

TEST REPORT

FCC WPT Test for NVT-T15M
Certification

APPLICANT
Novatech Co.,Ltd.

REPORT NO.
HCT-RF-2105-FC001

DATE OF ISSUE
May 11, 2021

Tested by
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TEST REPORT FCC WPT Test for NVT-T15M	REPORT NO. HCT-RF-2105-FC001
	DATE OF ISSUE May 11, 2021
	Additional Model -

Applicant	Novatech Co.,Ltd. 11st floor, U-TOWER, 120, Heungdeok Jungang-ro, Giheung-gu Yongin-si Gyeonggi-do 16950 South Korea
Eut Type Model Name	Wireless Charger NVT-T15M
FCC ID	2AZTP-NVT-T15M
Frequency of Operation & Max. Transmit Power	110 kHz ~ 148 kHz(Wireless Charger) : -17.35 dBuV/m @300 m
FCC Classification	Part 15 Low Power Transmitter Below 1705 kHz (DCD)
FCC Rule Part(s)	FCC Part 15, Subpart C (15.209)

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	May 11, 2021	Initial Release

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

* The report shall not be reproduced except in full(only partly) without approval of the laboratory.

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1. EUT DESCRIPTION

Model	NVT-T15M
Additional Model	-
EUT Type	Wireless Charger
Power Supply (Operating voltage)	DC 5.0 [V] = 5.5 [W] DC 9.0 [V] = 14.4[W]
Travel Adapter Information (For Testing)	Model : EP-TA800(SAMSUNG) Type : C to C <i>PDO(Power Data Objective)</i> - 5V(3A), 9V(2.77A) <i>PPS(Programmable Power Supply)</i> - 3.3-5.9V(3A), 3.3-11V(2.25A)
Frequency of Operation	110 kHz ~ 148 kHz (Wireless Power Charging)
Max. Transmit Power	-17.35 dBuV/m @300 m
Date(s) of Tests	April 05, 2021 ~ May 04, 2021

2. TEST METHODOLOGY

The measurement procedure described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Device (ANSI C63.10-2013) is used in the measurement of the test device.

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz. Above 1GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.6.5 of ANSI C63.10. (Version: 2013).

3. INSTRUMENT CALIBRATION

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

Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.

The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated April 02, 2018 (Registration Number: KR0032).

EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR § 15.203:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- (1) The antennas of this E.U.T are permanently attached.
- (2) The E.U.T Complies with the requirement of § 15.203

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of

ANSI C63.10-2013.

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_{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 Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05

7. Worst case configuration

Mode	EUT State	Position of Client device	WPT Output	Client device
Wireless Charger	Charging from EUT to Client device	Aligned	14.4W	Jig
			5.5W	(See Note 2)

Note:

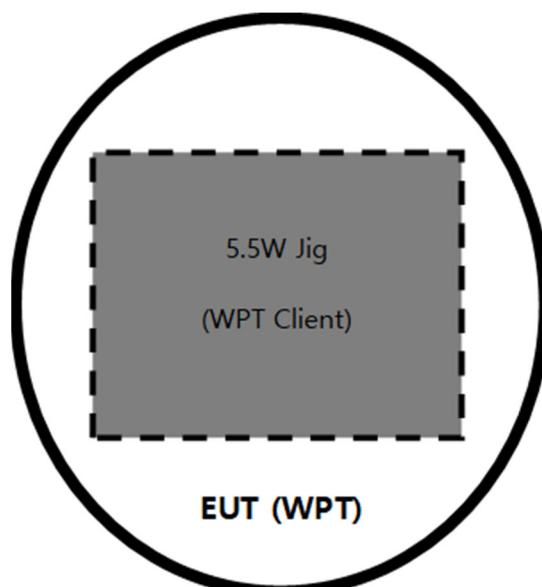
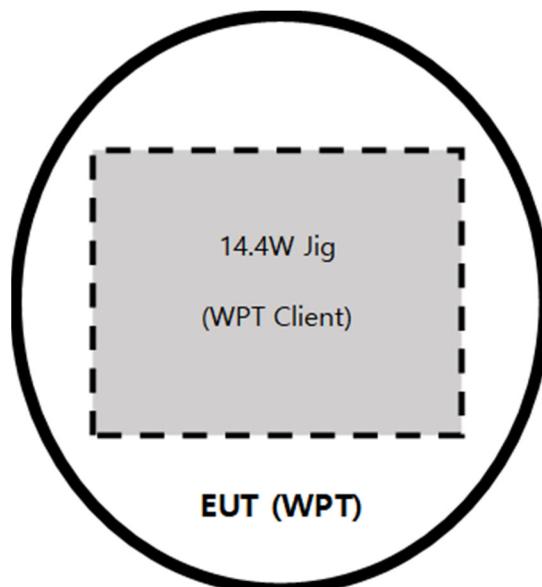
1. Client device:
 - WPT charging to Jig 5.5W & 14.4W
2. All position of loop antenna were investigated and the worst position results are reported.
 - Position : Horizontal, Vertical, Parallel to the ground plane
 - Worst Position : Horizontal
3. The EUT was tested in three orthogonal axis(X, Y, Z) and the worst position results are reported.
 - Axis : X, Z
 - Worst Axis : X
4. NVT-T15M were tested and the worst case results are reported.
 - Wireless power transfer from EUT(With TA) to 14.4W Jig
 - Wireless power transfer from EUT(With TA) to 5.5W Jig

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : EUT + Travel Adapter + 14.4W Jig(Client device), EUT + Travel Adapter + 5.5W Jig(Client device)
 - All mode Tested.

Test Setup Diagram:

Aligned



8. TEST SUMMARY

Test Description	FCC Rule	Limit	Condition	Result
Radiated emission	§ 15.209	cf. Section 9		Pass
AC Power Line Conducted Emission	§ 15.207	cf. Section 10	Radiated	Pass
Emission bandwidth.	§ 2.1049	<u>See note1</u>		<u>See note1</u>

Note:

1. For reporting purposes only.

9. RADIATED EMISSION MEASUREMENT

Test Settings

1. Analyzer frequency set to the frequency of the radiated spurious emission of interest
2. RBW :
 - 9kHz – 150kHz : 300Hz
 - 150kHz – 30MHz : 10kHz
 - 30MHz – 1GHz : 100kHz
3. VBW : $\geq 3 \times$ RBW
4. Sweep time : Auto couple
5. Detector : Peak
6. Trace : Maxhold
7. Trace was allowed to stabilize

Limit(FCC)

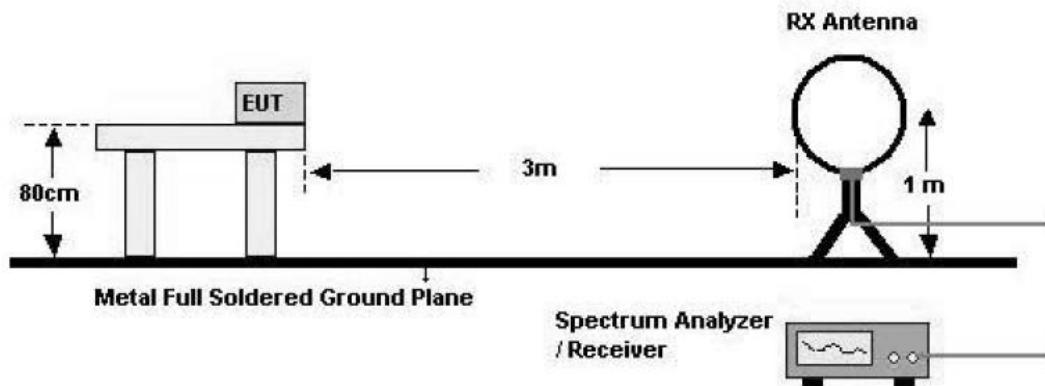
Except as provided elsewhere in this paragraph the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Rule Part	Frequency (MHz)	Limit
Part 15.209	0.009 ~ 0.490	2400/F(kHz) uV/m@300 m
	0.490 ~ 1.705	24000/F(kHz) uV/m@30 m
	1.705 ~ 30	30 uV/m@30 m
	30 ~ 88	100 ** uV/m@3 m
	88 ~ 216	150 ** uV/m@3 m
	216 ~ 960	200 ** uV/m@3 m
	Above 960	500 uV/m@3 m

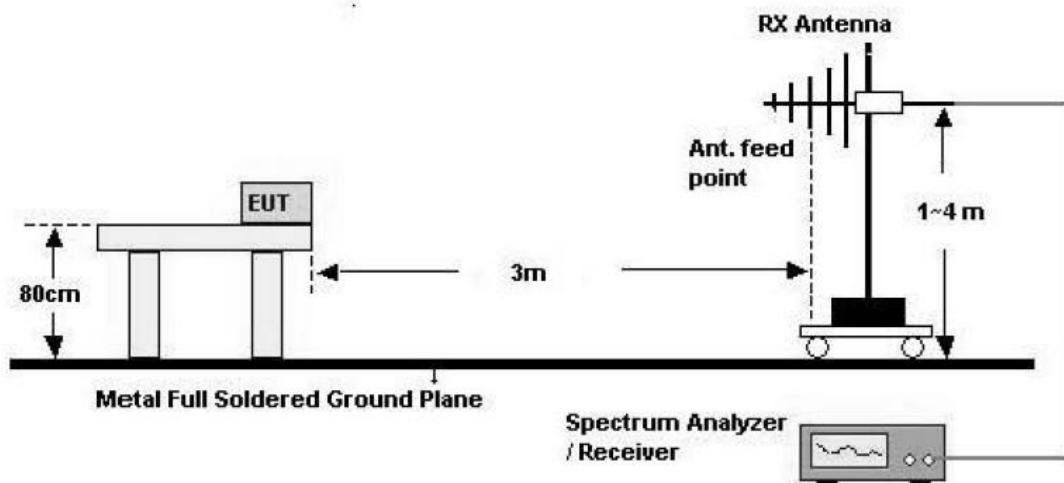
** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Test Set-up

Below 30 MHz



30 MHz - 1 GHz



Test Procedure of Radiated spurious emissions(Below 30 MHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3 m from the EUT.
3. The EUT is placed on a turntable, which is 0.8m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The limit is converted from microvolts/meter to decibel microvolts/meter. Sample Calculation:
* Result level(dB μ V/m@30m)
= Reading level(dB μ V/m@3m) + Ant factor(dB/m) + Cable Loss(dB) – Distance Correction Factor.
6. Distance Correction
* 0.009 MHz – 0.490 MHz :
 $40\log(3\text{ m}/300\text{ m}) = -80\text{ dB}$
* 0.490 MHz – 30MHz :
 $40\log(3\text{ m}/30\text{ m}) = -40\text{ dB}$
7. Plots were taken without using any correction factors.
8. The worst case plots are reported.

KDB 414788 OFS and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Test Procedure of Radiated spurious emissions(Below 1GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8m above ground plane.
3. The Hybrid antenna was placed at a location 3m from the EUT, which is varied from 1m to 4m to find out the highest emissions.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Spectrum Setting
 - (1) Measurement Type(Peak):
 - Measured Frequency Range : 30 MHz – 1 GHz
 - Detector = Peak
 - Trace = Maxhold
 - RBW = 100 kHz
 - VBW \geq 3 x RBW
7. Total = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L)
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

■Test Result

Frequency (kHz)	Reading Level (dBuV/m)@3m	Ant.Factor (dB/m)	Cable Loss (dB)	Distance Correction (dB)	Result Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
81.500	12.96	17.90	0.69	-80	-48.45	29.38	77.83
# 122.4670	43.72	17.10	0.69	-80	-18.49	25.84	44.33
366.50	33.27	17.10	0.69	-80	-28.94	36.32	65.26
17711.0	17.49	18.10	0.69	-40	-3.72	29.54	33.26
280600.0	8.71	18.90	1.93	-40	-10.46	43.52	53.98

Note

1. "#" Fundamental Frequency
2. EUT Mode: Wireless power transfer from EUT(With TA) to 15W Jig
3. Position: Aligned_14.4W
4. 30 MHz – 1GHz : No Critical peaks found
5. The fundamental frequency(110kHz – 148kHz) varies depending on the position of client device.

All fundamental frequency were investigated and the worst results are reported.

Frequency (kHz)	Reading Level (dBuV/m)@3m	Ant.Factor (dB/m)	Cable Loss (dB)	Distance Correction (dB)	Result Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
64.770	17.84	17.90	0.69	-80	-43.57	31.38	74.95
# 117.33	44.86	17.10	0.69	-80	-17.35	26.22	43.57
350.0	31.04	17.10	0.69	-80	-31.17	16.72	47.89
17750.0	15.87	18.10	0.69	-40	-5.34	29.54	34.88
129000.0	8.36	17.80	1.33	-40	-12.51	43.52	56.03

Note

1. "#" Fundamental Frequency
2. EUT Mode: Wireless power transfer from EUT(With TA) to 5.5W Jig
3. Position: Aligned_5.5W
4. 30 MHz – 1GHz : No Critical peaks found
5. The fundamental frequency(110kHz – 148kHz) varies depending on the position of client device.

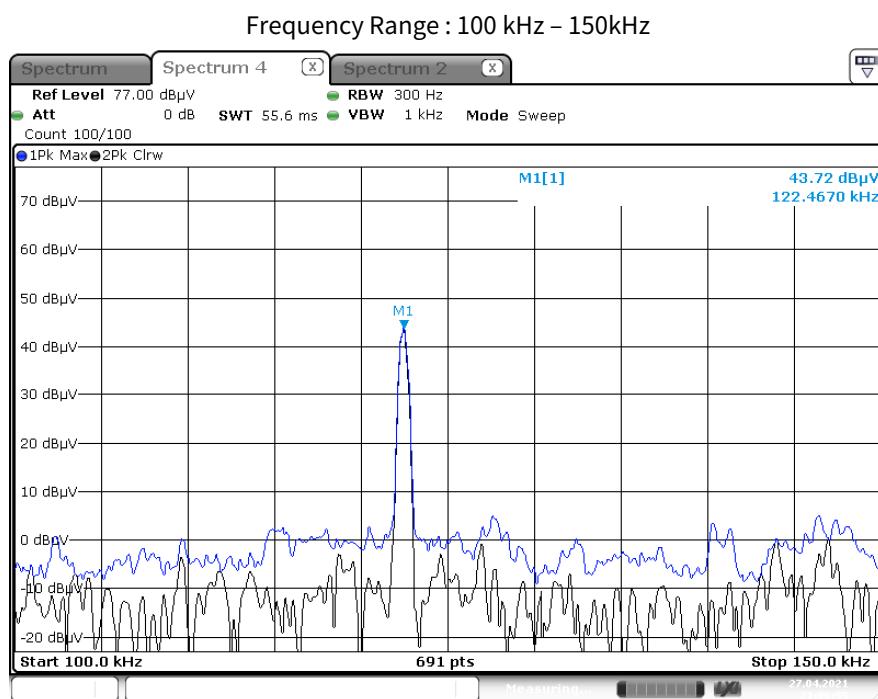
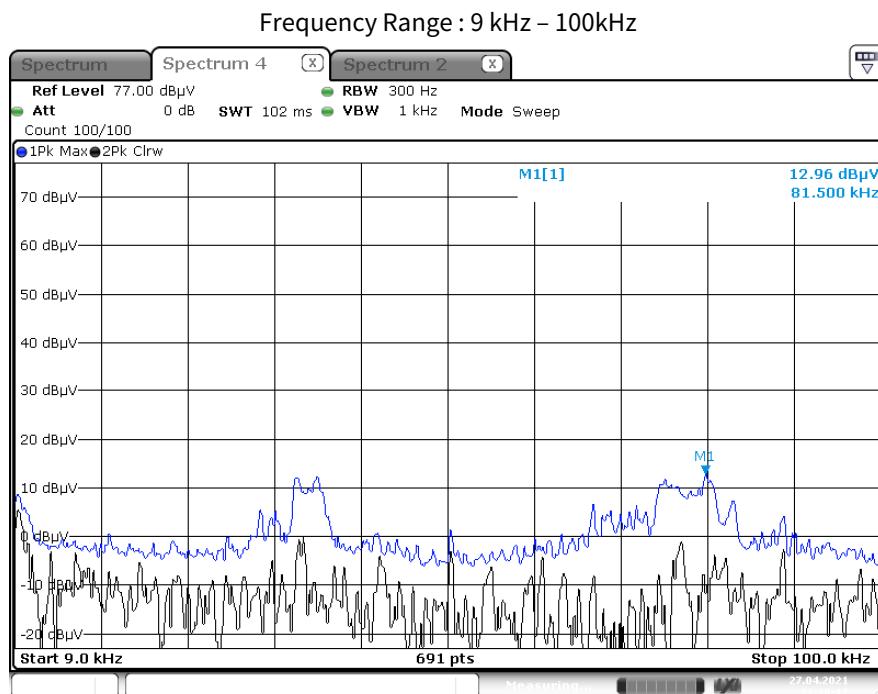
All fundamental frequency were investigated and the worst results are reported.

Test Plot

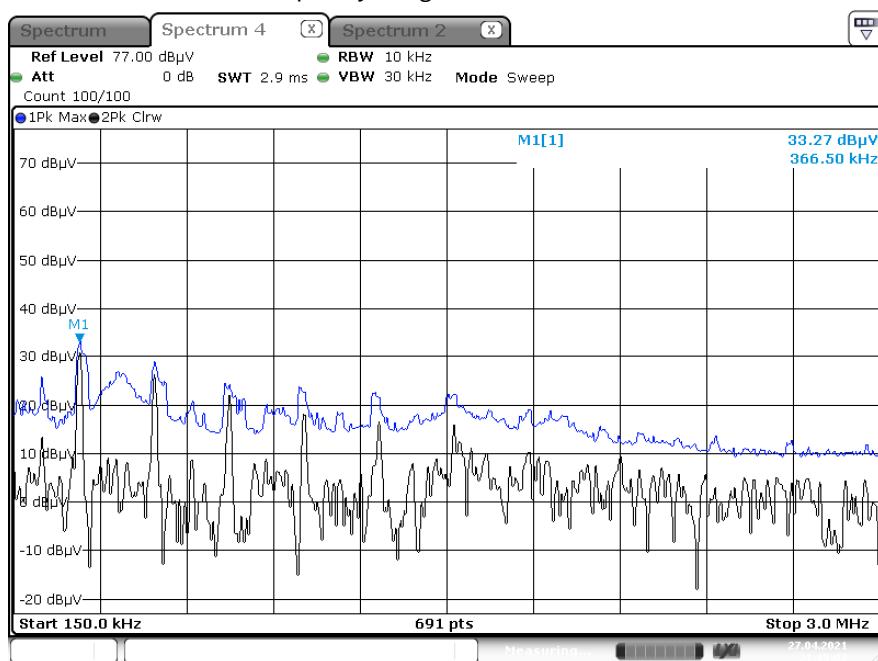
In order to simplify the report, the worst case results are reported.

Worst case

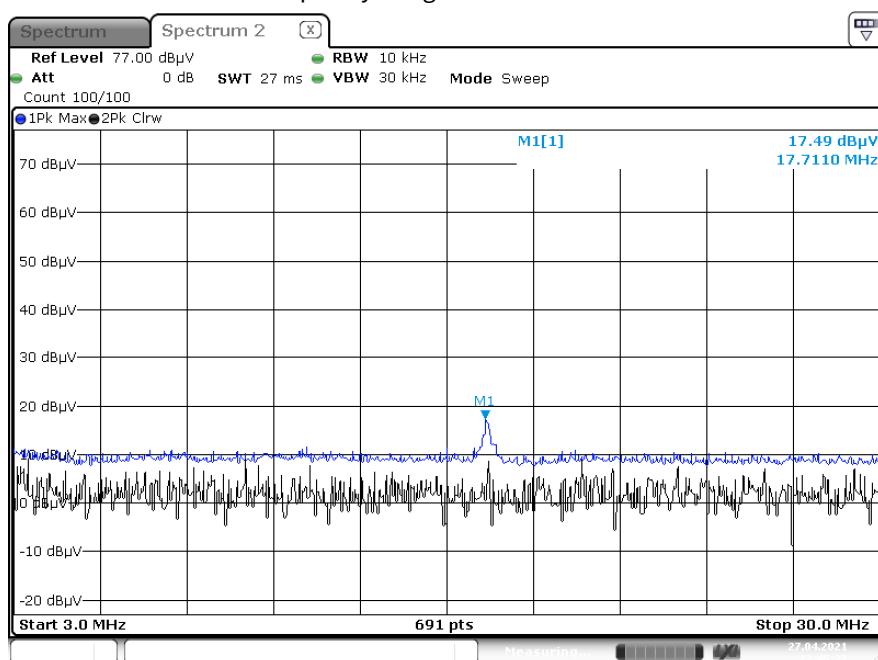
- EUT Mode: Wireless power transfer from EUT(With TA) to 14.4W Jig
- Position: Aligned_14.4W



Frequency Range : 150 kHz – 3 MHz

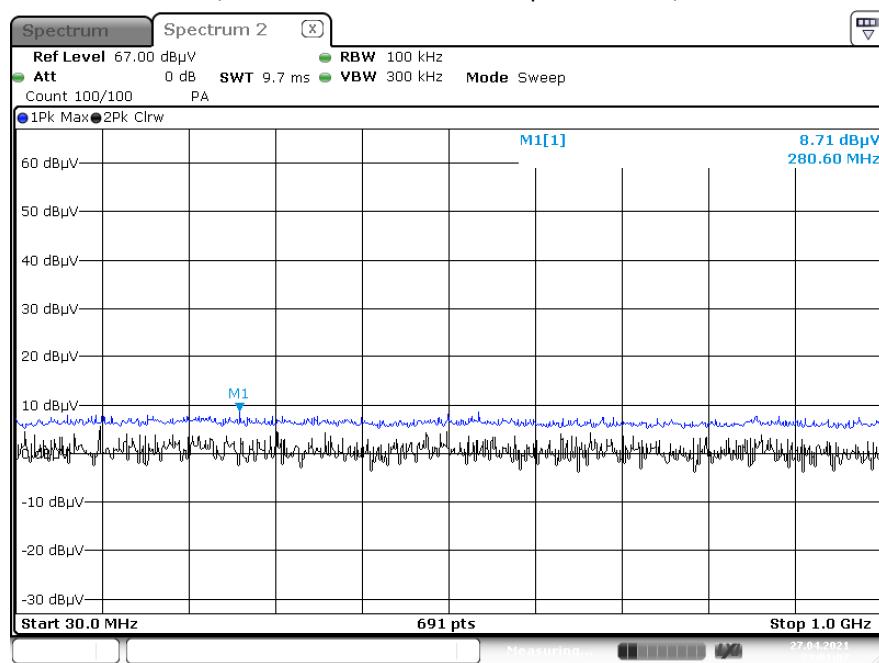


Frequency Range : 3 MHz – 30 MHz



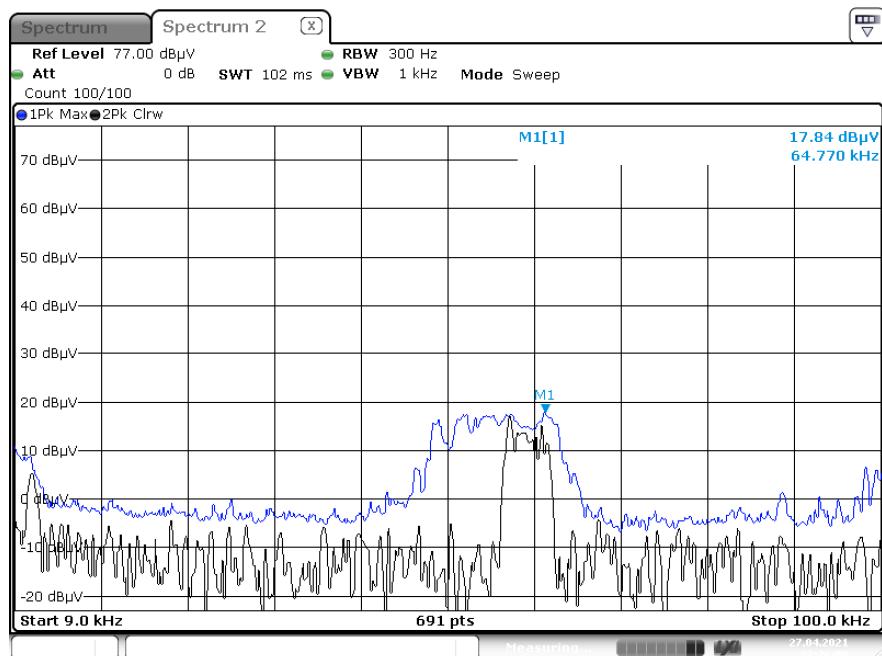
Frequency Range : 30 MHz – 1 GHz

(30 MHz – 1GHz : No Critical peaks found)

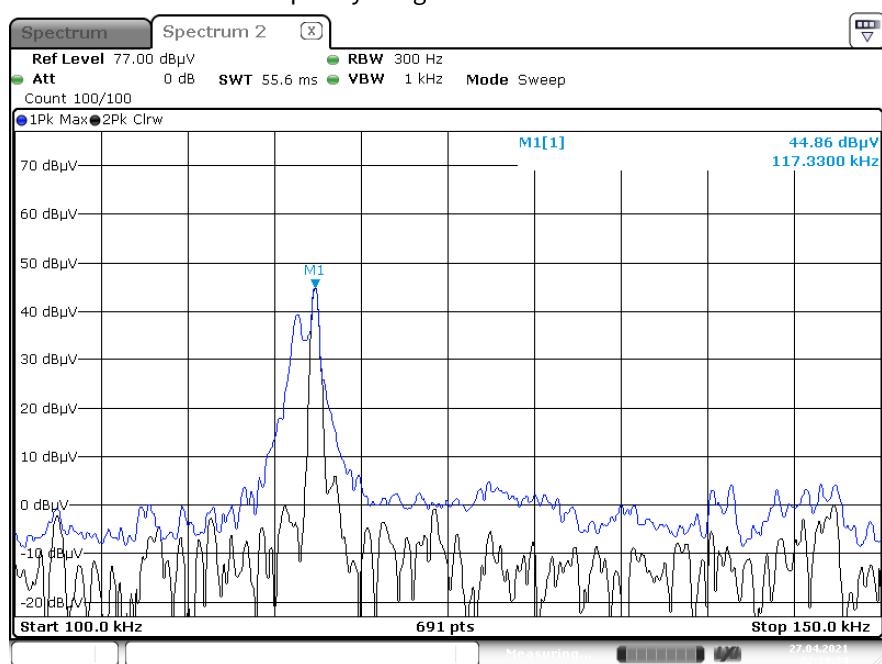


- EUT Mode: Wireless power transfer from EUT(With TA) to 5.5W Jig
- Position: Aligned_5.5W

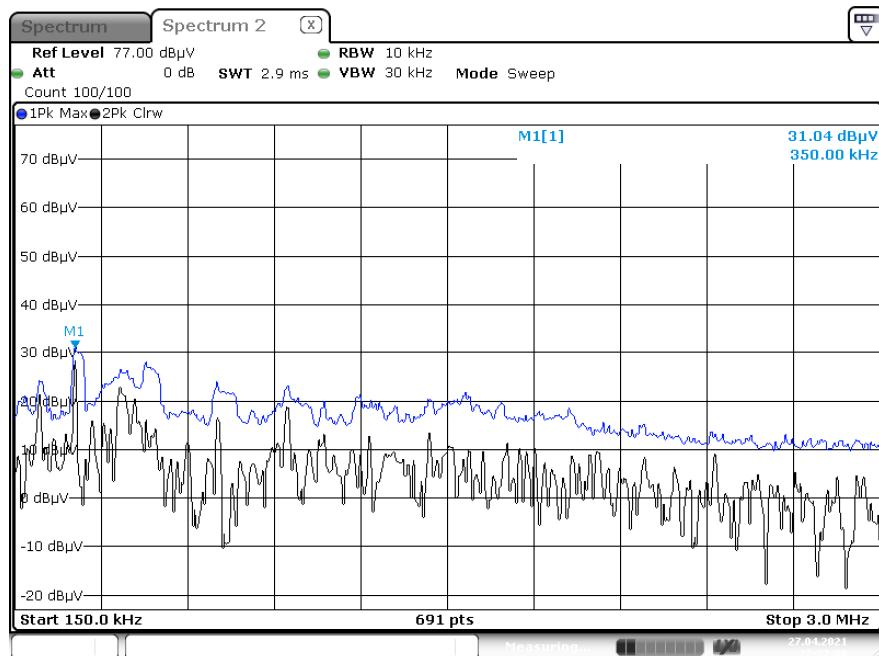
Frequency Range : 9 kHz – 100kHz



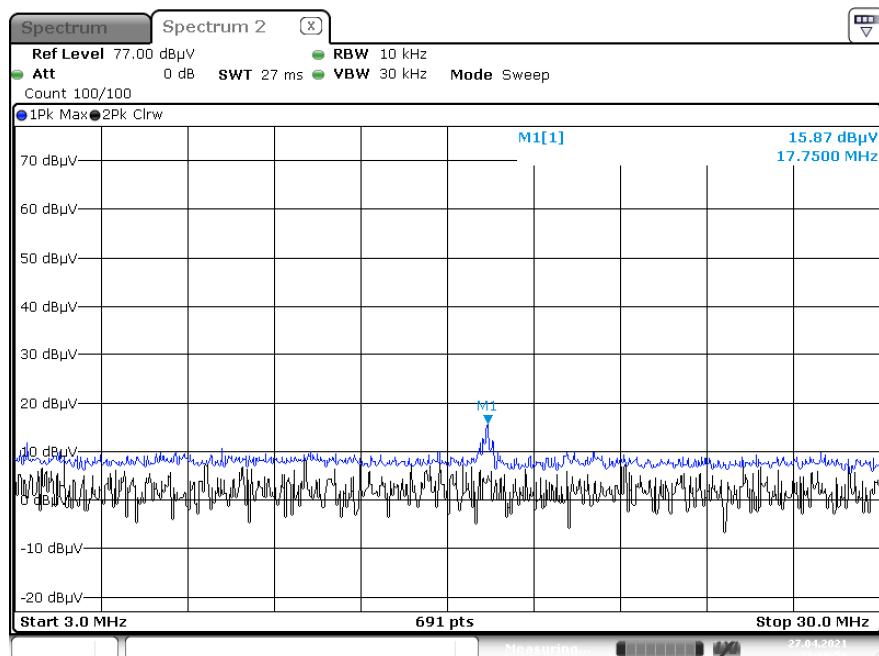
Frequency Range : 100 kHz – 150kHz



Frequency Range : 150 kHz – 3 MHz

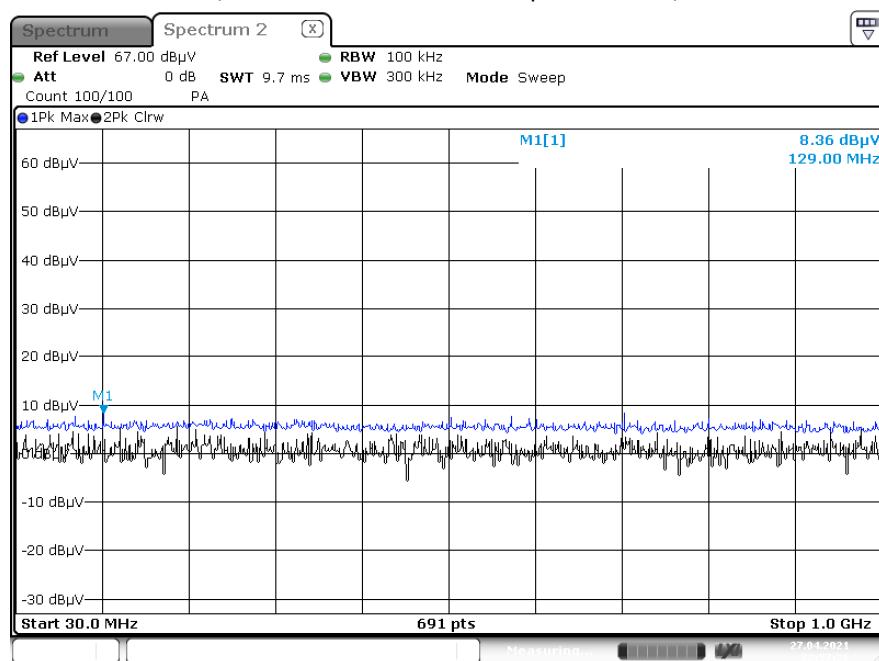


Frequency Range : 3 MHz – 30 MHz



Frequency Range : 30 MHz – 1 GHz

(30 MHz – 1GHz : No Critical peaks found)



10. POWERLINE CONDUCTE EMISSIONS

Limit

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56 ^(a)	56 to 46 ^(a)
0.50 to 5	56	46
5 to 30	60	50

^(a)Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.
5. The EUT is the device operating below 30 MHz.
 - For unterminated the Antenna, the AC line conducted tests are performed with the antenna connected
 - For terminated the Antenna, the AC line conducted tests are performed with a dummy load connected to the EUT antenna output terminal.

Sample Calculation

Quasi-peak(Final Result) = Reading Value + Correction Factor

Test Result & Plot (Position: Aligned_14.4W)**Conducted Emissions (Line 1)**

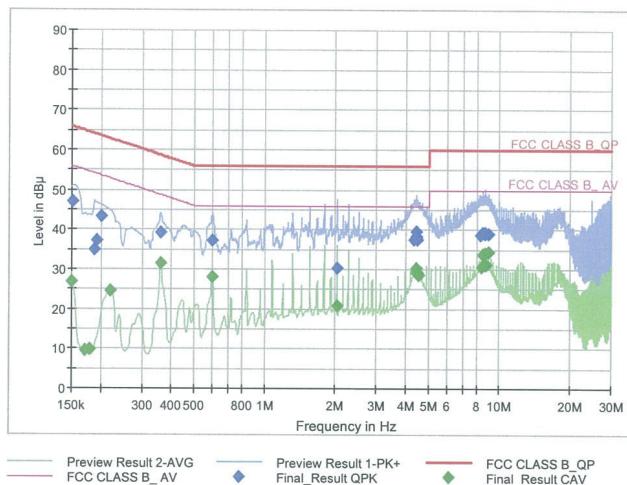
WPT 14.4W_L1

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Test Report**Common Information**

EUT : NVT-T15M
Manufacturer : NOVATECH
Test Site: SHIELD ROOM
Operating Conditions : WPT 14.4W_L1

Full Spectrum

**Final Result QPK**

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth	Line	Filter	Corr. (dB)
0.1523	47.16	65.88	18.72	9.000	L1	OFF	9.6
0.1883	34.80	64.11	29.31	9.000	L1	OFF	9.6
0.1928	37.18	63.92	26.74	9.000	L1	OFF	9.6
0.2018	43.13	63.54	20.41	9.000	L1	OFF	9.6
0.3593	39.09	58.75	19.66	9.000	L1	OFF	9.6
0.5990	37.32	56.00	18.68	9.000	L1	OFF	9.6
2.0368	30.34	56.00	25.66	9.000	L1	OFF	9.7
4.3543	37.43	56.00	18.57	9.000	L1	OFF	9.7
4.4308	38.43	56.00	17.57	9.000	L1	OFF	9.7
4.4353	38.09	56.00	17.91	9.000	L1	OFF	9.7
4.4555	39.44	56.00	16.56	9.000	L1	OFF	9.7
4.4735	37.48	56.00	18.52	9.000	L1	OFF	9.7
8.2918	38.68	60.00	21.32	9.000	L1	OFF	9.8
8.5190	39.20	60.00	20.80	9.000	L1	OFF	9.8
8.6743	39.24	60.00	20.76	9.000	L1	OFF	9.8
8.6878	39.04	60.00	20.96	9.000	L1	OFF	9.8
8.7440	39.34	60.00	20.66	9.000	L1	OFF	9.8
8.9848	39.02	60.00	20.98	9.000	L1	OFF	9.8

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WPT 14.4W_L1

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Final Result CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1500	26.78	56.00	29.22	9.000	L1	OFF	9.6
0.1725	9.51	54.84	45.33	9.000	L1	OFF	9.6
0.1793	9.83	54.52	44.69	9.000	L1	OFF	9.6
0.2198	24.39	52.83	28.44	9.000	L1	OFF	9.6
0.3593	31.36	48.75	17.38	9.000	L1	OFF	9.6
0.5990	28.09	46.00	17.91	9.000	L1	OFF	9.6
2.0368	20.63	46.00	25.37	9.000	L1	OFF	9.7
4.4083	29.33	46.00	16.67	9.000	L1	OFF	9.7
4.4330	29.24	46.00	16.76	9.000	L1	OFF	9.7
4.4510	30.22	46.00	15.78	9.000	L1	OFF	9.7
4.4623	29.10	46.00	16.90	9.000	L1	OFF	9.7
4.5523	28.68	46.00	17.32	9.000	L1	OFF	9.7
8.4628	30.71	50.00	19.29	9.000	L1	OFF	9.8
8.5055	33.81	50.00	16.19	9.000	L1	OFF	9.8
8.7305	31.24	50.00	18.76	9.000	L1	OFF	9.8
8.7463	33.96	50.00	16.04	9.000	L1	OFF	9.8
8.7890	31.07	50.00	18.93	9.000	L1	OFF	9.8
8.9848	34.26	50.00	15.74	9.000	L1	OFF	9.8

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Conducted Emissions (Line 2)

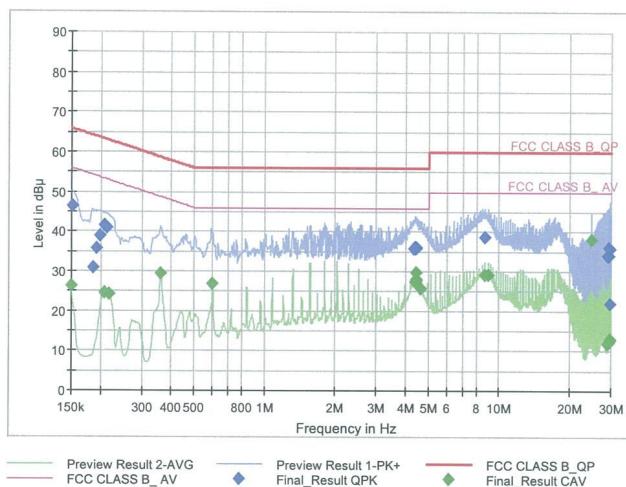
WPT 14.4W_N

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Test Report**Common Information**

EUT : NVT-T15M
Manufacturer : NOVATECH
Test Site: SHIELD ROOM
Operating Conditions : WPT 14.4W_N

Full Spectrum

**Final Result QPK**

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (MHz)	Line	Filter	Corr. (dB)
0.1523	46.58	65.88	19.30	9.000	N	OFF	9.6
0.1860	30.89	64.21	33.32	9.000	N	OFF	9.6
0.1928	35.88	63.92	28.04	9.000	N	OFF	9.6
0.1995	39.02	63.63	24.61	9.000	N	OFF	9.6
0.2085	41.47	63.27	21.80	9.000	N	OFF	9.6
0.2130	40.93	63.09	22.15	9.000	N	OFF	9.6
4.3430	35.75	56.00	20.25	9.000	N	OFF	9.7
4.3835	36.12	56.00	19.88	9.000	N	OFF	9.7
4.3903	36.11	56.00	19.89	9.000	N	OFF	9.7
4.3970	35.84	56.00	20.16	9.000	N	OFF	9.7
4.4150	35.99	56.00	20.01	9.000	N	OFF	9.7
4.4533	35.90	56.00	20.10	9.000	N	OFF	9.7
8.7485	38.63	60.00	21.37	9.000	N	OFF	9.8
29.0638	34.08	60.00	25.92	9.000	N	OFF	10.1
29.3000	36.05	60.00	23.95	9.000	N	OFF	10.1
29.3045	33.90	60.00	26.10	9.000	N	OFF	10.1
29.5385	35.72	60.00	24.28	9.000	N	OFF	10.1
29.7770	21.89	60.00	38.11	9.000	N	OFF	10.1

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WPT 14.4W_N

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Final Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1500	26.14	56.00	29.86	9.000	N	OFF	9.6
0.2085	24.44	53.27	28.82	9.000	N	OFF	9.6
0.2175	24.10	52.91	28.81	9.000	N	OFF	9.6
0.3615	29.47	48.63	19.22	9.000	N	OFF	9.6
0.6013	26.76	46.00	19.24	9.000	N	OFF	9.6
4.3700	27.46	46.00	18.54	9.000	N	OFF	9.7
4.3813	27.48	46.00	18.52	9.000	N	OFF	9.7
4.4105	27.90	46.00	18.10	9.000	N	OFF	9.7
4.4195	27.73	46.00	18.27	9.000	N	OFF	9.7
4.4555	29.70	46.00	16.30	9.000	N	OFF	9.7
4.6490	25.72	46.00	20.28	9.000	N	OFF	9.7
8.7463	29.26	50.00	20.74	9.000	N	OFF	9.8
8.9870	29.19	50.00	20.81	9.000	N	OFF	9.8
24.6628	38.00	50.00	12.00	9.000	N	OFF	10.0
29.0638	11.72	50.00	38.28	9.000	N	OFF	10.1
29.3023	12.21	50.00	37.79	9.000	N	OFF	10.1
29.5385	12.86	50.00	37.14	9.000	N	OFF	10.1
29.7770	12.82	50.00	37.18	9.000	N	OFF	10.1

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Test Result & Plot (Position: Aligned_5.5W)**Conducted Emissions (Line 1)**

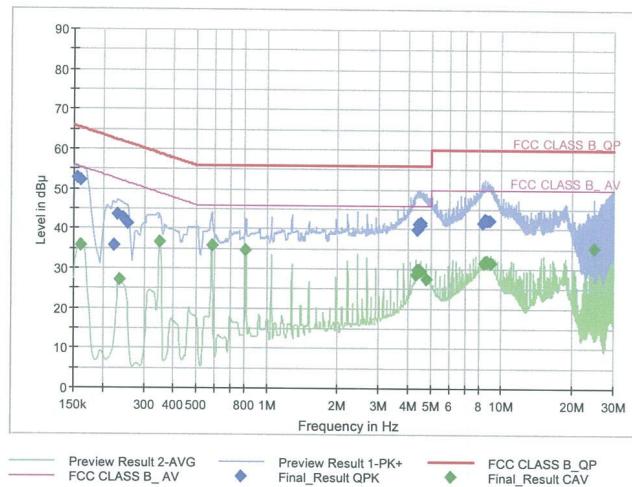
WPT 5.5W_L1

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Test Report**Common Information**

EUT : NVT-T15M
Manufacturer : NOVATECH
Test Site: SHIELD ROOM
Operating Conditions : WPT 5.5W_L1

Full Spectrum

**Final Result QPK**

Frequency (MHz)	QuasiPeak	Limit (dBuV)	Margin	Bandwidth	Line	Filter	Corr. (dB)
0.1545	52.67	65.75	13.09	9.000	L1	OFF	9.6
0.1613	52.29	65.40	13.11	9.000	L1	OFF	9.6
0.2220	35.86	62.74	26.88	9.000	L1	OFF	9.6
0.2310	43.44	62.41	18.97	9.000	L1	OFF	9.6
0.2445	42.63	61.94	19.31	9.000	L1	OFF	9.6
0.2535	41.34	61.64	20.30	9.000	L1	OFF	9.6
4.3768	39.70	56.00	16.30	9.000	L1	OFF	9.7
4.4218	41.17	56.00	14.83	9.000	L1	OFF	9.7
4.4263	41.32	56.00	14.68	9.000	L1	OFF	9.7
4.4533	41.29	56.00	14.71	9.000	L1	OFF	9.7
4.5433	41.55	56.00	14.45	9.000	L1	OFF	9.7
4.5478	40.89	56.00	15.11	9.000	L1	OFF	9.7
8.2760	41.44	60.00	18.56	9.000	L1	OFF	9.8
8.5100	42.26	60.00	17.74	9.000	L1	OFF	9.8
8.5145	42.06	60.00	17.94	9.000	L1	OFF	9.8
8.6810	42.17	60.00	17.83	9.000	L1	OFF	9.8
8.6923	42.13	60.00	17.87	9.000	L1	OFF	9.8
8.8633	42.12	60.00	17.88	9.000	L1	OFF	9.8

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WPT 5.5W_L1

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Final Result CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1613	35.88	55.40	19.52	9.000	L1	OFF	9.6
0.2355	27.02	52.25	25.24	9.000	L1	OFF	9.6
0.3503	36.73	48.96	12.23	9.000	L1	OFF	9.6
0.5833	35.70	46.00	10.30	9.000	L1	OFF	9.6
0.8150	34.73	46.00	11.27	9.000	L1	OFF	9.6
4.3138	28.42	46.00	17.58	9.000	L1	OFF	9.7
4.4015	29.68	46.00	16.32	9.000	L1	OFF	9.7
4.4308	29.27	46.00	16.73	9.000	L1	OFF	9.7
4.4668	29.78	46.00	16.22	9.000	L1	OFF	9.7
4.5478	29.35	46.00	16.65	9.000	L1	OFF	9.7
4.7795	27.49	46.00	18.51	9.000	L1	OFF	9.7
8.4448	31.39	50.00	18.61	9.000	L1	OFF	9.8
8.5100	31.62	50.00	18.38	9.000	L1	OFF	9.8
8.6270	31.71	50.00	18.29	9.000	L1	OFF	9.8
8.6788	31.73	50.00	18.27	9.000	L1	OFF	9.8
8.7440	31.85	50.00	18.15	9.000	L1	OFF	9.8
8.9780	31.41	50.00	18.59	9.000	L1	OFF	9.8
24.6763	35.18	50.00	14.82	9.000	L1	OFF	10.0

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Conducted Emissions (Line 2)

WPT 5.5W_N

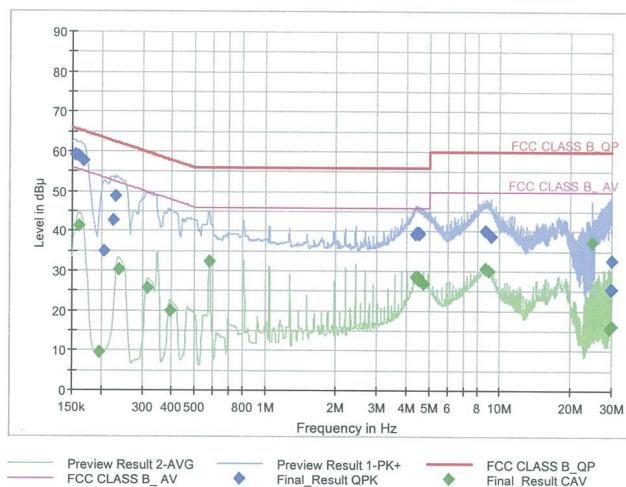
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Test Report

Common Information

EUT : NVT-T15M
 Manufacturer : NOVATECH
 Test Site: SHIELD ROOM
 Operating Conditions : WPT 5.5W_N

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak	Limit (dBuV)	MARGIN	Bandwidth	Line	Filter	Corr. (dB)
0.1545	59.22	65.75	6.54	9.000	N	OFF	9.6
0.1613	58.73	65.40	6.67	9.000	N	OFF	9.6
0.1680	57.80	65.06	7.26	9.000	N	OFF	9.6
0.2063	34.98	63.36	28.38	9.000	N	OFF	9.6
0.2243	42.61	62.66	20.05	9.000	N	OFF	9.6
0.2310	48.78	62.41	13.64	9.000	N	OFF	9.6
4.3633	39.11	56.00	16.89	9.000	N	OFF	9.7
4.4195	39.62	56.00	16.38	9.000	N	OFF	9.7
4.4960	39.57	56.00	16.43	9.000	N	OFF	9.7
4.5005	39.58	56.00	16.42	9.000	N	OFF	9.7
4.5140	39.27	56.00	16.73	9.000	N	OFF	9.7
4.5208	39.48	56.00	16.52	9.000	N	OFF	9.7
8.6878	39.96	60.00	20.04	9.000	N	OFF	9.8
8.6923	40.06	60.00	19.94	9.000	N	OFF	9.8
9.1805	38.58	60.00	21.43	9.000	N	OFF	9.8
29.7230	25.49	60.00	34.51	9.000	N	OFF	10.1
29.9503	25.29	60.00	34.71	9.000	N	OFF	10.1
29.9570	32.66	60.00	27.34	9.000	N	OFF	10.1

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WPT 5.5W_N

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Final Result_CAV

Frequency (MHz)	CAverage (dBmV)	Limit (dBmV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1613	41.22	55.40	14.17	9.000	N	OFF	9.6
0.1973	9.63	53.73	44.09	9.000	N	OFF	9.6
0.2378	30.15	52.17	22.02	9.000	N	OFF	9.6
0.3165	25.57	49.80	24.23	9.000	N	OFF	9.6
0.3930	19.96	48.00	28.04	9.000	N	OFF	9.6
0.5788	32.27	46.00	13.73	9.000	N	OFF	9.6
4.4038	28.43	46.00	17.57	9.000	N	OFF	9.7
4.4758	28.63	46.00	17.37	9.000	N	OFF	9.7
4.4803	28.52	46.00	17.48	9.000	N	OFF	9.7
4.4938	27.95	46.00	18.05	9.000	N	OFF	9.7
4.5185	27.72	46.00	18.28	9.000	N	OFF	9.7
4.7503	26.70	46.00	19.30	9.000	N	OFF	9.7
8.6900	30.66	50.00	19.34	9.000	N	OFF	9.8
8.7238	30.49	50.00	19.52	9.000	N	OFF	9.8
8.9645	30.07	50.00	19.93	9.000	N	OFF	9.8
24.6853	37.34	50.00	12.66	9.000	N	OFF	10.0
29.4980	15.62	50.00	34.38	9.000	N	OFF	10.1
29.9480	16.18	50.00	33.82	9.000	N	OFF	10.1

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11. EMISSION BANDWIDTH PLOT

Test Settings

1. Analyzer frequency set to the frequency of the radiated spurious emission of interest
2. RBW : 300 Hz
(Because the measured signal is CW/CW-like, adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.)
3. VBW : $\geq 3 \times$ RBW
4. Sweep time : Auto couple
5. Detector : Peak
6. Trace : Maxhold
7. Trace was allowed to stabilize

Limit

None

(for reporting purposes only.)

■Test Result

EUT Mode	Position	Test Frequency (kHz)	26dB Bandwidth (kHz)	Occupied Bandwidth (Hz)
Wireless power transfer from EUT(With TA) to 14.4W Jig	Aligned_14.4W	122.47	1.045	0.771
Wireless power transfer from EUT(With TA) to 5.5W Jig	Aligned_5.5W	117.33	0.926	0.690

■ Test Plot

Wireless power transfer from EUT(With TA) to 14.4W Jig – Position : Aligned_14.4W



Wireless power transfer from EUT(With TA) to 5.5W Jig – Position : Aligned_5.5W



12. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	09/04/2020	Annual	102245
Rohde & Schwarz	ESR / EMI Test Receiver	09/16/2020	Annual	101910
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	03/19/2020	Biennial	1513-333
Schwarzbeck	VULB 9168 / Hybrid Antenna	08/02/2019	Biennial	01039
Rohde & Schwarz	FSP(10 Hz ~ 40 GHz) / Spectrum Analyzer	05/13/2020	Annual	101055
Agilent	N9030A / Signal Analyzer	03/09/2021	Annual	MY49432108
Api tech.	18B-03 / Attenuator (3 dB)	06/04/2021	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	07/03/2020	Annual	08285
SONOMA	310N / Power Amplifier(9kHz~1GHz)	02/23/2021	Annual	284438
TNM system	FBSM-05B / LNA1(1~18GHz)	01/20/2021	Annual	25540

13. Annex A_TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2105-FC001-P