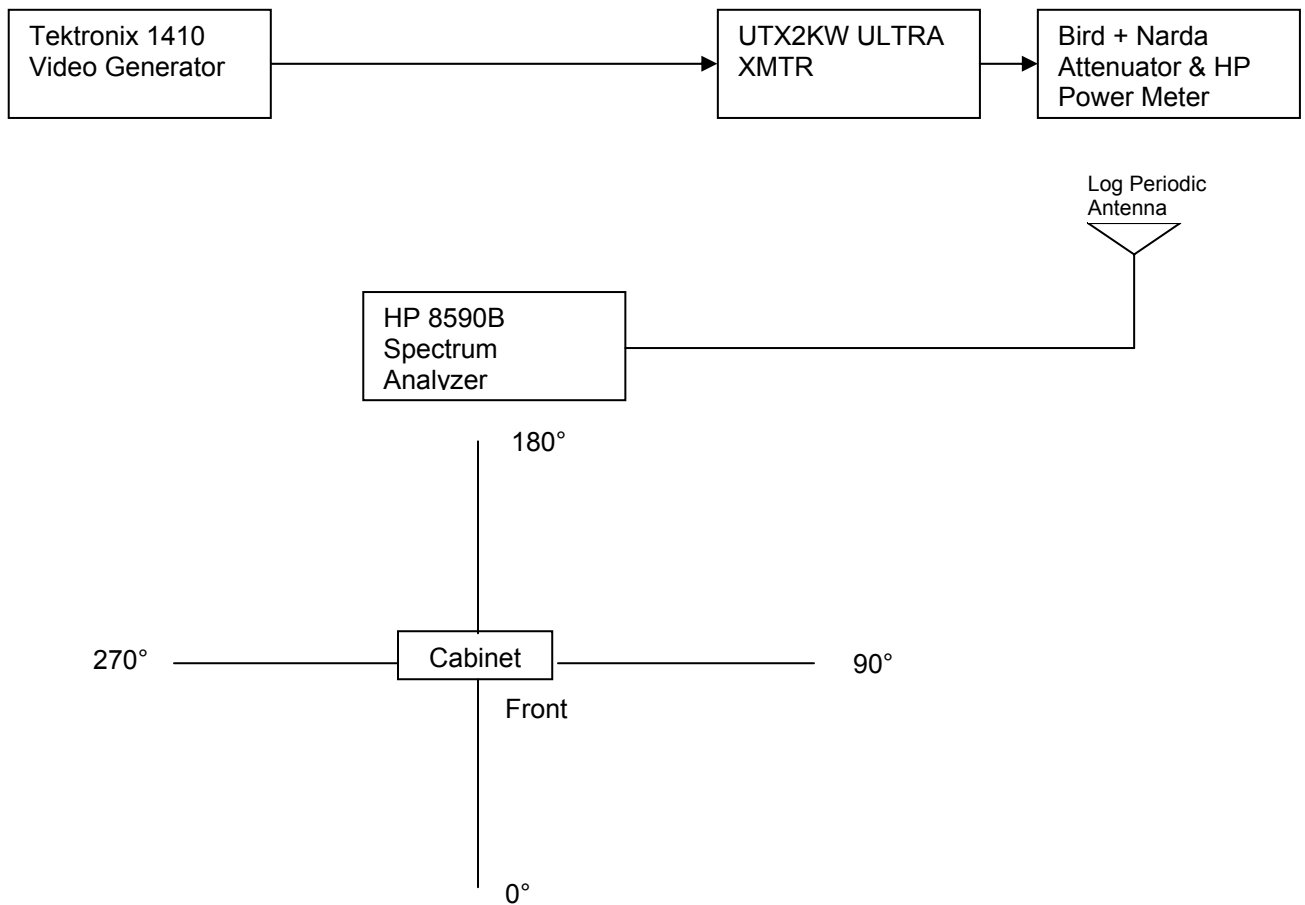


CABINET RADIATION

The transmitter and test equipment were configured as shown below including the angles of measurement with respect to the transmitter cabinet. The photo on the subsequent page also shows one view of the physical set-up of the test equipment and equipment under test. The transmitter was operated at 2.0 kW peak sync power with a 13 dB visual/aural ratio with the video input signal being a Modulated Stairstep signal. The free space path loss and antenna gain characteristics were obtained at the fundamental frequency and at each of the harmonics of the visual carrier frequency in order to accurately assess the level of the signal radiated from the cabinet. Radiation from the cabinet was measured at a distance of 10 meters in 4 different physical rotation angles: 0, 90, 180, and 270 degrees (0 degrees being the front of the cabinet). All spectral components radiated from the cabinet were recorded. The values are tabulated in the table on the next page following the photos.

TEST EQUIPMENT CONFIGURATION



PHYSICAL CABINET RADIATION TEST CONFIGURATION

This photograph shows the actual laboratory environment in which the cabinet radiation tests were conducted. The log periodic antenna, cable and spectrum analyzer is shown in the foreground and the UTX2KW ULTRA is shown in the background. The transmitter was rotated 90 degrees for each of the measurement orientations.



As indicated in the spreadsheet data on the following page, the worst case measurement was 68.1 dB at the second harmonic. The measurement tables for the all views of the transmitter at each frequency are shown below.

The results indicate that all radiated harmonics meet the FCC requirement of 60 dB as outlined in FCC rule 2.1053 and 2.1057.

CABINET RADIATION DATA

FRONT VIEW

Harmonic	Frequency	Measured	MAX SIG	CABLE LOSS	ANTENNA	PATH LOSS	ADJ	REQUIRED	STATUS	Compared to
	GHz	Level dBm	ANGLE DEGREES	dB dB	GAIN dB dB	dB dB	LEVEL dBm	LEVEL dBm	P=PASS	Peak Sync dB
Fc	0.575	-31	90	0.5	5.6	47.7	11.6	3	N/A	N/A
Fc*2	1.15	-55	90	0.9	5.7	53.7	-6.1	3	P	69.1
Fc*3	1.725	-58	90	1.3	5.6	57.2	-5.1	3	P	68.1
Fc*4	2.3	-81	90	1.7	5.2	59.7	-24.8	3	P	87.8
Fc*5	2.875	-81	90	1.8	4.8	61.7	-22.3	3	P	85.3
Fc*6	3.45	-81	90	1.9	4.9	63.3	-20.7	3	P	83.7
Fc*7	4.025	-81	90	2	3.2	64.6	-17.6	3	P	80.6
Fc*8	4.6	-81	90	2.1	3.3	65.8	-16.4	3	P	79.4
Fc*9	5.175	-81	90	2.8	2.7	66.8	-14.1	3	P	77.1
Fc*10	5.75	-81	90	3.6	3.1	67.7	-12.8	3	P	75.8

RIGHT VIEW

Harmonic	Frequency	Measured	MAX SIG	CABLE LOSS	ANTENNA	PATH LOSS	ADJ	REQUIRED	STATUS	Compared to
	GHz	Level dBm	ANGLE DEGREES	dB dB	GAIN dB dB	dB dB	LEVEL dBm	LEVEL dBm	P=PASS	Peak Sync dB
Fc	0.575	-30	90	0.5	5.6	47.7	12.6	3	N/A	N/A
Fc*2	1.15	-61	90	0.9	5.7	53.7	-12.1	3	P	75.1
Fc*3	1.725	-58	90	1.3	5.6	57.2	-5.1	3	P	68.1
Fc*4	2.3	-70.5	90	1.7	5.2	59.7	-14.3	3	P	77.3
Fc*5	2.875	-80	90	1.8	4.8	61.7	-21.3	3	P	84.3
Fc*6	3.45	-80	90	1.9	4.9	63.3	-19.7	3	P	82.7
Fc*7	4.025	-80	90	2	3.2	64.6	-16.6	3	P	79.6
Fc*8	4.6	-80	90	2.1	3.3	65.8	-15.4	3	P	78.4
Fc*9	5.175	-80	90	2.8	2.7	66.8	-13.1	3	P	76.1
Fc*10	5.75	-80	90	3.6	3.1	67.7	-11.8	3	P	74.8

LEFT VIEW

Harmonic	Frequency	Measured	MAX SIG	CABLE LOSS	ANTENNA	PATH LOSS	ADJ	REQUIRED	STATUS	Compared to
	GHz	Level dBm	ANGLE DEGREES	dB dB	GAIN dB dB	dB dB	LEVEL dBm	LEVEL dBm	P=PASS	Peak Sync dB
Fc	0.575	-34	90	0.5	5.6	47.7	8.6	3	N/A	N/A
Fc*2	1.15	-61	90	0.9	5.7	53.7	-12.1	3	P	75.1
Fc*3	1.725	-67	90	1.3	5.6	57.2	-14.1	3	P	77.1
Fc*4	2.3	-76	90	1.7	5.2	59.7	-19.8	3	P	82.8
Fc*5	2.875	-80	90	1.8	4.8	61.7	-21.3	3	P	84.3
Fc*6	3.45	-80	90	1.9	4.9	63.3	-19.7	3	P	82.7
Fc*7	4.025	-80	90	2	3.2	64.6	-16.6	3	P	79.6
Fc*8	4.6	-80	90	2.1	3.3	65.8	-15.4	3	P	78.4
Fc*9	5.175	-80	90	2.8	2.7	66.8	-13.1	3	P	76.1
Fc*10	5.75	-80	90	3.6	3.1	67.7	-11.8	3	P	74.8

REAR VIEW

Harmonic	Frequency	Measured	MAX SIG	CABLE LOSS	ANTENNA	PATH LOSS	ADJ	REQUIRED	STATUS	Compared to
	GHz	Level dBm	ANGLE DEGREES	dB dB	GAIN dB dB	dB dB	LEVEL dBm	LEVEL dBm	P=PASS	Peak Sync dB
Fc	0.575	-38	90	0.5	5.6	47.7	4.6	3	N/A	N/A
Fc*2	1.15	-71	90	0.9	5.7	53.7	-22.1	3	P	85.1
Fc*3	1.725	-69	90	1.3	5.6	57.2	-16.1	3	P	79.1
Fc*4	2.3	-76	90	1.7	5.2	59.7	-19.8	3	P	82.8
Fc*5	2.875	-80	90	1.8	4.8	61.7	-21.3	3	P	84.3
Fc*6	3.45	-80	90	1.9	4.9	63.3	-19.7	3	P	82.7
Fc*7	4.025	-80	90	2	3.2	64.6	-16.6	3	P	79.6
Fc*8	4.6	-80	90	2.1	3.3	65.8	-15.4	3	P	78.4
Fc*9	5.175	-80	90	2.8	2.7	66.8	-13.1	3	P	76.1
Fc*10	5.75	-80	90	3.6	3.1	67.7	-11.8	3	P	74.8

VOLTAGES AND CURRENTS TO FINAL AMPLIFIERS

Final amplifier DC voltage and current measurements were made with the transmitter operating at 2.0 kWatts power output. A video input signal of sync and 0 IRE "setup" level was used. The aural carrier was energized and adjusted for the proper 13 dB Visual to Aural power ratio. Voltage measurements were made using a Fluke 77 meter. Current measurements were made using the transmitter meter with a voltage measurement across a DC shunt. The power supply voltage was measured as 32 volts.

Peak Output Power = 2000 Watts

Voltage = 32 volts

Total DC Current = 150amps

Final amplifier DC power input = $32 \times 150 = 4800$ watts

EQUIPMENT LIST

The following test equipment was used in the various test equipment configurations or to create calibration of equipment at various frequencies. All equipment was known to be in good working order and the supplier of the equipment stipulated the equipment was within the calibration period.

EQUIPMENT MODEL	SERIAL NUMBER
Tektronix 1410 Video generator	B020216
Modulation Sciences MSI320 demodulator	390128364
HP 8590B Spectrum Analyzer	3089A09840
VM-700A Video Analyzer	N/A
HP339A Distortion Measurement Set	2520A06460
Tektronix TSG90 Video signal generator	B022622
Tektronix 1480R Waveform Monitor	B010695
ETS 3147 Log Periodic Antenna	9703-1288
Fluke 77 meter	54810424
Wavetek 8003 Scalar Analyzer	1813961
HP 54601 Oscilloscope	3134A02137
HP-435B Power Meter	2702A17274
Bird 8890-300 30 dB Attenuator	N/A
Narda 20 dB Attenuator	N/A
HP 53181 Frequency Counter	3736A05957