

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

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
2485.31	48.97pk	30.90	1.44	35.20	46.11pk	54.00av	-7.89	101	195
3355.64	49.10pk	31.38	1.63	35.53	46.60pk	54.00av	-7.40	103	266
3826.77	49.76pk	31.96	1.97	36.83	46.85pk	54.00av	-7.15	102	145
4420.18	46.87pk	33.46	2.05	37.36	45.02pk	54.00av	-8.98	101	58

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

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1841.56	48.60pk	29.67	2.48	34.87	45.88pk	54.00av	-8.12	100	54
2190.41	47.23pk	30.96	2.02	35.19	45.03pk	54.00av	-8.97	101	103
2488.91	48.98pk	30.90	1.42	35.20	46.10pk	54.00av	-7.90	101	197
3826.77	53.27pk	31.96	1.97	36.83	50.36pk	54.00av	-3.64	102	145
7459.14	43.53pk	39.83	2.29	36.43	49.23pk	54.00av	-4.77	101	176

Note: “*”: Fundamental Frequency
“pk”: peak reading
“av”: average reading
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.

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

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
2233.57	48.11pk	30.95	1.89	35.19	45.76pk	54.00av	-8.24	101	116
2496.10	48.02pk	30.90	1.38	35.20	45.11pk	54.00av	-8.89	101	199
3057.14	48.12pk	31.15	1.48	34.87	45.87pk	54.00av	-8.13	103	342
3355.64	49.58pk	31.38	1.63	35.53	47.07pk	54.00av	-6.93	103	266

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

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1064.74	52.64pk	24.80	2.18	33.96	45.65pk	54.00av	-8.35	102	108
1837.96	48.01pk	29.64	2.48	34.86	45.26pk	54.00av	-8.74	100	54
2496.10	48.27pk	30.90	1.38	35.20	45.36pk	54.00av	-8.64	101	199
3866.33	49.74pk	32.01	2.00	36.95	46.80pk	54.00av	-7.20	102	134
7459.14	43.48pk	39.83	2.29	36.43	49.18pk	54.00av	-4.82	101	176

Note: “ * ”: Fundamental Frequency

“ pk ”: peak reading

“ av ”: average reading

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.

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

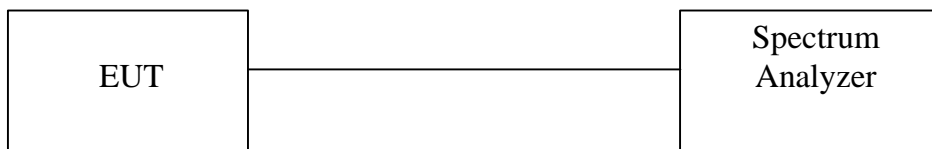
4.6.1 Test Procedure (Conducted)

1. The Transmitter output of EUT was connected to the spectrum analyzer.
Equipment mode: Spectrum analyzer

Peak Mode:	
SPAN	100MHz
RBW	1MHz
VBW	1MHz
Sweep Time	200msec.

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.

4.6.2 Test Setup (Conducted)



4.6.3 Test Data (conducted):

Band Edge measurement (Conducted)

Temperature ():24

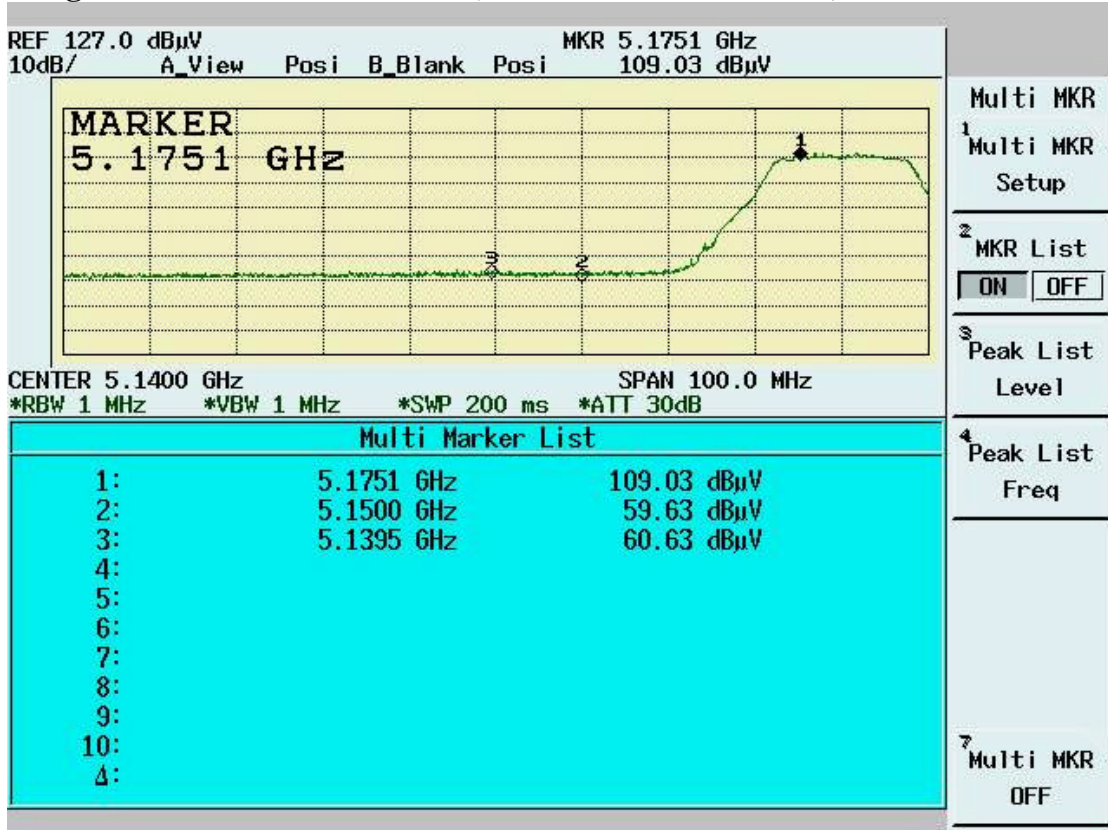
Test Engineer:Mailes Hsieh

Humidity (%):54

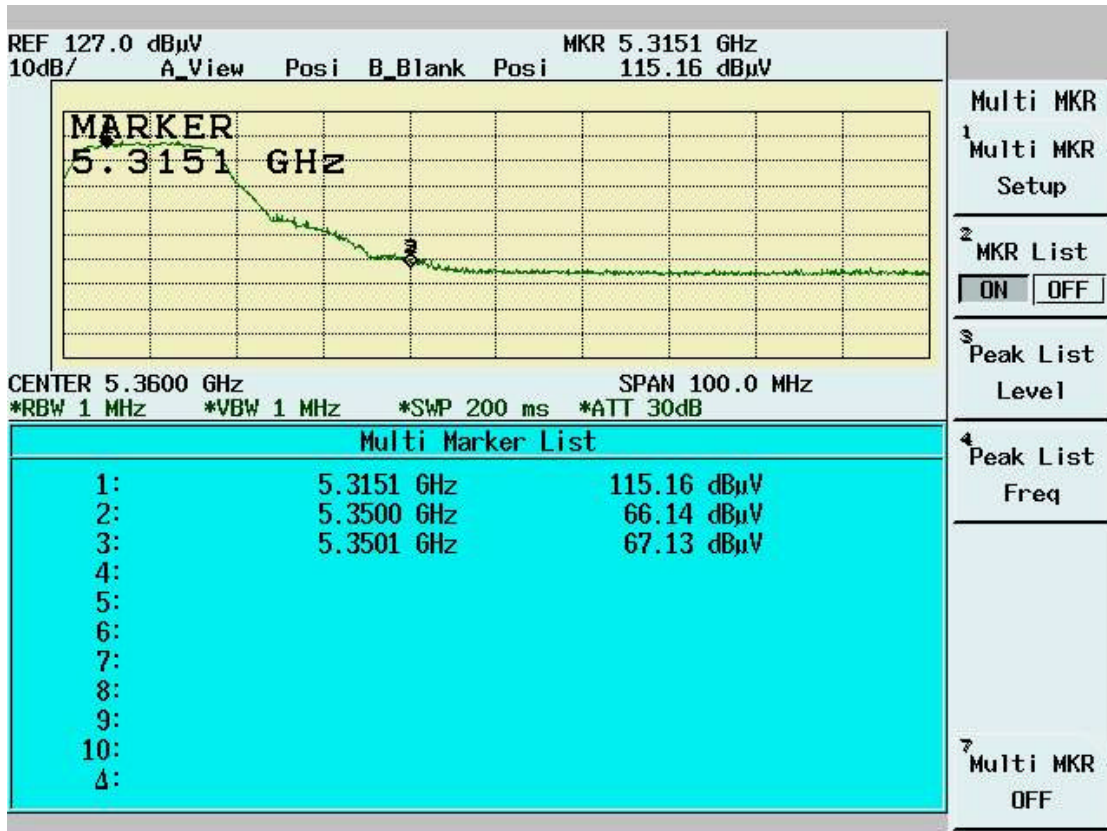
Outside Channel Normal Mode	Frequency (MHz)	Spectrum Reading (dBuV)	Corrected Factor (dB)	Corrected Emissions (dBuV EIRP)	Limit: (dBuV EIRP)	Pass or Fail
1	5139.5	60.63	3.46	64.09	80	Pass
8	5350.1	67.13	3.46	70.59	80	Pass
9	5724.4	65.58	3.46	69.04	90	Pass
9	5704.7	63.14	3.46	66.60	80	Pass
12	5826.6	64.76	3.46	68.22	90	Pass
12	5836.7	63.13	3.46	66.59	80	Pass

Note: Corrected Emissions=Spectrum + Corrected Factor
 Corrected Factor=Cable Loss+Antenna Peak Gain (dBi)

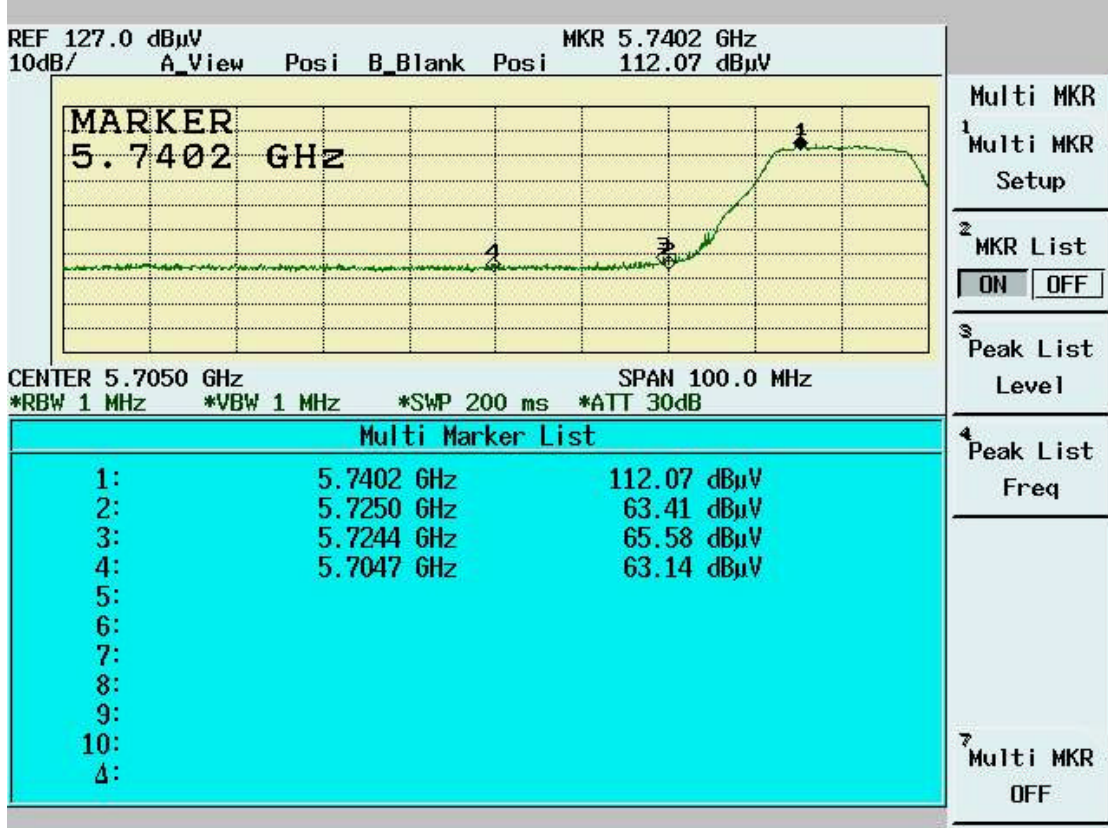
Band Edge Conducted measurement (Normal Mode Channel 1)



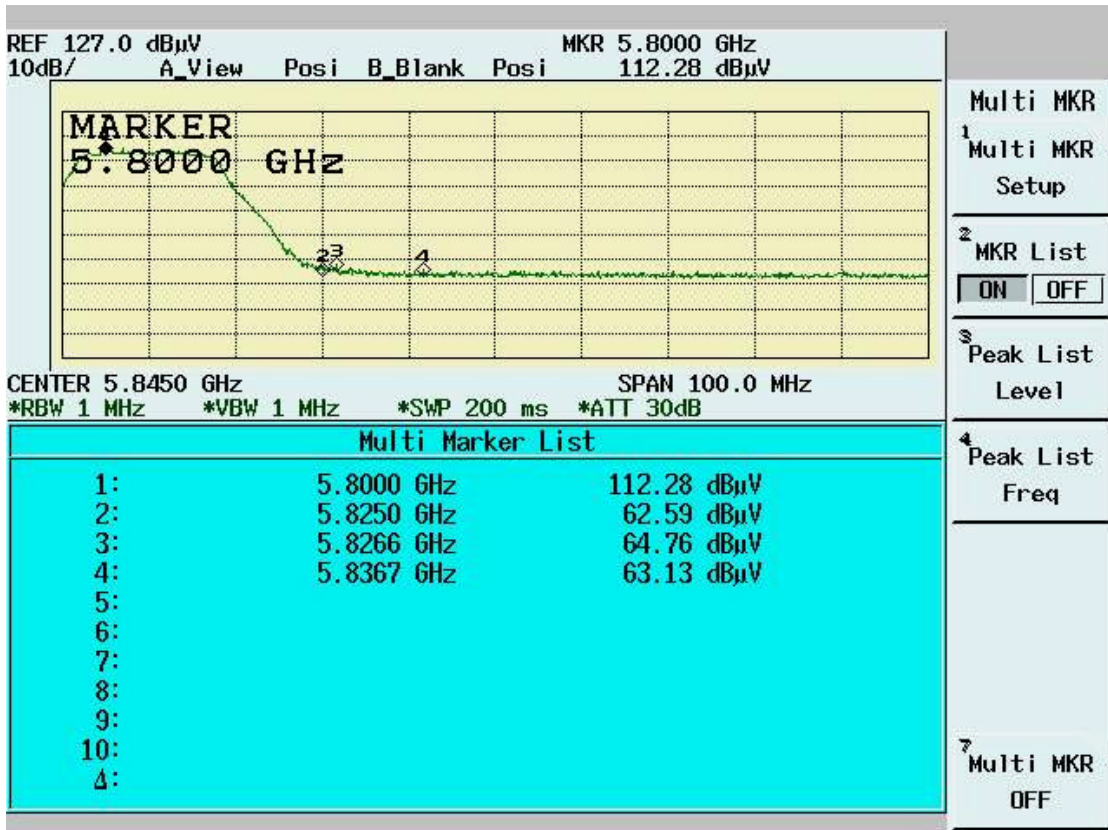
Band Edge Conducted Measurement (Normal Mode Channel 8)



Band Edge Conducted measurement (Normal Mode Channel 9)



Band Edge Conducted Measurement (Normal Mode Channel 12)



4.6.4 Bandedge Measurement Test Procedure (Radiated)

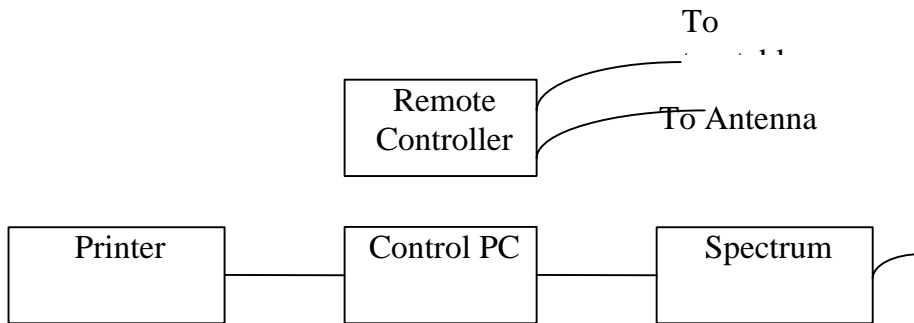
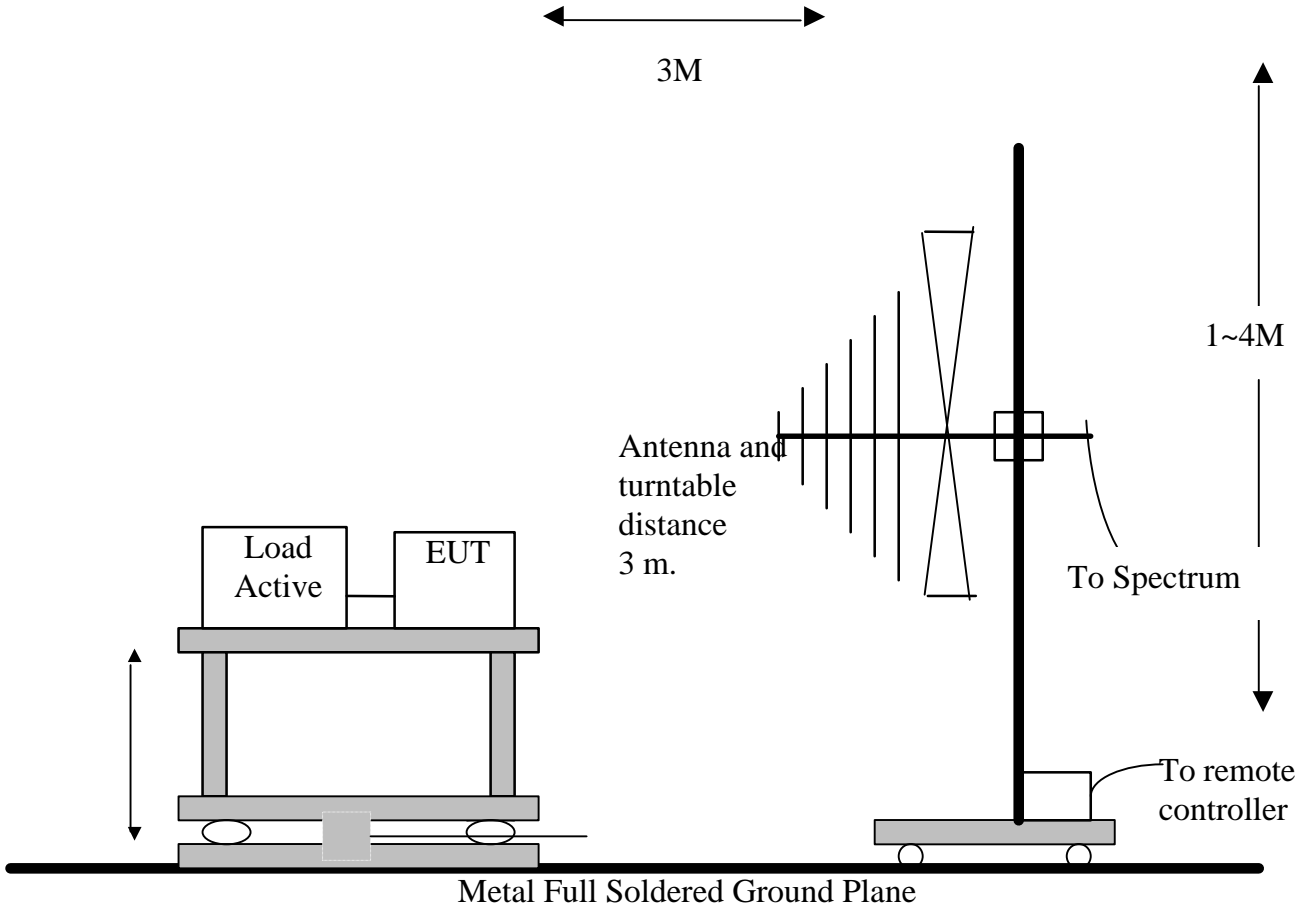
1. Antenna and Turntable test procedure same as Radiated Emissions measurement listed in Para. 6.5

Equipment mode: Spectrum analyzer

Peak Mode:	
SPAN	100MHz
RBW	1MHz
VBW	3MHz
Sweep Time	200msec.
AVE Mode:	
SPAN	100MHz
RBW	1MHz
VBW	10Hz
Sweep Time	20 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.
4. Get the spectrum reading after Maximum Hold function is completed.

4.6.5 Test Setup (Radiated)



4.6.6 Test Data (Radiated):

Band Edge measurement (Radiated)

Temperature ():25

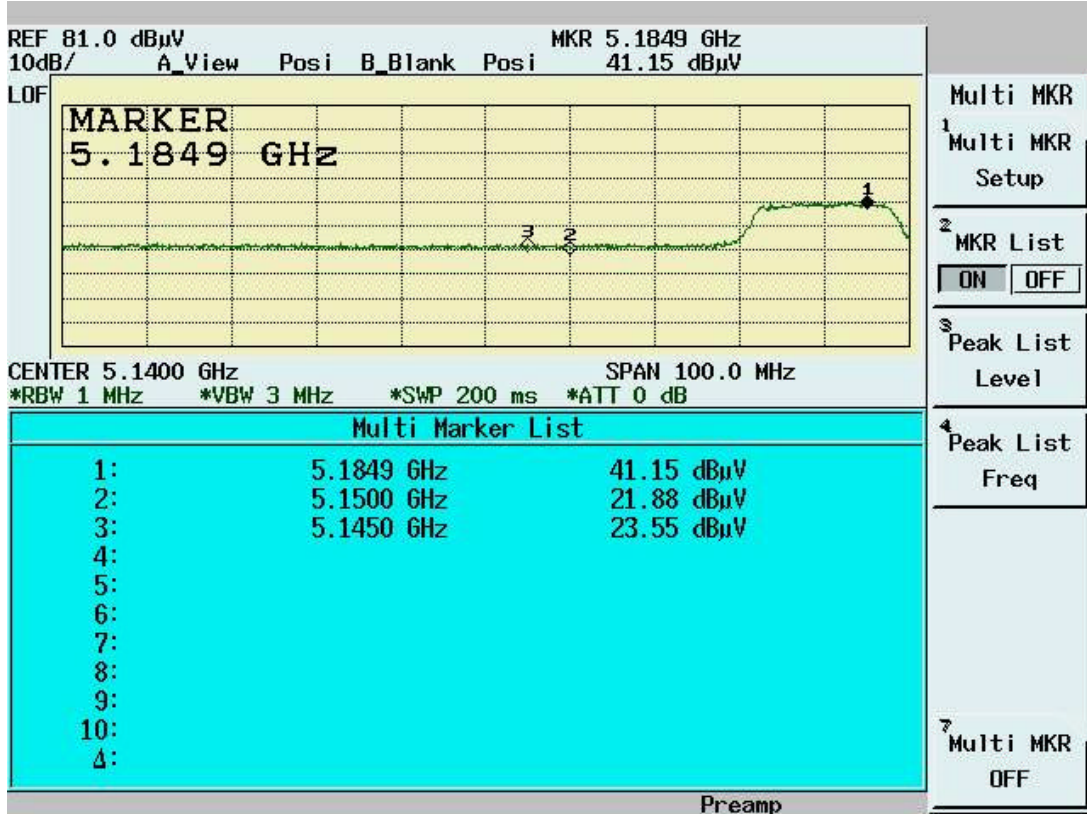
Test Engineer:Mailles Hsieh

Humidity (%):46

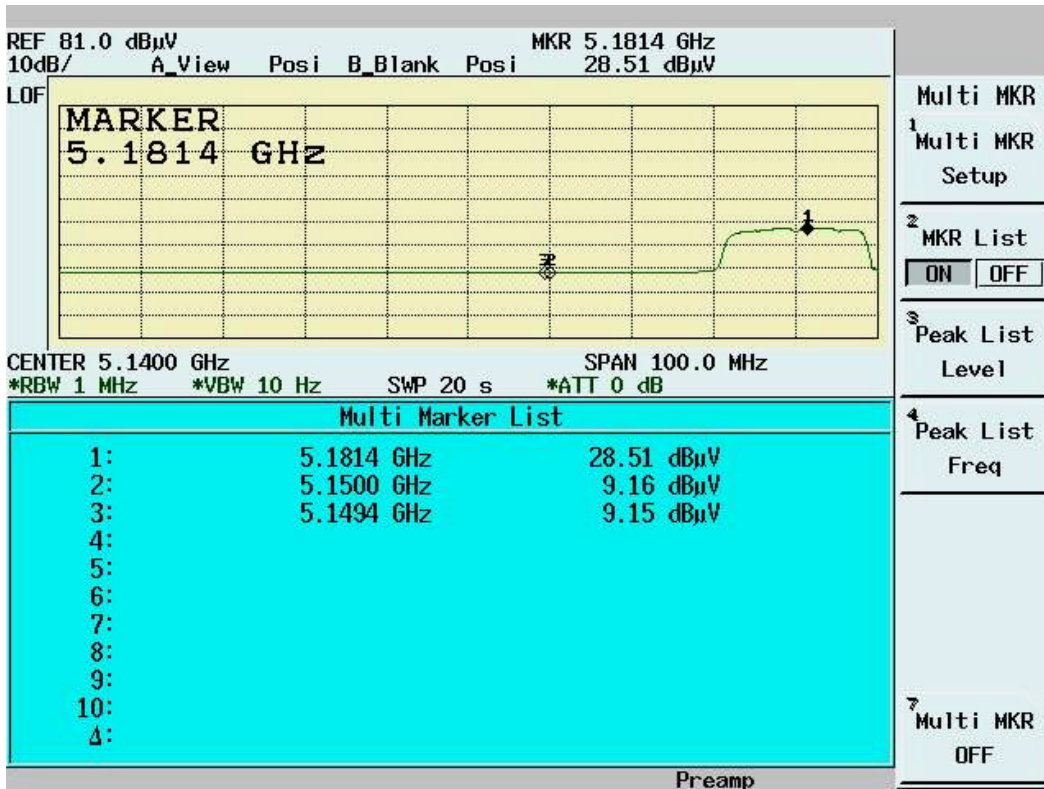
Outside Channel (Normal)	Frequency (MHz)	Spectrum Reading (dBuV)	Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Pass/Fail
1 (Peak)	5145.0	23.55	39.03	62.58	74	Pass
1 (Average)	5150.0	9.16	39.03	48.19	54	Pass
8 (Peak)	5355.8	24.07	39.34	63.41	74	Pass
8 (Average)	5351.5	9.45	39.34	48.79	54	Pass
9 (Peak)	5710.4	23.88	39.41	63.29	74	Pass
9 (Average)	5715.0	9.72	39.41	49.13	54	Pass
12 (Peak)	5836.1	23.56	39.42	62.98	74	Pass
12 (Average)	5836.1	9.84	39.42	49.26	54	Pass

Note: "pk": peak reading
"av": average reading
Emission Level=Spectrum Reading+Correction Factor
Correction Factor =Antenna Factor+cable loss
Both Horizontal and Vertical polarization have been tested and the worst data is listed above.

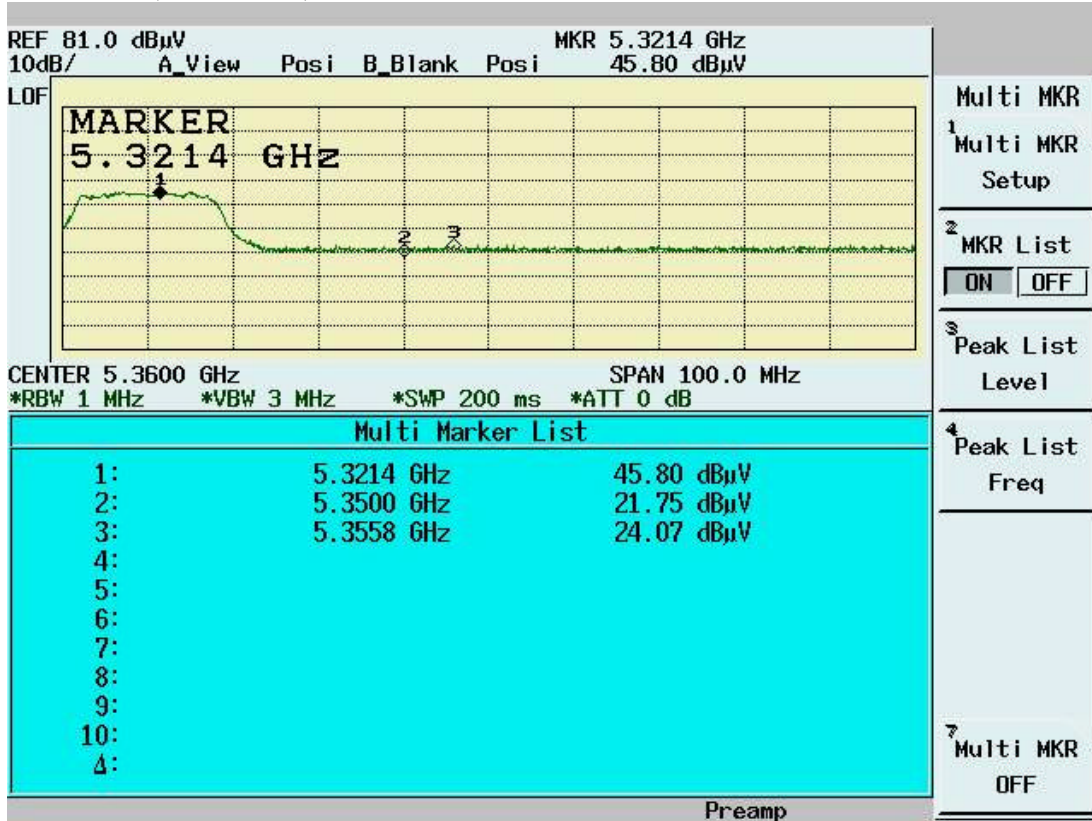
**Band Edge measurement for radiated emission in Restricted Band(Radiated)
Normal Mode (Channel 1) Peak data**



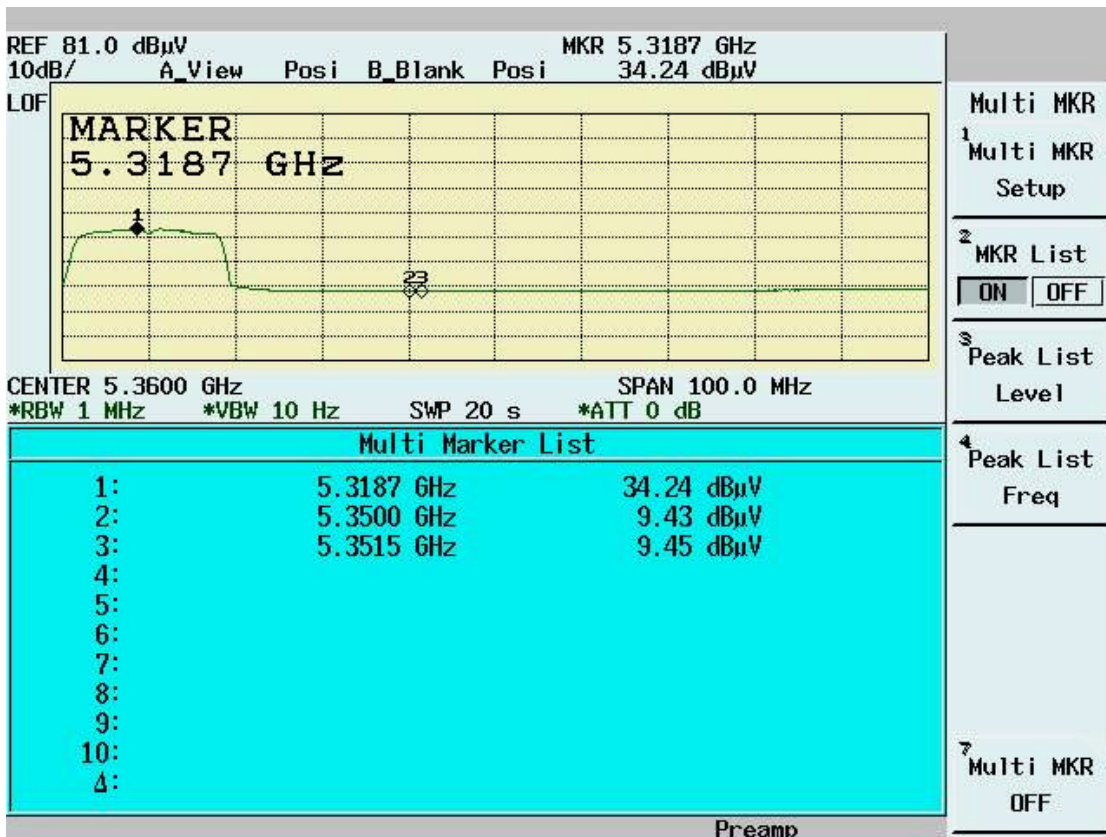
Normal Mode (Channel 1) Average Data



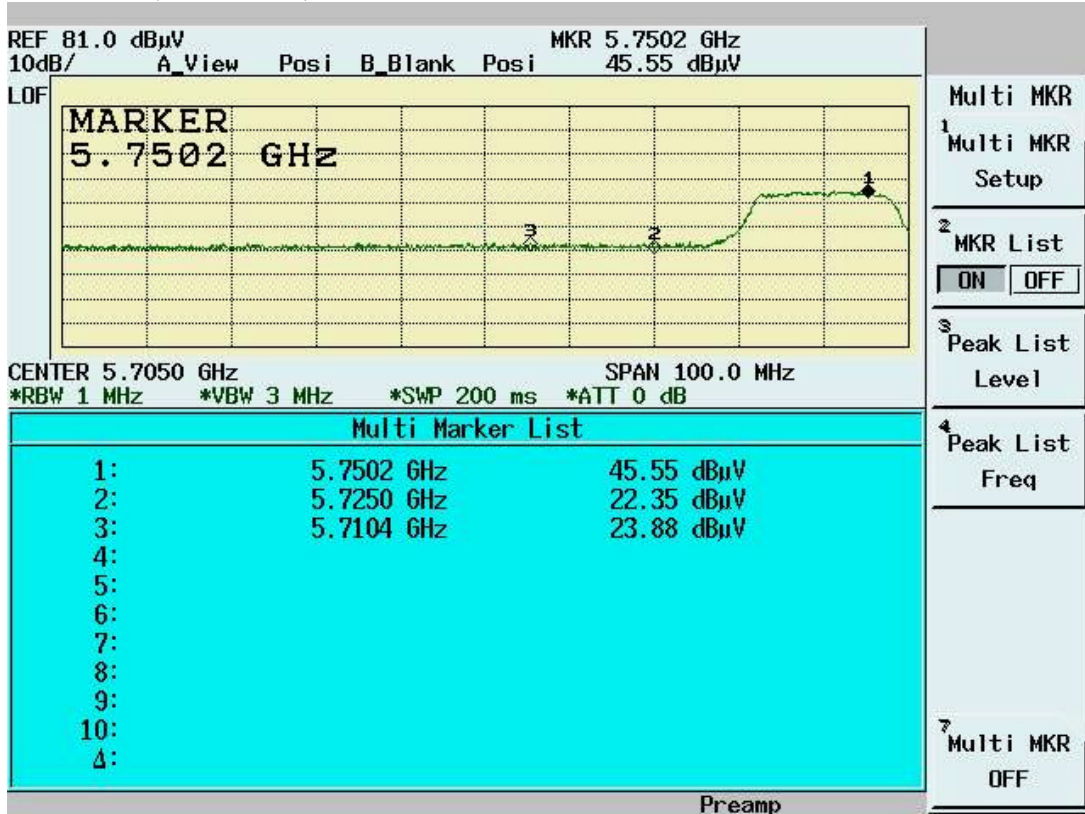
Normal Mode (Channel 8) Peak data



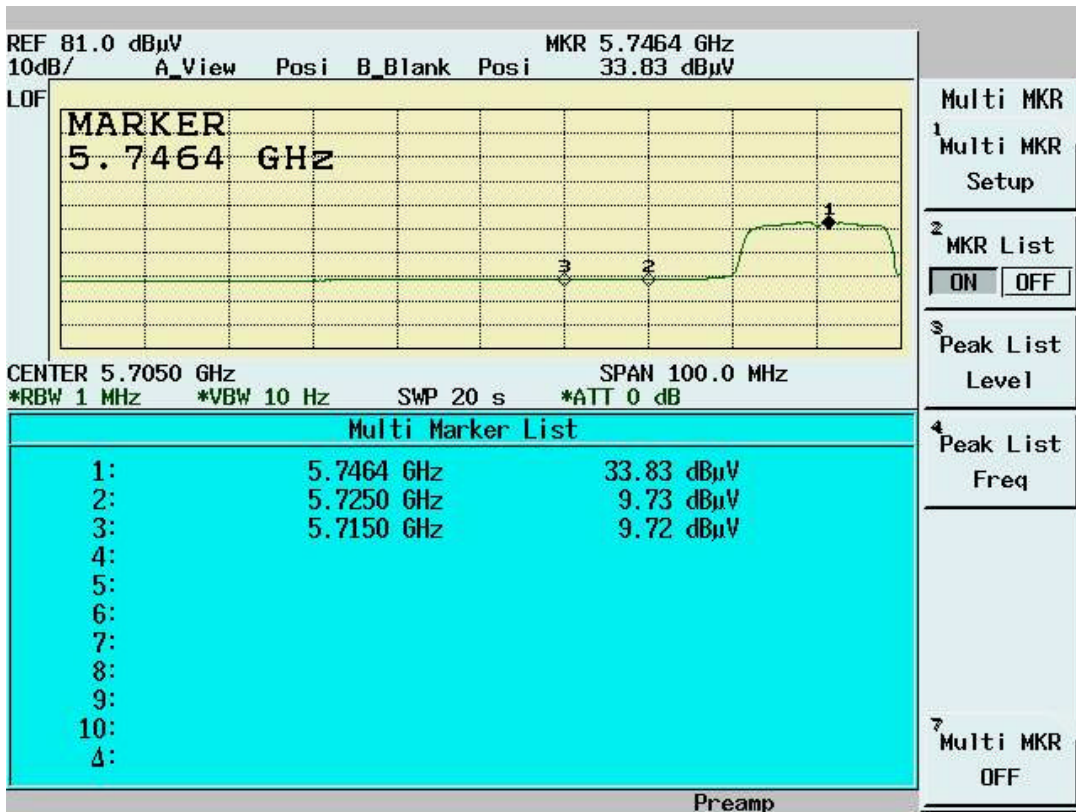
Normal Mode (Channel 8) Average data



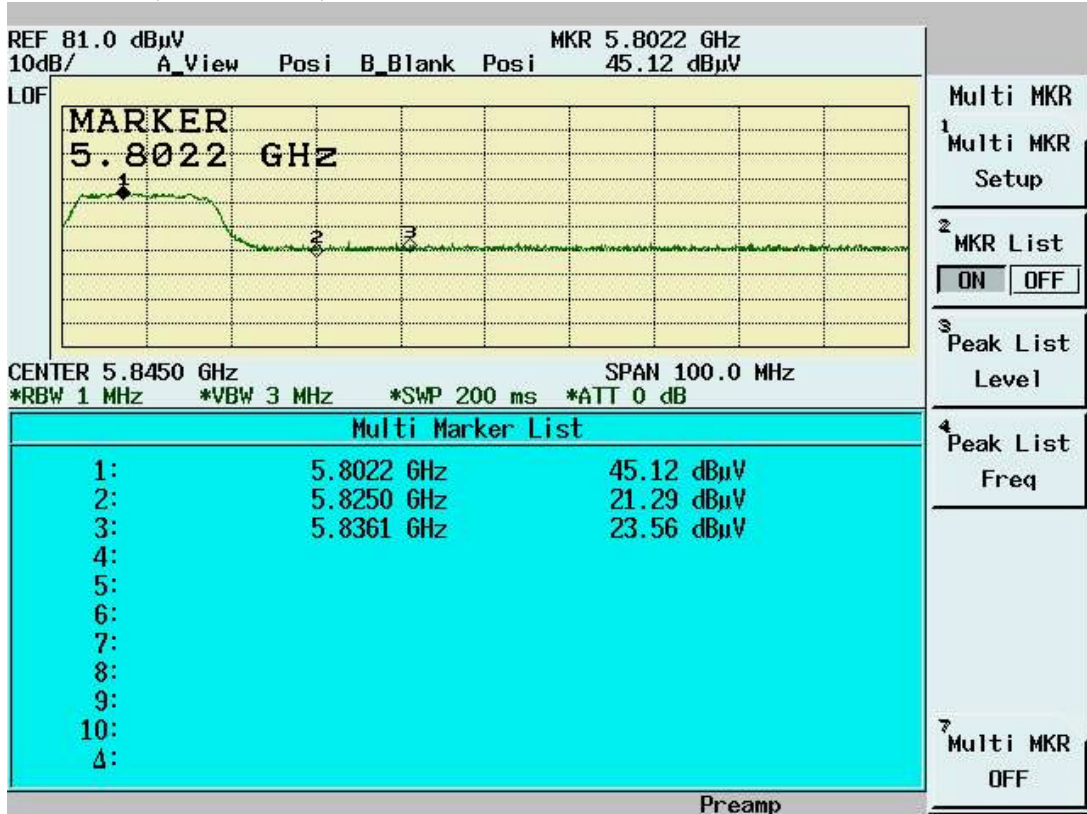
Normal Mode (Channel 9) Peak data



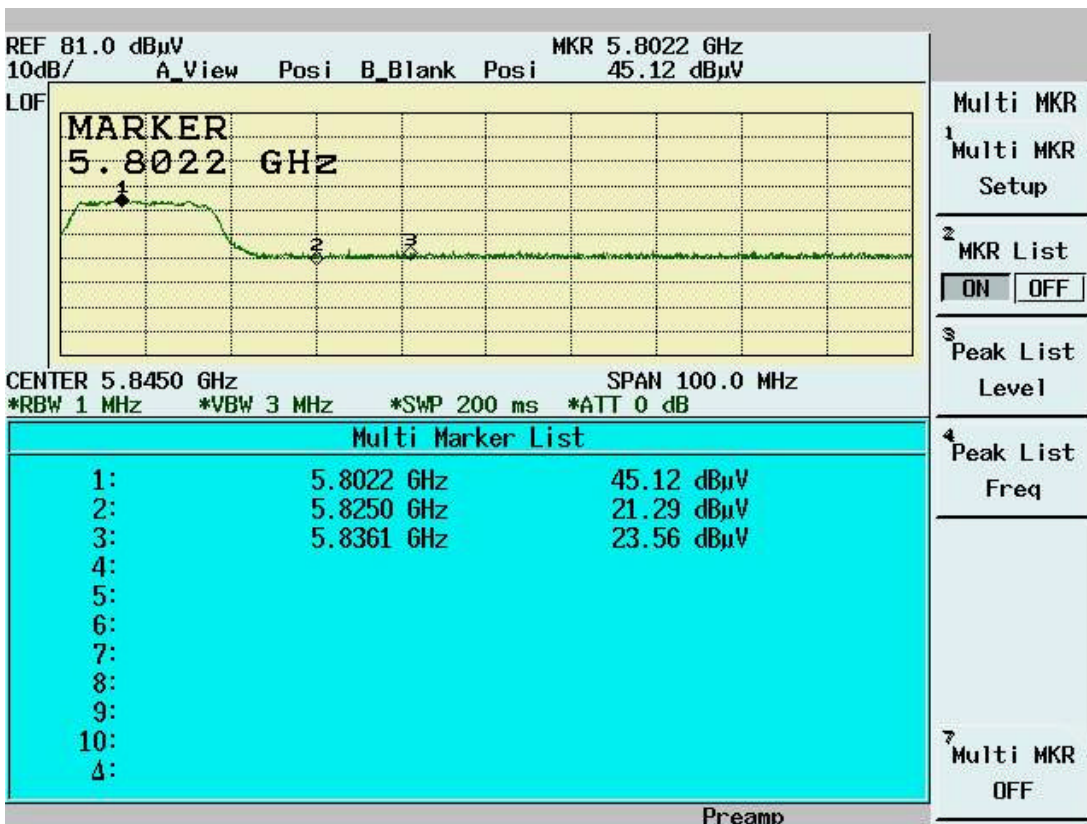
Normal Mode (Channel 9) Average Data



Normal Mode (Channel 12) Peak data



Normal Mode (Channel 12) Average Data



4.7 RF Exposure Measurement [Section 15.407(f)(4) & 1.1307(b)]

Refer to MPE Test Report

4.8 Frequency Stability [Section 15.407(g)]

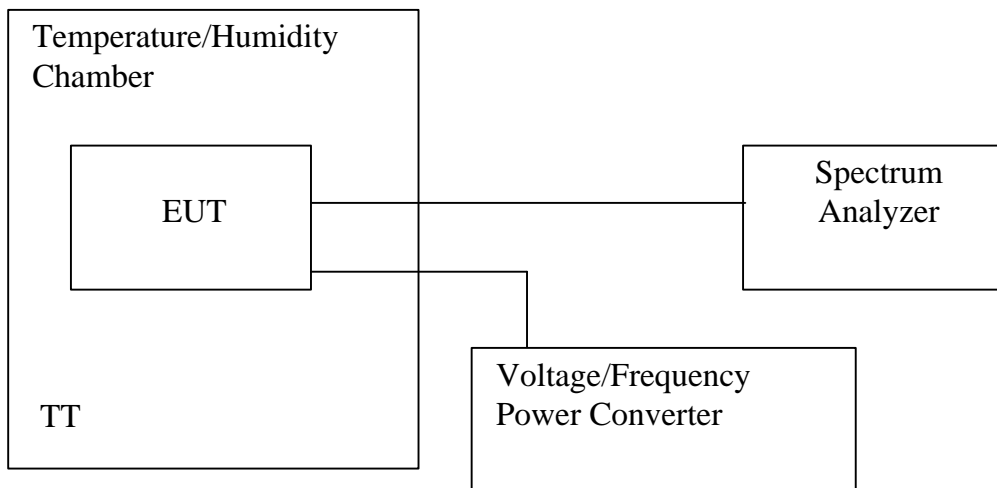
4.8.1 Limits of Frequency Stability Measurement

The frequency tolerance of the carrier sing shall be maintained within +/- 0.02% of the operating frequency over the operation temperature range of EUT (0⁰C~35⁰C), and variation in the primary supply voltage from 85% to 115% of the rated supply voltage (115V AC) at 20⁰C.

4.8.2 Test Procedure

1. The EUT was placed in the Temperature/Humidity Chamber and powered by a Voltage/Frequency Power converter.
2. Connect the RF output of EUT to Spectrum. Turn on the EUT.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the chamber temperature to stabilize. Turn the EUT on and measure the operating frequency after 2, 5, 10 minutes.
5. Set the Voltage/Frequency Power Converter to 85% and 115% of supply voltage, then repeat step 2, 3, 4 respectively.
6. Repeat step 2, 3, 4, 5 with the temperature of chamber set to the lowest temperature.
7. Repeat step 2, 3, 4, 5 with the temperature of chamber set to 20⁰C.

4.8.3 Test Setup



4.8.4 Test Data

Test Engineer:Mailes
Hsieh

Operating Frequency: 5180(Mhz)

Limit: +/- 0.02%

Temp. (°C)	Power Supply (V AC)	2 minutes		5 minutes		10 minutes	
		(MHz)	(%)	(MHz)	(%)	(MHz)	
35	132	5180.0018	0.0000	5180.0050	0.0001	5180.0208	0.0004
	115	5180.0050	0.0001	5180.0122	0.0002	5180.0212	0.0004
	97	5180.0036	0.0001	5180.0120	0.0002	5180.0013	0.0000
0	132	5180.0050	0.0001	5180.0155	0.0003	5180.0094	0.0002
	115	5180.0111	0.0002	5180.0233	0.0004	5180.0200	0.0004
	97	5180.0307	0.0006	5180.0193	0.0004	5180.0202	0.0004
20	132	5180.0043	0.0001	5180.0124	0.0002	5180.0087	0.0002
	115	5180.0108	0.0002	5180.0172	0.0003	5180.0121	0.0002
	97	5179.9932	-0.0001	5180.0249	0.0005	5179.9960	-0.0001

5. TEST RESULTS (802.11b)

5.1 Powerline Conducted Emissions [Section 15.207]

5.1.1 EUT Configuration

The conducted emission test setups are in accordance with Figs 9, 10(a) and 10(b) of ANSI C63.4-2001, CFR 47 Part 15 Subpart B; or EN55022:1994/ A1:1995/A2:1997; CISPR 22:1993/A1:1995/A2:1996.

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.

5.1.2 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.

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

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

5.1.4 Test Data:

Power Line Conducted Emissions (Hot) Channel 1, 6, 11

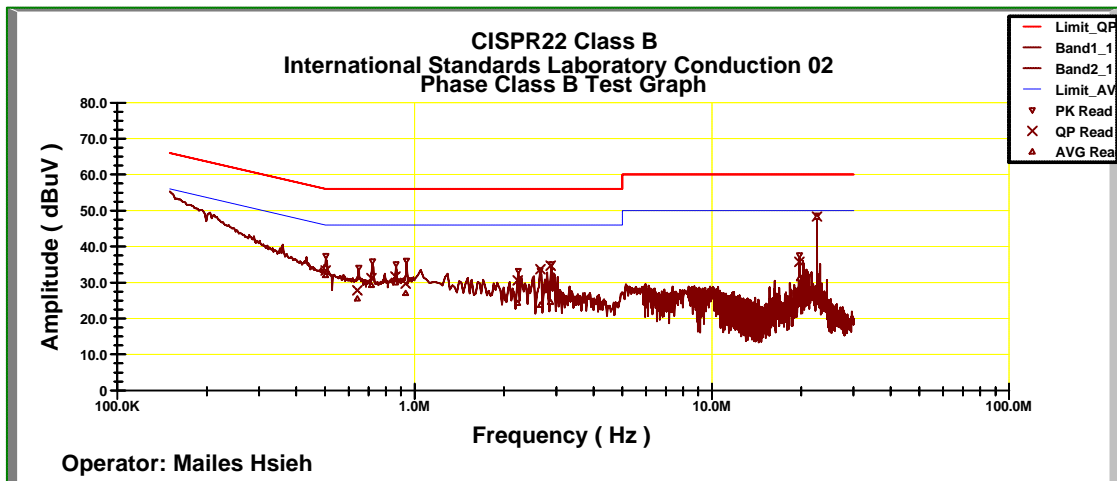
Operator:MailesHsieh

Temperature(C):25

12:22:40PM,Tuesday,May03,2005

Humidity(%):57

Frequency MHz	LISNLoss (dB)	CableLoss (dB)	QPCorrt. Amp.(dBuV)	QPLimit (dBuV)	QPMargin (dB)	AVECorrt. Amp.(dBuV)	AVELimit (dBuV)	AVEMargin (dB)
0.50148	0.12	0.07	33.31	56.00	-22.69	31.92	46.00	-14.08
0.64173	0.14	0.07	27.79	56.00	-28.21	25.48	46.00	-20.52
0.716	0.15	0.07	31.14	56.00	-24.86	29.21	46.00	-16.79
0.8614	0.18	0.07	31.63	56.00	-24.37	29.90	46.00	-16.10
0.93305	0.19	0.07	29.65	56.00	-26.35	26.94	46.00	-19.06
2.21976	0.20	0.10	30.53	56.00	-25.47	24.26	46.00	-21.74
2.64956	0.20	0.11	33.70	56.00	-22.30	23.72	46.00	-22.28
2.86506	0.20	0.11	34.66	56.00	-21.34	24.53	46.00	-21.47
19.7082	0.78	0.34	35.69	60.00	-24.31	31.07	50.00	-18.93
22.5695	0.85	0.33	48.32	60.00	-11.68	48.21	50.00	-1.79



Power Line Conducted Emissions (Neutral) Channel 1, 6, 11

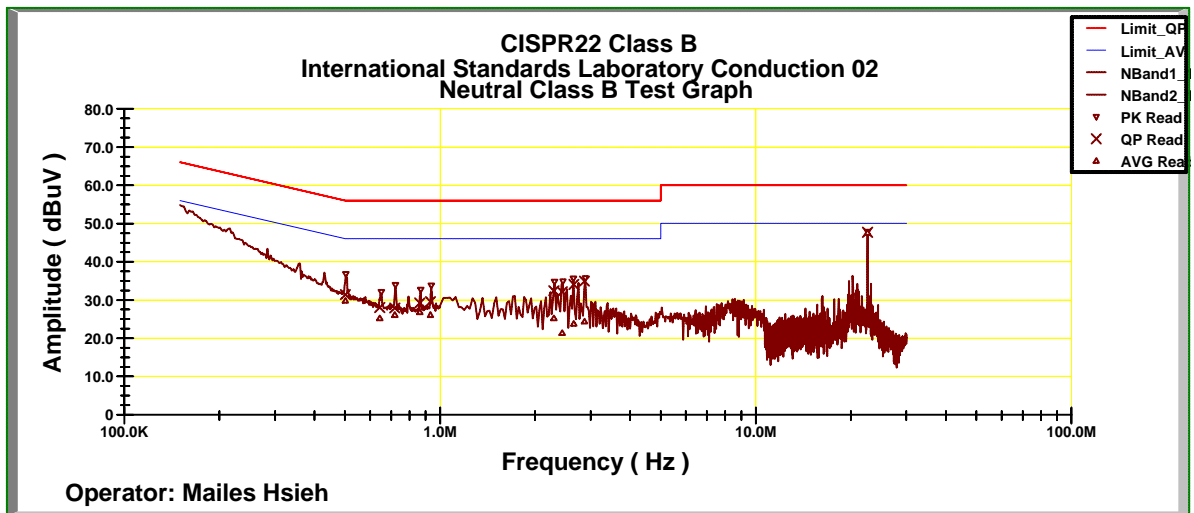
Operator:MailesHsieh

Temperature(C):25

12:32:07PM,Tuesday,May03,2005

Humidity(%):57

Frequency	LISNLoss	CableLoss	QPCorrt.	QPLimit	QPMargin	AVECorrt.	AVELimit	AVEMargin
MHz	(dB)	(dB)	Amp.(dBuV)	(dBuV)	(dB)	Amp.(dBuV)	(dBuV)	(dB)
0.50111	0.12	0.07	31.41	56.00	-24.59	29.79	46.00	-16.21
0.644	0.14	0.07	28.01	56.00	-27.99	25.18	46.00	-20.82
0.7187	0.15	0.07	27.88	56.00	-28.12	26.07	46.00	-19.93
0.86165	0.18	0.07	29.16	56.00	-26.84	26.79	46.00	-19.21
0.93216	0.19	0.07	29.56	56.00	-26.44	26.07	46.00	-19.93
2.2918	0.20	0.10	32.41	56.00	-23.59	25.16	46.00	-20.84
2.43456	0.20	0.10	32.14	56.00	-23.86	21.35	46.00	-24.65
2.65053	0.20	0.11	34.05	56.00	-21.95	23.73	46.00	-22.27
2.86483	0.20	0.11	34.91	56.00	-21.09	24.34	46.00	-21.66
22.5697	0.40	0.33	47.71	60.00	-12.29	47.55	50.00	-2.45



* NOTE: During the test, the EMI receiver was set to Max. Hold then switch the EUT Channel between 1, 6, 11 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

5.2 Bandwidth for DSSS [Section 15.247 (a)(2)]

5.2.1 Test Procedure

The Transmitter output of EUT was connected to the spectrum analyzer. The 6 dB bandwidth of the fundamental frequency was measured. The setting of spectrum analyzer is as follows

Equipment mode	Spectrum analyzer
Detector function	Peak mode
RBW	100KHz
VBW	100KHz

5.2.2 Test Setup



5.2.3 Test Data:

6dB Bandwidth

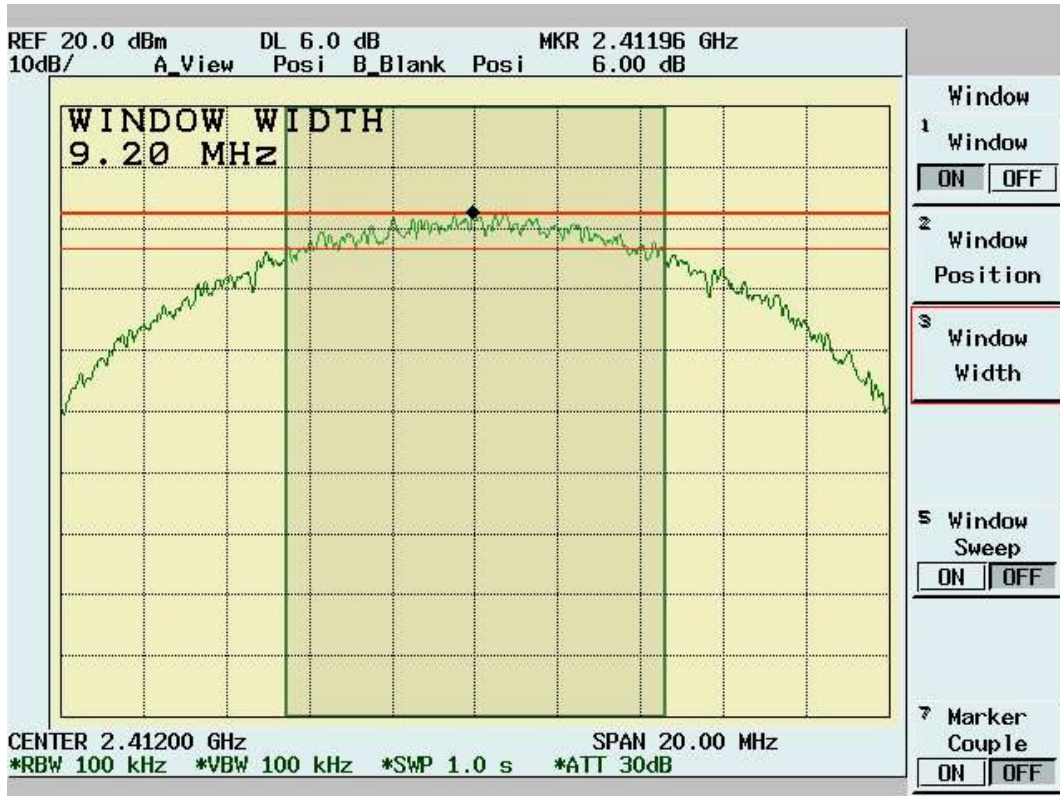
Temperature ():24

Humidity (%):54

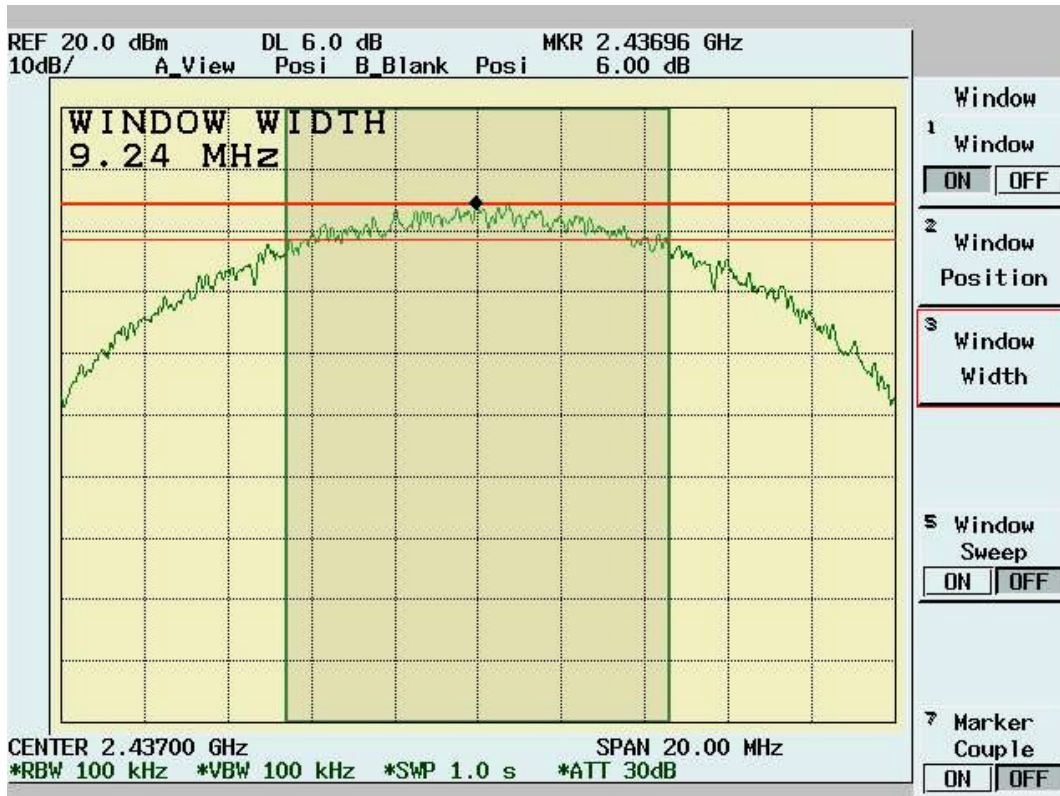
Test Engineer:Mailes Hsieh

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Pass/Fail
1	2412	9.20	0.5	Pass
6	2437	9.24	0.5	Pass
11	2462	9.20	0.5	Pass

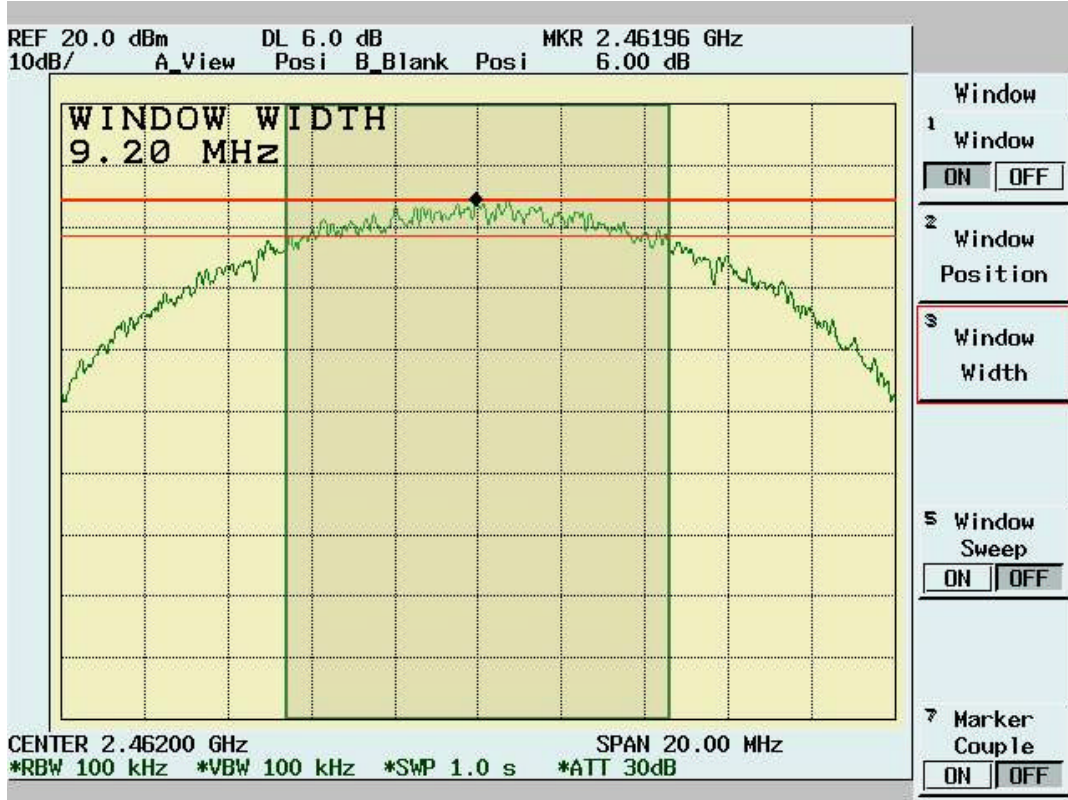
Channel 1:



Channel 6:



Channel 11:

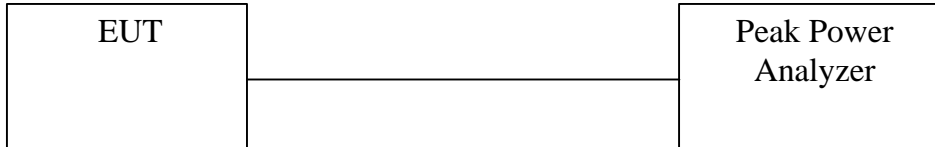


5.3 DSSS Maximum Peak Output Power [Section 15.247 (b)(1)]

5.3.1 Test Procedure

The Transmitter output of EUT was connected to the peak power analyzer.

5.3.2 Test Setup



5.3.3 Test Data

Maximum Peak Output Power

Temperature ():24

Test Engineer:Mailes Hsieh

Humidity (%):54

Channel	Frequency (Mhz)	Analyzer Reading (dBm)	Cable Loss (dB)	Peak Power Output (mW)	Peak Power Output (dBm)	Limit (dBm)	Pass/Fail
1	2412	17.10	1.10	66.07	18.20	30	Pass
6	2437	18.24	1.10	85.90	19.34	30	Pass
11	2462	18.58	1.10	92.90	19.68	30	Pass

Note: Two RF output(MAIN & AUX) have been test,the worse data shown above.

5.4 Radiated Emission Measurement [Section [15.247(c)(4)]

5.4.1 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.

5.4.2 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 – 25GHz: 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 *EMI Receiver/Spectrum Analyzer Configuration*.

For the test of 2nd to 10th harmonics frequencies , the equipment setup was also refer to *EMI Receiver/Spectrum Analyzer Configuration*. 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.

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

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

Frequency Range Tested:	1GHz – 25 GHz
Detector Function:	Peak Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	3MHz

Frequency Range Tested:	1GHz – 25 GHz
Detector Function:	Average Mode
Resolution Bandwidth (RBW):	1MHz
Video Bandwidth (VBW)	10 Hz

5.4.4 Test Data (30MHz – 1GHz):

30M – 1GHz Open Field Radiated Emissions (Horizontal) Channel 1, 6, 11

Operator:MailesHsieh

Temperature(C):24

Humidity(%):47

Frequency	RxAmp.	AntFact	CableLoss	PreAmpGain	Corrct.Emi.	Limit	Margin	Ant.Pos.	TablePos
MHz	(dBuV)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg)
231.76	23.23	9.21	2.95	0.00	35.39	46.00	-10.61	101.00	87.00
282.20	19.37	13.09	3.39	0.00	35.86	46.00	-10.14	101.00	54.00
306.45	18.27	13.69	3.68	0.00	35.64	46.00	-10.36	101.00	6.00
355.92	16.77	14.49	4.15	0.00	35.41	46.00	-10.59	101.00	349.00
364.65	21.14	14.77	4.20	0.00	40.11	46.00	-5.89	101.00	22.00
432.55	16.82	16.16	4.69	0.00	37.67	46.00	-8.33	101.00	22.00
629.46	7.07	18.96	6.15	0.00	32.18	46.00	-13.82	101.00	54.00
696.39	8.74	19.00	6.60	0.00	34.34	46.00	-11.66	101.00	333.00
766.23	3.98	20.10	7.07	0.00	31.15	46.00	-14.85	101.00	333.00
833.16	5.21	20.43	7.71	0.00	33.35	46.00	-12.65	101.00	22.00

30M – 1GHz Open Field Radiated Emissions (Vertical) Channel 1, 6, 11

Operator:MailesHsieh

Temperature(C):24

Humidity(%):47

Frequency	RxAmp.	AntFact	CableLoss	PreAmpGain	Corrct.Emi.	Limit	Margin	Ant.Pos.	TablePos
MHz	(dBuV)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg)
282.20	17.24	13.09	3.39	0.00	33.72	46.00	-12.28	101.00	348.00
366.59	24.28	14.83	4.22	0.00	43.33	46.00	-2.67	101.00	84.00
432.55	20.41	16.16	4.69	0.00	41.26	46.00	-4.74	101.00	17.00
544.10	11.20	18.65	5.49	0.00	35.33	46.00	-10.67	101.00	299.00
566.41	10.32	18.83	5.65	0.00	34.81	46.00	-11.19	101.00	133.00
629.46	14.88	18.96	6.15	0.00	40.00	46.00	-6.00	101.00	348.00
686.69	10.55	19.00	6.53	0.00	36.08	46.00	-9.92	101.00	315.00
699.30	14.03	19.00	6.62	0.00	39.65	46.00	-6.35	101.00	315.00
715.79	8.05	19.35	6.76	0.00	34.16	46.00	-11.84	101.00	348.00
830.25	7.51	20.40	7.70	0.00	35.61	46.00	-10.39	101.00	315.00

NOTE:

During the Pre-test, the EUT has been tested for Channel 1, 6, 11 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

5.4.5 Test Data (1GHz – 25 GHz) .

1GHz~ 25 GHz (Horizontal), Channel 1: 2412 MHz

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1359.64	50.60pk	26.15	2.21	34.12	44.84pk	54.00av	-9.16	101	87
1399.60	51.81pk	26.34	2.22	34.15	46.22pk	54.00av	-7.78	101	84
2488.51	48.09pk	30.90	1.42	35.20	45.21pk	54.00av	-8.79	101	196
3357.64	49.42pk	31.39	1.64	35.53	46.91pk	54.00av	-7.09	103	265
6426.57	46.20pk	36.31	3.36	37.73	48.13pk	54.00av	-5.87	100	211

1GHz~ 25 GHz (Vertical), Channel 1: 2412 MHz

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1064.94	54.80pk	24.80	2.18	33.97	47.81pk	54.00av	-6.19	102	108
1362.14	50.14pk	26.17	2.21	34.13	44.39pk	54.00av	-9.61	101	87
1841.66	49.18pk	29.67	2.48	34.87	46.46pk	54.00av	-7.54	100	54
2488.51	48.40pk	30.90	1.42	35.20	45.52pk	54.00av	-8.48	101	196
4872.01	47.51pk	35.55	2.17	37.89	47.33pk	54.00av	-6.67	100	1
6426.57	48.80pk	36.31	3.36	37.73	50.74pk	54.00av	-3.26	100	211

Note:

- ⚡ According to ANSI C63.4-2001 8.3.1.2 Notes(1):Where limits are specified by agencies for both average and peak (or quasi-peak) detection , if the peak (or quasi-peak) measured value complies with the average limit , it is unnecessary to perform an average measurement.
- ⚡ “ * ”: Fundamental Frequency
- ⚡ “***”: Not in the restricted band, Limit level=Fundamental Emission-20dB
- ⚡ “ pk” : peak mode
- ⚡ “ av” : average mode
- ⚡ “ --- “: No meter reading data due to the emission level is smaller than spectrum noise level.
- ⚡ 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 25 GHz have been tested.

1GHz~ 25 GHz (Horizontal) , Channel 6 : 2437 MHz

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1064.94	52.23pk	24.80	2.18	33.97	45.24pk	54.00av	-8.76	102	108
1399.6	050.76pk	26.34	2.22	34.15	45.17pk	54.00av	-8.83	101	84
2488.51	47.45pk	30.90	1.42	35.20	44.57pk	54.00av	-9.43	101	196
3357.64	49.52pk	31.39	1.64	35.53	47.02pk	54.00av	-6.98	103	265
6493.01	49.39pk	36.39	3.40	37.68	51.50pk	54.00av	-2.50	100	199

1GHz~ 25 GHz (Vertical), Channel 6 : 2437 MHz

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1329.67	50.63pk	26.02	2.21	34.11	44.74pk	54.00av	-9.26	101	89
1399.60	51.65pk	26.34	2.22	34.15	46.06pk	54.00av	-7.94	101	84
1841.66	49.84pk	29.67	2.48	34.87	47.13pk	54.00av	-6.87	100	54
2491.01	47.98pk	30.90	1.41	35.20	45.09pk	54.00av	-8.91	101	197
4972.03	46.78pk	35.49	2.16	37.88	46.56pk	54.00av	-7.44	100	3
6493.01	50.41pk	36.39	3.40	37.68	52.52pk	54.00av	-1.48	100	199

Note:

- ⚡ According to ANSI C63.4-2001 8.3.1.2 Notes(1):Where limits are specified by agencies for both average and peak (or quasi-peak) detection , if the peak (or quasi-peak) measured value complies with the average limit , it is unnecessary to perform an average measurement.
- ⚡ “ * ”: Fundamental Frequency
- ⚡ “***”: Not in the restricted band, Limit level=Fundamental Emission-20dB
- ⚡ “ pk”: peak mode
- ⚡ “av”: average mode
- ⚡ “---“: No meter reading data due to the emission level is smaller than spectrum noise level.
- ⚡ 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 25 GHz have been tested.

1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1397.10	50.01pk	26.33	2.22	34.14	44.41pk	54.00av	-9.59	101	85
1794.21	46.38pk	29.27	2.45	34.78	43.32pk	54.00av	-10.68	100	57
2496.00	48.18pk	30.90	1.38	35.20	45.26pk	54.00av	-8.74	101	199
3357.64	49.24pk	31.39	1.64	35.53	46.73pk	54.00av	-7.27	103	265
6562.94	46.20pk	36.74	3.36	37.62	48.69pk	54.00av	-5.31	101	187

1GHz~ 25 GHz (Vertical), Channel 11 : 2462 MHz

Operator:MailesHsieh

RBW:1MHz
Humidity(%):47
Temperature(C):26

Frequency MHz	Rx_R. dBuV	Ant_F. dB/m	Cab_L. dB	PreAmpl dB	Emission dBuV/m	Limit dBuV/m	Margin dB	A.Tower cm	T.Table deg
1062.44	52.77pk	24.79	2.18	33.96	45.77pk	54.00av	-8.23	102	108
1399.60	52.01pk	26.34	2.22	34.15	46.42pk	54.00av	-7.58	101	84
1841.66	48.97pk	29.67	2.48	34.87	46.25pk	54.00av	-7.75	100	54
2491.01	48.91pk	30.90	1.41	35.20	46.02pk	54.00av	-7.98	101	197
4989.51	46.77pk	35.56	2.17	37.90	46.59pk	54.00av	-7.41	100	1
6559.44	49.02pk	36.72	3.36	37.62	51.49pk	54.00av	-2.51	101	187

Note:

- ⚡ According to ANSI C63.4-2001 8.3.1.2 Notes(1):Where limits are specified by agencies for both average and peak (or quasi-peak) detection , if the peak (or quasi-peak) measured value complies with the average limit , it is unnecessary to perform an average measurement.
- ⚡ “ * ”: Fundamental Frequency
- ⚡ “***”: Not in the restricted band, Limit level=Fundamental Emission-20dB
- ⚡ “ pk”: peak mode
- ⚡ “av”: average mode
- ⚡ “---“: No meter reading data due to the emission level is smaller than spectrum noise level.
- ⚡ 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 25 GHz have been tested.

5.5 Band Edge Measurement

5.5.1 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: 100KHz
 VBW: 100KHz
 Center frequency: 2.4GHz, 2.4835GHz.
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

5.5.2 Test Setup (Conducted)



5.5.3 Test Data:

Table: Band Edge measurement (Conducted)

Temperature ():24

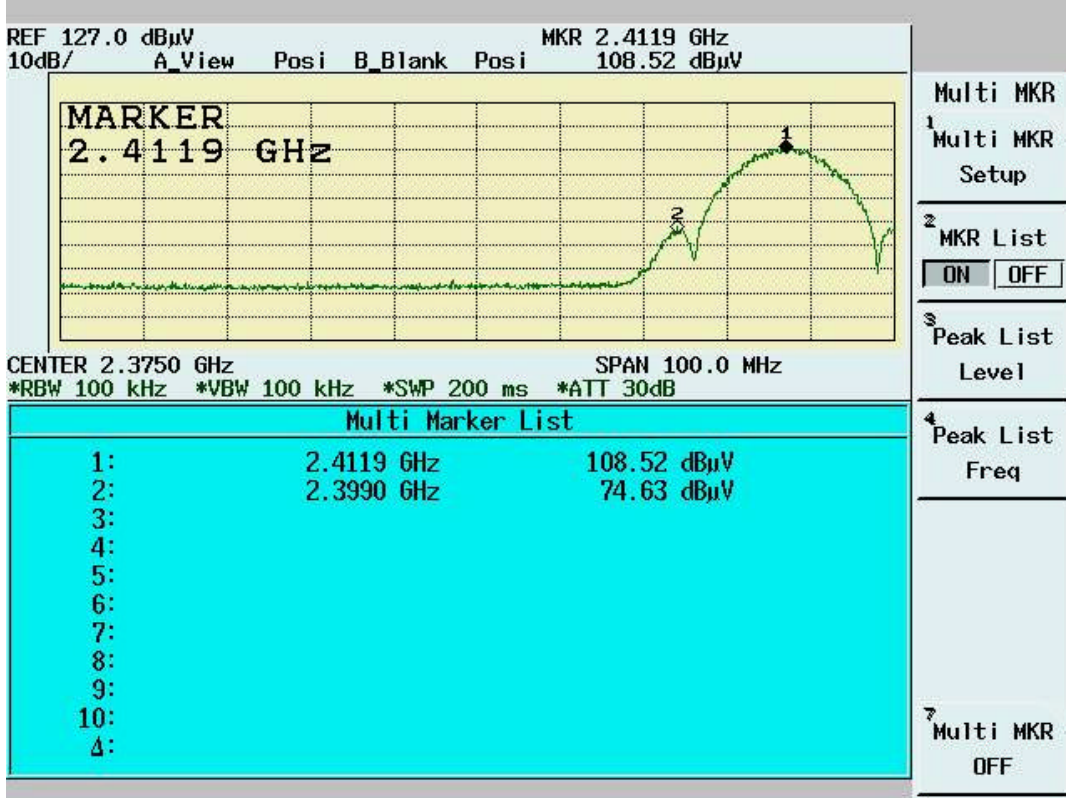
Test Engineer:Mailes Hsieh

Humidity (%):54

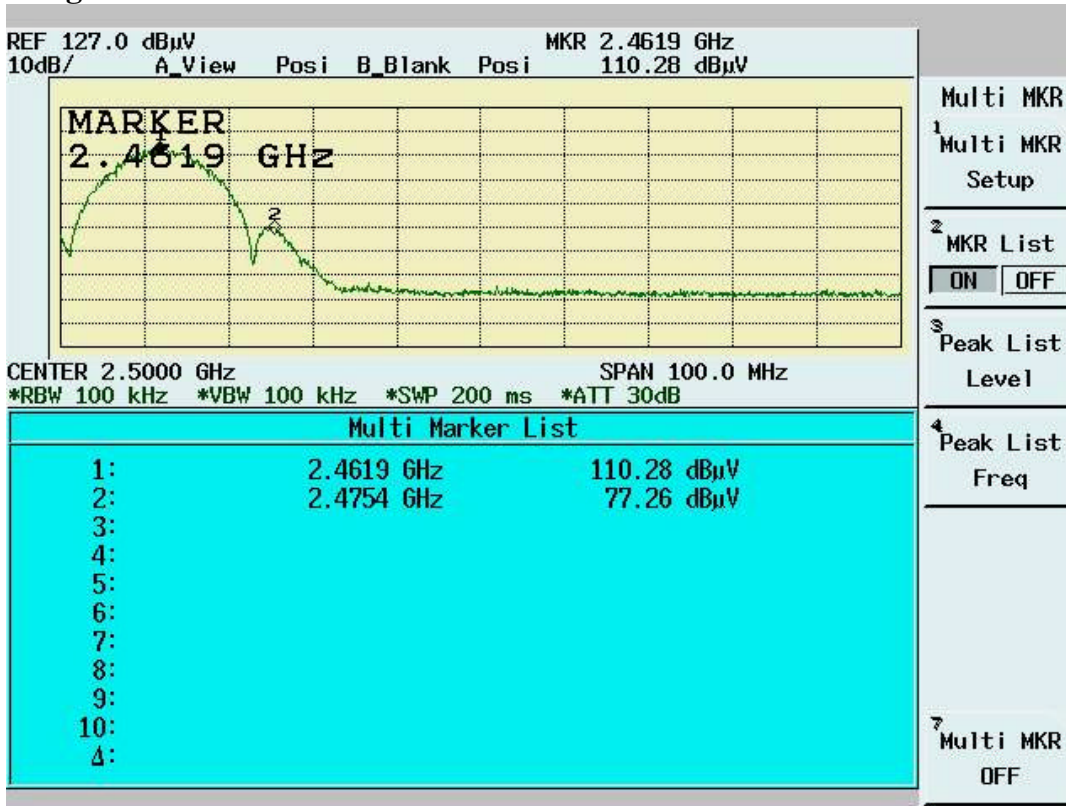
Channel	Frequency (MHz)	Spectrum Reading (dBuV)	Carrier - Outsideband Limit: >20dB (dB)	Pass/Fail
1	2411.9	108.52	---	---
Outside band	2399.0	74.63	33.89	Pass
11	2461.9	110.28	---	---
Outside band	2475.4	77.26	33.02	Pass

Note: Two RF output(MAIN & AUX) have been test,the worse data shown above.

Band Edge Conducted measurement



Band Edge Conducted Measurement



5.5.4 Test Procedure (Radiated)

1. Antenna and Turntable test procedure same as Radiated Emission Measurement.
Equipment mode: Spectrum analyzer
Detector function: Peak mode
SPAN: 100MHz
RBW: 1MHz
VBW: 3MHz
Center frequency: 2.395GHz, 2.48GHz.
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. For peak frequency emission level measurement in Restricted Band ,
Change RBW: 1MHz
VBW: 10Hz
Span: 100MHz.
5. Get the spectrum reading after Maximum Hold function is completed.

5.5.5 Test Setup (Radiated)

Same as *Radiated Emission Measurement*