



TEST REPORT

Report Number : TZ0429260401FEM01
Product Name : Dual Band Mobile Radio
Model/Type reference : TH-2000
FCC ID : 2BLTR-TH2000
Prepared for : Quanzhou RadioBoss Technology Co., Ltd
No.8, Chuangzao Road, Optoelectronics-information industry base, Nan'an,
Quanzhou, Fujian, China

Prepared By : Shenzhen Tongzhou Testing Co.,Ltd.
1st Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street,
Longhua, Shenzhen, China
Standards : FCC CFR Title 47 Part 15 Subpart B, ANSI C63.4: 2014
Date of Test : 2026-05-06 ~ 2026-06-12
Date of Issue : 2026-06-15

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(Authorized Officer)



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**** Report Revise Record ****

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2026-06-15	Valid	Initial release





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1. GENERAL INFORMATION

1.1. Client Information

Applicant	: Quanzhou RadioBoss Technology Co., Ltd
Address	: No.8, Chuangzao Road, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China
Manufacturer	: Quanzhou RadioBoss Technology Co., Ltd
Address	: No.8, Chuangzao Road, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China

1.2. Description of Device (EUT)

Product Name	: Dual Band Mobile Radio
Trade Mark	: TYTECH
Model Number	: TH-2000
Power Supply	: DC 12V/24V
Hardware version	: V1.2
Software version	: V1.0

1.3. Wireless Function Tested in this Report

Scan Receiver	
Operation Frequency	: 136-174MHz and 400-480MHz
Modulation Technology	: FM
Antenna Type And Gain	: Detachable Antenna with Typical 0dBi Gain

Note 1: Antenna position refer to EUT Photos.

Note 2: the above information was supplied by the applicant.





1.4. EUT configuration

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

● supplied by the manufacturer

○ supplied by the lab

○	Power Source	Model:	IT6721
		Input:	AC 100-240V 50/60Hz
		Output:	DC 0-60V 8A

1.5. Description of Test Facility

FCC

Designation Number: CN1275

Test Firm Registration Number: 167722

Shenzhen Tongzhou Testing Co.,Ltd has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA

Certificate Number: 5463.01

Shenzhen Tongzhou Testing Co.,Ltd has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

IC

ISED#: 22033

CAB identifier: CN0099

Shenzhen Tongzhou Testing Co.,Ltd has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4 and CISPR 16-1-4:2010





1.6. 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. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the Shenzhen Tongzhou Testing Co.,Ltd’s quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.7. Measurement Uncertainty

Test Item		Uncertainty	Note
Radiation Uncertainty(9KHz~30MHz)	:	$\pm 3.26\text{dB}$	(1)
Radiation Uncertainty(30MHz~1000MHz)	:	$\pm 3.92\text{dB}$	(1)
Radiation Uncertainty(1GHz~40GHz)	:	$\pm 5.62\text{dB}$	(1)
Conduction Uncertainty	:	$\pm 2.71\text{dB}$	(1)
Unwanted Emissions, conducted	:	$\pm 1.3\text{dB}$	(1)

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

1.8. Description of Test Modes

The EUT has been tested under typical operating condition.

Test Item	
EMI	
Mode 1	Receiver at FM 136-174MHz
Mode 2	Receiver at FM 400-480MHz

Preliminary tests were performed at both 12 VDC and 24 VDC. The 12 VDC supply condition was identified as the worst case; therefore, only the data for 12 VDC are included in this report.





2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen Tongzhou Testing Co.,Ltd

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the RX frequency that was for the purpose of the measurements.

2.3. Test Sample

Sample ID	Description
TZ0429260401-1#	Normal sample





3. SYSTEM TEST CONFIGURATION

3.1. Justification

The system was configured for testing in a continuous receiver condition.

3.2. Special Accessories

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/ unshielded	Notes
/	/	/	/	/	/	/	/

3.3. Block Diagram/Schematics

Please refer to the related document

3.4. Equipment Modifications

Shenzhen Tongzhou Testing Co.,Ltd has not done any modification on the EUT.

3.5. Test Setup

Please refer to the test setup photo.





4. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Sample ID	Result
§15.107	Conduction Emission	TZ0429260401-1#	N/A (Note 1)
§15.109	Radiated Emission	TZ0429260401-1#	Compliant
§15.111	Antenna Conducted Power for receivers	TZ0429260401-1#	Compliant
§15.121(b)	Scanning receivers and frequency converters used with scanning receivers	TZ0429260401-1#	Note 2

Note 1: Conducted emissions testing is not applicable for equipment powered by a vehicle power supply.

Note 2: Scanning receivers cannot receive any signals from the Cellular Radiotelephone Service frequency band.





5. TEST RESULT

5.1. Radiated Emissions Measurement

5.1.1. Standard Applicable

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

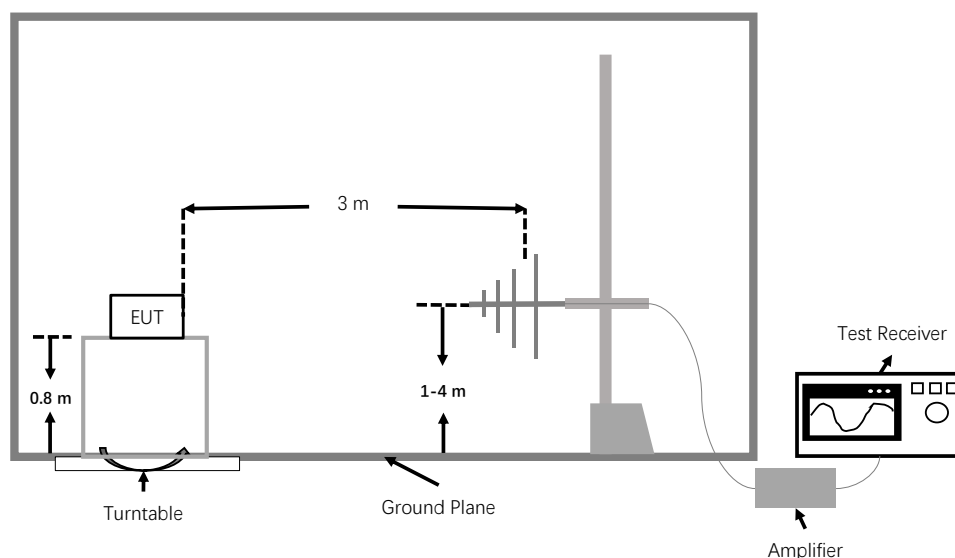
5.1.2. Measuring Instruments and Setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	5 th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 3 MHz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 3 MHz for Average

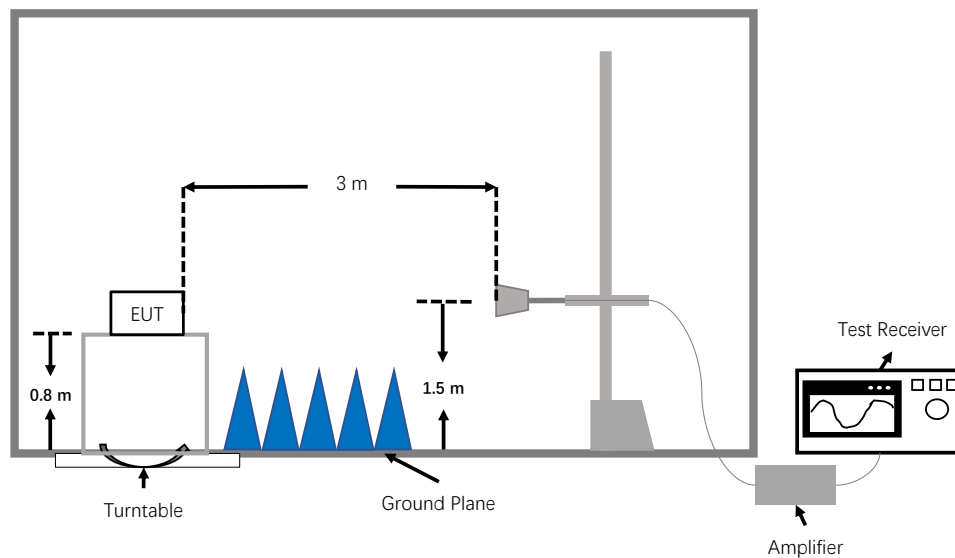
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB/VB 120kHz/1MHz for QP

5.1.3. Block Diagram of Test Setup



Radiated Emission Test Set-Up, Frequency below 1000MHz





Radiated Emission Test Set-Up, Frequency above 1000MHz

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	





5.1.4. Test Procedures

1) Sequence of testing 30 MHz to 1 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 3 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

2) Sequence of testing 1 GHz to 40 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 2.5 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meters. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.





5.1.5. EUT Operation during Test

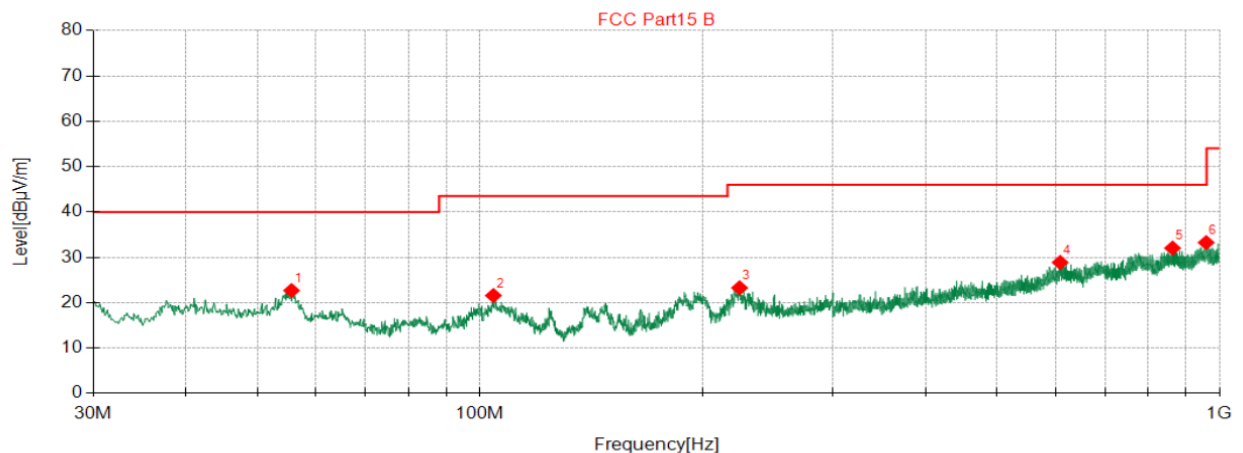
The EUT was programmed to be in continuously receiving mode.

5.1.6. Test Results

Results of Radiated Emissions (30MHz~1GHz)

Temperature	22.5℃	Humidity	56%
Test Engineer	Tony Luo	Configurations	Mode 1
Test Voltage	DC 12V	/	/

Vertical



◆ QP Detector

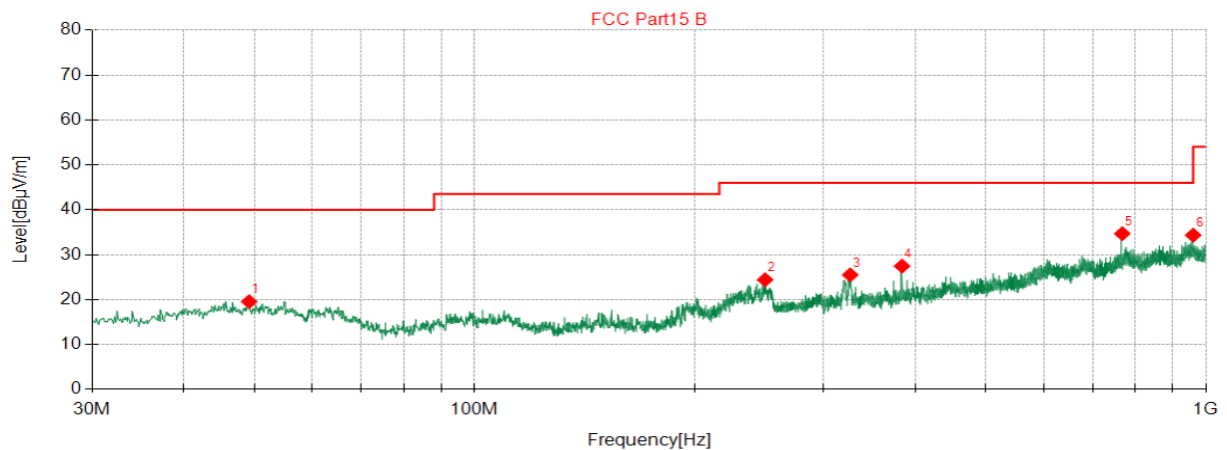
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	55.58	8.13	14.55	22.68	40.00	17.32	100	353	Vertical
2	104.2	9.15	12.43	21.58	43.50	21.92	100	353	Vertical
3	224.2	9.30	13.97	23.27	46.00	22.73	100	213	Vertical
4	608.4	6.21	22.65	28.86	46.00	17.14	100	62	Vertical
5	863.4	5.86	26.17	32.03	46.00	13.97	100	78	Vertical
6	958.6	5.89	27.36	33.25	46.00	12.75	100	325	Vertical

***Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m]



**Horizontal**

◆ QP Detector

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	49.15	4.33	15.21	19.54	40.00	20.46	100	100	Horizontal
2	249.4	9.61	14.80	24.41	46.00	21.59	100	3	Horizontal
3	326.0	8.48	17.02	25.50	46.00	20.50	100	294	Horizontal
4	383.9	8.68	18.77	27.45	46.00	18.55	100	267	Horizontal
5	768.0	10.02	24.66	34.68	46.00	11.32	100	103	Horizontal
6	959.9	6.79	27.55	34.34	46.00	11.66	100	322	Horizontal

*****Note:**

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m]

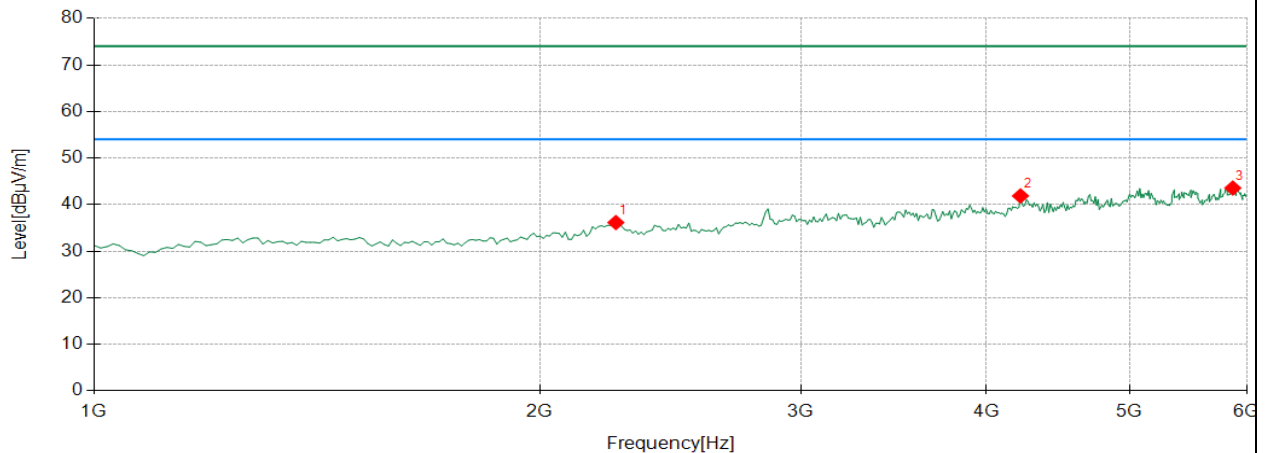




Results for Radiated Emissions (1GHz to 6GHz)

Temperature	24℃	Humidity	55.2%
Test Engineer	Tony Luo	Configurations	Mode 1
Test Voltage	DC 12V	/	/

Vertical

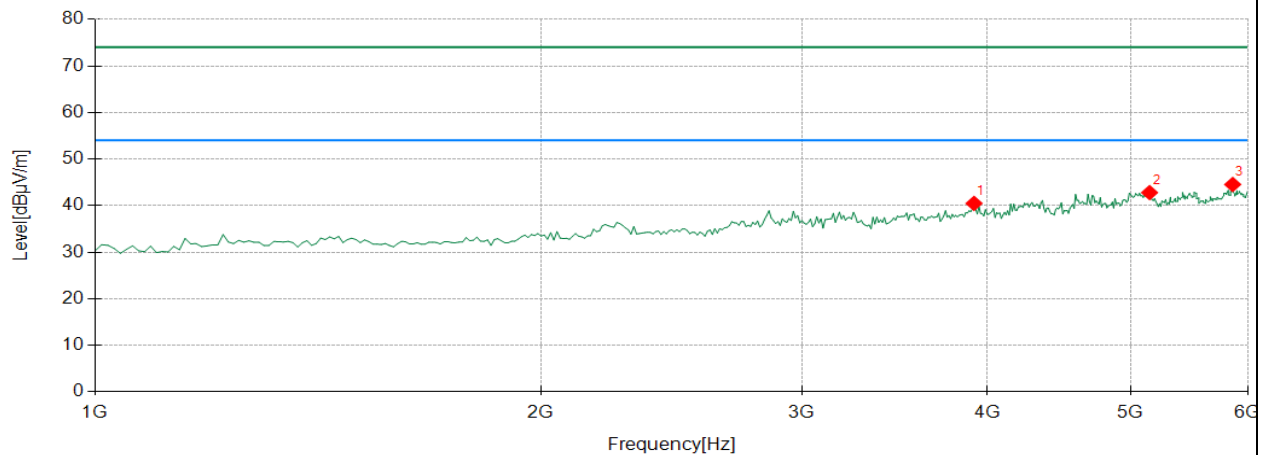


NO.	Freq. [MHz]	Level [dBμV/m]	Reading [dBμV]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2250	36.14	46.23	-10.09	74.00	37.86	100	270	Vertical
2	4220	41.86	48.62	-6.76	74.00	32.14	100	220	Vertical
3	5870	43.55	47.32	-3.77	74.00	30.45	100	30	Vertical

***Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m]
3. Since the peak emission levels are below the average limits, the average emission measurements are not required.



**Horizontal**

◆ PK Detector ◆ AV Detector

NO.	Freq. [MHz]	Level [dBμV/m]	Reading [dBμV]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3920	40.47	47.76	-7.29	74.00	33.53	100	320	Horizontal
2	5150	42.79	46.87	-4.08	74.00	31.21	100	330	Horizontal
3	5860	44.53	48.32	-3.79	74.00	29.47	100	10	Horizontal

*****Note:**

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m]
3. Since the peak emission levels are below the average limits, the average emission measurements are not required.





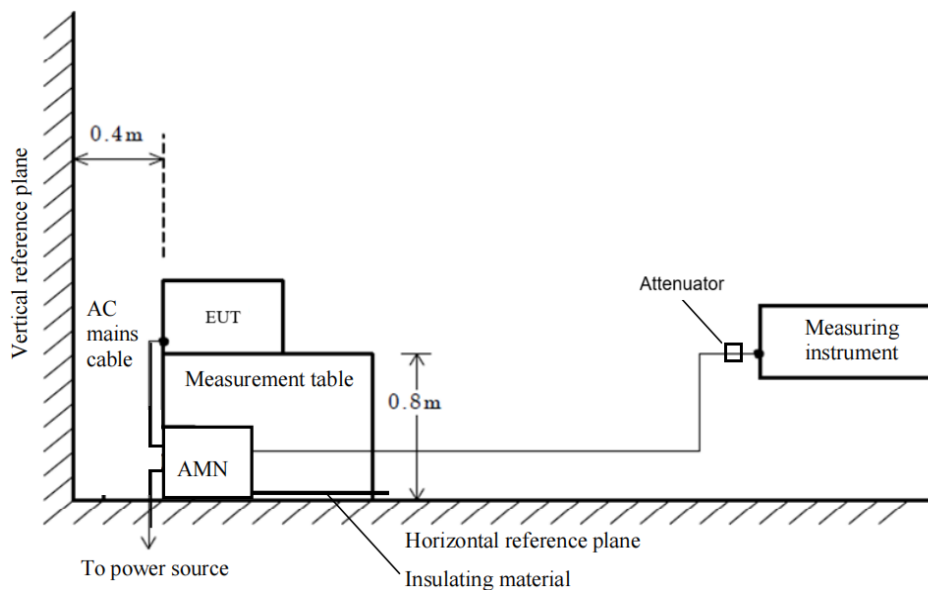
5.2. AC Power line conducted emissions

5.2.1. Standard Applicable

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

* Decreasing linearly with the logarithm of the frequency

5.2.2. Block Diagram of Test Setup



Note: the distance between LISN and Vertical reference plane is 40 cm and the distance between LISN and EUT is 80 cm.

5.2.3. Test Results

Not Applicable



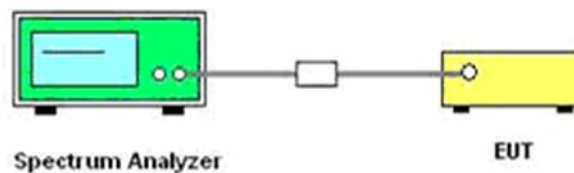


5.3. Antenna Conducted Power for Receivers

5.3.1. Standard Applicable

In addition to the radiated emission limits, receivers that operate (tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of §15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in §15.33 shall not exceed 2.0 nanowatts.

5.3.2. Block Diagram of Test Setup



5.3.3. Test Procedures

The antenna input is connected to a spectrum analyzer.
Spectrum analyzer set as follow:

Frequency range	RBW (kHz)	VBW (kHz)
9 kHz ~ 150 kHz	1	3
150 kHz ~ 30 MHz	10	30
30 MHz ~ 1000 MHz	100	300
1000 MHz ~ 5000 MHz	1000	3000

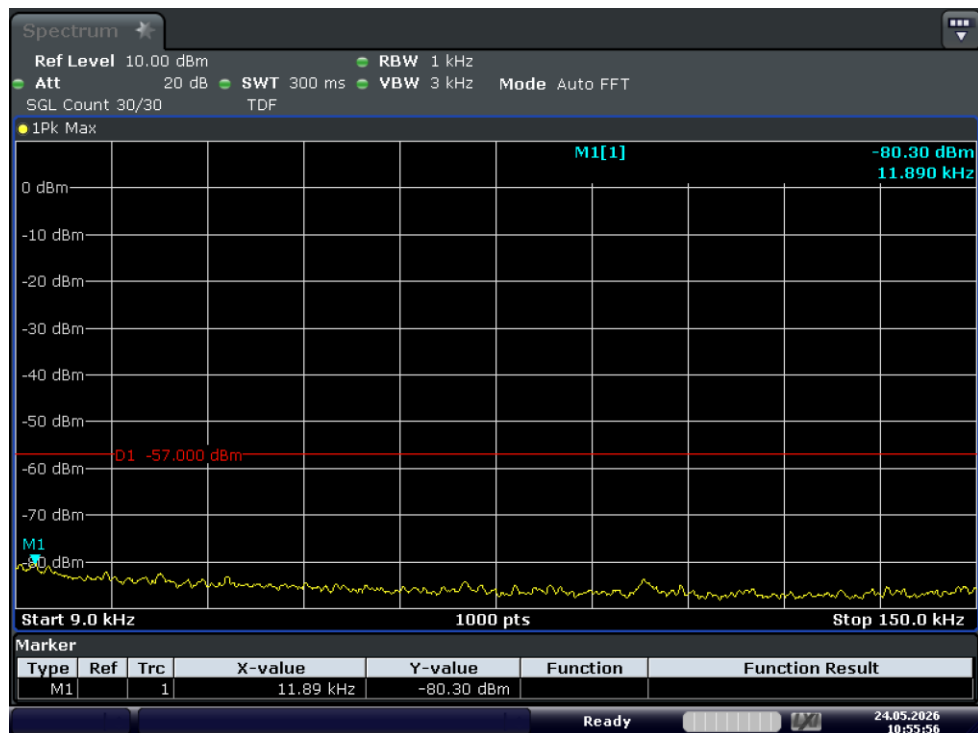
5.3.4. Test Results

PASS

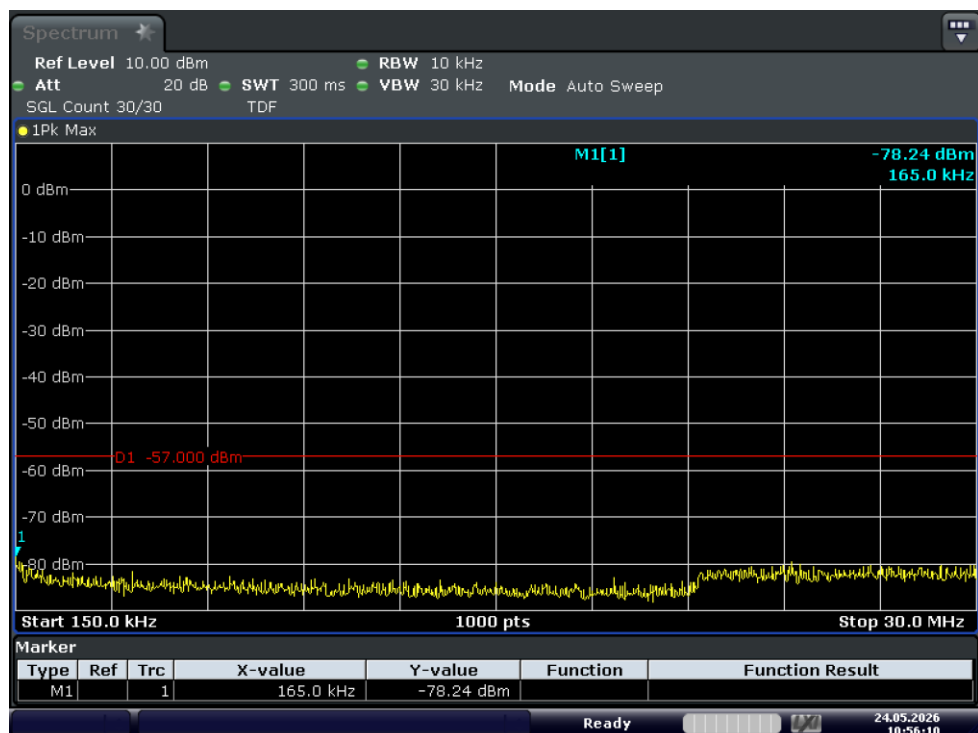




Mode 1

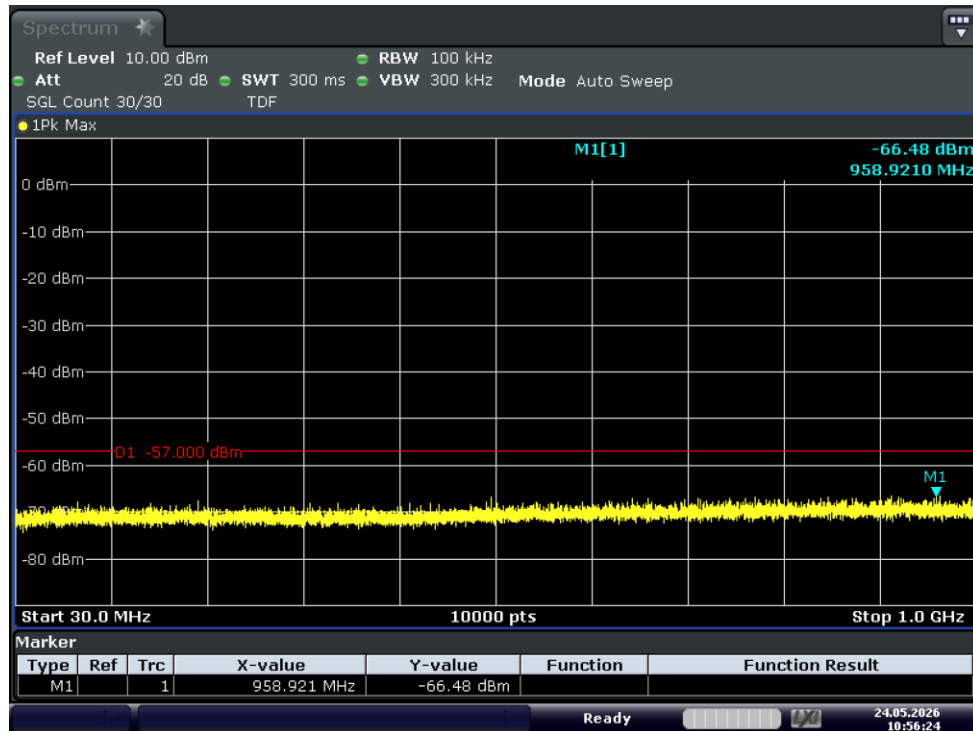


9kHz-150kHz

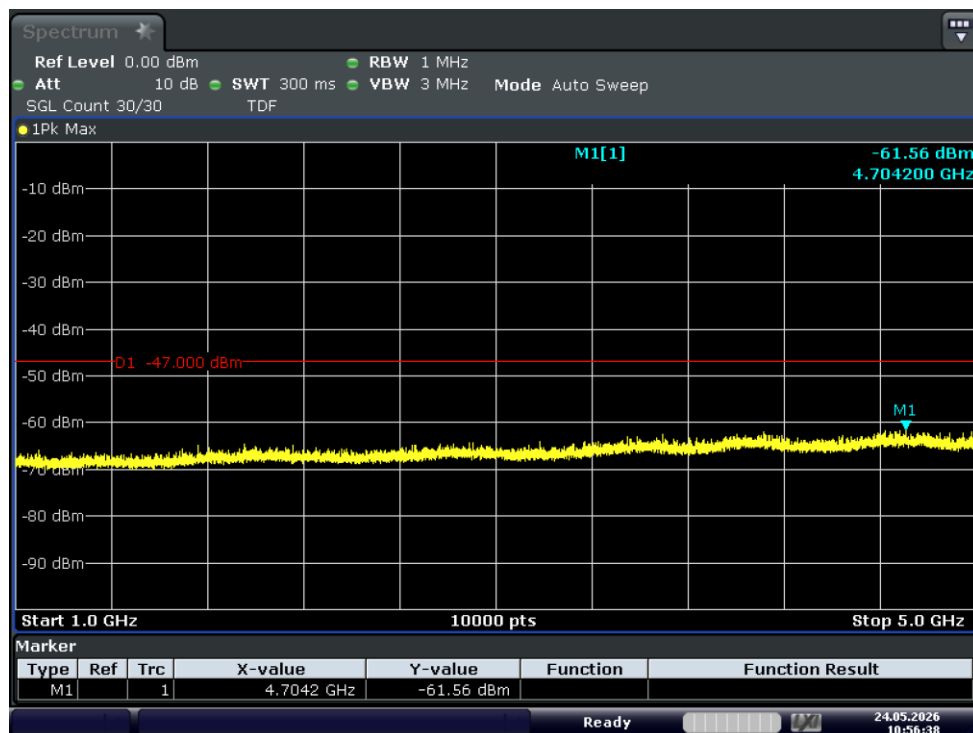


150kHz-30MHz





30MHz-1000MHz

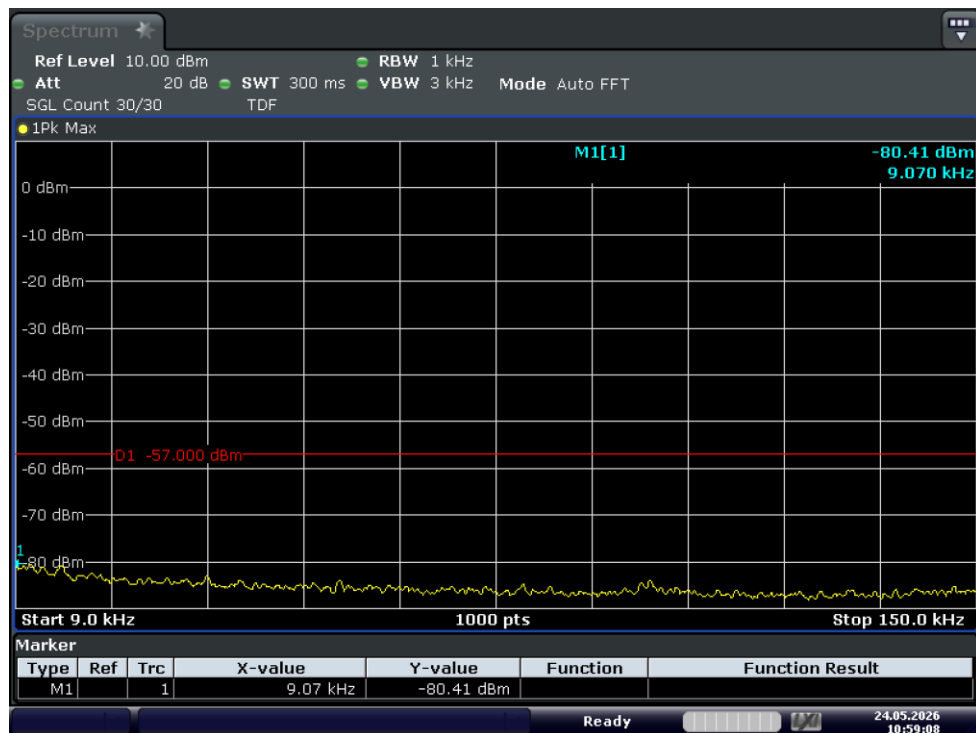


1000MHz-5000MHz

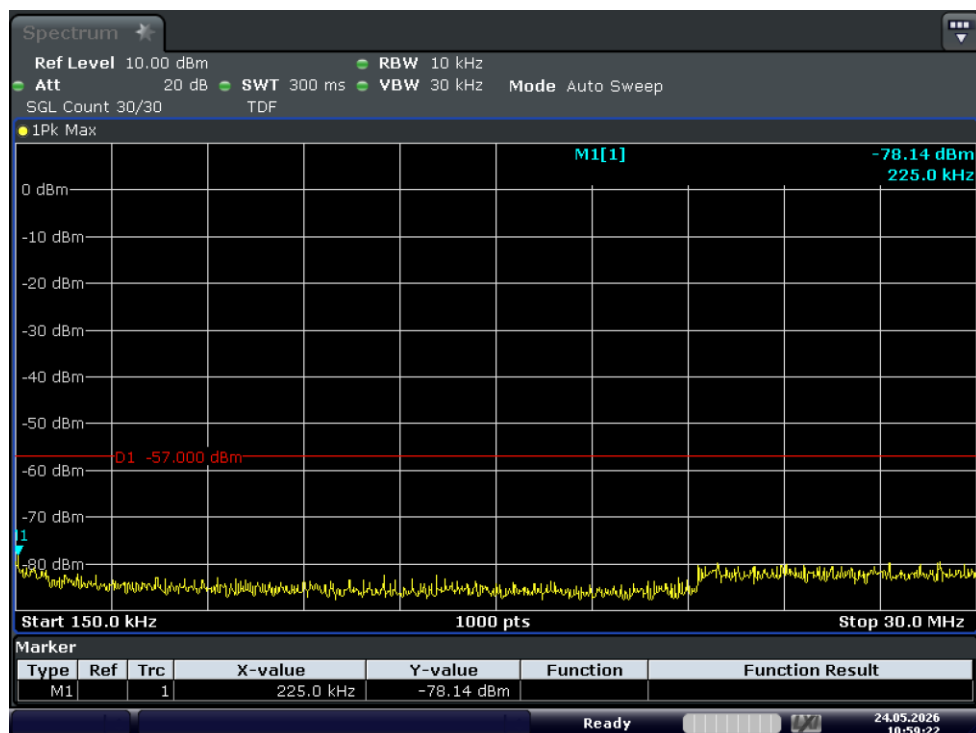




Mode 2

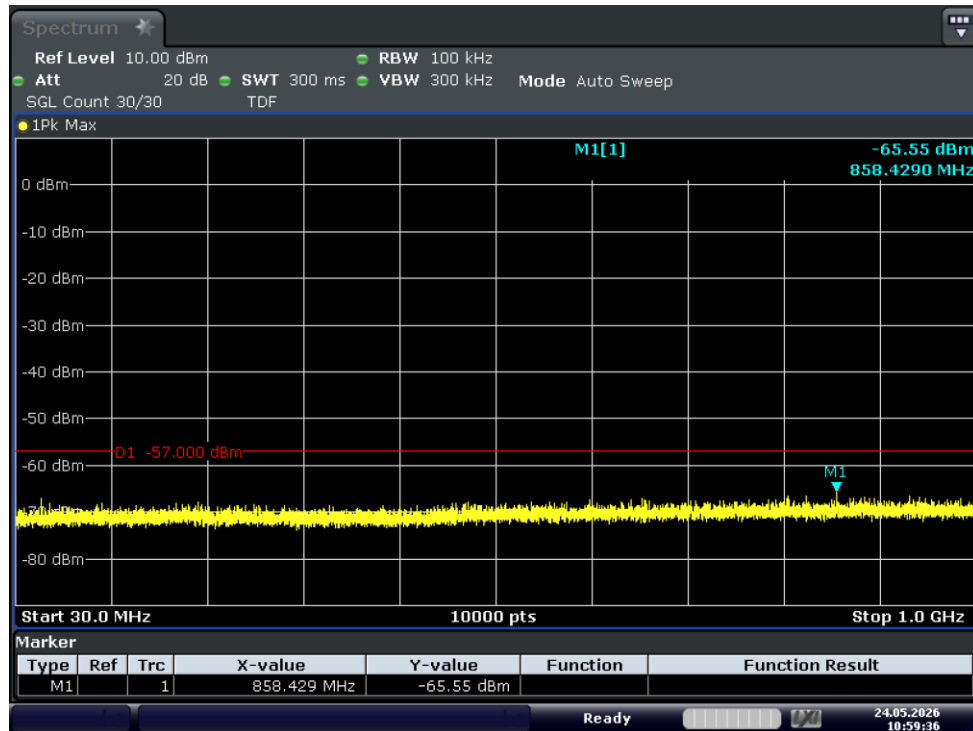


9kHz-150kHz

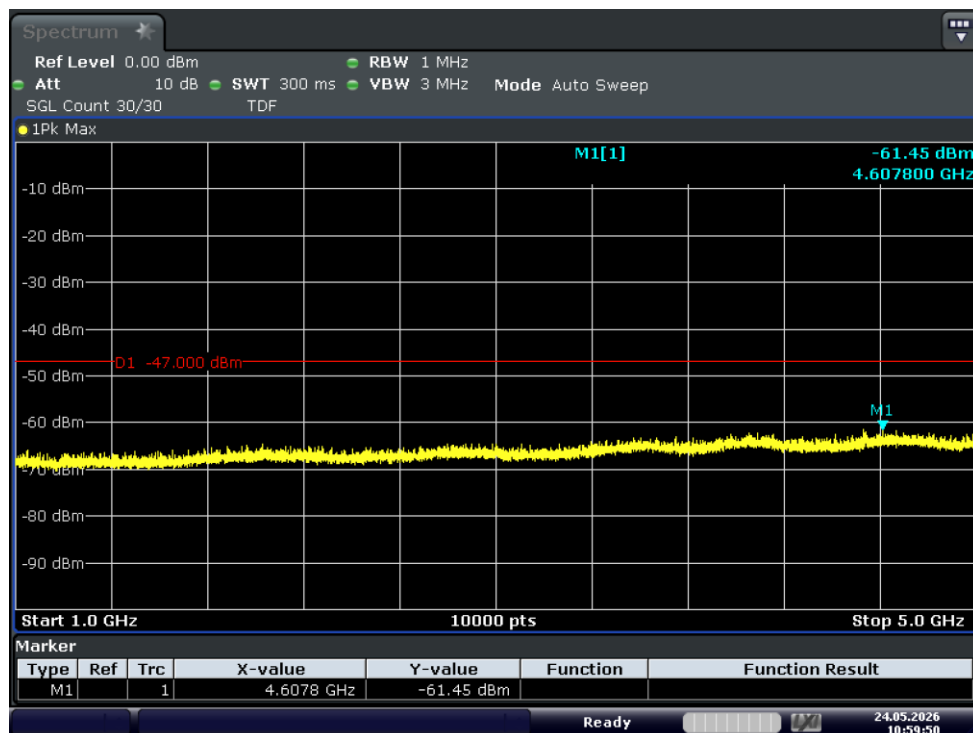


150kHz-30MHz





30MHz-1000MHz



1000MHz-5000MHz





6. LIST OF MEASURING EQUIPMENT

Conducted emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI-7	100849/003	2026-01-11	2027-01-10
2	Artificial Mains	ROHDE & SCHWARZ	ENV 216	101333-IP	2026-01-11	2027-01-10
3	EMI Test Software	ROHDE & SCHWARZ	ESK1	V1.71	N/A	N/A

Radiated emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	Test Receiver	R&S	ESCI-7	100849/003	2026-01-11	2027-01-10
2	wideband Antenna	Schwarzbeck	VULB 9163	958	2025-10-18	2028-10-17
3	Horn Antenna	Schwarzbeck	BBHA 9120D	01989	2025-10-18	2028-10-17
4	Amplifier	Schwarzbeck	BBV 9743	209	2026-01-11	2027-01-10
5	Amplifier	Tonscend	TSAMP-0518SE	--	2026-01-11	2027-01-10
6	Spectrum Analyzer	R&S	FSV40	101321	2026-01-11	2027-01-10
7	Postional Controller	MF	MF7802	--	--	--
8	RE test software	Tonscend	JS32-RE	V5.0.0.0	--	--





7. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

8. EXTERIOR PHOTOGRAPHS OF EUT

Please refer to separated files for External Photos of the EUT.

9. INTERIOR PHOTOGRAPHS OF EUT

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF REPORT-----

