax : +98 21 88039763
www.Takta.com
sales@Takta.com