

# Report on the Testing of the

Motorola Solution Malaysia SDN BHD

Model Name APX 900 900MHz

Part Number H92WCH9PW7AN(PMUF1913A)



America

Add value.  
Inspire trust.

In accordance with:

FCC Part 90 Subpart I and ISED Canada RSS-119

Prepared for: Motorola Solution Malaysia Sdn Bhd  
Innoplex, PLOT 2A, Bayan Lepas  
Penang, Pulau Pinang 11900

## COMMERCIAL-IN-CONFIDENCE

Document Number: AT721012838.1V5

### SIGNATURE

| NAME                 | JOB TITLE                         | RESPONSIBLE FOR      | ISSUE DATE |
|----------------------|-----------------------------------|----------------------|------------|
| Thierry Jean-Charles | Team Lead<br>TUV SUD America Inc. | Authorized Signatory | 12/15/2025 |

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD America, Inc. document control rules.

FCC Accreditation Designation Number US1233  
FCC Test Site Registration Number 967699  
Innovation, Science, and Economic Development Canada Lab Code 23932

### EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with the standards listed above for the field strength of spurious radiation requirements as described in this document.



A2LA Cert. No. 2955.09

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# 1 Report Summary

## 1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

**Table 1.1-1 – Modification Record**

| Issue | Description of Change                                                                    | Date of Issue |
|-------|------------------------------------------------------------------------------------------|---------------|
| 0     | First Issue                                                                              | 9/4/2025      |
| 1     | Second Issue – Added Antenna information to Section 1.4.1                                | 9/5/2025      |
| 2     | Third Issue – Added product technical information Table 1.4.1-1                          | 9/12/2025     |
| 3     | Fourth Issue – Updated section 1.2 and added worst margin under test result summary      | 10/7/2025     |
| 4     | Fifth Issue – Added remark under Table 2.1.6-18 Test Results for Worst case margin.      | 12/2/2025     |
| 5     | Sixth Issue – Added remark for under each Spurious emission data table for section 2.1.6 | 12/15/2025    |

## 1.2 Introduction

The purpose of this report is to verify the compliance of the Motorola Solutions Malaysia Sdn Bhd model H92WCH9PW7AN, with a battery configuration having model number PMNN4493A, with Part 90 Subpart I of the FCC's Code of Federal Regulations and Innovation Science and Economic Development Canada's Radio Standards Specification RSS-119 for the tests documented herein.

|                                               |                                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Manufacturer                                  | Motorola Solutions INC. (Plantation)                                                                  |
| Manufacturer Address                          | Motorola Solutions INC. (Plantation), 8000 West Sunrise Blvd MD 41-128, USA Plantation FL 333222-9947 |
| Applicant                                     | Motorola Solutions Inc                                                                                |
| Applicant Address                             | Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia                         |
| Product Marketing Version (PMN)               | APX 900                                                                                               |
| Hardware Version Identification Number (HVIN) | H92WCH9PW7AN                                                                                          |
| Serial Number                                 | 837TBK2538                                                                                            |
| FCC ID                                        | AZ489FT7100                                                                                           |
| ISED Certification Number                     | 109U-89FT7100                                                                                         |
| Firmware Version Identification Number (FVIN) | R36.01.00                                                                                             |
| Number of Samples Tested                      | 1                                                                                                     |



|                               |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Specification/Issue/Date | US Code of Federal Regulation (CFR): Title 47, Part 90:Private Land Mobile Services - 2025<br>Innovation Science and Economic Development Canada<br>Radio Standards Specifications; RSS-119 - Land Mobile and Fixed Equipment Operating in the Frequency Range 27.41-960 MHz, Issue 12, May 28, 2015, Amendment 1(April 1, 2022), Amendment 2 (July 28, 2025).                                                              |
| Order Number                  | 721012838                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date of Receipt of EUT        | 07/28/2025                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Start of Test                 | 08/08/2025                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Finish of Test                | 08/28/2025                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Related Document(s)           | ANSI C63.26: American National Standard of Compliance Testing of Transmitters Used in Licensed Radio Services - December 2015<br>US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedure - 2025<br>ISED Canada Radio Standards Specification: RSS-GEN – General Requirements for Compliance of Radio Apparatus, Issue 5, Amendment 1 (March 2019), Amendment 2 (February 2021) |



### 1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC Part 90 Subpart I, and ISED Canada's RSS-119 is shown below.

**Table 1.3-1: Test Result Summary**

| Test Parameter                          | Test Plan (Yes/No) | Test Result | FCC Rule Part  | ISED Canada's RSS         | Worst Case Margin | Test Report Page No |
|-----------------------------------------|--------------------|-------------|----------------|---------------------------|-------------------|---------------------|
| RF Power Output                         | No                 | Not Tested  | 2.1046         | RSS-GEN 6.12              | -----             | -----               |
| Modulation Characteristics              | No                 | Not Tested  | 2.1047         | -----                     | -----             | -----               |
| Occupied Bandwidth (Emission Limits)    | No                 | Not Tested  | 2.1049         | RSS-GEN 6.7               | -----             | -----               |
| Spurious Emissions at Antenna Terminals | No                 | Not Tested  | 2.1051         | RSS-GEN 6.13              | -----             | -----               |
| Field Strength of Spurious Emissions    | Yes                | Pass        | 2.1053, 90.210 | RSS-GEN 6.13, RSS-119 5.8 | 17.4 dB           | 10                  |
| Frequency Stability                     | No                 | Not Tested  | 2.1055         | RSS-GEN 6.11              | -----             | -----               |

## 1.4 Product Information

### 1.4.1 Technical Description

The equipment under test was a licensed non-broadcast transmitter held to face operating in the band UHF 896 - 941 MHz using Analog, Digital C4FM and Phase II modulation.

A full description and detailed product specification details are available from the manufacturer.

**Table 1.4.1-1 – Product Technical Information**

| Detail                    | Description                        |
|---------------------------|------------------------------------|
| FCC ID                    | AZ489FT7100                        |
| ISED Certification Number | 109U-89FT7100                      |
| Model Name (PMN)          | APX 900                            |
| Sales Model Number (HVIN) | H92WCH9PW7AN                       |
| Serial Number of EUT      | 837TBK2538                         |
| FVIN Number               | R36.01.00                          |
| Codeplug Version          | R36.01.00                          |
| Frequency Range (MHz)     | TX: 896-928 MHz, RX: 935-941 MHz   |
| Test Mode                 | Analog, Digital C4FM and Phase II  |
| Emission Designator       | 11K0F3E, 8K10F1D, 8K10F1E, 8K10F1W |
| Power                     | Max: 3 W, Low: 1 W                 |
| Battery                   | PMNN4493A                          |
| Antenna                   | Antenna: NAF5088B                  |



**Figure 1.4.1-1 –Front view of the EUT**



**Figure 1.4.1-2 – Back view of the EUT**

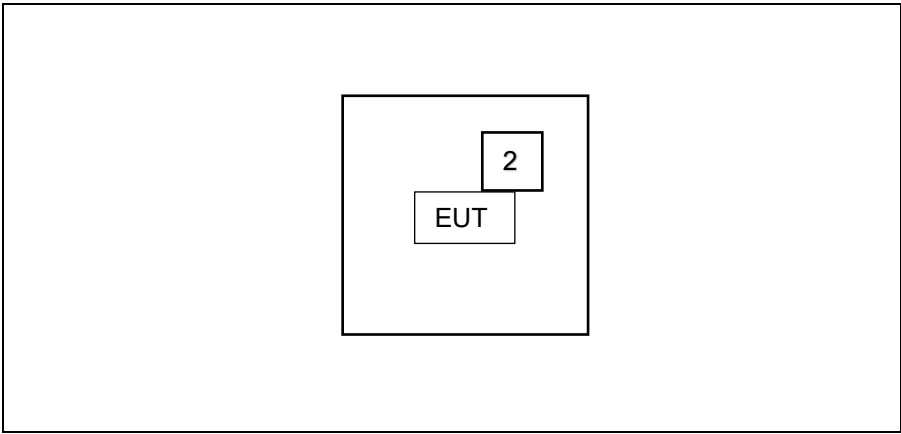


Figure 1.4.1-3 – Test Setup Block Diagram

Table 1.4.1-2: Support Equipment

| Item | Equipment Type    | Manufacturer | Model Number | Serial Number |
|------|-------------------|--------------|--------------|---------------|
| 1    | Battery           | Motorola     | PMNN4493A    | N/A           |
| 2    | 50-ohm Terminator | N/A          | N/A          | N/A           |
| 3    | Antenna           | Motorola     | NAF5088B     | N/A           |



#### 1.4.2 Modes of Operation

The radiated emissions were performed for the EUT operating at the maximum and minimum power where applicable. The EUT was terminated by a 50 Ohm matching load at the antenna connector during the evaluation.

The tested mode of operation and configuration during the assessment is listed below as declared by client.

| Configuration | Test Frequency (MHz) | TX Power | Channel Spacing (kHz) |
|---------------|----------------------|----------|-----------------------|
| 1             | 896.0125             | Max      | 12.5 (Analog)         |
| 2             | 896.0125             | Max      | 12.5 (Digital)        |
| 3             | 896.0125             | Max      | 12.5 (Phase II)       |
| 4             | 900.9875             | Max      | 12.5 (Analog)         |
| 5             | 900.9875             | Max      | 12.5 (Digital)        |
| 6             | 900.9875             | Max      | 12.5 (Phase II)       |
| 7             | 901.5                | Max      | 12.5 (Analog)         |
| 8             | 901.5                | Max      | 12.5 (Digital)        |
| 9             | 901.5                | Max      | 12.5 (Phase II)       |
| 10            | 935.0125             | Max      | 12.5 (Analog)         |
| 11            | 935.0125             | Max      | 12.5 (Digital)        |
| 12            | 935.0125             | Max      | 12.5 (Phase II)       |
| 13            | 939.9875             | Max      | 12.5 (Analog)         |
| 14            | 939.9875             | Max      | 12.5 (Digital)        |
| 15            | 939.9875             | Max      | 12.5 (Phase II)       |
| 16            | 940.5                | Max      | 12.5 (Analog)         |
| 17            | 940.5                | Max      | 12.5 (Digital)        |
| 18            | 940.5                | Max      | 12.5 (Phase II)       |

Max Power: 3 W

Low Power: 1 W

#### 1.4.3 Monitoring of Performance

The following performance attributes were monitored: Field Strength of Spurious Radiation of the Transmitter

#### 1.5 Deviations from the Standard

No deviations from the applicable test standard were made during testing.



## 1.6 EUT Modification Record

The table below details modifications made to the EUT during the test program. The modifications incorporated during each test are recorded on the appropriate test pages.

| Modification State | Description of Modification still fitted to EUT | Modification Fitted By | Date Modification Fitted |
|--------------------|-------------------------------------------------|------------------------|--------------------------|
| 0                  | Initial State                                   |                        |                          |

The equipment was tested as provided without any modifications.

## 1.7 Test Location

TÜV SÜD conducted the following tests at our Alpharetta, GA test laboratory.

| Test Name                            | Name of Engineer(s)                      | Accreditation |
|--------------------------------------|------------------------------------------|---------------|
| Battery Powered Operating            |                                          |               |
| Field Strength of Spurious Radiation | Bhagyashree Chaudhary / Jedsen Villacruz | A2LA          |

Office address:  
TÜV SÜD America  
5945 Cabot Parkway, Suite 100  
Alpharetta, GA 30005, USA



## 2 Test Details

### 2.1 Field Strength of Spurious Radiation

#### 2.1.1 Specification Reference

FCC Sections: 90.210  
ISED Canada RSS – 119 Sections 5.8

#### 2.1.2 Equipment Under Test and Modification State

No modifications were needed to comply to the test requirements.

#### 2.1.3 Date of Test

08/08/2025 – 08/28/2025

#### 2.1.4 Test Method

The equipment under test is placed in the Semi- Anechoic Chamber on a RF transparent table at the turntable center. For each spurious emission, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360° and the maximum reading on the spectrum analyzer is recorded. This was repeated for both horizontal and vertical polarizations of the receive antenna.

Radiated measurement was performed using the field strength measurement method as per ANSI C 63.26 5.5.4. For frequencies below 150 kHz, peak measurements were made using a resolution bandwidth RBW of CISPR 200 Hz and a video bandwidth VBW of 1 kHz and frequencies between 150 kHz and 30MHz, peak measurements were made using a resolution bandwidth RBW of CISPR 9 kHz and a video bandwidth VBW of 30 kHz. For frequencies between 30 MHz and 1000 MHz, peak measurements were made using a resolution bandwidth RBW of 100 kHz and a video bandwidth VBW of 300 kHz. For frequencies above 1000 MHz, peak measurements were made with RBW of 1 MHz and VBW of 3 MHz.

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least  $50 + 10 \log (P)$  dB. Which is equivalent to -20 dBm for 12.5kHz channel spacing.

Measurements up to 6 GHz were done using Tile7 (Version 7.7.2.4) automated software. Reported level is the actual level with all the correction factors factored in.

#### 2.1.5 Environmental Conditions

The EUT was evaluated within the temperature, humidity and pressure range of the EUT as specified by the standard. The laboratory shall have an ambient temperature range of 15°C to 35°C and relative humidity range of 30% to 60%.

|                     |         |
|---------------------|---------|
| Ambient Temperature | 22.3 °C |
| Relative Humidity   | 52.7 %  |



## 2.1.6 Test Results

**Test Summary:** EUT was set to transmit mode for all 18 configurations as mentioned in 1.4.2

**Test Results:** Pass

See data below for detailed results.

**Table 2.1.6-1: Field Strength of Spurious Emissions – Configuration 1**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 40.959          | -81.3              | -20         | 61.3**      | H                      |
| 129.179         | -77.3              | -20         | 57.3**      | H                      |
| 499.481         | -76.2              | -20         | 56.2**      | H                      |
| 1792.025        | -54.6              | -20         | 34.6*       | H                      |
| 3987.325        | -51                | -20         | 31**        | H                      |
| 9739.675        | -41.4              | -20         | 21.4**      | H                      |
| 131.44          | -77.5              | -20         | 57.5**      | V                      |
| 211.827         | -80                | -20         | 60**        | V                      |
| 649.999         | -72.1              | -20         | 52.1**      | V                      |
| 1792.025        | -44.6              | -20         | 24.6*       | V                      |
| 5639.8          | -49.4              | -20         | 29.4**      | V                      |
| 9399.775        | -41.6              | -20         | 21.6**      | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-2: Field Strength of Spurious Emissions – Configuration 2**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 65.844          | -84.1              | -20         | 64.1**      | H                      |
| 130.76          | -76.2              | -20         | 56.2**      | H                      |
| 558.482         | -75.4              | -20         | 55.4**      | H                      |
| 1880.225        | -54.3              | -20         | 34.3**      | H                      |
| 5639.7          | -49.4              | -20         | 29.4**      | H                      |
| 9399.9          | -41.3              | -20         | 21.3**      | H                      |
| 35.286          | -79                | -20         | 59**        | V                      |
| 131.437         | -75.9              | -20         | 55.9**      | V                      |
| 211.751         | -75                | -20         | 55**        | V                      |
| 1792.025        | -44.7              | -20         | 24.7*       | V                      |
| 5640            | -49                | -20         | 29**        | V                      |
| 9399.625        | -41.3              | -20         | 21.3**      | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-3: Field Strength of Spurious Emissions – Configuration 3**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 40.066          | -82.6              | -20         | 62.6**      | H                      |
| 130.563         | -76.2              | -20         | 56.2**      | H                      |
| 599.995         | -71.9              | -20         | 51.9**      | H                      |
| 2687.938        | -52.4              | -20         | 32.4*       | H                      |
| 3174.2          | -51.3              | -20         | 31.3**      | H                      |
| 7606.4          | -45.8              | -20         | 25.8**      | H                      |
| 129.936         | -78                | -20         | 58**        | V                      |
| 211.851         | -78.9              | -20         | 58.9**      | V                      |
| 599.995         | -72.8              | -20         | 52.8**      | V                      |
| 1792.025        | -45.4              | -20         | 25.4*       | V                      |
| 2433.89         | -51.3              | -20         | 31.3**      | V                      |
| 5375.875        | -49.6              | -20         | 29.6*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-4: Field Strength of Spurious Emissions – Configuration 4**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 131.459         | -75.5              | -20         | 55.5**      | H                      |
| 489.392         | -77                | -20         | 57**        | H                      |
| 671.921         | -74.5              | -20         | 54.5**      | H                      |
| 1801.975        | -53.3              | -20         | 33.3*       | H                      |
| 3415.45         | -51.1              | -20         | 31.1**      | H                      |
| 9883.65         | -41.9              | -20         | 21.9**      | H                      |
| 45.23           | -82.5              | -20         | 62.5**      | V                      |
| 131.75          | -80.9              | -20         | 60.9**      | V                      |
| 211.921         | -76.7              | -20         | 56.7**      | V                      |
| 1801.975        | -43.1              | -20         | 23.1*       | V                      |
| 2702.975        | -50.9              | -20         | 30.9*       | V                      |
| 9064.65         | -41.8              | -20         | 21.8**      | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-5: Field Strength of Spurious Emissions – Configuration 5**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 46.396          | -82.8              | -20         | 62.8**      | H                      |
| 130.246         | -76.1              | -20         | 56.1**      | H                      |
| 413.951         | -78.1              | -20         | 58.1**      | H                      |
| 2703.188        | -52.3              | -20         | 32.3*       | H                      |
| 5405.975        | -48.7              | -20         | 28.7*       | H                      |
| 9010.075        | -43.4              | -20         | 23.4*       | H                      |
| 131.023         | -74.9              | -20         | 54.9**      | V                      |
| 211.63          | -72                | -20         | 52**        | V                      |
| 557.752         | -75.4              | -20         | 55.4**      | V                      |
| 1801.975        | -42.1              | -20         | 22.1*       | V                      |
| 2437.425        | -50.5              | -20         | 30.5**      | V                      |
| 9069.115        | -42.3              | -20         | 22.3**      | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-6: Field Strength of Spurious Emissions – Configuration 6**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 35.965          | -80.1              | -20         | 60.1**      | H                      |
| 130.857         | -75.6              | -20         | 55.6**      | H                      |
| 823.242         | -74.9              | -20         | 54.9**      | H                      |
| 1801.8          | -54.1              | -20         | 34.1*       | H                      |
| 5405.675        | -48.6              | -20         | 28.6*       | H                      |
| 9624.475        | -41.1              | -20         | 21.1**      | H                      |
| 166.815         | -81                | -20         | 61**        | V                      |
| 212.044         | -78.5              | -20         | 58.5**      | V                      |
| 414.001         | -78.7              | -20         | 58.7**      | V                      |
| 1802.125        | -38                | -20         | 18*         | V                      |
| 5405.775        | -48.9              | -20         | 28.9*       | V                      |
| 9009.675        | -43.9              | -20         | 23.9*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-7: Field Strength of Spurious Emissions – Configuration 7**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 70.21           | -82.9              | -20         | 62.9**      | H                      |
| 132.216         | -75.9              | -20         | 55.9**      | H                      |
| 413.876         | -78.8              | -20         | 58.8**      | H                      |
| 1803.025        | -52.8              | -20         | 32.8*       | H                      |
| 5409            | -48.3              | -20         | 28.3*       | H                      |
| 9014.75         | -42.3              | -20         | 22.3*       | H                      |
| 116.139         | -77.7              | -20         | 57.7**      | V                      |
| 212.05          | -81.9              | -20         | 61.9**      | V                      |
| 413.976         | -78.2              | -20         | 58.2**      | V                      |
| 1803            | -40.3              | -20         | 20.3*       | V                      |
| 5408.75         | -48.7              | -20         | 28.7*       | V                      |
| 9015.025        | -43.4              | -20         | 23.4*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-8: Field Strength of Spurious Emissions – Configuration 8**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 33.904          | -78.3              | -20         | 58.3**      | H                      |
| 131.702         | -76.8              | -20         | 56.8**      | H                      |
| 413.876         | -78.6              | -20         | 58.6**      | H                      |
| 1803            | -53                | -20         | 33*         | H                      |
| 5408.925        | -48.7              | -20         | 28.7*       | H                      |
| 9015.15         | -42.8              | -20         | 22.8*       | H                      |
| 166.9           | -83.4              | -20         | 63.4**      | V                      |
| 218.226         | -77.3              | -20         | 57.3**      | V                      |
| 414.001         | -77.7              | -20         | 57.7**      | V                      |
| 1803            | -40.1              | -20         | 20.1*       | V                      |
| 5409.25         | -48.2              | -20         | 28.2*       | V                      |
| 9014.775        | -42.8              | -20         | 22.8*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-9: Field Strength of Spurious Emissions – Configuration 9**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 53.277          | -84.2              | -20         | 64.2**      | H                      |
| 129.208         | -76.3              | -20         | 56.3**      | H                      |
| 413.851         | -78.8              | -20         | 58.8**      | H                      |
| 1802.85         | -53.4              | -20         | 33.4*       | H                      |
| 3287.025        | -50.5              | -20         | 30.5**      | H                      |
| 9632.6          | -41.8              | -20         | 21.8**      | H                      |
| 131.368         | -75.8              | -20         | 55.8**      | V                      |
| 179.986         | -84                | -20         | 64**        | V                      |
| 212.116         | -81.2              | -20         | 61.2**      | V                      |
| 1803            | -39.2              | -20         | 19.2*       | V                      |
| 3009.2          | -52.1              | -20         | 32.1**      | V                      |
| 9015.075        | -43                | -20         | 23*         | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-10: Field Strength of Spurious Emissions – Configuration 10**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 130.564         | -75.7              | -20         | 55.7**      | H                      |
| 414.026         | -77.1              | -20         | 57.1**      | H                      |
| 862.894         | -72.7              | -20         | 52.7**      | H                      |
| 1870.025        | -52.2              | -20         | 32.2*       | H                      |
| 5610.2          | -48.7              | -20         | 28.7*       | H                      |
| 7480.1          | -39.6              | -20         | 19.6*       | H                      |
| 179.862         | -81.3              | -20         | 61.3**      | V                      |
| 212.114         | -84.6              | -20         | 64.6**      | V                      |
| 413.926         | -78.7              | -20         | 58.7**      | V                      |
| 1870.025        | -39.4              | -20         | 19.4*       | V                      |
| 2805.05         | -50.3              | -20         | 30.3*       | V                      |
| 7480.1          | -42.2              | -20         | 22.2*       | V                      |
| 9059.015        | -42.2              | -20         | 22.2**      | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-11: Field Strength of Spurious Emissions – Configuration 11**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 130.344         | -75.8              | -20         | 55.8**      | H                      |
| 260.982         | -81                | -20         | 61**        | H                      |
| 413.876         | -78.8              | -20         | 58.8**      | H                      |
| 1870.025        | -52.3              | -20         | 32.3*       | H                      |
| 5639.9          | -48.1              | -20         | 28.1**      | H                      |
| 7480.1          | -38.8              | -20         | 18.8*       | H                      |
| 130.516         | -78.7              | -20         | 58.7**      | V                      |
| 211.921         | -78                | -20         | 58**        | V                      |
| 413.826         | -79.1              | -20         | 59.1**      | V                      |
| 1870.025        | -39.4              | -20         | 19.4*       | V                      |
| 5639.9          | -48.4              | -20         | 28.4**      | V                      |
| 7480.1          | -42.3              | -20         | 22.3*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-12: Field Strength of Spurious Emissions – Configuration 12**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 45.959          | -82.3              | -20         | 62.3**      | H                      |
| 132.018         | -75.6              | -20         | 55.6**      | H                      |
| 413.826         | -78.5              | -20         | 58.5**      | H                      |
| 1869.675        | -52.8              | -20         | 32.8*       | H                      |
| 3351.85         | -50.5              | -20         | 30.5**      | H                      |
| 7480.1          | -40                | -20         | 20*         | H                      |
| 131.562         | -76.6              | -20         | 56.6**      | V                      |
| 212.141         | -76.7              | -20         | 56.7**      | V                      |
| 413.901         | -78.2              | -20         | 58.2**      | V                      |
| 1870            | -39                | -20         | 19*         | V                      |
| 2805.025        | -50.2              | -20         | 30.2*       | V                      |
| 7480.125        | -42.7              | -20         | 22.7*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-13: Field Strength of Spurious Emissions – Configuration 13**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 132.768         | -75.3              | -20         | 55.3**      | H                      |
| 212.964         | -84.7              | -20         | 64.7**      | H                      |
| 413.851         | -78.6              | -20         | 58.6**      | H                      |
| 2286.825        | -53.3              | -20         | 33.3**      | H                      |
| 5639.8          | -48.2              | -20         | 28.2*       | H                      |
| 7519.9          | -37.7              | -20         | 17.7*       | H                      |
| 131.703         | -76.2              | -20         | 56.2**      | V                      |
| 218.252         | -77.8              | -20         | 57.8**      | V                      |
| 562.217         | -75.8              | -20         | 55.8**      | V                      |
| 1879.975        | -42.4              | -20         | 22.4*       | V                      |
| 5640.15         | -48.9              | -20         | 28.9*       | V                      |
| 7519.9          | -41.4              | -20         | 21.4*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-14: Field Strength of Spurious Emissions – Configuration 14**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 131.853         | -76.1              | -20         | 56.1**      | H                      |
| 211.63          | -79.8              | -20         | 59.8**      | H                      |
| 585.764         | -76.1              | -20         | 56.1**      | H                      |
| 1879.975        | -55.6              | -20         | 35.6*       | H                      |
| 5640.075        | -49.1              | -20         | 29.1*       | H                      |
| 7519.9          | -38.3              | -20         | 18.3*       | H                      |
| 131.756         | -76.7              | -20         | 56.7**      | V                      |
| 218.254         | -77.1              | -20         | 57.1**      | V                      |
| 413.976         | -78.3              | -20         | 58.3**      | V                      |
| 1879.975        | -45.2              | -20         | 25.2*       | V                      |
| 5639.95         | -49.2              | -20         | 29.2*       | V                      |
| 7519.925        | -41.2              | -20         | 21.2*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-15: Field Strength of Spurious Emissions – Configuration 15**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 136.847         | -76                | -20         | 56**        | H                      |
| 211.925         | -85.3              | -20         | 65.3**      | H                      |
| 823.699         | -74.8              | -20         | 54.8**      | H                      |
| 2820.163        | -51.9              | -20         | 31.9*       | H                      |
| 5640.1          | -49.1              | -20         | 29.1*       | H                      |
| 7519.9          | -38                | -20         | 18*         | H                      |
| 131.488         | -76.3              | -20         | 56.3**      | V                      |
| 211.901         | -81.5              | -20         | 61.5**      | V                      |
| 413.926         | -78.4              | -20         | 58.4**      | V                      |
| 1879.975        | -44.5              | -20         | 24.5*       | V                      |
| 5640.125        | -48.8              | -20         | 28.8*       | V                      |
| 7519.9          | -41.6              | -20         | 21.6*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-16: Field Strength of Spurious Emissions – Configuration 16**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 74.084          | -84.2              | -20         | 64.2**      | H                      |
| 130.807         | -76.1              | -20         | 56.1**      | H                      |
| 211.921         | -84                | -20         | 64**        | H                      |
| 414.001         | -77.7              | -20         | 57.7**      | H                      |
| 1227.15         | -57.9              | -20         | 37.9**      | H                      |
| 5643.1          | -48.7              | -20         | 28.7*       | H                      |
| 7524            | -37.6              | -20         | 17.6*       | H                      |
| 130.711         | -76.2              | -20         | 56.2**      | V                      |
| 211.823         | -83                | -20         | 63**        | V                      |
| 413.951         | -78.7              | -20         | 58.7**      | V                      |
| 636.323         | -76.1              | -20         | 56.1**      | V                      |
| 1880.9          | -45.6              | -20         | 25.6*       | V                      |
| 5642.875        | -49                | -20         | 29*         | V                      |
| 7524            | -42.3              | -20         | 22.3*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-17: Field Strength of Spurious Emissions – Configuration 17**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 132.506         | -76.4              | -20         | 56.4**      | H                      |
| 211.678         | -83.7              | -20         | 63.7**      | H                      |
| 261.2           | -80.4              | -20         | 60.4**      | H                      |
| 413.876         | -78.8              | -20         | 58.8**      | H                      |
| 2821.5          | -53.2              | -20         | 33.2*       | H                      |
| 5642.95         | -48.9              | -20         | 28.9*       | H                      |
| 9404.9          | -41.9              | -20         | 21.9*       | H                      |
| 130.295         | -76.6              | -20         | 56.6**      | V                      |
| 211.726         | -78                | -20         | 58**        | V                      |
| 573.348         | -74.4              | -20         | 54.4**      | V                      |
| 1880.9          | -44.6              | -20         | 24.6*       | V                      |
| 5643.1          | -48.6              | -20         | 28.6*       | V                      |
| 7524            | -41.7              | -20         | 21.7*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

**Table 2.1.6-18: Field Strength of Spurious Emissions – Configuration 18**

| Frequency (MHz) | Spurious ERP (dBm) | Limit (dBm) | Margin (dB) | Antenna Polarity (H/V) |
|-----------------|--------------------|-------------|-------------|------------------------|
| 131.853         | -76.6              | -20         | 56.6**      | H                      |
| 213.161         | -85.6              | -20         | 65.6**      | H                      |
| 414.026         | -77.4              | -20         | 57.4**      | H                      |
| 2821.45         | -52.5              | -20         | 32.5*       | H                      |
| 5643.025        | -48.4              | -20         | 28.4*       | H                      |
| 7524            | -37.4              | -20         | 17.4***     | H                      |
| 131.875         | -76.6              | -20         | 56.6**      | V                      |
| 211.8           | -77.7              | -20         | 57.7**      | V                      |
| 413.851         | -78                | -20         | 58**        | V                      |
| 1880.9          | -43.8              | -20         | 23.8*       | V                      |
| 5642.775        | -47.9              | -20         | 27.9*       | V                      |
| 7524            | -40.8              | -20         | 20.8*       | V                      |

Remark: \* Indicates the emission is the harmonic frequency of the fundamental frequency.

\*\* Indicates the emission is the unintentional emission and not related to the fundamental frequency.

\*\*\* Indicates the worst-case margin 17.4 dB is observed on 8<sup>th</sup> harmonic of the fundamental frequency.

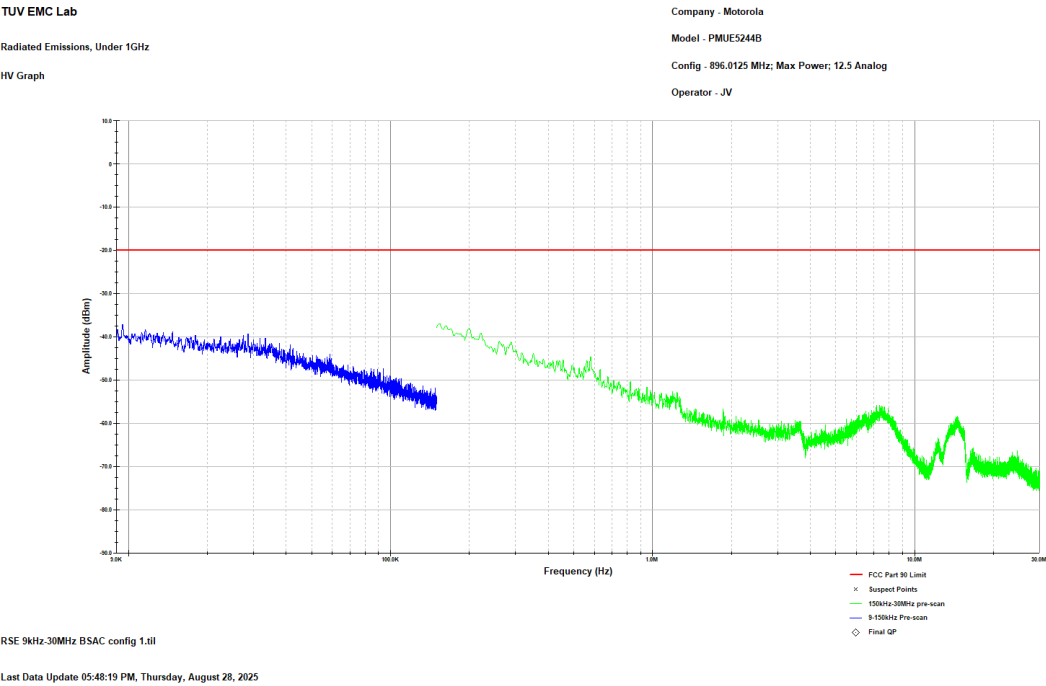


Figure 2.1.6-1: Reference plot for Field Strength of Spurious Emissions – 9 kHz – 30 MHz – Configuration 1

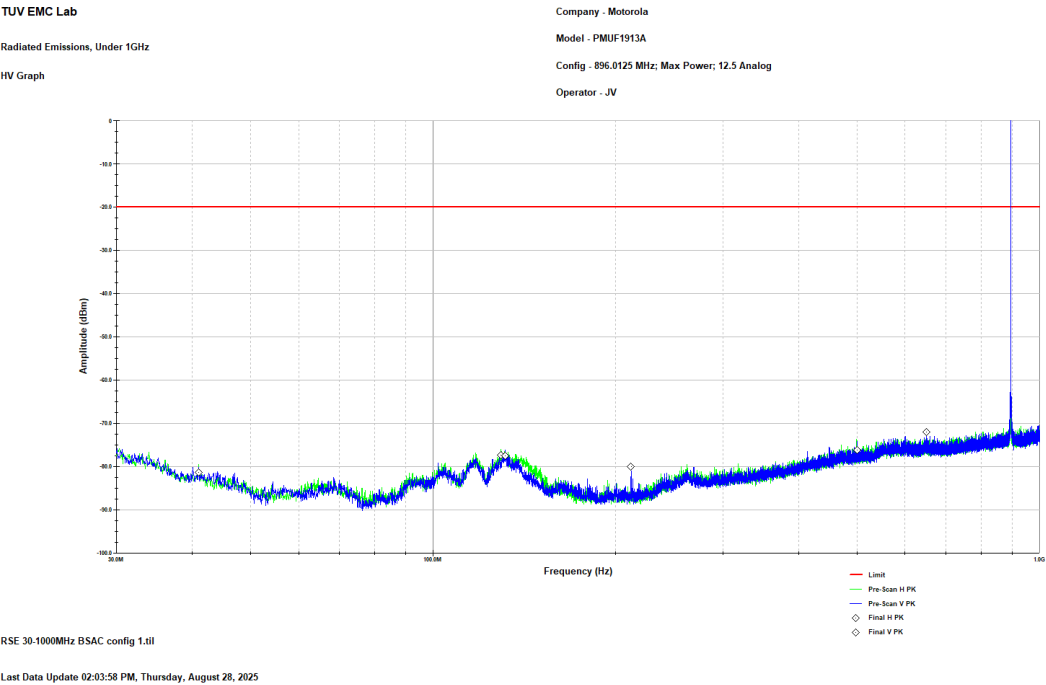


Figure 2.1.6-2: Reference plot for Field Strength of Spurious Emissions – 30 MHz – 1 GHz - Configuration 1

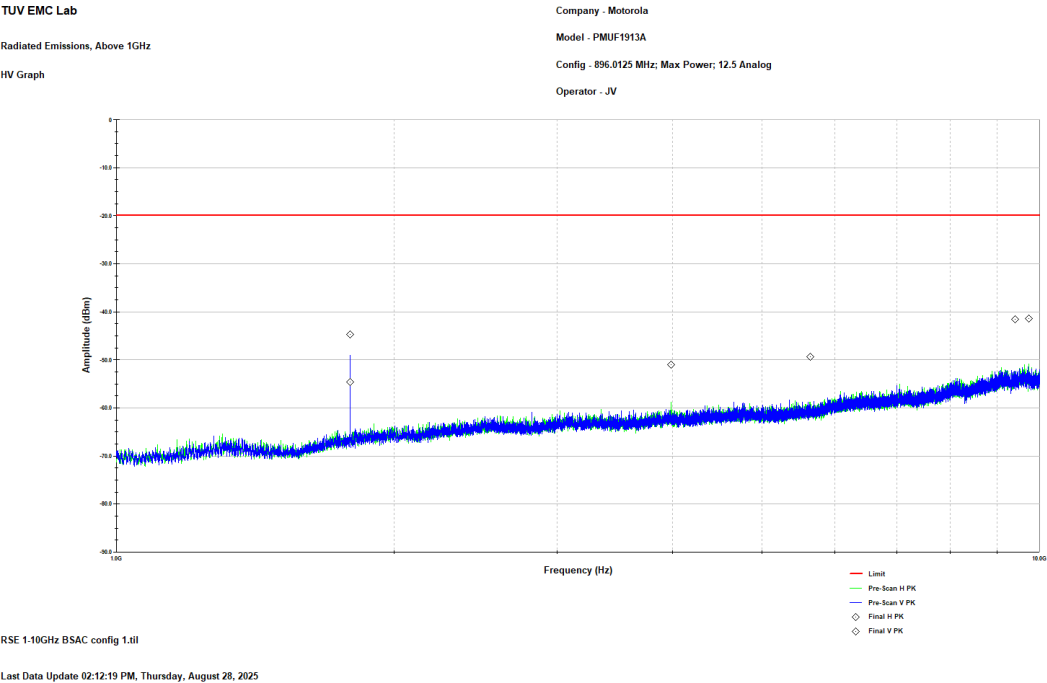


Figure 2.1.6-3: Reference plot for Field Strength of Spurious Emissions – 1 GHz – 10 GHz - Configuration 1



## 2.2 Test Equipment Used

**Table 2.2-1 –Equipment List**

| Asset ID      | Manufacturer                | Model                | Equipment Type                     | Serial Number | Last Calibration Date | Calibration Due Date |
|---------------|-----------------------------|----------------------|------------------------------------|---------------|-----------------------|----------------------|
| 628           | EMCO                        | 6502                 | Active Loop Antenna<br>10kHz-30MHz | 10160004      | 06/20/2023            | 12/20/2025           |
| AEMC0085<br>2 | Teseq                       | CBL6112D             | BiLog Antenna                      | 51617         | 11/14/2024            | 11/14/2026           |
| AEMC0884      | ETS Lindgren<br>(EMCO)      | 3117                 | DOUBLE-RIDGED<br>GUIDE ANTENNA     | 240106        | 5/22/2025             | 5/22/2027            |
| AEMC0889      | Com Power                   | PAM 103              | Pre-amplifier                      | 18020215      | 09/30/2024            | 09/30/2025           |
| AEMC0033<br>8 | Hewlett Packard             | 8449B                | High Frequency Pre-Amp             | 3008A01111    | 06/18/2024            | 06/18/2026           |
| AEMC0088<br>2 | Rohde & Schwarz             | ESW44                | ESW44 EMI TEST<br>RECEIVER         | 101961        | 6/10/2025             | 6/10/2026            |
| AEMC0020      | Teledyne Storm<br>Microwave | 90-195-456           | BSAC Cable                         | N/A           | 07/15/2025            | 07/15/2026           |
| AEMC0021      | Teledyne Storm<br>Microwave | R-90-195-036         | BSAC Cable                         | N/A           | 07/15/2025            | 07/15/2026           |
| AEMC0022<br>6 | Teledyne Storm<br>Microwave | R-90-195-072         | BSAC Cable                         | N/A           | 07/15/2025            | 07/15/2026           |
| AEMC3144      | ETS Lindgren                | USB Key MD<br>800608 | Tile! Software Key                 | 00232063      | NCR                   | NCR                  |

**N/A – Not Applicable**

**NCR – No Calibration Required**

### 3 Diagram of Test Set-ups

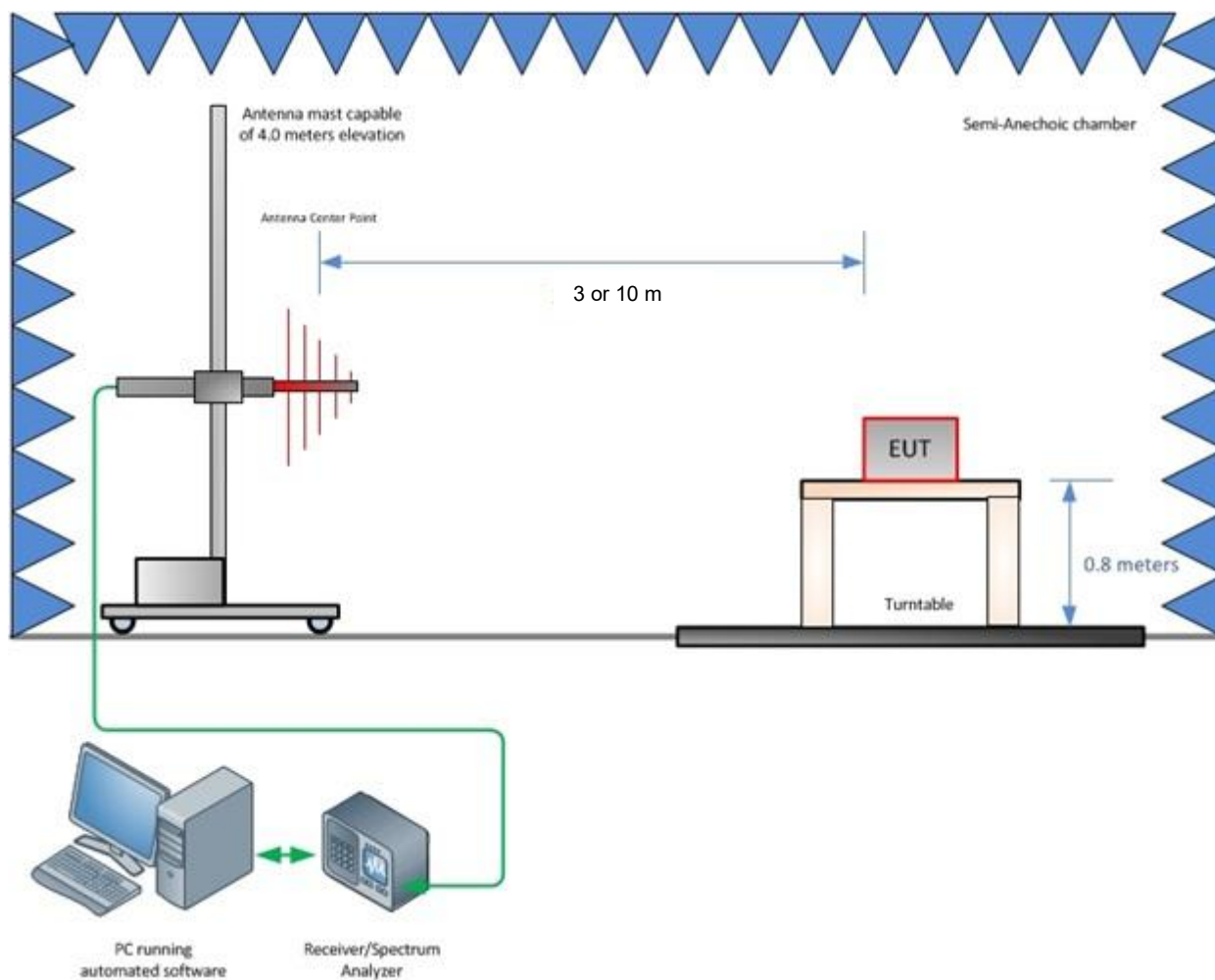


Figure 3-1 – Radiated Emissions Test Setup up to 1 GHz

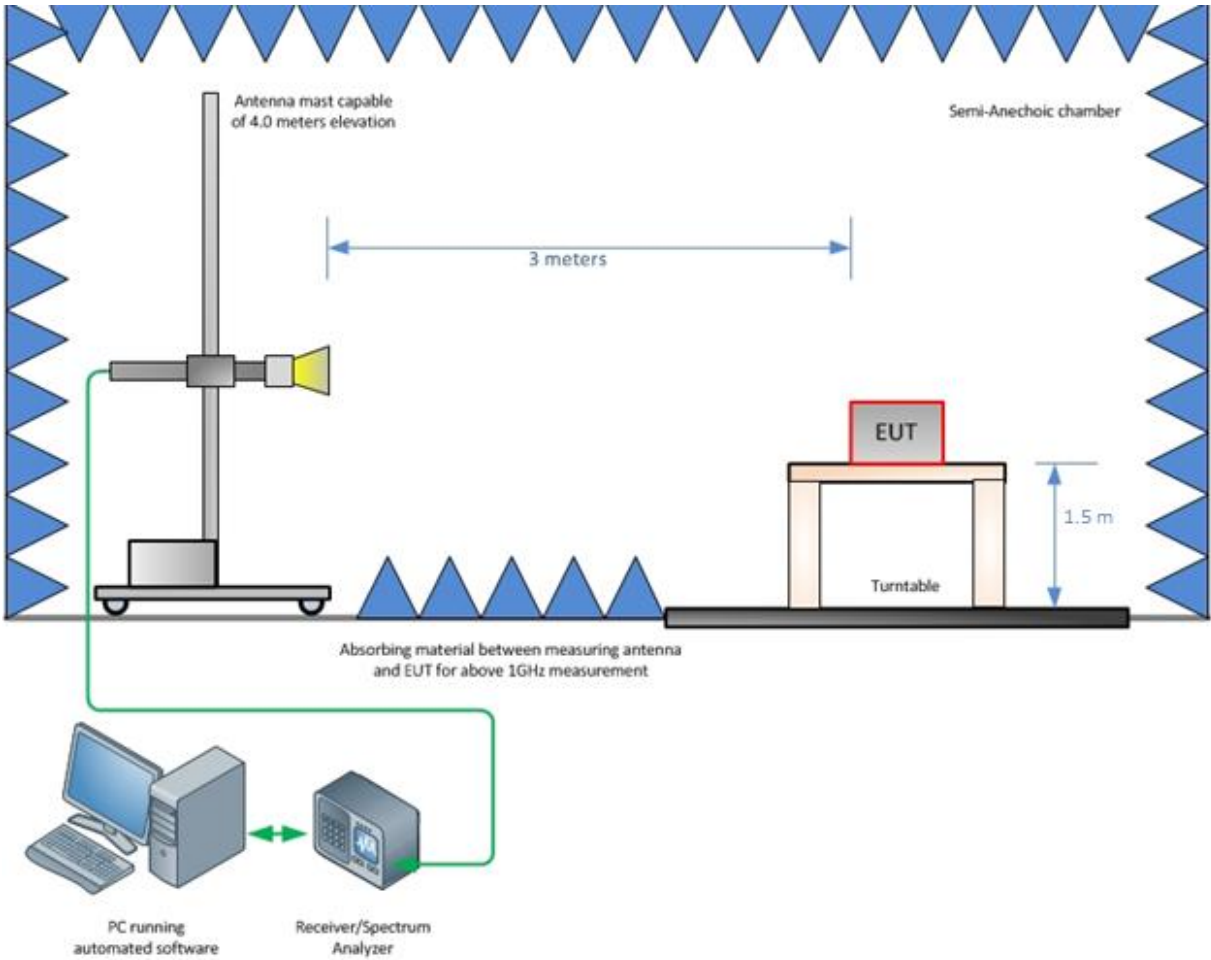


Figure 3-2 – Radiated Emissions Test Setup above 1 GHz



## 4 Accreditation, Disclaimers and Copyright

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### STATEMENT OF MEASUREMENT UNCERTAINTY – Emissions

The expanded laboratory measurement uncertainty figures ( $U_{\text{Lab}}$ ) provided below correspond to an expansion factor (coverage factor)  $k = 1.96$  which provide confidence levels of 95%.

**Table 4-1: Estimation of Measurement Uncertainty**

| Parameter                       | $U_{\text{lab}}$           |
|---------------------------------|----------------------------|
| Radiated Emissions $\leq 1$ GHz | $\pm 5.72$ dB              |
| Radiated Emissions $> 1$ GHz    | $\pm 4.02$ dB              |
| Temperature                     | $\pm 0.860$ °C             |
| Radio Frequency                 | $\pm 2.832 \times 10^{-8}$ |

### TEST EQUIPMENT

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated to meet test method standard requirements and/or manufacturer's specifications.



## END REPORT