



Model 23-1 23 cm 3 Watt FM TELEVISION TRANSMITTER



The KH6HTV-VIDEO, Model 23-1, is an FM Television Transmitter. It operates on the amateur 23 cm band (1240 - 1300 MHz) and produces an FM-TV signal with an output power of 3 Watts (+35 dBm). It transmits, standard definition (480i), NTSC video complete with stereo audio. The video and audio quality are exceptional with performance far superior to that offered by low cost, low power, import, consumer grade, transmitters, typically called "video senders" or "wireless video links". It is fully synthesized and operates on three programmable channels. It comes factory programmed with the customer specified frequencies. The user can easily reprogram the frequencies later as desired.

The model 23-1 is extremely simple to use. There are only three front panel controls: Power On/Off, Sound Sub-Carrier On/Off and Channel Selection (A, B or C). The model 23-1 can be readily configured to meet local operating protocols. Internal settings and adjustments that can be set for the user's particular requirements are: Ch A, Ch B & Ch C frequencies, Video Deviation, Video Polarity, Video Pre-Emphasis On/Off, Left & Right Sound Sub-carrier (SSC) frequencies and deviation, and SSC injection level.

The model 23-1 is ideal for either portable, mobile or base station use. It is particularly suitable for point-to-point, microwave link applications. It is an ideal transmitter for rugged, ARES field operations. A model 23-8 is also available for those customers only needing a low level modulator. It deletes the final amplifier, heat sink and cooling fan. It's output is +17dBm.

PARAMETER	Typical Performance	Notes
Frequency Range	1240 - 1300 MHz	23 cm Amateur Radio Band
Number of Channels	3	selectable with front panel, 3 position toggle switch
Standard Channels	Ch A = 1247 MHz Ch B = 1277.25 MHz Ch C = 1292 MHz	specify desired frequencies when ordering
Synthesizer Resolution	250 kHz	crystal controlled
Output Power	3 Watts (+35 dBm), typical	
RF Output Connector	type N (female)	
Video Modulation	FM	
FM Video Deviation	4 MHz	internally adjustable
FM Video Polarity	Normal or Inverted	black to white = low to high freq internally selectable
Video Pre-Emphasis	CCIR 405-1 or None	internally selectable
Video Frequency Response (-3dB BW)	< 15 Hz to > 8 MHz < 15 Hz to > 7.2 MHz (*) < 15 Hz to 4.5 MHz (*)	"Flat" without pre-emphasis With Pre-Emphasis & De- Emphasis + LPF in receiver
Video Input	1.0 V _{ptp} into 75 Ω	
Stereo Audio Modulation	FM	
Sound Sub-Carriers (SSC)	one (mono) or stereo (L & R)	internally selectable SSC may also be disabled by front panel switch
SSC Frequency Range	4 to 7.5 MHz	internally adjustable
Standard Sub-Carriers	Left (or mono) = 5.8 MHz Right = 6.2 MHz	Specify desired SSC frequencies when ordering
Sub-Carrier Deviation	75 kHz	internally adjustable
Sub-Carrier Level	-20 dBc	internally adjustable
Audio Pre-Emphasis	75 μs	
Audio Frequency Response	< 5 Hz to >50 kHz < 10 Hz to 20 kHz (*)	
Audio Input into >10 kΩ	Std. Line Level = 0 VU APL	level internally adjustable
A/V Input Connectors	RCA	
Duty Cycle	100 %	includes heat sink & cooling fan
Input DC Power	+12 Vdc, 1 Amp, 12 Watts	+9 V to +15 Vdc
Front Panel Controls	DC Power -- On / Off SSC -- On/Off Channel -- A, B or C	Front panel LED indicates PLL state. Red = unlock, Green = Lock. Fan switch on rear panel
Dimensions	4.2" x 3.5" x 7.4" (w x h x d)	
Accessories Included	Instruction Manual	

(*) When measured in complete FM-TV system of 23-8 transmitter, 23-7 down-converter (70MHz IF out), and 23-5 70MHz IF amplifier and FM demodulators

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NOTICE: *This TV transmitter is not FCC type accepted. Therefore, the use of this TV transmitter is only legal in the USA, amateur radio, 23 cm band (1240 - 1300 MHz). Owners and operators of this TV transmitter must be licensed amateur radio operators.*