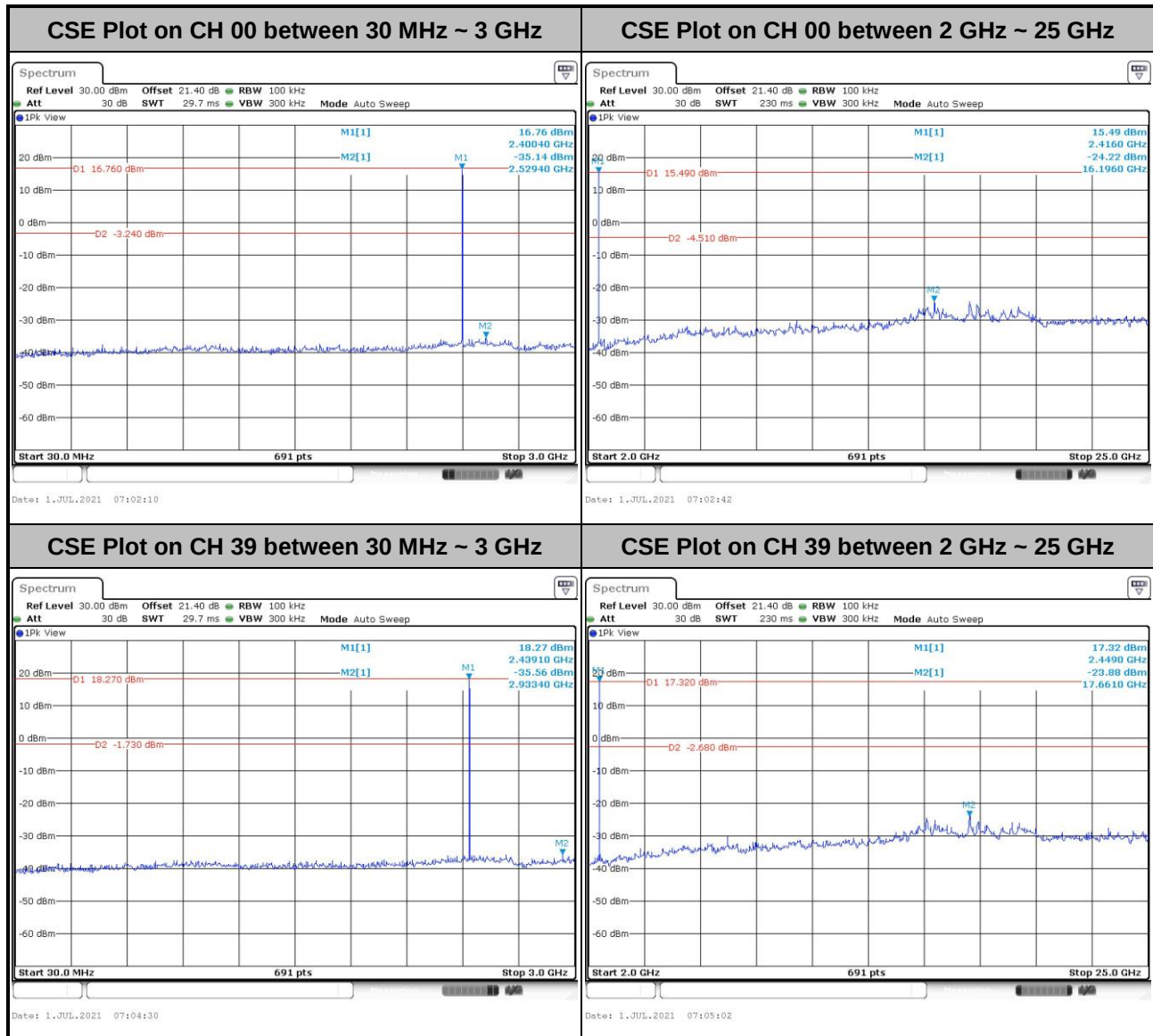
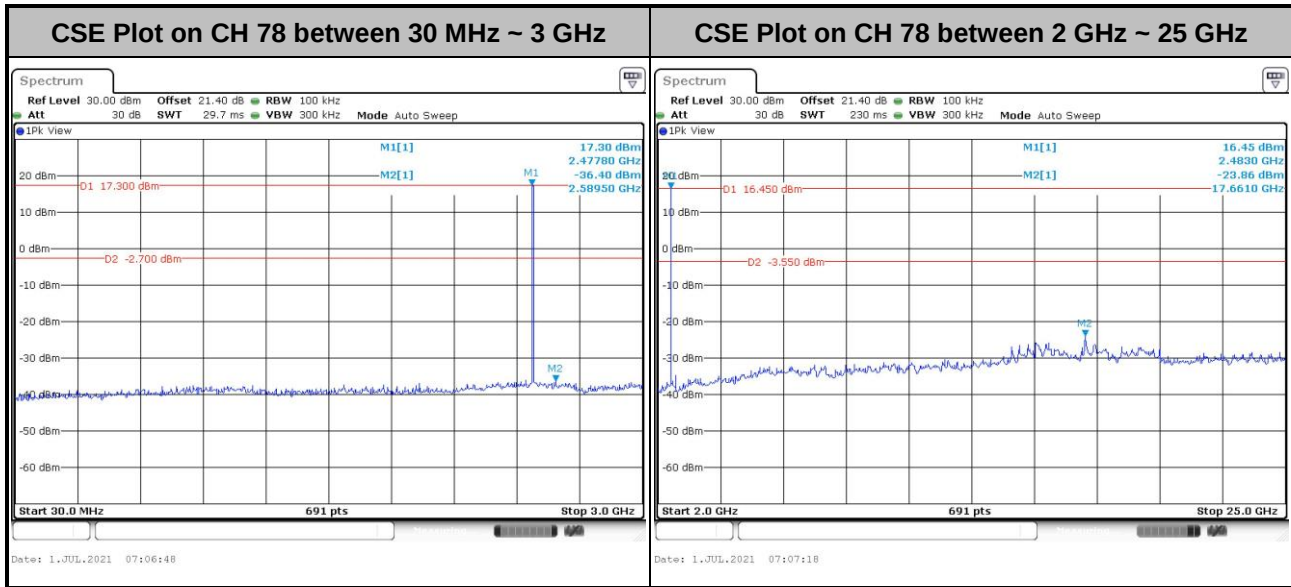




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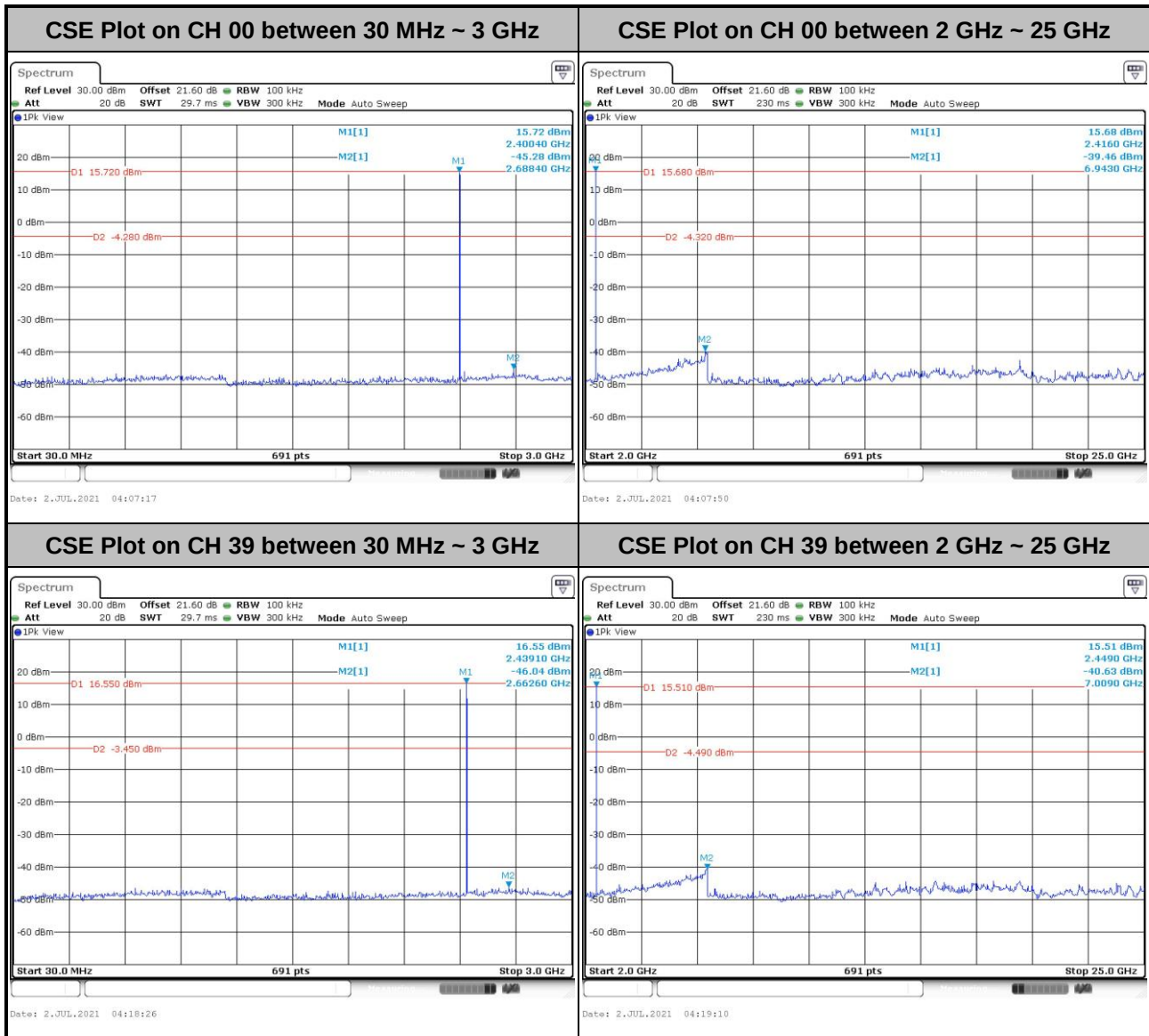


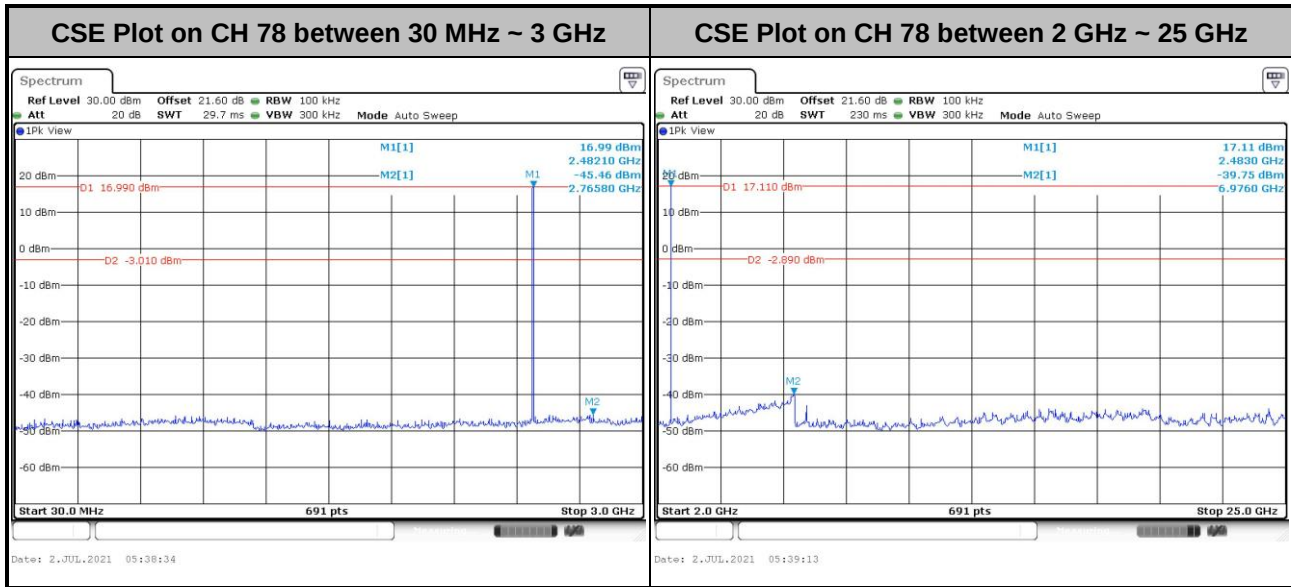




MIMO <Ant. 4>

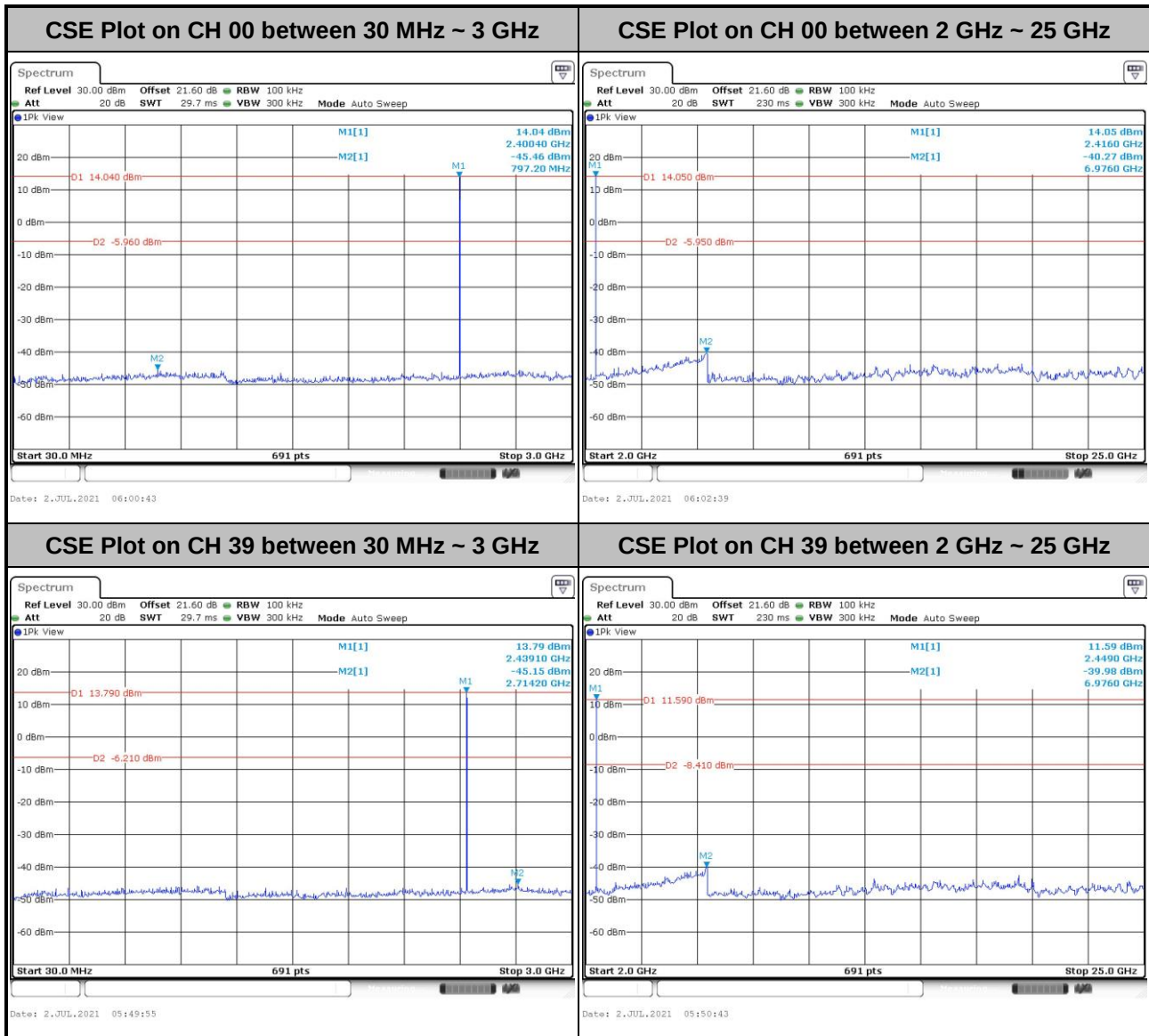
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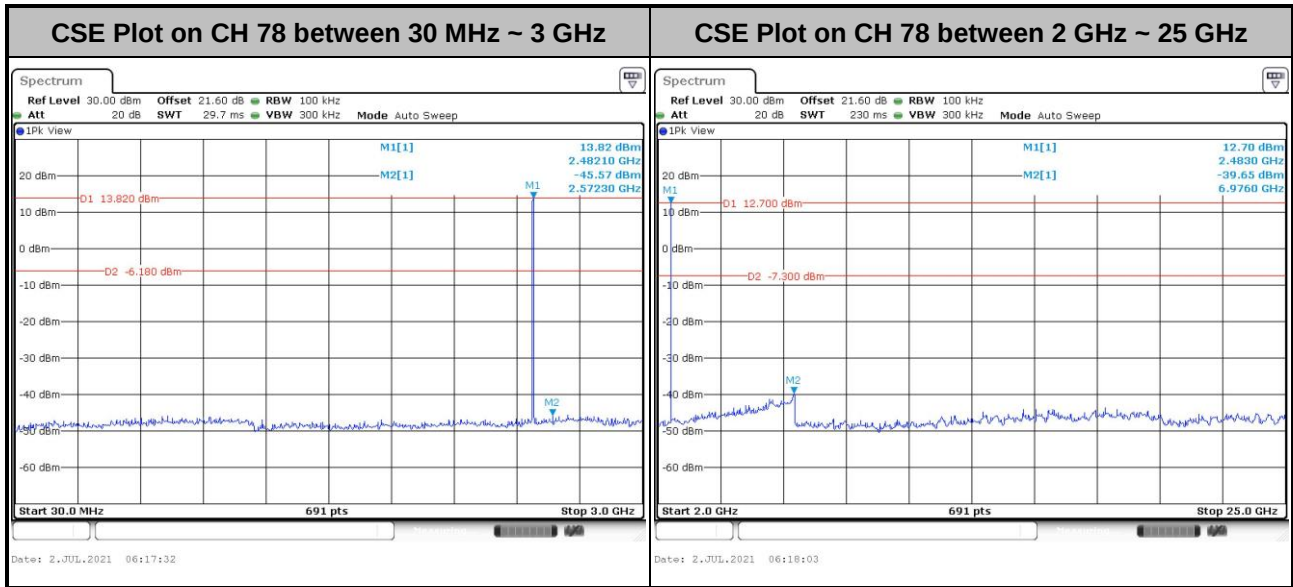






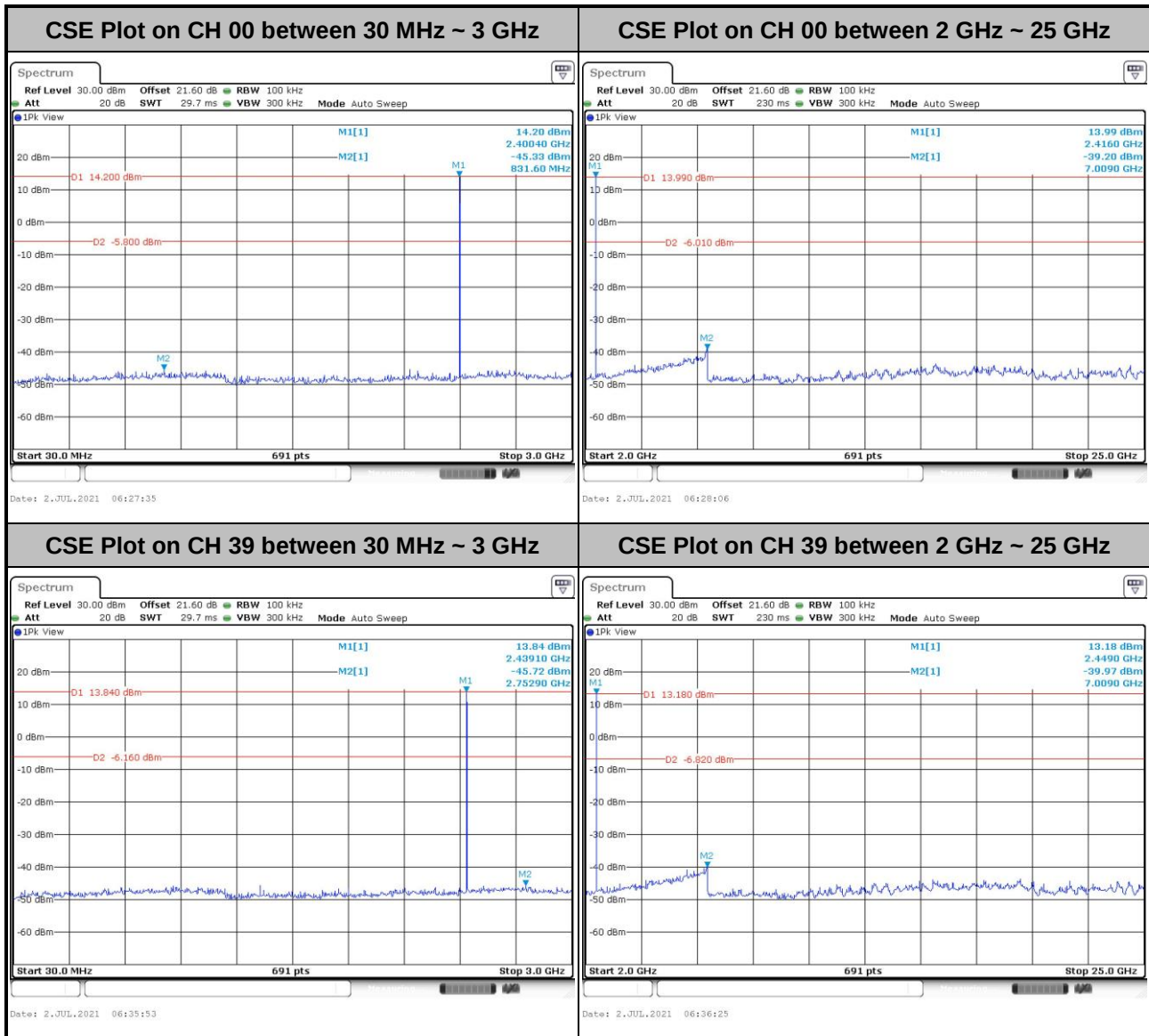
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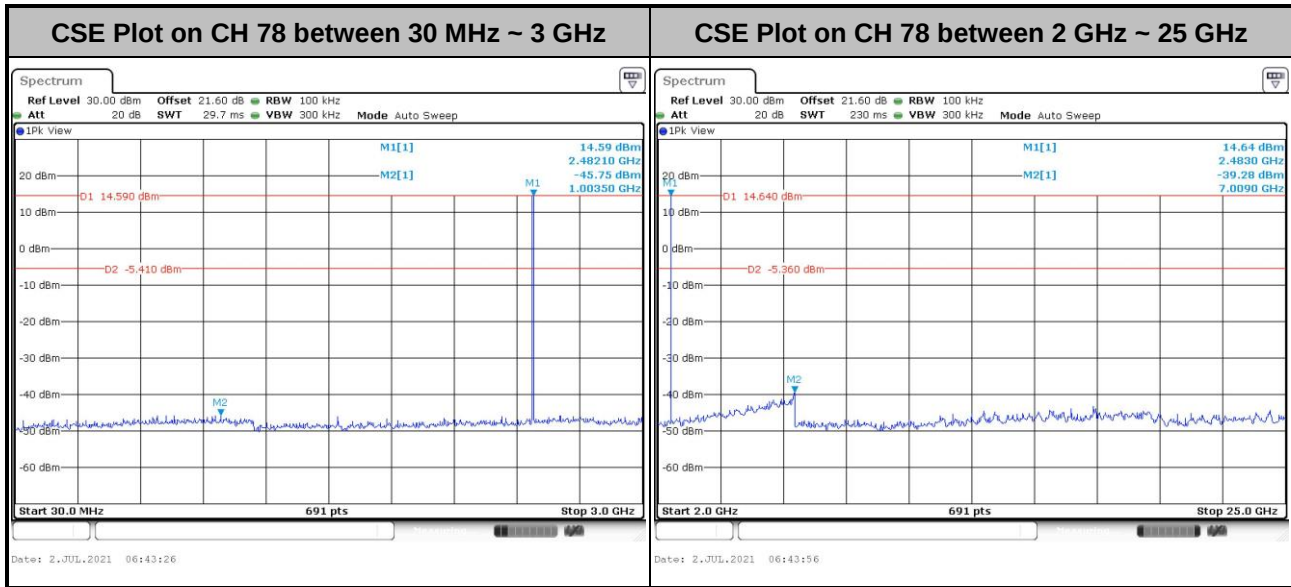






<3Mbps>

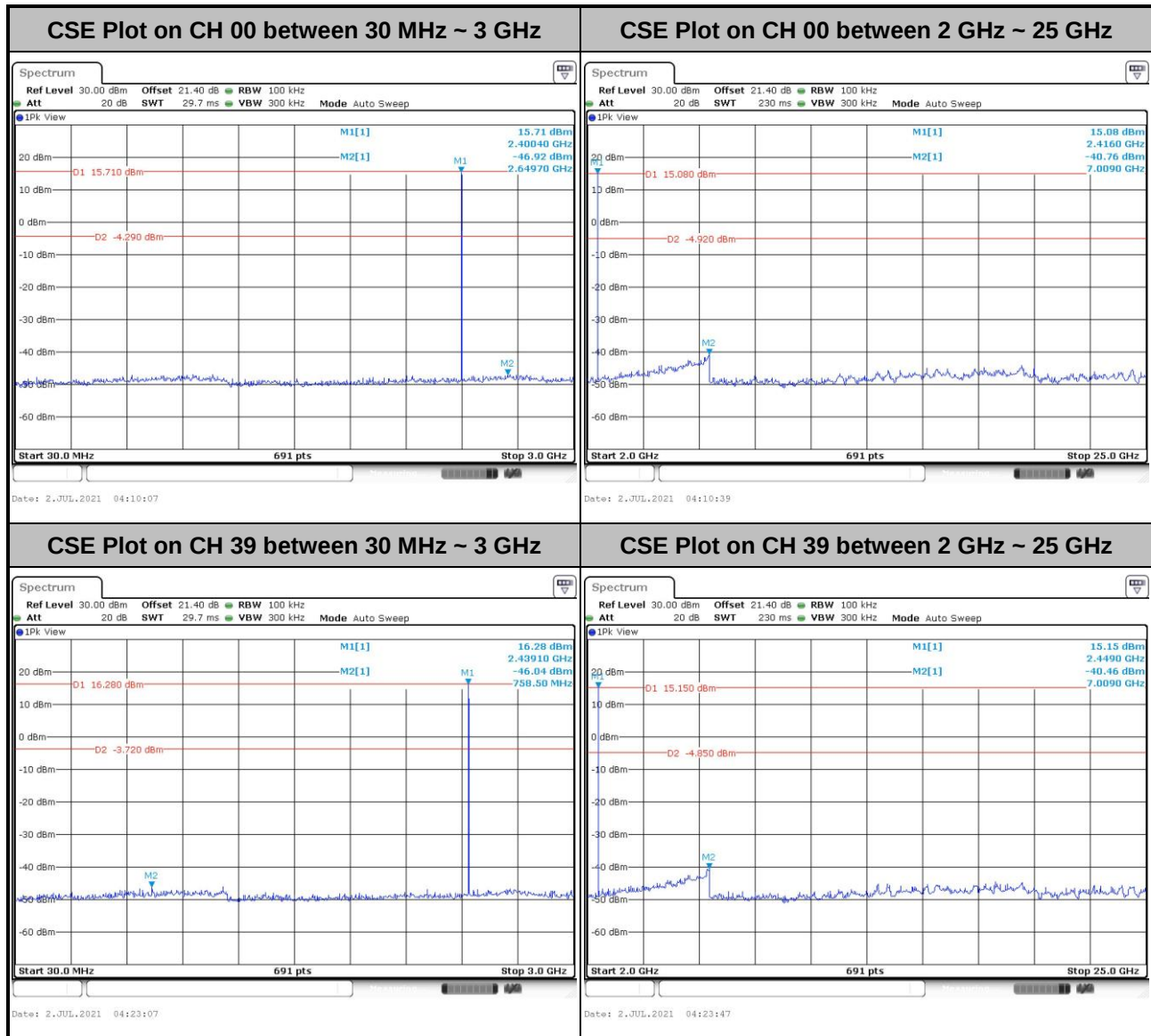


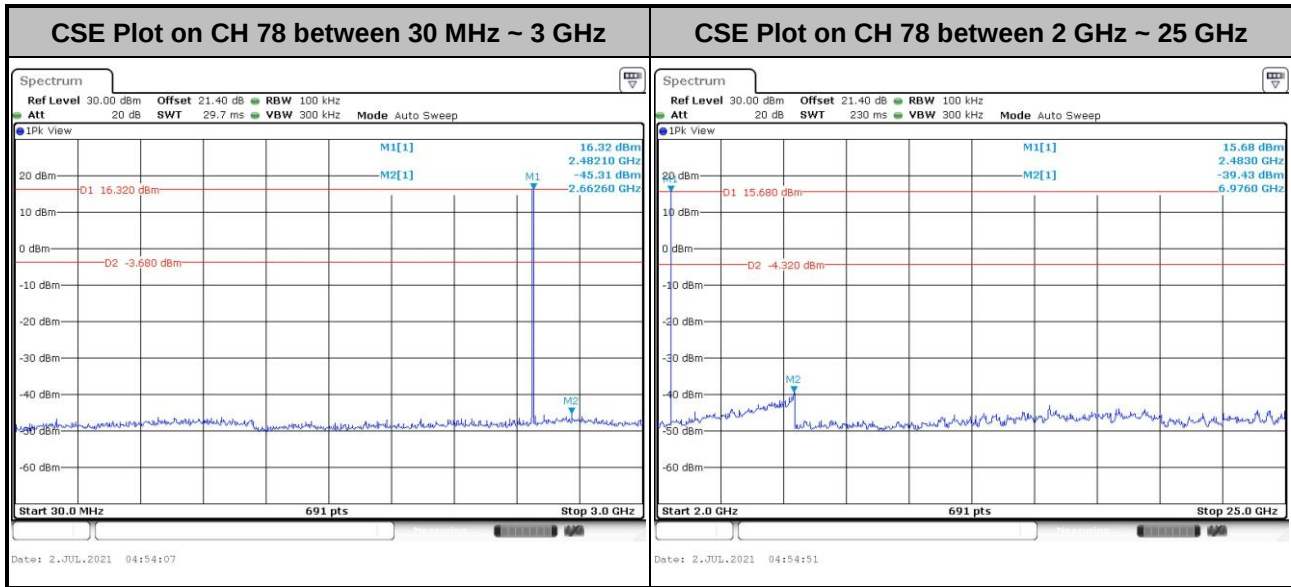




MIMO <Ant. 3>

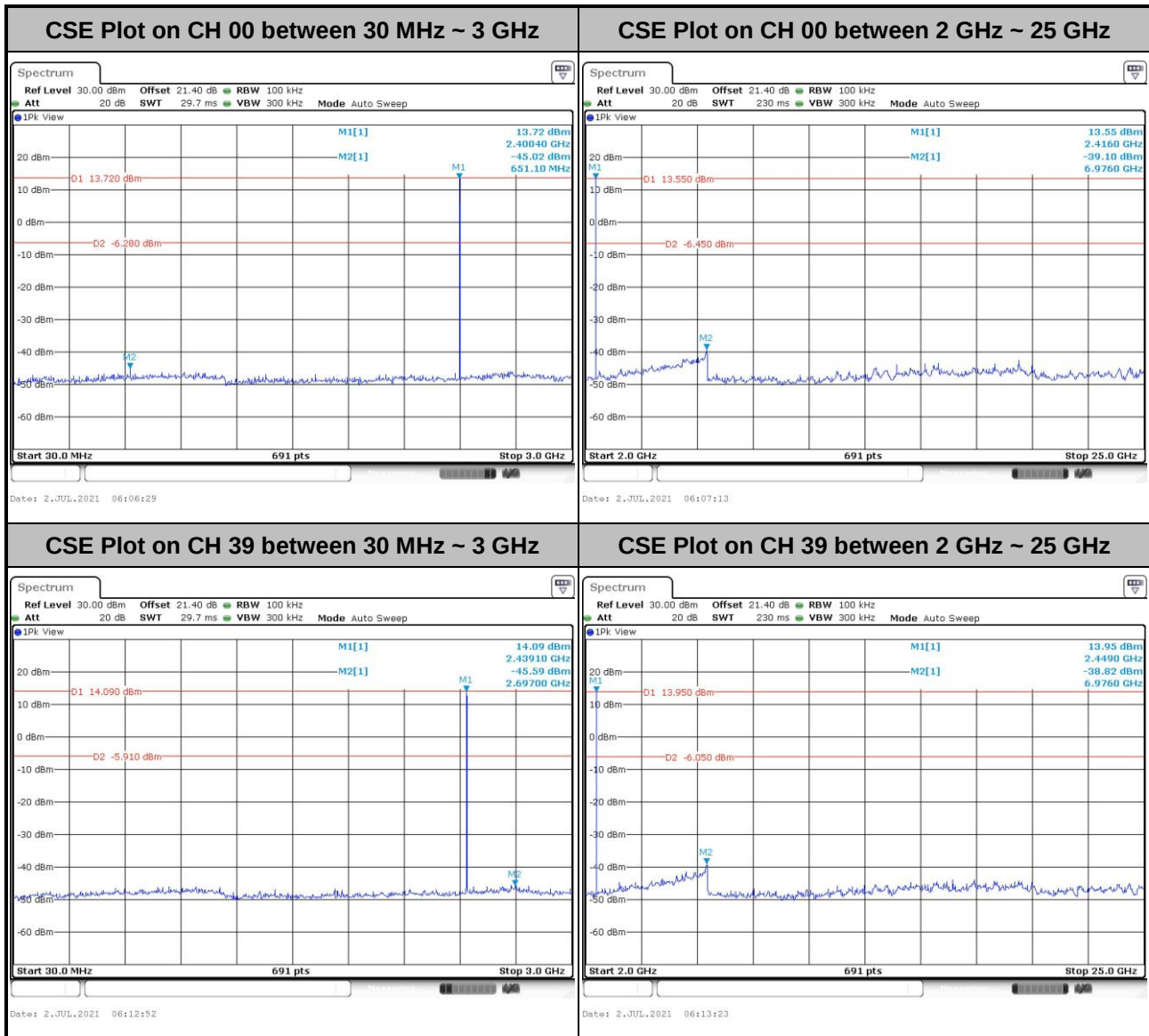
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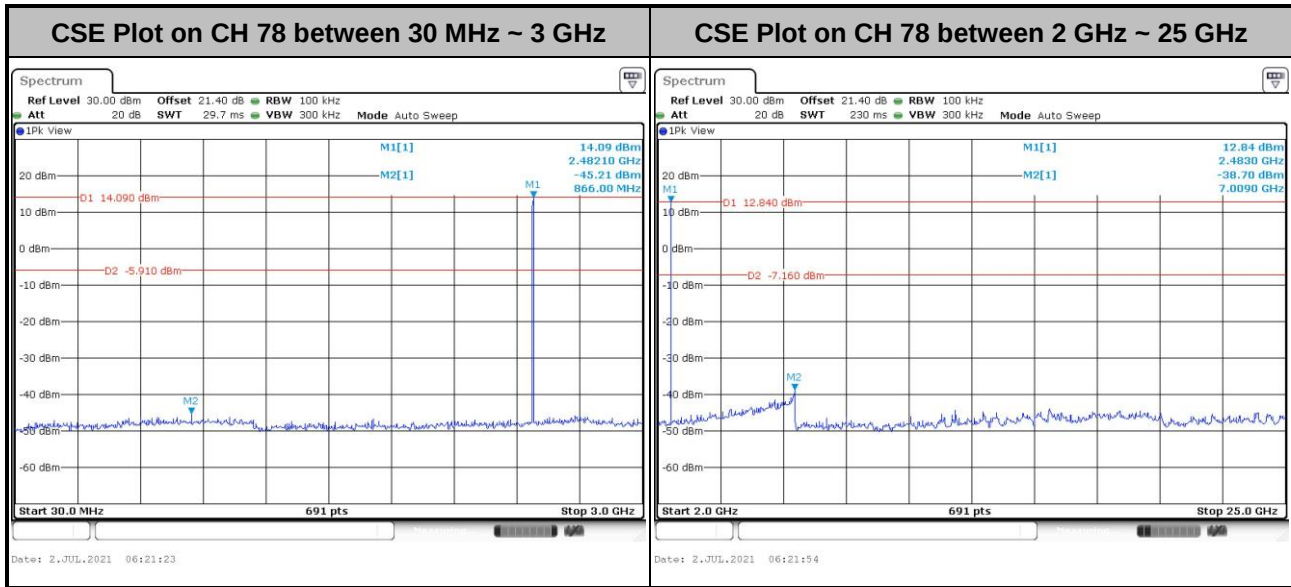






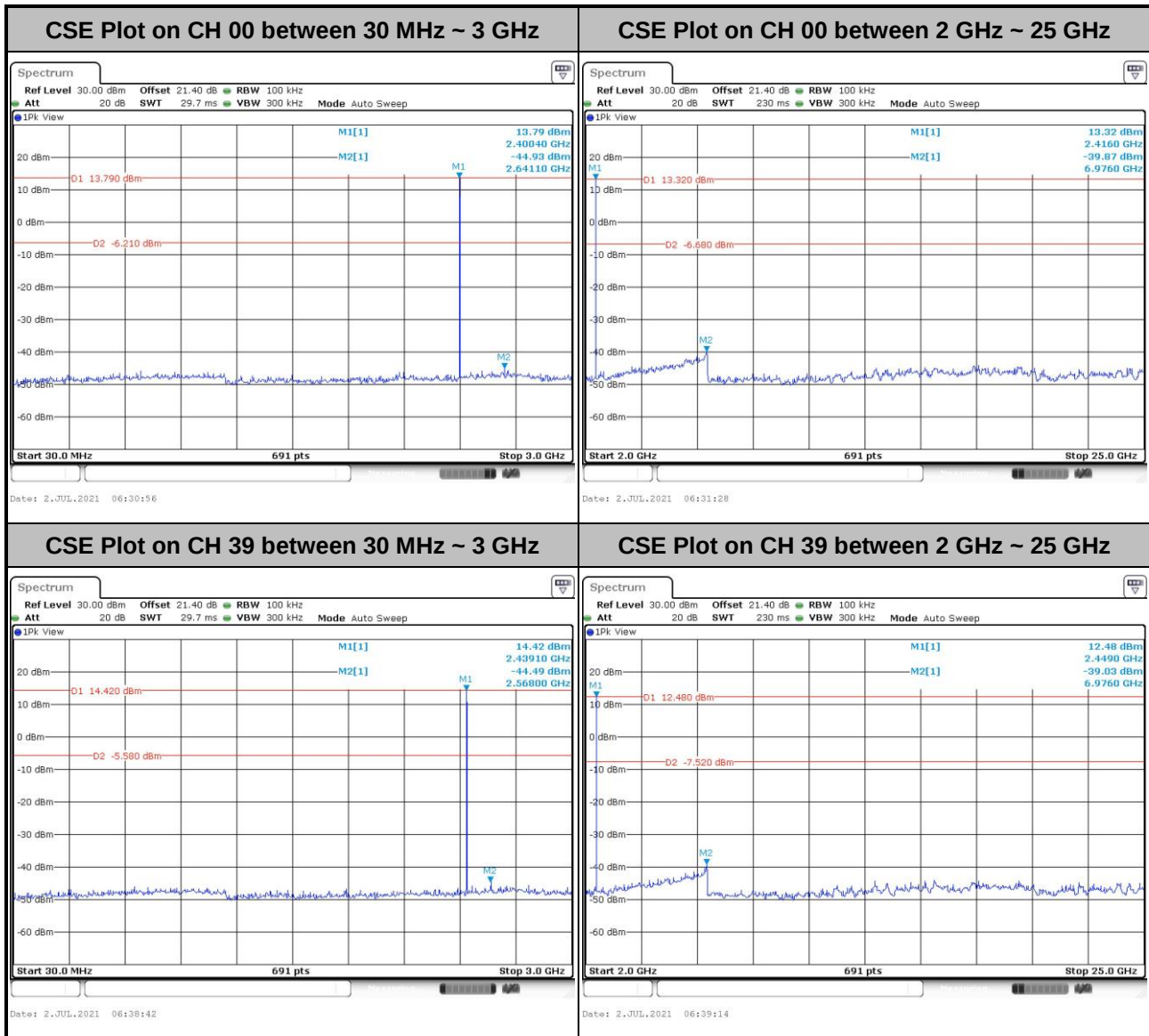
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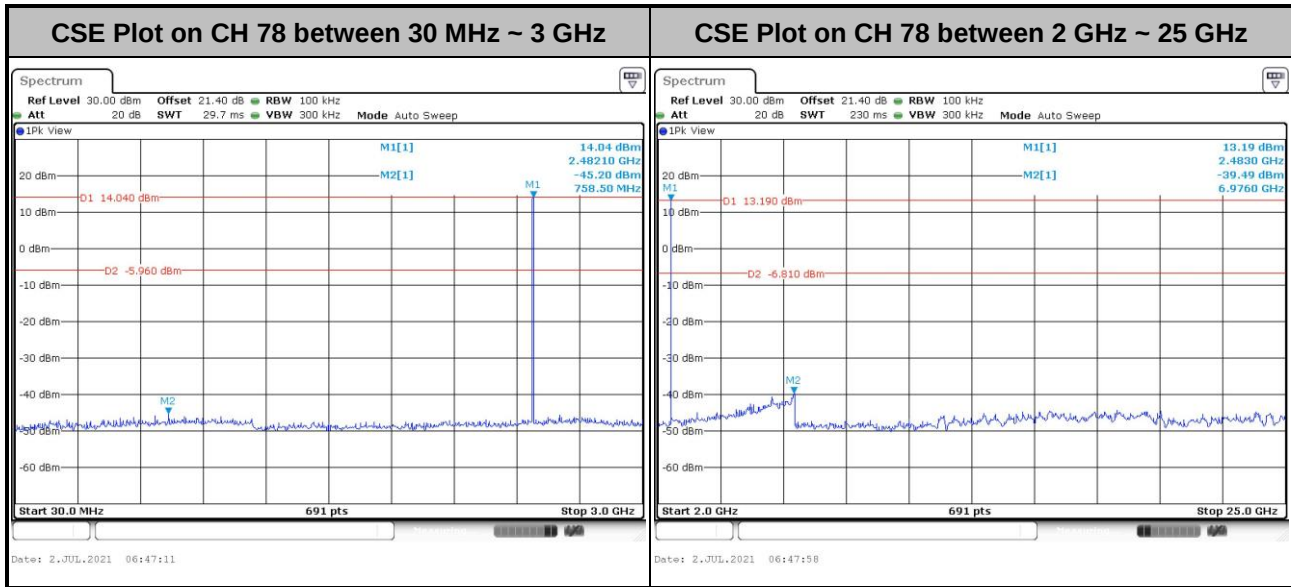






<3Mbps>





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

See list of measuring equipment of this test report.

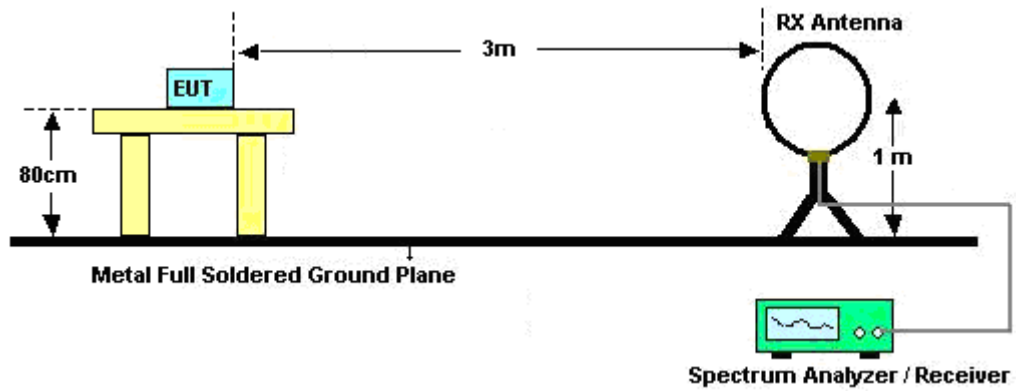
3.8.3 Test Procedures

1. The EUT was 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 was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. For each suspected emission, the EUT was 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 + $20 * \log(\text{Duty cycle})$
6. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
7. For testing below 1 GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
8. For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

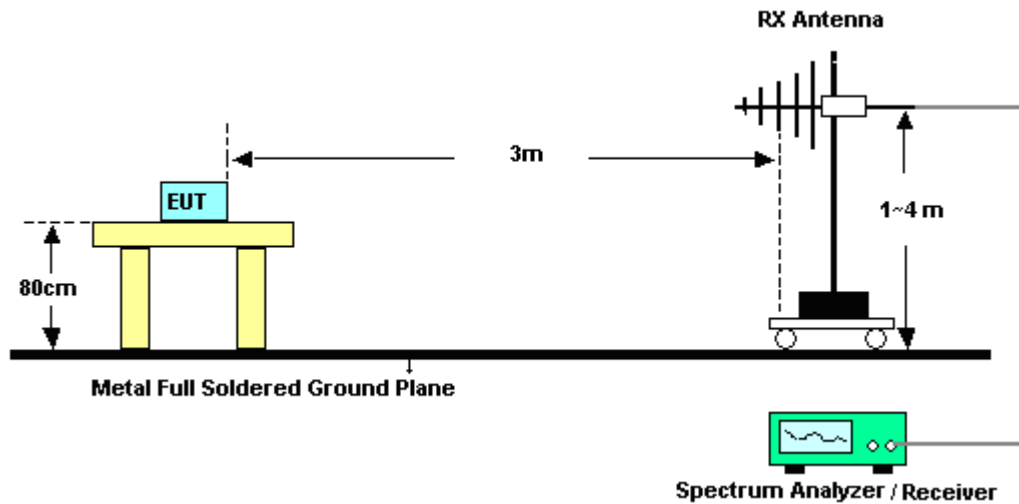
Note: The average levels were calculated from the peak level corrected with duty cycle correction factor (-24.76dB) derived from $20 \log(\text{dwell time}/100\text{ms})$. This correction is only for signals that hop with the fundamental signal, such as band-edge and harmonic. Other spurious signals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

3.8.4 Test Setup

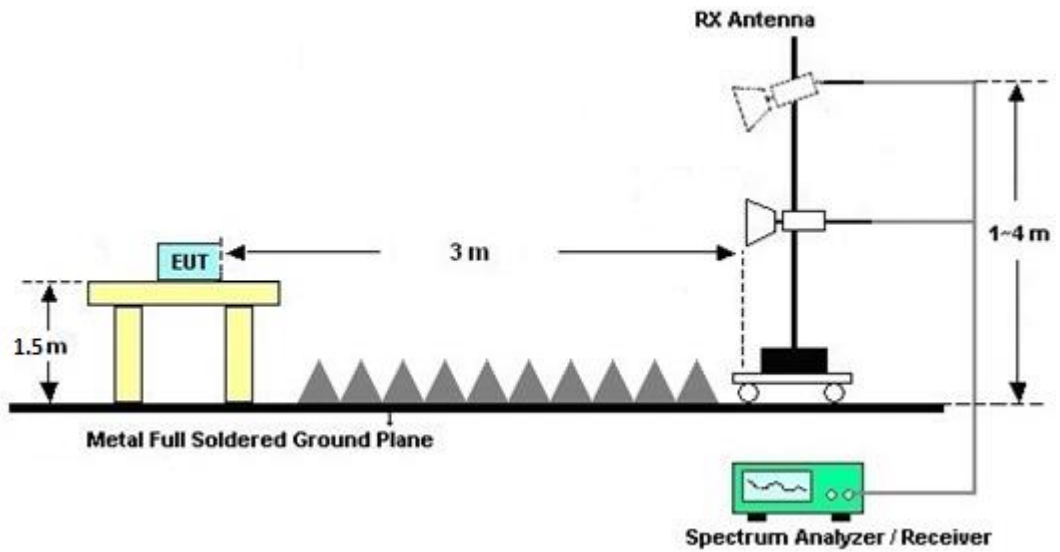
For radiated test below 30MHz



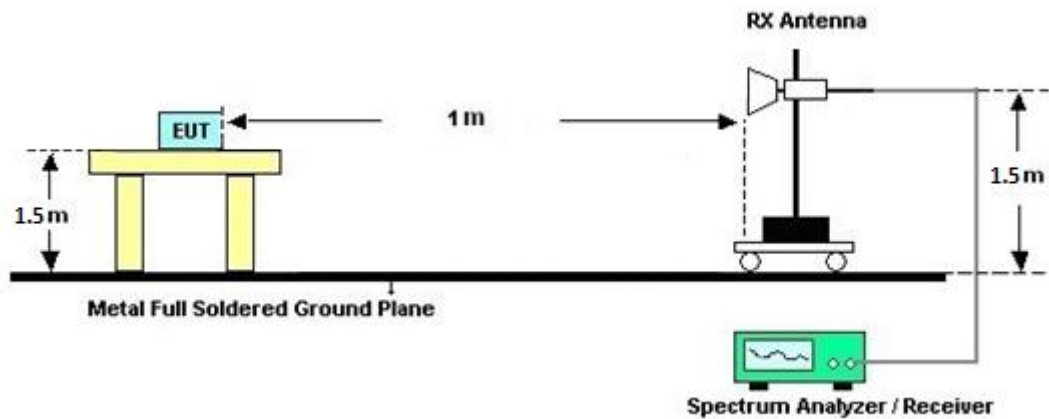
For radiated test from 30MHz to 1GHz



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 started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was 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 came out very similar.

3.8.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.8.7 Duty Cycle

Please refer to Appendix E.

3.8.8 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.

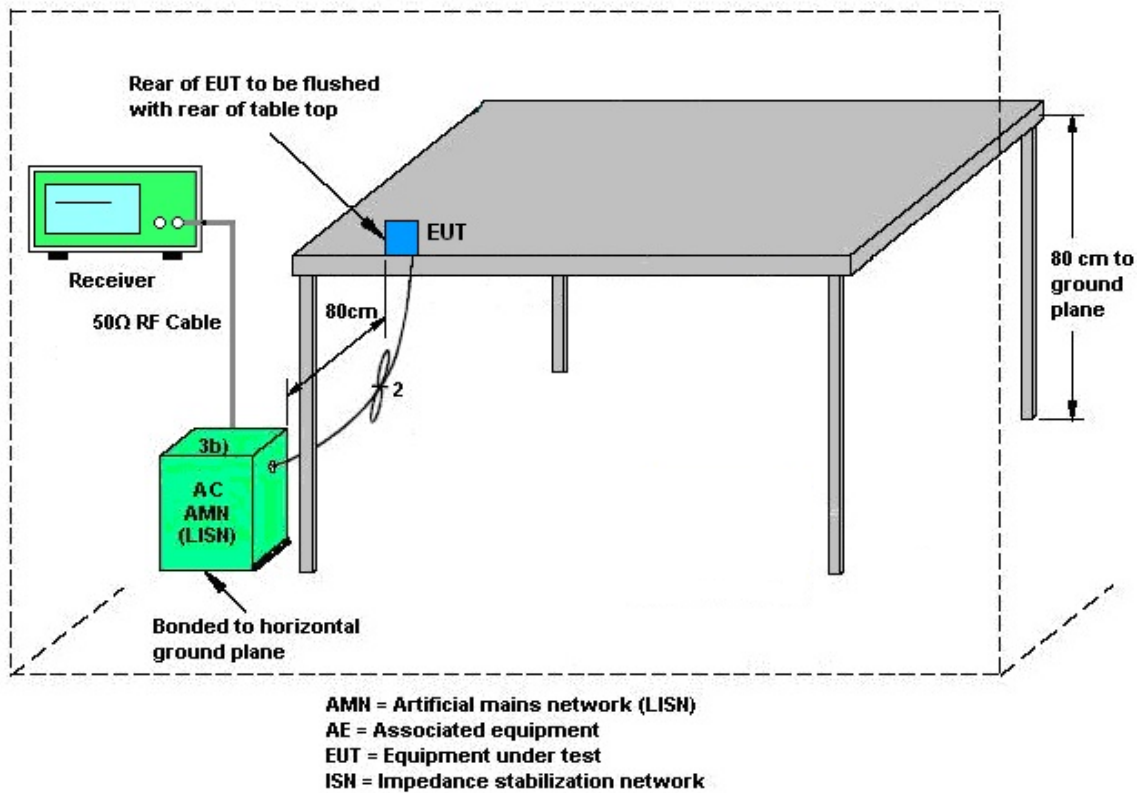
3.9.2 Measuring Instruments

See list of measuring equipment of this test report.

3.9.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was 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 sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) 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
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1326	1GHz ~ 18GHz	Nov. 03, 2020	Jul. 04, 2021~ Aug. 05, 2021	Nov. 02, 2021	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00991	18GHz~40GHz	May 12, 2021	Jul. 04, 2021~ Aug. 05, 2021	May 11, 2022	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 11, 2020	Jul. 04, 2021~ Aug. 05, 2021	Oct. 10, 2021	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 04, 2021	Jul. 04, 2021~ Aug. 05, 2021	Jan. 03, 2022	Radiation (03CH11-HY)
Preamplifier	EMEC	EM1G18G	060812	1GHz~18GHz	Oct. 27, 2020	Jul. 04, 2021~ Aug. 05, 2021	Oct. 26, 2021	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY532700 80	1GHz~26.5GHz	Nov. 12, 2020	Jul. 04, 2021~ Aug. 05, 2021	Nov. 11, 2021	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Jul. 04, 2021~ Aug. 05, 2021	Jun. 21, 2022	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 02, 2020	Jul. 04, 2021~ Aug. 05, 2021	Dec. 01, 2021	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY542004 86	10Hz~44GHz	Oct. 23, 2020	Jul. 04, 2021~ Aug. 05, 2021	Oct. 22, 2021	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY541300 85	20MHz~8.4GHz	Nov. 02, 2020	Jul. 04, 2021~ Aug. 05, 2021	Nov. 01, 2021	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500- B	N/A	1~4m	N/A	Jul. 04, 2021~ Aug. 05, 2021	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Jul. 04, 2021~ Aug. 05, 2021	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-00105 3	N/A	N/A	Jul. 04, 2021~ Aug. 05, 2021	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4 PE	9kHz-30MHz	Mar. 11, 2021	Jul. 04, 2021~ Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz-40GHz	Mar. 11, 2021	Jul. 04, 2021~ Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4 PE	30M-18G	Mar. 11, 2021	Jul. 04, 2021~ Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz-40GHz	Mar. 11, 2021	Jul. 04, 2021~ Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60SS	SN3	3GHz High Pass Filter	Sep. 14, 2020	Jul. 04, 2021~ Aug. 05, 2021	Sep. 13, 2021	Radiation (03CH11-HY)
Filter	Wainwright	WLK4-1000-1 530-8000-40S S	SN1	1.53GHz Low Pass Filter	Sep. 14, 2020	Jul. 04, 2021~ Aug. 05, 2021	Sep. 13, 2021	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP140325	N/A	Nov. 18, 2020	Jul. 04, 2021~ Aug. 05, 2021	Nov. 17, 2021	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP200880	QA-3-031	Oct. 22, 2020	Jul. 04, 2021~ Aug. 05, 2021	Oct. 21, 2021	Radiation (03CH11-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2021	Jun. 17, 2021~ Jul. 24, 2021	Mar. 01, 2022	Conducted (TH05-HY)
Power Meter	Agilent	E4416A	GB412923 44	N/A	Jan. 14, 2021	Jun. 17, 2021~ Jul. 24, 2021	Jan. 13, 2022	Conducted (TH05-HY)
Power Sensor	Agilent	E9327A	US404415 48	50MHz~18GHz	Jan. 14, 2021	Jun. 17, 2021~ Jul. 24, 2021	Jan. 13, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 27, 2020	Jun. 17, 2021~ Jul. 24, 2021	Nov. 26, 2021	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2021	Jun. 17, 2021~ Jul. 24, 2021	Mar. 16, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jul. 07, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Jul. 07, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Jul. 07, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Jul. 07, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jul. 07, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Feb. 25, 2021	Jul. 07, 2021	Feb. 24, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Jul. 07, 2021	Dec. 30, 2021	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.2 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Hank Hsu	Temperature:	22.5~25.9	°C
Test Date:	2021/6/17~2021/7/24	Relative Humidity:	45.1~58.7	%

<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	1.016	0.906	1.003	0.6773	Pass
DH	1Mbps	1	39	2441	1.013	0.906	1.003	0.6753	Pass
DH	1Mbps	1	78	2480	1.013	0.906	0.999	0.6753	Pass
2DH	2Mbps	1	0	2402	1.294	1.181	1.003	0.8627	Pass
2DH	2Mbps	1	39	2441	1.294	1.181	0.999	0.8627	Pass
2DH	2Mbps	1	78	2480	1.290	1.181	0.999	0.8600	Pass
3DH	3Mbps	1	0	2402	1.250	1.161	0.999	0.8333	Pass
3DH	3Mbps	1	39	2441	1.250	1.161	1.003	0.8333	Pass
3DH	3Mbps	1	78	2480	1.250	1.164	0.999	0.8333	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	20.15	20.97	Pass
	39	1	20.13	20.97	Pass
	78	1	20.27	20.97	Pass
2DH1	0	1	20.13	20.97	Pass
	39	1	20.10	20.97	Pass
	78	1	20.28	20.97	Pass
3DH1	0	1	20.80	20.97	Pass
	39	1	20.67	20.97	Pass
	78	1	20.90	20.97	Pass

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

DH	CH.	NTX	Average Power (dBm)	Duty Factor (dB)
DH1	0	1	19.06	5.15
	39	1	19.05	5.15
	78	1	19.40	5.15
2DH1	0	1	17.27	5.08
	39	1	17.24	5.08
	78	1	17.49	5.08
3DH1	0	1	17.49	5.08
	39	1	17.30	5.08
	78	1	17.54	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	1.016	0.906	0.998	0.6773	Pass
DH	1Mbps	1	39	2441	1.016	0.903	0.998	0.6773	Pass
DH	1Mbps	1	78	2480	1.016	0.903	0.998	0.6773	Pass
2DH	2Mbps	1	0	2402	1.289	1.181	0.998	0.8593	Pass
2DH	2Mbps	1	39	2441	1.294	1.181	1.003	0.8627	Pass
2DH	2Mbps	1	78	2480	1.294	1.184	1.003	0.8627	Pass
3DH	3Mbps	1	0	2402	1.250	1.158	1.003	0.8333	Pass
3DH	3Mbps	1	39	2441	1.250	1.158	0.999	0.8333	Pass
3DH	3Mbps	1	78	2480	1.250	1.161	0.994	0.8333	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	19.55	20.97	Pass
	39	1	20.23	20.97	Pass
	78	1	19.56	20.97	Pass
2DH1	0	1	20.15	20.97	Pass
	39	1	20.43	20.97	Pass
	78	1	20.16	20.97	Pass
3DH1	0	1	20.63	20.97	Pass
	39	1	20.95	20.97	Pass
	78	1	20.64	20.97	Pass

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

DH	CH.	NTX	Average Power (dBm)	Duty Factor (dB)
DH1	0	1	18.59	5.15
	39	1	19.25	5.15
	78	1	18.71	5.15
2DH1	0	1	17.30	5.05
	39	1	17.59	5.05
	78	1	17.31	5.05
3DH1	0	1	17.04	5.08
	39	1	17.38	5.08
	78	1	17.24	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

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
DH	1Mbps	2	0	2402	1.021	0.905	1.159	0.6807	Pass
DH	1Mbps	2	39	2441	1.015	0.905	1.007	0.6767	Pass
DH	1Mbps	2	78	2480	1.015	0.905	1.002	0.6767	Pass
2DH	2Mbps	2	0	2402	1.293	1.180	1.007	0.8620	Pass
2DH	2Mbps	2	39	2441	1.293	1.180	1.007	0.8620	Pass
2DH	2Mbps	2	78	2480	1.293	1.180	1.002	0.8620	Pass
3DH	3Mbps	2	0	2402	1.250	1.160	1.007	0.8333	Pass
3DH	3Mbps	2	39	2441	1.250	1.160	1.007	0.8333	Pass
3DH	3Mbps	2	78	2480	1.250	1.157	0.998	0.8333	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	2	17.94	20.97	Pass
	39	2	17.95	20.97	Pass
	78	2	18.32	20.97	Pass
2DH1	0	2	17.36	20.97	Pass
	39	2	17.23	20.97	Pass
	78	2	17.57	20.97	Pass
3DH1	0	2	17.92	20.97	Pass
	39	2	17.69	20.97	Pass
	78	2	17.97	20.97	Pass

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

DH	CH.	NTX	Average Power (dBm)	Duty Factor (dB)
DH1	0	2	16.99	5.14
	39	2	17.19	5.14
	78	2	17.46	5.14
2DH1	0	2	14.59	5.05
	39	2	14.30	5.05
	78	2	14.68	5.05
3DH1	0	2	14.58	5.08
	39	2	14.27	5.08
	78	2	14.77	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



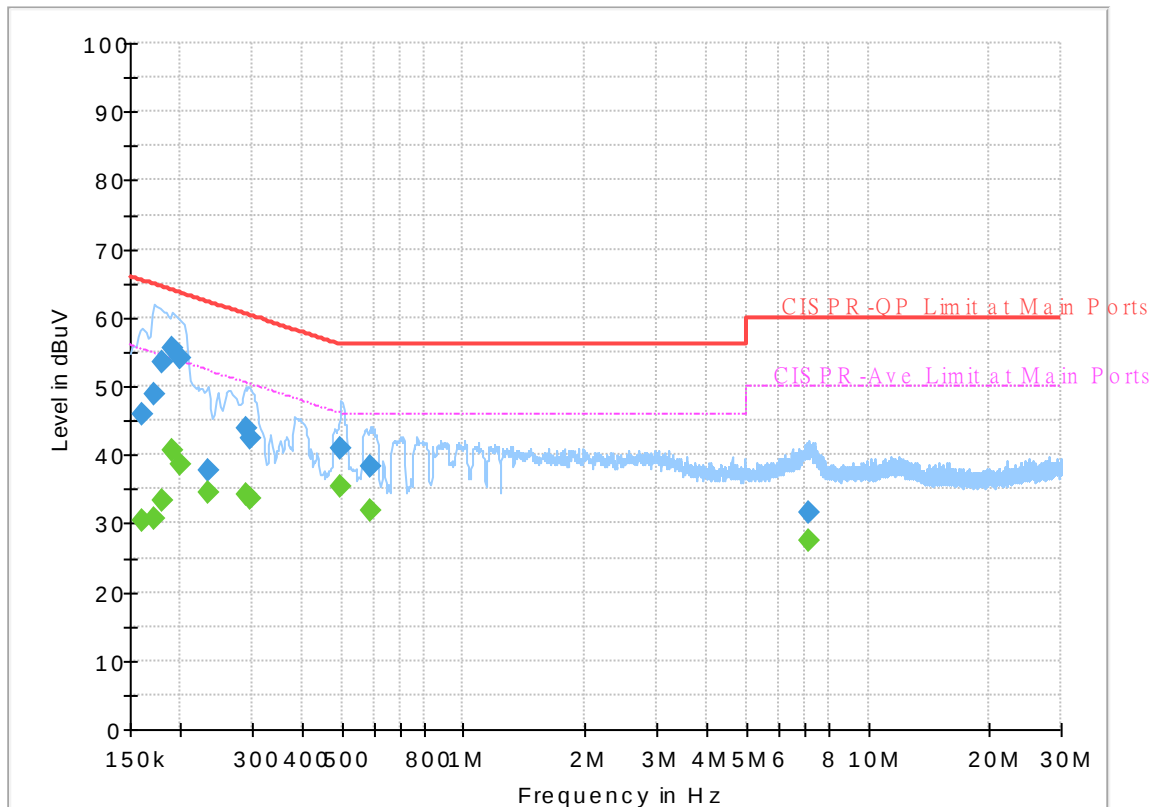
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26℃
		Relative Humidity :	40~50%

EUT Information

Report NO : 121931-04
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



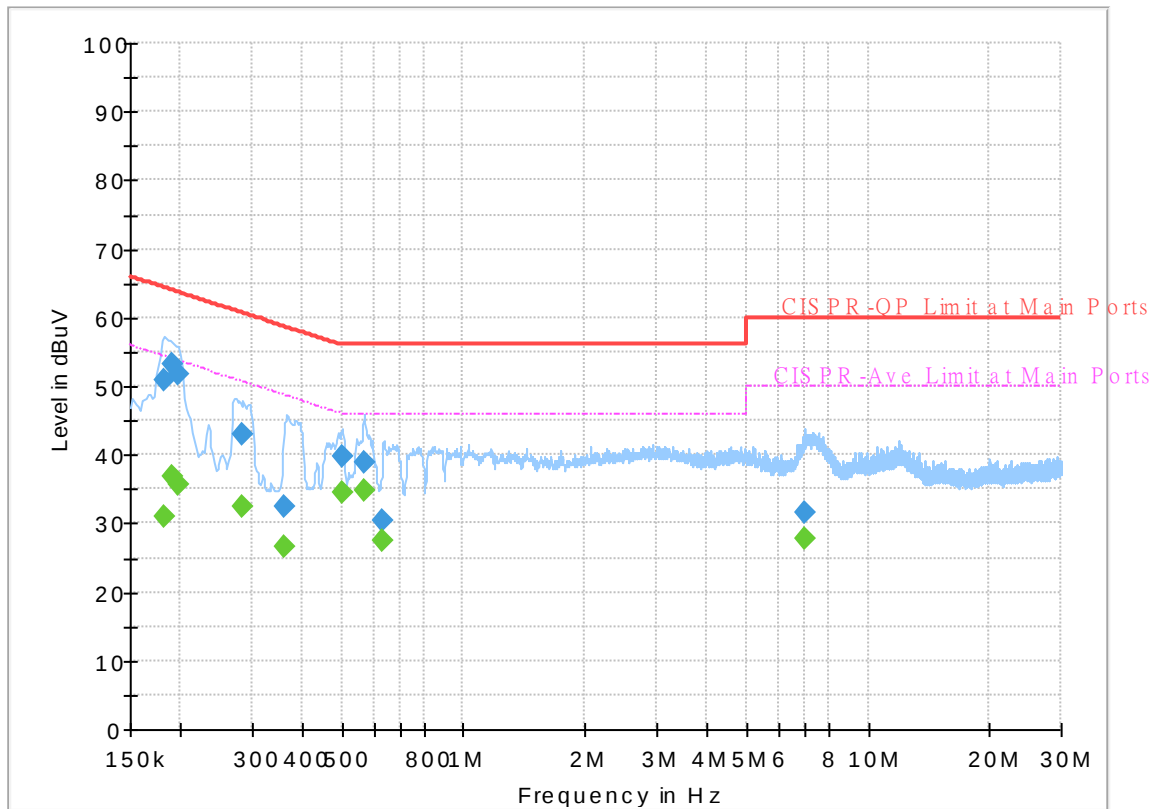
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	---	30.43	55.40	24.97	L1	OFF	19.5
0.161250	45.89	---	65.40	19.51	L1	OFF	19.5
0.172500	---	30.66	54.84	24.18	L1	OFF	19.5
0.172500	48.77	---	64.84	16.07	L1	OFF	19.5
0.179250	---	33.31	54.52	21.21	L1	OFF	19.5
0.179250	53.62	---	64.52	10.90	L1	OFF	19.5
0.190500	---	40.66	54.02	13.36	L1	OFF	19.5
0.190500	55.70	---	64.02	8.32	L1	OFF	19.5
0.199500	---	38.60	53.63	15.03	L1	OFF	19.5
0.199500	54.07	---	63.63	9.56	L1	OFF	19.5
0.233250	---	34.38	52.33	17.95	L1	OFF	19.5
0.233250	37.76	---	62.33	24.57	L1	OFF	19.5
0.289500	---	34.31	50.54	16.23	L1	OFF	19.5
0.289500	43.96	---	60.54	16.58	L1	OFF	19.5
0.298500	---	33.74	50.28	16.54	L1	OFF	19.5
0.298500	42.35	---	60.28	17.93	L1	OFF	19.5
0.498750	---	35.37	46.02	10.65	L1	OFF	19.7
0.498750	40.82	---	56.02	15.20	L1	OFF	19.7
0.591000	---	31.95	46.00	14.05	L1	OFF	19.8
0.591000	38.22	---	56.00	17.78	L1	OFF	19.8
7.163250	---	27.55	50.00	22.45	L1	OFF	19.9
7.163250	31.67	---	60.00	28.33	L1	OFF	19.9

EUT Information

Report NO : 121931-04
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)
0.181500	---	31.05	54.42	23.37	N	OFF	19.5
0.181500	50.90	---	64.42	13.52	N	OFF	19.5
0.190500	---	36.89	54.02	17.13	N	OFF	19.5
0.190500	53.34	---	64.02	10.68	N	OFF	19.5
0.197250	---	35.66	53.73	18.07	N	OFF	19.5
0.197250	51.67	---	63.73	12.06	N	OFF	19.5
0.285000	---	32.37	50.67	18.30	N	OFF	19.5
0.285000	43.03	---	60.67	17.64	N	OFF	19.5
0.361500	---	26.71	48.69	21.98	N	OFF	19.6
0.361500	32.51	---	58.69	26.18	N	OFF	19.6
0.503250	---	34.62	46.00	11.38	N	OFF	19.7
0.503250	39.68	---	56.00	16.32	N	OFF	19.7
0.568500	---	34.78	46.00	11.22	N	OFF	19.8
0.568500	38.91	---	56.00	17.09	N	OFF	19.8
0.631500	---	27.35	46.00	18.65	N	OFF	19.8
0.631500	30.46	---	56.00	25.54	N	OFF	19.8
6.965250	---	27.76	50.00	22.24	N	OFF	20.0
6.965250	31.46	---	60.00	28.54	N	OFF	20.0



Appendix C. Radiated Spurious Emission

Test Engineer :	Harvey Guo, Fu Chen and Troye Hsieh	Temperature :	19.1~23.3°C
		Relative Humidity :	60.2~69.5%



2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2315.67	44.44	-29.56	74	43.2	27.67	7.06	33.49	124	165	P	H
		2315.67	19.68	-34.32	54	-	-	-	-	-	-	A	H
	*	2402	103.11	-	-	101.92	27.5	7.14	33.45	124	165	P	H
	*	2402	78.35	-	-	-	-	-	-	-	-	A	H
													H
													H
		2334.465	43.2	-30.8	74	41.97	27.63	7.08	33.48	215	95	P	V
		2334.465	18.44	-35.56	54	-	-	-	-	-	-	A	V
	*	2402	100.05	-	-	98.86	27.5	7.14	33.45	215	95	P	V
	*	2402	75.29	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2368.8	43.47	-30.53	74	42.27	27.56	7.11	33.47	116	164	P	H
		2368.8	18.71	-35.29	54	-	-	-	-	-	-	A	H
	*	2441	104.01	-	-	102.74	27.5	7.2	33.43	116	164	P	H
	*	2441	79.25	-	-	-	-	-	-	-	-	A	H
		2483.5	43.32	-30.68	74	42.03	27.43	7.27	33.41	116	164	P	H
		2483.5	18.56	-35.44	54	-	-	-	-	-	-	A	H
		2355.08	43.71	-30.29	74	42.49	27.59	7.1	33.47	199	97	P	V
		2355.08	18.95	-35.05	54	-	-	-	-	-	-	A	V
	*	2441	102.55	-	-	101.28	27.5	7.2	33.43	199	97	P	V
	*	2441	77.79	-	-	-	-	-	-	-	-	A	V
		2495.8	44.37	-29.63	74	43.07	27.41	7.29	33.4	199	97	P	V
		2495.8	19.61	-34.39	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	103.23	-	-	101.94	27.44	7.26	33.41	100	162	P	H
	*	2480	78.47	-	-	-	-	-	-	-	-	A	H
		2483.56	47.07	-26.93	74	45.78	27.43	7.27	33.41	100	162	P	H
		2483.56	22.31	-31.69	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	100.74	-	-	99.45	27.44	7.26	33.41	200	92	P	V
	*	2480	75.98	-	-	-	-	-	-	-	-	A	V
		2483.72	46.2	-27.8	74	44.91	27.43	7.27	33.41	200	92	P	V
		2483.72	21.44	-32.56	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**2.4GHz 2400~2483.5MHz****BT (Harmonic @ 3m)**

BT Ant 4	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	38.36	-35.64	74	62.35	31	11.18	66.17	100	0	P	H
		4804	13.6	-40.4	54	-	-	-	-	-	-	A	H
		17955	57.92	-16.08	74	52.73	46.5	23.86	65.17	100	0	P	H
		17955	33.16	-20.84	54	-	-	-	-	-	-	A	H
		4804	37.67	-36.33	74	61.66	31	11.18	66.17	100	0	P	V
		4804	12.91	-41.09	54	-	-	-	-	-	-	A	V
		17940	58.96	-15.04	74	54.11	46.2	23.84	65.19	100	0	P	V
		17940	-11.85	-65.85	54	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		4882	38.67	-35.33	74	61.86	31.58	11.34	66.11	100	0	P	H
		4882	13.91	-40.09	54	-	-	-	-	-	-	A	H
		7323	42.6	-31.4	74	58.46	36.4	13.46	65.72	100	0	P	H
		7323	17.84	-36.16	54	-	-	-	-	-	-	A	H
		17970	58.77	-15.23	74	53.25	46.8	23.87	65.15	100	0	P	H
		17970	34.01	-19.99	54	-	-	-	-	-	-	A	H
		4882	39.14	-34.86	74	62.33	31.58	11.34	66.11	100	0	P	V
		4882	14.38	-39.62	54	-	-	-	-	-	-	A	V
		7323	42.92	-31.08	74	58.78	36.4	13.46	65.72	100	0	P	V
		7323	18.16	-35.84	54	-	-	-	-	-	-	A	V
		17970	58.34	-15.66	74	52.82	46.8	23.87	65.15	100	0	P	V
		17970	33.58	-20.42	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz		4960	39.41	-34.59	74	62.9	31.06	11.51	66.06	100	0	P	H
		4960	14.65	-39.35	54	-	-	-	-	-	-	A	H
		7440	43.82	-30.18	74	59.31	36.56	13.74	65.79	100	0	P	H
		7440	19.06	-34.94	54	-	-	-	-	-	-	A	H
		17940	57.66	-16.34	74	52.81	46.2	23.84	65.19	100	0	P	H
		17940	32.9	-21.1	54	-	-	-	-	-	-	A	H
		4960	39	-35	74	62.49	31.06	11.51	66.06	100	0	P	V
		4960	14.24	-39.76	54	-	-	-	-	-	-	A	V
		7440	43.05	-30.95	74	58.54	36.56	13.74	65.79	100	0	P	V
		7440	18.29	-35.71	54	-	-	-	-	-	-	A	V
		17955	57.75	-16.25	74	52.56	46.5	23.86	65.17	100	0	P	V
		17955	32.99	-21.01	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission above 18GHz

2.4GHz BT (SHF)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT SHF		24958	36.21	-31.99	68.2	52.79	39.35	-2.8	53.13	150	0	P	H
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		24881	36.09	-32.11	68.2	52.81	39.26	-2.81	53.17	150	0	P	V
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2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2353.89	43.49	-30.51	74	42.27	27.59	7.1	33.47	155	40	P	H
		2353.89	18.73	-35.27	54	-	-	-	-	-	-	A	H
	*	2402	-	-	74	110.06	27.5	7.14	33.45	155	40	P	H
	*	2402	-	-	54	-	-	-	-	-	-	A	H
													H
													H
		2380.35	43.61	-30.39	74	42.41	27.54	7.12	33.46	314	110	P	V
		2380.35	18.85	-35.15	54	-	-	-	-	-	-	A	V
	*	2402	101.78	-	-	100.59	27.5	7.14	33.45	314	110	P	V
	*	2402	77.02	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2338.28	44.59	-29.41	74	43.37	27.62	7.08	33.48	148	38	P	H
		2338.28	19.83	-34.17	54	-	-	-	-	-	-	A	H
	*	2441	113.42	-	-	112.15	27.5	7.2	33.43	148	38	P	H
	*	2441	88.66	-	-	-	-	-	-	-	-	A	H
		2495.87	43.45	-30.55	74	42.15	27.41	7.29	33.4	148	38	P	H
		2495.87	18.69	-35.31	54	-	-	-	-	-	-	A	H
		2321.06	43.9	-30.1	74	42.66	27.66	7.07	33.49	301	108	P	V
		2321.06	19.14	-34.86	54	-	-	-	-	-	-	A	V
	*	2441	105.45	-	-	104.18	27.5	7.2	33.43	301	108	P	V
	*	2441	80.69	-	-	-	-	-	-	-	-	A	V
		2488.8	43.83	-30.17	74	42.54	27.42	7.28	33.41	301	108	P	V
		2488.8	19.07	-34.93	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	112.38	-	-	111.09	27.44	7.26	33.41	150	40	P	H
	*	2480	87.62	-	-	-	-	-	-	-	-	A	H
		2483.52	47.73	-26.27	74	46.44	27.43	7.27	33.41	150	40	P	H
		2483.52	22.97	-31.03	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	109	-	-	107.71	27.44	7.26	33.41	300	117	P	V
	*	2480	84.24	-	-	-	-	-	-	-	-	A	V
		2483.88	46.19	-27.81	74	44.9	27.43	7.27	33.41	300	117	P	V
		2483.88	21.43	-32.57	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT Ant 3	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	37.77	-36.23	74	61.76	31	11.18	66.17	100	0	P	H
		4804	13.01	-40.99	54	-	-	-	-	-	-	A	H
		17955	57.94	-16.06	74	52.75	46.5	23.86	65.17	100	0	P	H
		17955	33.18	-20.82	54	-	-	-	-	-	-	A	H
		4804	37.63	-36.37	74	61.62	31	11.18	66.17	100	0	P	V
		4804	12.87	-41.13	54	-	-	-	-	-	-	A	V
		17955	58.48	-15.52	74	53.29	46.5	23.86	65.17	100	0	P	V
		17955	33.72	-20.28	54	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		4882	39.19	-34.81	74	62.38	31.58	11.34	66.11	100	0	P	H
		4882	14.43	-39.57	54	-	-	-	-	-	-	A	H
		7323	41.67	-32.33	74	57.53	36.4	13.46	65.72	100	0	P	H
		7323	16.91	-37.09	54	-	-	-	-	-	-	A	H
		17955	57.8	-16.2	74	52.61	46.5	23.86	65.17	100	0	A	H
		17955	33.04	-20.96	54	-	-	-	-	-	-	P	H
		4882	38.44	-35.56	74	61.63	31.58	11.34	66.11	100	0	A	V
		4882	13.68	-40.32	54	-	-	-	-	-	-	A	V
		7323	42.3	-31.7	74	58.16	36.4	13.46	65.72	100	0	P	V
		7323	17.54	-36.46	54	-	-	-	-	-	-	A	V
		17970	58.04	-15.96	74	52.52	46.8	23.87	65.15	100	0	P	V
		17970	33.28	-20.72	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz		4960	38.26	-35.74	74	61.75	31.06	11.51	66.06	100	0	P	H
		4960	13.5	-40.5	54	-	-	-	-	-	-	A	H
		7440	41.9	-32.1	74	57.39	36.56	13.74	65.79	100	0	P	H
		7440	17.14	-36.86	54	-	-	-	-	-	-	A	H
		17955	58.38	-15.62	74	53.19	46.5	23.86	65.17	100	0	A	H
		17955	33.62	-20.38	54	-	-	-	-	-	-	P	H
		4960	39.07	-34.93	74	62.56	31.06	11.51	66.06	100	0	A	V
		4960	14.31	-39.69	54	-	-	-	-	-	-	A	V
		7440	43.45	-30.55	74	58.94	36.56	13.74	65.79	100	0	P	V
		7440	18.69	-35.31	54	-	-	-	-	-	-	A	V
		17955	58.16	-15.84	74	52.97	46.5	23.86	65.17	100	0	P	V
		17955	33.4	-20.6	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission above 18GHz

2.4GHz BT (SHF)

[illegible]

Emission below 1GHz

2.4GHz BT (LF)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT LF		30	19.05	-20.95	40	26.64	24.06	0.79	32.44	-	-	P	H
		94.02	31.31	-12.19	43.5	47.2	15.13	1.49	32.51	100	0	P	H
		179.38	23.75	-19.75	43.5	39.4	14.77	2.11	32.53	-	-	P	H
		839.95	29.37	-16.63	46	27.61	28.83	4.37	31.44	-	-	P	H
		912.7	30.73	-15.27	46	28.03	29.21	4.61	31.12	-	-	P	H
		956.35	31.29	-14.71	46	26.43	30.98	4.71	30.83	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
		68.8	24.82	-15.18	40	43.95	12.12	1.28	32.53	-	-	P	V
		91.11	28.03	-15.47	43.5	44.4	14.67	1.47	32.51	-	-	P	V
		128.94	25.36	-18.14	43.5	38.8	17.35	1.72	32.51	-	-	P	V
		752.65	29.06	-16.94	46	28.87	28.04	4.12	31.97	-	-	P	V
		856.44	30.34	-15.66	46	28.05	29.25	4.41	31.37	-	-	P	V
		955.38	31.48	-14.52	46	26.67	30.94	4.71	30.84	100	0	P	V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2364.18	43.65	-30.35	74	42.44	27.57	7.11	33.47	134	76	P	H
		2364.18	18.89	-35.11	54	-	-	-	-	-	-	A	H
	*	2402	110.11	-	-	108.92	27.5	7.14	33.45	134	76	P	H
	*	2402	85.35	-	-	-	-	-	-	-	-	A	H
													H
													H
		2318.085	43.7	-30.3	74	42.46	27.66	7.07	33.49	400	114	P	V
		2318.085	18.94	-35.06	54	-	-	-	-	-	-	A	V
	*	2402	105.56	-	-	104.37	27.5	7.14	33.45	400	114	P	V
	*	2402	80.8	-	-	-	-	-	-	-	-	A	V
													V
													V
BT CH 39 2441MHz		2324.56	44.61	-29.39	74	43.38	27.65	7.07	33.49	133	290	P	H
		2324.56	19.85	-34.15	54	-	-	-	-	-	-	A	H
	*	2441	109.82	-	-	108.55	27.5	7.2	33.43	133	290	P	H
	*	2441	75.06	-	-	-	-	-	-	-	-	A	H
		2492.58	43.23	-30.77	74	41.94	27.41	7.28	33.4	133	290	P	H
		2492.58	18.47	-35.53	54	-	-	-	-	-	-	A	H
		2367.4	43.27	-30.73	74	42.06	27.57	7.11	33.47	389	60	P	V
		2367.4	18.51	-35.49	54	-	-	-	-	-	-	A	V
	*	2441	104.45	-	-	103.18	27.5	7.2	33.43	389	60	P	V
	*	2441	79.69	-	-	-	-	-	-	-	-	A	V
		2497.76	43.75	-30.25	74	42.46	27.4	7.29	33.4	389	60	P	V
		2497.76	18.99	-35.01	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	110.44	-	-	109.15	27.44	7.26	33.41	144	350	P	H
	*	2480	85.68	-	-	-	-	-	-	-	-	A	H
		2483.52	46.22	-27.78	74	44.93	27.43	7.27	33.41	144	350	P	H
		2483.52	21.46	-32.54	54	-	-	-	-	-	-	A	H
													H
													H
	*	2480	108.33	-	-	107.04	27.44	7.26	33.41	375	58	P	V
	*	2480	83.57	-	-	-	-	-	-	-	-	A	V
		2483.6	44.8	-29.2	74	43.51	27.43	7.27	33.41	375	58	P	V
		2483.6	20.04	-33.96	54	-	-	-	-	-	-	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT Ant 4+3	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	37.35	-36.65	74	61.34	31	11.18	66.17	100	0	P	H
		4804	12.59	-41.41	54	-	-	-	-	-	-	A	H
		17955	58.81	-15.19	74	53.62	46.5	23.86	65.17	100	0	P	H
		17955	34.05	-19.95	54	-	-	-	-	-	-	A	H
		4804	37.07	-36.93	74	61.06	31	11.18	66.17	100	0	P	V
		4804	12.31	-41.69	54	-	-	-	-	-	-	A	V
		17985	57.94	-16.06	74	52.07	47.1	23.89	65.12	100	0	P	V
		17985	33.18	-20.82	54	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		4882	39.2	-34.8	74	62.39	31.58	11.34	66.11	100	0	P	H
		4882	14.44	-39.56	54	-	-	-	-	-	-	A	H
		7323	40.94	-33.06	74	56.8	36.4	13.46	65.72	100	0	P	H
		7323	16.18	-37.82	54	-	-	-	-	-	-	A	H
		17985	57.74	-16.26	74	51.87	47.1	23.89	65.12	100	0	P	H
		17985	32.98	-21.02	54	-	-	-	-	-	-	A	H
		4882	38.26	-35.74	74	61.45	31.58	11.34	66.11	100	0	P	V
		4882	13.5	-40.5	54	-	-	-	-	-	-	A	V
		7323	41.48	-32.52	74	57.34	36.4	13.46	65.72	100	0	P	V
		7323	16.72	-37.28	54	-	-	-	-	-	-	A	V
		17970	57.74	-16.26	74	52.22	46.8	23.87	65.15	100	0	P	V
		17970	32.98	-21.02	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz		4960	40.16	-33.84	74	63.65	31.06	11.51	66.06	100	0	P	H
		4960	15.4	-38.6	54	-	-	-	-	-	-	A	H
		7440	41.26	-32.74	74	56.75	36.56	13.74	65.79	100	0	P	H
		7440	16.5	-37.5	54	-	-	-	-	-	-	A	H
		17955	57.77	-16.23	74	52.58	46.5	23.86	65.17	100	0	P	H
		17955	33.01	-20.99	54	-	-	-	-	-	-	A	H
		4960	41.17	-32.83	74	64.66	31.06	11.51	66.06	100	0	P	V
		4960	16.41	-37.59	54	-	-	-	-	-	-	A	V
		7440	41.66	-32.34	74	57.15	36.56	13.74	65.79	100	0	P	V
		7440	16.9	-37.1	54	-	-	-	-	-	-	A	V
		17970	57.11	-16.89	74	51.59	46.8	23.87	65.15	100	0	P	V
		17970	32.35	-21.65	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission above 18GHz

2.4GHz BT (SHF)

[illegible]

Emission below 1GHz

2.4GHz BT (LF)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT LF		30	19.82	-20.18	40	27.41	24.06	0.79	32.44	-	-	P	H
		93.05	31.41	-12.09	43.5	47.38	15.06	1.48	32.51	100	0	P	H
		178.41	23.88	-19.62	43.5	39.46	14.85	2.1	32.53	-	-	P	H
		855.47	30.43	-15.57	46	28.16	29.24	4.41	31.38	-	-	P	H
		940.83	30.73	-15.27	46	26.93	30.05	4.68	30.93	-	-	P	H
		949.56	31.26	-14.74	46	26.79	30.65	4.7	30.88	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
		68.8	25.26	-14.74	40	44.39	12.12	1.28	32.53	-	-	P	V
		92.08	27.78	-15.72	43.5	43.93	14.88	1.48	32.51	-	-	P	V
		179.38	25.1	-18.4	43.5	40.75	14.77	2.11	32.53	-	-	P	V
		895.24	30.28	-15.72	46	27.83	29.11	4.56	31.22	-	-	P	V
		926.28	30.84	-15.16	46	27.69	29.54	4.64	31.03	-	-	P	V
		958.29	32.32	-13.68	46	27.36	31.06	4.72	30.82	100	0	P	V
													V
													V
													V
													V
													V
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



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	P eak or A verage
H/V	H orizontal or V ertical



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 and average measured complies with the limit line, so test result is “PASS”.

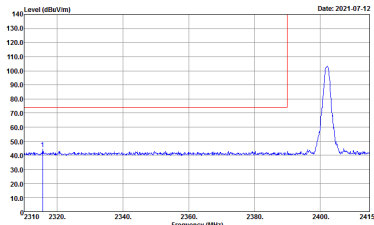
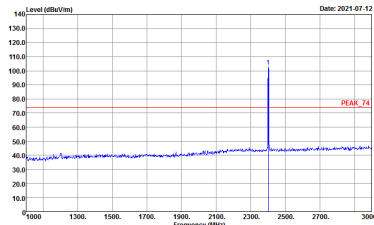


Appendix D. Radiated Spurious Emission Plots

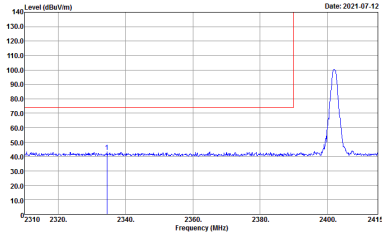
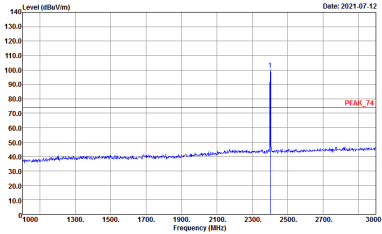
Test Engineer :	Harvey Guo, Fu Chen and Troye Hsieh	Temperature :	19.1~23.3°C
		Relative Humidity :	60.2~69.5%

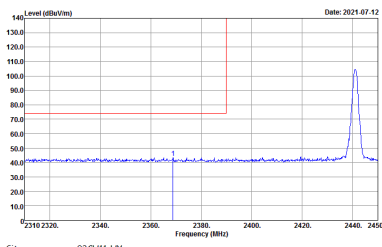
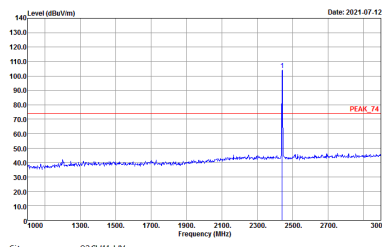
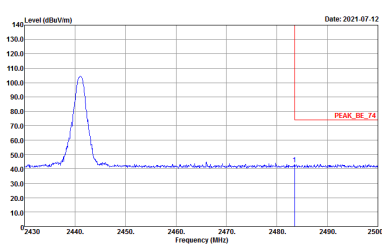
2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

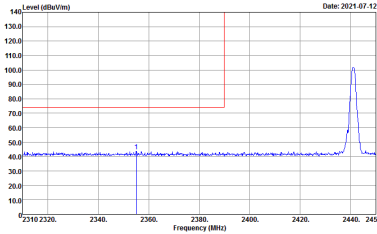
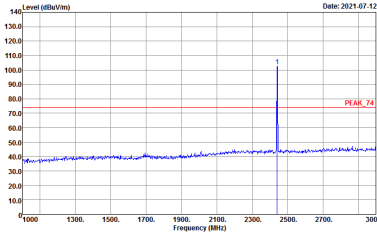
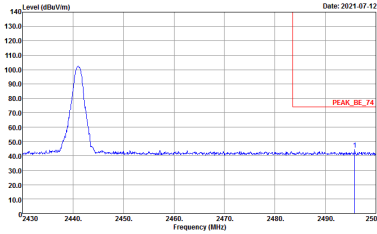
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4	Horizontal	Fundamental
Peak	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 9120D-HF 1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF 1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4	Vertical	Fundamental
Peak	 Site : 03CH11-HY Condition : PEAK_85_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 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	Level (dBm/100kHz) Date: 2021-07-12 2460 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_BF_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Level (dBm/100kHz) Date: 2021-07-12 2460 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto

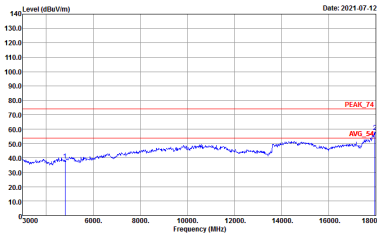
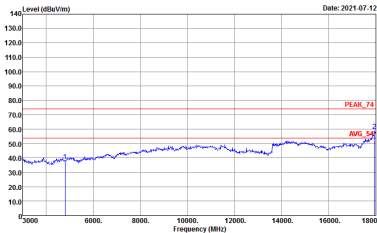


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4	Vertical	Fundamental
Peak	Level (dBuV/m) Date: 2021-07-12 PEAK_BF_74 Site : 03CH11-14Y Condition : PEAK_BF_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Level (dBuV/m) Date: 2021-07-12 PEAK_74 Site : 03CH11-14Y Condition : PEAK_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



2.4GHz 2400~2483.5MHz

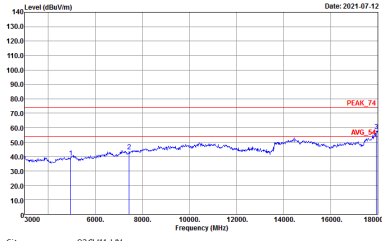
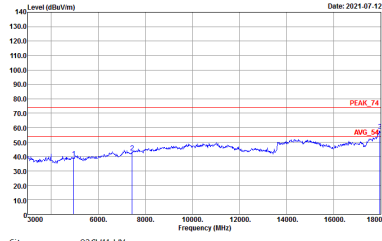
BT (Harmonic @ 3m)

BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH00 2402MHz	
4	Horizontal	Vertical
Peak Avg.	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



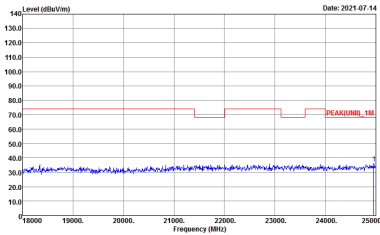
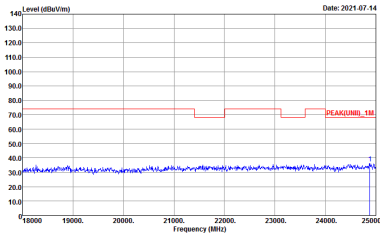
BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH39 2441MHz	
4	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-07-12 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-07-12 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH78 2480MHz	
4	Horizontal	Vertical
Peak Avg.	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



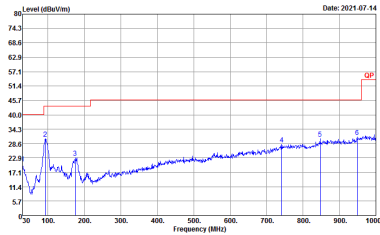
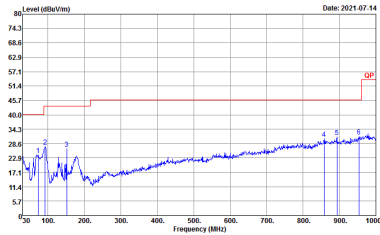
Emission above 18GHz
2.4GHz BT (SHF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT SHF	
4	Horizontal	Vertical
Peak/ Avg.	 Site : 03CHI1-HY Condition : PEAK(UNIT)_1M 1m SHF_00991_210512 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK(UNIT)_1M 1m SHF_00991_210512 VERTICAL Detector : Peak



Emission below 1GHz

2.4GHz BT (LF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT LF	
4	Horizontal	Vertical
QP / Peak	 Site : 03CH11-HY Condition : QP 3m BT-LOG 6111D-LF_ETC HORIZONTAL Detector : Peak	 Site : 03CH11-HY Condition : QP 3m BT-LOG 6111D-LF_ETC VERTICAL Detector : Peak

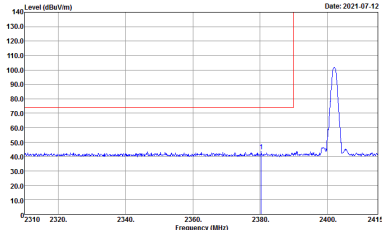
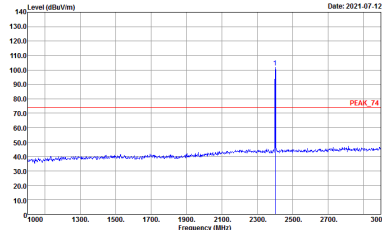


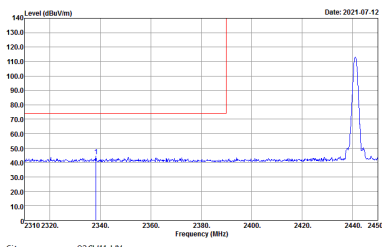
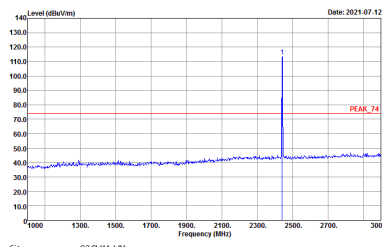
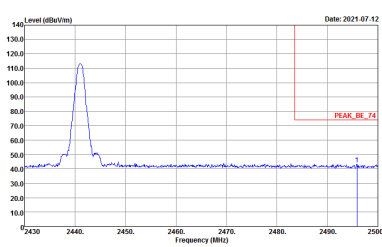
2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
3	Horizontal	Fundamental
Peak	Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto
Peak	Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 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	Level (dBuV/m) Date: 2021-07-14 2460 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Level (dBuV/m) Date: 2021-07-14 2460 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

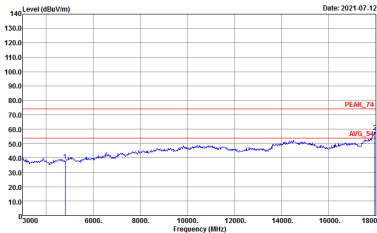
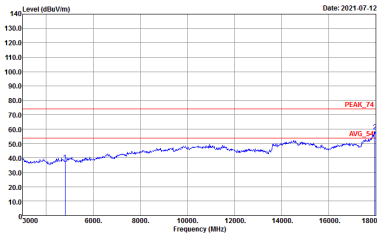


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
3	Vertical	Fundamental
Peak	Level (dBuV/m) Date: 2021-07-12 2460 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Level (dBuV/m) Date: 2021-07-12 1000 1300. 1500. 1700. 1900. 2100. 2300. 2500. 2700. 3000 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_74 3m HORN 91200-HF_1326 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 : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



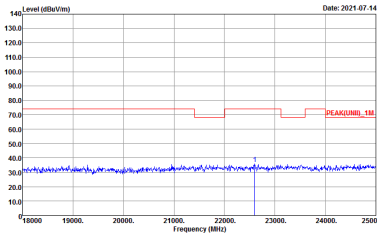
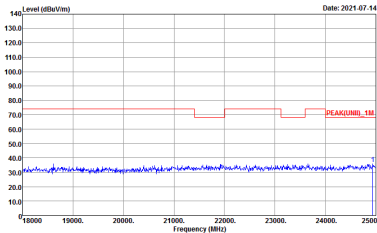
BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH39 2441MHz	
3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-07-12 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-07-12 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH78 2480MHz	
3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-07-12 Site : 05CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-07-12 Site : 05CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



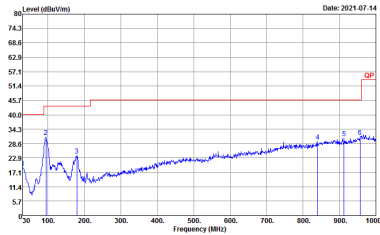
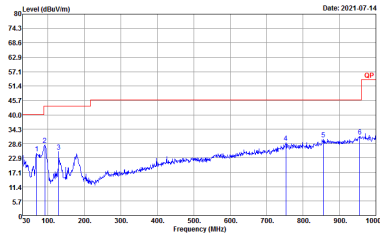
Emission above 18GHz
2.4GHz BT (SHF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT SHF	
3	Horizontal	Vertical
Peak/ Avg.	 Site : 03CHI1-HY Condition : PEAK(UNIT)_1M 1m SHF_00991_210512 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK(UNIT)_1M 1m SHF_00991_210512 VERTICAL Detector : Peak



Emission below 1GHz

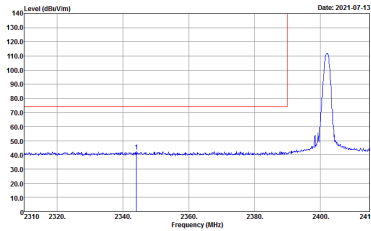
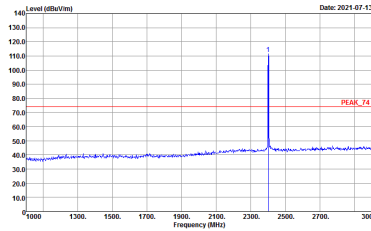
2.4GHz BT (LF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT LF	
3	Horizontal	Vertical
QP / Peak	 Site : 03CH11-HY Condition : QP 3m BT-LOG 6111D-LF_ETC HORIZONTAL Detector : Peak	 Site : 03CH11-HY Condition : QP 3m BT-LOG 6111D-LF_ETC VERTICAL Detector : Peak

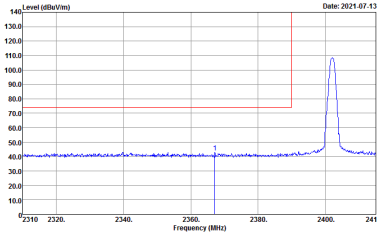
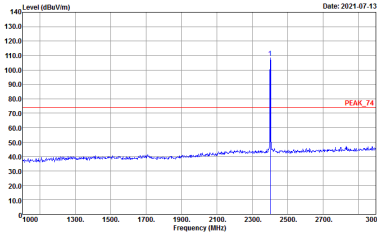


2.4GHz 2400~2483.5MHz

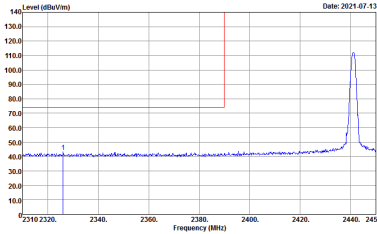
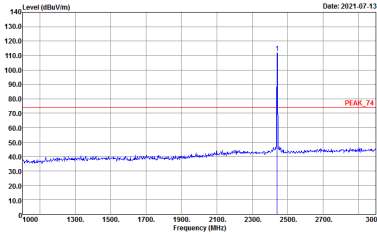
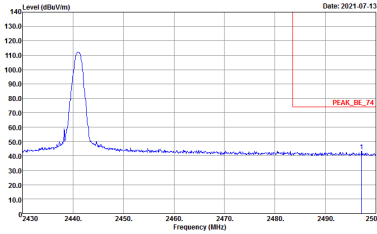
BT (Band Edge @ 3m)

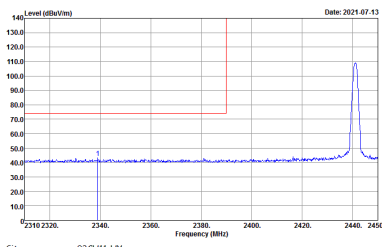
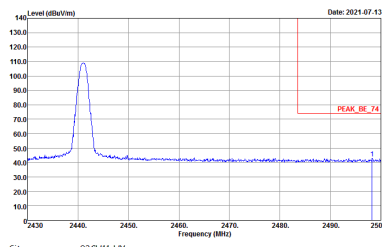
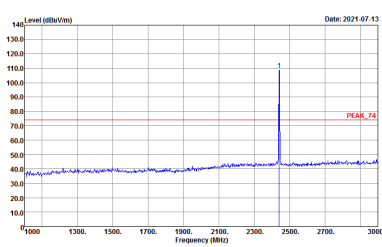
BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 9120D-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH00 2402MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH11-1Y Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-1Y Condition : PEAK_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 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 : 03CH11-HY Condition : PEAK_BE_74 3m HORN 9120D-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 9120D-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

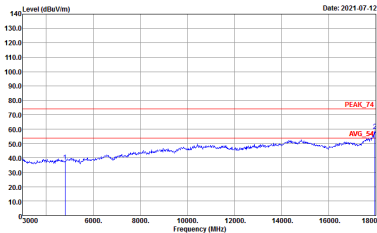
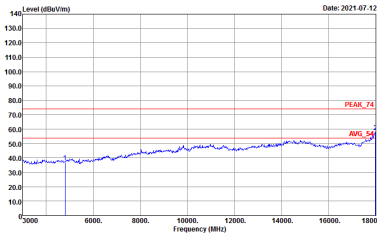


BT	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Fundamental
Peak	Level (dBuV/m) Date: 2021-07-13 2460 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_BF_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Level (dBuV/m) Date: 2021-07-13 1000 1300 1600 1900 2200 2500 2700 3000 Frequency (MHz) Site : 03CH11-14Y Condition : PEAK_74 3m HORN 91200-HF_1326 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	Level (dBuV/m) Date: 2021-07-13 PEAK_BE_74 Site : 03CH11-14Y Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Level (dBuV/m) Date: 2021-07-13 PEAK_74 Site : 03CH11-14Y Condition : PEAK_74 3m HORN 91200-HF_1326 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.	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



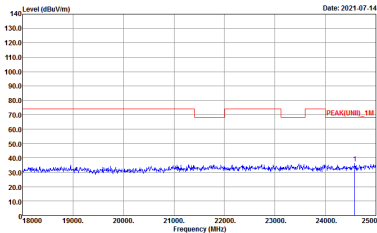
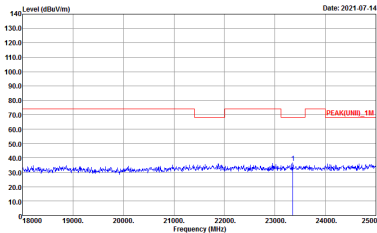
BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH39 2441MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-07-12 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-07-12 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



BT	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	BT CH78 2480MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-07-12 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-07-12 Site : 03CH11-HY Condition : PEAK_74 3m HORN 9120D-HF_1326 VERTICAL Detector : Peak



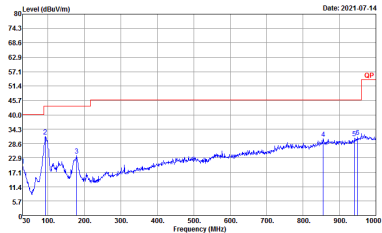
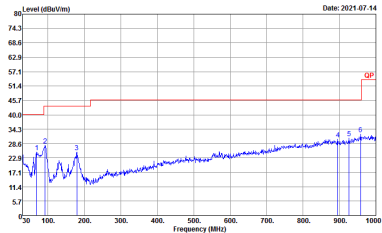
Emission above 18GHz
2.4GHz BT (SHF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT SHF	
4+3	Horizontal	Vertical
Peak/ Avg.	 Site : 03CHI1-HY Condition : PEAK(UNIT)_1M 1m SHF_00991_210512 HORIZONTAL Detector : Peak	 Site : 03CHI1-HY Condition : PEAK(UNIT)_1M 1m SHF_00991_210512 VERTICAL Detector : Peak



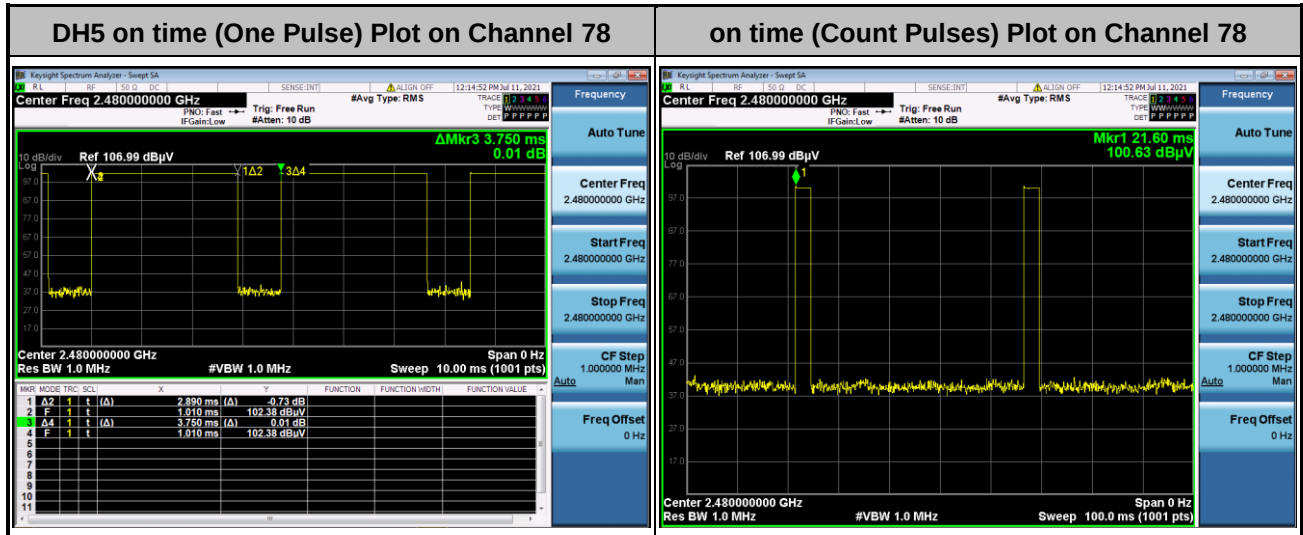
Emission below 1GHz

2.4GHz BT (LF)

BT	2.4GHz 2400~2483.5MHz	
ANT	BT LF	
4+3	Horizontal	Vertical
QP / Peak	 Site : 03CH11-HY Condition : QP 3m BT-LOG 6111D-LF_ETC HORIZONTAL Detector : Peak	 Site : 03CH11-HY Condition : QP 3m BT-LOG 6111D-LF_ETC 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. $[100 \text{ ms} / 57.8 \text{ ms}] = 2 \text{ hops}$

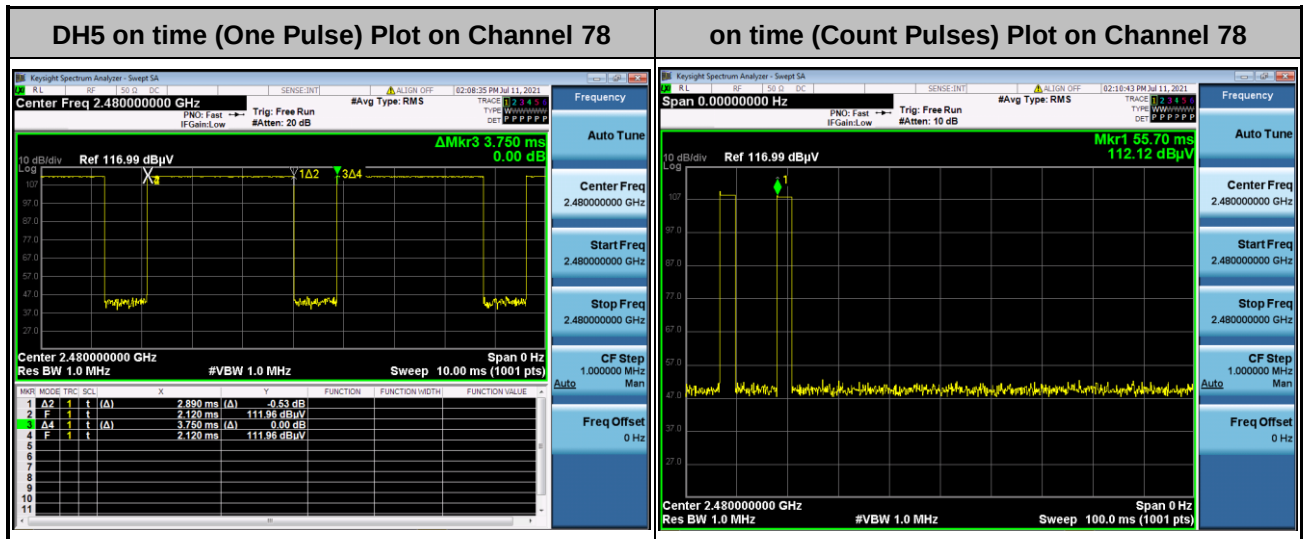
Thus, the maximum possible ON time:

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

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:

1. Worst case Duty cycle = on time/100 milliseconds = $2 \times 2.89 / 100 = 5.78 \%$
2. Worst case Duty cycle correction factor = $20 \times \log(\text{Duty cycle}) = -24.76 \text{ dB}$
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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:

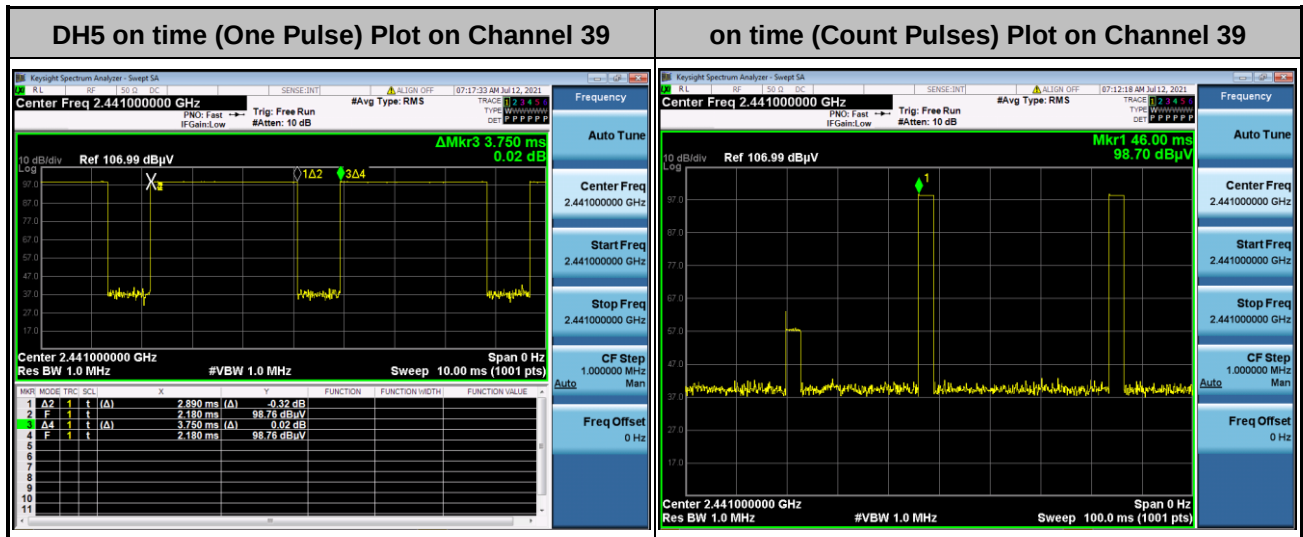
$$2.89 \text{ ms} \times 2 = 5.78 \text{ ms}$$

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 = $2 \times 2.89 / 100 = 5.78 \%$
2. Worst case Duty cycle correction factor = $20 \times \log(\text{Duty cycle}) = -24.76 \text{ dB}$
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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.

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

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—————