



TY-1440A 400W UHF Analog TV Transmitter Adjacent Channel Exciter (Optional)

Technical Specification
V3.01

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1. 400W UHF ANALOG TV Transmitter



1.1 Outline

The TY-1440A is a kind of transmitter working on UHF band 470MHz-860 MHz, and the Rated Output Power: 400W. It is widely used for analog TV signal transmission and can meet with various standards like PAL B/G, NTSC, SECAM. It is specially designed to supply common or pilot frequency coverage and subsidiary station by consuming small and medium power for terrestrial digital TV transmission. It is applicable to built-up areas, basement, tunnel and remote mountainous areas. Its main advantages include installation convenience and simple process in debugging and maintenance, etc. And in any combination of multiple antenna-feeder system it can supply local coverage and subsidiary station of wireless digital signal in the blind area. In addition to being widely used in domestic all-level television stations and network companies, it has exported in bulk to places like Southeast Asia and Africa.

1.2 Main features

- ✦ With RFU modularization, broadband and high consistency design, superlinear and all-solid-state power amplifier.
- ✦ With large LCD showed system real time working condition, maintenance and management of system can be achieved easily.
- ✦ With design of automatic power off in a situation of large signal input.

- ✦ With high reliability, small dimensions, convenience in installment and simple process in maintenance.
- ✦ It adopts modular design concept.
- ✦ It can upload to digital transmitter smoothly in future.
- ✦ Automatic Level Control in larger dynamic range(ALC); Automatic Gain Control(AGC); adaptation of wide dynamic range in different environments.
- ✦ With over-VSWR, over-voltage, over-current, over-heat and lighting auto-protective functions.
- ✦ With built-in big power fan, transmitter can run in a stable and reliable condition.
- ✦ With extended interface for remote control and GSM message auto-alarm system (optional), concentrated monitoring can be achieved.
- ✦ With the international and the domestic advanced level of the design and production of equipments.

1.3 Technical Specification

RF Index	TV system standard	PAL B/G, NTSC, SECAM
	Frequency Range	UHF470-860MHz(Optional VHF170-230MHz)
	The rated output power	400W (synchronous top power)
	Image/Audio power ratio	10:1
	Output impedance	50Ω
	frequency stability	±300Hz
	output power loss	+0.25dB
	In-band intermodulation	≤-52dB
	Out adjacent channel useless emission	≤-60dB
	In adjacent channel useless emission	≤-40dB
Video Index	Video input level	1Vpp±3dB
	Video input impedance	75 Ω
	Video input: reflection loss	≥34dB(frequency:0MHz~5.5MHz)
	Modulation Mode	AM, negative polarity
	Modulation	≤87.5%
	2T Sine SW distortion KP	≤2%
	2T Sine SW/Bar pulse amplitude ratio	≤2%
	Brightness non-linearity distortion	≤10%
	Blanking level stability	±2.5%
	Differential gain DG	±5%
	Differential phase DP	±5%
	Chroma/Brightness gain difference	≤10%
	Chroma/Brightness time delay difference	±30ns
	Continuous SCR (rms value, unweighted)	≥50dB
	Continuous SCR (rms value,Weighted)	≥58dB
Video Index	Periodic signal/noise ratio (peak value)	≥50dB
	CF Carrier parasitic phase modulation	±5°

	Group delay	$\leq \pm 50\text{ns}$
Audio Index	Audio input level	0dBm $\pm$ 6dB, 600 Ω (Bal.) or 10k Ω (Unb.)
	Modulation	FM
	Pre-emphasis	50 μ s
	MAX. Frequency deviation	$\pm 50\text{KHz}$
	Harmonic distortion	$\leq 1\%$ (30Hz~15KHz)
	Amplitude frequency characteristic	$\pm 1\text{dB}$ (30Hz~15KHz, 50%modulated 50 μ s)
	FM signal to clutter ratio (SCR)	$\geq 60\text{dB}$ (1KHz, 100% modulation)
	AM noise (no modulation)	$\leq -50\text{dB}$
	Carrier offset	$\pm 300\text{Hz}$
	AM noise	$\leq -50\text{dB}$
	Intercarrier noise	$\leq -45\text{dB}$
	Image/Audio intermodulation	$\leq 10\%$
Working Conditions	Cooling system	Forced air cool
	Operation temperature	0~40 $^{\circ}\text{C}$
	Relative humidity	<95%(Non condensation)
	Atmosphere pressure	86~106Kpa
	Power supply	AC220V $\pm 10\%$, 50/60Hz or Customized
Size	Net dimension	64*48*18cm
Weight	Net weight	19.5Kg

2. Simple Adjacent Channel Modulator /Exciter (Optional)



2.1 Features

- ✦ IF processed with one-conversion ensures low outband interfere
- ✦ MCU control for frequency control and accuracy
- ✦ LCD Display. User friendly operation, using UP and DOWN to control output level
- ✦ IF input&output loop
- ✦ Switching mode power supply allows operation worldwide
- ✦ PAL, NTSC and SECAM standards for optional

2.2 Technical Specification

RF Index	Output Frequency	45-870MHz
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	Frequency Accuracy	±5KHz
	Output Level	113dB _μ V
	Outband Suppression	≥60dB
	Sideband Suppression	≥60dB
	Output Impedance	75Ω
	A/V Ratio	-10dB ~ -20dB
Video Index	Input Level	0.6 ~ 1.5Vp-p
	Input Impedance	75Ω
	Input Return Loss	30dB min
	K Value	4% max (2T pulse)
	SNR	50dB
	Delay Response	45nsec
	Flatness	±1dB
	Differential Gain	±4% (Modulation 87.5)
	Differential Phase	±4° (Modulation 87.5)
Aduio Index	Input Level	-10 ~ 10 dBm
	Input Impedance	10KΩ min
	Flatness	±1dB
	Harmonic Distortion	1%
	SNR	-60dB
Power Supply	AC Input	110-220V AC

3. TYE Series Transmitters

Item	Product name	Frequency Range	Output Power	System
1	VHF Analog TV Transmitter	170MHz-230MHz	20W-2KW	PAL/NTSC/SECAM
2	VHF Digital TV Transmitter	170MHz-230MHz	5W-300W	DVB-T/T2/S/S2/C,QAM Omnidirectional transmission
3	VHF Live/Mobile Transmitter	300MHz-350MHz	5W-30W	Point to point transmission
4	UHF Analog TV Transmitter	470Mhz-860MHz	20W-2KW	PAL/NTSC/SECAM
5	UHF Digital TV Transmitter	470Mhz-860MHz	10W-1KW	DVB-T/T2/S/S2/C,QAM Omnidirectional transmission
6	L Band TV Transmitter	1.3GHz-1.5GHz	20W-50W	DVB-T/T2/S/S2/C,QAM Omnidirectional transmission; Point to point transmission
7	S Band (MMDS) Digital TV Transmitter	2.0GHz-2.9GHz	10W-500W	DVB-T/T2/S/S2/C,QAM Omnidirectional transmission; Point to point transmission , PAL/NTSC/SECAM(Analog signal)

8	8GHz TV Transmission Module Set	7.8GHz-8.3GHz	500mW-2W	DVB-S/S2(8PSK/QPSK) Omnidirectional transmission; Point to point transmission
9	Ku Band (MVDS) TV Transmitter	10.7GHz-12.0GHz	200mW-24 W	DVB-S/S2(8PSK/QPSK) Omnidirectional transmission; Point to point transmission