



Test Report

For:

Drone Go Home LLC. DBA AeroDefense

Brand:

AirWarden

Marketing Name:

Fixed Spectrum Sensor v2

Model Name:

SEN602

Product Description:

Fixed Spectrum Sensor

FCC ID: 2AU4I-SEN602

IC: 33327-SEN602

Applied Rules and Standards:

FCC CFR 47 Subpart 15B

ICES-003 Issue 7

REPORT #: AEROD_004_24001_FCC15B_ICES003_Rev1

DATE: 2025-06-12



A2LA Accredited

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3462B

CABID: US0187

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1 Assessment

The following device was evaluated against the applicable criteria specified in

- FCC rule Part 15B of Title 47 of the Code of Federal Regulations
- ICES-003, Issue 7

No deviations were ascertained.

Company	Description	Model #
Drone Go Home LLC. DBA AeroDefense	Fixed Spectrum Sensor	SEN602

Responsible for the Report:

2025-06-12	Compliance	Alvin ILARINA (Senior Manager Regulatory Compliance)	Alvin ILARINA  Digitally signed by Alvin ILARINA Date: 2025.06.12 18:07:53 -07'00'
Date	Section	Name	Signature

The test results of this test report relate exclusively to the test item specified in Section3.

CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing
City/Zip Code	Milpitas, 95035 CA
Country	USA
Telephone:	+ 1 (408) 586 6200
Fax:	+ 1 (408) 586 6299
EMC Lab Manager:	Alvin Ilarina
Project Manager:	Art Thammanavarat

2.2 Identification of the Client

Client's Name:	Drone Go Home LLC. DBA AeroDefense
Street Address:	1000 Sanger Ave, Suite 18
City/Zip Code	Oceanport New Jersey 07757
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	same as client
Manufacturers Address:	same as client
City/Zip Code	same as client
Country	same as client

3 Equipment Under Test (EUT)

3.1 EUT Specifications

Model No:	SEN602
Marketing Name:	Fixed Spectrum Sensor v2
HW Version:	N/A
SW Version:	N/A
FCC ID:	2AU4I-SEN602
IC:	33327-SEN602
FWIN:	N/A
HVIN:	N/A
PMN:	N/A
Product Description:	Fixed Spectrum Sensor
Power Supply / Rated operating Voltage Range:	120 V AC
Operating Temperature Range	N/A
Sample Revision	production
EUT Dimensions	N/A
Note: All information provided by the client.	

3.2 Radio Specifications

Embedded Radio Technologies	802.11 ac/b/g/n + BT LE M.2 Card The product scans the 400MHz, 900MHz, 2.4GHz, and 5.8GHz bands using SDR card and WiFi card
Frequency Range / number of channels:	UNII-1: 5150-5250 MHz UNII-2A 5250-5350 Mhz UNII 2C: 5470-5725 MHz UNII-3: 5725-5850 MHz
Modes of Operation	EUT is turned on without being transmitting
Note: All information provided by the client.	

3.3 EUT Sample details

EUT #	Serial Number	HW Version	SW Version	Notes/Comments
1	0	N/A	N/A	For radiated testing

3.4 Accessory Equipment (AE) details

AE #	Type	Model	Manufacturer	Serial Number
0	N/A	-	-	-

3.5 Mode of Operation

Mode #	Mode of Operation	Comments
1	Idle	EUT in fully functional mode, all radios idle

4 Subject of Investigation

The objective of the measurements done by CETECOM Inc. was to evaluate the compliance of the EUT against the relevant requirements specified in section 1 Assessment.

5 Measurement Results Summary

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	NA	NP	Result
FCC §15.109 ICES-003, §3.2.2	Radiated Emissions	Nominal	Idle	■	□	□	Complies
FCC §15.107 ICES-003, §3.2.1	Conducted Emissions	Nominal	Idle	■	□	□	Complies

Note: NA= Not Applicable; NP= Not Performed.

6 Measurements

6.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus, with 95% confidence interval (in dB delta to result), based on a coverage factor k=2.

Radiated measurement

Measurement System		EMC Lab 1	EMC Lab 2
Conducted emissions (mains port)	150 kHz – 30 MHz	2.47 dB	N/A
Radiated emissions	9 kHz – 30 MHz	2.68 dB	2.53 dB
	30 – 100 MHz	4.39 dB	3.85 dB
	100 MHz – 1 GHz	5.65 dB	5.24 dB
	1 – 6 GHz	5.0 dB	4.88 dB
	6 – 18 GHz	4.76 dB	4.58 dB
	18 – 40 GHz	4.65 dB	4.61 dB

RF conducted measurement ± 0.5 dB

According to TR 102 273 a multiplicative propagation of error is assumed for RF measurement systems. For this reason the RMS method is applied to dB values and not to linear values as appropriate for additive propagation of error. Also used: <http://physics.nist.gov/cuu/Uncertainty/typeb.html>. The above calculated uncertainties apply to direct application of the Substitution method. The Substitution method is always used when the EUT comes closer than 3dB to the limit.

6.2 Environmental Conditions During Testing:

The following environmental conditions were maintained during the course of testing:

- Ambient Temperature: 20-25°C
- Relative humidity: 40-60%

6.3 Dates of Testing:

2024-10-29 – 2024-11-04

6.4 Decision Rule:

Cetecom advanced follows ILAC G8:2019 chapter 4.2.1 (Simple Acceptance Rule).

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3. The measurement uncertainty is mentioned in this test report, See chapter 9, but is not taken into account – neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong.

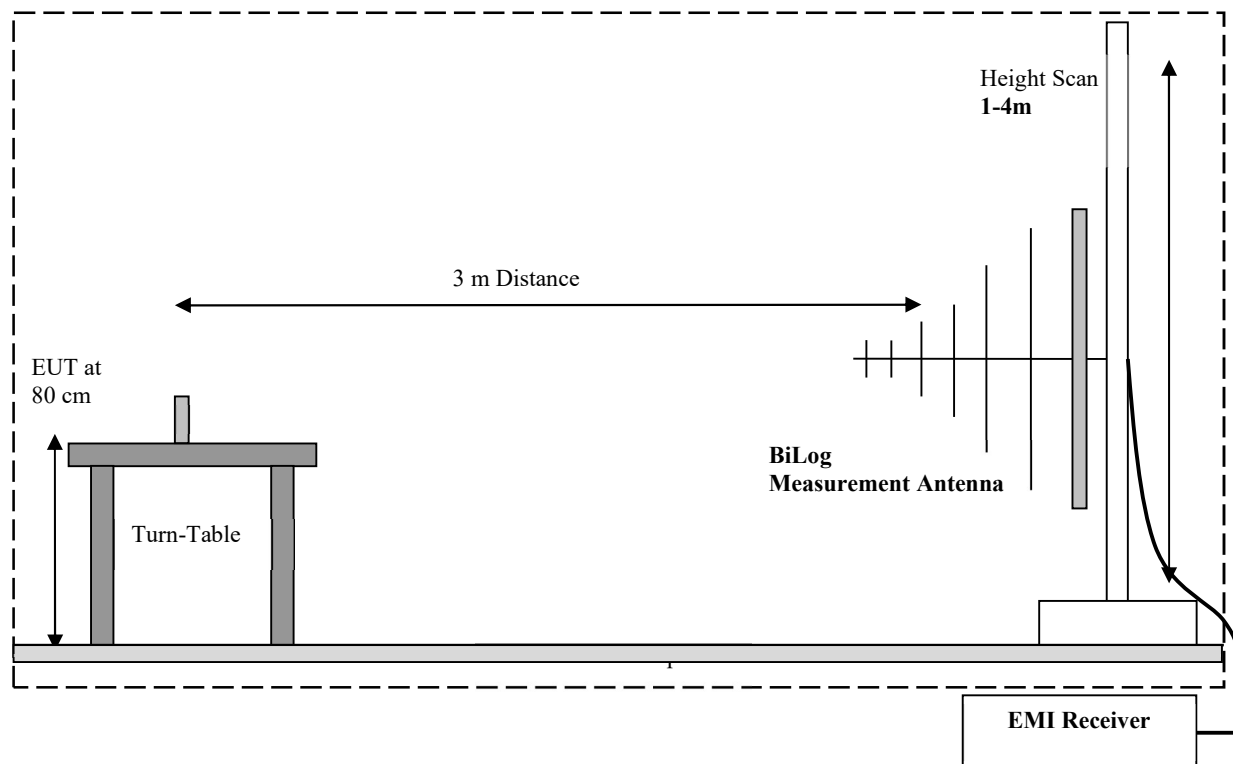
7 Measurement Procedures

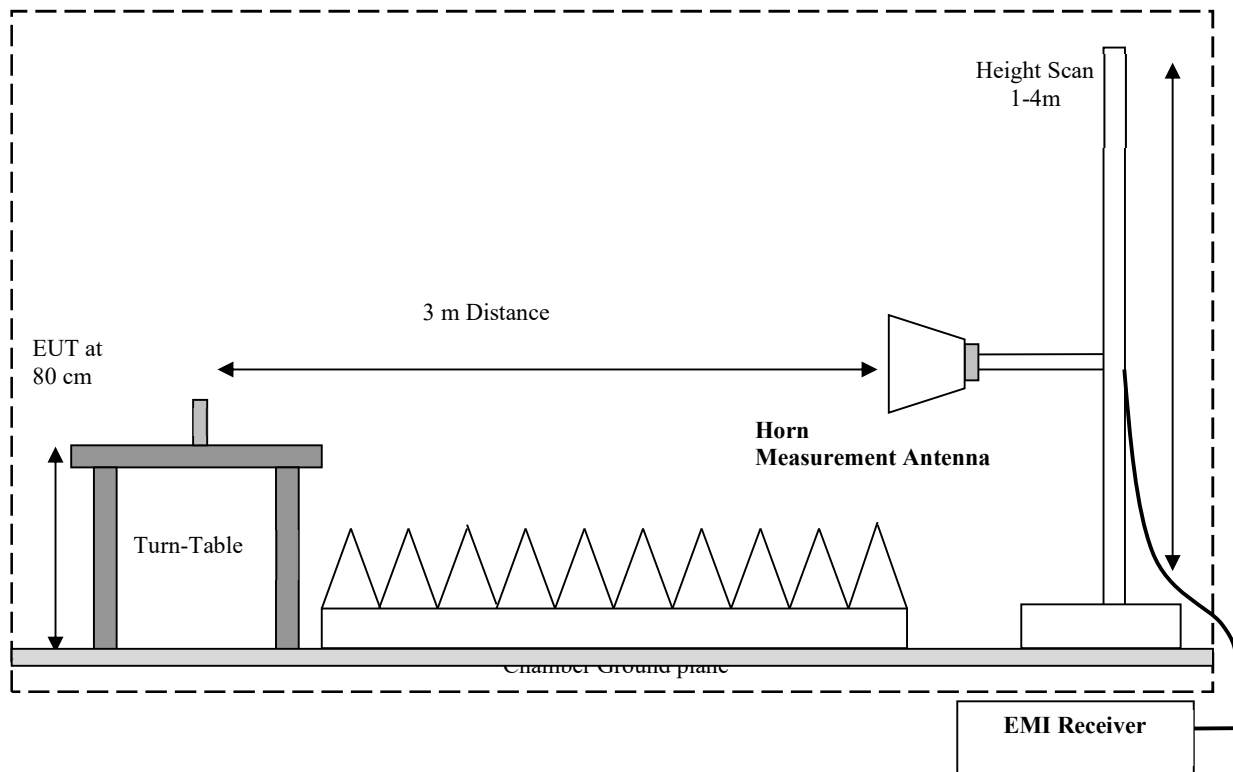
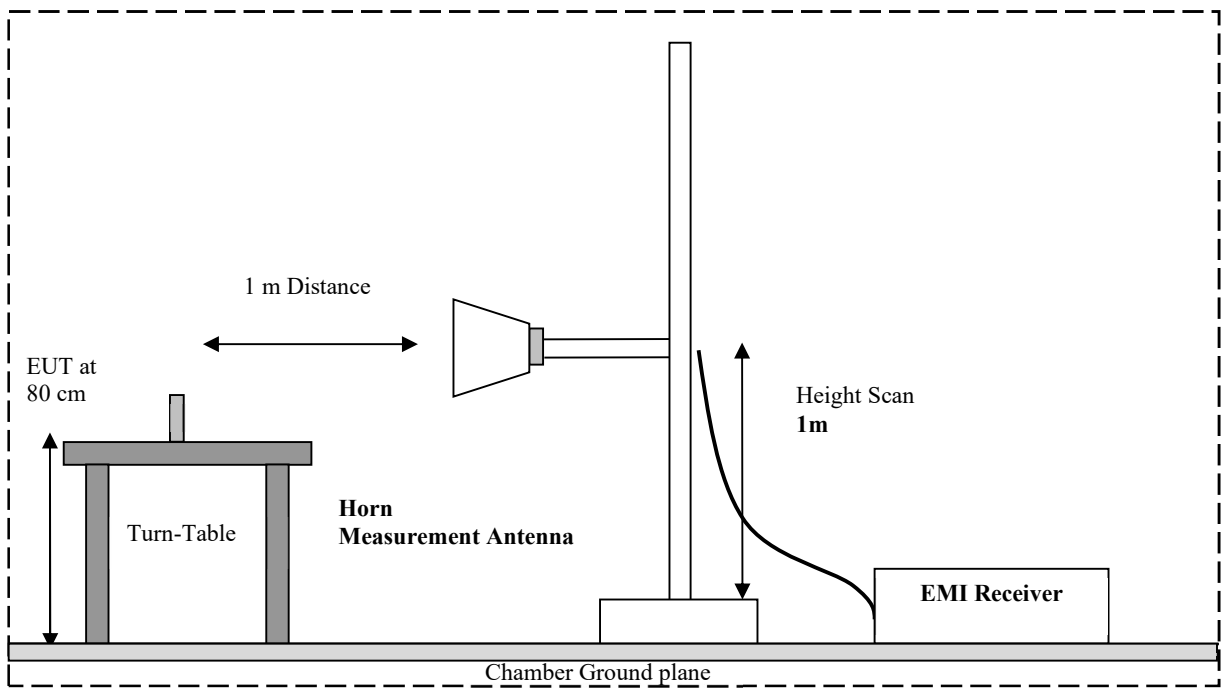
Testing is performed according to the guidelines provided in ANSI C63.4-2014 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 30 MHz to 40 GHz

7.1 Radiated Measurement

- The exploratory measurement is accomplished by running a matrix of sweeps over the required frequency range with R&S Test-SW EMC32, 360° continuous measurement of the turntable, two orthogonal positions of the EUT and both antenna polarizations, at 1, 1.5, and 2 meters. This procedure exceeds the requirement of the above standards to cover the 3 orthogonal axes of the EUT. A max peak detector is utilized during the exploratory measurement. The Test-SW creates an overall maximum trace for all sweeps and saves the settings for each point of this trace. The maximum trace is part of the test report.
- The 6 highest emissions are selected with an automatic algorithm of EMC32 searching for peaks in the noise floor and ensuring that broadband signals are not selected multiple times.
- The maxima are then put through the final measurement and again maximized in a 90deg range of the turntable, fine search in frequency domain and height scan between 1m and 4m.
- The above procedure is repeated for all possible ways of power supply to EUT and for all supported modulations.
- In case there are no emissions above noise floor level only the maximum trace is reported as described above.
- The results are split up into up to 4 frequency ranges due to antenna bandwidth restrictions. A magnetic loop is used from 9 kHz to 30 MHz, a Biconilog antenna is used from 30 MHz to 1 GHz, and two different horn antennas are used to cover frequencies up to 40 GHz.

Radiated Emissions Test Setup 30MHz-1GHz Measurements



Radiated Emissions Test Setup 1GHz-18GHz MeasurementsRadiated Emissions Test Setup 18GHz-40GHz Measurements

7.1.1 Sample Calculations for Field Strength Measurements

Field Strength is calculated from the Spectrum Analyzer/ Receiver readings, considering the following parameters:

1. Measured reading in dB μ V
2. Cable Loss between the receiving antenna and SA in dB and
3. Antenna Factor in dB/m

All radiated measurement plots in this report are taken from a test SW that calculates the Field Strength based on the following equation:

$$E = P + AF - \text{Cable loss}$$

E Field strength in dB μ V/m

P Test receiver raw value in dB μ V

AF antenna factor in dB/m, including gain from attached amplifier in dB

Example:

Frequency (MHz)	Measured raw value (dB μ V)	Cable Loss (dB)	Antenna Factor Correction (dB/m)	Field Strength Result (dB μ V/m)
1000	80.5	3.5	14	98.0

7.2 Power Line Conducted Measurement Procedure

AC Power Line conducted emissions measurements performed according to: ANSI C63.4 (2014)

8 Test Result

8.1 Radiated Emissions Measurement according to CFR 47 Part 15.109 and ICES-003 3.2.2

Spectrum Analyzer settings		
Sweep Frequency Range	30 MHz – 1 GHz	1 GHz – 40 GHz
Resolution Bandwidth	120 kHz	1 MHz
Detector (Exploratory Measurements)	Peak	Peak, Average
Detector (Final Measurements)	Quasi-Peak	Peak, Average
Trace Mode	Max Hold	Max Hold
Step Size	40 kHz	800 kHz
Measurement Time (Exploratory Measurements)	2 ms	2 ms
Measurement Time (Final Measurements)	100 ms	100 ms

8.1.1 Limits:

Class A Limits		
Frequency of emission (MHz)	Field Strength @ 10 m (μV/m)	Field Strength @ 3 m (dBμV/m)
30-88	90	49.5
88-216	150	54
216-960	210	56.9
Above 960	300	60

Class B Limits		
Frequency of emission (MHz)	Field Strength @ 3 m (μV/m)	Field Strength @ 3 m (dBμV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Note: For measurements below 1 GHz, the limits above use a quasi-peak detector. For measurements above 1 GHz, the limits above use an average detector.

8.1.2 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
22 °C	1	Idle	Nominal

8.1.3 Measurement result:

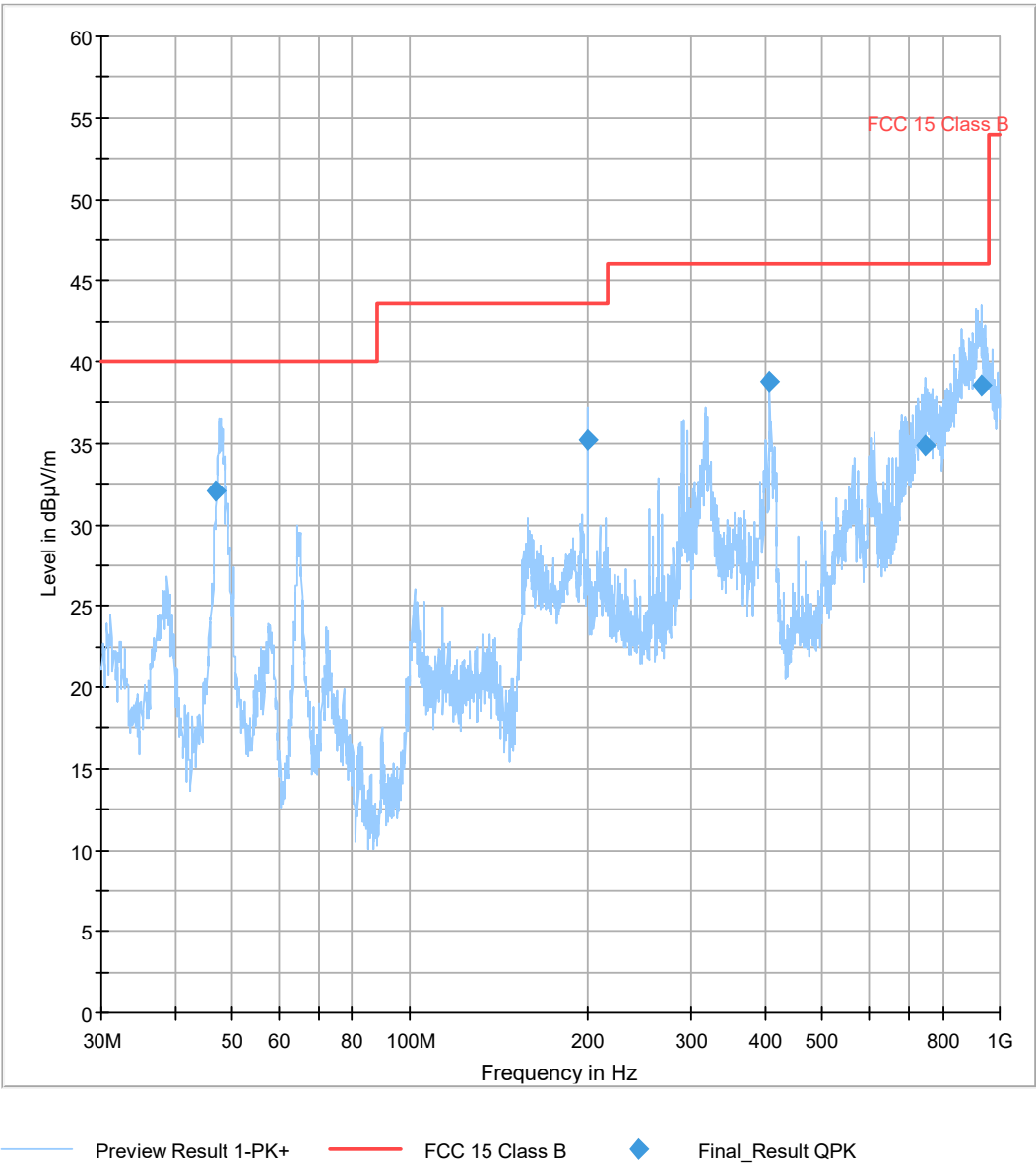
Plot #	Operation Mode	Scan Frequency	Spurious emission level with lowest margin	Limit	Result
1-3	Idle	30 MHz – 18 GHz	38.79 dB μ V/m at 408.01 MHz	See section 8.1.1	Pass

8.1.4 Measurement Plots

Plot # 1: 30 MHz – 1 GHz

Final_Result

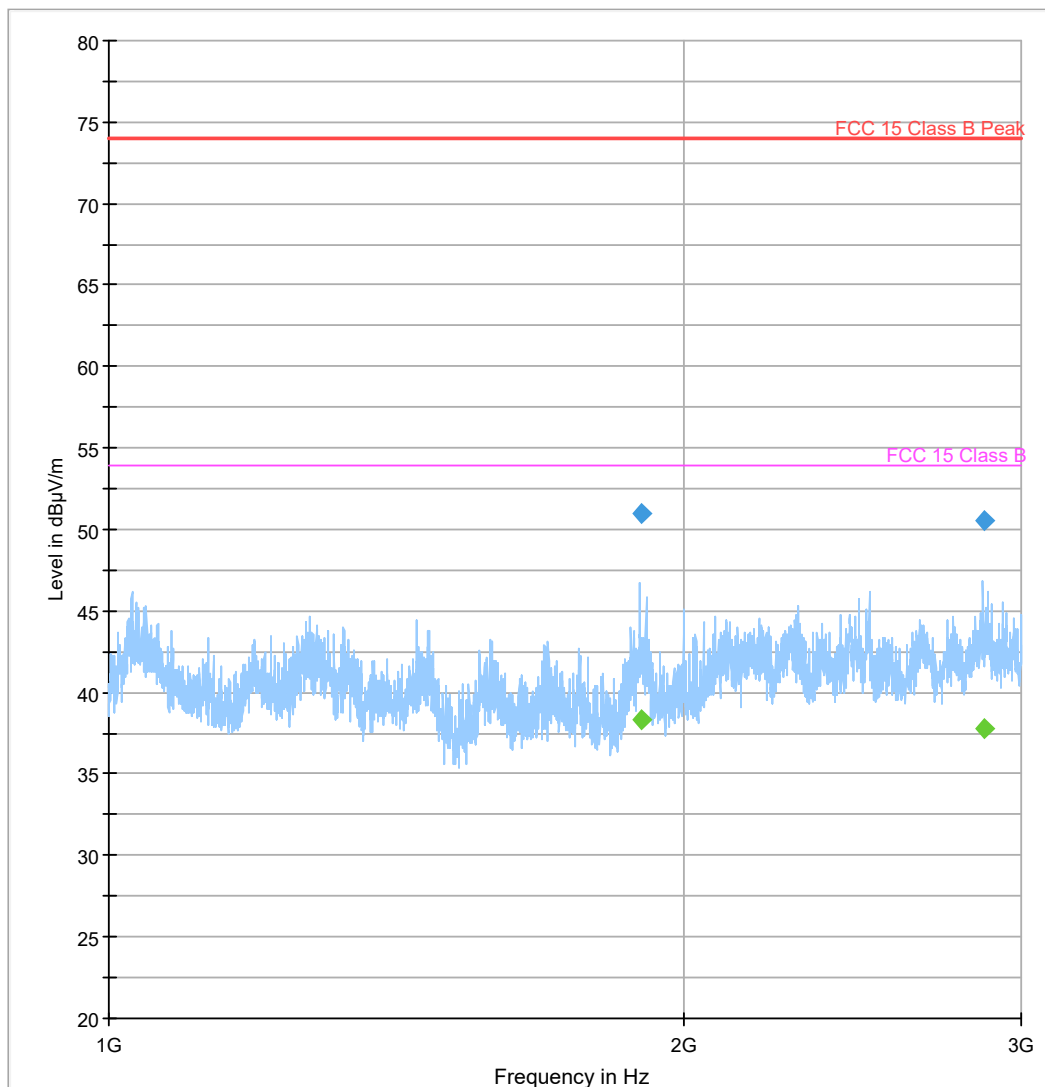
Frequency (MHz)	QuasiPeak (dBµV/m)	DET 2 (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
47.000	32.06	---	40.00	7.94	1000.0	120.0	100.0	V	289.0	-21.2	
199.994	35.22	---	43.52	8.30	1000.0	120.0	107.0	H	307.0	-17.3	
408.012	38.79	---	46.02	7.23	1000.0	120.0	100.0	H	107.0	-8.5	
746.838	34.83	---	46.02	11.19	1000.0	120.0	100.0	H	144.0	-3.4	
931.153	38.50	---	46.02	7.52	1000.0	120.0	142.0	H	346.0	-0.7	



Plot # 2: 1 GHz – 3 GHz

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	RMS (dBμV/m)	Limit (dBμV/m)	Margin	Meas. Time (ms)	Bandwidth (h)	Height (t)	Pol	Azimuth (h)	Corr. (dB/m)	Comment
1897.229	---	38.37	53.98	15.61	1000.0	1000.0	232.0	V	107.0	-4.0	
1897.229	50.99	---	73.98	22.99	1000.0	1000.0	232.0	V	107.0	-4.0	
2868.581	---	37.73	53.98	16.25	1000.0	1000.0	189.0	V	101.0	-0.1	
2868.581	50.50	---	73.98	23.48	1000.0	1000.0	189.0	V	101.0	-0.1	



◆ Preview Result 1-PK+
Final_Result PK+

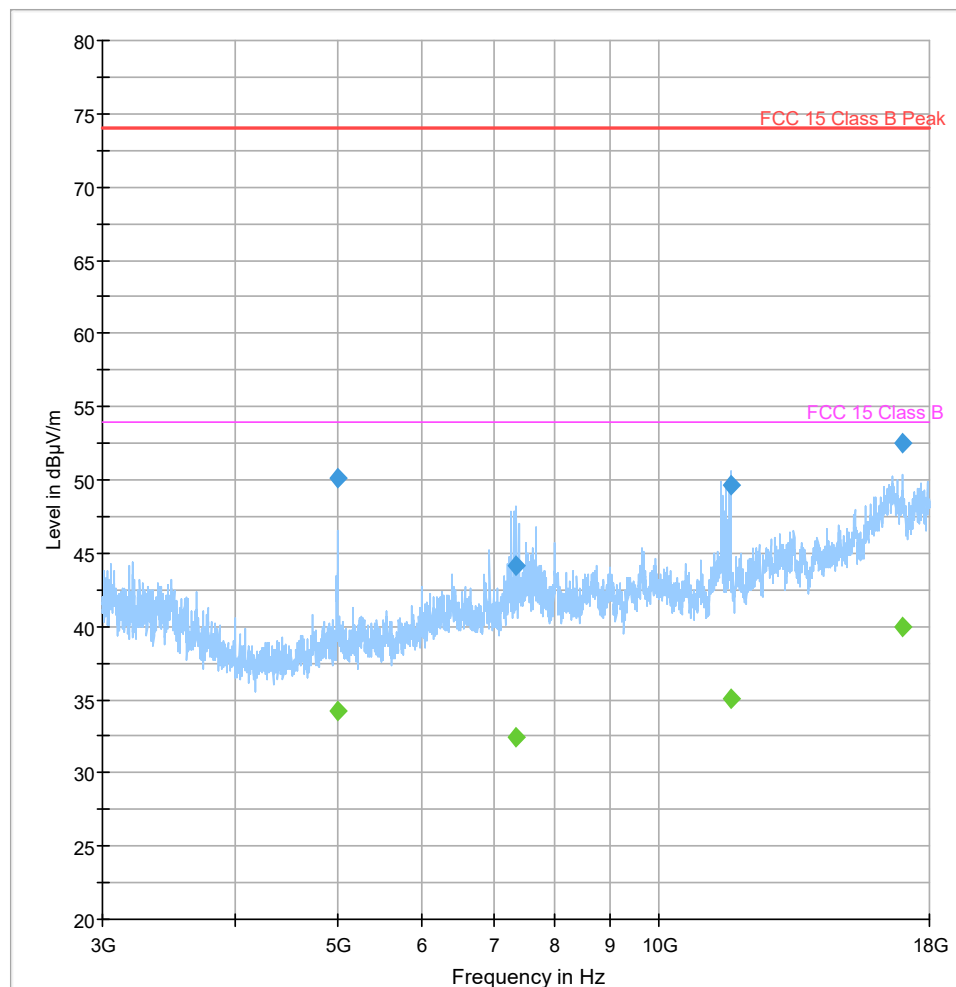
◆ FCC 15 Class B Peak
Final_Result RMS

— FCC 15 Class B

Plot # 3: 3 GHz – 18 GHz

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	RMS (dBμV/m)	Limit (dBμV/m)	Margin	Meas. Time (ms)	Bandwidth (h)	Height (t)	Pol	Azimuth (h)	Corr. (dB/m)	Comment
4990.712	---	34.26	53.98	19.72	1000.0	1000.0	205.0	H	8.0	-2.2	
4990.712	50.07	---	73.98	23.91	1000.0	1000.0	205.0	H	8.0	-2.2	
7356.979	44.11	---	73.98	29.87	1000.0	1000.0	204.0	H	4.0	1.5	
7356.979	---	32.47	53.98	21.51	1000.0	1000.0	204.0	H	4.0	1.5	
11694.101	49.66	---	73.98	24.32	1000.0	1000.0	187.0	H	-39.0	5.6	
11694.101	---	35.10	53.98	18.88	1000.0	1000.0	187.0	H	-39.0	5.6	
16978.773	---	40.01	53.98	13.97	1000.0	1000.0	267.0	V	239.0	14.1	
16978.773	52.47	---	73.98	21.51	1000.0	1000.0	267.0	V	239.0	14.1	



Preview Result 1-PK+ Final_Result PK+ FCC 15 Class B Peak Final_Result RMS FCC 15 Class B

8.2 AC Power line Conducted Emissions according to CFR 47 Part 15.107 and ICES-003 §3.2.1

Spectrum Analyzer Setting	
Frequency band	150 kHz – 30 MHz
Resolution Bandwidth	9 kHz
Detector (Exploratory Measurements)	Peak, Average
Detector (Final Measurements)	Quasi-Peak, Average
Trace Mode	Max Hold
Step Size	4 kHz
Measurement Time	20 ms

8.2.1 Measurement Procedure:

- The EUT and accessories are placed on a non-conducting table 80 cm above the horizontal ground plane and 40 cm from the vertical ground plane.
- Cables that hang closer than 40 cm to the ground plane are gathered into a 30 cm to 40 cm long bundle.
- The power cable of the EUT is connected to the LISN.
- The 6 highest emissions within 20 dB of the limit are noted.

8.2.2 Limits:

Class A Limits		
Frequency of emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

Class B Limits		
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

8.2.3 Test Summary:

Environmental Conditions	
Ambient Temperature:	23 °C
Relative Humidity:	46.2%
Atmospheric Pressure:	1011.3 mbar

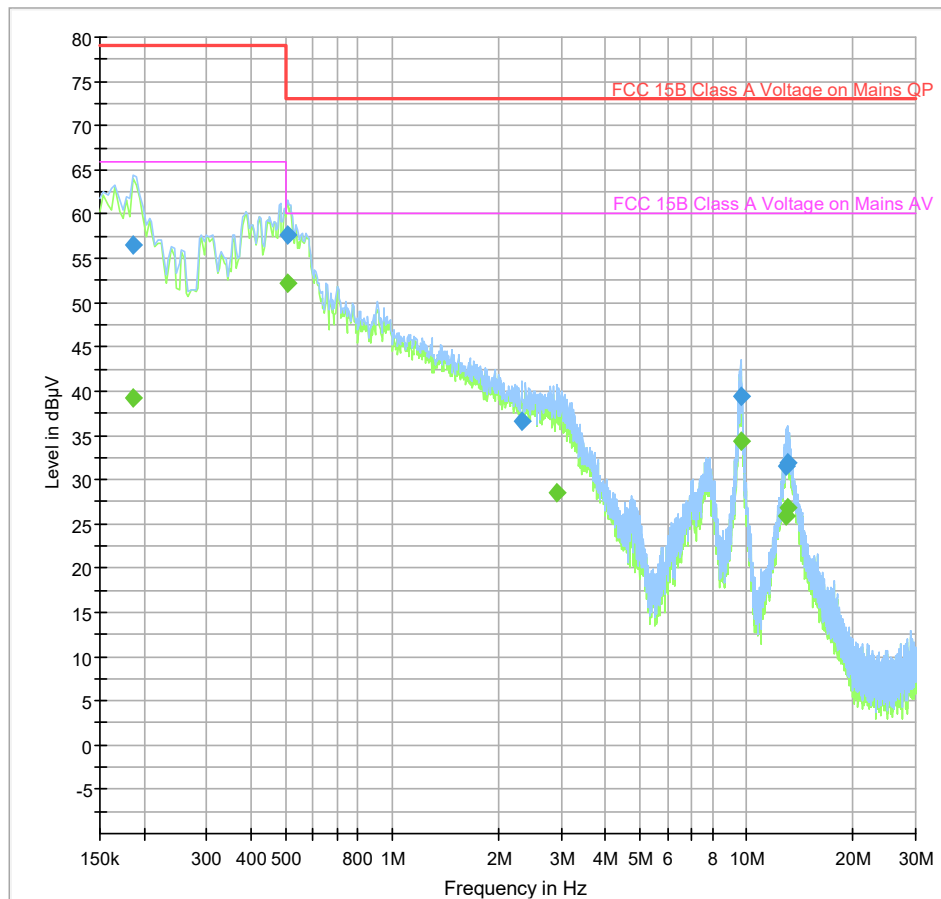
Test Results							
Plot #	EUT Set-Up #	EUT operating mode	Detector (Peak / AVG / QP)	Line Under Test	Power Supply Input	Comments	Result
1	1	RX Mode	QP & AVG	Line & Neutral	nominal	Final measurement	Pass

8.2.4 Measurement Plots:

Plot # 1: AC conducted emissions

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.186	56.52	---	79.00	22.48	1000.0	9.0	L1	GND	10.0
0.186	---	39.32	66.00	26.68	1000.0	9.0	L1	GND	10.0
0.509	---	52.26	60.00	7.74	1000.0	9.0	N	GND	9.9
0.509	57.56	---	73.00	15.44	1000.0	9.0	N	GND	9.9
2.328	36.63	---	73.00	36.37	1000.0	9.0	L1	GND	9.9
2.909	---	28.57	60.00	31.43	1000.0	9.0	L1	GND	9.9
9.613	39.38	---	73.00	33.62	1000.0	9.0	L1	GND	9.9
9.617	---	34.30	60.00	25.70	1000.0	9.0	L1	GND	9.9
12.941	31.53	---	73.00	41.47	1000.0	9.0	L1	GND	10.0
12.941	---	25.95	60.00	34.05	1000.0	9.0	L1	GND	10.0
13.002	31.92	---	73.00	41.08	1000.0	9.0	L1	GND	10.0
13.094	---	26.76	60.00	33.24	1000.0	9.0	L1	GND	10.0



— AVG MAXH
— PK+ MAXH
— FCC 15B Class A Voltage on Mains QP
— FCC 15B Class A Voltage on Mains AV
◆ Final_Result QPK
◆ Final_Result CAV

9 Test Setup Photos

Setup photos are included in supporting file name:
“AEROD_004_24001_FCC15B_ICES003_Setup_Photos.pdf”

10 Test Equipment and Ancillaries Used for Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
BILOG ANTENNA	ETS.LINDGREN	3142E	00166067	3 Years	08/01/2024
HORN ANTENNA	EMCO	3115	00035114	3 Years	09/13/2023
HORN ANTENNA	ETS.LINDGREN	3117	00215984	3 Years	10/26/2023
TEST RECEIVER	R&S	ESW44	103143	2 Years	09/12/2024
DIGITAL THERMOMETER	CONTROL COMPANY	4410,90080-03	230713059	3 Years	10/18/2023
PULSE LIMITER	R&S	ESH3-Z2	102473	3 Years	11/02/2023
LISN	FCC	FCC-LISN-50-25-2-08	08014	2 Years	10/06/2023
Multimeter	Fluke	115	56090717MV	3 Years	09/26/2023
Software	EMC32	Version 11.40.00	-	-	-

Note: Equipment used meets the measurement uncertainty requirements as required per applicable standards for 95% confidence levels. Calibration due dates, unless defined specifically, falls on the last day of the month. Items indicated “N/A” for cal status either do not specifically require calibration or is internally characterized before use.

11 Revision History

Date	Report name	Changes to report	Prepared by
2025-01-13	AEROD_004_24001_FCC15B_ICES003	Initial version	Guangcheng Huang
2025-06-12	AEROD_004_24001_FCC15B_ICES003_Rev1	Correct FCC ID to 2AU4I-SEN602	Alvin ILARINA

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