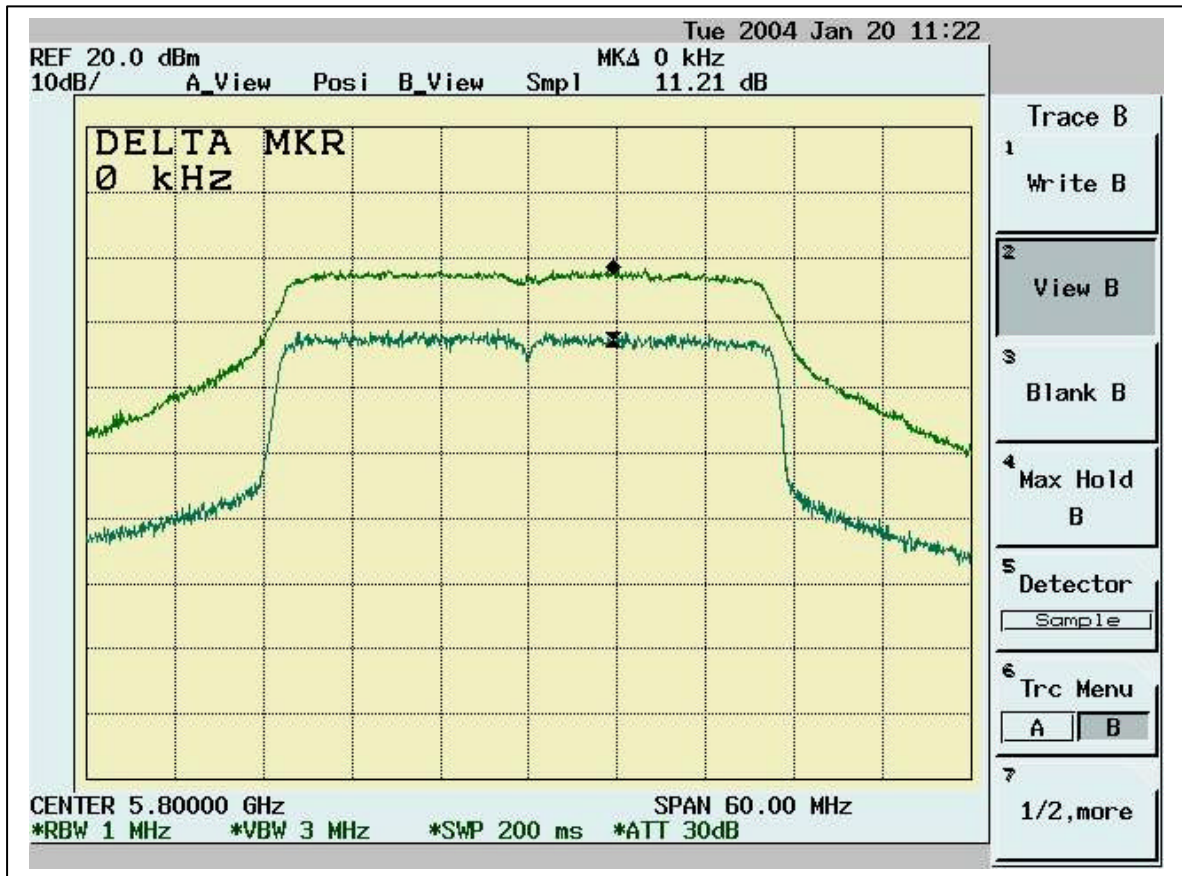




6.4 Powerline Conducted Emissions

[Section 15.207 & 15.407 (b)(5)]

6.4.1 EUT Configuration

The EUT was set up on the non-conductive table that is 1.0 by 1.5 meter, 80cm above ground. The wall of the shielded room was located 40cm to the rear of the EUT.

Power to the EUT was provided through the LISN. The impedance vs. frequency characteristic of the LISN is complied with the limit shown on the figure 1 of ANSI C63.4-2001.

Both lines (neutral and hot) were connected to the LISN in series at testing. A coaxial-type connector which provides one 50 ohms terminating impedance was provided for connecting the test instrument. The excess length of the power cord was folded back and forth at the center of the lead so as to form a bundle not exceeding 40cm in length.

Any changes made to the configuration, or modifications made to the EUT, during testing are noted in the following test record.

If the EUT is a Personal Computer or a peripheral of personal computer, and the personal computer has an auxiliary AC outlet which can be used for providing power to an external monitor, then all measurements will be made with the monitor power from first the computer-mounted AC outlet and then a floor-mounted AC outlet.

6.4.2 Test Procedure

The system was set up as described above, with the EMI diagnostic software running. The main power line conducted EMI tests were run on the hot and neutral conductors of the power cord and the results were recorded. The effect of varying the position of the interface cables has been investigated to find the configuration that produces maximum emission.

At the frequencies where the peak values of the emissions were higher than 6dB below the applicable limits, the emissions were also measured with the quasi-peak detectors. At the frequencies where the quasi-peak values of the emissions were higher than 6dB below the applicable average limits, the emissions were also measured with the average detectors.

The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.

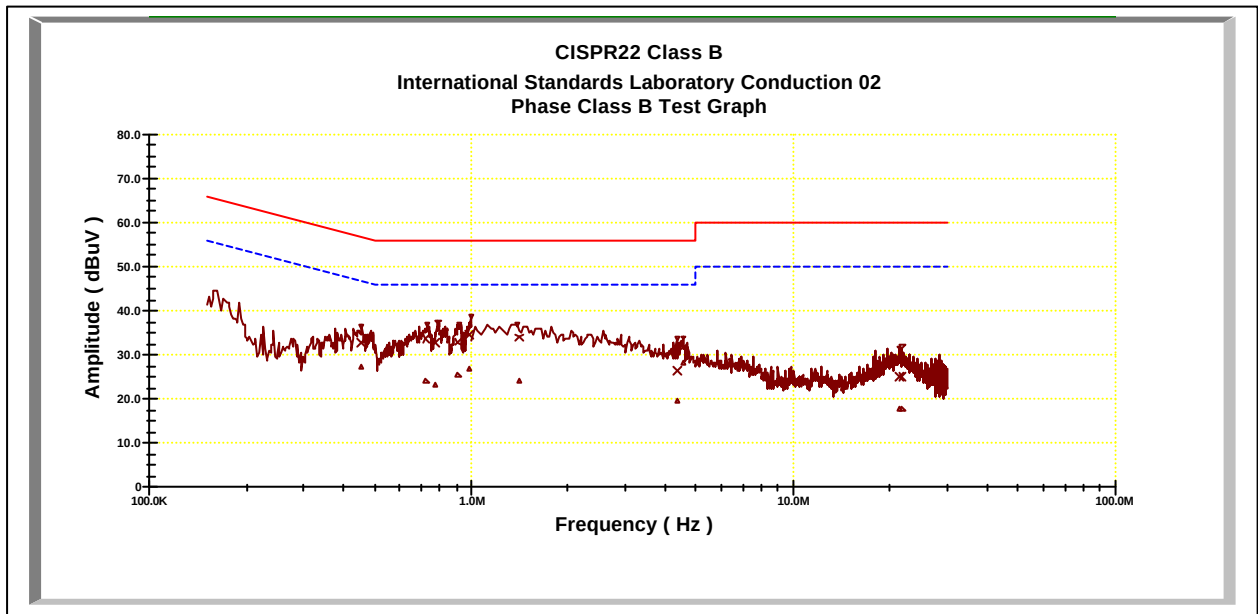
6.4.3 EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

Frequency Range:	150 KHz--30MHz
Detector Function:	Quasi-Peak/Average
Bandwidth (RBW):	9KHz

6.4.4 Test Data:

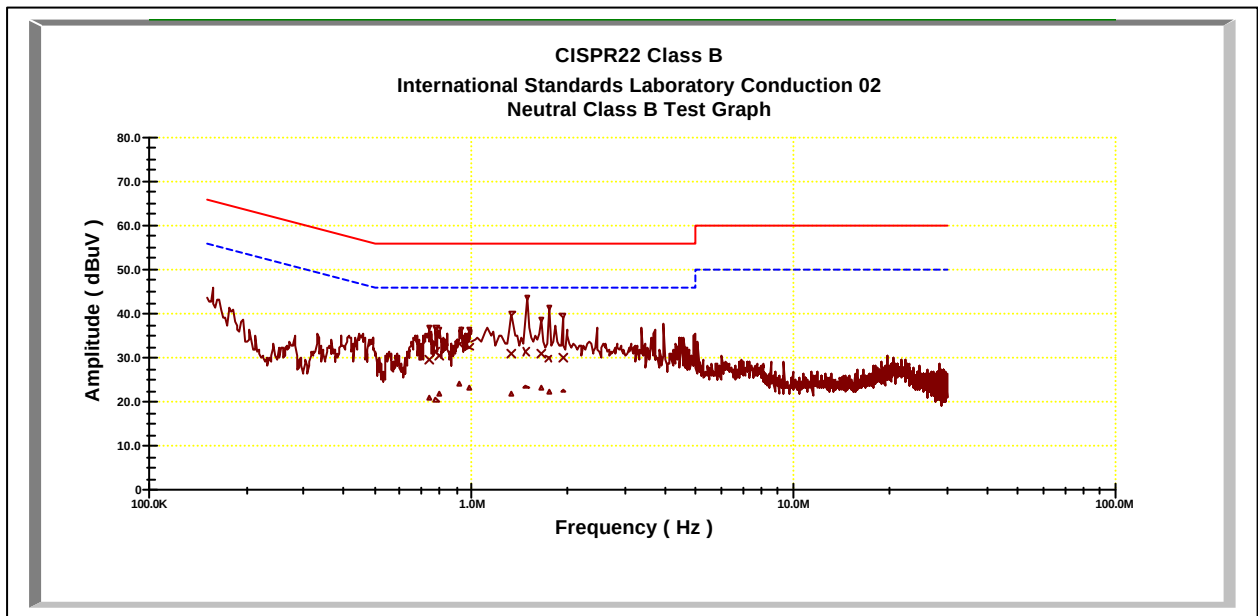
Power Line Conducted Emissions (Hot)

Frequency (MHz)	Corrective Factor		Quasi-Peak			Average		
	LISN Loss (dB)	Cable Loss (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.45308	0.11	0.03	32.90	57.34	-24.44	27.42	47.34	-19.92
0.72306	0.15	0.05	33.70	56.00	-22.30	24.01	46.00	-21.99
0.77153	0.16	0.05	32.83	56.00	-23.17	23.02	46.00	-22.98
0.90846	0.18	0.06	32.96	56.00	-23.04	25.23	46.00	-20.77
0.98238	0.20	0.07	34.42	56.00	-21.58	26.78	46.00	-19.22
1.40384	0.38	0.08	33.91	56.00	-22.09	24.01	46.00	-21.99
4.3639	0.31	0.12	26.42	56.00	-29.58	19.68	46.00	-26.32
4.55903	0.32	0.13	31.64	56.00	-24.36	28.23	46.00	-17.77
21.3607	0.90	0.28	25.05	60.00	-34.95	17.84	50.00	-32.16
21.8578	0.90	0.28	24.94	60.00	-35.06	17.71	50.00	-32.29



Power Line Conducted Emissions (Neutral)

Frequency (MHz)	Corrective Factor		Quasi-Peak			Average		
	LISN Loss (dB)	Cable Loss (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.73915	0.16	0.05	29.70	56.00	-26.30	21.00	46.00	-25.00
0.77666	0.16	0.05	31.43	56.00	-24.57	20.53	46.00	-25.47
0.79271	0.17	0.05	30.44	56.00	-25.56	21.94	46.00	-24.06
0.91686	0.19	0.06	32.97	56.00	-23.03	24.21	46.00	-21.79
0.98151	0.20	0.07	32.44	56.00	-23.56	22.98	46.00	-23.02
1.32994	0.27	0.08	30.94	56.00	-25.06	21.75	46.00	-24.25
1.47876	0.25	0.08	31.45	56.00	-24.55	23.35	46.00	-22.65
1.65363	0.23	0.09	30.88	56.00	-25.12	23.18	46.00	-22.82
1.73679	0.23	0.09	29.83	56.00	-26.17	22.34	46.00	-23.66
1.92051	0.21	0.10	30.00	56.00	-26.00	22.45	46.00	-23.55



* NOTE: During the test, the EMI receiver was set to Max. Hold then switch the EUT between Main antenna ,
Aux antenna Channel 1 , 4, 5, 8,9,12 of Normal
Mode and Channel 1, 2, 3,4,5 of Turbo Mode to get the maximum reading of all these channels.
Margin = Amplitude + Insertion Loss- Limit
A margin of -8dB means that the emission is 8dB below the limit

6.5 Radiated Emission Measurement

[Section 15.209 & 15.407(b)(5)]

6.5.1 EUT Configuration

The equipment under test was set up on the 10 meter chamber with measurement distance of 3 meters. The EUT was placed on a non-conductive table 80cm above ground.

Any changes made to the configuration, or modifications made to the EUT, during testing are noted in the following test record.

6.5.2 Test Procedure

The system was set up as described above, with the EMI diagnostic software running. We found the maximum readings by varying the height of antenna and then rotating the turntable. Both polarization of antenna, horizontal and vertical, are measured.

30M to 1GHz: The highest emissions between 30 MHz to 1000 MHz were also analyzed in details by operating the spectrum analyzer and/or EMI receiver in quasi-peak mode to determine the precise amplitude of the emissions. While doing so, the interconnecting cables and major parts of the system were moved around, the antenna height was varied between one and four meters, its polarization was varied between vertical and horizontal, and the turntable was slowly rotated, to maximize the emission.

1GHz – 40GHz: The highest emissions were also analyzed in details by operating the spectrum analyzer and/or EMI receiver in peak mode to determine the precise amplitude of the emission. While doing so, the interconnecting cables and major parts of the system were moved around, the antenna height was varied between one and four meters, its polarization was varied between vertical and horizontal, and the turntable was slowly rotated, to maximize the emission. During test the EMI receiver and spectrum was setup according to para. 6.5.3.

For the test of 2nd to 10th harmonics frequencies, the equipment setup was also refer to para.6.5.3. The frequencies were tested using Peak mode first, if the test data is higher than the emissions limit, an additional measurement using Average mode will be performed and the average reading will be compared to the limit and record in test report.

6.5.3 EMI Receiver/Spectrum Analyzer Configuration

Frequency Range Tested:	30MHz~1000MHz
Detector Function:	Quasi-Peak Mode
Resolution Bandwidth (RBW):	120KHz
Video Bandwidth (VBW)	1MHz
Frequency Range Tested:	1GHz – 40 GHz
Detector Function:	Peak Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	1MHz
Frequency Range Tested:	30MHz – 40 GHz
Detector Function:	Average Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	10 Hz

6.5.4 Test Data (30MHz – 1GHz) .

30M – 1GHz Open Field Radiated Emissions (Horizontal)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin*	Height (cm)	Position (°)
232.73	24.54	9.87	4.09	0.00	38.50	46.00	-7.50	150.00	158.00
365.62	16.84	14.50	5.01	0.00	36.35	46.00	-9.65	100.00	59.00
472.32	20.88	16.49	5.61	0.00	42.99	46.00	-3.01	150.00	223.00
539.25	13.30	18.04	6.01	0.00	37.36	46.00	-8.64	200.00	255.00
675.05	14.53	18.80	6.66	0.00	39.99	46.00	-6.01	100.00	287.00
708.03	11.35	19.01	6.82	0.00	37.18	46.00	-8.82	100.00	287.00
741.98	9.26	19.49	6.95	0.00	35.70	46.00	-10.30	250.00	207.00
862.26	8.89	20.05	7.49	0.00	36.43	46.00	-9.57	150.00	92.00
898.15	8.98	20.19	7.66	0.00	36.83	46.00	-9.17	250.00	207.00
944.71	14.40	20.47	7.83	0.00	42.70	46.00	-3.30	150.00	239.00

30M – 1GHz Open Field Radiated Emissions (Vertical)

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin*	Height (cm)	Position (°)
472.32	20.64	16.49	5.61	0.00	42.75	46.00	-3.25	100.00	346.00
497.54	17.45	17.05	5.77	0.00	40.27	46.00	-5.73	100.00	249.00
553.80	17.12	18.30	6.09	0.00	41.51	46.00	-4.49	150.00	249.00
657.59	12.79	18.73	6.58	0.00	38.10	46.00	-7.90	150.00	38.00
675.05	14.26	18.80	6.66	0.00	39.72	46.00	-6.28	100.00	55.00
708.03	12.04	19.01	6.82	0.00	37.87	46.00	-8.13	100.00	184.00
732.28	13.01	19.35	6.91	0.00	39.27	46.00	-6.73	200.00	216.00
741.98	12.48	19.49	6.95	0.00	38.92	46.00	-7.08	150.00	6.00
898.15	11.40	20.19	7.66	0.00	39.25	46.00	-6.75	150.00	200.00
944.71	14.08	20.47	7.83	0.00	42.38	46.00	-3.62	100.00	216.00

* NOTE:

During the Pre-test, the EUT has been tested for Channel 1, 4, 5, 8,9,12 of Normal Mode and Channel 1, 2, 3,4,5 of Turbo mode and transmit from Main and Aux antenna respectively to get all the critical emission frequencies. In the final test all the critical emission frequencies has been tested and the test data are listed above.

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 30MHz to 1GHz have been tested

6.5.5 Test Data (1GHz – 40 GHz, Transmitting).**1GHz~ 40 GHz (Horizontal), Normal Mode, Channel 1 : 5180 MHz**

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV /m) (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	40.80	39.82	2.35	46.24	36.73	54.00	-17.27	100	156
7912.09	30.21	40.88	2.48	44.16	29.42	54.00	-24.58	102	25
10340.7	43.84	39.34	2.87	40.93	45.12	54.00	-8.88	106	82
15282.7	25.71	43.15	3.49	43.30	29.05	54.00	-24.95	103	135
15996.0	25.19	44.39	3.57	41.14	32.00	54.00	-22.00	101	118
17864.1	25.62	49.03	3.77	40.88	37.54	54.00	-16.46	100	110

pk: peak value, av: average value**1GHz~ 40 GHz (Vertical), Normal Mode, Channel 1: 5180 MHz**

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	41.09	39.84	2.34	46.25	37.03	54.00	-16.97	100	235
10340.7	35.40	39.34	2.87	40.93	36.68	54.00	-17.32	106	24
11376.6	26.30	41.93	3.01	41.32	29.91	54.00	-24.09	107	71
15265.7	25.84	43.17	3.49	43.34	29.17	54.00	-24.83	109	125
15690.3	26.95	43.41	3.54	42.16	31.74	54.00	-22.26	102	108
15979.0	24.73	44.33	3.57	41.20	31.44	54.00	-22.56	100	190

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.**pk: peak value, av: average value**

1GHz~ 40 GHz (Horizontal), Normal Mode, Channel 4: 5240 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	41.10	39.84	2.34	46.25	37.04	54.00	-16.96	103	267
7912.09	31.64	40.88	2.48	44.16	30.85	54.00	-23.15	100	142
10459.5	42.77	39.38	2.89	40.85	44.19	54.00	-9.81	100	71
11376.6	25.48	41.93	3.01	41.32	29.10	54.00	-24.90	102	125
15690.3	26.23	43.41	3.54	42.16	31.02	54.00	-22.98	105	108
15962.0	25.00	44.28	3.57	41.26	31.59	54.00	-22.41	100	136

pk: peak value, av: average value**1GHz~ 40 GHz (Vertical), Normal Mode, Channel 4: 5240 MHz**

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Position (°)
7130.87	40.59	39.84	2.34	46.25	36.53	54.00	-17.47	100	327
10459.5	31.12	39.38	2.89	40.85	32.54	54.00	-21.46	105	230
11529.5	25.26	42.38	3.03	41.66	29.01	54.00	-24.99	100	175
15282.7	26.30	43.15	3.49	43.30	29.64	54.00	-24.36	109	140
15673.3	26.66	43.35	3.54	42.21	31.33	54.00	-22.67	102	130
15979.0	25.48	44.33	3.57	41.20	32.18	54.00	-21.82	100	192

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.**pk: peak value, av: average value**

1GHz~ 40 GHz (Horizontal), Normal Mode, Channel 5 : 5260 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	41.00	39.82	2.35	46.24	36.92	54.00	-17.08	100	310
7538.46	34.71	39.54	2.42	45.91	30.76	54.00	-23.24	102	30
7963.04	30.41	41.07	2.49	43.92	30.05	54.00	-23.95	100	75
10493.5	40.17	39.40	2.89	40.83	41.63	54.00	-12.37	106	140
15707.3	26.36	43.46	3.54	42.10	31.26	54.00	-22.74	100	218
15962.0	25.52	44.28	3.57	41.26	32.11	54.00	-21.89	105	130

pk: peak value, av: average value**1GHz~ 40 GHz (Vertical), Normal Mode, Channel 5 : 5260 MHz**

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	41.33	39.84	2.34	46.25	37.26	54.00	-16.74	100	93
7538.46	33.09	39.54	2.42	45.91	29.13	54.00	-24.87	100	203
10493.5	32.01	39.40	2.89	40.83	33.47	54.00	-20.53	106	70
14688.3	27.81	44.22	3.43	42.34	33.13	54.00	-20.87	103	262
15690.3	26.08	43.41	3.54	42.16	30.87	54.00	-23.13	107	124
15979.0	24.87	44.33	3.57	41.20	31.57	54.00	-22.43	101	113

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.**pk: peak value, av: average value**

1GHz~ 40 GHz (Horizontal), Normal Mode, Channel 8: 5320 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	41.11	39.82	2.35	46.24	37.03	54.00	-16.97	106	223
7487.51	36.38	39.41	2.41	46.10	32.11	54.00	-21.89	100	173
10629.4	42.30	39.68	2.91	40.74	44.15	54.00	-9.85	100	270
14688.3	28.02	44.22	3.43	42.34	33.33	54.00	-20.67	100	324
15690.3	27.45	43.41	3.54	42.16	32.24	54.00	-21.76	109	124
15996.0	25.07	44.39	3.57	41.14	31.89	54.00	-22.11	102	113

pk: peak value, av: average value

1GHz~ 40 GHz (Vertical), Normal Mode, Channel 8: 5320 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	40.98	39.82	2.35	46.24	36.91	54.00	-17.09	100	146
7385.61	37.81	39.54	2.39	46.14	33.60	54.00	-20.40	100	93
10629.4	31.95	39.68	2.91	40.74	33.80	54.00	-20.20	100	189
14688.3	28.87	44.22	3.43	42.34	34.18	54.00	-19.82	101	342
16709.3	27.13	45.19	3.65	42.12	33.84	54.00	-20.16	102	210
17949.1	24.33	49.39	3.78	40.57	36.92	54.00	-17.08	101	195

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.

pk: peak value, av: average value

1GHz~ 40 GHz (Horizontal), Normal Mode, Channel 9: 5745 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV /m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	40.71	39.84	2.34	46.25	36.64	54.00	-17.36	101	279
11461.5	30.55	42.25	3.02	41.51	34.32	54.00	-19.68	100	173
14688.3	27.59	44.22	3.43	42.34	32.91	54.00	-21.09	100	270
15996.0	25.58	44.39	3.57	41.14	32.39	54.00	-21.61	100	324
17269.7	26.60	46.81	3.71	42.11	35.01	54.00	-18.99	104	124
17966.0	24.59	49.46	3.78	40.51	37.32	54.00	-16.68	100	113

pk: peak value, av: average value

1GHz~ 40 GHz (Vertical), Normal Mode, Channel 9: 5745 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7164.83	41.07	39.80	2.35	46.24	36.98	54.00	-17.02	100	313
11461.5	29.07	42.25	3.02	41.51	32.84	54.00	-21.16	100	239
14671.3	27.26	44.26	3.43	42.25	32.70	54.00	-21.30	100	175
15996.0	25.28	44.39	3.57	41.14	32.10	54.00	-21.90	104	140
17507.5	26.78	47.53	3.73	42.17	35.87	54.00	-18.13	100	130
17932.1	25.19	49.31	3.78	40.64	37.64	54.00	-16.36	100	192

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.

pk: peak value, av: average value

1GHz~ 40 GHz (Horizontal), Normal Mode, Channel 12 : 5805 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV /m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	40.73	39.84	2.34	46.25	36.67	54.00	-17.33	100	121
11580.4	26.70	42.35	3.04	41.77	30.32	54.00	-23.68	102	326
14688.3	27.52	44.22	3.43	42.34	32.84	54.00	-21.16	100	275
15299.7	26.91	43.12	3.50	43.26	30.26	54.00	-23.74	106	140
16658.3	26.35	45.04	3.64	42.14	32.90	54.00	-21.10	100	218
17932.1	24.63	49.31	3.78	40.64	37.09	54.00	-16.91	105	130

pk: peak value, av: average value**1GHz~ 40 GHz (Vertical), Normal Mode, Channel 12 : 5805 MHz**

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	40.48	39.82	2.35	46.24	36.40	54.00	-17.60	100	105
7589.41	34.93	39.72	2.43	45.67	31.41	54.00	-22.59	100	189
11121.9	26.16	40.96	2.97	40.77	29.32	54.00	-24.68	103	72
14688.3	29.65	44.22	3.43	42.34	34.97	54.00	-19.03	100	259
15656.3	26.46	43.30	3.53	42.27	31.03	54.00	-22.97	109	121
17864.1	25.73	49.03	3.77	40.88	37.65	54.00	-16.35	101	115

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.**pk: peak value, av: average value**

1GHz~ 40 GHz (Horizontal), Turbo Mode, Channel 1: 5210 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV /m) (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	41.11	39.82	2.35	46.24	37.03	54.00	-16.97	107	234
7861.14	30.91	40.70	2.47	44.40	29.68	54.00	-24.32	100	211
10408.6	40.70	39.36	2.88	40.88	42.05	54.00	-11.95	106	72
15316.7	26.13	43.09	3.50	43.22	29.50	54.00	-24.50	109	121
15707.3	25.95	43.46	3.54	42.10	30.85	54.00	-23.15	100	102
15996.0	25.38	44.39	3.57	41.14	32.20	54.00	-21.80	102	115

pk: peak value, av: average value

1GHz~ 40 GHz (Vertical), Turbo Mode, Channel 1: 5210 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	40.75	39.84	2.34	46.25	36.68	54.00	-17.32	102	140
10408.6	31.51	39.36	2.88	40.88	32.87	54.00	-21.13	108	190
14688.3	28.34	44.22	3.43	42.34	33.65	54.00	-20.35	106	65
15265.7	26.76	43.17	3.49	43.34	30.08	54.00	-23.92	103	115
15690.3	26.36	43.41	3.54	42.16	31.15	54.00	-22.85	105	110
15996.0	25.27	44.39	3.57	41.14	32.09	54.00	-21.91	100	192

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.

pk: peak value, av: average value

1GHz~ 40 GHz (Horizontal) , Turbo Mode, Channel 2 : 5250 MHZ

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	42.16	39.84	2.34	46.25	38.09	54.00	-15.91	101	195
7895.10	30.50	40.82	2.48	44.24	29.56	54.00	-24.44	100	10
10476.5	39.23	39.39	2.89	40.84	40.66	54.00	-13.34	103	65
11410.6	25.27	42.06	3.01	41.40	28.95	54.00	-25.05	106	115
15265.7	25.69	43.17	3.49	43.34	29.01	54.00	-24.99	100	123
15656.3	26.64	43.30	3.53	42.27	31.20	54.00	-22.80	101	110

pk: peak value, av: average value

1GHz~ 40 GHz (Vertical), Turbo Mode, Channel 2: 5250 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	40.91	39.82	2.35	46.24	36.83	54.00	-17.17	109	25
7929.07	29.81	40.94	2.49	44.08	29.16	54.00	-24.84	100	70
10476.5	32.24	39.39	2.89	40.84	33.68	54.00	-20.32	103	130
11461.5	25.23	42.25	3.02	41.51	28.99	54.00	-25.01	100	166
15282.7	25.48	43.15	3.49	43.30	28.82	54.00	-25.18	100	90
15707.3	26.41	43.46	3.54	42.10	31.31	54.00	-22.69	108	85

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.

pk: peak value, av: average value

1GHz~ 40 GHz (Horizontal), Turbo Mode, Channel 3 : 5290 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7147.85	40.99	39.82	2.35	46.24	36.92	54.00	-17.08	103	273
7929.07	29.74	40.94	2.49	44.08	29.09	54.00	-24.91	100	231
10561.4	37.22	39.54	2.90	40.79	38.87	54.00	-15.13	106	23
11393.6	25.45	42.00	3.01	41.36	29.10	54.00	-24.90	100	199
15707.3	26.36	43.46	3.54	42.10	31.26	54.00	-22.74	105	221
15979.0	25.09	44.33	3.57	41.20	31.79	54.00	-22.21	103	218

pk: peak value, av: average value

1GHz~ 40 GHz (Vertical) , Turbo Mode, Channel 3: 5290 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	41.42	39.84	2.34	46.25	37.36	54.00	-16.64	100	254
7538.46	35.14	39.54	2.42	45.91	31.19	54.00	-22.81	100	194
10561.4	28.80	39.54	2.90	40.79	30.44	54.00	-23.56	103	130
11427.6	25.48	42.12	3.02	41.43	29.18	54.00	-24.82	100	166
15316.7	25.69	43.09	3.50	43.22	29.06	54.00	-24.94	100	122
15673.3	27.41	43.35	3.54	42.21	32.08	54.00	-21.92	100	175

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.

pk: peak value, av: average value

1GHz~ 40 GHz (Horizontal), Turbo Mode, Channel 4 : 5760 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	41.55	39.84	2.34	46.25	37.48	54.00	-16.52	100	264
7538.46	35.00	39.54	2.42	45.91	31.04	54.00	-22.96	100	231
7776.22	31.35	40.39	2.46	44.80	29.41	54.00	-24.59	101	245
11512.5	26.12	42.39	3.03	41.62	29.92	54.00	-24.08	100	162
15282.7	26.37	43.15	3.49	43.30	29.71	54.00	-24.29	100	221
15690.3	26.76	43.41	3.54	42.16	31.55	54.00	-22.45	100	111

pk: peak value, av: average value

1GHz~ 40 GHz (Vertical) , Turbo Mode, Channel 4: 5760 MHz

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Ampl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/m) (av)	Margin (dB)	Height (cm)	Position (°)
7164.83	40.11	39.80	2.35	46.24	36.02	54.00	-17.98	100	110
11495.5	26.75	42.38	3.02	41.58	30.58	54.00	-23.42	108	190
14688.3	27.63	44.22	3.43	42.34	32.94	54.00	-21.06	106	65
15316.7	25.90	43.09	3.50	43.22	29.27	54.00	-24.73	103	115
15656.3	26.46	43.30	3.53	42.27	31.03	54.00	-22.97	105	110
15979.0	25.18	44.33	3.57	41.20	31.88	54.00	-22.12	100	172

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

All frequencies from 1GHz to 40 GHz have been tested.

pk: peak value, av: average value

1GHz~ 40 GHz (Horizontal) , Turbo Mode, Channel 5 : 5800 MHZ

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-Am pl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	41.26	39.84	2.34	46.25	37.19	54.00	-16.81	101	195
7572.43	35.47	39.66	2.42	45.75	31.80	54.00	-22.20	100	210
11563.4	26.36	42.36	3.03	41.74	30.02	54.00	-23.98	103	65
15350.6	25.84	43.04	3.50	43.14	29.24	54.00	-24.76	100	115
15707.3	26.09	43.46	3.54	42.10	30.99	54.00	-23.01	100	123
15996.0	24.77	44.39	3.57	41.14	31.58	54.00	-22.42	101	110

pk: peak value, av: average value**1GHz~ 40 GHz (Vertical), Turbo Mode, Channel 5: 5800 MHz**

Meter Reading		Correction Factor			Corrected Emissions			Antenna	Turntable
Freq. (MHz)	Ampl. (dBuV) (pk)	Ant. (dB/m)	Cable (dB)	Pre-A mpl. (dB)	Ampl. (dBuV/m) (pk)	Limit (dBuV/ m) (av)	Margin (dB)	Height (cm)	Position (°)
7130.87	40.34	39.84	2.34	46.25	36.27	54.00	-17.73	100	2
7878.12	29.84	40.76	2.48	44.32	28.76	54.00	-25.24	101	21
8200.80	27.35	41.12	2.53	43.24	27.77	54.00	-26.23	101	45
11580.4	25.07	42.35	3.04	41.77	28.68	54.00	-25.32	101	262
15282.7	25.59	43.15	3.49	43.30	28.93	54.00	-25.07	100	291
15690.3	27.47	43.41	3.54	42.16	32.26	54.00	-21.74	100	211

Note: The Spectrum noise level + Correction Factor < Limit - 6 dB

Margin = Corrected Amplitude – Limit

Corrected Amplitude = Radiated Amplitude + Antenna Correction Factor + Cable Loss - Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit

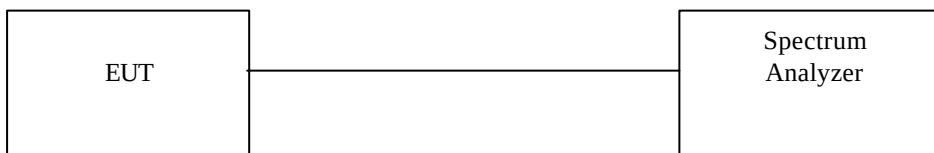
All frequencies from 1GHz to 40 GHz have been tested.**pk: peak value, av: average value**

6.6 Band Edge Measurement (Section 15.407 (b) (1) (2))

6.6.1 Test Procedure (Conducted)

1. The Transmitter output of EUT was connected to the spectrum analyzer.
Equipment mode: Spectrum analyzer
Detector function: Peak mode
SPAN: 100MHz
RBW: 1 MHz
VBW: 1 MHz
Sweep time= 200 sec.
2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed.
3. Find the next peak frequency outside the operation frequency band.

6.6.2 Test Setup (Conducted)



6.6.3 Test Data (conducted):

Band Edge measurement (Conducted)

Outside Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Corrected Factor (dB)	Corrected Emissions (dBuV ERP)	Limit: (dBuV ERP)	Pass or Fail
1 (Normal)	5145.7	66.65	2.63	69.28	80	Pass
8 (Normal)	5351.5	63.55	2.63	66.18	80	Pass
9 (Normal)	5735.0	85.05	2.63	87.68	90	Pass
9 (Normal)	5725.0	75.31	2.63	77.94	80	Pass
12 (Normal)	5815.0	84.12	2.63	86.75	90	Pass
12 (Normal)	5825.0	73.59	2.63	76.22	80	Pass

1 (Turbo)	5147.7	60.96	2.63	63.59	80	Pass
3 (Turbo)	5368.6	59.66	2.63	62.29	80	Pass
4 (Turbo)	5735.0	42.43	2.63	45.06	90	Pass
4 (Turbo)	5725.0	30.09	2.63	32.72	80	Pass
5 (Turbo)	5815.0	45.31	2.63	47.94	90	Pass
5 (Turbo)	5825.0	34.62	2.63	37.25	80	Pass

Note: Corrected Emissions = Spectrum + Corrected Factor

Corrected Factor = Cable Loss + Antenna Peak Gain (dBi)

Band Edge Conducted measurement (Normal Mode Channel 1)



Band Edge Conducted Measurement (Normal Mode Channel 8)



Band Edge Conducted Measurement (Normal Mode Channel 9)



Band Edge Conducted Measurement (Normal Mode Channel 12)



Band Edge Conducted measurement (Turbo Mode Channel 1)



Band Edge Conducted Measurement (Turbo Mode Channel 3)



Band Edge Conducted Measurement (Turbo Mode Channel 4)



Band Edge Conducted Measurement (Turbo Mode Channel 5)



6.6.4 Bandedge Measurement Test Procedure (Radiated)

1. Antenna and Turntable test procedure same as Radiated Emissions measurement listed in Para. 6.5
Equipment mode: Spectrum analyzer
Detector function: Peak mode SPAN: 100MHz
RBW=1 MHz, VBW = 1MHz for Peak measurement
RBW=1 MHz, VBW = 10 Hz for Average measurement
Sweep time= 200 msec for peak measurement, 20 sec. for Average
2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed.
3. Find the next peak frequency outside the operation frequency band.
4. Get the spectrum reading after Maximum Hold function is completed.

6.6.5 Test Setup (Radiated)

