

# EMC Test Report

According to

**Title 47 CFR Part 15 Subpart B**

**ISED ICES-Gen Issue 1; Amendment 1 (February 2021)**

**ISED ICES-003 Issue 7**

**ANSI C63.4:2014+A1:2017**

**DUT Name:** PAN9019A  
**Model No. :** ENWF9511C1KF  
**Customer:** Panasonic Industrial Devices Europe GmbH  
**Address:** Zeppelinstr. 19, 21337 Lüneburg, Germany  
**Summary** IN COMPLIANCE  
**Date of Reception:** 27.11.2023  
**Date(s) of Test(s):** 13.02.2024 – 22.02.2024

Tested by (Test Engineer)



Pekka Pulkkinen

Approved by (Technical Manager)



Jukka Rauma

The test report shall not be reproduced except in full, without the written approval of the laboratory. This report is only for the equipment which is described in page 4.

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Document Version History	Date of issue	Comments	Approved by
v0.1	01.03.2024	Initial version	
v1.0	5.4.2024	Approved version	Jukka Rauma

## 1. General Information

Test Engineer(s): Pekka Pulkkinen

Location:

Test Firm Name	Eurofins Electric & Electronics Finland Oy (EEEF)
Test Site	Yrttipellontie, Peltola
Address of Test Site	Yrttipellonte 6, 90230 Oulu, Finland
FCC Designation number	FI0008
FCC site registration number	771880
ISED number	29576
CAB Identifier	T290

Customer: Panasonic Industrial Devices Europe GmbH  
Zeppelinstr. 19, 21337 Lüneburg, Germany  
Marcus Nottorf  
tel: +49 (0) 4131-899 435  
email: marcus.nottorf@eu.panasonic.com

Climate Conditions: Temperature: 15 - 35 °C  
Air pressure: 860 - 1060 hPa  
Humidity: 30-60 rH%  
These limits were not exceeded during testing.

## 2. Test Samples

General description:

The PAN9019 and PAN9019A are 2.4 GHz and 5 GHz ISM band Wi-Fi, Bluetooth, and 802.15.41 radio modules, which allow easy integration of Wi-Fi, Bluetooth, and 802.15.41 based technologies into various electronic devices.

### Test samples:

Sample number	Serial number	Manufacturer	DUT Type	Model	HW version	SW version	Comments
3938ER005	00000295	Panasonic	Wireless module + GW.51.5153	ENWF9511C1KF	03	01	

### Accessories / Monitoring devices:

Sample number	Serial number	Manufacturer	DUT Type	Model	Description
3938ER006	na	Taoglas	Antenna	GW.51.5153	With 3938ER005
3938ER005	#6	Embedded Artists	Host Board	EAK00393	MX8M Mini Developer's Kit V3
3938ER007	na	Phihong Technology Co. Ltd.	Switching Power Supply	PSAA30R-120	
3938ER008	na	Phihong Technology Co. Ltd.	Switching Power Supply	PSAA30R-120	

### 3. Configuration and Operation Modes

Operation Mode	Description
OM1	EUT ON. WLAN 802.11ac station mode channel 64. Power Supply: 110 VAC
OM2	EUT ON. WLAN 802.11b/g/n station mode channel 6. Power Supply: 110 VAC
OM3	EUT ON. Bluetooth LE in RX mode. Power supply: 110 VAC

**4. Test sample description**

<b>Model</b>	ENWF9511C1KF	
<b>Additional model(s)</b>	ENWF9501C1KF, ENWF9511CMKF, ENWF9501CMKF, ENWF9511AMKF, ENWF9501AMKF	
<b>Brand name</b>	PAN9019, PAN9019A-M2E-EVD, PAN9019-M2E-EVD, PAN9019A-M2E-C-EVD, PAN9019-M2E-C-EVD	
<b>FCC ID</b>	T7V9019	
<b>IC</b>	216Q-9019	
<b>Class</b>	Class B	
<b>Radio module</b>	Type	Wi-Fi 6 Dual band 2.4/5 GHz,Bluetooth and 802.1115.4 Radio Module
	Model	PAN9019A ENWF9511C1KF
	Manufacturer	Panasonic
	FCC-ID	T7V9019
	IC	216Q-9019
<b>Antenna</b>	Type	Terminal Mount Dipole Antenna
	Manufacturer	Taoglas

	Port		Cable		
	Name and description	Shielded	Specified max length [m]	Attached during test	
<b>Ports</b>	AC power port	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
<b>Supplementary information to the ports</b>					
<b>Rated power supply</b>	Voltage and Frequency		Reference poles		
			L1	N	PE
	<input type="checkbox"/>	AC 230 V <input type="checkbox"/> 50 Hz <input type="checkbox"/> 60 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC 240 V <input type="checkbox"/> 50 Hz <input type="checkbox"/> 60 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	AC 110 V <input type="checkbox"/> 50 Hz <input checked="" type="checkbox"/> 60 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	AC 100 V <input type="checkbox"/> 50 Hz <input type="checkbox"/> 60 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	DC:				
<b>Rated Power</b>					
<b>Clock frequencies</b>					
<b>Other parameters</b>					

<b>Dimensions in cm (W x H x D)</b>	0,153 x 0,12 x 0,025	
<b>Weight</b>	<10g	
<b>Mounting position</b>	<input checked="" type="checkbox"/>	Table top equipment
	<input type="checkbox"/>	Wall/Ceiling mounted equipment
	<input type="checkbox"/>	Floor standing equipment
	<input type="checkbox"/>	Hand-held equipment
	<input type="checkbox"/>	Other:

## 5. Test description

### 5.1. FCC subpart 15B and ICES-003, radiated emission test procedure

Radiated tests were performed in a semi-anechoic chamber that has met NSA requirements (4 dB tolerance) according to

- CISPR 16-1-4 Ed. 4.0 2019-01 Validation of a SAC (6.8) using the Reference Site Method (RSM) (6.6);
- ANSI C63.4a -2017 Validation of radiated emission test sites (30MHz – 1 GHz) (Annex D)

sVSWR requirements (1 -18 GHz) are met according to

- CISPR 16-1-4 Ed. 4.0 2019-01 sVSWR site validation – standard test procedure (7, 7.6)

2 different measurement antenna was used, located at a distance of 3 m.

- linear polarized logarithmic periodic antenna for frequency range 30-1000 MHz
- and double-ridged horn antenna for the frequency range 1-18 GHz

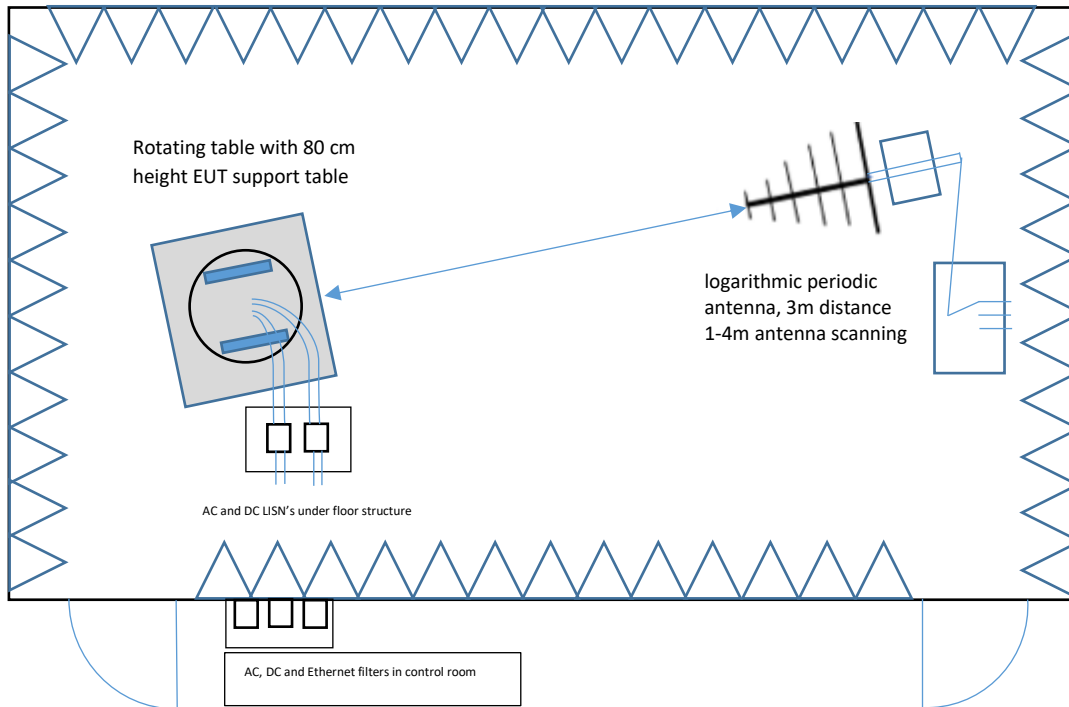
The equipment under test was set up on a non-conductive support, 80 cm above the ground plane. EUT power supply LISN's for AC and DC were located under the ground reference plane. The field strength was calculated by adding correction factor to the measured level from the EMI receiver. This correction factor includes antenna factor, cable loss and pre-amplifier gain.

#### Measurement procedure

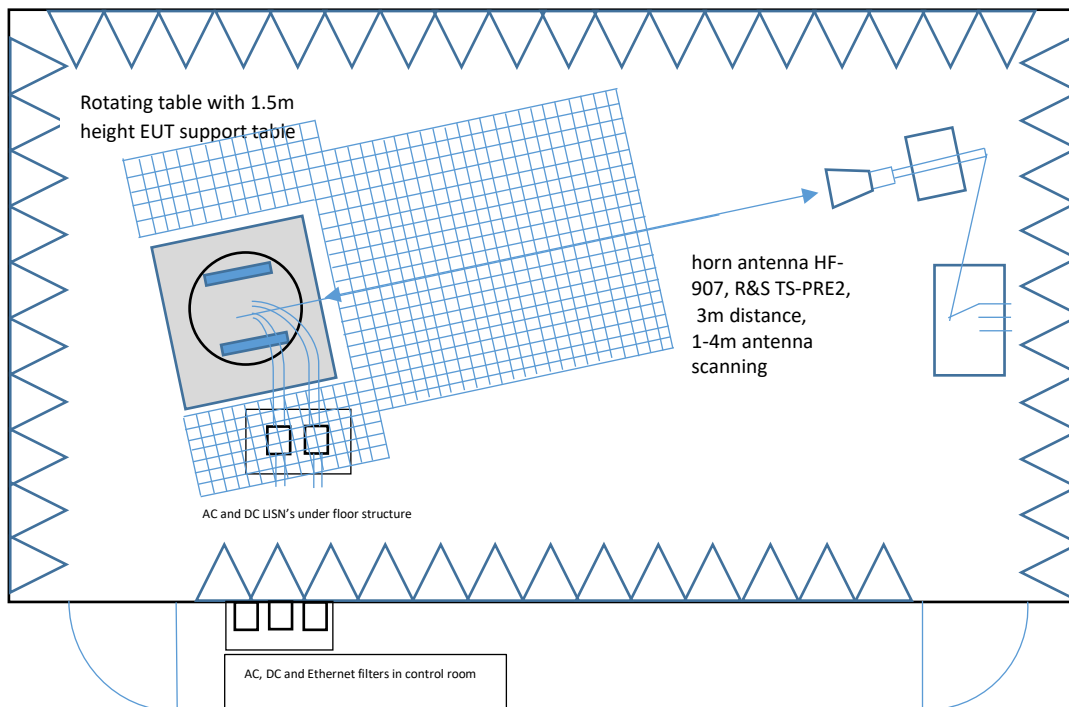
- EUT was set in a manner that is most representative of the equipment as typically used (i.e., as specified in the EUT instruction manual)
  - o In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the orientation (attitude) having maximum or near-maximum emission level.
- in exploratory measurements for full frequency range
  - o turntable was rotated with 45° steps (from 0° to 315°)
  - o measurement was done in both vertical and horizontal antenna polarization with antenna height of 1m
  - o measurement was done with peak detector to find the frequencies of maximum emissions and highest peaks related to the limits were chosen
- these peak values were further maximized by scanning the turntable position 0 to 360 degrees and the antenna height 1 to 4m
- for maximized values, final measurement was done with
  - o quasi-peak detector for 30MHz to 1GHz frequency range
  - o with Average detector for 1GHz to 18GHz frequency range

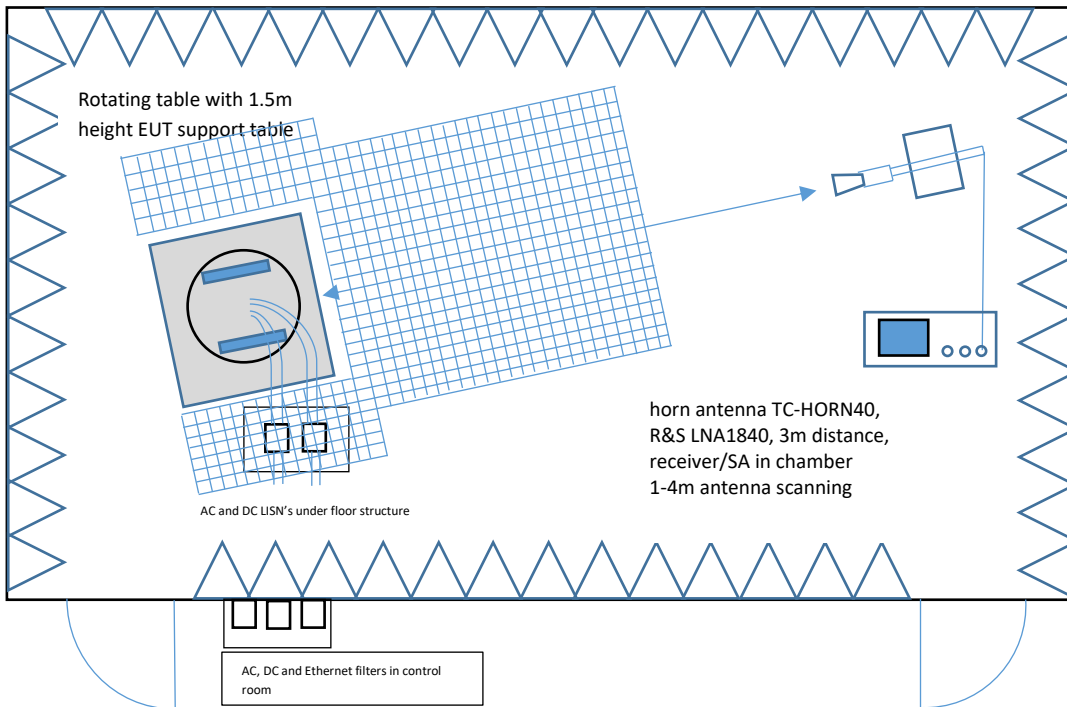


Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 18 GHz:



Radiated measurements setup from 18 GHz to 26 / 40 GHz:

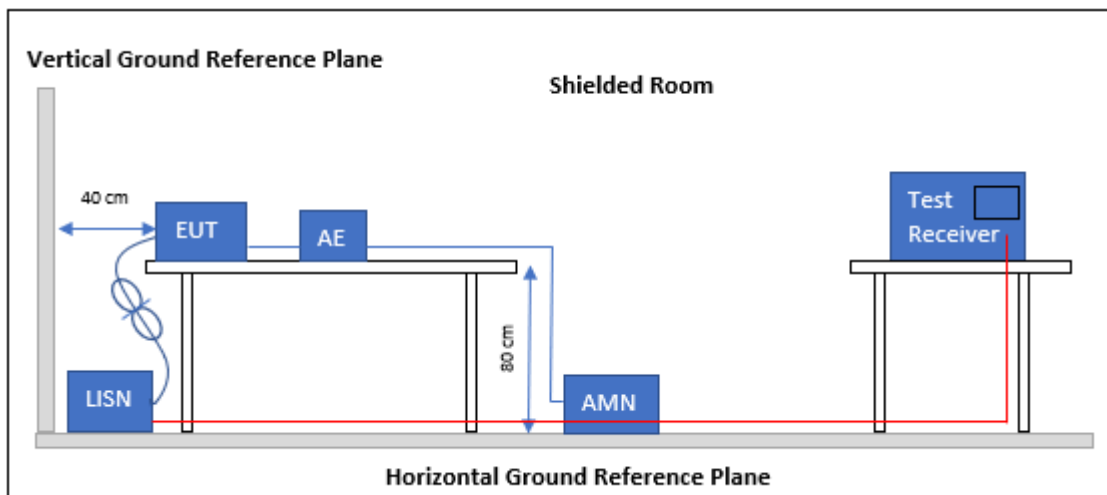
## 5.2. FCC subpart 15B and ICES-003, conducted emission test procedure

The equipment under test was set up on a non-conductive support, 80 cm above the ground plane and 40 cm distance of vertical ground plane. Test setup is described in pictures below.

### Measurement procedure

- EUT was operated in a range of typical modes of operation, with typical cable positions, and with a typical system equipment configuration and arrangement
- in exploratory measurements for full frequency range
  - o measurement was done with peak and average detector to find the frequencies of maximum emissions for each current-carrying conductor of each power cord associated with the EUT and at least six highest peaks related to the limits were chosen per conductor
  - o the one configuration and arrangement and mode of operation that produces the highest emissions related to the limit across all the measured conductors was recorded.
- for this configuration and its maximized values, final measurement for each current-carrying conductor was done with quasi-peak detector and average detector

### Conducted emission test setup



## 6. Uncertainties

### 6.1. Emission measurement uncertainties

Description	Expanded Uncertainty (k=2)
AC conducted emission	2,24
Radiated emission $\leq 1$ GHz	4,62
Radiated emission $> 1$ GHz	5,72

## 7. Summary

Title 47 CFR 15B, ISED ICES-003 Issue 7			
Reference	Requirement – Test case	Verdict	Remark
FCC 15.109 ICES-003, 3.2.2	Radiated emission. Electromagnetic field measure (30 MHz – 1000 MHz)	PASS	
FCC 15.109 ICES-003, 3.2.2	Radiated emission. Electromagnetic field measure (1 GHz – 18 GHz)	PASS	
FCC 15.107 ICES-003, 3.2.1	Continuous conducted emission (150 kHz – 30 MHz)	PASS	
The DUT has been tested and passes the FCC Part 15 Subpart B without any modifications.		No	
Supplementary information and remarks:  Possible test case verdicts PASS = Test object meet the requirements FAIL = Test object does not meet the requirements N/T = Required by standard but not tested N/R = Not required by standard for the test object			

## 8. Radiated Emissions

Reference: FCC 15.109, ICES-003, 3.2.2  
Test method: ANSI C63.4:2014+A1:2017 Section 8

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B, Secs. 15.109 & ICES-003 Issue 7, section 3.2.2.

### FCC part 15, subpart B

Limits, Class B Frequency of emission MHz)	Quasi-peak Limit for 3m	
	(microvolt/meter)	(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

### ICES-003, Issue 7

Limits, Class B Frequency of emission MHz)	Quasi-peak Limit for 3m	
	(microvolt/meter)	(dBuV/m)
30-88	100	40
88-216	150	43.5
216-230	200	46
230-960	223	47
Above 960	500	54

### FCC part 15, subpart B and ICES-003, Issue 7

Frequency of emission MHz)	Average Limit for 3m		Peak Limit for 3m
	(microvolt/meter)	(dBuV/m)	(dBuV/m)
Above 1000	500	54	74

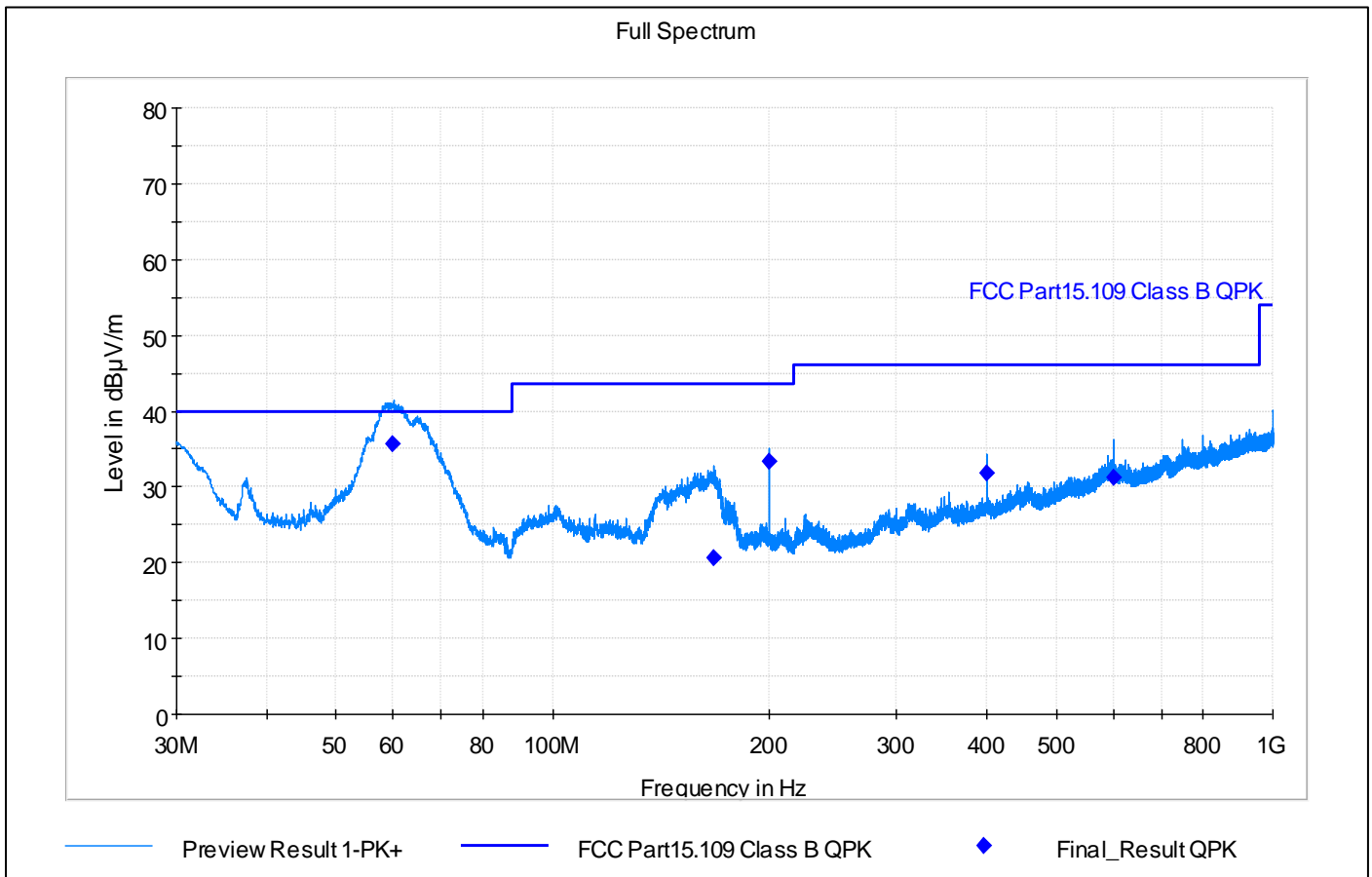
Frequencies above 1 GHz, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test, as per §15.35(b)

Tested sample(s): 3938ER005  
Operation mode(s) tested: OM1, OM2, OM3  
Test results: PASS  
Note:

### Test data:

Operation mode(s)	Configuration	Test Verdict
OM1	3938ER005+3938ER008, Frequency Range: 30 MHz – 1GHz	PASS
OM1	3938ER005+3938ER008, Frequency Range: 1 – 18 GHz	PASS
OM2	3938ER005+3938ER008, Frequency Range: 30 MHz – 1GHz	PASS
OM2	3938ER005+3938ER008, Frequency Range: 1 – 18 GHz	PASS
OM3	3938ER005+3938ER008, Frequency Range: 30 MHz – 1GHz	PASS
OM3	3938ER005+3938ER008, Frequency Range: 1 – 18 GHz	PASS

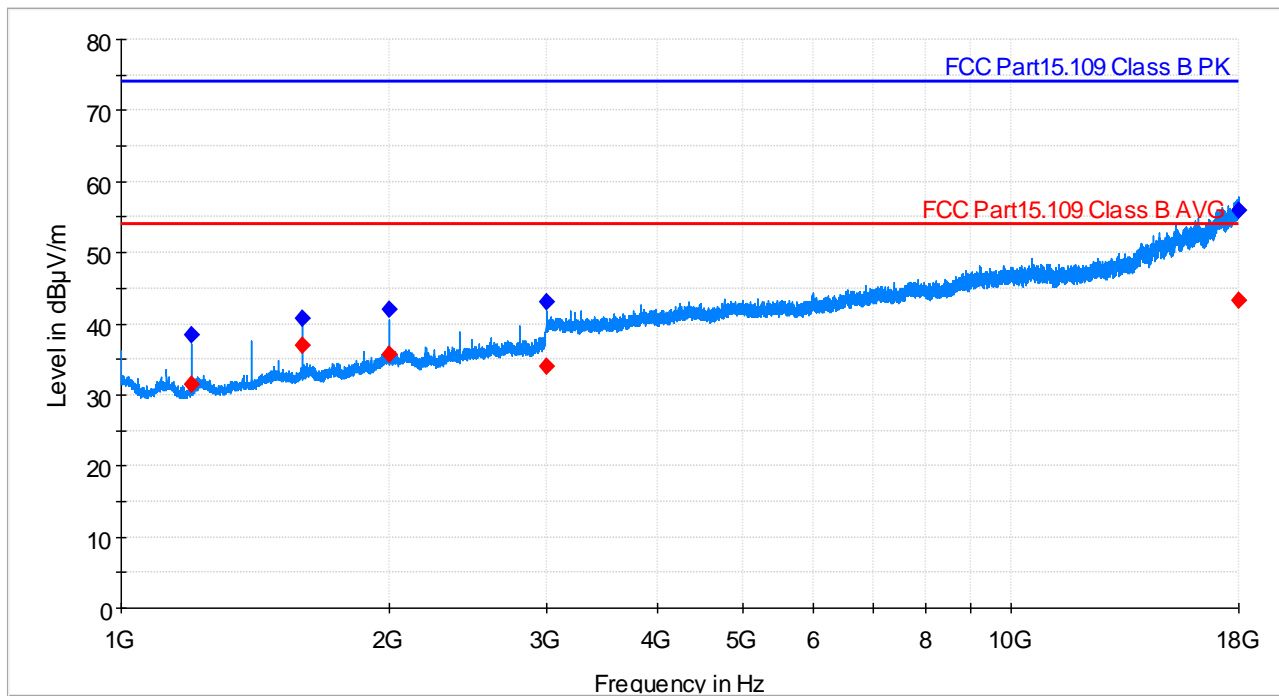
**FCC part 15 subpart B and ICES-003 Graph and final result table for 30 MHz – 1 GHz, OM1 802.11ac:**



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas, Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr, (dB/m)	Comment
60	35,67	40,00	4,33	15000,00	120	104	V	54	0	20,00	PASS
167	20,60	43,50	22,90	15000,00	120	116	V	265	0	17,10	PASS
200	33,34	43,50	10,16	15000,00	120	100	V	207	0	20,10	PASS
400	31,76	46,00	14,24	15000,00	120	115	V	37	0	25,20	PASS
600	31,19	46,00	14,81	15000,00	120	153	V	89	0	29,80	PASS

**FCC part 15 subpart B and ICES-003 Graph and final result table for 1 GHz – 18 GHz, OM1 802.11ac:**

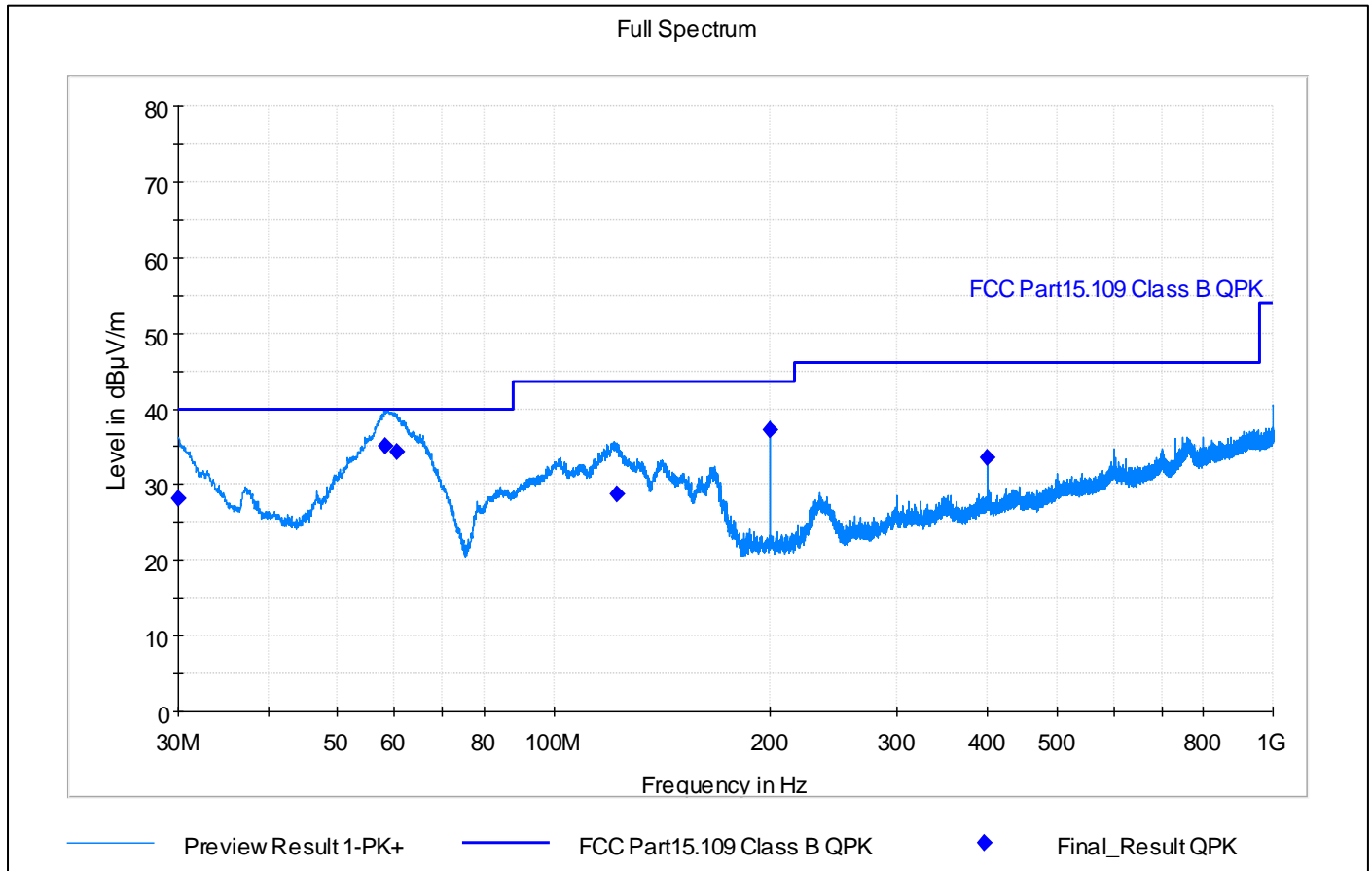
### Full Spectrum



- Preview Result 1-PK+
- FCC Part15.109 Class B AVG
- ◆ Final\_Result CAV
- FCC Part15.109 Class B PK
- ◆ Final\_Result PK+

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)	Comment
1200	---	31,51	54,00	22,49	500	1000	100	H	297	-7,60	PASS
1200	38,36	---	74,00	35,64	500	1000	100	H	297	-7,60	PASS
1600	---	37,02	54,00	16,98	500	1000	150	V	190	-4,80	PASS
1600	40,64	---	74,00	33,36	500	1000	150	V	190	-4,80	PASS
2000	41,92	---	74,00	32,08	500	1000	262	V	263	-1,50	PASS
2000	---	35,61	54,00	18,39	500	1000	262	V	263	-1,50	PASS
3000	---	33,96	54,00	20,04	500	1000	205	V	226	5,00	PASS
3000	43,09	---	74,00	30,91	500	1000	205	V	226	5,00	PASS
17967	55,93	---	74,00	18,07	500	1000	337	V	202	39,10	PASS
17967	---	43,26	54,00	10,74	500	1000	337	V	202	39,10	PASS

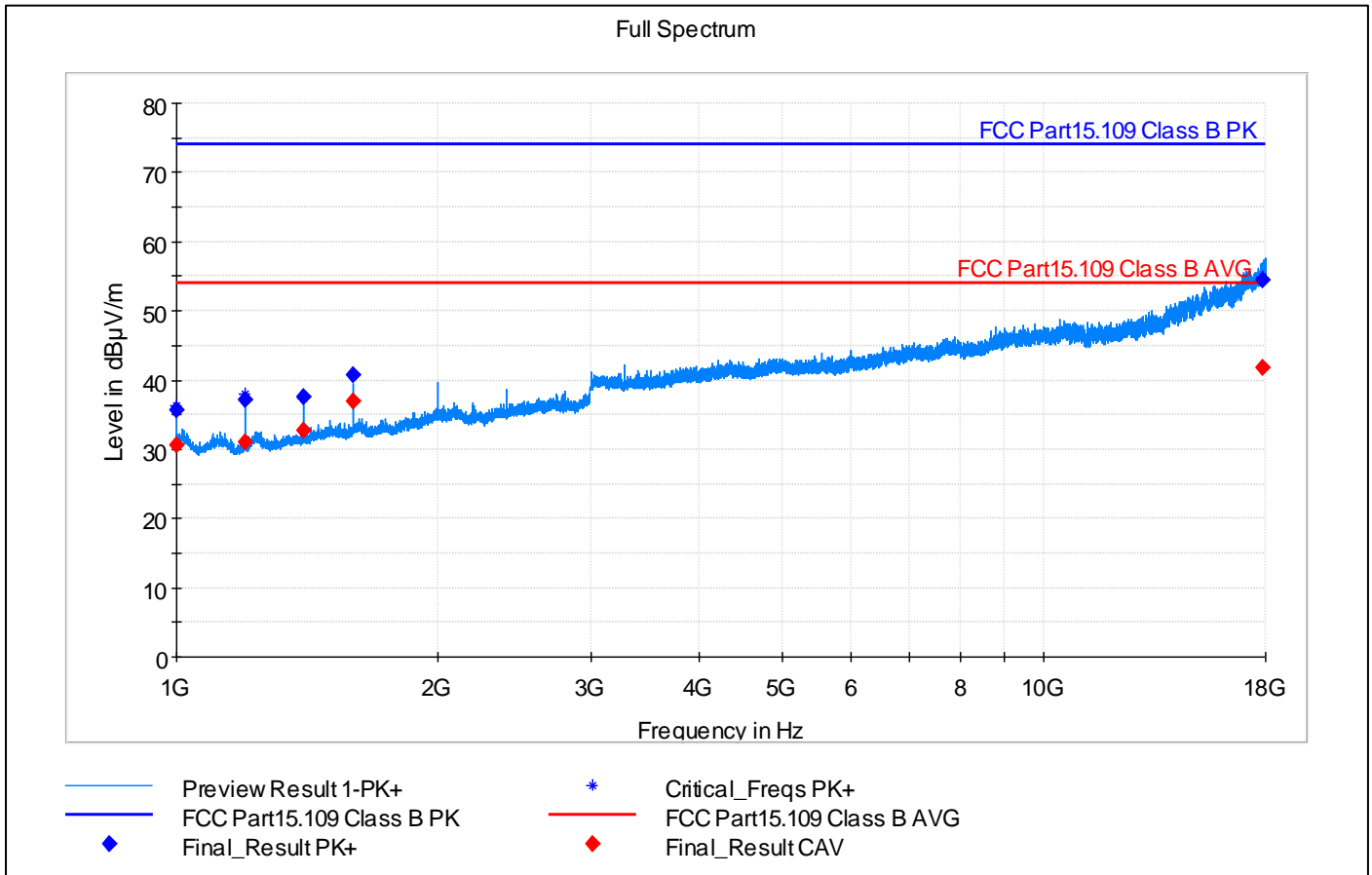
FCC part 15 subpart B and ICES-003 Graph and final result table for 30 MHz – 1 GHz, OM2 802.11b/g/n:



Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dB)	Margin (ms)	Meas. Time (kHz)	Bandwidth (cm)	Height	Pol (deg)	Azimuth (deg)	Corr. (dB/m)	Comment
30	28,20	40,00	11,80	15000,00	120	103	V	141	0	17,40	PASS
58	35,14	40,00	4,86	15000,00	120	124	V	109	0	20,30	PASS
60	34,34	40,00	5,66	15000,00	120	101	V	138	0	19,80	PASS
122	28,65	43,50	14,85	15000,00	120	104	V	118	0	17,50	PASS
200	37,30	43,50	6,20	15000,00	120	100	V	240	0	20,10	PASS
400	33,47	46,00	12,53	15000,00	120	126	V	44	0	25,20	PASS

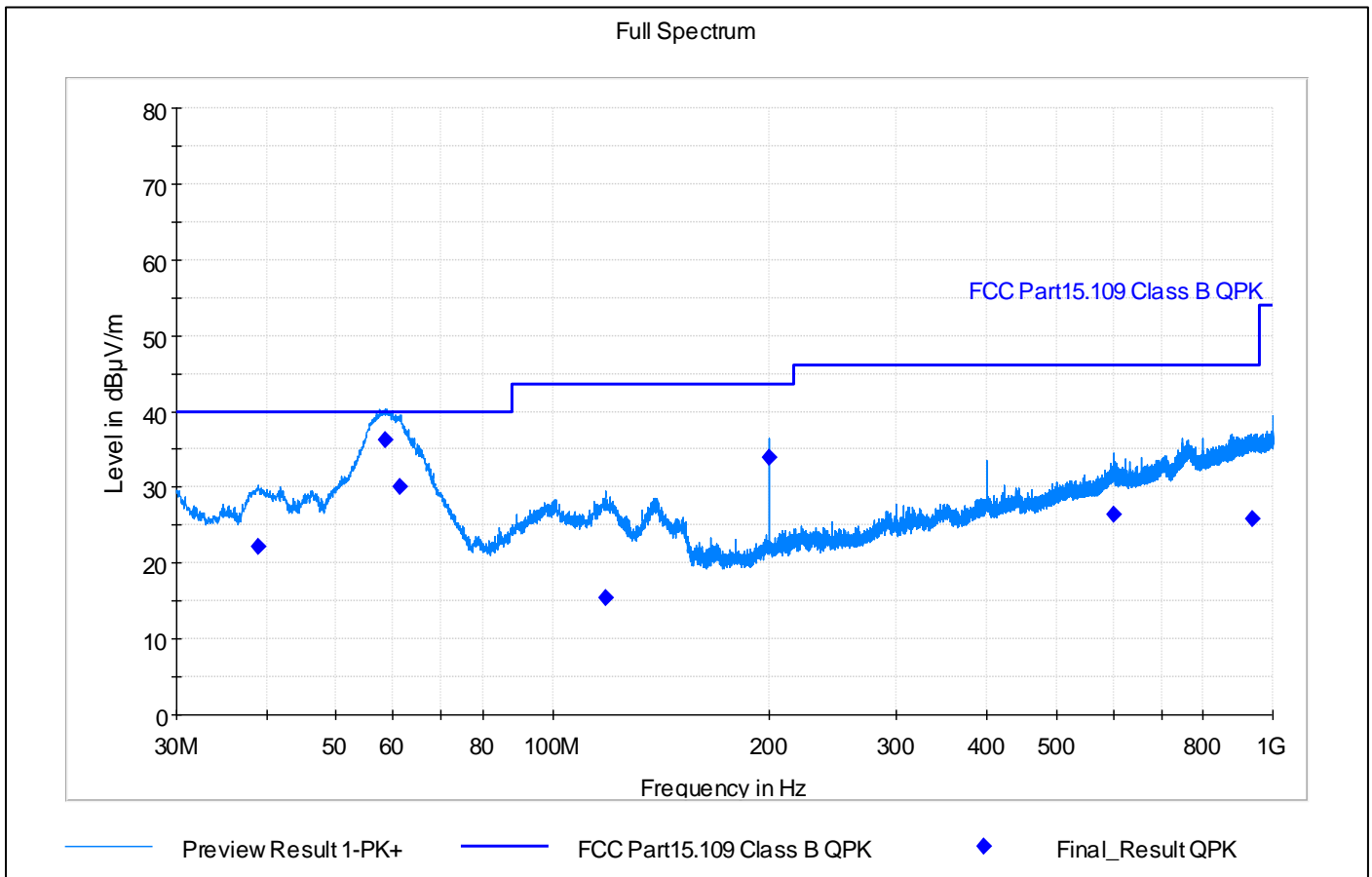


FCC part 15 subpart B and ICES-003 Graph and final result table for 1 GHz – 18 GHz, OM2 802.11b/g/n:



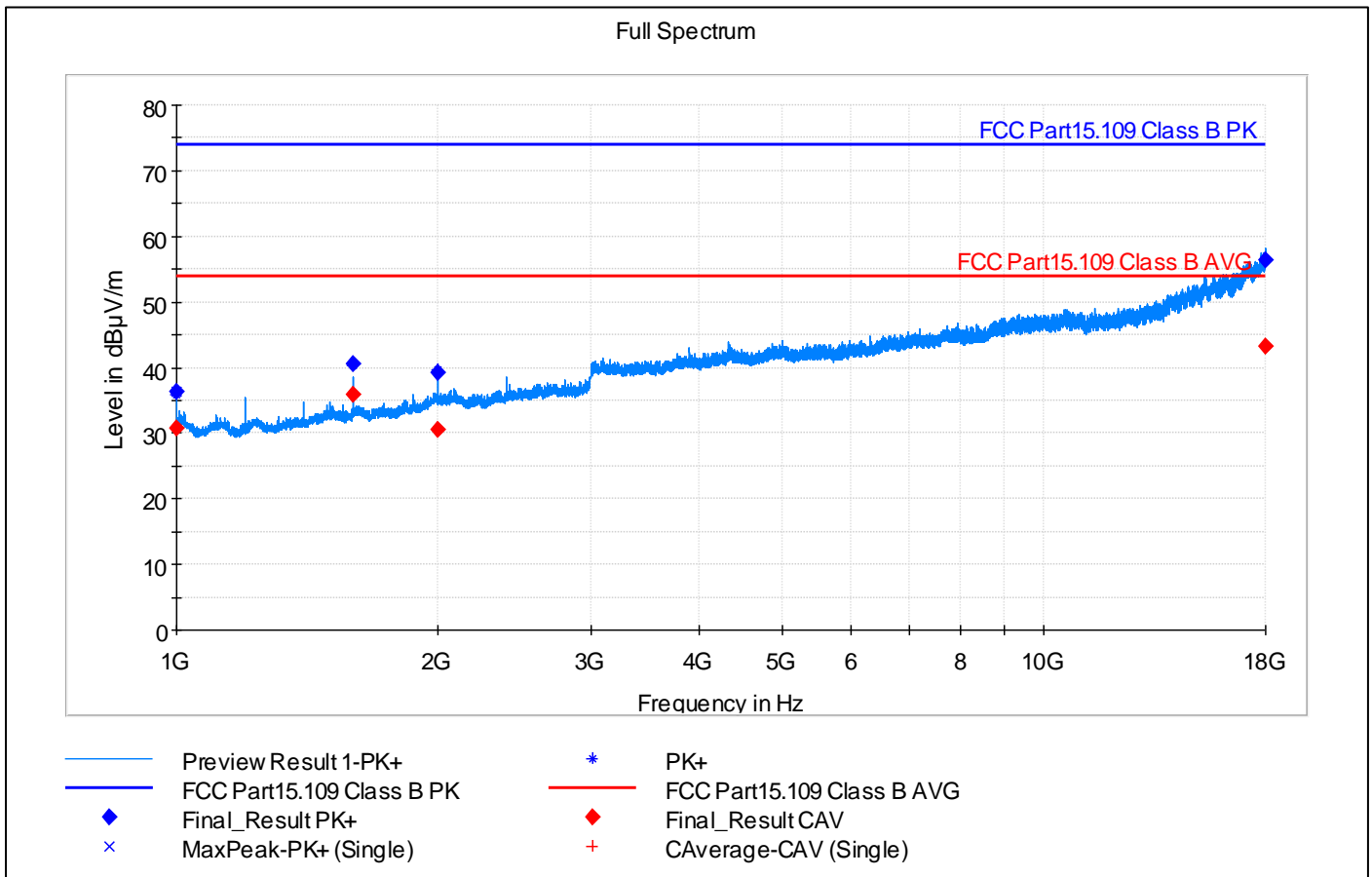
Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas, Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr, (dB/m)	Comment
1000,00	35,74	---	74	38,26	500	1000	162	V	205	-9,9	PASS
1000,00	---	30,70	54	23,30	500	1000	162	V	205	-8,1	PASS
1200,00	37,23	---	74	36,77	500	1000	173	H	300	-7,6	PASS
1200,00	---	30,95	54	23,05	500	1000	173	H	300	-7,6	PASS
1400,00	37,48	---	74	36,52	500	1000	105	V	133	-6,5	PASS
1400,00	---	32,67	54	21,33	500	1000	105	V	133	-6,5	PASS
1600,00	40,74	---	74	33,26	500	1000	242	V	50	-4,8	PASS
1600,00	---	37,03	54	16,97	500	1000	242	V	50	-4,8	PASS
17888,75	---	41,79	54	12,21	500	1000	98	H	109	38,7	PASS
17888,75	54,55	---	74	19,45	500	1000	98	H	109	38,7	PASS

FCC part 15 subpart B and ICES-003 Graph and final result table for 30 MHz – 1 GHz, OM3 BLE:



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas, Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr, (dB/m)	Comment
39	22,09	40,00	17,91	15000,00	120	126	V	301	0	19,20	PASS
59	36,21	40,00	3,79	15000,00	120	144	V	23	0	20,20	PASS
61	30,09	40,00	9,91	15000,00	120	170	V	323	0	19,60	PASS
118	15,51	43,50	27,99	15000,00	120	119	V	270	0	18,10	PASS
200	33,93	43,50	9,57	15000,00	120	100	V	65	0	20,10	PASS
600	26,46	46,00	19,54	15000,00	120	242	V	12	0	29,80	PASS
935	25,92	46,00	20,08	15000,00	120	207	H	139	0	34,10	PASS

FCC part 15 subpart B and ICES-003 Graph and final result table for 1 GHz – 18 GHz, OM3 BLE:



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)	Comment
1000	36,43	---	74	37,57	500	1000	180	V	220	-9,9	PASS
1000	---	30,74	54	23,26	500	1000	180	V	220	-9,9	PASS
1600	---	35,81	54	18,19	500	1000	221	V	194	-4,8	PASS
1600	40,59	---	74	33,41	500	1000	221	V	194	-4,8	PASS
2000	---	30,46	54	23,54	500	1000	210	H	310	-1,5	PASS
2000	39,23	---	74	34,77	500	1000	210	H	310	-1,5	PASS
17968,25	56,46	---	74	17,54	500	1000	315	H	315	39,1	PASS
17968,25	---	43,33	54	10,67	500	1000	315	H	315	39,1	PASS

## 9. Conducted Emissions, AC mains power port

Reference: FCC 15.107, ICES-003, 3.2.1  
Test method: ANSI C63.4:2014+A1:2017 Section 12

The applied limit for continuous conducted emission in power leads, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B, Secs. 15.107 & ICES-003 Issue 7

FCC part 15, subpart B and ICES-003, Issue 7

Limits:	Class B (dBuV)	
	Quasi peak limit	Average limit
0.15 – 0.50 MHz	66 to 56	56 to 46
0.50 – 5 MHz	56	46
5 – 30 MHz	60	50

Tested sample(s): 3938ER005 + 3938ER008  
Operation mode(s) tested: OM1, OM2, OM3  
Test results: PASS  
Note:

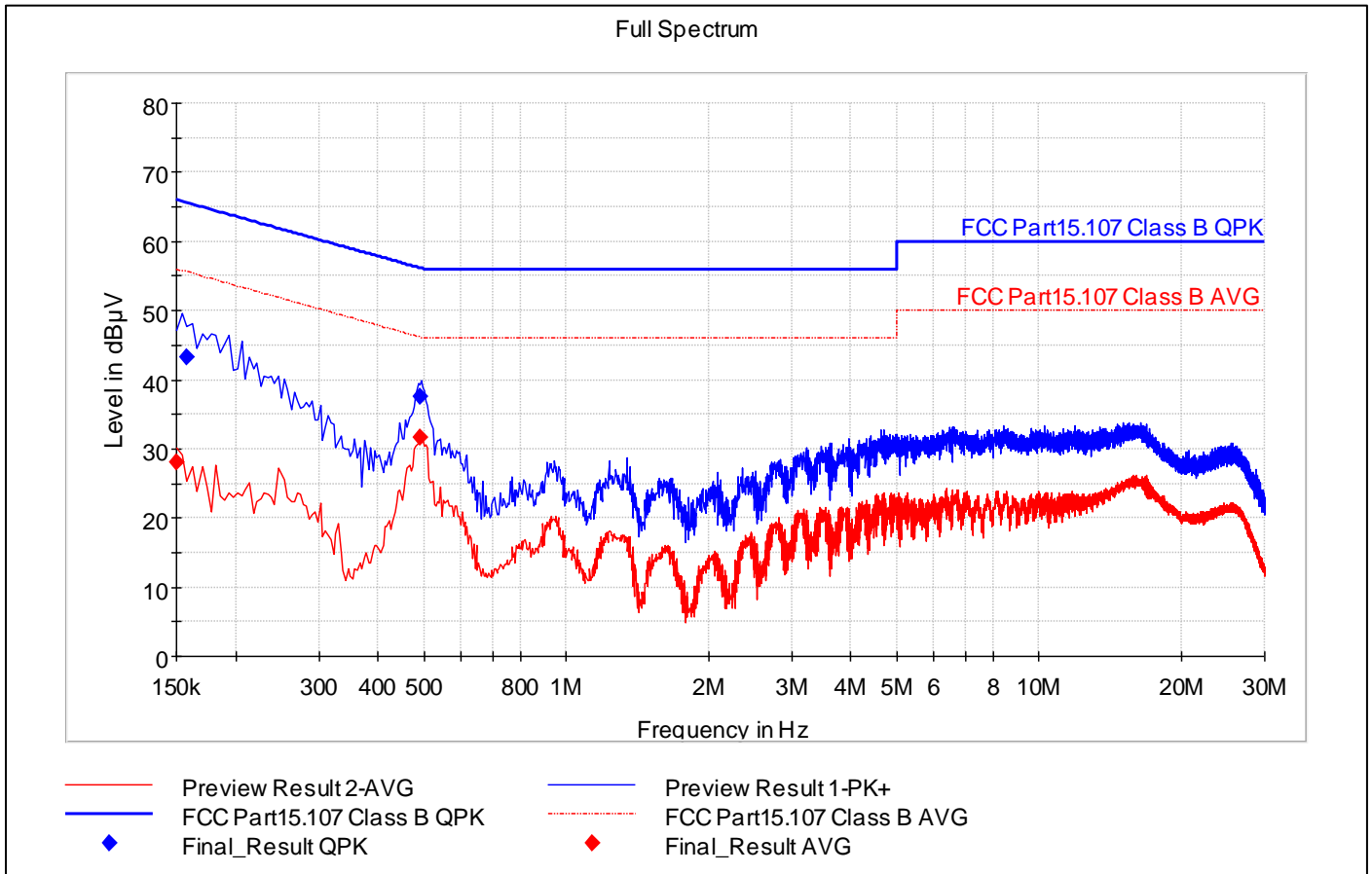
Test data:

Operation mode(s)	Configuration	Test Verdict
OM1	Neutral wire noise.	PASS
OM1	Phase wire noise.	PASS

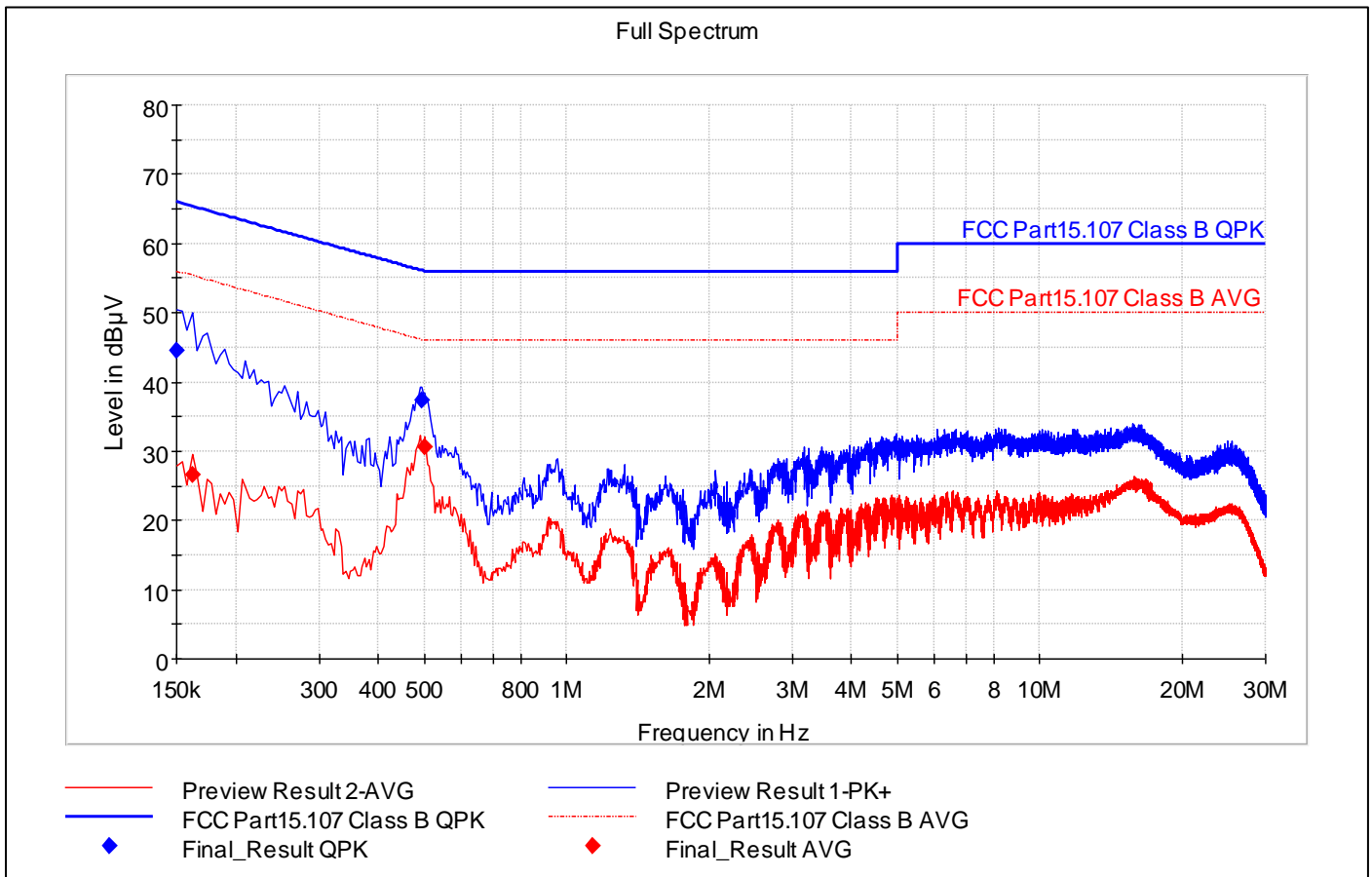
### Testdata OM1 802.11ac:

Frequency	QuasiPeak	Average	Limit	Margin	Meas, Time	Bandwidth	Line	Filter	Corr,	Comment
(MHz)	(dBμV)	(dBμV)	(dBμV)	(dB)	(ms)	(kHz)			(dB)	
0.150000	---	28,14	56,00	27,86	15000.0	9,00	L1	ON	9,50	PASS
0.158000	43,36	---	65,57	22,20	15000.0	9,00	L1	ON	9,50	PASS
0.490000	---	31,61	46,17	14,56	15000.0	9,00	L1	ON	9,60	PASS
0.490000	37,67	---	56,17	18,50	15000.0	9,00	L1	ON	9,60	PASS
0.150000	44,47	---	66,00	21,53	15000.0	9,00	N	ON	9,50	PASS
0.162000	---	26,67	55,36	28,69	15000.0	9,00	N	ON	9,50	PASS
0.494000	37,44	---	56,10	18,66	15000.0	9,00	N	ON	9,60	PASS
0.502000	---	30,70	46,00	15,30	15000.0	9,00	N	ON	9,60	PASS

FCC part 15, subpart B and ICES-003 Graph for frequency range 150kHz-30MHz phase line OM1:



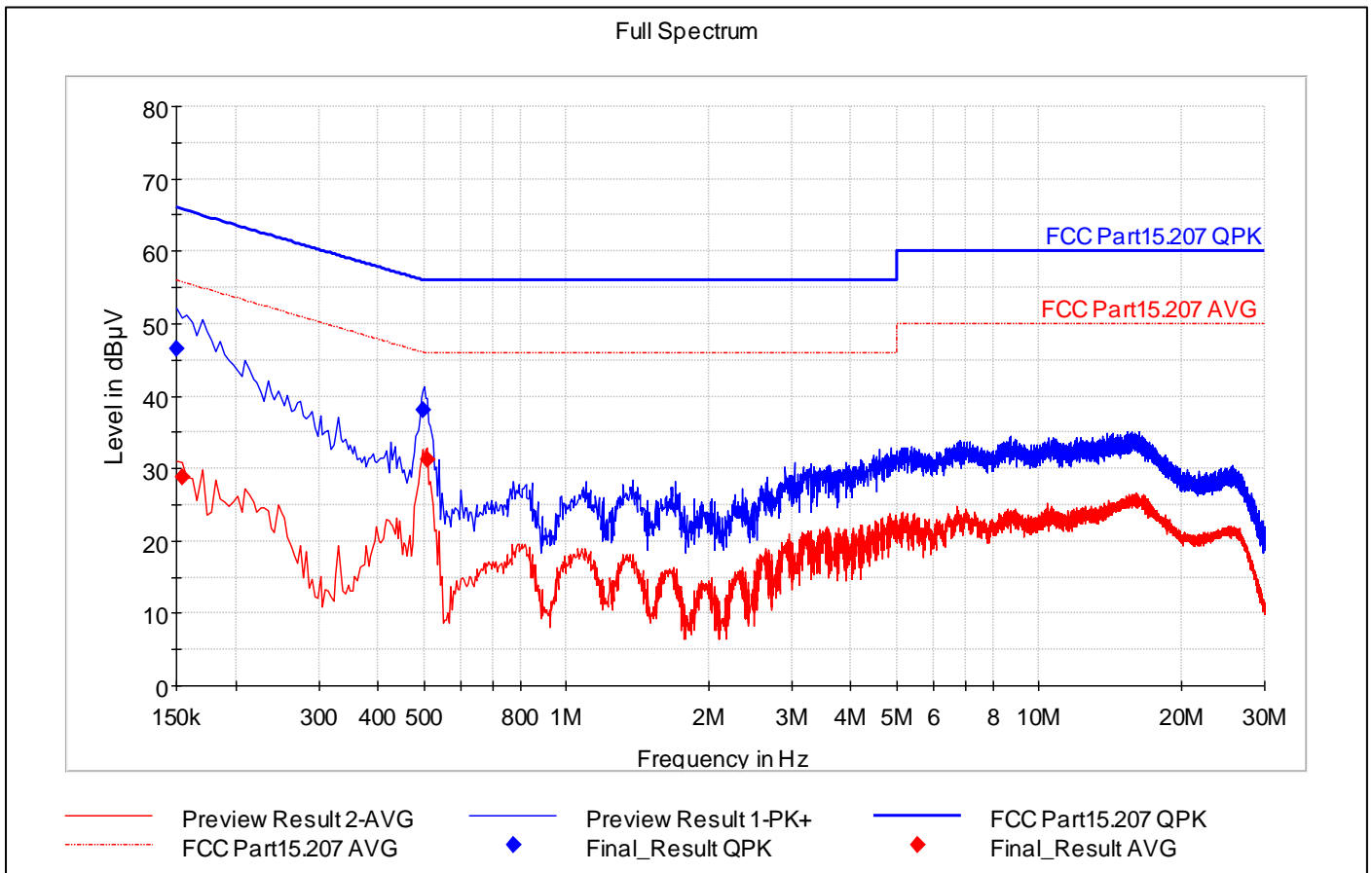
FCC part 15, subpart B and ICES-003 Graph for frequency range 150kHz-30MHz neutral line OM1:



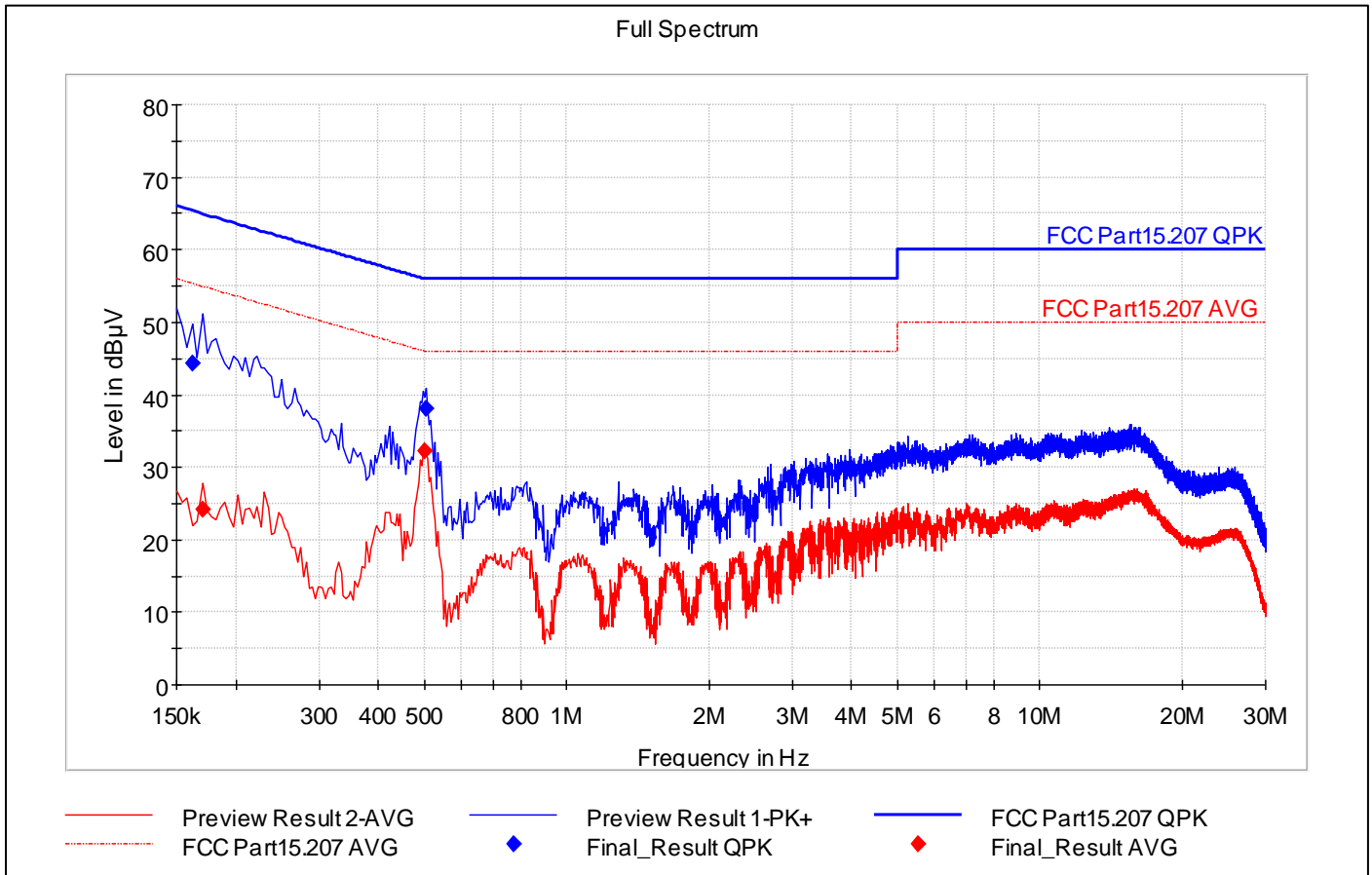
Testdata OM2 802.11b/g/n:

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas, Time (ms)	Bandwidth (kHz)	Line	Filter	Corr, (dB)	Comment
0.150000	46,54	---	66,00	19,46	15000.0	9,00	L1	ON	9,50	PASS
0.154000	---	28,89	55,78	26,89	15000.0	9,00	L1	ON	9,50	PASS
0.498000	38,07	---	56,03	17,96	15000.0	9,00	L1	ON	9,60	PASS
0.510000	---	31,22	46,00	14,78	15000.0	9,00	L1	ON	9,60	PASS
0.162000	44,33	---	65,36	21,03	15000.0	9,00	N	ON	9,50	PASS
0.170000	---	24,23	54,96	30,73	15000.0	9,00	N	ON	9,50	PASS
0.502000	---	32,28	46,00	13,72	15000.0	9,00	N	ON	9,60	PASS
0.506000	38,06	---	56,00	17,94	15000.0	9,00	N	ON	9,60	PASS

FCC part 15, subpart B and ICES-003 Graph for frequency range 150kHz-30MHz phase line OM2 802.11 b/g/n:



FCC part 15, subpart B and ICES-003 Graph for frequency range 150kHz-30MHz neutral line OM2 802.11 b/g/n:

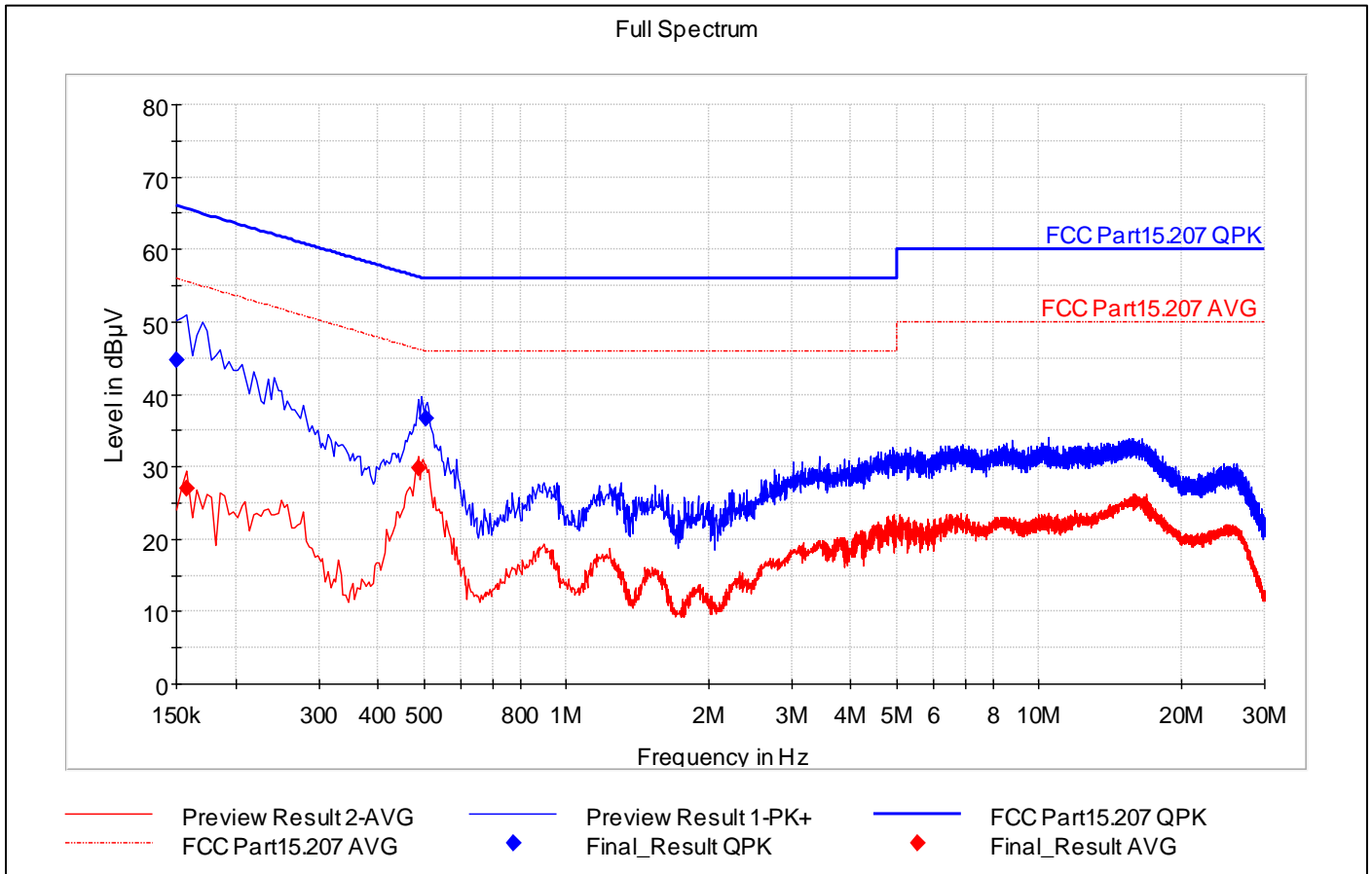


Testdata OM3 BLE:

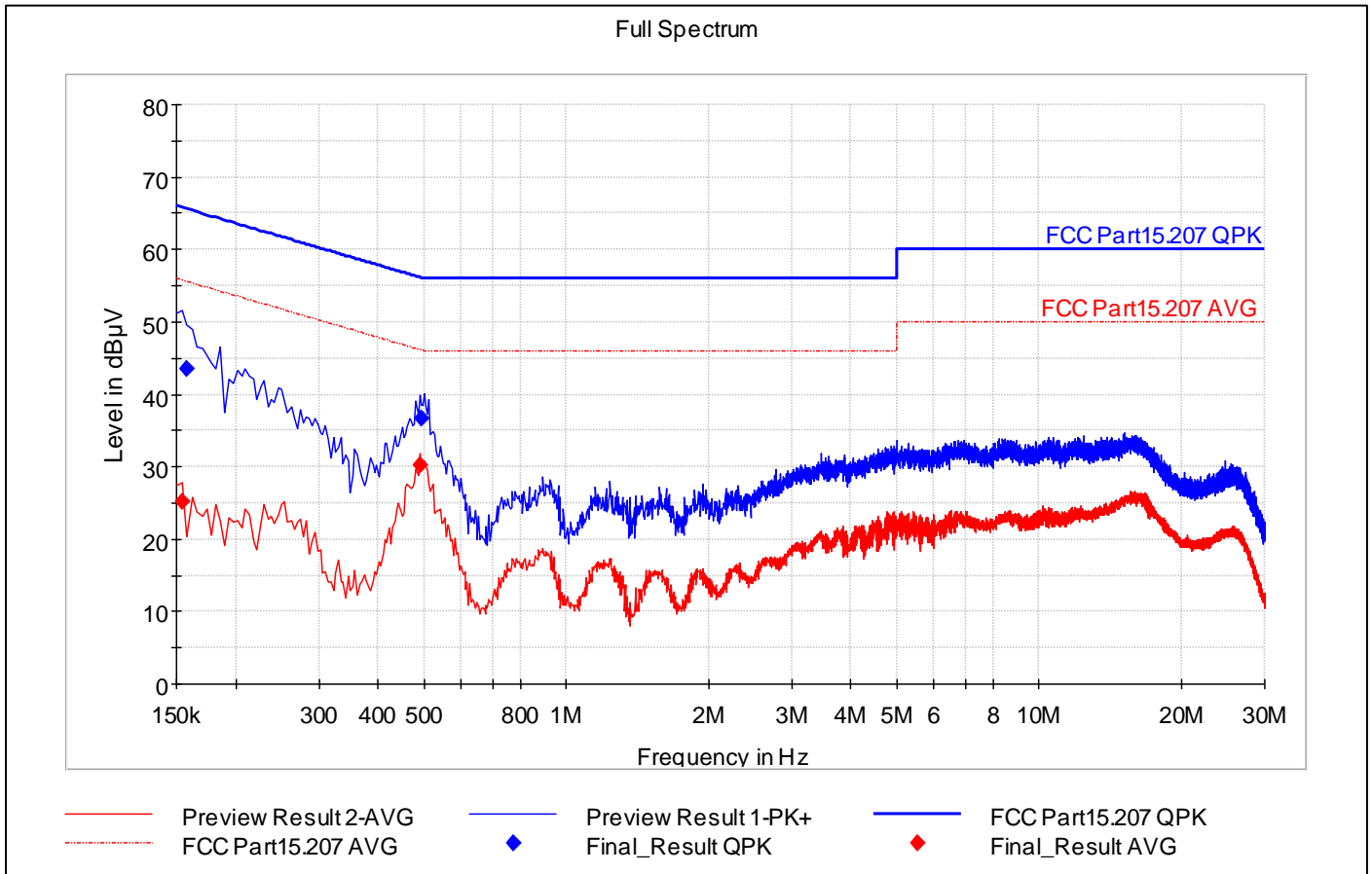
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas, Time (ms)	Bandwidth (kHz)	Line	Filter	Corr, (dB)	Comment
0.150000	44,83	---	66,00	21,17	15000.0	9,00	L1	ON	9,50	PASS
0.158000	---	27,01	55,57	28,56	15000.0	9,00	L1	ON	9,50	PASS
0.486000	---	29,89	46,24	16,35	15000.0	9,00	L1	ON	9,60	PASS
0.506000	36,59	---	56,00	19,41	15000.0	9,00	L1	ON	9,60	PASS
0.154000	---	25,27	55,78	30,51	15000.0	9,00	N	ON	9,50	PASS
0.158000	43,62	---	65,57	21,95	15000.0	9,00	N	ON	9,50	PASS
0.490000	---	30,13	46,17	16,04	15000.0	9,00	N	ON	9,60	PASS
0.494000	36,75	---	56,10	19,36	15000.0	9,00	N	ON	9,60	PASS



FCC part 15, subpart B and ICES-003 Graph for frequency range 150kHz-30MHz phase line OM3 BLE:



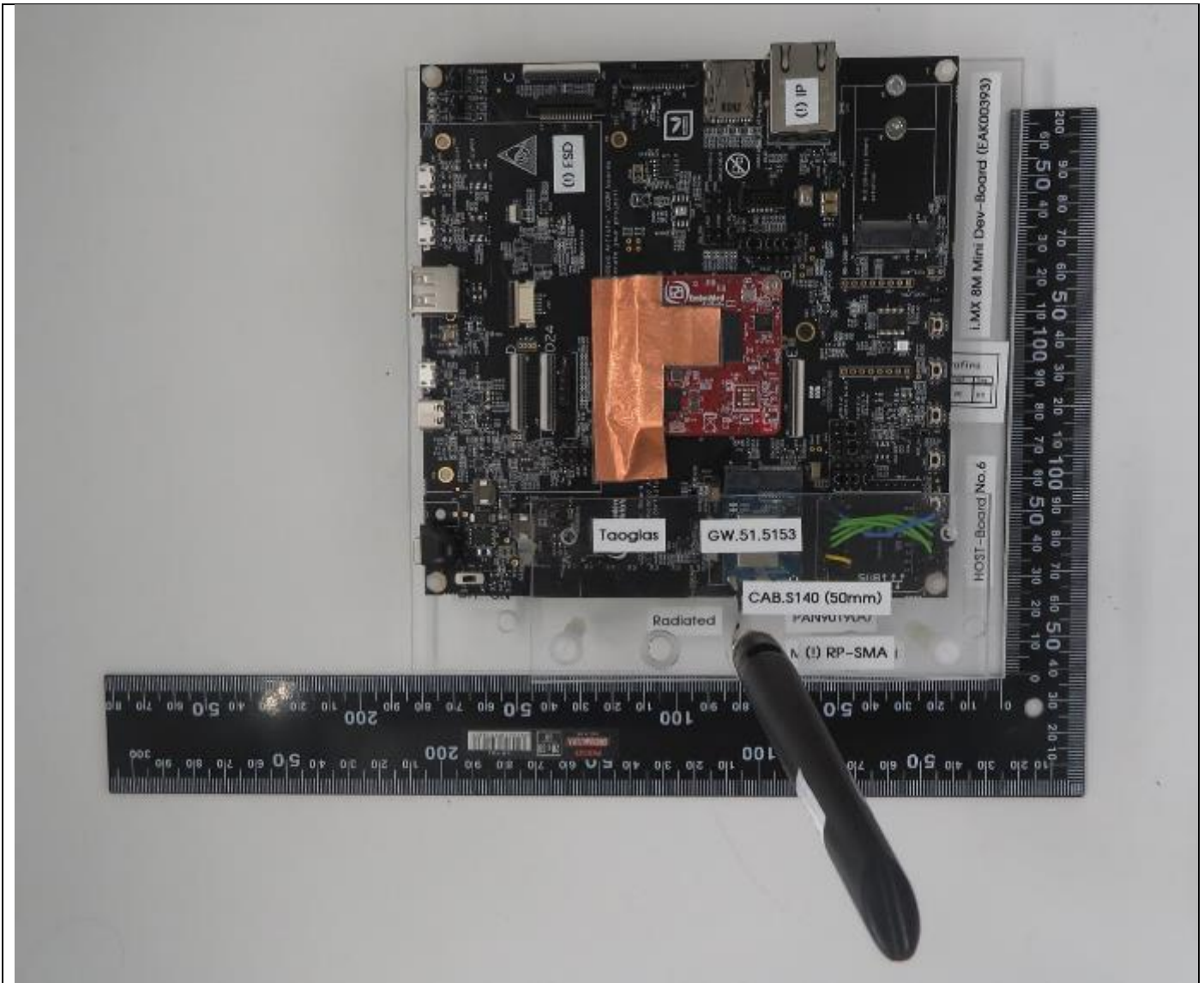
FCC part 15, subpart B and ICES-003 Graph for frequency range 150kHz-30MHz neutral line OM3 BLE:



## 10. Test Equipment List

New ID	Manufacturer	Equipment type	Description	Serial	Calibration information	Next calibration
G4C265	Rohde & Schwarz	ESW26	EMI test receiver	101324	29.6.2023	29.6.2024
G4C273	Frankonia	ALX-4000E	Broadband Antenna, 25MHz-4GHz with 6dB (50-A-MFN-06) att.	00816+1531	22.1.2024	22.1.2027
G4C503	Rohde & Schwarz	ESIB26	EMI Test Receiver 20Hz...26.5GHz	100263	7.11.2023	7.11.2025
G4C515	Rohde & Schwarz	ENV216	Two-line V-Network LISN	101472	15.5.2023	15.5.2024
G4C576	Rohde & Schwarz	HF907	Double-Ridged Waveguide Horn Antenna 800MHz-18GHz	100163	9.8.2022	9.8.2025

11. Photographs – Equipment External

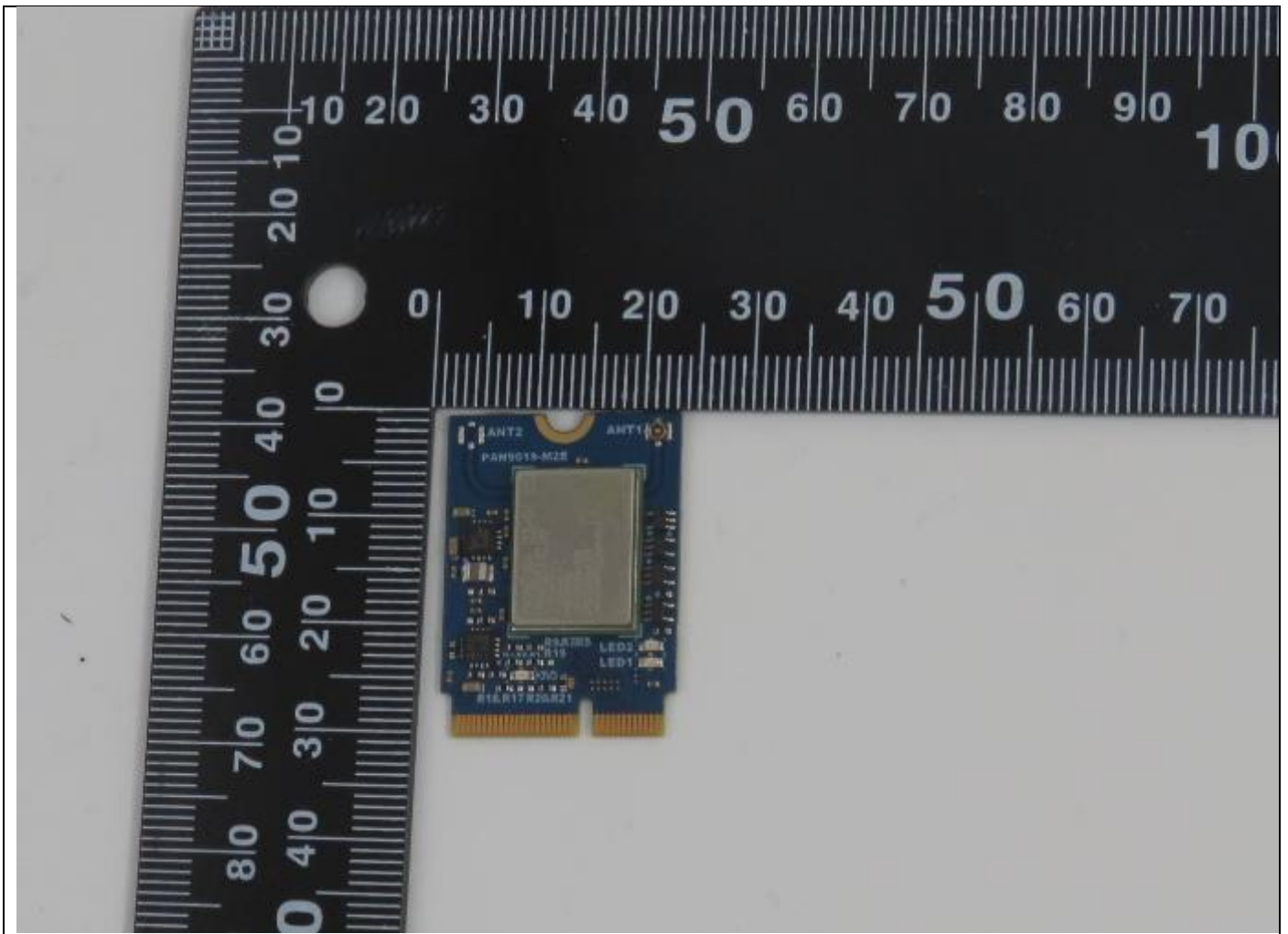


Picture 1, Host board with EUT Top view



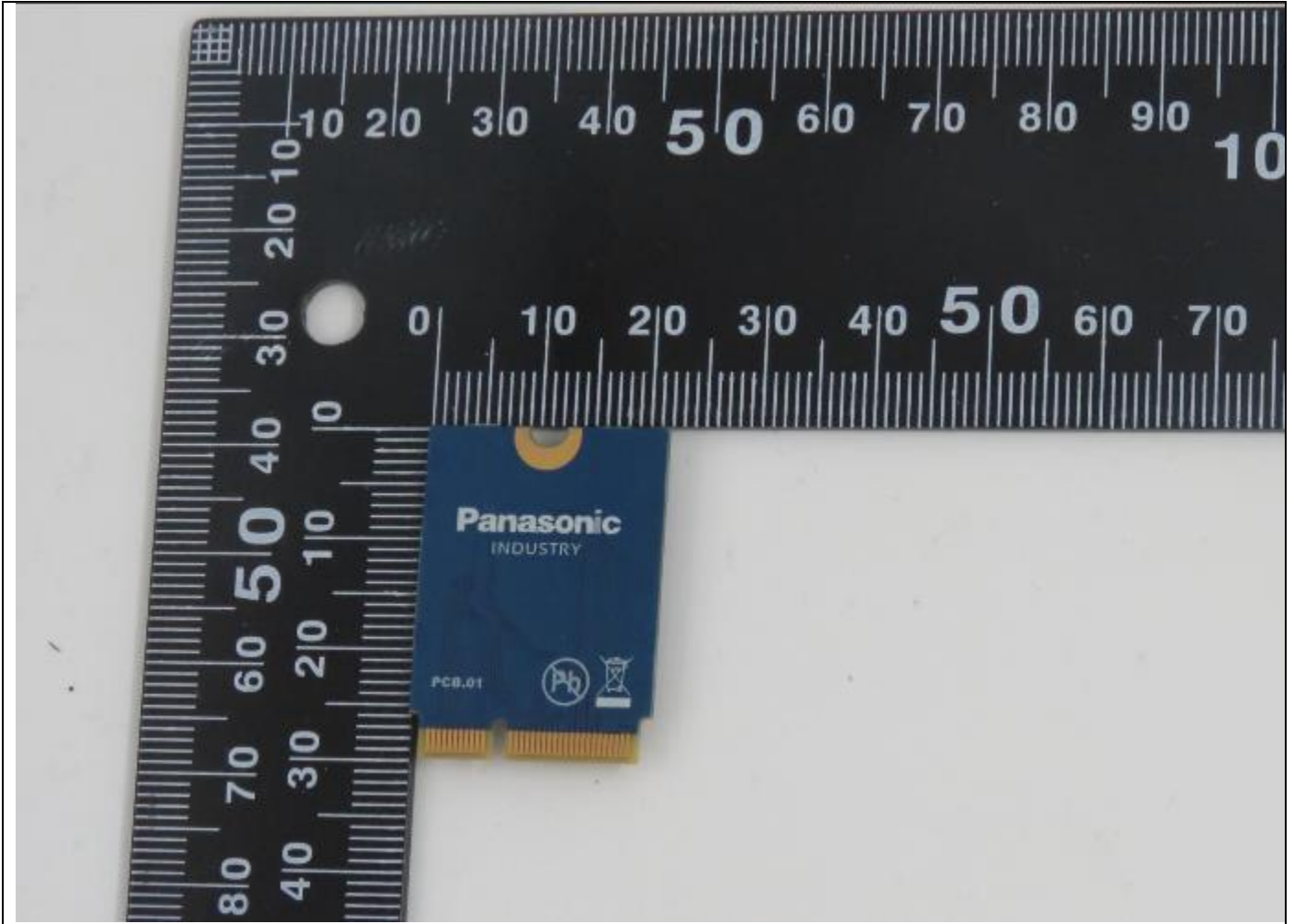
Picture 2, EUT with auxiliary equipment

12. Photographs – Equipment Internal

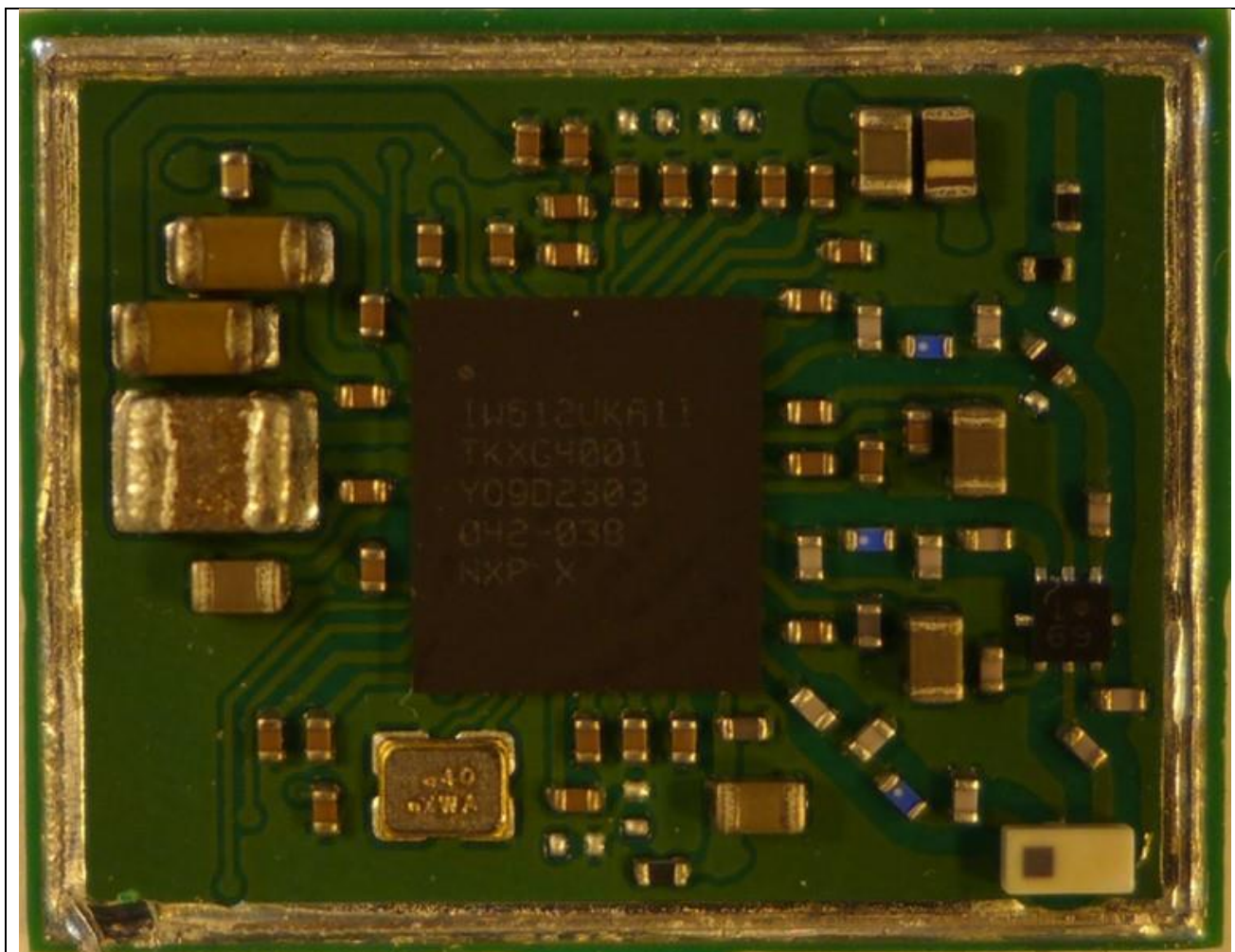


Picture 3, EUT PCB top



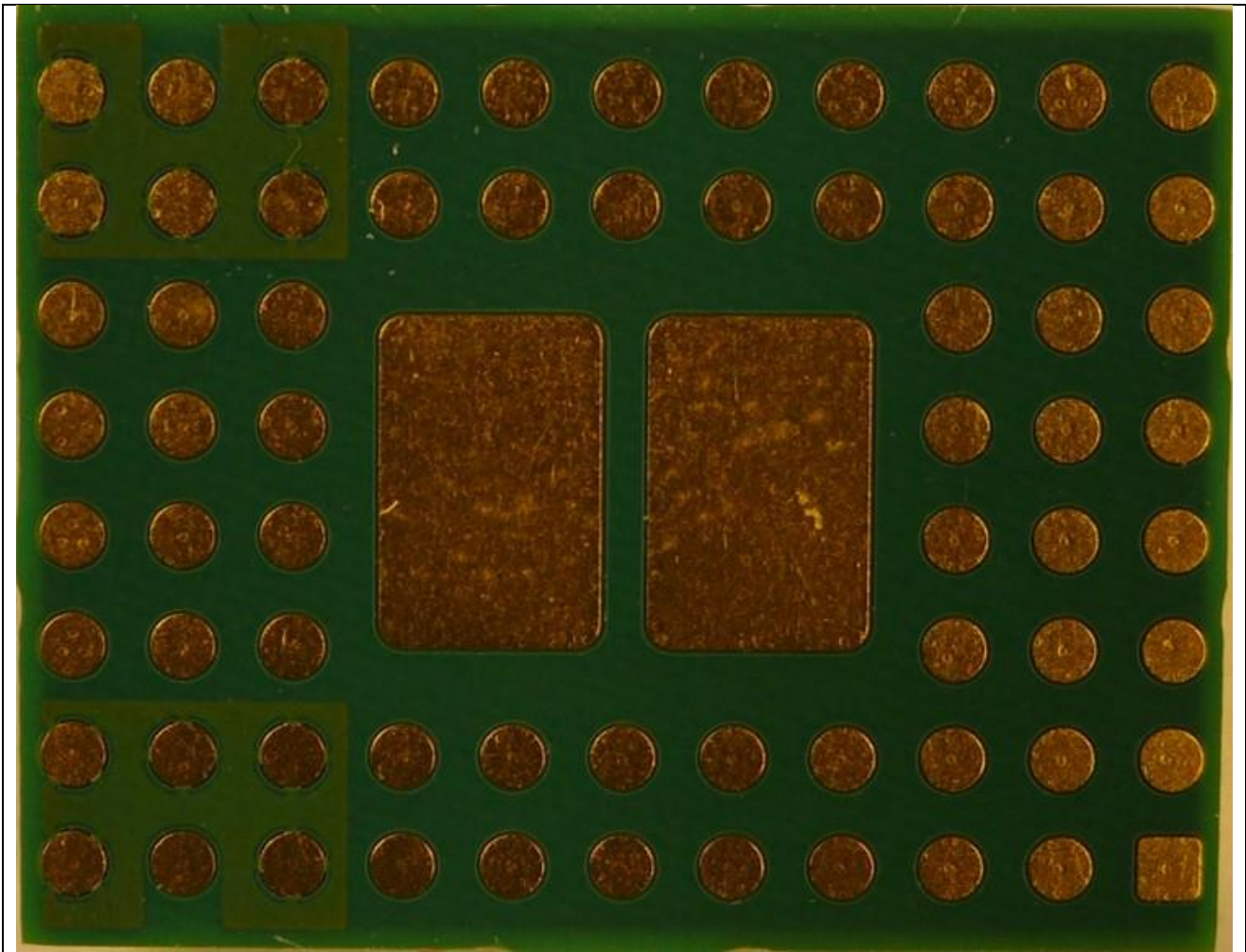


Picture 4, EUT PCB bottom



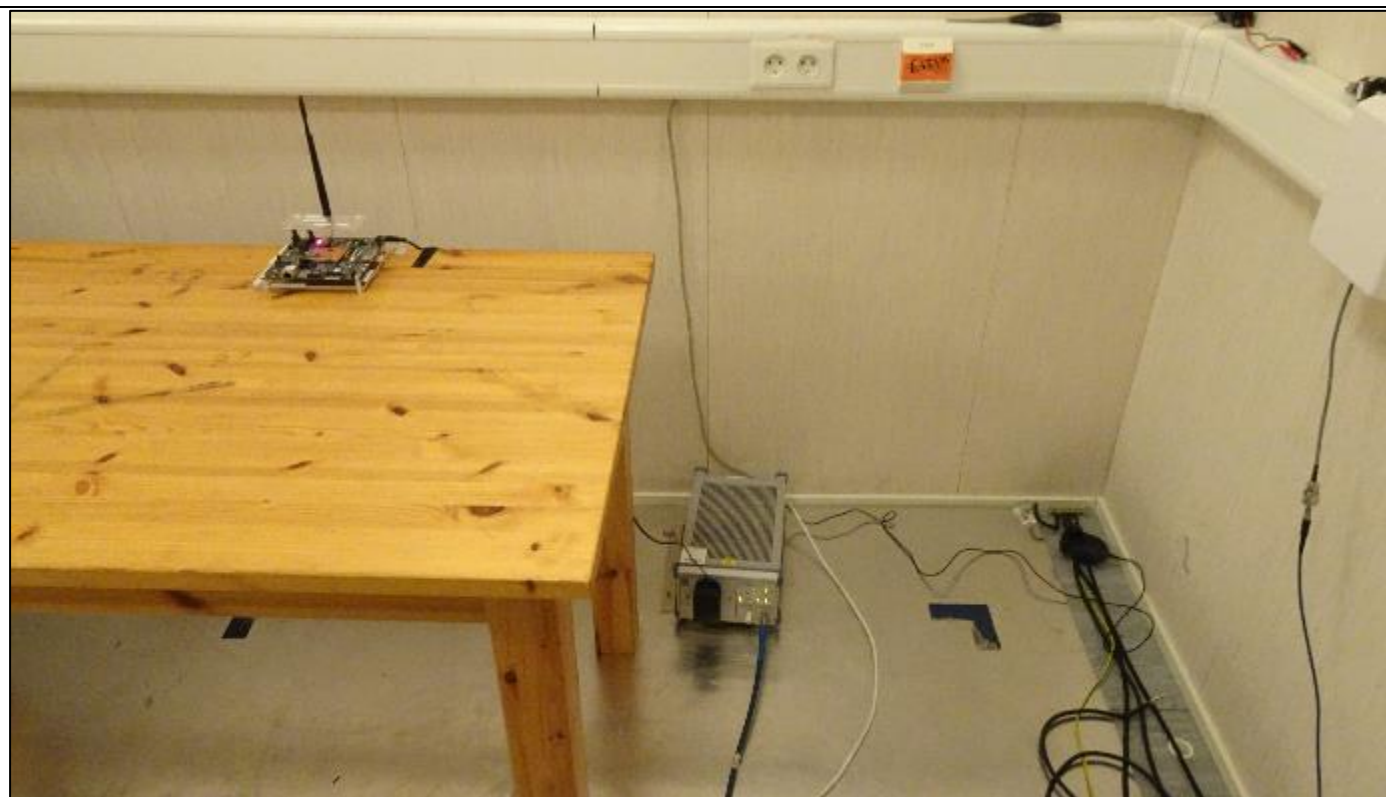
*Picture 5, EUT Module internal*





*Picture 6, EUT Module bottom*

### 13. Photographs – Test Setups

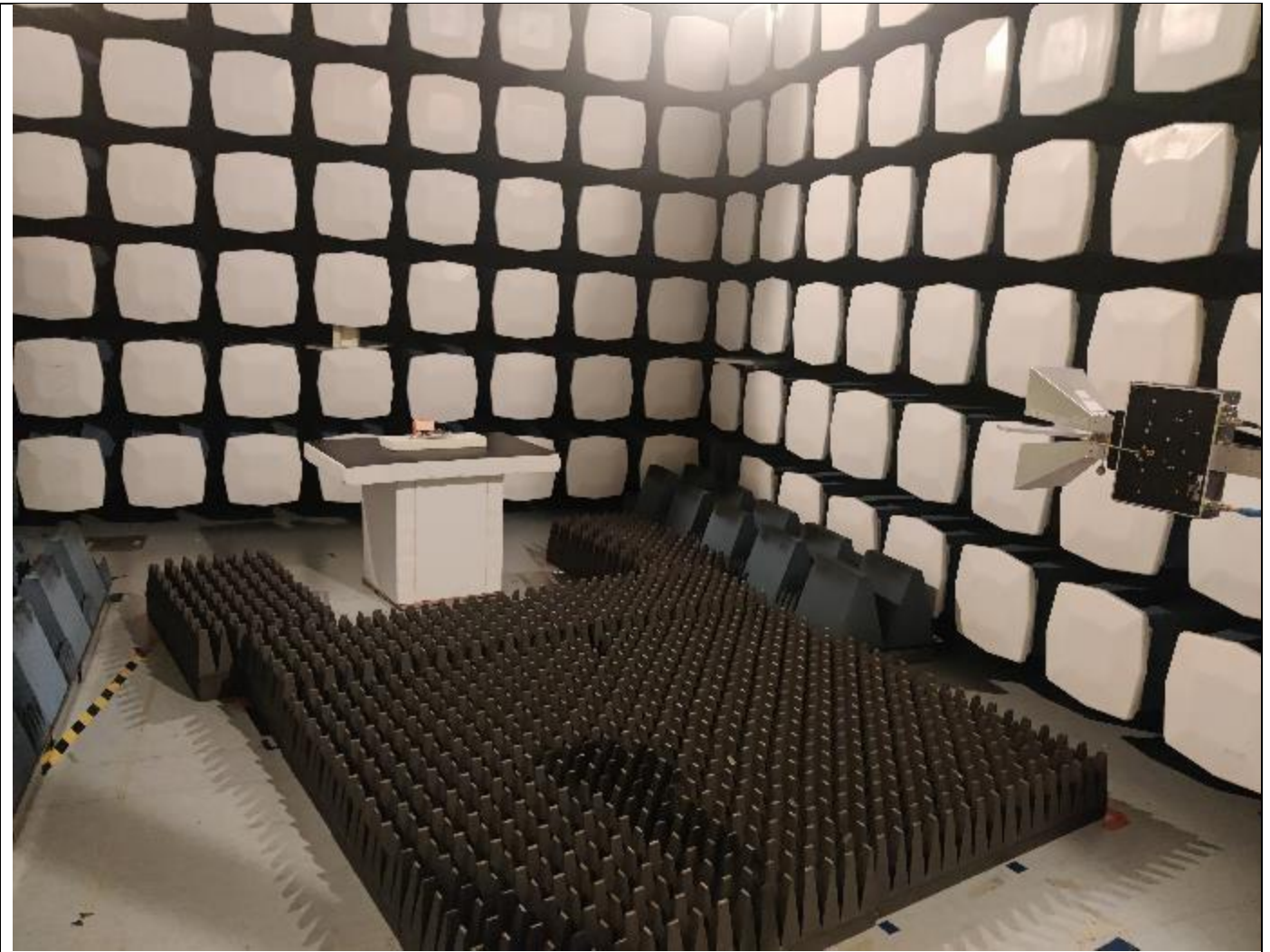


*Picture 7, AC Power Line Conducted Emissions*



*Picture 8, Radiated Emissions, common setup, 30 - 1000 MHz*





*Picture 9, Radiated Emissions, common setup, 1 – 18 GHz*