



# TEST REPORT

**Report No.** SST240429004EF01

**Applicant:** Shenzhen Jiuzhou Yunhai Technology Co., Ltd

**Address of Applicant:** 701, 602, Building 3, Shanglilang park, No. 61 Pingji Avenue,  
Shanglilang Community, Longgang, Shenzhen(518100),  
China.

**Product Name:** Laptop

**Trade Mark:** /

**Standard(s):** FCC CFR Title 47 Part 15 Subpart E Section 15.247

**FCC ID:** 2BFMN-TU156

**Test Report Form No:** SST-RD-7.5-02-E01(A/0)

**Date of sample receipt:** 2024/10/17

**Date of Test:** 2024/10/17 - 2024/12/27

**Date of report issued:** 2024/12/30

\*The equipment complies with the requirements according to the standard(s) or Specification above, it is applicable only to the tested sample identified in the report.

Prepared by:

Bol

Reviewed by:

Tiger

Approved by:

Seven Chan



\*The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

## Revision History

Version	Description	Date of Issue
V1.0	Original	2024/12/30



## 2 Contents

	Page
1 COVER PAGE .....	1
2 CONTENTS .....	3
3 TEST SUMMARY .....	4
4 MEASUREMENT UNCERTAINTY .....	4
5 GENERAL INFORMATION .....	5
5.1 CLIENT INFORMATION .....	5
5.2 GENERAL DESCRIPTION OF EUT .....	5
5.3 TEST MODE(S) .....	6
5.4 TEST FACILITY .....	7
5.5 DESCRIPTION OF SUPPORT UNITS .....	7
5.6 ADDITIONAL INSTRUCTIONS .....	7
5.7 ANTENNA INFORMATION .....	7
5.8 OTHERS .....	7
6 TECHNICAL REQUIREMENT AND MEASUREMENT DATA .....	8
6.1 GENERALLY REQUIREMENT .....	8
6.2 CONDUCTED PEAK OUTPUT POWER .....	9
6.3 20dB EMISSION BANDWIDTH .....	10
6.4 CARRIER FREQUENCY SEPARATION .....	11
6.5 HOPPING CHANNEL NUMBERS .....	12
6.6 DWELL TIME .....	13
6.7 CONDUCTED EMISSION .....	14
6.8 RADIATED SPURIOUS EMISSION .....	15
6.9 CONDUCTED EMISSIONS .....	24
7 TEST SETUP PHOTO .....	27
8 EUT CONSTRUCTIONAL DETAILS .....	27
ANNEX A --TEST INSTRUMENTS LIST .....	28

### 3 Test Summary

Test items	Basics standards	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)(iii)	Pass
Dwell Time	15.247 (a)(1)(iii)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Notes:

1: NA =Not Applicable

2: Determining compliance based on the results of the compliance measurement, not taking into account measurement uncertainty. If necessary, the applicant shall inform test lab in advance

3: Additions, Deviations and Exclusions from Standards: None.

### 4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

Item	Uncertainty ( $\pm$ ) (k=2, 95%)	
Output Power, Conducted	0.54	
Power Spectral Density, Conducted	1.28	
Spurious Emissions, Conducted	1.28	
Radiated Emissions(<1GHz)	9kHz~30MHz	2.6
	30MHz~1GHz	5.08
Radiated Emissions(>1GHz)	1GHz~6GHz	4.02
	6GHz~18GHz	4.62
	18GHz~40GHz	4.7
Occupied Bandwidth	1.14	
Conducted Emissions—AC mains	9kHz~150KHz	1.76
	150kHz~30MHz	2.52
Conducted Emissions—Telecom	2.64	

## 5 General Information

### 5.1 Client Information

**Applicant:** Shenzhen Jiuzhou Yunhai Technology Co., Ltd  
**Address of applicant:** 701, 602, Building 3, Shanglilang park, No. 61 Pingji Avenue, Shanglilang Community, Longgang, Shenzhen(518100), China.  
**Manufacturer:** Same as applicant  
**Address of Manufacturer:** Same as applicant  
**Factory:** Same as applicant  
**Address of Factory:** Same as applicant

### 5.2 General Description of EUT

Product Name:	Laptop
Model No.:	TU156 i7-1195G7, TU*****, DH*****, A1("*" stands for 0-9, a-z, A-Z,"-", space or blank, indicating different sales channels or different colors, without affecting product safety and Electromagnetic compatibility)
Test Model:	TU156 i7-1195G7
Test sample(s) ID:	24042900401
Sample(s) Status:	Continuously transmitter
S/N:	/
Hardware Version:	/
Software Version:	/
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, Pi/4DQPSK, 8DPSK
Antenna gain:	Refer to section 5.7 for details
Power supply:	AC/DC ADAPTOR Model: QL065GaN-1903420C Input: AC 100~240V, 50/60Hz, 1.5A Output: DC 19V, 3.42A  Or DC 7.7V 5000mAh/38.5Wh Rechargeable li-ion battery

### 5.3 Test mode(s)

Mode 1:	continuously transmitting
Mode 2:	
Mode 3:	

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
3	2404MHz	23	2424MHz	43	2444MHz	63	2464MHz
4	2405MHz	24	2425MHz	44	2445MHz	64	2465MHz
5	2406MHz	25	2426MHz	45	2446MHz	65	2466MHz
6	2407MHz	26	2427MHz	46	2447MHz	66	2467MHz
7	2408MHz	27	2428MHz	47	2448MHz	67	2468MHz
8	2409MHz	28	2429MHz	48	2449MHz	68	2469MHz
9	2410MHz	29	2430MHz	49	2450MHz	69	2470MHz
10	2411MHz	30	2431MHz	50	2451MHz	70	2471MHz
11	2412MHz	31	2432MHz	51	2452MHz	71	2472MHz
12	2413MHz	32	2433MHz	52	2453MHz	72	2473MHz
13	2414MHz	33	2434MHz	53	2454MHz	73	2474MHz
14	2415MHz	34	2435MHz	54	2455MHz	74	2475MHz
15	2416MHz	35	2436MHz	55	2456MHz	75	2476MHz
16	2417MHz	36	2437MHz	56	2457MHz	76	2477MHz
17	2418MHz	37	2438MHz	57	2458MHz	77	2478MHz
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

**Note:**

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see above marked

## 5.4 Test Facility

The test facility is recognized, certified, or accredited by these organizations:	<b>FCC Accredited Lab</b> Test Firm Registration Number: 638130 Designation Number: CN1359
	<b>IC Registration Lab</b> CAB Identifier No. CN0154
	<b>A2LA Accreditation Lab</b> Certificate No.:7057.01

Test Performed at:	<b>Name</b> GuangDong Set Sail Testing Co., Ltd.
	<b>Address</b> 101, No.19, Tianxin Hudie 1st Road, Huangjiang Town, Dongguan, Guangdong, China

## 5.5 Description of Support Units

Device Type	Brand	Model	Series No.	Note
---	---	---	---	---

## 5.6 Additional Instructions

Test Software	QRCT
Power level setup	Default

## 5.7 Antenna Information

Ant	Manufacturer	Model	Antenna Type	Antenna Gain (dBi)	Note
1	/	/	PIFA	2.6	WiFi, BT

All above information provided by the applicant which is fully responsible for those information.

## 5.8 Others

<p>The laboratory responsible for all the information provided in the report, except those information provided by the applicant.</p> <p>The applicant shall fully responsible for the information they provided.</p> <p>The report would be invalid without a stamp of test laboratory and the signatures of compiler and approver.</p> <p>The laboratory has not been responsible for the sampling stage; the test report merely corresponds to the test sample received.</p> <p>Any objection to the test report shall submitted to the test laboratory within 15 days from the date of receipt of the report.</p> <p>It is not permitted to copy extracts of these test result without the written permission of the test laboratory.</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## 6 Technical Requirement and Measurement Data

### 6.1 Generally requirement

**15.203 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 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.

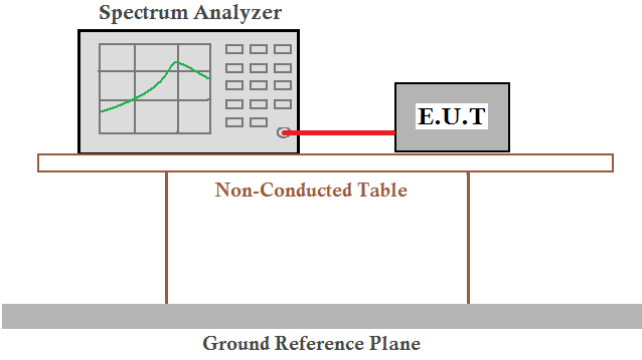
**15.247(c) (1)(i) requirement:**

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 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.

**EUT Antenna:**

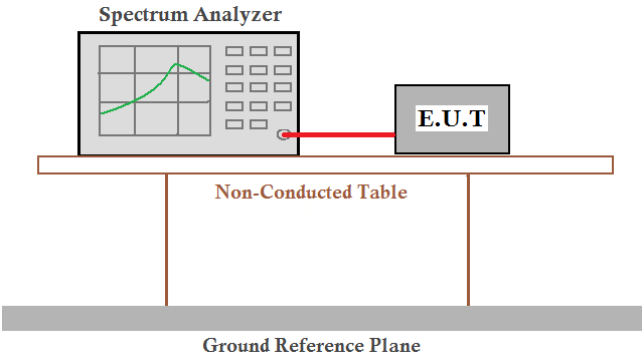
Reference to the appendix II for details

## 6.2 Conducted Peak Output Power

<b>Limit</b>
20.97dBm
<b>Block diagram of Test Setup</b>
 <p>The diagram shows a Spectrum Analyzer and an E.U.T (Equipment Under Test) connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below this table is a 'Ground Reference Plane'.</p>
<b>Test Instrument</b>
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

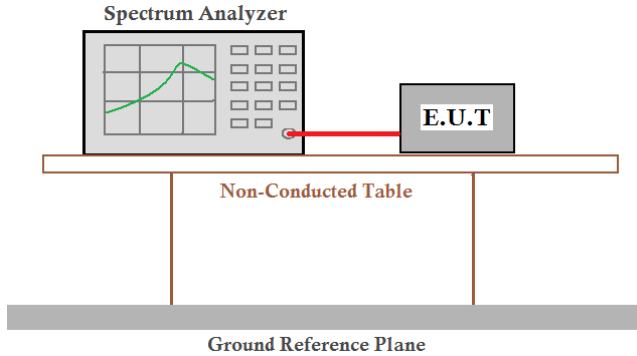
**Measurement Data:** The detailed test data see Appendix

### 6.3 20dB Emission Bandwidth

<b>Limit</b>
Report only
<b>Block diagram of Test Setup</b>
 <p>The diagram shows a Spectrum Analyzer and an E.U.T. connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
<b>Test Instrument</b>
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

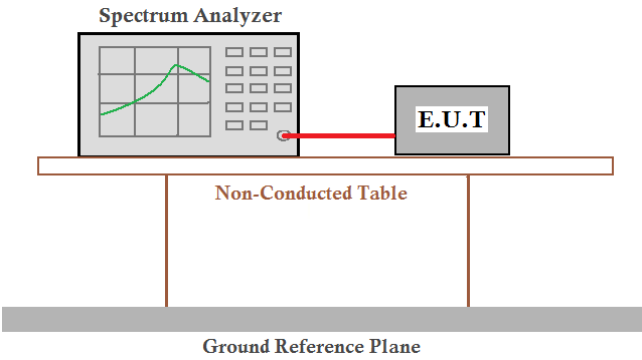
**Measurement Data:** The detailed test data see Appendix

## 6.4 Carrier Frequency Separation

<b>Limit</b>
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
<b>Block diagram of Test Setup</b>
 <p>The diagram shows a Spectrum Analyzer and an E.U.T. (Equipment Under Test) connected by a red cable. They are both placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
<b>Test Instrument</b>
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

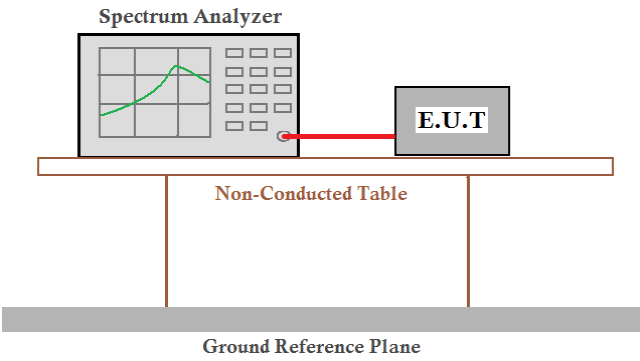
**Measurement Data:** The detailed test data see Appendix

## 6.5 Hopping Channel Numbers

<b>Limit</b>
At least 15 channels
<b>Block diagram of Test Setup</b>
 <p>The diagram shows a Spectrum Analyzer and an E.U.T (Equipment Under Test) connected by a red cable. They are both placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
<b>Test Instrument</b>
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

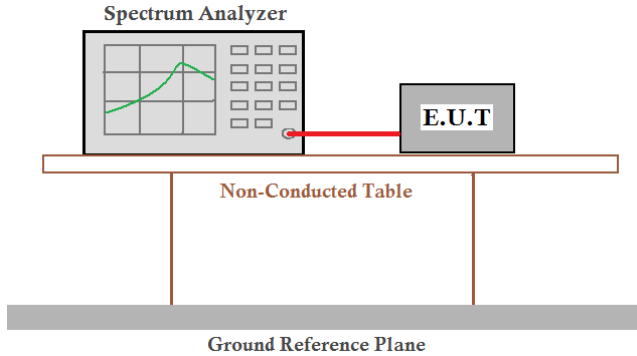
**Measurement Data:** The detailed test data see Appendix

## 6.6 Dwell Time

<b>Limit</b>
0.4s
<b>Block diagram of Test Setup</b>
 <p>The diagram shows a Spectrum Analyzer and an E.U.T (Equipment Under Test) connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
<b>Test Instrument</b>
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

**Measurement Data:** The detailed test data see Appendix

## 6.7 Conducted Emission

<b>Limit</b>
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
<b>Block diagram of Test Setup</b>
 <p>The diagram shows a Spectrum Analyzer and an E.U.T (Equipment Under Test) connected by a red cable. They are both placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
<b>Test Instrument</b>
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

**Measurement Data:** The detailed test data see Appendix

## 6.8 Radiated Spurious Emission

### Limit

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

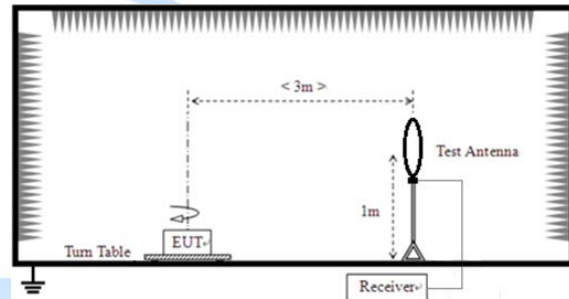
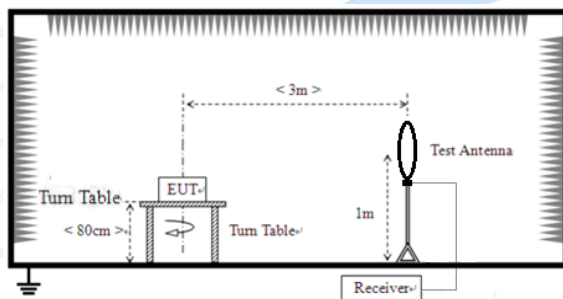
\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

### Block diagram of Test Setup

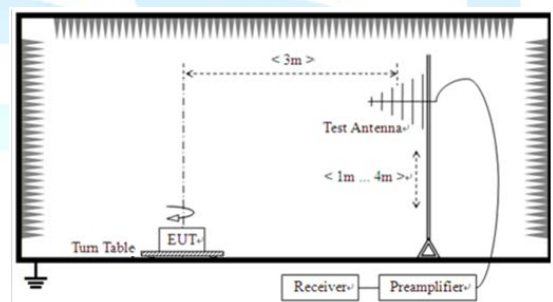
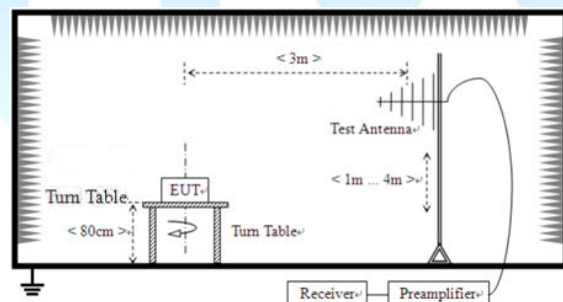
☒ For table-top equipment

☐ For floor standing equipment

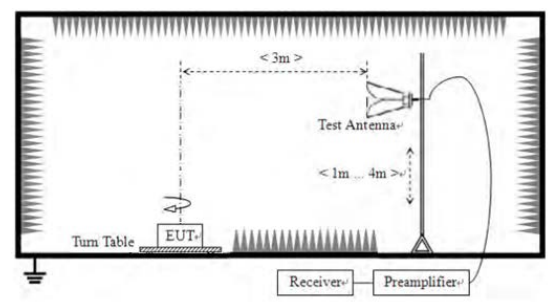
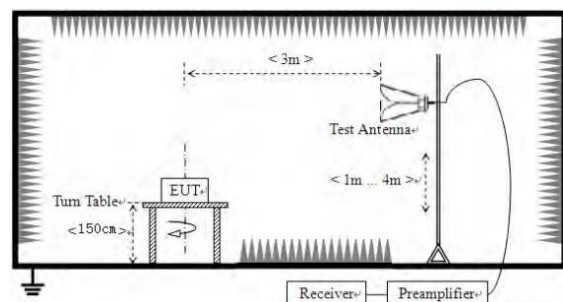
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



### Test Instrument

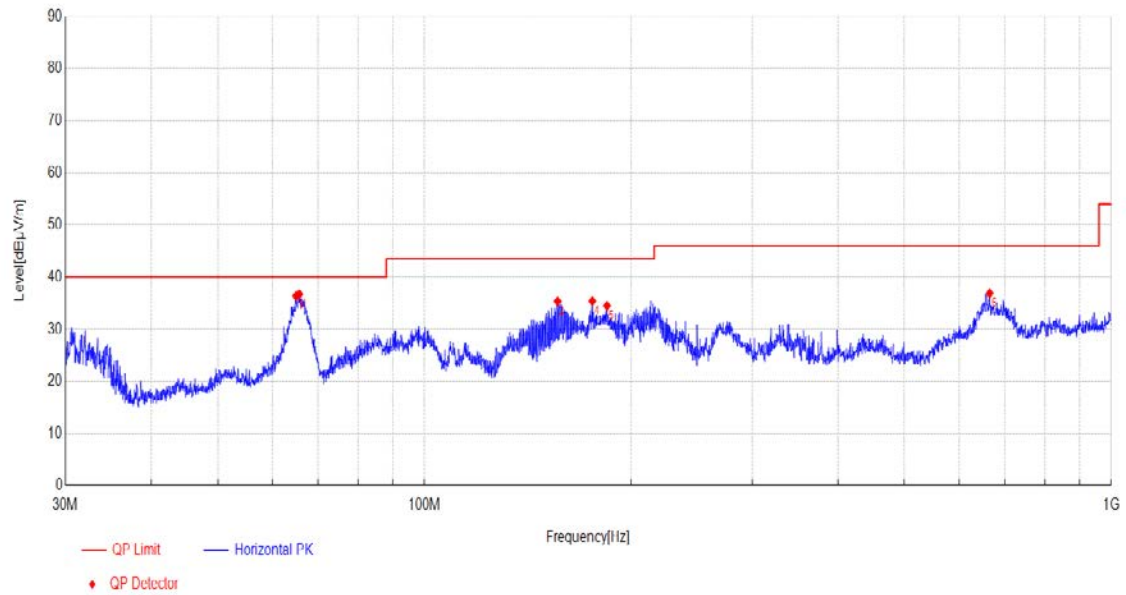
Refer to Annex A for details
<b>Test Procedures</b>
Test applies to C63.10
<b>Verdict</b>
Pass

*Note: The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.*



**Test Result(30M~1GHz)**

Test mode	Mode 1	Polarity	Horizontal
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%

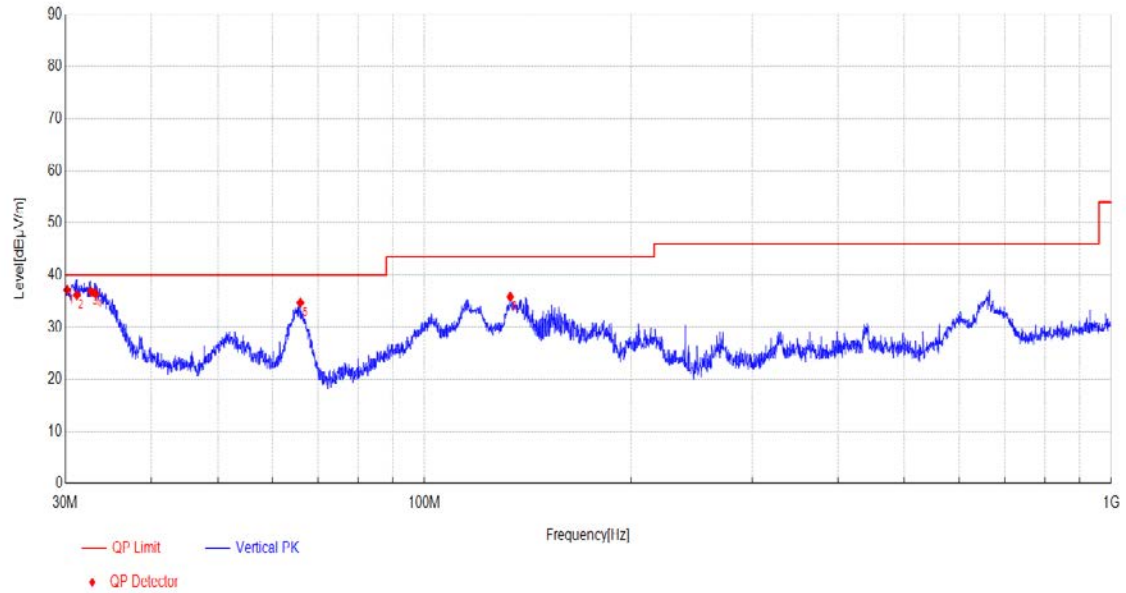


NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity	Verdict
1	65.0448	11.85	36.39	40.00	3.61	Horizontal	PASS
2	65.7325	11.62	36.72	40.00	3.28	Horizontal	PASS
3	156.2562	9.46	35.36	43.50	8.14	Horizontal	PASS
4	175.574	10.42	35.40	43.50	8.10	Horizontal	PASS
5	184.4061	11.25	34.47	43.50	9.03	Horizontal	PASS
6	665.2879	21.64	36.90	46.00	9.10	Horizontal	PASS

Note: Final Level = Receiver Read level + Factor  
Factor = Antenna Factor + Cable Loss – Preamplifier Factor  
Only the worst case report(GFSK 2402MHz)

**Test Result(30M~1GHz)**

Test mode	Mode 1	Polarity	Vertical
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%



NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity	Verdict
1	30.1846	10.80	37.16	40.00	2.84	Vertical	PASS
2	31.1795	11.02	36.19	40.00	3.81	Vertical	PASS
3	32.6906	11.35	36.89	40.00	3.11	Vertical	PASS
4	33.1813	11.46	36.43	40.00	3.57	Vertical	PASS
5	65.9634	11.54	34.70	40.00	5.30	Vertical	PASS
6	133.335	9.13	35.83	43.50	7.67	Vertical	PASS

Note: Final Level = Receiver Read level + Factor  
Factor = Antenna Factor + Cable Loss – Preamplifier Factor  
Only the worst case report(GFSK 2402MHz)

Test Result(Emissions in Non-restricted band)								
Test mode	Mode 1			Temp. /Hum.		25 °C/60%		
Test voltage	AC 120V/60Hz			Test channel		Lowest		
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310	49.9	27.71	5.3	53.84	29.07	74	-44.93	Horizontal
2390	50.44	27.91	5.4	53.82	29.93	74	-44.07	Horizontal
2310	48.41	27.71	5.3	53.84	27.58	74	-46.42	Vertical
2390	53.91	27.91	5.4	53.82	33.4	74	-40.6	Vertical
Average value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310	43.58	27.71	5.3	53.84	22.75	54	-31.25	Horizontal
2390	43.07	27.91	5.4	53.82	22.56	54	-31.44	Horizontal
2310	40.91	27.71	5.3	53.84	20.08	54	-33.92	Vertical
2390	41.76	27.91	5.4	53.82	21.25	54	-32.75	Vertical
<p>Note: Final Level =Receiver Read level + Factor</p> <p>Factor= Antenna Factor + Cable Loss – Preamplifier Factor</p> <p>The emission levels of other frequencies are very lower than the limit and not show in test report.</p> <p>Only the worst case report(GFSK)</p>								

Test Result(Emissions in Non-restricted band)								
Test mode		Mode 1		Temp. /Hum.		25 °C/60%		
Test voltage		AC 120V/60Hz		Test channel		Highest		
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.5	52.51	28.16	5.51	53.8	32.38	74	-41.62	Horizontal
2500	50.16	28.2	5.53	53.8	30.09	74	-43.91	Horizontal
2483.5	53.49	28.16	5.51	53.8	33.36	74	-40.64	Vertical
2500	50.32	28.2	5.53	53.8	30.25	74	-43.75	Vertical
Average value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.5	45.07	28.16	5.51	53.8	24.94	54	-29.06	Horizontal
2500	46.8	28.2	5.53	53.8	26.73	54	-27.27	Horizontal
2483.5	50.13	28.16	5.51	53.8	30	54	-24	Vertical
2500	43.92	28.2	5.53	53.8	23.85	54	-30.15	Vertical
<p>Note: Final Level =Receiver Read level + Factor Factor= Antenna Factor + Cable Loss – Preamplifier Factor The emission levels of other frequencies are very lower than the limit and not show in test report. Only the worst case report(GFSK)</p>								

Test Result(Emissions in Restricted band)								
Test mode	Mode 1			Temp. /Hum.		25 °C/60%		
Test voltage	AC 120V/60Hz			Test channel		Lowest		
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804	51.92	33.35	7.7	53.72	39.25	74	-34.75	Vertical
7206	51.63	36.54	9.55	53.24	44.48	74	-29.52	Vertical
9608	52.6	39.04	11.29	53.28	49.65	74	-24.35	Vertical
4804	52.71	33.35	7.7	53.72	40.04	74	-33.96	Horizontal
7206	51.37	36.54	9.55	53.24	44.22	74	-29.78	Horizontal
9608	51.75	39.04	11.29	53.28	48.8	74	-25.2	Horizontal
Average value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804	45.9	33.35	7.7	53.72	33.23	54	-20.77	Vertical
7206	46.97	36.54	9.55	53.24	39.82	54	-14.18	Vertical
9608	46.53	39.04	11.29	53.28	43.58	54	-10.42	Vertical
4804	46.69	33.35	7.7	53.72	34.02	54	-19.98	Horizontal
7206	47.79	36.54	9.55	53.24	40.64	54	-13.36	Horizontal
9608	47.33	39.04	11.29	53.28	44.38	54	-9.62	Horizontal
Note: Final Level =Receiver Read level + Factor Factor= Antenna Factor + Cable Loss – Preamplifier Factor The emission levels of other frequencies are very lower than the limit and not show in test report. Only the worst case report(GFSK)								

Test Result(Emissions in Restricted band)								
Test mode	Mode 1			Temp. /Hum.		25 °C/60%		
Test voltage	AC 120V/60Hz			Test channel		Middle		
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882	51.28	33.57	7.77	53.71	38.91	74	-35.09	Vertical
7323	51.66	36.56	9.64	53.26	44.6	74	-29.4	Vertical
9764	51.01	39.11	11.39	53.25	48.26	74	-25.74	Vertical
4882	51.9	33.57	7.77	53.71	39.53	74	-34.47	Horizontal
7323	51.31	36.56	9.64	53.26	44.25	74	-29.75	Horizontal
9764	51.88	39.11	11.39	53.25	49.13	74	-24.87	Horizontal
Average value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882	46.02	33.57	7.77	53.71	33.65	54	-20.35	Vertical
7323	45.18	36.56	9.64	53.26	38.12	54	-15.88	Vertical
9764	45.43	39.11	11.39	53.25	42.68	54	-11.32	Vertical
4882	45.27	33.57	7.77	53.71	32.9	54	-21.1	Horizontal
7323	47.21	36.56	9.64	53.26	40.15	54	-13.85	Horizontal
9764	46.15	39.11	11.39	53.25	43.4	54	-10.6	Horizontal
Note: Final Level =Receiver Read level + Factor Factor= Antenna Factor + Cable Loss – Preamplifier Factor The emission levels of other frequencies are very lower than the limit and not show in test report. Only the worst case report(GFSK)								

Test Result(Emissions in Restricted band)								
Test mode	Mode 1			Temp. /Hum.		25 °C/60%		
Test voltage	AC 120V/60Hz			Test channel		Highest		
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960	51.28	33.79	7.83	53.7	39.2	74	-34.8	Vertical
7440	51.33	36.59	9.72	53.29	44.35	74	-29.65	Vertical
9920	51.42	39.17	11.48	53.22	48.85	74	-25.15	Vertical
4960	51.07	33.79	7.83	53.7	38.99	74	-35.01	Horizontal
7440	52.19	36.59	9.72	53.29	45.21	74	-28.79	Horizontal
9920	51.31	39.17	11.48	53.22	48.74	74	-25.26	Horizontal
Average value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960	45.1	33.79	7.83	53.7	33.02	54	-20.98	Vertical
7440	47.49	36.59	9.72	53.29	40.51	54	-13.49	Vertical
9920	47.92	39.17	11.48	53.22	45.35	54	-8.65	Vertical
4960	47.47	33.79	7.83	53.7	35.39	54	-18.61	Horizontal
7440	47.96	36.59	9.72	53.29	40.98	54	-13.02	Horizontal
9920	47.31	39.17	11.48	53.22	44.74	54	-9.26	Horizontal
Note: Final Level =Receiver Read level + Factor Factor= Antenna Factor + Cable Loss – Preamplifier Factor The emission levels of other frequencies are very lower than the limit and not show in test report. Only the worst case report(GFSK)								

## 6.9 Conducted Emissions

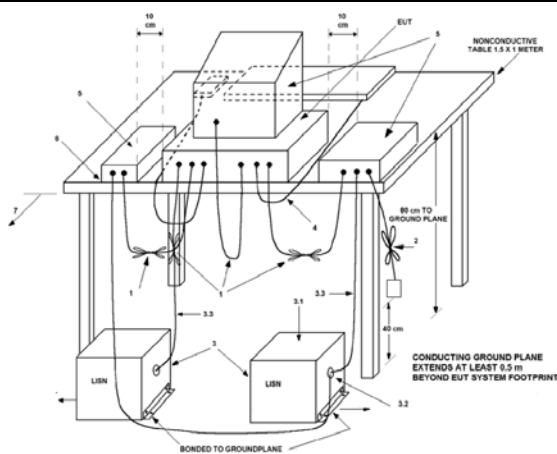
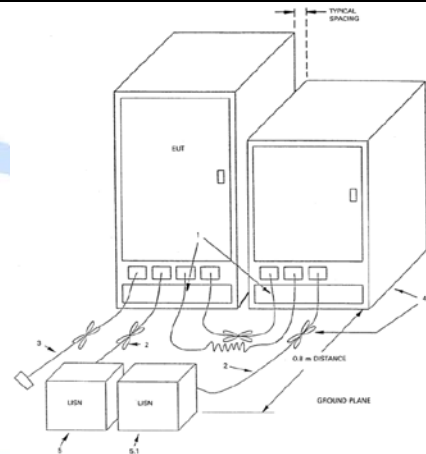
### Limit

Frequency (MHz)	Quasi-peak	Average
0.15~0.50	66 to 56*	56 to 46*
0.50~5.0	56	46
5.0~30	60	50

\*Decreases with the logarithm of the frequency.

If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out

### Block diagram of Test Setup

☒ For table-top equipment

☐ For floor standing equipment


### Test Instrument

Refer to Annex A for details

### Test Procedures

The measurement was performed in a shield room.

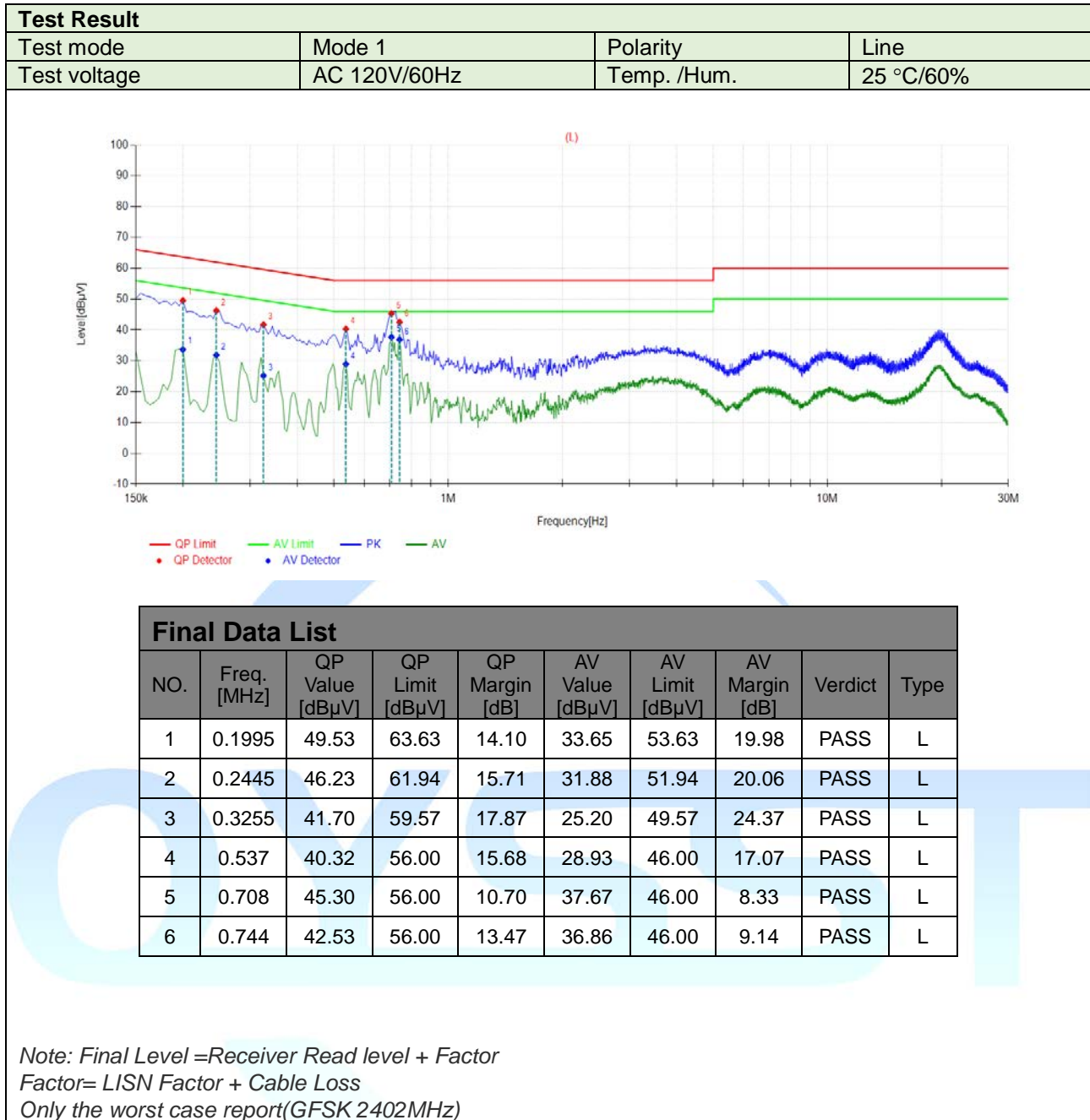
Measured levels of ac power-line conducted emission shall be the radio-noise voltage from the voltage probe, where permitted, or across the 50  $\Omega$  LISN port (to which the EUT is connected), as terminated into a 50  $\Omega$  EMI receiver or spectrum analyzer. All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN, if used. The manufacturer shall test equipment with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended. For measurements using a LISN, the 50  $\Omega$  measuring port is terminated into a 50  $\Omega$  EMI receiver or spectrum analyzer. All other ports are terminated into 50  $\Omega$  loads.

Table top devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

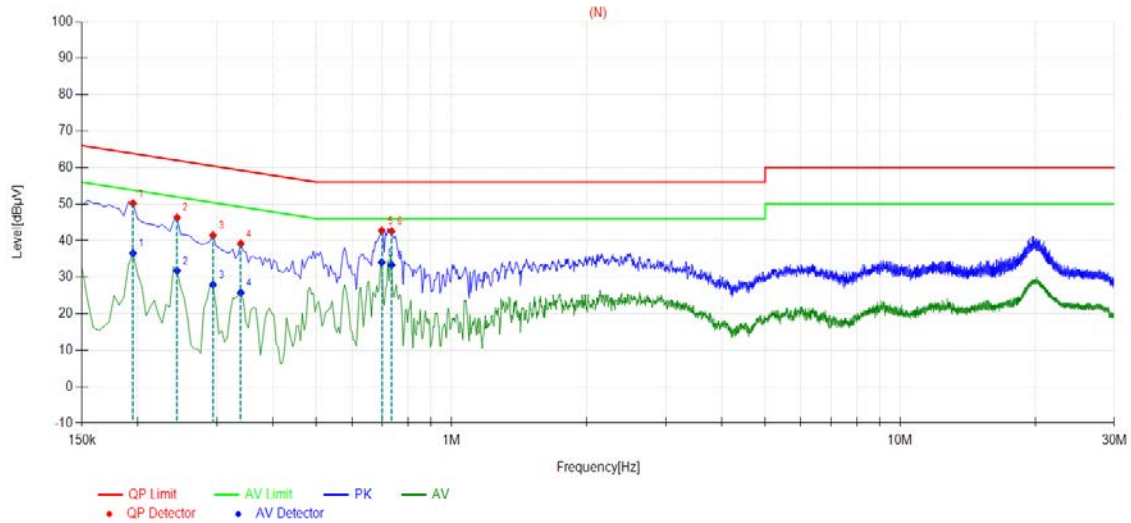
The bandwidth of the test receiver is set at 9 kHz.

### Verdict

Pass



Test Result			
Test mode	Mode 1	Polarity	Neutral
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%



Final Data List									
NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict	Type
1	0.195	50.18	63.82	13.64	36.53	53.82	17.29	PASS	N
2	0.2445	46.27	61.94	15.67	31.76	51.94	20.18	PASS	N
3	0.294	41.43	60.41	18.98	27.95	50.41	22.46	PASS	N
4	0.339	39.17	59.23	20.06	25.74	49.23	23.49	PASS	N
5	0.699	42.72	56.00	13.28	34.07	46.00	11.93	PASS	N
6	0.735	42.55	56.00	13.45	33.34	46.00	12.66	PASS	N

Note: Final Level = Receiver Read level + Factor

Factor = LISN Factor + Cable Loss

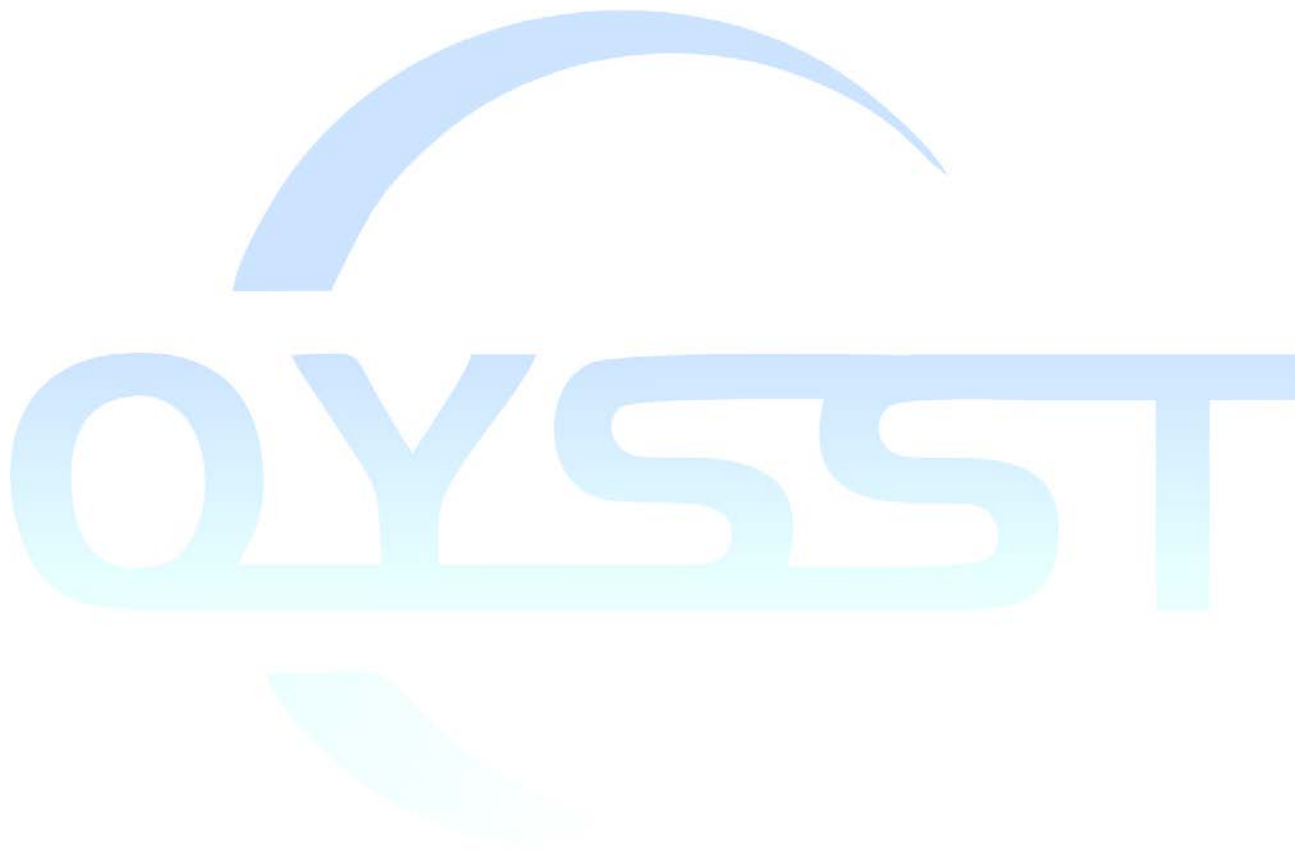
Only the worst case report (GFSK 2402MHz)

## 7 Test Setup Photo

Reference to the **appendix I** for details.

## 8 EUT Constructional Details

Reference to the **appendix II** for details.



## Annex A --Test Instruments list

Radiated Emission:						
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
SST-E-SAC001	3m Semi- Anechoic Chamber	BOST	966	/	3 years	2023.01.07
SST-E-SCC001	Control Room	BOST	333	/	3 years	2023.01.07
SST-E-SAC002	Breiband TRILOG Messantenne	Schwarzbeck	VULB 9162	00556	1 year	2024.04.20
SST-E-SAC004	Broad-band Horn Antenna	Schwarzbeck	BBHA 9120 D	02783	1 year	2024.04.16
SST-E-SCC003	EMI Test Receiver	R&S	ESU 8	100372	1 year	2024.04.16
SST-E-SCC004	Amplifier	Schwarzbeck	BBV 9744	00327	1 year	2024.04.16
SST-E-SCC015	Amplifie (1-18GHz)	TSTPASS	LNA10180G45	TSAM2303003	1 year	2024.04.16
SST-E-SCC016	Amplifier (40G)	RFsystem	TRLA-180400G45B	23060801	1 year	2024.04.16
SST-E-SAC006	Broadband Horn Antenna (40G)	Schwarzbeck	BBHA9170	01306	1 year	2024.04.17
SST-E-RSC010	Spectrum analyzer	R&S	FSV40-N	/	1 year	2024.04.16
SST-E-SAC007	Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60B 044	1 year	2024.04.17
SST-E-SAC005	5W 6dB attenuator	/	DC-6GHz	/	Internal calibration	/
SST-E-EMC006	Thermohygrometer	KTJ	TA218A	879030	1 year	2024.04.18
/	EMI Test Software	Tonscend	TS+	/	/	/

Conducted Emission						
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
SST-E-CSC001	Shielding Room	BOST	854	/	3 year	2023.01.07
SST-E-CSC002	EMI Test Receiver	R&S	ESR3	103057	1 year	2024.04.16
SST-E-CSC003	LISN	R&S	ENV 216	102832	1 year	2024.04.16
SST-E-CSC004	ISN	R&S	NTFM 8158	00347	1 year	2024.04.16
SST-E-CSC007	Antenna port test assembly	/	DC-3GHz	/	Internal calibration	/
SST-E-EMC011	Thermohygrometer	KTJ	TA218A	879036	1 year	2024.04.18
/	EMI Test Software	Tonscend	TS+	V4.0	/	/

RF conducted						
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
SST-E-RSC001	Shielding Room	BOST	543	/	3 year	2023.01.07
SST-E-RSC007	Spectrum analyzer	keysight	N9020A	MY51280659	1 year	2024.04.16
SST-E-RSC008	Analog signal source	Agilent	N5181A	MY48180054	1 year	2024.04.16
SST-E-RSC009	Vector signal source	keysight	N5172B	MY57281610	1 year	2024.04.16
SST-E-EMC007	Thermohygrometer	KTJ	TA218A	879032	1 year	2024.04.18
SST-E-RSC010	Spectrum analyzer	R&S	FSV40-N	/	1 year	2024.04.16
SST-E-RSC015-1	Power meter 1	TST	TST V2	/	1 year	2024.04.16
/	Test Software	TST PASS	TST PASS	V2.0	/	/

▶▶▶ END OF REPORT ◀◀◀

