



Test Report

For:

Smith & Nephew Medical Limited

Brand:

LEAF

Marketing Name:

LEAF Patient Sensor

Model Name:

66803060

Product Description:

The LEAF Patient Sensor is a small and disposable patient monitoring sensor that adheres to a patient's skin. It will communicate wirelessly to LEAF Relay Antennas.

FCC ID: 2AWH9-LEAFS

Applied Rules and Standards:

47 CFR Parts: 15.247 (DTS)

REPORT #: SMITH_064_25001_FCC15247_DTS

DATE: 2025-10-27



A2LA Accredited

IC recognized #
3462B

CETECOM Inc.

411 Dixon Landing Road ♦ Milpitas, CA 95035 ♦ U.S.A.

Phone: + 1 (408) 586 6200 ♦ Fax: + 1 (408) 586 6299 ♦ E-mail: contact@cetecom.com ♦ <http://www.cetecom.com>

CETECOM Inc. is a Delaware Corporation with Corporation number: 2905571

TABLE OF CONTENTS

1	ASSESSMENT.....	3
2	ADMINISTRATIVE DATA	4
2.1	IDENTIFICATION OF THE TESTING LABORATORY ISSUING THE EMC TEST REPORT	4
2.2	IDENTIFICATION OF THE CLIENT	4
2.3	IDENTIFICATION OF THE MANUFACTURER.....	4
3	EQUIPMENT UNDER TEST (EUT).....	5
3.1	EUT SPECIFICATIONS	5
3.2	RADIO SPECIFICATIONS	5
3.3	EUT SAMPLE DETAILS	6
3.4	ACCESSORY EQUIPMENT (AE) DETAILS.....	6
3.5	TEST SETUP CONFIGURATIONS	6
3.6	EUT POWER SETTING	6
3.7	JUSTIFICATION FOR WORST CASE MODE OF OPERATION.....	6
4	SUBJECT OF INVESTIGATION	7
4.1	DATE OF TESTING:.....	7
4.2	MEASUREMENT UNCERTAINTY	7
4.3	DECISION RULE:.....	7
5	MEASUREMENT PROCEDURES	8
5.1	RADIATED MEASUREMENT.....	8
5.2	SAMPLE CALCULATIONS FOR FIELD STRENGTH MEASUREMENTS	10
5.3	POWER LINE CONDUCTED MEASUREMENT PROCEDURE	10
5.4	RF CONDUCTED MEASUREMENT PROCEDURE	10
6	MEASUREMENT RESULTS SUMMARY	11
7	TEST RESULT DATA	12
7.1	MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER	12
7.2	POWER SPECTRAL DENSITY	14
7.3	BAND EDGE COMPLIANCE	16
7.4	EMISSION BANDWIDTH 6dB AND 99% OCCUPIED BANDWIDTH.....	21
7.5	RADIATED TRANSMITTER SPURIOUS EMISSIONS	24
8	TEST EQUIPMENT AND ANCILLARIES USED FOR TESTING	31
9	TEST SETUP PHOTOS.....	31
10	REVISION HISTORY	32

1 Assessment

The following device was evaluated against the applicable criteria specified in

- FCC rule part 15.247 of Title 47 of the Code of Federal Regulations

There were no additions, deviations, or exclusions made from the test method.

Company	Description	Model #
Smith & Nephew Medical Limited	The LEAF Patient Sensor is a small and disposable patient monitoring sensor that adheres to a patient's skin. It will communicate wirelessly to LEAF Relay Antennas.	66803060

Report Authorized by:

Responsible for testing Laboratory:

Alvin, Ilarina

2025-10-27

Compliance

(Director of EMC Services)

Date	Section	Name	Signature
------	---------	------	-----------

Responsible for the Report:

Guangcheng Huang

2025-10-27

Compliance

(Senior EMC Engineer)

Date	Section	Name	Signature
------	---------	------	-----------

The test results of this test report relate exclusively to the test item specified in Section 3.

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:	Ruby Hall

2.2 Identification of the Client

Client's Name:	Smith & Nephew Medical Limited
Street Address:	101 Hessle Road,
City/Zip Code	Hull / HU3 2BN
Country	United Kingdom of Great Britain and Northern Ireland

2.3 Identification of the Manufacturer

Manufacturer's Name:	Celestica LLC
Manufacturers Address:	Calle Octava # 102, Parque Industrial Monterrey, Apodaca, Nuevo Leon,
City/Zip Code	CP66600
Country	Mexico

3 Equipment Under Test (EUT)

3.1 EUT Specifications

Model No:	66803060
Marketing Name:	LEAF Patient Sensor
HW Version:	1000027980 Rev D
SW Version:	V3.79
FCC ID:	2AWH9-LEAFS
ISED:	N/A
FWIN:	N/A
HVIN:	N/A
PMN:	N/A
Product Description:	The LEAF Patient Sensor is a small and disposable patient monitoring sensor that adheres to a patient's skin. It will communicate wirelessly to LEAF Relay Antennas.
Power Supply / Rated operating Voltage Range:	3VDC 285mAh primary lithium coin cell with solder tags and part number CR2430SM
Operating Temperature Range	50 to 97 °F (5 to 36 °C)
Sample Revision	Production
EUT Dimensions	1.8" x 2.0" (46 x 50 mm)
Note: All information provided by the client.	

3.2 Radio Specifications

Embedded Radio Technologies	IEEE 802.15.4 (2405.0 - 2480.0 MHz)
Frequency Range / number of channels:	IEEE 802.15.4 (2405.0 – 2480.0 MHz) - Channel 15 only (2425 MHz)
Rated max. EIRP	1.55 mW
Tested radio technology	IEEE 802.15.4 (2405.0 - 2480.0 MHz)
Antenna Type / Gain	2.4 GHz SMT Chip antenna / -2dBi
Modes of Operation	1. Continuous transmission (for testing purposes only) 2. Intermittent (used case scenario)
Note: All information provided by the client.	

3.3 EUT Sample details

EUT #	Serial Number	HW Version	SW Version	Notes/Comments
1	-	1000027980 Rev D	V3.79	Conducted sample
2	0042808229	1000027980 Rev D	V3.79	Radiated sample

3.4 Accessory Equipment (AE) details

AE #	Type	Model	Manufacturer	Serial Number
0	0	0	0	0
0	0	0	0	0

3.5 Test Setup Configurations

Set-up #	EUT / AE used for set-up	Comments
1	EUT#1	Conducted testing
2	EUT#2	Radiated testing

3.6 EUT Power setting

Test software provided by applicant

COM5 - PuTTY

```
Smith + Nephew. 2025. Leaf 2.0 DTM (802.15.4)
CLI ready. Type 'help'.
> 
```

Power level setting

Channel Number	Power Level
15	-4

3.7 Justification for Worst Case Mode of Operation

During the testing process, the EUT was tested with transmitter sets to highest possible duty cycle. For radiated measurements, all data in this report show the worst case between horizontal and vertical antenna polarizations and for all orientations of the EUT.

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.

4.1 **Date of Testing:**

2025-08-21 – 2025-08-21

4.2 **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

Environmental Conditions during Testing:

The following environmental conditions were maintained during testing:

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

Deviating test conditions are indicated at individual test description where applicable.

4.3 **Decision Rule:**

Cetecom Inc follows ILAC G8:09/2019 chapter 4.2.1 (Simple Acceptance Rule).

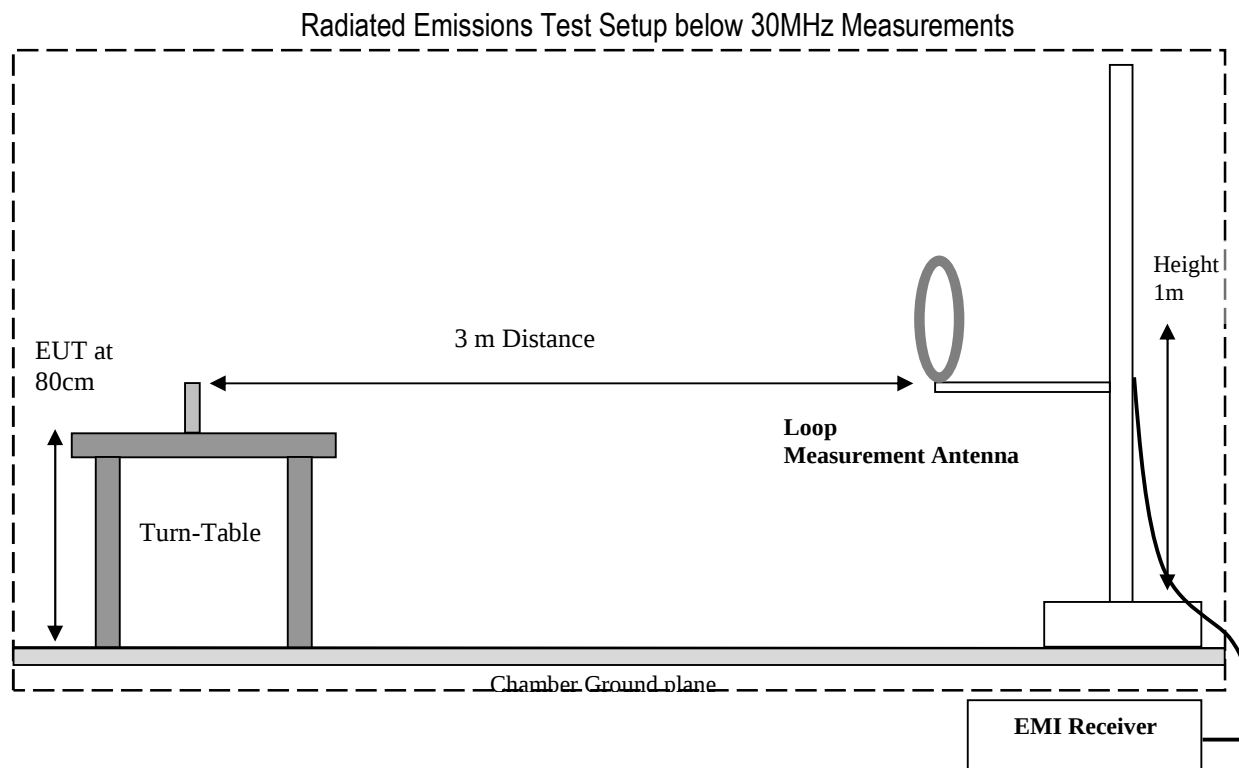
Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3. The measurement uncertainty is mentioned in this test report, See chapter 9, but is not considered – neither to the 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.

5 Measurement Procedures

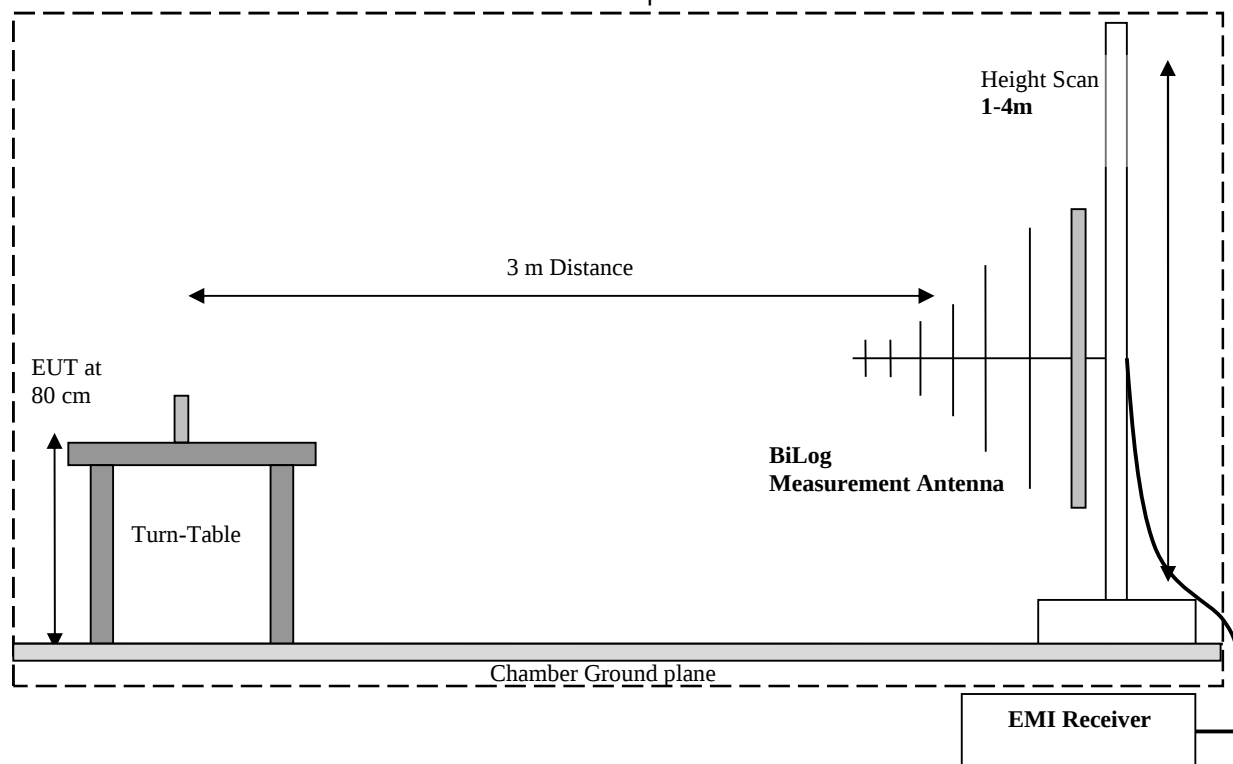
5.1 Radiated Measurement

The radiated measurement is performed according to ANSI C63.10 (2020)

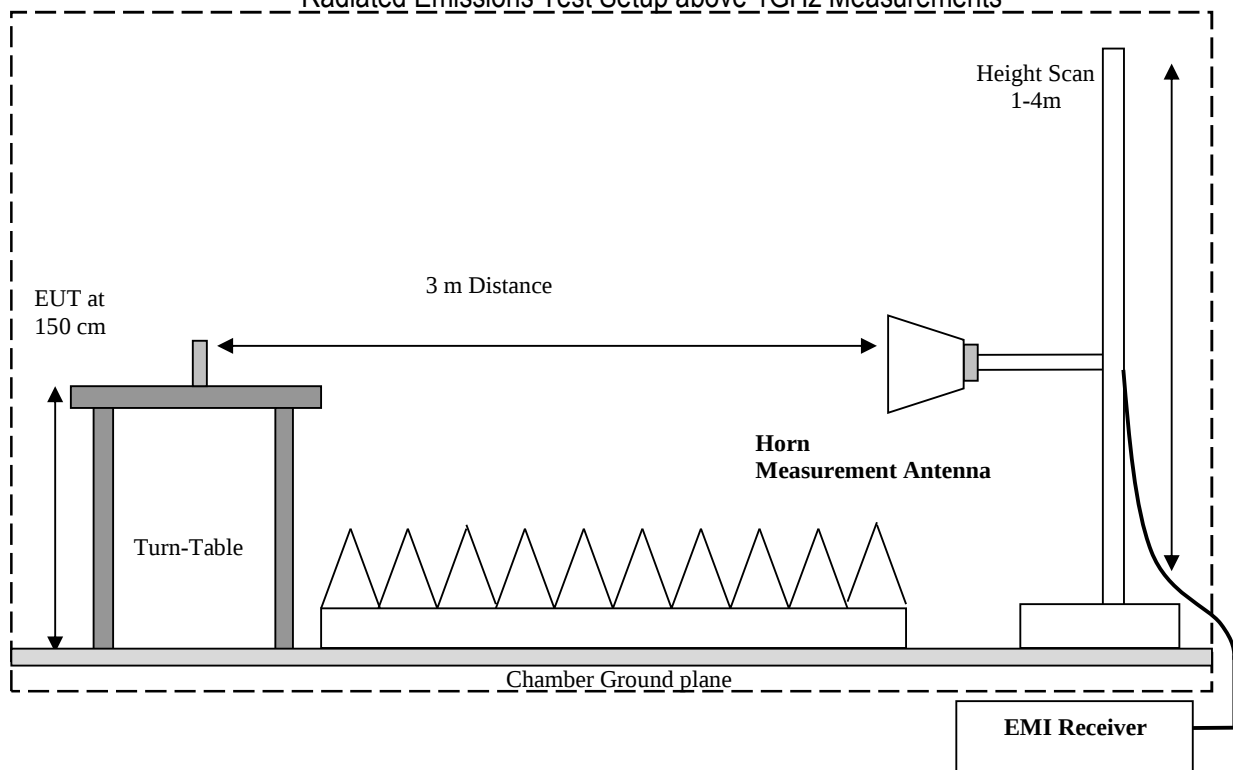
- The exploratory measurement is accomplished by running a matrix of 16 sweeps over the required frequency range with R&S Test-SW EMC32 for 4 positions of the turntable, two orthogonal positions of the EUT and both antenna polarizations. This procedure exceeds the requirement of the above standards to cover the 3 orthogonal axis of the EUT. A max peak detector is utilized during the exploratory measurement. The Test-SW creates an overall maximum trace for all 12 sweeps and saves the settings for each point of this trace. The maximum trace is part of the test report.
- The 10 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 above 1GHz Measurements



5.2 Sample Calculations for Field Strength Measurements

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

- Measured reading in dB μ V
- Cable Loss between the receiving antenna and SA in dB and
- 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:

$$FS \text{ (dB}\mu\text{V/m)} = \text{Measured Value on SA (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$$

Example:

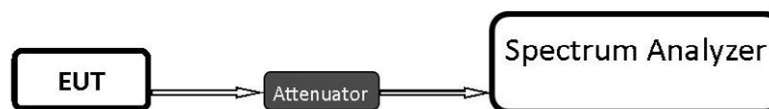
Frequency (MHz)	Measured SA (dB μ V)	Cable Loss (dB)	Antenna Factor Correction (dB)	Field Strength Result (dB μ V/m)
1000	80.5	3.5	14	98.0

5.3 Power Line Conducted Measurement Procedure

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

5.4 RF Conducted Measurement Procedure

Testing procedures are based on 558074 D01 15.247 Meas Guidance v05r02 – “GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES” - April 2, 2019, by the Federal Communications Commission, Office of Engineering and Technology, Laboratory Division.



- Connect the equipment as shown in the above diagram.
- Adjust the settings of the SA (Rohde-Schwarz Spectrum Analyzer) to connect the EUT at the required mode of test.
- Measurements are to be performed with the EUT set to the low, middle and high channels and for worst case modulation schemes.

6 Measurement Results Summary

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	NA	NP	Result
§15.247(a)(2)	Emission Bandwidth	Nominal	1	☒	☐	☐	Complies
§15.247(e)	Power Spectral Density	Nominal	1	☒	☐	☐	Complies
§15.247(b)(3) §15.247(b)(4)	Maximum Conducted Output Power and EIRP	Nominal	1	☒	☐	☐	Complies
§15.247(d)	Band edge compliance Non-restricted Band Edges	Nominal	1	☒	☐	☐	Complies
§15.247; 15.209; 15.205	Band edge compliance Restricted Band Edges	Nominal	1	☒	☐	☐	Complies
§15.247(d); §15.209	TX Spurious emissions- Radiated	Nominal	1	☒	☐	☐	Complies
§15.207(a)	AC Conducted Emissions	Nominal	N/A	☐	☒	☐	NA Note 1

Note 1: This device does not connect to AC mains network

7 Test Result Data

7.1 Maximum Conducted (Average) Output Power

7.1.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings:

- RBW = 1% to 5% of the OBW, not to exceed 1 MHz
- VBW $\geq 3 \times$ RBW
- Span = at least 1.5 times the OBW
- Sweep = Auto couple
- Detector function = RMS
- Trace = Average (at least 100 traces in power averaging (rms) mode)
- Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges
- Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times

7.1.2 Limits:

Maximum Output Power:

- FCC §15.247 (b)(1): 1 W

7.1.3 Test conditions and setup:

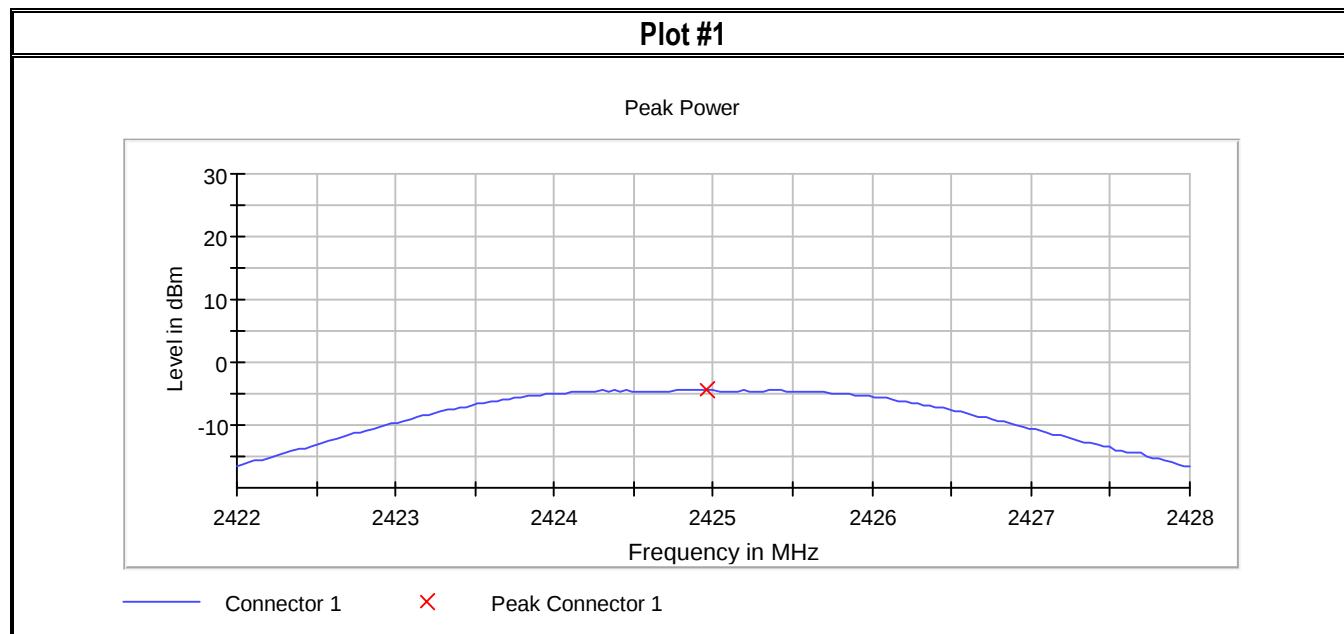
Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.8°C	1	1	nominal

7.1.4 Measurement result:

Test #	Frequency (MHz)	Output Power (dBm)	Antenna Gain (dBi)	Limit (dBm)	Result
1	2412	-4.5	-2	30 (PK)	Pass

Note: Antenna gain provided by applicant.

7.1.5 Measurement Plots:



7.2 Power Spectral Density

7.2.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings for AVGPST-1 PSD method:

- Set analyzer center frequency to DTS channel center frequency
- Set the span to $> 1.5 \times$ DTS bandwidth
- Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
- Set the VBW $\geq (3 \times \text{RBW})$
- Detector = RMS
- Sweep time = Auto couple
- Trace mode = Employ trace averaging (RMS)
- Allow trace to fully stabilize
- Use the peak marker function to determine the maximum amplitude level within the RBW
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat

7.2.2 Limits:

FCC §15.247(e):

- For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

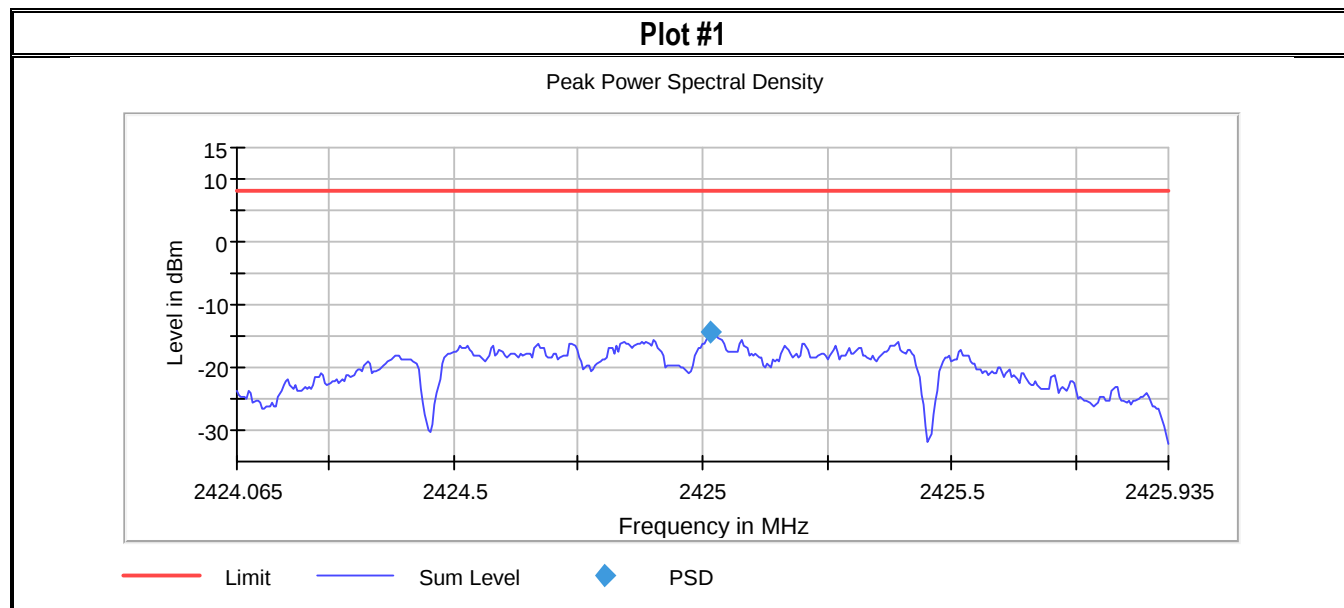
7.2.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.8°C	1	1	Nominal

7.2.4 Measurement result:

Test #	Frequency (MHz)	Maximum Power Spectral Density (dBm/3 kHz)	Limit (dBm / 3 kHz)	Result
1	2425	-14.366	8	Pass

7.2.5 Measurement Plots:



7.3 Band Edge Compliance

7.3.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings for band edge:

- Set the center frequency and span to encompass frequency range to be measured
- RBW = 100 kHz
- VBW $\geq 3 \times$ RBW
- Sweep Time: Auto couple
- Detector = Peak
- Trace = Max hold
- Allow trace to fully stabilize
- Use the peak marker function to determine the maximum amplitude level
- Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge

7.3.2 Limits non restricted band:

FCC§15.247 (d)

- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Spectrum Analyzer settings for restricted band:

- Peak measurements are made using a peak detector and RBW=1 MHz

7.3.3 Limits restricted band §15.247/15.209/15.205

- *PEAK LIMIT= 74 dB μ V/m @3m =-21.23 dBm
- *AVG. LIMIT= 54 dB μ V/m @3m =-41.23 dBm
- Start frequency & stop frequency according to frequency range specified in the restricted band table in FCC section 15.205
- Measurements with a peak detector were used to show compliance to average limits, thus showing compliance to both peak and average limits.

- (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

7.3.4 Test conditions and setup:

Non-Restricted Band:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.8°C	1	1n	Nominal

Restricted Band:

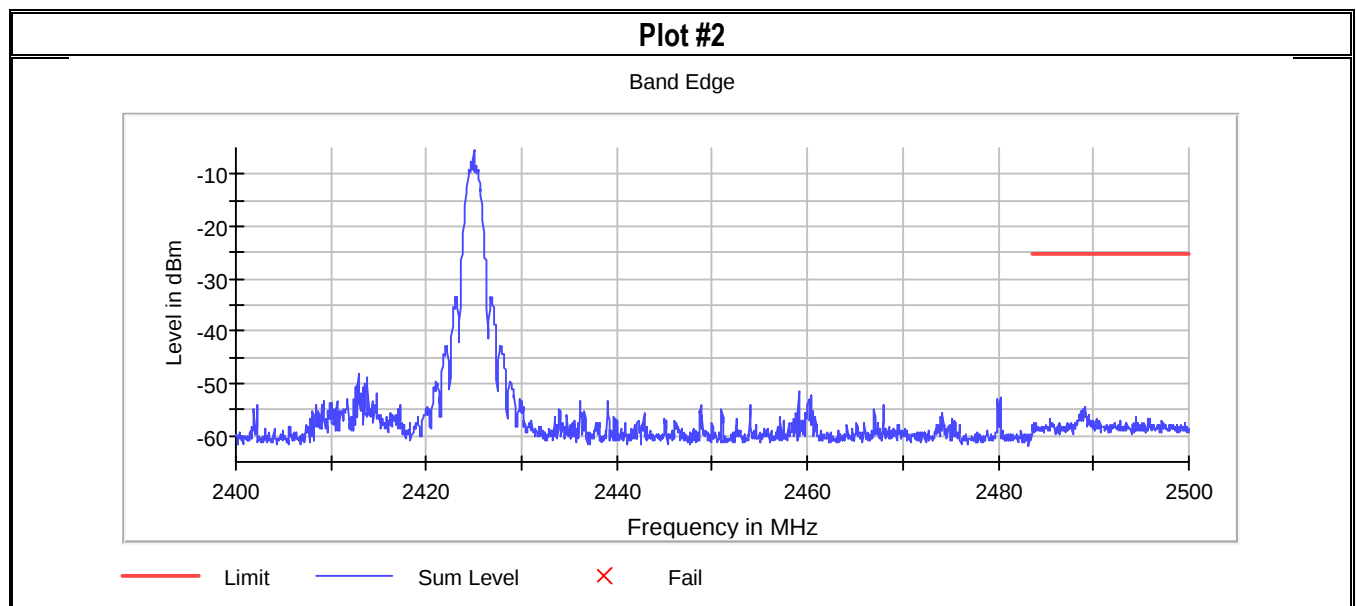
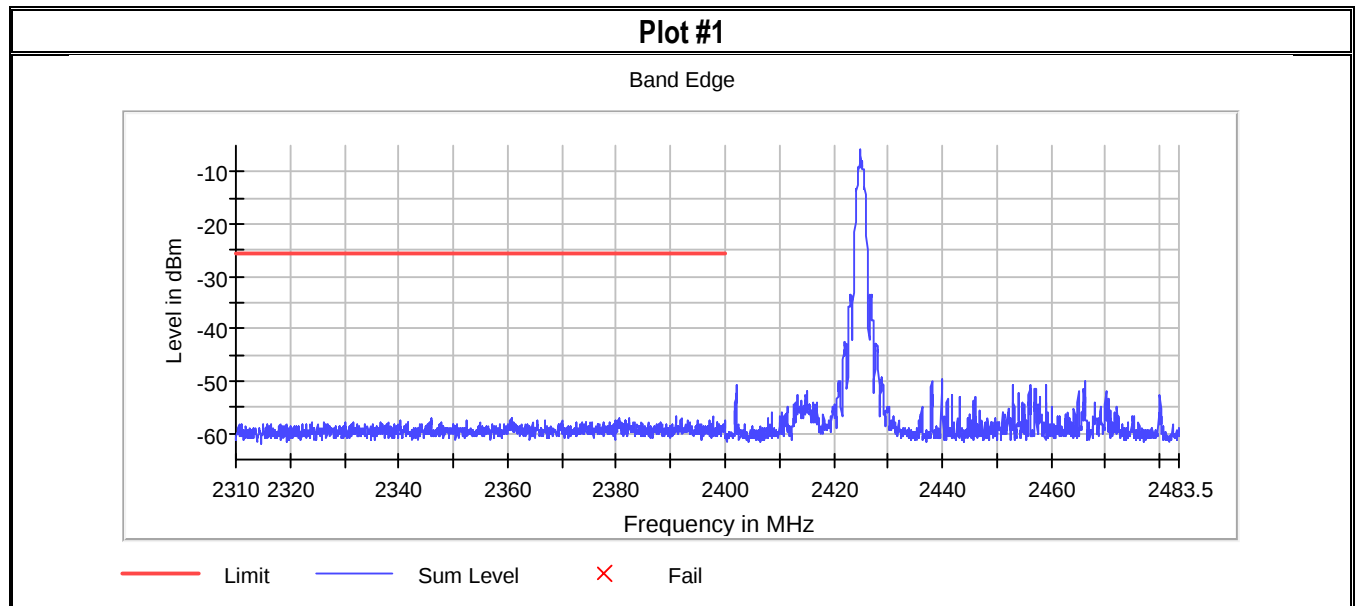
Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.8°C	2	1	Nominal

7.3.5 Measurement result:

Emissions in Nonrestricted frequency bands						
Plot #	Band edge	Frequency	Inband Peak Level	Level	Margin	Limit
		MHz	dBm	dBm	dB	dBm
1	low	2425	-5.7	-58.8	31.1	-25.7
2	high	2425	-5.4	-54.7	29.3	-25.4

Emissions in restricted frequency bands					
Plot #	Band Edge	Measured Peak Value (dB μ V/m)	Measured Average Value (dB μ V/m)	Limit (dB μ V/m)	Result
3	Lower Restricted Peak and Average	54.732	38.889	See section 8.4.3	Pass

7.3.6 Measurement Plots:



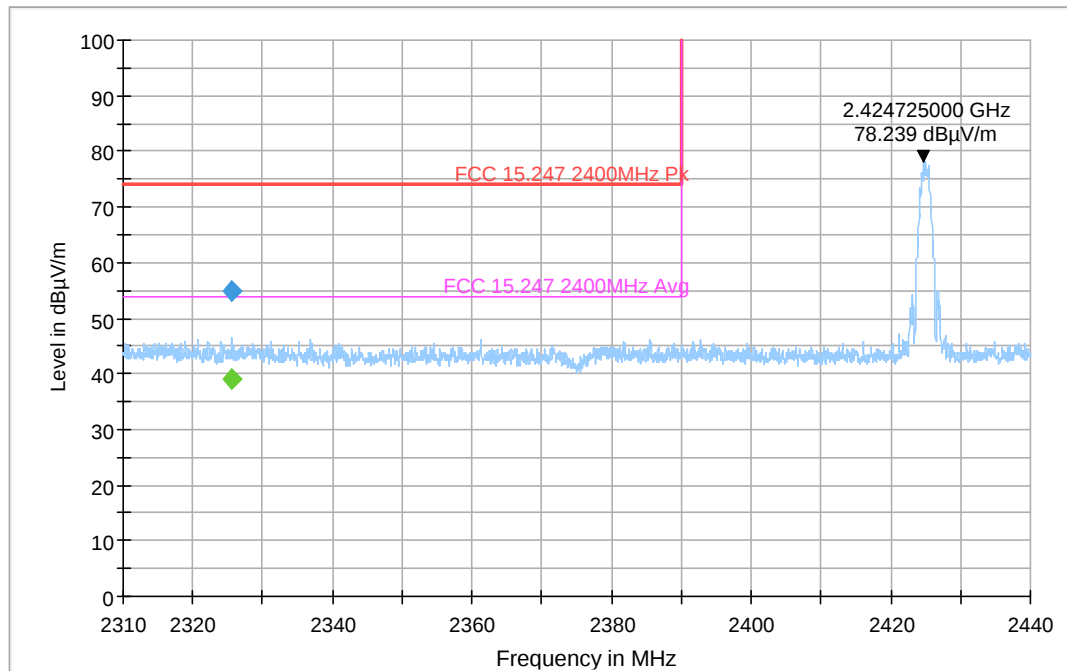
Plot #3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
2325.526	---	38.889	54.00	15.11	500.0	1000.0	167.0	V	304.0	33.3	5.3	0.0	28.0
2325.526	54.732	---	74.00	19.27	500.0	1000.0	167.0	V	304.0	33.3	5.3	0.0	28.0

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
2325.526	5.6
2325.526	21.4



AVG_MAXH PK+_MAXH FCC 15.247 2400MHz Pk
FCC 15.247 2400MHz Avg Final_Result PK+ Final_Result CAV

7.4 Emission Bandwidth 6dB and 99% Occupied Bandwidth

7.4.1 Measurement according to FCC 558074 D01 15.247 Meas Guidance v05r02

Spectrum Analyzer settings:

6dB (DTS) Bandwidth:

- Set RBW = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW
- Detector = Peak
- Trace mode = Max hold
- Sweep = Auto couple
- Allow the trace to stabilize
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

99% Occupied Bandwidth:

- Set frequency = nominal EUT channel center frequency
- Set Span = 1.5 x to 5.0 x OBW
- Set RBW = 1% to 5% of OBW
- Set the video bandwidth (VBW) $\approx 3 \times$ RBW
- Detector = Peak
- Trace mode = Max hold
- Sweep = Auto couple
- Allow the trace to stabilize
- Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth
- If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

7.4.2 Limits:

FCC §15.247(a)(2)

- Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.4.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.8°C	1	1	Nominal

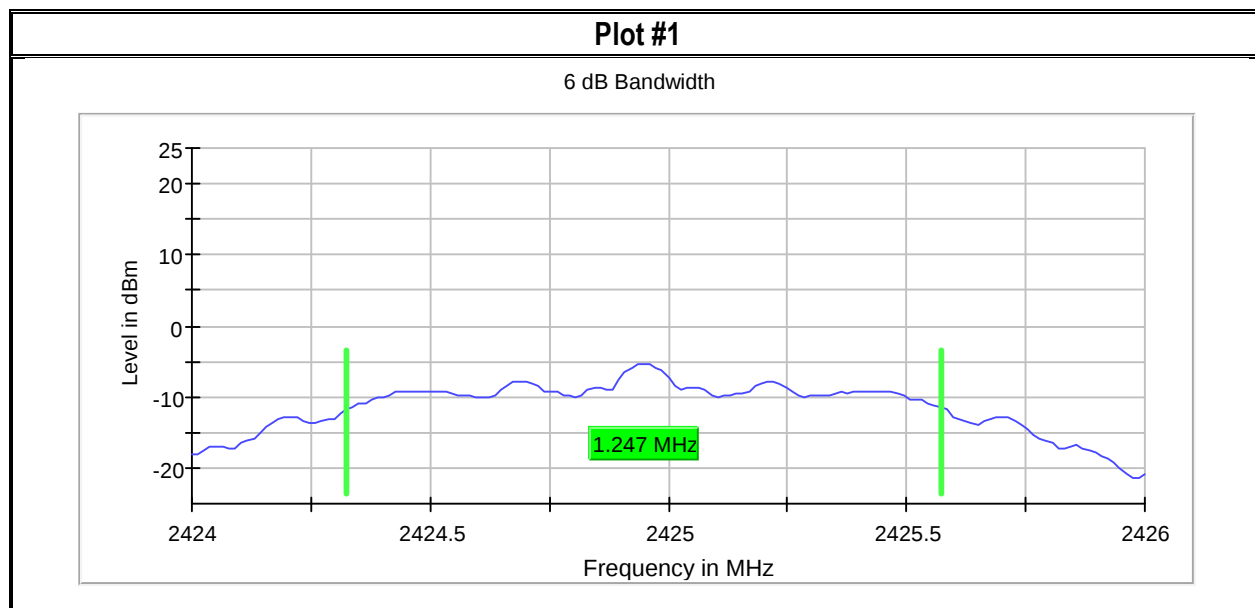
7.4.4 Measurement result:

Plot #	Frequency (MHz)	6dB Emission Bandwidth (MHz)	Limit (MHz)	Result
1	2412	1.246754	> 0.5	Pass

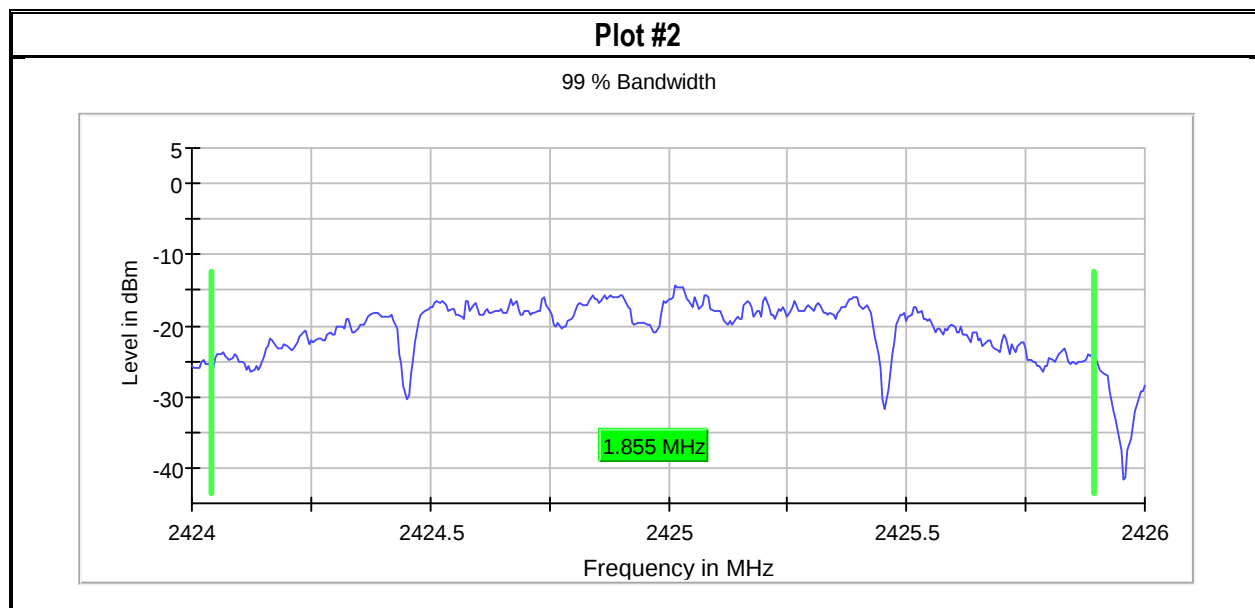
Plot #	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
2	2412	1.855000	N/A	Pass

7.4.5 Measurement Plots:

6 dB Emission Bandwidth



99% Occupied Bandwidth



7.5 Radiated Transmitter Spurious Emissions

7.5.1 Measurement according to ANSI C63.10 (2020)

Spectrum Analyzer Settings:

- Frequency = 9 KHz – 30 MHz
- RBW = 9 KHz
- Detector: Peak

- Frequency = 30 MHz – 1 GHz
- Detector = Peak / Quasi-Peak
- RBW= 120 KHz (<1GHz)

- Frequency > 1 GHz
- Detector = Peak / Average
- RBW = 1 MHz

- Radiated spurious emissions shall be measured for the transmit frequencies, transmit power, and data rate for the lowest, middle and highest channel in each frequency band of operation and for the highest gain antenna for each antenna type, and using the appropriate parameters and test requirements.
- The highest (or worst-case) data rate shall be recorded for each measurement.
- For testing frequencies below 30 MHz at distance other than the specified in the standard, the limit conversion is calculated by using the FCC materials for the ANSI 63 committee issued on January, 27 1991.

7.5.2 Limits:

FCC §15.247

- In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.5.3 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
22.0 °C	2	1	Nominal

7.5.4 Measurement result:

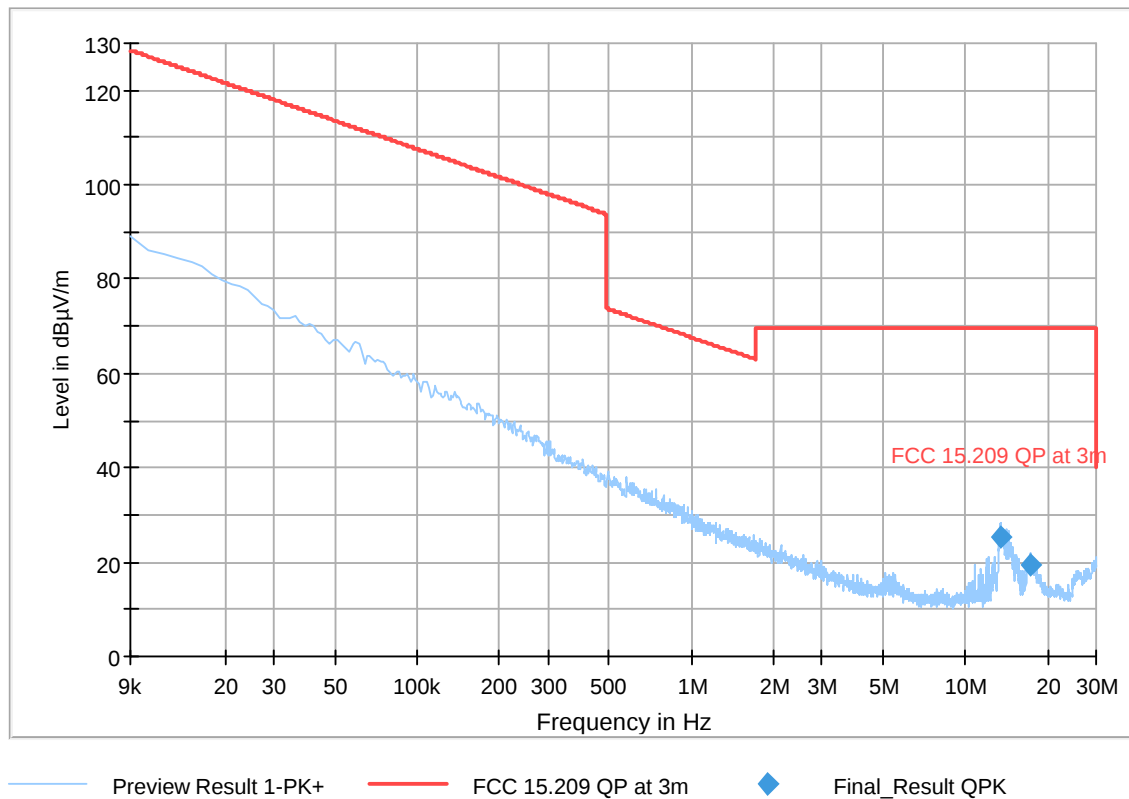
Plot #	Channel #	Scan Frequency	Limit	Result
1-3	15	9 kHz – 26 GHz	See section 8.6.2	Pass

7.5.5 Measurement Plots:

Plot 1: radiated emissions 9 kHz – 30 MHz

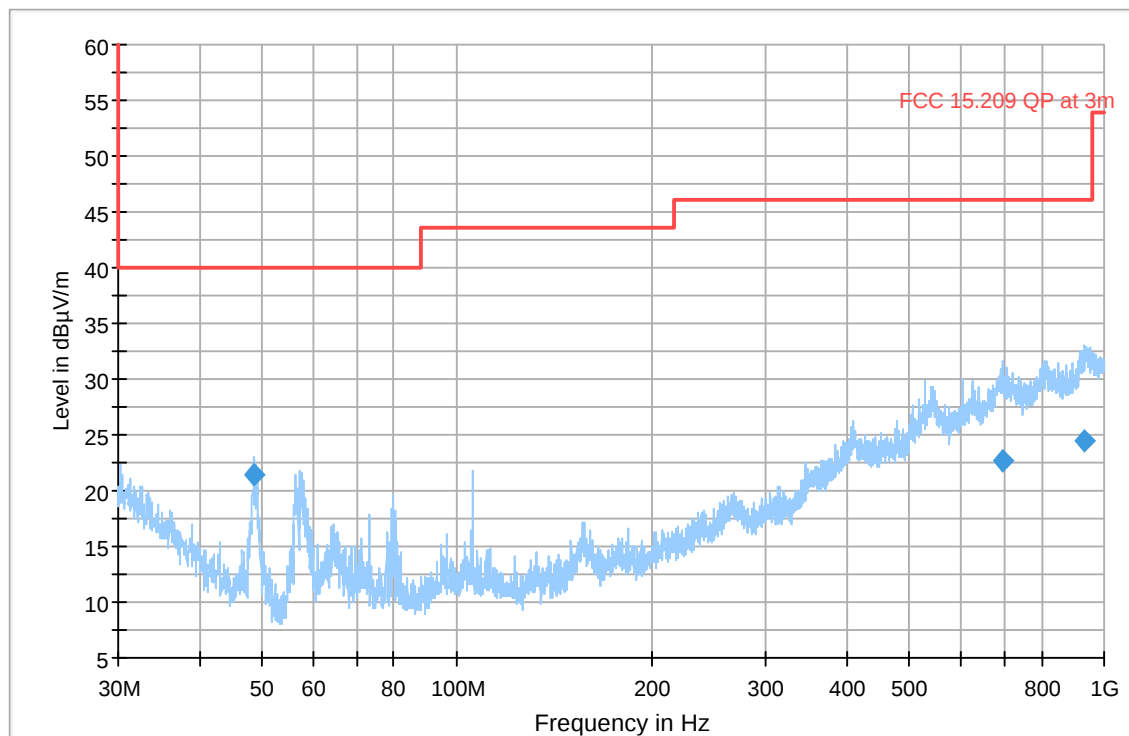
Final Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	DET 2 (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
13.42	25.47399368	---	69.50	44.03	500.0	9.0	120.0	H	24.0	5.2	
17.33	19.62328904	---	69.50	49.88	500.0	9.0	120.0	H	138.0	4.9	



Plot 2: radiated emissions 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
48.70	21.41002927	---	40.00	18.59	500.0	120.0	134.0	V	45.0	-21.7	
695.59	22.61907065	---	46.02	23.40	500.0	120.0	347.0	V	45.0	-2.4	
934.45	24.43668671	---	46.02	21.58	500.0	120.0	253.0	V	244.0	-0.6	



Preview Result 1-PK+ FCC 15.209 QP at 3m Final_Result QPK

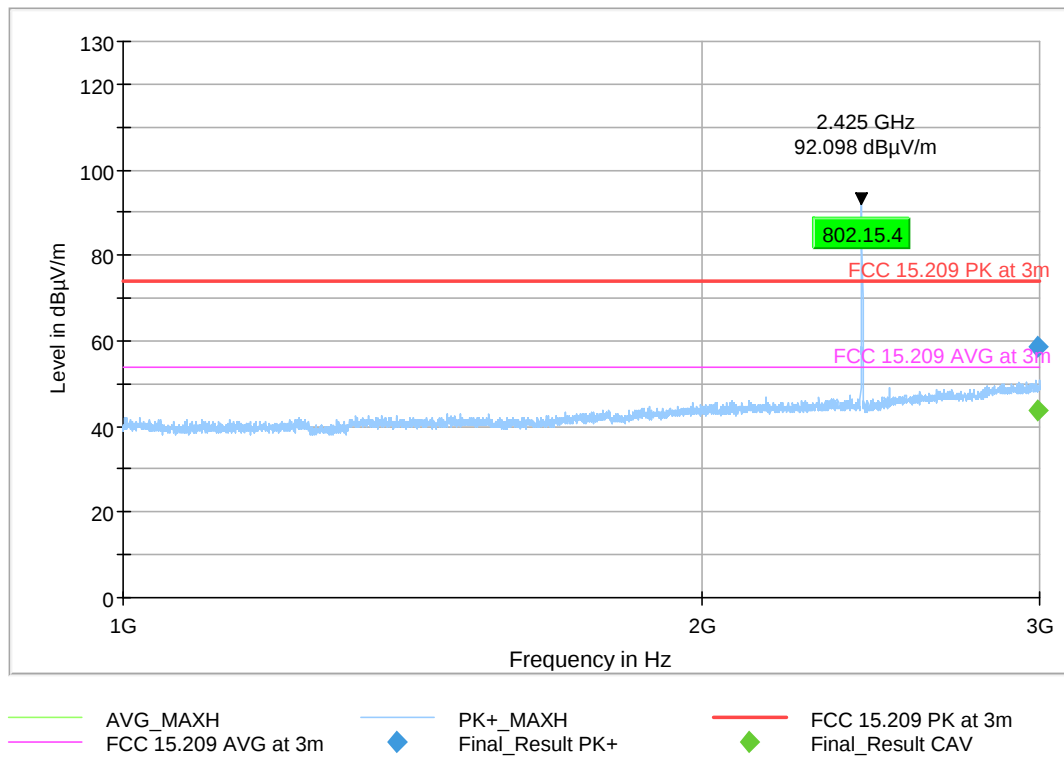
Plot 3: radiated emissions 1 GHz – 3 GHz

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preampl (dB)	Trd Corr. (dB/m)
2989.907	---	43.812	53.98	10.17	500.0	1000.0	125.0	V	191.0	35.8	5.9	0.0	29.9
2989.907	58.587	---	73.98	15.39	500.0	1000.0	125.0	V	191.0	35.8	5.9	0.0	29.9

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
2989.907	8.0
2989.907	22.8



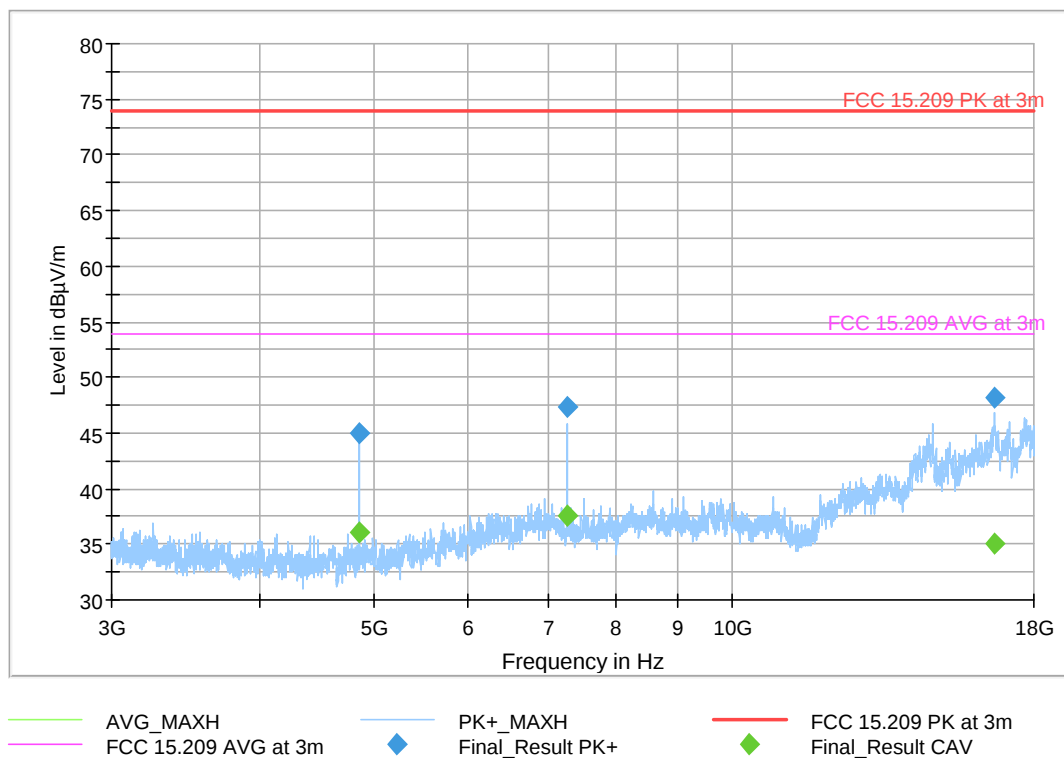
Plot 4: radiated emissions 3 GHz – 18 GHz

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
4849.500	44.954	---	73.98	29.03	500.0	1000.0	100.0	V	211.0	-4.6	6.9	-45.8	34.3
4849.500	---	36.039	53.98	17.94	500.0	1000.0	100.0	V	211.0	-4.6	6.9	-45.8	34.3
7273.500	47.313	---	73.98	26.67	500.0	1000.0	184.0	H	223.0	-2.0	8.9	-46.8	35.8
7273.500	---	37.573	53.98	16.41	500.0	1000.0	184.0	H	223.0	-2.0	8.9	-46.8	35.8
16660.750	---	35.109	53.98	18.87	500.0	1000.0	204.0	H	178.0	14.0	15.2	-42.4	41.2
16660.750	48.120	---	73.98	25.86	500.0	1000.0	204.0	H	178.0	14.0	15.2	-42.4	41.2

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
4849.500	49.6
4849.500	40.7
7273.500	49.3
7273.500	39.6
16660.750	21.1
16660.750	34.1



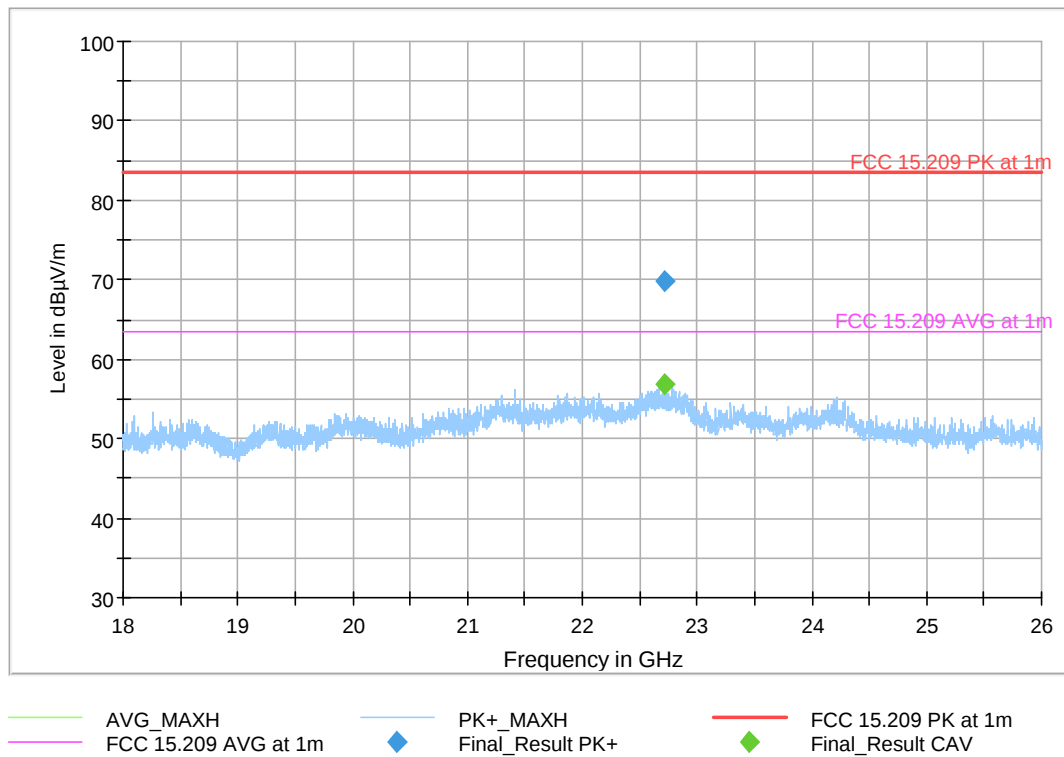
Plot 5: radiated emissions 18 GHz – 26 GHz

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/)	Sig Path (dB)	Preamp (dB)	Trd Corr. (dB/m)
22713.500	---	56.970	63.50	6.53	500.0	1000.0	325.0	H	152.0	21.1	9.8	0.0	11.4
22713.500	69.753	---	83.50	13.75	500.0	1000.0	325.0	H	152.0	21.1	9.8	0.0	11.4

(continuation of the "Final_Result" table from column 19 ...)

Frequency (MHz)	Raw Rec (dBμV)
22713.500	35.8
22713.500	48.6



8 Test Equipment and Ancillaries Used For Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
PASSIVE LOOP ANTENNA	ETS LINDGREN	6512	000164698	3 Years	09/05/2025
BILOG ANTENNA	A.H. SYSTEMS	BiLA2G	569	3 Years	09/08/2025
HORN ANTENNA	EMCO	3115	00035111	3 Years	09/04/2025
HORN ANTENNA	ETS LINDGREN	3117-PA	00167061	3 Years	09/04/2025
HORN ANTENNA	ETS LINDGREN	3116C-PA	00166821	3 Years	09/04/2025
ESW.EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW44	101715	3 Years	04/17/2024
DIGITAL THERMOMETER	Control Company	4410,90080-03	230712972	3 Years	10/18/2023
Signal Analyzer	R&S	FSV40	101022	3 Years	09/30/2025
Multimeter	Fluke	115	56090717MV	3 Years	09/25/2025
Software	EMC32	Version 10.50.40	-	-	-
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	1201.002K50-127068-mX	3 Years	10/02/2024
Notch Filter	MICRO-TRONICS	BRC50722	G051	-	-
Vector Signal Generator	ROHDE & SCHWARZ	SMW 200A	14120000K02-111326-gW	-	N/A
Signal Generator	ROHDE & SCHWARZ	SMF 100A	1167.0000K02-101833-NX	3 Years	09/27/2023
Spectrum Analyzer	ROHDE & SCHWARZ	FSU	200302	3 Years	01/25/2024
Switch	ROHDE & SCHWARZ	OSP 120	100083	3 Years	12/14/2023
Spectrum Analyzer	ROHDE & SCHWARZ	FSU	100189	3 Years	10/21/2024
RF Step Attenuator	ROHDE & SCHWARZ	RSP	100062	-	N/A
Temperature Chamber	TESTEQUITY	123H	230159	-	N/A
Digital Thermometer	Traceable	-	230713047	3 Years	10/18/2023
Software	WMS32	12.00.01	-	-	N/A

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.

9 Test setup photos

Setup photos are included in supporting file name:

"SMITH_064_25001_FCC15247_DTS_Setup_Photos"

10 Revision History

Date	Report name	Changes to report	Prepared by
2025-10-27	SMITH_064_25001_FCC15247_DTS	Initial version	Guangcheng Huang

<<< The End >>>