



REPORT

For

Clad Innovations Ltd.

110 East Cordova Street
Vancouver, BC
V6A 1K9, Canada

Date: 10 May 2021
Report No.: 20.01.20321-1
Revision No.: 0
Project No.: 20321
Equipment: WiFi/BLE Wireless Module
Model No.: Haven
FCC ID: 2ANU9HAVENA
IC ID.: 23327-HAVENA



ONE STOP GLOBAL CERTIFICATION SOLUTIONS



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TEST REPORT_FCC Part 15, Subpart B & 15.247/RSS-247 & RSS-Gen	
Report Reference No.	20.01.20321-1
Report Revision History.	✓ Rev. 0: 10 MAY 2021
Compiled by (+ signature)	Jeremy Lee 
Approved by (+ signature)	David Johanson 
Date of issue	10 MAY 2021
Total number of pages	24
FCC Site Designation No.: CA5970	
IC Site Registration No.: CA5970	
Testing Laboratory: LabTest Certification Inc.	
Address	
Unit 205 – 8291 92ST. Delta, B.C. V4G 0A4, Canada	
Applicant's name	
Clad Innovations Ltd.	
Address	
110 East Cordova Street, Vancouver, BC V6A 1K9	
Manufacture's Name	
Same as Applicant	
Address	
Same as Applicant	
Test specification:	
Standards	<ul style="list-style-type: none"> ➤ FCC Part 15, Subpart B: 2021/RSS-Gen, Issue 5, 2018 ➤ FCC 15.247:2021 & RSS-247, Issue 2, 2017
Test procedure	<ul style="list-style-type: none"> ➤ ANSI C63.4:2014 ➤ ANSI C63.10: 2013
Non-standard test method	N/A
Test Report Form(s) Originator	Jeremy Lee
Master TRF	1036_Rev2 – RF Report Template
Test item description :	
Trade Mark	TZOA HAVEN
Model/Type reference	HAVEN
Serial Number	n/p
FCC ID	2ANU9HAVENA
IC ID	23327-HAVENA
Possible test case verdicts:	

- test case does not apply to the test object..... :	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing:	
Date of receipt of test item	05 MAY 2021
Date (s) of performance of tests	05 MAY 2021

Revision History

Revision	Date	Reason For Change	Author(s)
0	10 MAY 2021	Release version	Jeremy Lee

Device Under Test Description

Application for	WiFi/BLE Wireless Module
Operating Frequency of WiFi	2412 to 2467MHz
Operating Frequency of BLE	2402 to 2480MHz
Number of Channels	Depends on 802.11 communication Protocol
Rated RF Output.....	0.0364 Watts
Modulation Type	802.11b/g/n Protocols
Antenna Type/Gain	BT Tunable FPC 2.4GHz Embedded Antenna/3.3dBi
Equipment mobility	Fixed
Operating condition.....	-40 to +60°C
Nominal Voltages for:	12 to 24VAC
Supply Voltage:	24V AC_20VA

Program details

Testing Facility by procedure:	
<input checked="" type="checkbox"/>	All Testing: LabTest Certification Inc.
Testing location/ address..... :	Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada

Summary of testing:	
Tests performed (name of test and test clause): Radiated Field strength and Emissions AC Power Line Conducted Emissions	Testing location: In SAC, Richmond On GRP, Richmond
<p>The tests indicated in Test Summary were performed on the product constructed as described below. The test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.</p> <p>Based on the results of our investigation, we have concluded the product tested complies with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. LabTest does not make any claims of compliance for samples or variants which were not tested.</p>	

Description of Equipment Under Test and Variant Models

<p>Description: The pre-certified Wireless Module, FCC ID: 2ANU9HAVENA and IC ID: 23327-HAVENA is installed another HOST UNIT, CACA with another Antenna. The only differences are:</p> <ul style="list-style-type: none"> ➤ The antenna is changed to use the following in new HOST, CACA: <ul style="list-style-type: none"> a) Antenna Info: BT Tunable FPC 2.4GHz Embedded Antenna, 3.3dBi Peak Gain. Part Number: 1003893FT-AA10L0050.
<p>Variant Models: The following variant models were part of this evaluation, and have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Labtest does not make any claims of compliance for samples or variants which were not tested.</p>
<p>None.</p>

EUT Internal Operating Frequencies

Frequency	Description	Frequency	Description
16.00 MHz	Crystal	1.5625 MHz	SPI Memsic
32.768 kHz	RTC	400 kHz	I2C
25 MHz	SPI Flash	2.1 MHz	Switching supply
25 MHz	Spi MCU-MCU	115.2kHz	Baud rate to WiFi

Additional Client Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
EUT	Wireless Module	Clad Innovations	HAVEN	Installed in new Host, CACA
SIM	Laptop	MSI	WE65	Controlled Radio
SIM	Power Supply	TRIAD	WAU240-500	Convert 120VAC to 24VAC Input: 120VAC 60Hz, 16W Output: 24VAC @500mA
SIM	Test Jig	Clad Innovations	n/p	Connect to command port of Main Board for Radio control
SIM	Dummy Load	Clad Innovations	n/p	Dummy Load for sensors
Abbreviations: EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or SIM - Simulator (Not Subjected to Test)				

Software and Firmware

Use*	Description	Version
AE	ESP_RF_Test_Tool	V2.5
Abbreviations: EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or SIM - Simulator (Not Subjected to Test)		

Input/Output Ports

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
1	Power 24Vac	AC	Yes	No	Could be any power supply 12 to 24V AC or DC

*Note: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical
 I/O = Signal Input or Output Port (Not Involved in Process Control)
 TP = Telecommunication Ports

Power Interface

Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	115	0.3	20VA	AC	1	Used for 24vAC power adapter

EUT Operation Modes

Mode #	Description
1	Continuous operating with Radio off.
2	Continuous turning on WiFi_802.11g_2437MHz.
3	Continuous turning on BT_BLE_2440MHz.

EUT Configuration Modes

Mode #	Description
1	Antenna and EUT Flat on table top with AC 24VAC

Test Equipment Verified for function

Model #	Description	Checked Function	Results
N9038A	EMI Receiver	Frequency and Amplitude	In Tolerance
SAS-571	Antenna, 1 to 18GHz	Checked structure	Normal – no damage.
SAS-572	Antenna, 18 to 25GHz	Checked structure	Normal – no damage.
JB1	Antenna, 30 to 1000MHz	Checked structure	Normal – no damage.
8449B	Pre-Amplifier	Gain	In Tolerance
LIN-120C	LISN	Checked Insertion Losses	In Tolerance
5001i	AC Power Source	Measured the Output power	In Tolerance

Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests:

Parameter	Uncertainty
Temperature	± 1.0 °C
Humidity	± 5.0 %
DC and Low Frequency Voltages	± 3.0 %
Radiated Emission, 30 to 18,000MHz	± 4.93 dB
Conducted Measurements, 0.15 to 30MHz	± 3.52 dB

Uncertainty figures are valid to a confidence level of 95%.

Result Summary

The Compliance Status is a judgment based on the direct measurements and calculated highest emissions to appropriate standard limits. Measurement uncertainty values, provided on calibration certificates, were not be used in the judgment of the final status of compliance.

FCC Part 15, Subpart B/RSS-Gen & FCC15.247/RSS-247			
Test Type	Regulation	Measurement Method	Result
AC Power Line Conducted Emissions	FCC 15.107(a) & ICES-003 Class B	ANSI C63.4:2014	PASS
Radiated Emissions for Digital Parts	FCC 15.109(a), & ICES-003 Class B	ANSI C63.4:2014	PASS
Field Strength of Spurious Radiation	FCC Part 15.247(d) IC RSS-247 § 5.5	ANSI C63.10:2013	PASS
Antenna Requirement	FCC Part 15.203	n/a	PASS

AC Power Line Conducted Emissions

Governing Doc	FCC 15.107(a) & ICES-003	Room Temperature (°C)	22.4		
Basic Standard	ANSI C63.4	Relative Humidity (%)	36.8		
Test Location	Richmond	Barometric Pressure (kPa)	102.0		
Test Engineer	Jeremy Lee	Date	05 May 2021		
EUT Voltage	<input type="checkbox"/> 24VAC <input checked="" type="checkbox"/> 120VAC @ 60Hz via AC/AC Transformer				
Test Equipment Used	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMC Analyzer	KeySight	N9038A	702	27-May-2020	27-May-2021
LISN	Com-Power	LIN-120C	920	11-Dec-2020	11-Dec-2021
RF Cable	MRO	n/a	n/a	IHC ¹	IHC ¹
AC Power Source	California Instruments	5001i	059	IHC ²	IHC ²
Used Software	<input checked="" type="checkbox"/> Tile 7! v7.3.0.6				
Used Template	_FCC_ConEmi_AC Mains_LSN120C_TROFF_20201215				
Note1) In House Calibration Ref. # 6					
Note2) In House Calibration Ref. # 7					
Frequency Range:	<input checked="" type="checkbox"/> 150kHz-30MHz <input type="checkbox"/> 9-150kHz				
Detector:	<input checked="" type="checkbox"/> Peak <input checked="" type="checkbox"/> Quasi-Peak <input checked="" type="checkbox"/> Averaging				
RBW/VBW:	<input checked="" type="checkbox"/> 9/30kHz <input type="checkbox"/> 200/300Hz				
Coupling device:	<input checked="" type="checkbox"/> LISN <input type="checkbox"/> ISN <input type="checkbox"/> Current Probe <input type="checkbox"/> CVP				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
All emissions were under both limit levels, QP and Average.					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

Test Method

This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices. Testing was performed in accordance with the test standard(s) referenced in the test summary section of this report. The Equipment Under Test (EUT) was configured based upon the requirements of the applicable test standard. Initially a scan was made with an EMC Analyzer, controlled by EMC Test Software, Tile7!, from 150 kHz to 30 MHz on each phase with the receiver in the peak mode. The measuring bandwidth was set up 9 kHz. Measurements were then made using CISPR16-1 quasi peak and averaging detectors when the peak readings were within 10dB of the Quasi-peak limit line.

Test Result

- Conducted Emissions (QP/AV) level (dBμV) = Analyzer level (dBμV) + Corr. (dB)
- Corr. (dB) = Insertion Loss of LISN (dB) + Cable Loss (dB)
- Margin (dB) = QP/AV Limit (dBμV) – QP/AV level (dBμV)

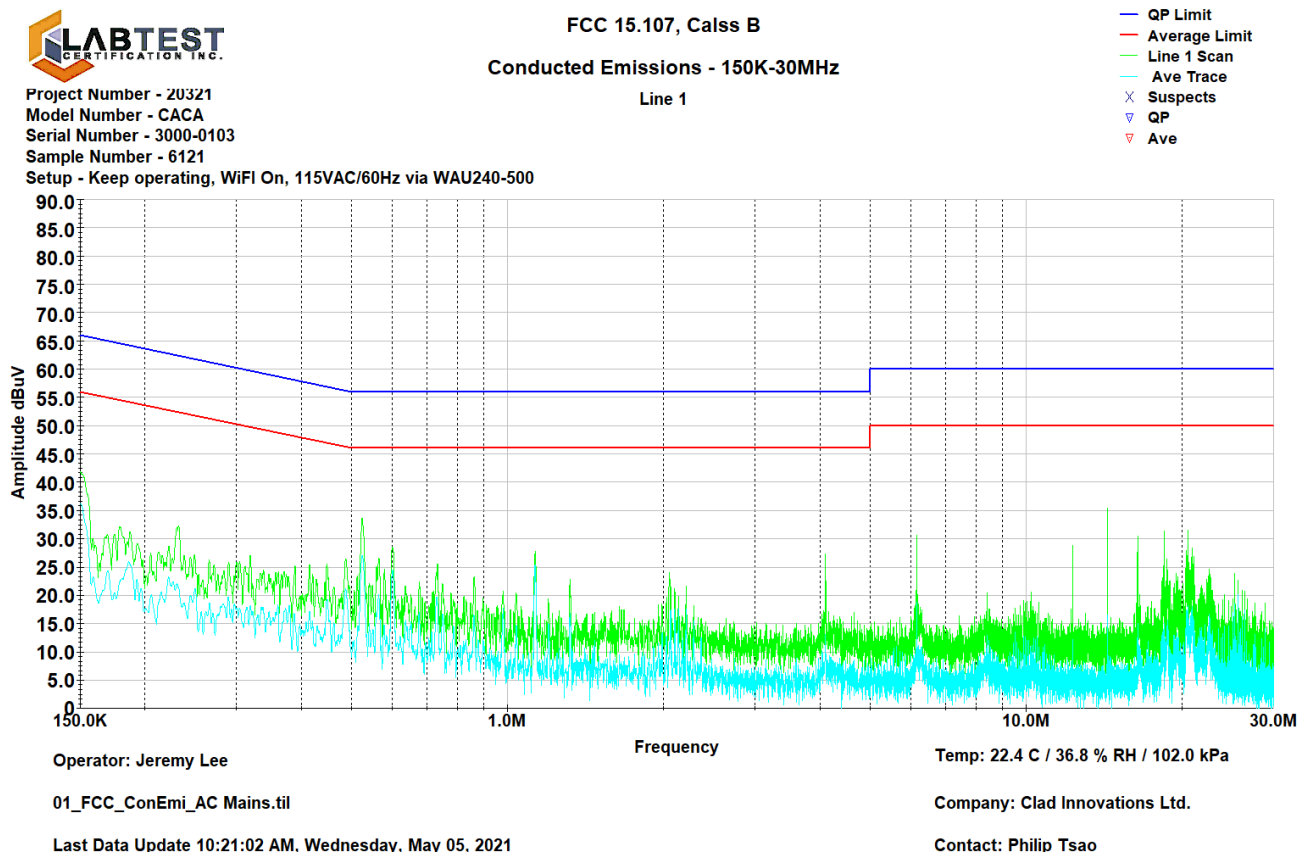
Test Setup

Description of test set-up:

The EUT was placed on a 0.8 m non-conducting table above a ground reference plane (GRP).
The EUT was set to **Operation Mode #1 with configuration Mode #1**

Measurement / Graphical Representation for Emission – Conducted Emissions

- Graph of Line 1 – Hot



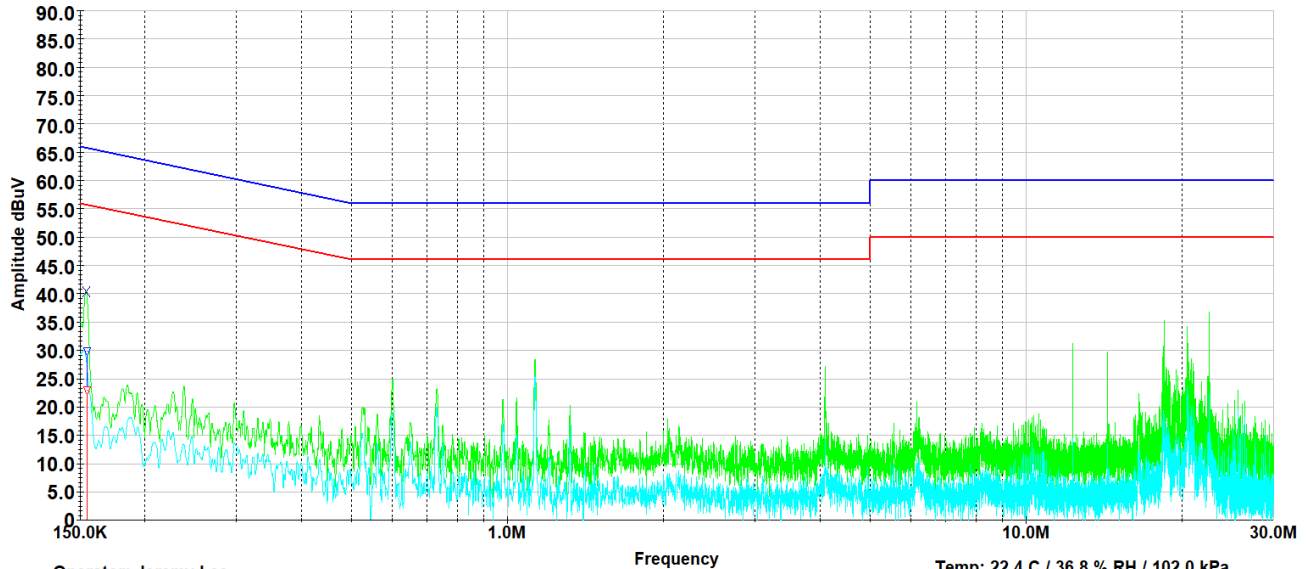
- Graph of Line 2 - Neutral



Project Number - 20321
 Model Number - CACA
 Serial Number - 3000-0103
 Sample Number - 6121
 Setup - Keep operating, WiFi On, 115VAC/60Hz via WAU240-500

FCC 15.107, Class B
 Conducted Emissions - 150K-30MHz
 Line 2

- QP Limit
- Average Limit
- Line 2 Scan
- Ave Trace
- × Suspects
- ▽ QP
- ▽ Ave



Operator: Jeremy Lee

Temp: 22.4 C / 36.8 % RH / 102.0 kPa

01_FCC_ConEmi_AC Mains.til

Company: Clad Innovations Ltd.

Last Data Update 10:22:57 AM, Wednesday, May 05, 2021

Contact: Philip Tsao

Frequency(MHz)	Peak (dBuV)	QP (dBuV)	QP Limit (dBuV)	Margin_QP (dB)	AVG (dBuV)	AVG Limit (dBuV)	Margin_AVG (dB)	LISN Losses (dB)	Path Losses (dB)
154.50000 KHz	42.34	29.91	65.75	35.84	22.93	55.75	32.82	0.57	0.01

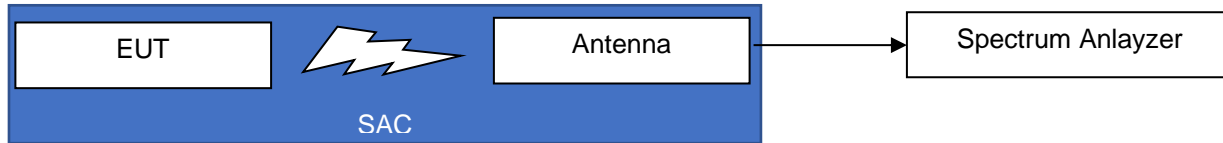
Radiated Emissions for Digital Parts

Governing Doc	FCC 15.109(a) & ICES-003	Room Temperature (°C)	22.1		
Basic Standard	ANSI C63.4	Relative Humidity (%)	36.8		
Test Location	Richmond	Barometric Pressure (kPa)	102.0		
Test Engineer	Jeremy Lee	Date	05 May 2021		
EUT Voltage	<input type="checkbox"/> 24VAC <input checked="" type="checkbox"/> 120VAC @ 60Hz via AC/AC Transformer				
Test Equipment Used	Manufacturer	Model	Identifier	Calibration	Calibration due
EMC Analyzer	KeySight	N9038A	702	27-May-2020	27-May-2021
Broadband Antenna	Sunol	JB1	371	24-Sep-2020	24-Sep-2022
Motion Controller	Sunol	SC104V	235A	IHC ¹	IHC ¹
Antenna Tower	Sunol	TWR95-4	235B	IHC ¹	IHC ¹
Turn Table	Sunol	SM46C	235C	IHC ¹	IHC ¹
EMC Shielded Enclosure	USC	USC-26	374	IHC ¹	IHC ¹
RF Cable	MRO	n/a	n/a	IHC ²	IHC ²
AC Power Source	California Instruments	5001i	059	IHC ³	IHC ³
Used Software	<input checked="" type="checkbox"/> Tile 7! v7.3.0.6				
Used Template	_FCC_RadEmi_30-1000MHz_20200727				
Note1) In House Calibration Ref. # 4 Note2) In House Calibration Ref. # 6 Note3) In House Calibration Ref. # 7					
Frequency Range:	<input type="checkbox"/> 9kHz-30MHz <input checked="" type="checkbox"/> 30-1000MHz <input type="checkbox"/> 1-6GHz				
Detector:	<input checked="" type="checkbox"/> Peak (for Prescan) <input checked="" type="checkbox"/> Quasi-Peak(for Formal)				
RBW/VBW:	<input type="checkbox"/> 9/30kHz <input checked="" type="checkbox"/> 120/300kHz <input type="checkbox"/> 1/3MHz				
Type of Facility:	<input checked="" type="checkbox"/> SAC <input type="checkbox"/> FSOATS <input type="checkbox"/> <i>in-situ</i>				
Distance:	<input checked="" type="checkbox"/> 3meter <input type="checkbox"/> 10meter <input type="checkbox"/> 1meter				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
Classification:	<input checked="" type="checkbox"/> Class B <input type="checkbox"/> Class A				
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

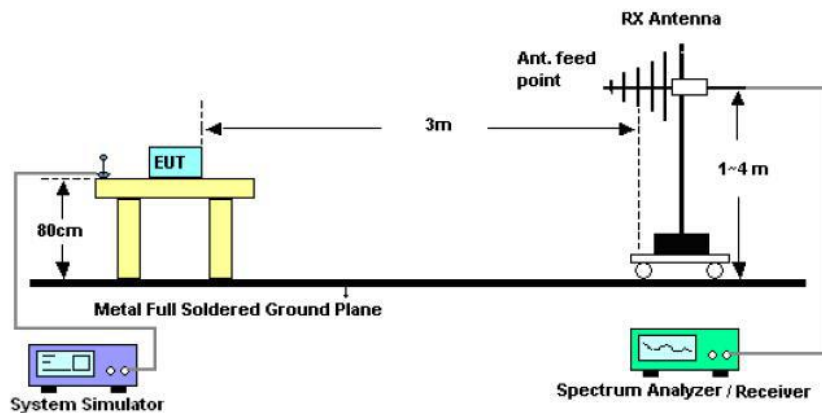
Test setup

Description of test set-up:

The EUT was placed on a 0.8 m non-conducting table above a Turn table in SAC.
The EUT was set to **Operation Mode #1 with configuration Mode #1**.



- Radiated Emission 30 to 1000MHz, with JB1



Measurement Procedure

This test measures the radiating levels from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices. Testing was performed in accordance with the test standard(s) referenced in the test summary section of this report. The Equipment Under Test (EUT) was configured based upon the requirements of the applicable test standard. Initially, the primary emission frequencies are identified by positioning a broadband receive antenna three meter from the EUT.

A scan was made with an EMC Analyzer, controlled by EMC Test Software, Tile7!, from 30kHz to 1,000 MHz with the receiver in the peak mode. The receiver IF bandwidth was 9/120 kHz and scan step was about 3/30kHz. To ensure that the maximum emission at each discrete frequency of interest is observed, the receive antenna is varied in height from one to four meters and rotated to produce horizontal and vertical polarities while the turntable is rotated to determine the worst emitting configuration. Under 30MHz was only tested at 1meter height and Antenna was changed both polarization, Horizontal and Vertical. Measurements were then made using CISPR quasi peak when the peak readings were within 10dB of the limit line. The numerical results are included herein to demonstrate compliance.

Test Result

- Radiated Emissions level (dB μ V/m) = Analyzer level (dB μ V) + AFCL (dB/m)
- AFCL (dB/m) = Antenna Factor (dB/m) +Cable Loss (dB) - Pre-Amplifier Gain(dB)
- Margin (dB) = Limit (dB μ V/m) - Field Strength level (dB μ V/m)

Graphical Representation for Emission - Radiated 30MHz to 1GHz

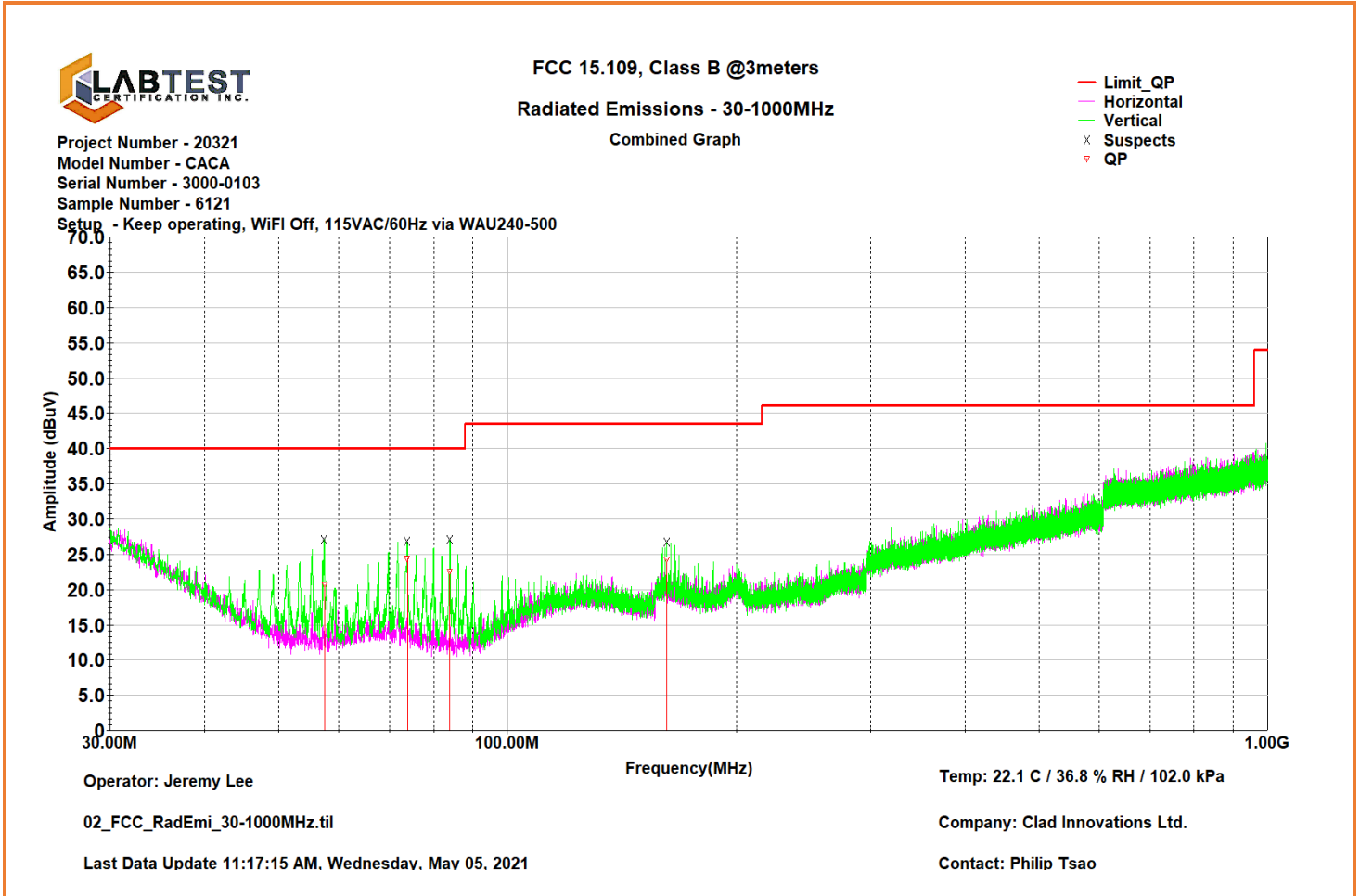


Table Representation for Emission - Radiated 30MHz to 1GHz

Frequency(MHz)	Ant Fac (dB)	Cable loss (dB)	Preamp (dB)	AZ (Deg)	HGT (cm)	Peak (dBuV)	QP (dBuV)	Limit (dBuV)	Margin (dB)
57.4382 MHz	8.71	1.13	0.00	328	100	23.56	20.65	40.00	19.35
73.8255 MHz	9.28	1.26	0.00	47	107	26.75	24.34	40.00	15.66
83.8962 MHz	9.48	1.34	0.00	79	127	29.16	22.49	40.00	17.51
161.8843 MHz	10.89	2.10	0.00	0	100	30.59	24.21	43.52	19.31

Field Strength of Spurious Radiation

Governing Doc	FCC Part 15.247(d) IC RSS-247 § 5.5	Room Temperature (°C)	23.1 to 23.3		
Basic Standard	ANSI C63.10	Relative Humidity (%)	36.8 to 37.3		
Test Location	Richmond	Barometric Pressure (kPa)	101.7 to 101.9		
Test Engineer	Jeremy Lee	Date	05 May 2021		
EUT Voltage	<input type="checkbox"/> 24VAC <input checked="" type="checkbox"/> 120VAC @ 60Hz via AC/AC Transformer				
Test Equipment Used	Manufacturer	Model	Identifier	Calibration	Calibration due
EMC Analyzer	KeySight	N9038A	702	27-May-2020	27-May-2021
Broadband Antenna	Sunol	JB1	371	24-Sep-2020	24-Sep-2022
Horn Antenna	A.H Systems	SAS-571	227C	12-Aug-2020	12-Aug-2022
Horn Antenna	A.H Systems	SAS-572	227D	11-Dec-2018	11-Dec-2021
Motion Controller	Sunol	SC104V	235A	IHC ¹	IHC ¹
Antenna Tower	Sunol	TWR95-4	235B	IHC ¹	IHC ¹
Turn Table	Sunol	SM46C	235C	IHC ¹	IHC ¹
EMC Shielded Enclosure	USC	USC-26	374	IHC ¹	IHC ¹
RF Cable	MRO Elec.	SMA-SMA-12FT	n/a	IHC ²	IHC ²
RF Cable	MRO	n/a	n/a	IHC ²	IHC ²
RF Preamp	Agilent	8449B	273	IHC ²	IHC ²
AC Power Source	California Instruments	5001i	059	IHC ³	IHC ³
Used Software	<input checked="" type="checkbox"/> Tile 7! v7.3.0.6				
Used Template	_FCC_RadEmi_30-1000MHz_Spur_20201008 _FCC_RadEmi_1-18GHz_Spur_20200824 _FCC_RadEmi_18-26.5GHz_Spur_20200810				
Note1) In House Calibration Ref. # 4 & 5 Note2) In House Calibration Ref. # 6 Note3) In House Calibration Ref. # 7					
Frequency Range:	<input checked="" type="checkbox"/> 1.0-25GHz <input checked="" type="checkbox"/> 30-1000MHz <input type="checkbox"/> 9kHz-30MHz				
Detector:	<input checked="" type="checkbox"/> Peak(for Prescan and Formal) <input checked="" type="checkbox"/> Average (for Formal) <input checked="" type="checkbox"/> Quasi-Peak(for Formal 30-1000MHz)				
RBW/VBW:	<input checked="" type="checkbox"/> 1/3MHz <input checked="" type="checkbox"/> 120/300kHz <input checked="" type="checkbox"/> 9/30kHz				
Type of Facility:	<input checked="" type="checkbox"/> SAC/FSOATS <input type="checkbox"/> OATS <input type="checkbox"/> in-situ				
Distance:	<input checked="" type="checkbox"/> 3meter <input type="checkbox"/> 10meter <input type="checkbox"/> 1meter				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
There was no Spurious detected over Limit of FCC15.247(d).					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

Test Method

The EUT and test equipment were set up and measurements taken using the procedures is based on ANSI C63.10.

Adjust the spectrum analyzer for the following setting:

- a) RBW : 100 kHz (< 1 GHz), 1 MHz (> 1 GHz).
- b) VBW : 300 kHz (< 1 GHz), 3 MHz (> 1 GHz).
- c) Detector mode : Positive Peak

The transmitter was placed on a Styrofoam table, and it was set for continuous transmission

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT.

Requirements – Radiated Spurious Emissions:

Emissions found in Restricted bands, the levels must comply with the general limits found in FCC Part 15.209.

Frequency	Limits
FCC Part 15.209, IC RSS-GEN 8.9	
9 to 490 kHz	2400/F (kHz) μ V/m @ 300 meters
490 to 1705 kHz	24000/F (kHz) μ V/m @ 30 meters
1705 kHz to 30 MHz	29.54 dB μ V/m @ 30 meters
30 – 88	40.0 dB μ V/m @ 3 meters
80 – 216	43.5 dB μ V/m @ 3 meters
216 – 960	46.0 dB μ V/m @ 3 meters
Above 960	54.0 dB μ V/m @ 3 meters

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

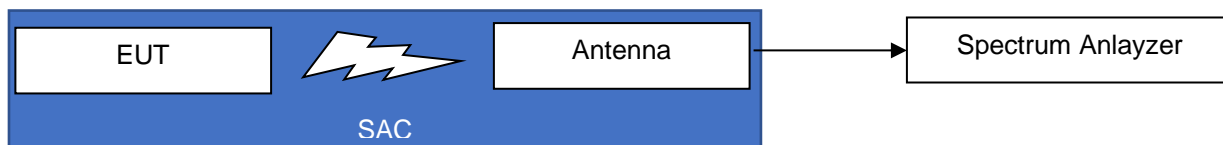
Test setup

Description of test set-up:

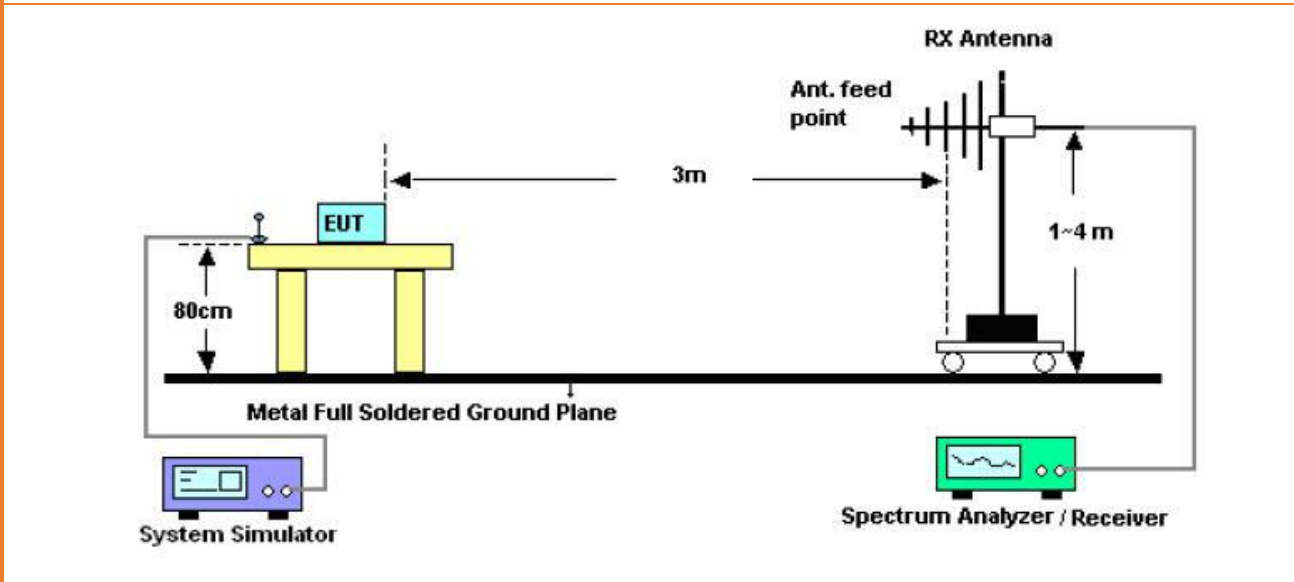
The EUT was placed on a 0.8m non-conducting table above a ground reference plane (GRP) for the frequency range 9kHz to 1GHz.

The EUT was placed on a 1.5m non-conducting table above a ground reference plane (GRP) for the frequency range 1 to 25GHz.

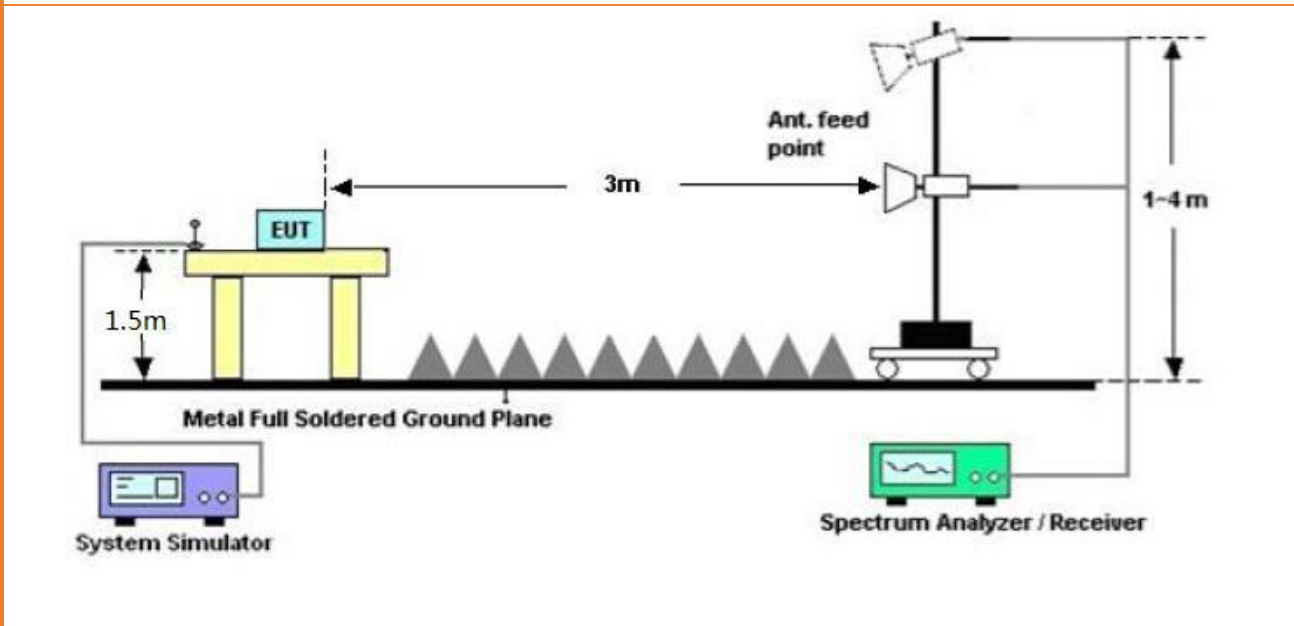
The EUT was set to **Operation Mode #2 & #3 with configuration Modes #1.**



- Radiated Emission 30 to 1,000MHz, with JB-1



- Radiated Emission 1 to 25GHz, with SAS-571 & SAS-572



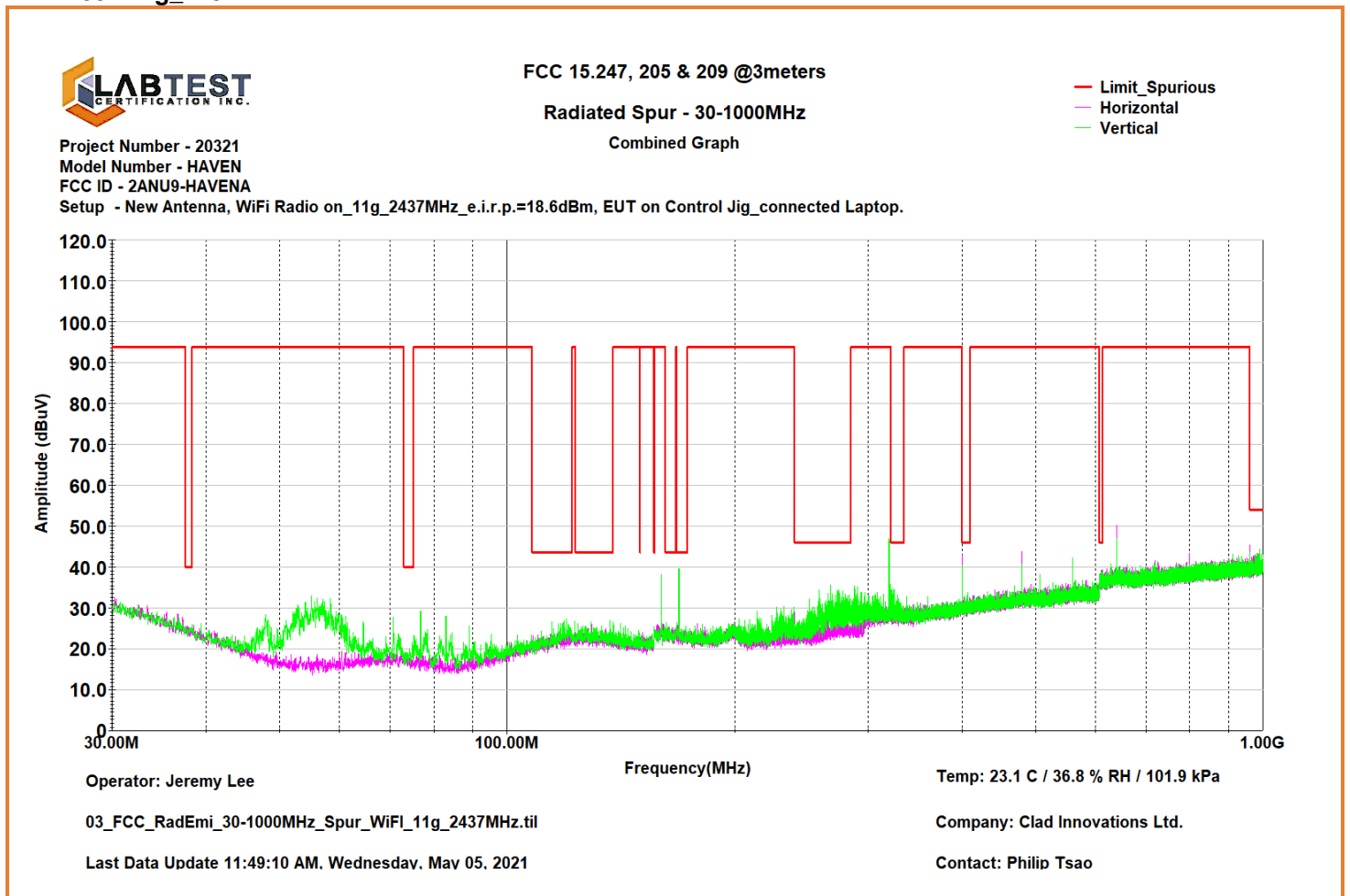
Results

All Radiated spurious emissions from the transmitter were greater than 10dB below the limit line and were not measured which was detected under noise floor.

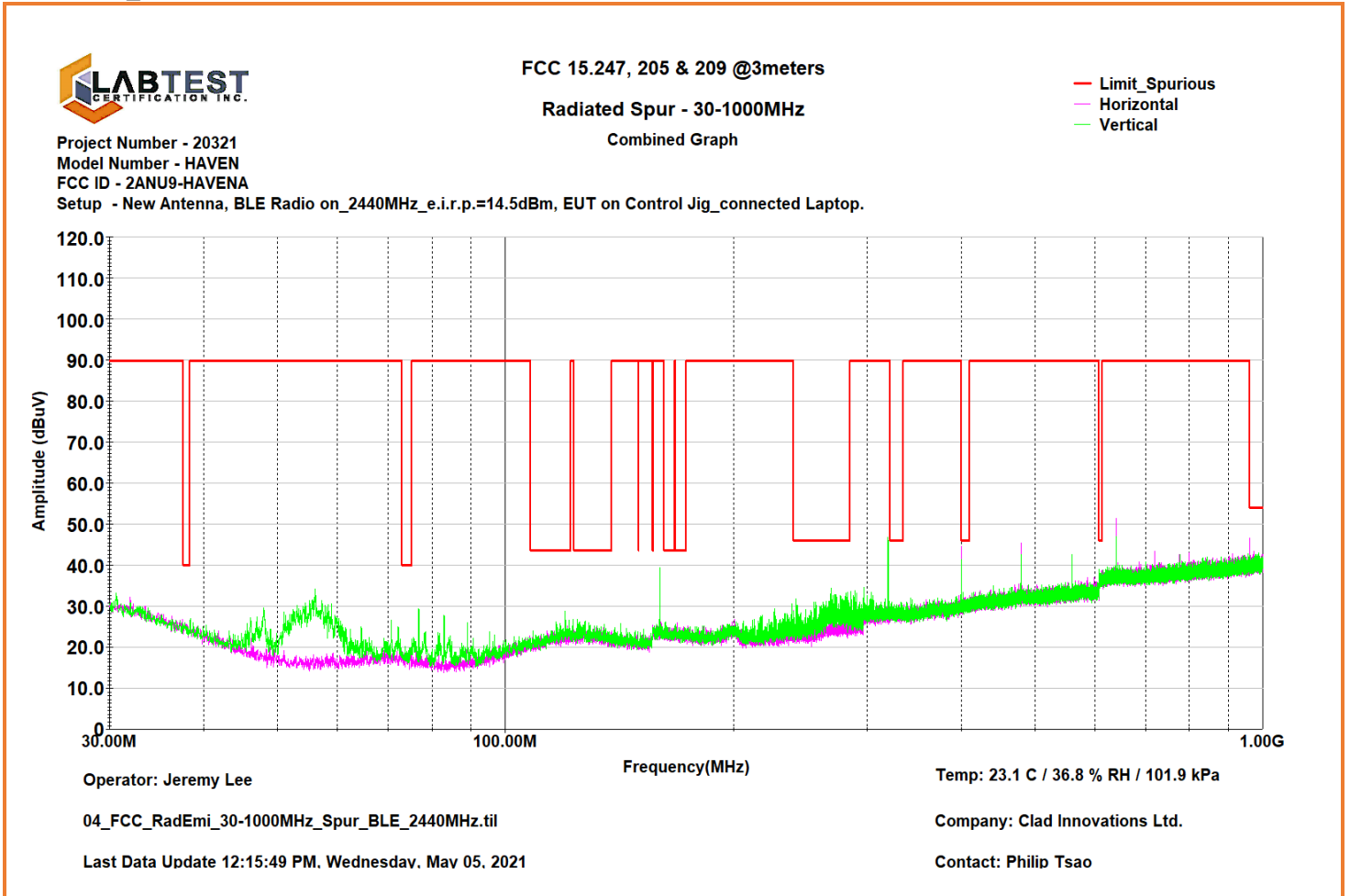
All other emissions detected are from the Power Supply or digital circuitry.

Graphical Representation for Spurious Emission - Radiated 30 to 1000MHz

1. 802.11g_2437MHz

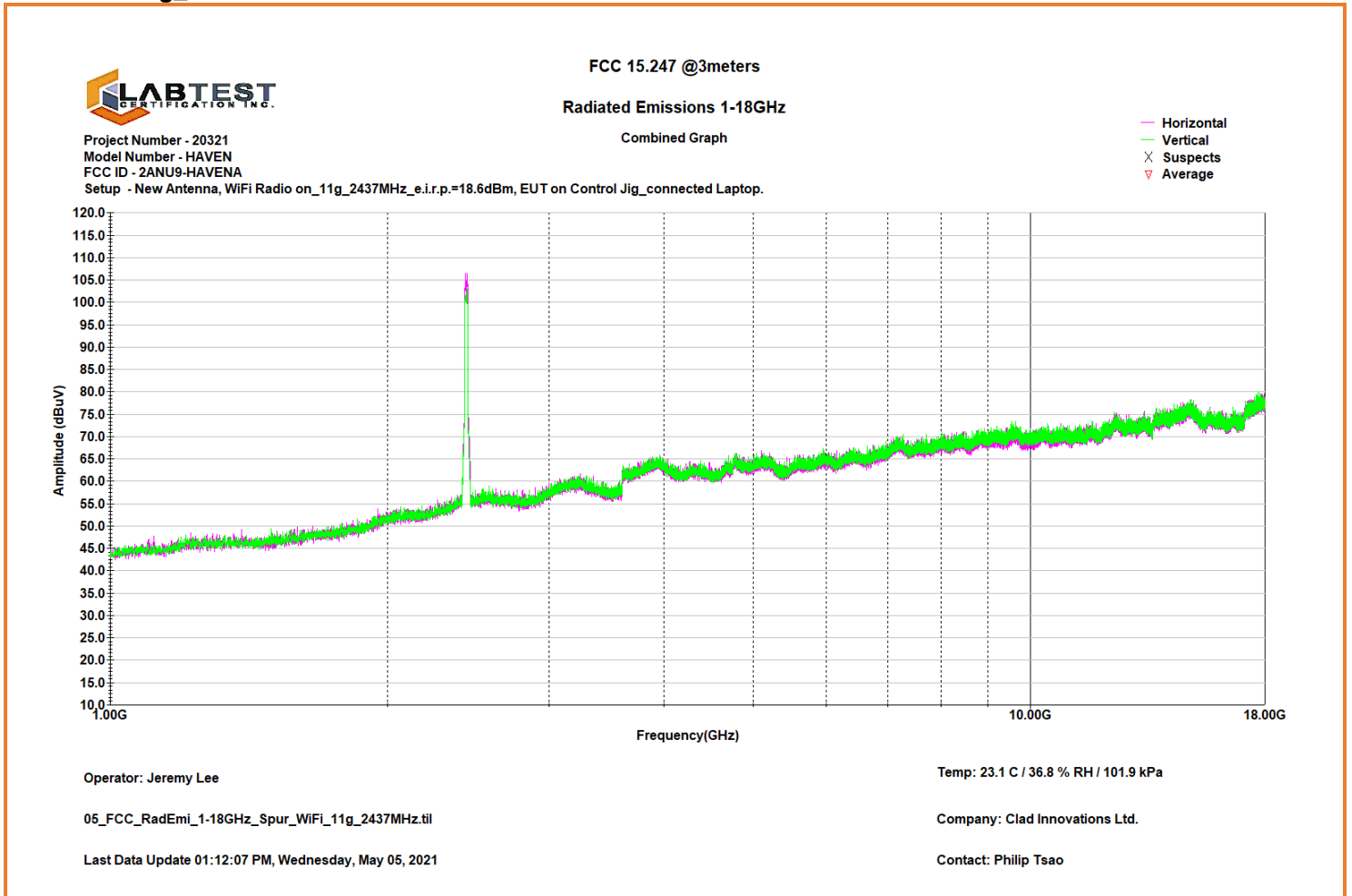


2. BLE_2440MHz

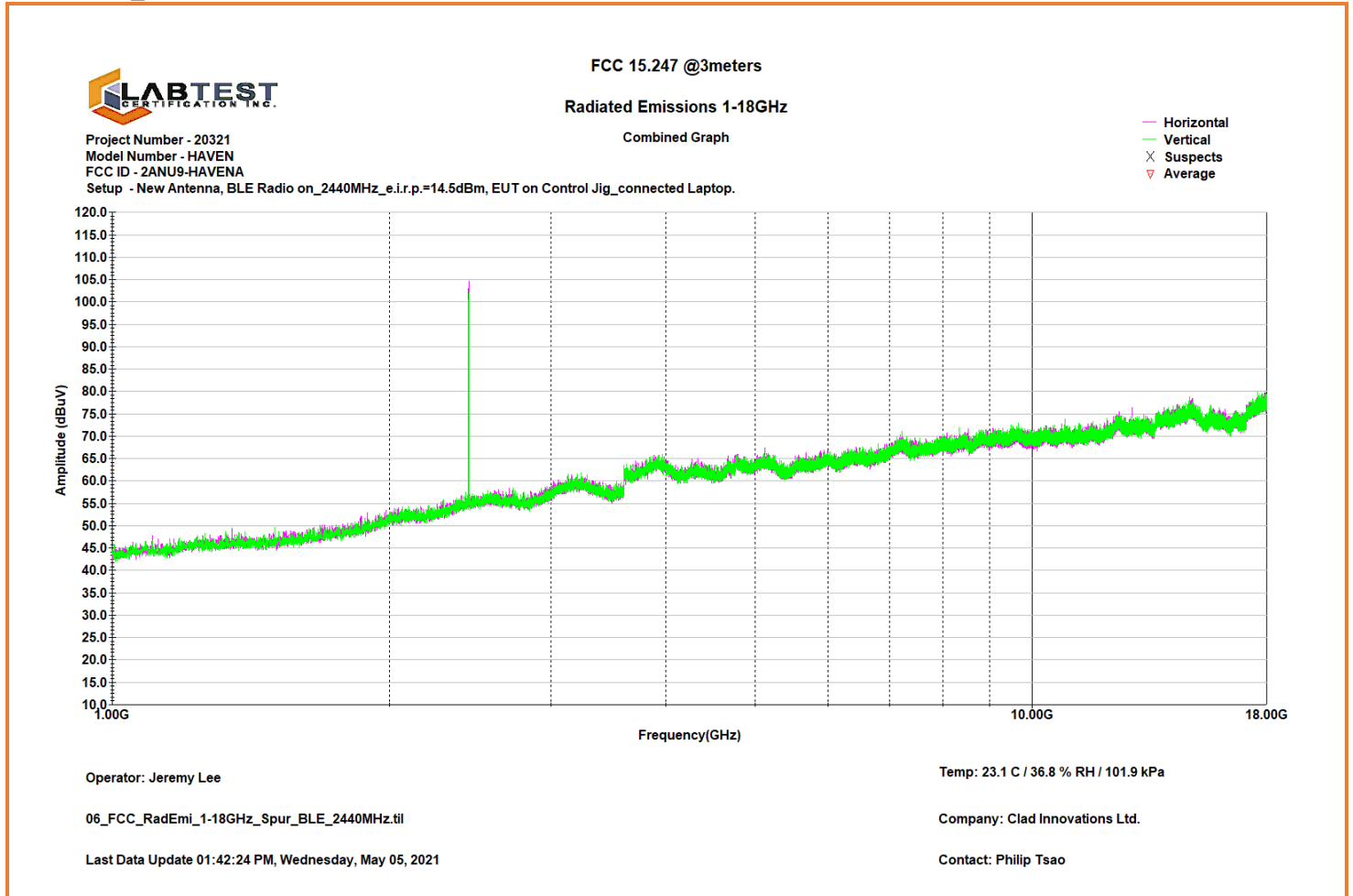


Graphical Representation for Spurious Emission - Radiated 1 to 18GHz

1. 802.11g_2437MHz

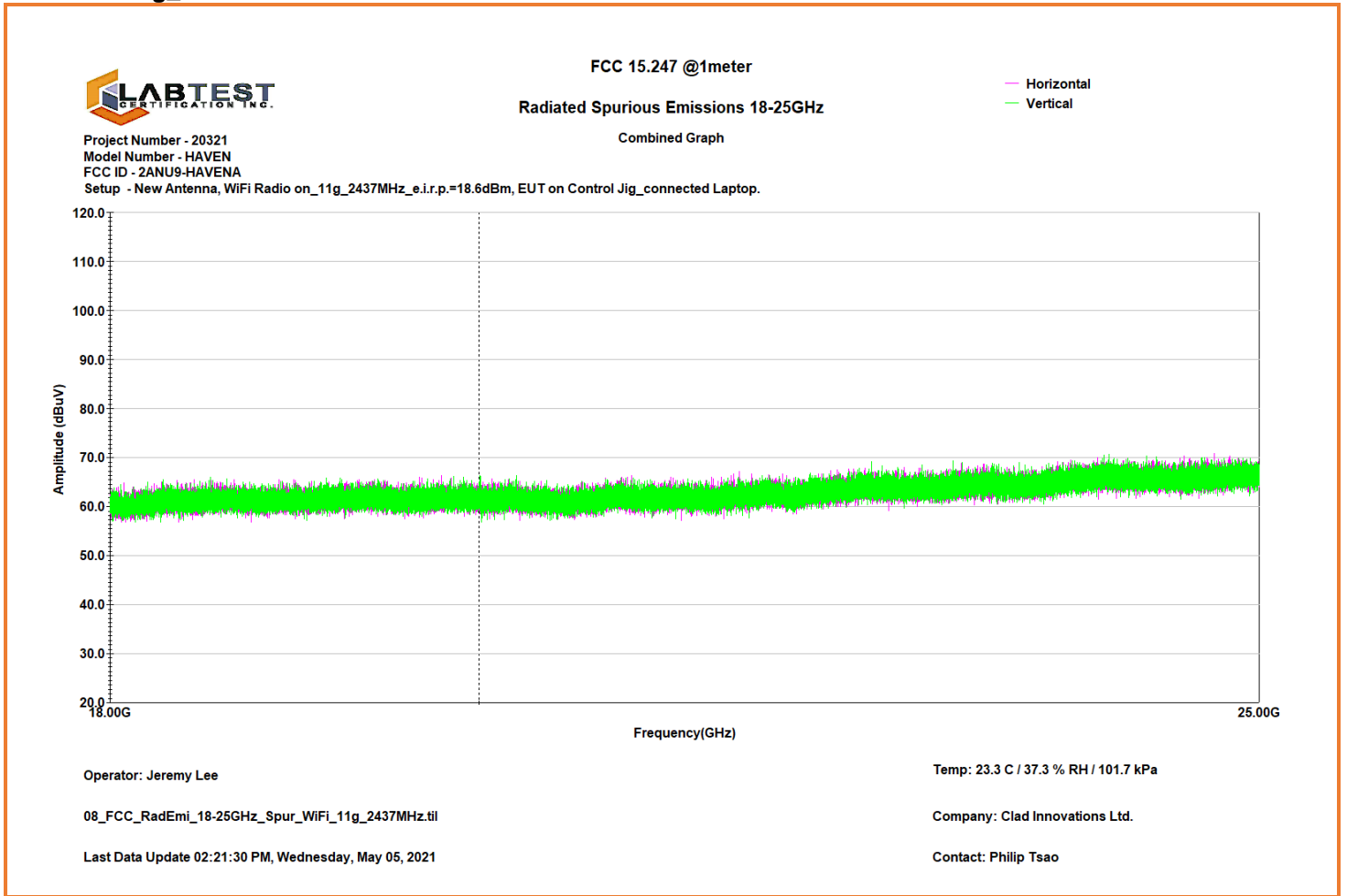


2. BLE_2440MHz

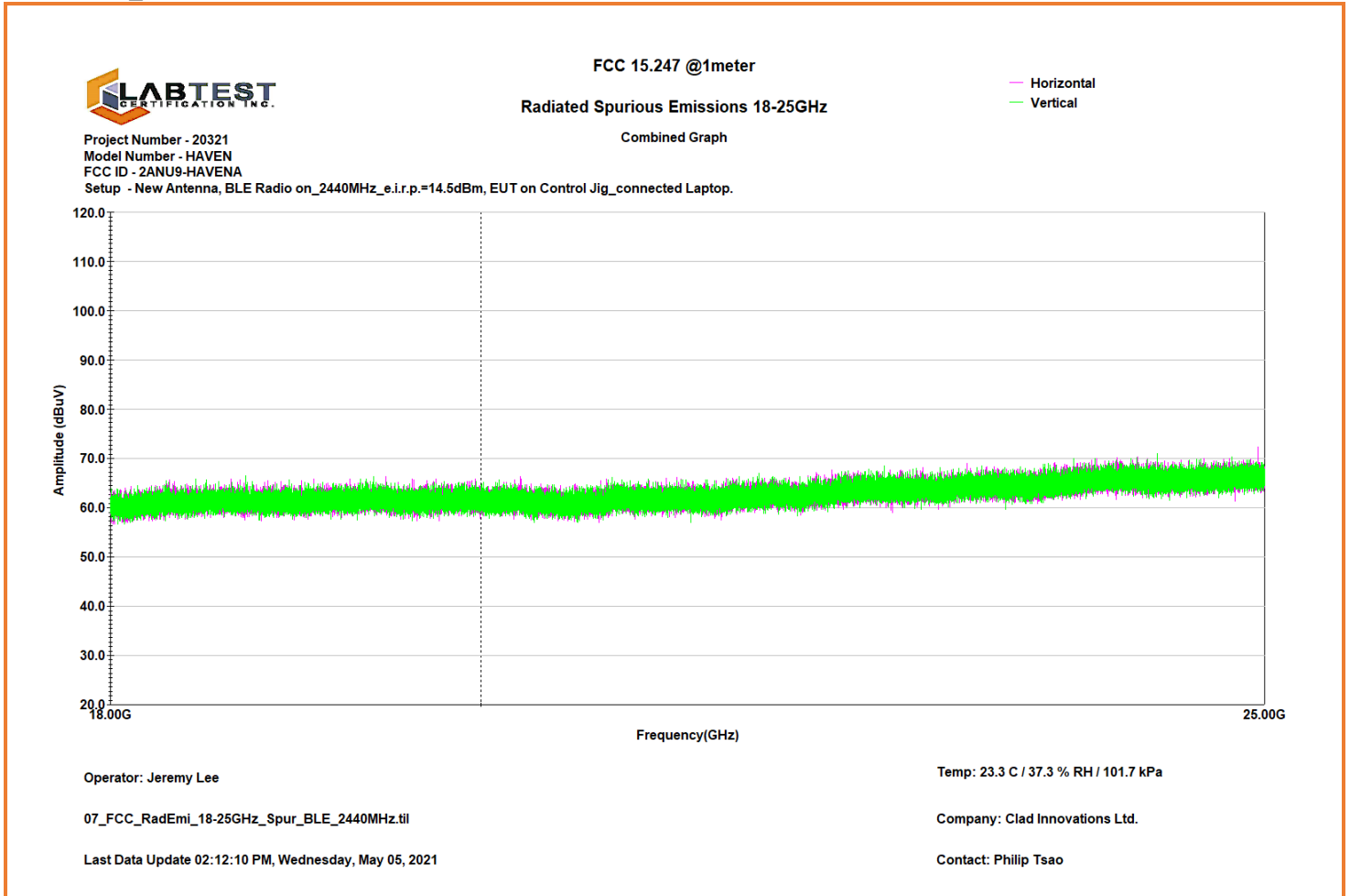


Graphical Representation for Spurious Emission - Radiated 18 to 25GHz

1. 802.11g_2437MHz



2. BLE_2440MHz



Antenna Requirement

Governing Doc	15.203	Room Temperature (°C)	N/A
Basic Standard	15.203	Relative Humidity (%)	N/A
Test Location	Richmond	Barometric Pressure (kPa)	N/A
Test Engineer	Jeremy Lee	Date	05 May 2021
EUT Voltage	<input type="checkbox"/> 24VAC <input checked="" type="checkbox"/> 120VAC @ 60Hz via AC/AC Transformer		
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>			

Results

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

The EUT has one approved antenna, which accordance to the above sections, is considered sufficient to comply with the provisions of these sections. The antenna is permanently mounted inside the EUT and can not be easily replaced without using special tools and appropriate mounting hardware.

TZOA Part Number:

Manufacturer: ethertronics P/N: 1003893FT-AA10L0050 Description: 3.3 dBi 2.4 GHz Embedded Antenna.



END of REPORT