

TEST REPORT

Ref. n.	FCCTR_182885A-1	Issue Date:	06/07/2023	Pages:	19
Test object	Type test according to Standard FCC Cfr 47 part 15 - Subpart C - §15.207, §15.209				
Applicant	DATALOGIC S.r.l. Via S. Vitalino 13 - 40012 Lippo Di Calderara Di Reno - Bologna - Italy Phone. +39 051 3147196 Fax +39 051 3147561				
Trade mark					
Manufacturer	DATALOGIC S.r.l.				
Product	Base charger station				
Tested model	JOYA TOUCH 3-SLOT CRADLE				
FCC ID	U4G-JNG3SD				
Date of test samples receipt	23/06/2022				
No. of tested samples	1 – Sampled by the manufacturer				
Test date	15/03/2023				
Testing site	PRSLAB S.r.l. Unipersonale - Via Campagna 92 - 22020 Faloppio - Como - Italy				
Test results	CONFORME / COMPLIANT				
Verifications carried out by	Daniele AOSANI Laboratory Engineer				
Approved by	Riccardo PFEIFFER Laboratory Manager				

The test results reported in this test report shall refer only to the samples tested.

The sample has been provided by the customer and the results apply to the sample as received.

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PRS refuses any responsibility about information provided by the customer contained in this test report.

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0. RELEASE CONTROL RECORD

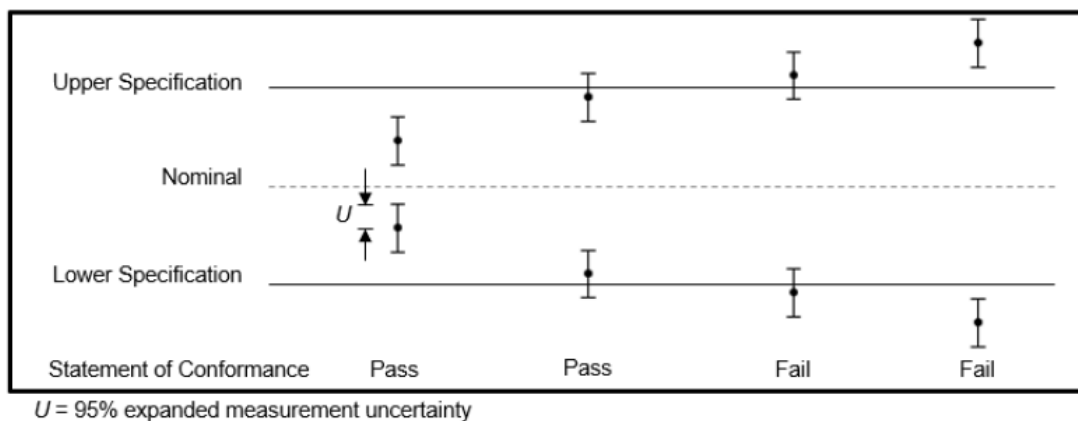
TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
FCCTR_182885A-0	Original release	17/03/2023
FCCTR_182885A-1	Added, in Section 6, the number of WPT clients used during the tests	06/07/2023

This document is valid in last revision that deletes and replaces the previous one

1. DECISION RULE

PRS LAB specifies that, if the decision rules of conformity of the test results are not indicated in detail in the standard/s object of tests, it takes as a decision rule for the declaration of conformity the simple binary system ($w = 0$) stated in the ILAC-G8-09:2019 document.

The decision rule is applicable for all parts of standard



Statements of conformity are reported as:

- Pass: the measured value is below the acceptance limit, $AL=TL$.
- Fail: the measured value is above the acceptance limit, $AL=TL$.

Definitions

- Guard Band (w): interval between a tolerance limit and a corresponding acceptance limit where length $w=|TL-AL|$.
- Tolerance Limit (TL) (Specification Limit): specified upper or lower bound of permissible values of a property.
- Acceptance Limit (AL): specified upper or lower bound of permissible measured quantity values.

2. INFORMATION PROVIDED BY CUSTOMER

- The manufacturer DATALOGIC S.r.l. declares, in the document *"JT_3SC - M1_3SC_alt_IC letter.pdf"* issue on 01.07.2022, the differences between the previous version of the product and the one tested in this report. The difference lies in the change of the IC controller due to the shortage of the components.
- According to Manufacturer declaration, the tested model is the most representative and the most complex. The differences between the tested one and his variants are described in the table above and are declared by Manufacturer.

Differences between versions declared by manufacturer		
Tested model	JOYA TOUCH 3-SLOT CRADLE	The difference between your product versions is in the trade name and color, the tested product is white and the black color variant. The electronic parts are the same for both versions.
Variant	MEMOR 1 3-SLOT CRADLE	

3. GENERAL REMARKS

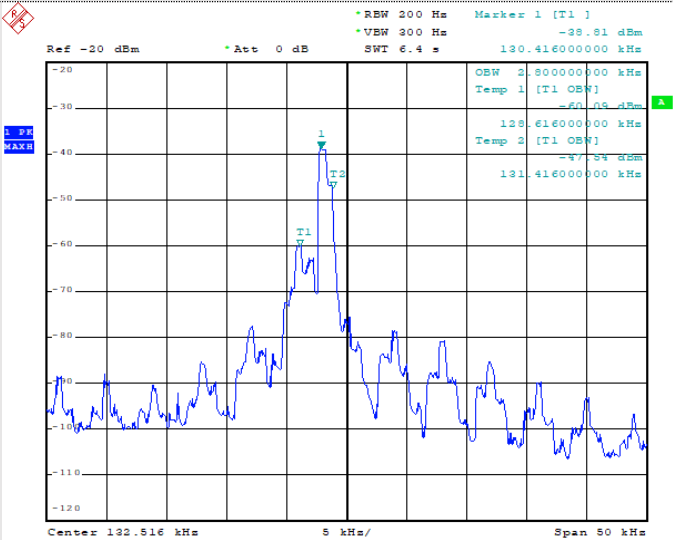
- Tests were performed using 3 identical WPT clients model **JOYA TOUCH A22**.

4. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

4.1 EUT Identification

DESCRIPTION	Base charger station
MODEL NAME	JOYA TOUCH 3-SLOT CRADLE
FCC ID	U4G-JNG3SD
SERIAL NO.	G22EB98789
PART NO.	91ACC0043
PRS LAB INTERNAL REFERENCE	BC 196/2022 1/1
TRADEMARK	
MANUFACTURER	DATALOGIC S.r.l.
COUNTRY OF MANUFACTURER	Vietnam
SINGLE UNIT OR SYSTEM	Single
SOFTWARE VERSION (Information provided by Customer)	2.1.4
HARDWARE VERSION (Information provided by Customer)	DVT
POWER SOURCE	AC/DC adapter (model EA10681U-120) powered at 100-240V ~ 50-60Hz
SUPPLY VOLTAGE	12Vdc from AC/DC adapter
MAX POWER or MAX ABSORBED CURRENT	Max 5A
OPERATING TEMPERATURE	0°C ÷ +50°C
DIMENSIONS	See photographic documentation
EUT STANDING	☐ WALL; ☐ CEILING; ☒ TABLE; ☐ FLOOR; ☒ RACK MOUNTED; ☐ BODY WORN; ☐ HANDELD; ☐ PORTABLE; ☐ MOBILE
HIGHEST INTERNAL FREQUENCY (Information provided by Customer)	☒ <108MHz; ☐ 108MHz<F<500MHz; ☐ 500MHz<F<1GHz; ☐ F>1GHz

4.2 WPT module technical data

CHIP MANUFACTURER	 TEXAS INSTRUMENTS
CHIP MODEL	BQ501210
ETS CATEGORY	Wireless Power Transmission (WPT)
FREQUENCY RANGE	100-148 kHz f. band
TRANSMITTER MAX POWER	10W
TYPE OF MODULATION	FSK/ASK
ANTENNA TYPE	Internal
MEASURED 99% BW	 99%BW = 2.80kHz

4.3 Ports identification

	PORT	DESCRIPTION	CONNECTION	NOTES
☒	Enclosure	Plastic	Screw	---
☒	AC Power input	115V ~ 60Hz by AC/DC adapter	---	---
☐	DC Power input	Port not present	---	---
☐	Signal / Control port	Port not present	---	---
☐	Telecomm.port	Port not present	---	---
☐	Antenna port	☒ Internal; ☐ External	---	---

Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.

4.4 Modifications incorporated in E.U.T.

The following items are the modifications introduced in the equipment under test:

- None

4.5 Auxiliary equipment

- None

5. REFERENCE STANDARDS

CODE OF FEDERAL REGULATIONS	DESCRIPTION
Title 47 Part 15 Subpart C	Radio frequency devices - Intentional Radiators
Title 47 Part 15 Subpart C § 15.207	Radio frequency devices - Intentional Radiators Conducted Limits
Title 47 Part 15 Subpart C § 15.209	Radio frequency devices - Intentional Radiators Radiated emission limits; general requirements.
ANSI C63.4: 2014	American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz
ANSI C63.10:2013	American National Standard for Testing Unlicensed Wireless Devices

6. OPERATING MODES AND TEST CONDITIONS

In the following table there are the operating conditions adopted during tests identified by an indicator (#) at which has been referred the item "Operating condition of the equipment under test"

OPERATING CONDITION	DESCRIPTION
#1	EUT in maximum output power transfer mode, WPT battery initially discharged Radiated measurements were performed with the 3 readers positioned in the three slots of the base; it produced worst case emissions and output power, all 3 WPT transmitters were functional during testing, therefore this alignment was used for all measurements.

Special Test Software: None

Special Hardware Used: None

Transmitter Test Antenna: The EUT has been tested with the antenna fitted in a manner typical of normal intended use as integral antenna equipment as described with the test results.

7. UNITS OF MEASUREMENTS

Conducted EMI Data is in dBμV; dB referenced to one microvolt

Radiated EMI Data is in dBμV/m; dB/m referenced to one microvolt per meter

Sample Calculation:

RFS = Radiated Field Strength,

FSM = Field Strength Measured,

A.F. = Receive antenna factor,

Gain = amplification gains and/or cable losses.

$$\text{RFS (dB}\mu\text{V/m @ 3m)} = \text{FSM (dB}\mu\text{V)} + \text{A.F. (dB/m)} - \text{Gain (dB)}$$

8. SUMMARY OF TEST RESULTS

SUMMARY OF TEST RESULTS				
Port	Test	Reference Standard	Operating Condition ¹	Results
Enclosure	Radiated Emissions 9kHz – 30MHz	Title 47 Part 15 Subpart C § 15.209	#1	Within the limits
	Radiated Emissions 30MHz – 1GHz		#1	Within the limits
AC main	Conducted Emissions	Title 47 Part 15 Subpart C § 15.207	#1	Within the limits

¹ Ref. Tab. Of Section 6

9. TESTS RESULTS

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CONDUCTED EMISSION.....	15

TEST 1.	RADIATED EMISSIONS – 9kHz to 1GHz
REFERENCE DOCUMENT	FCC Cfr 47 part 15 - Subpart C - §15.209

• TEST SETUP	Acc. To ref. Std.					
• TEST LOCATION	Semi-Anechoic Chamber					
• DISTANCE OF MEASUREMENT	3m					
• TEST EQUIPMENT USED FOR TEST	Instrument	Manufacturer	Model	Serial n°	Calibrated On	Due to
	Stabilized Power Supply	Spitzenberger+ Spies	PAS5000	A154201/00595	02/2022	02/2024
	MXE Emi Receiver	Rohde & Schwarz	ESU 40	100111	02/2023	02/2024
	MXE Emi Receiver	Keysight	N9038A	MY57290150	09/2022	09/2023
	Semi-Anechoic Chamber	Siemens	B83117-D6019-T232	003-005-134/94C	02/2022	02/2023
	Loop antenna	Rohde & Schwarz	HFH 2-Z2	841801/012	05/2020	05/2023
	Bi-log antenna	Chase	CBL6111C	2717	04/2022	04/2025
	Radiated Emission Cable (30MHz – 1GHz)	Sucoflex	Sucoflex 126	---	12/2021	12/2023
	Software EMC	Rohde & Schwarz	EMC32-E	V 8.40.0	N.A.	
• TESTED PORT	Enclosure port					
• TEST METHOD	ANSI C63.10:2013 section 6.5					
• FREQUENCY RANGE	9kHz – 1GHz					
• LIMITS	Acc. To § 15.209 (a)					
• UNCERTAINTY OF MEASURE	Level of confidence = 95% (k=2)					
	Expanded uncertainty 9kHz – 30MHz = 4,18 dB					
	Expanded uncertainty 30MHz – 1GHz = 5,72 dB					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	23°C ± 5°C	23.6 °C
Ambient humidity	25 - 75%rH	38%
Pressure	85 - 106kPa (860mbar - 1060mbar)	960 mbar
Voltage		115V ~ 60Hz

OPERATING CONDITION: #1

RESULT: WITHIN THE LIMITS

MEASUREMENT PARAMETER – 9kHz – 150kHz

Resolution bandwidth	300Hz
Video bandwidth	1kHz
Span	141kHz
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

MEASUREMENT PARAMETER – 150kHz – 30MHz

Resolution bandwidth	10kHz
Video bandwidth	30kHz
Span	29.850MHz
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

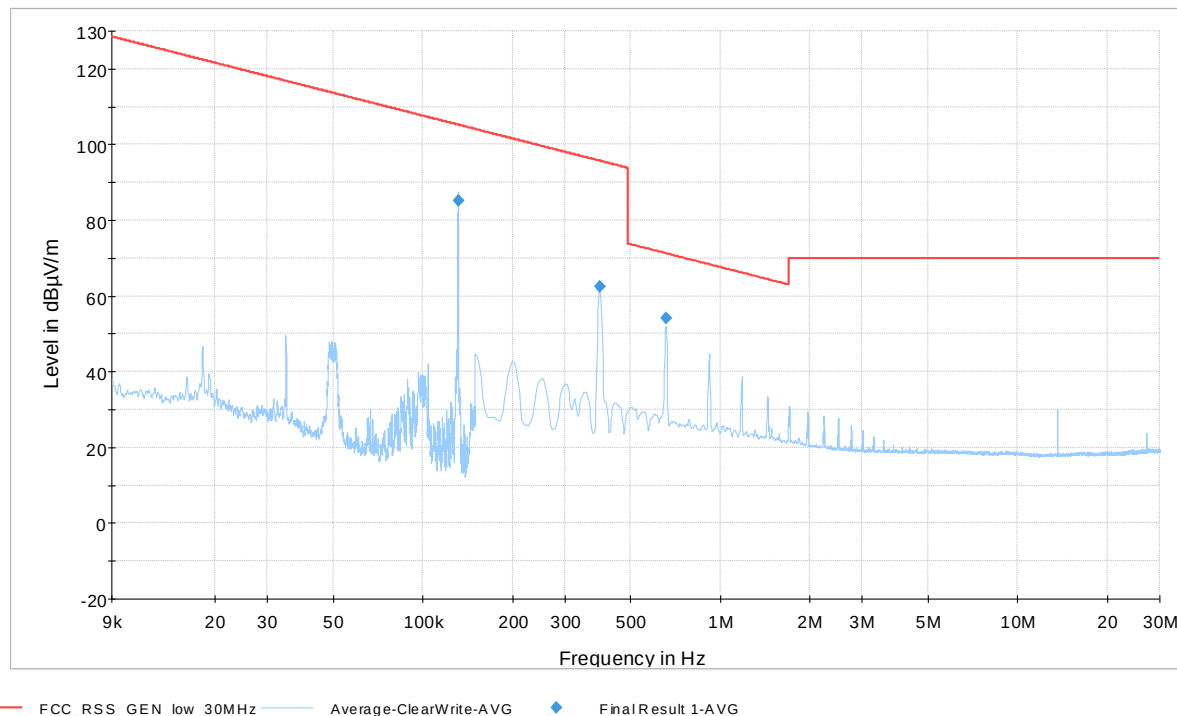
MEASUREMENT PARAMETER – 30MHz – 1GHz

Resolution bandwidth	120kHz
Video bandwidth	300kHz
Span	970MHz
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

TEST RESULTS

Operating condition: EUT in Wireless Power Transfer mode

Frequency Range: 9kHz – 30MHz



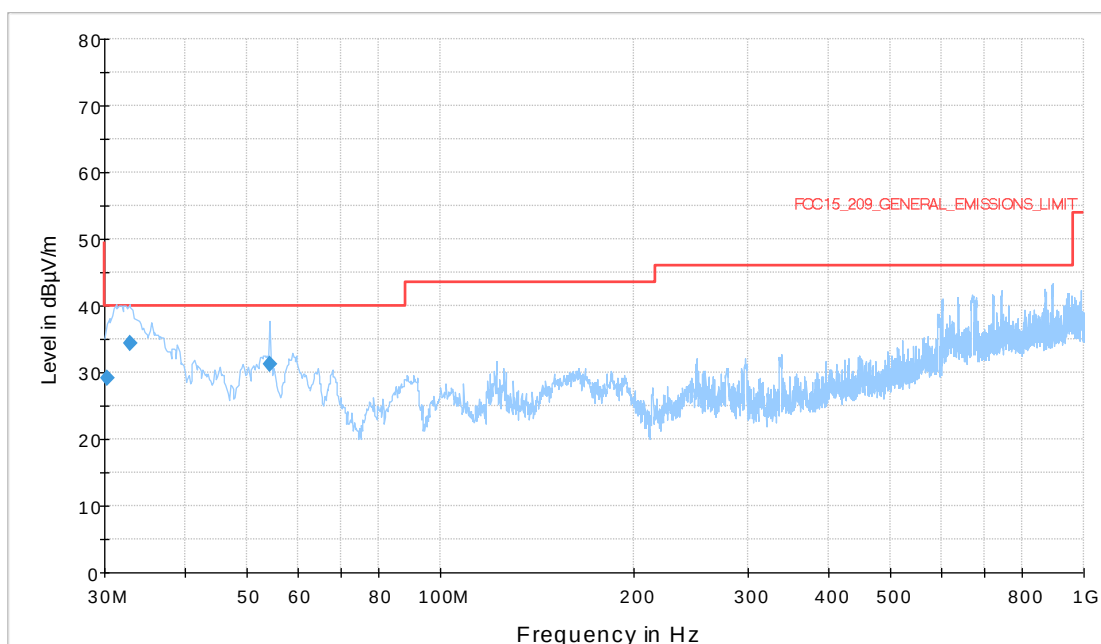
Final Results:

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Axis	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
0.131350	85.1	104.8	Y	180.0	25.5	20.1	105.2
0.393000	62.4	104.8	Y	0.0	25.4	33.3	95.7
0.656250	54.3	104.8	Y	0.0	25.5	17.0	71.3

NOTA: The results reported are for the worst axis only.

Frequency Range: 30MHz – 1GHz

Vertical polarization



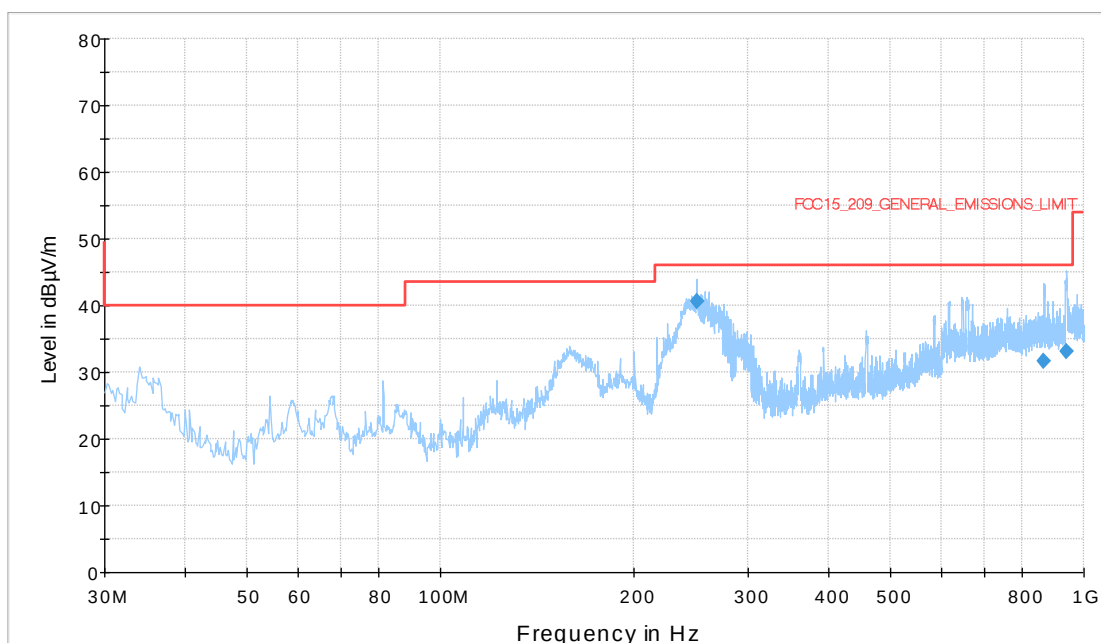
— FCC15_209_GENERAL_EMISSIONS_LIMIT — MaxPeak-ClearWrite-PK+ ◆ Final Result 1-QPK

Final Results:

Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
30.270000	29.2	121.8	187.0	10.8	40.0
32.910000	34.3	123.9	277.0	5.7	40.0
54.240000	31.3	99.9	7.0	8.7	40.0

Frequency Range: 30MHz – 1GHz

Horizontal polarization



— FCC15_209_GENERAL_EMISSIONS_LIMIT — MaxPeak-ClearWrite-PK+ ◆ Final Result 1-QPK

Final Results:

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
249.990000	40.6	121.7	7.0	5.4	46.0
865.020000	31.7	260.9	277.0	14.3	46.0
941.580000	33.1	179.8	277.0	12.9	46.0

TEST 2.	CONDUCTED EMISSION
REFERENCE DOCUMENT	FCC Cfr 47 part 15 - Subpart C - §15.207

• TEST SETUP	Acc. to ANSI C63.4-2014					
• TEST LOCATION	Shielded room					
• TEST EQUIPMENT USED FOR TEST	Instrument	Manufacturer	Model	Serial n°	Calibrated On	Due to
	Stabilized Power Supply	Spitzenberger+ Spies	PAS5000	A154201/00595	02/2022	02/2024
	MXE Emi Receiver	Keysight	N9038A	MY57290150	09/2022	09/2023
	LISN	Narda	L3-32	243ZT00202	08/2022	08/2024
	Software EMC	Rohde & Schwarz	EMC32-E	V 8.40.0	N.A.	
	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100837	07/2021	07/2023
• TESTED PORT	AC mains power port					
• TEST METHOD	ANSI C63.10:2013 section 6.2					
• FREQUENCY RANGE	150kHz - 30MHz					
• LIMITS	Acc. To § 15.207 (a)					
• UNCERTAINTY OF MEASURE	Level of confidence = 95% (k=2) Expanded uncertainty 150kHz – 30 MHz = 2,81 dB					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	23°C ± 5°C	24°C
Ambient humidity	25 - 75%rH	45%
Pressure	85 - 106kPa (860mbar - 1060mbar)	960mbar
Voltage		115V ~ 60Hz

OPERATING CONDITION: #1

RESULT: Within the Limits

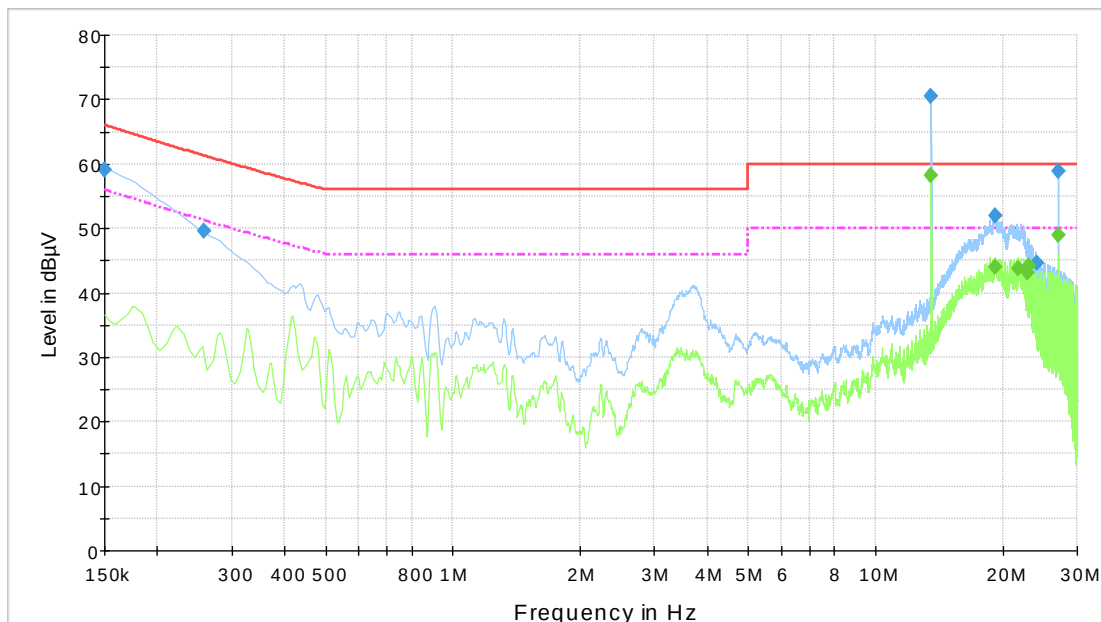
MEASUREMENT PARAMETER – 150kHz – 30MHz	
Resolution bandwidth	9kHz
Video bandwidth	30kHz
Span	29.850MHz
Sweep time	Auto couple
Detector	Quasi Peak - Average
Trace-Mode	Max. hold

TEST RESULTS

Operating condition: EUT in Wireless Power Transfer mode

Line: L

Frequency Range: 150MHz – 30MHz



— FCC Part 15 Class B Voltage on Mains QP — FCC Part 15 Class B Voltage on Mains AV — QuasiPeak-ClearWrite-QPK
— Average-ClearWrite-AVG ◆ Final Result 1-QPK ◆ Final Result 2-AVG

Final Results:

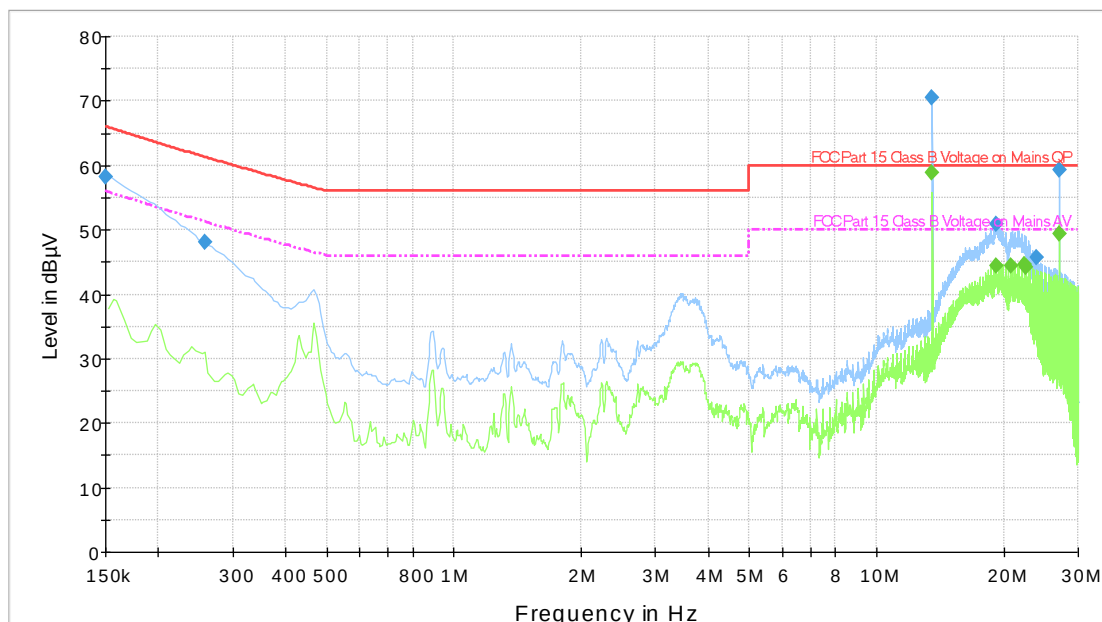
Frequency (MHz)	QuasiPeak (dBμV)	PE	Margin (dB)	Limit (dBμV)
0.150000	59.1	GND	6.9	66.0
0.258000	49.6	GND	11.7	61.3
13.560000	70.5	GND	-10.5	60.0
19.171500	52.0	GND	8.0	60.0
24.162000	44.6	GND	15.4	60.0
27.120750	58.9	GND	1.1	60.0

Frequency (MHz)	Average (dBμV)	PE	Margin (dB)	Limit (dBμV)
13.560000	58.2	GND	-8.2	50.0
19.196250	44.0	GND	6.0	50.0
21.797250	43.9	GND	6.1	50.0
22.848000	43.2	GND	6.8	50.0
23.109000	44.2	GND	5.8	50.0
27.120750	49.0	GND	1.0	50.0

NOTE: Peaks at 13.56 MHz and 27.12 MHz belongs to NFC radiator contribution, not disabled during the present measurement.

Line: N

Frequency Range: 150MHz – 30MHz



— FCC Part 15 Class B Voltage on Mains QP — FCC Part 15 Class B Voltage on Mains AV — QuasiPeak-ClearWrite-QPK
— Average-ClearWrite-AVG — Final Result 1-QPK — Final Result 2-AVG

Final Results:

Frequency (MHz)	QuasiPeak (dBμV)	PE	Margin (dB)	Limit (dBμV)
0.150000	58.3	GND	7.7	66.0
0.258000	48.1	GND	13.2	61.3
13.560000	70.4	GND	-10.4	60.0
19.164750	50.9	GND	9.1	60.0
23.889750	45.7	GND	14.3	60.0
27.120750	59.2	GND	0.8	60.0

Frequency (MHz)	Average (dBμV)	PE	Margin (dB)	Limit (dBμV)
13.560000	58.8	GND	-8.8	50.0
19.164750	44.4	GND	5.6	50.0
20.739750	44.4	GND	5.6	50.0
22.314750	44.6	GND	5.4	50.0
22.578000	44.2	GND	5.8	50.0
27.120750	49.3	GND	0.7	50.0

NOTE: Peaks at 13.56 MHz and 27.12 MHz belongs to NFC radiator contribution, not disabled during the present measurement.

END OF TEST REPORT