UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-LBE5ACXR
IC ID	6545A-LBE5ACXR
Equipment Under Test	LBE-5AC-XR
Test Report Serial Number	TR6313_04
Date of Test(s)	24 June – 9 July 2021
Report Issue Date	27 July 2021

Test Specification	Applicant
47 CFR FCC Part 15, Subpart C	Ubiquiti Inc. 685 Third Avenue New York, NY 10019 U.S.A.

NVLAP TESTING ilac-MRA

NVLAP LAB CODE 600241-0

Certification of Engineering Report

This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart C. This report may be reproduced in full. Partial reproduction of this report may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	airMAX
Model Number	LBE-5AC-XR
FCC ID	SWX-LBE5ACXR
IC ID	6545A-LBE5ACXR

On this 27th day of July 2021, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith.

Although NVLAP has accredited the Unified Compliance Laboratory testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. federal government.

Unified Compliance Laboratory

Alan Kitchen

Written By: Alan Kitchen

Reviewed By: Joseph W. Jackson

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	27 July 2021
02	Updated antenna gain	20 August 2021
03	Removed reference to UNII-2 bands	23 August 2021
04	Updated description to include 2.4 GHz WiFi radio	24 August 2021

Table of Contents

1 Client Information 5
1.1 Applicant 5
1.2 Manufacturer 5
2 Equipment Under Test (EUT) 6
2.1 Identification of EUT 6
2.2 Description of EUT 6
2.3 EUT and Support Equipment 6
2.4 Interface Ports on EUT 7
2.5 Operating Environment 7
2.6 Operating Modes 7
2.7 EUT Exercise Software 7
2.8 Block Diagram of Test Configuration 7
2.9 Modification Incorporated/Special Accessories on EUT 8
2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard 8
3 Test Specification, Method and Procedures 9
3.1 Test Specification 9
3.2 Methods & Procedures 9
3.3 FCC Part 15, Subpart C 9
3.4 Results 10
3.5 Test Location 10
4 Test Equipment 11
4.1 Conducted Emissions at Mains Ports 11
4.2 Direct Connect at the Antenna Port Tests 11
4.3 Radiated Emissions 12
4.4 Equipment Calibration 12
4.5 Measurement Uncertainty 13
5 Test Results 14
5.1 §15.203 Antenna Requirements 14
5.2 Conducted Emissions at Mains Ports Data 14
5.3 §15.247(a)(2) 16
5.4 §15.247(b)(3) Maximum Average Output Power 16
5.5 §15.247(d) Spurious Emissions 16
5.6 §15.247(e) Maximum Average Power Spectral Density 24

1 Client Information

1.1 Applicant

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Mark Feil
Title	Compliance Manager

1.2 Manufacturer

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Mark Feil
Title	Compliance Manager

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	airMAX
Model Number	LBE-5AC-XR
Serial Number	0418D6A2AFB9
Dimensions (cm)	74.7 x 52.5 x 34.7

2.2 Description of EUT

The LBE-5AC-XR is a point-to-point transceiver, intended for outdoor use, operating in the 2.4 GHz WiFi, UNII-1 and UNII-3 frequency bands. The LBE-5AC-XR is designed to the lightweight and aimed to create extremely long-distance wireless links. The LBE-5AC-XR also has a Bluetooth LE transceiver for device management. An Ethernet port is used for data transfer and to provide power using a POE-24-24W POE power supply.

This report covers the circuitry of the device subject to FCC Part 15, Subpart C. The circuitry of the device subject to FCC Part 15 Subpart B was found to be compliant and is covered under a separate Unified Compliance Laboratory test report.

2.3 EUT and Support Equipment

The EUT and support equipment used during the test are listed below.

Brand Name **Model Number** **Serial Number**	**Description**	**Name of Interface Ports / Interface Cables**
BN: airMAX MN: LBE5AC-XR (Note 1) SN: 0418D6A2AFB9	Wireless Transceiver	See Section 2.4
BN: Ubiquiti Inc. MN: POE-24-24W (Note 1) SN: None	POE Supply	POE Port See Section 2.4
BN: Dell MN: XPS 13 SN: None	Laptop PC	LAN Port / Shielded or Unshielded Cat 5e cable (Note 2)
BN: HP MN: Spectre SN: None	Laptop PC	LAN Port / Shielded or Unshielded Cat 5e cable (Note 2)

Notes: (1) EUT
(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this standard.

2.4 Interface Ports on EUT

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
AC (PoE Injector)	1	3 conductor power cord/80cm
LAN (PoE Injector)	1	Shielded or Unshielded Cat 5e cable/1 meter
Data	1	Shielded or Unshielded Cat 5e cable/8meters

2.5 Operating Environment

Power Supply	120 Vac to 24 Volt PoE Power
AC Mains Frequency	60 Hz
Temperature	22.3 – 29.8 °C
Humidity	26.4 – 55.2 %
Barometric Pressure	1017 mBar

2.6 Operating Modes

The LBE-5AC-XR was connected to a personal computer laptop and tested using test software in order to enable to constant duty cycle of the WiFi transceiver. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 ac were investigated. All measurements are reported with the worst-case mode (802.11ac) unless otherwise stated.

2.7 EUT Exercise Software

EUT firmware version 1.0 was used to operate the transmitter using a constant transmit mode.

2.8 Block Diagram of Test Configuration

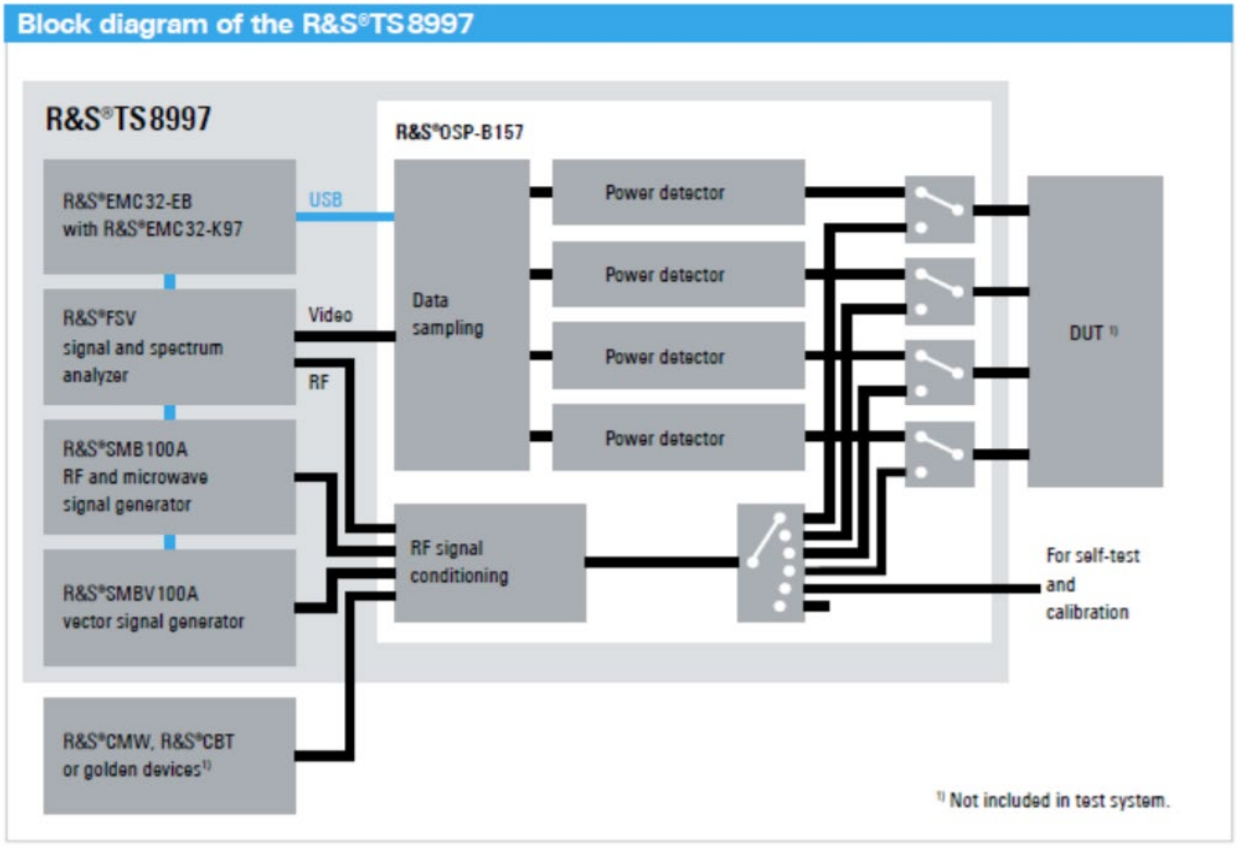


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

There were no modifications made to the EUT during testing to comply with the specification.

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

There were no deviations, opinions, additional information or interpretations from the test specification.

3 Test Specification, Method and Procedures

3.1 Test Specification

Title	47 CFR FCC Part 15, Subpart C 15.203, 15.207 and 15.247 Limits and methods of measurement of radio interference characteristics of radio frequency devices.
Purpose of Test	The tests were performed to demonstrate initial compliance

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.203

See test standard for details.

3.2.2 47 CFR FCC Part 15 Section 15.207

See test standard for details.

3.2.3 47 CFR FCC Part 15 Section 15.247

See test standard for details.

3.3 FCC Part 15, Subpart C

3.3.1 Summary of Tests

FCC Section	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.203	N/A	Antenna requirements	Structural Requirement	Compliant
15.207	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.247(a)	RSS-247 § 5.2	Bandwidth Requirement	2412 to 2462	Compliant
15.247(b)	RSS-247 § 5.4	Peak Output Power	2412 to 2462	Compliant
15.247(d)	RSS-247 § 5.4	Antenna Conducted Spurious Emissions	0.009 to 26000	N/A
15.247(d)	RSS-247 § 5.4	Radiated Spurious Emissions	0.009 to 26000	Compliant
15.247(e)	RSS-247 § 5.2	Peak Power Spectral Density	2412 to 2462	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 558074 and 47 CFR Part 15. Where applicable, KDB 662911 was followed to sum required measurements.				

3.4 Results

In the configuration tested, the EUT complied with the requirements of the specification.

3.5 Test Location

Testing was performed at the Unified Compliance Laboratory 3-Meter and 10-Meter chambers located at 427 West 12800 South, Draper, UT 84020. Unified Compliance Laboratory is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Code 600241-0 which is effective until 30 June 2022. This site has also been registered with Innovations, Science and Economic Development (ISED) department and was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until 30 June 2022. Unified Compliance Laboratory has been assigned Conformity Assessment Number US0223 by ISED.

4 Test Equipment

4.1 Conducted Emissions at Mains Ports

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	AFJ	FFT3010	UCL-2500	9/18/2020	9/17/2021
LISN	AFJ	LS16C/10	UCL-2512	5/26/2020	5/26/2022
Cat6 ISN	Teseq	ISN T8-Cat6	UCL-2971	5/18/2020	5/18/2022
ISN	Teseq	ISN T800	UCL-2974	6/4/2021	6/4/2022
LISN	Com-Power	LIN-120C	UCL-2612	5/19/2021	5/19/2022
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	UCL	Revision 1	UCL-3107	N/A	N/A

Table 1: List of equipment used for Conducted Emissions Testing at Mains Port

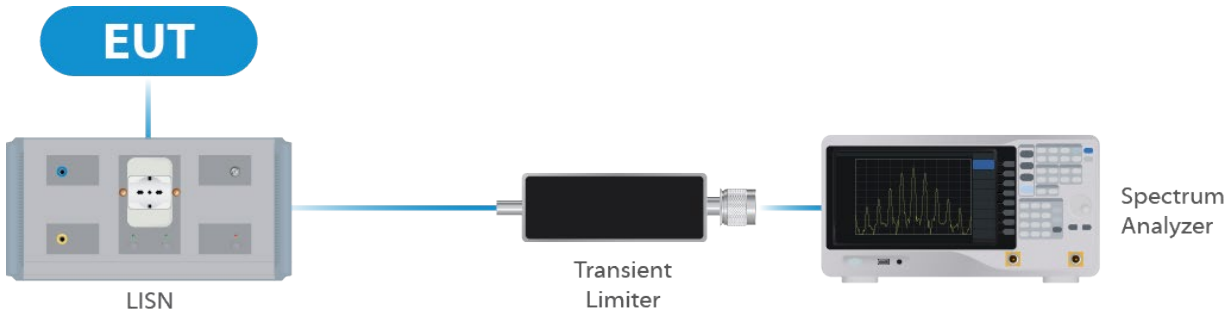


Figure 1: Conducted Emissions Test

4.2 Direct Connect at the Antenna Port Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	R&S	FSV40	UCL-2861	8/24/2020	8/24/2021
Signal Generator	R&S	SMB100A	UCL-2864	N/A	N/A
Vector Signal Generator	R&S	SMBV100A	UCL-2873	N/A	N/A
Switch Extension	R&S	OSP-B157WX	UCL-2867	9/8/2020	9/8/2021
Switch Extension	R&S	OSP-150W	UCL-2870	3/3/2021	3/3/2022

Table 2: List of equipment used for Direct Connect at the Antenna Port

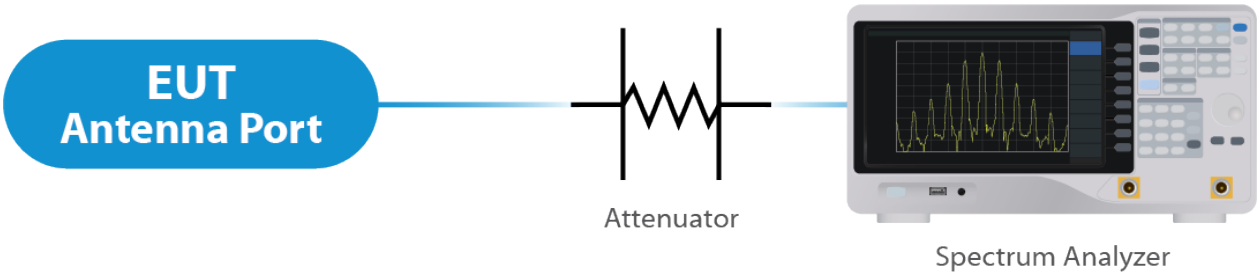


Figure 2: Direct Connect at the Antenna Port Test

4.3 Radiated Emissions

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	Keysight	N9038A	UCL-2778	6/21/2021	6/21/2022
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	9/10/2020	9/10/2021
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	7/8/2021	7/8/2022
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	11/16/2020	11/16/2021
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	5/21/2020	5/21/2022
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	9/29/2020	9/29/2021
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

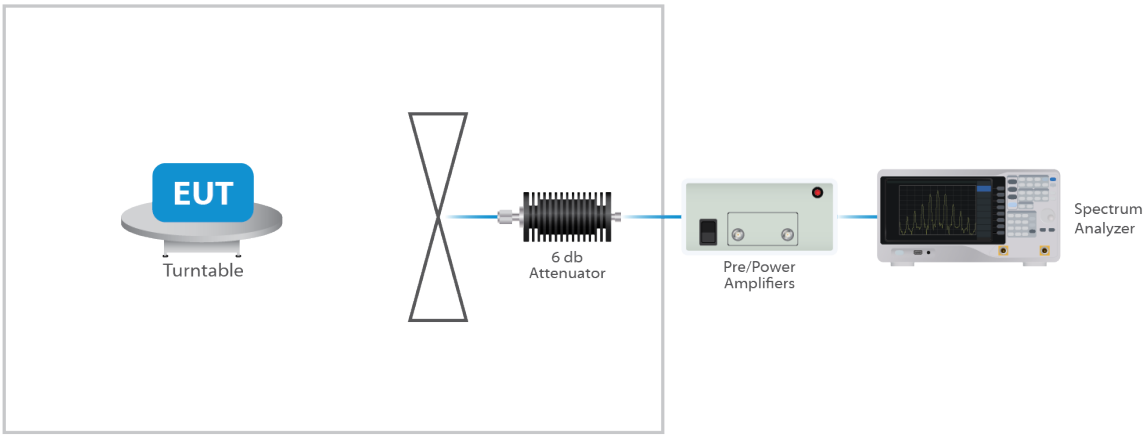


Figure 3: Radiated Emissions Test

4.4 Equipment Calibration

All applicable equipment is calibrated using either an independent calibration laboratory or Unified Compliance Laboratory personnel at intervals defined in ANSI C63.4:2014 following outlined calibration

procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request.

4.5 Measurement Uncertainty

Test	Uncertainty (± dB)	Confidence (%)
Conducted Emissions	1.44	95
Radiated Emissions (9 kHz to 30 MHz)	2.50	95
Radiated Emissions (30 MHz to 1 GHz)	4.38	95
Radiated Emissions (1 GHz to 18 GHz)	4.37	95
Radiated Emissions (18 GHz to 40 GHz)	3.93	95
Direct Connect Tests	**K Factor**	**Value**
Emissions Bandwidth	2	2.0%
Output Power	2	1.0 dB
Peak Power Spectral Density	2	1.3 dB
Band Edge	2	0.8 dB
Transmitter Spurious Emissions	2	1.8 dB

5 Test Results

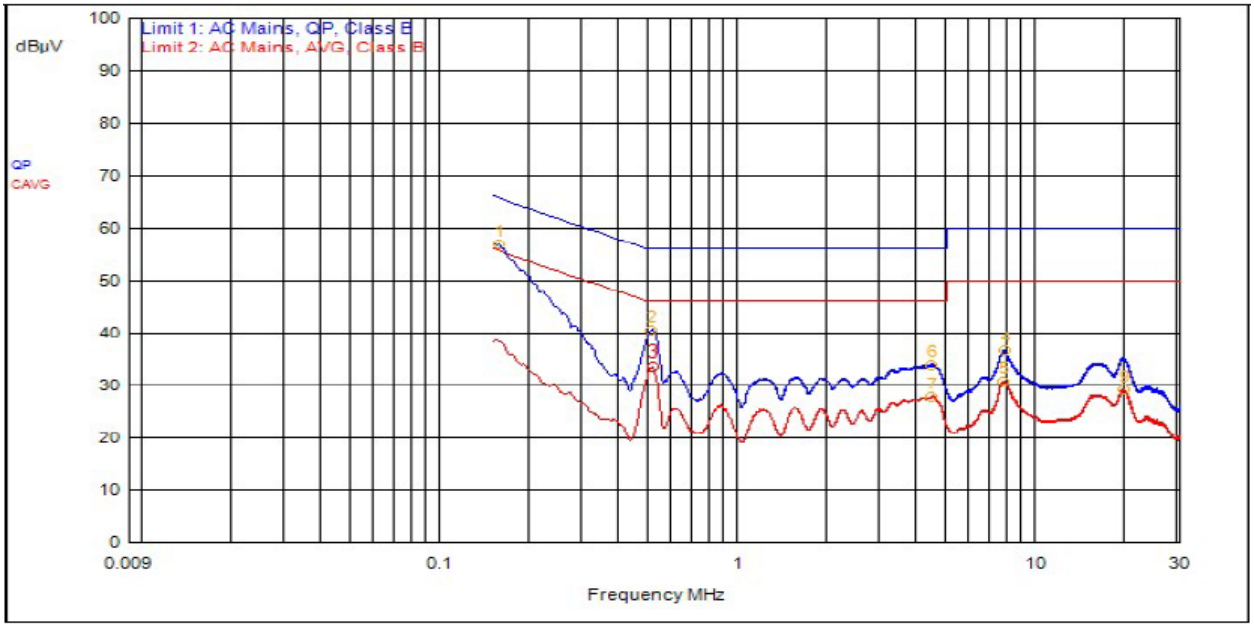
5.1 §15.203 Antenna Requirements

The EUT uses an integral antenna. The Maximum gain of the antenna is 2 dBi. The antenna is not user replaceable.

Results

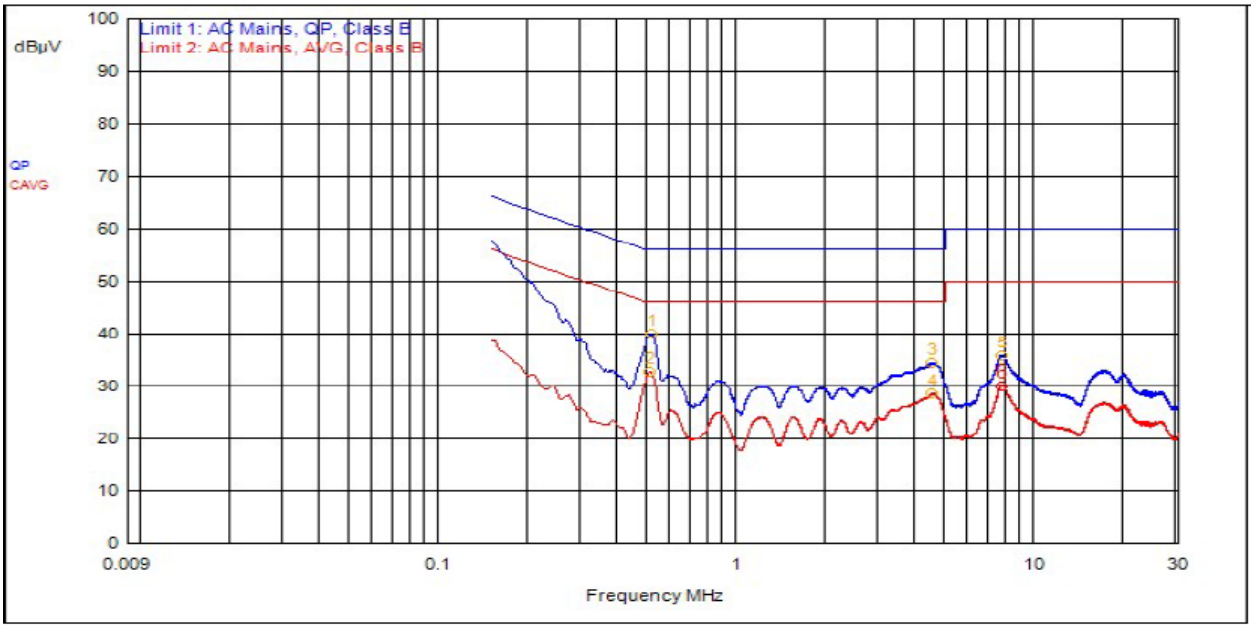
The EUT complied with the specification

5.2 Conducted Emissions at Mains Ports Data



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	156,000kHz	12.4	0.0		QPeak	44.5	56.9	65.7	-8.8		
2	507,000kHz	12.4	0.0		QPeak	28.2	40.6	56.0	-15.4		
6	4.407MHz	12.3	0.1		QPeak	21.6	34.0	56.0	-22.0		
4	7.719MHz	12.3	0.2		QPeak	24.1	36.6	60.0	-23.4		
3	510,000kHz	12.4	0.0		C_AVG	21.0	33.5			46.0	-12.5
5	7.686MHz	12.3	0.2		C_AVG	18.3	30.8			50.0	-19.2
7	4.419MHz	12.3	0.1		C_AVG	15.5	27.9			46.0	-18.1
9	19.401MHz	12.2	0.2		C_AVG	16.8	29.2			50.0	-20.8

Graph 1: Conducted Emissions Plot - Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	510,000kHz	12.4	0.0		QPeak	27.5	39.9	56.0	-16.1		
3	4.437MHz	12.3	0.1		QPeak	22.0	34.4	56.0	-21.6		
5	7.686MHz	12.3	0.2		QPeak	23.4	35.9	60.0	-24.1		
2	507,000kHz	12.4	0.0		C_AVG	20.4	32.8			46.0	-13.2
4	4.467MHz	12.3	0.1		C_AVG	16.1	28.5			46.0	-17.5
6	7.611MHz	12.3	0.2		C_AVG	17.6	30.1			50.0	-19.9

Graph 2: Conducted Emissions Plot – Line 1

Result

The EUT complied with the specification limit.

5.3 §15.247(a)(2) Emissions Bandwidth

Mode	Frequency (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth (MHz)
ac	2412	16.60	16.45
	2437	25.30	16.45
	2462	16.60	16.40

Result

In the configuration tested, the 6 dB bandwidth was greater than 500 kHz; therefore, the EUT complied with the requirements of the specification (see spectrum analyzer plot within the Annex).

5.4 §15.247(b)(3) Maximum Average Output Power

The maximum average RF conducted output power measured for this device was 17.87 dBm or 61.24 mW. The limit is 30 dBm or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 2 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP
ac	2412	Mcs0	10.5	8.96	10.96
	2437	Mcs0	19.5	17.87	19.87
	2462	Mcs0	11	10.5	12.5

Result

In the configuration tested, the maximum average RF output power was less than 1 watt; therefore, the EUT complied with the requirements of the specification (see spectrum analyzer plot within the Annex).

* Gated EIRP shown in the Annex is the conducted measurement

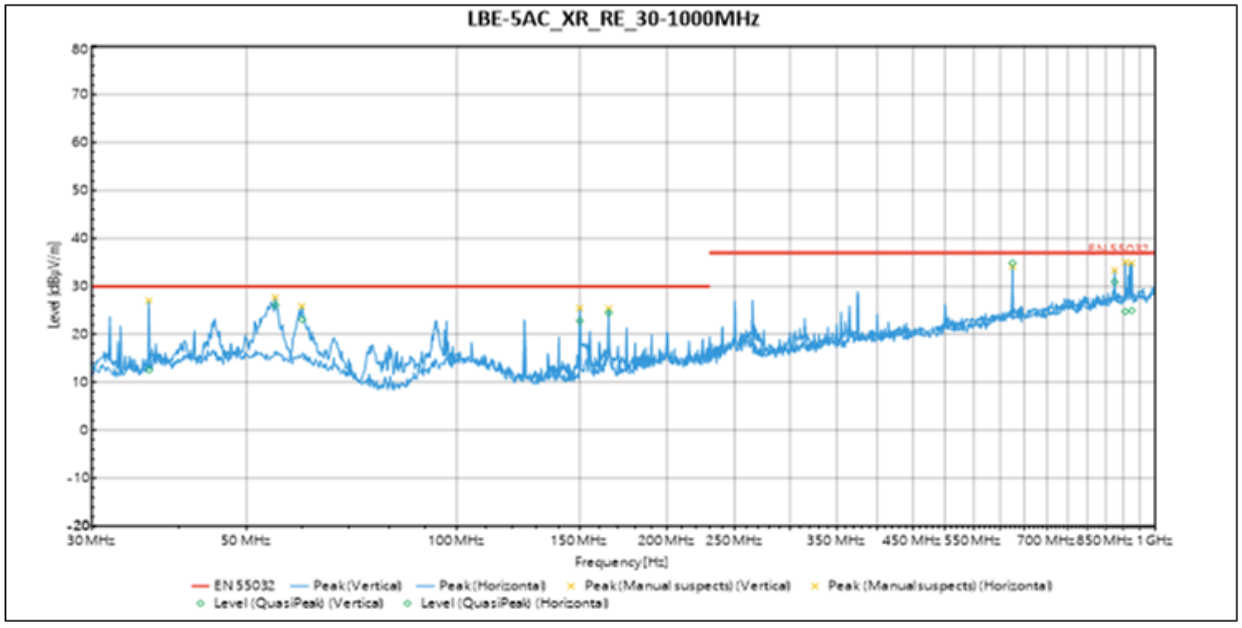
5.5 §15.247(d) Spurious Emissions

5.5.1 Radiated Spurious Emissions in the Restricted Bands of §15.205

The frequency range from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental emissions was investigated to measure any radiated emissions in the restricted bands. The following tables show measurements of any emissions that fell into the restricted bands of §15.205. The tables show the worst-case emissions measured from the EUT. For frequencies above 18.0 GHz, a measurement distance of 1 meter was used. The noise floor was a minimum of 6 dB below the limits. The emissions in the restricted bans must meet the limits specified in §15.209. Tabular data for each of the spurious emissions is shown below for each of the units. Plots of the band edges are also shown.

Result

All emissions in the restricted bands of §15.205 met the limits specified in §15.209; therefore, the EUT complies with the specification.



Vertical

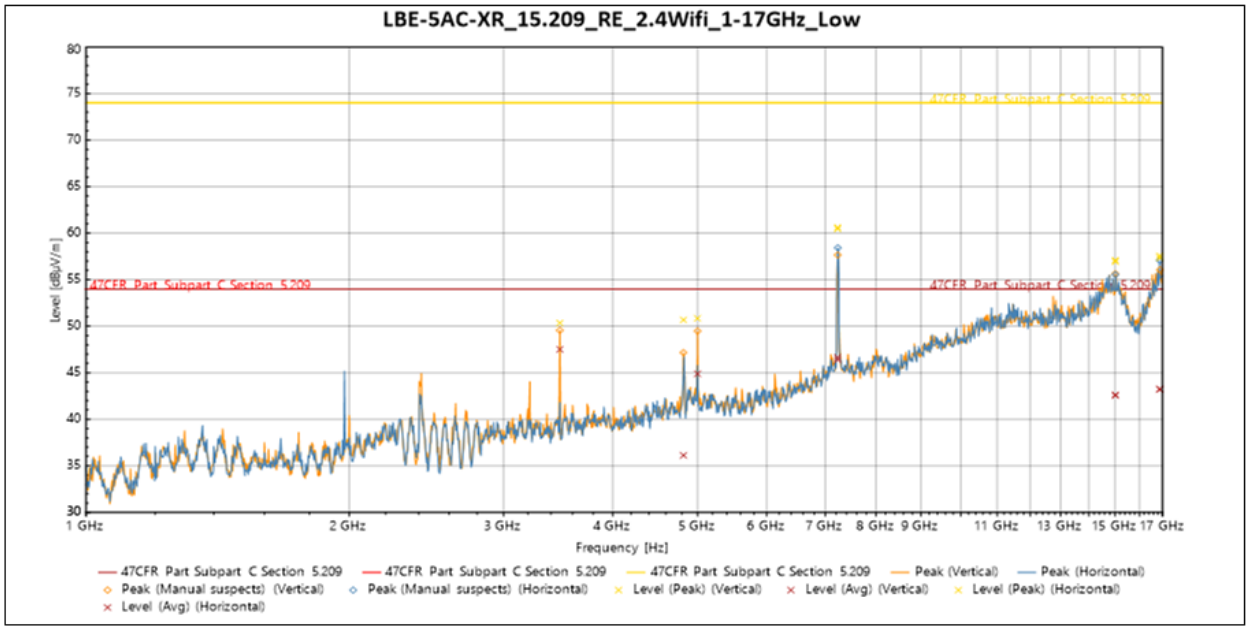
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	36.268 MHz	12.547	30	-17.453	246	0.995	Vertical	-14.359
QuasiPeak	55.037 MHz	26.11	30	-3.89	31	3.661	Vertical	-12.734
QuasiPeak	60.067 MHz	23.037	30	-6.963	110	3.442	Vertical	-13.432
QuasiPeak	150.02 MHz	22.839	30	-7.161	59	1.167	Vertical	-17.799
QuasiPeak	164.98 MHz	24.483	30	-5.517	213	1.034	Vertical	-16.827
QuasiPeak	906.67 MHz	24.727	37	-12.273	328	3.059	Vertical	-0.573
QuasiPeak	925.77 MHz	24.963	37	-12.037	309	1.735	Vertical	0.037

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	625 MHz	34.856	37	-2.144	153	1.362	Horizontal	-4.944

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	875.04 MHz	30.931	37	-6.069	133	1.125	Horizontal	-1.207

Table 4: Radiated Emissions 30 – 1000 MHz



Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	3.4801 GHz	50.346	74	-23.654	14	1.5	Vertical	-12.177
Peak	4.8181 GHz	50.68	74	-23.32	346	1.643	Vertical	-8.592
Peak	5.0001 GHz	50.849	74	-23.151	334	1.643	Vertical	-7.925
Peak	7.2299 GHz	60.62	74	-13.38	30	1.647	Vertical	-2.006
Peak	15.014 GHz	57.095	74	-16.905	102	1.647	Vertical	9.952
Peak	16.883 GHz	57.335	74	-16.665	295	2.15	Vertical	12.097

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	3.4801 GHz	47.512	54	-6.488	14	1.5	Vertical	-12.177
Avg	4.8181 GHz	36.118	54	-17.882	346	1.643	Vertical	-8.592
Avg	5.0001 GHz	44.894	54	-9.106	334	1.643	Vertical	-7.925
Avg	7.2299 GHz	46.65	54	-7.35	30	1.647	Vertical	-2.006
Avg	15.014 GHz	42.578	54	-11.422	102	1.647	Vertical	9.952
Avg	16.883 GHz	43.254	54	-10.746	295	2.15	Vertical	12.097

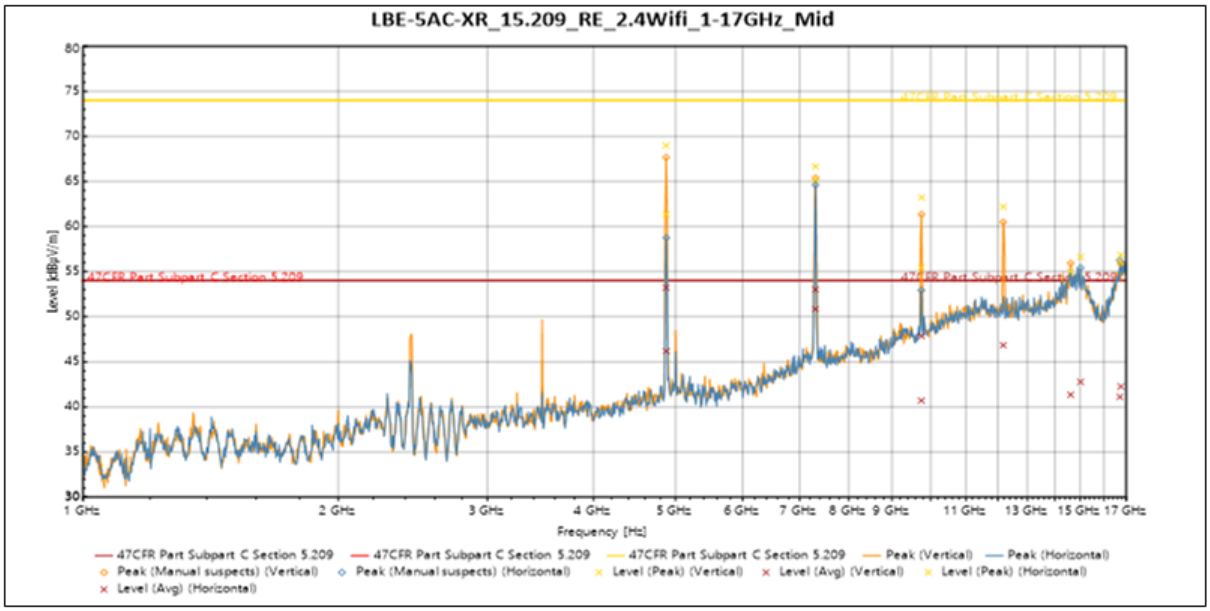
Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	7.2312 GHz	60.472	74	-13.528	90	3.302	Horizontal	-2.065
Peak	15.016 GHz	56.948	74	-17.052	108	1.83	Horizontal	10.031
Peak	16.871 GHz	57.575	74	-16.425	123	4	Horizontal	12.011

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	7.2312 GHz	46.39	54	-7.61	90	3.302	Horizontal	-2.065
Avg	15.016 GHz	42.612	54	-11.388	108	1.83	Horizontal	10.031

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	16.871 GHz	43.202	54	-10.798	123	4	Horizontal	12.011

Table 5: Transmitting at the Lowest Frequency 1 – 17 GHz



Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	4.8727 GHz	68.978	74	-5.022	17	2.816	Vertical	-8.373
Peak	7.3136 GHz	66.65	74	-7.35	332	2.317	Vertical	-1.737
Peak	9.7519 GHz	63.225	74	-10.775	168	2.147	Vertical	2.745
Peak	12.175 GHz	62.21	74	-11.79	1	2.15	Vertical	6.354
Peak	14.625 GHz	54.989	74	-19.011	129	1.643	Vertical	8.86
Peak	16.76 GHz	56.864	74	-17.136	47	2.146	Vertical	11.534

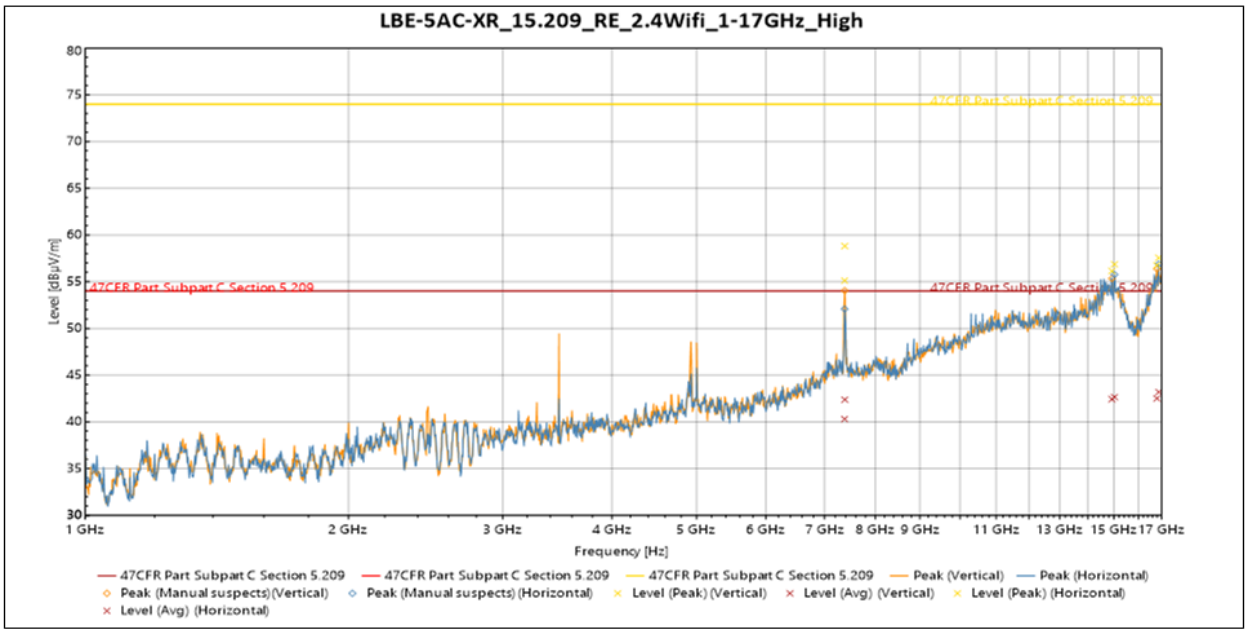
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	4.8727 GHz	53.23	54	-0.77	17	2.816	Vertical	-8.373
Avg	7.3136 GHz	53.018	54	-0.982	332	2.317	Vertical	-1.737
Avg	9.7519 GHz	47.839	54	-6.161	168	2.147	Vertical	2.745
Avg	12.175 GHz	46.83	54	-7.17	1	2.15	Vertical	6.354
Avg	14.625 GHz	41.334	54	-12.666	129	1.643	Vertical	8.86
Avg	16.76 GHz	42.258	54	-11.742	47	2.146	Vertical	11.534

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	4.8759 GHz	61.363	74	-12.637	231	3.793	Horizontal	-8.25
Peak	7.3123 GHz	65.229	74	-8.771	101	3.307	Horizontal	-1.733
Peak	9.7473 GHz	55.443	74	-18.557	48	2.811	Horizontal	2.693
Peak	15.022 GHz	56.633	74	-17.367	171	1.5	Horizontal	10.275
Peak	16.72 GHz	56.067	74	-17.933	242	1.647	Horizontal	10.392

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	4.8759 GHz	46.165	54	-7.835	231	3.793	Horizontal	-8.25
Avg	7.3123 GHz	50.847	54	-3.153	101	3.307	Horizontal	-1.733
Avg	9.7473 GHz	40.701	54	-13.299	48	2.811	Horizontal	2.693
Avg	15.022 GHz	42.767	54	-11.233	171	1.5	Horizontal	10.275
Avg	16.72 GHz	41.112	54	-12.888	242	1.647	Horizontal	10.392

Table 6: Transmitting at the Middle Frequency 1 – 17 GHz



Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	7.3844 GHz	58.809	74	-15.191	29	1.829	Vertical	-1.701
Peak	14.918 GHz	56.138	74	-17.862	120	4	Vertical	9.834
Peak	16.796 GHz	56.763	74	-17.237	132	3.302	Vertical	11.557

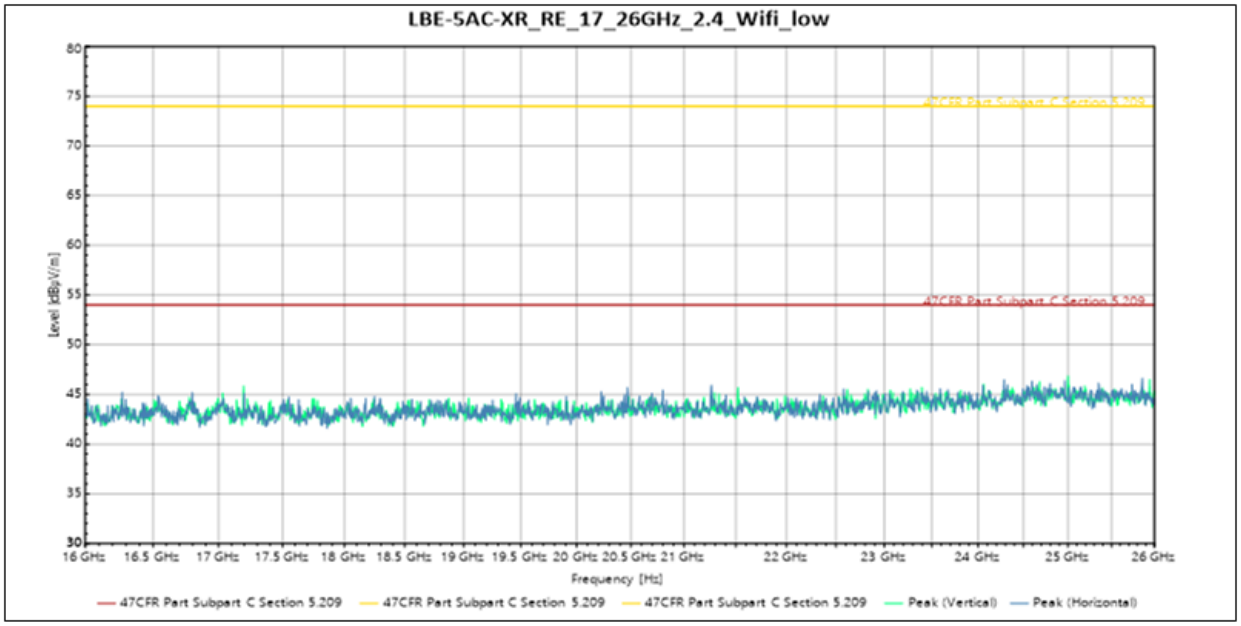
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	7.3844 GHz	42.371	54	-11.629	29	1.829	Vertical	-1.701
Avg	14.918 GHz	42.415	54	-11.585	120	4	Vertical	9.834
Avg	16.796 GHz	42.495	54	-11.505	132	3.302	Vertical	11.557

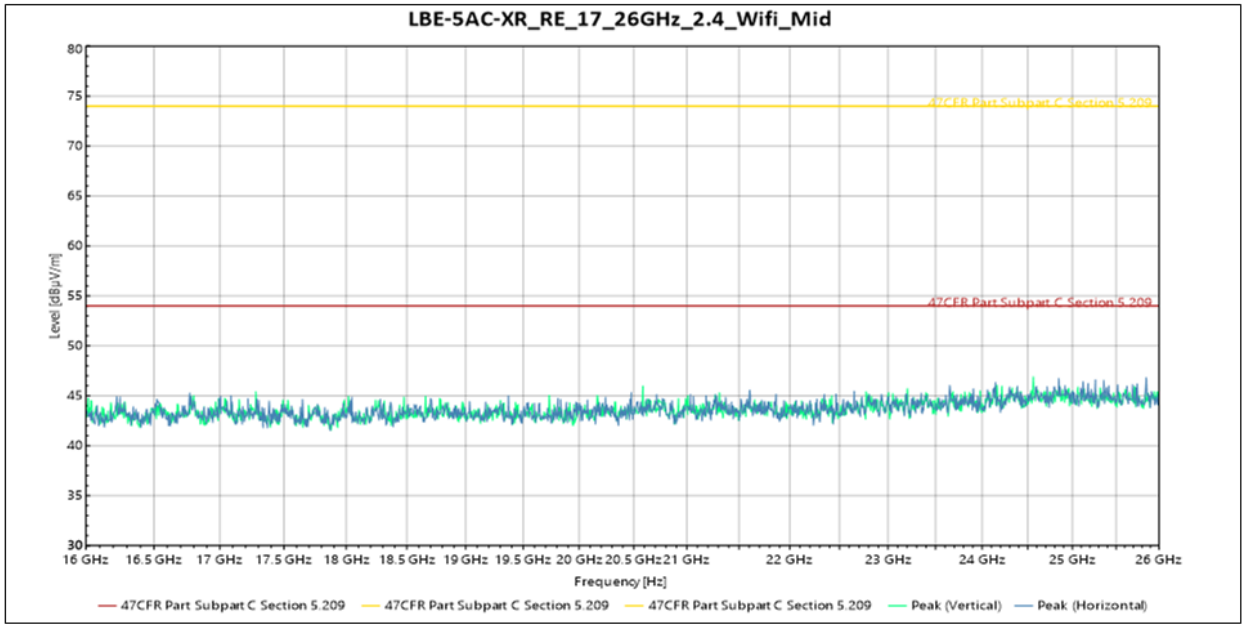
Horizontal

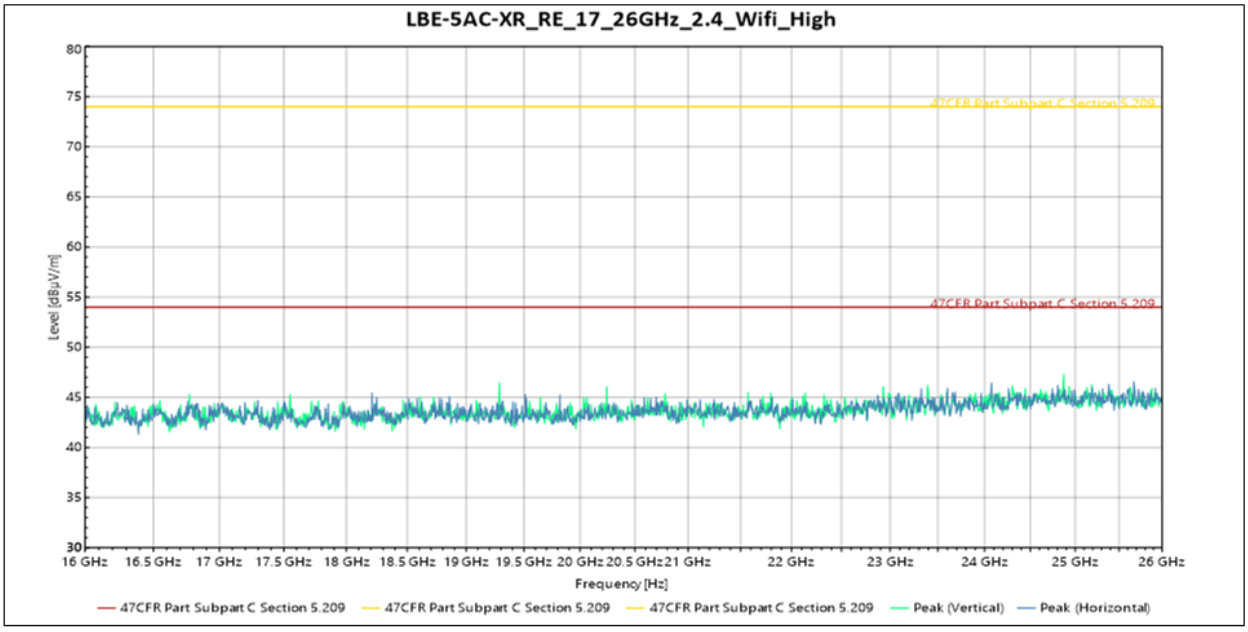
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	7.3805 GHz	55.124	74	-18.876	87	3.793	Horizontal	-1.772
Peak	15.018 GHz	56.864	74	-17.136	90	2.812	Horizontal	10.112
Peak	16.875 GHz	57.545	74	-16.455	116	3.302	Horizontal	12.099

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	7.3805 GHz	40.303	54	-13.697	87	3.793	Horizontal	-1.772
Avg	15.018 GHz	42.646	54	-11.354	90	2.812	Horizontal	10.112
Avg	16.875 GHz	43.176	54	-10.824	116	3.302	Horizontal	12.099

Table 7: Transmitting at the Highest Frequency 1 – 17 GHz

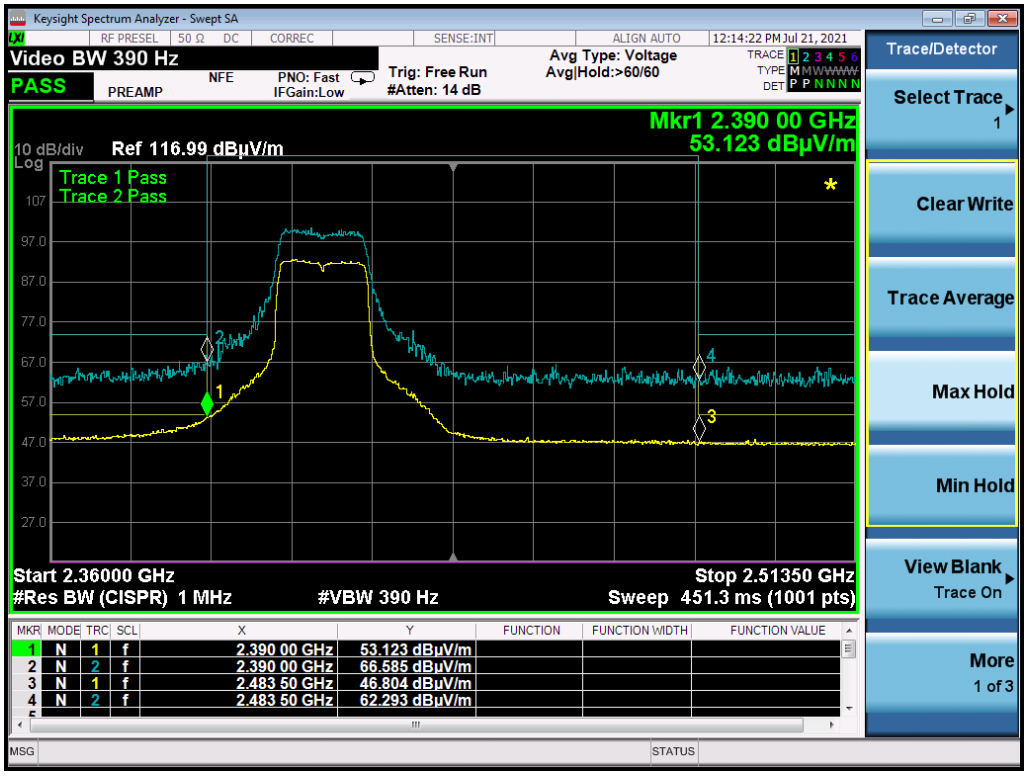




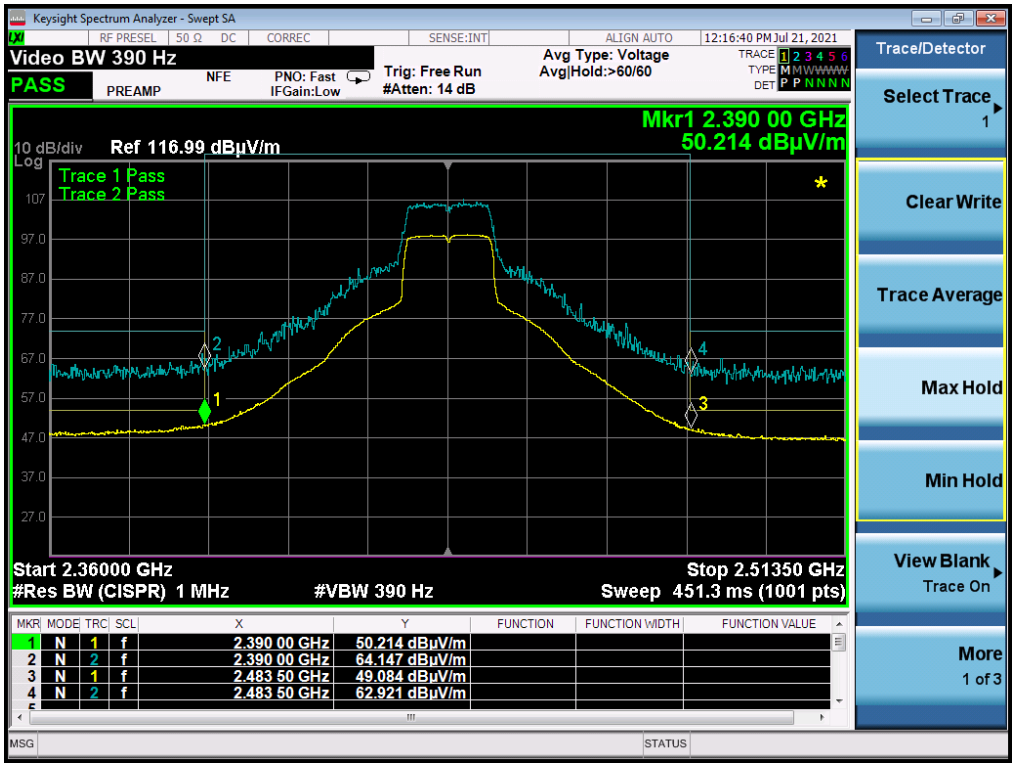


Vertical – No significant emissions were observed from 17 – 26 GHz
Horizontal – No significant emissions were observed from 17 – 26 GHz

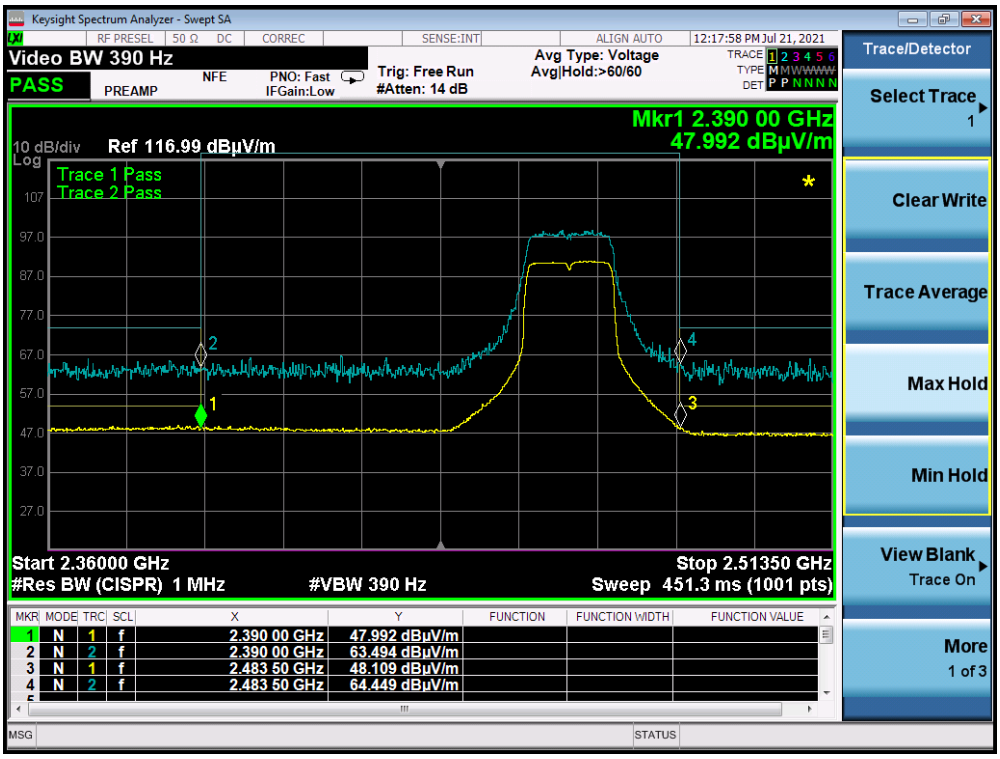
Graph 3: Transmitting at the all Frequencies 17 – 26 GHz



Graph 4: Lower Band Edge Plot – 2412 MHz – ac Mode



Graph 5: Middle Band Edge Plot – 2437 MHz – ac Mode



Graph 6: Upper Band Edge Plot – 2462 MHz – ac Mode

5.6 §15.247(e) Maximum Average Power Spectral Density

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. Results of this testing are summarized.

Mode	Frequency (MHz)	Measurement (dBm)	Criteria (dBm)
ac	2412	-27.7	8.0
	2437	-19.0	8.0
	2462	-26.75	8.0

Result

The maximum average power spectral density was less than the limit of 8 dBm; therefore, the EUT complies with the specification.

-- End of Test Report --