

# EMC TEST REPORT

APPLICANT

**NPi Electronics Corporation**

MODEL NAME

**SUPER ANTENNA SUPER-MP**

FCC ID

**2BG9ISUPER-MP**

REPORT NUMBER

**HA2508-0219-E01**

# TEST REPORT

**Date of Issue**  
September 25, 2025

**Test Site**  
HCT America, Inc.

**Applicant** NPI Electronics Corporation

**Applicant Address** 3 East Third Ave., Suite 2 – Lumenari Spaces, San Mateo, CA 94401

**Model Name** SUPER ANTENNA SUPER-MP

**Date of Test** August 29, 2025

**Test Standard(s)** FCC CFR 47 Part 15 Subpart B  
ICES-003 Issue 7  
ANSI C63.4-2014

**Class Type** Class B

**Test Result** Refer to the present document.

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014. (See Test Report if any modifications were made for compliance) The results of testing in this report apply only to the product which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT America, Inc. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

**Tested By**



James Choi

Test Engineer

**Reviewed By**



Sunwoo Kim

Technical Manager

## REVISION HISTORY

*The revision history for this document is shown in table.*

Test Report No.	Issue Date	Description
HA2508-0219-E01	09/25/2025	Original Issue

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## 1. Test Information of EUT

### 1.1. General Information of EUT

<b>Base Model Name</b>	SUPER ANTENNA
<b>Series Model Name</b>	SUPER ANTENNA MP1D Series, SUPER ANTENNA MP1L Series
<b>Product Name</b>	SUPER-MP
<b>Product Type</b>	Antenna
<b>Manufacturer</b>	SUPER ANTENNA
<b>FCC ID</b>	2BG9ISUPER-MP

### 1.2. Product Specification

Item	Specification
<b>Max. Clock Frequency</b>	990.0 kHz
<b>Dimensions</b>	Approx. 370 cm <sup>a</sup>
<b>High Frequency Range</b>	3.5 – 54 MHz
<b>Very High Frequency Range</b>	144 – 148 MHz
<b>Fittings</b>	3/8" – 24 thread, SO-239

a) Adjustable up to 370 cm high. The EUT has multiple modules each with varying height and possible orientation.

### 1.3. System Configuration

EUT is composed of 4 modules connected to each other via a radio cable.

Module #1 – MP1LX, MP1LXMAX, MP1LX80			
Type	Model	Manufacturer	Quantity
Visual Frequency Indicator	MP1-VFI	SUPER ANTENNA	1
All Band HF-VHF Antenna	MP1C	SUPER ANTENNA	1
VHF Band Diplexer	MC2	SUPER ANTENNA	1
Adapter	MC60	SUPER ANTENNA	1
Adapter	MC80	SUPER ANTENNA	1
Stealth Antenna Wire	MS135	SUPER ANTENNA	1
Radio Antenna	MR1710	SUPER ANTENNA	1
Radio Antenna	MR3017	SUPER ANTENNA	1
Radio Antenna	MR4010	SUPER ANTENNA	1
Radio Antenna	MR6060	SUPER ANTENNA	1
Radio Antenna	MR8075	SUPER ANTENNA	1
Ruggedized Antenna Whip	SW1	SUPER ANTENNA	1
Extension Rod	ER2	SUPER ANTENNA	1
Large Tripod	TM4	SUPER ANTENNA	1
Adapter for Large Tripod	UM3	SUPER ANTENNA	1
Connecting Cable	MR3	SUPER ANTENNA	1

Module #2 – MP1DXMAX			
Type	Model	Manufacturer	Quantity
Visual Frequency Indicator	MP1-VFI	SUPER ANTENNA	1
VHF Radio Antenna	MR642	SUPER ANTENNA	1
Scanner Antenna with Tripod	SR1	SUPER ANTENNA	1
Telescopic Antenna	TW1	SUPER ANTENNA	1
Connecting Cable	MR3	SUPER ANTENNA	2
Low Profile Antenna Tripod	TM1	SUPER ANTENNA	1

Module #3 – MP1DXTR80			
Type	Model	Manufacturer	Quantity
Visual Frequency Indicator	MP1-VFI	SUPER ANTENNA	1
Adapter	MC11	SUPER ANTENNA	1
Radio Antenna	MR11	SUPER ANTENNA	1
Scanner Antenna with Tripod	SR1	SUPER ANTENNA	1
Portable RF Ground Spike	GP3	SUPER ANTENNA	1
Telescopic Antenna	TW1	SUPER ANTENNA	1
Low Profile Antenna Tripod	TM1	SUPER ANTENNA	1
Connecting Cable	MR3	SUPER ANTENNA	2

Module #4 – MP1DXG			
Type	Model	Manufacturer	Quantity
Visual Frequency Indicator	MP1-VFI	SUPER ANTENNA	1
Portable RF Ground Spike	GP3	SUPER ANTENNA	1
Telescopic Antenna	TW1	SUPER ANTENNA	1
Ground Mounting Spike	SP3	SUPER ANTENNA	1
Low Profile Antenna Tripod	TM1	SUPER ANTENNA	1
Connecting Cable	MR3	SUPER ANTENNA	2
Universal Portable Mount + NVIS	UM2	SUPER ANTENNA	1

## 2. Configuration and Connections with the EUT

### 2.1. EUT and Ancillary Equipment

Equipment Type	Model	Serial Number	Manufacturer
EUT	SUPER ANTENNA SUPER-MP	-	SUPER ANTENNA

### 2.2. Test Ports

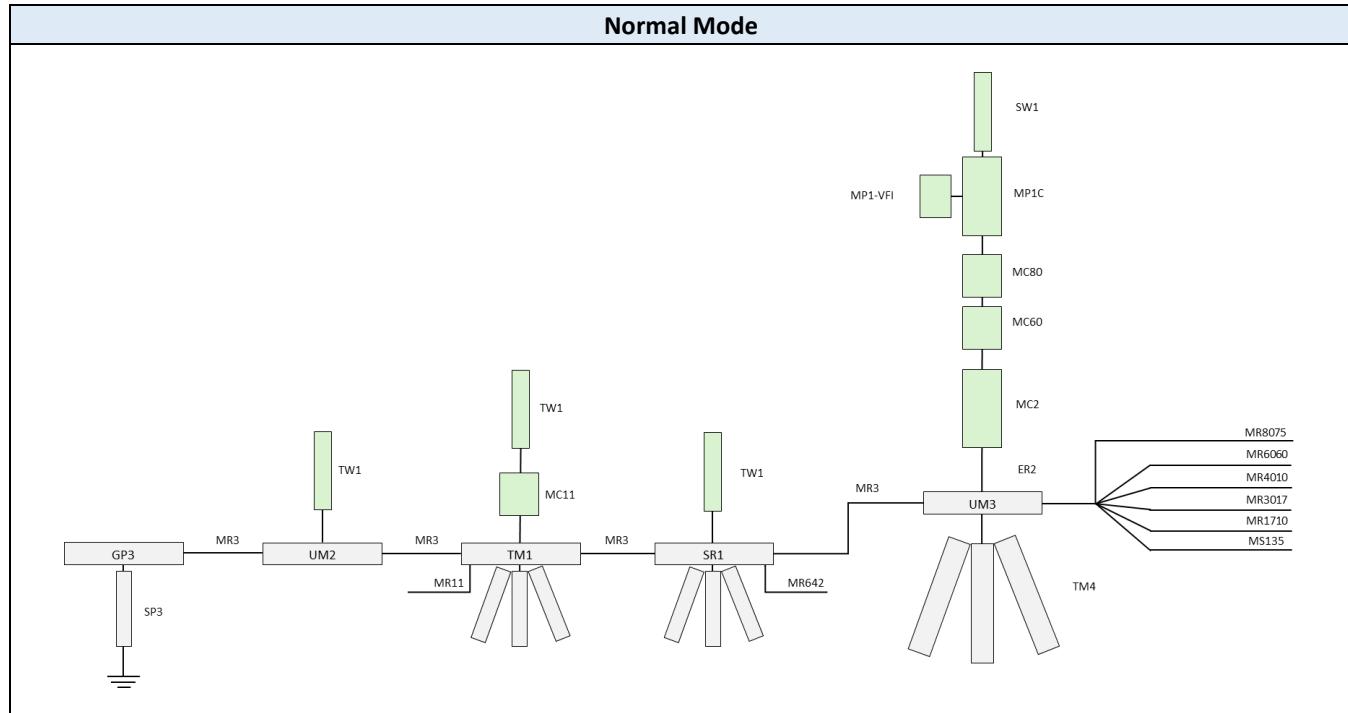
Start Connection		End Connection		Cable		Quantity
Equipment	I/O Port	Equipment	I/O Port	Length (m)	Shielding Condition	
EUT	-	-	-	-	-	-

### 2.3. EUT Operating Mode(s)

#### Normal Mode

Modules #1 - #4 were spread out and extended to simulate actual working conditions. The Visual Frequency Indicator was attached directly to the MP1 Coil. The battery powered, Visual Frequency Indicator was turned on for the whole duration of the test.

### 2.4. Connection Diagram of the EUT and Ancillary Equipment



### 3. Test Facilities and Accreditations

#### 3.1. Test Laboratory

<b>Company Name</b>	HCT America, Inc.
<b>CEO</b>	Sunwoo Kim
<b>Address</b>	840 Yosemite Way, Milpitas, CA 95035 USA
<b>Telephone</b>	+1 510-933-8848
<b>Fax</b>	+1 510-933-8849

#### 3.2. Test Facility

<b>3 m Semi-Anechoic Chamber Main Address</b>	840 Yosemite Way, Milpitas, CA 95035 USA
<b>10 m Open Site Satellite Address</b>	1177 Comstock Road, Hollister, CA 95023 USA

Measurement facilities are constructed in conformance with the requirements of ANSI C63.4-2014. The normalized site attenuations (30 MHz to 1 GHz) and site validation (1 GHz to 18 GHz) were performed in accordance with the standard in ANSI C63.4-2014.

<b>Measurement Facilities</b>	<b>Test Facility</b>	
Radiated Field Strength Measurement Facility 3 m Semi-Anechoic Chamber	Chamber A	Chamber B
	Chamber C	Chamber D
Radiated Field Strength Measurement Facility 10 m Open Site	OATS	

#### 3.3. Instrument Calibration

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturers recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

All antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

### 3.4. Accreditation Certificate

**HCT AMERICA, INC.**

Milpitas, CA

for technical competence in the field of

**Electrical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This laboratory also meets the A2LA – R256 – Specific Requirements. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

Presented this 17<sup>th</sup> day of July 2023.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 4201.01  
Valid to October 31, 2025  
Revised September 17, 2025

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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## 4. References of Test

### 4.1. Test Standard

FCC CFR 47 Part 15 Subpart B  
ICES-003 Issue 7

### 4.2. Test Method

FCC CFR 47 Part 15 Subpart B  
ICES-003 Issue 7  
ANSI C63.4-2014

### 4.3. Additional Deviations and Exclusions from Standards

No additions, deviations, or exclusions have been made from standards and/or accreditations.

## 5. Test Rationale

### 5.1. Test Limits Guideline

#### 5.1.1. FCC CFR 47 Part 15 Subpart B

Conducted Emissions Limits AC Mains Power Port				
Frequency Range (MHz)	Class A		Class B	
	Average (dB $\mu$ V)	Quasi-Peak (dB $\mu$ V)	Average (dB $\mu$ V)	Quasi-Peak (dB $\mu$ V)
0.15 – 0.5	66	79	56 to 46 <sup>1</sup>	66 to 56 <sup>1</sup>
0.5 – 5	60	73	46	56
5 – 30	60	73	50	60

Note 1: The limit level in dB $\mu$ V decreases linearly with the logarithm of the frequency.

Radiated Emissions Limits 30 MHz to 1 GHz					
Frequency Range (MHz)	Measurement Distance (m)	Class A		Class B	
		Quasi-Peak		Quasi-Peak	
		$\mu$ V/m	dB $\mu$ V/m	$\mu$ V/m	dB $\mu$ V/m
30 – 88	3	300	49.5	100	40
88 – 216		500	54	150	43.5
216 – 960		700	56.9	200	46
960 – 1 000		1 000	60	500	54
30 – 88	10	90	39	30	29.5
88 – 216		150	43.5	45	33
216 – 960		210	46.4	60	35.5
960 – 1 000		300	49.5	150	43.5

Radiated Emissions Limits 1 GHz to 40 GHz						
Frequency Range (MHz)	Measurement Distance (m)	Class A			Class B	
		Average		Peak	Average	
		$\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	$\mu$ V/m	dB $\mu$ V/m
1 000 – 40 000	3	1 000	60	80	500	54
						74

### 5.1.2. ICES-003 Issue 7

ICES-003 Issue 7 test limits for conducted and radiated emissions are equivalent to FCC CFR 47 Part 15 Subpart B test limits, except for as listed in the table below.

Radiated Emissions Limits 30 MHz to 1 GHz			
Frequency Range (MHz)	Measurement Distance (m)	Class A	Class B
		Quasi-Peak (dB $\mu$ V/m)	Quasi-Peak (dB $\mu$ V/m)
30 – 88	3	50	40
88 – 216		54	43.5
216 – 230		56.9	46
230 – 960		57	47
960 – 1 000		60	54
30 – 88	10	40	30
88 – 216		43.5	33.1
216 – 230		46.4	35.6
230 – 960		47	37
960 – 1 000		49.5	43.5

### 5.2. Frequency Range of Radiated Measurements

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a Radiated Emission limit is specified, up to the frequency shown in the following table.  $F_x$  is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.

Highest Internal Frequency, $F_x$ (MHz)	Upper Frequency of Measurement Range (MHz)
$F_x \leq 108$	1 000
$108 < F_x \leq 500$	2 000
$500 < F_x \leq 1 000$	5 000
$F_x > 1 000$	5 $\times$ $F_x$ or 40 GHz, whichever is lower

### 5.3. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014.

All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the  $U_{\text{CISPR}}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Emission (0.15 MHz to 30 MHz)	2.55 dB ( $k = 2$ )
Radiated Emissions (30 MHz to 1 GHz)	4.73 dB ( $k = 2$ )
Radiated Emissions (1 GHz to 18 GHz)	5.21 dB ( $k = 2$ )
Radiated Emissions (18 GHz to 40 GHz)	5.18 dB ( $k = 2$ )

## 6. Test Summary

The results in this report apply only to sample tested:

Test Date	Phenomena	Limit Value / Performance Criteria	Test Result	Test Method
08/29/2025	Radiated Emission (30 MHz to 1 GHz)	See test data	Pass	ANSI C63.4-2014

Note: Due to FCC Part 15.107 Conducted Emissions are not required for battery operated devices.

## 7. Test Equipment

Radiated Emissions (30 MHz to 1 GHz)					
Type	Manufacturer	Model	Serial #	Cal Cycle	Cal Due Date
EMI Test Receiver	Rohde & Schwarz	ESW44	103177	1 year	03/05/2026
Hybrid Antenna	Sunol	JB1	A061416	2 years	05/07/2027
Antenna Mast	Incco System	MA4640-XP-ET	10130124	-	-
Turn Table	Incco System	-	5951023	-	-
Antenna Mast Controller	Incco System	CO3000	CO3000/1573/ 58720124/P	-	-
Turn Table Controller	Incco System	CO3000	CO3000/1573/ 58720124/P	-	-
Software	Rohde & Schwarz	ELEKTRA Version 5.11.1	-	-	-

## 8. EMC Test Results

### 8.1. Radiated Emission (30 MHz – 1 GHz)

#### 8.1.1. Test Environment

Test Site				
Chamber A <input type="checkbox"/>	Chamber B <input type="checkbox"/>	Chamber C <input type="checkbox"/>	Chamber D <input checked="" type="checkbox"/>	OATS <input type="checkbox"/>
CE Stage <input type="checkbox"/>		Harmonic/Flicker Stage <input type="checkbox"/>	Immunity Stage A <input type="checkbox"/>	Immunity Stage B <input type="checkbox"/>
<b>Date</b>		<b>Temperature</b>	<b>Relative Humidity</b>	<b>Pressure</b>
08/29/2025		26.6 °C	48 % R.H.	101.8 kPa

#### 8.1.2. Test Condition

Operating Mode(s)	Power Supply	Applicable Port
Normal Mode	-	Enclosure Port

#### 8.1.3. Test Method and Levels

The test method shall be in accordance with ANSI C63.4-2014.

The equipment shall meet the Class B limits given in FCC CFR 47 Part 15 Subpart B and ICES-003 Issue 7.

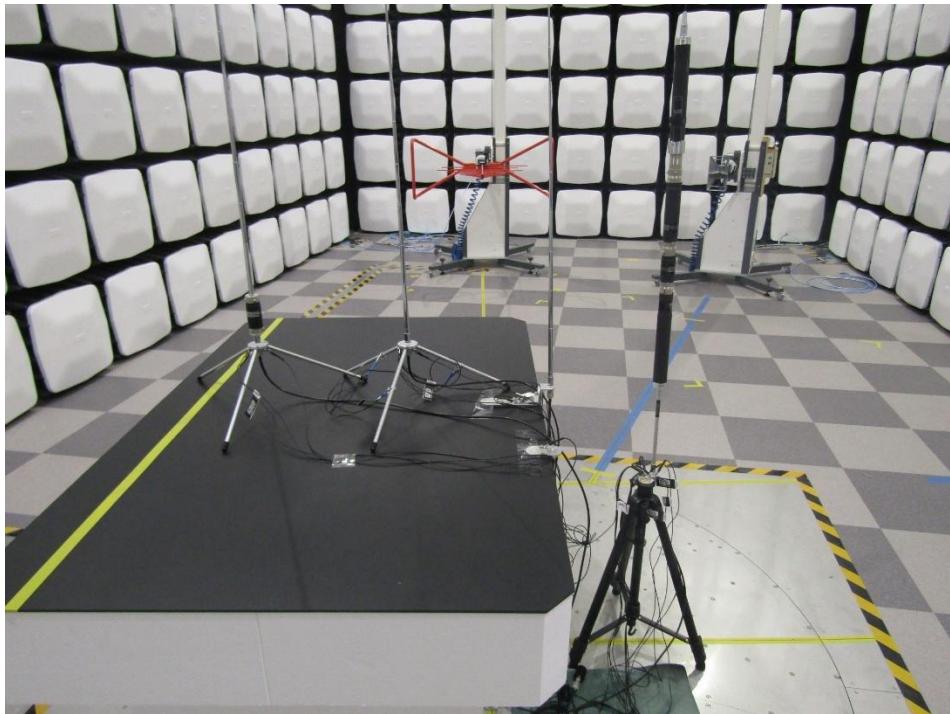
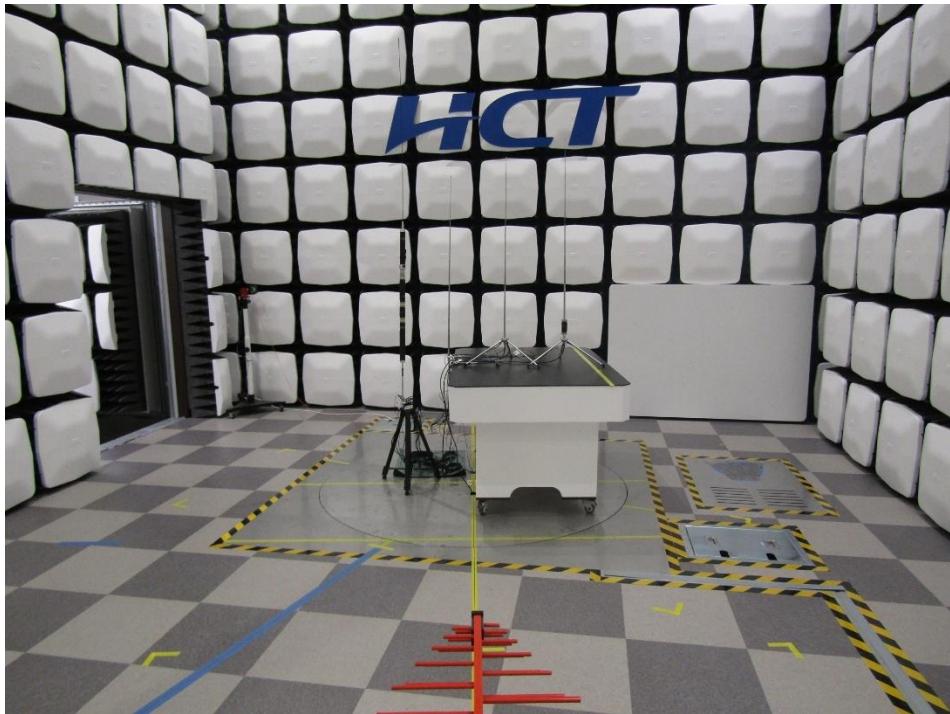
Obtained the max. emission point by optimizing the antenna height, antenna polarization, and turntable azimuth.

<b>Frequency Range</b>	30 MHz to 1 000 MHz
<b>Measurement Detector Type</b>	Quasi-Peak
<b>Measurement Bandwidth (IF BW)</b>	120 kHz
<b>Measurement Distance</b>	3 m

#### 8.1.4. Test Setup Photos

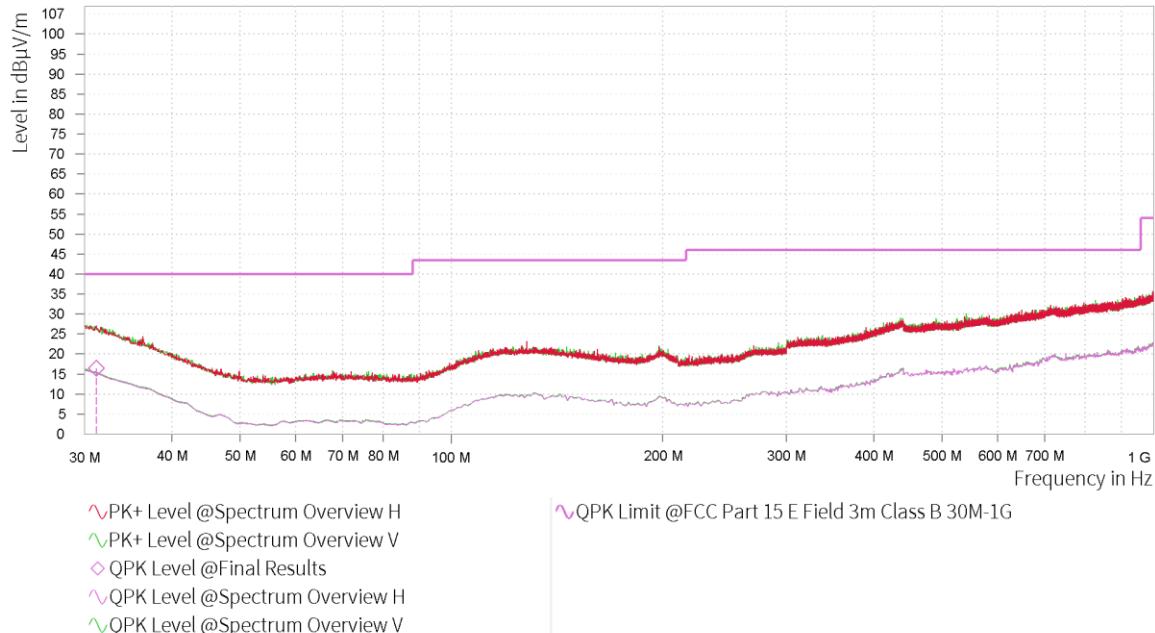
Normal Mode

[ 30 MHz – 1 000 MHz ]



### 8.1.5. Test Data

**Operating Mode:** Normal Mode  
**Power Supply:** -  
**Frequency Range:** 30 MHz – 1 000 MHz  
**Test Limit:** FCC Part 15 Subpart B Class B

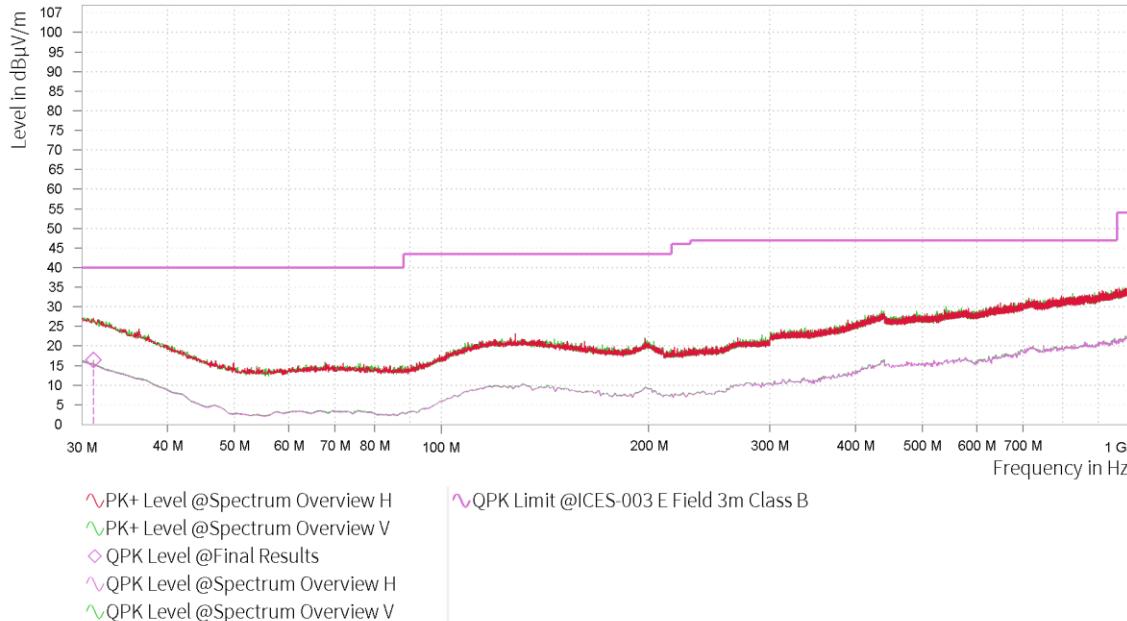


Frequency MHz	Polarization	Reading dB(uV)	Corr. dB(1/m)	Level dB(uV/m)	Limit dB(uV/m)	Margin dB	Height cm	Angle deg
		QP		QP	QP	QP		
31.200	V	-10.22	26.69	16.47	40.00	23.53	380.0	79.2

#### Calculation Formula:

1. Polarization: H = Horizontal, V = Vertical
2. Corr. (Correction Factor) = Antenna Factor + Cable Loss + LNA
3. QuasiPeak Level = Reading (Receiver Reading) + Corr.
4. Margin = Limit - QuasiPeak Level

**Operating Mode:** Normal Mode  
**Power Supply:** -  
**Frequency Range:** 30 MHz – 1 000 MHz  
**Test Limit:** ICES-003 Issue 7 Class B

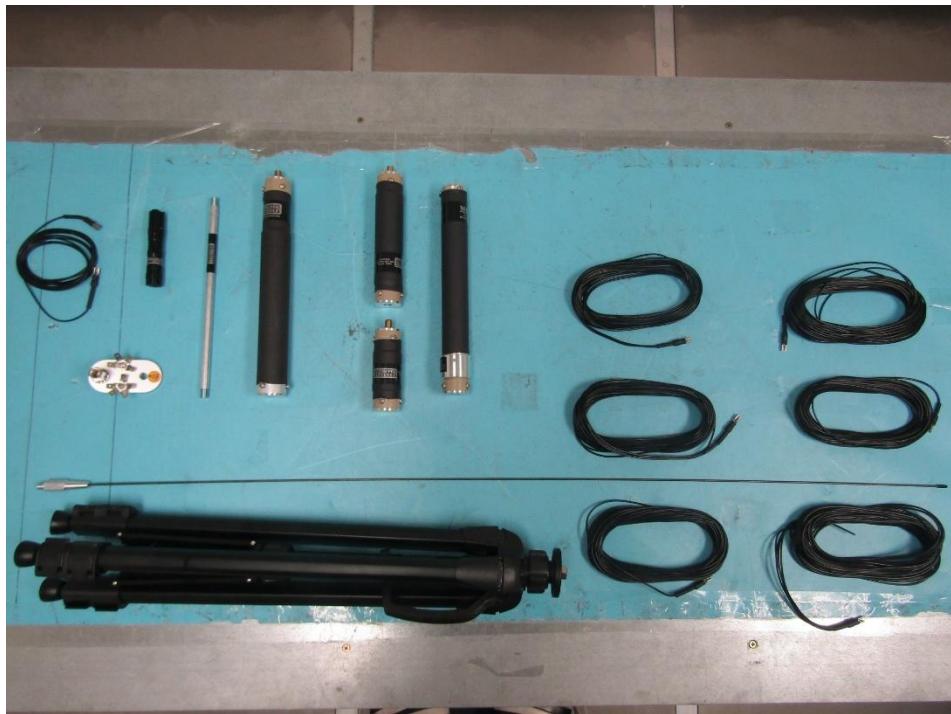
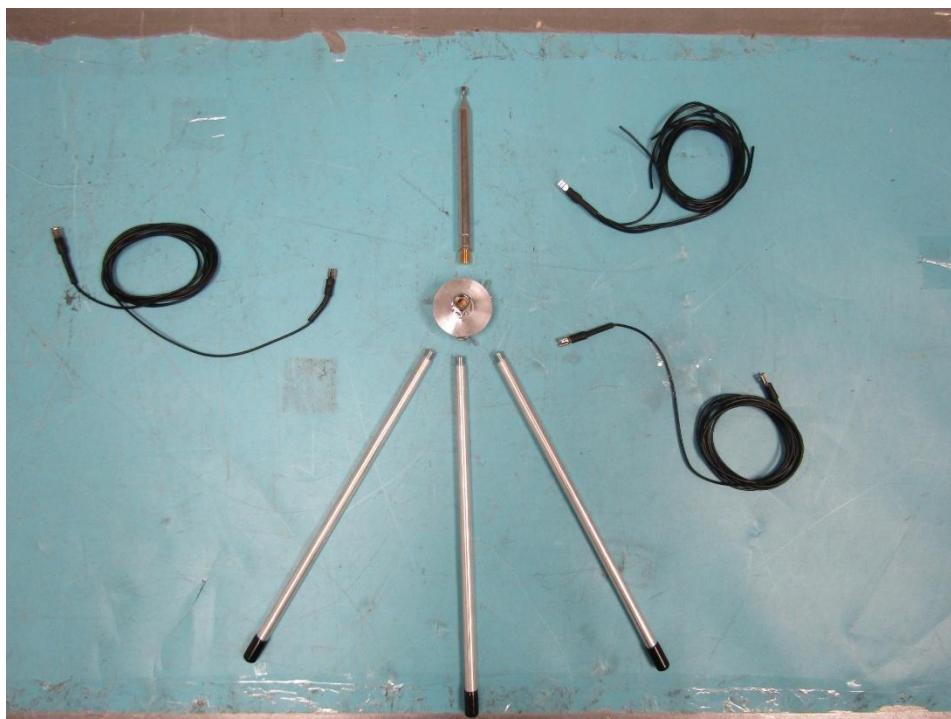


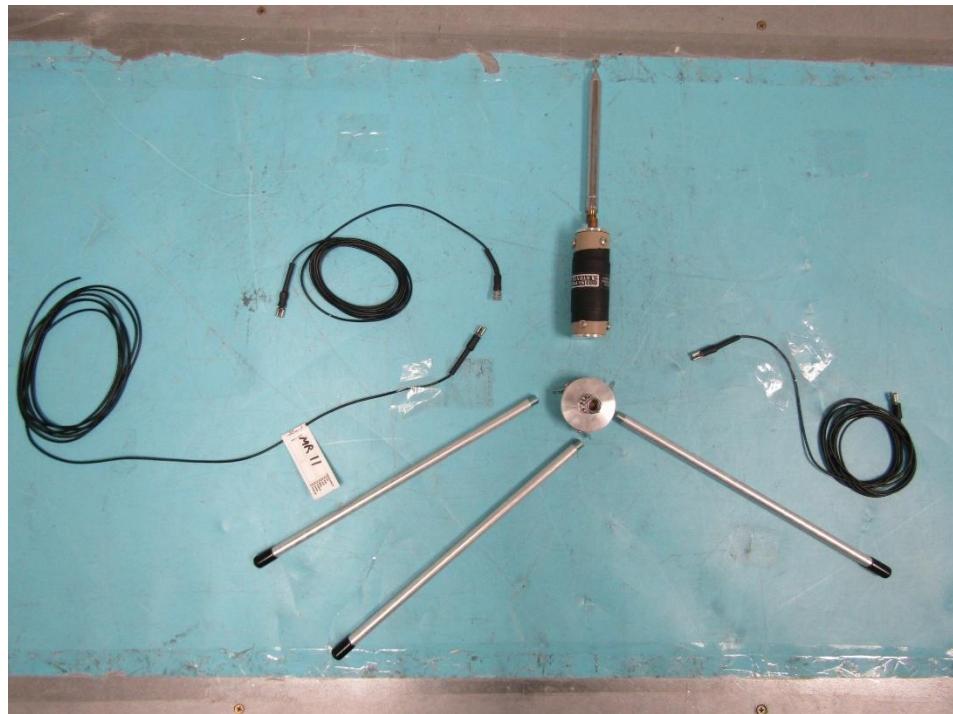
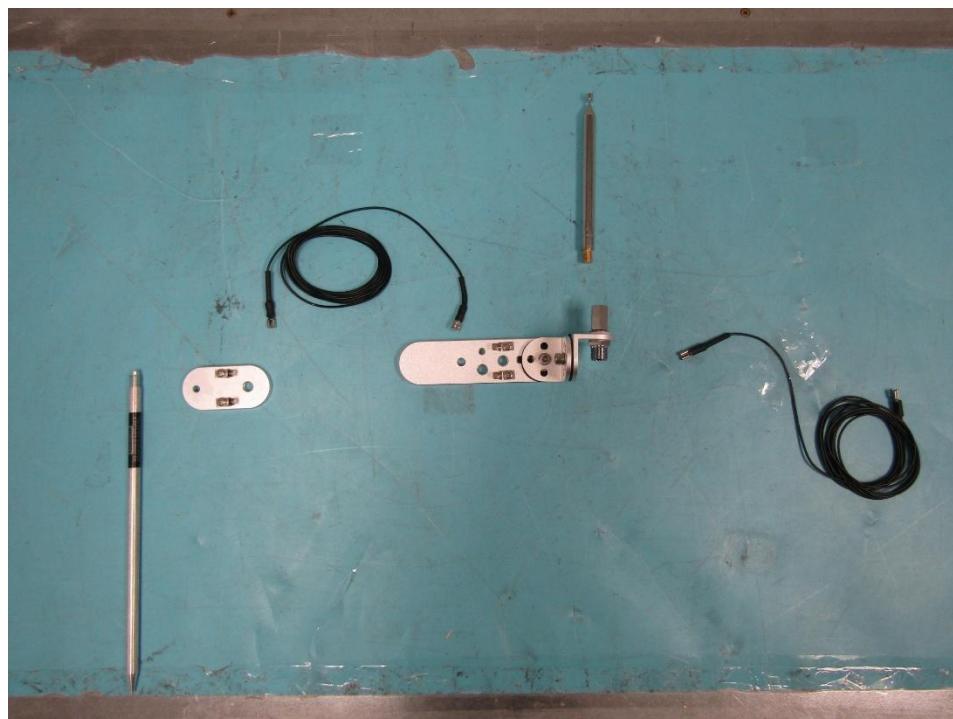
Frequency MHz	Polarization	Reading dB(uV)	Corr. dB(1/m)	Level dB(uV/m)	Limit dB(uV/m)	Margin dB	Height cm	Angle deg
		QP		QP	QP	QP		
31.200	V	-10.22	26.69	16.47	40.00	23.53	380.0	79.2

**Calculation Formula:**

1. Polarization: H = Horizontal, V = Vertical
2. Corr. (Correction Factor) = Antenna Factor + Cable Loss + LNA
3. QuasiPeak Level = Reading (Receiver Reading) + Corr.
4. Margin = Limit - QuasiPeak Level

## 9. Photographs of EUT

**Module #1****Module #2**

**Module #3****Module #4**

***END OF TEST REPORT***