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TEST REPORT

FCC PART 15.236

Report Reference No.: **CTL2505068021-WF**

Compiled by:
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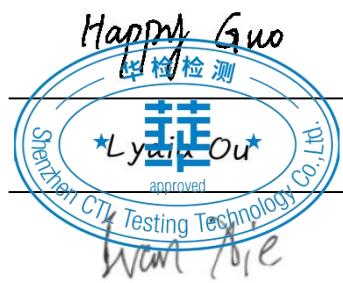
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Product Name: wireless microphone

Model/Type reference: M6

List Model(s): M5

Trade Mark: W-KING

FCC ID: Q8W-M6

Applicant's name: SHENZHEN WEIKING TECHNOLOGY CO.,LTD

Address of applicant: FuCheng Street,Zhangge Community,ZhangGe Road,No. 142,Building 1,Room 301 Shenzhen Longhua Guangdong,China

Test Firm: Shenzhen CTL Testing Technology Co., Ltd.

Address of Test Firm: Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Test specification:

Standard: FCC Part 15.236:Operation of wireless microphones in the bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-698 MHz

TRF Originator: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF: Dated 2011-01

Date of receipt of test item: May 08, 2025

Date of Test Date: May 08, 2025–May 20, 2025

Date of Issue: May 21, 2025

Result: **Pass**

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TEST REPORT

Test Report No. :	CTL2505068021-WF	May 21, 2025
		Date of issue

Equipment under Test : wireless microphone

Sample No. : CTL2505068021

Model /Type : M6

Listed Models : M5

Applicant : SHENZHEN WEIKING TECHNOLOGY CO.,LTD

Address : FuCheng Street,Zhangge Community,ZhangGe Road,No. 142,Building 1,Room 301 Shenzhen Longhua Guangdong,China

Manufacturer : SHENZHEN WEIKING TECHNOLOGY CO.,LTD

Address : FuCheng Street,Zhangge Community,ZhangGe Road,No. 142,Building 1,Room 301 Shenzhen Longhua Guangdong,China

Test result	Pass *
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* In the configuration tested, the EUT complied with the standards specified page 5.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

** Modified History **

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1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

[FCC Rules Part 15.236](#): Operation of wireless microphones in the bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-698 MHz

[ANSI C63.10:2013](#): American National Standard for Testing Unlicensed Wireless Devices

According to KDB 206256 D01 wireless microphone Certification v02.

1.2. Test Description

Test Specification clause		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.236(d)	RF Power Output	PASS
FCC Part 15.236(f)(2)	Occupied Bandwidth	PASS
FCC Part 15.236(g) EN 300 422-1 V2.2.1	Necessary Bandwidth Spurious emissions	PASS
FCC Part 15.236(f)(3)	Frequency Stability	PASS

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No. 3011, Shaxi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSIC63.10 requirements.

1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L7497

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9618B

CAB Identifier: CN0041

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B.

1.4. 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. 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 CTL Testing Technology Co., Ltd. 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.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power Radiated	±2.20 dB	(1)
Radiated Emission 9KHz~30MHz	±3.66dB	(1)
Radiated Emission 30~1000MHz	±4.08dB	(1)
Radiated Emission Above 1GHz	±4.32dB	(1)
20dB Emission Bandwidth	±1.9%	(1)
Carrier Frequency Separation	±1.9%	(1)
Maximum Power Spectral Density Level	±0.98 dB	(1)
Number of Hopping Channel	±1.9%	(1)
Time of Occupancy	±0.11%	(1)
Max Peak Conducted Output Power	±0.98 dB	(1)
Band-edge Spurious Emission	±1.21dB	(1)
Conducted RF Spurious Emission	9kHz-7GHz:±1.09dB 7GHz-26.5GHz: ±3.27dB	(1)

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

1.5. Auxiliary equipment information

Manufacturer	Description	Model	Serial Number
Jiangsu Chenyang Electronics Co., LTD	Switching power adapter	SC-88	HC78E2N4121901

Note: This adapter is provided by the test laboratory and is only for auxiliary testing.

2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	wireless microphone
Model/Type reference:	M6
EUT Rated Voltage:	DC 5V from adapter or DC 3.7V from battery(1600mAh)
Test Voltage:	DC 5V from adapter or DC 3.7V from battery(1600mAh)
wireless microphone	
Modulation:	pi/4 DQPSK
Operation frequency:	580MHz -584MHz
Channel number:	5
Channel separation:	1MHz
Antenna type:	FPC Antenna
Antenna gain:	1.15dBi

Note1: For more details, please refer to the user's manual of the EUT.

Note2: Antenna gain and cable loss provided by the applicant.

Note3: The product cannot be configured to operate outside the current frequency band plan through software configuration, Third parties are not allowed to change any software parameter configuration of the product.

2.3. Description of Test Modes and Test Frequency

The system is configured to test under continuous transmission conditions and transmission frequency through the switch button control. And the number of channels provided to EUT is 5, select channel 01/03/05 for testing.

Operation Frequency List :

Channel	Frequency (MHz)
01	580
02	581
03	582
04	583
05	584

Note: The line display in grey is the channel selected to perform test.

2.4. Equipments Used during the Test

Conducted Emission						
Test Equipment	Manufacturer	Model No.	Serial No.	Previous calibration	Last Cal.	Cal.Due
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2024/04/30	2025/04/29	2026/04/28
LISN	ROHDE & SCHWARZ	ESH2-Z5	860014/010	2024/04/30	2025/04/29	2026/04/28
Limitator	ROHDE & SCHWARZ	ESH3-Z2	100408	2024/04/30	2025/04/29	2026/04/28
Software:						
Name of Software:			Version:			
ES-K1			V1.71			

Radiated Emission						
Test Equipment	Manufacturer	Model No.	Serial No.	Previous calibration	Last Cal.	Cal.Due
Active Loop Antenna	Da Ze	ZN30900A	/	2021/05/13	2024/04/30	2027/04/29
Double cone logarithmic antenna	Schwarzbeck	VULB 9168	824	2020/04/07	2023/02/13	2026/02/12
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2021/12/23	2024/11/25	2027/11/24
Horn Antenna	Ocean Microwave	OBH100400	26999002	2022/02/22	2025/02/21	2028/02/20
Amplifier	MRT-AP01M06	MRT	S-001	2024/04/30	2025/04/29	2026/04/28
Amplifier	Brief&Smart	LNA-4018	2104197	2024/05/03	2025/05/02	2026/04/29
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2024/04/30	2025/04/29	2026/04/28
Spectrum Analyzer	RS	FSP	1164.4391.38	2024/05/03	2025/05/02	2026/04/28
Software:						
Name of Software:			Version:			
EZ_EMC(Below 1GHz)			V1.1.4.2			
EZ_EMC(Above 1GHz)			V1.1.4.2			

RF Conducted						
Test Equipment	Manufacturer	Model No.	Serial No.	Previous calibration	Last Cal.	Cal.Due
Spectrum Analyzer	Keysight	N9020A	MY53420874	2024/05/01	2025/04/30	2026/04/28
Temperature/Humidity Meter	Ji Yu	MC501	/	2024/05/04	2025/05/03	2026/05/05
Software:						
Name of Software:			Version:			
TST-PASS			V2.0			

2.5. Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended to comply with Section 15.236 of the FCC Part 15, Subpart C Rules.

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Conducted Emissions Test

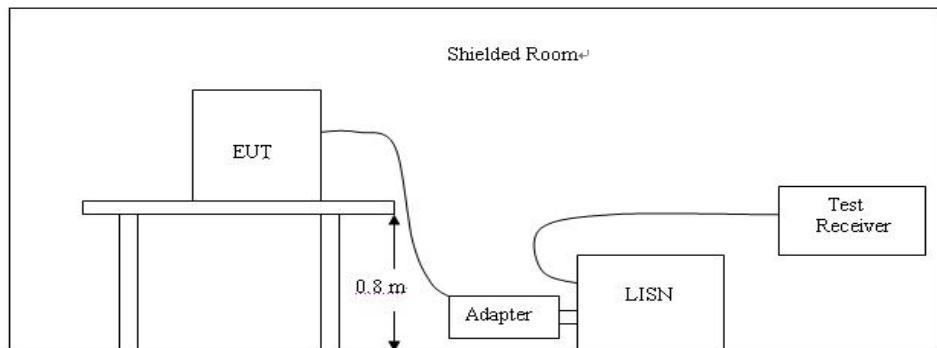
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

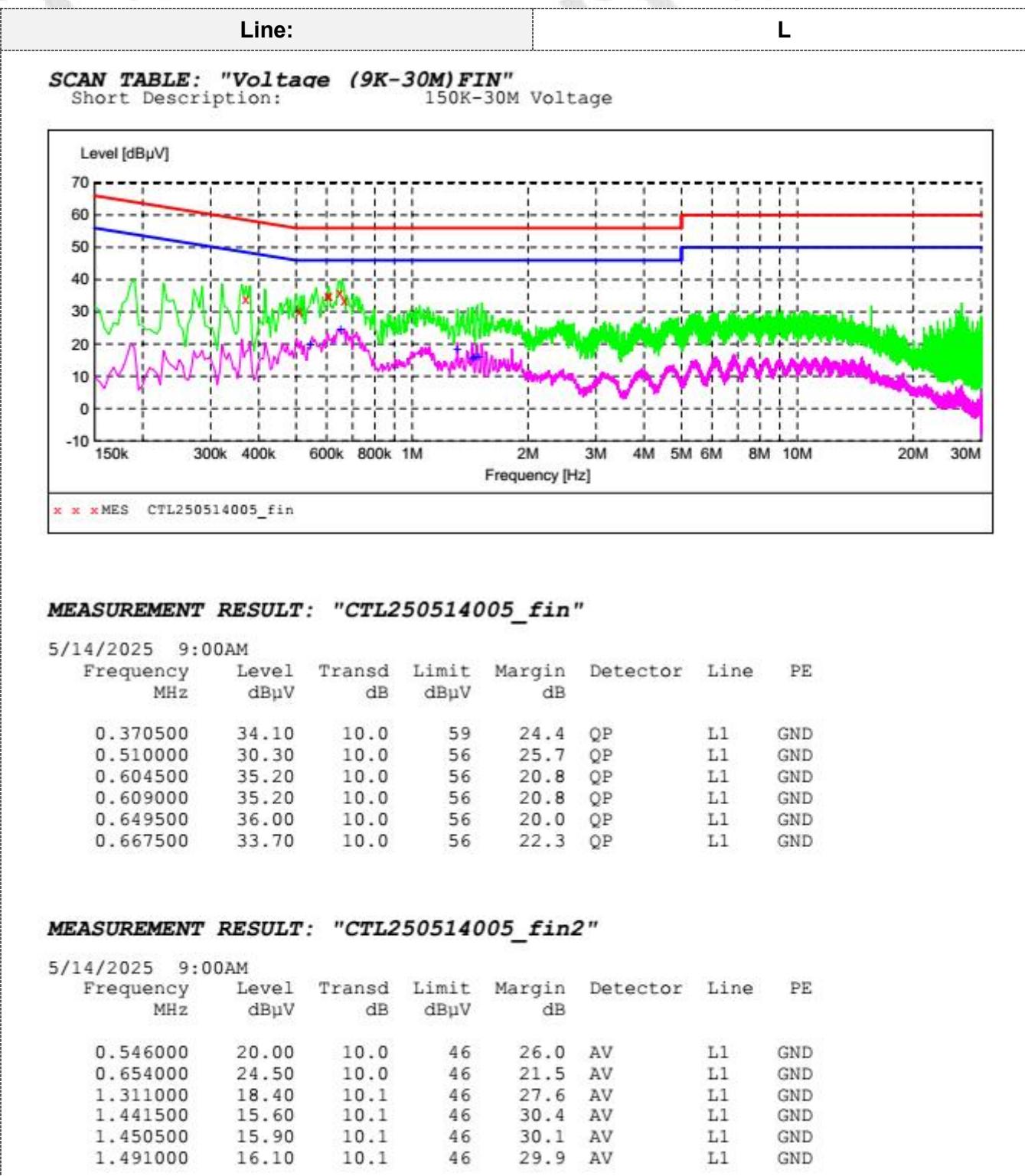
* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



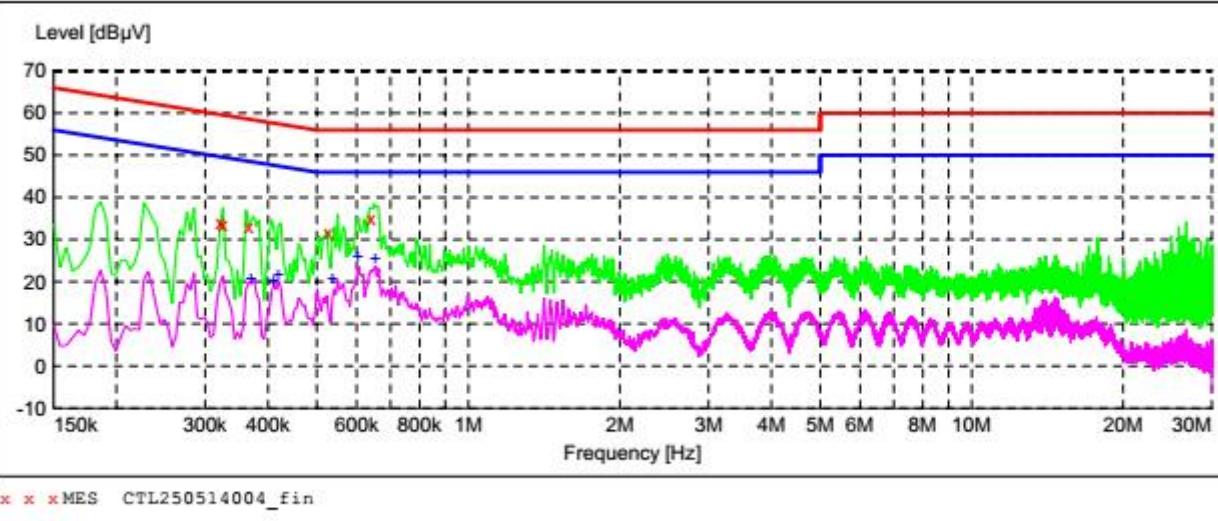
TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Line:

N

SCAN TABLE: "Voltage (9K-30M) FIN"
 Short Description: 150K-30M Voltage

MEASUREMENT RESULT: "CTL250514004_fin"

5/14/2025 8:57AM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Detector	Line	PE
0.321000	33.80	10.0	60	25.9	QP	N	GND
0.325500	33.60	10.0	60	26.0	QP	N	GND
0.366000	33.10	10.0	59	25.5	QP	N	GND
0.528000	31.60	10.0	56	24.4	QP	N	GND
0.640500	34.90	10.0	56	21.1	QP	N	GND

MEASUREMENT RESULT: "CTL250514004_fin2"

5/14/2025 8:57AM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Detector	Line	PE
0.370500	20.90	10.0	49	27.6	AV	N	GND
0.411000	20.30	10.0	48	27.3	AV	N	GND
0.420000	21.60	10.0	47	25.8	AV	N	GND
0.537000	20.60	10.0	46	25.4	AV	N	GND
0.604500	26.10	10.0	46	19.9	AV	N	GND
0.654000	25.30	10.0	46	20.7	AV	N	GND

3.2. Maximum Output Power

Limit

The maximum radiated power shall not exceed the following values:

- (1) In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP
- (2) In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP.

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.

Test Configuration



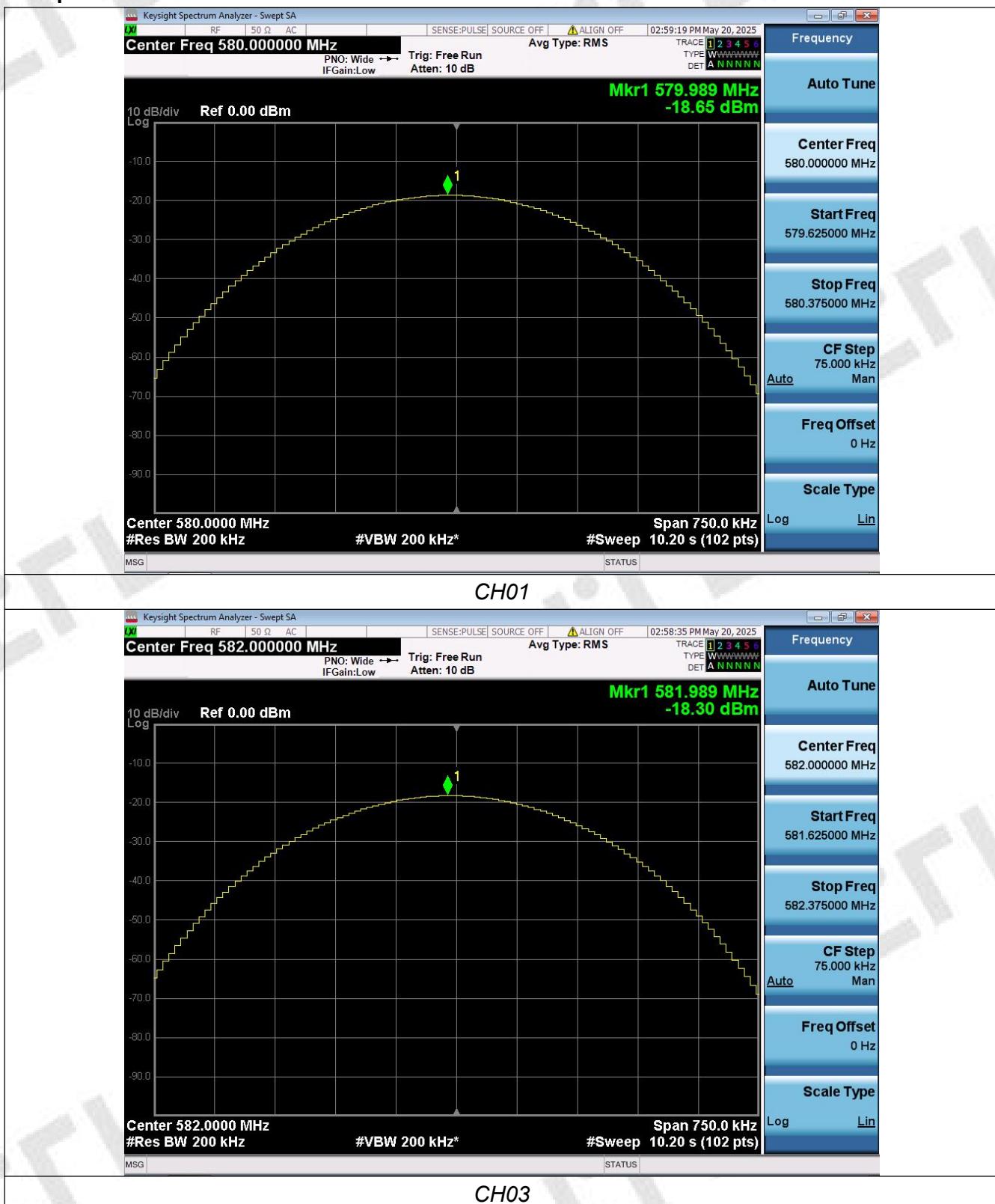
Test Results

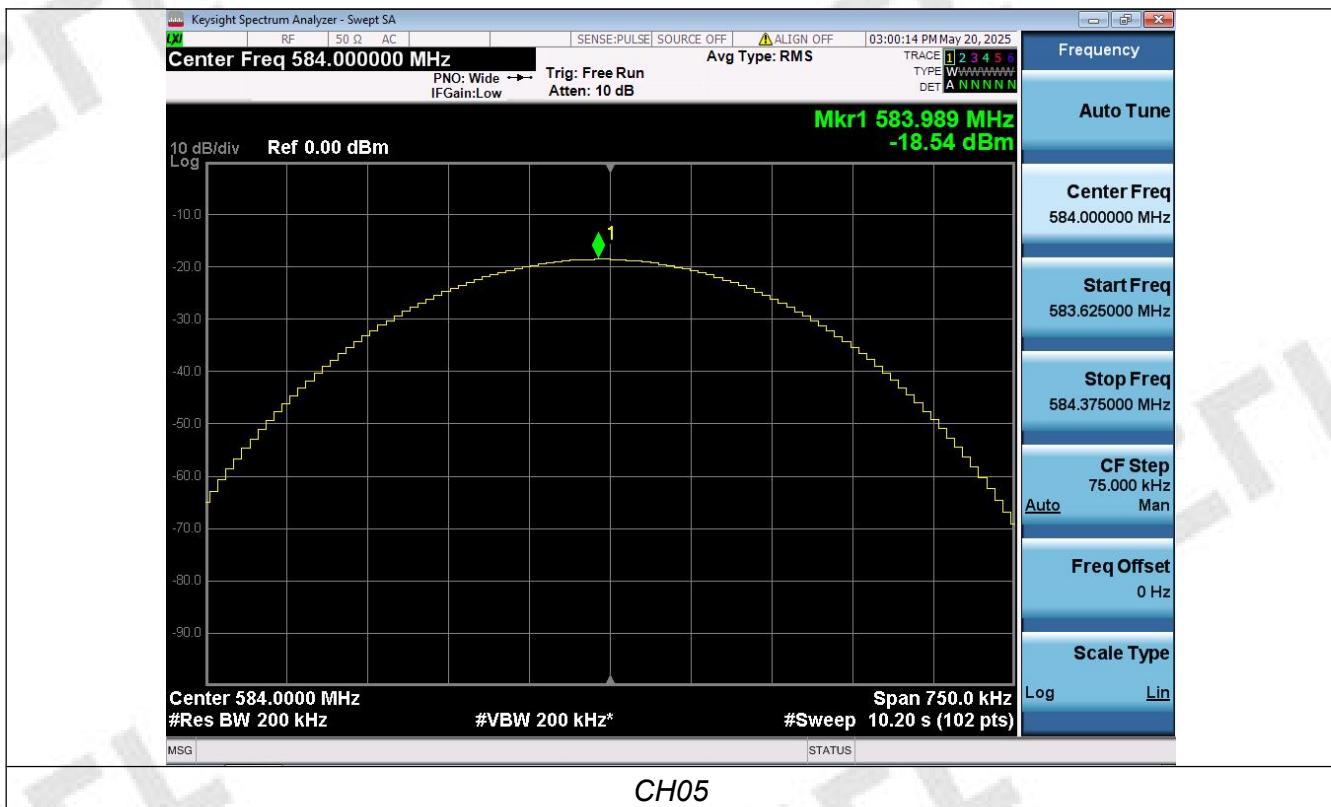
Modulation	Channel	Output power (dBm)	Ant. Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
pi/4 DQPSK	CH01	-18.65	1.15	-17.50	17	Pass
	CH03	-18.30	1.15	-17.15	17	Pass
	CH03	-18.54	1.15	-17.39	17	Pass

Note: 1. The test results including the cable loss.

2. The RF cable is 50 ohm.

Test plot as follows:





3.2. Occupied Bandwidth Measurement

Limit

One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

Test Configuration



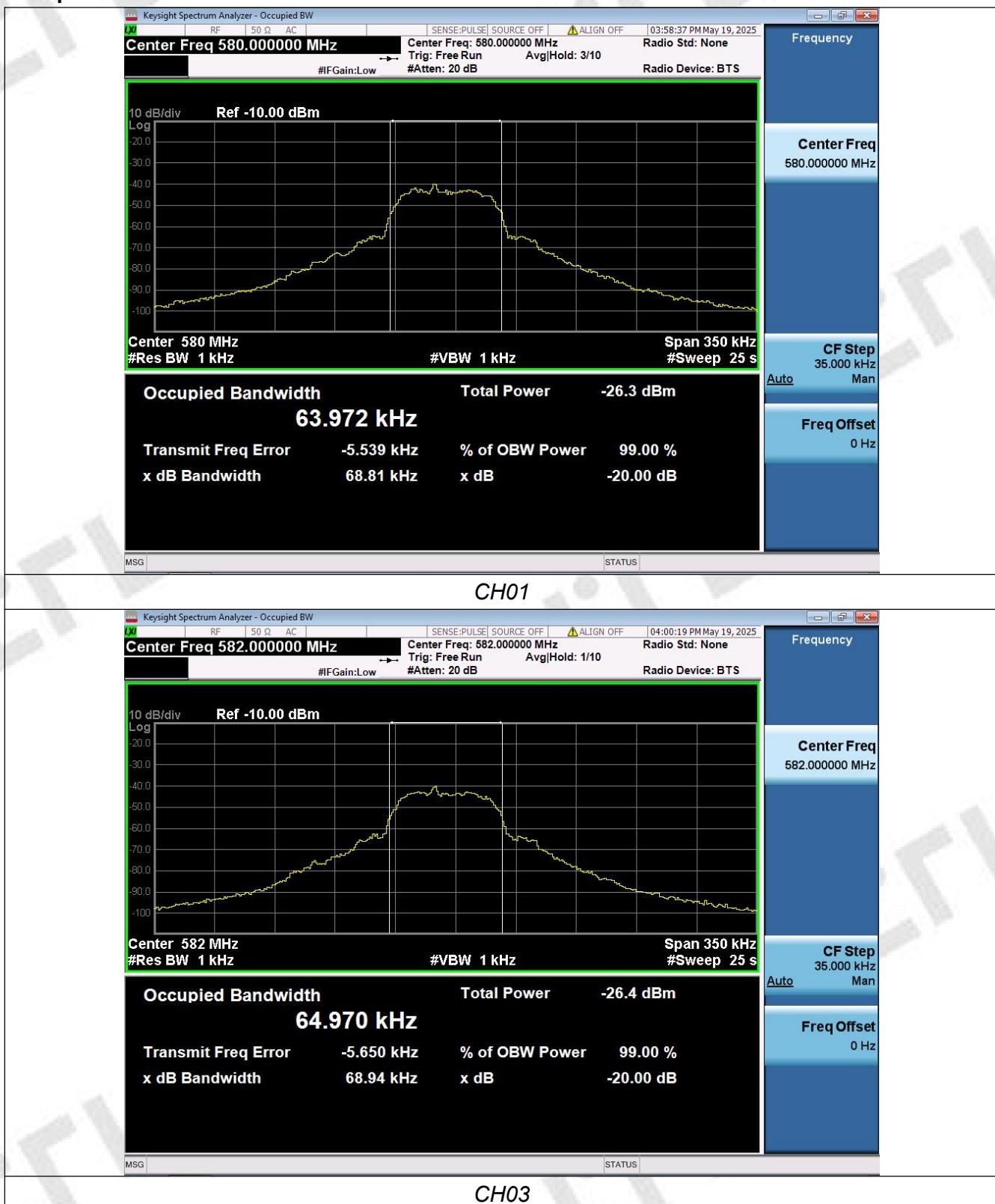
Test Procedure

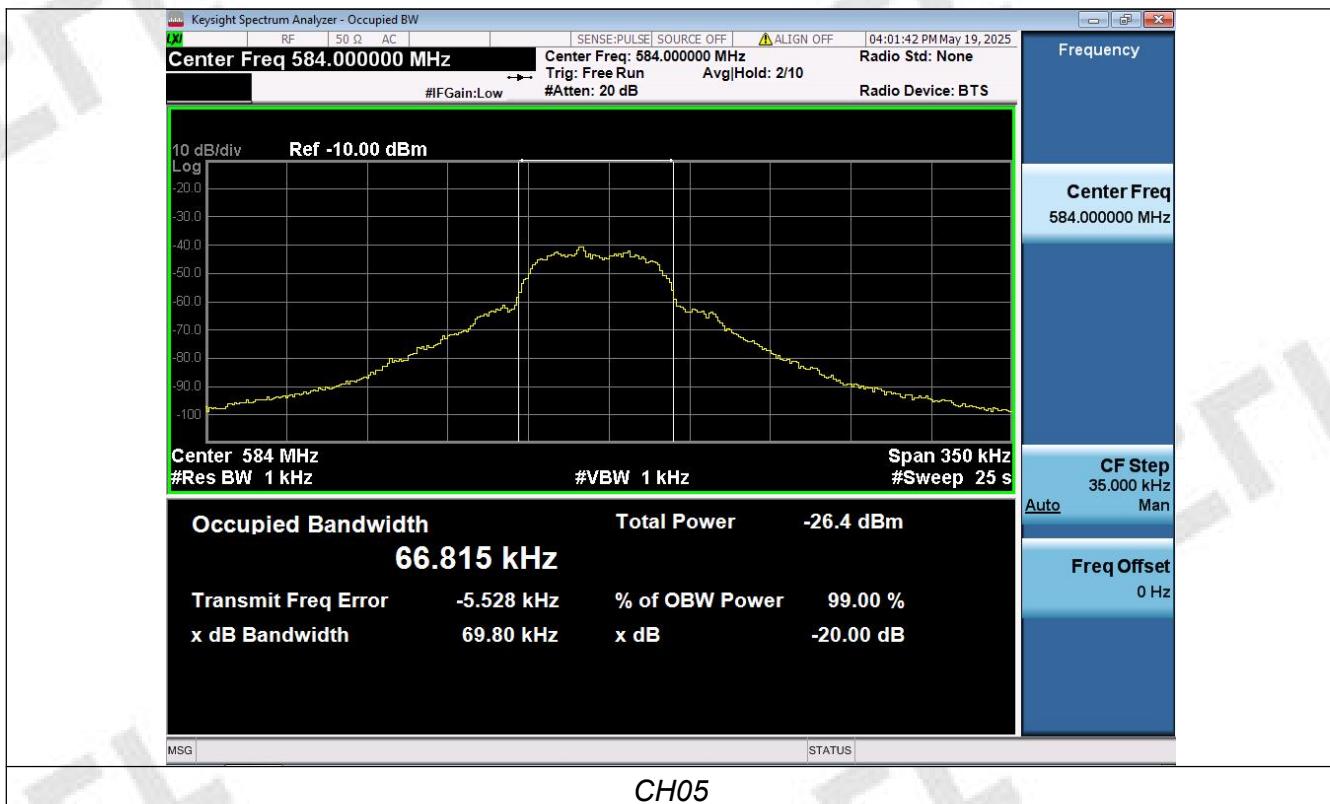
The test shall be modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.

Test Results

Modulation	Channel	99% OBW (KHz)	Limit (KHz)	Result
pi/4 DQPSK	CH01	63.972	200	Pass
	CH03	64.970	200	
	CH05	66.815	200	

Test plot as follows:





3.3. Necessary Bandwidth

LIMIT

According to ETSI EN 300 422-1 v2.2.1(2021-11) section 4.2.4.2, The mean Power Density, measured with 1 kHz measurement bandwidth and RMS detector, of the transmitter unwanted emissions shall not exceed the limits of the masks provided in figure 1 for equipment employing analogue modulation and figure 2 for equipment employing digital modulation, but excluding WMAS.

The limits in figures 1 and 2 are relative to the transmitter RF output power according to clauses 4.2.1 and 5.4.1.

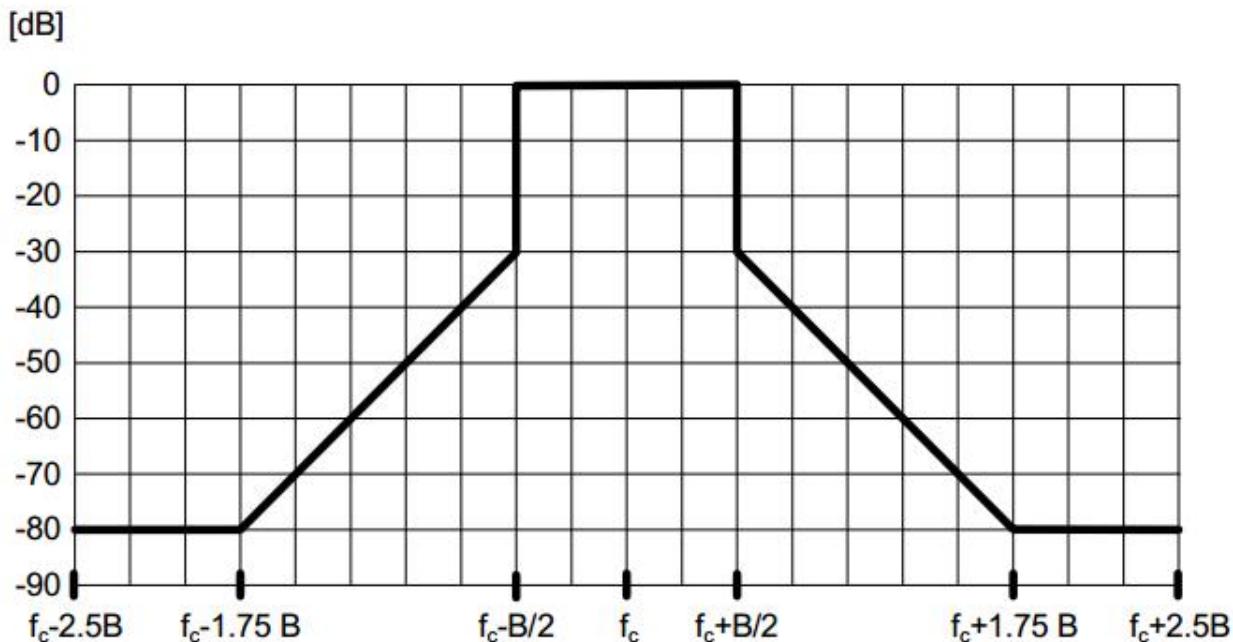


Figure 2: Transmit spectral power mask for equipment employing digital modulation, except WMAS, RBW = 1 kHz

TEST PROCEDURE

The arrangement of test equipment as shown in figure B.1 shall be used. Note that the noise meter conforms to (quasieak) without weighting filter (flat).

With the Low Frequency (LF) audio signal generator set to 500 Hz, the audio input level to the DUT shall be adjusted to 8 dB below the limiting threshold (-8 dB (lim)) as declared by the manufacturer.

The corresponding audio output level from the demodulator shall be measured and recorded.

The input impedance of the noise meter shall be sufficiently high to avoid more than 0,1 dB change in input level when the meter is switched between input and output.

The audio input level shall be increased by 20 dB, i.e. to +12 dB (lim), and the corresponding change in output level shall be measured.

It shall be checked that the audio output level has increased by ≤ 10 dB.

If this condition is not met, the initial audio input level shall be increased from -8 dB (lim) in 1 dB steps until the above condition is fulfilled, and the input level recorded in the test report. This level replaces the value derived from the manufacturer's declaration and is defined as -8 dB (lim).

Measure the input level at the transmitter required to give +12 dB (lim).

The LF generator shall be replaced with the weighted noise source to Recommendation ITU-R BS.559-2 [i.3], band-limited to 15 kHz as described in IEC 60244-13 [2], and the level shall be adjusted such that the measured input to the transmitter corresponds to +12 dB (lim).

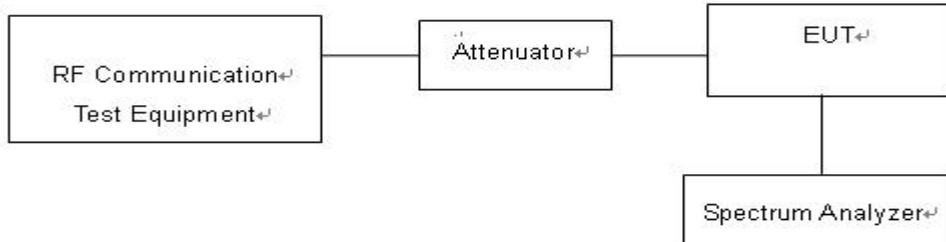
If the transmitter incorporates any ancillary coding or signalling channels (e.g. pilot-tones), these shall be enabled prior to any spectral measurements.

If the transmitter incorporates more than one audio input, e.g. stereo systems, the second and subsequent channels shall be simultaneously driven from the same noise source, attenuated to a level of -6 dB (lim).

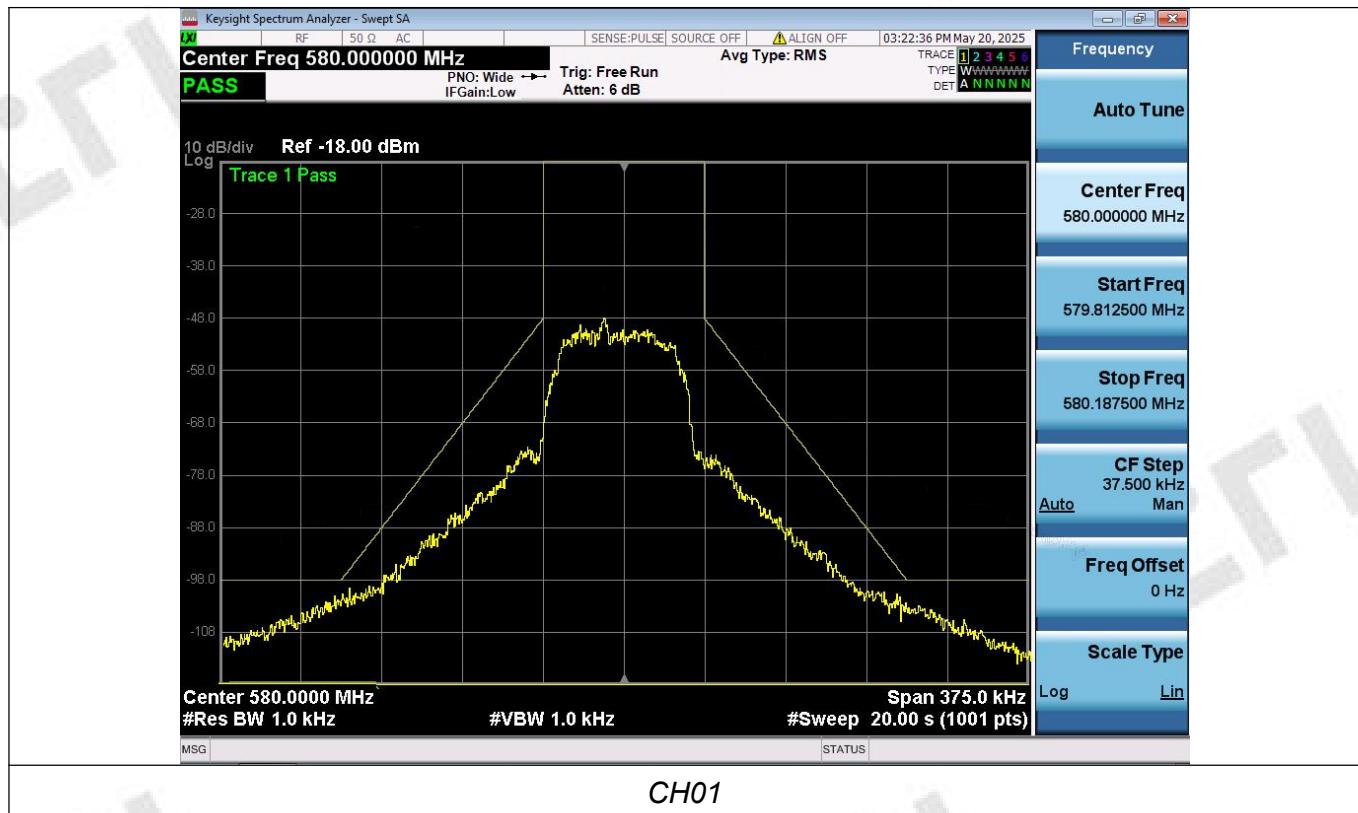
The transmitter RF output spectrum shall be measured, using a spectrum analyser with the following settings:

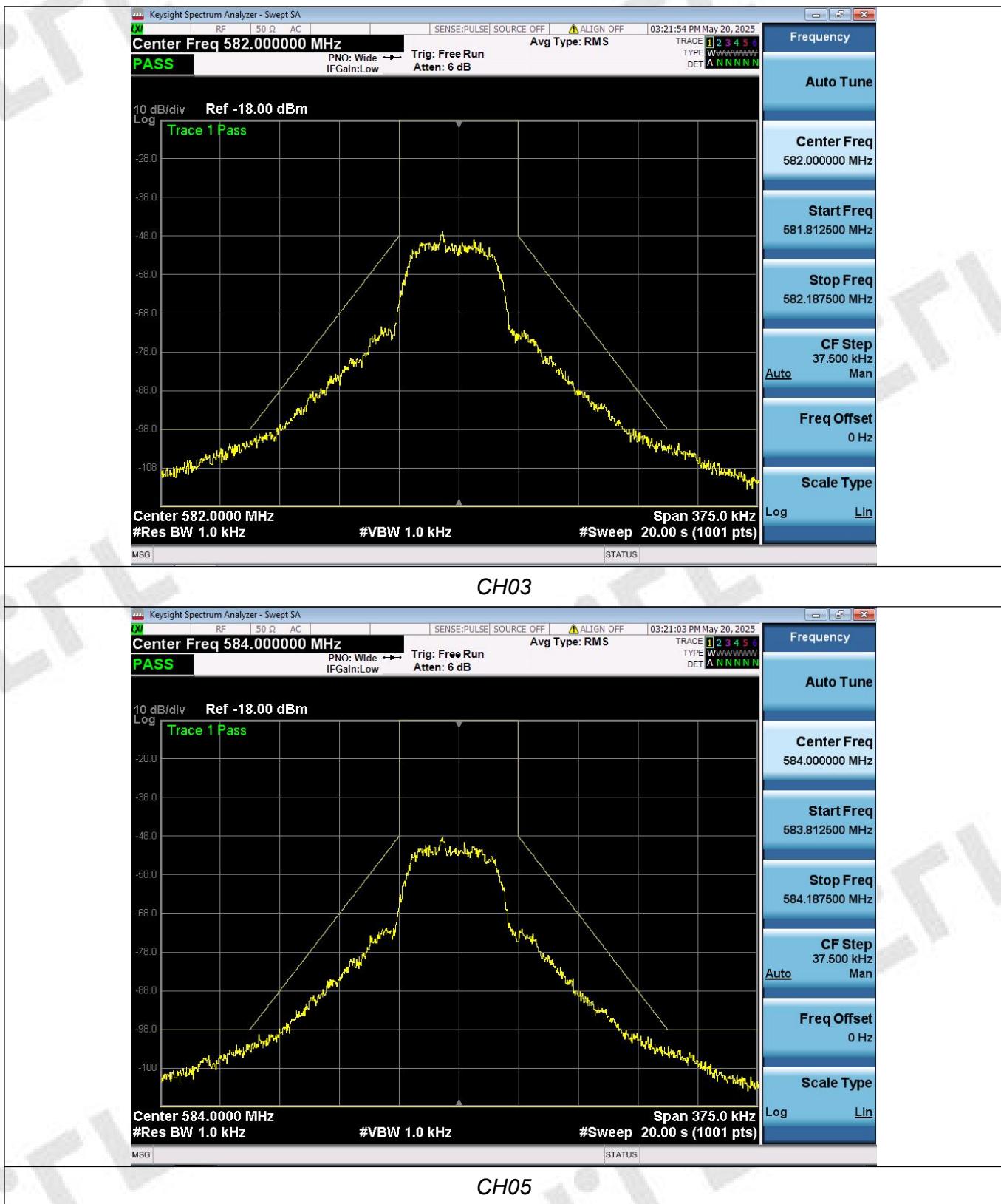
- centre frequency: f_c : Transmitter (Tx) nominal frequency;
- dispersion (Span): 5B (B is the declared bandwidth);
- Resolution BandWidth (RBW): 1 kHz;
- Video BandWidth (VBW): 1 kHz;
- detector: Average hold.

TEST CONFIGURATION



TEST RESULTS





3.4. Transmitter spurious emissions

Limit

Spurious emissions are emissions outside the frequency range(s) of the equipment. The power of the spurious emissions shall not exceed the limits of table as below:

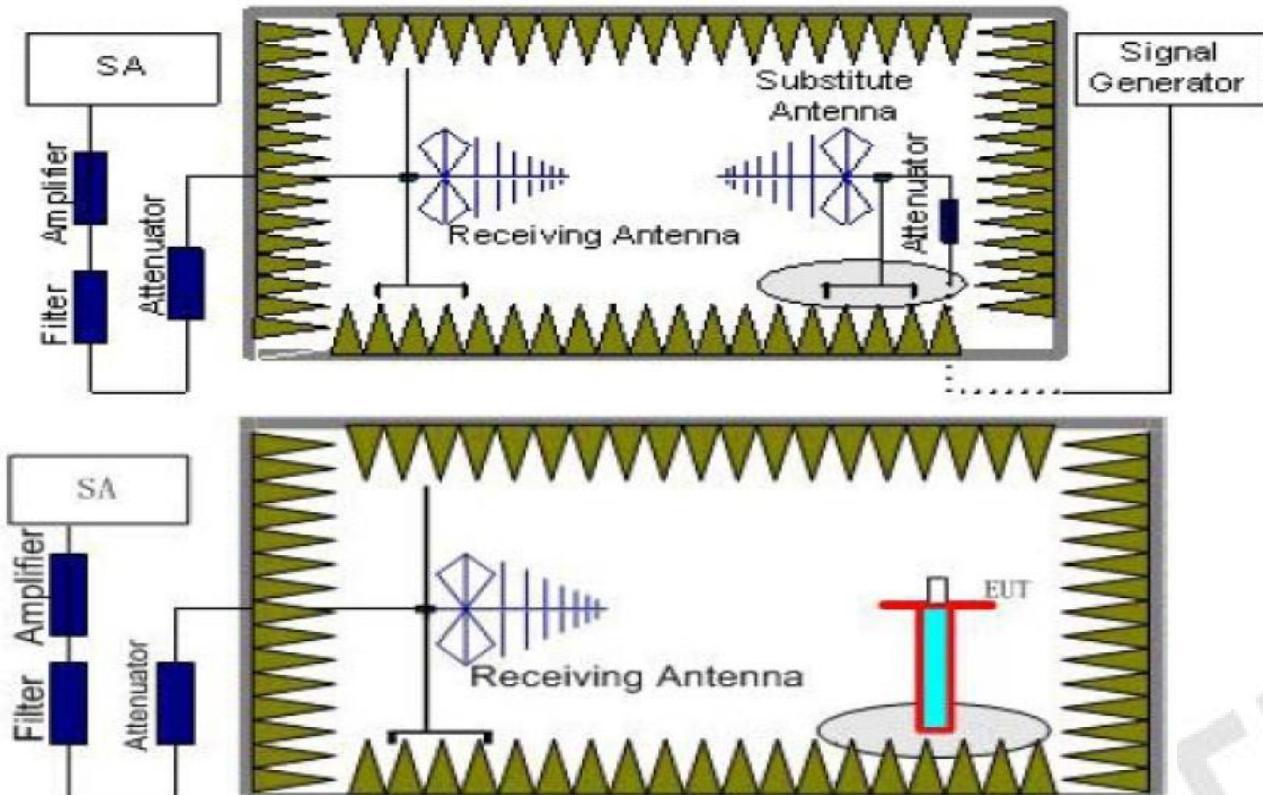
State	Frequency	Other Frequencies below 1 000 MHz	Frequencies above 1 000 MHz
	47 MHz to 74 MHz 87,5 MHz to 137 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz		
Operation	4 nW	250 nW	1 μ W
Standby	2 nW	2 nW	20 nW

Test Procedure

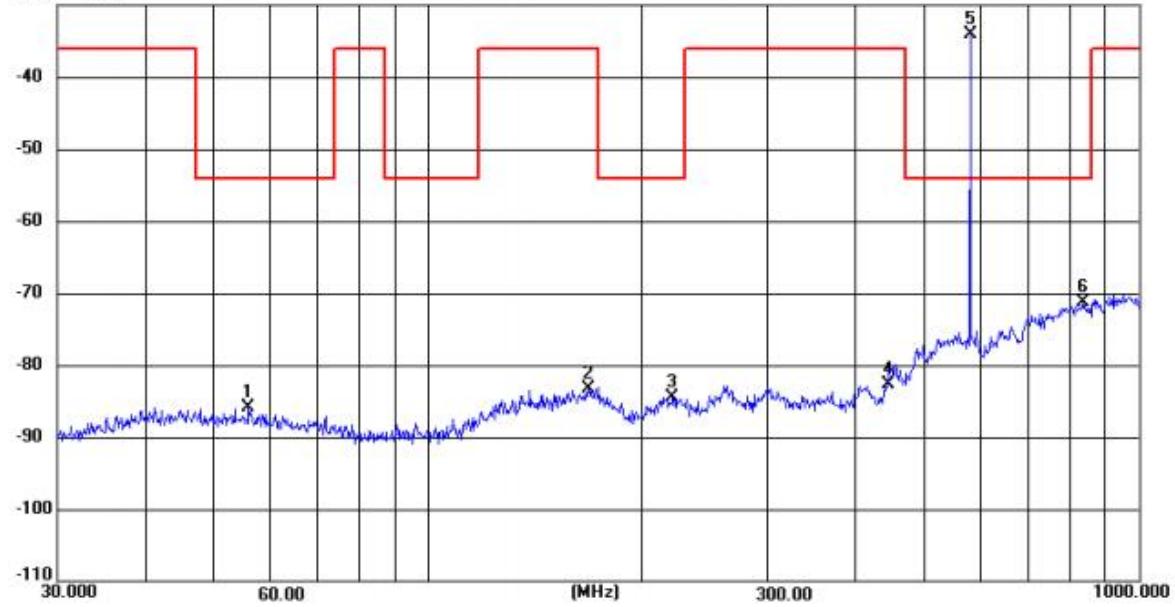
1. EUT shall be placed on a 0.8m high table for frequency below 1GHz
2. EUT shall be placed on a 1.5m high table for frequency above 1GHz, The test distance between the receiving antenna and the EUT is 1m up to 4m, Set EUT in continuous transmitting with maximum output power at test frequency.
3. The table was rotated from 0 to 360 degree to search the highest radiated emission.
4. Repeat step 3 to 4 for each polarization and test channel to find the worst emission level.
5. The results obtained are compared to the limits in order to prove compliance with the requirement.
6. Please refer to ETSI EN 300 422-1 v2.2.1(2021-11) clause 4.2.4.1 for the test conditions.
7. Please refer to ETSI EN 300 422-1 v2.2.1(2021-11) clause 5.4.4 for the measurement method.

Test Configuration

Effective Radiated Power measurement (30 MHz to 12.75 GHz)



Test Results

Channel:	CH01	Polarity:	Horizontal								
	Shenzhen CTL Testing Technology Co., Ltd										
Shenzhen CTL Testing Technology Co., Ltd											
	Tel: +86-755-89486194										
Radiated Emission Measurement											
File :RF_5	Data :#662	Date: 2025/05/17	Time: 17:27:01								
-30.0 dBm											
											
30.000	60.00	(MHz)	300.00	1000.000							
Site: LAB Chamber 2 Limit: ETSI EN300422TX(RF) EUT: M/N: Mode: 580MHz TX Note: CTL2505068021-WF											
		Polarization: Horizontal	Temperature: 25(C)								
		Power:	Humidity: 50 %								
		Distance: 3m									
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	55.9762	-72.63	-13.31	-85.94	-54.00	31.94	peak	150	0	P	
2	168.1188	-68.34	-14.90	-83.24	-36.00	47.24	peak	150	0	P	
3	221.0043	-66.47	-17.94	-84.41	-54.00	30.41	peak	150	0	P	
4	444.8514	-71.61	-11.01	-82.62	-36.00	46.62	peak	150	0	P	
5	580.1937	-27.25	-6.91	-34.16	-54.00	-19.84	peak	150	0	F	
6	833.6825	-68.74	-2.62	-71.36	-54.00	17.36	peak	150	0	P	



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194

Radiated Emission Measurement

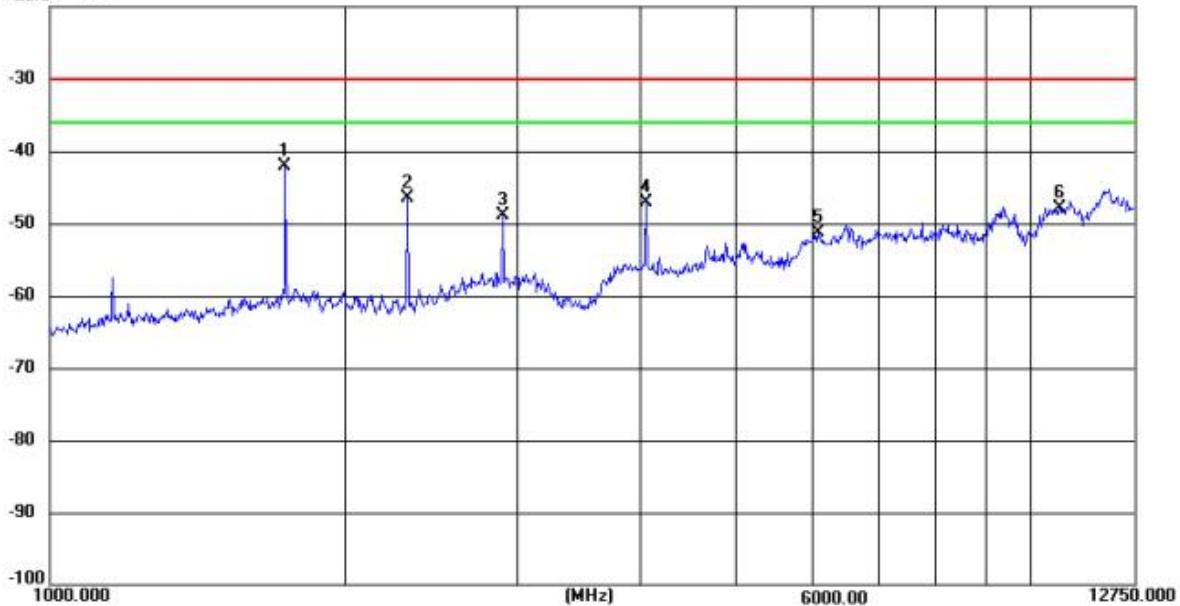
File :RF_5

Data :#637

Date: 2025/05/17

Time: 15:42:35

-20.0 dBm



Site LAB Chamber 2

Limit: ETSI EN300422TX(RF)

EUT:

M/N:

Mode: 580MHz TX

Note: CTL2505068021-WF

Polarization: **Horizontal**

Temperature: 25(C)

Power:

Humidity: 50 %

Distance: 3m

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1739.596	-34.66	-7.47	-42.13	-30.00	12.13	peak	150	0	P	
2	2320.114	-41.56	-5.01	-46.57	-30.00	16.57	peak	150	0	P	
3	2899.877	-46.36	-2.49	-48.85	-30.00	18.85	peak	150	0	P	
4	4060.536	-48.37	1.35	-47.02	-30.00	17.02	peak	150	0	P	
5	6067.050	-57.57	6.37	-51.20	-30.00	21.20	peak	150	0	P	
6	10716.652	-59.68	11.83	-47.85	-30.00	17.85	peak	150	0	P	

Channel:

CH01

Polarity:

Vertical



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Radiated Emission Measurement

File :RF_5

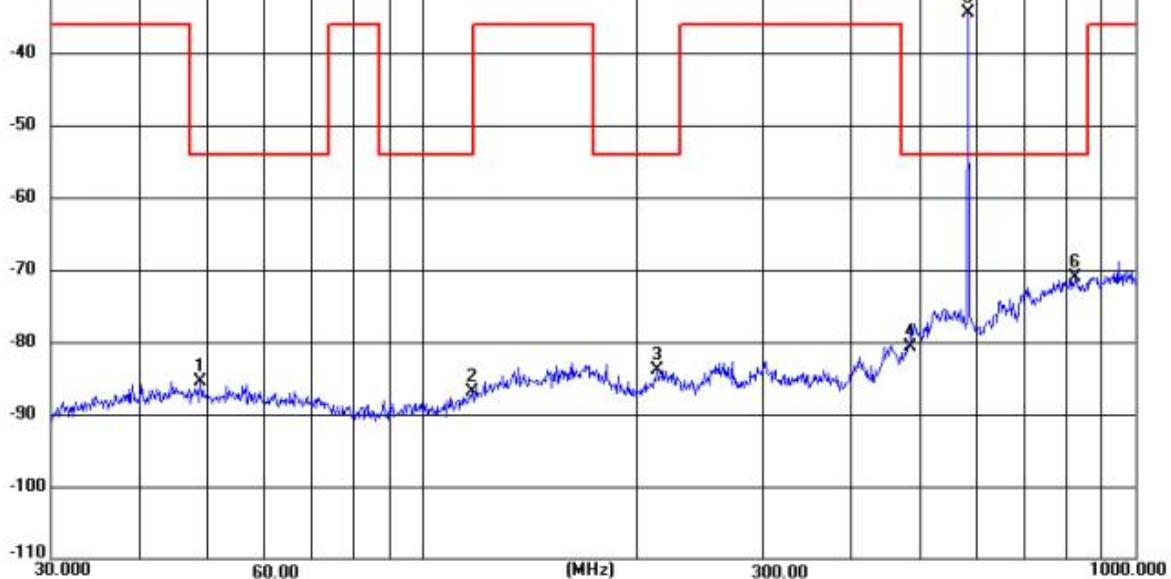
Data #:661

Date: 2025/05/17

Time: 17:25:55

-30.0

dBm



Site: LAB Chamber 2

Polarization: **Vertical**

Temperature: 25(C)

Limit: ETSI EN300422TX(RF)

Power:

Humidity: 50 %

EUT:

Distance: 3m

M/N:

Mode: 580MHz TX

Note: CTL2505068021-WF

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	48.8001	-72.88	-12.66	-85.54	-54.00	31.54	peak	150	360	P	
2	117.0520	-70.77	-16.09	-86.86	-54.00	32.86	peak	150	360	P	
3	213.5761	-65.94	-17.95	-83.89	-54.00	29.89	peak	150	360	P	
4	482.2156	-70.65	-10.11	-80.76	-54.00	26.76	peak	150	360	P	
5	579.9980	-27.67	-6.81	-34.48	-54.00	-19.52	peak	150	360	F	
6	824.9583	-68.46	-2.68	-71.14	-54.00	17.14	peak	150	360	P	



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Radiated Emission Measurement

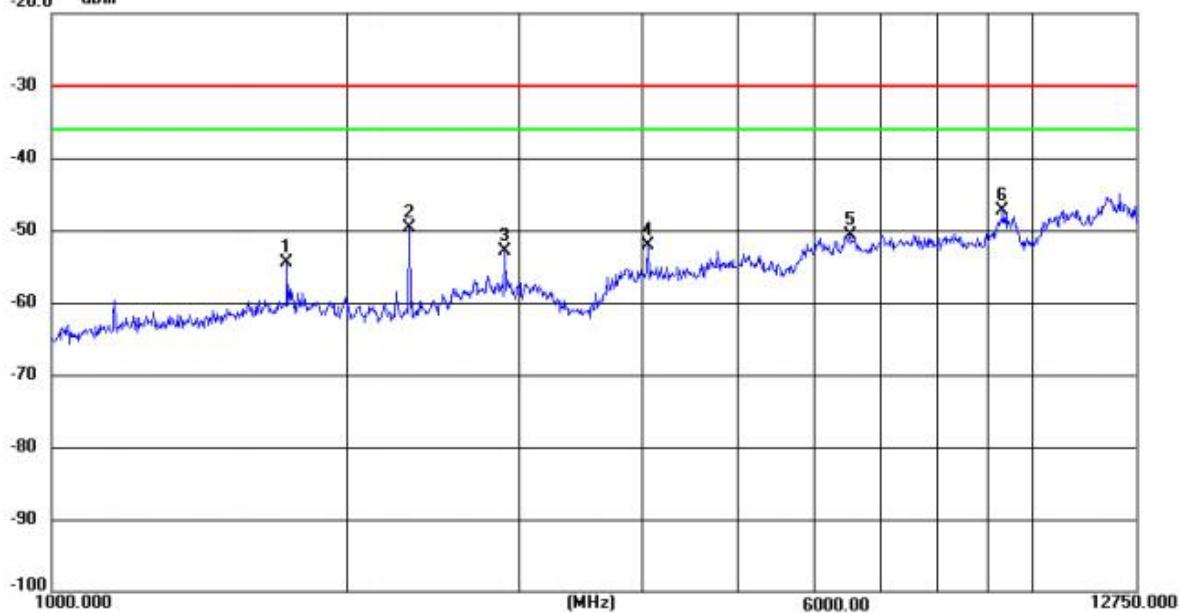
File :RF_5

Data #:638

Date: 2025/05/17

Time: 15:43:58

-20.0 dBm



Site LAB Chamber 2

Limit: ETSI EN300422TX(RF)

Polarization: **Vertical**

Temperature: 25(C)

EUT:

Power:

Humidity: 50 %

M/N:

Distance: 3m

Mode: 580MHz TX

Note: CTL2505068021-WF

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1740.150	-47.05	-7.47	-54.52	-30.00	24.52	peak	150	360	P	
2	2320.114	-44.65	-5.01	-49.66	-30.00	19.66	peak	150	360	P	
3	2899.877	-50.42	-2.49	-52.91	-30.00	22.91	peak	150	360	P	
4	4060.536	-53.49	1.35	-52.14	-30.00	22.14	peak	150	360	P	
5	6519.409	-57.98	7.30	-50.68	-30.00	20.68	peak	150	360	P	
6	9340.316	-58.69	11.35	-47.34	-30.00	17.34	peak	150	360	P	

Channel:

CH05

Polarity:

Horizontal



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Radiated Emission Measurement

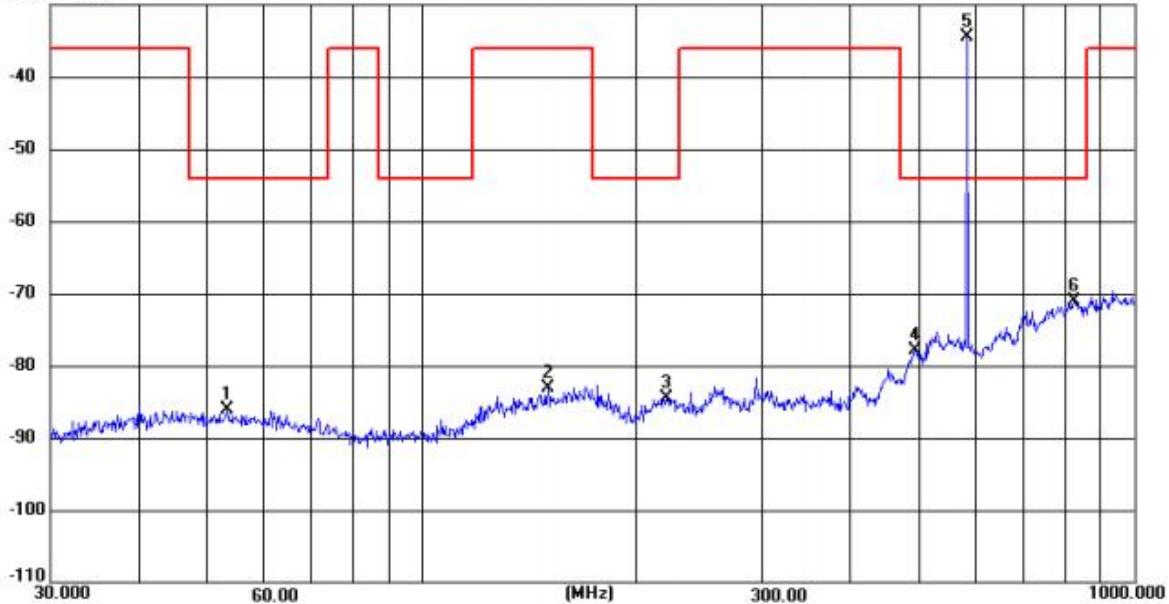
File :RF_5

Data :#659

Date: 2025/05/17

Time: 17:20:13

-30.0 dBm



Site LAB Chamber 2

Limit: ETSI EN300422TX(RF)

Polarization: **Horizontal**

Temperature: 25(C)

EUT:

Power:

Humidity: 50 %

M/N:

Distance: 3m

Mode: 584MHz TX

Note: CTL2505068021-WF

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	53.2946	-73.09	-13.04	-86.13	-54.00	32.13	peak	150	0	P	
2	150.1424	-68.62	-14.48	-83.10	-36.00	47.10	peak	150	0	P	
3	220.5205	-66.43	-17.97	-84.40	-54.00	30.40	peak	150	0	P	
4	493.9819	-68.08	-9.85	-77.93	-54.00	23.93	peak	150	0	P	
5	584.0210	-27.69	-6.77	-34.46	-54.00	-19.54	peak	150	0	F	
6	824.2355	-68.45	-2.69	-71.14	-54.00	17.14	peak	150	0	P	



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Radiated Emission Measurement

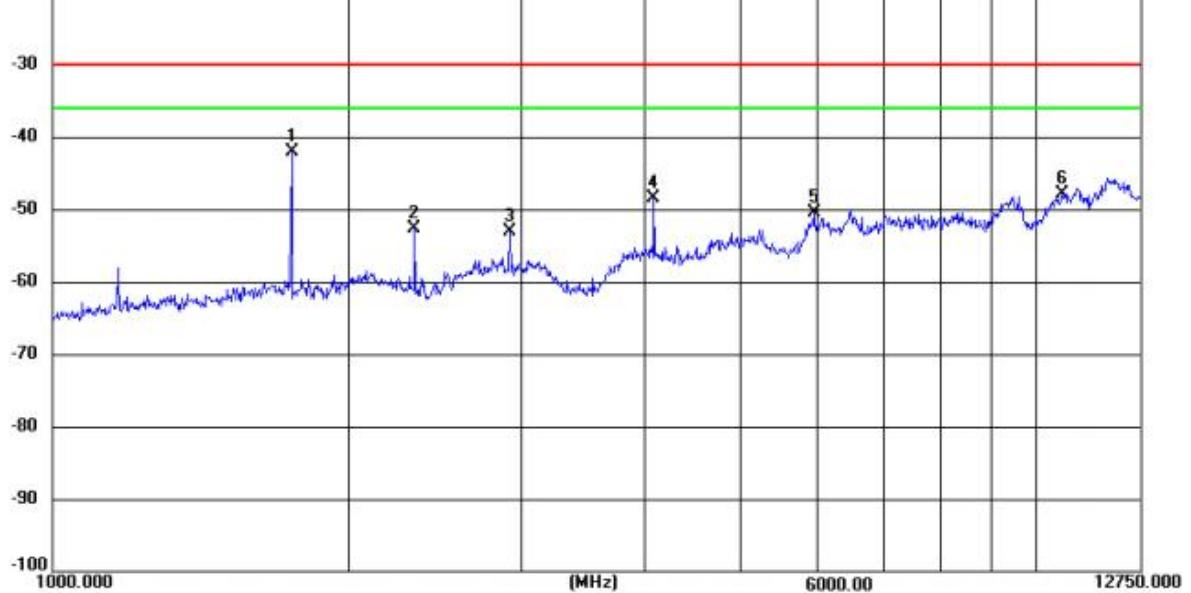
File :RF_5

Data #:658

Date: 2025/05/17

Time: 17:11:15

-20.0 dBm



Site LAB Chamber 2

Limit: ETSI EN300422TX(RF)

Polarization: **Horizontal**

Temperature: 25(C)

EUT:

Power:

Humidity: 50 %

M/N:

Distance: 3m

Mode: 584MHz TX

Note: CTL2505068021-WF

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1751.817	-34.74	-7.41	-42.15	-30.00	12.15	peak	150	360	P	
2	2335.669	-47.74	-4.96	-52.70	-30.00	22.70	peak	150	360	P	
3	2919.319	-50.71	-2.39	-53.10	-30.00	23.10	peak	150	360	P	
4	4087.759	-50.05	1.47	-48.58	-30.00	18.58	peak	150	360	P	
5	5942.858	-56.48	5.96	-50.52	-30.00	20.52	peak	150	360	P	
6	10635.125	-59.65	11.68	-47.97	-30.00	17.97	peak	150	360	P	

Channel:

CH05

Polarity:

Vertical



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Radiated Emission Measurement

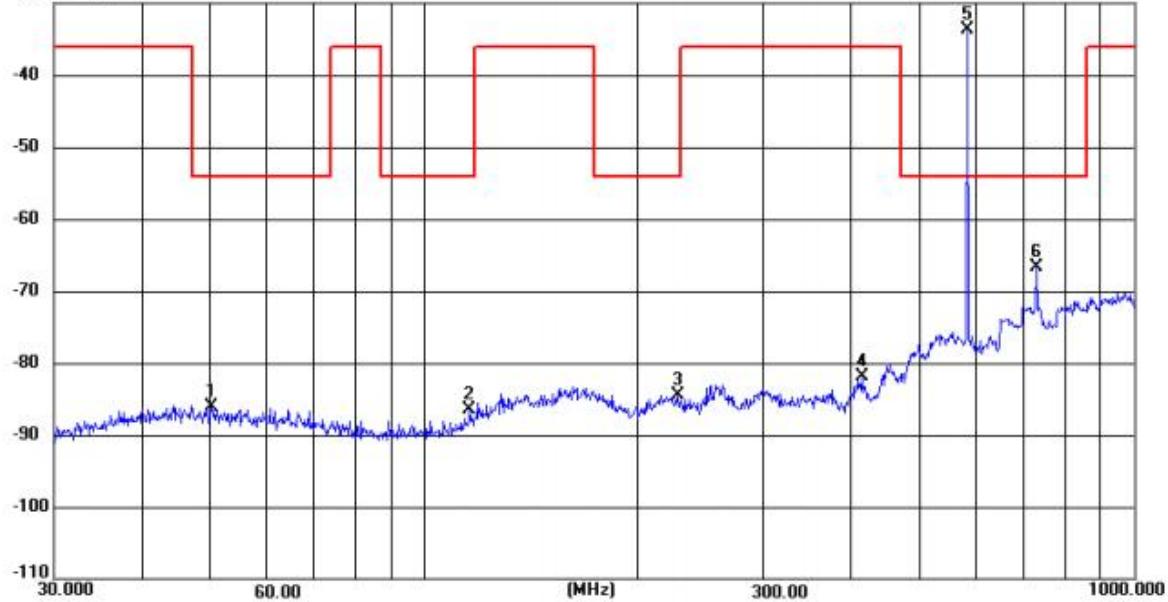
File :RF_5

Data :#660

Date: 2025/05/17

Time: 17:23:17

-30.0 dBm



Site LAB Chamber 2

Polarization: **Vertical**

Temperature: 25(C)

Limit: ETSI EN300422TX(RF)

Power:

Humidity: 50 %

EUT:

Distance: 3m

M/N:

Mode: 584MHz TX

Note: CTL2505068021-WF

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	50.1225	-73.44	-12.73	-86.17	-54.00	32.17	peak	150	0	P	
2	115.7764	-70.39	-16.21	-86.60	-54.00	32.60	peak	150	0	P	
3	227.6906	-67.03	-17.48	-84.51	-54.00	30.51	peak	150	0	P	
4	413.8144	-70.22	-11.77	-81.99	-36.00	45.99	peak	150	0	P	
5	584.0210	-27.02	-6.77	-33.79	-54.00	-20.21	peak	150	0	F	
6	729.6780	-62.38	-4.25	-66.63	-54.00	12.63	peak	150	0	P	



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Radiated Emission Measurement

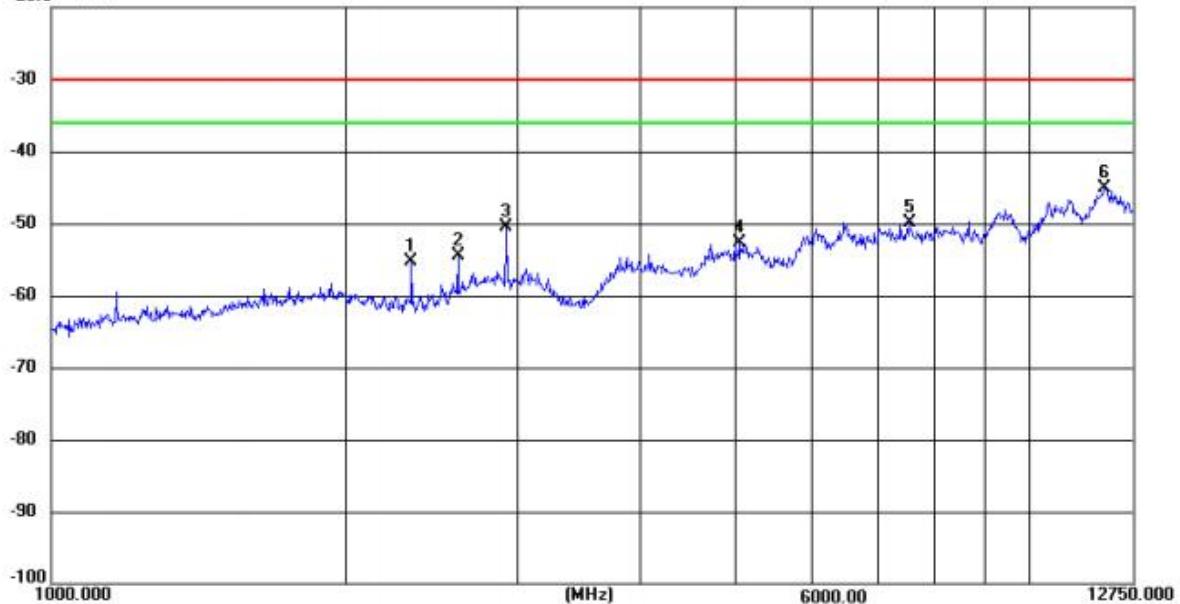
File :RF_5

Data #:657

Date: 2025/05/17

Time: 17:09:26

-20.0 dBm



Site LAB Chamber 2

Limit: ETSI EN300422TX(RF)

Polarization: **Vertical**

Temperature: 25(C)

EUT:

Power:

Humidity: 50 %

M/N:

Distance: 3m

Mode: 584MHz TX

Note: CTL2505068021-WF

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2336.412	-50.39	-4.96	-55.35	-30.00	25.35	peak	150	0	P	
2	2605.843	-50.67	-3.88	-54.55	-30.00	24.55	peak	150	0	P	
3	2920.248	-48.13	-2.39	-50.52	-30.00	20.52	peak	150	0	P	
4	5067.138	-56.48	3.78	-52.70	-30.00	22.70	peak	150	0	P	
5	7559.029	-58.56	8.63	-49.93	-30.00	19.93	peak	150	0	P	
6	11944.872	-58.69	13.59	-45.10	-30.00	15.10	peak	150	0	P	

3.5. Frequency Stability

Limit

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.005\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

Test Procedure

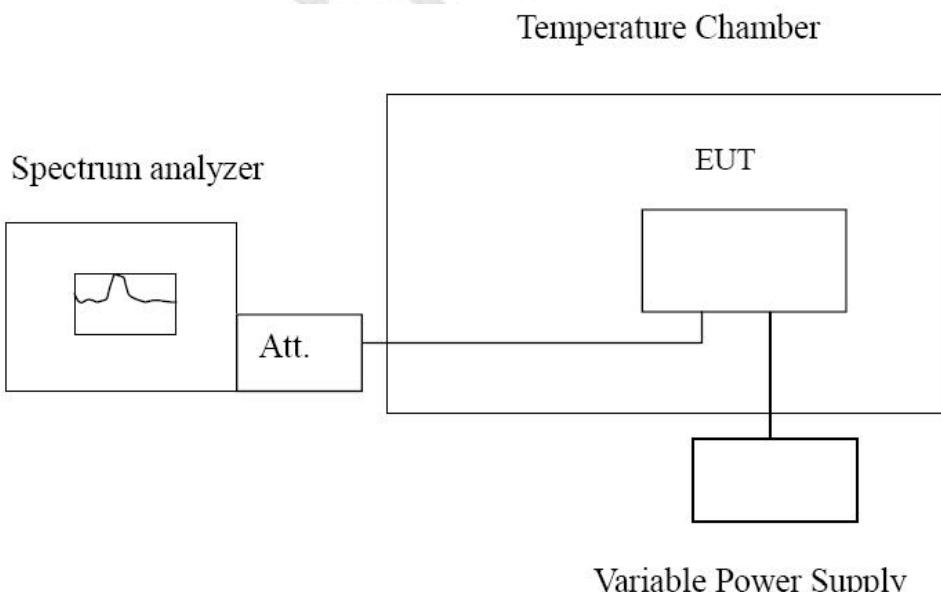
a) Frequency stability versus environmental temperature

1. Set up a Test Configuration for frequencies measured at ambient temperature if it is within 15°C to 25°C . Otherwise, an environmental chamber set for a temperature of 20°C shall be used.
2. Turn on EUT and set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 3 kHz, VBW to 10 kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. Set the temperature of chamber to 50°C . Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -20°C is measured, record all measurement frequencies.

b) Frequency stability versus input voltage

1. Set up a Test Configuration for frequencies measured at ambient temperature if it is within 15°C to 25°C . Otherwise, an environmental chamber set for a temperature of 20°C shall be used. Install new batteries in the EUT.
2. Set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 3 kHz, VBW to 10 kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. For non hand carried, battery operated device, supply the EUT primary voltage with 85 and 115 percent of the nominal value and record the frequency.

Test Configuration

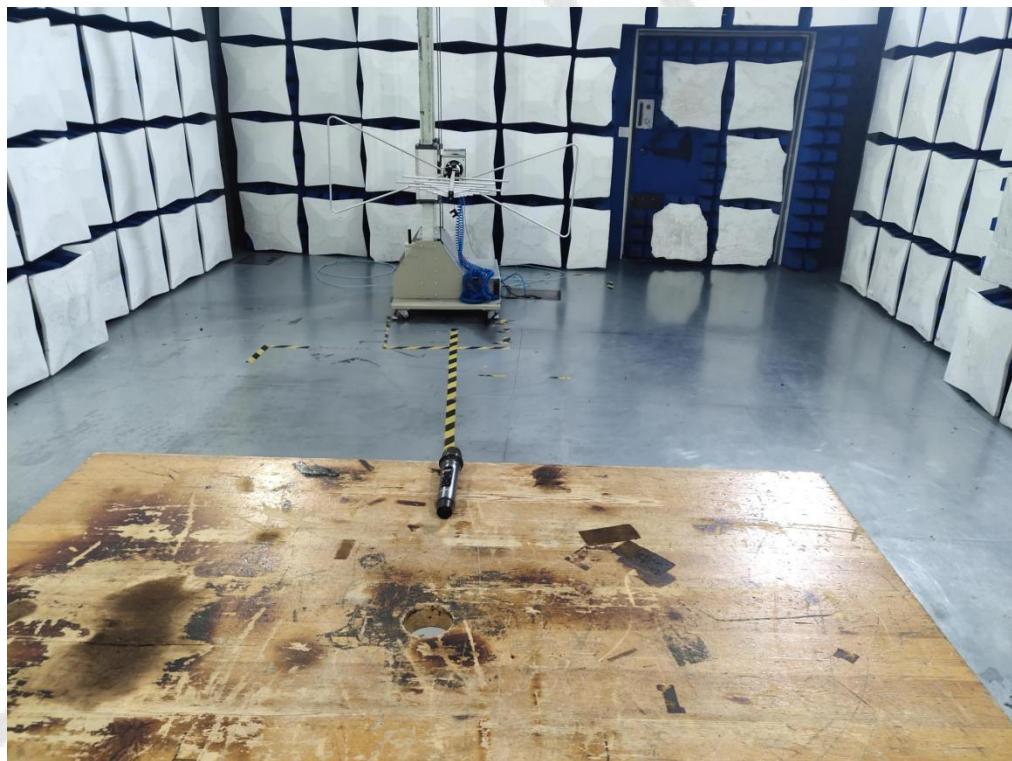


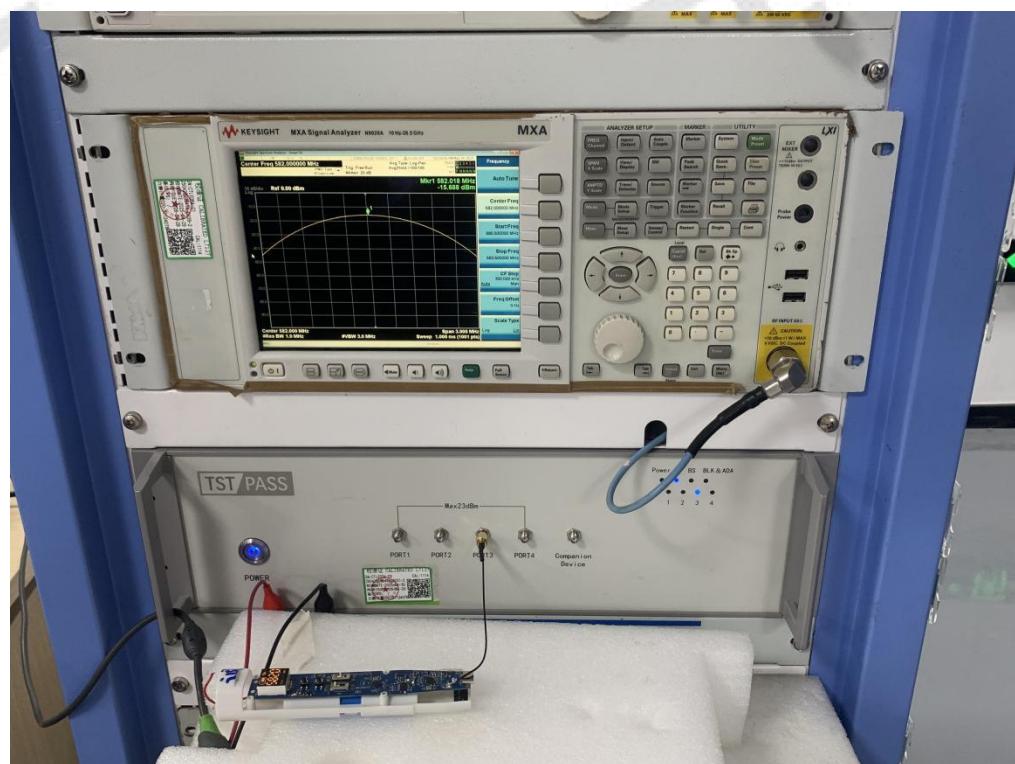
Test Results

Reference Frequency: 580MHz					
Voltage (V)	Temperature (°C)	Frequency error (MHz)	Frequency Tolerance (%)	Limit (%)	Result
3.70	-20	0.01815	0.00313	±0.005	PASS
	-10	0.01842	0.00318		
	0	0.01725	0.00297		
	10	0.01792	0.00309		
	20	0.01820	0.00314		
	30	0.01762	0.00304		
	40	0.01743	0.00301		
	50	0.01827	0.00315		
4.07	25	0.01910	0.00329		
3.33	25	0.01914	0.00330		

Note: The report tests all channel data, but this report only records the worst channel data.

4. Test Setup Photos of the EUT





5. External and Internal Photos of the EUT

External Photos of EUT

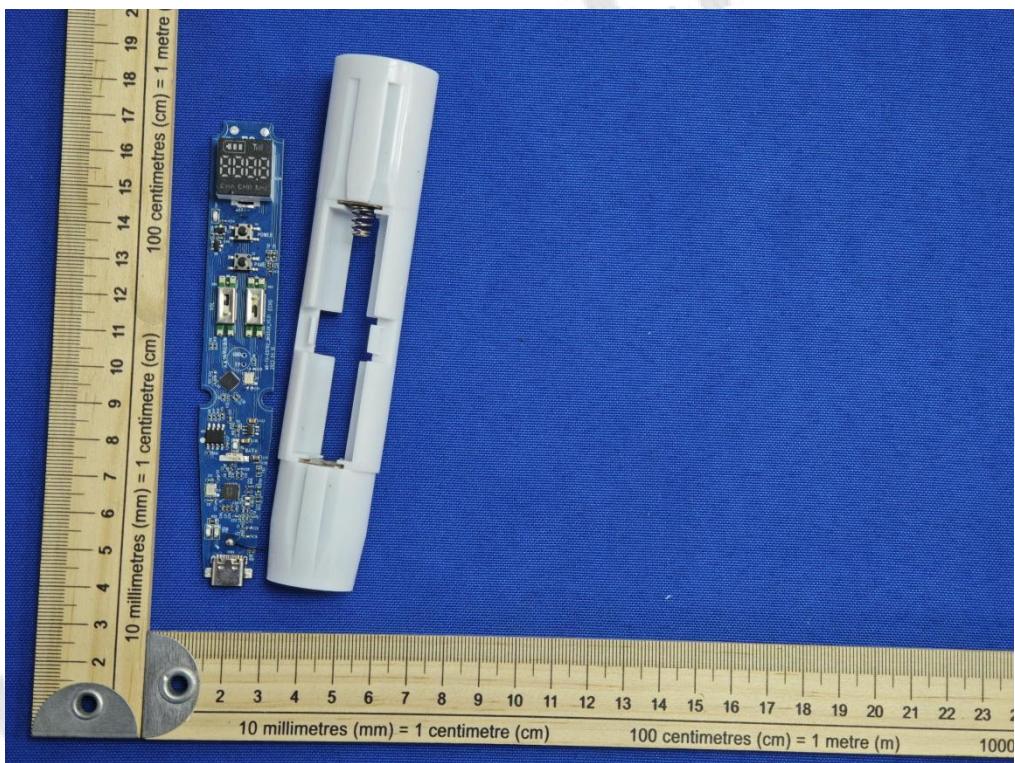


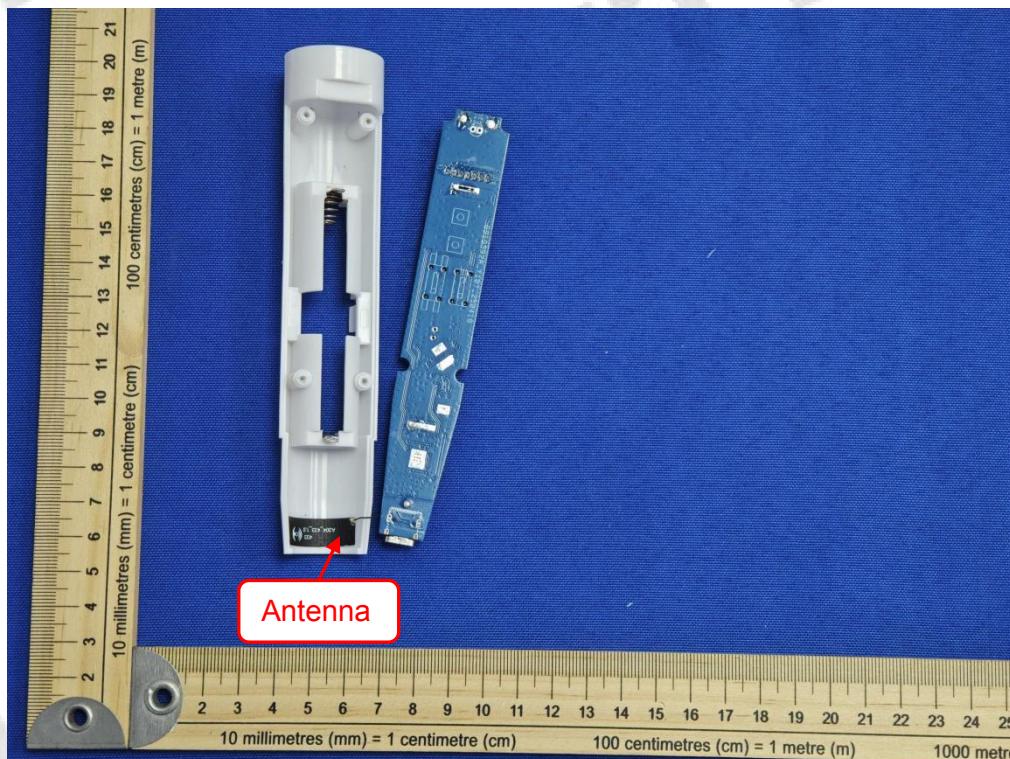
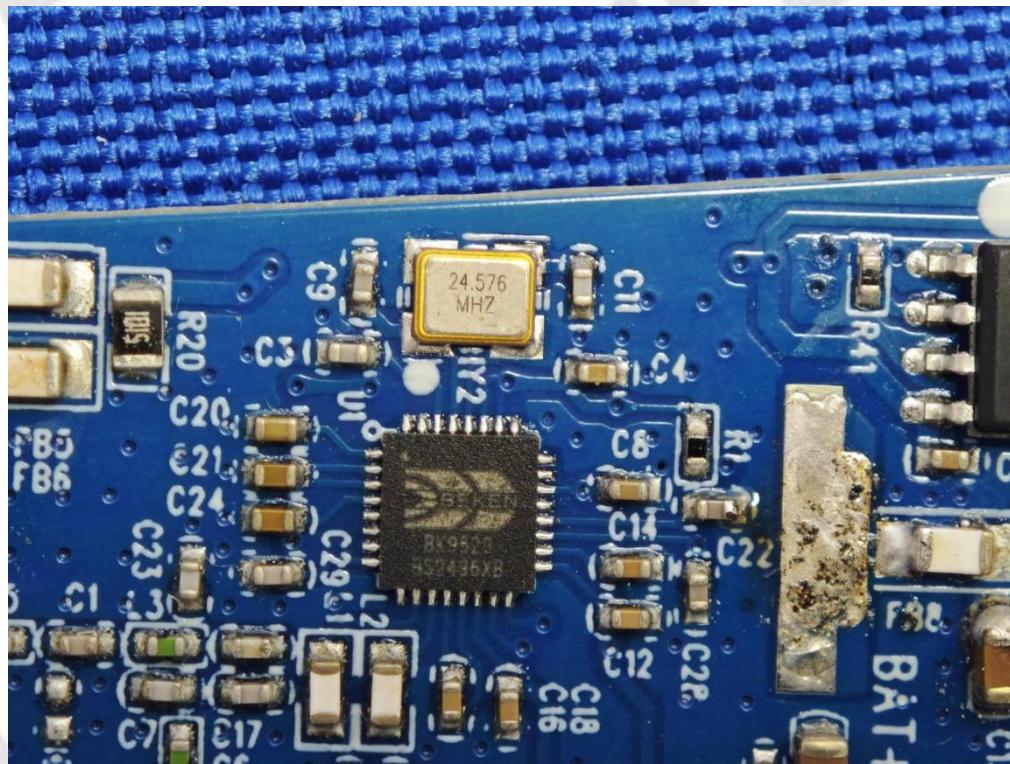


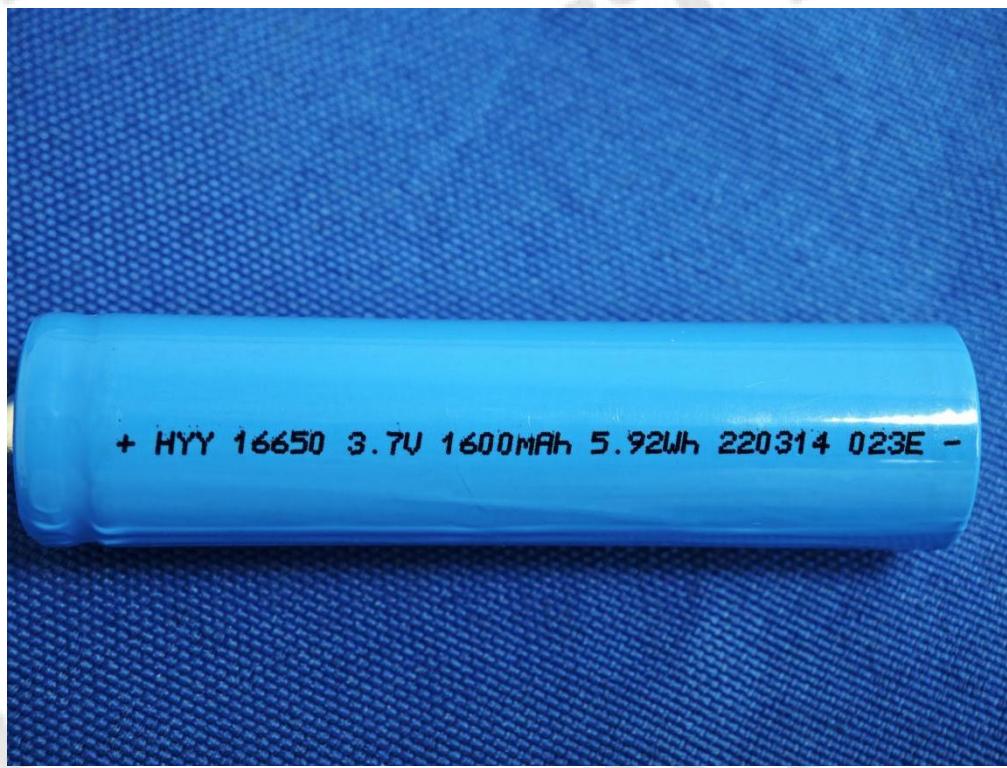
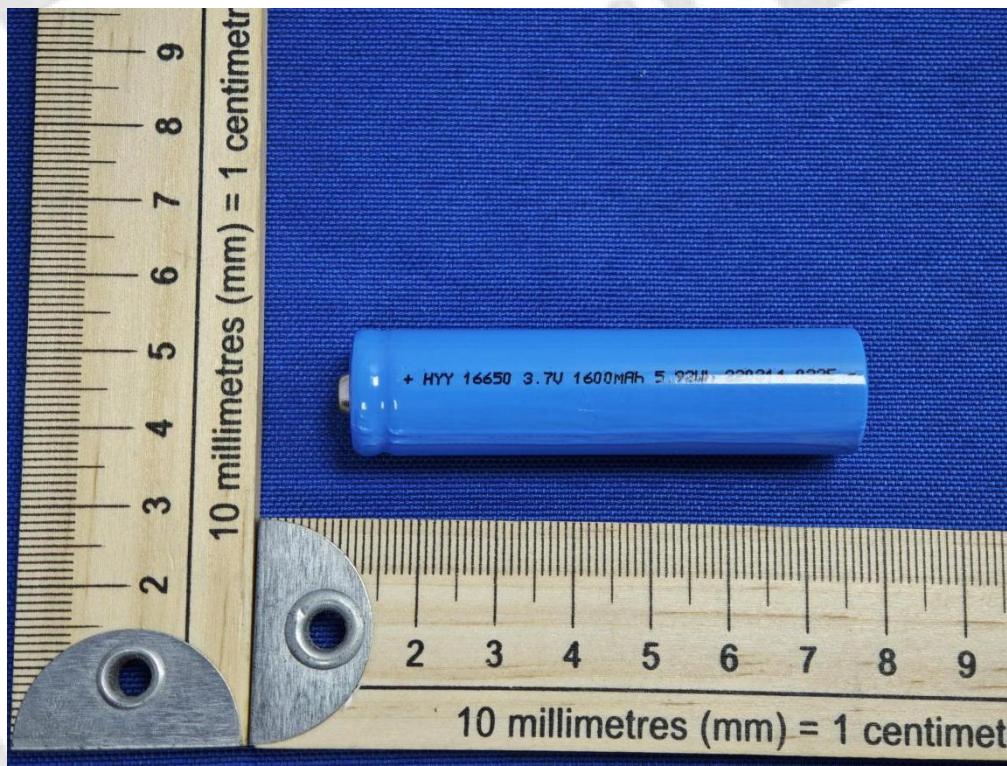




Internal Photos of EUT







*******End of Report*******