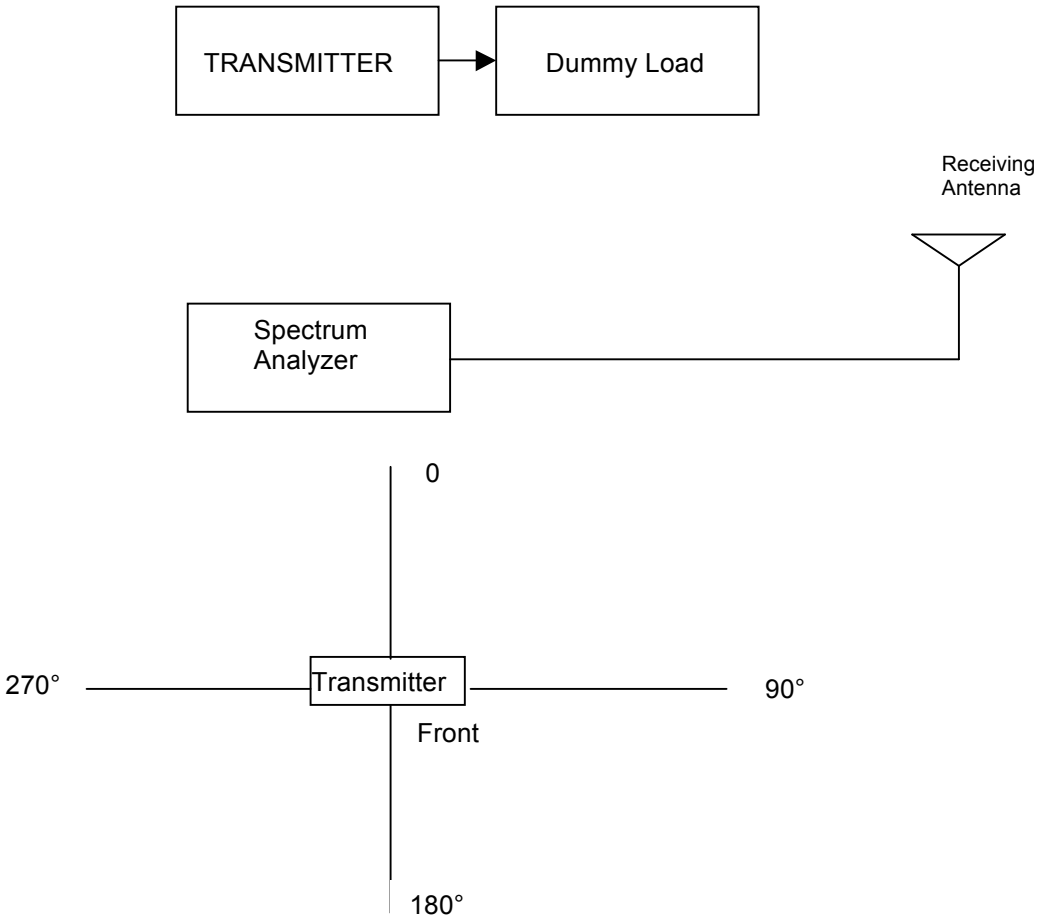
SDT 500 UB ARK ECHO

Cabinet Radiation

CABINET RADIATED EMISSION

The transmitter and test equipment are configured as shown below including the angles of measurement with respect to the transmitter cabinet. The transmitter is operated with a center frequency of THE CHANNEL FCC 56 MHz at 20W average power into a dummy load and cabinet radiation measurements were taken at that channel. The free space path loss, cable loss and antenna gain characteristics are obtained at the fundamental frequency and at each of the harmonics up to the 10^{th} harmonic of the center frequency of in order to accurately assess the level of the signal radiated from the cabinet. (The spectrum analyzer and receiving antenna are placed 10 meters away from the transmitter and dummy load with no obstructions in the path.) Radiation from the cabinet was measured at a distance of ~10 meters in 4 different physical rotation angles: 0 (front), 90(left), 180(rear) and 270 (right) degrees (0 degrees being the front of the cabinet) by rotating the transmitter. The transmitter is energized and the spectrum analyzer is adjusted to search for the harmonic (or other spurious products) signal. For each measurement made, the receiving antenna is rotated in polarization (between 0 degrees—totally Horizontal polarization and 90 degrees being totally vertical polarization) and adjusted for the maximum displayed signal on the spectrum analyzer. The level of the signal measured on the spectrum analyzer is recorded in the table in the column for “measured value”. For digital waveforms, the largest value in the frequency range of the harmonic on the display is where the center frequency of the spectrum analyzer is selected.The measurement have been done with the measurement bandwidth set at 100 KHz All spectral components above the noise floor radiated from the cabinet were recorded. The values are tabulated in the table on the next pages following the test equipment configuration drawing. Once the value is recorded for this frequency the next highest harmonic or spurious frequency is evaluated.


TRANSMITTER
Dummy Load
Receiving
Antenna
Spectrum
Analyzer
0
270°
Transmitter
90°
Front
180°

XMTR CABINET RADIATION SPREADSHEET

EUT:

Description: SDT 500 UB ARK 1 Transmitter

TX Frequency (MHz): 725

Output Power (Wrms): 20 dBm Value: 43 dBm

Front View

Corrected level must be less than: -17 dBm

Distance (m): 10

Harmonic	Frequency MHz	Measured Level [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Path Loss [dB]	Corrected Level [dBm]	Required Level [dBm]	Status Pass/Fail
Xmit freq.	725	-55,3	1	5	45,6	-15,7	-17	N/A
2nd	1450	-68,2	1,3	6	52,1	-23,4	-17	PASS
3rd	2175	-72,5	1,6	6,5	55,5	-25,1	-17	PASS
4th	2900	-74,5	2	12	58	-30,5	-17	PASS
5th	3625	-70,2	2,2	12,5	60	-24,9	-17	PASS
6th	4350	-75,2	2,5	13	61,5	-29,2	-17	PASS
7th	5075	-72,1	2,8	14	62,9	-26	-17	PASS
8th	5800	-75,2	3,1	14,5	64	-28,8	-17	PASS
9th	6525	-79,2	3,4	15,6	65	-33,2	-17	PASS
10th	7250	-72,6	3,7	16	66	-26,3	-17	PASS

Left View

Harmonic	Frequency MHz	Measured Level [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Path Loss [dB]	Corrected Level [dBm]	Required Level [dBm]	Status Pass/Fail
Xmit freq.	725	-55,2	1	5	45,6	-15,6	-17	N/A
2nd	1450	-63,2	1,3	6	52,1	-18,4	-17	PASS
3rd	2175	-72,1	1,6	6,5	55,5	-24,7	-17	PASS
4th	2900	-68,5	2	12	58	-24,5	-17	PASS
5th	3625	-74,6	2,2	12,5	60	-29,3	-17	PASS
6th	4350	-69,5	2,5	13	61,5	-23,5	-17	PASS
7th	5075	-74,8	2,8	14	62,9	-28,7	-17	PASS
8th	5800	-77	3,1	14,5	64	-30,6	-17	PASS
9th	6525	-81,2	3,4	15,6	65	-35,2	-17	PASS
10th	7250	-79,2	3,7	16	66	-32,9	-17	PASS

REAR View

Harmonic	Frequency MHz	Measured Level [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Path Loss [dB]	Corrected Level [dBm]	Required Level [dBm]	Status Pass/Fail
Xmit freq.	725	-56,2	1	5	45,6	-16,6	-17	N/A
2nd	1450	-64,5	1,3	6	52,1	-19,7	-17	PASS
3rd	2175	-70,5	1,6	6,5	55,5	-23,1	-17	PASS
4th	2900	-64,2	2	12	58	-20,2	-17	PASS
5th	3625	-72,5	2,2	12,5	60	-27,2	-17	PASS
6th	4350	-68,6	2,5	13	61,5	-22,6	-17	PASS
7th	5075	-75,4	2,8	14	62,9	-29,3	-17	PASS
8th	5800	-78,2	3,1	14,5	64	-31,8	-17	PASS
9th	6525	-78,6	3,4	15,6	65	-32,6	-17	PASS
10th	7250	-75,6	3,7	16	66	-29,3	-17	PASS

RIGHT
View

Harmonic	Frequency MHz	Measured Level [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Path Loss [dB]	Corrected Level [dBm]	Required Level [dBm]	Status Pass/Fail
Xmit freq.	725	-55,2	1	5	45,6	-15,6	-17	N/A
2nd	1450	-63,2	1,3	6	52,1	-18,4	-17	PASS
3rd	2175	-71,2	1,6	6,5	55,5	-23,8	-17	PASS
4th	2900	-65,4	2	12	58	-21,4	-17	PASS
5th	3625	-73,5	2,2	12,5	60	-28,2	-17	PASS
6th	4350	-66,5	2,5	13	61,5	-20,5	-17	PASS
7th	5075	-72,5	2,8	14	62,9	-26,4	-17	PASS
8th	5800	-77,7	3,1	14,5	64	-31,3	-17	PASS
9th	6525	-72,4	3,4	15,6	65	-26,4	-17	PASS
10th	7250	-70,5	3,7	16	66	-24,2	-17	PASS