



Model 23-11A
23 cm, 49 dB, 30/15/4.5 W
RF LINEAR
POWER AMPLIFIER



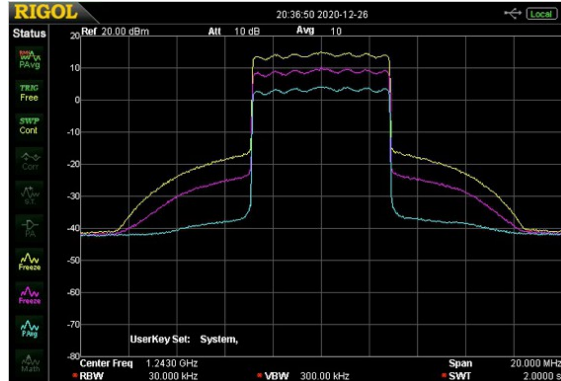
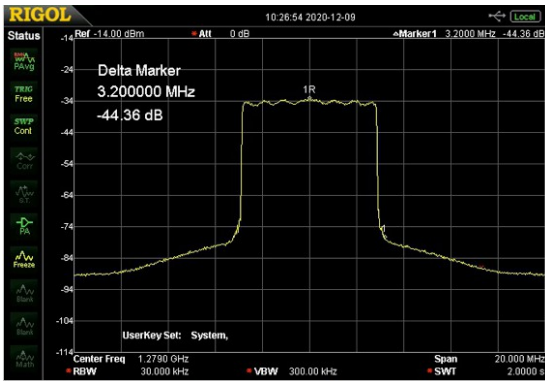
The KH6HTV-VIDEO Model 23-11A, RF Power Amplifier is for use in the amateur radio 23 cm band (1240-1300 MHz). It is a Class A-B amplifier designed for linear service. It can be used to produce a 30 Watt FM signal or 15 Watt (pep), analog, TV signal. It can also produce a 4.5 Watt (rms), high-definition (1080P), digital TV signal. The rf power output can be lowered -5 dB or -10 dB for reduced DC current draw with the front panel rotary switch. Provision is included for external PTT control. It is ideal for use as the final amplifier in a digital ATV repeater.

KH6HTV-VIDEO Boulder, Colorado, USA

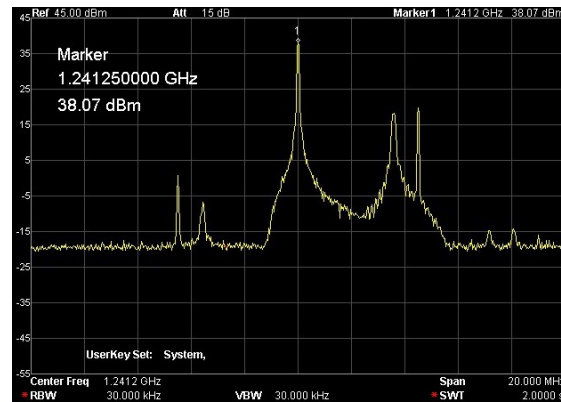
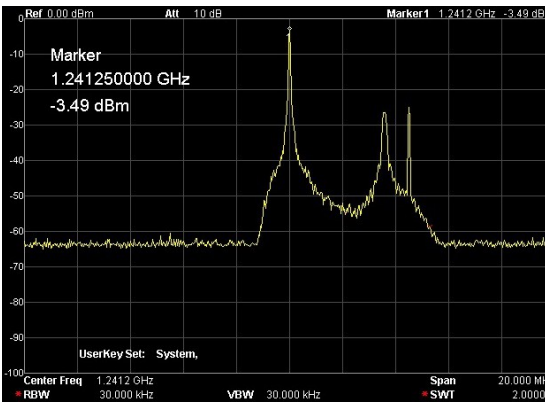
web site = www.kh6htv.com email = kh6htv@arrl.net 303-594-2547

PARAMETER	Typical Performance	Notes
Output Power (analog TV) (VUSB-TV, NTSC)	15 Watts PEP (+42 dBm) also 5 or 1.5 Watt	peak power on sync tips adjustable in -5dB steps
Output Power (Digital TV)	4.5 Watts (+36.5dBm), also 1.4 or 0.4 Watts	rms, avg. power,DVB-T service -5dB & -10dB
Output Power (FM, CW)	25-35 Watts	saturated output
Output Power (SSB)	18 Watts PEP	
Output Power (AM)	5 Watts	
Output Power, P(-1dB)	18 Watts	-1dB gain compression
Output Power vs. Supply Voltage	+36.5 dBm @ 12 - 13.8 Vdc +35.5 dBm @ 10 Vdc	DTV
RF Power Amplifier Gain	49 dB, nominal	
Amplifier Gain Flatness	± 2.5 dB	1240 - 1300 MHz, see photo
Amplifier Max Input Power	50 mW, +17 dBm	
LSB Rejection (analog VUSB)	-20dB	LSB/USB ratio, see photo
Spectrum Regrowth (Digital TV)	-30 dB at +36.5dBm avg.	shoulder break-point, see photo
Duty Cycle	100 %	heat sink & cooling fan included
DC Supply Voltage	13.8 Vdc	10 to 15 Vdc
DC Current @ 13.8 Vdc	6.9, 4, or 2.5Amps 9 Amps	HI / MED / LO power (DTV) 30 W (FM/CW)
Controls - Rotary Switch	OFF - HI - MED - LOW	rf power adjustable in 5 dB steps
Control - Mini Toggle Switch	Xmit ON - Stand-By - Ext PTT	
RF Connectors	SMA input & N output	
PTT In Connector	RCA	PTT provided for repeater control
Rear Panel Terminal Strip	GND, +12Vdc, PTT OUT	
Dimensions & Weight	5.5" x 4.5" x 5.0", 2 lbs	
Accessories Included	instruction manual, test report, 3 ft. DC power cord, 20" SMA cable	

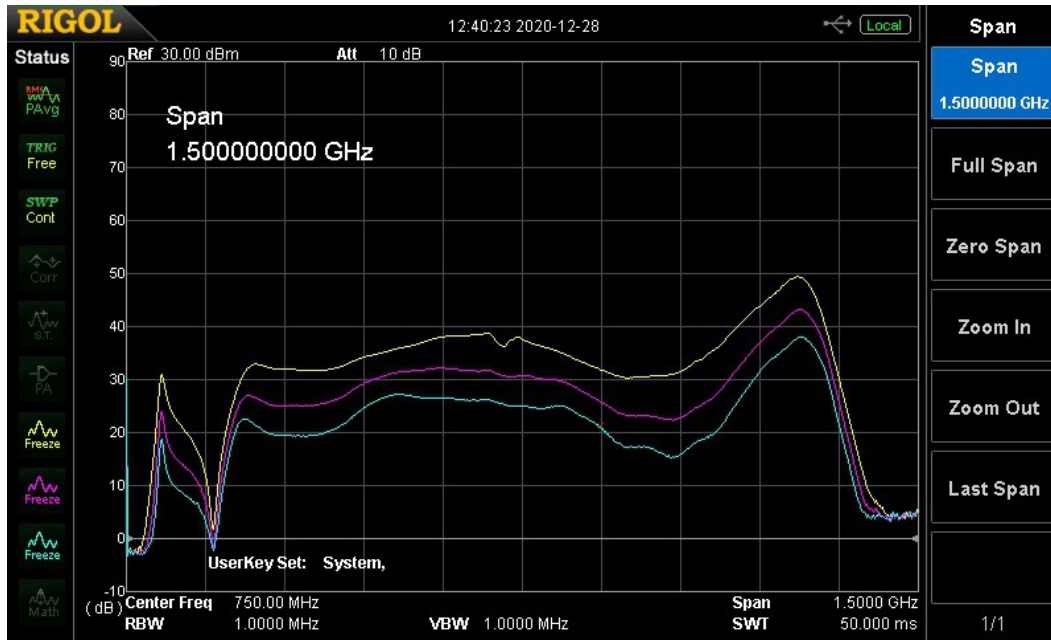




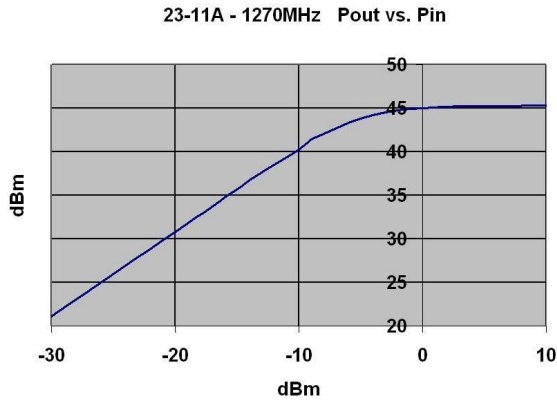
RF Spectrum in DVB-T service. Modulator output (left) & Amplifier output (right) 10dB/div & 2MHz/div. Yellow = HIGH, Magenta = MED, Blue = LOW RF Power



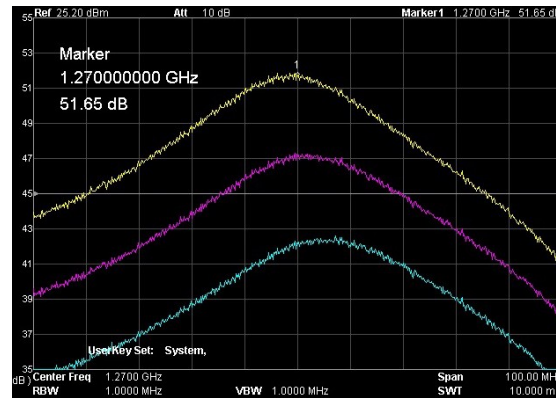
RF Spectrum in NTSC, VUSB-TV service. Modulator output (left) & Amplifier output (right) 10dB/div & 2MHz/div.



S21, Small Signal Gain Frequency Response sweep from 0 to 1.5 GHz.. Center freq = 750MHz, 150MHz/div, 10dB/div Yellow = HIGH, Magenta = MED, Blue = LOW RF Power



Note: slightly lower gain and power output at band edges



S21, 2dB/div & 10MHz/div, 1270MHz center Yellow=HIGH, Magenta=MED, Blue=LOW

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