Prüfbericht - Produkte
Test Report - Products

TÜVRheinland®

Prüfbericht-Nr.: *Test report no.:*	**CN2175XY 002**	**Auftrags-Nr.:** *Order no.:*	168327447	Seite 1 von 20 *Page 1 of 20*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2021-07-25	
Auftraggeber: *Client:*	**Hubbell Incorporated (Delaware) Wiring Device-Kellems** 40 Waterview Dr, PO Box 1000 Shelton CT 06484 USA			
Prüfgegenstand: *Test item:*	Jumpcharge mobile battery			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	JCBATTERY-M			
Auftrags-Inhalt: *Order content:*	Type test			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.209			
Wareneingangsdatum: *Date of sample receipt:*	2021-07-25	Refer to photos document		
Prüfmuster-Nr.: *Test sample no.:*	A003063371-001			
Prüfzeitraum: *Testing period:*	2021-08-05 – 2021-08-05			
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von: *tested by:*	X Bell Hu	**genehmigt von:** *authorized by:*	X Lin Lin
Datum: *Date:* 2021-09-13	Signed by: Bell Hu	**Ausstellungsdatum:** *Issue date:* 2021-09-13	Signed by: Lin Lin
Stellung / Position	Project Manager	**Stellung** / Position	Reviewer

Sonstiges / *Other:* FCCID: GX7JCBATTERY-M

This Report is only for 9K-30MHz radiated spurious emissions, please refer to CN2175XY 001.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged:*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specifications(s)		*F(ail) = failed a.m. test specifications(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

TUV Rheinland (Shenzhen) Co., Ltd. 1601 R&D Room, 1602-1604, 17-18F, Building 7 Site C, Vanke Cloud City Phase I, Xingke First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P.R. China
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Test Summary

5.1.1 RADIATED SPURIOUS EMISSION

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

None

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Unwanted Emission Testing				
Description	**Manufacturer**	**Model**	**Serial No.**	**Cal. Until**
EMI Test Receiver	Rohde & Schwarz	ESR 7	102021	2021-08-19
Signal Analyzer	Rohde & Schwarz	FSV 40	101439	2021-08-21
System Controller Interface	Rohde & Schwarz	SCI-100	S10010038	N/A
Filterbank	Rohde & Schwarz	Wlan	100759	2021-08-21
OSP	Rohde & Schwarz	OSP 120	102040	N/A
Pre-amplifier	Rohde & Schwarz	SCU08F1	08320031	2021-08-20
Amplifier	Rohde & Schwarz	SCU-18F	180070	2021-08-20
Amplifier	Rohde & Schwarz	SCU40A	100475	2021-08-21
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2021-09-01
Test software	Rohde & Schwarz	V10.40.10-EMC32	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

Test	Parameters	Expanded uncertainty (U_{lab})	Expanded uncertainty (U_{cispr})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 3.70 dB ± 3.30 dB	± 3.8 dB ± 3.4 dB
Radiated Emission (3m SAC)	Level accuracy (30MHz to 1000MHz)	± 4.52 dB	± 6.3 dB
	Level accuracy (above 1000MHz)	± 4.37 dB	N/A
Radiated Emission (10m SAC)	Level accuracy (30MHz to 1000MHz)	± 4.66 dB	± 6.3 dB
	Level accuracy (above 1000MHz)	± 4.35 dB	N/A

2.6 Location of Original Data

The original copies of all test data taken during actual testing were in this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd.Test facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The devices are Jumpcharge mobile battery, which supports wireless charging function.

All models are identical except for the model name, pattern and the color of enclosure.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Jumpcharge mobile battery
Type Designation	JCBATTERY-M
FCC ID	GX7JCBATTERY-M
Input Voltage	DC 5V, 2A
Technical Specification of WPT	
Operating Frequency	115-205KHz
Extreme Temperature Range	0°C - +40°C
Modulation	ASK
Antenna Type	Coil Antenna
Wireless output	5W maximum

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Wireless charging

B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Block Diagram
- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.
Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5&6. All testing were performed according to the procedures in ANSI C63.10: 2013 & ANSI C63.4: 2014

According to clause 3.1, all test were applied on model IDCOMQI-01.

4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	Rating or S/N
Mobile Phone	HUAWEI	HUAWEI P30 Pro	HVQ0119220000186
AC/DC Adapter	HUAWEI	HW-100400C01	Input: AC 100-240V, 50/60Hz, 1.2A Output: DC 5V, 2A or DC 9V, 2A or DC 10, 4A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

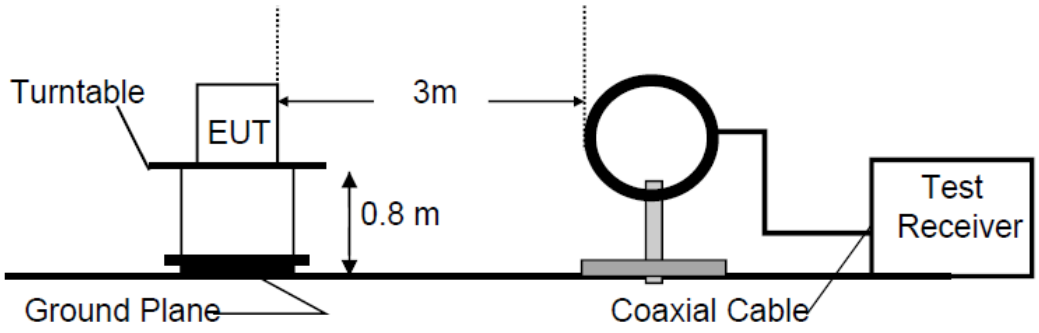


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

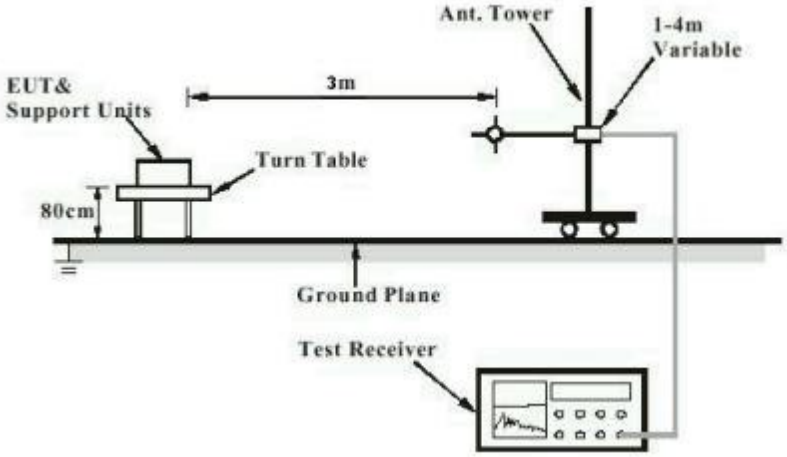
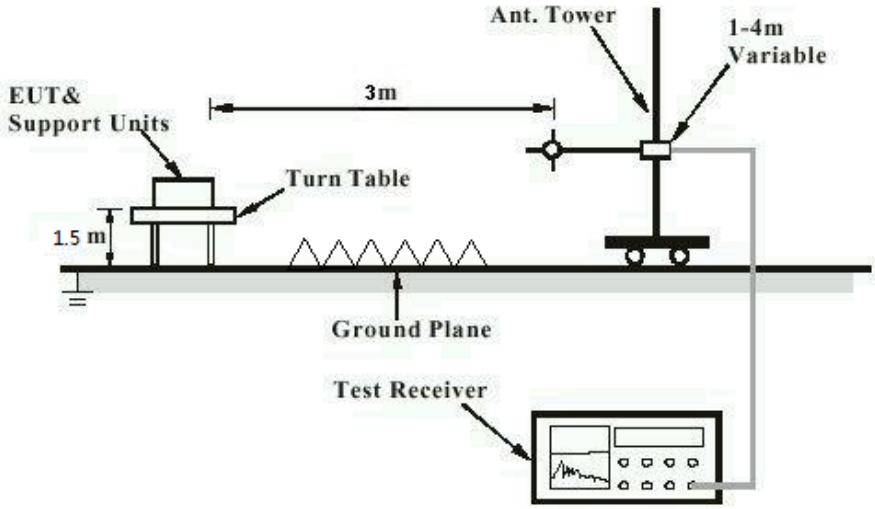


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)



5 Test Results

5.1 Transmitter Requirement & Test Suites for WPT

5.1.1 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.201
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a)
Kind of test site	:	3m Semi-anechoic Chamber

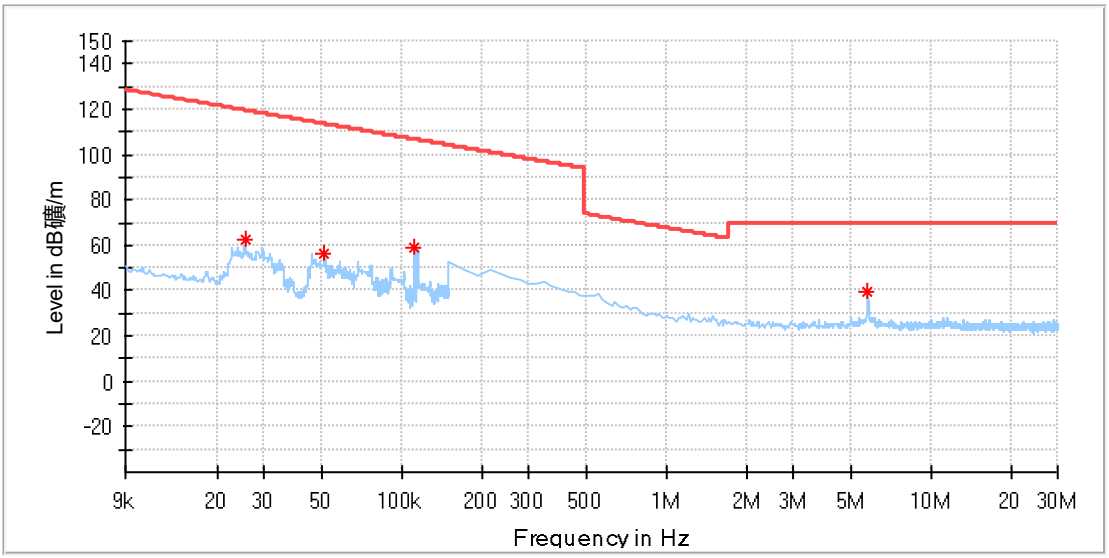
Test Setup

Date of testing	:	08.05.2021
Operation mode	:	A
Ambient temperature	:	24 ℃
Relative humidity	:	47 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

EUT Information

EUT Name:	Power Bank
Model:	JCBATTERY-M
Test Mode:	Charging
Test Voltage::	Battery
Remark:	Temp 23 Humi:45%
Test Standard:	FCC Part 15C
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.025416	62.36	119.49	57.13	100.0	X	0.0	20.1
0.050897	56.06	113.46	57.40	100.0	X	0.0	20.1
0.111326	59.28	106.67	47.38	100.0	X	131.0	20.1
5.757536	39.17	69.50	30.33	100.0	X	195.0	20.3

EUT Information

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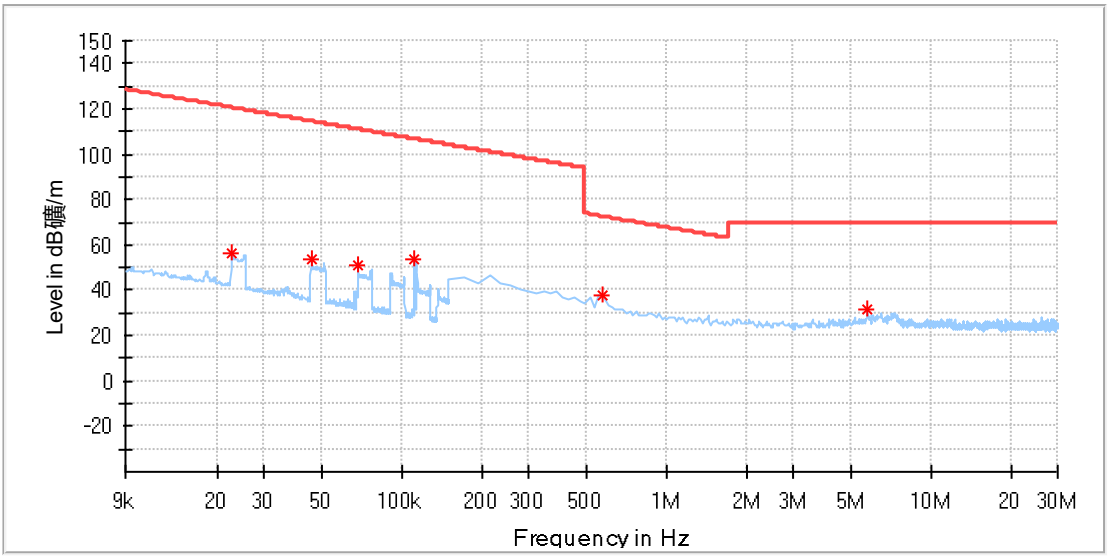

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.022697	56.57	120.47	63.90	100.0	Y	309.0	20.1
0.045459	53.61	114.44	60.83	100.0	Y	309.0	20.1
0.068119	50.74	110.93	60.19	100.0	Y	309.0	20.1
0.111124	53.89	106.68	52.79	100.0	Y	36.0	20.1
0.576429	37.71	72.39	34.69	100.0	Y	276.0	20.1
5.714893	31.42	69.50	38.08	100.0	Y	0.0	20.3

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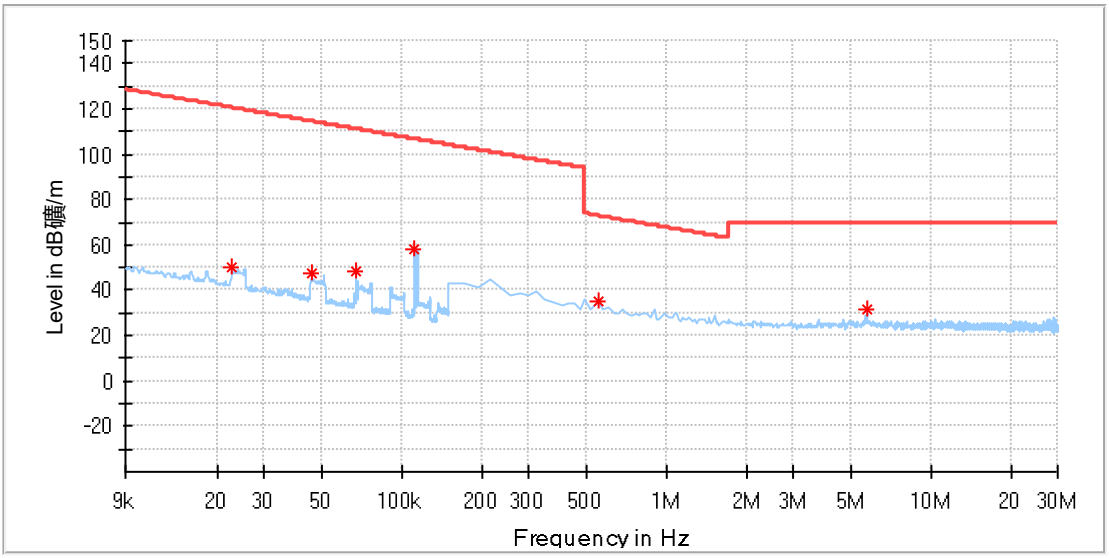

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.022697	50.35	120.47	70.12	100.0	Z	0.0	20.1
0.045358	47.34	114.46	67.12	100.0	Z	354.0	20.1
0.067112	48.77	111.06	62.29	100.0	Z	104.0	20.1
0.111024	58.16	106.69	48.53	100.0	Z	128.0	20.1
0.555107	34.79	72.72	37.93	100.0	Z	326.0	20.1
5.693572	31.96	69.50	37.54	100.0	Z	4.0	20.3

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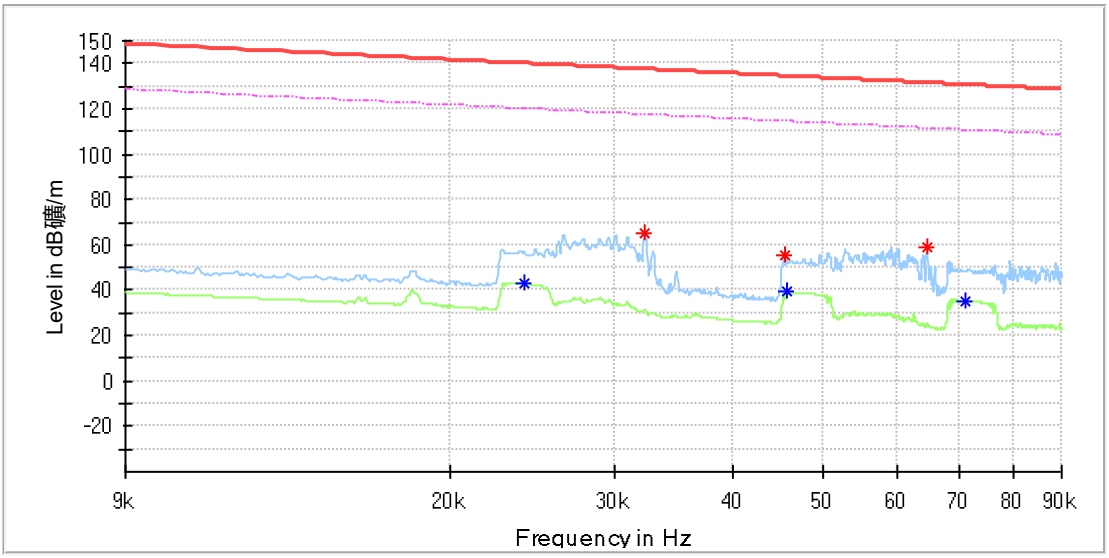

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.023985	---	43.07	119.99	76.92	100.0	X	333.0	20.0
0.032316	65.49	---	137.40	71.91	100.0	X	355.0	20.0
0.045508	55.78	---	134.43	78.65	100.0	X	333.0	20.0
0.045797	---	39.32	114.38	75.06	100.0	X	333.0	20.0
0.064601	59.40	---	131.39	71.99	100.0	X	355.0	20.0
0.071196	---	35.31	110.55	75.24	100.0	X	333.0	20.0

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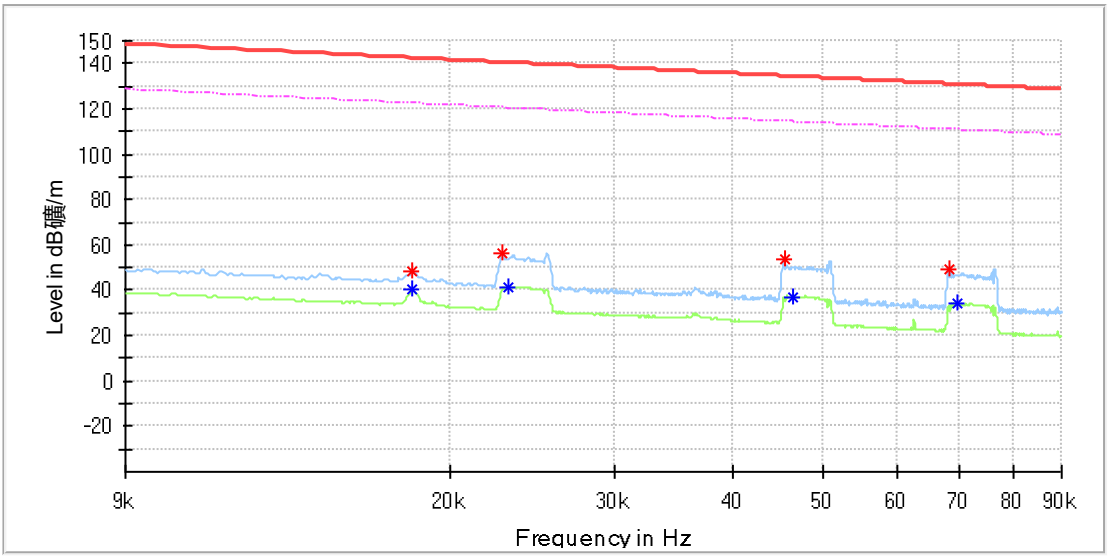

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.018199	48.64	---	142.39	93.75	100.0	Y	0.0	20.0
0.018257	---	40.65	122.36	81.71	100.0	Y	0.0	20.0
0.022712	56.53	---	140.46	83.94	100.0	Y	276.0	20.0
0.023059	---	41.49	120.33	78.84	100.0	Y	276.0	20.0
0.045508	53.79	---	134.43	80.64	100.0	Y	276.0	20.0
0.046376	---	37.22	114.27	77.05	100.0	Y	276.0	20.0
0.068304	49.18	---	130.91	81.73	100.0	Y	276.0	20.0
0.069634	---	33.81	110.74	76.92	100.0	Y	276.0	20.0

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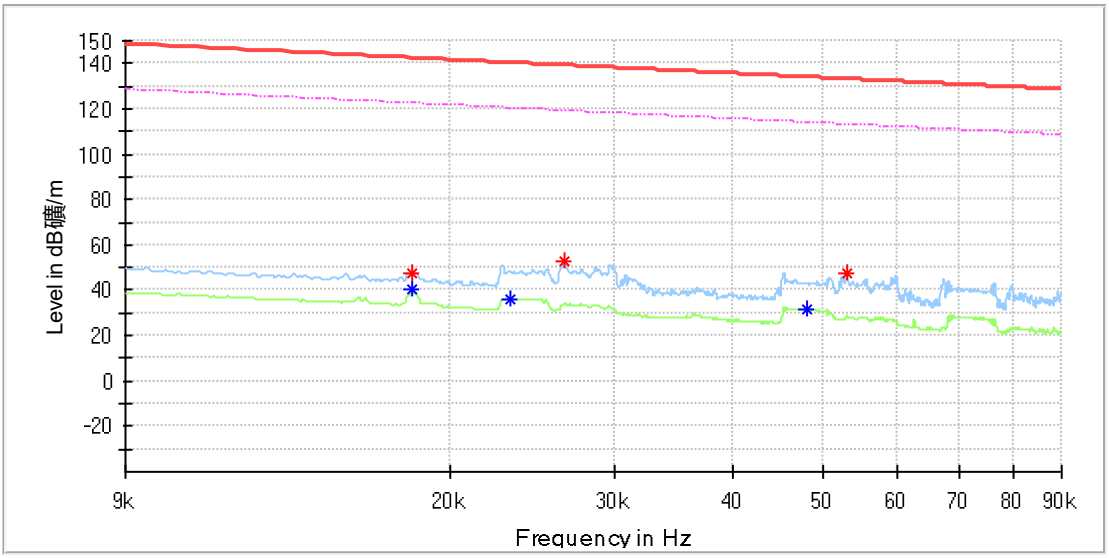

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.018199	---	40.17	122.39	82.22	100.0	Z	306.0	20.0
0.018257	47.82	---	142.36	94.54	100.0	Z	306.0	20.0
0.023233	---	36.38	120.27	83.88	100.0	Z	182.0	20.0
0.026531	52.46	---	139.12	86.66	100.0	Z	182.0	20.0
0.048054	---	31.43	113.96	82.52	100.0	Z	354.0	20.0
0.053087	47.13	---	133.09	85.96	100.0	Z	182.0	20.0

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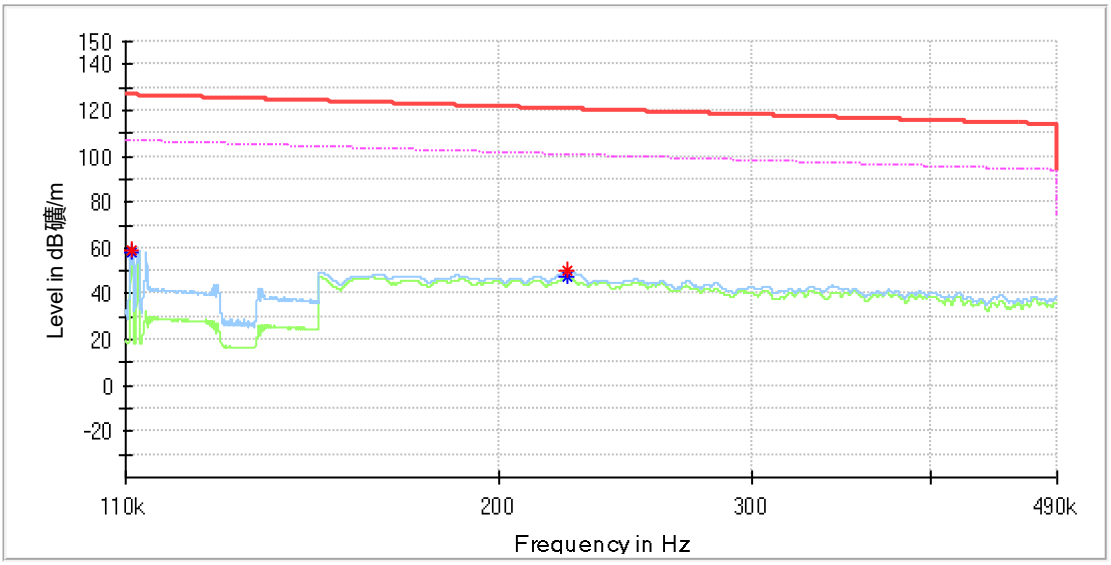

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.111029	---	58.34	106.69	48.35	100.0	X	80.0	20.0
0.111029	58.98	---	126.69	67.70	100.0	X	80.0	20.0
0.223100	50.37	---	120.63	70.26	100.0	X	269.0	20.0
0.223250	---	47.19	100.62	53.44	100.0	X	269.0	20.0

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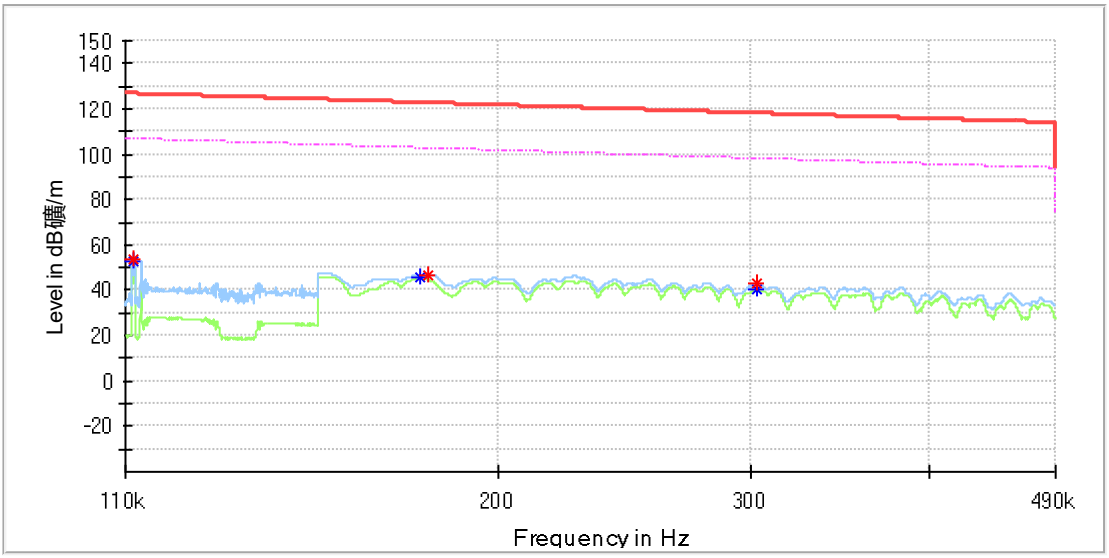

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.111314	53.66	---	126.67	73.00	100.0	Y	6.0	20.0
0.111314	---	53.02	106.67	53.64	100.0	Y	6.0	20.0
0.176600	---	45.92	102.66	56.74	100.0	Y	266.0	20.0
0.178950	46.98	---	122.54	75.57	100.0	Y	295.0	20.0
0.303050	---	40.24	97.97	57.73	100.0	Y	266.0	20.0
0.303400	43.04	---	117.96	74.93	100.0	Y	266.0	20.0

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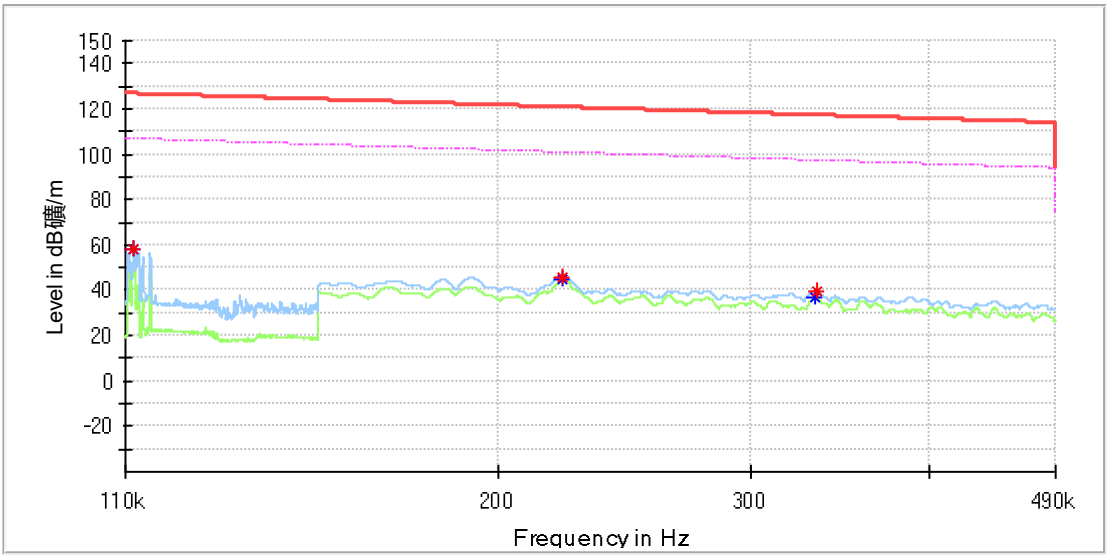

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
0.111543	---	57.77	106.65	48.88	100.0	Z	105.0	20.0
0.111572	58.14	---	126.65	68.51	100.0	Z	105.0	20.0
0.222050	---	44.41	100.67	56.26	100.0	Z	262.0	20.0
0.222250	45.84	---	120.66	74.82	100.0	Z	262.0	20.0
0.333200	---	37.06	97.15	60.09	100.0	Z	125.0	20.0
0.333900	39.71	---	117.13	77.42	100.0	Z	125.0	20.0