FCC Part 15B TEST REPORT

Report No.: STS2301115E03

Issued for

Capstone Industries, Inc.

431 Fairway Drive Suite 200 Deerfield Beach, FL 33441, USA

Product Name:	Kitchen Tablet + Food Prep Station
Brand:	Connected Chef
Model Number:	Chef Kitchen 1
Series Model(s):	N/A
FCC ID:	2BAQRCAP-1815
Test Standard:	FCC 47 CFR Part 15: Subpart B

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Shenzhen STS Test Services Co., Ltd.
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TEST RESULT CERTIFICATION

Applicant's Name .....:	Capstone Industries, Inc.
Address.....:	431 Fairway Drive Suite 200 Deerfield Beach, FL 33441, USA
Manufacture's Name .....:	SHENZHEN JOYAR SMART MANUFACTURING TECHNOLOGY LIMITED
Address.....:	Unit 3C, Building D2, TCL Science Park, 1001 Zhongshan Garden Road, Xili, Nanshan District, Shenzhen, China.
Product Description.....:	
Product Name .....:	Kitchen Tablet + Food Prep Station
Brand .....:	Connected Chef
Model Number.....:..	Chef Kitchen 1
Series Model(s).....:	N/A
Standards.....:	FCC 47 CFR Part 15: Subpart B
Test Procedure.....:	ANSI C63.4-2014

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....	:	
Date of Receipt of Test Item.....	:	10 Jan. 2023
Date of Performance of Tests	:	10 Jan. 2023 ~ 23 Feb. 2023
Date of Issue.....	:	23 Feb. 2023
Test Result	:	**Pass**

Testing Engineer : Jane. chen

(Jane Chen)

Technical Manager : Bulun

(Bulun)

Authorized Signatory : Bovey Yang

(Bovey Yang)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	23 Feb. 2023	STS2301115E03	ALL	Initial Issue

1. SUMMARY OF THE TEST RESULTS

Test procedures according to the technical standards:

EMISSION			
Standard	Item	Result	Remarks
FCC 47 CFR Part 15 Subpart B	Conducted Emission	PASS	Meet Class B limit
	Radiated Emission	PASS	Meet Class B limit

NOTE:

(1) N/A=Not Applicable.

1.1 TEST FACTORY

Company Name:	SHENZHEN STS TEST SERVICES CO.,LTD.
Address:	A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
Telephone:	+86-755 3688 6288
Fax:	+86-755 3688 6277
Registration No.:	FCC test Firm Registration Number: 625569
	IC test Firm Registration Number: 12108A
	A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	±2.14dB
2	Conducted Emission (150KHz-30MHz)	±2.54dB
3	All emissions,radiated(<1G) 30MHz-1000MHz	±3.94dB
4	All emissions,radiated(>1G) 1GHz-6GHz	±4.59dB
5	All emissions,radiated(>1G) 6GHz-18GHz	±5.22dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Kitchen Tablet + Food Prep Station	
Brand	Connected Chef	
Model Number	Chef Kitchen 1	
Series Model(s)	N/A	
Model Difference	N/A	
Frequency Bands	Bluetooth	2402~2480MHz
	2.4G WLAN	802.11b/g/n 20: 2412~2462 MHz 802.11n(40MHz):2422~2452MHz
	5G WLAN	802.11a/ n(HT20)/ac(VHT20): 5.180GHz-5.240GHz 802.11n(HT40)/ac(VHT40): 5.190GHz-5.310GHz
		802.11a/ n(HT20)/ac(VHT20): 5.260GHz-5.320GHz 802.11n(HT40)/ac(VHT40): 5.270GHz-5.310GHz
		802.11a/ n(HT20)/ac(VHT20): 5.500GHz-5.700GHz 802.11n(HT40)/ac(VHT40): 5.510GHz-5.670GHz
		802.11a/ n(HT20)/ac(VHT20): 5.745GHz-5.825GHz 802.11n(HT40)/ac(VHT40): 5.755GHz-5.795GHz
Modulation Mode	Bluetooth	GFSK(1Mbps), π/4-DQPSK(2Mbps), 8DPSK(3Mbps)
	BLE	GFSK
	2.4G WLAN	802.11b(DSSS): CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM
	5G WLAN	802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM
Adapter	Input: 100-240V~ 50/60Hz 0.35A Max Output: 5V, 2000mA	
Battery	Rated Voltage:3.8V Charge Limit Voltage:4.35V Capacity: 4000mAh 15.2Wh	
Hardware Version Number	N/A	
Software Version Number	N/A	

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Adapter + 2.4G WIFI + BT Link
Mode 2	Adapter + 5G WIFI + BT Link
Mode 3	PC+USB Transmitting

For Conducted Test	
Final Test Mode	Description
Mode 3	PC+USB Transmitting

For Radiated Test	
Final Test Mode	Description
Mode 3	PC+USB Transmitting

Note:

1. For conducted emission test, test mode 3 was the worst case and only this mode was presented in this report.
2. For radiated emission test, test mode 3 was the worst case and only this mode was presented in this report.
3. We have be tested for all avaiable U.S. voltage and frequencies (For 120V, 50/60Hz) for which the device is capable of operation.

2.3 DESCRIPTION OF THE TEST SETUP

The EUT has been tested with associated equipment below and the test setup please refer to appendix 1 - test setup.

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
/	Adapter	N/A	KA12C-0502000US	N/A	N/A
/	USB Cable	N/A	N/A	200CM	NO

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
/	Notebook Adapter	DELL	HSTNN-CA15	N/A	N/A
/	Personal computer	DELL	VOSTRO.3800	N/A	N/A
/	Keyboard	Acer	SK-9624	N/A	N/A
/	Mouse	HP	MODGUO	N/A	N/A
/	Printer	LENOVO	LJ2400L	N/A	N/A
/	USB Cable	N/A	N/A	100cm	NO
/	DC Cable	N/A	N/A	120cm	NO
/	USB Cable	N/A	N/A	110cm	NO
/	USB Cable	N/A	N/A	110cm	NO
/	USB Cable	N/A	N/A	110cm	NO

Note:

(1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

(2) “YES” is means “with core”; “NO” is means “without core”.

2.4 EQUIPMENTS LIST FOR ALL TEST ITEMS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2022.09.29	2023.09.28
Bi-log Antenna	TESEQ	CBL6111D	45873	2021.10.08	2023.10.07
Horn Antenna	SCHWARZBECK	BBHA 9120D	1343	2022.09.28	2023.09.27
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A02383	2022.07.04	2023.07.03
Pre-amplifier(0.1M-3GHz)	EM	EM330	060665	2022.07.04	2023.07.03
Spectrum Analyzer	Agilent	N9020A	MY49100060	2022.09.28	2023.09.27
RE Cable (9K-1G)	N/A	R01	N/A	2022.09.28	2023.09.27
RE Cable (1-26G)	N/A	R02	N/A	2022.09.28	2023.09.27
Temperature & Humidity	Mieo	HH660	N/A	2022.09.28	2023.09.27
Horn Antenna(18-40G)	A-INFO	LB-180400-KF	J211020657	2022.09.30	2023.09.29
Testing Software	EZ-EMC(Ver.STSLAB-03A1 RE)				

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2022.09.28	2023.09.27
LISN	R&S	ENV216	101242	2022.09.28	2023.09.27
LISN	ETS	3810/2NM	00023625	2022.09.28	2023.09.27
Absorbing Clamp	R&S	MDS-21	100668	2022.03.02	2023.03.01
CE Cable	N/A	C01	N/A	2022.09.28	2023.09.27
Temperature & Humidity	Mieo	HH660	N/A	2022.09.30	2023.09.29
Testing Software	EZ-EMC(Ver.STSLAB-03A1 CE)				

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	☐Class A (dBμV)		☒Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.5 ~ 5	73.00	60.00	56.00	46.00
5 ~ 30	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

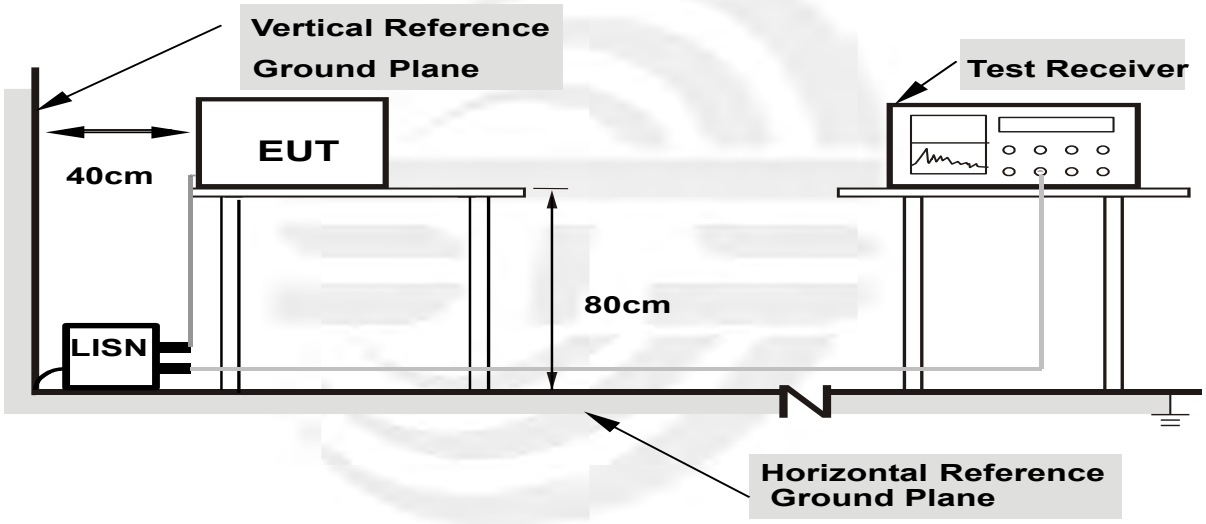
3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

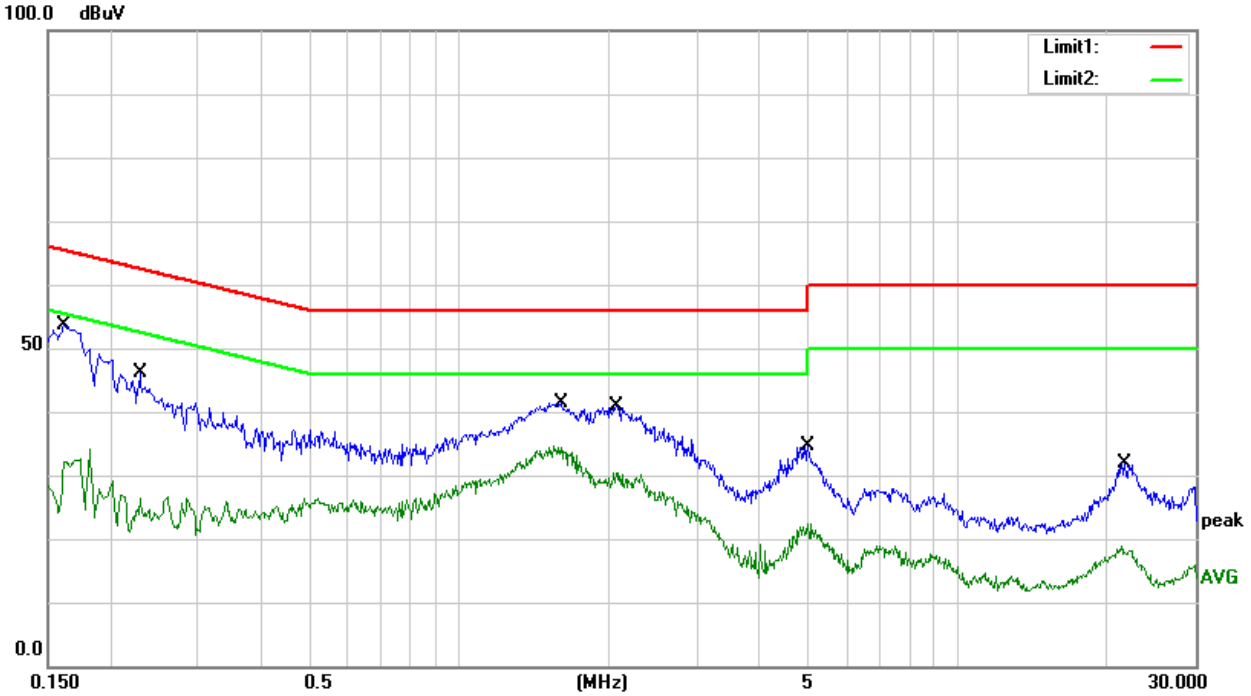
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

Temperature:	25.6 ℃	Relative Humidity:	45%
Phase:	L	Test Mode:	Mode 3
Test Voltage:	AC 120V/60Hz	Test Date:	2023.02.13

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1620	43.21	10.33	53.54	65.36	-11.82	QP
2	0.1620	23.71	10.33	34.04	55.36	-21.32	AVG
3	0.2300	35.66	10.44	46.10	62.45	-16.35	QP
4	0.2300	16.11	10.44	26.55	52.45	-25.90	AVG
5	1.6100	31.15	10.30	41.45	56.00	-14.55	QP
6	1.6100	24.29	10.30	34.59	46.00	-11.41	AVG
7	2.0740	30.63	10.30	40.93	56.00	-15.07	QP
8	2.0740	20.18	10.30	30.48	46.00	-15.52	AVG
9	5.0260	24.12	10.46	34.58	60.00	-25.42	QP
10	5.0260	11.92	10.46	22.38	50.00	-27.62	AVG
11	21.6300	19.15	12.80	31.95	60.00	-28.05	QP
12	21.6300	6.10	12.80	18.90	50.00	-31.10	AVG

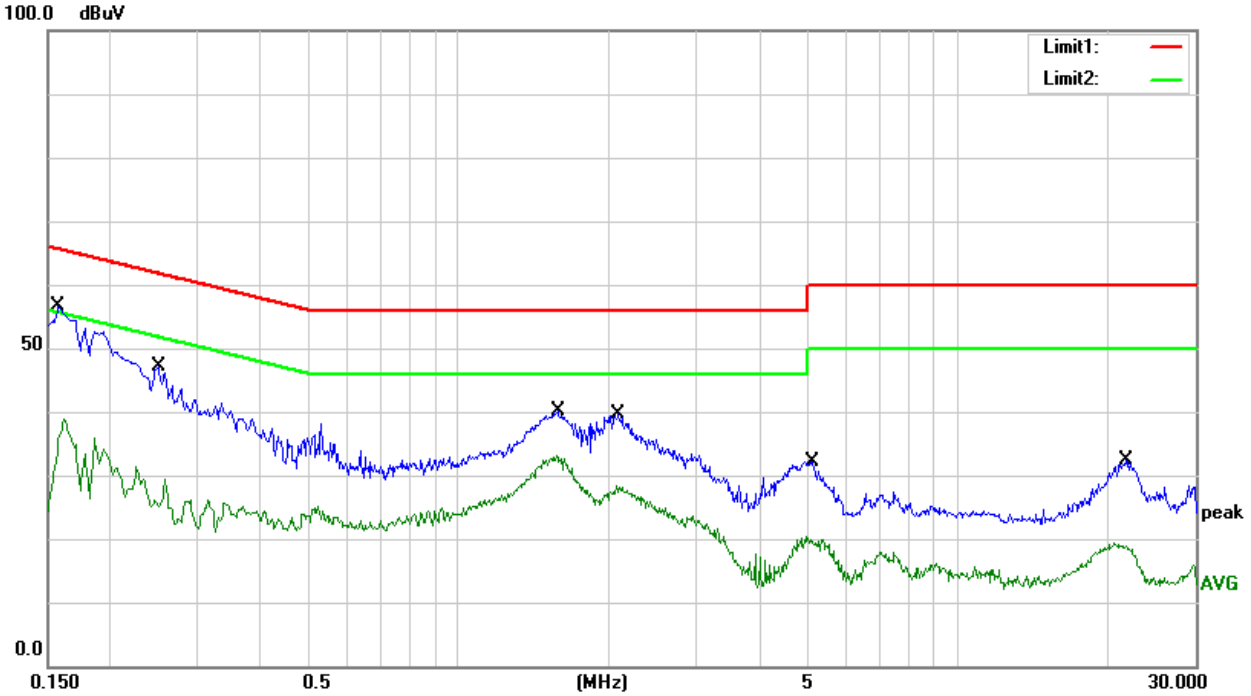
Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor = Insertion loss + Cable loss



Temperature:	25.6 ℃	Relative Humidity:	45%
Phase:	N	Test Mode:	Mode 3
Test Voltage:	AC 120V/60Hz	Test Date:	2023.02.13

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	46.19	10.33	56.52	65.57	-9.05	QP
2	0.1580	28.49	10.33	38.82	55.57	-16.75	AVG
3	0.2500	36.67	10.53	47.20	61.76	-14.56	QP
4	0.2500	18.77	10.53	29.30	51.76	-22.46	AVG
5	1.5780	29.70	10.30	40.00	56.00	-16.00	QP
6	1.5780	22.80	10.30	33.10	46.00	-12.90	AVG
7	2.0980	29.37	10.30	39.67	56.00	-16.33	QP
8	2.0980	18.02	10.30	28.32	46.00	-17.68	AVG
9	5.1140	21.70	10.47	32.17	60.00	-27.83	QP
10	5.1140	9.87	10.47	20.34	50.00	-29.66	AVG
11	21.7380	19.65	12.80	32.45	60.00	-27.55	QP
12	21.7380	6.60	12.80	19.40	50.00	-30.60	AVG

Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor = Insertion loss + Cable loss



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

Below 1 GHz
Measurement Method and Applied Limits:
ANSI C63.4:

Frequency (MHz)	☐Class A		☒Class B
	Field strength (dBuV/m) (at 10m)	Field strength (dBuV/m) (at 3m)	Field strength (dBuV/m) (at 3m)
30 ~ 88	39	49	40
88 ~ 216	43.5	53.5	43.5
216 ~ 960	46	56	46
Above 960	49.5	59.5	54

Above 1 GHz
Measurement Method and Applied Limits:
ANSI C63.4:

Frequency (MHz)	☐Class A				☒Class B	
	(dBuV/m) (at 3m)		(dBuV/m) (at 10m)		(dBuV/m) (at 3m)	
	Peak	Average	Peak	Average	Peak	Average
Above 1000	80	60	69.5	49.5	74	54

Frequency Range of Radiated Disturbance Measurement

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 ~ 108	1000
108 ~ 500	2000
500 ~ 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Note:

(1) The limit for radiated test was performed in the following: FCC PART 15B.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m) = 20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. EUT as the center to the edge of the auxiliary device, the distance from the maximum edge to the center of the antenna is 3 meter.
c. The height of antenna is varied from 1 meter to 4 meter above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meter and the rotatable table was turned from 0 degrees to 360 degree to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

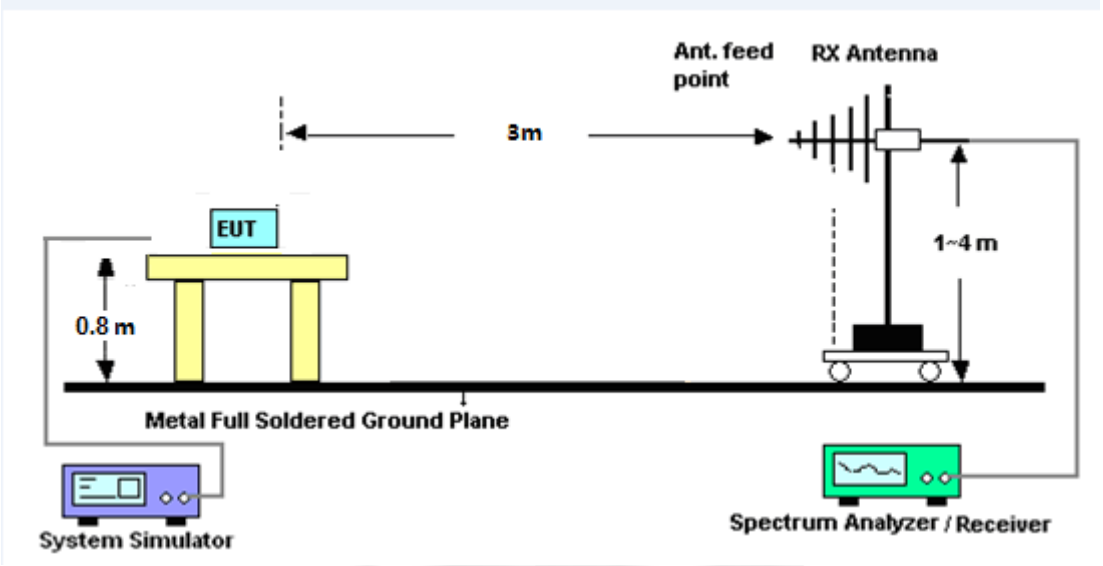
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

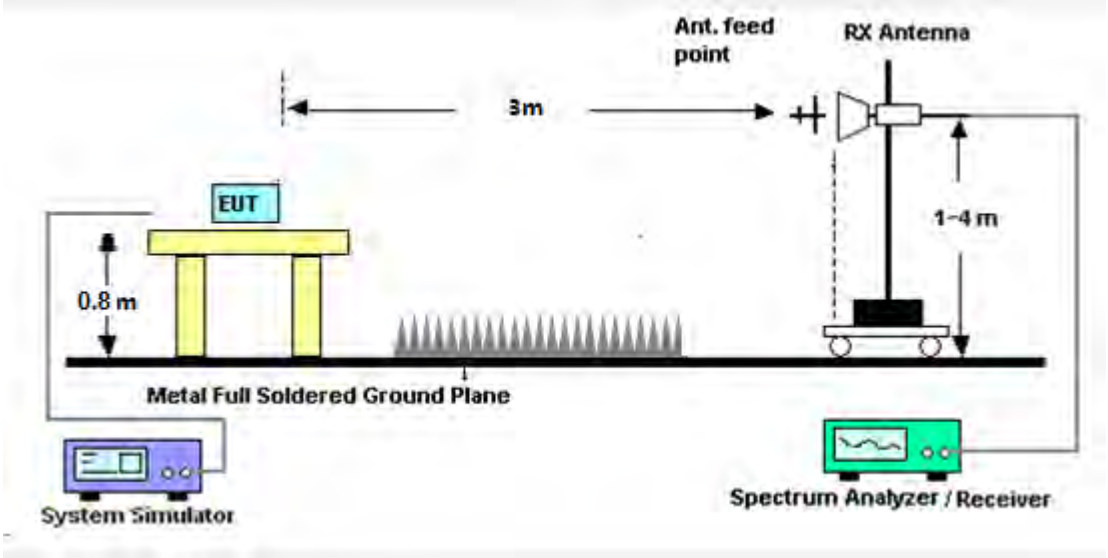
No deviation

3.2.4 TEST SETUP

（A）Radiated Emission Test-Up Frequency 30MHz~1GHz



（B）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 described unless otherwise a special operating condition is specified in the following during the testing.

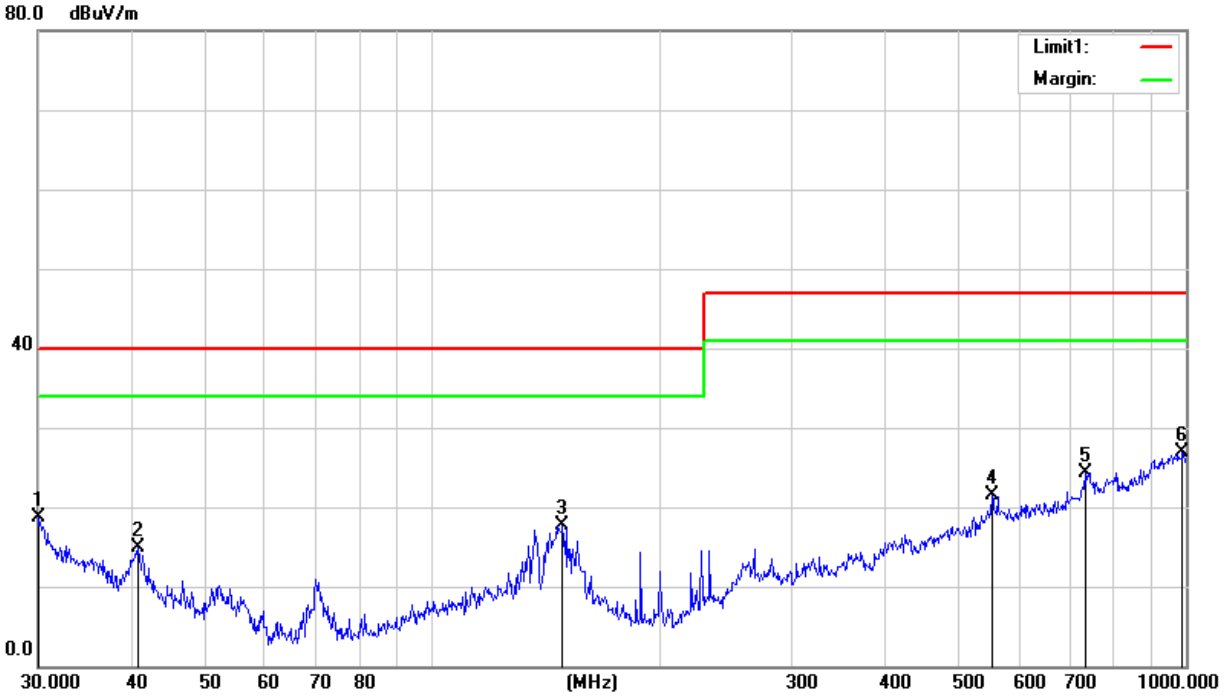
3.2.6 TEST RESULTS

30MHz - 1000MHz

Temperature:	24.8℃	Relative Humidity:	40%
Phase:	Horizontal	Test Mode:	Mode 3
Test Voltage:	DC 5V From PC	Test Date:	2023.02.13

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.0000	29.67	-11.03	18.64	40.00	-21.36	QP
2	40.7016	31.92	-16.95	14.97	40.00	-25.03	QP
3	148.9625	35.92	-18.14	17.78	40.00	-22.22	QP
4	552.8832	29.82	-8.28	21.54	47.00	-25.46	QP
5	734.4913	29.32	-4.98	24.34	47.00	-22.66	QP
6	989.5355	29.09	-2.14	26.95	47.00	-20.05	QP

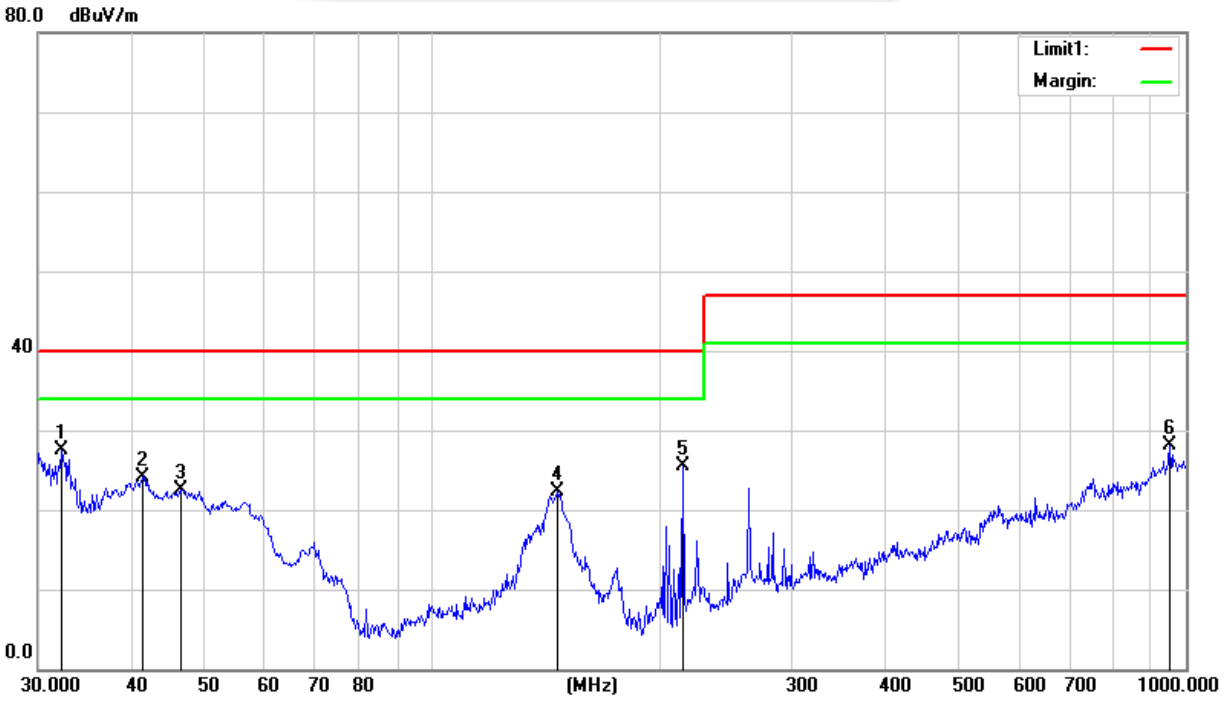
Remark:
1. All readings are Quasi-Peak
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain



Temperature:	24.8℃	Relative Humidity:	40%
Phase:	Vertical	Test Mode:	Mode 3
Test Voltage:	DC 5V From PC	Test Date:	2023.02.13

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	32.1795	39.77	-12.25	27.52	40.00	-12.48	QP
2	41.2765	41.38	-17.24	24.14	40.00	-15.86	QP
3	46.5030	42.31	-19.88	22.43	40.00	-17.57	QP
4	146.8877	40.61	-18.29	22.32	40.00	-17.68	QP
5	215.2678	45.99	-20.50	25.49	40.00	-14.51	QP
6	952.0937	30.11	-2.10	28.01	47.00	-18.99	QP

Remark:
1. All readings are Quasi-Peak
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain

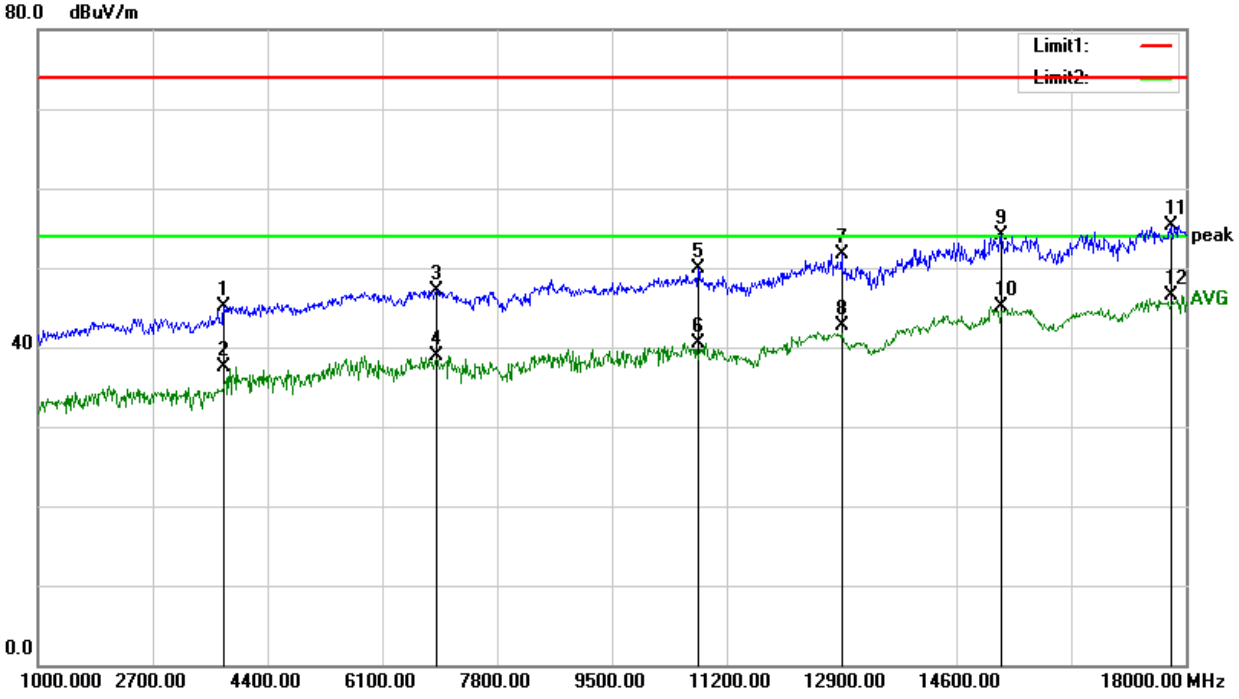


(1 GHz - 18GHz)

Temperature:	24.1℃	Relative Humidity:	41%
Phase:	Horizontal	Test Mode:	Mode 3
Test Voltage:	DC 5V From PC	Test Date:	2023.02.10

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	3762.500	41.45	3.74	45.19	74.00	-28.81	Peak
2	3762.500	33.78	3.74	37.52	54.00	-16.48	AVG
3	6907.500	36.51	10.57	47.08	74.00	-26.92	Peak
4	6907.500	28.32	10.57	38.89	54.00	-15.11	AVG
5	10775.000	35.83	14.03	49.86	74.00	-24.14	Peak
6	10775.000	26.44	14.03	40.47	54.00	-13.53	AVG
7	12900.000	36.40	15.37	51.77	74.00	-22.23	Peak
8	12900.000	27.34	15.37	42.71	54.00	-11.29	AVG
9	15271.500	36.41	17.60	54.01	74.00	-19.99	Peak
10	15271.500	27.46	17.60	45.06	54.00	-8.94	AVG
11	17787.500	31.14	24.24	55.38	74.00	-18.62	Peak
12	17787.500	22.18	24.24	46.42	54.00	-7.58	AVG

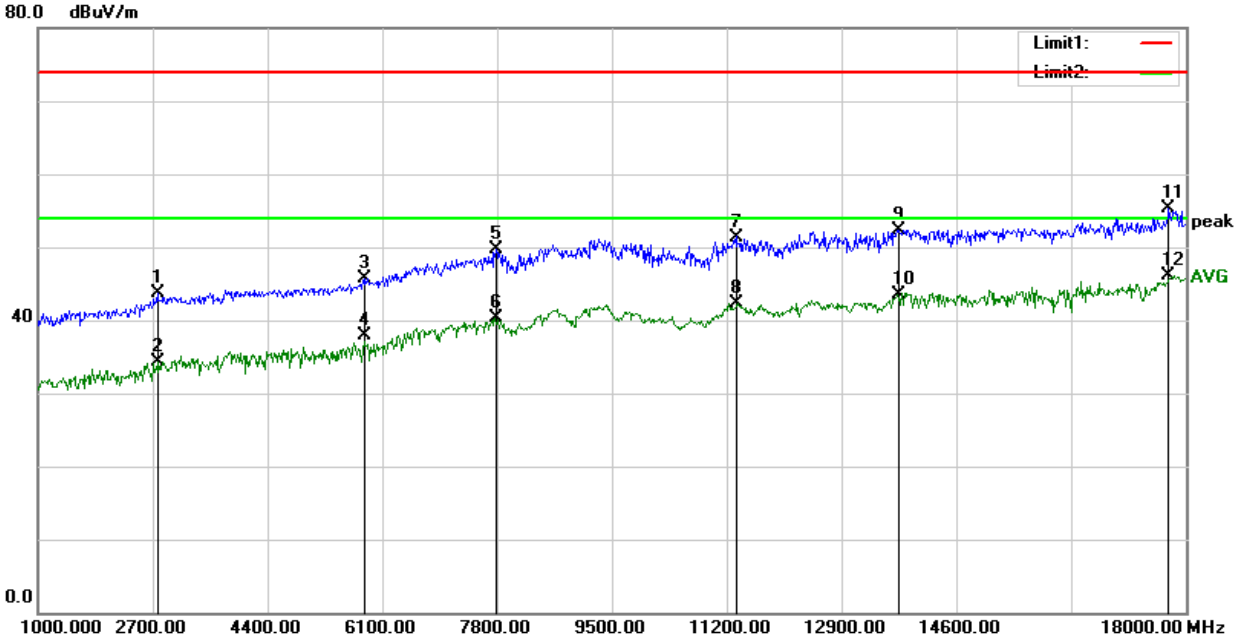
Remark:
1. All readings are Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain



Temperature:	24.1℃	Relative Humidity:	41%
Phase:	Vertical	Test Mode:	Mode 3
Test Voltage:	DC 5V From PC	Test Date:	2023.02.10

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	2768.000	42.65	1.05	43.70	74.00	-30.30	Peak
2	2768.000	33.30	1.05	34.35	54.00	-19.65	AVG
3	5853.500	38.27	7.50	45.77	74.00	-28.23	Peak
4	5853.500	30.42	7.50	37.92	54.00	-16.08	AVG
5	7783.000	38.64	11.11	49.75	74.00	-24.25	Peak
6	7783.000	29.22	11.11	40.33	54.00	-13.67	AVG
7	11336.000	37.00	14.40	51.40	74.00	-22.60	Peak
8	11336.000	27.96	14.40	42.36	54.00	-11.64	AVG
9	13758.500	35.93	16.47	52.40	74.00	-21.60	Peak
10	13758.500	27.08	16.47	43.55	54.00	-10.45	AVG
11	17753.500	31.72	23.68	55.40	74.00	-18.60	Peak
12	17753.500	22.48	23.68	46.16	54.00	-7.84	AVG

Remark:
1. All readings are Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain



Notes:

1. Measuring frequencies from 1 GHz to 18GHz.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak and average detector mode of the emission shown in Actual FS column.
3. The frequency emission of 18-25GHz is at least 20dB lower than the limit, and the frequency emission mainly comes from environmental noise.

※※※※※END OF THE REPORT※※※※※