

Test Report

Prepared for: Credence ID, LLC

Model: Tap2iD Verifier

Serial Number: 00002219

Project No: p2540006

FCC ID: 2AMBZ-TID-CID-16-00

Test Results: Pass

To

FCC Part 15.225

Date of Issue: July 29, 2025

On behalf of the applicant:

Credence ID, LLC
2335 Broadway, Suite 100
Oakland, CA 94612 US

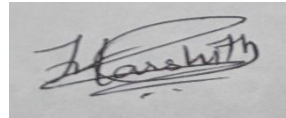
Attention of:

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Prepared By:

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ANAB Cert#: AT-2901
FCC Site Reg. #750616
ISED Site Reg. #2044A-2

Reviewed / Authorized By:



Harshith Devaraja, EMC Engineer

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All results contained herein relate only to the sample tested

Test Results Summary
 Test Date Range: **May 22, 2025 – July 29, 2025**

Specification	Test Name	Pass, Fail, N/A	Comments
FCC			
15.225(a)	Fundamental Field Strength	Pass	
15.225(b)(c)(d)	Out of Band Spurious Emissions	Pass	
15.225(e)	Frequency Stability	Pass	
15.209	Radiated Emissions	Pass	
15.207	Conducted Powerline Emissions	Pass	
15.215	20db Occupied Bandwidth	Pass	

Statements of conformity are reported as:

- Pass - the measured value is below the acceptance limit, *acceptance limit = test limit*.
- Fail - the measured value is above the acceptance limit, *acceptance limit = test limit*.

References/Methods	Description
ANSI C63.10-2020	American National Standard of Procedure for compliance testing of unlicensed wireless devices
ISO/IEC 17025:2017	General requirements for the Competence of Testing and Calibrations Laboratories

15.203: Antenna Requirement:

- ☒ The antenna is permanently attached to the EUT
- ☐ The antenna uses a unique coupling
- ☐ The EUT must be professionally installed
- ☐ The antenna requirement does not apply

Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	06/06/2025	Harshith Devaraja	Original Document
2.0	07/29/2025	Harshith Devaraja	Removed EUT and test setup Pictures. Added 20db Occupied measurement section.

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ANAB

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to the joint ISO-ILAC-IAF Communiqué dated January 2009).

The tests results contained within this test report all fall within our scope of accreditation, unless noted below.

Please refer to <http://www.compliancetesting.com/labscope.html> for current scope of accreditation.



FCC Site Reg. #750616

IC Site Reg. #2044A-2

The applicant has been cautioned as to the following:

15.21 Information to User

The user's manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) Special Accessories

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator the responsible part may employ other methods of ensuring that the special accessories are provided to the consumer, without an additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Standard Test Conditions Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.10-2020 and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104°F), unless the particular equipment requirements specified testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Measurement results, unless otherwise noted, are worse case measurements.

Environmental Conditions		
Temperature (°C)	Humidity (%)	Pressure (mbar)
22.94 – 27.7	23.4 – 25.4	966.8 – 975.8

EUT Description

Model:	Tap2iD Verifier
Serial:	00002219
Firmware:	1.17.0
Description:	The Tap2iD Verifier is a mobile ID Verifier
Additional Information:	Usage: Tabletop
Receipt of Sample(s):	May 22, 2025
EUT Condition:	Visual Damage No State of Development Engineering Sample/Prototype

Test Setup and Modes of Operation

EUT Operation during Tests

The device was connected to a standard AC wall adapter 120V 60Hz and operated in normal condition.

Serial Number: 00002219

Accessories:

Qty	Description	Manufacturer	Model	S/N
1	Test Laptop	Dell	Vostro	C847FH2
1	Switching Adapter	Globtek, Inc.	GTM46161	WR9QA3200

Cables:

Qty	Description	Length (M)	Ferrites (Y/N)	Shielding Y/N	Shielded Hood Y/N	Termination / Connection
1	Power supply cable	1.8	N	N	N	AC wall adapter/ EUT supply port

Modifications to EUT(s) (Y/N): N

Field Strength

Engineer: Harshith Devaraja

Test Date: 06/04/2025

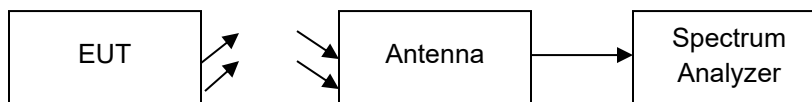
Test Procedure

The EUT was tested in a semi-anechoic chamber at a distance of 1 meter from the receiving loop antenna and characterized to the 30-meter limit. A spectrum analyzer was used to verify that the EUT met the requirements for Fundamental Field Strength. The antenna correction and distance correction factors were summed with the quasi-peak measurement to ensure accurate readings were obtained. The following table indicates the highest emission in each of the indicated bands in the worst-case orientation.

Corrected Measurement = Monitored level – Distance CF + Antenna CF

Margin = Corrected Measurement - Limit

Test Setup



Field Strength

Frequency Band (MHz)	Measured Frequency (MHz)	Monitored Level (dBuV/m)	Distance CF (dB)	Antenna CF (dB)	Corrected Measurement (dBuV/m)	Limit (dBuV/m)	Margin	Result
13.110_13.410	13.349	43.246	59.1	17.07	1.216	40.51	-39.29	Pass
13.410_13.553	13.552	65.313	59.1	17.07	23.283	50.47	-27.19	Pass
13.553_13.567	13.56	72.74	59.1	17.07	30.71	84.00	-53.29	Pass
13.567_13.710	13.568	63.94	59.1	17.07	21.91	50.47	-28.56	Pass
13.710_14.010	13.772	45.012	59.1	17.07	2.982	40.51	-37.52	Pass

Note: Cable correction factors are not included in this measurement as the low loss of the high quality TWINAX cable at low frequencies is practically non-existent.

Frequency Stability

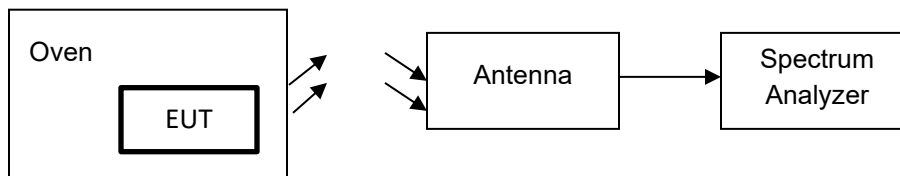
Engineer: Harshith Devaraja

Test Date: 06/05/2025

Test Procedure

The EUT was placed in an environmental test chamber and a Spectrum analyzer was utilized to verify that the frequency of the fundamental met the requirements for frequency stability ($\pm 0.01\%$) across the temperature range from -20°C to $+50^{\circ}\text{C}$. A variable DC power supply was used to vary the voltage from 85% to 115% of the rated voltage.

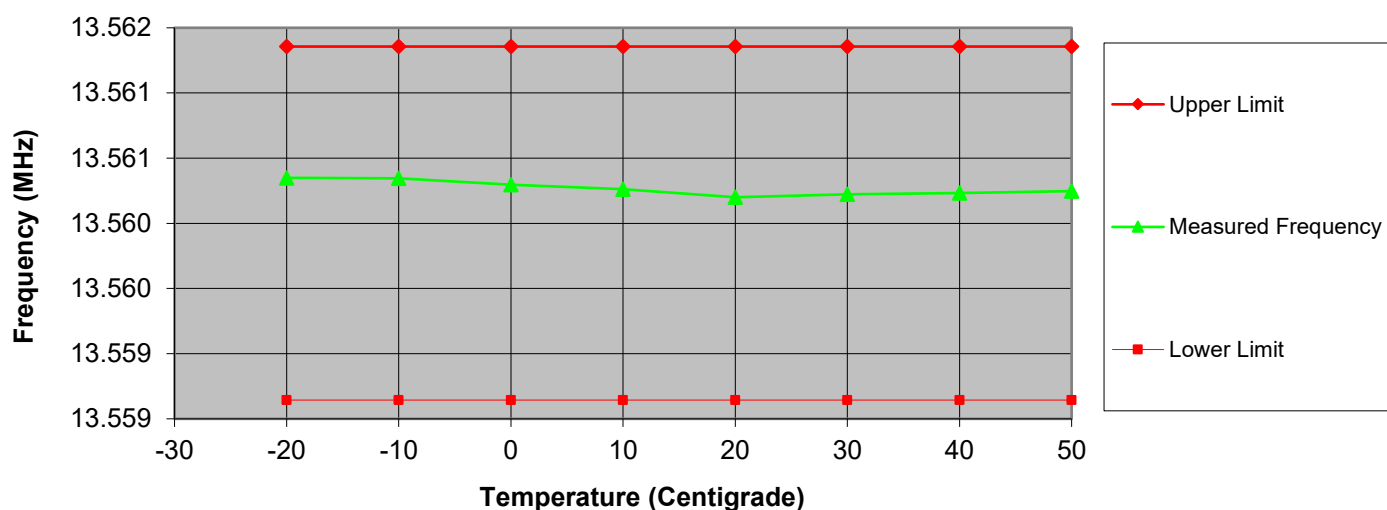
Test Setup



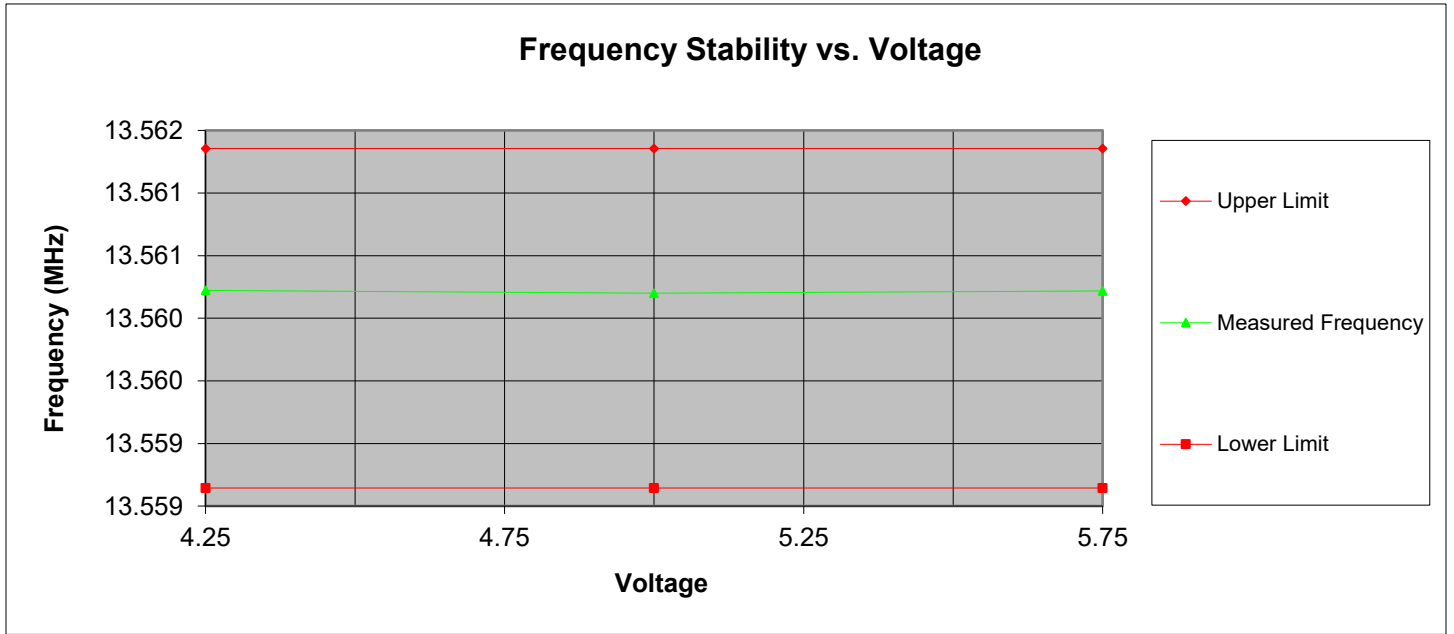
Test Data

Tuned Frequency (MHz)	Frequency Tolerance %	Upper Limit (MHz)	Lower Limit (MHz)	Temperature centigrade	Measured Frequency (MHz)	Upper Margin (MHz)	Lower Margin (MHz)
13.56	0.0100	13.5613560	13.5586440				
		13.5613560	13.5586440	-20	13.5603487	0.0010073	0.0017047
		13.5613560	13.5586440	-10	13.5603462	0.0010098	0.0017022
		13.5613560	13.5586440	0	13.5602962	0.0010598	0.0016522
		13.5613560	13.5586440	10	13.5602621	0.0010939	0.0016181
		13.5613560	13.5586440	20	13.5602000	0.0011560	0.0015560
		13.5613560	13.5586440	30	13.5602216	0.0011344	0.0015776
		13.5613560	13.5586440	40	13.5602315	0.0011245	0.0015875
		13.5613560	13.5586440	50	13.5602473	0.0011087	0.0016033

Frequency Stability vs. Temperature



Tuned Frequency (MHz)	Frequency Tolerance %	Upper Limit (MHz)	Lower Limit (MHz)	Nominal Voltage	Voltage	Measured Frequency (MHz)	Upper Margin (MHz)	Lower Margin (MHz)
13.56	0.0100	13.5613560	13.5586440	5.00	4.25	13.5602220	0.0011340	0.0015780
		13.5613560	13.5586440		5.00	13.5602000	0.0011560	0.0015560
		13.5613560	13.5586440		5.75	13.5602170	0.0011390	0.0015730



Radiated Emissions

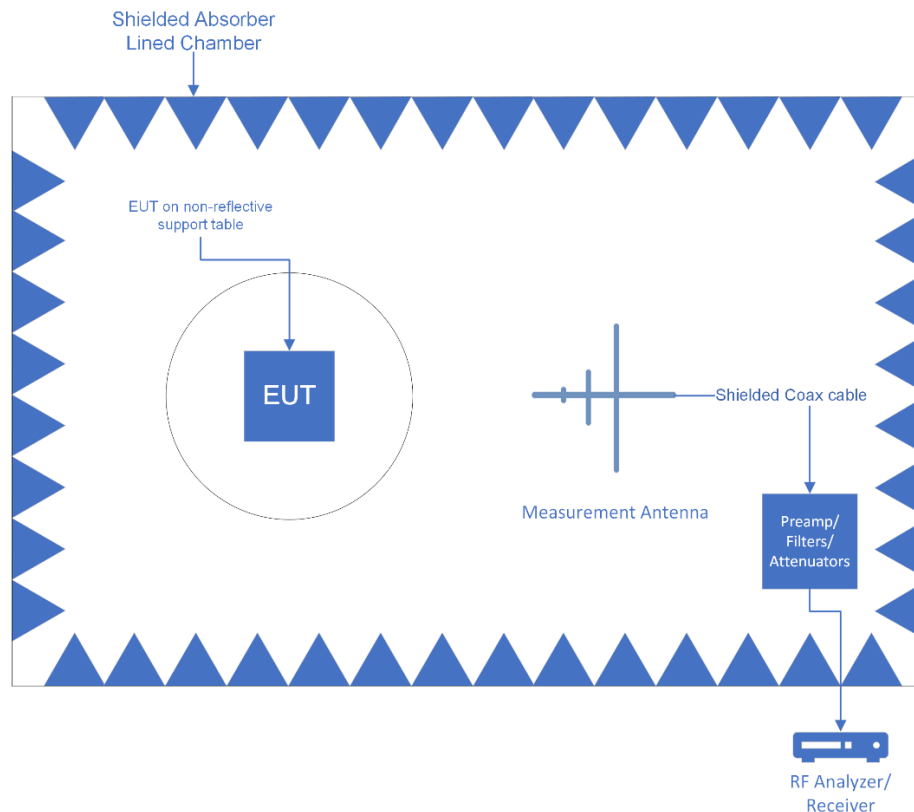
Engineer: Harshith Devaraja

Test Date: 06/04/2025

Test Procedure

The EUT was tested in a semi-anechoic chamber at a distance of 1 meter from the receiving antenna in the 9 KHz – 30 MHz frequency range and at 3 meters in the 30 MHz -1000 MHz frequency range. A spectrum analyzer was used to verify that the EUT met the requirements for Radiated Emissions. The spectrum for each tuned frequency was examined beyond the 10th harmonic.

Basic Test Setup

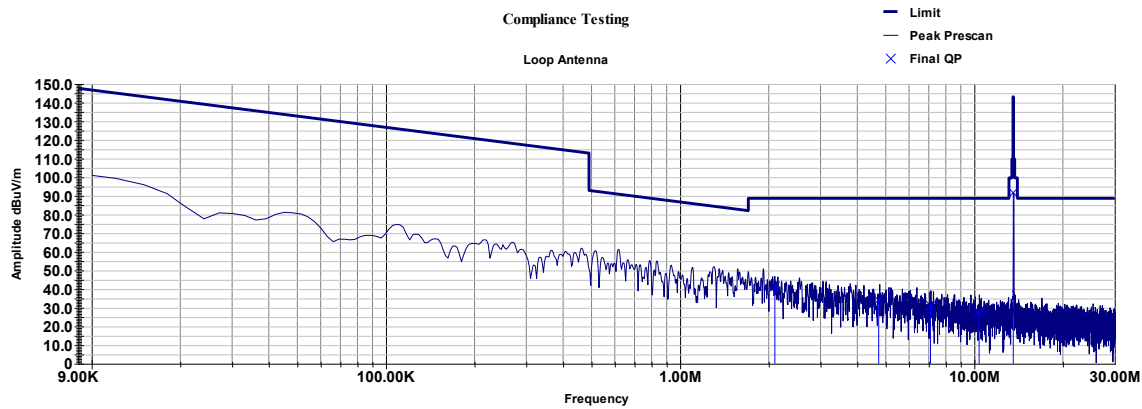


Sample Calculations

Corrected Value = Measured Value + Correction factor

Correction factor = Antenna Correction Factor + Cable loss + Preamp/Attenuator Factor

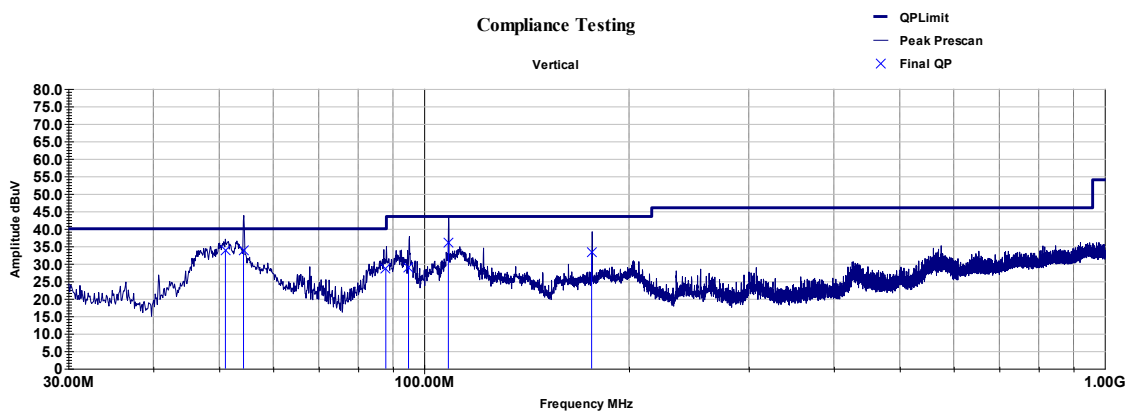
Radiated Emissions 9 KHz-30 MHz



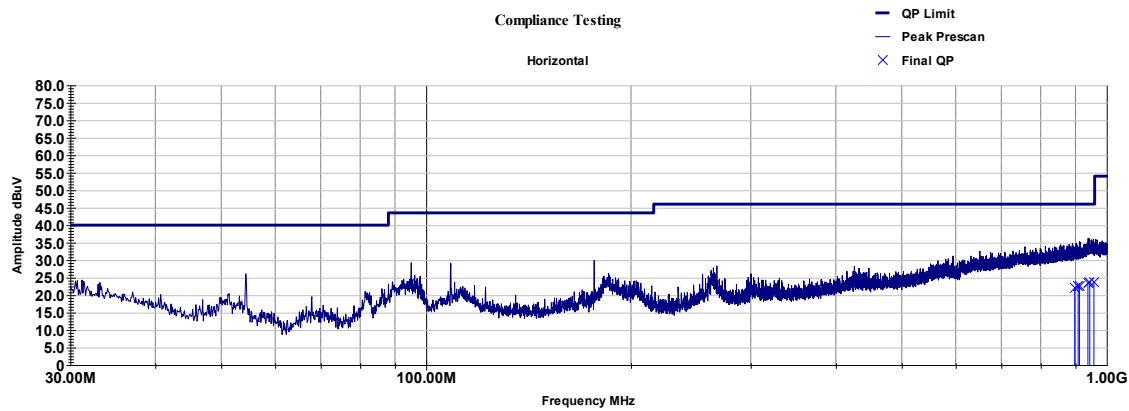
Frequency	Azimuth	Height	Raw QP	Correction	Final QP	Limit	QP Margin
	deg	cm	dBuV	dB	dBuV/m	dBuV/m	dB
2.099	0.00	105.00	24.41	17.09	41.50	88.60	-47.10
4.731	0.00	105.00	16.90	17.16	34.10	88.60	-54.60
7.092	0.00	105.00	13.38	17.45	30.80	88.60	-57.80
10.381	6.00	105.00	9.94	17.67	27.60	88.60	-61.00
13.56	3.00	105.00	73.67	17.90	91.60	143.10	-51.50
13.562	0.00	0.00	NAN	NAN	NAN	NAN	NAN
Final = Raw + Path Loss							
Margin = Final - Limit							

All other orientations resulted in margins greater than 20db from the limit

Radiated Emissions 30-1000MHz



Frequency	Azimuth	Height	Raw QP	Correction	Final QP	Limit	QP Margin
MHz	deg	cm	dBuV	dB	dBuV/m	dBuV/m	dB
51.059	133.00	109.00	57.85	-23.93	33.90	40.00	-6.10
54.285	146.00	100.00	58.81	-24.85	34.00	40.00	-6.00
87.844	208.00	105.00	50.80	-22.25	28.60	40.00	-11.40
94.854	287.00	121.00	49.53	-20.55	29.00	43.50	-14.50
108.539	255.00	155.00	54.82	-18.78	36.00	43.50	-7.50
176.25	221.00	121.00	53.70	-20.40	33.30	43.50	-10.20
Final = Raw + Path Loss							
Margin = Final - Limit							



Frequency	Azimuth	Height	Raw QP	Correction	Final QP	Limit	QP Margin
MHz	deg	cm	dBuV	dB	dBuV/m	dBuV/m	dB
897.418	105.00	325.00	25.03	-2.98	22.10	46.00	-23.90
907.882	212.00	140.00	25.31	-2.70	22.60	46.00	-23.40
912.034	213.00	390.00	25.11	-2.55	22.60	46.00	-23.40
938.26	37.00	100.00	24.99	-1.46	23.50	46.00	-22.50
944.471	224.00	325.00	24.95	-1.21	23.70	46.00	-22.30
957.562	237.00	373.00	24.96	-1.22	23.70	46.00	-22.30
Final = Raw + Path Loss							
Margin = Final - Limit							

A/C Powerline Conducted Emissions

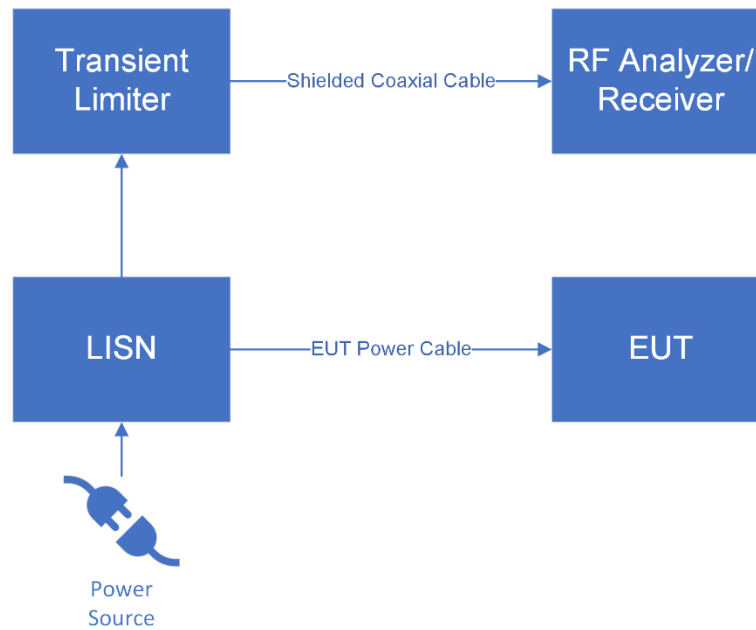
Engineer: Harshith Devaraja

Test Date: 06/05/25

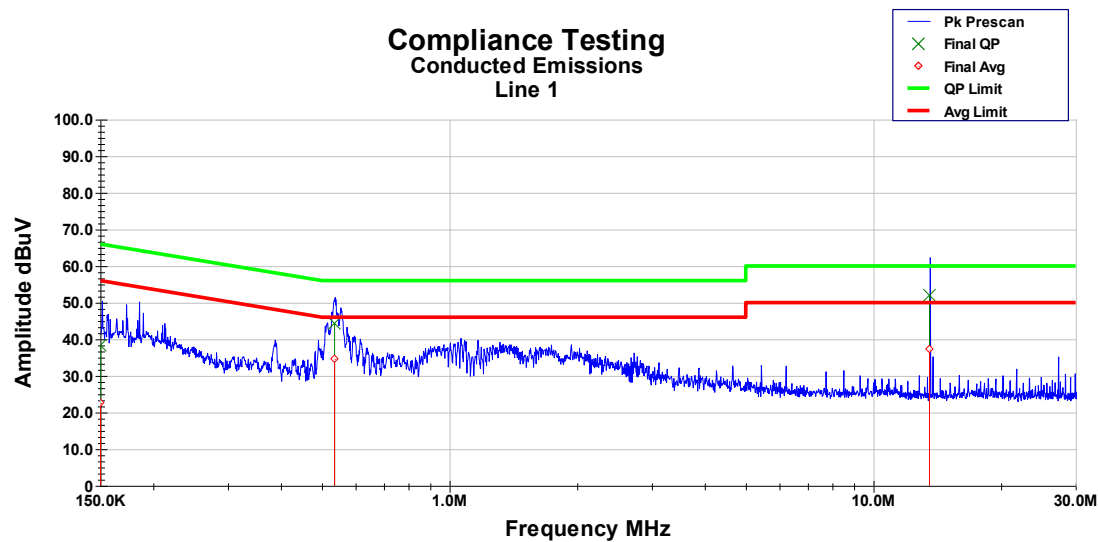
Test Procedure

The EUT power cable was connected to a LISN and the monitored output of the LISN was connected to a transient limiter, which then connected directly to a spectrum analyzer. The conducted emissions from 150 kHz to 30 MHz were measured and compared to the specification limits.

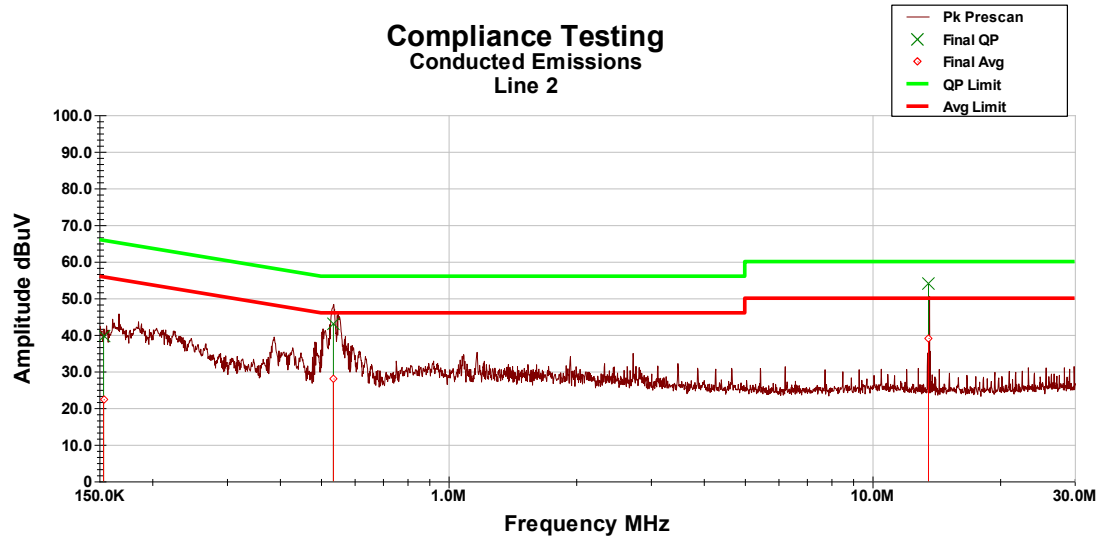
Basic Test Setup



Conducted Emissions at 120V 60Hz



Frequency (MHz)	Raw QP dBuV	Raw Avg dBuV	Path Loss dB	Final QP dBuV	Final Avg dBuV	QP Limit dBuV	QP Margin dB	Avg Limit dBuV	Avg Margin dB
150.25 KHz	28.30	12.70	9.90	38.20	22.60	66.00	-27.80	56.00	-33.40
535.69 KHz	34.10	24.50	10.10	44.20	34.60	56.00	-11.80	46.00	-11.40
13.558 MHz	41.70	26.80	10.40	52.00	37.20	60.00	-8.00	50.00	-12.80
Final = Raw + Path Loss									
Margin = Final - Limit									



Frequency	Raw QP	Raw Avg	Path Loss	Final QP	Final Avg	QP Limit	QP Margin	Avg Limit	Avg Margin
(MHz)	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dB	dBuV	dB
153.63 KHz	29.71	12.60	9.80	39.50	22.40	65.90	-26.40	55.90	-33.50
535.08 KHz	33.01	18.00	10.00	43.10	28.10	56.00	-12.90	46.00	-17.90
13.56 MHz	43.53	28.80	10.40	53.90	39.10	60.00	-6.10	50.00	-10.90
Final = Raw + Path Loss									
Margin = Final - Limit									

20db Occupied Bandwidth

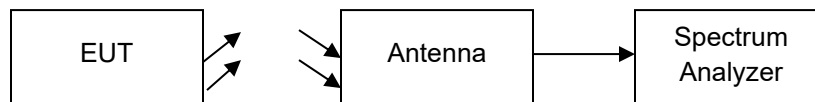
Engineer: Harshith Devaraja

Test Date:07/29/2025

Test Procedure

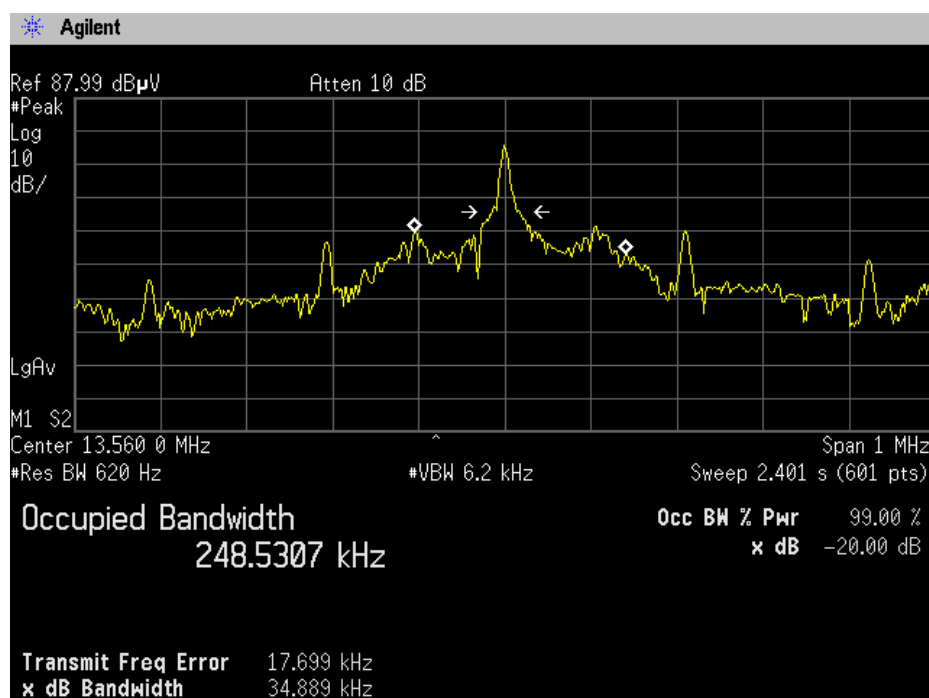
The EUT was tested on an anechoic chamber at a distance of 1 meter from the receiving loop antenna. A spectrum analyzer was used to measure the 20db occupied bandwidth.

Test Setup



20db occupied Bandwidth Summary

Frequency (MHz)	Recorded Measurement	Result
13.56	34.889 KHz	Pass



Test Equipment Utilized

Description	Manufacturer	Model #	CT Asset #	Last Cal Date	Cal Due Date
Temp./humidity/pressure monitor (Main Lab)	Omega Engineering	iBTHX-W-5	i00686	1/25/25	1/25/26
Temp./humidity/pressure monitor (Main Lab)	Omega Engineering	iBTHX-W-5	i00631	8/7/24	8/7/25
3 Meter Semi-Anechoic Chamber	Panashield	3 Meter Semi-Anechoic Chamber	i00428	7/13/23	7/13/26
44GHz EMI receiver	Keysight	N9038A	i00552	3/17/25	3/17/26
Bi-Log antenna	Chase	CBL6111C	i00267	3/5/24	3/5/26
Active Loop Antenna	EMCO	6507	i00326	11/21/2023	11/21/2025
Data Logger	Fluke	Hydra Data Bucket	i00343	6/19/2024	6/19/2025
PSA Spectrum Analyzer	Agilent	E4448A	i00688	10/26/24	10/26/25
Loop Antenna	EMCO	7604	i00081	NCR	
Temperature Chamber	Tenney Manufacturing	Tenney Junior	i00027	NCR	
Preamplifier	COM-Power	PAM-103	i00734	Verified on: 6/27/24	
Preamplifier	Eravant	SBB-0115034019-2F2F-E3	i00722	Verified on: 12/4/24	
Power Supply	Agilent	E3615A	I00568	Verified on:06/05/2025	
EMI Receiver	HP	85462A	i00033	6/25/24	6/25/25
Transient Limiter	Com-Power	LIT-153	i00123	Verified on: PTV	
AC Power Source	Behlman	BL 6000	i00362	NCR	
LISN	COM-Power	LI-125A	i00446	3/18/24	3/18/26
LISN	COM-Power	LI-125A	i00448	3/18/24	3/18/26

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

Measurement Uncertainty

Measurement Uncertainty (U_{lab}) for Compliance Testing is listed in the table below.

Measurement	U_{lab}
Radio Frequency	$\pm 3.3 \times 10^{-8}$
RF Power, conducted	± 1.5 dB
RF Power Density, conducted	± 1.0 dB
Conducted Emissions	± 1.8 dB
Radiated Emissions	± 4.5 dB
Temperature	± 1.5 deg C
Humidity	± 4.3 %
DC voltage	± 0.20 VDC
AC Voltage	± 1.2 VAC

The reported expanded uncertainty $\pm U_{lab}$ (dB) has been estimated at a 95% confidence level ($k=2$)

U_{lab} is less than or equal to U_{ETSI} therefore

- Compliance is deemed to occur if no measured disturbance exceeds the disturbance limit
- Non-Compliance is deemed to occur if any measured disturbance exceeds the disturbance limit

END OF TEST REPORT