



**TEST REPORT NUMBER: (8522)165-0568**

## **TEST REPORT**

Applicant:	OUT THERE FIRST INC D/B/A/ ALEX GLOBAL PRODUCTS	Fax:	--
Address:	1203 NEW EAST OCEAN CENTRE, 9 SCIENCE MUSEUM ROAD, TSIM SHA TSUI, HONGKONG.		
Test Date:	14 May, 2022 ---- 06 June, 2022		

Manufacturer or Supplier:	SEMTEL (HONG KONG) LIMITED
Address:	SUITE 2611, 26/F LANGHAM PLACE OFFICE TOWER 8 ARGYLE ST MONGKOK KL
Sample Description:	WALKIE TALKIE
Model number:	DN1040-3
Rated Voltage:	DC 9.0V(6F22*1)
FCC ID:	2A7WO35652785
The submitted sample of the above equipment has been tested according to following standard(s)	
FCC part 15, Subpart C, Section 15. 235 & ANSI C63.10-2013: Operation within the band 49.82-49.90 MHz. ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.	
CONCLUSION: The submitted sample was found to COMPLY with the test requirement	

Assistant Manager

Name: Nick Lung  
Date: AUG 08,2022



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### 1 Test Standards

The tests were performed according to following standards:

FCC part 15, Subpart C, Section 15. 235: Operation within the band 49.82-49.90 MHz

ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

### 2 Summary

#### 2.1 General remarks

Date of receipt of test sample	14 May, 2022
Testing commenced on	14 May, 2022 ---- 06 June, 2022
Testing concluded on	06 June, 2022

#### 2.2 Final assessment

Test content:	Assessment
The RF requirements pertaining to the technical standards and tested operation modes are	Fulfilled
The equipment under test	Fulfilled the RF requirements

### 3 Equipment under Test

#### 3.1 Short description of the Equipment Under Test (EUT)

EUT Name	WALKIE TALKIE
Model No.	DN1040-3
Power supply voltage	DC 9.0V(6F22*1)
Operating Mode	TX mode
Operation frequency	49.86MHz
Number of Channel	1
Modulation	GFSK
Antenna Type	Brass antenna
Antenna Gain	0dBi
Number of tested samples	1

#### NOTE:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual. The laboratory is not responsible for the accuracy of the information provided by manufacturer.



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### 3.2 EUT configuration

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurement:

Not Applicable

EUT

### 3.3 Description of test modes

NO.	Frequency	Test mode description
1	49.86MHz	Transmitting mode

Note:

1. All the test modes can be supply by new battery, and only the data of the worst case recorded in the test report.
2. For radiated emission, 3axis were chosen for testing for each applicable mode.



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### 4 Test Environment

#### 4.1 Address of the test laboratory

Test Laboratory:	AJT Testing Services Limited
Test site:	1-2/F., NO.1, WENHUA SOUTH ROAD, CHENGHUA INDUSTRIAL ZONE, CHENGHAI DISTRICT, SHANTOU, GUANGDONG, CHINA
Tel:	86-754-85860999
Fax:	86-754-86984098

#### 4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:	
CNAS Accreditation NO.:	L4735
A2LA Accreditation NO.:	5443.01
Designation Number:	CN1263
Test Firm Registration Number:	127385
Industry Canada site registration number:	25345
FCC Registration NO.:	0028094555

#### 4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:	
Temperature	15~35°C
Humidity	30~75% RH



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### 4.4 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. Furthermore, component and process variability of devices are similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Measurement Uncertainty	
Conducted emissions	±2.14dB
Radiated Emission below 1GHz	±4.44dB
Radiated Emission above 1GHz	±5.26dB
Occupied Bandwidth	0.1303MHz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 4.5 Test types and results

Standard: FCC part 15, Subpart C			
Standard Section	Test Type	Result	Remark
§15.207	Conducted Emission (CE)	N/A	EUT is powered by battery
§15.235(a) & §15.235(b)&15.209	Radiated Emission (RE) and Band Edges	Pass	Compliant
§15.215	20dB Bandwidth	Pass	Compliant
§15.203	Antenna Requirement	Pass	No antenna connector is used

Note: The conducted limits are not required for devices which only employ battery power for operation.

## 5 Test Conditions and Results

### 5.1 Radiated emission

For test instruments and accessories used see section 6

#### 5.1.1 Test procedures

- (1) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. (Below 1000MHz)
- (2) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. (Below 30MHz)
- (3) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- (4) The height of antenna is varied from one meter to four meters 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.

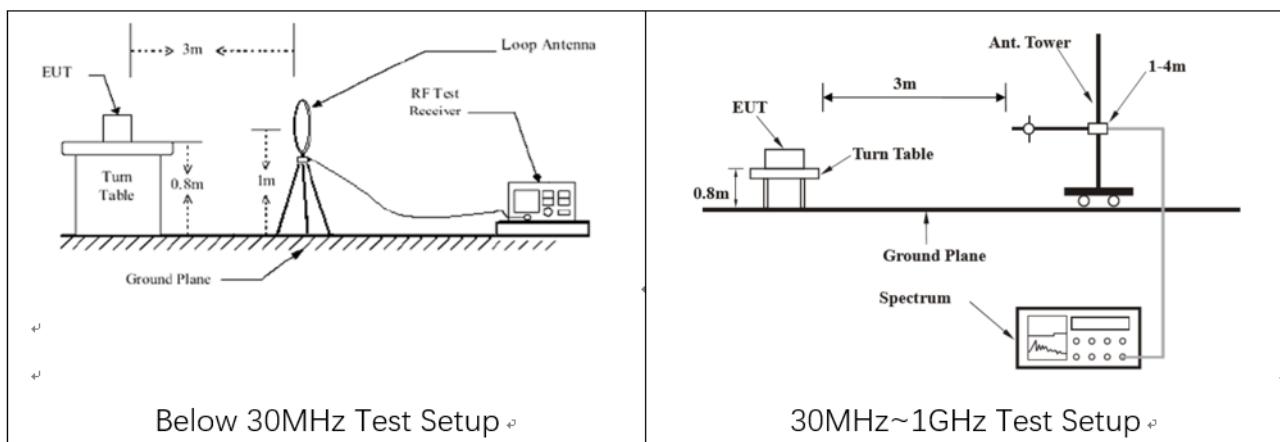
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- (5) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- (6) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.
- (7) During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position Y, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level.
- (8) For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

**Note:**

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. Emission level (dB $\mu$ V/m) = Raw value (dB $\mu$ V) + Correction Factor (dB/m)
3. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
4. Margin value = Emission level – Limit value.
5. Fundamental AV value = PK Emission + AV Factor

### 5.1.2 Test setup





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### 5.1.3 Test limits

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (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

According to §15. 235(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Range of Fundamental (MHz)	Field Strength of Fundamental Emission (Peak) ( $\mu$ V/m)	Field Strength of Fundamental Emission (average) ( $\mu$ V/m)
49.82 ~ 49.90	100,000(100dB $\mu$ V/m)	10,000(80dB $\mu$ V/m)

#### Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level ( $\text{dB}\mu\text{V}/\text{m}$ ) = 20 log Emission level ( $\mu\text{V}/\text{m}$ ).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### FCC 15.235(b)

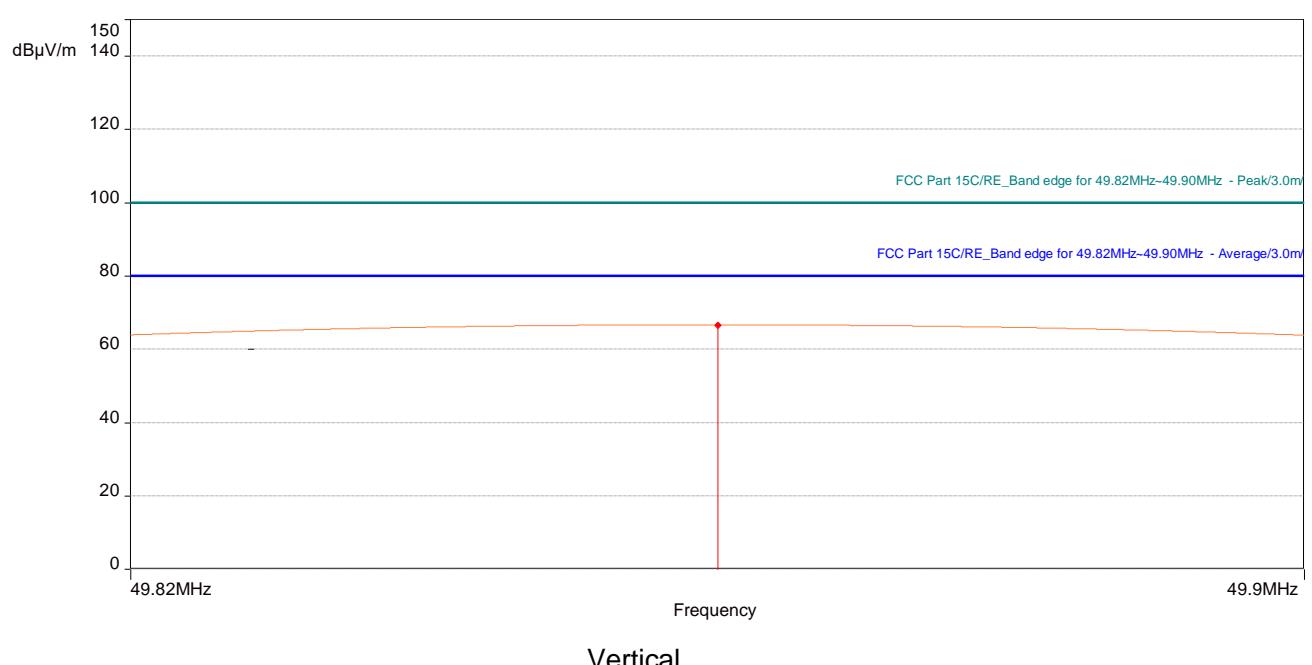
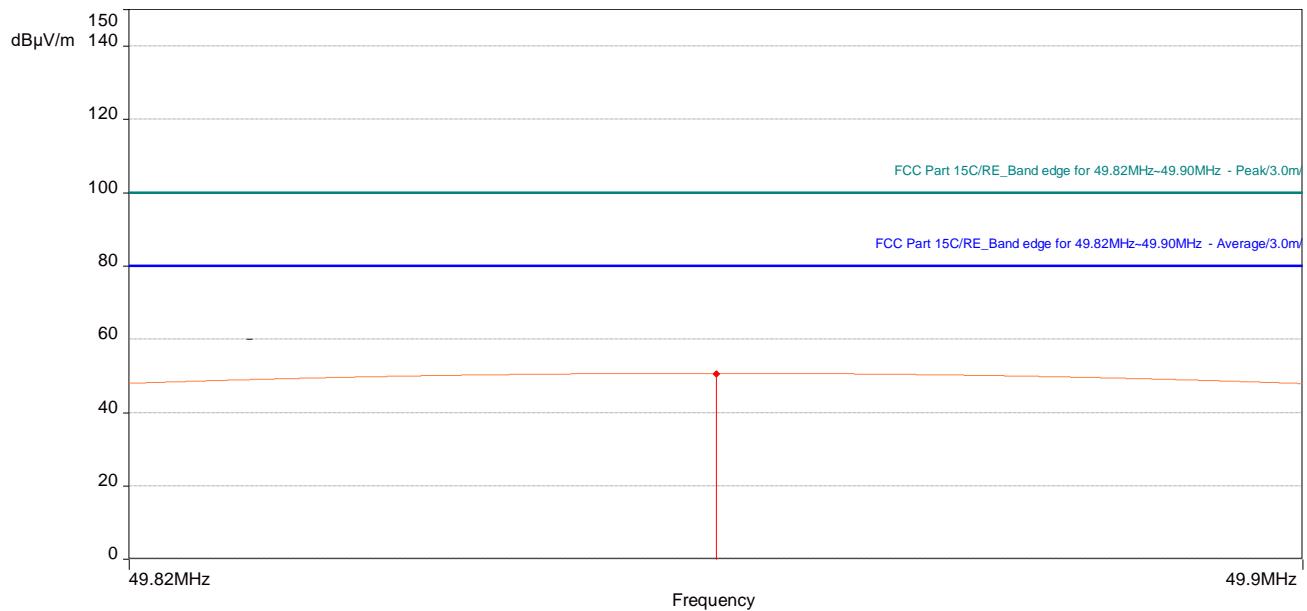
The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in §15.209, whichever permits the higher emission levels. The field strength of any emissions removed by more than 10 kHz from the band edges shall not exceed the general radiated emission limits in §15.209. All signals exceeding 20 microvolts/meter at 3 meters shall be reported in the application for certification.



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### 5.1.4 Test results

#### 5.1.4.1 Field strength of fundamental





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Frequency (MHz)	Reading Level (dB $\mu$ V/m)	Emission Level (dB $\mu$ V/m)	Limit. (dB $\mu$ V/m)	Margin (dB)	Height (m)	Angle (°)	Correction (dB)	Polarization
49.86(PK)	--	50.66	100.00	-49.34	1.99	340.00	-5.24	Horizontal
49.86(PK)	--	66.65	100.00	-33.35	1.01	123.00	-5.24	Vertical
49.86(AV)	--	50.66	80.00	-29.34	1.99	340.00	0	Horizontal
49.86(AV)	--	66.65	80.00	-13.35	1.01	123.00	0	Vertical

### Note:

1. Emission Level = Read Level + Correction Factor
2. Correction Factor = Antenna Factor + Cable Loss - Preamplifier Gain
3. Margin = Emission Level - Limit Value
4. The average value of fundamental frequency is: Average value = Peak value +AV factor, where the AV factor is calculated from following formula: AV factor-20 log (Duty cycle) = 20 log (100%) = 0dB, please see 5.1.4.2.

### 5.1.4.2 Calculation of Average Factor

Duty Cycle =100%

Averaging factor in dB = 20 log (duty cycle) =20 log (100%) =0 dB



### 5.1.4.3 9kHz-1GHz Radiated Emission Result

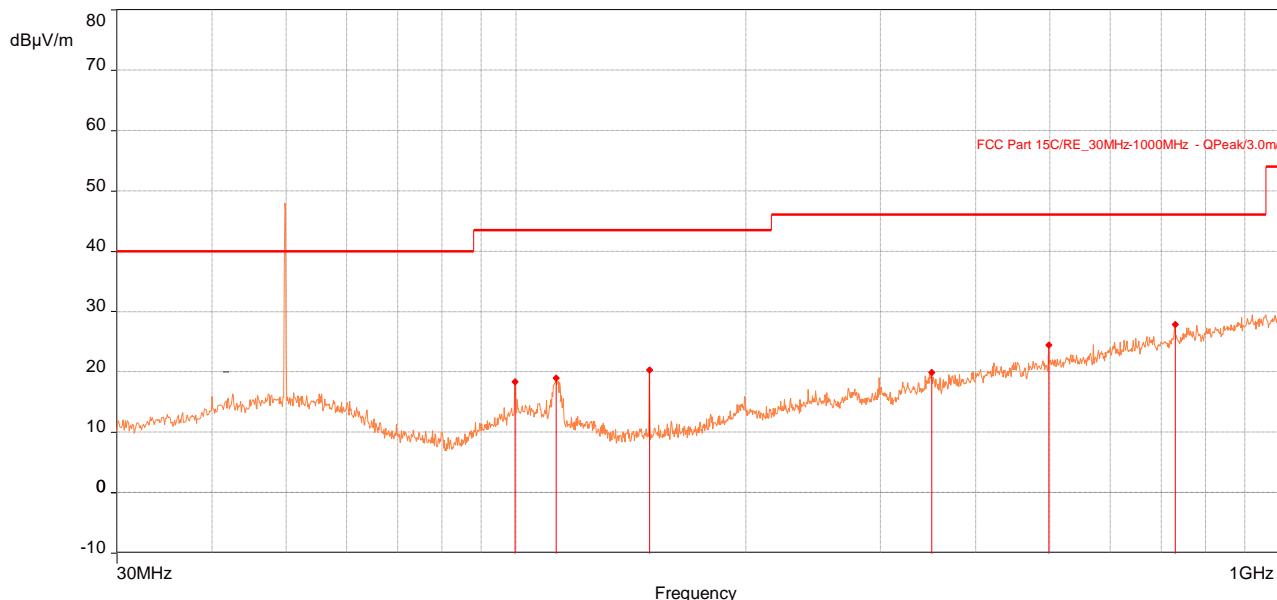
The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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Test point	Operation mode	Result
Horizontal	TX mode	Pass

EUT	WALKIE TALKIE
Operating Condition	DC 9.0V(6F22*1)
Test Condition	Ambient Temperature: 25°C Humidity: 67% RH



Frequency (MHz)	Peak (dB $\mu$ V/m)	QP (dB $\mu$ V/m)	QP Lim. (dB $\mu$ V/m)	Margin (dB)	Angle (°)	Height (m)	Polarization
99.646	18.41	/	43.50	-25.09	146.00	1.98	Horizontal
112.838	18.97	/	43.50	-24.53	122.00	1.00	Horizontal
149.504	20.31	/	43.50	-23.19	291.00	1.98	Horizontal
350.197	19.90	/	46.00	-26.10	0.00	1.98	Horizontal
498.607	24.45	/	46.00	-21.55	105.00	1.98	Horizontal
729.176	27.91	/	46.00	-18.09	287.00	1.98	Horizontal

Note:

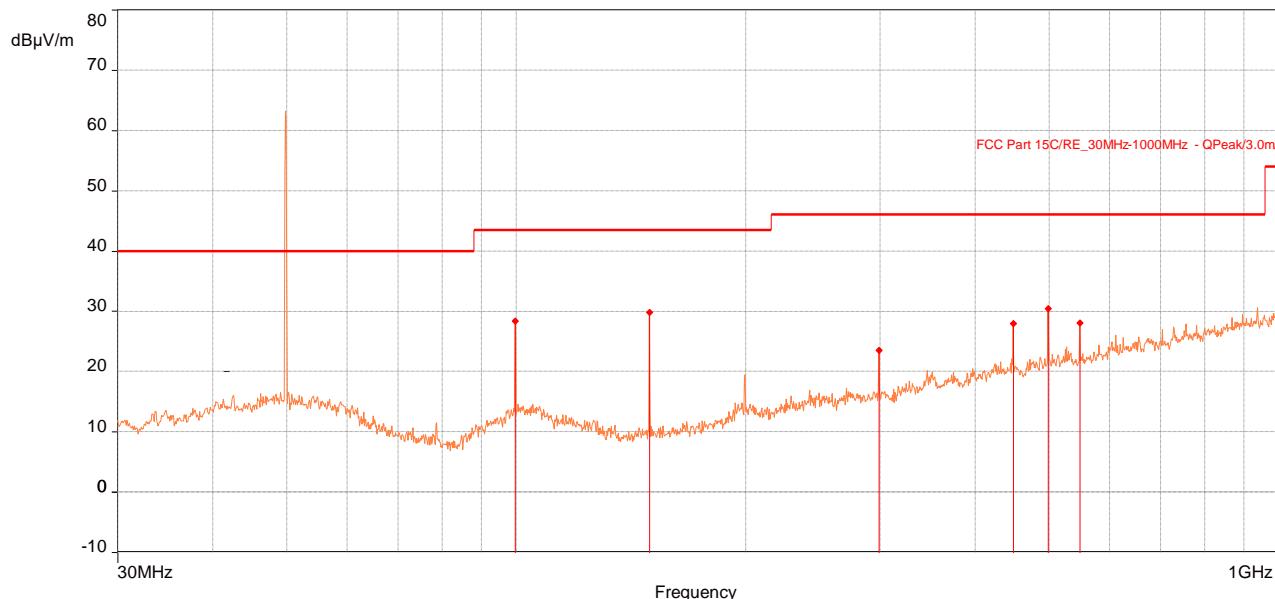
- 1.QP is abbreviation of Quasi-Peak
- 2.Margin = Emission Level - Limit Value



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Test point	Operation mode	Result
Vertical	TX mode	Pass

EUT	WALKIE TALKIE
Operating Condition	DC 9.0V(6F22*1)
Test Condition	Ambient Temperature: 25°C Humidity: 67% RH



Frequency (MHz)	Peak (dB $\mu$ V/m)	QP (dB $\mu$ V/m)	QP Lim. (dB $\mu$ V/m)	Margin (dB)	Angle (°)	Height (m)	Polarization
99.646	28.41	/	43.50	-15.09	65.00	1.00	Vertical
149.504	29.81	/	43.50	-13.69	70.00	1.00	Vertical
299.175	23.51	/	46.00	-22.49	59.00	1.99	Vertical
448.749	27.99	/	46.00	-18.01	80.00	1.00	Vertical
498.607	30.43	/	46.00	-15.57	55.00	1.00	Vertical
548.465	28.06	/	46.00	-17.94	45.00	1.00	Vertical

**Note:**  
1.QP is abbreviation of Quasi-Peak  
2.Margin = Emission Level - Limit Value



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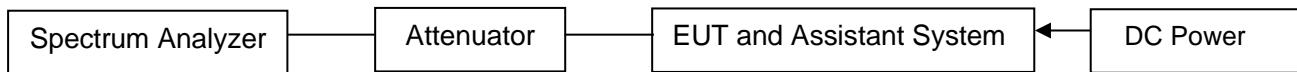
### 5.2 20dB bandwidth

For test instruments and accessories used see section 6

#### 5.2.1 Test procedures

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

#### 5.2.2 Test setup



#### 5.2.3 Test limits

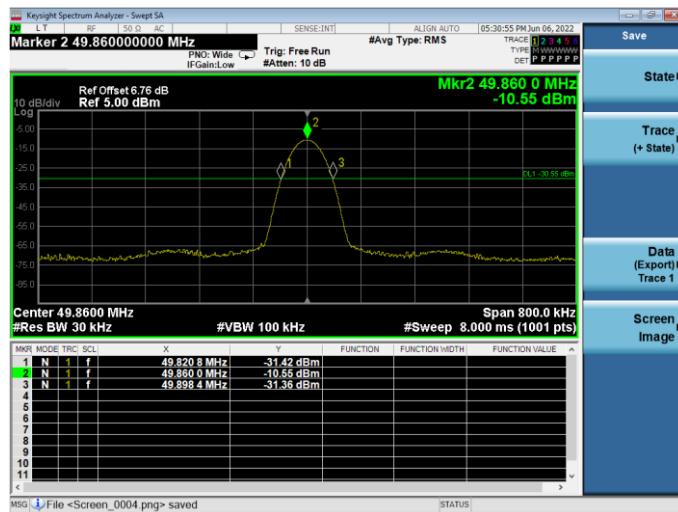
The field strength of any emissions appearing between the band edges and out of band shall be attenuated at least 20 dB below the level of the unmodulated carrier or to the general limits in Section 15.209

Frequency (MHz)	Limits (MHz)
49	Within 49.82-49.90



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### 5.2.4 Test results



$F_L$ (MHz)	$F_H$ (MHz)	Limit (MHz)	Result
49.821	49.898	49.82 MHz – 49.90 MHz	PASS



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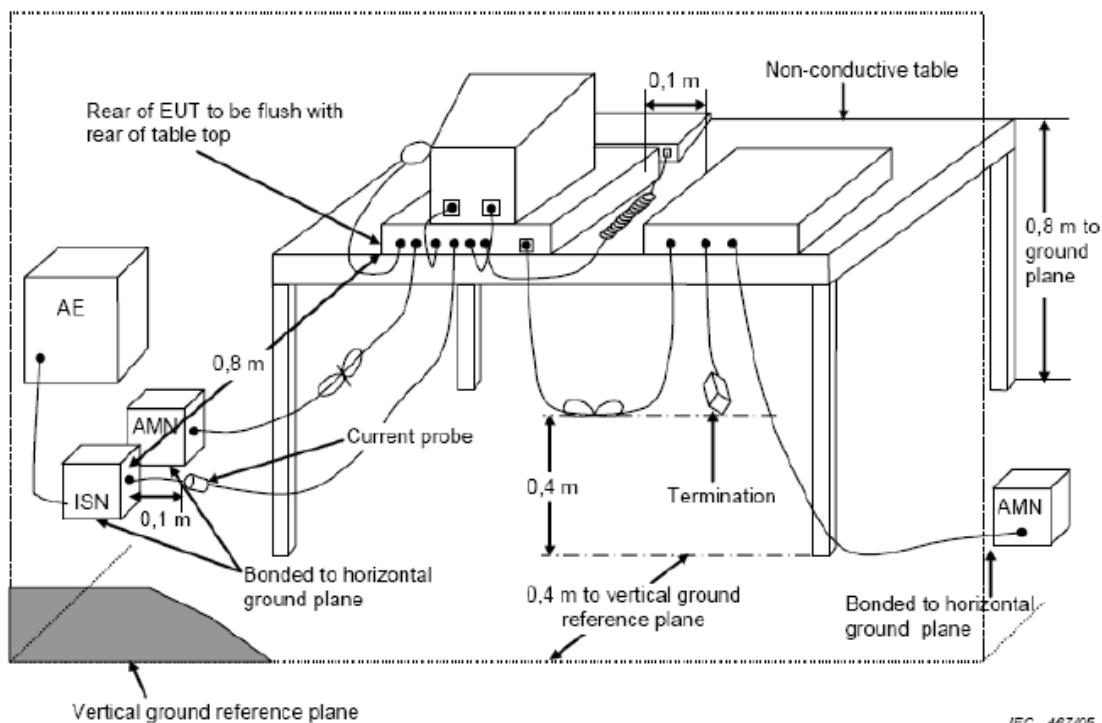
### 5.3 Conducted emission

For test instruments and accessories used see section 6

### 5.3.1 Test procedures

The PC Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test software, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

### 5.3.2 Test setup





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### 5.3.3 Test limits

Standard: FCC part 15, Subpart C		
Frequency of emission (MHz)	Maximum RF Line Voltage	
	Quasi-Peak Level dB(µV)	Average Level dB(µV)
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Notes: 1. \* Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 5.3.4 Test results

Not Applicable

Note: The device is a DC power supply and does not apply to conducted emissions.

## 5.4 Antenna requirements

### 5.4.1 Test Standard:

FCC Part 15, Subpart C 15.203

### 5.4.2 Standard Requirement:

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, 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.

### 5.4.3 EUT Antenna:

The antenna is Brass antenna and no consideration of replacement. The best case gain of the antenna is 0dBi. Antenna location: Refer to Appendix (Internal photos).



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### 6 Test Equipment

Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Test Receiver	ROHDE & SCHWARZ	ESR3	102452	2022/03/22	2023/03/22
Spectrum analyzer	Keysight	N9010A-526	MY51120099	2021/11/30	2022/11/30
TRILOG Breitband Antenna	SCHWARZBECK	VULB 9163	9163-1127	2021/07/12	2023/07/12
Horn Antenna	SCHWARZBECK	BBHA 9120D	01829	2022/03/22	2023/03/22
Broadband Preamplifier	SCHWARZBECK	BBV 9743B	00067	2022/03/22	2023/03/22
Broadband Preamplifier	SCHWARZBECK	BBV 9718B	00062	2022/03/22	2023/03/22
Line Impedance Stabilization Network / V LINE	SCHWARZBECK	NSLK 8127 RC	8127-RC 05040	2022/03/22	2023/03/22
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F N00359	2022/03/22	2023/03/22
DC power supply	ZHAOXIN	RXN-3010D	2009006313	2022/03/22	2023/03/22
Active loop antenna	DAZE	ZN30900C	15015	2022/03/22	2023/03/22
3Meters Semi-anechoic chamber	Shenzhen EMC-united	3mSAC	EMCU-3m-1808	2021/09/10	2024/09/10
Conduction control room	Shenzhen EMC-united	SR6	/	2021/09/14	2024/09/14
BAT-EMC testing software	NEXIO	3.16.0.74	/	/	/



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**7 Test Photographs**

Referring to – "(8522)165-0568(C)".

**8 External and Internal Photos of the EUT**

Referring to – "(8522)165-0568(A)" and "(8522)165-0568(B)".

**END OF TEST REPORT**