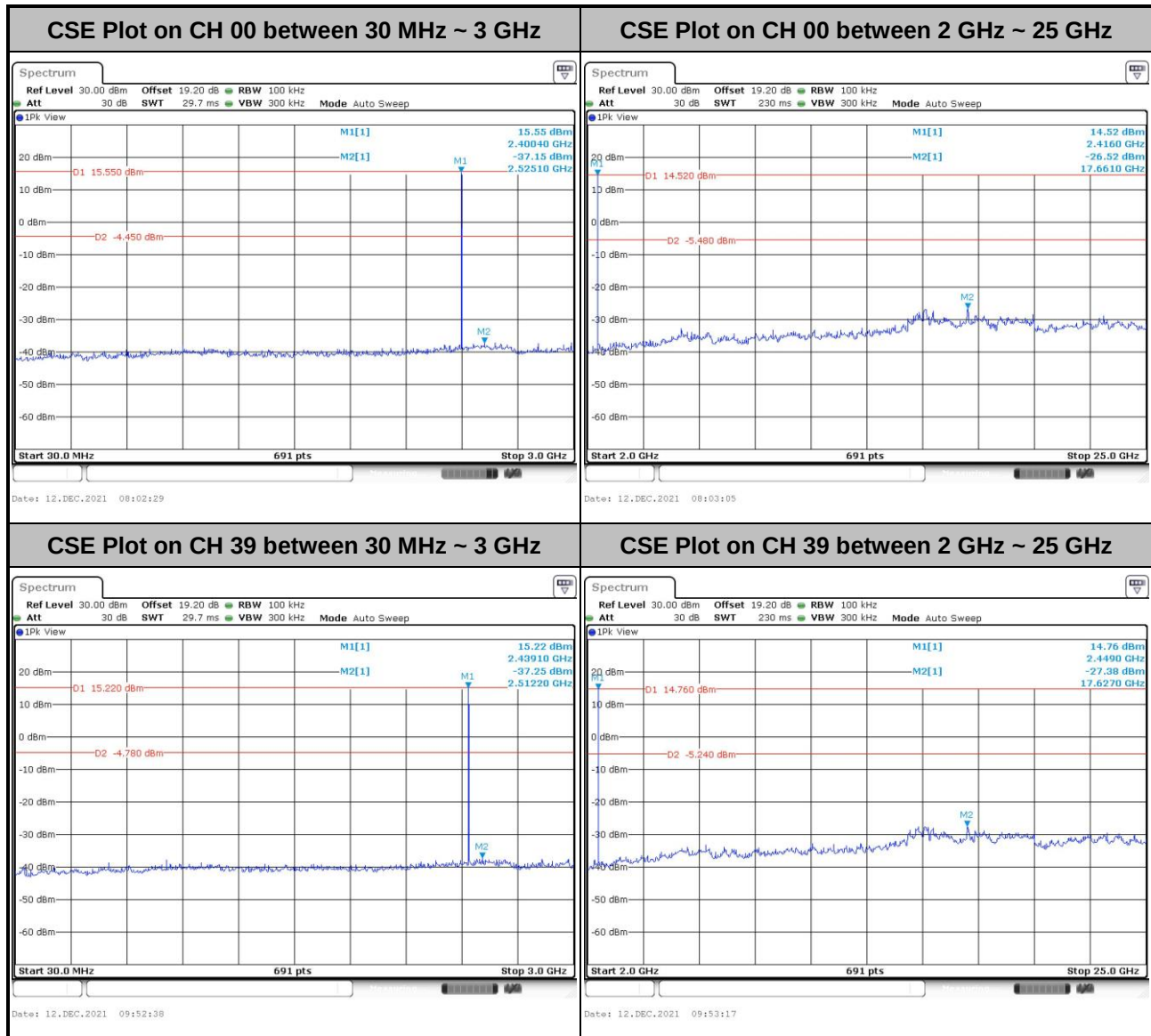
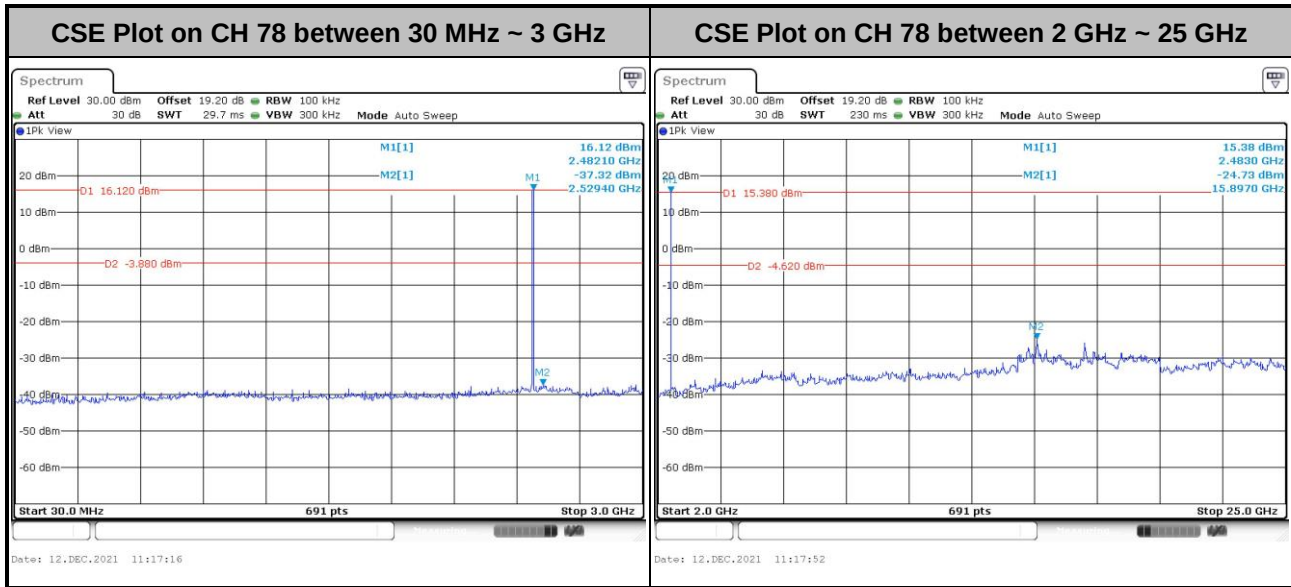




MIMO <Ant. 4>

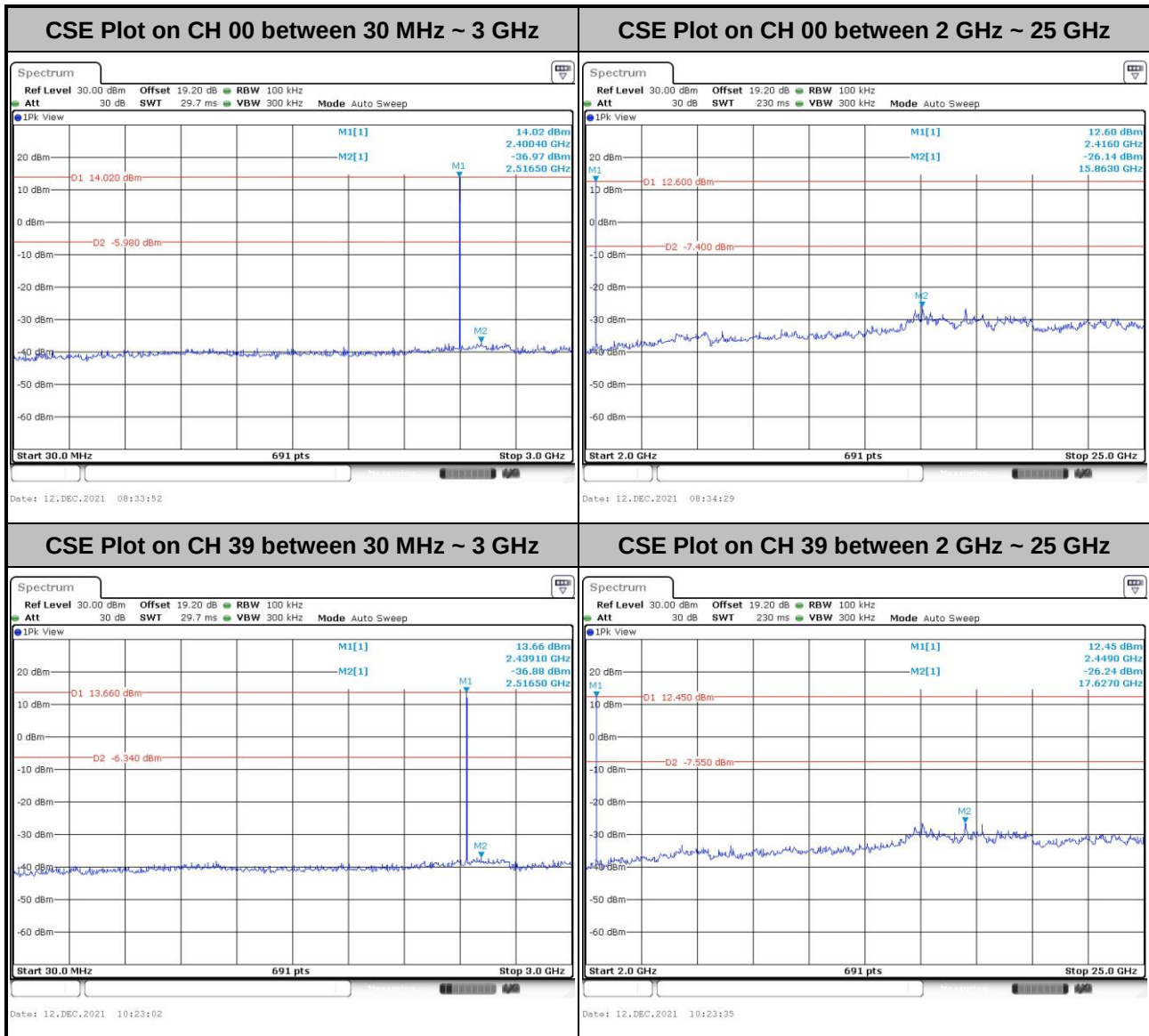
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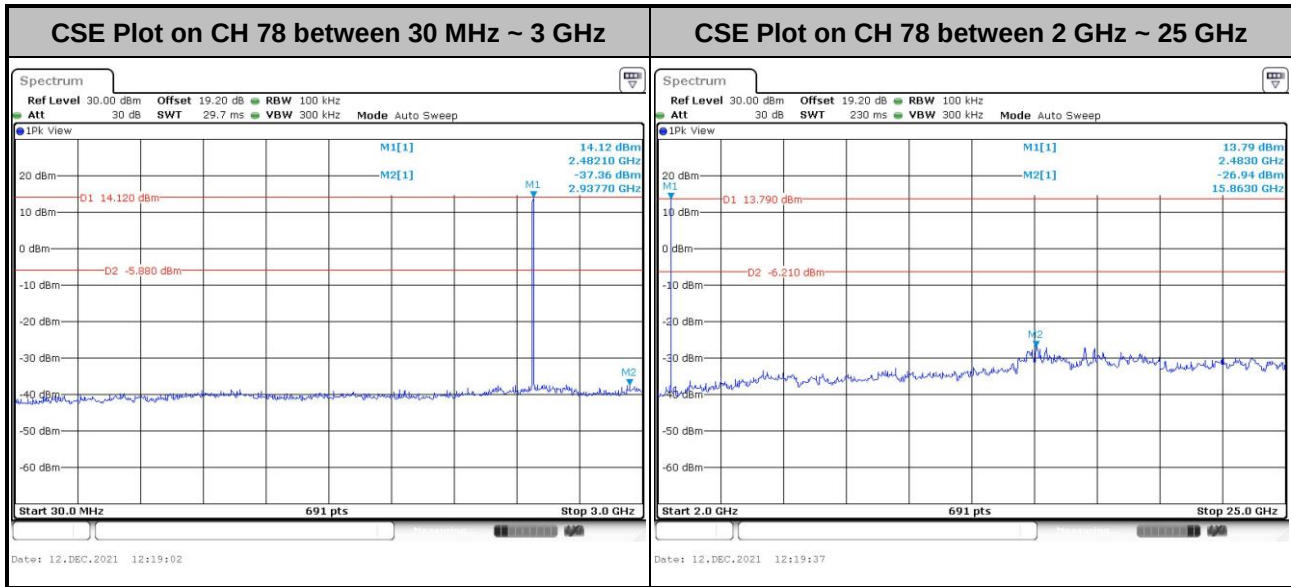






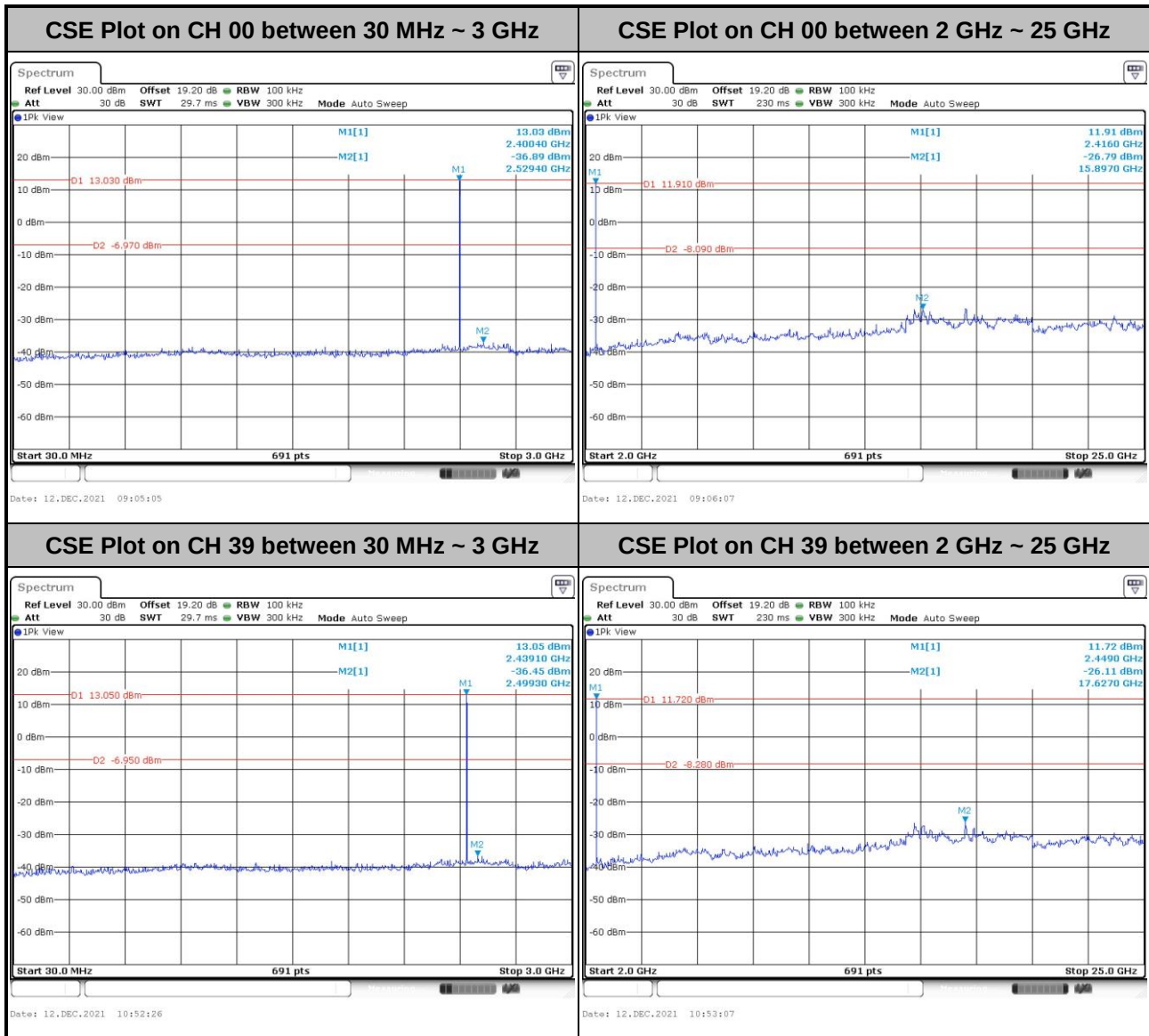
<2Mbps>

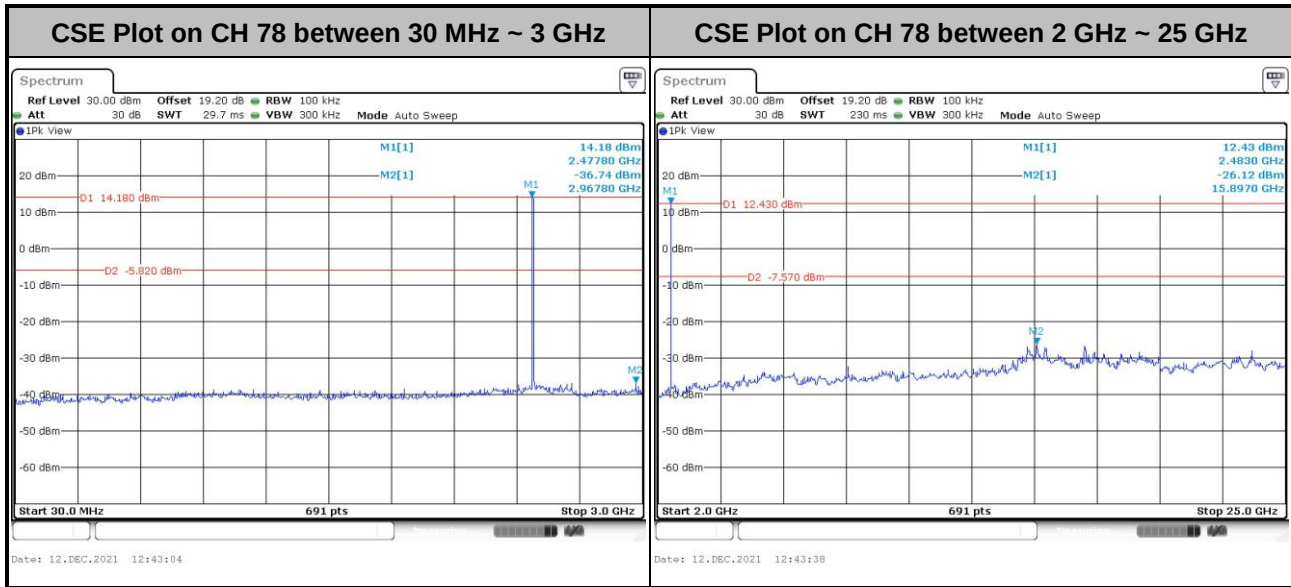






<3Mbps>

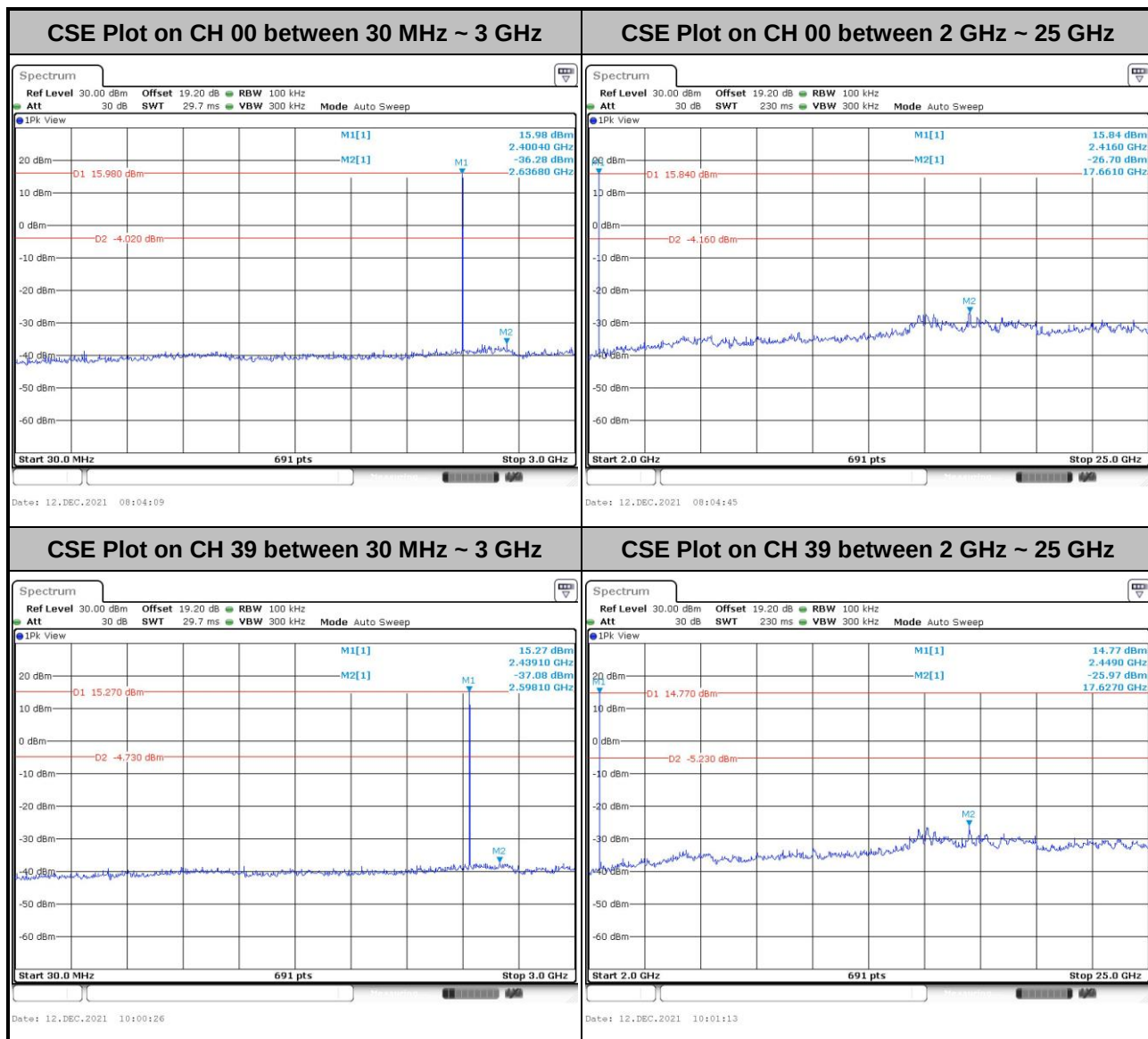


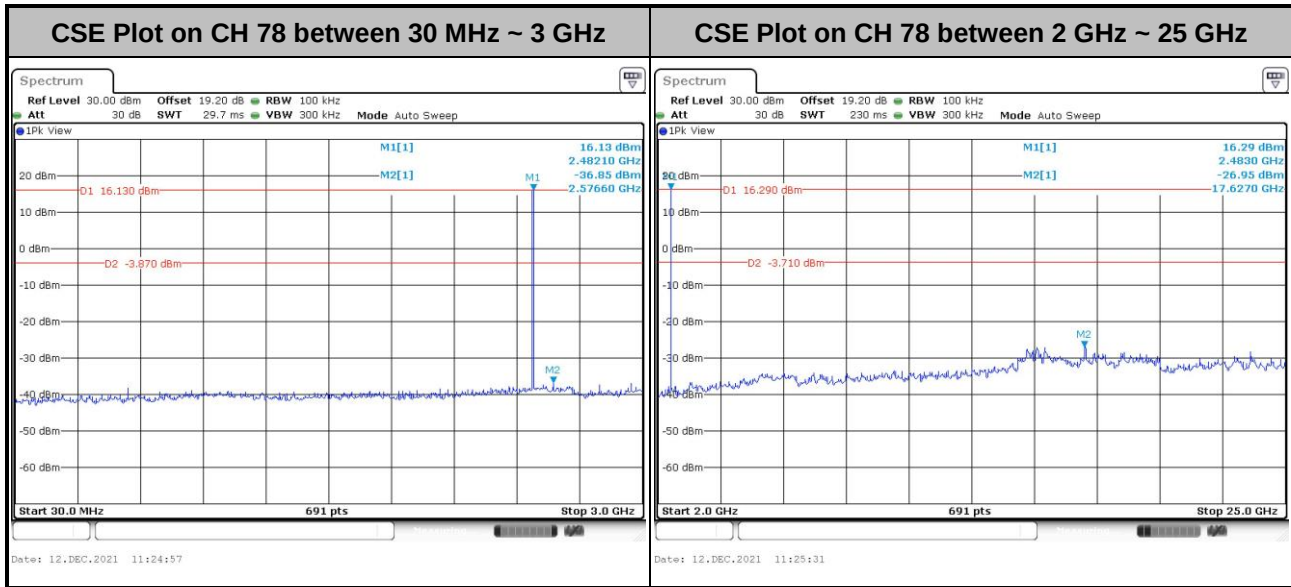




MIMO <Ant. 3>

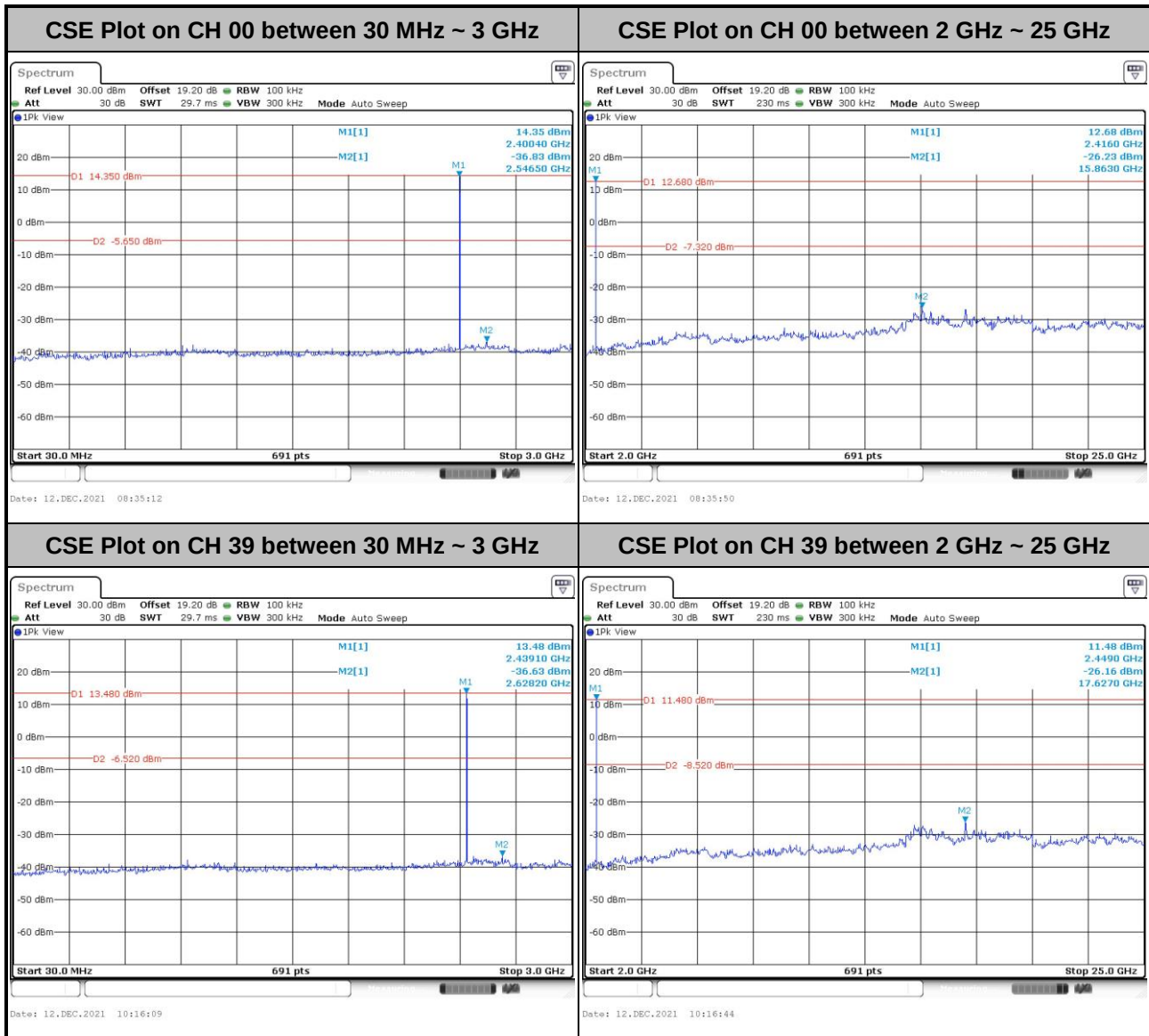
<1Mbps>

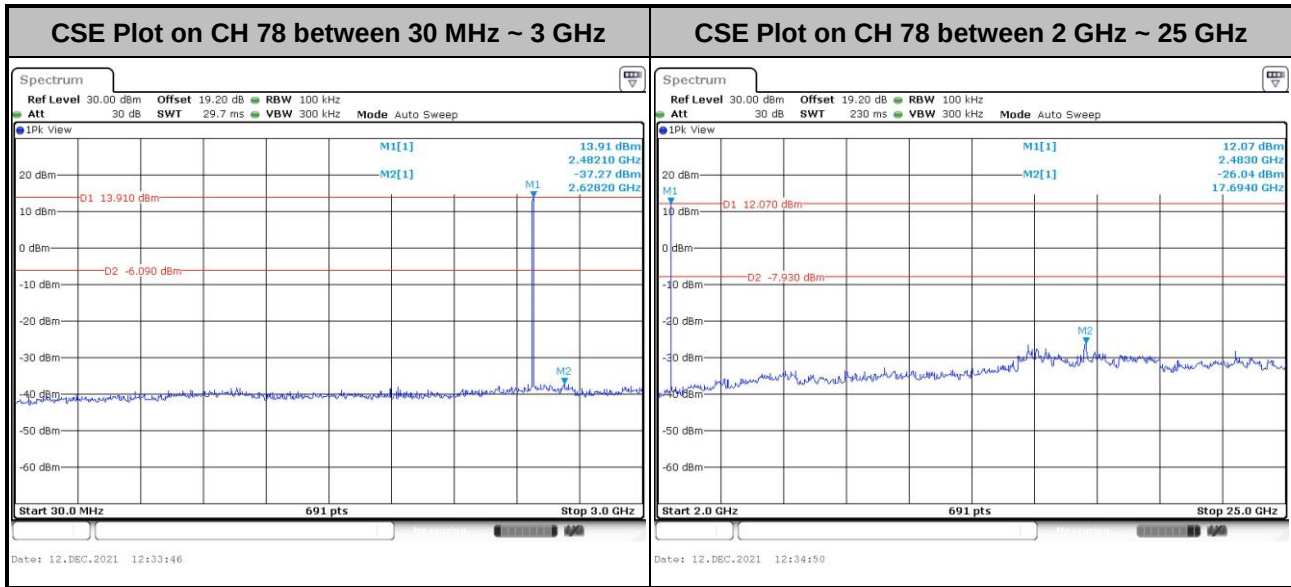






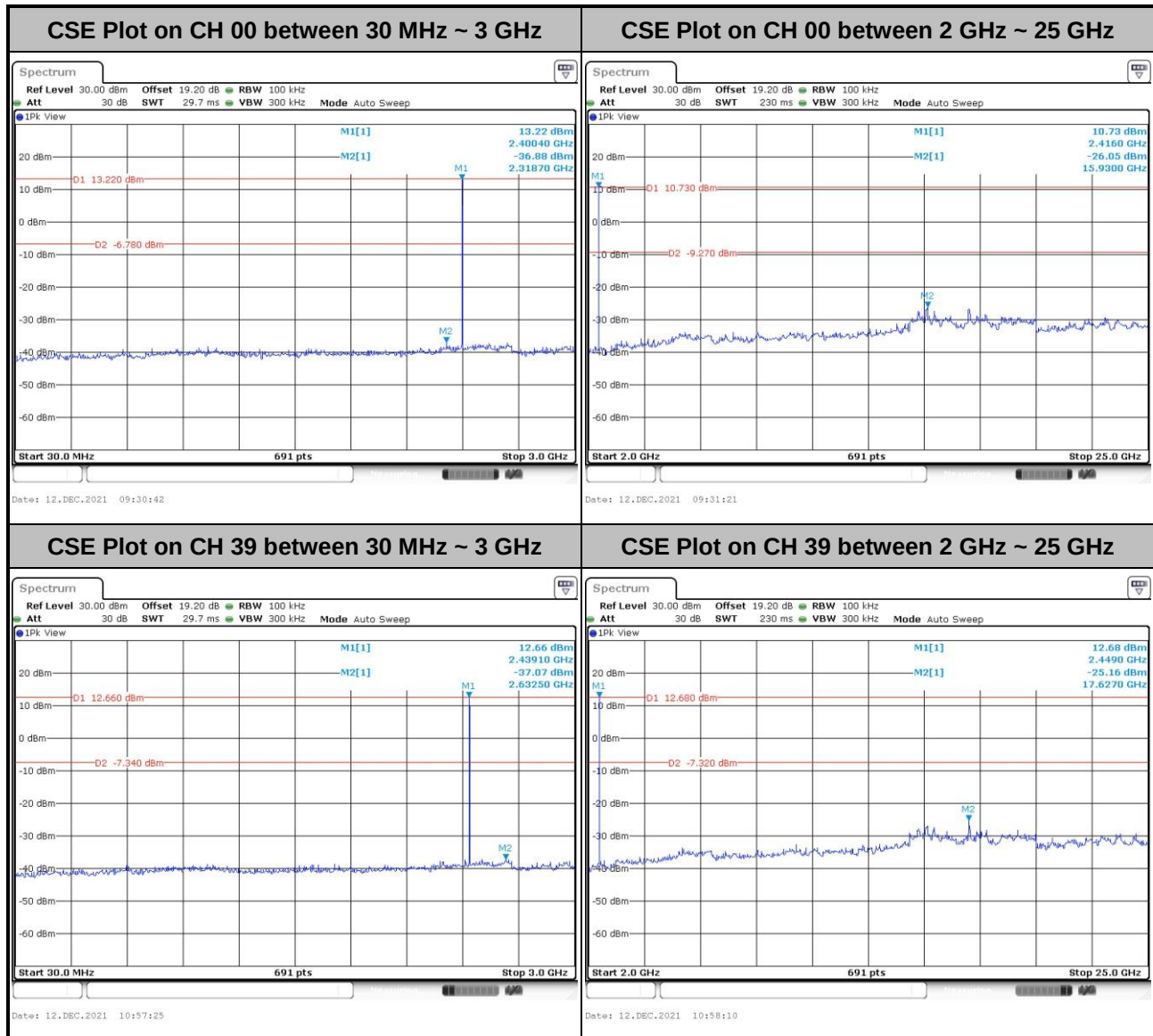
<2Mbps>

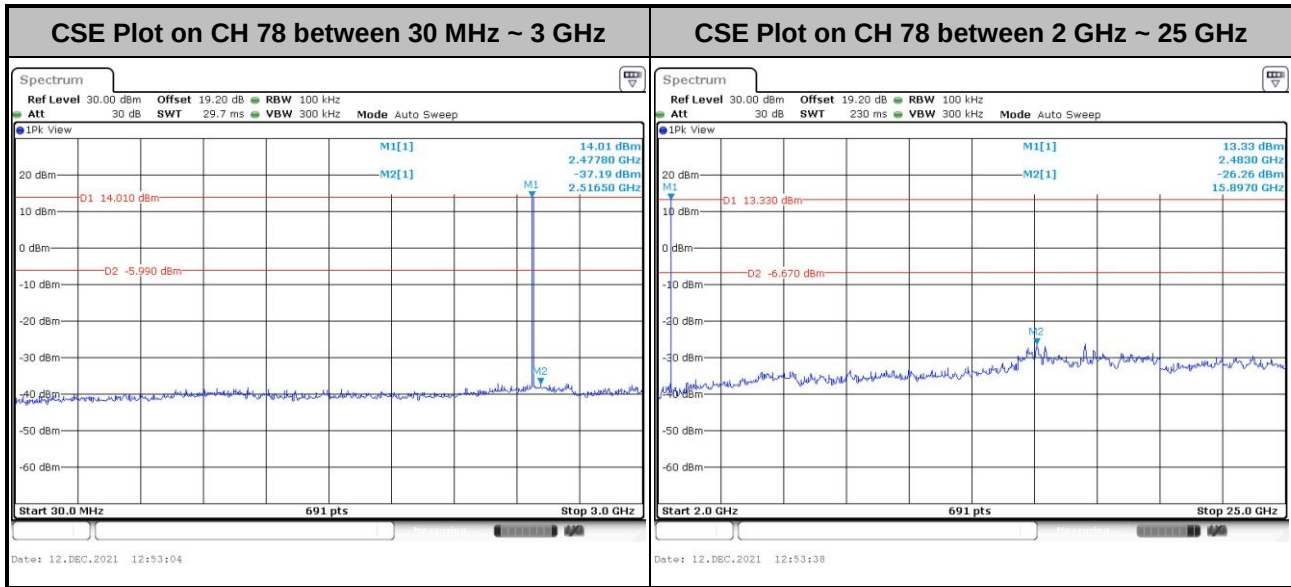






<3Mbps>





3.8 Radiated Band Edges and Spurious Emission Measurement

3.8.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics / spurious must be at least 20 dB below the highest emission level within the authorized band. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.8.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.



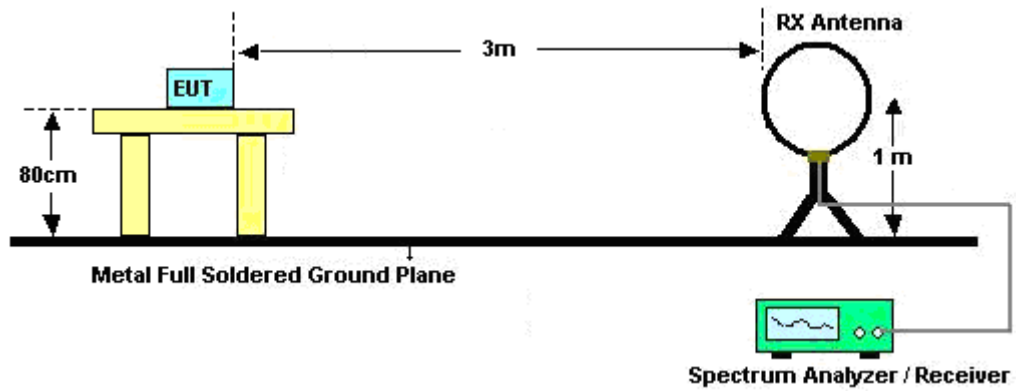
3.8.3 Test Procedures

1. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
2. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
3. For each suspected emission, the EUT is arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
4. Set the maximum power setting and enable the EUT to transmit continuously.
5. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW = 100 kHz for $f < 1$ GHz, RBW = 1 MHz for $f > 1$ GHz ; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak
 - (3) For average measurement: use duty cycle correction factor method per 15.35(c).
Duty cycle = On time/100 milliseconds
On time = $N_1 * L_1 + N_2 * L_2 + \dots + N_{n-1} * L_{n-1} + N_n * L_n$
Where N_1 is number of type 1 pulses, L_1 is length of type 1 pulses, etc.
Average Emission Level = Peak Emission Level + $20 * \log$ (Duty cycle)
6. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
7. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-”.
8. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.

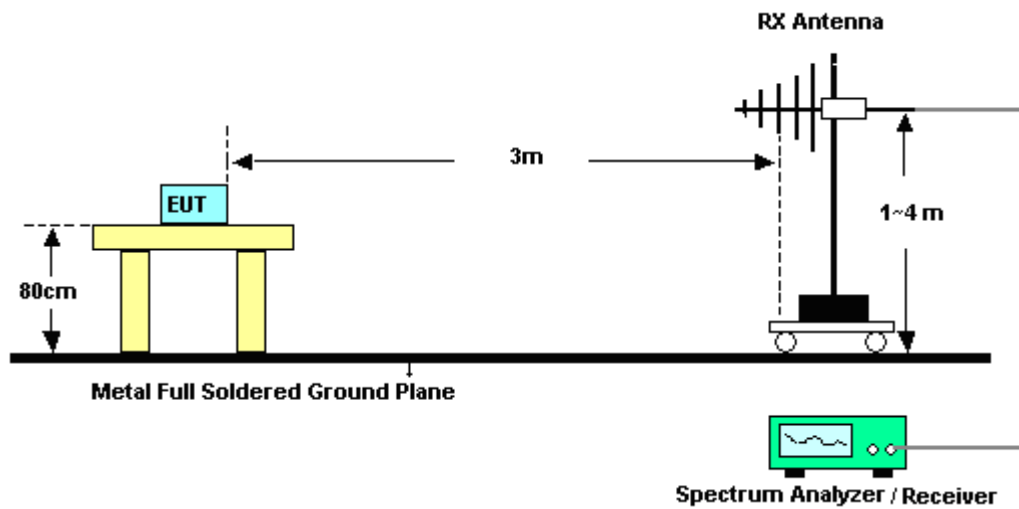
Note: The average levels are calculated from the peak level corrected with duty cycle correction factor (-24.76dB) derived from $20 \log$ (dwell time/100ms). This correction is only for signals that hop with the fundamental signal, such as band-edge and harmonic. Other spurious signals that are independent of the hopping signal would not use this correction.

3.8.4 Test Setup

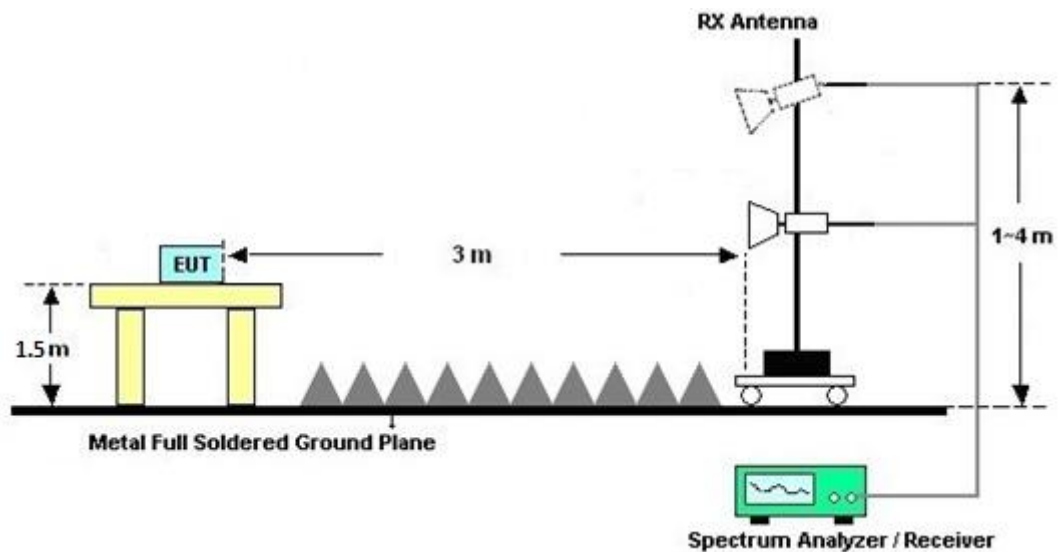
For radiated test below 30MHz



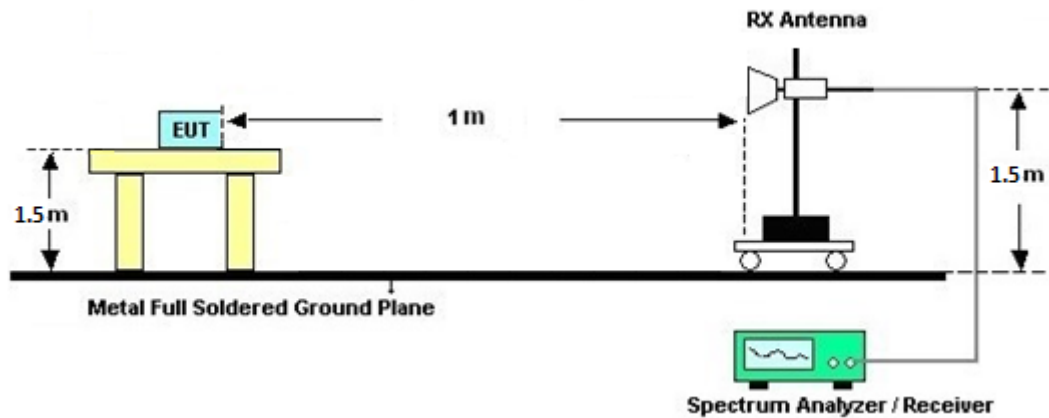
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.8.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

3.8.6 Test Results of Radiated Spurious Emissions (above 18 GHz)

For frequency above 18GHz, the pre-scanned result is 20dB lower than the limit line is not reported.

3.8.7 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.8.8 Duty Cycle

Please refer to Appendix E.

3.8.9 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.9 AC Conducted Emission Measurement

3.9.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

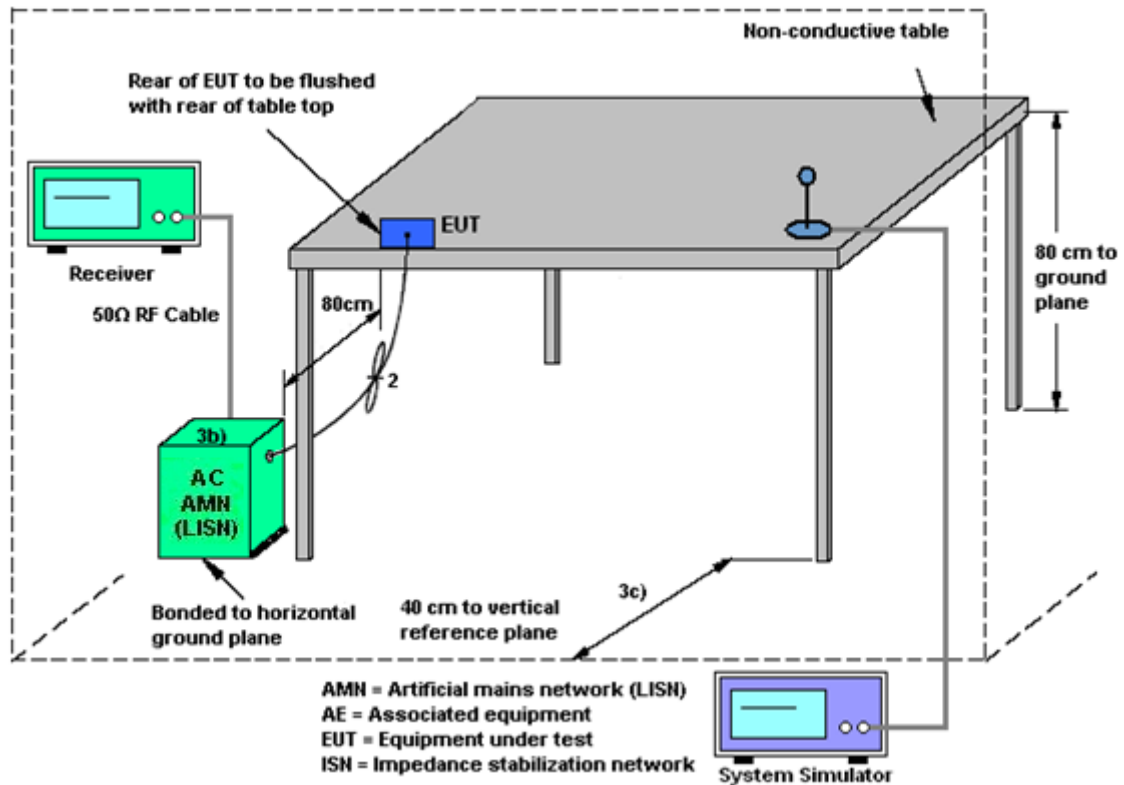
3.9.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.9.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.9.4 Test Setup



3.9.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.10 Antenna Requirements

3.10.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.10.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.10.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 07, 2021	Nov. 25, 2021~ Dec. 15, 2021	Sep. 06, 2022	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N -06	47020 & 06	30MHz to 1GHz	Oct. 09, 2021	Nov. 25, 2021~ Dec. 15, 2021	Oct. 08, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1522	1G~18GHz	Oct. 12, 2021	Nov. 25, 2021~ Dec. 15, 2021	Oct. 11, 2022	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	00991	18GHz ~40GHz	May 12, 2021	Nov. 25, 2021~ Dec. 15, 2021	May 11, 2022	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1G	Jul. 05, 2021	Nov. 25, 2021~ Dec. 15, 2021	Jul. 04, 2022	Radiation (03CH16-HY)
Amplifier	Jet-Power	JPA0118-55-30 3	17100018000 54001	1-18GHz	Jun. 16, 2021	Nov. 25, 2021~ Dec. 15, 2021	Jun. 15, 2022	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2020	Nov. 25, 2021~ Dec. 15, 2021	Jun. 21, 2021	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 10, 2020	Nov. 25, 2021~ Dec. 08, 2021	Dec. 09, 2021	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 09, 2021	Dec. 09, 2021~ Dec. 15, 2021	Dec. 08, 2022	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY57290111	3Hz~26.5GHz	Dec. 11, 2020	Nov. 25, 2021~ Dec. 09, 2021	Dec. 10, 2021	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY59053012	3Hz~26.5GHz	Nov. 18, 2021	Dec. 09, 2021~ Dec. 15, 2021	Nov. 17, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11680/4P E	NA	Aug. 28, 2021	Nov. 25, 2021~ Dec. 15, 2021	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11688/4P E	NA	Aug. 28, 2021	Nov. 25, 2021~ Dec. 15, 2021	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-5 757	NA	Aug. 28, 2021	Nov. 25, 2021~ Dec. 15, 2021	Aug. 27, 2022	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Nov. 25, 2021~ Dec. 15, 2021	N/A	Radiation (03CH16-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Nov. 25, 2021~ Dec. 15, 2021	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Nov. 25, 2021~ Dec. 15, 2021	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Nov. 25, 2021~ Dec. 15, 2021	N/A	Radiation (03CH16-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 16, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Nov. 16, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	TECPEL	DTM-303A	TP201973	N/A	Oct. 22, 2021	Nov. 16, 2021	Oct. 21, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 01, 2020	Nov. 16, 2021	Nov. 30, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Nov. 16, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Nov. 16, 2021	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Nov. 16, 2021	Dec. 30, 2021	Conduction (CO05-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Nov. 24, 2021~Dec. 13, 2021	Nov. 15, 2022	Conducted (TH05-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Jan. 14, 2021	Nov. 24, 2021~Dec. 13, 2021	Jan. 13, 2022	Conducted (TH05-HY)
Power Sensor	Agilent	E9327A	US40441548	50MHz~18GHz	Jan. 14, 2021	Nov. 24, 2021~Dec. 13, 2021	Jan. 13, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Nov. 24, 2021~Dec. 13, 2021	Aug. 29, 2022	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW191204(BOX8)	N/A	Jan. 07, 2021	Nov. 24, 2021~Dec. 13, 2021	Jan. 06, 2022	Conducted (TH05-HY)



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
--	--------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
--	--------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2 dB
--	--------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
--	--------

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Ching Chen	Temperature:	21~25	°C
Test Date:	2021/11/24-2021/12/13	Relative Humidity:	51~54	%

<Ant. 4>

TEST RESULTS DATA**20dB and 99% Occupied Bandwidth and Hopping Channel Separation**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	20db BW (MHz)	99% Bandwidth (MHz)	Hopping Channel Separation Measurement (MHz)	Hopping Channel Separation Measurement Limit (MHz)	Pass/Fail
DH	1Mbps	1	0	2402	0.970	0.906	0.999	0.6464	Pass
DH	1Mbps	1	39	2441	0.970	0.909	0.994	0.6464	Pass
DH	1Mbps	1	78	2480	0.970	0.909	0.999	0.6464	Pass
2DH	2Mbps	1	0	2402	1.303	1.184	1.003	0.8683	Pass
2DH	2Mbps	1	39	2441	1.307	1.184	1.003	0.8712	Pass
2DH	2Mbps	1	78	2480	1.303	1.184	0.999	0.8683	Pass
3DH	3Mbps	1	0	2402	1.259	1.164	0.999	0.8393	Pass
3DH	3Mbps	1	39	2441	1.263	1.164	0.999	0.8423	Pass
3DH	3Mbps	1	78	2480	1.263	1.161	0.999	0.8423	Pass

TEST RESULTS DATA**Dwell Time**

Mod.	Hopping Channel Number Rate	Hops Over Occupancy Time(hops)	Package Transfer Time (msec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
Nomal	79	106.67	2.90	0.31	0.4	Pass
AFH	20	53.33	2.90	0.15	0.4	Pass

TEST RESULTS DATA**Peak Power Table**

DH	CH.	NTX	Peak Power (dBm)	Power Limit (dBm)	Test Result
DH1	0	1	20.47	20.97	Pass
	39	1	20.62	20.97	Pass
	78	1	20.84	20.97	Pass
2DH1	0	1	19.91	20.97	Pass
	39	1	19.81	20.97	Pass
	78	1	20.14	20.97	Pass
3DH1	0	1	19.27	20.97	Pass
	39	1	19.32	20.97	Pass
	78	1	20.01	20.97	Pass

TEST RESULTS DATA**Average Power Table***(Reporting Only)*

DH	CH.	NTX	Average Power (dBm)	Duty Factor (dB)
DH1	0	1	19.60	5.15
	39	1	19.51	5.15
	78	1	19.98	5.15
2DH1	0	1	17.09	5.08
	39	1	17.13	5.08
	78	1	17.34	5.08
3DH1	0	1	15.89	5.08
	39	1	16.07	5.08
	78	1	16.66	5.08

TEST RESULTS DATA**Number of Hopping Frequency**

Number of Hopping (Channel)	Adaptive Frequency Hopping (Channel)	Limits (Channel)	Pass/Fail
79	20	> 15	Pass

<Ant. 3>

TEST RESULTS DATA**20dB and 99% Occupied Bandwidth and Hopping Channel Separation**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	20db BW (MHz)	99% Bandwidth (MHz)	Hopping Channel Separation Measurement (MHz)	Hopping Channel Separation Measurement Limit (MHz)	Pass/Fail
DH	1Mbps	1	0	2402	0.970	0.909	1.003	0.6464	Pass
DH	1Mbps	1	39	2441	1.022	0.912	1.003	0.6811	Pass
DH	1Mbps	1	78	2480	1.022	0.900	0.994	0.6811	Pass
2DH	2Mbps	1	0	2402	1.307	1.181	1.003	0.8712	Pass
2DH	2Mbps	1	39	2441	1.307	1.184	1.003	0.8712	Pass
2DH	2Mbps	1	78	2480	1.303	1.178	0.994	0.8683	Pass
3DH	3Mbps	1	0	2402	1.263	1.161	1.003	0.8423	Pass
3DH	3Mbps	1	39	2441	1.259	1.161	1.003	0.8393	Pass
3DH	3Mbps	1	78	2480	1.263	1.161	0.999	0.8423	Pass

TEST RESULTS DATA**Dwell Time**

Mod.	Hopping Channel Number Rate	Hops Over Occupancy Time(hops)	Package Transfer Time (msec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
Nomal	79	106.67	2.90	0.31	0.4	Pass
AFH	20	53.33	2.90	0.15	0.4	Pass

TEST RESULTS DATA**Peak Power Table**

DH	CH.	NTX	Peak Power (dBm)	Power Limit (dBm)	Test Result
DH1	0	1	20.71	20.97	Pass
	39	1	20.51	20.97	Pass
	78	1	20.51	20.97	Pass
2DH1	0	1	20.93	20.97	Pass
	39	1	20.54	20.97	Pass
	78	1	20.83	20.97	Pass
3DH1	0	1	20.30	20.97	Pass
	39	1	19.92	20.97	Pass
	78	1	20.16	20.97	Pass

TEST RESULTS DATA**Average Power Table****(Reporting Only)**

DH	CH.	NTX	Average Power (dBm)	Duty Factor (dB)
DH1	0	1	19.95	5.14
	39	1	19.45	5.14
	78	1	19.73	5.14
2DH1	0	1	18.27	5.08
	39	1	17.81	5.08
	78	1	18.22	5.08
3DH1	0	1	17.08	5.05
	39	1	16.66	5.05
	78	1	16.98	5.05

TEST RESULTS DATA**Number of Hopping Frequency**

Number of Hopping (Channel)	Adaptive Frequency Hopping (Channel)	Limits (Channel)	Pass/Fail
79	20	> 15	Pass

MIMO <Ant. 4+3>

TEST RESULTS DATA**20dB and 99% Occupied Bandwidth and Hopping Channel Separation**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	20db BW (MHz)		99% Bandwidth (MHz)		Hopping Channel Separation Measurement (MHz)		Hopping Channel Separation Measurement Limit (MHz)		Pass/Fail
					ANT4	ANT3	ANT4	ANT3	ANT4	ANT3	ANT4	ANT3	
DH	1Mbps	2	0	2402	1.019	0.967	0.906	0.903	1.003	1.003	0.6792	0.6445	Pass
DH	1Mbps	2	39	2441	1.022	1.025	0.909	0.912	1.003	1.003	0.6811	0.6831	Pass
DH	1Mbps	2	78	2480	1.019	1.019	0.909	0.906	0.999	0.999	0.6792	0.6792	Pass
2DH	2Mbps	2	0	2402	1.303	1.307	1.181	1.184	1.003	0.999	0.8683	0.8712	Pass
2DH	2Mbps	2	39	2441	1.303	1.307	1.184	1.184	0.999	0.999	0.8683	0.8712	Pass
2DH	2Mbps	2	78	2480	1.303	1.303	1.184	1.184	1.003	0.999	0.8683	0.8683	Pass
3DH	3Mbps	2	0	2402	1.263	1.268	1.161	1.161	1.003	1.003	0.8423	0.8451	Pass
3DH	3Mbps	2	39	2441	1.263	1.263	1.164	1.164	1.003	0.999	0.8423	0.8423	Pass
3DH	3Mbps	2	78	2480	1.263	1.263	1.161	1.164	1.003	0.999	0.8423	0.8423	Pass

TEST RESULTS DATA**Dwell Time**

Mod.	Hopping Channel Number Rate	Hops Over Occupancy Time(hops)	Package Transfer Time (msec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
Nomal	79	106.67	2.90	0.31	0.4	Pass
AFH	20	53.33	2.90	0.15	0.4	Pass

TEST RESULTS DATA**Peak Power Table**

DH	CH.	NTX	Peak Power Ant 4 (dBm)	Peak Power Ant 3 (dBm)	Peak Power Total (dBm)	Power Limit (dBm)	Test Result
DH1	0	2	16.97	15.93	20.02	20.97	Pass
	39	2	17.01	16.14	20.07	20.97	Pass
	78	2	17.50	15.90	20.49	20.97	Pass
2DH1	0	2	17.26	14.83	20.44	20.97	Pass
	39	2	17.52	14.52	20.42	20.97	Pass
	78	2	17.13	13.74	19.96	20.97	Pass
3DH1	0	2	16.78	14.94	20.01	20.97	Pass
	39	2	17.05	13.31	19.92	20.97	Pass
	78	2	17.59	13.83	20.48	20.97	Pass

TEST RESULTS DATA**Average Power Table
(Reporting Only)**

DH	CH.	NTX	Average Power Ant 4 (dBm)	Average Power Ant 3 (dBm)	Average Power Total (dBm)	Duty Factor (dB)
DH1	0	2	15.91	16.14	19.04	5.15
	39	2	15.97	16.10	19.04	5.15
	78	2	16.57	16.38	19.48	5.15
2DH1	0	2	14.61	14.78	17.71	5.08
	39	2	14.91	14.59	17.77	5.08
	78	2	14.43	14.03	17.25	5.08
3DH1	0	2	13.55	13.98	16.78	5.08
	39	2	13.81	13.56	16.70	5.08
	78	2	14.45	14.10	17.29	5.08

TEST RESULTS DATA**Number of Hopping Frequency**

Number of Hopping (Channel)	Adaptive Frequency Hopping (Channel)	Limits (Channel)	Pass/Fail
79	20	> 15	Pass



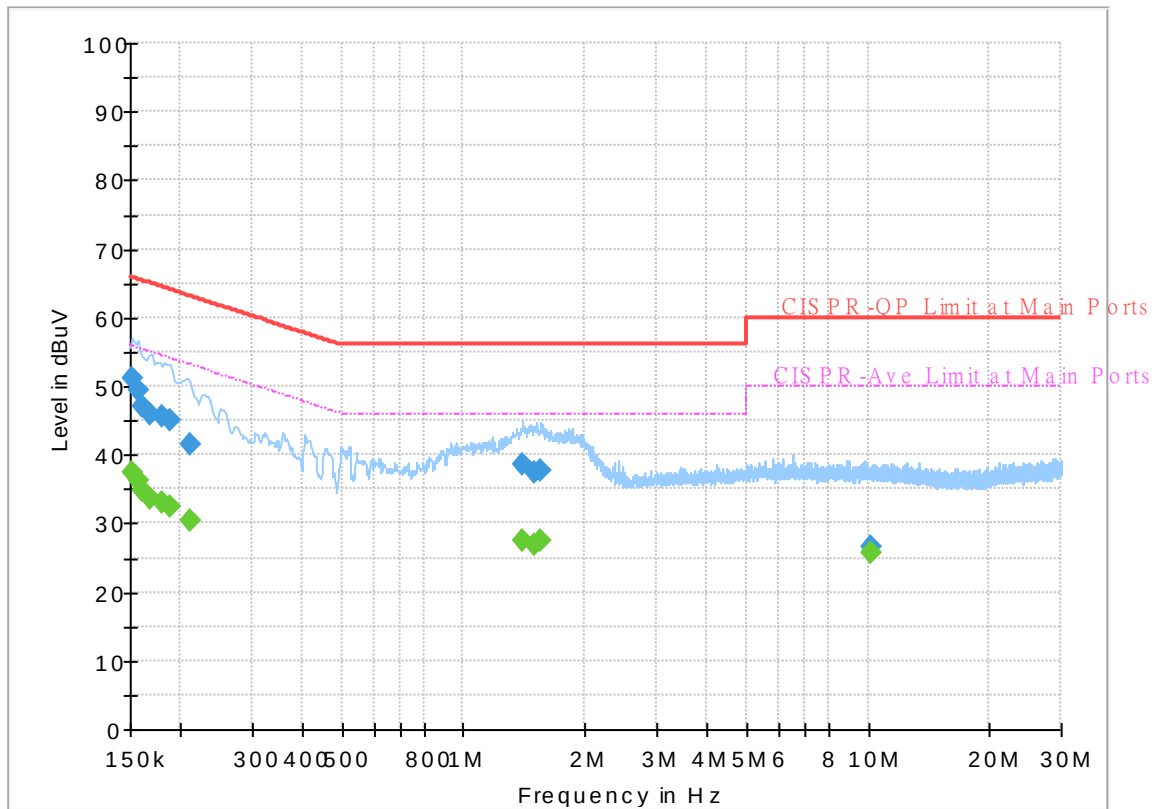
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26°C
		Relative Humidity :	45~55%

EUT Information

Report NO : 161608-05
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



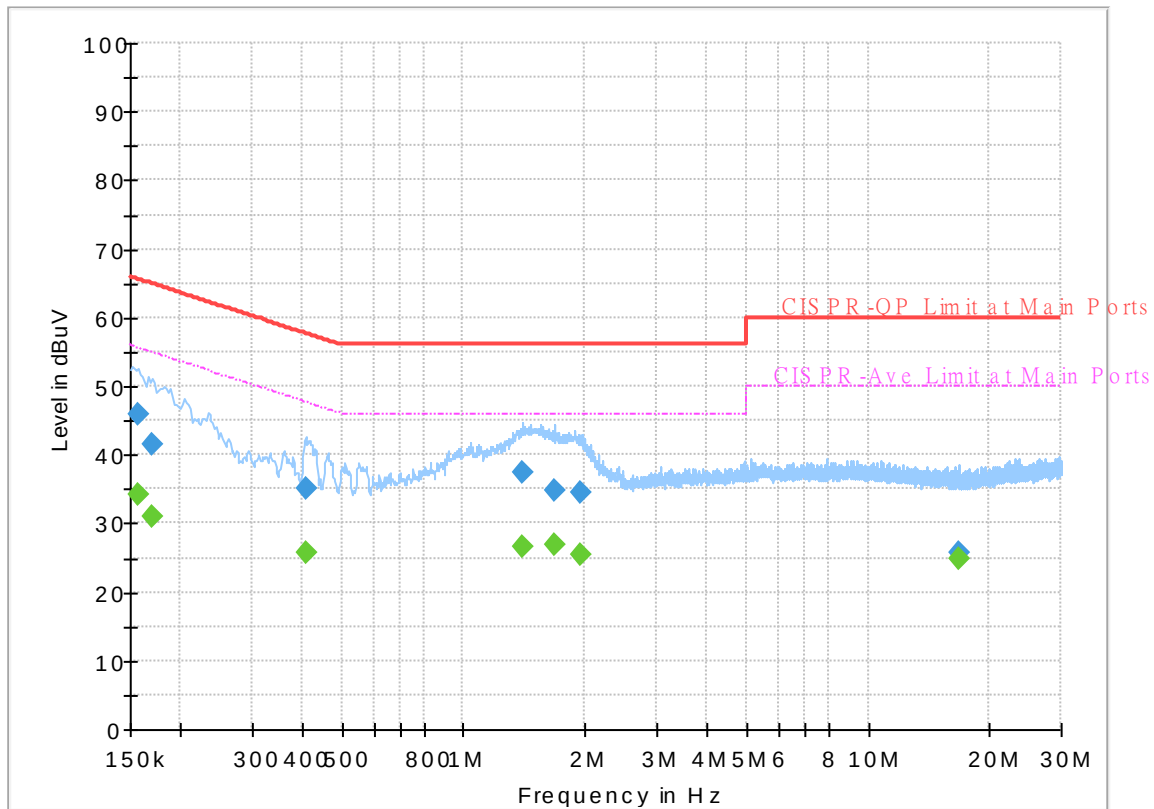
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	37.57	55.88	18.31	L1	OFF	19.7
0.152250	51.20	---	65.88	14.68	L1	OFF	19.7
0.156750	---	36.37	55.63	19.26	L1	OFF	19.7
0.156750	49.47	---	65.63	16.16	L1	OFF	19.7
0.161250	---	34.88	55.40	20.52	L1	OFF	19.7
0.161250	47.20	---	65.40	18.20	L1	OFF	19.7
0.168000	---	33.68	55.06	21.38	L1	OFF	19.7
0.168000	46.01	---	65.06	19.05	L1	OFF	19.7
0.179250	---	33.02	54.52	21.50	L1	OFF	19.7
0.179250	45.60	---	64.52	18.92	L1	OFF	19.7
0.188250	---	32.59	54.11	21.52	L1	OFF	19.7
0.188250	45.04	---	64.11	19.07	L1	OFF	19.7
0.210750	---	30.41	53.18	22.77	L1	OFF	19.7
0.210750	41.39	---	63.18	21.79	L1	OFF	19.7
1.403250	---	27.60	46.00	18.40	L1	OFF	20.2
1.403250	38.52	---	56.00	17.48	L1	OFF	20.2
1.491000	---	26.93	46.00	19.07	L1	OFF	20.2
1.491000	37.47	---	56.00	18.53	L1	OFF	20.2
1.556250	---	27.56	46.00	18.44	L1	OFF	20.2
1.556250	37.70	---	56.00	18.30	L1	OFF	20.2
10.212000	---	25.71	50.00	24.29	L1	OFF	20.2
10.212000	26.71	---	60.00	33.29	L1	OFF	20.2

EUT Information

Report NO : 161608-05
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.156750	---	34.16	55.63	21.47	N	OFF	19.7
0.156750	45.99	---	65.63	19.64	N	OFF	19.7
0.170250	---	30.85	54.95	24.10	N	OFF	19.7
0.170250	41.66	---	64.95	23.29	N	OFF	19.7
0.408750	---	25.86	47.67	21.81	N	OFF	19.7
0.408750	35.23	---	57.67	22.44	N	OFF	19.7
1.403250	---	26.51	46.00	19.49	N	OFF	20.2
1.403250	37.47	---	56.00	18.53	N	OFF	20.2
1.675500	---	26.77	46.00	19.23	N	OFF	20.2
1.675500	34.84	---	56.00	21.16	N	OFF	20.2
1.938750	---	25.55	46.00	20.45	N	OFF	20.2
1.938750	34.54	---	56.00	21.46	N	OFF	20.2
16.818000	---	24.75	50.00	25.25	N	OFF	20.5
16.818000	25.82	---	60.00	34.18	N	OFF	20.5



Appendix C. Radiated Spurious Emission

Test Engineer :	Karl Hou and Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~65%

<Ant. 4>

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamplifier Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2361.765	46.65	-27.35	74	40.97	27.73	8.24	30.29	374	29	P	H
		2361.765	21.89	-32.11	54	-	-	-	-	-	-	A	H
	*	2402	109.54	-	-	104	27.5	8.32	30.28	374	29	P	H
	*	2402	84.78	-	-	-	-	-	-	-	-	A	H
													H
		2360.085	46.85	-27.15	74	41.16	27.74	8.24	30.29	376	115	P	V
		2360.085	22.09	-31.91	54	-	-	-	-	-	-	A	V
	*	2402	107.46	-	-	101.92	27.5	8.32	30.28	376	115	P	V
	*	2402	82.7	-	-	-	-	-	-	-	-	A	V
													V
BT CH 39 2441MHz		2337.72	47.06	-26.94	74	41.36	27.8	8.2	30.3	366	27	P	H
		2337.72	22.3	-31.7	54	-	-	-	-	-	-	A	H
	*	2441	108.37	-	-	102.83	27.42	8.39	30.27	366	27	P	H
	*	2441	83.61	-	-	-	-	-	-	-	-	A	H
		2498.25	47.65	-26.35	74	42	27.4	8.5	30.25	366	27	P	H
		2498.25	22.89	-31.11	54	-	-	-	-	-	-	A	H
		2359	46.89	-27.11	74	41.19	27.75	8.24	30.29	361	113	P	V
		2359	22.13	-31.87	54	-	-	-	-	-	-	A	V
	*	2441	106.23	-	-	100.69	27.42	8.39	30.27	361	113	P	V
	*	2441	81.47	-	-	-	-	-	-	-	-	A	V
		2492.86	46.17	-27.83	74	40.53	27.4	8.49	30.25	361	113	P	V
		2492.86	21.41	-32.59	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	111.76	-	-	106.16	27.4	8.46	30.26	352	27	P	H
	*	2480	87	-	-	-	-	-	-	-	-	A	H
		2483.76	48.53	-25.47	74	42.91	27.4	8.47	30.25	352	27	P	H
		2483.76	23.77	-30.23	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	110.3	-	-	104.7	27.4	8.46	30.26	348	99	P	V
	*	2480	85.54	-	-	-	-	-	-	-	-	A	V
		2484.64	49.03	-24.97	74	43.41	27.4	8.47	30.25	348	99	P	V
		2484.64	24.27	-29.73	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 00 2402MHz		4804	41.43	-32.57	74	55.97	31.19	12.35	58.08	-	-	P	H
		4804	16.67	-37.33	54	-	-	-	-	-	-	A	H
		11595	52.87	-21.13	74	53.53	39.81	20.19	60.66	-	-	P	H
		11595	28.11	-25.89	54	-	-	-	-	-	-	A	H
		14490	52.94	-21.06	74	49.74	42	22.01	60.81	-	-	P	H
		14490	28.18	-25.82	54	-	-	-	-	-	-	A	H
		17985	61.14	-12.86	74	44.07	48.85	25.04	56.82	-	-	P	H
		17985	36.38	-17.62	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
		4804	41.5	-32.5	74	56.04	31.19	12.35	58.08	-	-	P	V
		4804	16.74	-37.26	54	-	-	-	-	-	-	A	V
		11520	52.7	-21.3	74	53.16	40.04	20.11	60.61	-	-	P	V
		11520	27.94	-26.06	54	-	-	-	-	-	-	A	V
		14475	53.1	-20.9	74	49.93	42	22	60.83	-	-	P	V
		14475	28.34	-25.66	54	-	-	-	-	-	-	A	V
		18000	61.4	-12.6	74	43.96	49.2	25.04	56.8	-	-	P	V
		18000	36.64	-17.36	54	-	-	-	-	-	-	A	V
													V
													V
													V
													V



BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 39 2441MHz		4882	41.24	-32.76	74	55.74	31.23	12.32	58.05	-	-	P	H
		4882	16.48	-37.52	54	-	-	-	-	-	-	A	H
		7323	51.48	-22.52	74	57.15	36.4	15.89	57.96	302	102	P	H
		7323	26.72	-27.28	54	-	-	-	-	-	-	A	H
		10635	52.76	-21.24	74	55.5	39.93	19.24	61.91	-	-	P	H
		10635	28	-26	54	-	-	-	-	-	-	A	H
		14475	53.72	-20.28	74	50.55	42	22	60.83	-	-	P	H
		14475	28.96	-25.04	54	-	-	-	-	-	-	A	H
		17985	61.69	-12.31	74	44.62	48.85	25.04	56.82	-	-	P	H
		17985	36.93	-17.07	54	-	-	-	-	-	-	A	H
													H
													H
		4882	40.77	-33.23	74	55.27	31.23	12.32	58.05	-	-	P	V
		4882	16.01	-37.99	54	-	-	-	-	-	-	A	V
		7323	53.83	-20.17	74	59.5	36.4	15.89	57.96	100	235	P	V
		7323	29.07	-24.93	54	-	-	-	-	-	-	A	V
		10950	52.76	-21.24	74	54.34	40.4	19.49	61.47	-	-	P	V
		10950	28	-26	54	-	-	-	-	-	-	A	V
		14505	52.86	-21.14	74	49.63	42.01	22.02	60.8	-	-	P	V
		14505	28.1	-25.9	54	-	-	-	-	-	-	A	V
		18000	60.79	-13.21	74	43.35	49.2	25.04	56.8	-	-	P	V
		18000	36.03	-17.97	54	-	-	-	-	-	-	A	V
													V
													V



BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 78 2480MHz		4960	41.13	-32.87	74	55.43	31.44	12.28	58.02	-	-	P	H
		4960	16.37	-37.63	54	-	-	-	-	-	-	A	H
		7440	51.47	-22.53	74	56.82	36.44	16.2	57.99	300	96	P	H
		7440	26.71	-27.29	54	-	-	-	-	-	-	A	H
		11490	52.82	-21.18	74	53.26	40.1	20.08	60.62	-	-	P	H
		11490	28.06	-25.94	54	-	-	-	-	-	-	A	H
		14475	53.22	-20.78	74	50.05	42	22	60.83	-	-	P	H
		14475	28.46	-25.54	54	-	-	-	-	-	-	A	H
		17970	61.15	-12.85	74	44.45	48.51	25.03	56.84	-	-	P	H
		17970	36.39	-17.61	54	-	-	-	-	-	-	A	H
													H
													H
		4960	41.02	-32.98	74	55.32	31.44	12.28	58.02	-	-	P	V
		4960	16.26	-37.74	54	-	-	-	-	-	-	A	V
		7440	55.97	-18.03	74	61.32	36.44	16.2	57.99	100	235	P	V
		7440	31.21	-22.79	54	-	-	-	-	-	-	A	V
		10920	52.75	-21.25	74	54.38	40.4	19.48	61.51	-	-	P	V
		10920	27.99	-26.01	54	-	-	-	-	-	-	A	V
		14490	52.67	-21.33	74	49.47	42	22.01	60.81	-	-	P	V
		14490	27.91	-26.09	54	-	-	-	-	-	-	A	V
		17970	61.63	-12.37	74	44.93	48.51	25.03	56.84	-	-	P	V
		17970	36.87	-17.13	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



<Ant. 3>

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2337.09	46.18	-27.82	74	40.49	27.8	8.19	30.3	115	18	P	H
		2337.09	21.42	-32.58	54	-	-	-	-	-	-	A	H
	*	2402	111.47	-	-	105.93	27.5	8.32	30.28	115	18	P	H
	*	2402	86.71	-	-	-	-	-	-	-	-	A	H
													H
													H
		2313.675	45.83	-28.17	74	40.18	27.8	8.15	30.3	373	67	P	V
		2313.675	21.07	-32.93	54	-	-	-	-	-	-	A	V
	*	2402	107.89	-	-	102.35	27.5	8.32	30.28	373	67	P	V
	*	2402	83.13	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2362.78	46.28	-27.72	74	40.6	27.72	8.25	30.29	114	19	P	H
		2362.78	21.52	-32.48	54	-	-	-	-	-	-	A	H
	*	2441	110.87	-	-	105.33	27.42	8.39	30.27	114	19	P	H
	*	2441	86.11	-	-	-	-	-	-	-	-	A	H
		2490.55	46.44	-27.56	74	40.81	27.4	8.48	30.25	114	19	P	H
		2490.55	21.68	-32.32	54	-	-	-	-	-	-	A	H
		2370.62	46.4	-27.6	74	40.75	27.68	8.26	30.29	400	68	P	V
		2370.62	21.64	-32.36	54	-	-	-	-	-	-	A	V
	*	2441	107.43	-	-	101.89	27.42	8.39	30.27	400	68	P	V
	*	2441	82.67	-	-	-	-	-	-	-	-	A	V
		2491.25	46.1	-27.9	74	40.47	27.4	8.48	30.25	400	68	P	V
		2491.25	21.34	-32.66	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	111.88	-	-	106.28	27.4	8.46	30.26	100	20	P	H
	*	2480	87.12	-	-	-	-	-	-	-	-	A	H
		2483.72	48.67	-25.33	74	43.05	27.4	8.47	30.25	100	20	P	H
		2483.72	23.91	-30.09	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	108.12	-	-	102.52	27.4	8.46	30.26	395	67	P	V
	*	2480	83.36	-	-	-	-	-	-	-	-	A	V
		2484.08	47.09	-26.91	74	41.47	27.4	8.47	30.25	395	67	P	V
		2484.08	22.33	-31.67	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 00 2402MHz		4804	41.89	-32.11	74	56.43	31.19	12.35	58.08	-	-	P	H
		4804	17.13	-36.87	54	-	-	-	-	-	-	A	H
		10830	52.61	-21.39	74	54.66	40.19	19.4	61.64	-	-	P	H
		10830	27.85	-26.15	54	-	-	-	-	-	-	A	H
		14490	53.69	-20.31	74	50.49	42	22.01	60.81	-	-	P	H
		14490	28.93	-25.07	54	-	-	-	-	-	-	A	H
		17985	61.34	-12.66	74	44.27	48.85	25.04	56.82	-	-	P	H
		17985	36.58	-17.42	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
		4804	42.78	-31.22	74	57.32	31.19	12.35	58.08	-	-	P	V
		4804	18.02	-35.98	54	-	-	-	-	-	-	A	V
		11400	53.48	-20.52	74	54.16	40.1	19.98	60.76	-	-	P	V
		11400	28.72	-25.28	54	-	-	-	-	-	-	A	V
		14475	53.02	-20.98	74	49.85	42	22	60.83	-	-	P	V
		14475	28.26	-25.74	54	-	-	-	-	-	-	A	V
		17985	61.94	-12.06	74	44.87	48.85	25.04	56.82	-	-	P	V
		17985	37.18	-16.82	54	-	-	-	-	-	-	A	V
		10830	52.61	-21.39	74	54.66	40.19	19.4	61.64	-	-	P	H
													V
													V
													V



BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 39 2441MHz		4882	43.27	-30.73	74	57.77	31.23	12.32	58.05	-	-	P	H
		4882	18.51	-35.49	54	-	-	-	-	-	-	A	H
		7323	48.27	-25.73	74	53.94	36.4	15.89	57.96	100	341	P	H
		7323	23.51	-30.49	54	-	-	-	-	-	-	A	H
		10695	42.02	-31.98	74	44.75	39.81	19.29	61.83	-	-	Q	H
		10695	17.26	-36.74	54	-	-	-	-	-	-	P	H
		14475	53.67	-20.33	74	50.5	42	22	60.83	-	-	P	H
		14475	28.91	-25.09	54	-	-	-	-	-	-	A	H
		17985	62.21	-11.79	74	45.14	48.85	25.04	56.82	-	-	P	H
		17985	37.45	-16.55	54	-	-	-	-	-	-	A	H
													H
													H
		4882	42.15	-31.85	74	56.65	31.23	12.32	58.05	-	-	P	V
		4882	17.39	-36.61	54	-	-	-	-	-	-	A	V
		7323	53.23	-20.77	74	58.9	36.4	15.89	57.96	100	231	P	V
		7323	28.47	-25.53	54	-	-	-	-	-	-	A	V
		11445	53.42	-20.58	74	53.98	40.1	20.03	60.69	-	-	P	V
		11445	28.66	-25.34	54	-	-	-	-	-	-	A	V
		14490	53.53	-20.47	74	50.33	42	22.01	60.81	-	-	P	V
		14490	28.77	-25.23	54	-	-	-	-	-	-	A	V
		17985	61	-13	74	43.93	48.85	25.04	56.82	-	-	P	V
		17985	36.24	-17.76	54	-	-	-	-	-	-	A	V
													V
													V



BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 78 2480MHz		4960	42.43	-31.57	74	56.73	31.44	12.28	58.02	-	-	P	H
		4960	17.67	-36.33	54	-	-	-	-	-	-	A	H
		7440	49.16	-24.84	74	54.51	36.44	16.2	57.99	100	349	P	H
		7440	24.4	-29.6	54	-	-	-	-	-	-	A	H
		11505	53.25	-20.75	74	53.67	40.08	20.1	60.6	-	-	P	H
		11505	28.49	-25.51	54	-	-	-	-	-	-	A	H
		14490	52.84	-21.16	74	49.64	42	22.01	60.81	-	-	P	H
		14490	28.08	-25.92	54	-	-	-	-	-	-	A	H
		17985	62.98	-11.02	74	45.91	48.85	25.04	56.82	-	-	P	H
		17985	38.22	-15.78	54	-	-	-	-	-	-	A	H
													H
													H
		4960	41.09	-32.91	74	55.39	31.44	12.28	58.02	-	-	P	V
		4960	16.33	-37.67	54	-	-	-	-	-	-	A	V
		7440	52.83	-21.17	74	58.18	36.44	16.2	57.99	100	231	P	V
		7440	28.07	-25.93	54	-	-	-	-	-	-	A	V
		10950	52.78	-21.22	74	54.36	40.4	19.49	61.47	-	-	P	V
		10950	28.02	-25.98	54	-	-	-	-	-	-	A	V
		14475	52.85	-21.15	74	49.68	42	22	60.83	-	-	P	V
		14475	28.09	-25.91	54	-	-	-	-	-	-	A	V
		17985	61.22	-12.78	74	44.15	48.85	25.04	56.82	-	-	P	V
		7440	24.4	-29.6	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



MIMO <Ant. 4+3>

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2358.09	46.03	-27.97	74	40.33	27.75	8.24	30.29	112	240	P	H
		2358.09	21.27	-32.73	54	-	-	-	-	-	-	A	H
	*	2402	104.03	-	-	98.49	27.5	8.32	30.28	112	240	P	H
	*	2402	79.27	-	-	-	-	-	-	-	-	A	H
													H
													H
		2337.09	45.93	-28.07	74	40.24	27.8	8.19	30.3	386	103	P	V
		2337.09	21.17	-32.83	54	-	-	-	-	-	-	A	V
	*	2402	97.12	-	-	91.58	27.5	8.32	30.28	386	103	P	V
	*	2402	72.36	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2320.08	46.53	-27.47	74	40.87	27.8	8.16	30.3	102	241	P	H
		2320.08	21.77	-32.23	54	-	-	-	-	-	-	A	H
	*	2441	104.61	-	-	99.07	27.42	8.39	30.27	102	241	P	H
	*	2441	79.85	-	-	-	-	-	-	-	-	A	H
		2486.49	45.86	-28.14	74	40.23	27.4	8.48	30.25	102	241	P	H
		2486.49	21.1	-32.9	54	-	-	-	-	-	-	A	H
		2387.84	46.27	-27.73	74	40.68	27.57	8.3	30.28	369	128	P	V
		2387.84	21.51	-32.49	54	-	-	-	-	-	-	A	V
	*	2441	98.62	-	-	93.08	27.42	8.39	30.27	369	128	P	V
	*	2441	73.86	-	-	-	-	-	-	-	-	A	V
		2491.53	46.01	-27.99	74	40.38	27.4	8.48	30.25	369	128	P	V
		2491.53	21.25	-32.75	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	105.83	-	-	100.23	27.4	8.46	30.26	102	241	P	H
	*	2480	81.07	-	-	-	-	-	-	-	-	A	H
		2484	48.21	-25.79	74	42.59	27.4	8.47	30.25	102	241	P	H
		2484	23.45	-30.55	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	101.75	-	-	96.15	27.4	8.46	30.26	400	94	P	V
	*	2480	76.99	-	-	-	-	-	-	-	-	A	V
		2484.52	46.88	-27.12	74	41.26	27.4	8.47	30.25	400	94	P	V
		2484.52	22.12	-31.88	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 00 2402MHz		4804	42.89	-31.11	74	57.43	31.19	12.35	58.08	-	-	P	H
		4804	18.13	-35.87	54	-	-	-	-	-	-	A	H
		10875	53.51	-20.49	74	55.32	40.33	19.44	61.58	-	-	P	H
		10875	28.75	-25.25	54	-	-	-	-	-	-	A	H
		14775	53.68	-20.32	74	50.03	42.15	22.3	60.8	-	-	P	H
		14775	28.92	-25.08	54	-	-	-	-	-	-	A	H
		17955	62.17	-11.83	74	45.81	48.17	25.04	56.85	-	-	P	H
		17955	37.41	-16.59	54	-	-	-	-	-	-	A	H
													H
													H
													H
													H
		4804	42.14	-31.86	74	56.68	31.19	12.35	58.08	-	-	P	V
		4804	17.38	-36.62	54	-	-	-	-	-	-	A	V
		10770	52.98	-21.02	74	55.34	40.01	19.35	61.72	-	-	P	V
		10770	28.22	-25.78	54	-	-	-	-	-	-	A	V
		14775	53.28	-20.72	74	49.63	42.15	22.3	60.8	-	-	P	V
		14775	28.52	-25.48	54	-	-	-	-	-	-	A	V
		17985	62.63	-11.37	74	45.56	48.85	25.04	56.82	-	-	P	V
		17985	37.87	-16.13	54	-	-	-	-	-	-	A	V
													V
													V
													V
													V



BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 39 2441MHz		4882	42.68	-31.32	74	57.18	31.23	12.32	58.05	-	-	P	H
		4882	17.92	-36.08	54	-	-	-	-	-	-	A	H
		7323	49.24	-24.76	74	54.91	36.4	15.89	57.96	-	-	P	H
		7323	24.48	-29.52	54	-	-	-	-	-	-	A	H
		11490	54.26	-19.74	74	54.7	40.1	20.08	60.62	-	-	P	H
		11490	29.5	-24.5	54	-	-	-	-	-	-	A	H
		14475	53.5	-20.5	74	50.33	42	22	60.83	-	-	P	H
		14475	28.74	-25.26	54	-	-	-	-	-	-	A	H
		17985	62.45	-11.55	74	45.38	48.85	25.04	56.82	-	-	P	H
		17985	37.69	-16.31	54	-	-	-	-	-	-	A	H
													H
													H
		4882	41.74	-32.26	74	56.24	31.23	12.32	58.05	-	-	P	V
		4882	16.98	-37.02	54	-	-	-	-	-	-	A	V
		7323	48.48	-25.52	74	54.15	36.4	15.89	57.96	-	-	P	V
		7323	23.72	-30.28	54	-	-	-	-	-	-	A	V
		11475	53.57	-20.43	74	54.04	40.1	20.07	60.64	-	-	P	V
		11475	28.81	-25.19	54	-	-	-	-	-	-	A	V
		14475	54.2	-19.8	74	51.03	42	22	60.83	-	-	P	V
		14475	29.44	-24.56	54	-	-	-	-	-	-	A	V
		17985	62.81	-11.19	74	45.74	48.85	25.04	56.82	-	-	P	V
		17985	38.05	-15.95	54	-	-	-	-			A	V
													V
													V



BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 78 2480MHz		4960	40.38	-33.62	74	54.68	31.44	12.28	58.02	-	-	P	H
		4960	15.62	-38.38	54	-	-	-	-	-	-	A	H
		7440	48.79	-25.21	74	54.14	36.44	16.2	57.99	-	-	P	H
		7440	24.03	-29.97	54	-	-	-	-	-	-	A	H
		10890	52.66	-21.34	74	54.39	40.37	19.45	61.55	-	-	P	H
		10890	27.9	-26.1	54	-	-	-	-	-	-	A	H
		14475	53.12	-20.88	74	49.95	42	22	60.83	-	-	P	H
		14475	28.36	-25.64	54	-	-	-	-	-	-	A	H
		18000	60.98	-13.02	74	43.54	49.2	25.04	56.8	-	-	P	H
		18000	36.22	-17.78	54	-	-	-	-	-	-	A	H
													H
													H
		4960	41.23	-32.77	74	55.53	31.44	12.28	58.02	-	-	P	V
		4960	16.47	-37.53	54	-	-	-	-	-	-	A	V
		7440	48.56	-25.44	74	53.91	36.44	16.2	57.99	-	-	P	V
		7440	23.8	-30.2	54	-	-	-	-	-	-	A	V
		10935	53.42	-20.58	74	55.02	40.4	19.49	61.49	-	-	P	V
		10935	28.66	-25.34	54	-	-	-	-	-	-	A	V
		14475	53.33	-20.67	74	50.16	42	22	60.83	-	-	P	V
		14475	28.57	-25.43	54	-	-	-	-	-	-	A	V
		17985	62.55	-11.45	74	45.48	48.85	25.04	56.82	-	-	P	V
		17985	37.79	-16.21	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission below 1GHz

2.4GHz BT (LF)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT LF		94.99	32.06	-11.44	43.5	47.41	15.2	1.76	32.31	-	-	P	H
		159.01	25.68	-17.82	43.5	38.96	16.67	2.3	32.25	-	-	P	H
		182.29	23.02	-20.48	43.5	37.83	14.96	2.45	32.22	-	-	P	H
		260.86	20.5	-25.5	46	29.88	20.02	2.85	32.25	-	-	P	H
		500.45	25.77	-20.23	46	30.1	24.03	3.99	32.35	-	-	P	H
		746.83	32.51	-13.49	46	32.01	28.09	4.75	32.34	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
		33.88	25.75	-14.25	40	34.39	22.77	0.9	32.31	-	-	P	V
		94.99	28.87	-14.63	43.5	44.22	15.2	1.76	32.31	-	-	P	V
		161.92	27.34	-16.16	43.5	40.9	16.37	2.32	32.25	-	-	P	V
		184.23	24.33	-19.17	43.5	39.22	14.88	2.46	32.23	-	-	P	V
		264.74	20.69	-25.31	46	30.11	19.95	2.88	32.25	-	-	P	V
		697.36	29.16	-16.84	46	30.53	26.44	4.59	32.4	-	-	P	V
												V	
												V	
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission level is with at least 6 dB margin against limit line, the position is marked as “-“.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical

A calculation example for radiated spurious emission is shown as below:

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH 00 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Over Limit(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

Both peak measured complies with the limit line, so test result is “PASS”.

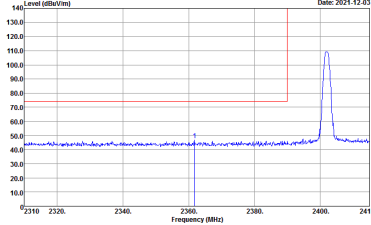
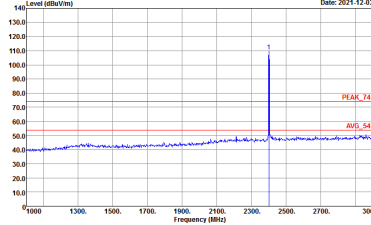


Appendix D. Radiated Spurious Emission Plots

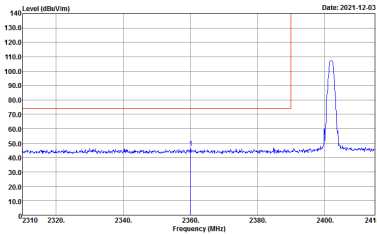
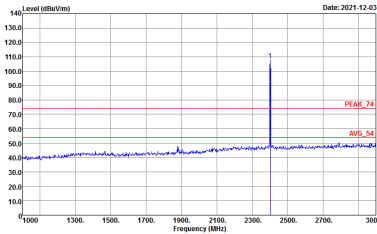
Test Engineer :	Karl Hou and Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~65%

2.4GHz 2400~2483.5MHz

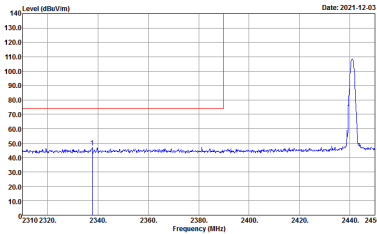
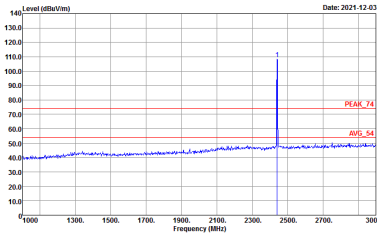
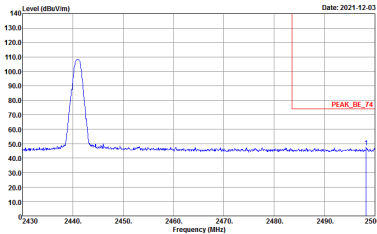
BT (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH39 2441MHz	
4	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

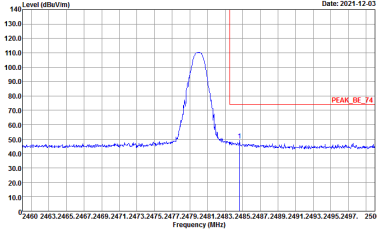
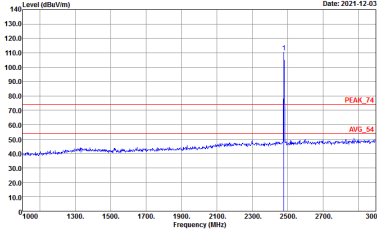


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH39 2441MHz	
4	Vertical	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4	Horizontal	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

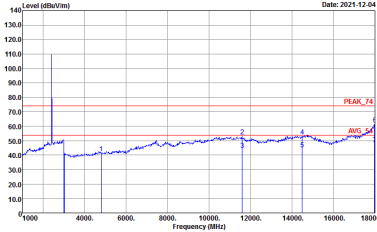
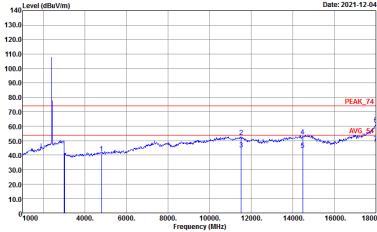


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

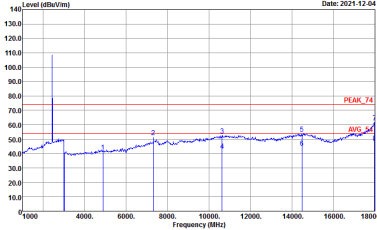
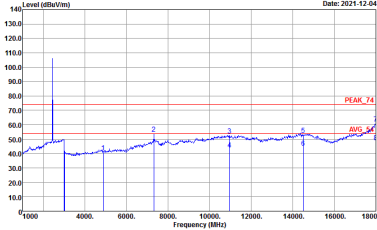


2.4GHz 2400~2483.5MHz

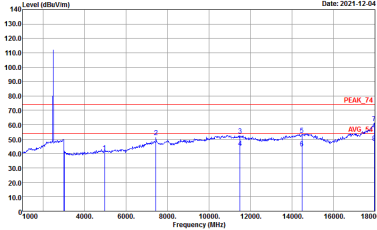
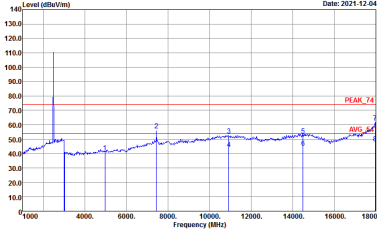
BT (Harmonic @ 3m)

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH00 2402MHz	
4	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL Detector : Peak



BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH39 2441MHz	
4	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_T4 3m 9120D_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_T4 3m 9120D_1522_211012 VERTICAL Detector : Peak

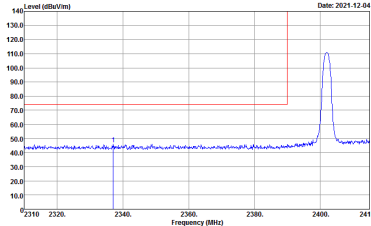
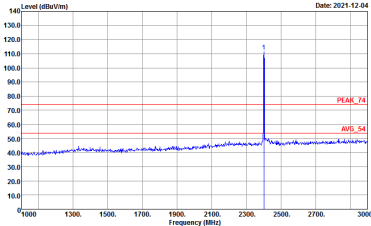


BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH78 2480MHz	
4	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 VERTICAL Detector : Peak

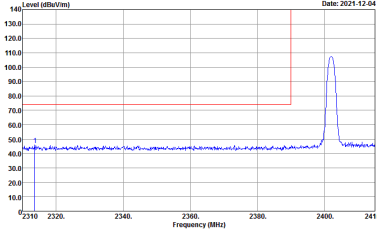
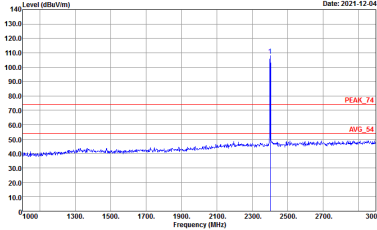


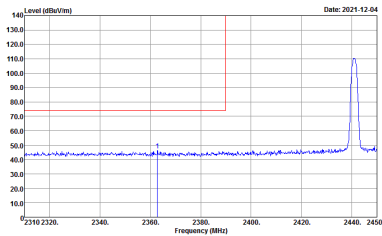
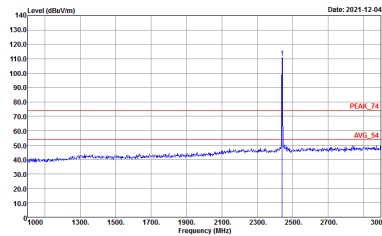
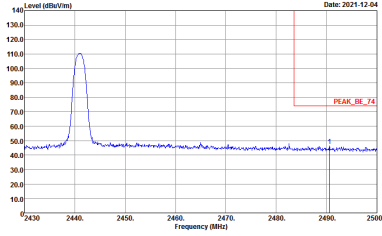
2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

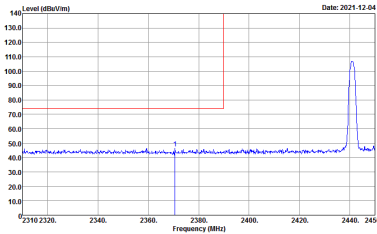
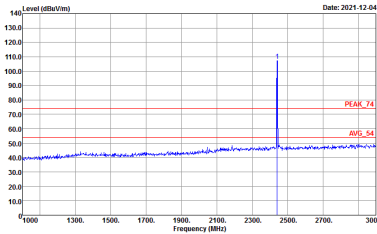
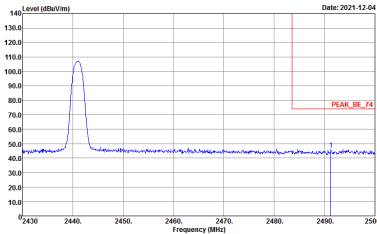
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



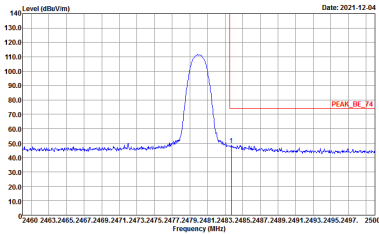
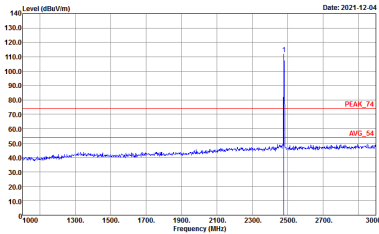
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH39 2441MHz	
3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH39 2441MHz	
3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

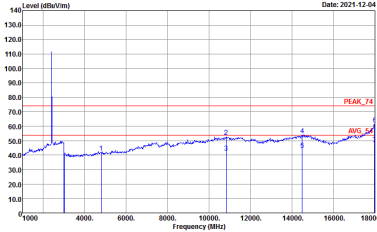
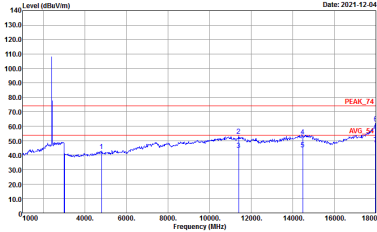


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
3	Vertical	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



2.4GHz 2400~2483.5MHz

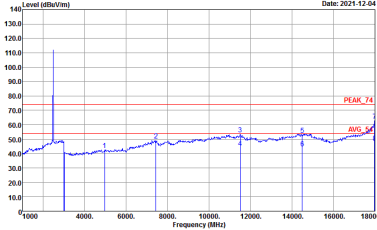
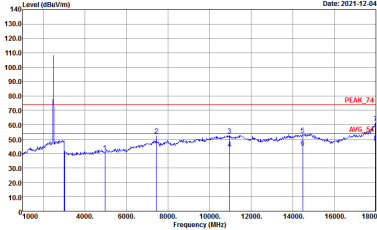
BT (Harmonic @ 3m)

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH00 2402MHz	
3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL Detector : Peak



BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH39 2441MHz	
3	Horizontal	Vertical
Peak Avg.	Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 HORIZONTAL Detector : Peak	Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 VERTICAL Detector : Peak

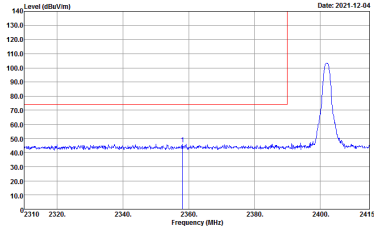
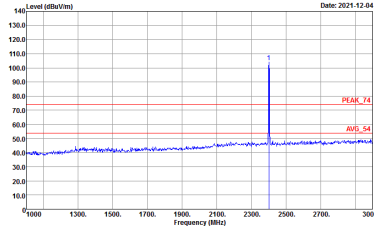


BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH78 2480MHz	
3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 VERTICAL Detector : Peak

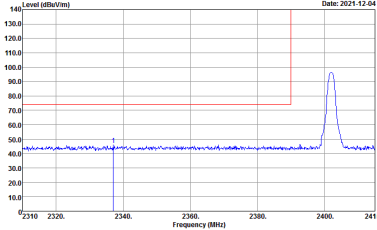
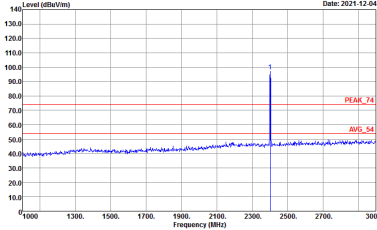


2.4GHz 2400~2483.5MHz

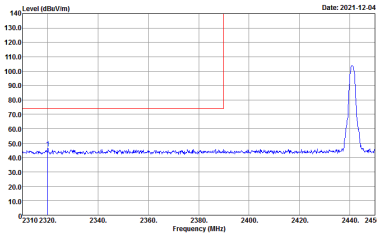
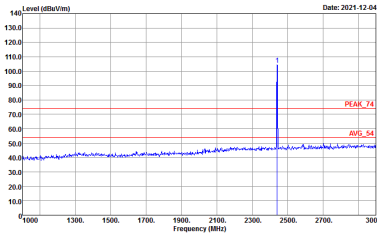
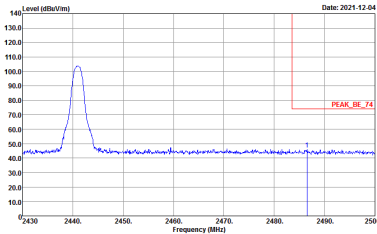
BT (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

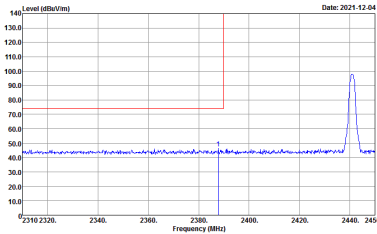
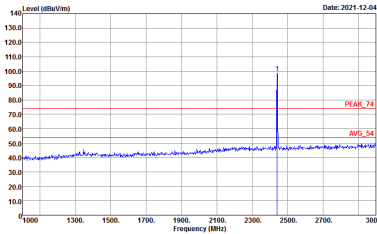
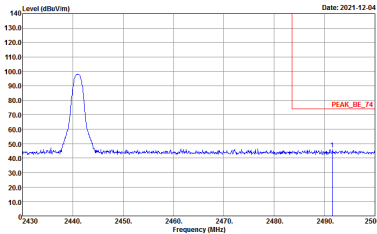


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

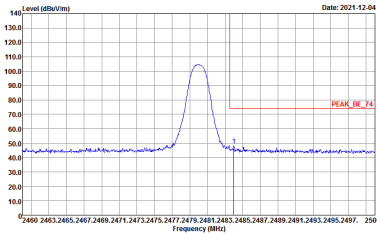
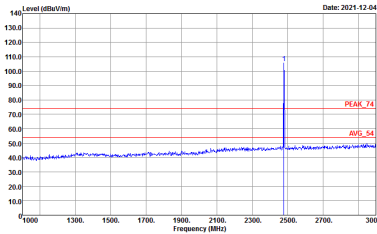


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH39 2441MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

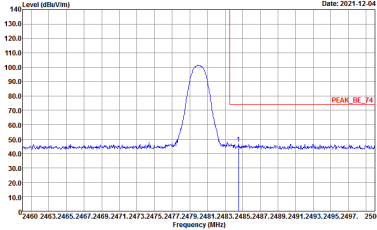
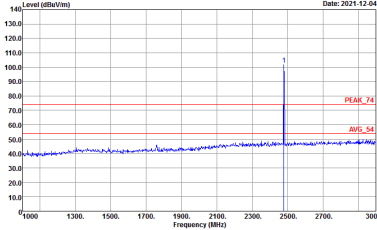


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH39 2441MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_211012 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BC_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

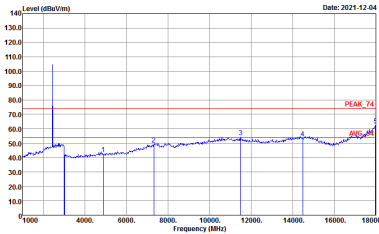
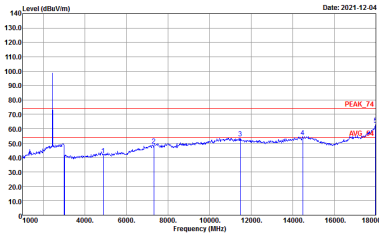


2.4GHz 2400~2483.5MHz

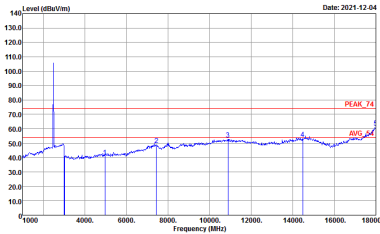
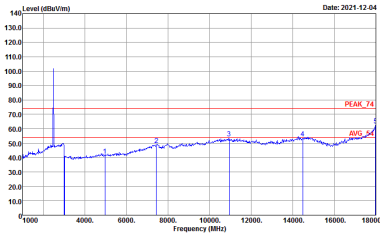
BT (Harmonic @ 3m)

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH00 2402MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-12-04 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-12-04 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL Detector : Peak

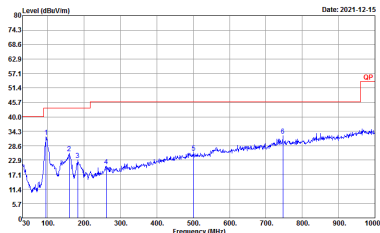
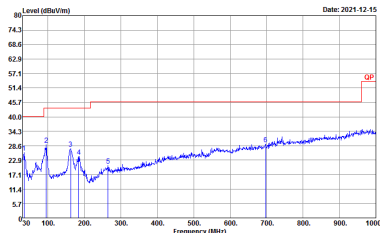


BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH39 2441MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_1522_211012 VERTICAL Detector : Peak



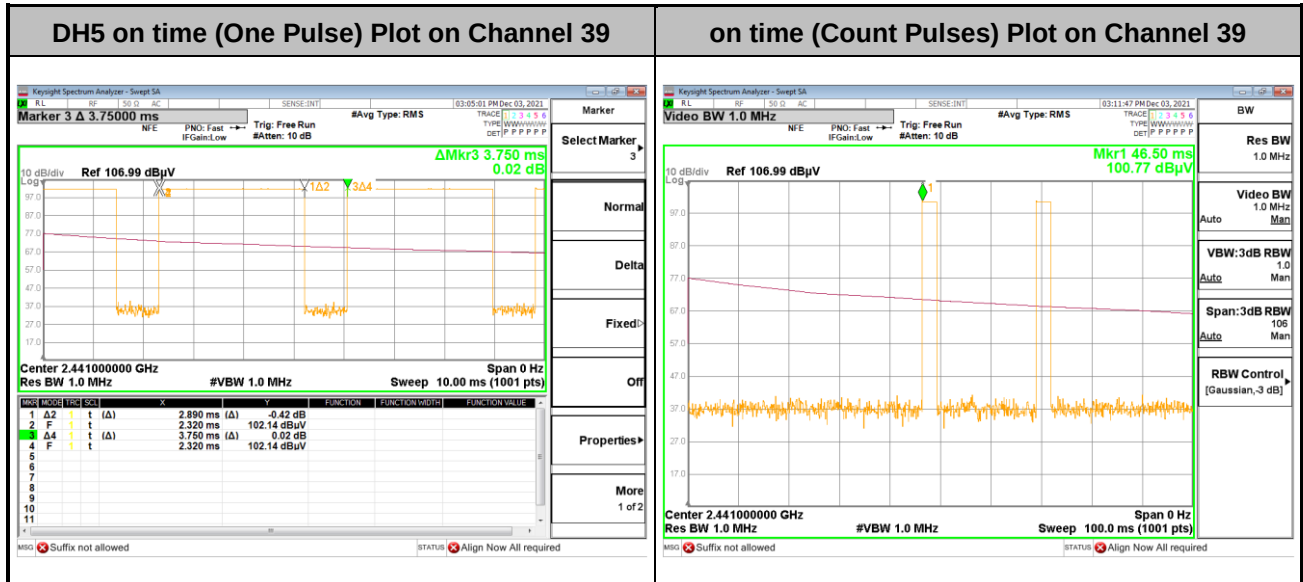
BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_1522_211012 VERTICAL Detector : Peak

Emission below 1GHz
2.4GHz BT (LF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT LF	
4+3	Horizontal	Vertical
QP / Peak	 Site : 03CH16-HY Condition : QP 3m BIL06_47020_211009 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : QP 3m BIL06_47020_211009 VERTICAL Detector : Peak

Appendix E. Duty Cycle Plots

<Ant. 4>



Note:

1. Worst case Duty cycle = on time/100 milliseconds = $2 * 2.89 / 100 = 5.78 \%$
2. Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.76 \text{ dB}$
3. DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

$$2.89 \text{ ms} \times 20 \text{ channels} = 57.8 \text{ ms}$$

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. $[100 \text{ ms} / 57.8 \text{ ms}] = 2 \text{ hops}$

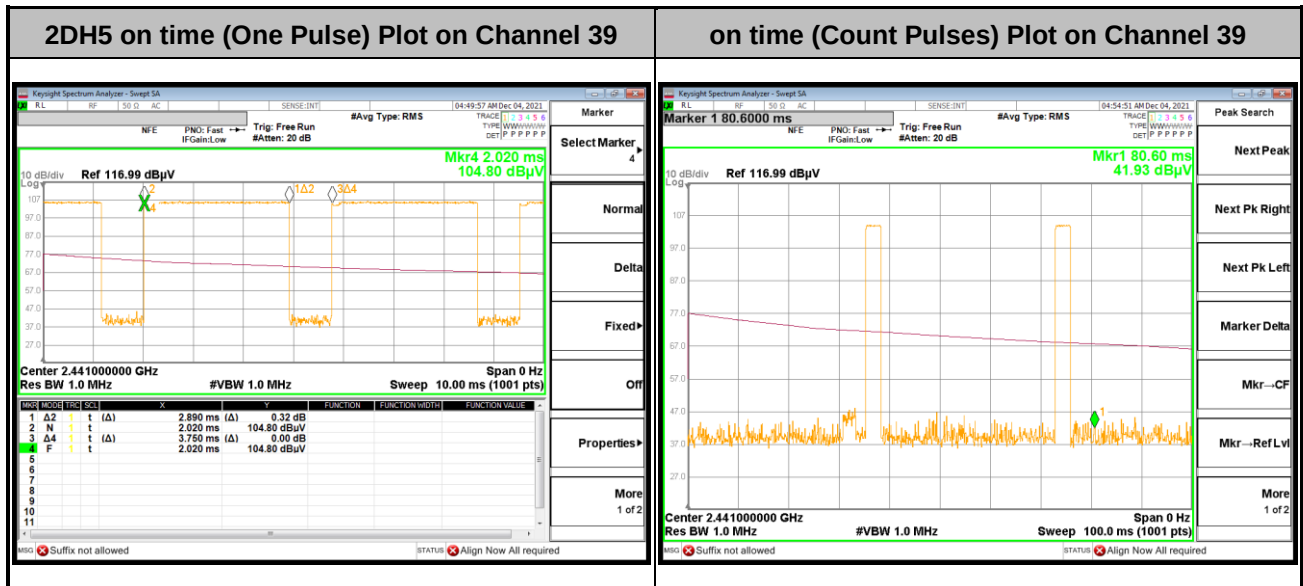
Thus, the maximum possible ON time:

$$2.89 \text{ ms} \times 2 = 5.78 \text{ ms}$$

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

$$20 \times \log(5.78 \text{ ms}/100 \text{ ms}) = -24.76 \text{ dB}$$

<Ant. 3>



Note:

- Worst case Duty cycle = on time/100 milliseconds = $2 * 2.89 / 100 = 5.78 \%$
- Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.76 \text{ dB}$
- 2DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

$$2.89 \text{ ms} \times 20 \text{ channels} = 57.8 \text{ ms}$$

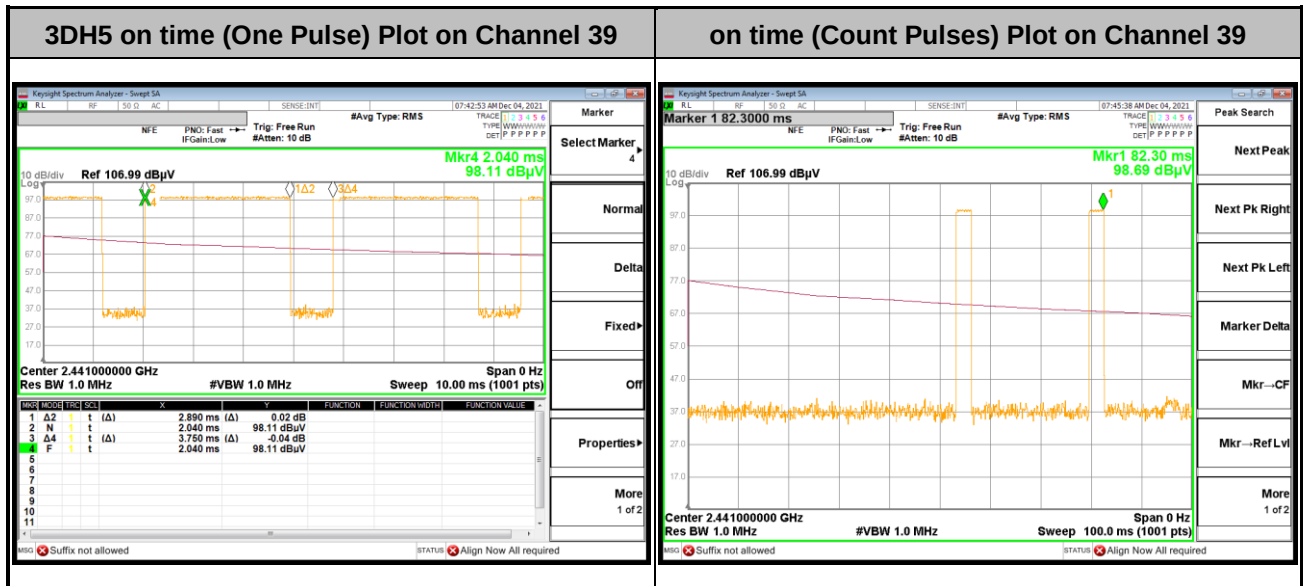
There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. $[100 \text{ ms} / 57.8 \text{ ms}] = 2 \text{ hops}$

Thus, the maximum possible ON time:

$$2.89 \text{ ms} \times 2 = 5.78 \text{ ms}$$

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

$$20 \times \log(5.78 \text{ ms}/100 \text{ ms}) = -24.76 \text{ dB}$$

MIMO <Ant. 4+3>

Note:

1. Worst case Duty cycle = on time/100 milliseconds = $2 * 2.89 / 100 = 5.78 \%$
2. Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.76 \text{ dB}$
3. 3DH5 has the highest duty cycle worst case and is reported.

Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

$$2.89 \text{ ms} \times 20 \text{ channels} = 57.8 \text{ ms}$$

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period. $[100 \text{ ms} / 57.8 \text{ ms}] = 2 \text{ hops}$

Thus, the maximum possible ON time:

$$2.89 \text{ ms} \times 2 = 5.78 \text{ ms}$$

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

$$20 \times \log(5.78\text{ms}/100 \text{ ms}) = -24.76 \text{ dB}$$

—THE END—