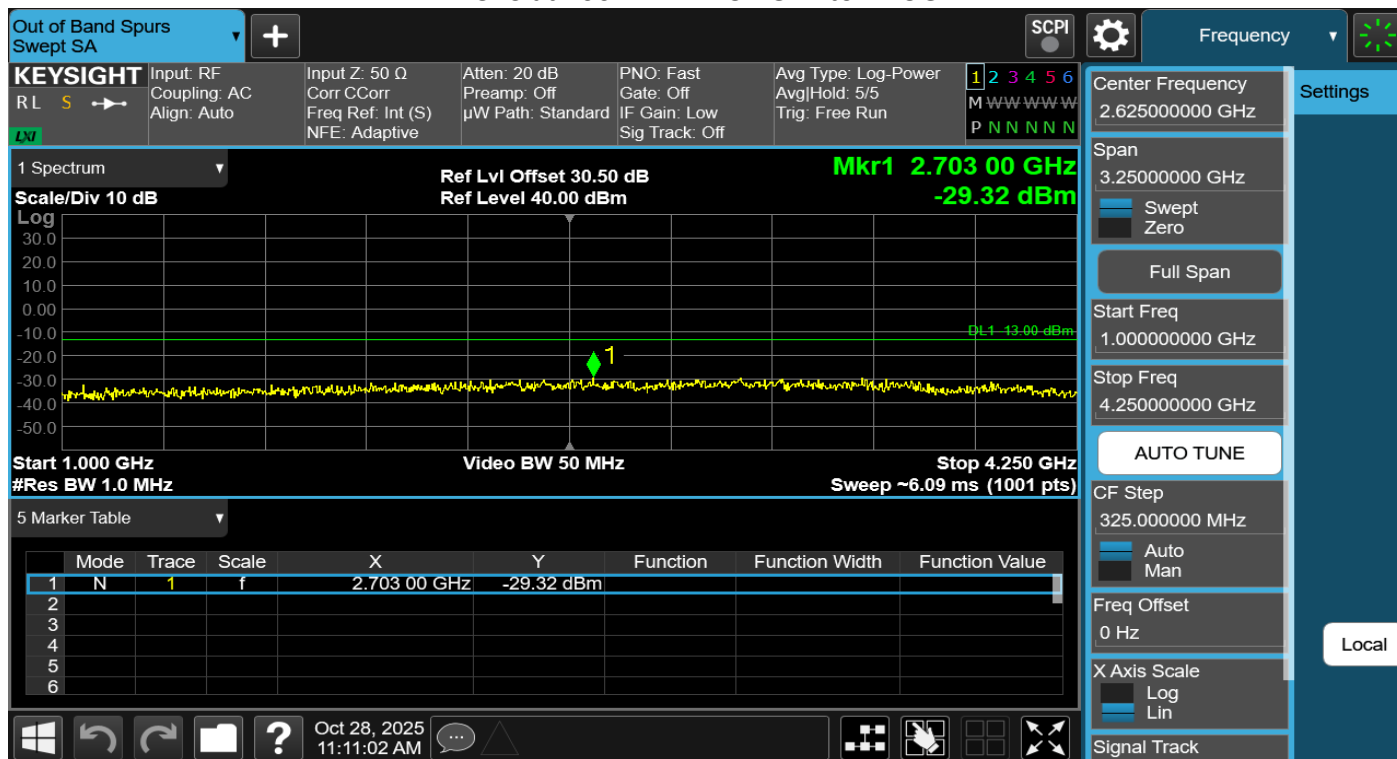
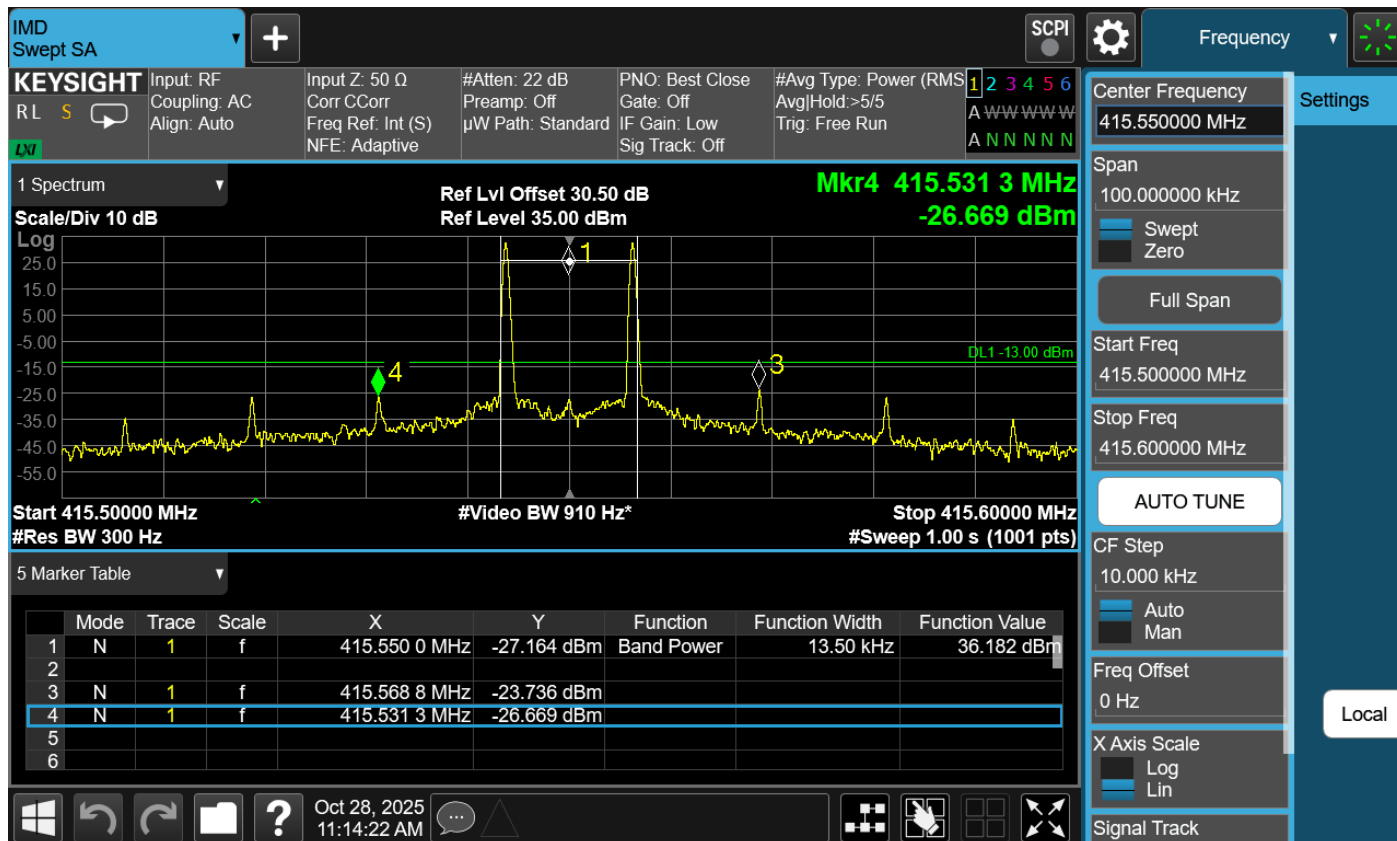


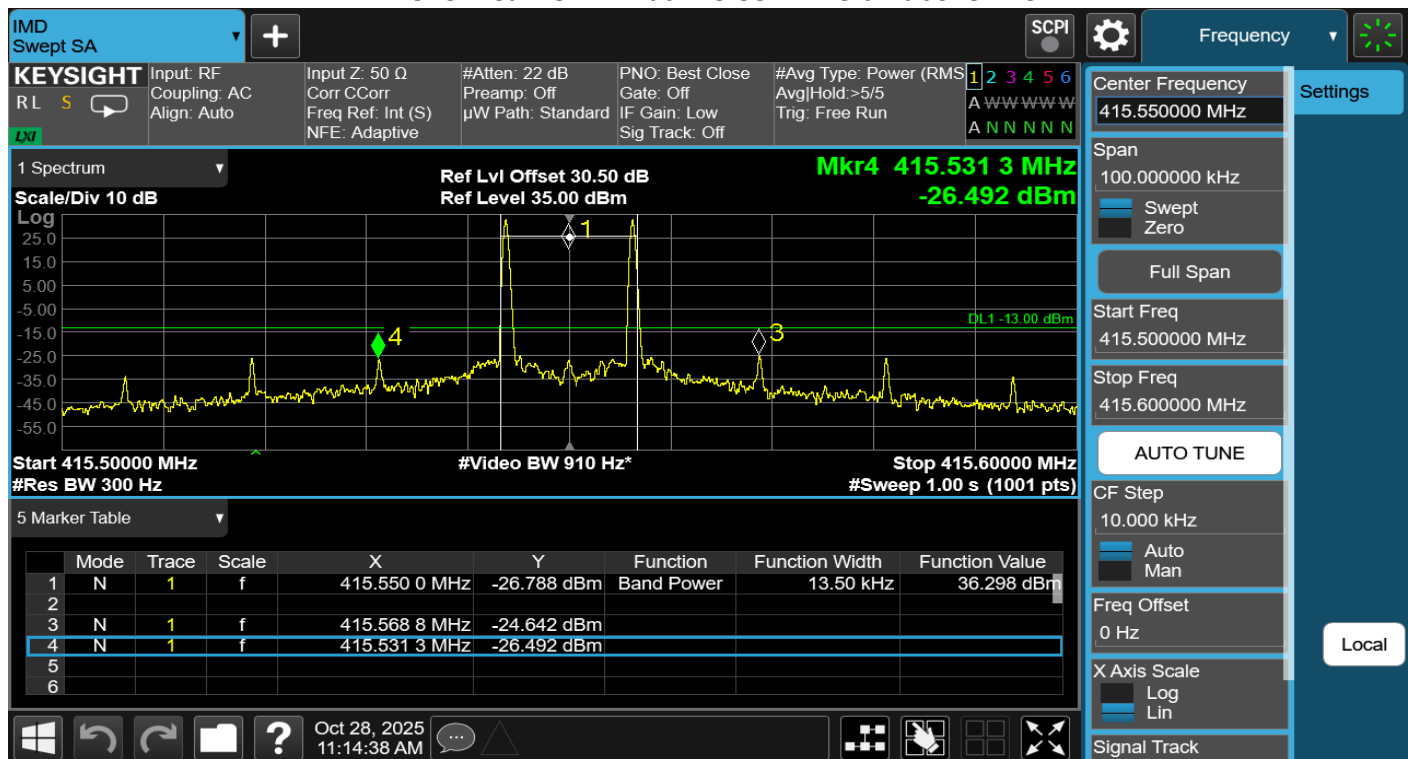
415PS at 406.1 MHz R5 1GHz to 4.25GHz



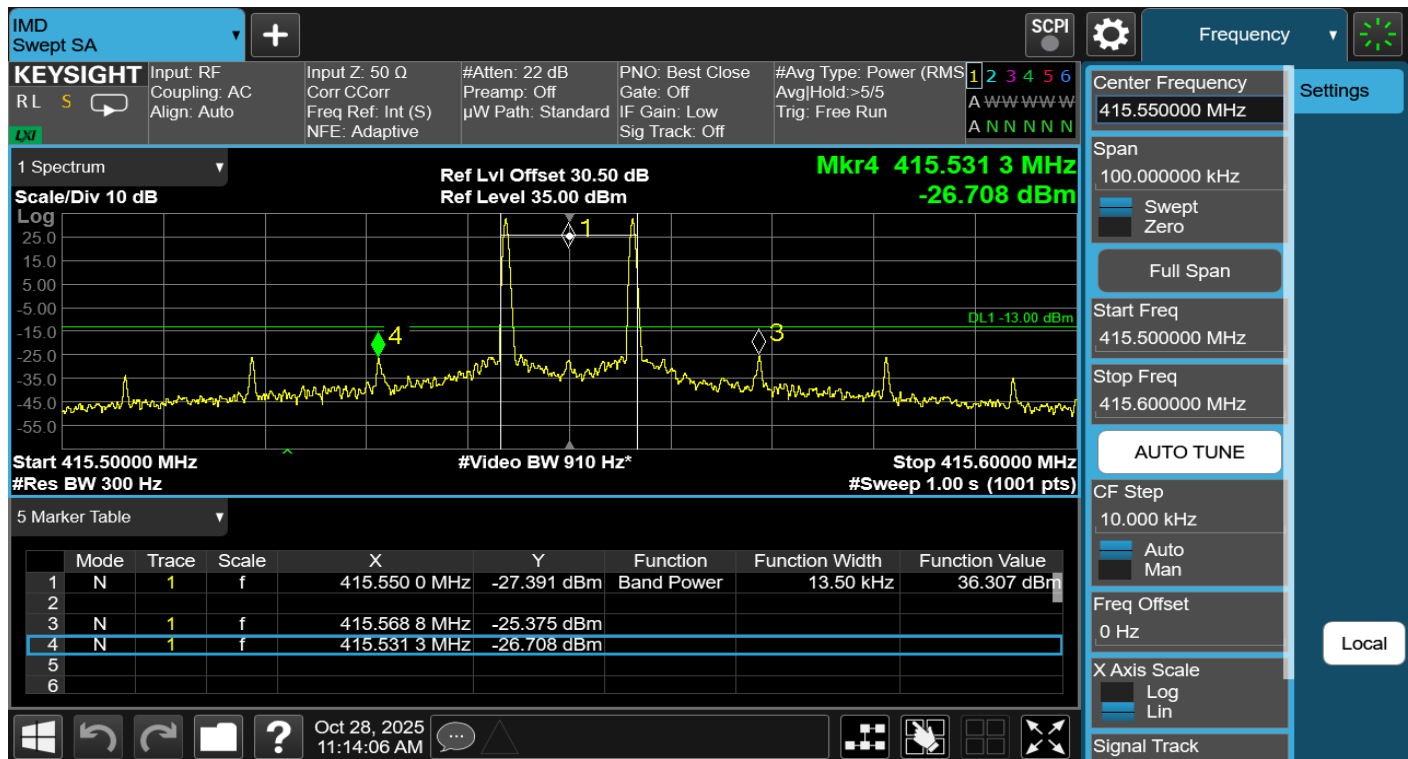
415PS 2 Carrier IMD at 415.55MHz 2 dB below ALC



415PS 2 Carrier IMD at 415.55MHz 3 dB above ALC



415PS 2 Carrier IMD at 415.55MHz 0.5 dB below ALC



7. Noise Figure

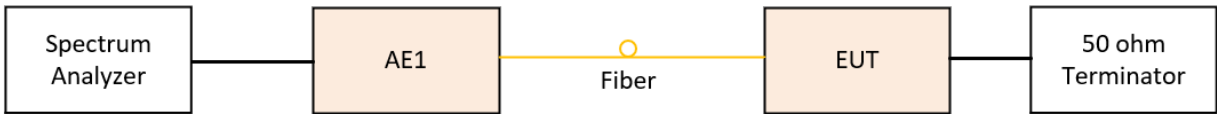
Standard	CFR §90.219(e)(2)
Test method	FCC KDB 935210 D05, v01r03, Section 4.6; ANSI TIA-603- E-2016
Test Engineer	Jack Qin
Test Date	2026-02-02
Applied limit	≤ 9 dB
Result Summary	Noise Figure on each band is less than the 9 dB.
Test Result	Compliant

7.1 Test setup

Based on FCC KDB 935210 D05 Indus Booster Basic Meas v01r03: 2019, the system maximum gain and the noise density is measured. Measurements were performed within the EUT’s passband.

The noise figure is then calculated by $NF = NP - Gain + KTB \text{ Noise}$; where NP is in band noise power per Herz, Gain is measured at the maximum noise frequency with -55 dBm input signal in UL. KTB Noise is 174dB/Hz.

The EUT was set to Operation Mode #1.



7.2 Noise Figure Test Results

Test Band	Gain (dB)	kTB (dBm/Hz)	Measured Value (dBm/Hz)	Noise Figure (dB)
800 PS	91.2	174	-75.8	6.96
700 PS	92.2	174	-75.2	6.62
UHF PS	91.6	174	-75.8	6.58

8. Frequency Stability

Standard	Not Applicable
Test method	Not Applicable
Test Engineer	Not Applicable
Test Date	Not Applicable
Applied limit	Not Applicable
R-esult Summary	The EUT is synchronized with the reference clock from the support equipment. Therefore, no frequency error occurs after down-conversion and up-conversion are performed.
Test Result	Not Applicable

9. Radiated Spurious Emissions (Transmitter)

Standard	§90.210			
Test method	FCC §2.1053, ANSI C63.26			
Test Engineer	Jack Qin			
Test Date	2026-02-02			
Applied limit				
	Radiated Emission Limit below 30 MHz			
	Frequency	H-Field strength (μA/m)	E-Field strength (μV/m)	Measurement distance
	9 - 490 kHz	6.37/F (kHz)	2400/F(kHz)	300 m
	490 - 1705 kHz	63.7/F (kHz)	24000/F(kHz)	30 m
	1.705 - 30 MHz	0.08	30	30 at 30 m
	Radiated Emission Limit above 30 MHz			
	Frequency (MHz)	Quasi-peak (dB μV/m) at 3 Meters		
	30 – 88	40		
	88 – 216	43.52		
	216 - 960	46.02		
	Above 960	53.98		
Note 1. The lower limit shall apply at the transition frequency				
Note 2. Additional provisions may be required for cases where interference occurs				
Note 4: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.				
Note 3. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter’s fundamental emission.				
Test Result	Compliant			

9.1 Test Method

The radiated spurious emissions test was performed in accordance with the procedures specified in ANSI C63.10.

The Equipment Under Test (EUT) was configured to operate in a continuous transmit mode at the channel producing the highest emission levels. All necessary support equipment was connected and configured to represent typical operation.

preliminary scan was performed using a spectrum analyzer with a peak detector. The EUT was rotated through 360°, and the antenna height and polarization were varied to identify the maximum emission levels.

Final measurements were performed on all significant emissions identified during the preliminary scan. For each emission:

The turntable was rotated to obtain the maximum emission level. The antenna height was adjusted to maximize the received signal. Both antenna polarizations were investigated. Sweep time shall be sufficient to allow accurate measurement of emissions.

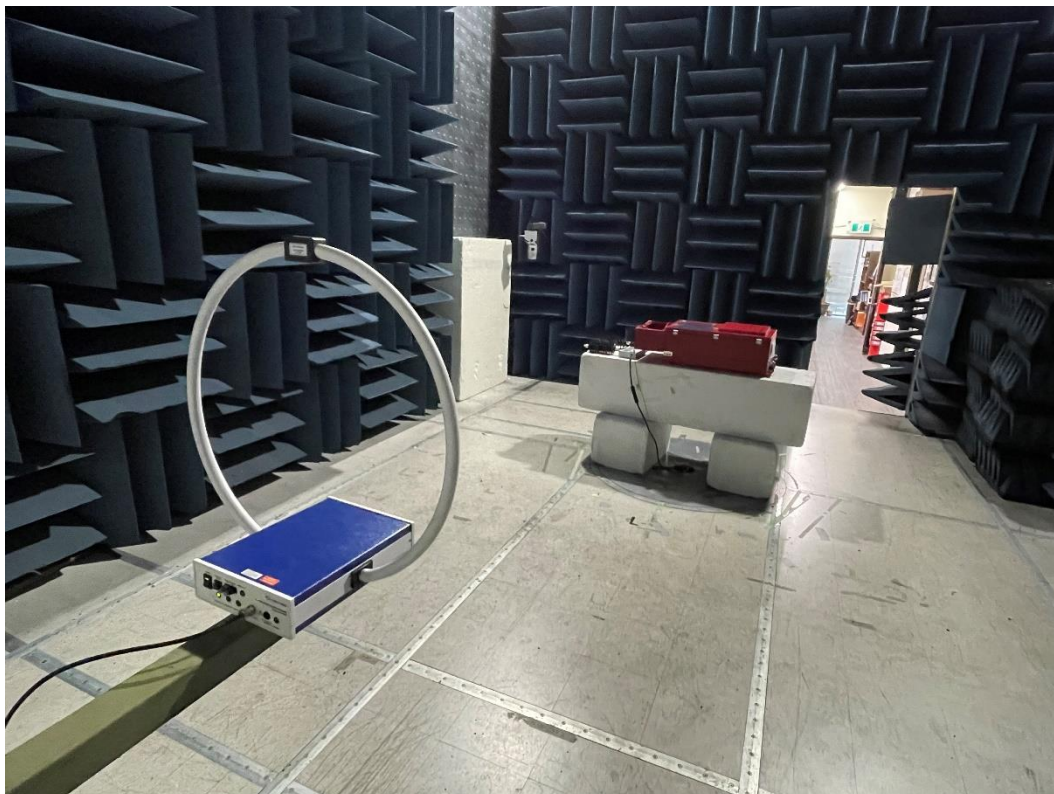
Radiated spurious emissions shall be measured over the frequency range:9 kHz to the 10th harmonic of the highest fundamental frequency or 40 GHz, whichever is lower, unless otherwise specified by the applicable regulatory rule.

The corrected emission levels were compared with the applicable regulatory limits. The EUT is considered compliant if all measured radiated emissions are below the specified limits.

Analyzer Settings			
Frequency Range	RBW	VBW	Detector
9 kHz – 150 kHz	200 Hz	1 kHz	Peak
150 kHz – 30 MHz	9 kHz	30 kHz	Peak
30 MHz – 1 GHz	120 kHz	300 kHz	Quasi-Peak
Above 1GHz	1 MHz	3 MHz	Peak / Average

9.2 Test Setup

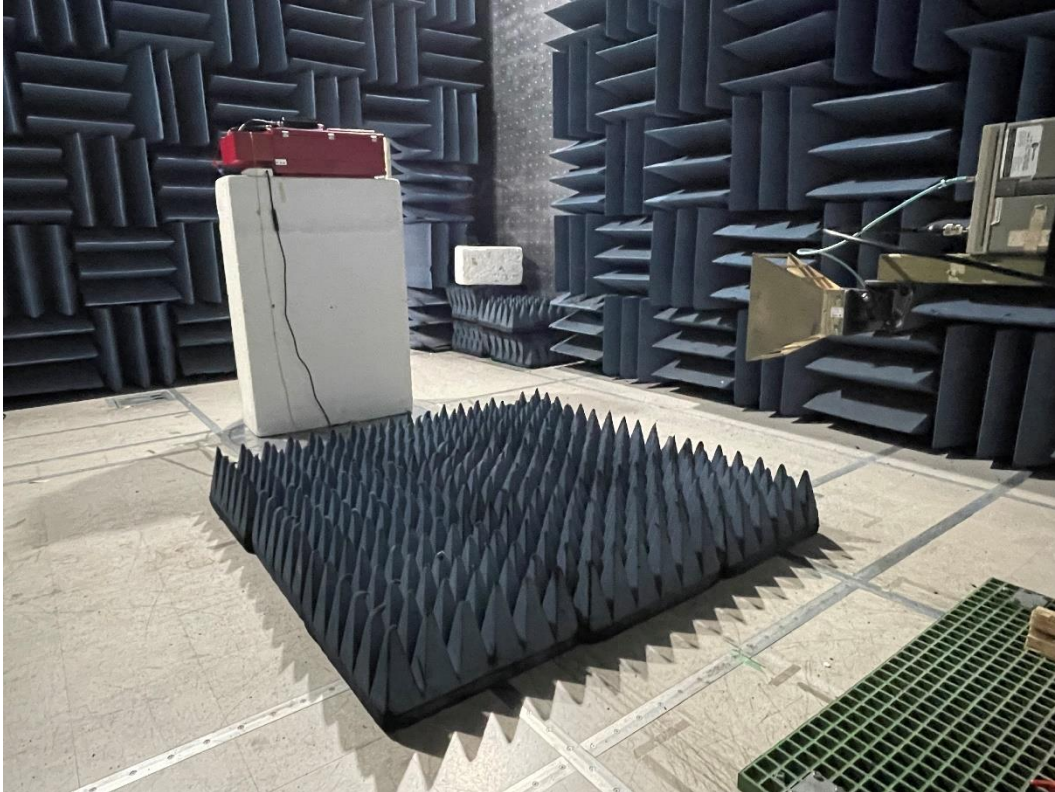
Note: For measurements below 1 GHz, the EUT was placed on a non-conductive table 0.8 m above the ground plane on a motorized turntable. For measurements around 1 GHz and above, the EUT was placed on a table 1.5 m above the ground plane. The measurement antenna was positioned at a distance of 3 m from the EUT, with its height varied from 1 m to 4 m to maximize the received emissions.



Test setup of radiated spurious emissions below 30 MHz



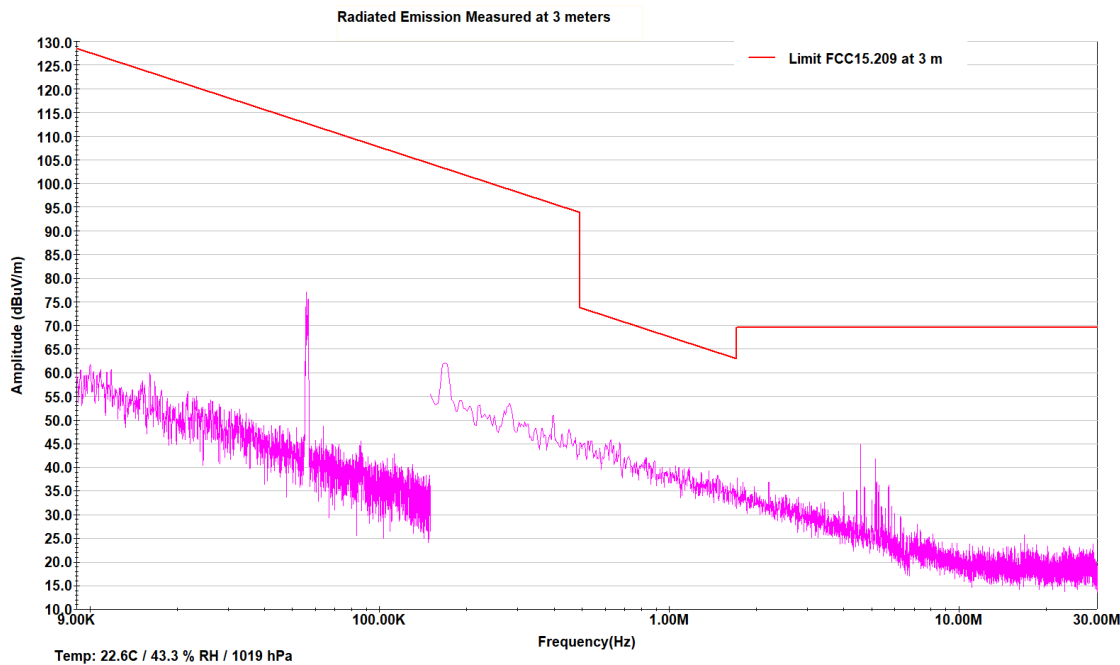
Test setup of radiated spurious emissions from 30 MHz to 1000MHz



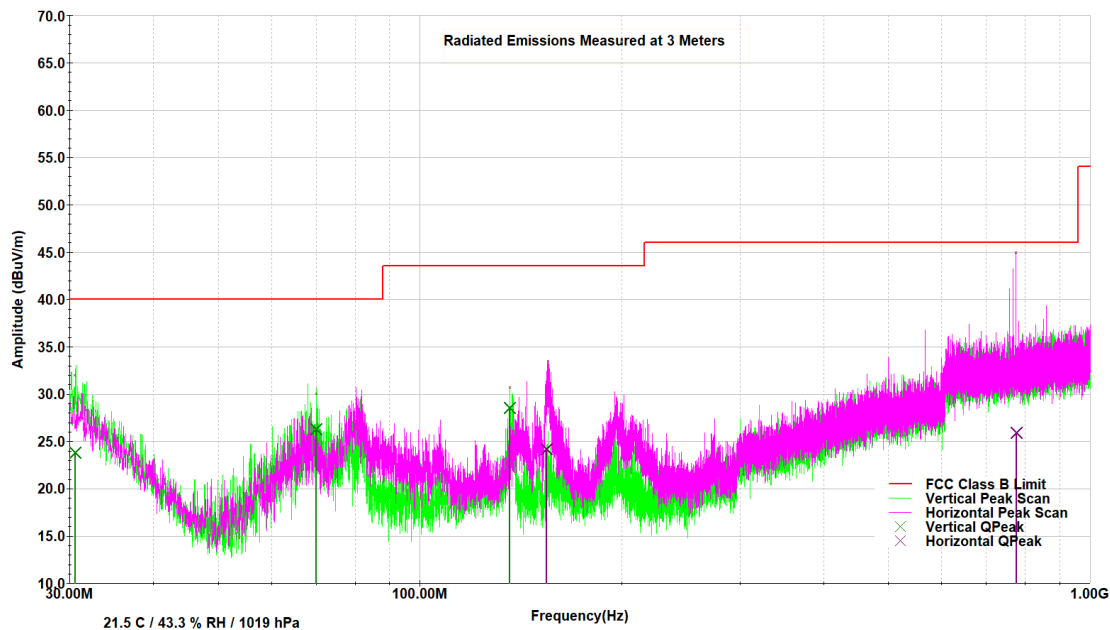
Test setup of radiated spurious emissions above 1 GHz

9.3 Test Results

Test data of radiated spurious emissions below 30 MHz



Test data of radiated spurious emissions from 30 MHz to 1000MHz

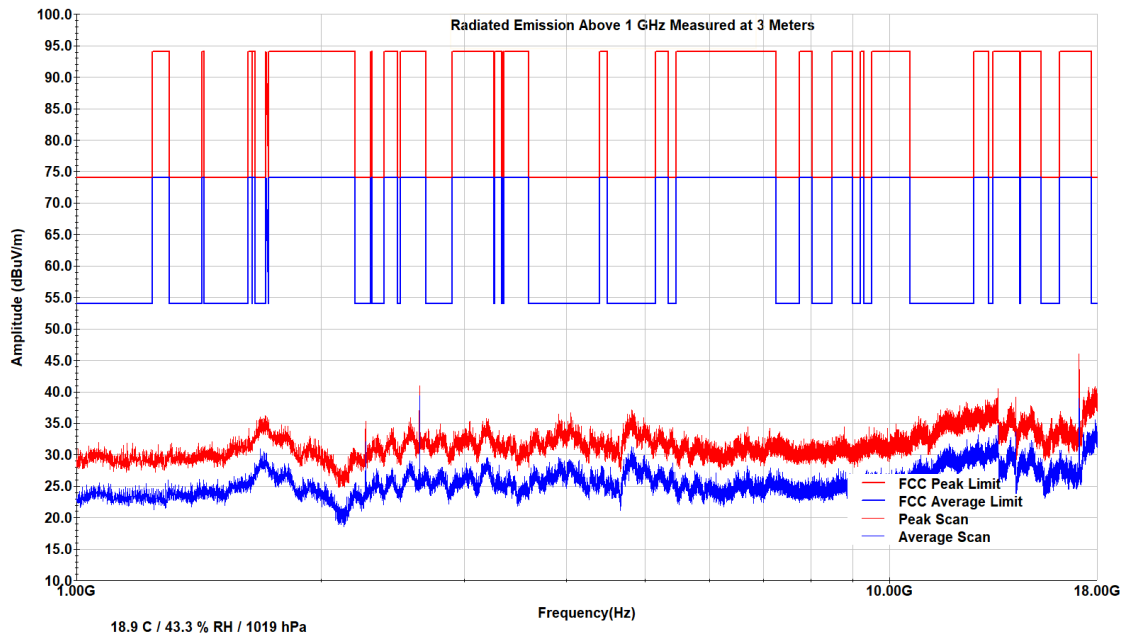


Frequency	Antenna Polarization	Raw Quasi-peak	Antenna Factor	Cable loss	QPeak	Margin	Limit
MHz	V/H	dBuV	dB/m	dB	dBuV/m	dB	dBuV/m
154.498478	H	6.9	16.1	1.2	24.2	19.3	43.5
776.059328	H	-1.4	24.6	2.7	25.9	20.1	46
30.6075	V	-1.8	24.9	0.7	23.8	16.2	40
70.00582	V	13	12.4	0.9	26.3	13.7	40

Note:

- (1) Quasi-peak (dBuV/m) = Raw Quasi-peak (dBuV) + Antenna Factor (dB/m) + Cable loss (dB)
- (2) Only the worst-case frequencies were selected for the final Quasi-peak measurement.

Test data of radiated spurious emissions above 1 GHz



Note: Only the worst-case frequencies were selected for the final measurement.

10. Unintentional Radiated Emissions

Standard	FCC Part 15 B	
Test method	ANSI C63.4	
Test Engineer	Jack Qin	
Test Date	2026-02-02	
Applied limit	Radiated Emission Limit, Class B	
	Frequency (MHz)	Quasi-peak (dB μ V/m) at 3 Meters
	30 – 88	40
	88 – 216	43.52
	216 - 960	46.02
	Above 960	53.98
	Note 1. The lower limit shall apply at the transition frequency Note 2. Additional provisions may be required for cases where interference occurs Note 4: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector. Note 3. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter’s fundamental emission.	
Test Result	Compliant	

10.1 Test Method

The radiated spurious emissions test was performed in accordance with the procedures specified in ANSI C63.10.

The Equipment Under Test (EUT) was configured to operate in a continuous transmit mode at the channel producing the highest emission levels. All necessary support equipment was connected and configured to represent typical operation.

preliminary scan was performed using a spectrum analyzer with a peak detector. The EUT was rotated through 360°, and the antenna height and polarization were varied to identify the maximum emission levels.

Final measurements were performed on all significant emissions identified during the preliminary scan. For each emission:

The turntable was rotated to obtain the maximum emission level. The antenna height was adjusted to maximize the received signal. Both antenna polarizations were investigated. Sweep time shall be sufficient to allow accurate measurement of emissions.

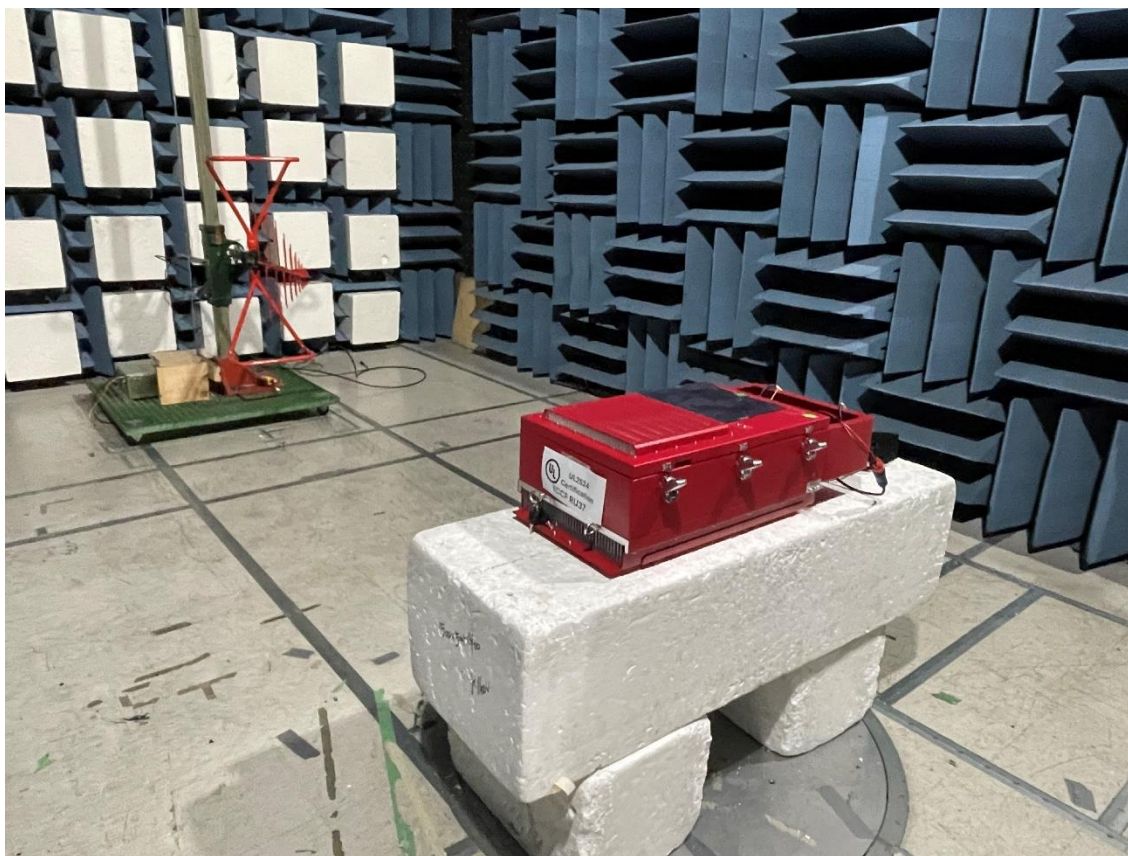
Radiated spurious emissions shall be measured over the frequency range:9 kHz to the 10th harmonic of the highest fundamental frequency or 40 GHz, whichever is lower, unless otherwise specified by the applicable regulatory rule.

The corrected emission levels were compared with the applicable regulatory limits. The EUT is considered compliant if all measured radiated emissions are below the specified limits.

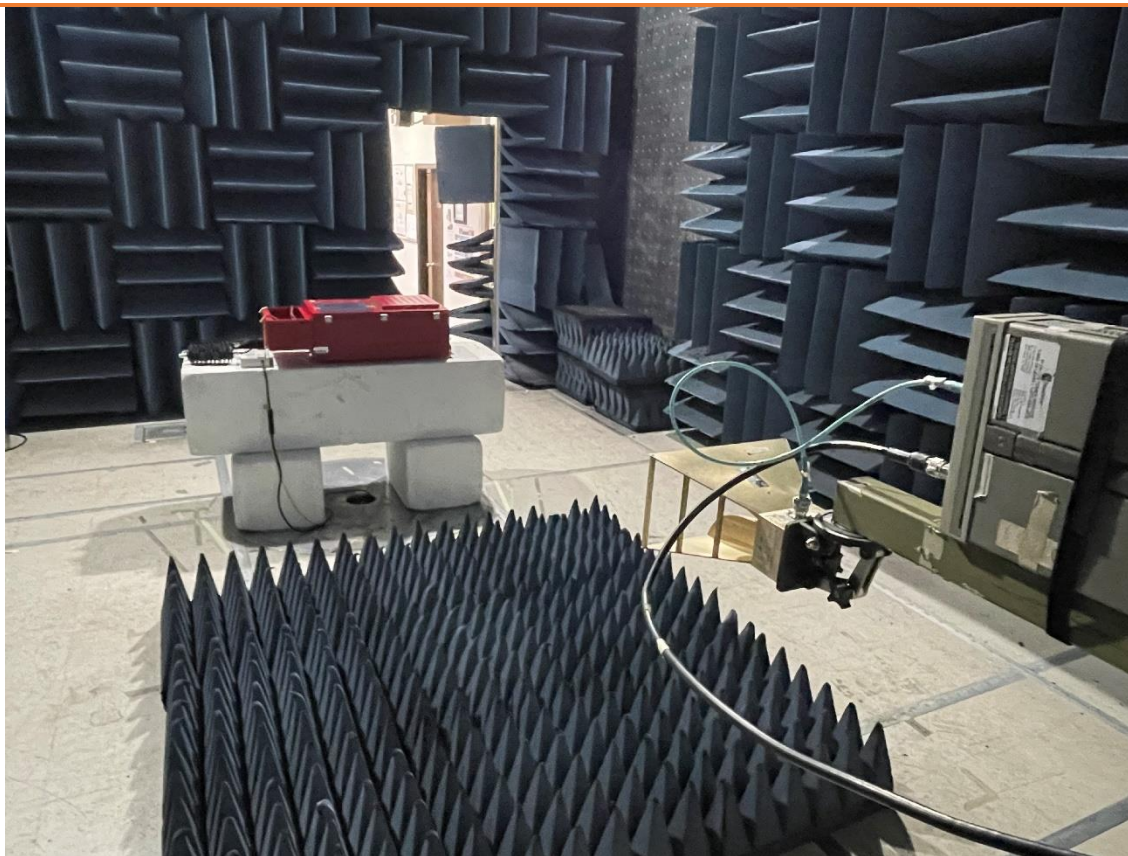
Analyzer Settings			
Frequency Range	RBW	VBW	Detector
30 MHz – 1 GHz	120 kHz	300 kHz	Quasi-Peak
Above 1GHz	1 MHz	3 MHz	Peak / Average

10.2 Test Setup

Note: The EUT was placed on a non-conductive table 0.8 m above the ground plane on a motorized turntable. The measurement antenna was positioned at a distance of 3 m from the EUT, with its height varied from 1 m to 4 m to maximize the received emissions.



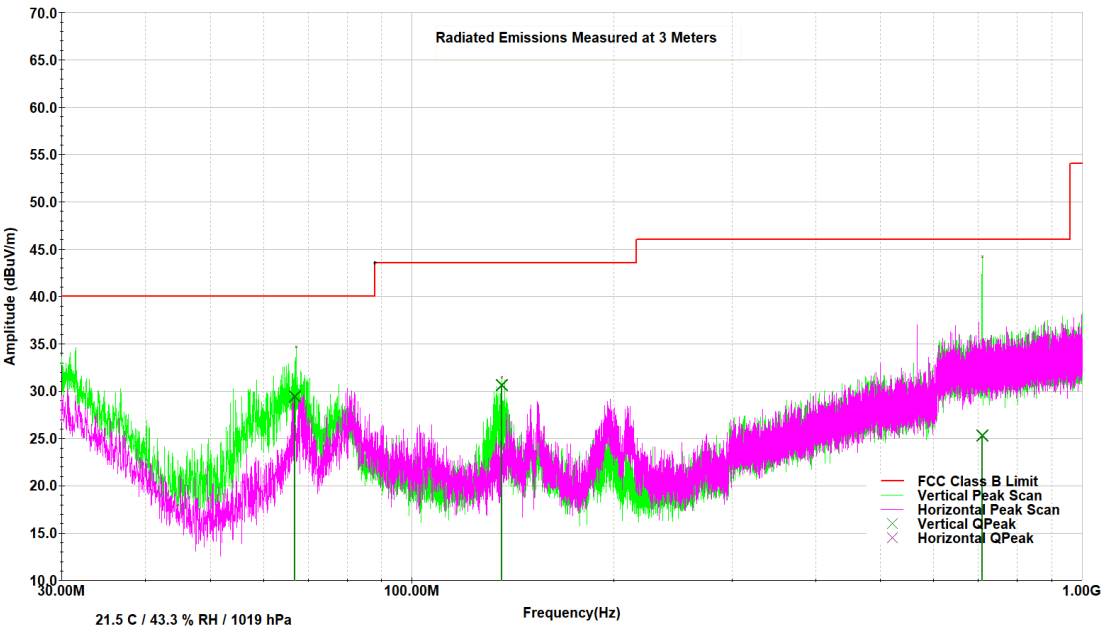
Test setup of radiated emissions from 30 MHz to 1000MHz



Test setup of radiated emissions above 1 GHz

9.3 Test Results

Test data of radiated emissions from 30 MHz to 1000MHz



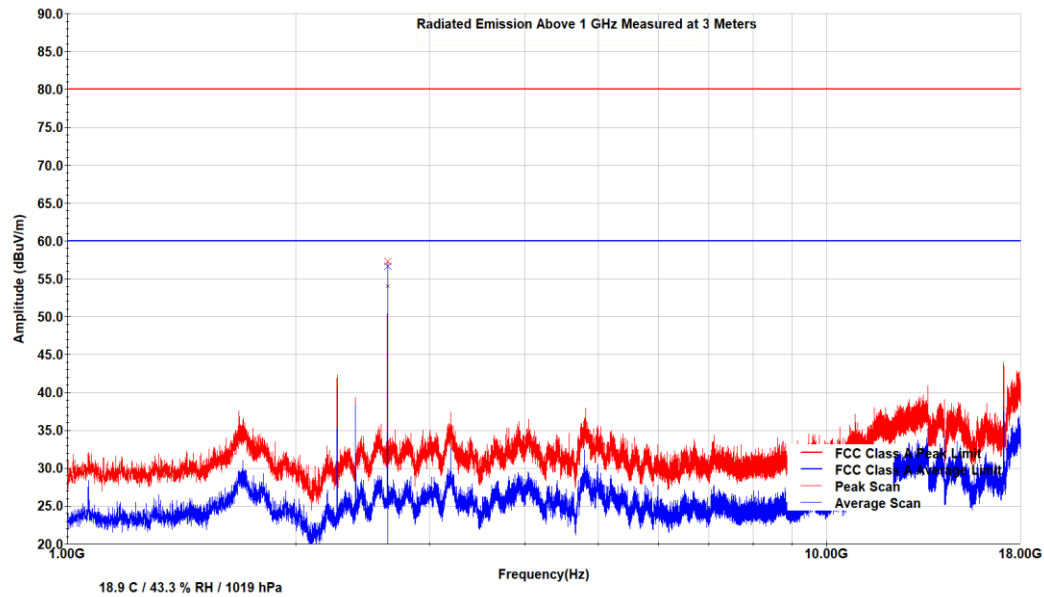
Frequency	Antenna Polarization	Raw Quasi-peak	Antenna Factor	Cable loss	QPeak	Margin	Limit
MHz	V/H	dBuV	dB/m	dB	dBuV/m	dB	dBuV/m
66.883502	V	16.4	12.2	0.8	29.4	10.6	40
136.059796	V	12	17.5	1.1	30.6	12.9	43.5
708.756098	V	-1.1	23.7	2.7	25.3	20.7	46

Note:

(1) $\text{Quasi-peak (dBuV/m)} = \text{Raw Quasi-peak (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable loss (dB)}$

(2) Only the worst-case frequencies were selected for the final Quasi-peak measurement.

Test data of radiated emissions above 1 GHz



Frequency	Antenna Polarization	Antenna Factor	Correction Factor	Raw Average	Average	Average Margin	FCC Average Limit	RAW Peak	Peak	Peak Margin	FCC Peak Limit
MHz	V/H	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	dBuV	dBuV/m	dB	dBuV/m
2640.1	V	30	-26.4	53.1	56.6	3.4	60	53.712	57.289	22.711	80

Note: Only the worst-case frequencies were selected for the final measurement.

11. AC Power Line Conducted Emissions

Standard	FCC Part 15 B		
Test method	ANSI C63.4		
Test Engineer	Jack Qin		
Test Date	2026-02-02		
Applied limit			
	Conducted emissions Class A limits (AC mains power terminals)		
	Frequency (MHz)	Quasi-Peak (dBμV)	Average (dBμV)
	0.15 - 0.50	79	66
	0.5 - 30	73	60
	Note 1 The lower limit shall apply at the transition frequencies		
Test Result	Compliant		

11.1 Test Method

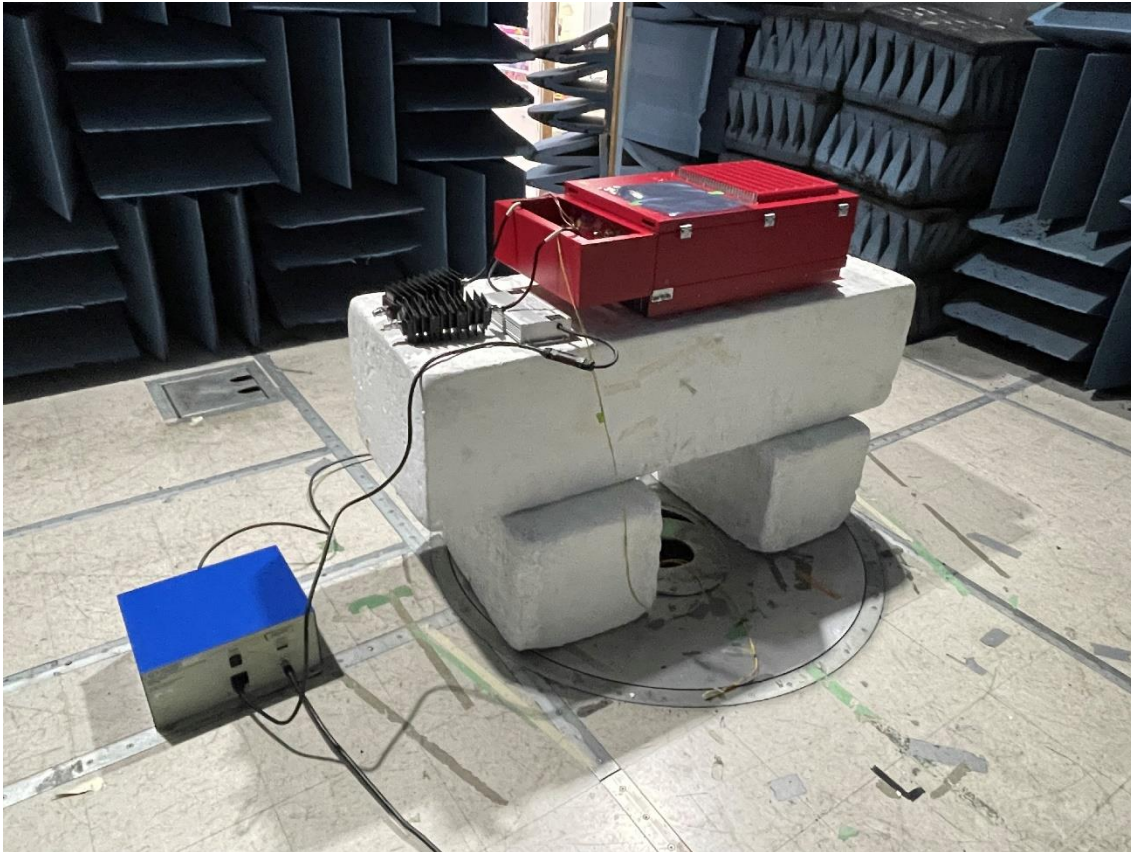
An artificial mains network (LISN) was used to provide a defined impedance at high frequencies across the terminals of the EUT and to isolate the test circuit from unwanted radio frequency signals on the supply mains. Initially, a pre-scan was performed using an EMC analyser set to peak and average detector modes, controlled by the EMC test software, Tile7. The receiver’s resolution bandwidth was configured as follows:

9 kHz for the frequency range 150 kHz to 30 MHz

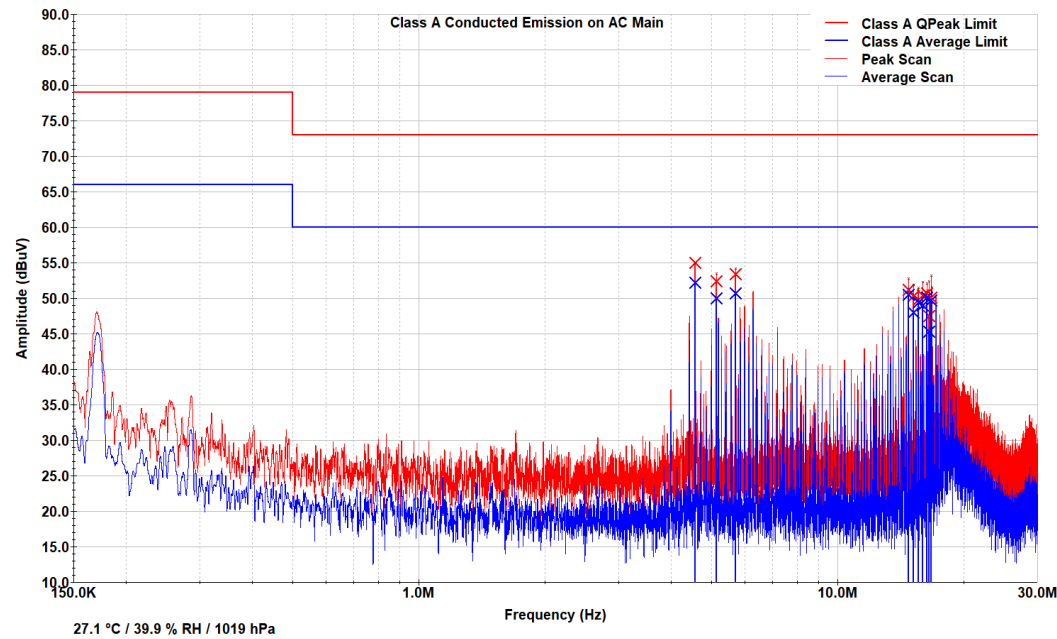
After the pre-scan, the worst-case frequencies within 10 dB of the limit line were selected for the final measurement. The EMC analyser was then set to CISPR quasi-peak and average modes for the final measurement.

The numerical results provided confirm compliance with the applicable standards, demonstrating that the EUT meets the conducted emission limits specified in ICES-003.

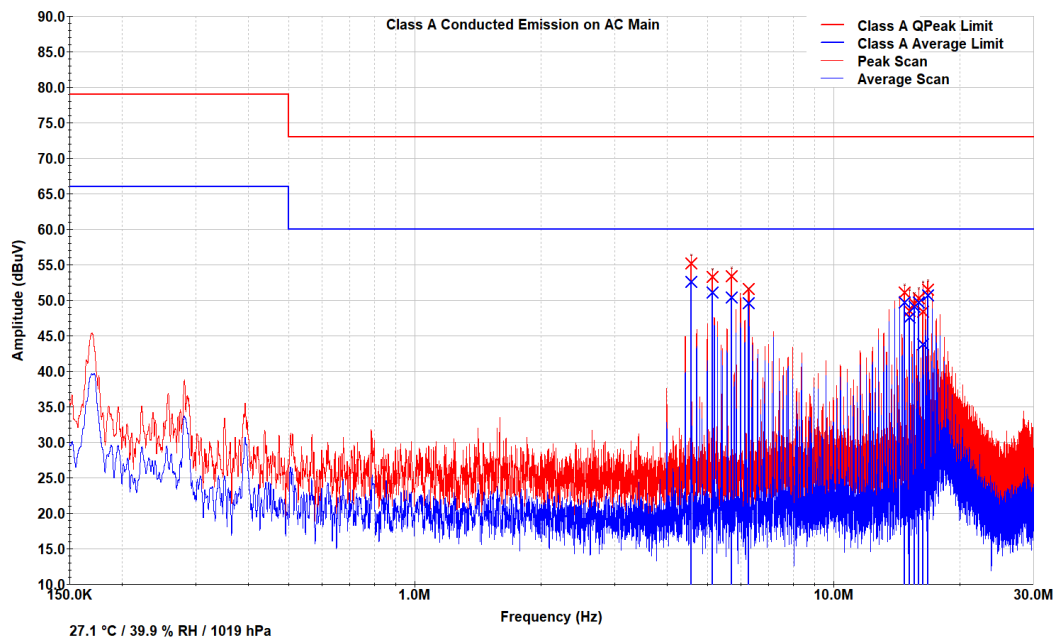
11.2 Test Setup



11.3 AC Power Line Conducted Emissions Test Results



Frequency	Correction Factor	QPeak	QPeak Margin	QPeak Limit	Average	Average Margin	Average Limit
MHz	dB	dBuV	dB	dBuV	dBuV	dB	dBuV
4.568	20.3	54.98	18.02	73	52.174	7.83	60
5.139	20.33	52.43	20.57	73	49.962	10.04	60
5.708	20.347	53.42	19.58	73	50.733	9.27	60
14.766	20.589	51.21	21.79	73	50.522	9.48	60
15.16	20.594	50.26	22.74	73	47.976	12.02	60
15.563	20.601	49.81	23.19	73	49.359	10.64	60
15.96	20.623	50.45	22.55	73	48.978	11.02	60
16.359	20.636	50.65	22.35	73	50.123	9.88	60
16.557	20.641	47.46	25.54	73	45.285	14.72	60
16.755	20.637	50.11	22.89	73	49.72	10.28	60



Frequency	Correction Factor	QPeak	QPeak Margin	QPeak Limit	Average	Average Margin	Average Limit
MHz	dB	dBuV	dB	dBuV	dBuV	dB	dBuV
4.565	20.318	55.21	17.79	73	52.57	7.43	60
5.135	20.343	53.25	19.75	73	51.079	8.92	60
5.705	20.367	53.36	19.64	73	50.432	9.57	60
6.276	20.371	51.64	21.36	73	49.634	10.37	60
14.767	20.666	51.05	21.95	73	49.713	10.29	60
15.166	20.674	48.49	24.51	73	47.562	12.44	60
15.563	20.681	49.45	23.55	73	49.099	10.9	60
15.965	20.703	50.32	22.68	73	49.694	10.31	60
16.356	20.719	48.35	24.65	73	43.823	16.18	60
16.763	20.724	51.46	21.54	73	50.705	9.29	60

Annex

Annex 1 – List of Test Equipment

Equipment	Manufacturer	Model	LabTest ID/SN	Last calibration	Calibration due*
Spectrum Analyzer	Keysight	N9020B	MY56450228	Apr 28, 2025	Apr 28, 2027
Signal Generator	Keysight	N5172B	MY53050270	Dec 12, 2023	Dec 12, 2026
EMC Analyzer	Keysight	N9038A	702	26-Apr-2024	26-Apr-2026
Active loop antenna	Com-Power	AL-130R	2304	2024-07-15	2026-07-15
Horn Antenna	A.H Systems	SAS-571	227C	2025-02-04	2027-02-04
Broadband Antenna	Sunol	JB1	371	2025-01-13	2027-01-13
RF Preamplifier	Agilent	8449B	273	IHC	IHC
EMC Shielded Enclosure	USC	USC-26	374	IHC	IHC
RF Cable	A.H. Systems	SAC-26G-3	227D	IHC	IHC
RF Cable	MRO	NA	NA	IHC	IHC
Used Software	Tile 7!, v7.3.0.6				

* Calibration interval extended based on enough calibration data and experience of use (see IECCE OD-5011:2015 clause 8.3)

Annex 2 – Measurement Uncertainties

For all measurements where guidance for the calculation of the instrumentation uncertainty of a measurement is specified in CISPR 16-4-2/EN55016-4-2, IEC/EN 61000-4 series or a product standard, the measurement instrumentation uncertainty has been calculated and applied in accordance with these standards.

Uncertainties have been calculated according to the LabTest internal document, DCN. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%

Parameter	Uncertainty
Radio Frequency	± 1 ppm
Conducted RF Power	± 1 dB
Temperature	± 1.0 °C
Humidity	± 5.0 %
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%.)

Annex 3 - ISO 17025 ACCREDITATION CERTIFICATE

For complete scope of certification use

https://labtestcert.com/wp-content/uploads/2024/04/LabTest-Certification-Inc-Cert-and-Scope-File-03-12-2024_1710259791.pdf

END OF REPORT

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