TEST REPORT

Applicant:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address of Applicant:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China
Manufacturer:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address of Manufacturer:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China

Equipment Under Test (EUT)

Product Name:	Smart Phone
Model No.:	V Max
Trade mark:	DOOGEE
Applicable standards:	47 CFR Part 15 Subpart C Section 15.225
Date of sample receipt:	2022-12-11
FCC ID:	2AX4YVMAX
Date of Test:	2022-12-12~2022-1-8
Date of report issued:	2023-1-9
Test Result :	PASS *

*In the configuration tested, the EUT complied with the standards specified above.

Version

Version No.	Date	Description
00	*2023-1-9*	*Original*

Prepared By: Stone Tang ***Date:*** ***2023-1-9***

Project Engineer

Check By: Randy LV ***Date:*** ***2022-1-9***

Reviewer

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1. Test Summary

No.	Description	FCC Part No.	Test Result	Test By	Verdict	Remark
1	Antenna Requirement	15.203	--		Pass	--
2	20dB Bandwidth	15.215	ANNEX A.1		Pass	--
3	Field Strength of the Fundamental and Mask Measurement	15.225(a)(b)(c)	ANNEX A.2		Pass	--
4	Conducted Emission	15.207	ANNEX A.3		Pass	--
5	Radiated Spurious Emission	15.225(d) 15.209	ANNEX A.4		Pass	--
6	Frequency Stability	15.225(e)	ANNEX A.5		Pass	

2. General Information

General Description of EUT

Product Name:	Smart Phone
Model No.:	V Max, S100Pro
Test Model No.:	V Max
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.	
Adapter/Power Supply:	Model: HJ-1203000-09 Input: 100-240V~50/60Hz, 0.8A Output: 5V⎓3A , 9V⎓3A, 12V⎓2.75A, 33.0W Max. PPS:5.0V-11.0V 3.0A 33.0W Max.

The requirement for the following technical information of the EUT was tested in this report:

Network and Wireless connectivity	NFC

The requirement for the following technical information of the EUT was tested in this report:

Modulation Type	ASK
Operation Frequency	13.56 MHz
Number of Channel	1
Antenna Type	Coil Antenna

Description of Support Units

The EUT was test as an independent unit

Test Location

All tests were performed at:
No. 2 Danzi North Road, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China Telephone: +86 (0) 0755-27087573

Deviation from Standards

None

Other Information Requested by the Customer

None.

3. Test Instruments List

Conducted Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022.11.24	2023.11.23	☒
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022.11.24	2023.11.23	☒
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022.11.24	2023.11.23	☒
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022.11.24	2023.11.23	☒
RF Sensor Unit	Techy	TR1029-2	/	2022.11.24	2023.11.23	☒
RF Control Unit	Techy	TR1029-1	/	2022.11.24	2023.11.23	☒
RFTest software	/	V1.00	/	/	/	☒

Radiated Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022.11.24	2023.11.23	☒
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022.11.24	2023.11.23	☒
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021.11.28	2023.11.27	☒
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021.11.28	2023.11.27	☒
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/	☒
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022.11.24	2023.11.23	☒
Preamplifier	SCHWARZBECK	BBV9744	00246	2022.11.24	2023.11.23	☒
Horn Antenna	Schwarzbeck	BBHA9120D	2597	2022.3.26	2023.3.25	☒
Low Noise Pre-amplifier	Sket	LNPA_1840G-50	SK2022032902	2022.3.26	2023.3.25	☒
Coaxial cable	Schwarzbeck	N/SMA 0.5m	517386	2022.3.26	2023.3.25	☒

Multiflex 141						
Broadband Preamplilifier	Schwarzbeck	BBV9718D	00008	2022.3.26	2023.3.25	☒

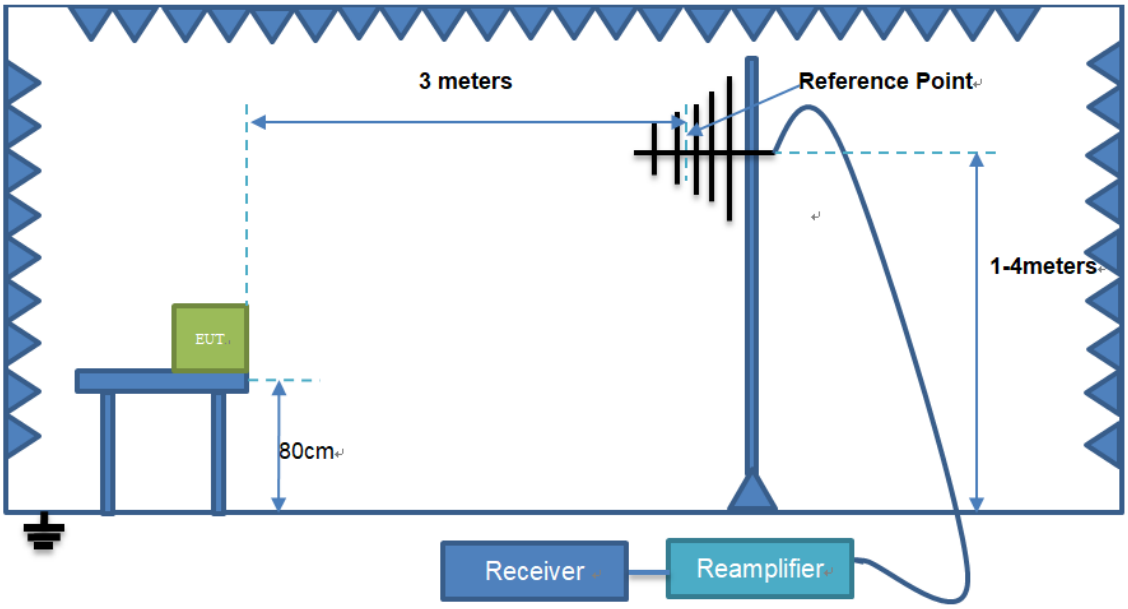
Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2022.11.24	2023.11.23	☒
LISN	AFJ	LS16/110VAC	16010020076	2022.11.24	2023.11.23	☐
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022.11.24	2023.11.23	☒
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022.11.24	2023.11.23	☒
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022.11.24	2023.11.23	☒
EZ_EMC	Frad	EMC-CON 3A1.1+	/	/	/	☒

1.1 Test Auxiliary Equipment

Description	Manufacturer	Model	Serial No.	Length	Description	Use
/	/	/	/	/	/	☒

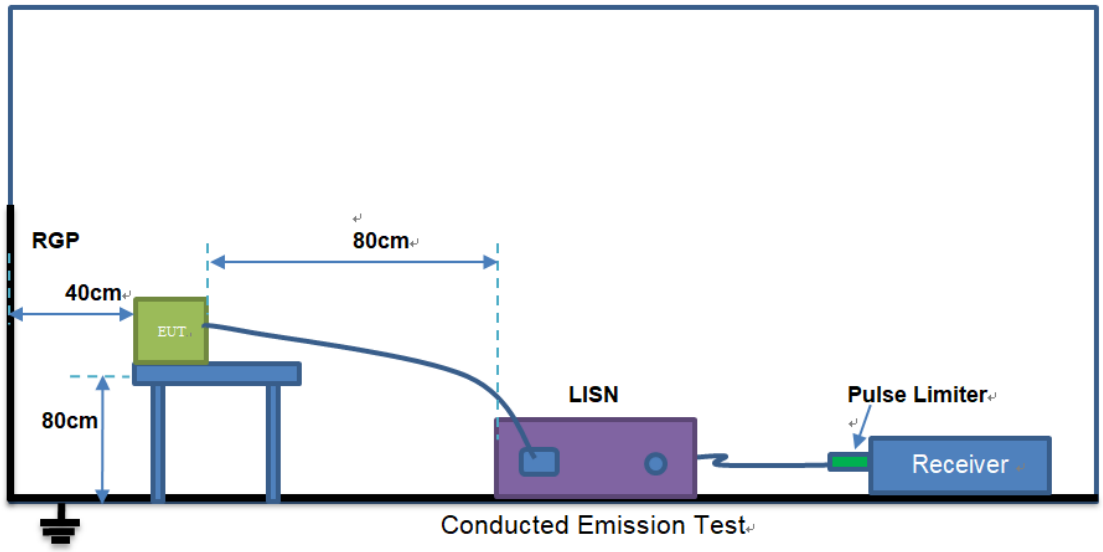
1.1 Test Setup

Test Setup 1



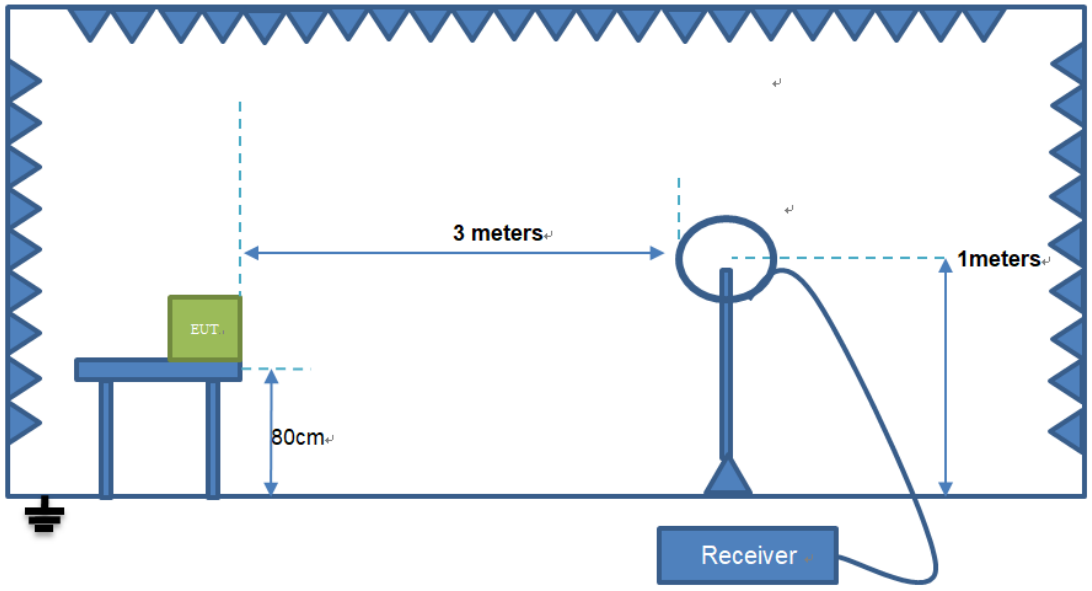
Radiation Test (30MHz – 1GHz)

Test Setup 2



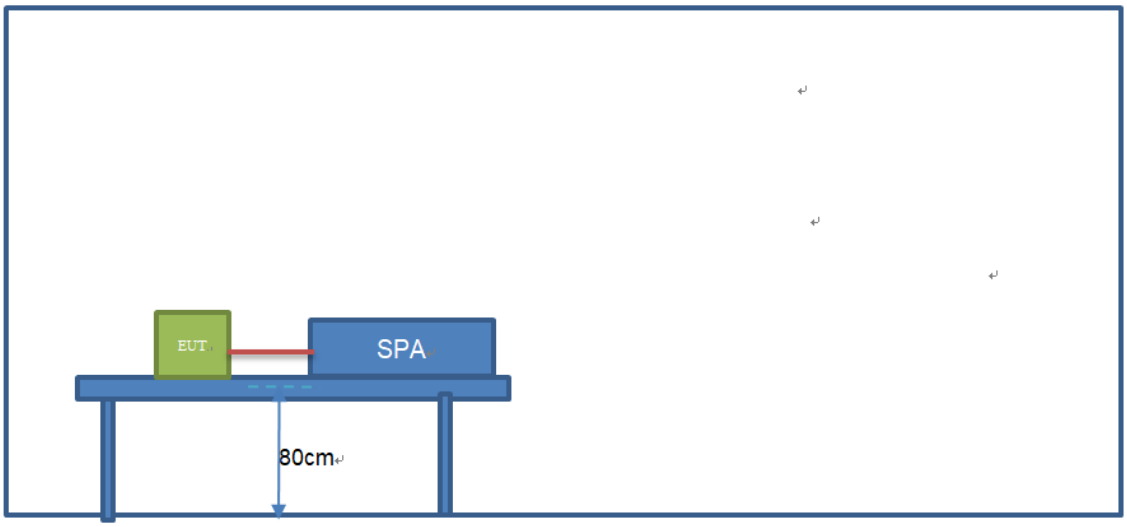
Conducted Emission Test

Test Setup 3



Radiation Test (9k - 30MHz)

Test Setup 4



2. Test Items

2.1 Antenna Requirements

2.1.1 Relevant Standards

FCC §15.203; RSS-247, 5.4(f)

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with
§ 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

2.1.2 Antenna Anti-Replacement Construction

Protected Method	Description
The antenna is embedded in the product.	An embedded in antenna design is used.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

2.2 20dB Bandwidth

2.2.1 Limit

Intentional radiators must be designed to ensure that the 20dB emission bandwidth in the specific band 13.553~13.567MHz.

2.2.2 Test Setup

See section 4.4 for test setup 4. The photo of test setup please refer to ANNEX B

2.2.3 Test Procedure

a) The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
b) Set to the maximum power setting and enable the EUT transmit continuously.
c) Use the following spectrum analyzer settings:
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel,
RBW ⩾ 1% of the 20 dB bandwidth, VBW ⩾ RBW,
Sweep = auto, Detector function = peak, Trace = max hold.
d) Measure and record the results in the test report.

2.2.4 Test Result

Please refer to ANNEX A.1

2.3 Field Strength of the Fundamental and Mask Measurement

2.3.1 Limit

FCC §15.225(a)(b)(c)

Fundamental frequency(MHz)	Field strength of fundamental (uV/m @30m)	Field strength of fundamental (dBuV/m @3m)
13.553-13.567	15848	124.0
13.410-13.553&13.567-13.710	334	90.5
13.110-13.410&13.710-14.010	106	80.5

Note: Limit dBuV/m @3m =Limit dBuV/m @30m +40*log(30/3)= Limit dBuV/m @30m + 40.

2.3.2 Test Setup

See section 4.4 for test setup 3. The photo of test setup please refer to ANNEX B

2.3.3 Test Procedure

a) The EUT was setup and tested according to ANSI C63.10 requirements.
b) The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
c) 3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
d) The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.

2.3.4 Test Result

Please refer to ANNEX A.2

2.4 Conducted Emission

2.4.1 Limit

FCC §15.207; RSS-GEN, 8.8

For an intentional radiator 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 within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

2.4.2 Test Setup

See section 4.4 for test setup 2. The photo of test setup please refer to ANNEX B

2.4.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

2.4.4 Test Result

Please refer to ANNEX A.3

NOTE:

1. Results (dBuV) = Reading (dBuV) + Factor (dB)
   The reading level is calculated by software which is not shown in the sheet
2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.

2.5 Radiated Spurious Emission

2.5.1 Limit

FCC §15.209&15.225

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).
According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
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

Note:

1. Field Strength (dBμV/m) = 20*log[Field Strength (μV/m)].
2. In the emission tables above, the tighter limit applies at the band edges.
3. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
4. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

2.5.2 Test Setup

See section 4.4 for test setup 1 and 3. The photo of test setup please refer to ANNEX B

2.5.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands:
a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)
c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies $\leqslant$ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$E = EIRP – 20\log D + 104.8$

where:
E = electric field strength in dBμV/m,
EIRP = equivalent isotropic radiated power in dBm D = specified measurement distance in meters.
f) Compare the resultant electric field strength level to the applicable limit.

g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure:

Peak emission levels are measured by setting the instrument as follows:

a)RBW = as specified in Table 1.

b)VBW ⩾ 3 x RBW.

c)Detector = Peak.

d)Sweep time = auto.

e)Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction:

If continuous transmission of the EUT (i.e., duty cycle ⩾ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

a) The EUT shall be configured to operate at the maximum achievable duty cycle.

b) Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.

c) RBW = 1 MHz (unless otherwise specified).

d) VBW ⩾ 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

f) Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.

2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is 10 log(1/x), where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is 20 log(1/x), where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain:

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when

determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.
See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test:

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.
For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.
The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured RBW = 1 MHz for f ⩾ 1 GHz, 100 kHz for f < 1 GHz

VBW ⩾ RBW

Sweep = auto

Detector function = peak Trace = max hold

2.5.4 Test Result

Please refer to ANNEX A.4

NOTE:

1. Results (dBuV) = Reading (dBuV) + Factor (dB)

The reading level is calculated by software which is not shown in the sheet

2. Factor = Insertion loss + Cable loss
3. Over limit = Results – Limit.

2.6 Frequency Stability

2.6.1 Limit

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

2.6.2 Test Setup

See section 4.4 for test setup 4. The photo of test setup please refer to ANNEX B

2.6.3 Test Procedure

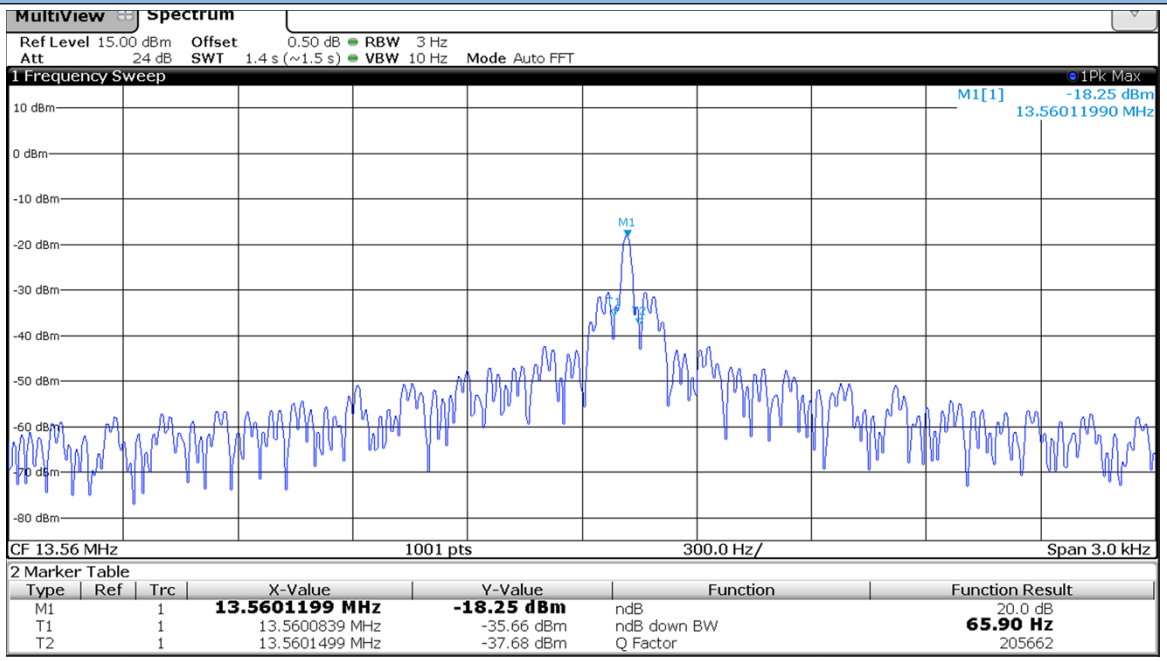
a) The equipment under test was connected to an external power supply.
b) RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
c) The EUT was placed inside the temperature chamber.
d) Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.
e) Turn EUT off and set the chamber temperature to -20℃. After the temperature stabilized for approximately 30 minutes recorded the frequency.
f) Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

2.6.4 Test Result

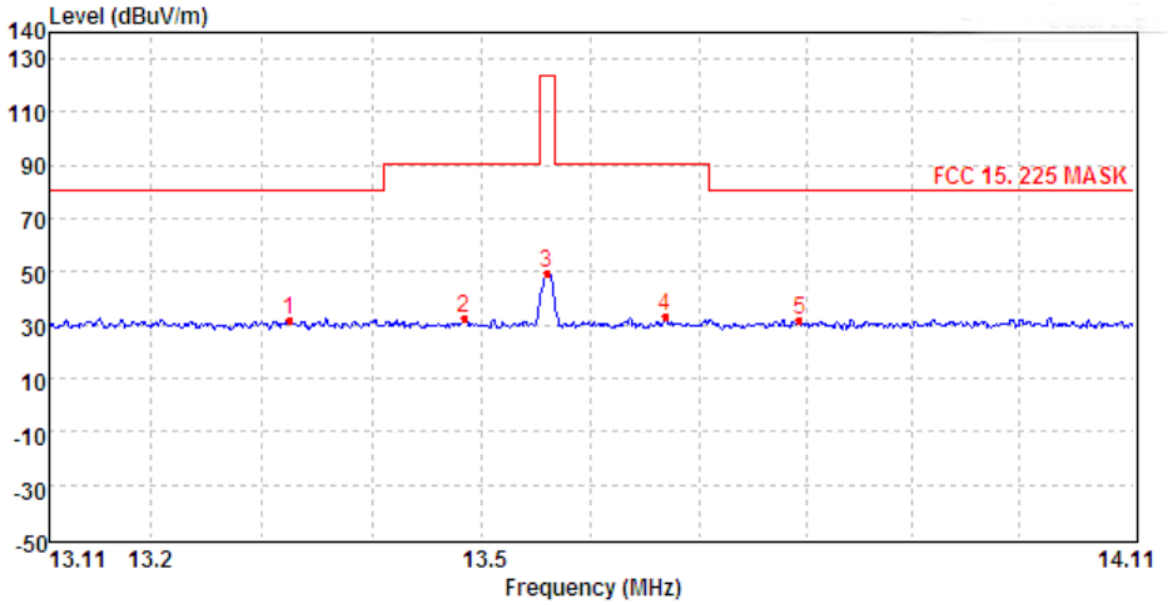
Please refer to ANNEX A.5

ANNEX A Test Results

A.1 20dB Bandwidth

20dB Bandwidth	
	
Frequency Range (MHz)	13.560084MHz ⩽ f_L, f_H⩽ 13.560150MHz
20dB Bandwidth(Hz):	66Hz

A.2 Field Strength of the Fundamental and Mask Measurement

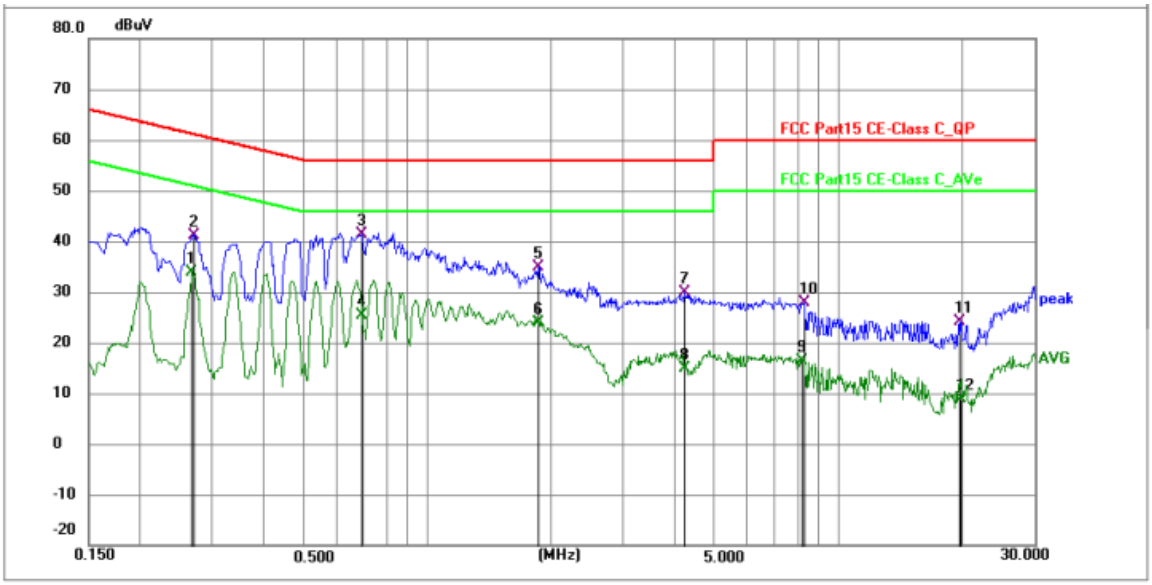


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	13.32	11.00	20.14	0.54	0.00	31.68	80.50	-48.82	Peak
2	13.48	11.91	20.08	0.54	0.00	32.53	90.50	-57.97	Peak
3	13.56	29.30	20.05	0.54	0.00	49.89	124.00	-74.11	Peak
4	13.67	12.65	20.00	0.54	0.00	33.19	90.50	-57.31	Peak
5	13.79	11.35	19.95	0.55	0.00	31.85	80.50	-48.65	Peak

A.3 Conducted Emission

150kHz~30MHz	Worst Case Operating Mode: Simultaneous transmission

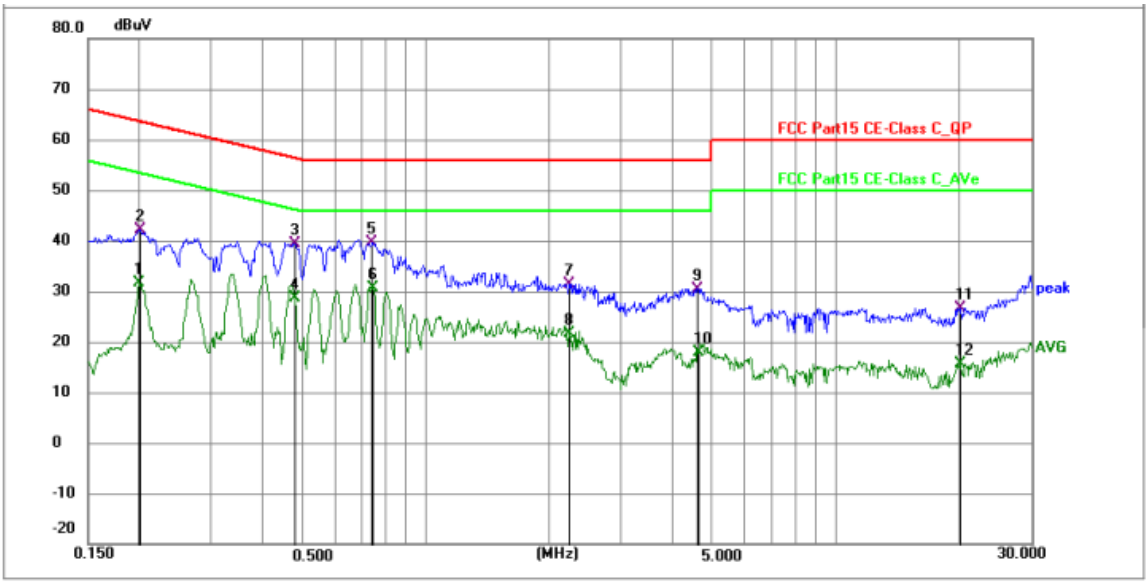
Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2670	23.85	10.15	34.00	51.21	-17.21	AVG	P	
2	0.2700	31.06	10.15	41.21	61.12	-19.91	QP	P	
3 *	0.6900	31.20	10.25	41.45	56.00	-14.55	QP	P	
4	0.6945	15.09	10.25	25.34	46.00	-20.66	AVG	P	
5	1.8645	24.57	10.29	34.86	56.00	-21.14	QP	P	
6	1.8645	13.56	10.29	23.85	46.00	-22.15	AVG	P	
7	4.2313	19.59	10.22	29.81	56.00	-26.19	QP	P	
8	4.2313	4.77	10.22	14.99	46.00	-31.01	AVG	P	
9	8.2094	6.05	10.35	16.40	50.00	-33.60	AVG	P	
10	8.2500	17.51	10.35	27.86	60.00	-32.14	QP	P	
11	19.9229	14.21	9.89	24.10	60.00	-35.90	QP	P	
12	19.9814	-0.98	9.89	8.91	50.00	-41.09	AVG	P	

150kHz~30MHz	Worst Case Operating Mode: Simultaneous transmission

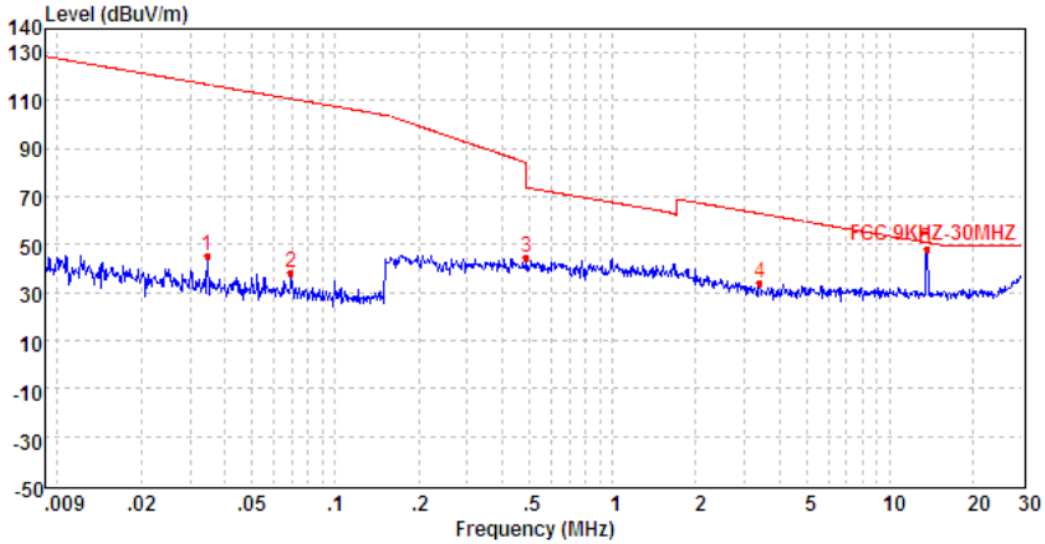
Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1995	21.34	10.20	31.54	53.63	-22.09	AVG	P	
2	0.2006	31.83	10.20	42.03	63.59	-21.56	QP	P	
3	0.4783	29.14	10.25	39.39	56.37	-16.98	QP	P	
4	0.4783	18.31	10.25	28.56	46.37	-17.81	AVG	P	
5	0.7395	29.48	10.26	39.74	56.00	-16.26	QP	P	
6 *	0.7440	20.47	10.26	30.73	46.00	-15.27	AVG	P	
7	2.2425	21.19	10.28	31.47	56.00	-24.53	QP	P	
8	2.2425	11.35	10.28	21.63	46.00	-24.37	AVG	P	
9	4.6050	20.29	10.21	30.50	56.00	-25.50	QP	P	
10	4.6320	7.69	10.21	17.90	46.00	-28.10	AVG	P	
11	20.1390	16.79	9.89	26.68	60.00	-33.32	QP	P	
12	20.2423	5.62	9.89	15.51	50.00	-34.49	AVG	P	

A.4 Radiated Spurious Emission

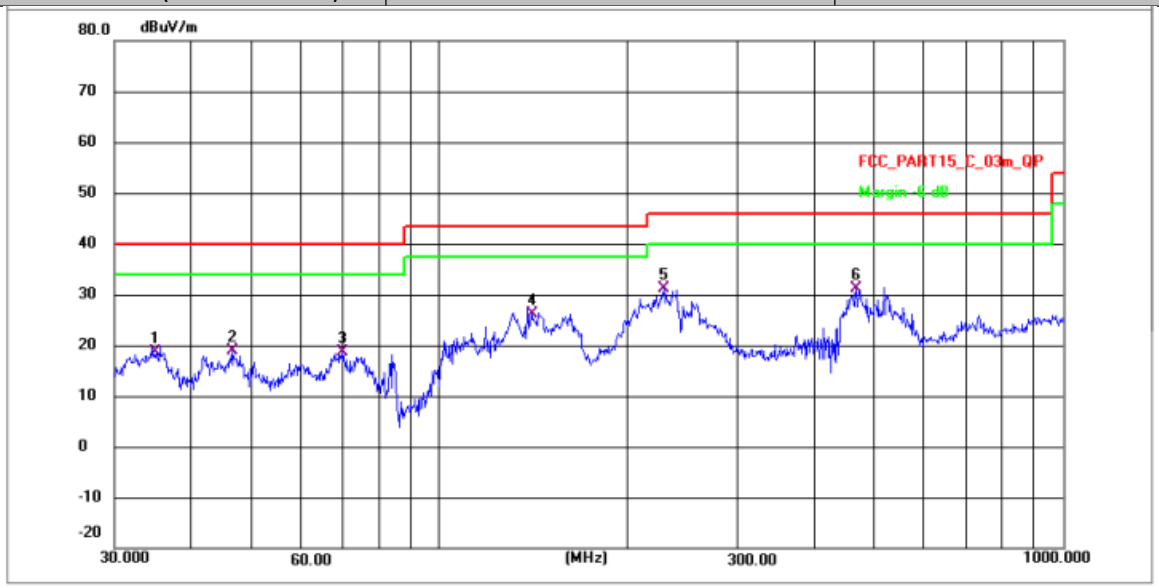
9KHz – 30MHz



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	0.03	22.75	22.34	0.21	0.00	45.30	116.84	-71.54	Peak
2	0.07	15.43	22.30	0.21	0.00	37.94	110.76	-72.82	Peak
3	0.49	22.18	22.20	0.23	0.00	44.61	84.08	-39.47	Peak
4	3.40	11.18	22.20	0.37	0.00	33.75	62.95	-29.20	Peak
5	13.62	27.89	20.02	0.54	0.00	48.45	50.89	-2.44	Peak

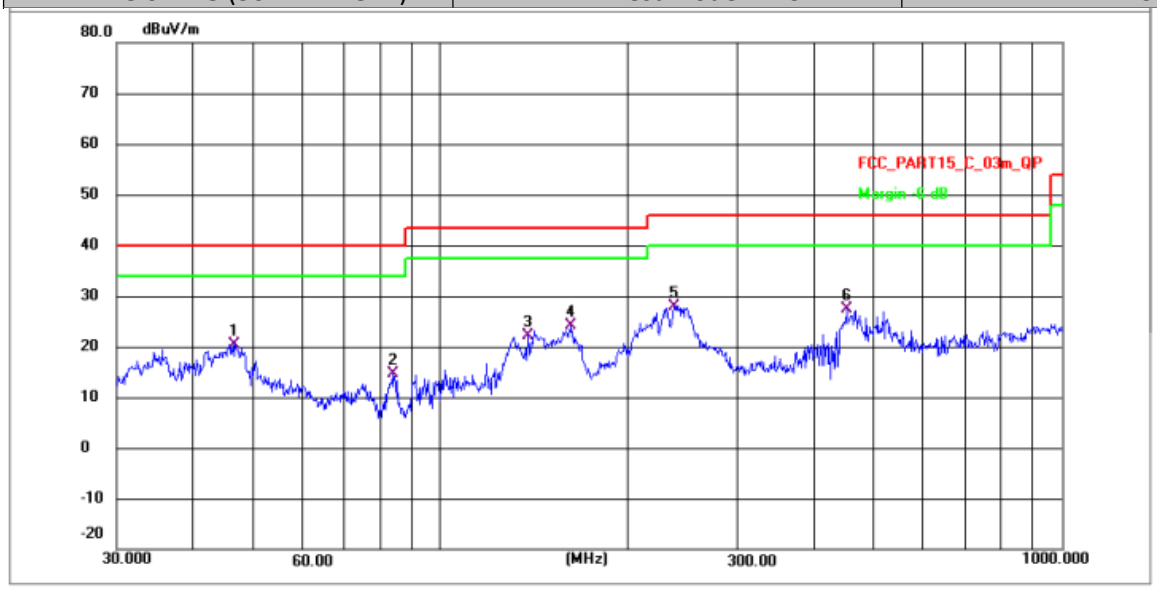
30MHz – 1GHz

Below 1G (30MHz~1GHz)	Test mode: NFC	HORIZONTAL



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	35.0661	34.57	-16.05	18.52	40.00	-21.48	QP	P
2	46.5846	46.87	-28.08	18.79	40.00	-21.21	QP	P
3	69.8450	46.49	-27.92	18.57	40.00	-21.43	QP	P
4	140.8350	53.40	-27.30	26.10	43.50	-17.40	QP	P
5 *	229.2930	58.00	-26.83	31.17	46.00	-14.83	QP	P
6	465.5994	56.71	-25.56	31.15	46.00	-14.85	QP	P

Below 1G (30MHz~1GHz)	Test mode: NFC	VERTICAL

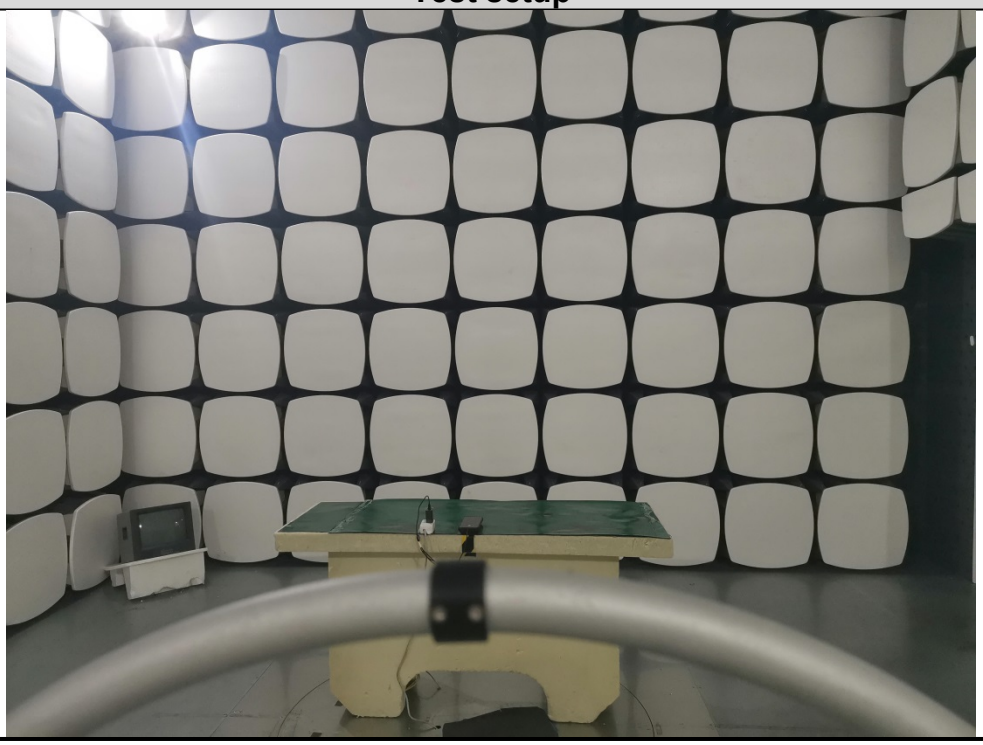


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	46.5846	48.55	-28.08	20.47	40.00	-19.53	QP	P
2	83.5220	42.49	-27.86	14.63	40.00	-25.37	QP	P
3	138.1450	49.51	-27.32	22.19	43.50	-21.31	QP	P
4	162.3257	51.20	-27.19	24.01	43.50	-19.49	QP	P
5 *	237.8925	54.54	-26.78	27.76	46.00	-18.24	QP	P
6	450.3446	52.94	-25.60	27.34	46.00	-18.66	QP	P

A.5 Frequency Stability

Test Enviroment		Frequency Reading(MHz)	Frequency Error(%)	Limit	Result
Voltage	Temperature(℃)				
DC 3.8V	-20	13.56098	0.0072	±0.01 %	Pass
	-10	13.56108	0.0080	±0.01 %	Pass
	0	13.56114	0.0084	±0.01 %	Pass
	10	13.56123	0.0091	±0.01 %	Pass
	20	13.56108	0.0080	±0.01 %	Pass
	30	13.56142	0.0080	±0.01 %	Pass
	40	13.56119	0.0088	±0.01 %	Pass
	50	13.56132	0.0097	±0.01 %	Pass
DC 4.2V	Normal	13.56112	0.0082	±0.01 %	Pass
DC 3.4V	Normal	13.56121	0.0080	±0.01 %	Pass

ANNEX B TEST SETUP PHOTOS

Test setup


ANNEX C EUT EXTERNAL PHOTOS

Refer to Report No: FCC2022-06453RF1 for EUT external.

ANNEX D EUT INTERNAL PHOTOS

Refer to Report No: FCC2022-06453RF1 for internal photos.