UC-UHF TRANSMITTER TECHNICAL REPORT

The following information is provided to support the technical performance of the UC-UHF DTV transmitter. The information is supplied for broadcast TV service according to applicable portions of Part 74 of the FCC Rules.

The information in this report is provided in support of verification that the transmitter meets the appropriate requirements. Measurements outlined below were recorded of spectrum and other data to demonstrate compliance.

1. Power Output Measurements
2. Frequency stability tests versus AC input voltage and temperature
3. Measurements to demonstrate the transmitter meets the DTV emission mask as specified in FCC Rule 74.794.
4. Measurement of cabinet radiation for spurs and harmonics as specified in FCC Rule 2.1053 and Rule 2.1057

Measurements for power output and emission mask compliance were conducted at power output levels of both 1000 watts and 250 watts which matches the power range for the type certification range of operation.

The test equipment used for the measurements is listed at the end of this document.

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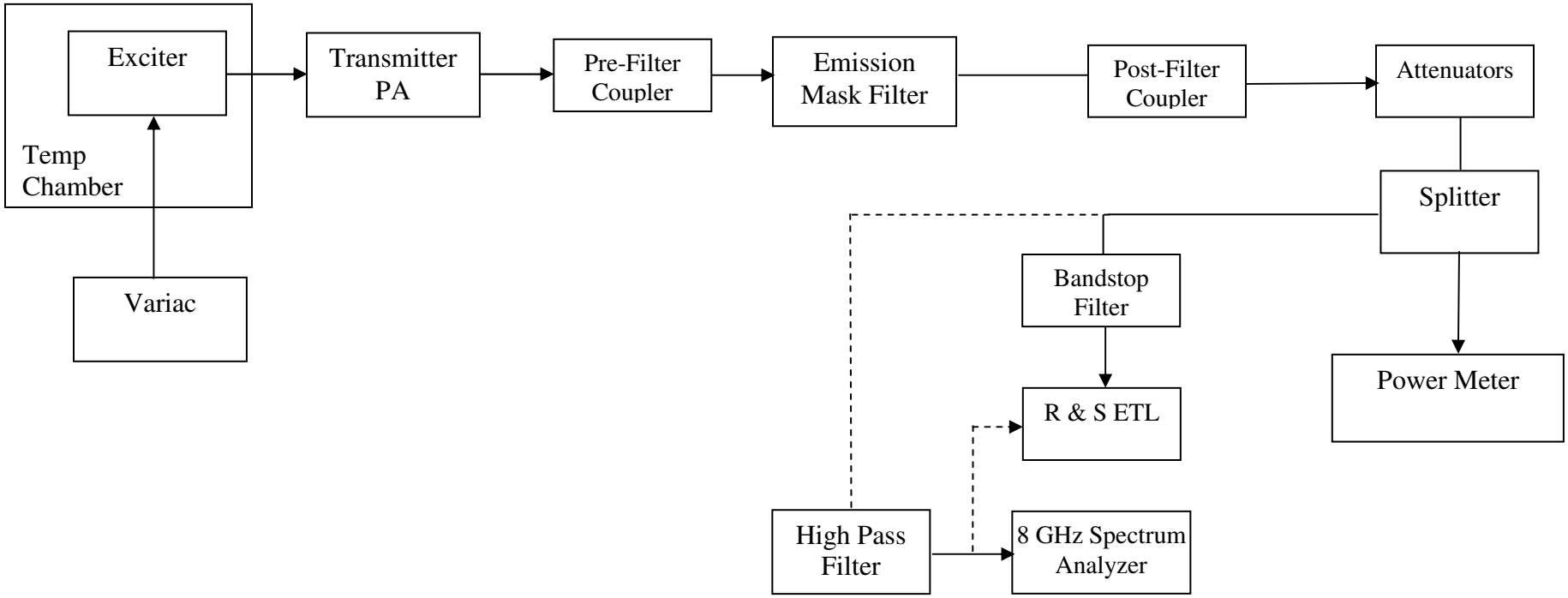
FIGURE 1—TEST EQUIPMENT CONFIGURATION



Note: The attenuation factor of attenuators and splitter was determined to be 47.9 dB

RF Power Output Measurements

The equipment was configured as shown in Figure 1. The attenuation factor through the attenuators was calibrated at the channel center frequency of the channel 31 DTV signal of 575 MHz. Average power was read on the Agilent HP437B Power Meter.

Measurement Of Nominal Transmitter Power

The transmitter was energized at nominal power in the test configuration above and the power was read on the HP437B Power Meter through a calibrated 47.9 dB attenuator. The indicated reading is shown below.

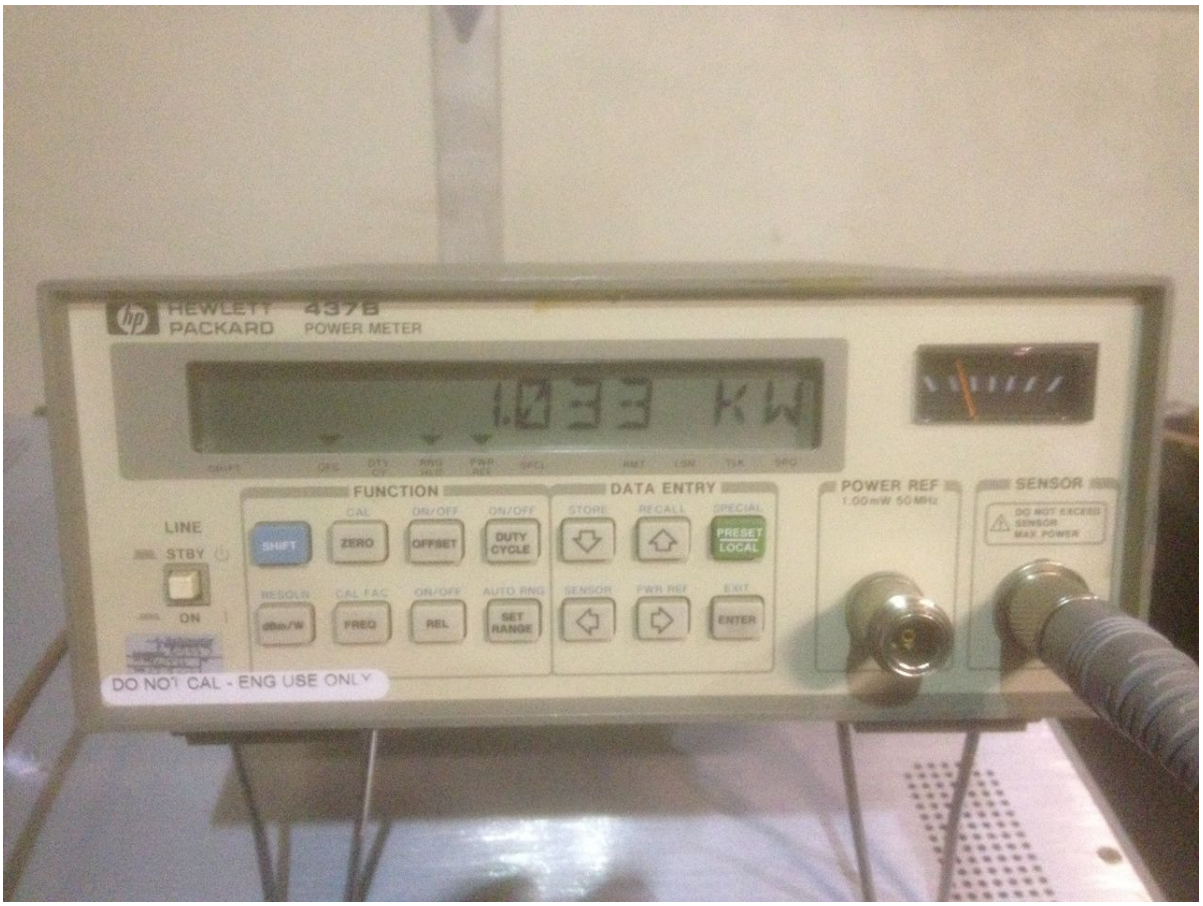


Figure 2—Power Meter Reading at Nominal Transmitter Power

Calculation of Output Power: An offset of 47.9 dB, equal to the attenuator and splitter loss plus the calibrated cable was entered into the HP437B to allow direct display of output power in watts average power. With this condition, measured transmitter final amplifier voltage is 51.5 VDC and final amplifier current is 75.7 Amps.

Emission Mask Compliance

To determine emission mask compliance, the test equipment configuration shown in Figure 1 was used. For frequency measurements below 3 GHz, the R & S ETL spectrum analyzer was used and for frequencies above 3 GHz, the Avantest R3162 was used. The transmitter tested for compliance with the emission mask as specified in FCC rule 74.794. The IEEE 2008-1631 Recommended Practice On 8-VSB Digital Television Transmission Compliance Measurement was used as the test measurement methodology. The first part of the tests measured the adjacent channel emission and the second part of the tests measured the harmonic and spurious energy.

The transmitter was energized at 1000 watts on Channel 31 (center frequency of 575 MHz) as calculated by the insertion loss of the attenuator and a reference was established on the spectrum analyzer (using the channel power measurement mode). The bandstop filter frequency response was determined using a spectrum analyzer and tracking generator combination. The insertion loss at the center of each of the twelve 500 kHz segments either side of the main channel was tabulated. The bandstop filter response is shown as Plot 1. The attenuation has been tabulated in the next section with the spreadsheet of measured emission values.

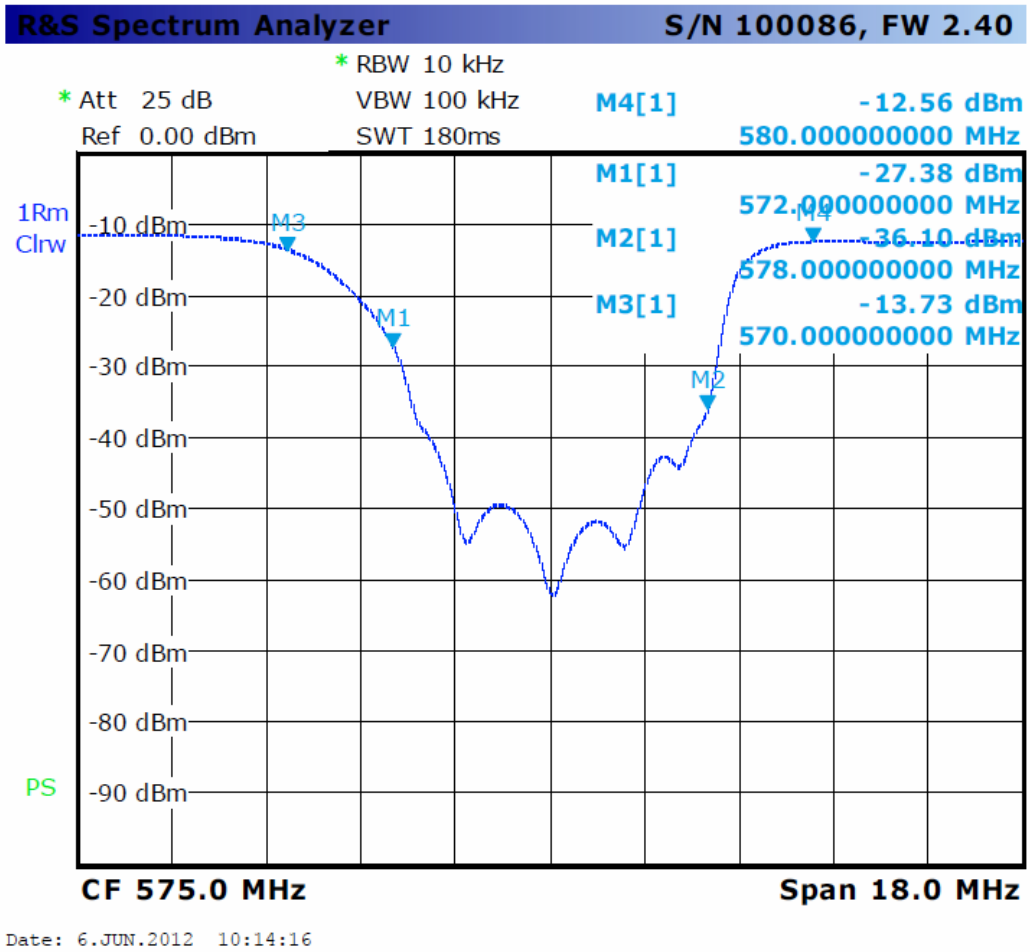


Figure 3 Bandstop Filter Response

The noise floor of the spectrum analyzer was found and from that the minimum RF sample level was determined (assuming the transmitter exactly met the emission mask requirements identified in the FCC rules). The actual RF sample level was well above the required minimum RF sample so plenty of margin was available with the test configuration used.

The transmitter was energized at 1000 Watts and optimized for linearity. The 6 MHz DTV channel power was first measured for the channel 31 signal. Then the twelve 500 kHz segments on both sides of the Channel 31 signal were measured. The closest four 500 kHz segments on either side of the Channel 31 signal were measured without the use of the bandstop filter because those signals were above the noise floor of the spectrum analyzer with the existing spectrum analyzer setting. The bandstop filter was inserted in the path according to the set-up in Figure 1. The spectrum analyzer attenuation setting was reduced and the remaining 500 kHz segments on each side of Channel 31 were measured and the data was recorded in the emission mask spreadsheet provided on the next page.

The measured values were corrected for proximity to the noise floor first and then for the bandstop filter insertion loss. The transmitter emissions met the requirements as indicated by comparison with the FCC Emission Mask from FCC Rule 74.794.

ATSC TRANSMITTER
TEST REPORT 1000 W

Spectrum Analyzer 10kHz RBW Noise Floor [dBm]	-120.0
Spectrum Analyzer 500kHz RBW Noise Floor [dBm]	-103.0
Noise floor proximity upper threshold [dBm]	-93.0
Noise floor proximity lower threshold [dBm]	-100.0

Min. Sample Level [dBm]	-26.8

ATSC TRANSMISSION MASK COMPLIANCE TEST
Stringent Mask

Channel Power [dBm]	-5.4
Channel Number	31
Center Frequency [MHz]	575

Delta Frequency [MHz]	Frequency [MHz]	Measured Amplitude [dBm]	Corrected for Noise Floor [dBm]	Bandstop Filter (dB)	Corrected Amplitude [dBm]	Amplitude below Channel Power [dB]	FCC Limit [dB]	Pass/Fail
3.25	578.25	-54.8	-54.8		-54.8	49.4	47.0	Pass
3.75	578.75	-60.4	-60.4		-60.4	55.0	49.9	Pass
4.25	579.25	-67.5	-67.5		-67.5	62.1	55.6	Pass
4.75	579.75	-72.7	-72.7		-72.7	67.3	61.4	Pass
5.25	580.25	-84.6	-84.6	1.6	-83.0	77.6	67.1	Pass
5.75	580.75	-90.9	-90.9	1.4	-89.5	84.1	71.9	Pass
6.25	581.25	-96.4	-97.5	1.3	-96.2	90.8	76.0	Pass
6.75	581.75	-100.5	-103.0	1.1	-101.9	96.5	76.0	Pass

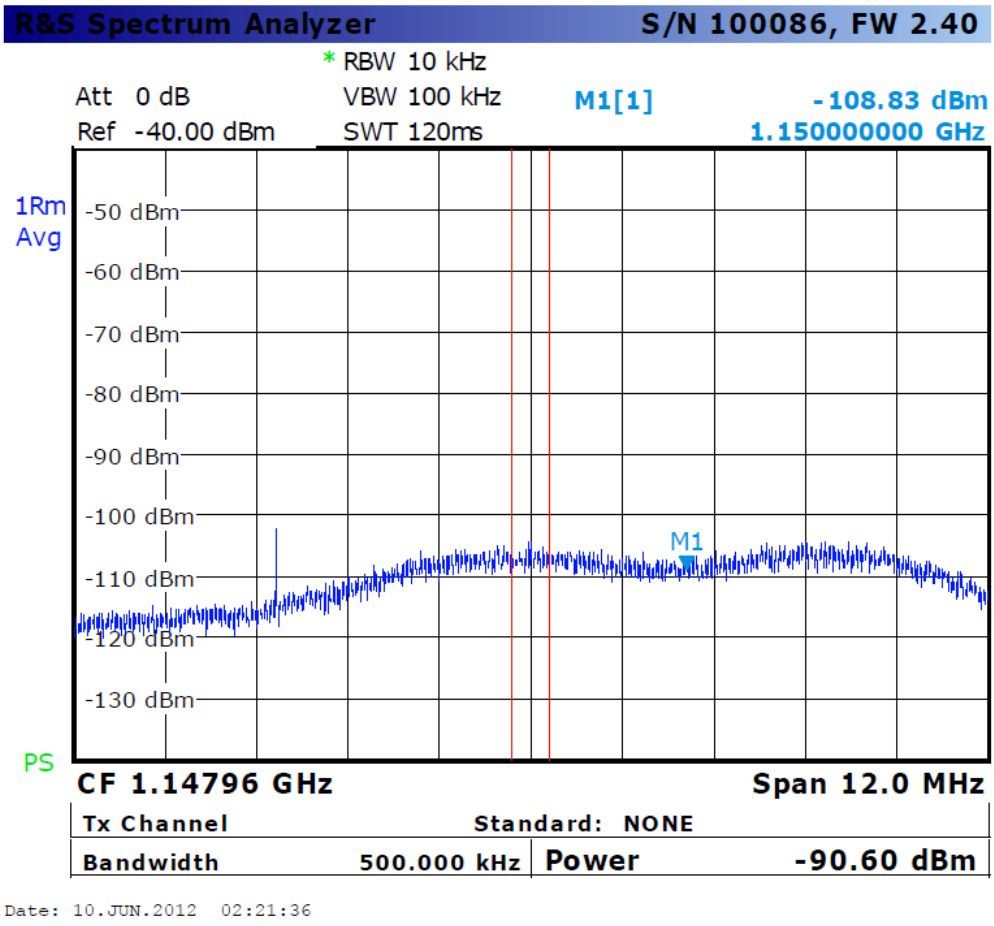
7.25	582.25	-101.8	-103.0	1.0	-102.0	96.6	76.0	**Pass**
7.75	582.75	-102.6	-103.0	1.0	-102.0	96.6	76.0	**Pass**
8.25	583.25	-103.0	-103.0	1.0	-102.0	96.6	76.0	**Pass**
8.75	583.75	-103.0	-103.0	0.9	-102.1	96.7	76.0	**Pass**
-3.25	571.75	-56.0	-56.0		-56.0	50.6	47.0	**Pass**
-3.75	571.25	-62.6	-62.6		-62.6	57.2	49.9	**Pass**
-4.25	570.75	-70.1	-70.1		-70.1	64.7	55.6	**Pass**
-4.75	570.25	-74.3	-74.3		-74.3	68.9	61.4	**Pass**
-5.25	569.75	-89.4	-89.4	2.7	-86.7	81.3	67.1	**Pass**
-5.75	569.25	-93.6	-94.1	2.0	-92.1	86.7	71.9	**Pass**
-6.25	568.75	-97.0	-98.3	1.6	-96.7	91.3	76.0	**Pass**
-6.75	568.25	-99.9	-102.8	1.4	-101.4	96.0	76.0	**Pass**
-7.25	567.75	-101.5	-103.0	1.3	-101.7	96.3	76.0	**Pass**
-7.75	567.25	-102.3	-103.0	1.2	-101.8	96.4	76.0	**Pass**
-8.25	566.75	-103.0	-103.0	1.2	-101.8	96.4	76.0	**Pass**
-8.75	566.25	-103.3	-103.0	1.2	-101.8	96.4	76.0	**Pass**

The next set of tests provides measurements of harmonic and spurious energy. The frequency spectrum up to the 10th harmonic was investigated for harmonic and spurious energy. The test setup of Figure 1 was used with the RF sample feeding the high pass filter and then the spectrum analyzer. The output attenuator was calibrated at each of the transmitter harmonic frequencies. The measurements up to 3 GHz were taken from connection to the R & S ETL and for frequencies above 3 GHz, all measurements were recorded using the Avantest R3162. A high pass filter was used to permit the spectrum analyzer attenuation to be minimized without the spectrum analyzer being overloaded from the Channel 31 signal. The only energy coming from the transmitter was found to be harmonically related. Measurements were taken at harmonics up to the 10th and the level of the energy was recorded on the spreadsheet following on the next page. Screen shots of the harmonic energy at the worst case conditions (2nd and 3rd harmonics) were taken and are provided on the page following the spreadsheet.

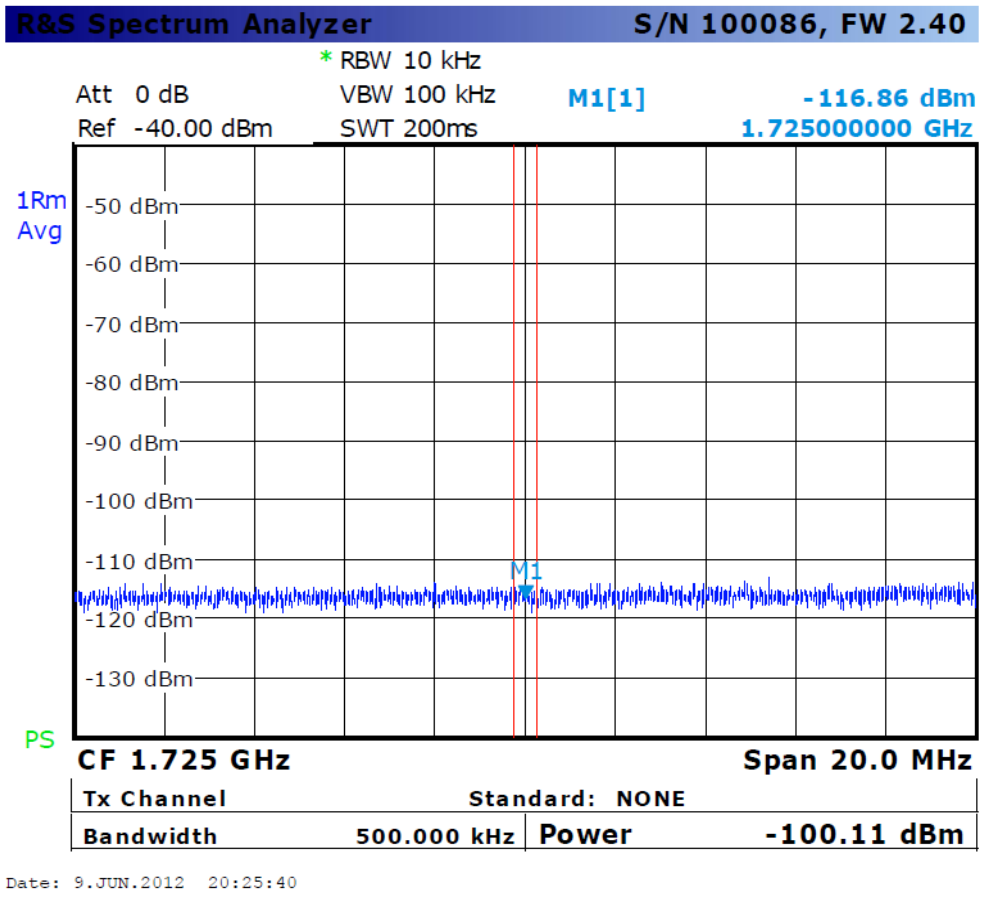
ATSC TRANSMISSION MASK COMPLIANCE TEST
HARMONICS

Channel Power [dBm]	60.0
Channel Number	31
Center Frequency [MHz]	575

Harmonic	Frequency [MHz]	Measured Amplitude [dBm]	Attenuation	Corrected Amplitude [dBm]	Amplitude below Channel Power[dB]	FCC Limit [dB]	Pass/Fail
2nd	1150.00	-90.8	58.1	-32.7	92.7	76.0	**Pass**
3rd	1725.00	-99.7	58.9	-40.8	100.8	76.0	**Pass**
4th	2300.00	-93.8	59.9	-33.9	93.9	76.0	**Pass**
5th	2875.00	-99.4	61.2	-38.2	98.2	76.0	**Pass**
6th	3450.00	-101.0	62.2	-38.8	98.8	76.0	**Pass**
7th	4025.00	-101.0	63.3	-37.7	97.7	76.0	**Pass**
8th	4600.00	-100.5	62.4	-38.1	98.1	76.0	**Pass**
9th	5175.00	-101.0	65.0	-36.0	96.0	76.0	**Pass**
10th	5750.00	-100.6	66.0	-34.6	94.6	76.0	**Pass**



Worst case Harmonic Energy at 2nd Harmonic



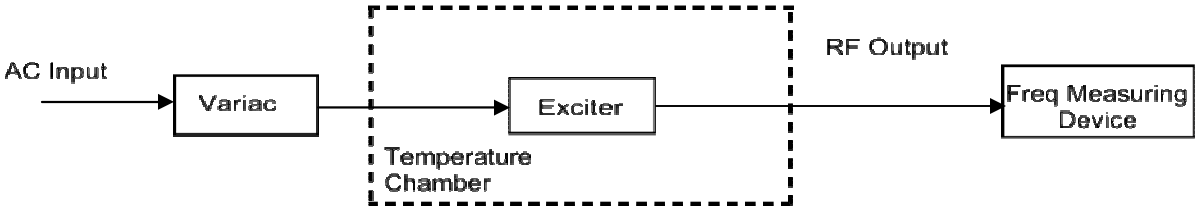
Worst case Harmonic Energy at 3rd Harmonic

FREQUENCY STABILITY

The frequency stability of the transmitter is determined solely by the exciter used. The frequency stability was measured versus temperature and versus line voltage. The DTV pilot frequency was used as the frequency reference. The test configuration indicated below was used for these tests.

Frequency stability versus temperature and line voltage was measured in a controlled environment. For these tests, the exciter RF output was fed to a calibrated Rohde & Schwarz ETL that has better than 0.1 ppm accuracy. The test equipment configuration is shown below:

The variac was adjusted for nominal voltage and the frequency was recorded. Then the variac was adjusted to 85% and 115% of the nominal voltage and the frequency was recorded at each voltage level. The results are tabulated on the next page:



TEST EQUIPMENT CONFIGURATION

Line Voltage (Volts)	Pilot Frequency (MHz)
103 (85%)	-455.0
121 (Nominal)	-455.3
139(115%)	-455.5

For the temperature stability measurements, the exciter was placed inside a Sierra Dynamics temperature chamber -- Model FT34-40X176C equipped with a Honeywell temperature controller. The exciter was energized and the pilot frequency was measured on the Rohde and Schwarz ETL test set. The temperature was then lowered to 0°C, allowed to stabilize for 15 minutes and then cycled to each warmer temperature where it was allowed to stabilize for 10 minutes before recording the measured frequency and moving on to the next lower temperature.

CH 31 Pilot Frequency Reference = 572.3094406

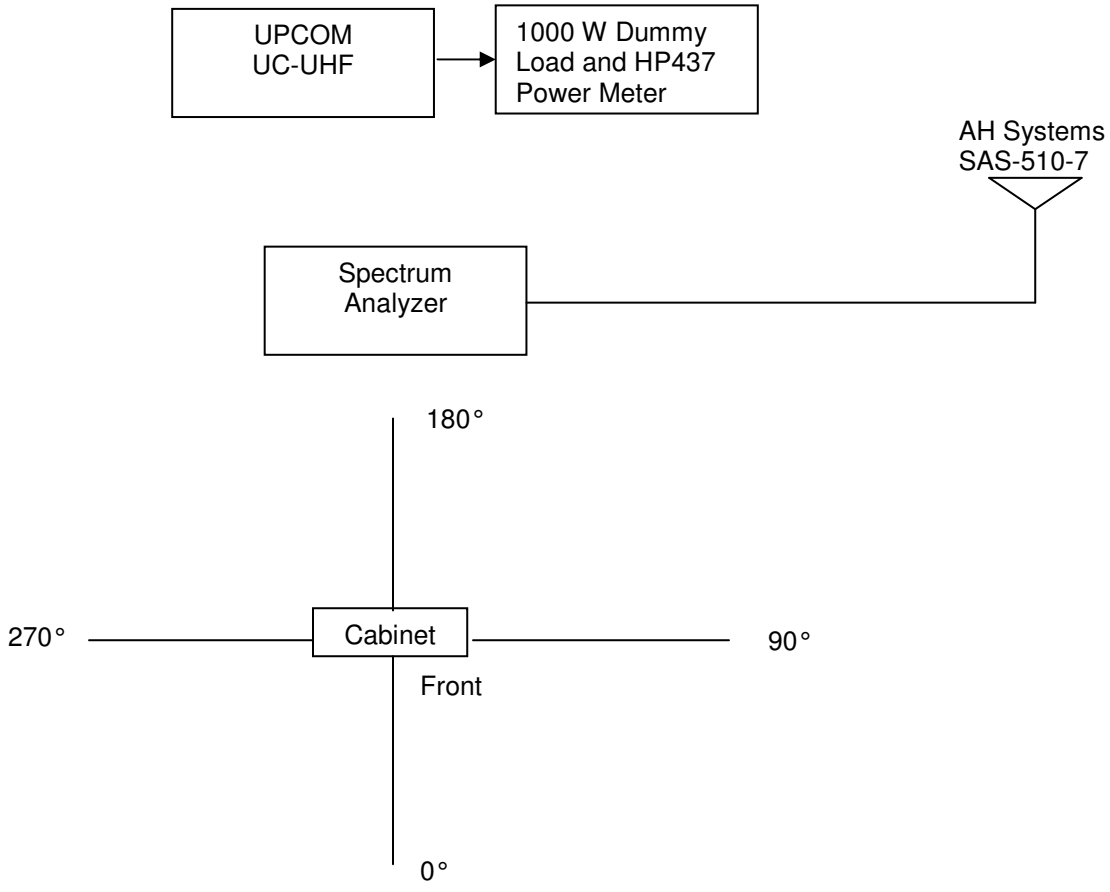
Temperature °C	Time	Pilot Freq *MHz)	Difference (Hz)
25	16:05	-427	-427
0	17:05	-443	-443
10	17:40	-415	-415
20	18:20	-417	-417
30	18:55	-419	-419
40	20:35	-422	-422

The recorded data indicates that the frequency stability requirements of FCC Rules were met.

CABINET RADIATION

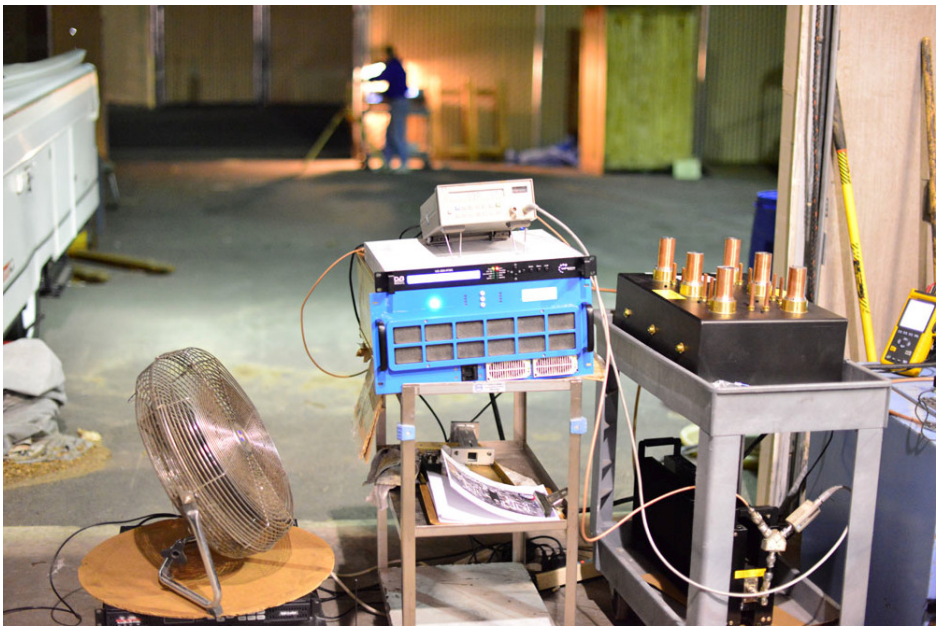
The transmitter and test equipment were configured as shown below including the angles of measurement with respect to the transmitter cabinet. The transmitter was operated at 1000 Watts average power. The free space path loss, cable loss and antenna gain characteristics were obtained at the fundamental frequency and at each of the harmonics of the center of DTV Channel 31 in order to accurately assess the level of the signal radiated from the cabinet. Radiation from the cabinet was measured at a distance of 50 feet in 4 different physical rotation angles: 0, 90, 180 and 270 degrees (0 degrees being the front of the cabinet). The cabinet was rotated in four directions 90 degrees apart so that all angles of the transmitter were evaluated. The measured value for each spectrum emission emanating from the cabinet was recorded in the tables beginning on the next page. The emissions were measured in a 10 kHz Resolution Bandwidth and the channel power mode of the spectrum analyzer was used to determine the total power in a 500 kHz measurement bandwidth for comparison to the total DTV power of the transmitter.

Test Equipment Configuration for Cabinet Radiation



Cabinet Radiation Test Results

As calculated from the spreadsheet data on the following pages, the worst case measurement was -79.8 dB. The measurement tables for all views of the transmitter are shown on the following pages. Photographs of the test set-up are shown below.



Transmitter and emission mask filter mounted on carts.
Spectrum analyzer and receiving antenna in background.

Closeup of receiving antenna and spectrum analyzers.

Test Inputs	Conditions and Parameters
Test Date	June 8, 2012
Test Engineer	Greg Best
Transmitter Model Number	UPCOM UC-UHF
Operating Power Output Level	60.0 dBm 1000 watts (Power)
Center Frequency	575 MHz Channel 31
Antenna Model Number	AH Systems Serial Number 180
Spectrum Analyzer Model	R & S ETL (<3GHz) Avantest R3162 (>3 Ghz)
Distance to Transmitter	15.2 meters

The highest channel power level in any 500 kHz segment between the lower frequency edge and the upper frequency edge of the spectrum associated with each harmonic was recorded as the column marked Signal Level. Radiation at the fundamental signal was not measured due to comparison against a radiated signal in normal operation.

FRONT VIEW

Harmonic	Frequency GHz	SIGNAL LEVEL dBm	CABLE LOSS dB	ANTENNA GAIN dB	PATH LOSS dB	ADJ LEVEL dBm	MAXIMUM LEVEL dBm	STATUS P=PASS
Fundamental	0.575	N/A	0.4	5.6	51.39	N/A	0.0	N/A
2nd	1.15	-77.1	0.6	6.8	57.41	-25.8922	0.0	P
3rd	1.725	-97	0.7	7.0	60.93	-42.3704	0.0	P
4th	2.3	-82.5	0.9	6.5	63.43	-24.6716	0.0	P
5th	2.875	-100	0.9	5.5	65.37	-39.2134	0.0	P
6th	3.45	-92.3	1.0	6.6	66.95	-30.9998	0.0	P
7th	4.025	-93	1.0	7.1	68.29	-30.8109	0.0	P
8th	4.6	-92.6	1.0	7.1	69.45	-29.251	0.0	P
9th	5.175	-92.6	1.0	7.4	70.47	-28.528	0.0	P
10th	5.75	-92.5	1.0	6.9	71.39	-27.0128	0.0	P

LEFT VIEW

Harmonic	Frequency GHz	SIGNAL LEVEL dBm	CABLE LOSS dB	ANTENNA GAIN dB	PATH LOSS dB	ADJ LEVEL dBm	MAXIMUM LEVEL dBm	STATUS
Fundamental	0.575	N/A	0.4	5.6	51.39	N/A	0.0	N/A
2nd	1.15	-78.9	0.6	6.8	57.41	-27.6922	0.0	P
3rd	1.725	-96.2	0.7	7.0	60.93	-41.5704	0.0	P
4th	2.3	-80.6	0.9	6.5	63.43	-22.7716	0.0	P
5th	2.875	-100	0.9	5.5	65.37	-39.2134	0.0	P
6th	3.45	-89.5	1.0	6.6	66.95	-28.1998	0.0	P
7th	4.025	-92.5	1.0	7.1	68.29	-30.3109	0.0	P
8th	4.6	-90.2	1.0	7.1	69.45	-26.851	0.0	P
9th	5.175	-92.4	1.0	7.4	70.47	-28.328	0.0	P
10th	5.75	-92.4	1.0	6.9	71.39	-26.9128	0.0	P

RIGHT VIEW

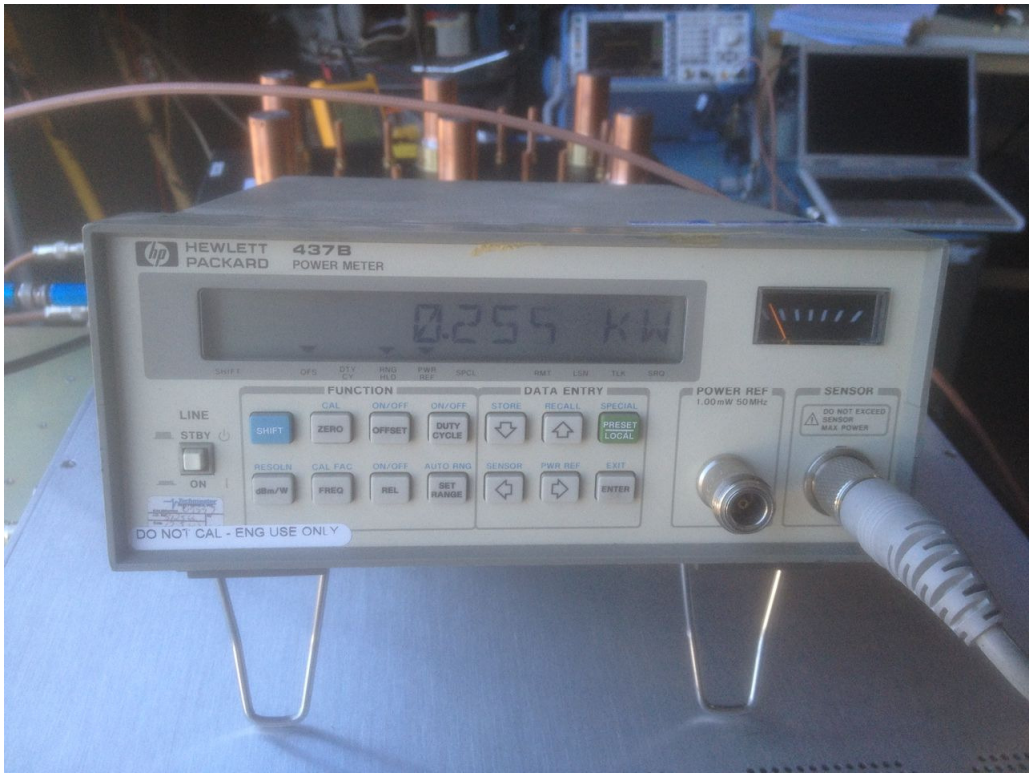
Harmonic	Frequency GHz	SIGNAL LEVEL dBm	CABLE LOSS dB	ANTENNA GAIN dB	PATH LOSS dB	ADJ LEVEL dBm	MAXIMUM LEVEL dBm	STATUS
Fundamental	0.575	N/A	0.4	5.6	51.39	N/A	0.0	N/A
2nd	1.15	-83.7	0.6	6.8	57.41	-32.4922	0.0	P
3rd	1.725	-96.5	0.7	7.0	60.93	-41.8704	0.0	P
4th	2.3	-82.4	0.9	6.5	63.43	-24.5716	0.0	P
5th	2.875	-100	0.9	5.5	65.37	-39.2134	0.0	P
6th	3.45	-93	1.0	6.6	66.95	-31.6998	0.0	P
7th	4.025	-92.7	1.0	7.1	68.29	-30.5109	0.0	P
8th	4.6	-92	1.0	7.1	69.45	-28.651	0.0	P
9th	5.175	-92	1.0	7.4	70.47	-27.928	0.0	P
10th	5.75	-91	1.0	6.9	71.39	-25.5128	0.0	P

REAR VIEW

Harmonic	Frequency GHz	SIGNAL LEVEL dBm	CABLE LOSS dB	ANTENNA GAIN dB	PATH LOSS dB	ADJ LEVEL dBm	MAXIMUM LEVEL dBm	STATUS
Fundamental	0.575	N/A	0.4	5.6	51.39	N/A	0.0	N/A
2nd	1.15	-71	0.6	6.8	57.41	-19.7922	0.0	P
3rd	1.725	-92	0.7	7.0	60.93	-37.3704	0.0	P
4th	2.3	-81.5	0.9	6.5	63.43	-23.6716	0.0	P
5th	2.875	-100	0.9	5.5	65.37	-39.2134	0.0	P
6th	3.45	-89	1.0	6.6	66.95	-27.6998	0.0	P
7th	4.025	-89.5	1.0	7.1	68.29	-27.3109	0.0	P
8th	4.6	-89.5	1.0	7.1	69.45	-26.151	0.0	P
9th	5.175	-89.5	1.0	7.4	70.47	-25.428	0.0	P
10th	5.75	-89.5	1.0	6.9	71.39	-24.0128	0.0	P

Low Power Operation---250 Watts

Power output and emission mask compliance data was repeated for the transmitter operating at a lower power level. For this configuration, the transmitter was energized in the same test configuration as above except at the output power of 250 watts. The power was read on the HP 437B power meter through the same calibrated 47.9 attenuator. The indicated reading is shown below.



Calculation of Output Power: An offset of 47.9 dB equal to the calibrated attenuator, splitter, and cable was entered into the HP 437B to allow direct display of output power in watts average power. With this condition, measured transmitter final amplifier voltage is 48.6 VDC and final amplifier current is 37.9 Amps.

Emission Mask Compliance 250 Watts Output Power

To determine emission mask compliance, the test equipment configuration shown in Figure 1 was used. For frequency measurements below 3 GHz, the R & S ETL spectrum analyzer was used and for frequencies above 3 GHz, the Avantest R3162 was used. The transmitter was tested for compliance with the emission mask as specified in FCC rule 74.794. The IEEE 2008-1631 Recommended Practice On 8-VSB Digital Television Transmission Compliance Measurement was used as the test measurement methodology. The first part of the tests measured the adjacent channel emission and the second part of the tests measured the harmonic and spurious energy.

The transmitter was energized at 250 watts on Channel 31 (center frequency of 575 MHz) as calculated by the insertion loss of the attenuator and a reference was established on the spectrum analyzer (using the channel power measurement mode). The same bandstop filter used in the first set of measurements at 1000 watts was also used for this set of measurements at 250 watts.

The noise floor of the spectrum analyzer was found and from that the minimum RF sample level was determined (assuming the transmitter exactly met the emission mask requirements identified in the FCC rules). The actual RF sample level was well above the required minimum RF sample so plenty of margin was available with the test configuration used.

The transmitter was energized at 250 W and optimized for linearity. The 6 MHz DTV channel power was first measured for the Channel 31 signal. Then the twelve 500 kHz segments on both sides of the Channel 31 signal were measured. The closest four 500 kHz segments on either side of the Channel 31 signal were measured without the use of the bandstop filter because those signals were above the noise floor with the spectrum analyzer. The bandstop filter was inserted in the path according to the set-up in Figure 1. The remaining 500 kHz segments on each side of Channel 31 were measured and the data was recorded in the emission mask spreadsheet provided on the next page.

The measured values were corrected for proximity to the noise floor first and then for the bandstop filter insertion loss. The transmitter emissions met the requirements as indicated by comparison with the FCC Emission Mask from FCC Rule 74.794.

ATSC TRANSMITTER
TEST REPORT 250 W

Spectrum Analyzer 10kHz RBW Noise Floor [dBm]	-120.0
Spectrum Analyzer 500kHz RBW Noise Floor [dBm]	-103.0
Noise floor proximity upper threshold [dBm]	-93.0
Noise floor proximity lower threshold [dBm]	-100.0

Min. Sample Level [dBm]	-26.8

ATSC TRANSMISSION MASK COMPLIANCE TEST
Stringent Mask

Channel Power [dBm]	-11.6
Channel Number	31
Center Frequency [MHz]	575

Delta Frequency [MHz]	Frequency [MHz]	Measured Amplitude [dBm]	Corrected for Noise Floor [dBm]	Bandstop Filter (dB)	Corrected Amplitude [dBm]	Amplitude below Channel Power [dB]	FCC Limit [dB]	Pass/Fail
3.25	578.25	-68.7	-68.7		-68.7	57.1	47.0	**Pass**
3.75	578.75	-74.2	-74.2		-74.2	62.6	49.9	**Pass**
4.25	579.25	-80.2	-80.2		-80.2	68.6	55.6	**Pass**
4.75	579.75	-83.7	-83.7		-83.7	72.1	61.4	**Pass**
5.25	580.25	-98.5	-100.4	1.6	-98.8	87.2	67.1	**Pass**
5.75	580.75	-101.5	-103.0	1.4	-101.6	90.0	71.9	**Pass**
6.25	581.25	-102.5	-103.0	1.3	-101.7	90.1	76.0	**Pass**
6.75	581.75	-102.5	-103.0	1.1	-101.9	90.3	76.0	**Pass**

7.25	582.25	-102.5	-103.0	1.0	-102.0	90.4	76.0	**Pass**
7.75	582.75	-103.0	-103.0	1.0	-102.0	90.4	76.0	**Pass**
8.25	583.25	-103.0	-103.0	1.0	-102.0	90.4	76.0	**Pass**
8.75	583.75	-103.0	-103.0	0.9	-102.1	90.5	76.0	**Pass**
-3.25	571.75	-72.4	-72.4		-72.4	60.8	47.0	**Pass**
-3.75	571.25	-80.7	-80.7		-80.7	69.1	49.9	**Pass**
-4.25	570.75	-84.2	-84.2		-84.2	72.6	55.6	**Pass**
-4.75	570.25	-85.0	-85.0		-85.0	73.4	61.4	**Pass**
-5.25	569.75	-99.3	-101.7	2.7	-99.0	87.4	67.1	**Pass**
-5.75	569.25	-101.4	-103.0	2.0	-101.0	89.4	71.9	**Pass**
-6.25	568.75	-102.3	-103.0	1.6	-101.4	89.8	76.0	**Pass**
-6.75	568.25	-102.9	-103.0	1.4	-101.6	90.0	76.0	**Pass**
-7.25	567.75	-103.0	-103.0	1.3	-101.7	90.1	76.0	**Pass**
-7.75	567.25	-103.0	-103.0	1.2	-101.8	90.2	76.0	**Pass**
-8.25	566.75	-103.0	-103.0	1.2	-101.8	90.2	76.0	**Pass**
-8.75	566.25	-103.0	-103.0	1.2	-101.8	90.2	76.0	**Pass**

The next set of tests provides measurements of harmonic and spurious energy. The frequency spectrum up to the 10th harmonic was investigated for harmonic and spurious energy. The test setup of Figure 1 was used with the RF sample feeding the high pass filter and then the spectrum analyzer. The attenuator was calibrated at each of the transmitter harmonic frequencies. The measurements up to 3 GHz were taken from connection to the R & S ETL and for frequencies above 3 GHz, all measurements were recorded using the Avantest R3162. A high pass filter was used to permit the spectrum analyzer attenuation to be minimized without the spectrum analyzer being overloaded from the Channel 31 signal. The only energy coming from the transmitter was found to be harmonics. Measurements were taken at harmonics up to the 10th and the level of the energy was recorded on the spreadsheet following on the next page.

ATSC TRANSMISSION MASK COMPLIANCE TEST

HARMONICS

Channel Power [dBm]	54.0
Channel Number	31
Center Frequency [MHz]	575

Harmonic	Frequency [MHz]	Measured Amplitude [dBm]	Attenuation	Corrected Amplitude [dBm]	Amplitude below Channel Power[dB]	FCC Limit [dB]	Pass/Fail
2nd	1150.00	-98.0	58.1	-39.9	93.9	76.0	**Pass**
3rd	1725.00	-100.0	58.9	-41.1	95.1	76.0	**Pass**
4th	2300.00	-97.0	59.9	-37.1	91.1	76.0	**Pass**
5th	2875.00	-99.7	61.2	-38.5	92.5	76.0	**Pass**
6th	3450.00	-101.0	62.2	-38.8	92.8	76.0	**Pass**
7th	4025.00	-101.0	63.3	-37.7	91.7	76.0	**Pass**
8th	4600.00	-100.5	62.4	-38.1	92.1	76.0	**Pass**
9th	5175.00	-101.0	65.0	-36.0	90.0	76.0	**Pass**
10th	5750.00	-100.0	66.0	-34.0	88.0	76.0	**Pass**

Test 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 within its calibration period.

VENDOR	MODEL NUMBER	DESCRIPTION	SERIAL NUMBER
Shanghai Mech & Electrical Component Factory	SVC-TND	Variac	N/A
Sierra Dynamics	FT34-40X176C	Temperature Chamber	51893-1
Honeywell	N/A	Temperature Controller	N/A
Fluke	233	Digital VOM with 80TK Thermometer	12230046
Mini-Circuits	NHP-1000	Hi Pass Filter	N/A
Microwave Filter Company	R16560-25	DTV Bandstop Filter	N/A
Agilent	HP437B	Power Meter	3125U09997
Agilent	HP8482A	Power Sensor	3318A29524
BED Mfg	DAC-1000W	1000 Watt Dummy Load	N/A
Rohde & Schwarz	ETL	ETL Digital TV Analyzer	100086
A H Systems	SAS-510-7	Log Periodic Antenna	180
Avantest	R3162	Spectrum Analyzer	110105927
Agilent	8753E	Network Analyzer	JP38160580
Agilent	11667A	Splitter	09269
Bird	2A MFN-10	Attenuator	N/A