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500 Watt & 1000 Watt VHF TELEVISION TRANSMITTERS



500 Watt



1000 Watt

Description of the Equipment

The A500WSTTV and A11KSTTV are 500 and 1000 Watt VHF Television Transmitters designed for NTSC, PAL or SECAM Formats.

The audio and video signals are fed to the exciter assembly, which consists of two stages. A **modulator/upconverter** creates on-channel visual and aural carriers at 0 dBm. This signal is then amplified by the **25 Watt driver amplifier** and fed to multiple **700 Watt power amplifiers (PA)** which are combined to provide the appropriate transmitter output power. The combined output is fed to a notch/bandpass filter and a directional coupler. These components supply the RF signal to the antenna.

The A500WSTTV and -A11KSTTV have many control and protection features seldom found in comparably priced equipment:

- The driver and all PA amplifiers have circulator isolated outputs for enhanced reliability and performance.
- Active components are located on printed circuit boards for fast, easy field service.
- All of the metering and control circuitry is built with precision components.
- Light emitting diodes (LEDs) give a quick, visual indication of the condition of the transmitter.
- Digital panel meters give accurate readings of important voltages, currents, and powers associated with the driver and PA.
- Robust power components insure that the transmitter can survive adverse conditions.
- All of the major components, such as power supplies, combiners, circulators, and fans, are easily field replaceable and are readily available from either the original manufacturer or from e. I. marsden wireless, inc..

Technical Specifications

Output Specifications

Overall:

Power Capability	500 W Visual (peak sync) with 50 W Aural (average) 1000 W Visual (peak sync) with 100 W Aural (average)
Frequency Range	Available on any TV channel (including standard offsets) within: Band I (VHF-LO) Band II (VHF-M) Band III (VHF-HI) Specify Band and Channel when ordering
Output Impedance	50 Ohms
Output Connector	7/8" EIA Flange (other options available)
Carrier Stability	± 1 kHz standard and offset channels
Intercarrier Stability	± 500 Hz
Harmonics Products	-60 dB or better referred to sync peak
Non-Harmonic Spurious Products	As per appropriate FCC or CCIR Standard

Video:

Differential Gain	5%
Differential Phase	$\pm 3^\circ$
Group Delay	As per appropriate FCC or CCIR Standard
Frequency Response (Sideband)	As per appropriate FCC or CCIR Standard
In Band Intermodulation Products	-52 dB or better (using three tone test)

Audio:

Frequency Response (Main Channel)	± 0.5 dB (50Hz to 15 kHz with appropriate de-emphasis)
Pre-emphasis	As per appropriate FCC or CCIR Standard
FM Noise	-60 dB or better
AM Noise	-50 dB or better
Total Harmonic Distortion	0.5% or better
Frequency Deviation Capability	± 25 kHz for Monophonic Operation Stereo exciter available as option

Input Specifications:

Video Input Impedance / Level	75 Ohms, 1V(p-p)
Audio Input Impedance / Level	10k Ohms unbalanced, 140 mV RMS (600 Ohms balanced, -10 dBm to +10 dBm option available)
AC Line Voltage	208 / 240 VAC $\pm 5\%$, single phase, 60 Hz/50 Hz (Specify 50 Hz or 60 Hz when ordering)

General Specifications:

Driver	25 W LDMOS Amplifier
Output Stage	Multiple 700 W LDMOS Amplifiers (1 for 500 W, 2 for 1000 W)
Cooling	Forced Air
Max Altitude	7500 ft (higher altitude operation as option)
Ambient Temperature Range	-30° C to +50° C
Ambient Humidity Range	0 - 95% relative humidity without condensation
Dimensions (W x H x D):	22" x 48.3" x 32" Internal for 1 kW and 2 kW; 22 " x 22" x 26" for 3 kW
Weight	~200 lbs. (500 W), ~270 lbs. 1000 W)
Power Consumption (Typical)	~1.9 kVA 500 W (500 W peak visual w/ black picture, 50 W aural) ~3.8 kVA 1000 W (1000 W peak visual w/ black picture, 100 W aural))
Heat Load @ Full Output (Typical)	3750 BTU/Hr (500 W), 7500 BTU/Hr (1000 W),
Air Conditioning Requirements	Based on local environment; consult factory

Additional Options:

Automatic FSK Station Identifier	Input Video Automatic Gain Control
AC Surge Protector	Audio Processor
Spare Tube	BTSC Stereo Generator
Spare Parts Kit	Remote Control
Video Proc/Amp	Dual Exciter Assembly

