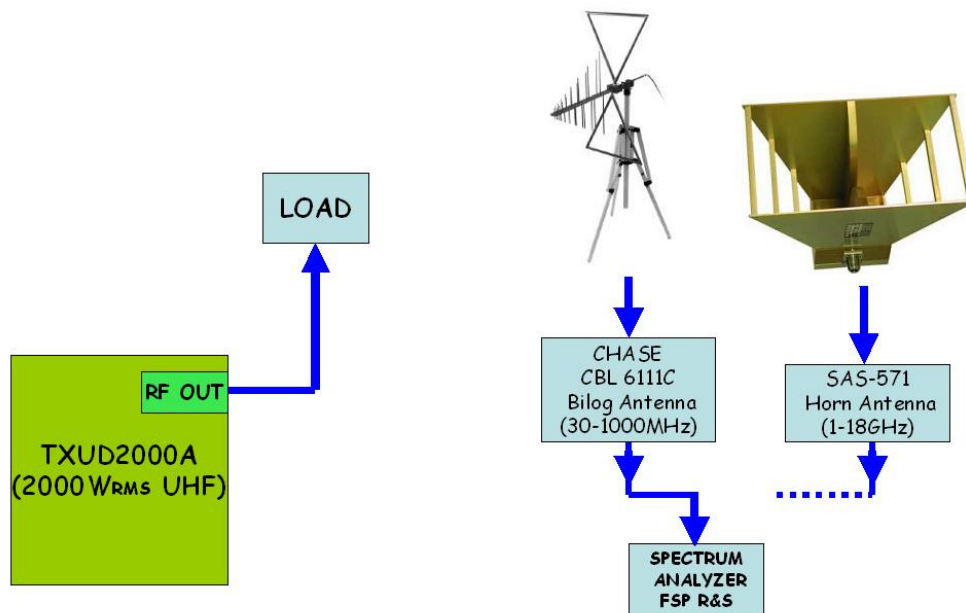


Cabinet Radiation

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 the physical set-up of the test equipment and equipment under test. The transmitter was operated at 2000W 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 frequency of channel 34 (593 MHz) in order to accurately assess the level of the signal radiated from the cabinet. Radiation from the cabinet was measured at a distance of 30 feet in 4 different physical rotation angles: 0, 90, 180 and 270 degrees (0 degrees being the front of the cabinet). All spectral components above the noise floor referenced to average power radiated from the cabinet were recorded. The values are tabulated in the table on the next page following the photo.

TXUD2000A – Cabinet radiation



PHYSICAL CABINET RADIATION TEST CONFIGURATION

This photograph shows the actual laboratory environment in which the cabinet radiation tests were conducted. The SAS571 antenna is shown in the foreground and the TXUD2000 is shown in the background. The transmitter was rotated 90 degrees for each of the measurement orientations.



As calculated from the spreadsheet data on the following page, the worst case measurement was -75 dB at the second harmonic (The photo above shows this particular measurement). The measurement tables for the remaining views of the transmitter are shown on the following pages.

CABINET RADIATION MEASURED DATA

EUT: TXUD2000A

Description: 2kW UHF ATSC Transmitter

TX Frequency (MHz): 593

Output Power (Wrms): 2000

dBm value: 63.0

Corrected level must be less than: 3.0

Distance (m): 10

dBm

Front View

Harmonic	Frequency	Measured	Cable	Antenna	Path	Corrected	Required	Status
	MHz	Level	Loss	Gain	Loss	Level	Level	Pass/Fail
Xmit freq.	593	-47.2	0.8	7	47.9	-5.5	3.0	N/A
2nd	1186	-75.3	1.2	8.1	53.9	-28.3	3.0	Pass
3rd	1779	-76.0	1.6	10.7	57.4	-27.7	3.0	Pass
4th	2372	-73.9	2.1	10.4	59.9	-22.3	3.0	Pass
5th	2965	-78.7	2.4	10.6	61.8	-25.1	3.0	Pass
6th	3558	-80.6	2.7	11.6	63.4	-26.1	3.0	Pass
7th	4151	-81.2	3.1	10.7	64.8	-24.0	3.0	Pass
8th	4744	-84.3	3.6	10.9	65.9	-25.7	3.0	Pass
9th	5337	-87.6	4.3	11.7	66.9	-28.1	3.0	Pass
10th	5930	-92.1	4.8	12.2	67.9	-31.6	3.0	Pass

LEFT SIDE VIEW

Harmonic	Frequency	Measured	Cable	Antenna	Path	Corrected	Required	Status
	MHz	Level	Loss	Gain	Loss	Level	Level	Pass/Fail
Xmit freq.	593	-47.6	0.8	7	47.9	-5.9	0.0	N/A
2 nd	1186	-74.8	1.2	8.1	53.9	-27.8	0.0	Pass
3 rd	1779	-77.6	1.6	10.7	57.4	-29.3	0.0	Pass
4 th	2372	-72.8	2.1	10.4	59.9	-21.2	0.0	Pass
5 th	2965	-77.3	2.4	10.6	61.8	-23.7	0.0	Pass
6 th	3558	-80.9	2.7	11.6	63.4	-26.4	0.0	Pass
7 th	4151	-81.0	3.1	10.7	64.8	-23.8	0.0	Pass
8 th	4744	-83.9	3.6	10.9	65.9	-25.3	0.0	Pass
9 th	5337	-86.7	4.3	11.7	66.9	-27.2	0.0	Pass
10 th	5930	-91.0	4.8	12.2	67.9	-30.5	0.0	Pass

RIGHT SIDE VIEW

Harmonic	Frequency	Measured	Cable	Antenna	Path	Corrected	Required	Status
	MHz	Level	Loss	Gain	Loss	Level	Level	Pass/Fail
Xmit freq.	593	-48.1	0.8	7	47.9	-6.4	0.0	N/A
2nd	1186	-73.8	1.2	8.1	53.9	-26.8	0.0	Pass
3rd	1779	-75.5	1.6	10.7	57.4	-27.2	0.0	Pass
4th	2372	-70.3	2.1	10.4	59.9	-18.7	0.0	Pass
5th	2965	-78.1	2.4	10.6	61.8	-24.5	0.0	Pass
6th	3558	-81.1	2.7	11.6	63.4	-26.6	0.0	Pass
7th	4151	-80.9	3.1	10.7	64.8	-23.7	0.0	Pass
8th	4744	-83.2	3.6	10.9	65.9	-24.6	0.0	Pass
9th	5337	-86.5	4.3	11.7	66.9	-27.0	0.0	Pass
10th	5930	-90.9	4.8	12.2	67.9	-30.4	0.0	Pass

REAR VIEW

Harmonic	Frequency	Measured	Cable	Antenna	Path	Corrected	Required	Status
	MHz	Level	Loss	Gain	Loss	Level	Level	Pass/Fail
Xmit freq.	593	-48.0	0.8	7	47.9	-6.3	0.0	N/A
2nd	1186	-72.4	1.2	8.1	53.9	-25.4	0.0	Pass
3rd	1779	-74.8	1.6	10.7	57.4	-26.5	0.0	Pass
4th	2372	-71.3	2.1	10.4	59.9	-19.7	0.0	Pass
5th	2965	-78.2	2.4	10.6	61.8	-24.6	0.0	Pass
6th	3558	-82.2	2.7	11.6	63.4	-27.7	0.0	Pass
7th	4151	-81.9	3.1	10.7	64.8	-24.7	0.0	Pass
8th	4744	-82.4	3.6	10.9	65.9	-23.8	0.0	Pass
9th	5337	-87.8	4.3	11.7	66.9	-28.3	0.0	Pass
10th	5930	-91.5	4.8	12.2	67.9	-31.0	0.0	Pass

All cabinet radiation measurements indicate the FCC rule has been met.

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 was within the calibration period.

EQUIPMENT & MFR	MODEL NUMBER
Rohde Schwarz Power Sensor Meter	NRV-Z53
Level Meter	URV-35
R & S DTV Analyzer	ETL
Rohde Schwarz Spectrum Analyzer	FSP
Elettronika Bandstop Filter	N/A
Elettronika Highpass filter	N/A
A H Systems Horn Antenna	SAS571
Bird Dummy Load	8251
Humidifier Cuoghi NEB-5000	No Number
Thermal detector CAREL IR32c	No Number
Humidity detector CAREL S90HP	No Number
Thermal Chamber (-20 °C / 60 °C) Assembled by COTER	N/A