

RADIATED SPURIOUS EMISSIONS

30 MHz - 1 GHz Band Procedure

With the EUT first in transmit mode, then in receive mode a prescan of the emissions in the 30 MHz – 1 GHz range was performed. Then suspicious peaks were closely measured while the antenna height, table azimuth and EUT cabling were maximized for worst case emissions. The analyzer/receiver was programmed to compensate for all loss and gain factors (such as cables, antennas, preamplifiers etc.). The peak and quasi-peak readings were recorded. The limit used was FCC Part 15 class B radiated emissions limit.

30 MHz - 1 GHz Band Results

All emissions measured were below the limit. The following table shows the measured values, system loss/gain factors for those emissions and the position of the EUT and the measurement antenna.

Frequency (MHz)	Reading		Antenna Factor (dB)	System Loss (dB)	Limit (dBuV/m)	Azimuth Angle (°)	Antenna		Margin (dB)
	Peak (dBuV/m)	QP (dBuV/m)					Height (m)	Polariz.	
131.35	37.22	32.54	12.56	11.42	43.50	75.00	1m	Horizontal	10.96
146.20	42.21	35.42	12.10	10.98	43.50	280.00	1.5m	Horizontal	8.08
155.72	38.51	30.18	11.54	10.05	43.50	185.00	1m	Horizontal	13.32
188.46	35.87	34.23	9.98	11.16	43.50	220.00	1m	Horizontal	9.27
260.34	40.83	36.46	12.86	20.82	46.00	110.00	1m	Horizontal	9.54
310.20	41.61	37.76	14.27	22.08	46.00	140.00	1.5m	Horizontal	8.24
150.11	42.97	35.34	12.05	11.13	43.50	320.00	1m	Vertical	8.16
161.65	42.51	34.75	11.34	11.46	43.50	15.00	1m	Vertical	8.75
170.08	35.89	31.67	10.83	11.89	43.50	170.00	1m	Vertical	11.83
278.86	47.28	37.16	13.22	21.67	46.00	330.00	1m	Vertical	8.84
310.20	40.23	36.82	14.27	22.08	46.00	145.00	1.5m	Vertical	9.18
370.42	44.22	38.18	15.02	22.94	46.00	85.00	1.5m	Vertical	7.82

1 GHz - 10 GHz Band Procedure

With the transmitter in continuous transmit mode, a pre-scan of the EUT was performed at 1m by rotating the EUT 360° and changing the antenna height between 1m and 4m. All suspicious peaks were noted. Then with the average-peak detector at 1 MHz RBW all suspicious peaks were scanned in the maximized EUT direction and antenna height. Same measurements were made for both polarizations of the antenna. The analyzer / receiver was programmed to compensate for all loss and gain factors (such as cables, antennas, preamplifiers etc.). A 10 dB correction factor was added to the readings for the reduction of measurements distance. The peak and average readings were recorded. The limits used were the limits specified in paragraphs 205 (restricted bands), 209 (spurious emissions), 247 (c) (harmonic emissions) of Part 15.

1 GHz - 10 GHz Band Results

The tables on following pages show the measured values, system loss/gain factors for those emissions and the position of the EUT and the antenna. As can be seen all harmonics were within required limits. No detectable emissions were found in receive mode.

Frequency (GHz)	Peak (*) (dB μ V/m)	Avg. (*) (dB μ V/m)	Gain/Loss (dB)	Polar.	Ant. Ht. (m)	Limit (dB μ V/m)	Margin (dB)
Low Channel							
1.8052	50.3	46.7	26.5	V	1	107	60.3
2.7078	53.9	51.3	29.3	V	1	54	2.7
3.6104	51.3	49.5	29.7	V	1.25	54	4.5
45130	44.5	41.4	32.5	V	1.25	54	12.6
5.4156	42.7	41.2	32.9	V	1	54	12.8
Medium Channel							
1829.2	50.7	47.8	26.5	V	1	107	59.2
2.7438	53.8	51.5	29.3	V	1	54	2.5
3.6584	52.1	50.6	29.7	V	1.25	54	3.4
45730	44.9	41.6	32.5	V	1.25	54	12.4
High Channel							
1.8548	51.4	48.1	26.5	V	1	107	58.9
2782.2	54.8	51.9	29.3	V	1	54	2.1
3.7096	50.3	49.2	29.7	V	1.25	54	4.8
4.6378	43.7	40.6	32.5	V	1.25	54	13.4

(*) corrected measurements (all factors included)