TEST REPORT

Report No.	SST2504E0538
Applicant:	ShenZhen SenHang Electronics CO,.Ltd
Address of Applicant:	Tangdong Gongyeyuan Building A-6A, Hangcheng Dadao, Xixiang Subdistrict, Baoan District, Shenzhen City, China
Product Name:	MELODY GO
Trade Mark:	Springvoice
Standard(s):	FCC CFR Title 47 Part 15 Subpart E Section 15.247 ANSI C63.10-2020
FCC ID:	2BOM2-SH004
Test Report Form No:	SST-RD-7.5-02-E01(A/0)
Date of sample receipt:	2025/3/31
Date of Test:	2025/4/1 - 2025/4/24
Date of report issued:	2025/4/25

*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: Bob

Reviewed by: Tiger Qian

Approved by: Seven Zhan

GUANGDONG SET SAIL TESTING CO., LTD. *CERTIFICATE*

*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	2025/4/25

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 informing 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 (±) (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 SenHang Electronics CO,.Ltd
Address of applicant:	Tangdong Gongyeyuan Building A-6A, Hangcheng Dadao, Xixiang Subdistrict, Baoan District, Shenzhen City, China
Manufacturer:	Same as applicant
Address of Manufacturer:	Same as applicant
Factory:	Dongguan Fengyu Plastic Technology Co., LTD
Address of Factory:	Room 201, Building 1, No. 801, Zhen'an Middle Road, Chang'an Town, Dongguan City, China

5.2 General Description of EUT

Product Name:	MELODY GO
Model No.:	Enjoyplay V1.0
Test sample(s) ID:	2503270401
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 rating:	DC 3.7V, 1500mAh

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:	**FCC Accredited Lab** Test Firm Registration Number: 638130 Designation Number: CN1359
	IC Registration Lab CAB Identifier No. CN0154
	A2LA Accreditation Lab Certificate No.:7057.01

Test Performed at:	**Name** GuangDong Set Sail Testing Co., Ltd.
	Address 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
Notebook PC	HP	ZHAN 66P	---	---

5.6 Additional Instructions

Test Software	FCC_assist_1.0.2.2-696X
Power level setup	Default

5.7 Antenna Information

Ant	Manufacturer	Model	Antenna Type	Antenna Gain (dBi)	Note
1	/	/	PCB	1.9	BT

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

5.8 Others

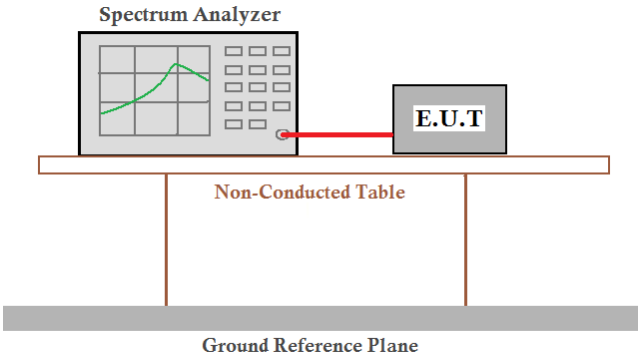
The laboratory responsible for all the information provided in the report, except those information provided by the applicant.
The applicant shall fully responsible for the information they provided.
The report would be invalid without a stamp of test laboratory and the signatures of compiler and approver.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

6 Technical Requirement and Measurement Data

6.1 Generally requirement

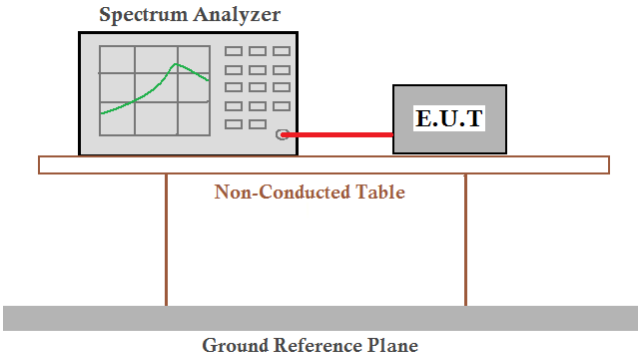
15.203 requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered 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

Limit
20.97dBm
Block diagram of Test Setup

Test Instrument
Refer to Annex A for details
Test Procedures
a) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel. b) RBW > 20 dB bandwidth of the emission being measured. c) VBW ≥ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow trace to stabilize. h) Use the marker-to-peak function to set the marker to the peak of the emission. i) The indicated level is the peak output power, after any corrections for external attenuators and cables.
Verdict
Pass

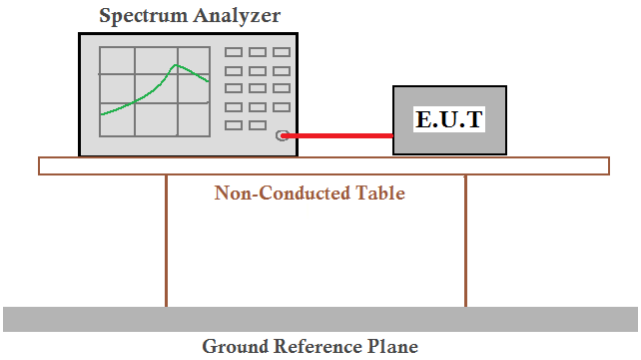
Measurement Data: The detailed test data see Appendix

6.3 20dB Emission Bandwidth

Limit
Report only
Block diagram of Test Setup

Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

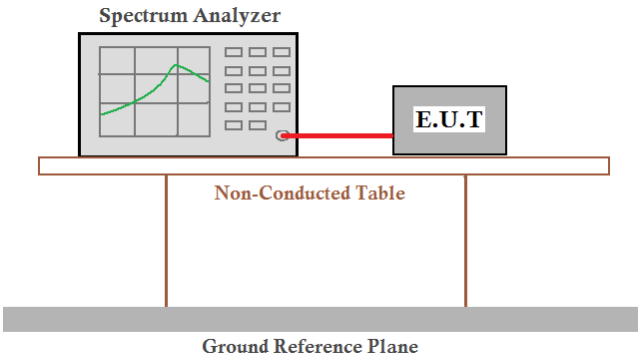
Measurement Data: The detailed test data see Appendix

6.4 Carrier Frequency Separation

Limit
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.
Block diagram of Test Setup

Test Instrument
Refer to Annex A for details
Test Procedures
The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: Wide enough to capture the peaks of two adjacent channels. b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel. c) Video (or average) bandwidth (VBW) ≥ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.
Verdict
Pass

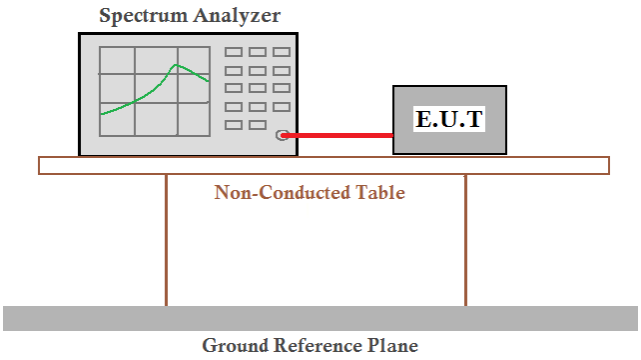
Measurement Data: The detailed test data see Appendix

6.5 Hopping Channel Numbers

Limit
At least 15 channels
Block diagram of Test Setup

Test Instrument
Refer to Annex A for details
Test Procedures
The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: The frequency band of operation. Depending on the number of channels the device supports, it could be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen. b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller c) VBW ≥ RBW. d) Sweep: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize.
Verdict
Pass

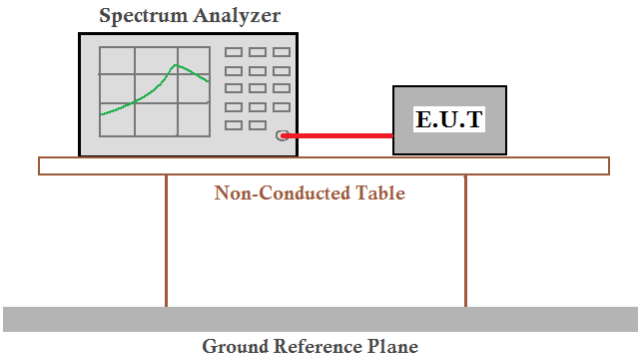
Measurement Data: The detailed test data see Appendix

6.6 Dwell Time

Limit
0.4s
Block diagram of Test Setup

Test Instrument
Refer to Annex A for details
Test Procedures
Use the following spectrum analyzer settings to determine the dwell time per hop: a) Span: Zero span, centered on a hopping channel. b) RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected transmission time per hop. c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = 1/hopping rate) should achieve this. d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel. e) Detector function: Peak. f) Trace: Clear-write, single sweep. g) Place markers at the start of the first transmission on the channel and at the end of the last transmission. The dwell time per hop is the time between these two markers.
Verdict
Pass

Measurement Data: The detailed test data see Appendix

6.7 Conducted Emission

Limit
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.
Block diagram of Test Setup

Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

Measurement Data: The detailed test data see Appendix

6.8 Radiated Spurious Emission

Limit

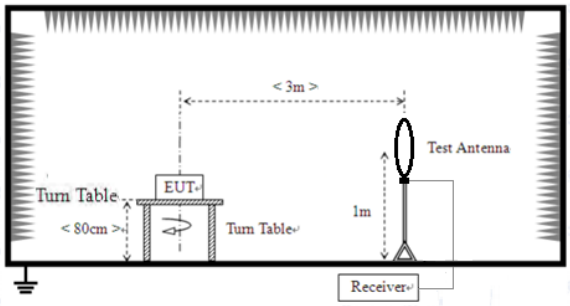
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

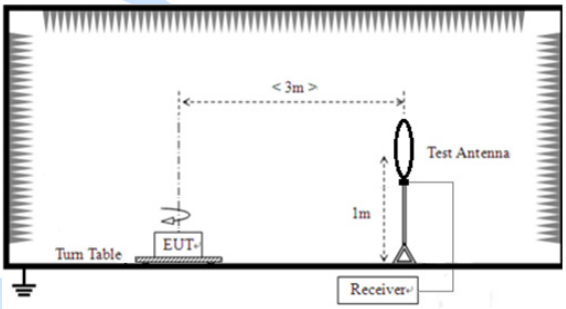
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this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

Block diagram of Test Setup

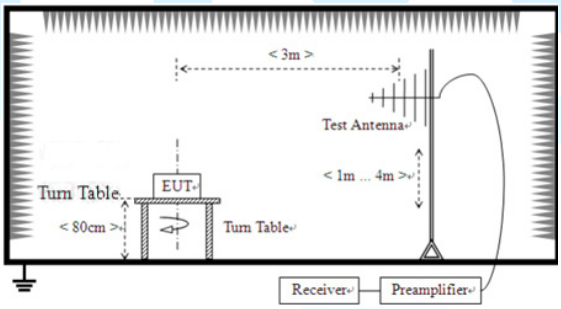
☒For table-top equipment	☐For floor standing equipment

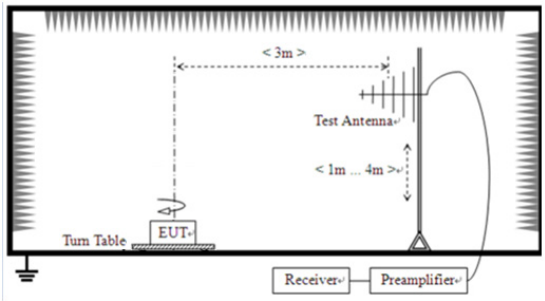
For radiated emissions from 9kHz to 30MHz



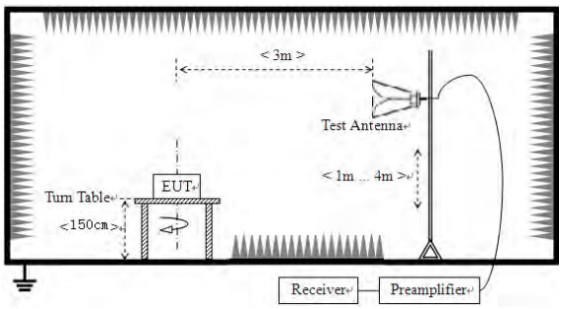


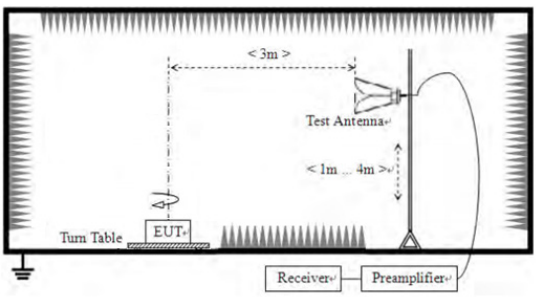
For radiated emissions from 30MHz to1GHz





For radiated emissions above 1GHz



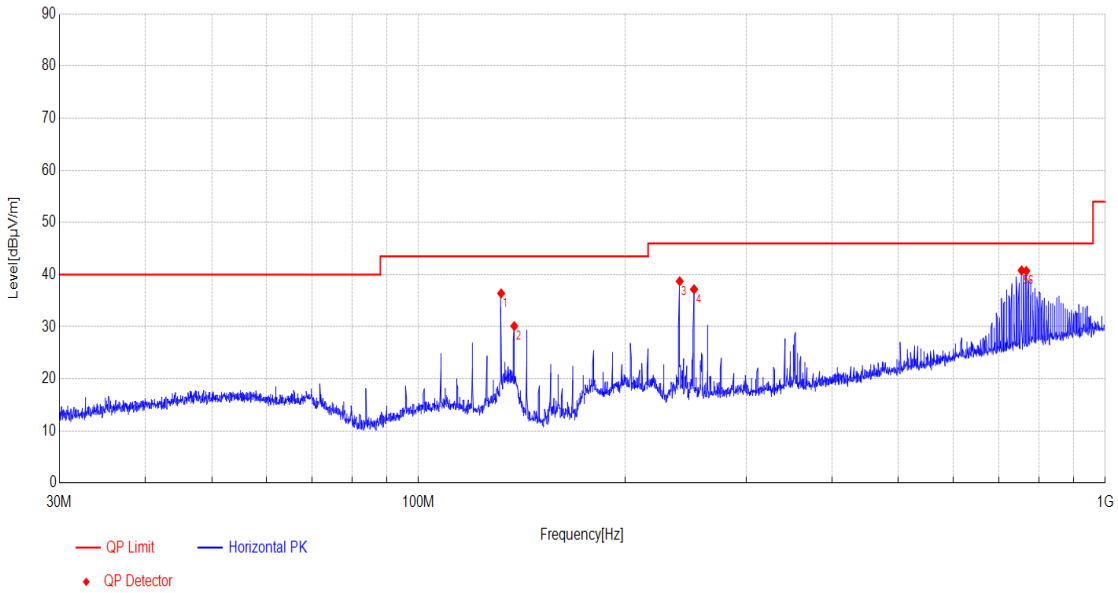


Test Instrument

Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
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.

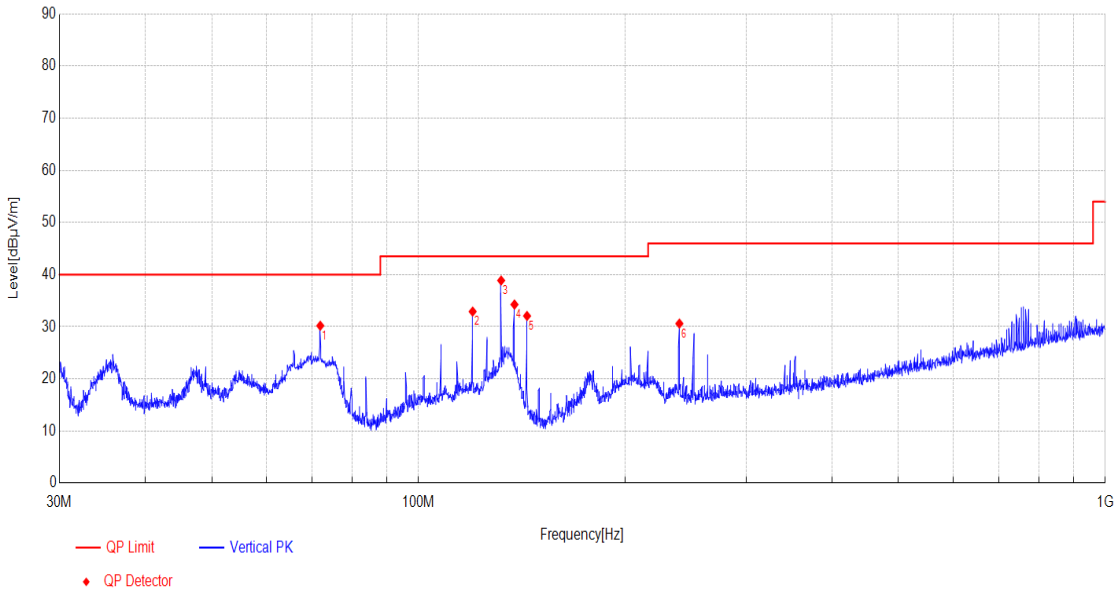
Test Result(30M~1GHz)			
Test mode	Mode 1	Polarity	Horizontal
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%



NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	131.9401	9.16	36.40	43.50	7.10	Horizontal	PASS
2	137.8504	9.00	30.13	43.50	13.37	Horizontal	PASS
3	240.073	13.38	38.72	46.00	7.28	Horizontal	PASS
4	251.9287	13.76	37.19	46.00	8.81	Horizontal	PASS
5	755.4403	23.07	40.81	46.00	5.19	Horizontal	PASS
6	767.4523	23.28	40.70	46.00	5.30	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	71.9423	9.80	30.20	40.00	9.80	Vertical	PASS
2	119.9192	10.98	32.92	43.50	10.58	Vertical	PASS
3	131.9401	9.16	38.87	43.50	4.63	Vertical	PASS
4	137.9712	9.00	34.27	43.50	9.23	Vertical	PASS
5	143.8993	8.97	32.08	43.50	11.42	Vertical	PASS
6	239.8627	13.38	30.61	46.00	15.39	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	52.93	27.71	5.3	53.84	32.1	74	-41.9	Horizontal
2390	57.43	27.91	5.4	53.82	36.92	74	-37.08	Horizontal
2310	53.5	27.71	5.3	53.84	32.67	74	-41.33	Vertical
2390	53.07	27.91	5.4	53.82	32.56	74	-41.44	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	41.91	27.71	5.3	53.84	21.08	54	-32.92	Horizontal
2390	48.21	27.91	5.4	53.82	27.7	54	-26.3	Horizontal
2310	43.95	27.71	5.3	53.84	23.12	54	-30.88	Vertical
2390	45.35	27.91	5.4	53.82	24.84	54	-29.16	Vertical

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 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	56.2	28.16	5.51	53.8	36.07	74	-37.93	Horizontal
2500	55.88	28.2	5.53	53.8	35.81	74	-38.19	Horizontal
2483.5	56.56	28.16	5.51	53.8	36.43	74	-37.57	Vertical
2500	52.44	28.2	5.53	53.8	32.37	74	-41.63	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	49.87	28.16	5.51	53.8	29.74	54	-24.26	Horizontal
2500	49.76	28.2	5.53	53.8	29.69	54	-24.31	Horizontal
2483.5	50.23	28.16	5.51	53.8	30.1	54	-23.9	Vertical
2500	48.43	28.2	5.53	53.8	28.36	54	-25.64	Vertical

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	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	55.55	33.35	7.7	53.72	42.88	74	-31.12	Vertical
7206	53.98	36.54	9.55	53.24	46.83	74	-27.17	Vertical
9608	55.48	39.04	11.29	53.28	52.53	74	-21.47	Vertical
4804	53.33	33.35	7.7	53.72	40.66	74	-33.34	Horizontal
7206	53.8	36.54	9.55	53.24	46.65	74	-27.35	Horizontal
9608	53.83	39.04	11.29	53.28	50.88	74	-23.12	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	48.6	33.35	7.7	53.72	35.93	54	-18.07	Vertical
7206	50.02	36.54	9.55	53.24	42.87	54	-11.13	Vertical
9608	50	39.04	11.29	53.28	47.05	54	-6.95	Vertical
4804	48.45	33.35	7.7	53.72	35.78	54	-18.22	Horizontal
7206	48.66	36.54	9.55	53.24	41.51	54	-12.49	Horizontal
9608	49.95	39.04	11.29	53.28	47	54	-7	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	54.8	33.57	7.77	53.71	42.43	74	-31.57	Vertical
7323	54.52	36.56	9.64	53.26	47.46	74	-26.54	Vertical
9764	53.61	39.11	11.39	53.25	50.86	74	-23.14	Vertical
4882	53.47	33.57	7.77	53.71	41.1	74	-32.9	Horizontal
7323	54.55	36.56	9.64	53.26	47.49	74	-26.51	Horizontal
9764	53.33	39.11	11.39	53.25	50.58	74	-23.42	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	46.86	33.57	7.77	53.71	34.49	54	-19.51	Vertical
7323	46.48	36.56	9.64	53.26	39.42	54	-14.58	Vertical
9764	46.17	39.11	11.39	53.25	43.42	54	-10.58	Vertical
4882	46.24	33.57	7.77	53.71	33.87	54	-20.13	Horizontal
7323	46.21	36.56	9.64	53.26	39.15	54	-14.85	Horizontal
9764	46.09	39.11	11.39	53.25	43.34	54	-10.66	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	54.84	33.79	7.83	53.7	42.76	74	-31.24	Vertical
7440	53.83	36.59	9.72	53.29	46.85	74	-27.15	Vertical
9920	55.69	39.17	11.48	53.22	53.12	74	-20.88	Vertical
4960	53.77	33.79	7.83	53.7	41.69	74	-32.31	Horizontal
7440	53.54	36.59	9.72	53.29	46.56	74	-27.44	Horizontal
9920	54.56	39.17	11.48	53.22	51.99	74	-22.01	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	48.46	33.79	7.83	53.7	36.38	54	-17.62	Vertical
7440	49.69	36.59	9.72	53.29	42.71	54	-11.29	Vertical
9920	49.99	39.17	11.48	53.22	47.42	54	-6.58	Vertical
4960	49.1	33.79	7.83	53.7	37.02	54	-16.98	Horizontal
7440	48.46	36.59	9.72	53.29	41.48	54	-12.52	Horizontal
9920	50.63	39.17	11.48	53.22	48.06	54	-5.94	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

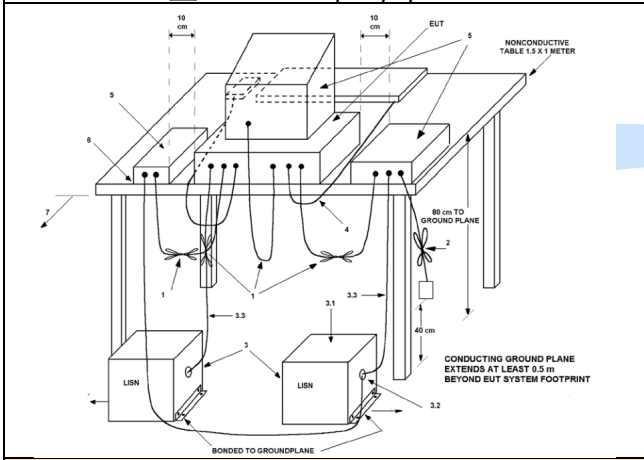
Limit

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

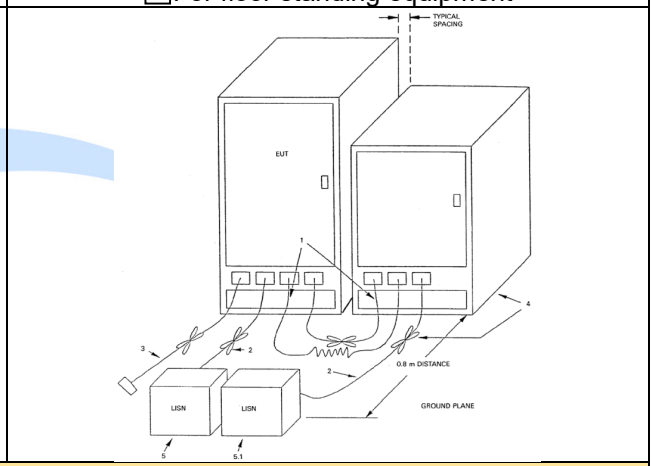
*Decreases with the logarithm of the frequency.
If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be 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 Ω LISN port (to which the EUT is connected), as terminated into a 50 Ω 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 Ω measuring port is terminated into a 50 Ω EMI receiver or spectrum analyzer. All other ports are terminated into 50 Ω loads.

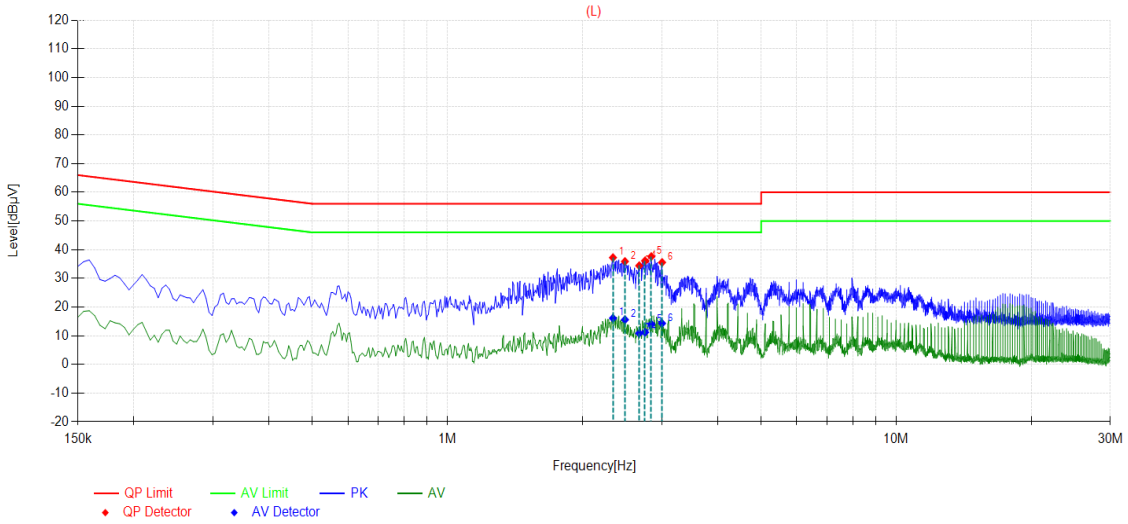
Table top devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on 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	Line
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%

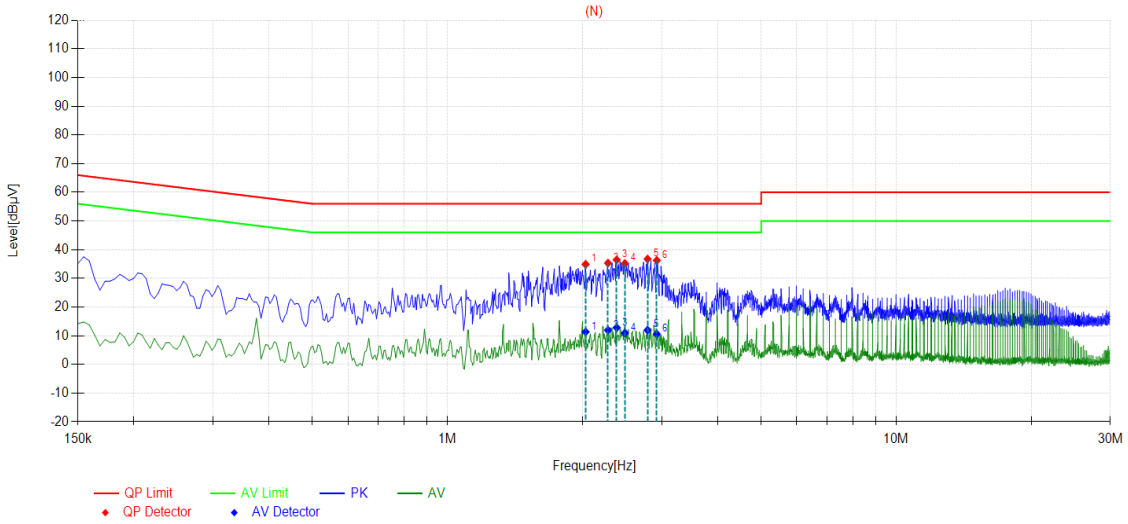


Final Data List

Freq.[MHz]	Type	QP Value [dBμV]	AV Value [dBμV]	QP Limit [dBμV]	AV Limit [dBμV]	QP Margin [dB]	AV Margin [dB]	Verdict
2.337	L	37.23	16.10	56.00	46.00	18.77	29.90	PASS
2.4855	L	35.89	15.59	56.00	46.00	20.11	30.41	PASS
2.6745	L	34.41	10.85	56.00	46.00	21.59	35.15	PASS
2.7555	L	36.11	11.18	56.00	46.00	19.89	34.82	PASS
2.8455	L	37.60	13.98	56.00	46.00	18.40	32.02	PASS
3.0075	L	35.56	14.30	56.00	46.00	20.44	31.70	PASS

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

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



Final Data List

Freq.[MHz]	Type	QP Value [dBµV]	AV Value [dBµV]	QP Limit [dBµV]	AV Limit [dBµV]	QP Margin [dB]	AV Margin [dB]	Verdict
2.031	N	34.90	11.33	56.00	46.00	21.10	34.67	PASS
2.2785	N	35.32	11.92	56.00	46.00	20.68	34.08	PASS
2.382	N	36.46	12.81	56.00	46.00	19.54	33.19	PASS
2.4855	N	35.20	10.95	56.00	46.00	20.80	35.05	PASS
2.7915	N	36.76	11.96	56.00	46.00	19.24	34.04	PASS
2.9265	N	36.25	10.57	56.00	46.00	19.75	35.43	PASS

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:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. cycle**	**Cal.Date**
3m Semi- Anechoic Chamber	BOST	966	/	3 years	2023.01.07
Control Room	BOST	333	/	3 years	2023.01.07
Breiband TRILOG Messantenne	Schwarzbeck	VULB 9162	00556	1 year	2025.04.19
Broad-band Horn Antenna	Schwarzbeck	BBHA 9120 D	02783	1 year	2025.04.19
EMI Test Receiver	R&S	ESU8	100372	1 year	2025.04.17
Amplifier （1-18GHz）	TSTPASS	LNA10180G45	TSAM2303003	1 year	2025.04.17
Spectrum Analyzer	keysight	N9020A	MY51280659	1 year	2025.04.17
Amplifier（40G）	RFsystem	TRLA-180400G45B	23060801	1 year	2025.04.18
Broadband Horn Antenna（40G）	Schwarzbeck	BBHA9170	01306	1 year	2025.04.19
Spectrum analyzer	R&S	FSV40-N	101791	1 year	2025.04.17
Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60B 044	1 year	2025.04.18
5W 6dB attenuator	/	DC-6GHz	/	Internal calibration	/
Thermohygrometer	KTJ	TA218A	879030	1 year	2025.04.21
EMI Test Software	Tonscend	TS+	V5.0	/	/

Conducted Emission					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. cycle**	**Cal.Date**
Shielding Room	BOST	854	/	3 year	2023.01.07
EMI Test Receiver	R&S	ESR3	103057	1 year	2025.04.17
LISN	R&S	ENV 216	102832	1 year	2025.04.17
ISN	Schwarzbeck	NTFM 8158	00347	1 year	2025.04.17
ISN	Schwarzbeck	CAT3 8158	00279	1 year	2025.04.17
ISN	Schwarzbeck	CAT5 8158	00524	1 year	2025.04.17
Sensor probe	TCTEST	CSP 9160A	81837	1 year	2025.04.17
High impedance capacitive voltage probe	Schwarzbeck	CVP 9222C	00221	1 year	2025.04.22
Voltage probe	Schwarzbeck	TK 9420	01304	1 year	2025.04.17
Antenna port test assembly	/	DC-3GHz	/	Internal calibration	/
Thermohygrometer	KTJ	TA218A	879036	1 year	2025.04.21
EMI Test Software	Tonscend	TS+	V4.0	/	/

RF conducted					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. cycle**	**Cal.Date**
Shielding Room	BOST	543	/	3 year	2023.01.07
Spectrum analyzer	keysight	N9020A	MY51280659	1 year	2025.04.17
Analog signal source	Agilent	N5181A	MY48180054	1 year	2025.04.17
Vector signal source	keysight	N5172B	MY57281610	1 year	2025.04.17
Thermohygrometer	KTJ	TA218A	879032	1 year	2025.04.21
Spectrum analyzer	R&S	FSV40-N	/	1 year	2025.04.17
Power meter 1	TST	TST V2	/	1 year	2025.04.17
Test Software	TST PASS	TST PASS	V2.0	/	/
Temperature and humidity chamber	Guangdong fenghe	FH-TH-1000	FH24032017	1 year	2024.04.26

►►► END OF REPORT ◄◄◄