



Date: 16 June 2022

I.T.L. Product Testing Ltd. FCC/IC Radio Test Report

for

Amimon Ltd.

Equipment under test:

Wireless HD Video System - Video Display Unit (VDU)

AMN42012

Tested by: 
M. Zohar

Approved by: 
David Shidowsky

This report must not be reproduced, except in full, without the written permission of I.T.L. (Product Testing) Ltd. This report relates only to items tested.
I.T.L. (Product Testing) Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results is marked with a triangle symbol “ Δ ”. Customer model name, addresses, names, trademarks, etc. are not considered data.

Measurement/Technical Report for Amimon Ltd.

Wireless HD Video System - Video Display Unit (VDU)

AMN42012

FCC ID: VQSA MN42012

IC: 7680A-AMN42012

This report concerns: Original Grant

Equipment type: FCC: (UNII) Unlicensed National Information

Infrastructure TX

IC: Wireless Local Area Network Device

Limits used: 47CFR15, Part 15, Subpart E, Section 15.407
RSS 248, Issue 1, November 19, 2021

Measurement procedures used:

FCC: KDB 789033 D02 v02r01, ANSI C63.10:2013 and KDB 987594 D02 U-NII 6GHz EMC Measurement v01

IC: RSS 248 Issue 1

Application for Certification

prepared by:

Ram Ezrah

I.T.L. Product Testing Ltd.

1 Bat Sheva St.

Lod 7116002

email: rame@itlglobal.org

Applicant for this device:

(Manufacturer)

Gabi Nocham

Amimon Ltd.

26 Zarhin St.

Raanana, 4366250, Israel



Table of Contents

1. GENERAL INFORMATION -----	5
1.1 Administrative Information.....	5
1.2 List of Accreditations	6
1.3 Product Description	6
1.4 Test Methodology	7
1.5 Test Facility	7
1.6 Measurement Uncertainty	7
2. SYSTEM TEST CONFIGURATION-----	8
2.1 Justification.....	8
2.2 EUT Exercise Software	8
2.3 Special Accessories	8
2.4 Equipment Modifications	8
2.5 Tested System Configuration	9
3. CONDUCTED AND RADIATED MEASUREMENT TEST SETUP PHOTOS -----	10
4. CONDUCTED EMISSION FROM AC MAINS -----	10
4.1 Test Specification	10
4.2 Test Procedure	10
4.3 Test Limit.....	11
4.4 Test Results.....	11
5. MAXIMUM CONDUCTED OUTPUT POWER-----	17
5.1 Test Specification	17
5.2 Test Procedure	17
5.3 FCC Test Limit	17
5.4 IC Test Limit	17
5.5 Test Results.....	17
5.6 Test Equipment Used; Maximum Peak Power Output*	18
6. MAXIMUM POWER SPECTRAL DENSITY (PSD) -----	19
6.1 Test Specification	19
6.2 Test Procedure	19
6.3 FCC Test Limit	19
6.4 IC Test Limit	19
6.5 Test Results.....	19
6.6 Test Equipment Used; Transmitted Power Density	22
7. BAND EDGE -----	23
7.1 Test Specification	23
7.2 Test Procedure	23
7.3 FCC Test Limits.....	23
7.4 IC Test Limits.....	23
7.5 Test Results.....	23
7.6 Test Instrumentation Used, Band Edge	25
8. UNDESIRABLE/UNWANTED EMISSIONS -----	26
8.1 Test Specification	26
8.2 Test Procedure	26
8.3 FCC and IC Test Limits	26
8.4 Test Results.....	27
8.5 Test Instrumentation Used, Emissions in Non Restricted Frequency Bands .38	38
8.6 Field Strength Calculation	39
9. 99% OCCUPIED BANDWIDTH-----	40
9.1 Test Specification	40
9.2 Test Procedure	40
9.3 FCC and IC Test Limit	40
9.4 Test Results.....	40



9.5 Test Equipment Used; Occupied Bandwidth.....	43
10. 26DB BANDWIDTH-----	44
10.1 Test Specification	44
10.2 Test Procedure	44
10.3 Test Limit.....	44
10.4 Test Results.....	44
10.5 Test Equipment Used; 26dB Bandwidth	47
11. IN-BAND EMISSION MASK-----	48
11.1 Test Specification	48
11.2 Test Procedure	48
11.3 FCC and IC Test Limit.....	48
11.4 Test Results.....	48
11.5 Test Equipment Used; In-band Emission Mask	51
12. CONTENTION BASED PROTOCOL-----	52
12.1 Test Specification	52
12.2 Test Procedure	52
12.3 Test Procedure Modification.....	52
12.4 Test Limit.....	53
12.5 Test Results.....	53
12.6 Test Equipment Used; Contention Based Protocol.....	57
13. ANTENNA GAIN/INFORMATION-----	58
13.1 Test Specification	58
13.2 Test Limit.....	58
13.3 Test Results.....	58
14. APPENDIX A - CORRECTION FACTORS -----	59
14.1 For ITL #1911 OATS RF Cable.....	59
14.2 For ITL #1840 Anechoic Chamber RF Cable.....	59
14.3 For ITL # 1075 Active Loop Antenna	60
14.4 For ITL #1356 Biconical Antenna	60
14.5 For ITL # 1349 Log Periodic Antenna	61
14.6 For ITL # 1352 1-18 Horn Antenna	61
14.7 For ITL # 1353 18-26.5 GHz Horn Antenna	62
14.8 For ITL # 1777 26.5-40 GHz Horn Antenna	62
14.9 For Horn Antenna Model: SWH-28	63



1. General Information

1.1 Administrative Information

Manufacturer: Amimon Ltd.

Manufacturer's Address: 26 Zarhin St., PO Box 2308, Raanana 4366250, Israel

Manufacturer's Representative: Gabi Nocham

Equipment Under Test (E.U.T): Wireless HD Video System - Video Display Unit (VDU)

Equipment Model: AMN42012

Equipment Serial No.: 3RBX2639200277

Equipment HVIN: AMN42012

Date of Receipt of E.U.T: December 27, 2020

Start of Test (original): December 27, 2020

Start of Radiated Emission above 1 GHz test: December 8, 2021

Start of PSD retesting: May 29, 2022

End of Test (original): March 03, 2021

End of Radiated Emission above 1 GHz test: December 15, 2021

End of PSD retesting: May 29, 2022

Test Laboratories Locations:

1. I.T.L (Product Testing) Ltd.
1 Bat Sheva St., Lod 7120101, Israel
2. Electrical and Electronics Laboratory, SII.
42 Haim Levanon St., Tel Aviv 69977, Israel

Test Specifications:

47CFR15, Part 15, Subpart E, Section 15.407
KDB 987594 D02 U-NII 6GHz EMC Measurement v01
RSS 248 Issue 1, November 19, 2021



1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), FCC Designation No. IL1005.
3. Department of Innovation, Science and Economic Development (ISED) Canada, CAB identifier: IL1002
4. Electrical and Electronics Laboratory, SII (Israel), Registration No. IL1003

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

The Draco system provides high-end, high performance wireless HD video connection that can operate in challenging unmanned environment.

The AMN41012 is the video source unit, which is connected to a camera to capture video signals and to transmit these signals to its companion device AMN42012 thus creating a wireless video link.

The AMN42012 is the video display unit that receives the video information transmitted from AMN41012 unit and transfers the images to various types of computer monitors/displays. This enables the user or camera operator to monitor the video transmitted from the remoted camera connected to the AMN41012.

Supply Voltage Range	5VDC \pm 10%
Mode of Operation	Transceiver (1 port TX/RX, 4 ports RX)
Modulations	OFDM 16 QAM
Assigned Frequency Range	5925.0-7125.0 MHz
Operating Frequency Range	5925.0-6425.0 MHz
Transmit power (conducted)	\sim 8.0 dBm (for 20MHz BW) \sim 11.0 dBm (for 40MHz BW)
Antenna Gain	2.0 dBi
Modulation BW	20 MHz and 40 MHz



1.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in KDB 789003 D02 v02r01, KDB 987594 D02 U-NII 6GHz EMC Measurement v01 and ANSI C63.10: 2013, and in RSS 248 Issue 1, November 19, 2021, and RSS-Gen Issue 5, March 2019, Amendment 1. Radiated testing was performed at an antenna to EUT distance of three meters.

1.5 Test Facility

Emissions tests were performed at I.T.L.'s testing facility in Lod, Israel, and at the Electrical and Electronics Laboratory, SII, Registration No. IL1003.

I.T.L.'s EMC Laboratory is accredited by A2LA, certificate No. 1152.01 and its FCC Designation Number is IL1005

1.6 Measurement Uncertainty

Conducted Emission

Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4)

0.15 – 30 MHz:

Expanded Uncertainty (95% Confidence, K=2):
± 3.44 dB

Radiated Emission

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site:

30-1000MHz:

Expanded Uncertainty (95% Confidence, K=2):
± 4.96 dB

1 GHz to 6 GHz

Expanded Uncertainty (95% Confidence, K=2):
± 5.19 dB

>6 GHz

Expanded Uncertainty (95% Confidence, K=2):
± 5.51 dB



2. System Test Configuration

2.1 Justification

1. The E.U.T contains a 6G band transceiver module that can transmit from 1 port only and at 2 optional BW's: 20MHz or 40MHz.
2. The E.U.T. was tested for usage at UNII5.
3. The unit was evaluated while transmitting at 20MHz BW: the low channel (5935.0MHz), the mid channel (6175.0MHz) and the high channel (6415.0MHz) and at 40MHz BW: the low channel (5945.0MHz), the mid channel (6185.0MHz) and the high channel (6405.0MHz). Each one with duty cycle above 98%.
4. Conducted emission tests were performed with the E.U.T. antenna terminal connected by a RF cable to the Spectrum Analyzer through external attenuator.
5. Only for testing, the E.U.T was powered by a typical AC/DC adapter.
6. Radiated emission tests were performed after exploratory band edge emission testing, that was performed with two optional antenna types: "mushroom", model AMN_ASM_1011, and "dipole", model AMN_ANT_1010, to determine the "worst case" radiation each one for different transmission BW.
7. Complimentary radiated emission tests above 1GHz were performed at the SII laboratory; see section 1.2 for accreditation.
8. According to the below screening results, the "worst case" antenna type related to band edge radiation was the "dipole" type.

BW (MHz)	Frequency (MHz)	"Mushroom" antenna type	"Dipole" antenna type
20.0	5935.0	64.3	64.3
	6415.0	63.8	64.0
40.0	5945.0	64.9	65.0
	6405.0	64.8	64.8

Figure 1. Screening Results

2.2 EUT Exercise Software

No special exercise software was used.

2.3 Special Accessories

No special accessories were used

2.4 Equipment Modifications

Customer reduced the power for each port to comply with the PSD limits.

2.5 Tested System Configuration

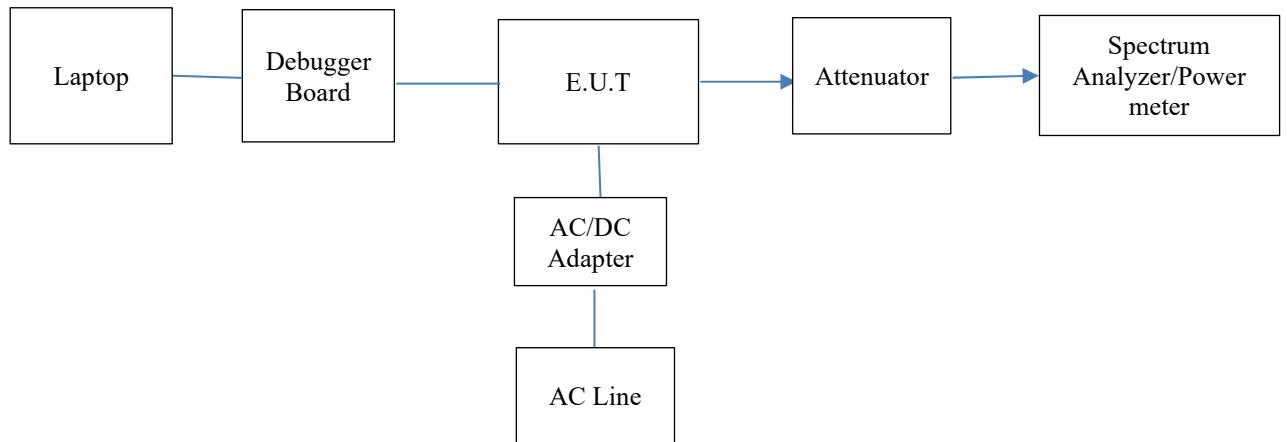


Figure 2. Configuration of Tested System Conducted

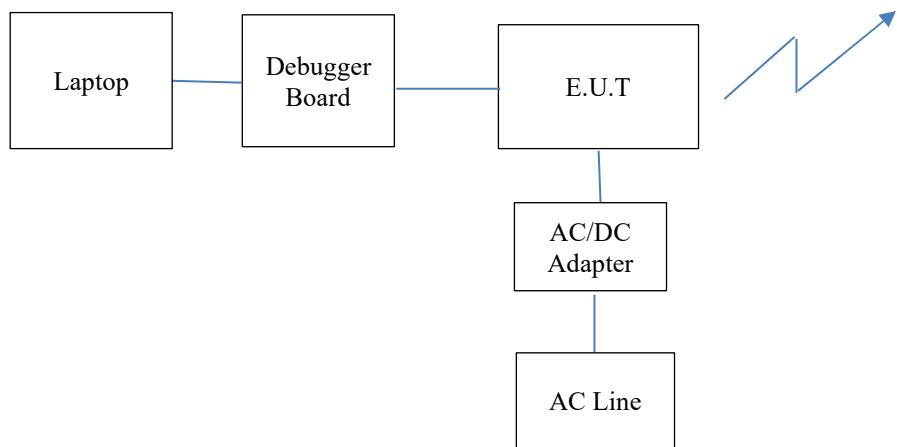


Figure 3. Configuration of Tested System Radiated



3. Conducted and Radiated Measurement Test Setup Photos

See a separate file.

4. Conducted Emission from AC Mains

4.1 Test Specification

FCC Part 15, Subpart C, Section 15.207

RSS-Gen, Issue 5, March 2019, Amendment 1, Section 8.8

4.2 Test Procedure

(Temperature (22°C)/ Humidity (56%RH))

The E.U.T operation mode and test setup are as described in Section 2 of this report. In order to minimize background noise interference, the conducted emission testing was performed inside a shielded room, with the E.U.T placed on a 0.8 meter high wooden table, 0.4 meter from the room's vertical wall. In the case of a floor-standing E.U.T., it was placed on the horizontal ground plane.

The E.U.T was powered from 115 V AC / 60 Hz via 50 Ohm / 50 μ Hn Line Impedance Stabilization Network (LISN) on the phase and neutral lines. The LISN's were grounded to the shielded room ground plane (floor), and were kept at least 0.8 meters from the nearest boundary of the E.U.T.

The center of the E.U.T.'s AC cable was folded back and forth, in order to form a bundle less than 0.40 meters and a total cable length of 1 meter.

The effect of varying the position of the cables was investigated to find the configuration that produces maximum emission.

The emission voltages at the LISN's outputs were measured using a computerized receiver, complying with CISPR 16 requirements. The specification limits are loaded to the receiver and are displayed on the receiver's spectrum display.

The E.U.T was evaluated in TX operation mode.

A frequency scan between 0.15 and 30 MHz was performed at 9 kHz I.F. band width, using peak detection.

The spectral components having the highest level on each line were measured using a quasi-peak and average detector.



4.3 Test Limit

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

4.4 Test Results

JUDGEMENT: Passed by -12.06 dB

The EUT met FCC Part 15, Subpart C, and RSS-Gen Issue 5 March 2019 Amendment 1 specification requirements.

The margin between the emission levels and the specification limit is, in the worst case, -14.20 dB for the phase line at 24.018 MHz and -12.06 dB at 24.022 MHz for the neutral line.

The details of the highest emissions are given in *Figure 4* to *Figure 7*.



Conducted Emission

Specification: FCC Part 15, Subpart C;
RSS-Gen Issue 5

Lead: Phase

Detectors: Peak, Quasi-peak, Average

Power Operation AC/DC Adapter

EDIT PEAK LIST (Final Measurement Results)					
Trace1:	CE22BQP				
Trace2:	CE22BAP				
Trace3:	---				
TRACE	FREQUENCY	LEVEL dB μ V	DELTA	LIMIT dB	
1 Quasi Peak	166 kHz	43.89	-21.26		
2 Average	170 kHz	26.09	-28.86		
1 Quasi Peak	426 kHz	29.52	-27.80		
2 Average	430 kHz	20.53	-26.71		
1 Quasi Peak	482 kHz	29.96	-26.33		
2 Average	482 kHz	22.15	-24.14		
1 Quasi Peak	738 kHz	21.10	-34.89		
2 Average	1.042 MHz	15.70	-30.29		
2 Average	1.558 MHz	15.66	-30.33		
1 Quasi Peak	1.562 MHz	21.09	-34.90		
2 Average	3.598 MHz	17.92	-28.07		
1 Quasi Peak	3.602 MHz	27.79	-28.20		
1 Quasi Peak	3.678 MHz	28.67	-27.32		
2 Average	3.77 MHz	20.01	-25.98		
2 Average	8.366 MHz	25.21	-24.78		
1 Quasi Peak	8.402 MHz	31.61	-28.39		
1 Quasi Peak	11.122 MHz	30.45	-29.54		
2 Average	11.218 MHz	24.99	-25.00		
1 Quasi Peak	24.018 MHz	36.50	-23.49		
2 Average	24.018 MHz	35.79	-14.20		

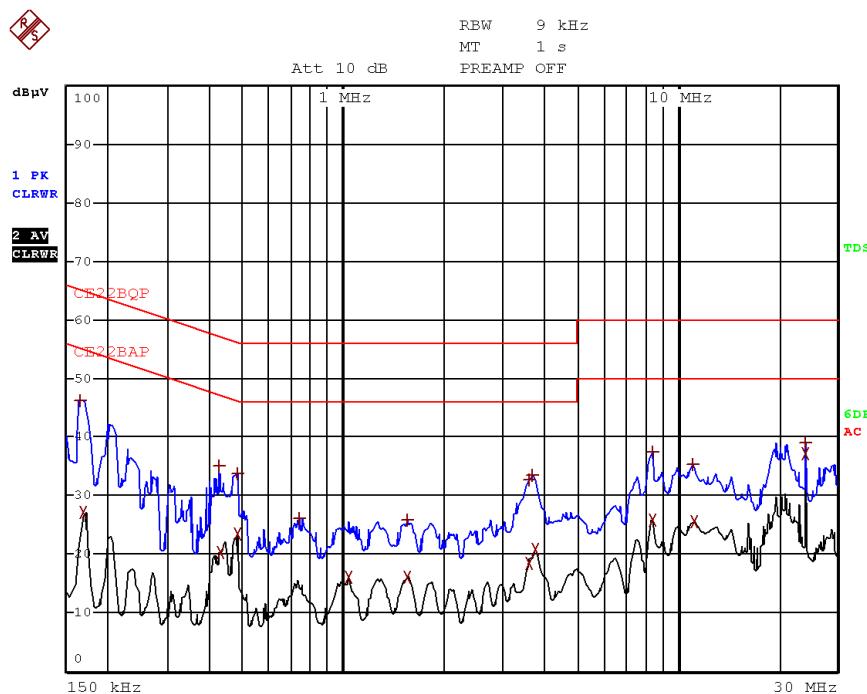
Date: 27.DEC.2020 10:04:29

Figure 4. Detectors: Peak, Quasi-peak, Average

Note: QP Delta/Av Delta refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Conducted Emission

Specification: FCC Part 15, Subpart C;
RSS-Gen Issue 5
Lead: Phase
Detectors: Peak, Quasi-peak, Average
Power Operation AC/DC Adapter



Date: 27.DEC.2020 09:54:25

Figure 5. Detectors: Peak, Quasi-peak, Average



Conducted Emission

Specification: FCC Part 15, Subpart C;
RSS-Gen Issue 5
Lead: Neutral
Detectors: Peak, Quasi-peak, Average
Power Operation AC/DC Adapter

EDIT PEAK LIST (Final Measurement Results)					
Trace1:	CE22BQP				
Trace2:	CE22BAP				
Trace3:	---				
TRACE	FREQUENCY	LEVEL dB μ V	DELTA	LIMIT dB	
1	Quasi Peak 170 kHz	43.24	-21.72		
2	Average 170 kHz	24.85	-30.10		
1	Quasi Peak 426 kHz	31.62	-25.70		
2	Average 426 kHz	21.61	-25.71		
1	Quasi Peak 438 kHz	30.70	-26.39		
2	Average 442 kHz	23.20	-23.81		
2	Average 1.042 MHz	17.96	-28.03		
1	Quasi Peak 1.118 MHz	17.93	-38.06		
1	Quasi Peak 1.594 MHz	21.43	-34.56		
2	Average 1.838 MHz	16.05	-29.94		
2	Average 2.742 MHz	15.88	-30.11		
1	Quasi Peak 3.57 MHz	26.89	-29.11		
1	Quasi Peak 3.71 MHz	28.16	-27.83		
2	Average 3.802 MHz	19.67	-26.32		
2	Average 8.378 MHz	24.60	-25.39		
1	Quasi Peak 8.394 MHz	31.18	-28.81		
1	Quasi Peak 11.078 MHz	30.16	-29.83		
2	Average 11.222 MHz	25.19	-24.80		
1	Quasi Peak 24.022 MHz	38.42	-21.57		
2	Average 24.022 MHz	37.93	-12.06		

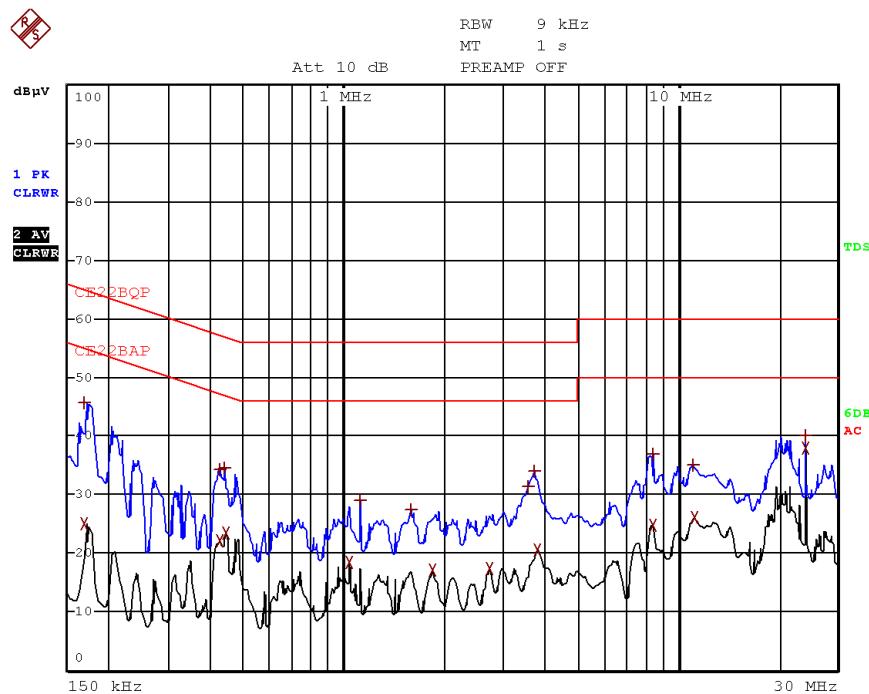
Date: 27.DEC.2020 10:20:10

Figure 6. Detectors: Peak, Quasi-peak, Average

Note: QP Delta/Av Delta refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Conducted Emission

Specification: FCC Part 15, Subpart C;
RSS-Gen Issue 5
Lead: Neutral
Detectors: Peak, Quasi-peak, Average
Power Operation: AC/DC Adapter



Date: 27.DEC.2020 10:18:26

Figure 7 Detectors: Peak, Quasi-peak, Average



4.5 **Test Equipment Used; Conducted Emission**

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
LISN	Fischer	FCC-LISN-25A	127	October 28, 2020	October 31, 2021
Transient Limiter	HP	11947A	3107A03041	October 28, 2020	October 31, 2021
EMI Receiver	Rohde & Schwarz	ESCI7	100724	March 9, 2020	March 31, 2021
RF Cable	Telrad	RJ214	-	October 28, 2020	October 31, 2021

Figure 8 Test Equipment Used



5. Maximum Conducted Output Power

5.1 Test Specification

FCC, Part 15, Subpart E, Section 407(a)

RSS 248 Issue 1 November 19, 2021, Section 4.6.3(b)

5.2 Test Procedure

(Temperature (22°C)/ Humidity (57%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report.

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable (total loss=31.0 dB). Special attention was taken to prevent Spectrum Analyzer RF input overload.

Spectrum setting was done according to KDB 789033, method PM instructions (section E.3.a).

5.3 FCC Test Limit

For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

5.4 IC Test Limit

For client devices, the maximum e.i.r.p. over the 5925-7125 MHz frequency band shall not exceed 24 dBm.

5.5 Test Results

JUDGMENT: Passed

The EUT met the requirements of the FCC Part 15, Subpart E, Section 15.407(a), and RSS-Gen, Issue 5, March 2019, Amendment 1, Section 4.6.3 specifications.

For additional information see *Figure 9* below.

BW	Operation Frequency	Power	Antenna Gain	EIRP	Limit	Margin
(MHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
20.0	5935.0	8.8	2.0	10.8	24.0	-13.2
	6175.0	8.4	2.0	10.4	24.0	-13.6
	6415.0	8.3	2.0	10.3	24.0	-13.7
40.0	5945.0	11.2	2.0	13.2	24.0	-10.8
	6185.0	11.0	2.0	13.0	24.0	-11.0
	6405.0	11.5	2.0	13.5	24.0	-10.5

Figure 9 FCC and IC Test Results



5.6 Test Equipment Used; Maximum Peak Power Output*

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
Power Meter	HP	437B	3043U04017	February 26, 2019	February 28, 2021
Power Sensor	HP	8481A	2702A73530	February 26, 2019	February 28, 2021
30dB Attenuator	MCL	BW-S30W5	533	August 23, 2020	August 31, 2021
RF Cable	Huber Suhner	Sucofelex	28239/4PEA	August 23, 2020	August 31, 2021

*Testing performed on February 4, 2021

Figure 10 Test Equipment Used



6. Maximum Power Spectral Density (PSD)

6.1 Test Specification

FCC, Part 15, Subpart E, Section 407(a)

RSS 248 Issue 1 November 19, 2021, Section 4.6.3(a)

6.2 Test Procedure

(Temperature (22°C)/ Humidity (56%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report. The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable (total loss= 31.0dB). Special attention was taken to prevent Spectrum Analyzer RF input overload. Spectrum setting done according KDB 789033 instructions (section F).

6.3 FCC Test Limit

For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum e.i.r.p. spectral density shall not exceed -1 dBm/MHz.

6.4 IC Test Limit

For client devices, the maximum e.i.r.p. spectral density shall not exceed -1 dBm/MHz

6.5 Test Results

JUDGEMENT: Passed

The EUT met the requirements of the F.C.C. Part 15, Subpart E, Section 15.407(a), and RSS-Gen, Issue 5, March 2019, Amendment 1, Section 4.6.3 specifications.

For additional information see *Figure 12* to *Figure 17*.

BW (MHz)	Operation Frequency (MHz)	Reading (dBm/MHz)	Antenna gain (dBi)	PSD EIRP (dBm)	Limit (dBm)	Margin (dB)
20.0	5935.0	-3.2	2.0	-1.2	-1.0	-0.2
	6175.0	-3.3	2.0	-1.3	-1.0	-0.3
	6415.0	-3.4	2.0	-1.4	-1.0	-0.4
40.0	5945.0	-3.2	2.0	-1.2	-1.0	-0.2
	6185.0	-3.4	2.0	-1.4	-1.0	-0.4
	6405.0	-3.2	2.0	-1.2	-1.0	-0.2

Figure 11 FCC and IC Test Results

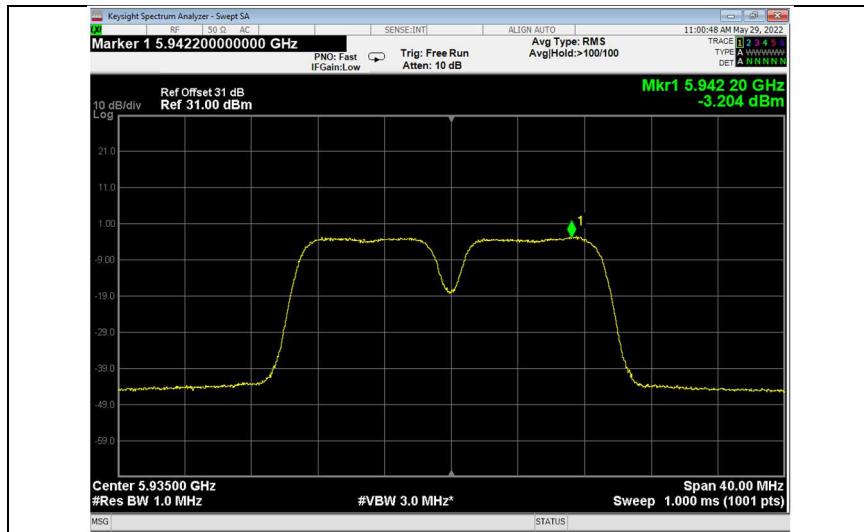


Figure 12. 5935.0MHz,20MHz BW

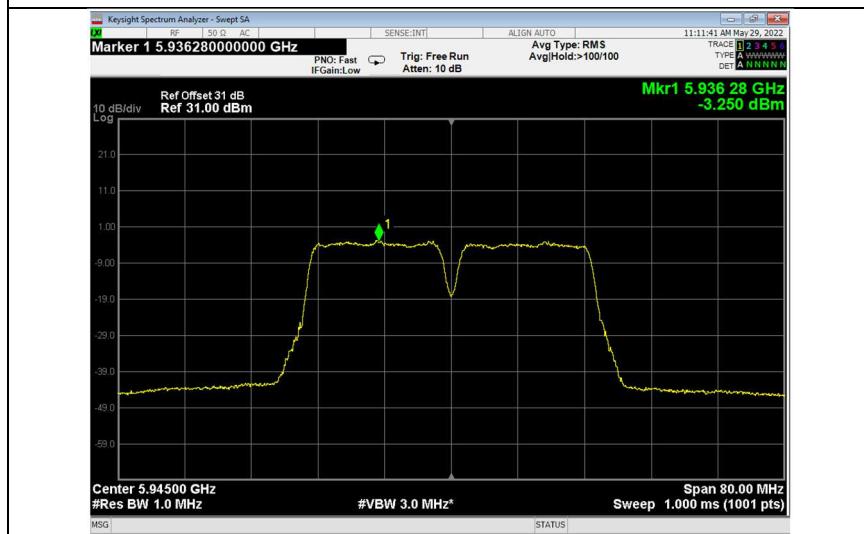


Figure 13. 5945.0MHz,40MHz BW

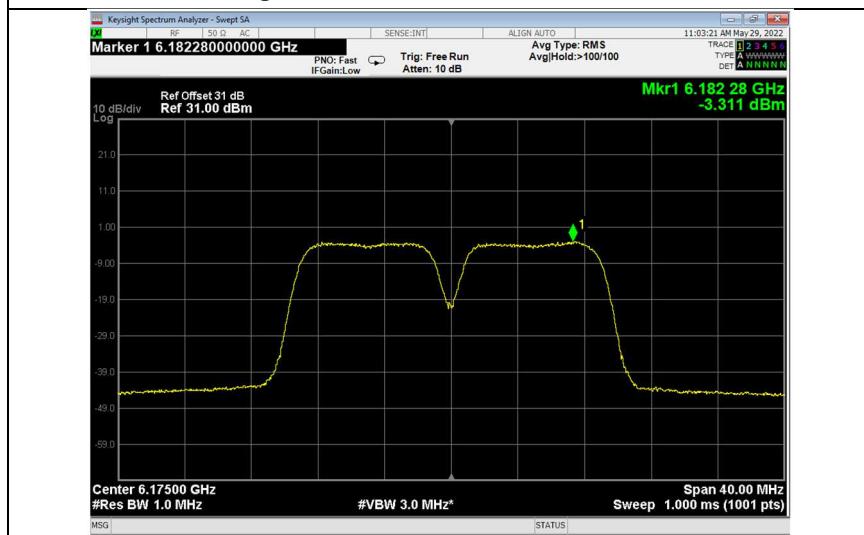


Figure 14. 6175.0MHz,20MHz BW

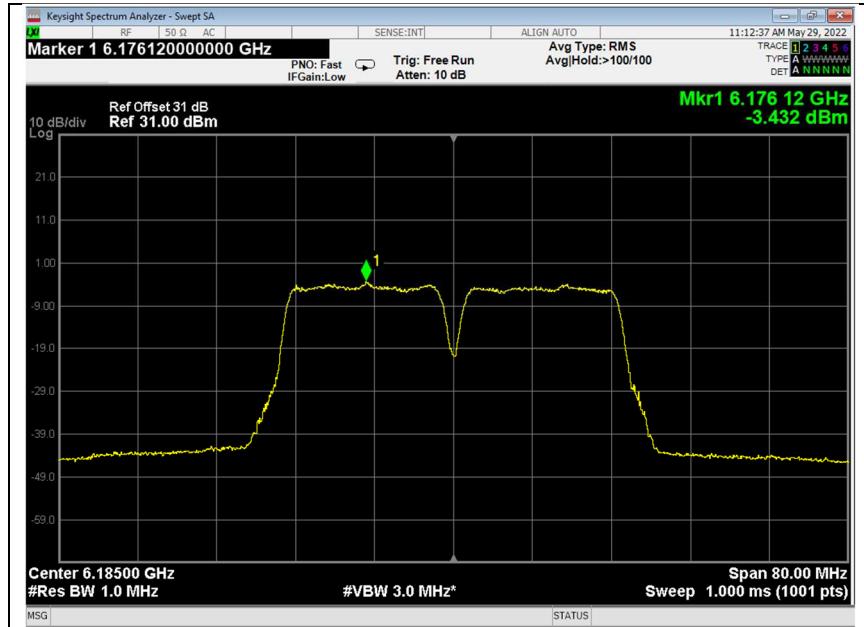


Figure 15. 6185.0MHz,40MHz BW

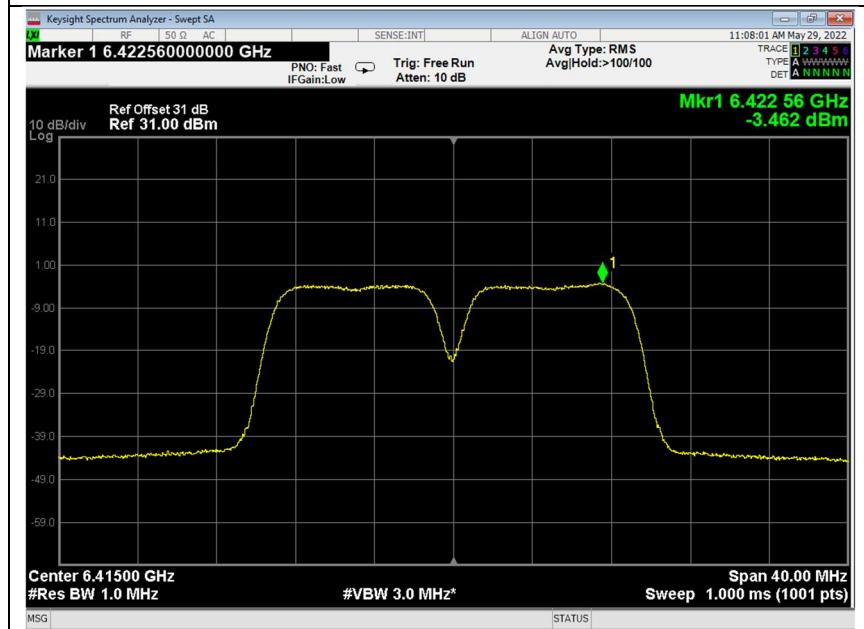


Figure 16. 6415.0MHz,20MHz BW

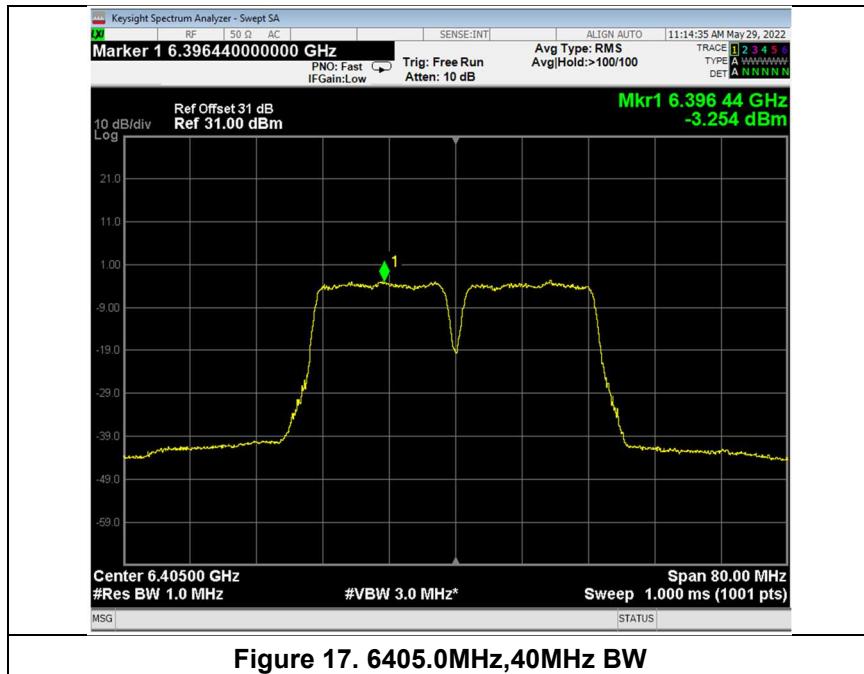


Figure 17. 6405.0MHz,40MHz BW

6.6 Test Equipment Used; Transmitted Power Density

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
Signal analyzer	Keysight	N9010A	my51170071	13/02/2022	13/02/2024
30dB Attenuator	MCL	BW-S30W5	533	16/05/2022	16/05/2023
RF Cable	Huber Suhner	Sucofelex	28239/4PEA	23/05/2021	31/05/2022

Figure 18 Test Equipment Used



7. Band Edge

7.1 Test Specification

FCC Part 15, Subpart E, Section 15.407(b)(5)
RSS 248 Issue 1 November 19, 2021, Section 4.7.2(a)

7.2 Test Procedure

(Temperature (22°C)/ Humidity (56%RH))

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable (loss = 33.0dB). The offset calculation: attenuator (30dB) + cable loss(1dB) E.U.T gain antenna (2dBi) +=33.0dB. channel power over 1MHz used.

7.3 FCC Test Limits

For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed e.i.r.p. of -27 dBm/MHz.

7.4 IC Test Limits

Any emission outside the 5925-7125 MHz band shall not exceed -27 dBm/MHz e.i.r.p.

7.5 Test Results

JUDGEMENT: Passed

The EUT met the requirements of the F.C.C. Part 15, Subpart E, Section 15.407(b)(5), and RSS-Gen, Issue 5, March 2019, Amendment 1, Section 4.7.2(a) specifications.

For details see *Figure 19* to *Figure 22*.

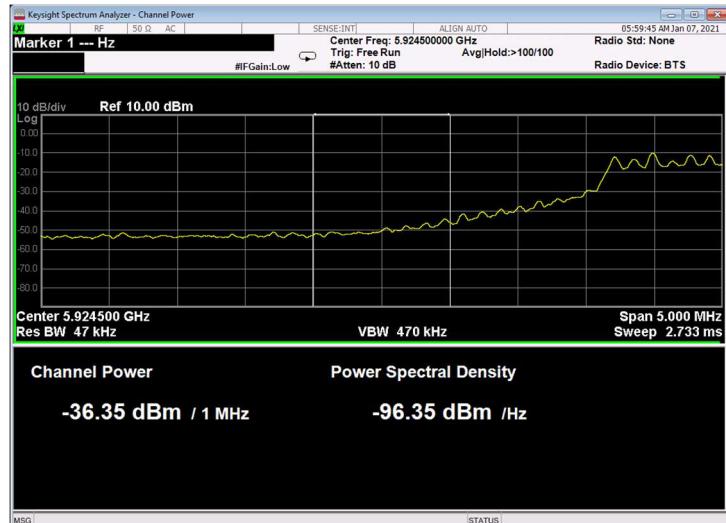


Figure 19 Lower Band Edge, 20MHz BW

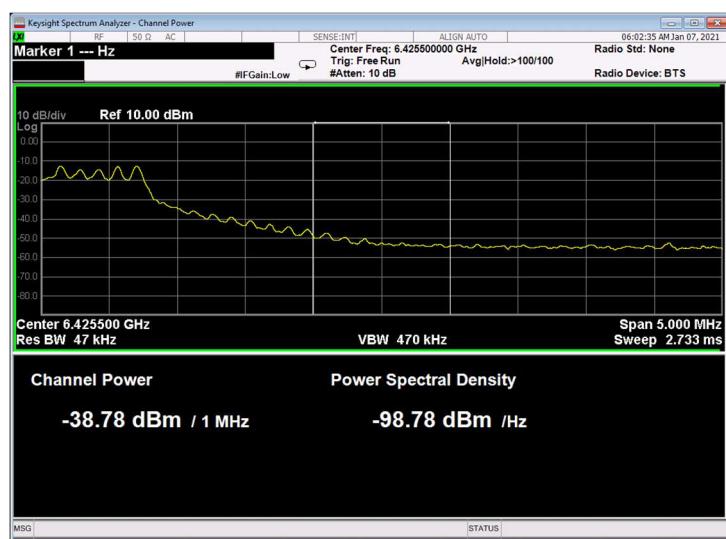


Figure 20 Upper Band Edge, 20MHz BW

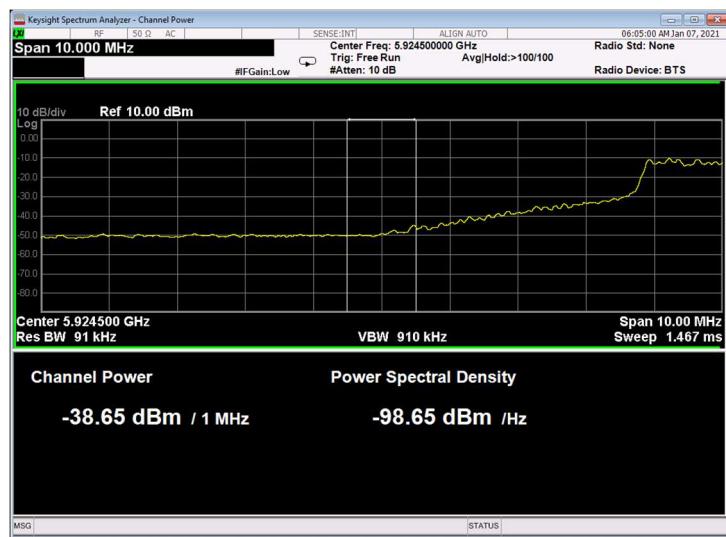


Figure 21 Lower Band Edge, 40MHz BW

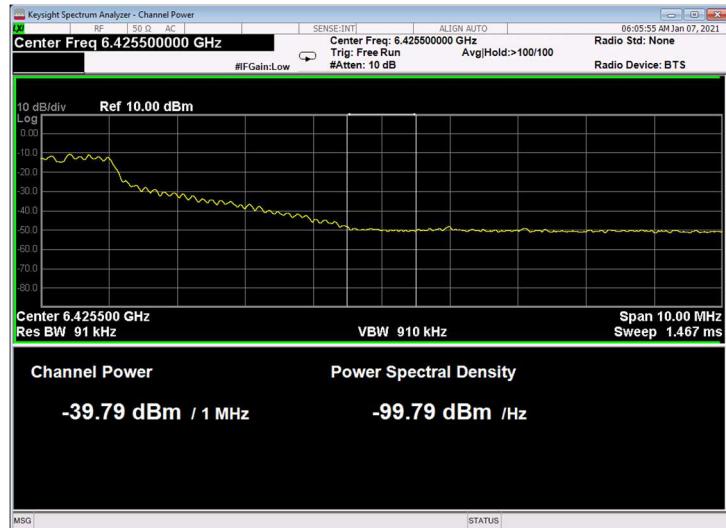


Figure 22 Upper Band Edge, 40MHz BW

7.6 Test Instrumentation Used, Band Edge

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EXA Signal Analyzer	Agilent Technologies	N9010A	902A000401	March 1, 2019	March 31, 2021
30dB Attenuator	MCL	BW-S30W5	533	August 23, 2020	August 31, 2021
RF Cable	Huber Suhner	Sucofelex	28239/4PEA	August 23, 2020	August 31, 2021

Figure 23 Test Equipment Used



8. Undesirable/Unwanted Emissions

8.1 Test Specification

FCC Part 15, Subpart E, Section 15.407(b)(1-7)
RSS 248, Issue 1, November 19, 2021, Section 4.7.2(c&d)

8.2 Test Procedure

(Temperature (22°C)/ Humidity (56%RH))

Testing was performed for both Radiated Emission for Emissions in the Non-Restricted Bands & in the Restricted Bands:

For measurements between 0.009-30MHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.

The frequency range 0.009MHz-30MHz was scanned.

For measurements between 30-1000 MHz:

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization. The frequency range 30-1000 MHz was scanned and the list of the highest emissions was verified and updated accordingly.

For measurements between 1-40 GHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 1.5 meters above the ground. The emissions were measured at a distance of 3 meters.

The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization. The antenna scanned from 1m to 4m height.

The frequency range 1-40 GHz was scanned.

Evaluation was performed for both 20MHz and 40MHz BW transmissions.

The highest radiations are described in the tables below.

8.3 FCC and IC Test Limits

EIRP Above 1.0GHz (dBm/MHz)	Field strength Above 1.0 GHz (dB μ V/m/MHz@3m)	Field strength Below 1.0 GHz (dB μ V/m)
-27.0	68.2	As describe in section 15.209 and in RSS-Gen

Figure 24 Non-Restricted Band Limits



Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field strength (dB μ V/m)	Field strength* (dB μ V/m)@3m
0.009-0.490	2400/F(kHz)	300	48.5-13.8	128.5-73.8
0.490-1.705	24000/F(kHz)	30	33.8-23.0	73.8-63.0
1.705-30.0	30	30	29.5	69.5
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

Figure 25 FCC Restricted Band Limits

Frequency (MHz)	Magnetic Field strength (microampere/meter)	Measurement distance (meters)	Magnetic Field strength (dB μ A/m)	Magnetic Field strength* (dB μ A/m)@3m
0.009-0.490	6.37/F(kHz)	300	-3.0-(-37.7)	77.0-42.2
0.490-1.705	63.7/F(kHz)	30	-17.7-(-28.5)	22.3-11.4
1.705-30.0	0.08	30	-21.9	18.0
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field strength (dB μ V/m)	Field strength* (dB μ V/m)@3m
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

Figure 26 IC Restricted Band Limits

8.4 Test Results

JUDGEMENT: Passed

The EUT met the requirements of the F.C.C. Part 15, Subpart E, Section 15.407(b)(1-7), and RSS 248, Issue 1, November 19, 2021, Section 4.7.2(c&d) specification.



Figure 27 Fundamental: 5.935 GHz ,20 MHz, band 1

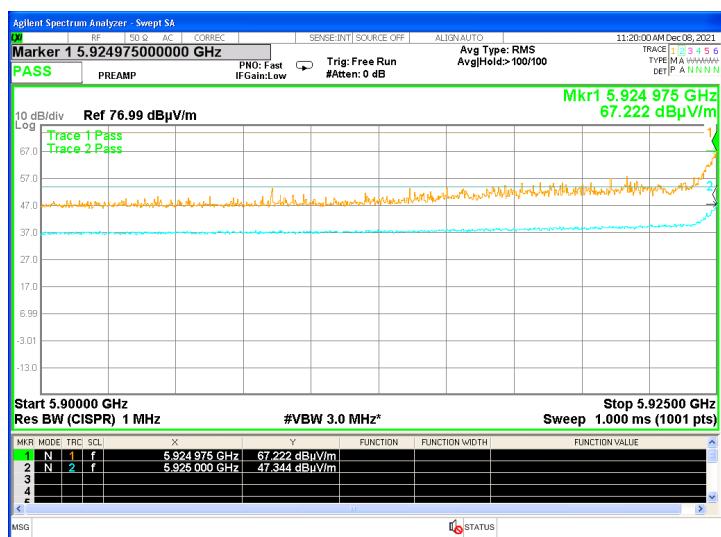


Figure 28 Fundamental: 5.935 GHz, 20 MHz, band 2

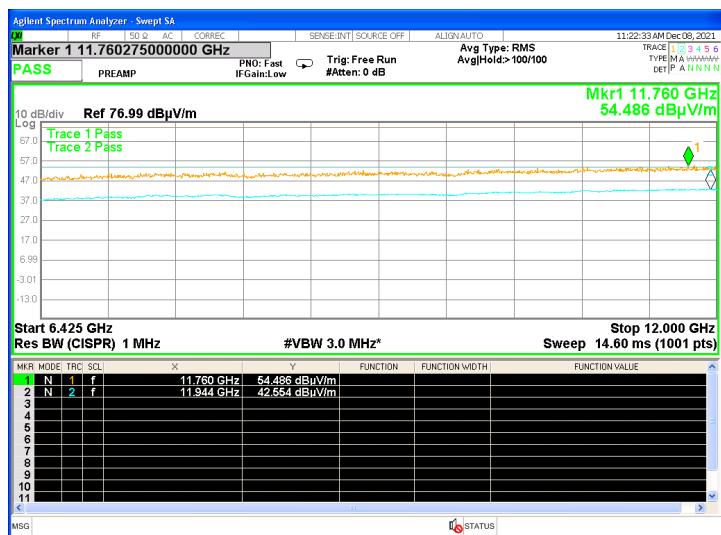
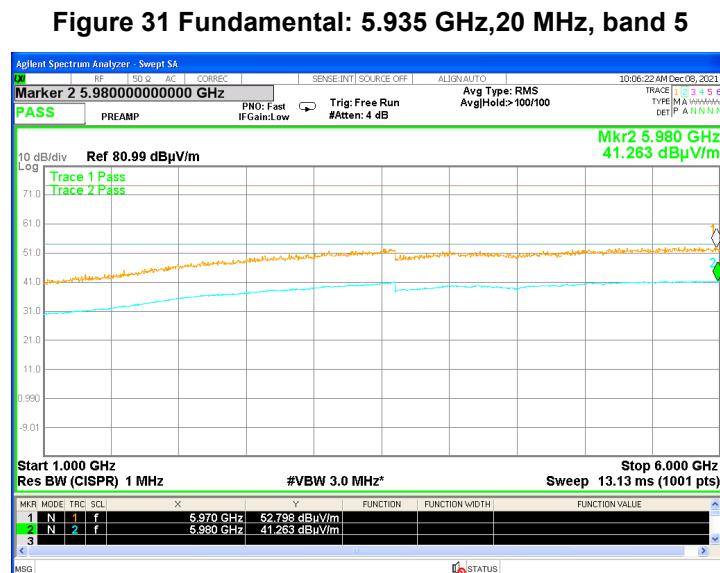
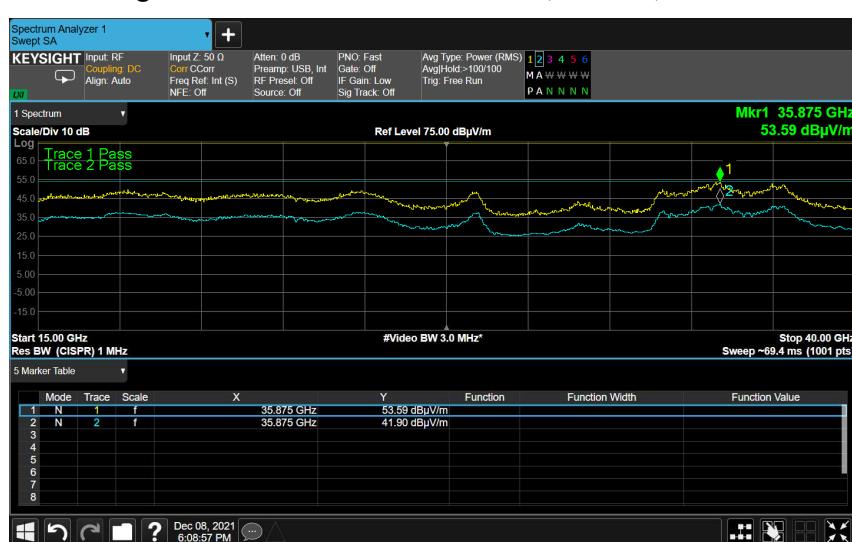


Figure 29 Fundamental: 5.935 GHz, 20 MHz, band 3



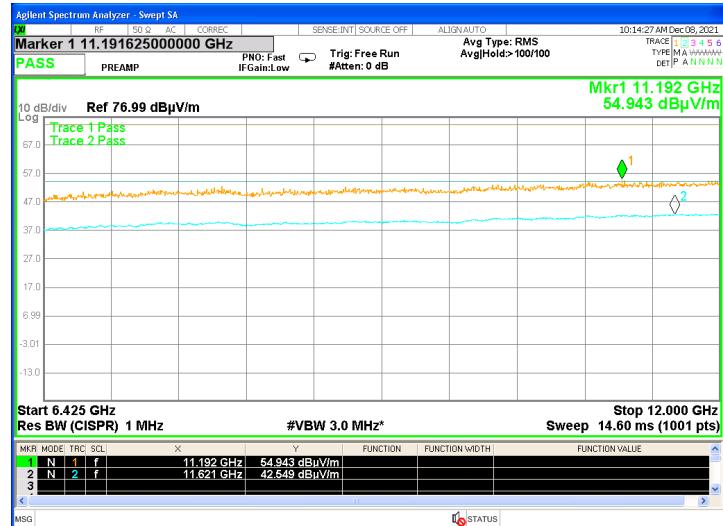


Figure 33 Fundamental: 6.175 GHz ,20 MHz, band 2



Figure 34 Fundamental: 6.175 GHz ,20 MHz, band 3



Figure 35 Fundamental: 6.175 GHz ,20 MHz, band 4