TEST REPORT

Report No.:	BCTC2409989382E
Applicant:	SHENZHEN XIEXUNDA TECHNOLOGY CO.,LTD
Product Name:	wireless microphone
Test Model:	H21H-2
Tested Date:	2024-09-05 to 2024-09-26
Issued Date:	2024-09-26

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AYOB-H21H

Product Name:	wireless microphone
Trademark:	/
Model/Type reference:	H21H-2 See Section 4.1 for details.
Prepared For:	SHENZHEN XIEXUNDA TECHNOLOGY CO.,LTD
Address:	4th Floor, Building 1, Jinwen Science and Technology Innovation Park, Sanwei, Hangcheng Street, Bao'an District, Shenzhen
Manufacturer:	SHENZHEN XIEXUNDA TECHNOLOGY CO.,LTD
Address:	4th Floor, Building 1, Jinwen Science and Technology Innovation Park, Sanwei, Hangcheng Street, Bao'an District, Shenzhen
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2024-09-05
Sample tested Date:	2024-09-05 to 2024-09-26
Issue Date:	2024-09-26
Report No.:	BCTC2409989382E
Test Standards:	FCC Part 74H ANSI C63.10-2013
Test Results:	PASS

Tested by:

Willem Wang

Willem Wang/Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2403267399E	2024-09-26	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Output Power Measurement	§74.861(e)(1)(ii)	PASS
2	Occupied Bandwidth Emission	§74.861(e)(5)	PASS
3	Radiated Spurious Emission	§74.861(e)(6)	PASS
4	Spurious Emission at Antenna Port	§2.1051	PASS
5	Frequency Stability	§74.861(e)(4)	PASS

3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59℃

4. Product Information And Test Setup

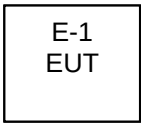
4.1 Product Information

Model/Type reference:	AH100
Model differences:	H21H-1, H21H-2, HM21-1, HM21-2, H12G-1, H21G-2, H21G-4, H21GS-1, H21GS-2, H21GS-4, H15H-1, H15H-2, H15H-4, H15G-1, H15G-2, H16L-1, H16L-2, H16GL-1, H16GL-2, H16GLS-1, H16GLS-2, H17U-1, H17U-2, H17G, H17G-1, H17G-2, H17G-4, H17GL-1, H17GL-2, H17GL-4, H17GLS-1, H17GLS-2, H17GLS-4, H18GS-1, H18GS-2, H19G-1, H19G-2, H20G-1, H20G-2, H20G-4, H22G-1, H22G-2, H22G-4, H23H-1, H23H-2, H23G-1, H23G-2, H23G-4, H23VL-1, H23VL-2, H23GL-1, H23GL-2, H23GLS-1, H23GLS-2, H23GLS-4, H24H-1, H24H-2, H24G-1, H24G-2, H24G-4, H25H-1, H25H-2, H25G-1, H25G-2, H25G-4, H26H-1, H26H-2, H26G-1, H26G-2, H26G-4, U30D, TU52, U50, U50-2, U50-T2, U50-8, U50-T, U50-T2, U50-HT, US50-4, US50-T4, US50-H4, US50-HT2, US50-8, US50-T8, US50-H8, US50-HT4, US60-4, US60-T4, US60-HT2, US60-H4, US60-8, US60-H8, US60-T8, US70-HT4, US70-4, US70-T4, US70-HT2, US70-H4, US70-8, US60-H8, US70-T8, US70-HT4, GL10-1, GL10-2, GL11-1, GL11-2, GL11-4, GL12-1, GL-12-2, GL12-4, GL13-1S, GL13-1, GL13-2, GL13-3, GL13-4, GL13-5, GL13-6, GL13-8, G03, Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, AL11, AL12, AL13, AL51, AL52, GL51, GL52, ALU1, ALU2, GL61, GL61-1 TYPE-C, GL61-2 TYPE-C, GL61-1 lighting, GL61-2 lighting, G03, G03-2, G06, G06-2, G06-4, G103, G103-2, G106, G106-2, G106-4, U12FS-4, U12F, U12F-1, U12B, U12B2, U106AS, U106AS2, G3 ,G3-2, G6, G6-2, G6-4, U12D, U12DX, G11DX, G12DX, G12DS, U12WDZ, U12SKS-T, U12SKS-T2, G18SKS-T, U13SKS-T, G30, G30-1, G30-2, G13SKS-T, G13SKS-T2, 04-YDZ, 04-KDZ, V16LS-1, V16LS-2, F08, F08V, F08L, F08ML, SK30-3.5, SK32-3.5, S1, S1 PRO, S2, S2 PRO, S3, S3 PRO, S4, S4 PRO, S5, S5 PRO, S6, S6 PRO, S7, S7PRO, S8, S8 PRO, S9, S9 PRO, S10, S10 PRO, X1, X1 PRO, X2, X2 PRO, X3, X3 PRO, X4, X4 PRO, X5, X5 PRO, X6, X6 PRO, X7, X7 PRO, X8, X8 PRO, XS1, XS1 PRO, XS2, XS2 PRO, XS3, XS3 PRO, XS4, XS4 PRO, XS5, XS5 PRO, XS6, XS6 PRO, K1, K2, K3, K4, K5, K6, K7, K8, K9, K10
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	573.5MHz~586.5MHz
Type of Modulation:	GFSK
Number Of Channel	12 Channel
Antenna installation:	Integral Antenna
Antenna Gain:	-0.26 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Ratings:	DC 5V charging from adapter, DC 3.7V by battery

4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Radiated Spurious Emission



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	wireless microphone	/	H21H-2	N/A	EUT

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	573.5	2	574.5	3	575.5	4	576.5
5	578.5	6	579.5	7	580.5	8	581.5
9	583.5	10	584.5	11	585.5	12	586.5

4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Description
Mode 1	Transmitting (CH1:573.5MHz)
Mode 2	Transmitting (CH6:579.5MHz)
Mode 3	Transmitting (CH12:586.5MHz)

Note:
The measurements are performed at the available channels.

4.6 Test Conditions

	Normal	LTLV	LTHV	HTHV	HTLV
Temperature (℃)	20	-20	-30	50	50
Voltage (V)	3.7	3.33	4.07	3.33	4.07

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.
FCC Test Firm Registration Number: 712850
A2LA certificate registration number is: CN1212
ISED Registered No.: 23583
ISED CAB identifier: CN0017

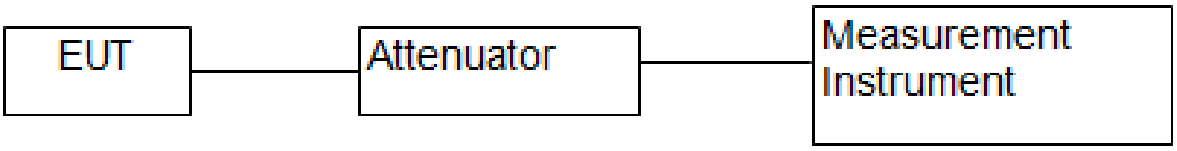
5.2 Test Instrument Used

RF Conducted Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Power meter	Keysight	E4419	\	May 16, 2024	May 15, 2025
Power Sensor (AV)	Keysight	E9300A	\	May 16, 2024	May 15, 2025
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025

Radiated Emissions Test (966 Chamber01)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025
Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 21, 2024	May 20, 2025
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
Amplifier	SKET	LAPA_01G18G-45dB	SK2021040901	May 16, 2024	May 15, 2025
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. RF Output Power

6.1 Block Diagram Of Test Setup



6.2 Limit

According to FCC 74.861(e)(1)(ii)
For low power auxiliary station operating in the 470-608, and 614-698 MHz bands, the power of the measured unmodulated carrier power ant the output of the transmitter power amplifier (antenna input power) may not exceed 250mW.

6.3 Test Procedure

1. The maximum peak output power was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in unmodulated situation.
2. Set the spectrum analyzer: RBW = 3MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value. Measure and record the results in the test report.

6.4 EUT Operating Conditions

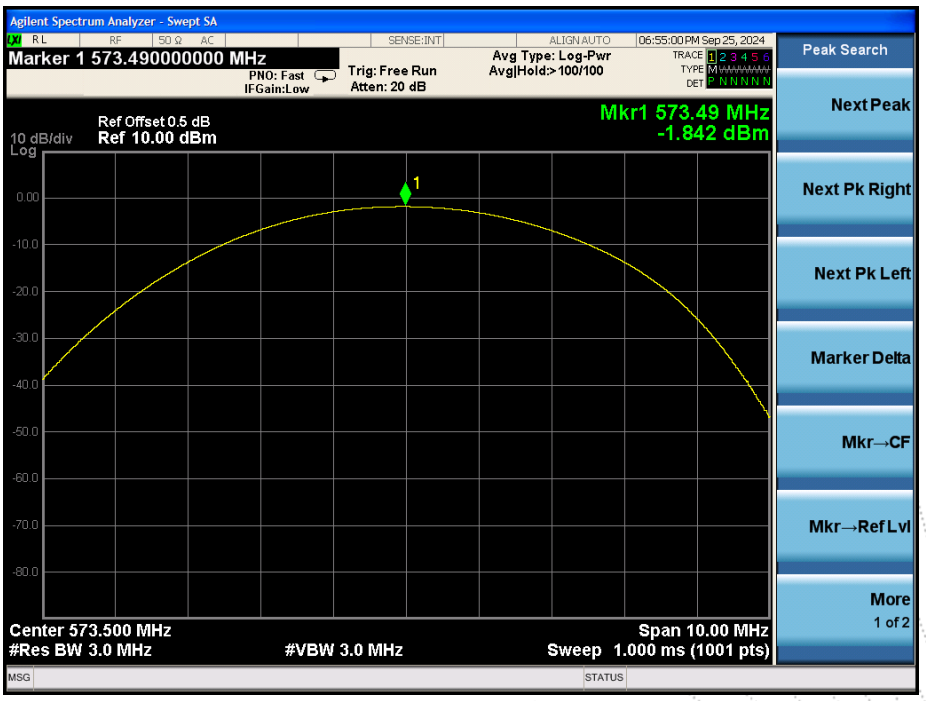
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

6.5 Test Result

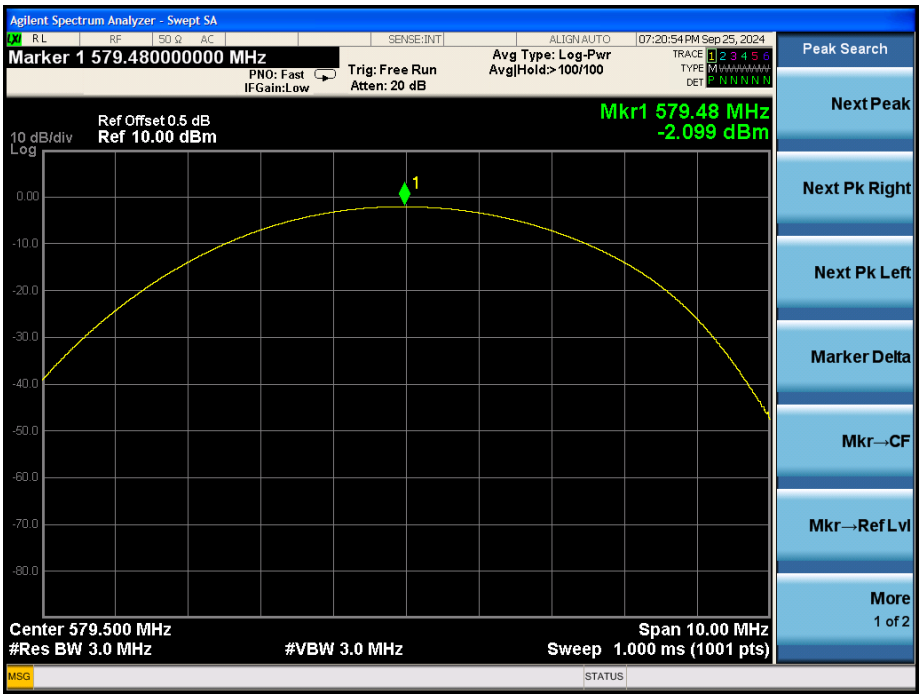
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V

Channel	Frequency (MHz)	conducted power (dBm)	conducted power (mW)	Limit (mW)
Low	573.5	-1.842	0.65	250
Middle	579.5	-2.099	0.62	250
High	586.5	-2.119	0.61	250

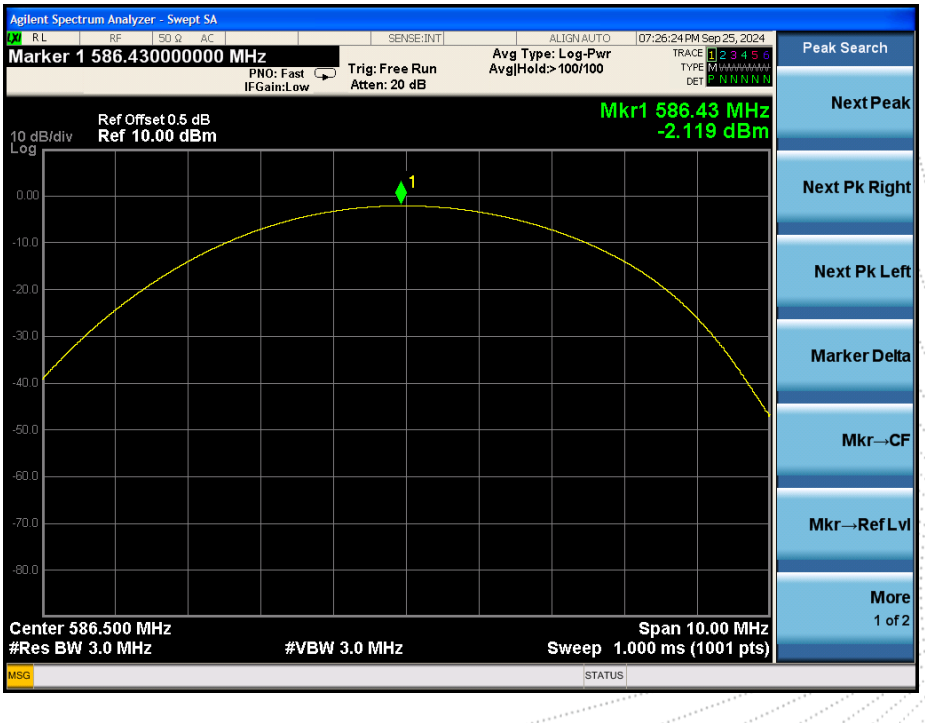
Low Channel



Middle Channel



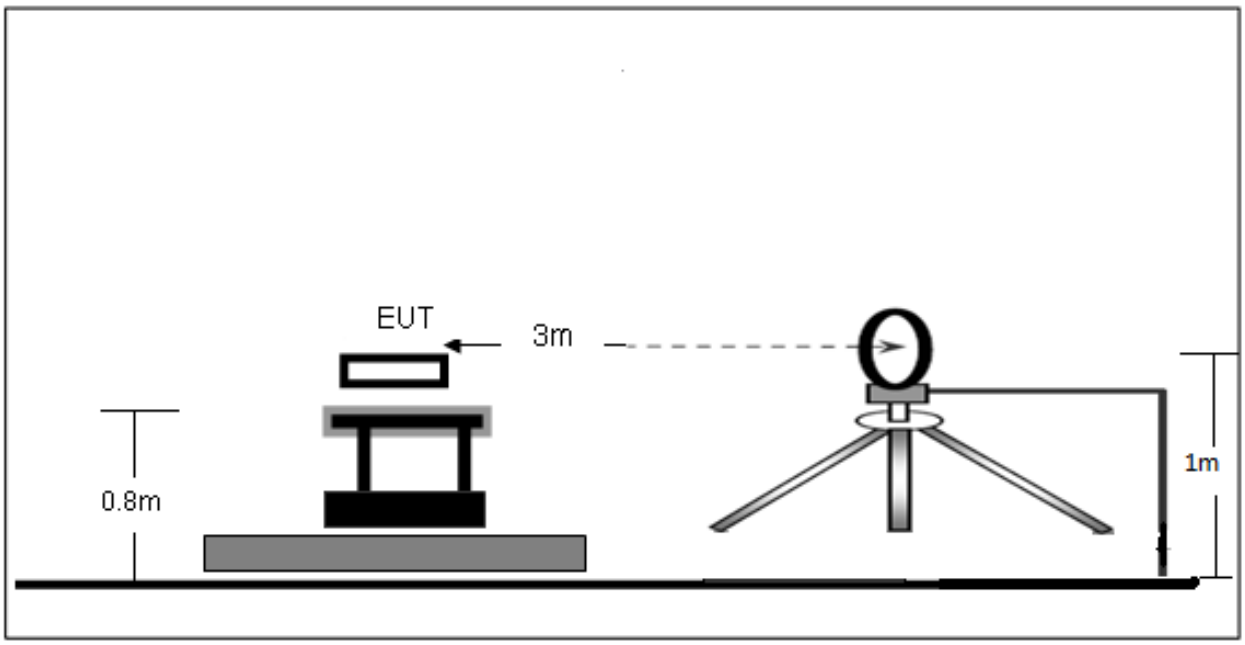
High Channel



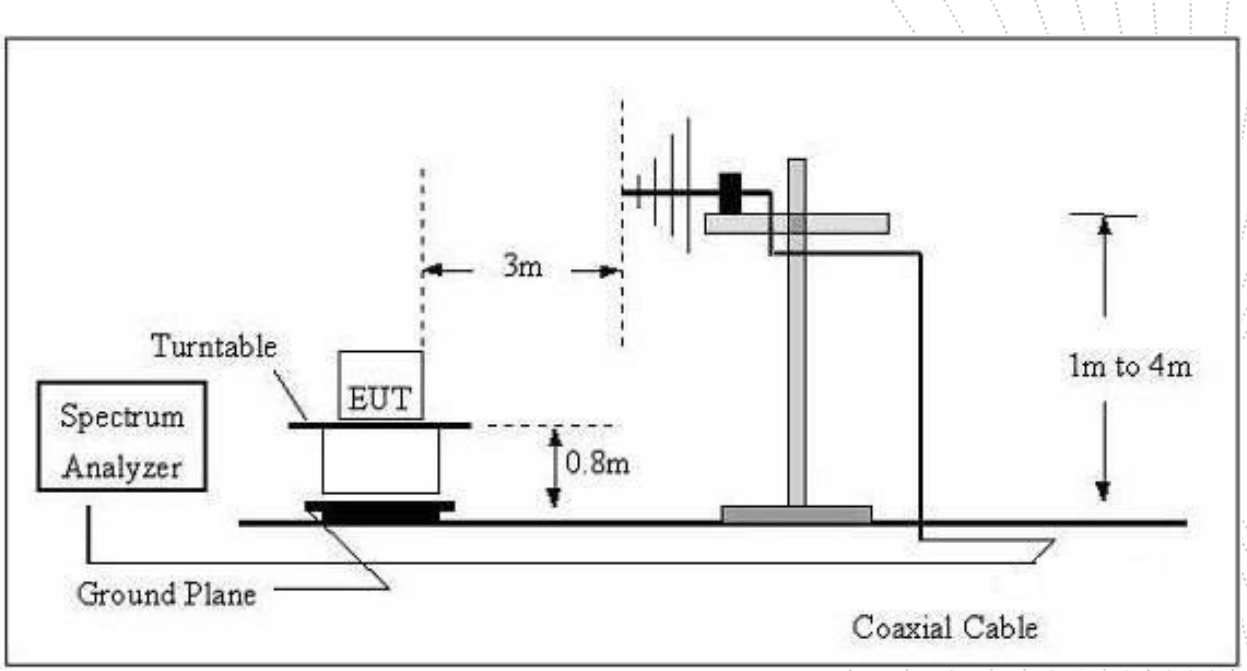
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

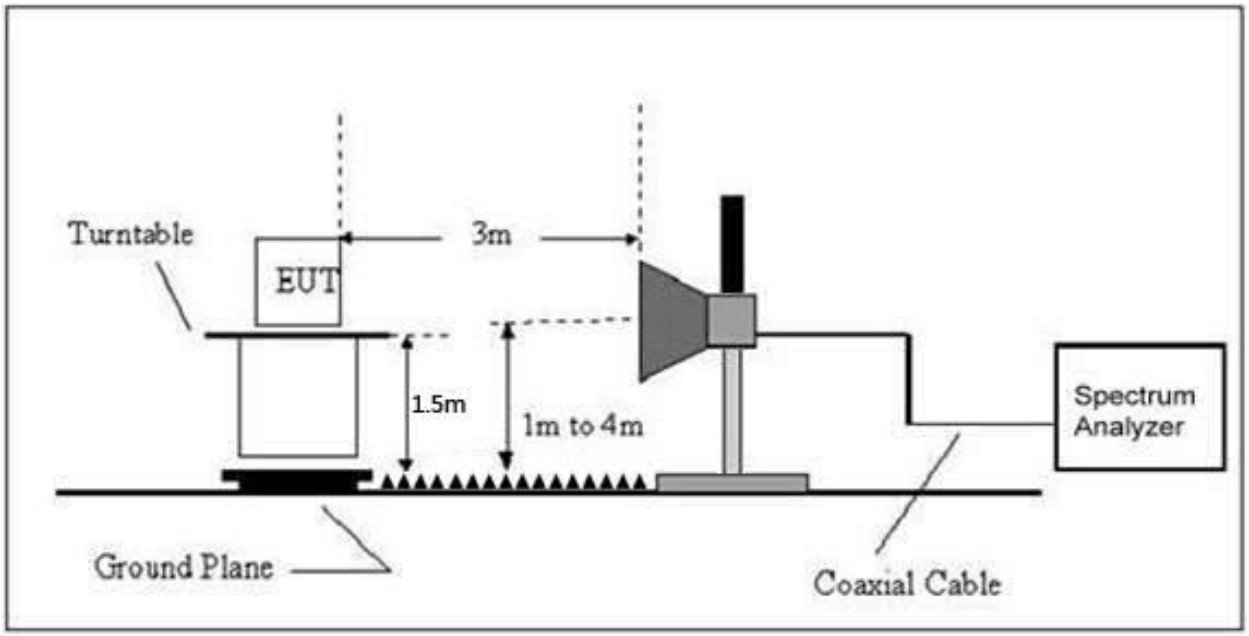
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



7.2 Limit

According to FCC74.861 (e)(6) and FCC 2.1053
According to FCC 2.1053, measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediated circuit elements under normal condition of installation and operation. Information submitted shall include the relative radiated power of spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from a halfwave dipole antenna.
According to FCC74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
1. On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.
2. On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.
3. On any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least 43 plus 10 Log (output power in watts) dB

7.3 Test Procedure

The setup of EUT is according with ANSI C63.4-2014 measurement procedure.
a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.
b) Each emission under consideration shall be evaluated:
1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
3) Return the turntable to the azimuth where the highest emission amplitude level was observed.
4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
5) Record the measured emission amplitude level and frequency using the appropriate RBW.
c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
d) Set-up the substitution measurement with the reference point of the substitution antenna located as ear as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize ny potential influences on the measurement results. Set the signal generator to the frequency here emissions are detected, and set an output power level such that the radiated signal can be etected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:
1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).
3) Record the output power level of the signal generator when equivalence is achieved in step 2).
h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.
The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
The frequency range up to tenth harmonic of the fundamental frequency was investigated.
Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
Spurious attenuation limit in dB = 43 + 10 Log10 (power in Watts)

7.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

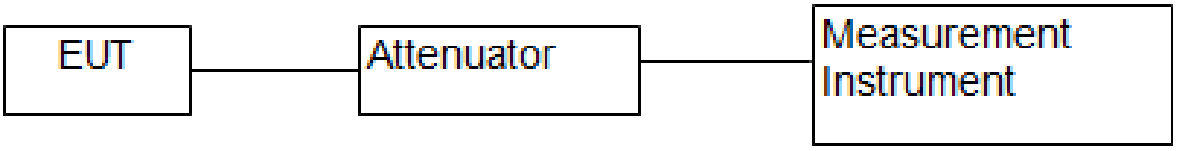
7.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (573.5MHz)						
159.23	-43.57	-11.18	-54.75	-13.00	-41.75	H
1147.00	-16.85	-14.65	-31.50	-13.00	-18.50	H
2294.00	-19.51	-13.64	-33.15	-13.00	-20.15	H
152.66	-42.77	-11.35	-54.12	-13.00	-41.12	V
1147.00	-25.15	-14.65	-39.80	-13.00	-26.80	V
2294.00	-29.11	-13.64	-42.75	-13.00	-29.75	V
Middle Channel (579.5MHz)						
154.35	-44.68	-11.29	-55.97	-13.00	-42.97	H
1159.00	-16.66	-14.58	-31.24	-13.00	-18.24	H
2318.00	-20.15	-13.51	-33.66	-13.00	-20.66	H
155.69	-43.69	-11.27	-54.96	-13.00	-41.96	V
1159.00	-23.18	-14.58	-37.76	-13.00	-24.76	V
2318.00	-26.93	-13.51	-40.44	-13.00	-27.44	V
High Channel (586.5MHz)						
160.15	-45.65	-11.08	-56.73	-13.00	-43.73	H
1173.00	-17.14	-14.50	-31.64	-13.00	-18.64	H
2346.00	-20.65	-13.47	-34.12	-13.00	-21.12	H
158.56	-44.25	-11.24	-55.49	-13.00	-42.49	V
1173.00	-23.14	-14.50	-37.64	-13.00	-24.64	V
2346.00	-29.45	-13.47	-42.92	-13.00	-29.92	V

8. Occupied Bandwidth

8.1 Block Diagram Of Test Setup



8.2 Limit

According to §74.861(e)(5), the operating bandwidth shall not exceed 200 kHz.

8.3 Test Procedure

1. Set RBW = 1%-5% OBW.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.

8.4 EUT Operating Conditions

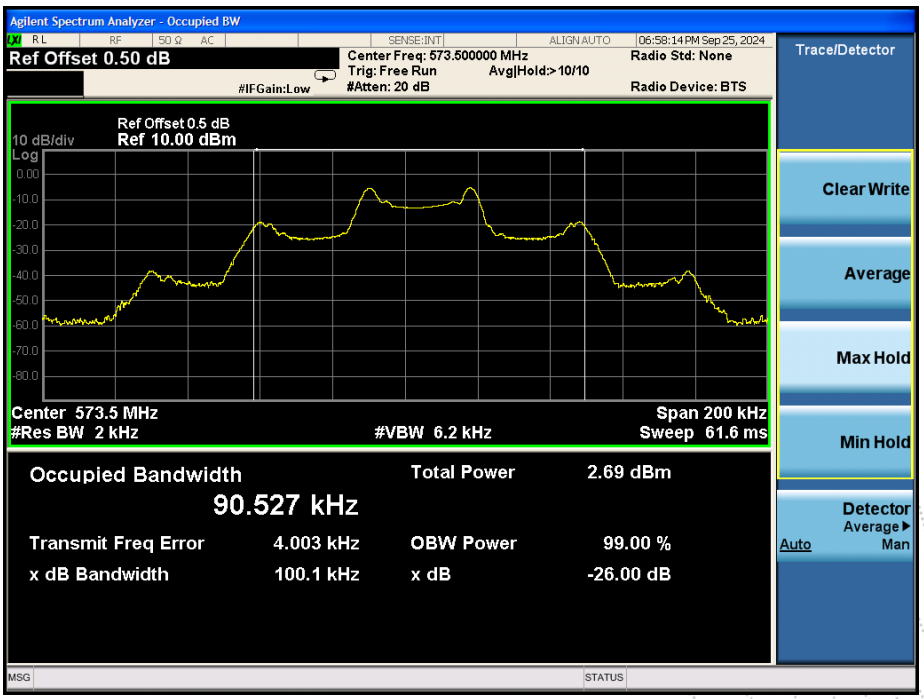
The EUT tested system was configured as the statements of 2.4 unless otherwise a special operating condition is specified in the follows during the testing.

9.5 Test Result

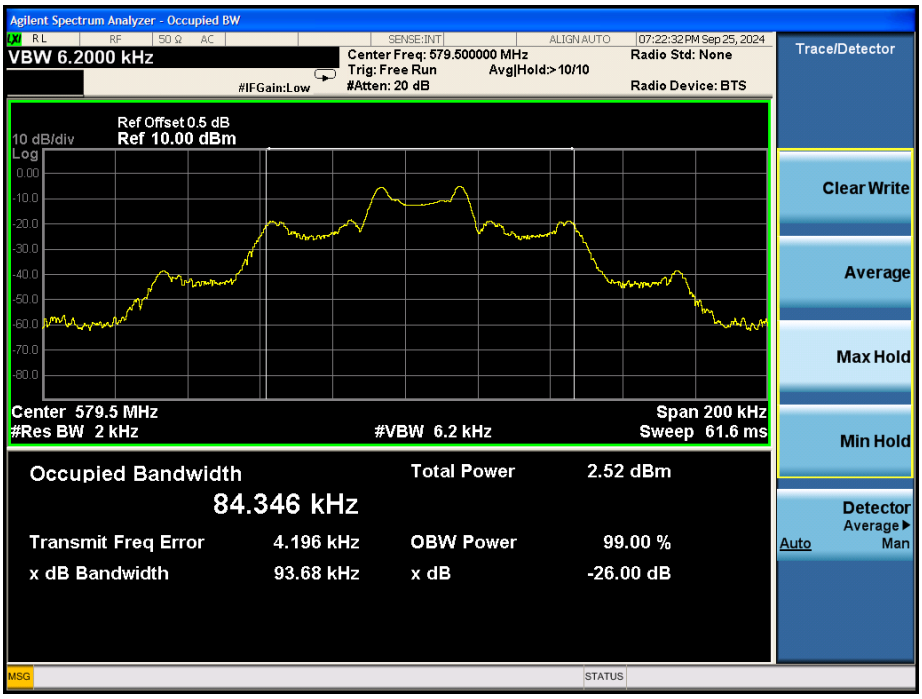
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V

Test Channel	Frequency (MHz)	99% Bandwidth (kHz)	Limit (kHz)
Low	573.5	90.527	200
Middle	579.5	84.346	200
High	586.5	88.347	200

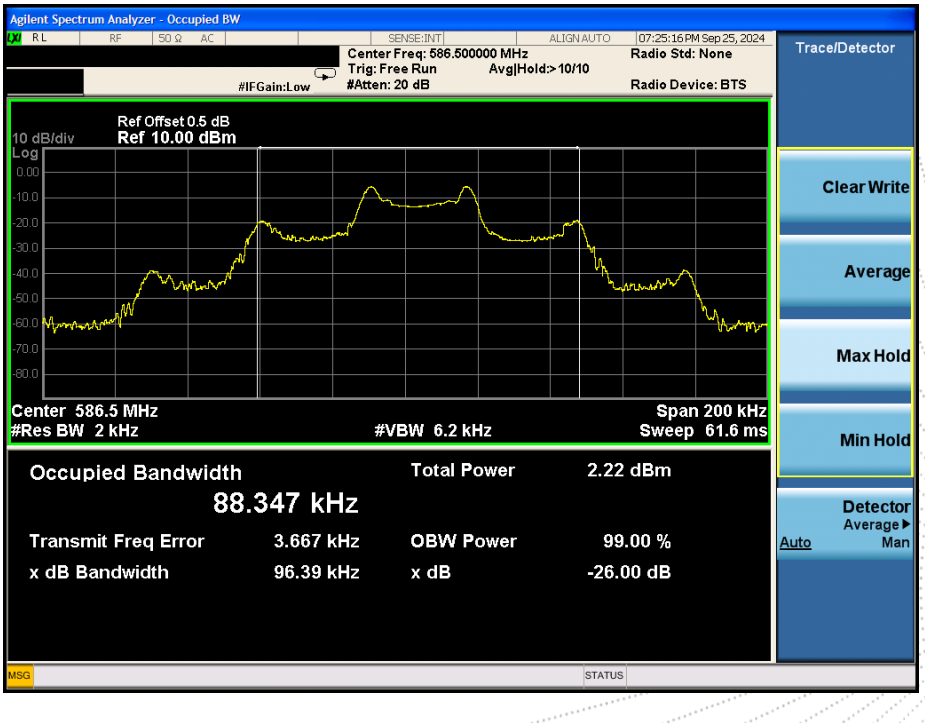
Low Channel



Middle Channel

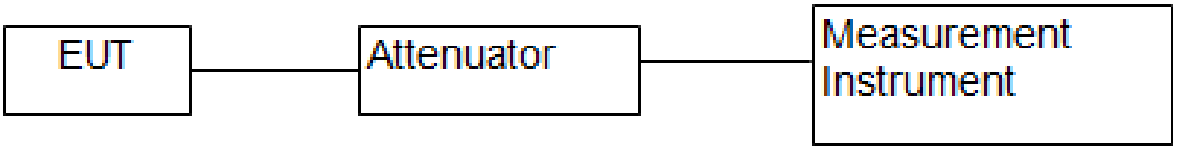


High Channel



9. Emission Mask

9.1 Block Diagram Of Test Setup



9.2 Limit

According to FCC 74.861(e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
1 On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.
2 On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.
3 On any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least 43 plus 10 Log (output power in watts) dB.
According to §74.861(e)(7), analog emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in section 8.3.1.2 of the European Telecommunications Institute Standard ETSI EN 300 422-1 v1.4.2 (2011-08),Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; part 1: Technical characteristics and methods of measurement. Digital emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in section 8.3.2.2 (Figure 4) of the European Telecommunications Institute Standard ETSI EN 300 422-1 v1.4.2 (2011-08), Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; part 1: Technical characteristics and methods of measurement.

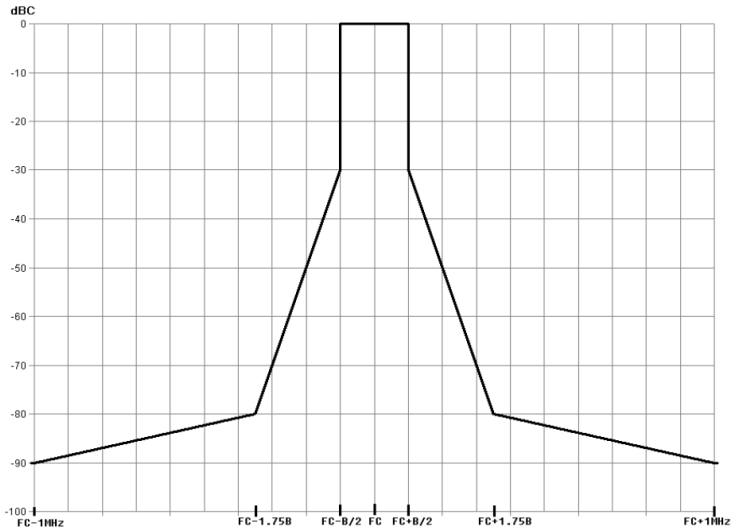


Figure 4: Spectrum mask for digital systems below 1 GHz

8.3 Test Procedure

Emissions:
spectrum analyzer setup:
Center Frequency = fc
Span = 2MHz
Detector = Peak
Trace Mode = Peak Hold
RBW&VBW=3 kHz/10kHz
Sweep time≥ 2 s

Emission Mask：
Step 1: spectrum analyzer setup:
Center Frequency = fc
Span = Zero span
Detector = RMS
Trace Mode = Average
RBW&VBW = 5 x B
Sweep time≥ 2 s

Step 2: spectrum analyzer setup:
Center Frequency = fc
Span = 2MHz
Detector =RMS
Trace Mode = Peak Hold
RBW&VBW=1 kHz
Sweep time≥ 2 s

Step 3: spectrum analyzer setup:
Start Frequency = fc + 1,75B and fc - 1 MHz below 1 GHz,
Start Frequency fc +B and fc - 1 MHz above 1 GHz.
Stop Frequency = fc +1 MHz and fc - 1,75 B below 1 GHz,
Stop Frequency fc+1 MHz and fc -B above 1 GHz.
Detector = RMS
Trace Mode = Average
RBW&VBW = 1 kHz
Sweep time ≥2 s

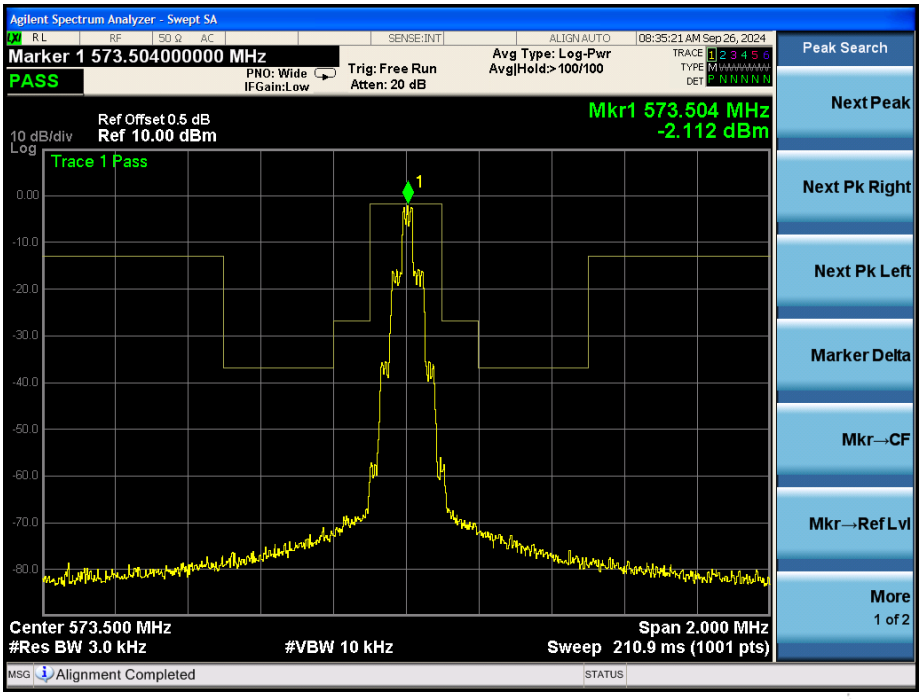
8.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 2.4 unless otherwise a special operating condition is specified in the follows during the testing.

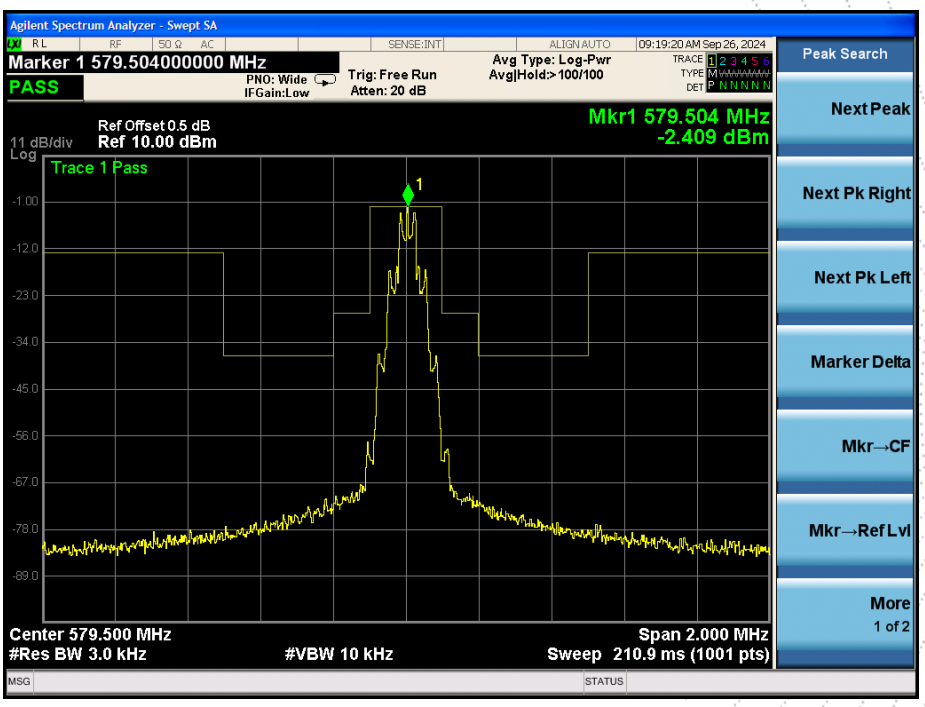
9.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V

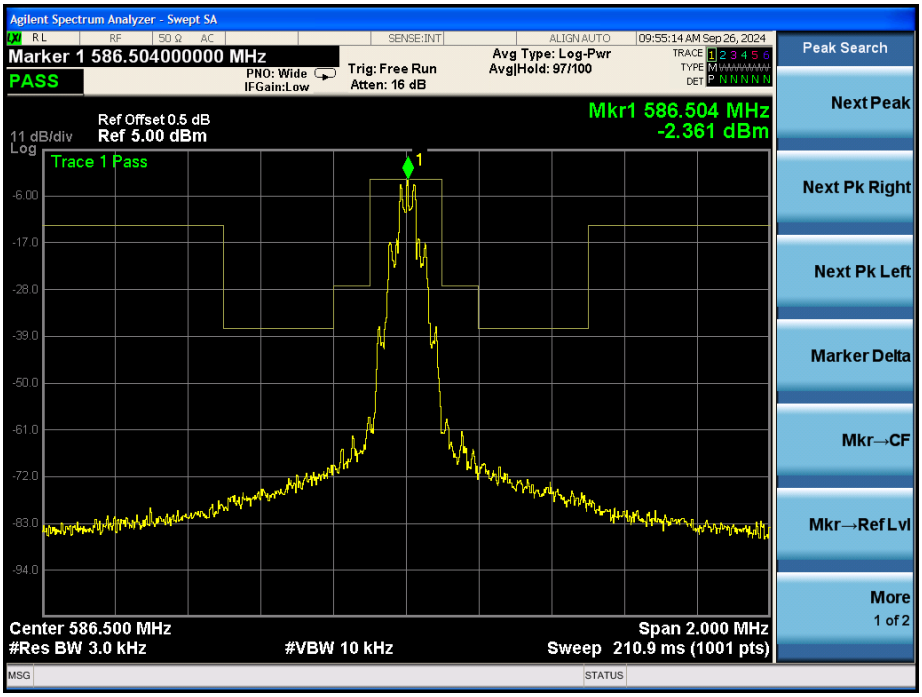
Emissions: Low Channel



Emissions: Middle Channel

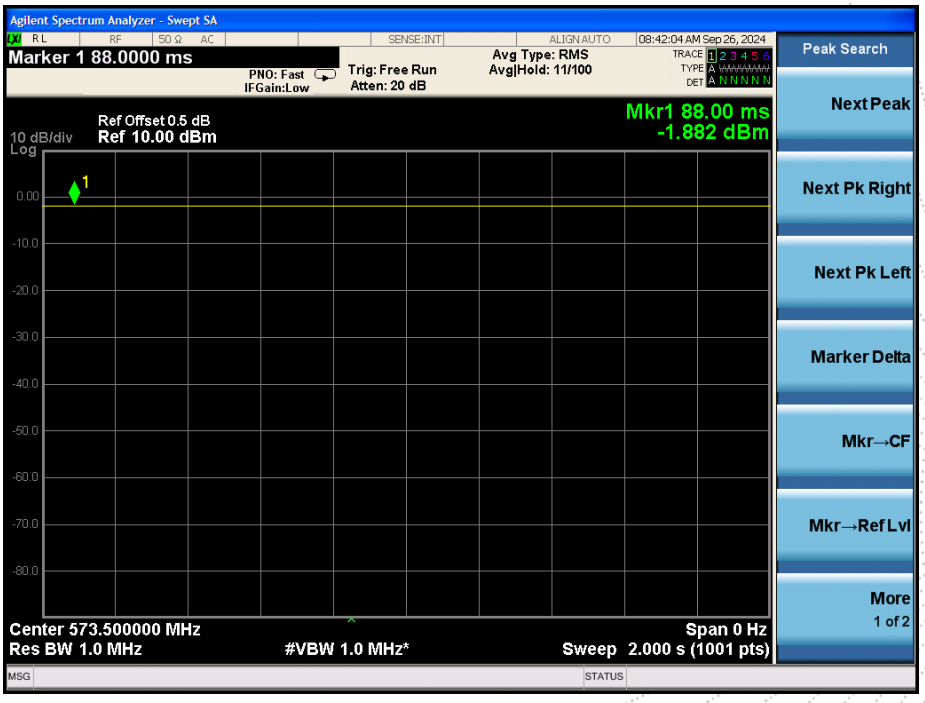


Emissions: High Channel

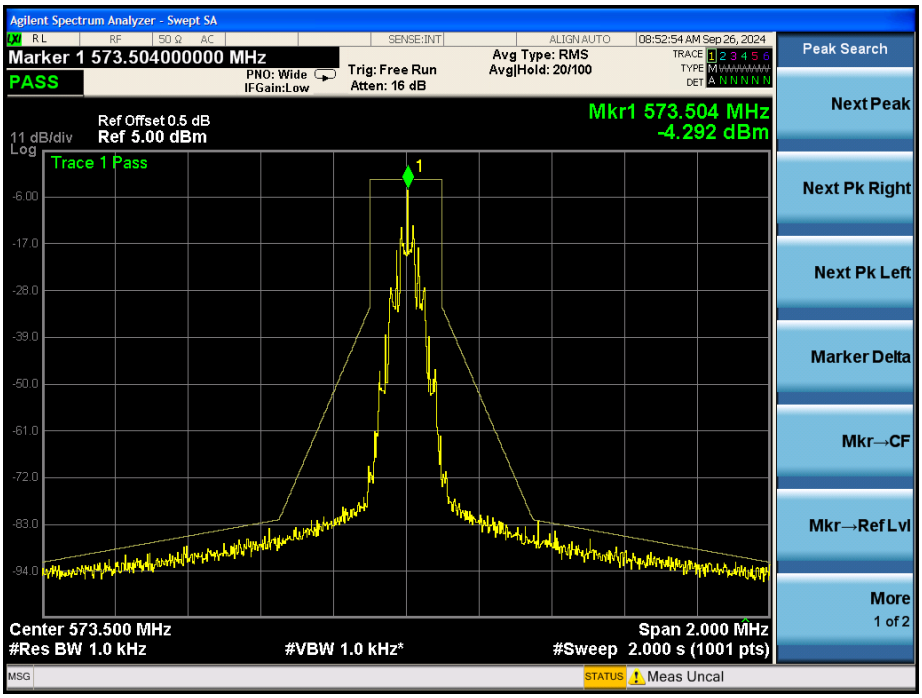


Emissions Mask: Low Channel

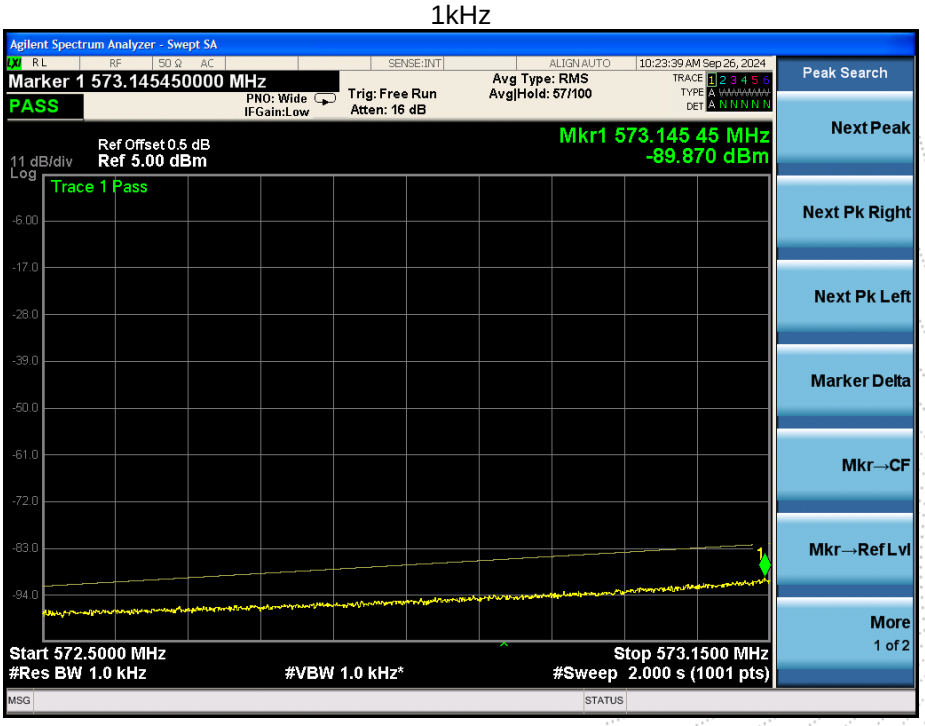
1kHz



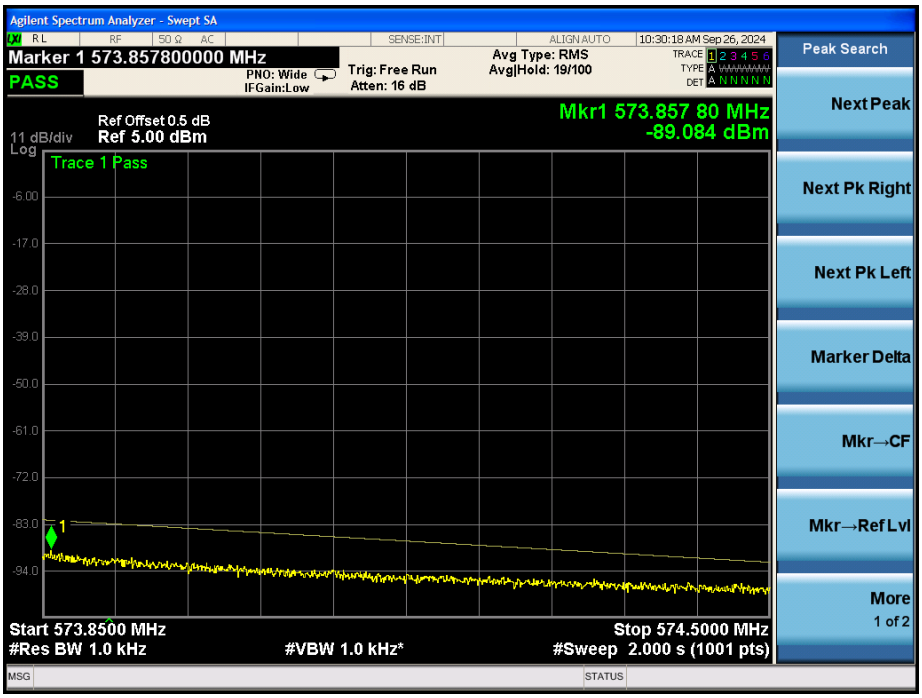
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.504000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 20/100
08:52:54 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 573.504 MHz
-4.292 dBm
Trace 1 Pass
Center 573.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Meas Uncal

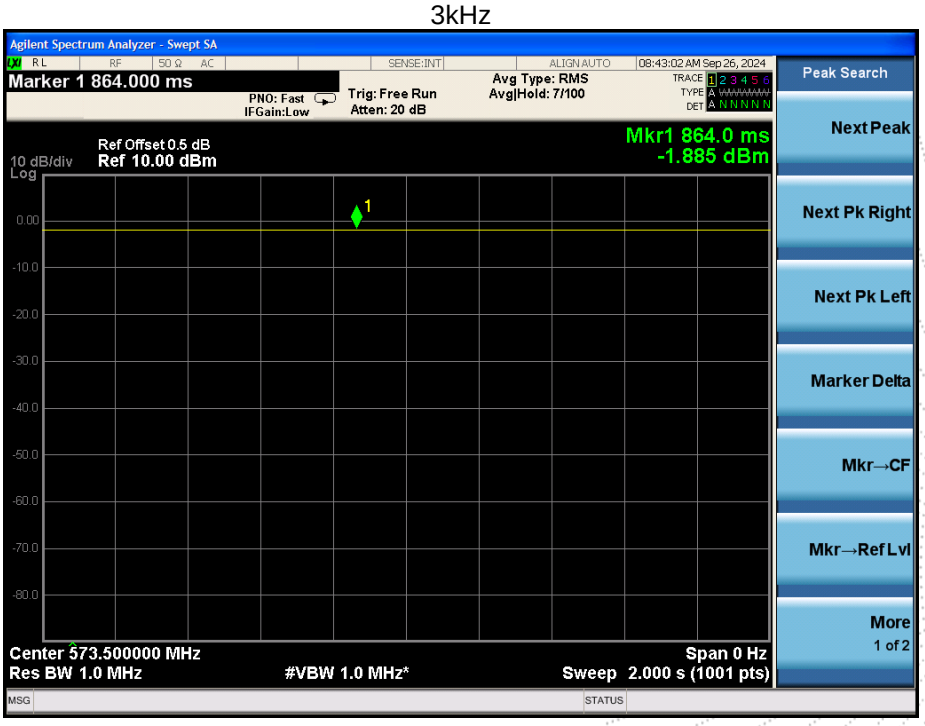
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.145450000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 57/100
10:23:39 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 573.145 45 MHz
-89.870 dBm
Trace 1 Pass
Start 572.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 573.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

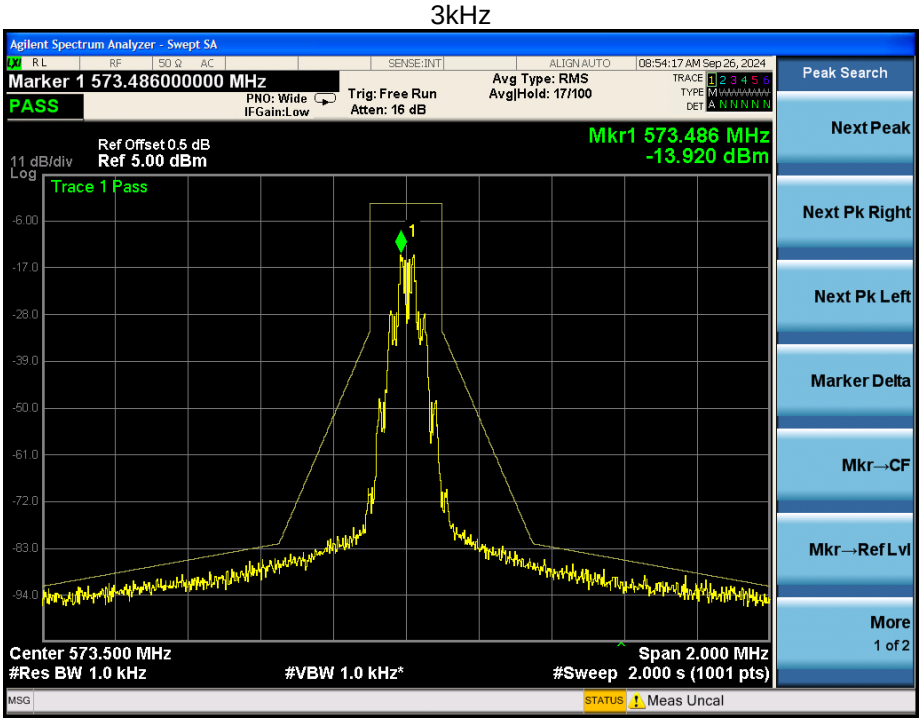
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.857800000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 19/100
10:30:18 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 573.857 80 MHz
-89.084 dBm
Trace 1 Pass
Start 573.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 574.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

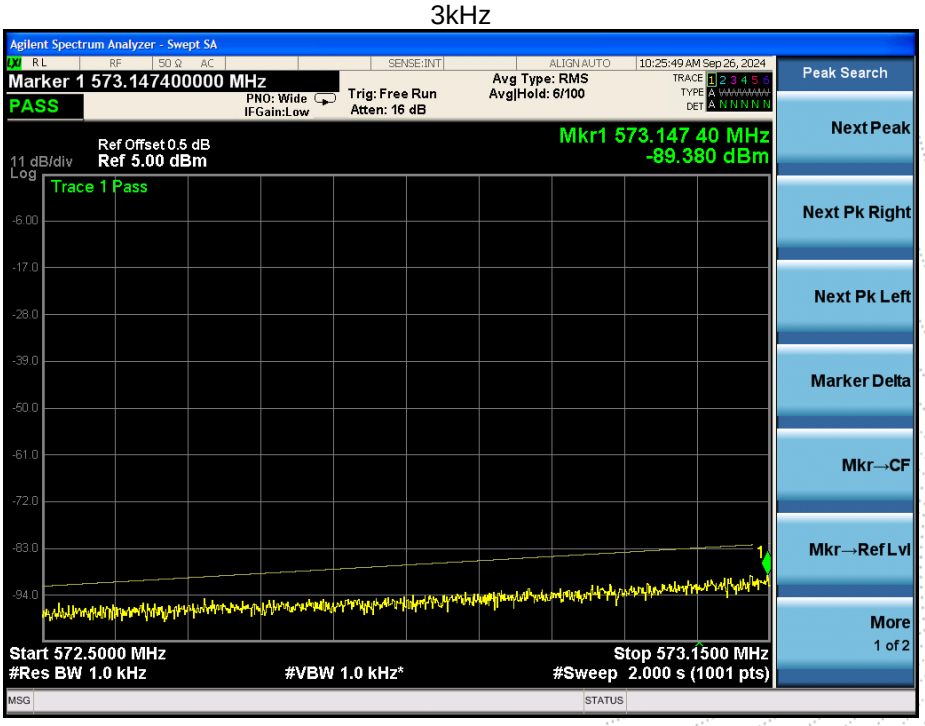
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 864.000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: RMS
Avg|Hold: 7/100
08:43:02 AM Sep 26, 2024
Ref Offset 0.5 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 864.0 ms
-1.885 dBm
Center 573.500000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz*
Span 0 Hz
Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

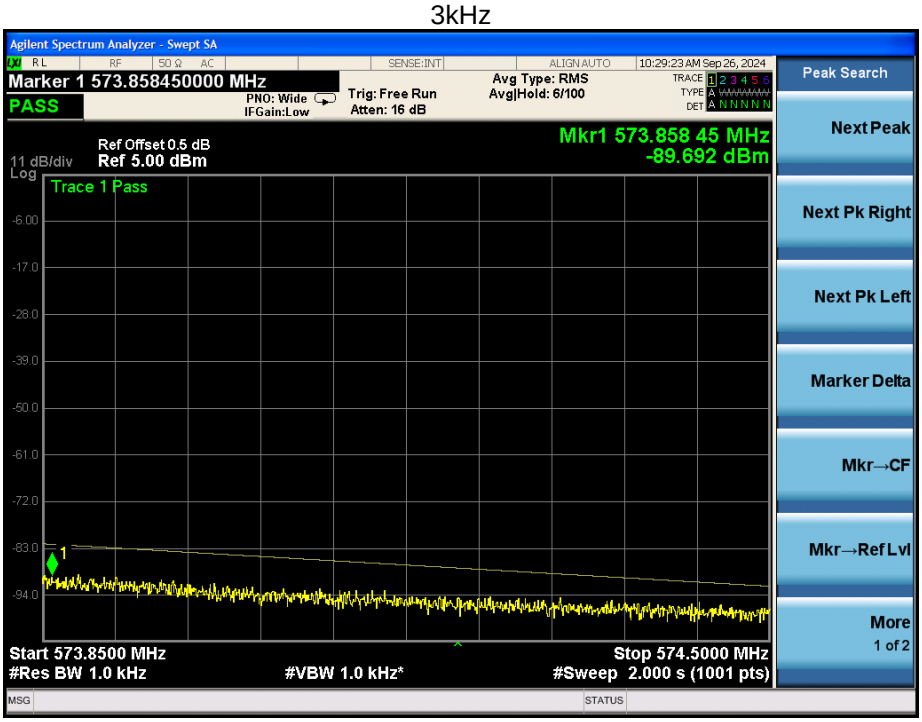
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.486000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 17/100
08:54:17 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 573.486 MHz
-13.920 dBm
Trace 1 Pass
Center 573.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Meas Uncal

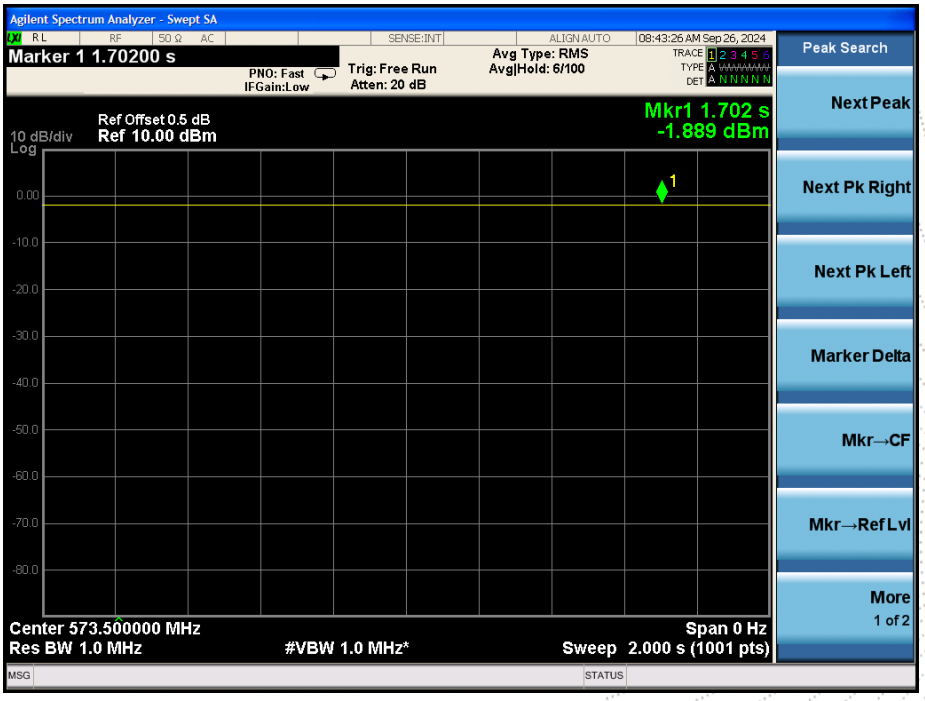
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.147400000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 6/100
10:25:49 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 573.147 40 MHz
-89.380 dBm
Trace 1 Pass
Start 572.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 573.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

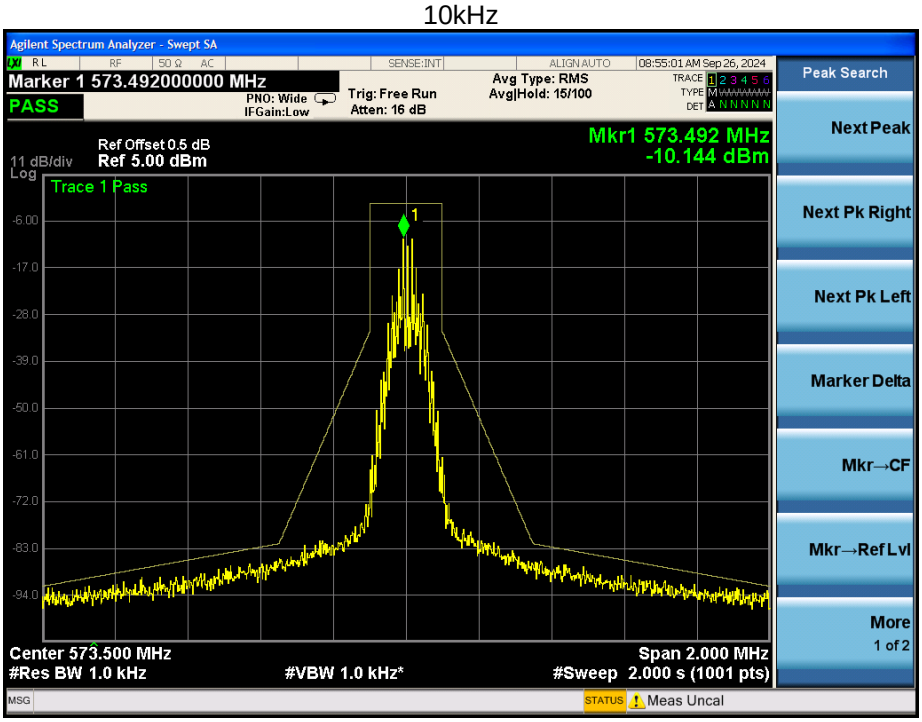
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.858450000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 6/100
10:29:23 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 573.858 45 MHz
-89.692 dBm
Trace 1 Pass
Start 573.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 574.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

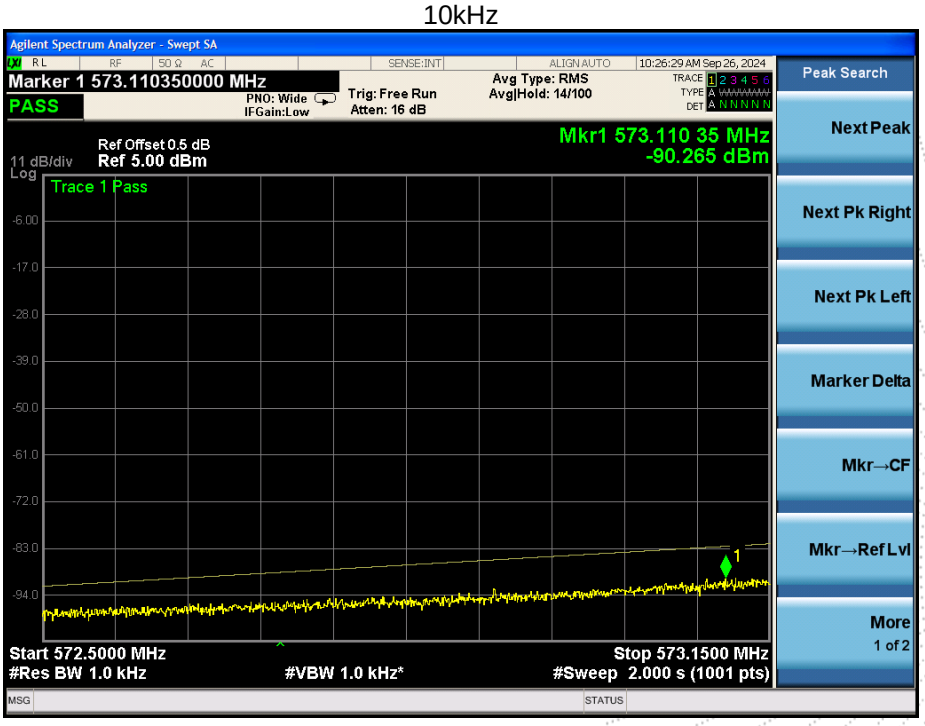
10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.70200 s
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: RMS
Avg|Hold: 6/100
08:43:26 AM Sep 26, 2024
Ref Offset 0.5 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 1.702 s
-1.889 dBm
Center 573.500000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz*
Span 0 Hz
Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

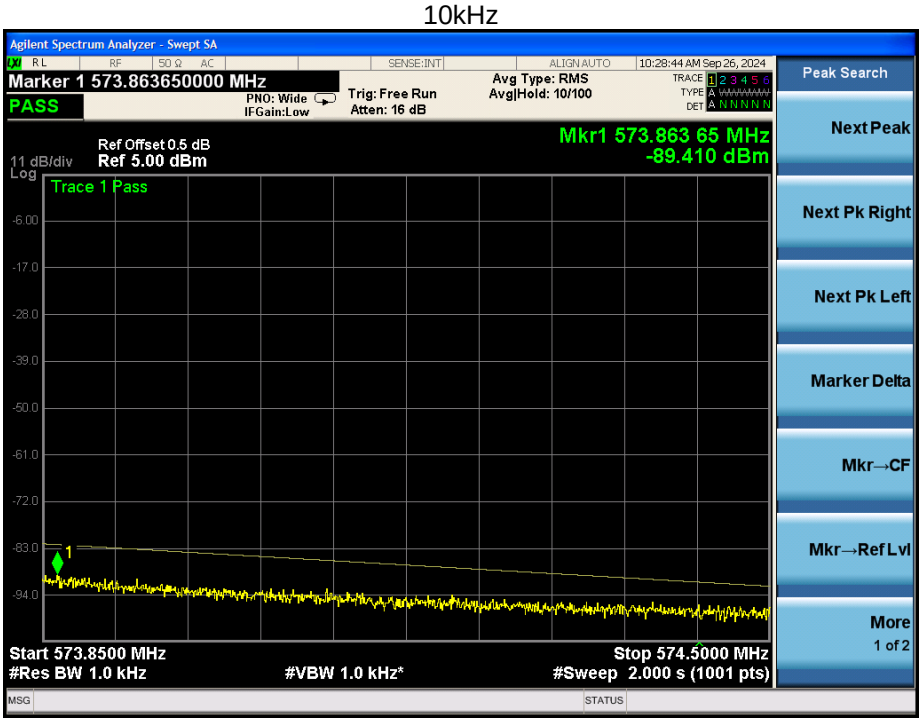
10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.492000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 15/100
08:55:01 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 573.492 MHz
-10.144 dBm
Trace 1 Pass
Center 573.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Meas Uncal

10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 573.110350000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 14/100
10:26:29 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 573.110 35 MHz
-90.265 dBm
Trace 1 Pass
Start 572.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 573.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

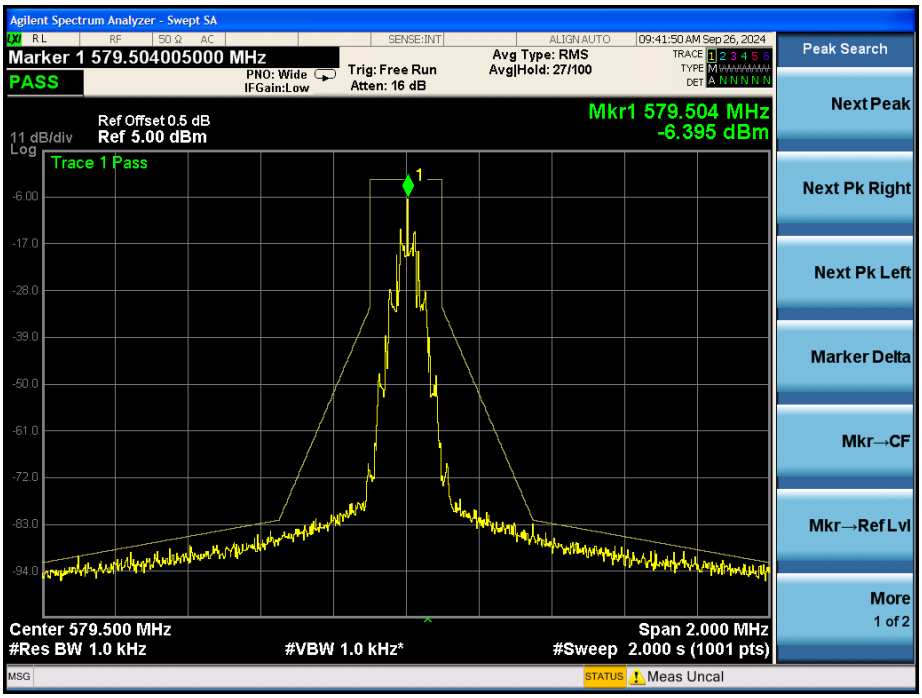
10kHz



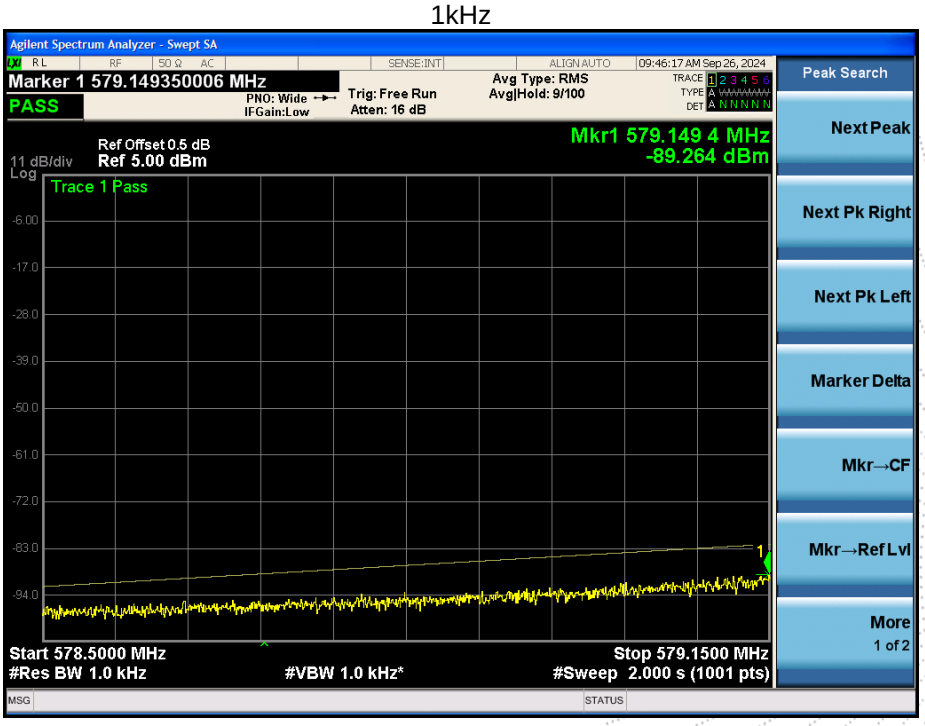
Emissions Mask: Middle Channel

1kHz

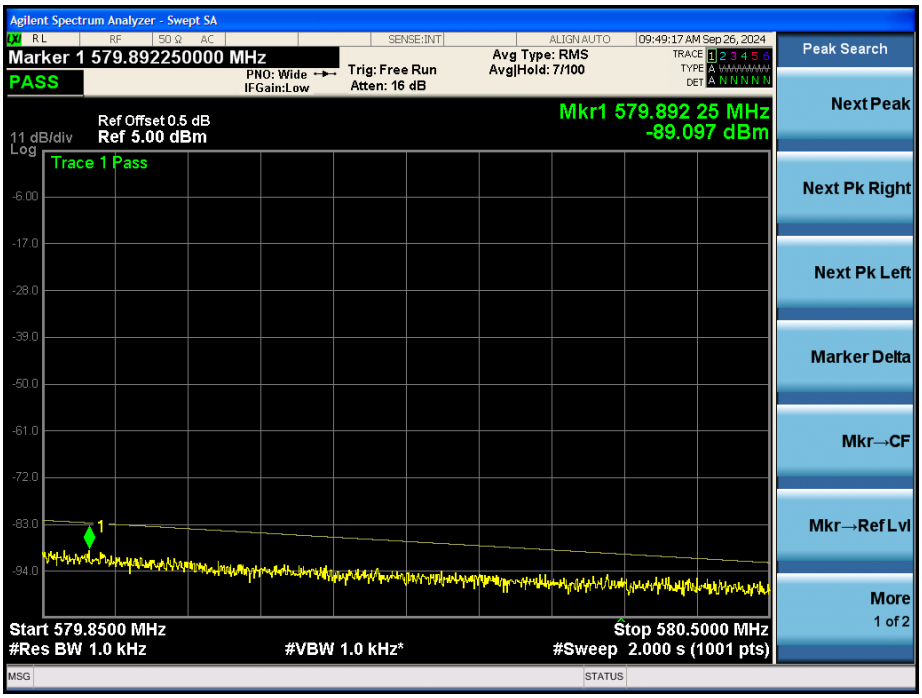
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.504005000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 27/100
09:41:50 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 579.504 MHz
-6.395 dBm
Trace 1 Pass
Center 579.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Meas Uncal

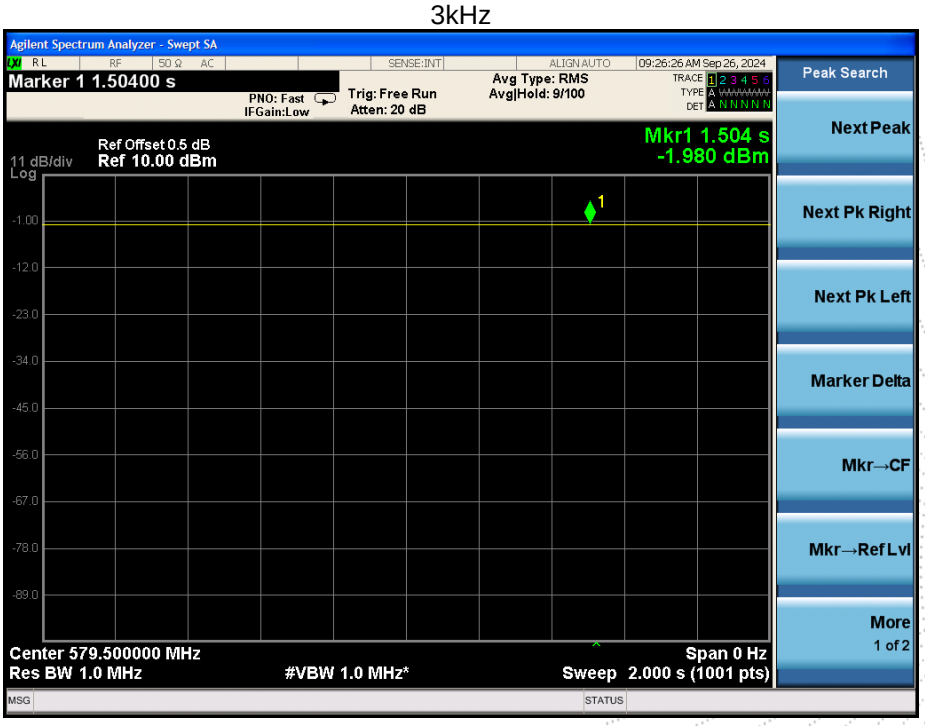
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.149350006 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 9/100
09:46:17 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 579.149 4 MHz
-89.264 dBm
Trace 1 Pass
Start 578.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 579.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

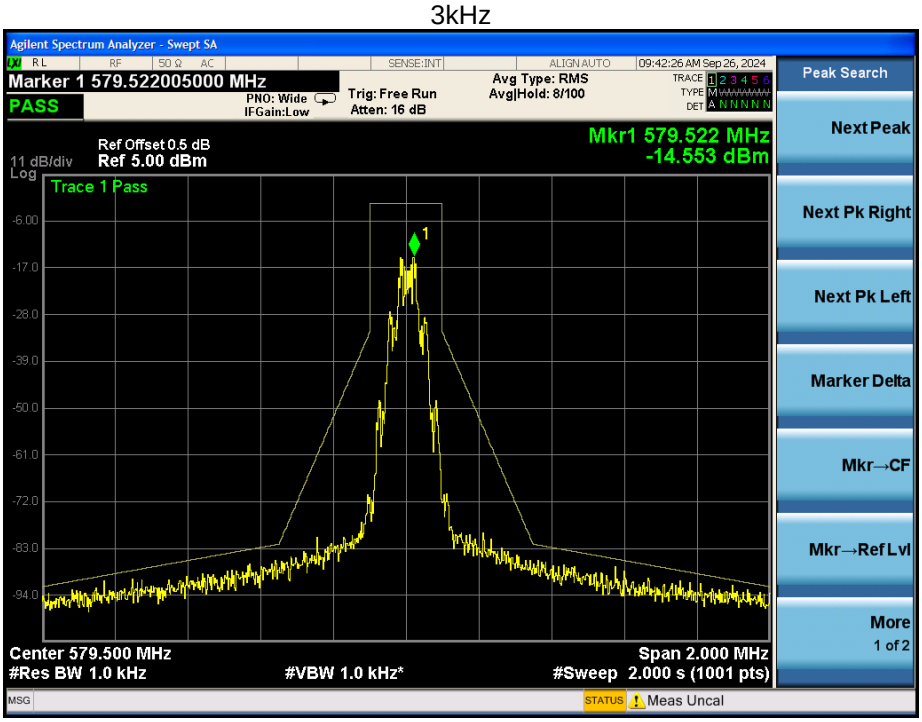
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.892250000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 7/100
09:49:17 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 579.892 25 MHz
-89.097 dBm
Trace 1 Pass
Start 579.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 580.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

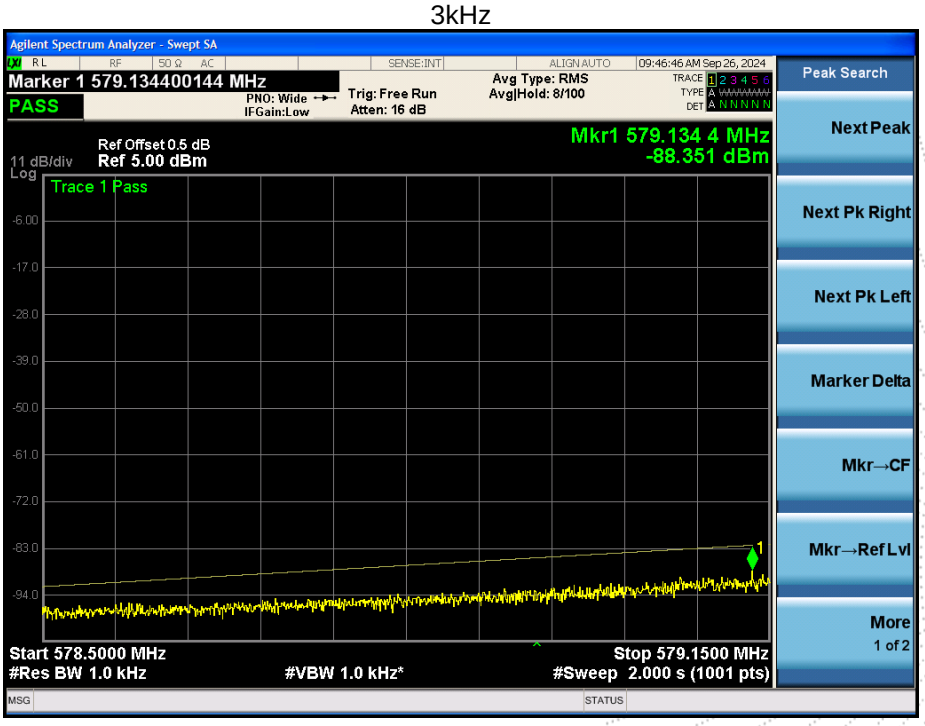
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.50400 s
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: RMS
Avg|Hold: 9/100
09:26:26 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 10.00 dBm
Mkr1 1.504 s
-1.980 dBm
Center 579.500000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz*
Span 0 Hz
Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

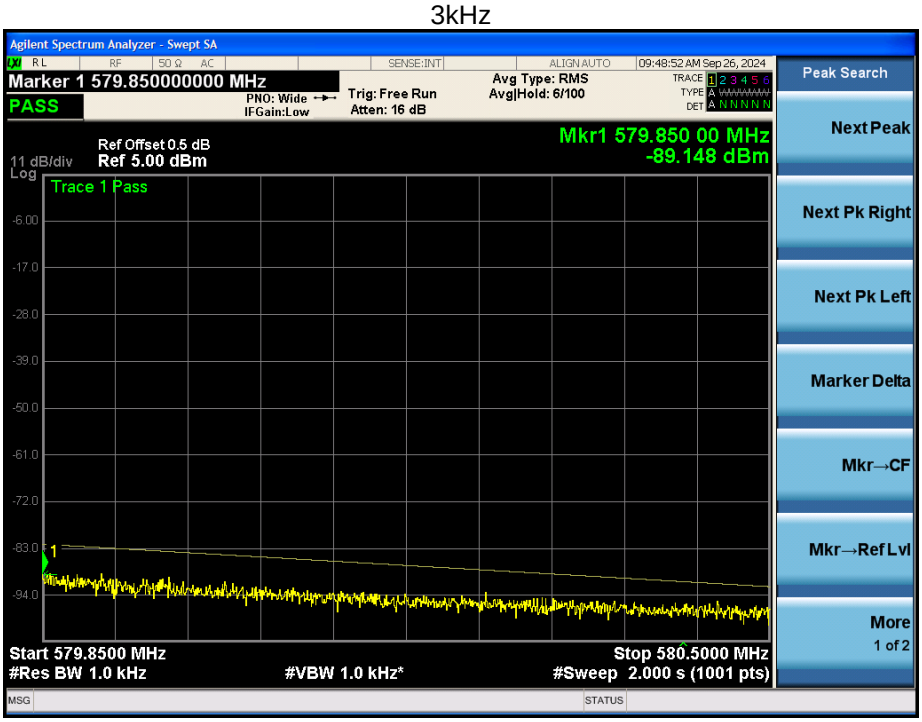
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.522005000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 8/100
09:42:26 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 579.522 MHz
-14.553 dBm
Trace 1 Pass
Center 579.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Meas Uncal

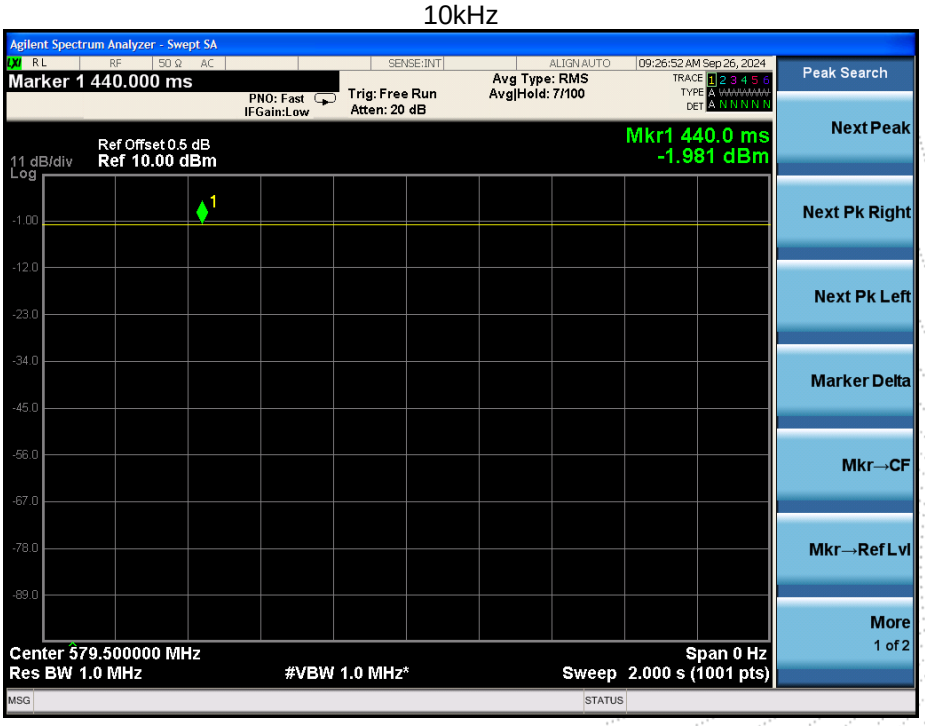
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.134400144 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 8/100
09:46:46 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 579.134 4 MHz
-88.351 dBm
Trace 1 Pass
Start 578.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 579.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

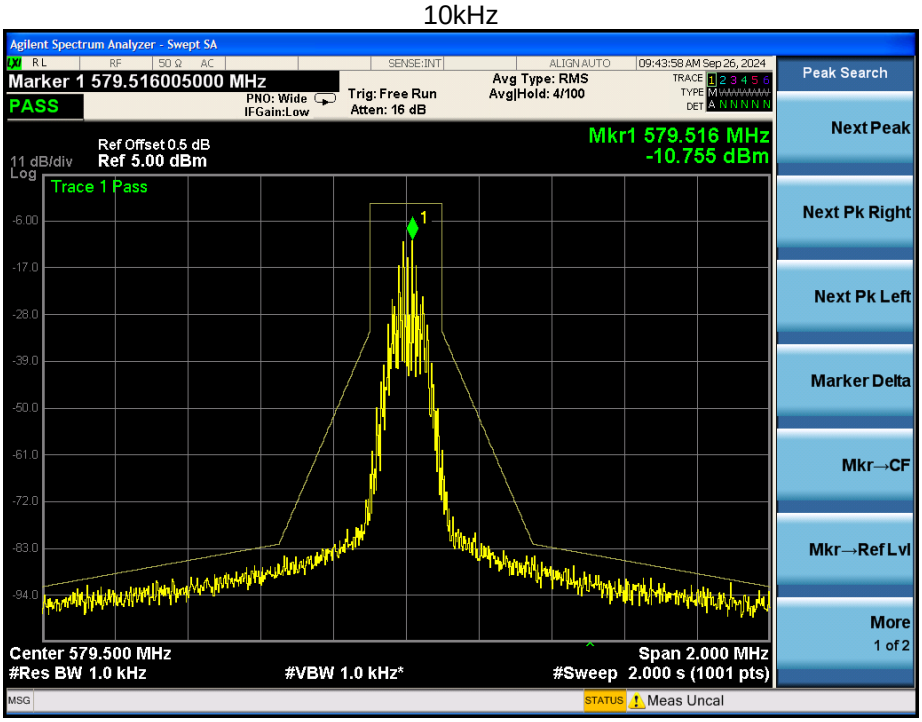
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.850000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 6/100
09:48:52 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 579.850 00 MHz
-89.148 dBm
Trace 1 Pass
Start 579.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 580.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

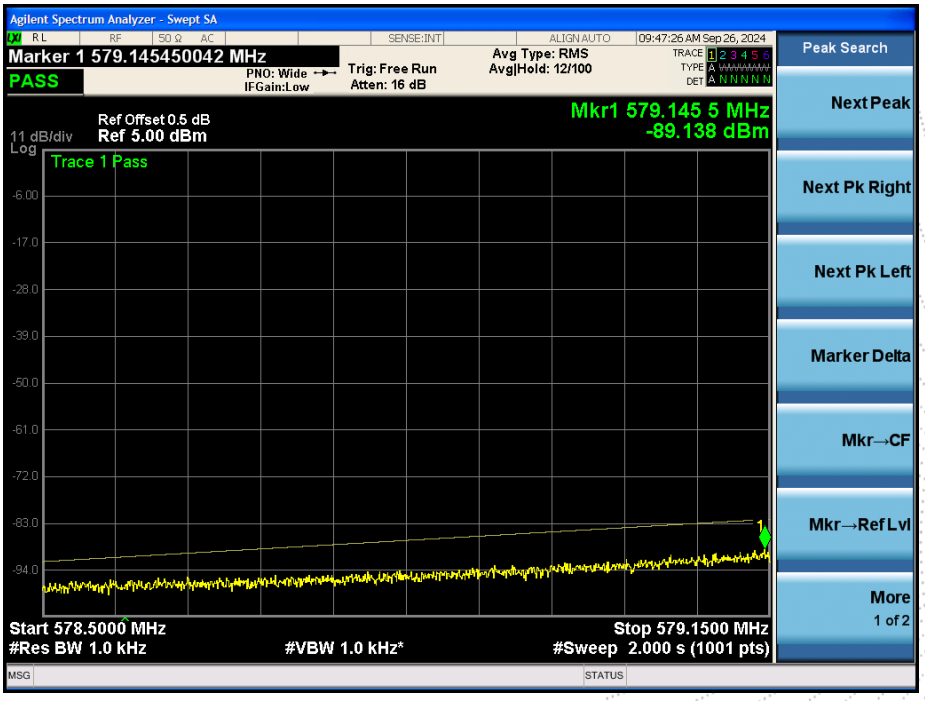
10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 440.000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: RMS
Avg|Hold: 7/100
09:26:52 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 10.00 dBm
Mkr1 440.0 ms
-1.981 dBm
Center 579.500000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz*
Span 0 Hz
Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

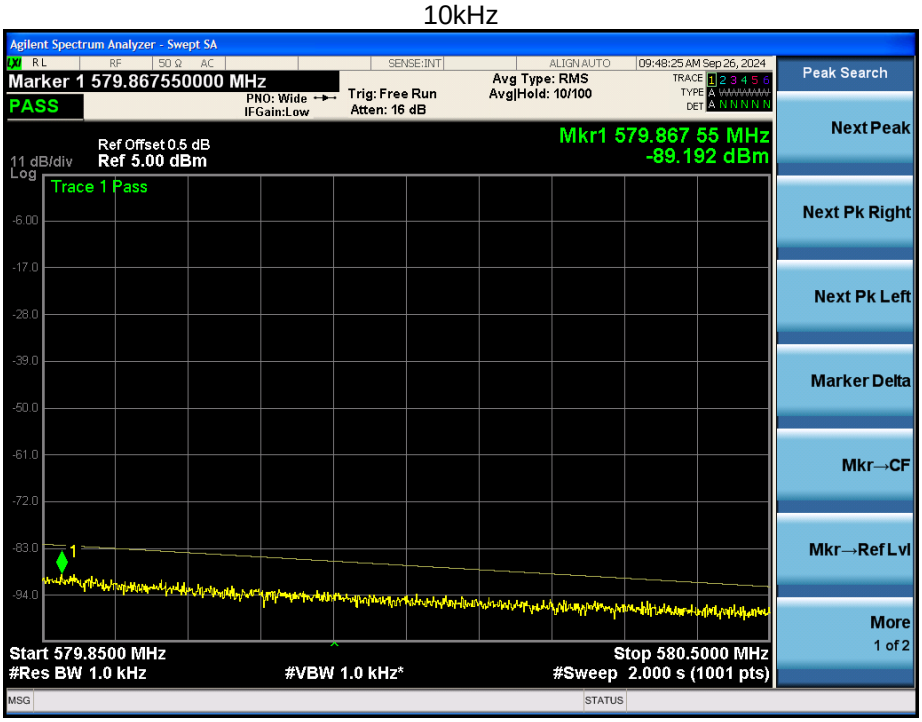
10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 579.516005000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 4/100
09:43:58 AM Sep 26, 2024
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Trace 1 Pass
Mkr1 579.516 MHz
-10.755 dBm
Center 579.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Meas Uncal

10kHz

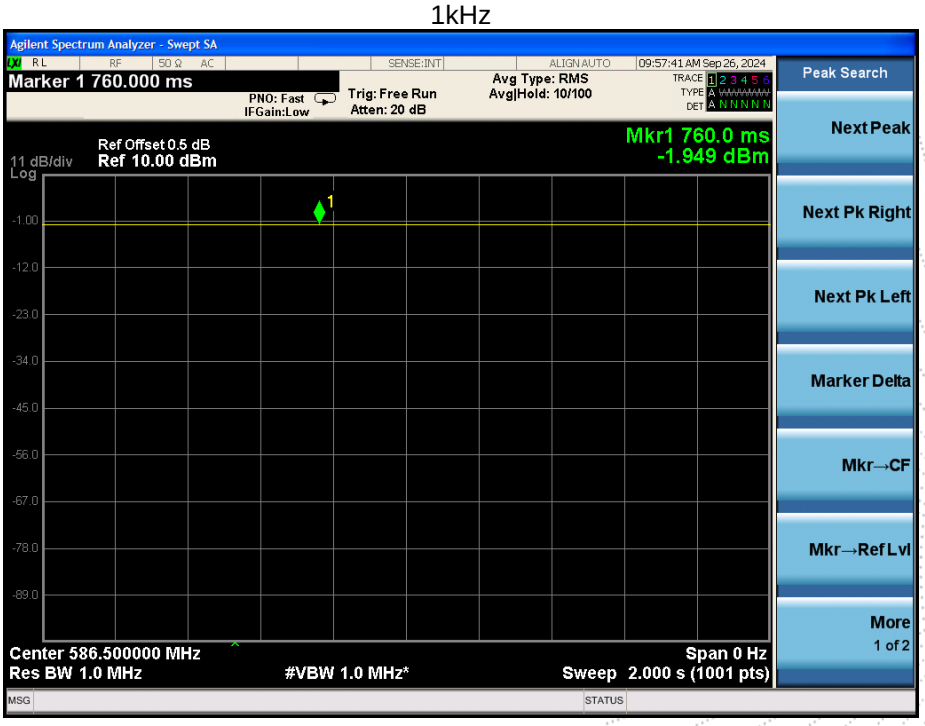

Agilent Spectrum Analyzer - Swept SA
Marker 1 579.145450042 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
09:47:26 AM Sep 26, 2024
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Trace 1 Pass
Mkr1 579.145 5 MHz
-89.138 dBm
Start 578.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 579.1500 MHz
#Sweep 2.000 s (1001 pts)

10kHz

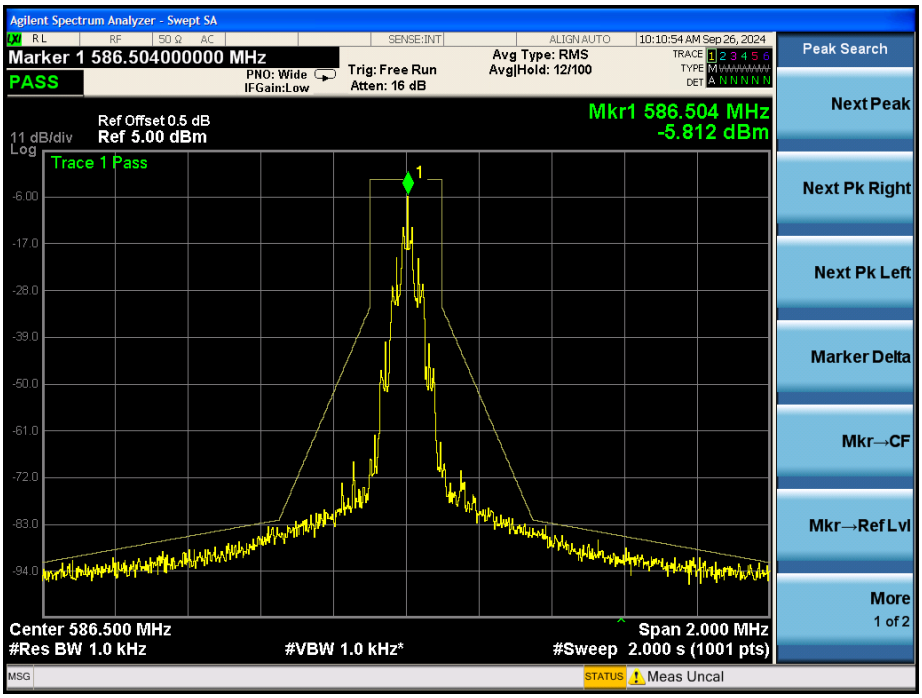


Emissions Mask: High Channel

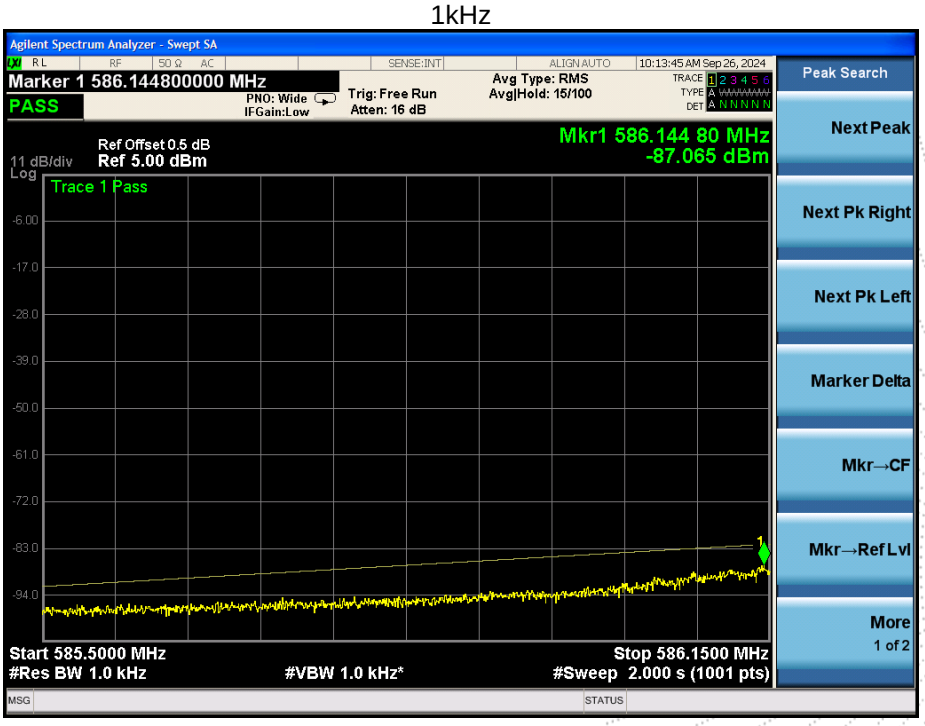
1kHz



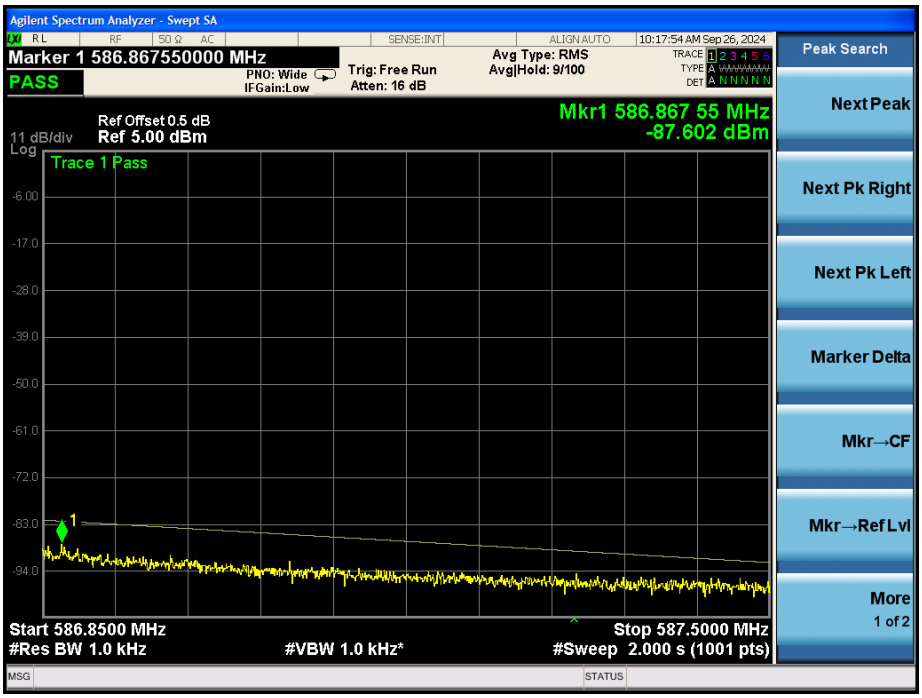
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.504000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
10:10:54 AM Sep 26, 2024
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 586.504 MHz
-5.812 dBm
Trace 1 Pass
Center 586.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Meas Uncal

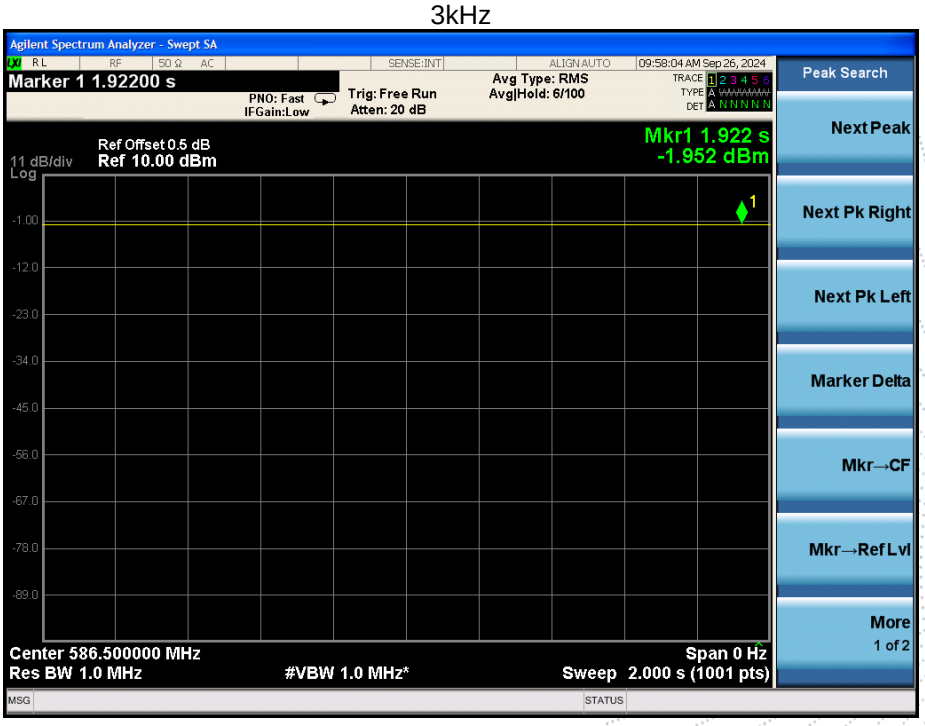
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.144800000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 15/100
10:13:45 AM Sep 26, 2024
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 586.144 80 MHz
-87.065 dBm
Trace 1 Pass
Start 585.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 586.1500 MHz
#Sweep 2.000 s (1001 pts)

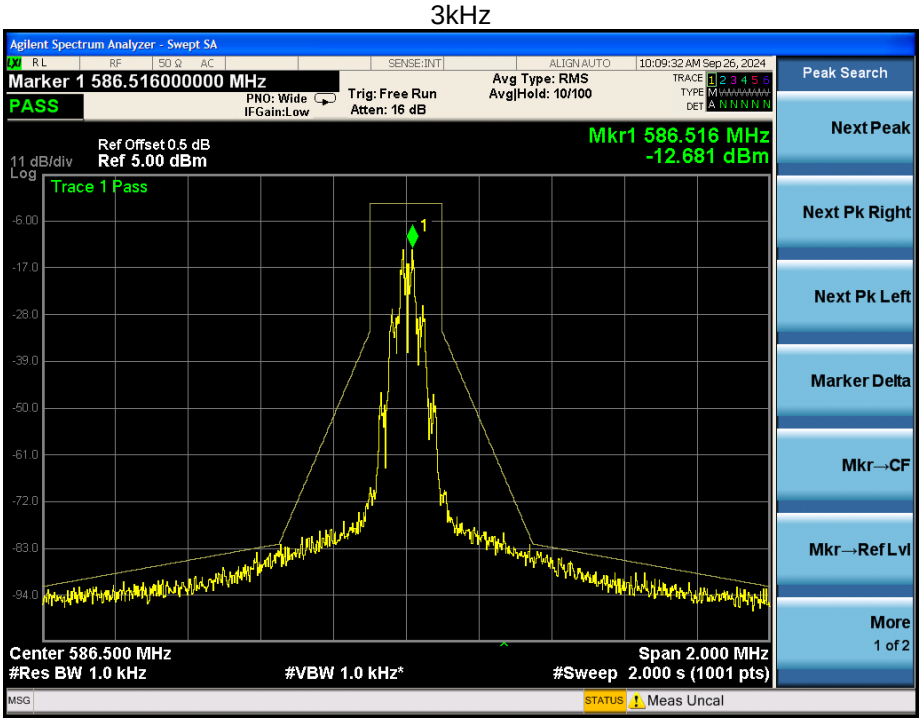
1kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.867550000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 9/100
10:17:54 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 586.867 55 MHz
-87.602 dBm
Trace 1 Pass
Start 586.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 587.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

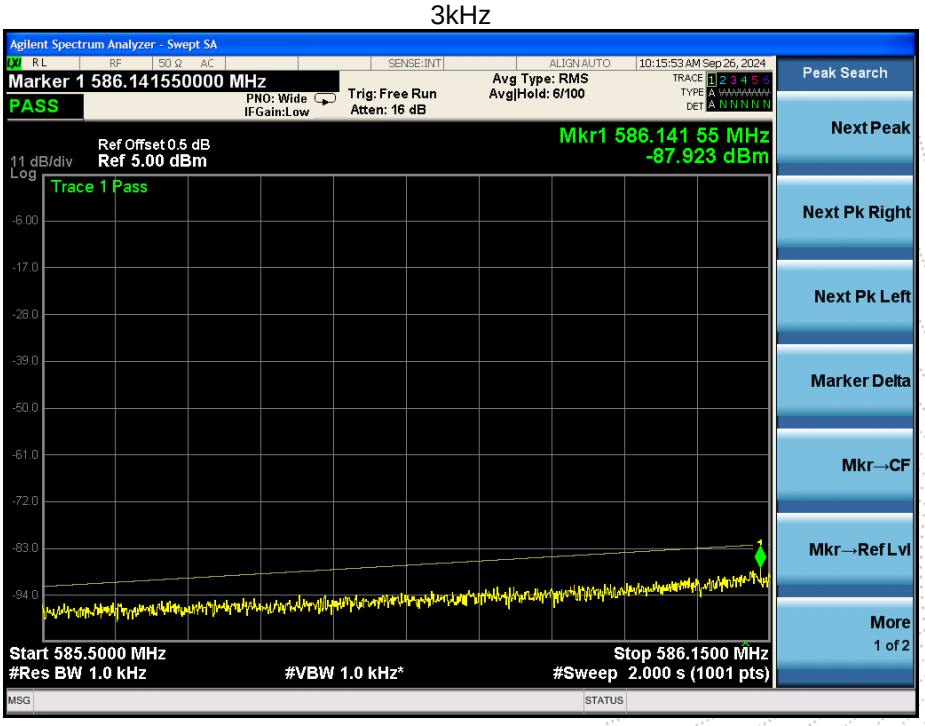
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.92200 s
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: RMS
Avg|Hold: 6/100
09:58:04 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 10.00 dBm
Mkr1 1.922 s
-1.952 dBm
Center 586.500000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz*
Span 0 Hz
Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

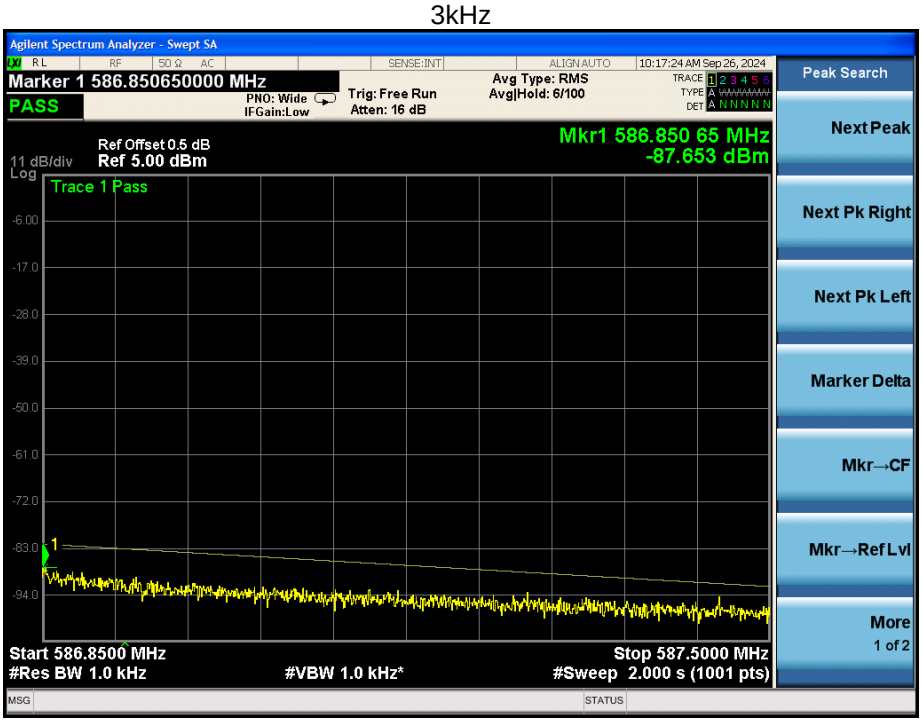
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.516000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 10/100
10:09:32 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 586.516 MHz
-12.681 dBm
Trace 1 Pass
-6.00
-17.0
-28.0
-39.0
-50.0
-61.0
-72.0
-83.0
-94.0
Center 586.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Meas Uncal

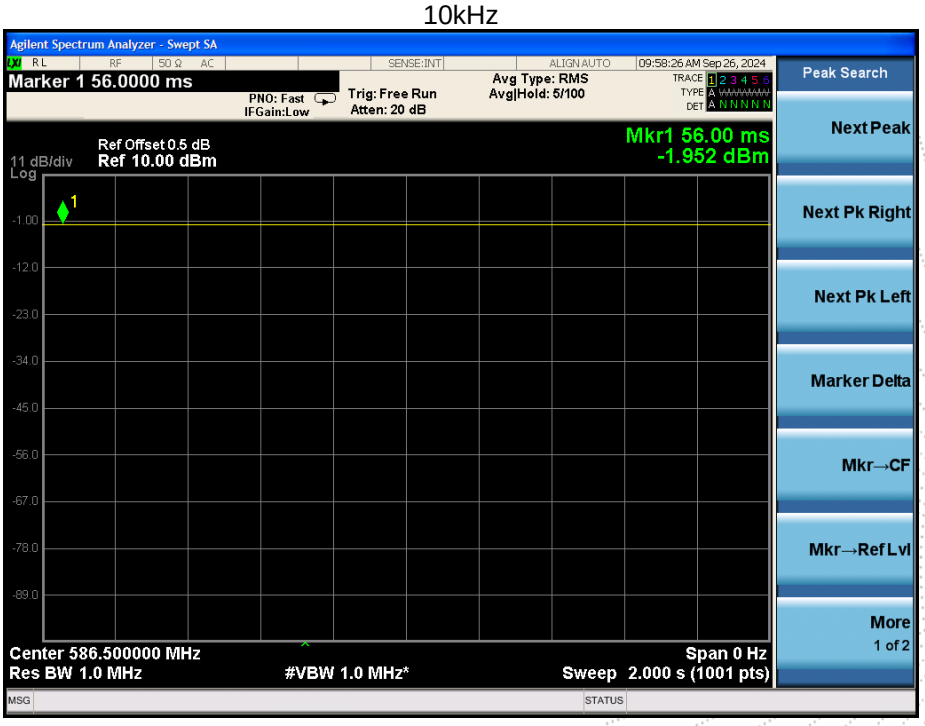
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.141550000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 6/100
10:15:53 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 586.141 55 MHz
-87.923 dBm
Trace 1 Pass
-6.00
-17.0
-28.0
-39.0
-50.0
-61.0
-72.0
-83.0
-94.0
Start 585.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 586.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

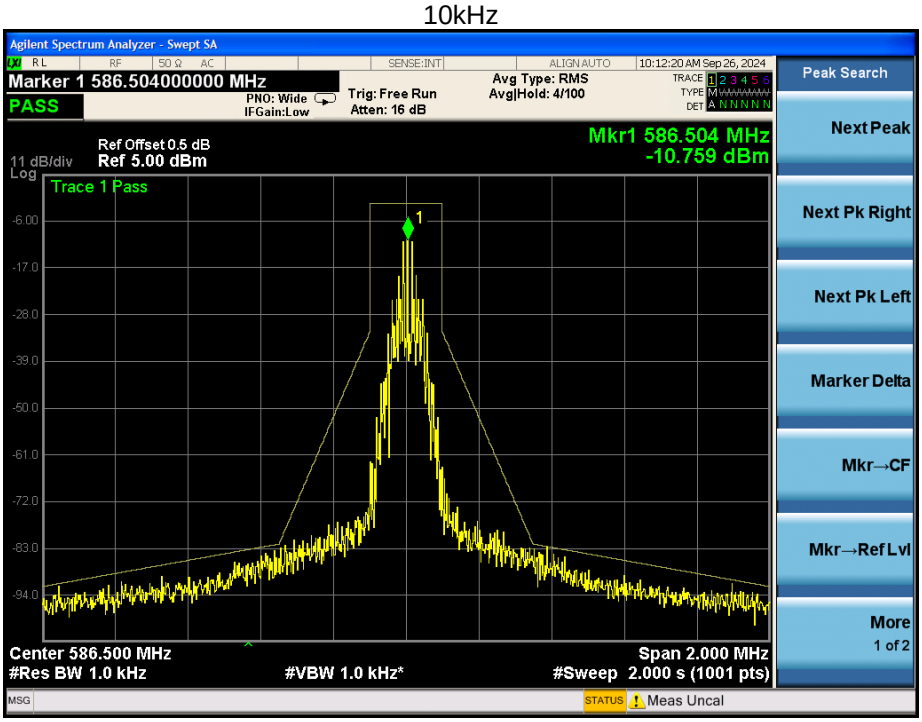
3kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.850650000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 6/100
10:17:24 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 586.850 65 MHz
-87.653 dBm
Trace 1 Pass
Start 586.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 587.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

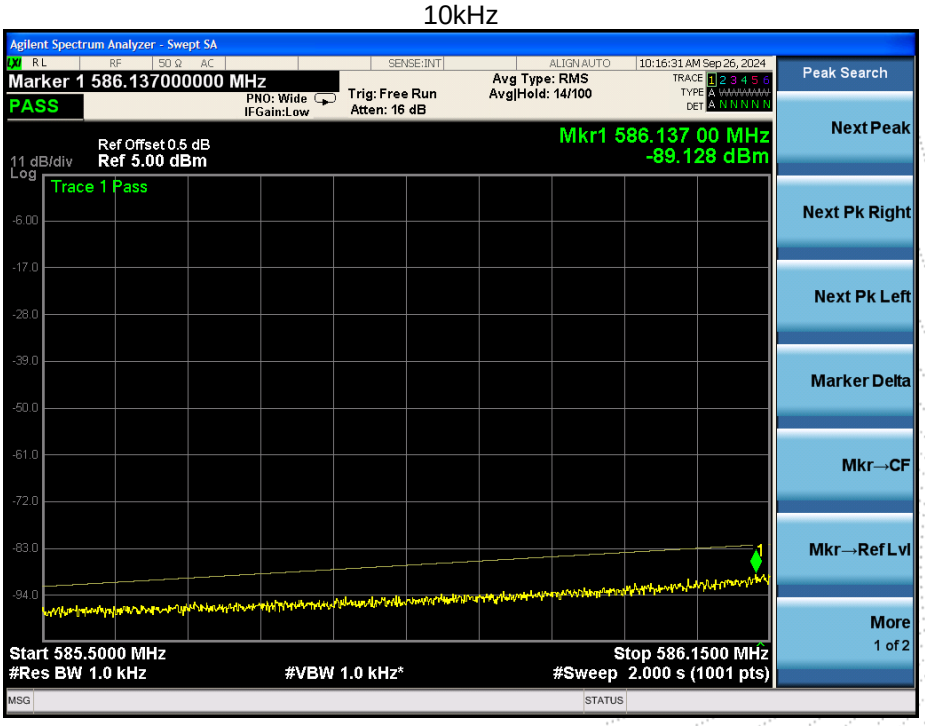
10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 56.0000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: RMS
Avg|Hold: 5/100
09:58:26 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Log
Ref 10.00 dBm
Mkr1 56.00 ms
-1.952 dBm
Center 586.500000 MHz
Res BW 1.0 MHz
#VBW 1.0 MHz*
Span 0 Hz
Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

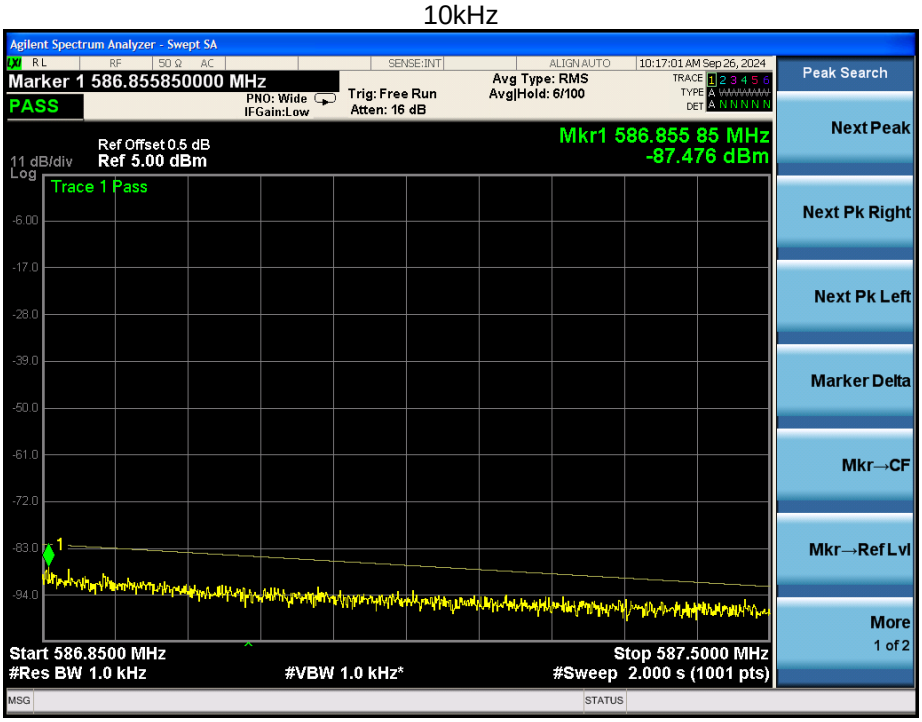
10kHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 586.504000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 4/100
10:12:20 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 586.504 MHz
-10.759 dBm
Trace 1 Pass
-6.00
-17.0
-28.0
-39.0
-50.0
-61.0
-72.0
-83.0
-94.0
Center 586.500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Span 2.000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS
Meas Uncal

10kHz

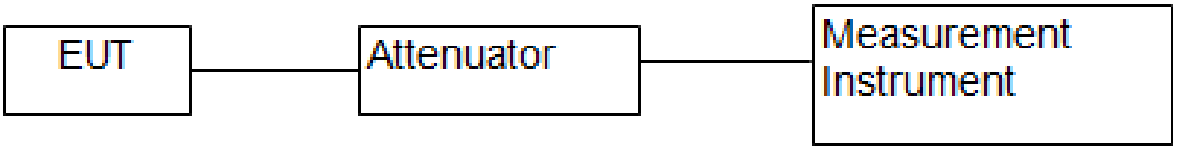

Agilent Spectrum Analyzer - Swept SA
Marker 1 586.137000000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 14/100
10:16:31 AM Sep 26, 2024
Ref Offset 0.5 dB
11 dB/div
Ref 5.00 dBm
Log
Mkr1 586.137 00 MHz
-89.128 dBm
Trace 1 Pass
-6.00
-17.0
-28.0
-39.0
-50.0
-61.0
-72.0
-83.0
-94.0
Start 585.5000 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 586.1500 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

10kHz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:17:01 AM Sep 26, 2024
Marker 1 586.855850000 MHz
PASS
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 16 dB
Avg Type: RMS
Avg|Hold: 6/100
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Ref Offset 0.5 dB
11 dB/div
Log
Ref 5.00 dBm
Mkr1 586.855 85 MHz
-87.476 dBm
Trace 1 Pass
-6.00
-17.0
-28.0
-39.0
-50.0
-61.0
-72.0
-83.0
-94.0
Start 586.8500 MHz
#Res BW 1.0 kHz
#VBW 1.0 kHz*
Stop 587.5000 MHz
#Sweep 2.000 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

10. Spurious Emission At Antenna Terminal

10.1 Block Diagram Of Test Setup



10.2 Limit

According to FCC74.861 (e)(6)
According to §2.1051, the radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in §2.1049 as appropriate.
According to FCC74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
On any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least 43 plus 10 Log (output power in watts) dB.

10.3 Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer
Reference level measurement
Establish a reference level by using the following procedure:
Set instrument center frequency to EUT center frequency.
Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.
Set the RBW = 100 kHz. Set the VBW ≥ 3 x RBW.
Set Detector = peak. Set Sweep time = auto couple.
Set Trace mode = max hold. Allow trace to fully stabilize.
Use the peak marker function to determine the maximum Maximum conduceted level.
Note that the channel found to contain the maximum conduceted level can be used to establish the reference level.
Conduceted Spurious RF Conducted Emission
Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.(30MHz to 25GHz).
Set RBW = 100 kHz (above 1GHz Set RBW = 1 MHz) Set VBW RBW
Set Sweep = auto Set Detector function = peak Set Trace = max hold
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.

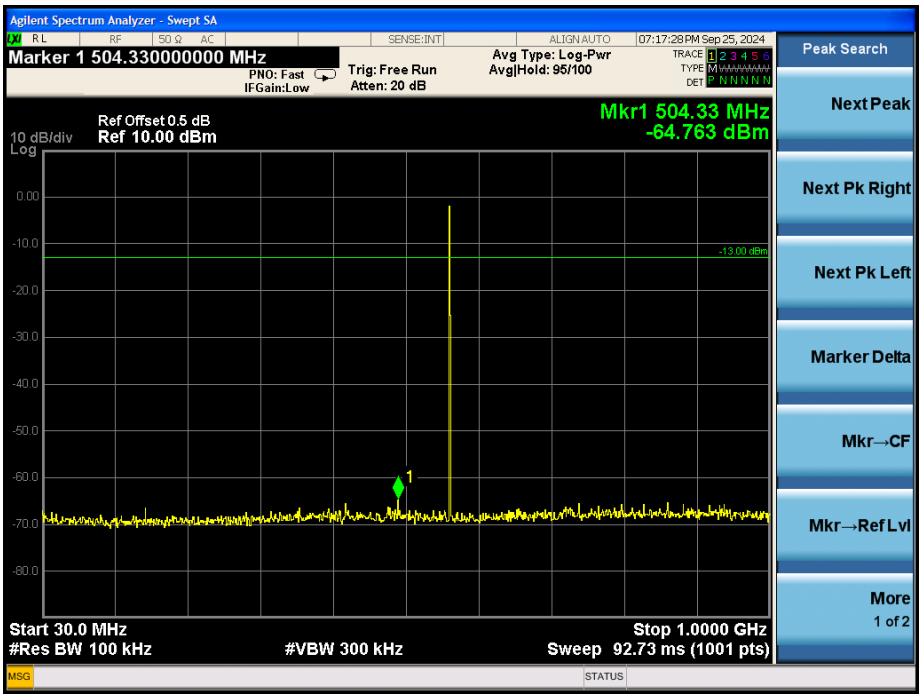
10.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 2.4 unless otherwise a special operating condition is specified in the follows during the testing.

10.5 Test Result

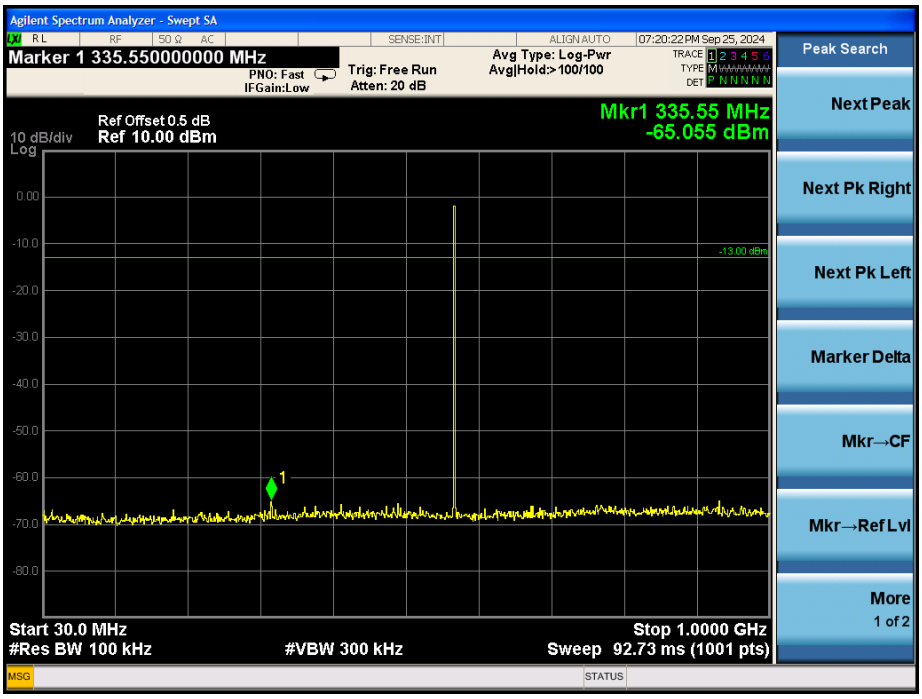
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V

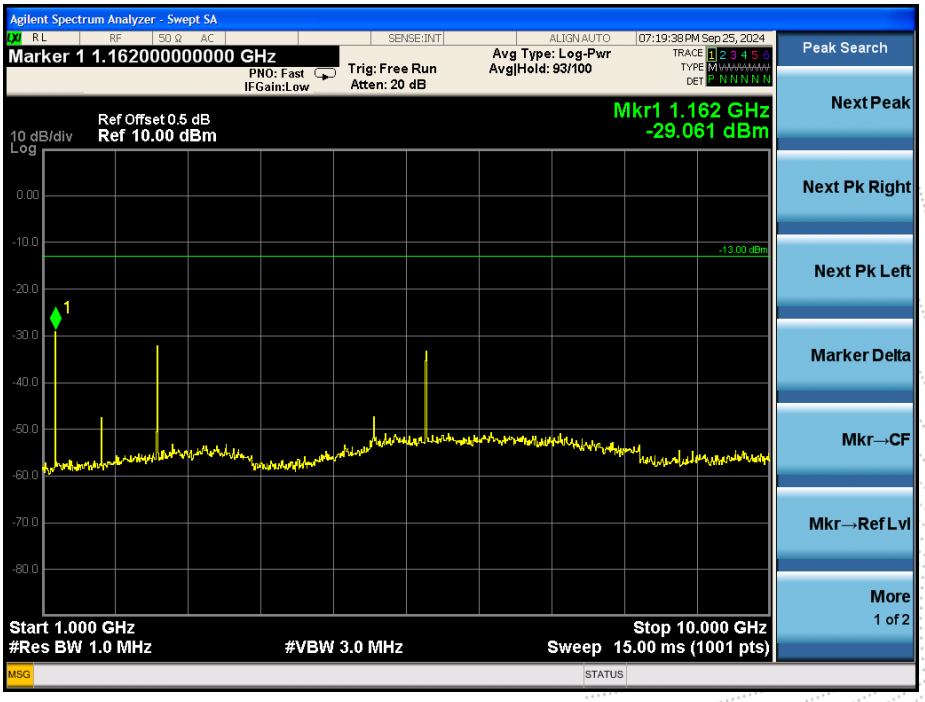
Low Channel


Agilent Spectrum Analyzer - Swept SA
Marker 1 504.330000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 95/100
07:17:28 PM Sep 25, 2024
Ref Offset 0.5 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 504.33 MHz
-64.763 dBm
-13.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

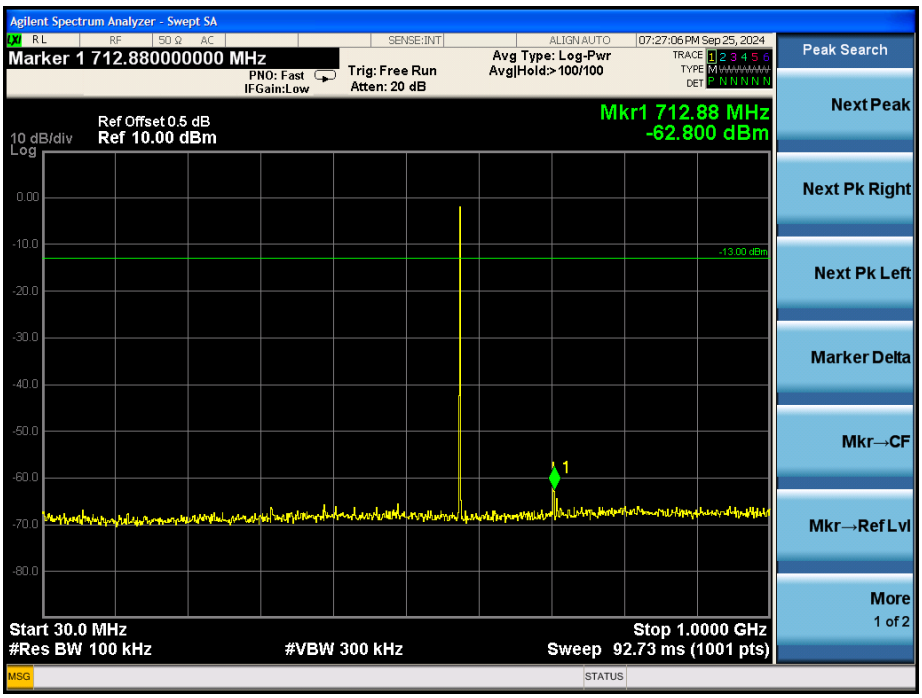

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.144000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 70/100
07:18:24 PM Sep 25, 2024
Ref Offset 0.5 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 1.144 GHz
-29.249 dBm
-13.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
Sweep 15.00 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

Middle Channel



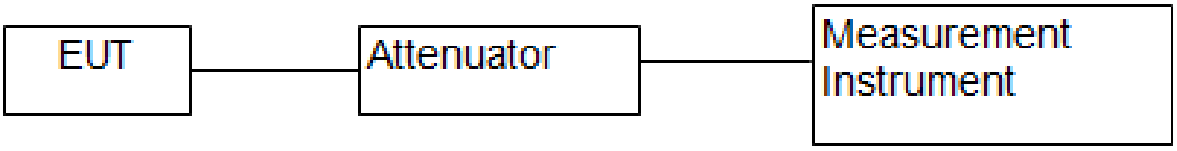


High Channel



11. Frequency Stability

11.1 Block Diagram Of Test Setup



11.2 Limit

According to FCC 74.861
According to FCC 2.1055(a)(1), the frequency stability shall be measure with variation of ambient temperature from –30ºC to +50ºC, and according to FCC 2.1055(d)(2), the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point which is specified by the manufacturer.
According to FCC 74.861, the frequency tolerance of the transmitter shall be 0.005 percent.

11.3 Test Procedure

1 Setup the configuration of the ambient temperature form -30ºC to 50ºC with sufficient time. And measure the different power of the EUT with an artificial power from highest to end point voltage.
2 Set frequency counter center frequency to the right frequency needs to be measured.

11.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 2.4 unless otherwise a special operating condition is specified in the follows during the testing.

11.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V

Test conditions		Frequency Error		
		573.5 MHz	**579.5 MHz**	**586.5 MHz**
T_{min} (-30°C)	V_{min}(3.33V)	573.5042	579.5048	586.5045
	V_{max}(4.07V)	573.5026	579.5042	586.5027
T(-20°C)	V_{nom}(3.7V)	573.5032	579.5039	586.5029
T(-10°C)	V_{nom}(3.7V)	573.5025	579.5033	586.5034
T(0°C)	V_{nom}(3.7V)	573.5041	579.5043	586.5033
T(10°C)	V_{nom}(3.7V)	573.5023	579.5042	586.5040
T_{nom}(20°C)	V_{nom}(3.7V)	573.5039	579.5033	586.5035
T(30°C)	V_{nom}(3.7V)	573.5038	579.5038	586.5035
T(40°C)	V_{nom}(3.7V)	573.5022	579.5035	586.5039
T_{max}(50°C)	V_{min}(3.33V)	573.5022	579.5036	586.5031
	V_{max}(4.07V)	573.5032	579.5045	586.5025
Max. frequency error (ppm)		7.32	8.28	7.67
Limit (ppm)		±50ppm		
End Point		DC 3.7V		

12. Antenna Requirement

12.1 Limit

15.203 requirement: For intentional device, according to 15.203: 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.

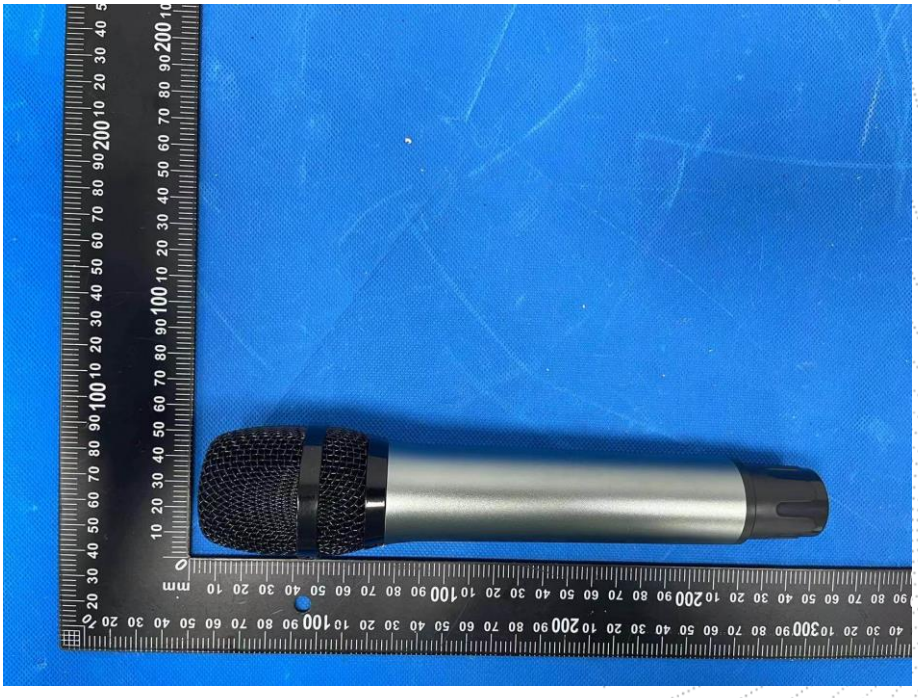
12.2 Test Result

The EUT antenna is Integral Antenna, fulfill the requirement of this section.

13. EUT Photographs

EUT Photo 1

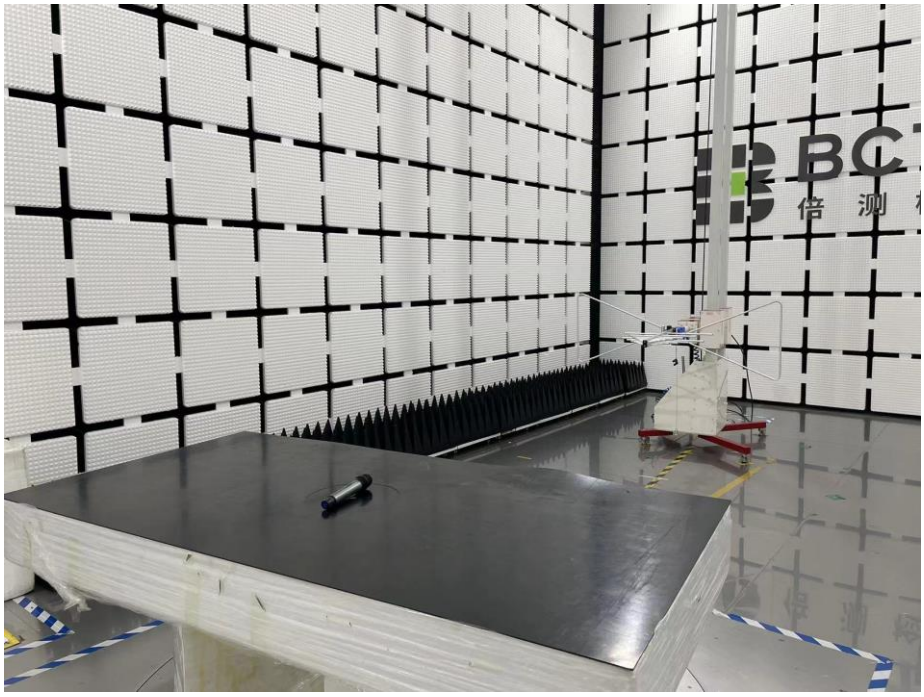
EUT Photo 2



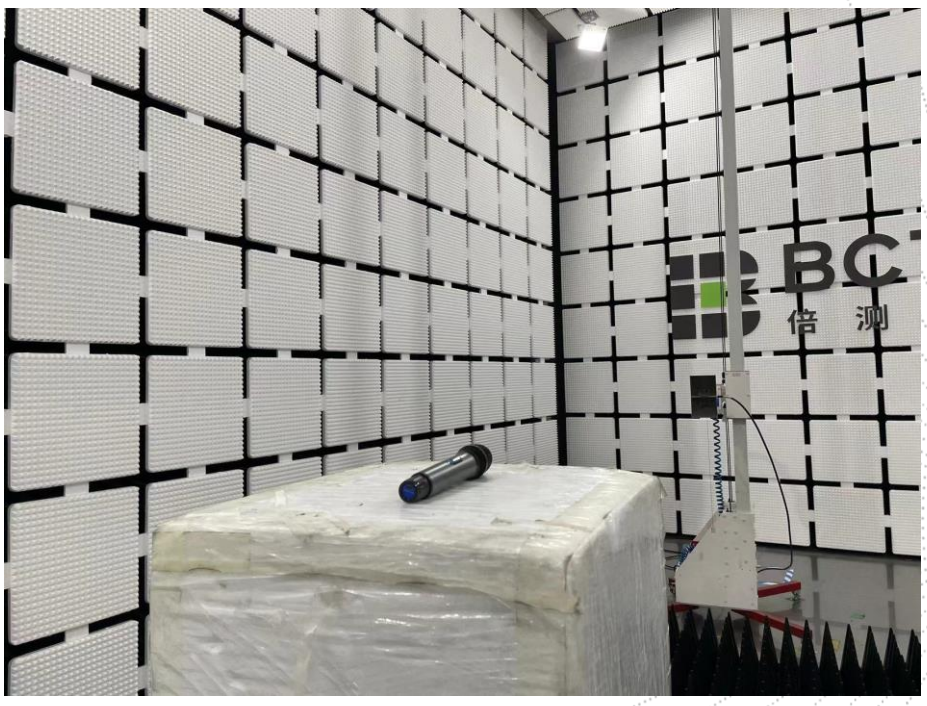
NOTE: Appendix-Photographs Of EUT Constructional Details.

14. EUT Test Setup Photographs

Spurious Emission Test Setup (Below 1GHz)



Spurious Emission Test Setup (Above 1GHz)



STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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