

FCC Test Report

Report No.: RFCJWN-WTW-P26060620-4

FCC ID: 2AEUP-5CFYB6

Test Model: 5CFYB6

Received Date: 2026/6/26

Test Date: 2026/8/7 ~ 2026/9/7

Issued Date: 2026/9/18

Applicant: Ring LLC

Address: 12515 Cerise Ave, Hawthorne, CA 90250, USA

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: (1) No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, Taiwan
(2) No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

FCC Registration / (1) 788550 / TW0003

Designation Number: (2) 281270 / TW0032



This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Table of Contents

Release Control Record	4
1 Certificate of Conformity.....	5
2 Summary of Test Results.....	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information.....	7
3.1 General Description of EUT	7
3.2 Description of Test Modes.....	8
3.2.1 Test Mode Applicability and Tested Channel Detail.....	8
3.3 Description of Support Units	10
3.3.1 Configuration of System under Test	10
3.4 General Description of Applied Standards	10
4 Test Types and Results	11
4.1 Radiated Emission Measurement	11
4.1.1 Limits of Radiated Emission Measurement	11
4.1.2 Test Instruments	12
4.1.3 Test Procedures.....	14
4.1.4 Deviation from Test Standard	15
4.1.5 Test Setup.....	16
4.1.6 EUT Operating Conditions.....	17
4.1.7 Test Results	18
4.2 Conducted Emission Measurement	28
4.2.1 Limits of Conducted Emission Measurement.....	28
4.2.2 Test Instruments	28
4.2.3 Test Procedures.....	29
4.2.4 Deviation from Test Standard	29
4.2.5 Test Setup.....	29
4.2.6 EUT Operating Conditions.....	29
4.2.7 Test Results	30
4.3 Occupied Bandwidth Measurement	32
4.3.1 Limits of Occupied Bandwidth Measurement.....	32
4.3.2 Test Setup.....	32
4.3.3 Test Instruments	32
4.3.4 Test Procedure	33
4.3.5 Deviation from Test Standard	33
4.3.6 EUT Operating Conditions.....	33
4.3.7 Test Result.....	33
4.4 Output Power Measurement	34
4.4.1 Limits of Output Power Measurement	34
4.4.2 Test Setup.....	34
4.4.3 Test Instruments	34
4.4.4 Test Procedures.....	35
4.4.5 Deviation from Test Standard	35
4.4.6 EUT Operating Conditions.....	35
4.4.7 Test Results	36
4.5 Frequency Stability Measurement	41
4.5.1 Limits of Frequency Stability Measurement	41
4.5.2 Test Setup.....	41
4.5.3 Test Instruments	41
4.5.4 Test Procedure	41
4.5.5 Deviation from Test Standard	41
4.5.6 EUT Operating Condition	42
4.5.7 Test Results	42

5	Pictures of Test Arrangements.....	43
	Appendix – Information of the Testing Laboratories	44

Release Control Record

Issue No.	Description	Date Issued
RFCJWN-WTW-P26060620-4	Original Release	2026/9/18

1 Certificate of Conformity

Product: Security Camera

Brand: ring

Test Model: 5CFYB6

Sample Status: Engineering Sample

Applicant: Ring LLC

Test Date: 2026/8/7 ~ 2026/9/7

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.255)

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** 2026/9/18
Polly Chien / Specialist

Approved by :  , **Date:** 2026/9/18
Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.255)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -8.83 dB at 0.47560 MHz.
15.255(e)	6dB Bandwidth	N/A	Not Applicable
-	Occupied Bandwidth	Pass	Meet the requirement of limit
15.255(c)(2)(ii)	Output Power	Pass	Meet the requirement of limit.
15.255(d) 15.205 15.209	Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -4.7 dB at 78.50 MHz.
15.255(f)	Frequency Stability	Pass	Meet the requirement of limit.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty
		(k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	3.23 dB
Radiated Emissions	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB
	40GHz ~ 66GHz	4.59 dB
	66GHz ~ 100GHz	5.37 dB
	Above 100GHz	5.40 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Security Camera
Brand	ring
Test Model	5CFYB6
Sample Status	Engineering Sample
Power Supply Method	100-240VAC, 50/60Hz, 32W
Modulation Type	FMCW
Operating Frequency	60~61 GHz
Output Power (EIRP)	18.87dBm (PK)

Note:

1. The EUT uses following accessories.

Item	Specification
Base	Non-shielded AC cable (6.0m)

2. The antenna information is listed as below.

Antenna type	Frequency Range (GHz)	Antenna Net Gain (dBi)	Connector Type
PIFA	60~61	3	N/A

*Due to radiated measurements are made and the antenna gain is already accounted for this device, so provide an antenna datasheet and/or antenna measurement report is not required. The antenna dimensions and pictures (include antenna wire length if have) are stated in EUT photo exhibit.

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

1 channel is provided for EUT.

Channel's Number	1
Frequency (GHz)	60.577

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To						Description
	PLC	OBW	OP	FS	RE < 1G	RE ≥ 1G	
-	√	√	√	√	√	√	-

Where PLC: Power Line Conducted Emission

OBW: Occupied bandwidth

OP: Output Power

FS: Frequency Stability

RE < 1G: Radiated Emission below 1GHz

RE ≥ 1G: Radiated Emission above 1GHz

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on Y-plane.

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1	1	FMCW

Occupied Bandwidth Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1	1	FMCW

Output Power Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1	1	FMCW

Frequency Stability Test:

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1	1	FMCW

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1	1	FMCW

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1	1	FMCW

Test Condition:

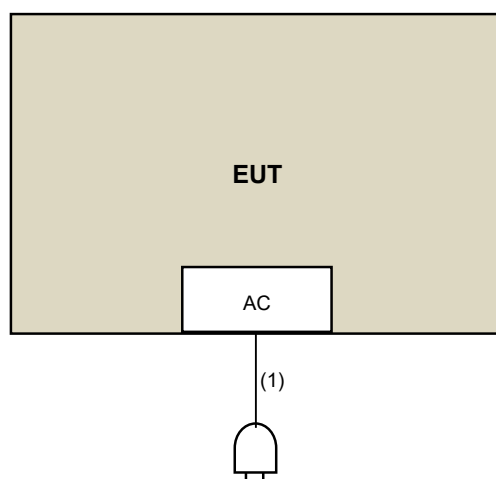
Applicable To	Environmental Conditions	Input Power	Tested By
PLC	25 deg. C, 75 %RH	120Vac, 60Hz	Vanness Huang
OBW	25 deg. C, 66 %RH	120Vac, 60Hz	Wade Huang
OP	23 deg. C, 66 %RH	120Vac, 60Hz	Wade Huang
FS	25 deg. C, 66 %RH	120Vac, 60Hz	Wade Huang
RE<1G	22 deg. C, 66 %RH	120Vac, 60Hz	Vanness Huang
RE≥1G	22 deg. C, 67 %RH	120Vac, 60Hz	Wade Huang

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC cable(with Base)	1	6	No	0	Supplied by applicant

3.3.1 Configuration of System under Test



Under Table

Remote Site

3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.255)

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission Measurement

4.1.1 Limits of Radiated Emission Measurement

Spurious Emission	
Frequency Range	Limitation
Radiated emissions below 40GHz	Part 15.209
Between 40GHz and 200GHz	90pW/cm ² (at 3 meter)
Note: The levels of the spurious emissions shall not exceed the level of the fundamental emission.	

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
4. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.

4.1.2 Test Instruments

For Below 40GHz and Frequency Stability

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver Rohde & Schwarz	ESR3	102579	2026/07/20	2027/07/19
Spectrum Analyzer KEYSIGHT	N9020B	MY60110462	2026/05/05	2027/05/04
BILOG Antenna SCHWARZBECK	VULB9168	9168-995	2025/09/17	2026/09/16
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-404	2025/11/09	2026/11/08
HORN Antenna SCHWARZBECK	BBHA 9170	9170-995	2025/11/09	2026/11/08
Loop Antenna EMCI	EM-6879	269	2025/11/17	2026/11/16
Preamplifier EMCI	EMC330N	980783	2026/01/13	2027/01/12
Preamplifier EMCI	EMC118A45SE	980810	2025/12/24	2026/12/23
Preamplifier EMCI	EMC184045SE	980787	2026/01/13	2027/01/12
RF signal cable EMCI	EMC104-SM-SM-(9000+2000+1000)	201230+ 201242+ 210101	2026/01/13	2027/01/12
RF signal cable EMCI	EMCCFD400-NM-NM-(9000+300+500)	201252+ 201250+ 201245	2026/01/13	2027/01/12
RF signal cable EMCI	EMC101G-KM-KM-(5000+3000+2000)	201261+201258+ 201249	2026/01/13	2027/01/12
Software BV CPS	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Turn Table Max-Full	MFT-151SS-0.5T	NA	NA	NA
Turn Table Controller Max-Full	MF-7802BS	MF780208675	NA	NA
Antenna Tower KaiTuo	NA	NA	NA	NA
Antenna Tower Controller KaiTuo	KT-2000	NA	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Temperature & Humidity Chamber Terchy	MHU-225AU	920842	2026/07/02	2027/07/01
Digital Storage Oscilloscope Keysight	DSO-X 6004A	MY55190202	2026/06/12	2028/06/11

Note: 1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in WM Chamber 7.
 3. Test date: 2026/8/7

For Above 40GHz:

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer Keysight	N9042B	US60360159	2026/06/23	2027/06/22
*OXE89 Horn Antenna (33~55GHz) QuinStar	QWH-QPRR00	QWH-QPRR00-1	2026/01/28	2029/01/27
*Conical Horn Antenna (50~75GHz) Keysight	WR15CH-Conical	RCHO15RL-1	2026/01/28	2029/01/27
*Conical Horn Antenna (75~110GHz) Keysight	WR10CH-Conical	RCHO10RL-1	2026/01/28	2029/01/27
*Conical Horn Antenna (110~170GHz) Keysight	WR6.5CH-Conical	RCHO6RL-1	2026/01/28	2029/01/27
*Conical Horn Antenna (140~220GHz) Keysight	WR5.1CH-Conical	RCHO5RL-1	2026/01/28	2029/01/27
Extension Module_down converter (50-75GHz) 9VDC supply VDI	SAX WR15	SAX 439	2026/01/29	2029/01/28
Extension Module_down converter (75-110GHz) 9VDC supply Keysight	N9029AV10	SAX 378	2026/01/29	2029/01/28
Extension Module_down converter (110-170GHz) 9VDC supply VDI	SAX WR6.5	SAX723	2026/01/29	2029/01/28
Extension Module_down converter (140-220GHz) 9VDC supply VDI	SAX WR5.1	SAX375	2026/03/30	2029/03/29
PSG analog signal generator Keysight	E8257D	MY60020399	2026/01/23	2027/01/22
*Power Meter VDI (110-325GHz)	PM5B	571V	2026/02/04	2029/02/03
*Power Meter Keysight (50-110GHz)	U8489A	US59290810	2026/02/18	2029/02/17
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12/36 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in WM Chamber 7.
3. Test date: 2026/8/19 ~ 2026/9/1

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission 30MHz to 40GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 40GHz

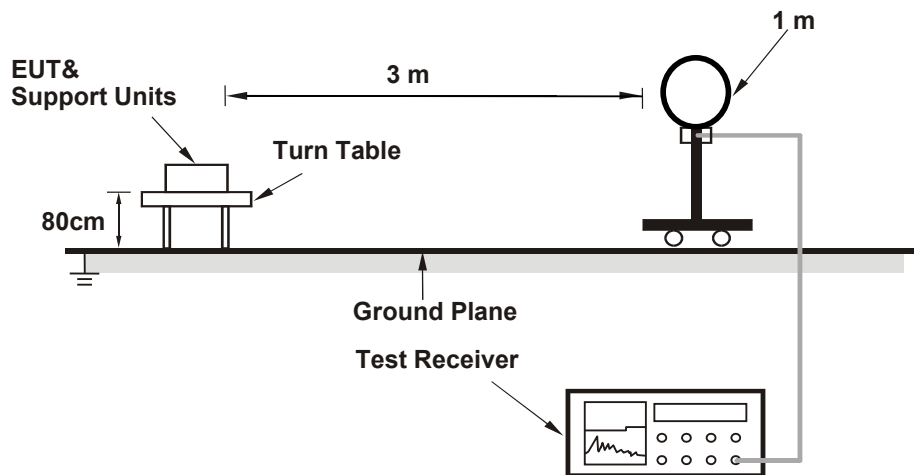
- a. Connect the test antenna covering the appropriate frequency range to a spectrum analyzer via an external mixer to the spectrum analyzer.
- b. Set spectrum analyzer RBW = 1 MHz, VBW = 3 MHz, average detector.
- c. Calculate the distance to the far field boundary and determine the maximum measurement distance.
- d. Perform an exploratory search for emissions and determine the approximate direction at which each observed emission emanates from the EUT.
- e. Exploratory measurements be made at a closer distance than the validated maximum measurement distance.
- f. Perform a final measurement; begin with the test antenna at the approximate position where the maximum level occurred during the exploratory scan.
- g. Slowly scan the test antenna around this position, slowly vary the test antenna polarization by rotating through at least 0° to 180°, and slowly vary the orientation of the test antenna to find the final position, polarization, and orientation at which the maximum level of the emission is observed.
- h. Record the measured reading with the test antenna fixed at this maximized position, polarization, and orientation. Record the measurement distance.
- i. Calculate the maximum field strength of the emission at the measurement distance and the adjusted/corrected power at the output of the test antenna.
- j. Calculate the EIRP from the measured field strength and then convert to the linear.
- k. Calculate the power density at the distance specified by the limit from the field strength at the distance specified by the limit.
- l. Repeat the preceding sequence for every emission observed in the frequency band under investigation.

4.1.4 Deviation from Test Standard

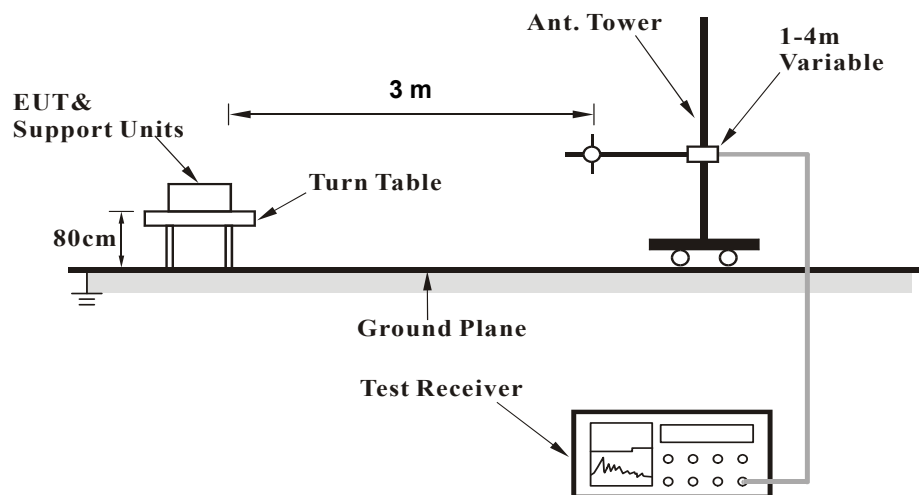
No deviation.

4.1.5 Test Setup

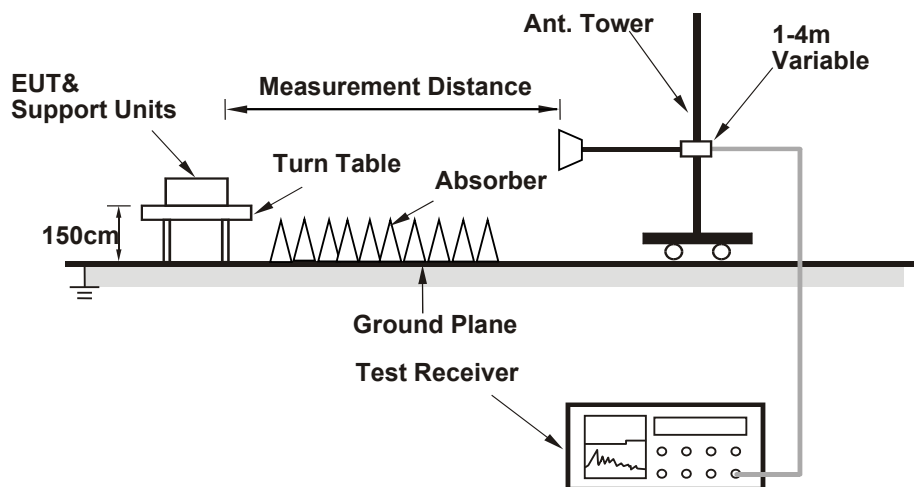
For Radiated emission below 30MHz



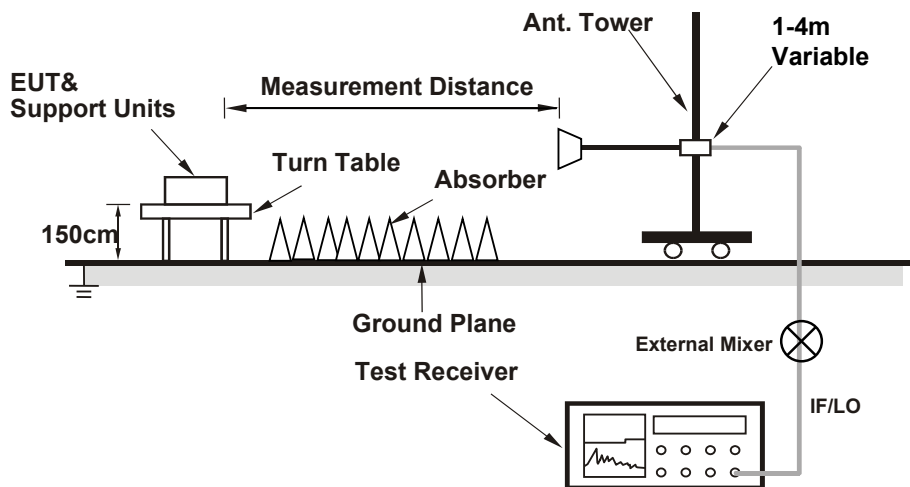
For Radiated emission 30MHz to 1GHz



For Radiated emission 1GHz to 50GHz



For Radiated emission above 50GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- The EUT is connected to the simulator at low, middle and high frequency channel individually.

4.1.7 Test Results

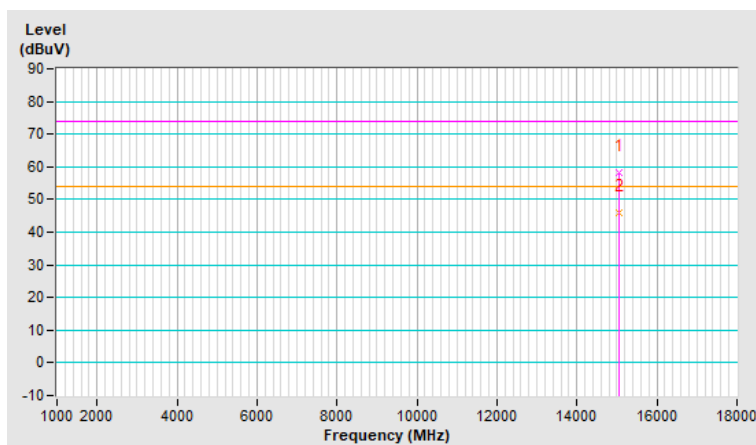
Above 1GHz Data:

Channel	CH 1 : 60.577 GHz		
Frequency Range	1GHz ~ 18GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	15042.00	58.4 PK	74.0	-15.6	1.41 H	184	38.5	19.9
2	15042.00	45.9 AV	54.0	-8.1	1.41 H	184	26.0	19.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

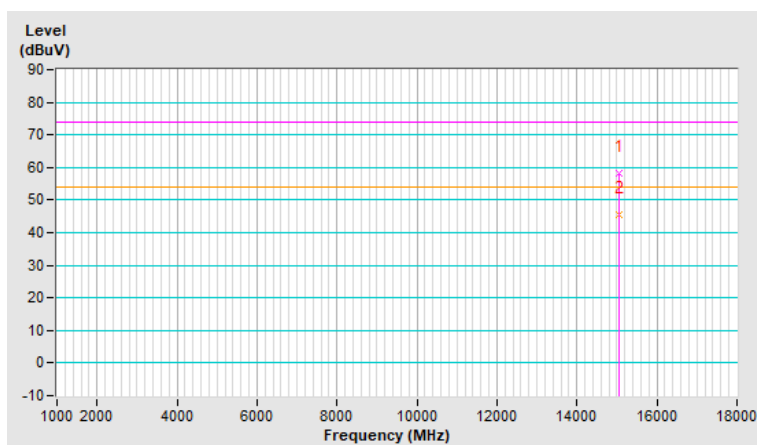


Channel	CH 1 : 60.577 GHz		
Frequency Range	1GHz ~ 18GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	15042.00	58.1 PK	74.0	-15.9	1.59 V	277	38.2	19.9
2	15042.00	45.7 AV	54.0	-8.3	1.59 V	277	25.8	19.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

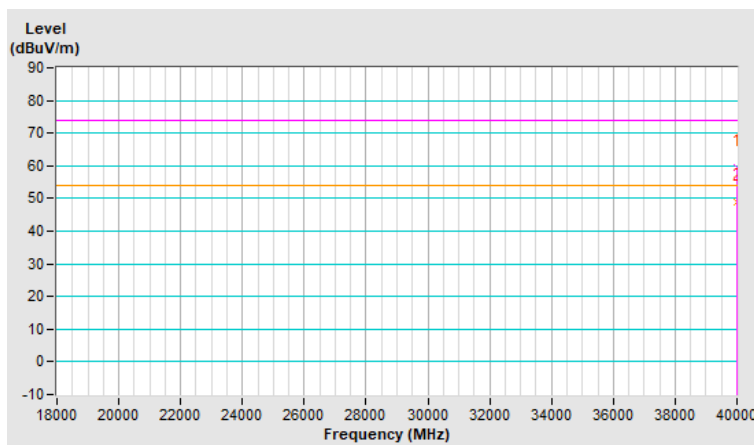


Channel	CH 1 : 60.577 GHz		
Frequency Range	18GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	39978.00	59.7 PK	74.0	-14.3	1.49 H	230	59.8	-0.1
2	39978.00	48.8 AV	54.0	-5.2	1.49 H	230	48.9	-0.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

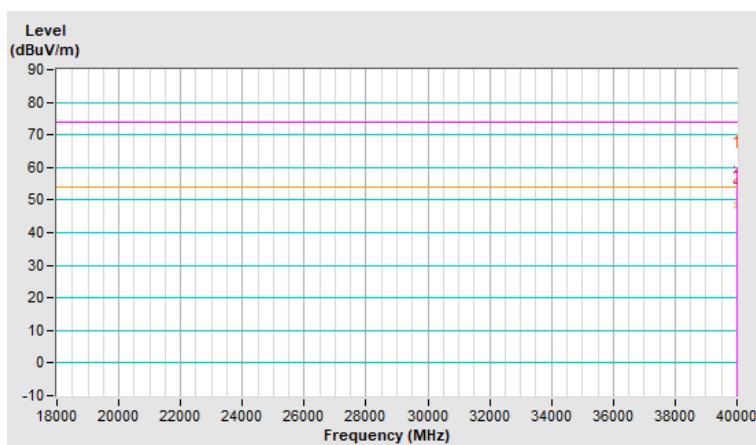


Channel	CH 1 : 60.577 GHz		
Frequency Range	18GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	39978.00	59.4 PK	74.0	-14.6	1.76 V	60	59.5	-0.1
2	39978.00	48.4 AV	54.0	-5.6	1.76 V	60	48.5	-0.1

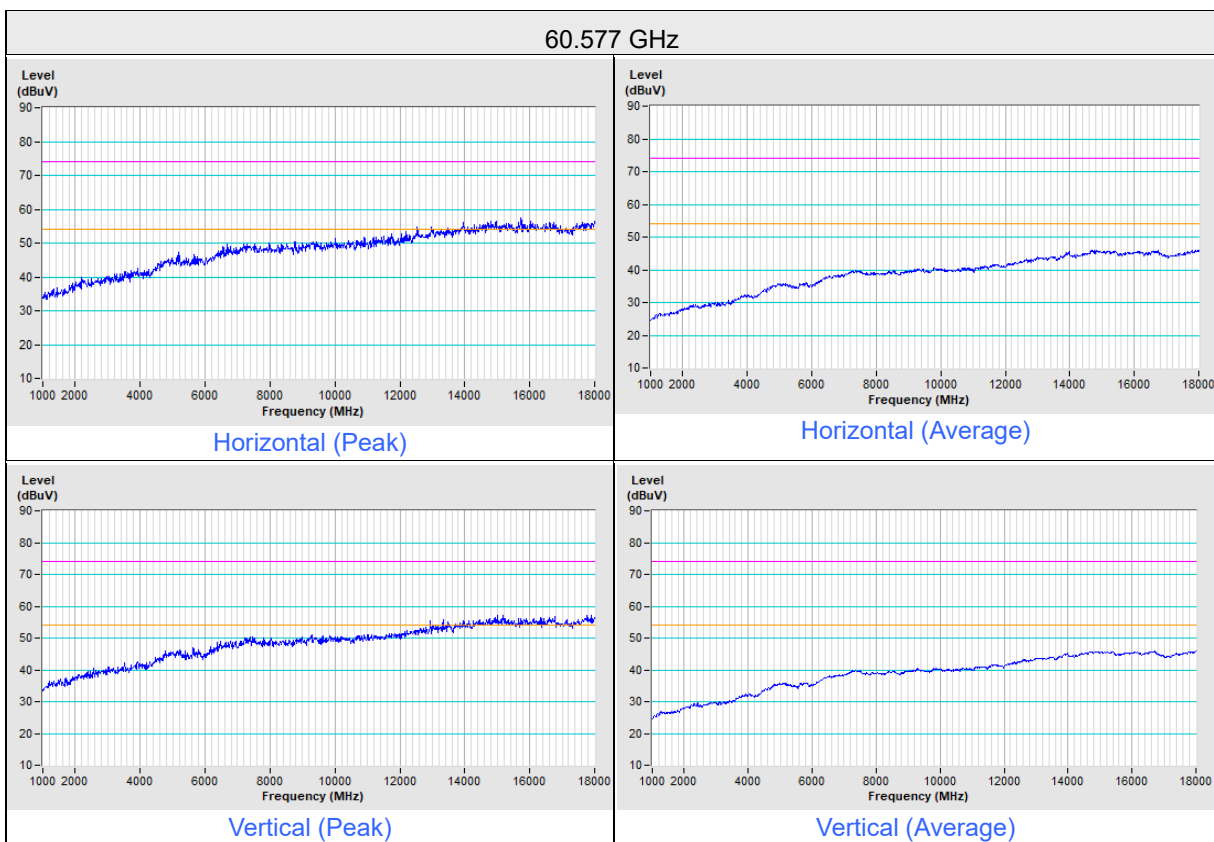
Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

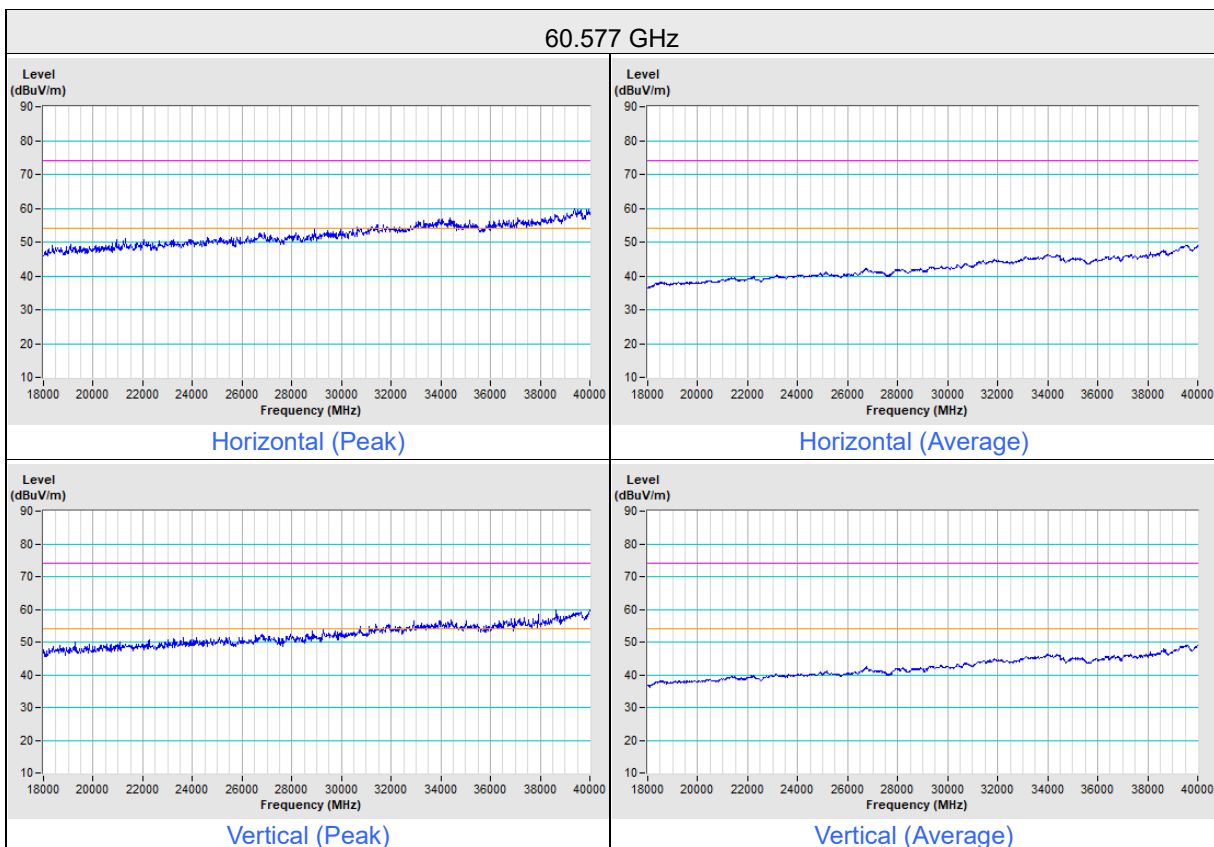


Plot of Other Emission

Frequency Range	1 GHz ~ 18 GHz	Detector Function	Peak (PK) Average (AV)
-----------------	----------------	-------------------	---------------------------



Frequency Range	18 GHz ~ 40 GHz	Detector Function	Peak (PK) Average (AV)
-----------------	-----------------	-------------------	---------------------------



Channel	CH 1 : 60.577 GHz		
Frequency Range	40GHz ~ 200GHz	Detector Function	Average (AV)

Antenna Polarity: Horizontal								
No.	Frequency (GHz)	Power (dBm)	Gain of test Antenna (dBi)	EIRP Level (dBm/MHz)	Power Density (pW/cm ²)	Power Density Limit (pW/cm ²)	Margin (pW/cm ²)	PASS/ FAIL
1	49.98	-104.69	22.50	-60.78	0.0007	90.00	-90.00	PASS
2	50.03	-87.99	21.50	-43.07	0.0436	90.00	-89.96	PASS
3	65.45	-91.78	21.50	-44.52	0.0312	90.00	-89.97	PASS
4	109.74	-105.82	21.60	-54.18	0.0034	90.00	-90.00	PASS
5	116.28	-104.66	22.00	-52.91	0.0045	90.00	-90.00	PASS
6	172.98	-87.32	21.30	-31.42	0.6372	90.00	-89.36	PASS
Antenna Polarity : Vertical								
No.	Frequency (GHz)	Power (dBm)	Gain of test Antenna (dBi)	EIRP Level (dBm/MHz)	Power Density (pW/cm ²)	Power Density Limit (pW/cm ²)	Margin (pW/cm ²)	PASS/ FAIL
1	49.99	-104.71	22.50	-60.79	0.0007	90.00	-90.00	PASS
2	50.02	-88.06	21.50	-43.14	0.0429	90.00	-89.96	PASS
3	69.39	-92.15	21.50	-44.39	0.0322	90.00	-89.97	PASS
4	109.99	-105.92	21.60	-54.26	0.0033	90.00	-90.00	PASS
5	116.35	-104.82	22.00	-53.07	0.0044	90.00	-90.00	PASS
6	172.99	-87.58	21.30	-31.68	0.6003	90.00	-89.40	PASS

Remarks:

1. The measured power level is converted to EIRP using the equation:

Follow ANSI 63.10-2020 section 9.2.2 Equations to calculate EIRP

$$\text{EIRP Level (dBm/MHz)} = 21.98 - 20\log(\lambda) + 20\log(d_{\text{Meas}}) + P - G$$

where:

EIRP is the equivalent isotropically radiated power, in dBm

λ is the wavelength of the emission under investigation [300/fMHz], in m

d_{Meas} is the measurement distance, in m

P is the power measured at the output of the test antenna, in dBm

G is the gain of the test antenna, in dBi

Measurements made at 1 meter distance.

2. Power density formula as follows

Follow ANSI 63.10-2020 section 9.2.3 Equations to calculate power density

$$PD = EIRP_{Linear} / 4 \pi d^2$$

PD is the power density at the distance specified by the limit, in W/m²

EIRP_{Linear} is the equivalent isotropically radiated power, in watts

d is the 3m distance.

3. The far-field boundary is given in ANSI 63.10 as:

$$R \text{ far field} = (2 * L^2) / \lambda$$

L is the Largest Antenna Dimension of measurement antenna, including the reflector

λ is the wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
40	0.03	0.0075	0.240
50	0.03	0.0060	0.300

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
50	0.025	0.0060	0.208
75	0.025	0.0040	0.313

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
75	0.018	0.0040	0.162
110	0.018	0.0027	0.238

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
110	0.012	0.0027	0.106
170	0.012	0.0018	0.163

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
170	0.008	0.0018	0.073
260	0.008	0.0012	0.111

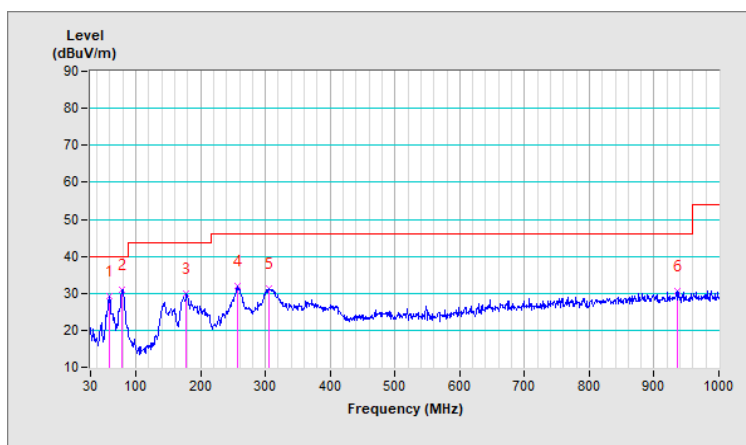
Below 1GHz Data:

Channel	CH 1 : 60.577 GHz		
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	59.10	29.3 QP	40.0	-10.7	1.50 H	117	42.6	-13.3
2	77.53	31.0 QP	40.0	-9.0	1.00 H	145	48.1	-17.1
3	177.44	29.9 QP	43.5	-13.6	1.25 H	89	43.9	-14.0
4	256.98	31.9 QP	46.0	-14.1	1.50 H	224	45.7	-13.8
5	305.48	31.3 QP	46.0	-14.7	1.00 H	303	43.4	-12.1
6	935.01	30.6 QP	46.0	-15.4	1.25 H	268	31.0	-0.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

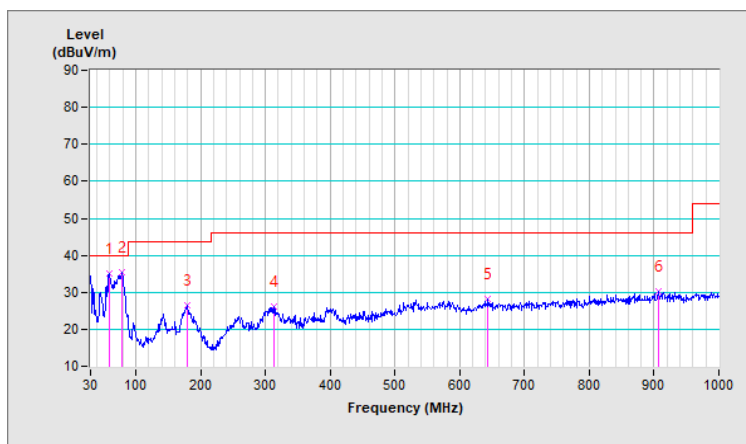


Channel	CH 1 : 60.577 GHz		
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	58.13	35.1 QP	40.0	-4.9	1.50 V	7	48.4	-13.3
2	78.50	35.3 QP	40.0	-4.7	1.01 V	183	52.7	-17.4
3	178.41	26.4 QP	43.5	-17.1	1.01 V	236	40.5	-14.1
4	314.21	26.1 QP	46.0	-19.9	1.25 V	242	37.8	-11.7
5	644.01	28.3 QP	46.0	-17.7	1.50 V	261	32.6	-4.3
6	906.88	30.3 QP	46.0	-15.7	1.01 V	71	31.0	-0.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	E1-011279	04	2025/12/04	2026/12/03
	E1-011280	05	2025/12/04	2026/12/03
	E1-011311	09	2025/12/04	2026/12/03
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2025/11/3	2026/11/2
Diode Pulse Limiter Schwarzbeck	VTSD 9561 F-N	01445	2026/04/18	2027/04/17
EMI Test Receiver R&S	ESCI	100613	2025/11/27	2026/11/26
Extension Power Line EMCI	EMCI-EXP-EU-US	023	2026/03/06	2027/03/05
LISN R&S	ENV216	101826	2026/03/06	2027/03/05
	ESH3-Z5	100311	2026/08/25	2027/08/24
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2026/01/03	2027/01/02
Software BVADT	BVADT_Cond_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2026/08/24	2027/08/23

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).
 3. The VCCI Site Registration No. is C-12040.
 4. Test date: 2026/9/7

4.2.3 Test Procedures

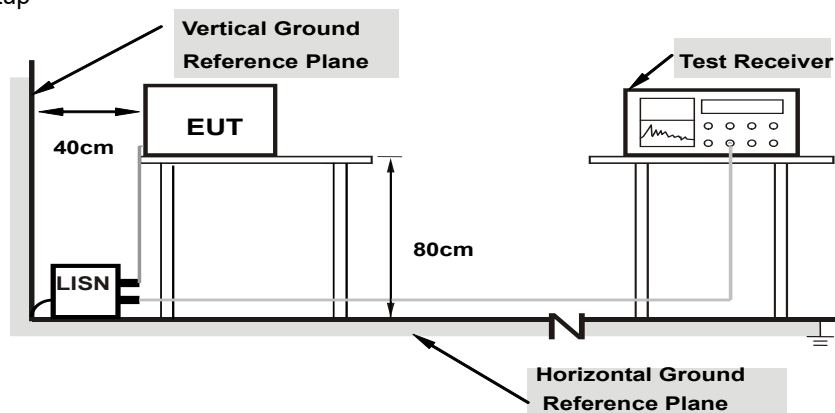
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

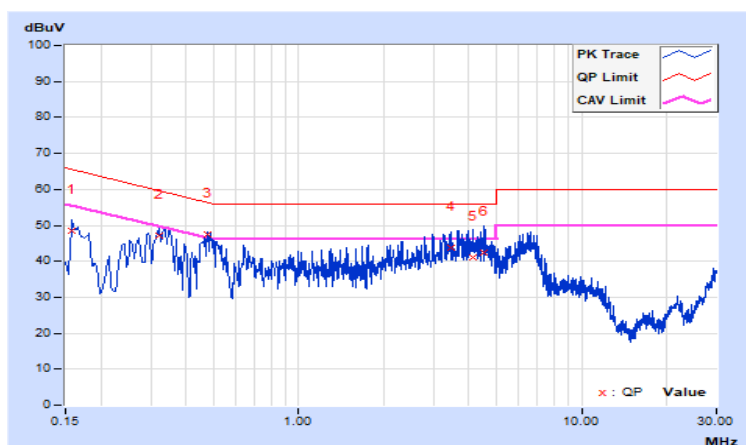
4.2.7 Test Results

Channel	CH 1 : 60.577 GHz		
Frequency Range	150kHz ~ 30MHz	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.78	38.79	23.78	48.57	33.56	65.57	55.57	-17.00	-22.01
2	0.32119	9.77	37.36	22.68	47.13	32.45	59.68	49.68	-12.55	-17.23
3	0.47560	9.78	37.81	25.18	47.59	34.96	56.42	46.42	-8.83	-11.46
4	3.44200	9.90	33.88	23.95	43.78	33.85	56.00	46.00	-12.22	-12.15
5	4.14200	9.91	31.15	22.48	41.06	32.39	56.00	46.00	-14.94	-13.61
6	4.54200	9.92	32.59	23.05	42.51	32.97	56.00	46.00	-13.49	-13.03

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

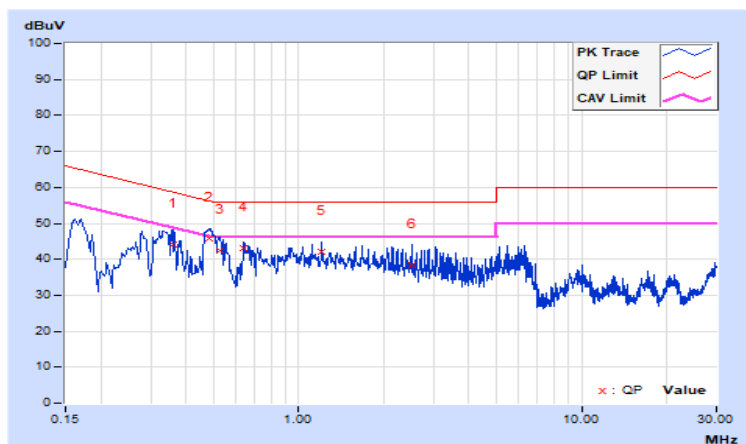


Channel	CH 1 : 60.577 GHz		
Frequency Range	150kHz ~ 30MHz	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.36200	9.78	34.36	18.54	44.14	28.32	58.68	48.68	-14.54	-20.36
2	0.48573	9.79	36.09	19.93	45.88	29.72	56.24	46.24	-10.36	-16.52
3	0.52985	9.79	32.49	13.85	42.28	23.64	56.00	46.00	-13.72	-22.36
4	0.64200	9.79	33.43	24.78	43.22	34.57	56.00	46.00	-12.78	-11.43
5	1.20600	9.81	32.43	22.65	42.24	32.46	56.00	46.00	-13.76	-13.54
6	2.51400	9.89	28.50	17.50	38.39	27.39	56.00	46.00	-17.61	-18.61

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

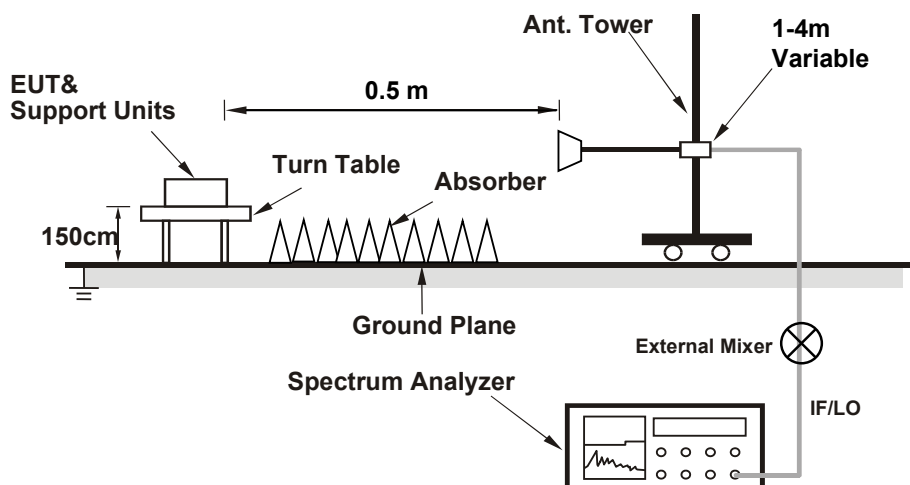


4.3 Occupied Bandwidth Measurement

4.3.1 Limits of Occupied Bandwidth Measurement

None: For reporting purposes only.

4.3.2 Test Setup



4.3.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer Agilent	N9010A	MY52220314	2025/12/22	2026/12/21
Spectrum Analyzer (50~110GHz) Keysight	N9030A	MY55330160	2026/01/20	2027/01/19
Conical Horn Antenna (50~75GHz) Keysight	WR15CH-Conical	RCH015RL-2	2026/01/28	2029/01/27
DC Power Supply TOPWARD	6306A	727263	NA	NA
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	2025/12/23	2026/12/22

Note:

- The calibration interval of the above test instruments is 12/36 months and the calibrations are traceable to NML/ROC and NIST/USA.
- Tested date: 2026/8/19

4.3.4 Test Procedure

1. Set Span=1.5 times the OBW
2. Set RBW = 1~5% of the OBW, or minimum of 1MHz if the this is not possible due to a large OBW.
3. Set the VBW approximately 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. The EUT shall be transmitting at its maximum data rate, Allow the trace to stabilize.

4.3.5 Deviation from Test Standard

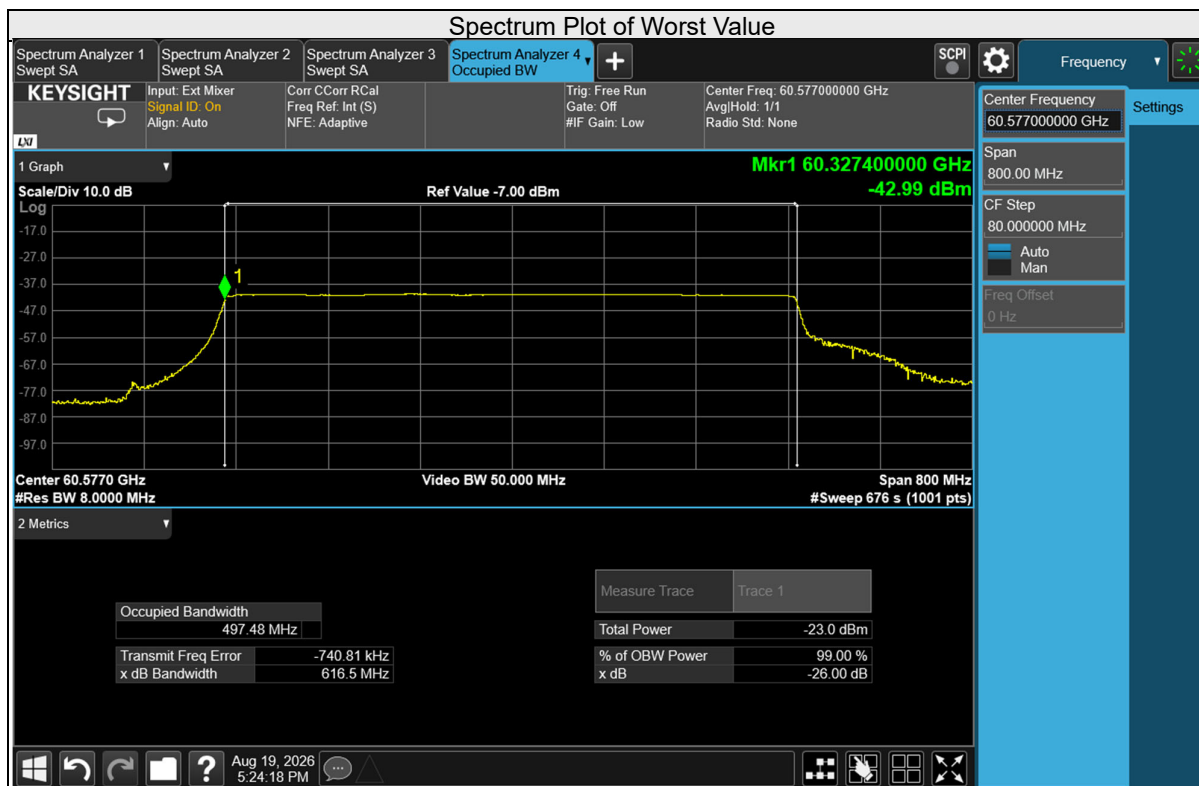
No deviation.

4.3.6 EUT Operating Conditions

Same as 4.1.6.

4.3.7 Test Result

Channel	Frequency (GHz)	Occupied Bandwidth (GHz)	Pass/Fail
1	60.577	0.49748	Pass



4.4 Output Power Measurement

4.4.1 Limits of Output Power Measurement

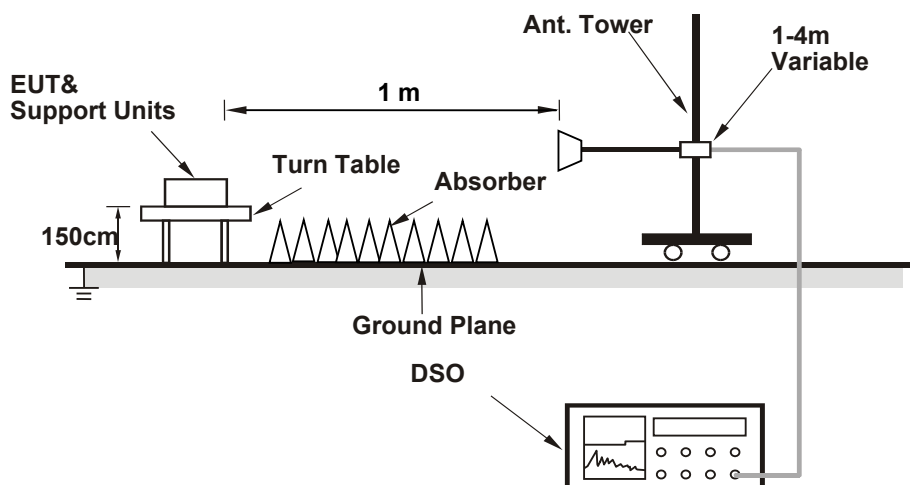
for 15.255(c)(ii)

The peak EIRP shall not exceed 3 dBm except that the peak EIRP shall not exceed 20 dBm if the sum of continuous transmitter off-times of at least two milliseconds equals at least 16.5 milliseconds within any contiguous interval of 33 milliseconds.

for 15.255(e)(2)

Devices other than field disturbance sensors/ radars with an emission bandwidth of less than 100 megahertz must limit their peak transmitter conducted output power to the product of 500 mW times their emission bandwidth divided by 100 megahertz. For the purposes of this paragraph, emission bandwidth is defined as the instantaneous frequency range occupied by a steady state radiated signal with modulation, outside which the radiated power spectral density never exceeds 6 dB below the maximum radiated power spectral density in the band, as measured with a 100 kilohertz resolution bandwidth spectrum analyzer.

4.4.2 Test Setup



4.4.3 Test Instruments

Same as Item 4.1.2.

4.4.4 Test Procedures

- 1) Place the measurement antenna at a measurement distance that is in the far-field of the measurement antenna, in the far-field of the EUT antenna, and meets the measurement distance requirements for final radiated measurements as specified in 9.1.4.
- 2) Place the measurement antenna in the main beam of the EUT then maximize the fundamental emission using the procedures of 9.7, noting that multiple peaks can be found at different beam orientations and/or polarizations.
- 3) Correct the power reading from the spectrum analyzer for any external gain and/or attenuation between the measurement antenna and the spectrum analyzer. This is the power at the output of the measurement antenna
- 4) Calculate the EIRP from the power at the output of the measurement antenna using Equation (22), and then convert to linear form using Equation (24).
- 5) Where applicable, calculate conducted output power from the EIRP using Equation (27).
- 6) FMCW emissions, the procedures in 4.1.5.2.8 and Annex L

$$R \text{ far field} = (2 * L^2) / \lambda$$

Where:

L is the Largest Antenna Dimension of either the EUT antenna or measurement antenna, including the reflector

λ is the wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
60.577	0.007422432	0.00495	0.22

*Measurements made at 1 meter distance.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

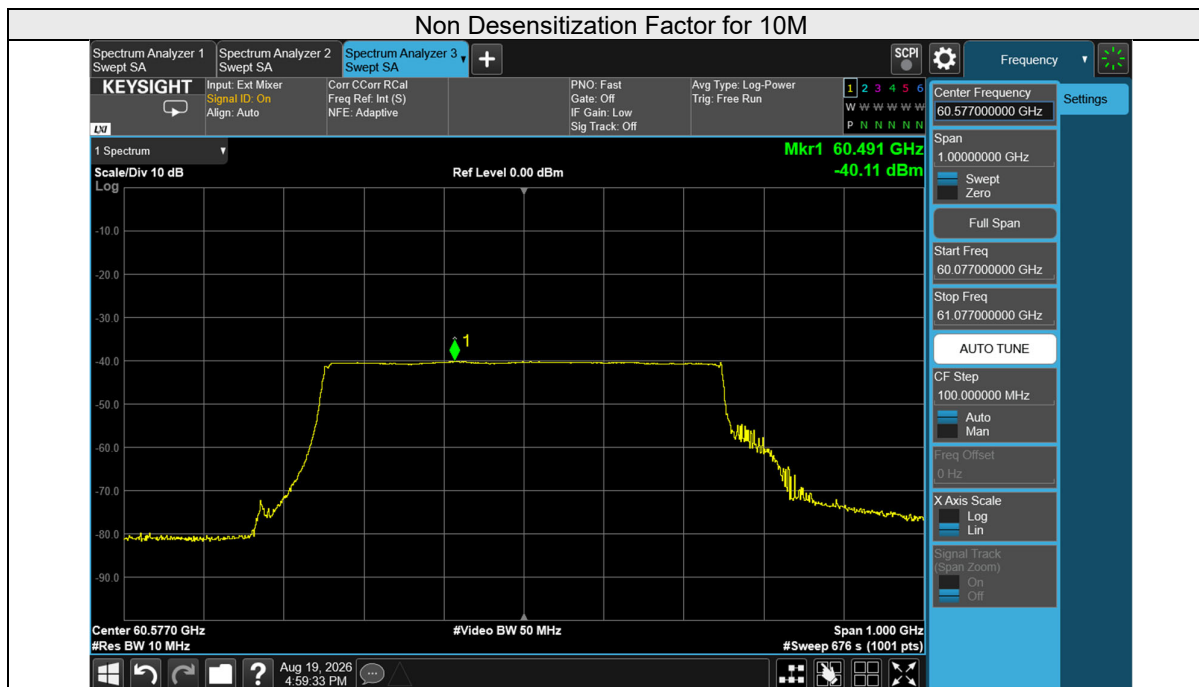
Same as 4.1.6.

4.4.7 Test Results

For Output Power (EIRP)

Frequency (MHz)	Max Peak EIRP(dBm)	Peak EIRP Limit(dBm)	Result
60577	18.87	20.00	Pass

Note: Max Peak EIRP = Non Desensitization Factor + Ref Lvl Offset



Spectrum analyzer

Frequency (GHz)	Ant Gain(dBi)	IF Cable loss	d (m)	Desensitization Factor (dB)	Free space loss (dB)	Ref Lvl Offset (dB)
60577	21.70	12.53	1	0.06	68.09	58.98

Note1: Ref Lvl Offset = Free Space loss - Ant. Gain + Cable Loss + Desensitization Factor

Note2: The Mixer conversion loss has been offset in mixer mode of spectrum analyzer.

Note3: The Free-space propagation path loss is determined from Equation (G.9) of Annex G in ANSI C63.10

$$= 20\log(F) + 20\log(d) - 27.5$$

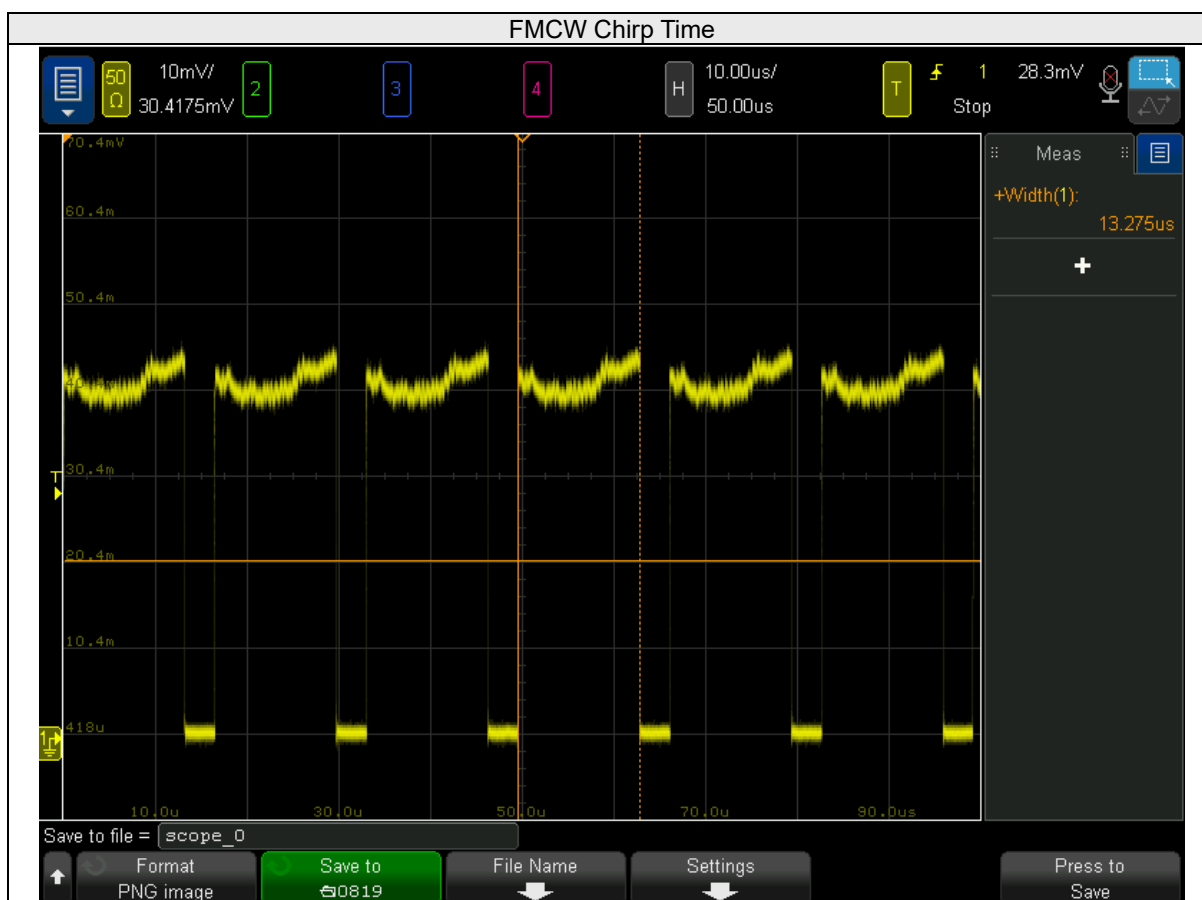
The FMCW Desensitization factor

Start Frequency (GHz)	Stop Frequency (GHz)	FMCW Chirp Width (MHz)	FMCW Chirp Time (us)	FMCW Chirp Rate (Hz/s)	RBW (MHz)	Normalized Sweep Rate (lin)	Desensitization factor (lin)	Desensitization factor (dB)
60	61	497	13.28	3.74E+13	10	0.37	0.99	-0.06

Note: The derivation of the FMCW Desensitization Factor is given in ANSI C63.10-2020/Cor.1-2023 Annex L.1.

$$\alpha = \frac{1}{\left(1 + \left[\left(\frac{2 \times \ln(2)}{\pi}\right)^2 \times \left(\frac{BW_{\text{Chirp}}}{T_{\text{Chirp}} \times RBW^2}\right)^2\right]\right)^{0.25}}$$

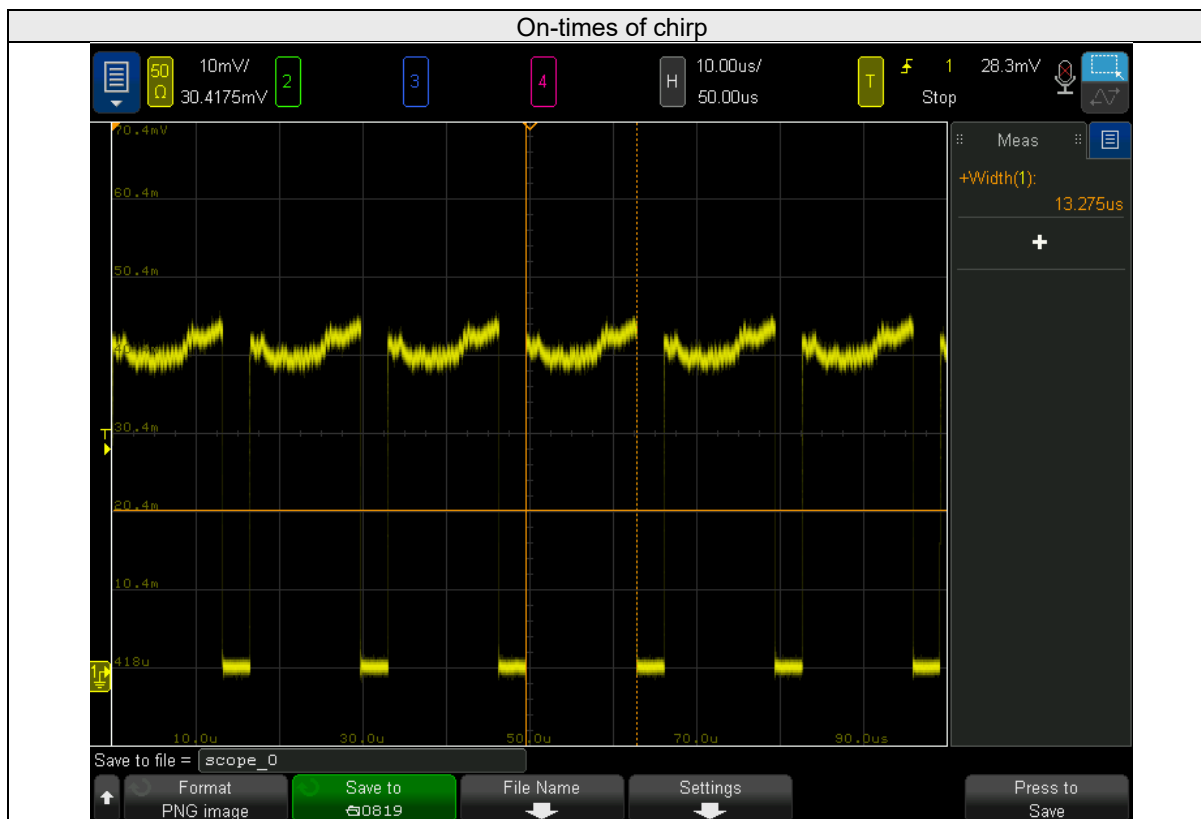
α is the reduction in amplitude
 BW_{Chirp} is the FMCW Chirp Bandwidth
 T_{Chirp} is the FMCW Chirp Time
 B is the 3dB IF Bandwidth=RBW



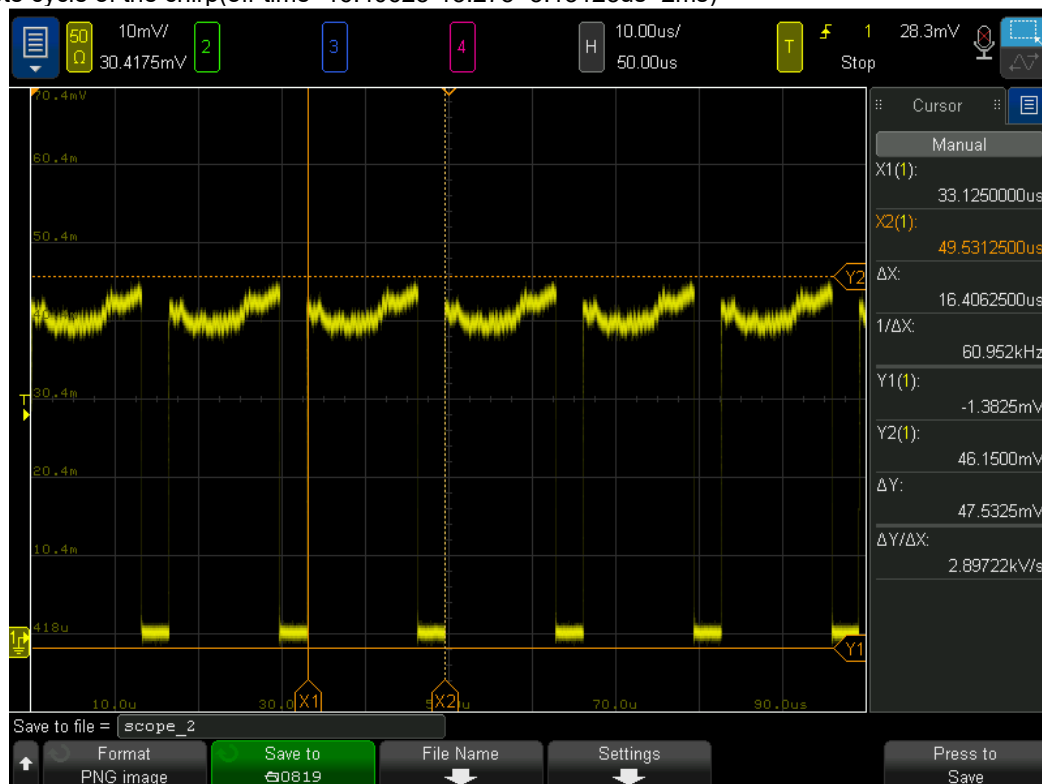
For continuous transmitter time

Tx On Duration(ms)	Tx Off Duration(ms)	Period (ms)	Tx Off Limit (ms)	Result
10.546875	22.453125	33	16.5	PASS

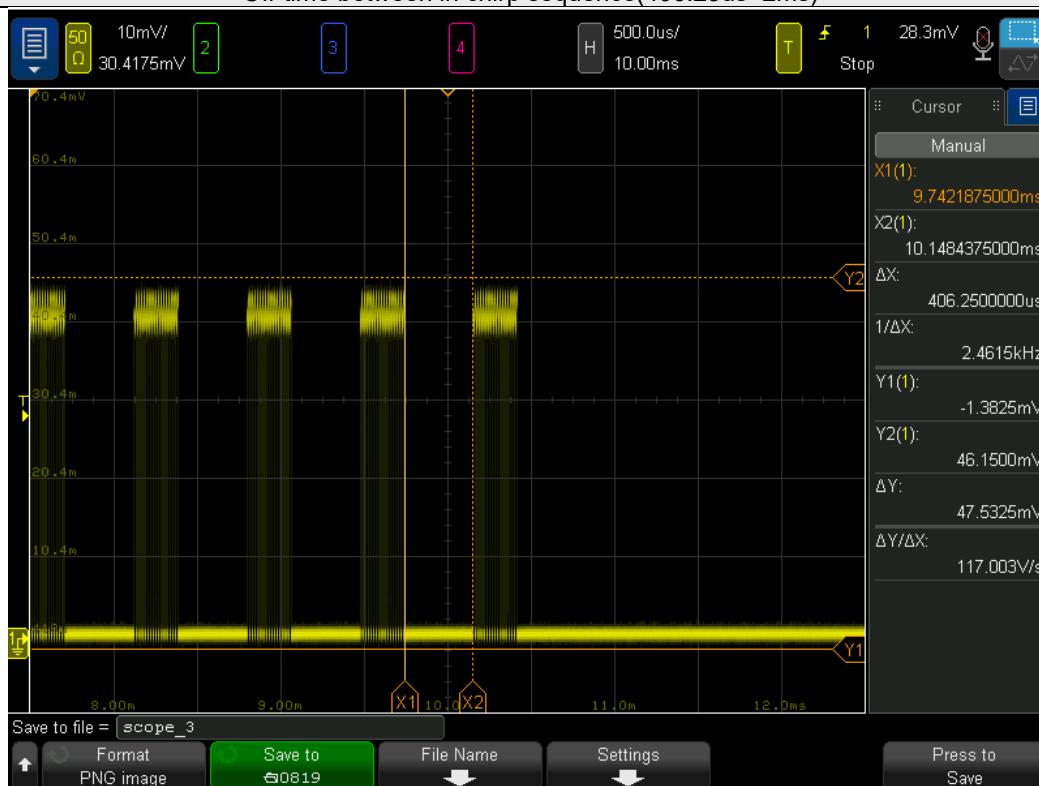
Note: Tx Off Duration(ms)=Period- Tx On Duration(ms)
 $33(\text{ms}) - 10.546875(\text{ms}) = 22.453125(\text{ms})$

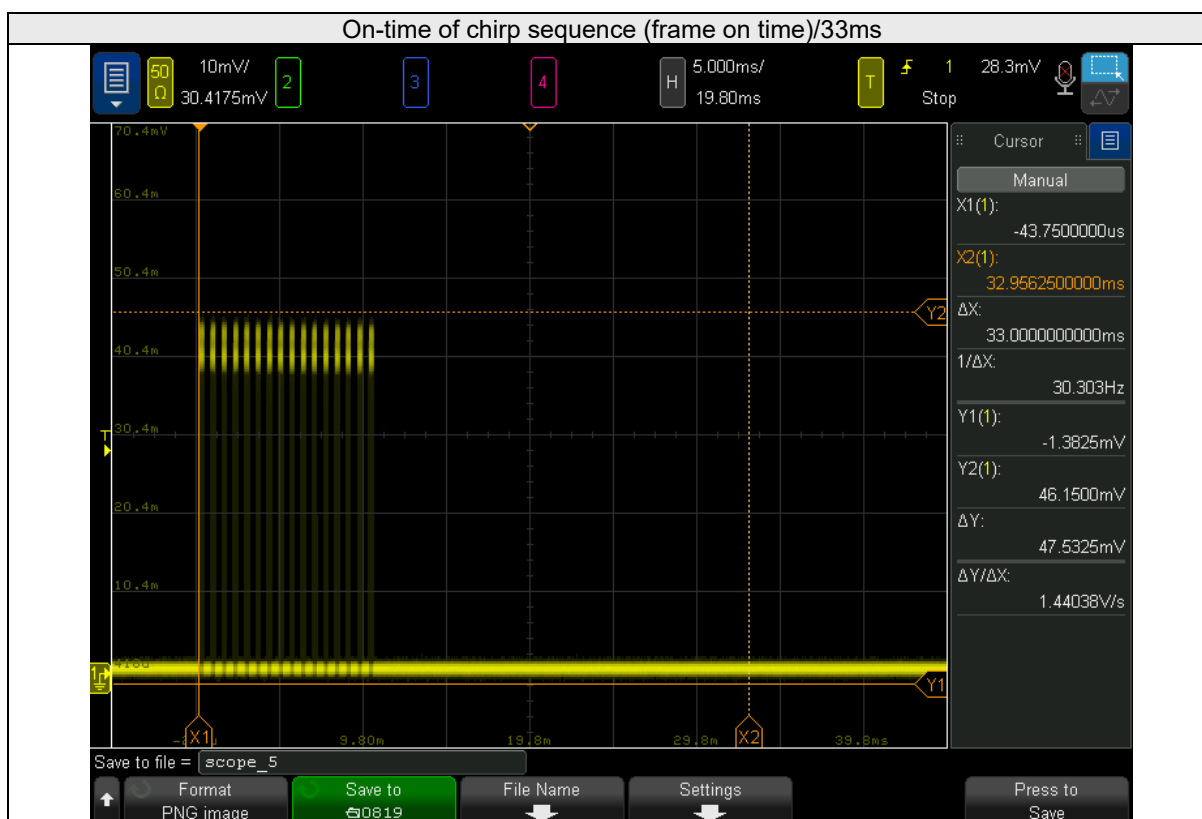
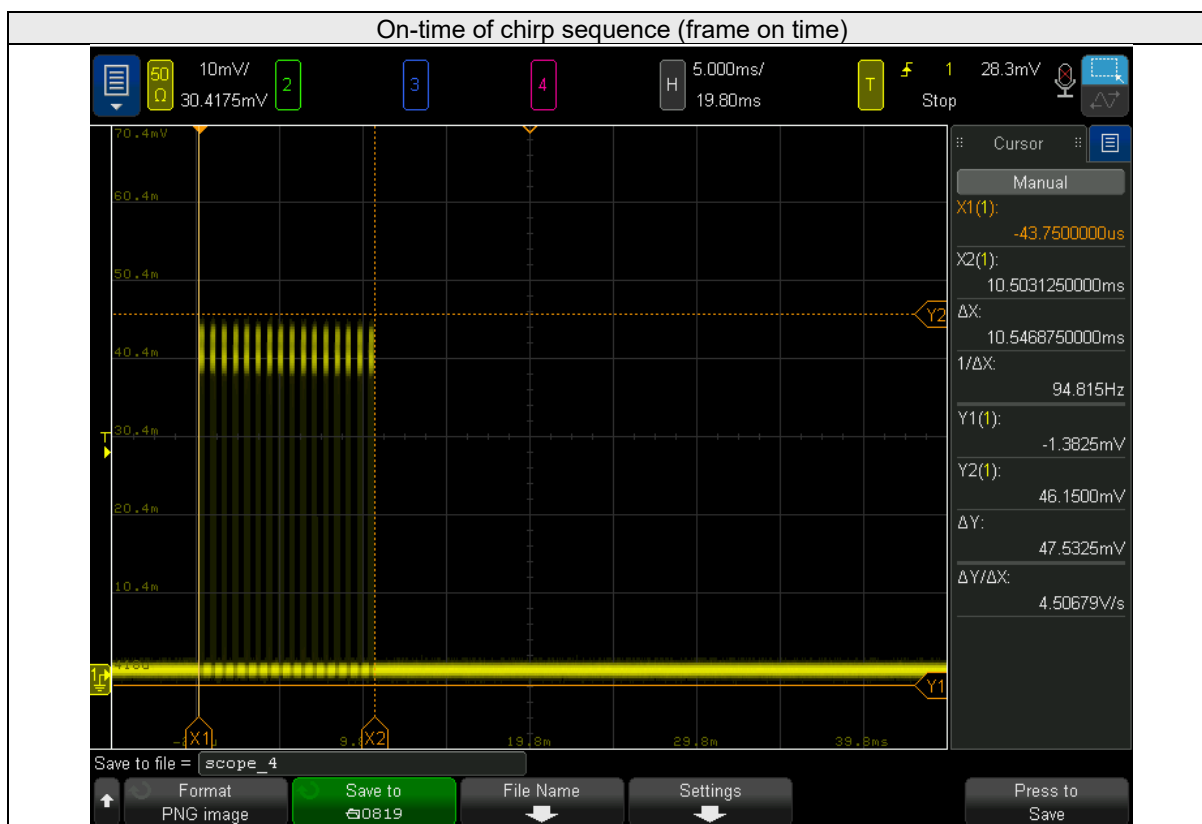


complete cycle of the chirp(off-time=16.40625-13.275=3.13125us<2ms)



Off-time between in chirp sequence(406.25us<2ms)



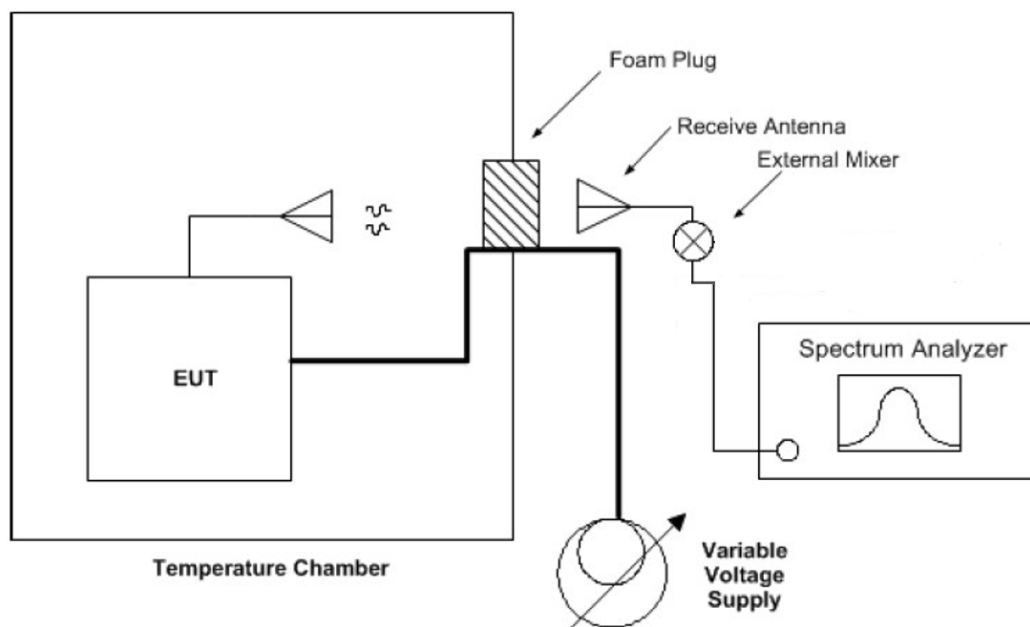


4.5 Frequency Stability Measurement

4.5.1 Limits of Frequency Stability Measurement

15.255(f) Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation.

4.5.2 Test Setup



4.5.3 Test Instruments

Same as Item 4.2.3.

4.5.4 Test Procedure

- Arrange EUT and test equipment as above setup configuration.
- With the EUT at ambient temperature and voltage source set to the EUT nominal operating voltage (100%), record the spectrum mask of the EUT emission on the spectrum analyzer.
- Vary EUT power supply between 85% and 115% of nominal, and record the frequency excursion of the EUT emission mask.
- Set the power supply to 100% nominal setting, and raise EUT operating temperature to 50 °C. Record the frequency excursion of the EUT emission mask.
- Repeat step d) at each 10 °C increment down to -20 °C

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as 4.1.6.

4.5.7 Test Results

Frequency Stability Versus Temperature									
Operating Frequency: 60.577 GHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		FL (GHz)	FH (GHz)	FL (GHz)	FH (GHz)	FL (GHz)	FH (GHz)	FL (GHz)	FH (GHz)
50	120	60.32803	60.82551	60.32803	60.82551	60.32805	60.82553	60.32804	60.82552
40	120	60.32804	60.82552	60.32805	60.82553	60.32803	60.82551	60.32803	60.82551
30	120	60.32799	60.82547	60.32797	60.82545	60.32800	60.82548	60.32795	60.82543
20	120	60.32816	60.82564	60.32818	60.82566	60.32816	60.82564	60.32818	60.82566
10	120	60.32853	60.82601	60.32853	60.82601	60.32852	60.82600	60.32854	60.82602
0	120	60.32845	60.82593	60.32847	60.82595	60.32844	60.82592	60.32846	60.82594
-10	120	60.32825	60.82573	60.32825	60.82573	60.32821	60.82569	60.32824	60.82572
-20	120	60.32825	60.82573	60.32827	60.82575	60.32826	60.82574	60.32823	60.82571

Frequency Stability Versus Voltage									
Operating Frequency: 60.577 GHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		FL (GHz)	FH (GHz)	FL (GHz)	FH (GHz)	FL (GHz)	FH (GHz)	FL (GHz)	FH (GHz)
20	138	60.32822	60.82570	60.32818	60.82566	60.32820	60.82568	60.32819	60.82567
	120	60.32816	60.82564	60.32818	60.82566	60.32816	60.82564	60.32818	60.82566
	102	60.32819	60.82567	60.32820	60.82568	60.32820	60.82568	60.32820	60.82568

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab

Tel: 886-(0)2-26052180

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-(0)3-6668565 (SIP)

Tel: 886-(0)3-5120595 (WD)

Hwa Ya EMC/RF/Safety/SAR Lab & Wenming EMC/RF Lab

Tel: 886-(0)3-3183232

Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

The address and road map of all our labs can be found in our web site also.

--- END ---