

# FCC EMC Test Report

# FCC ID: 2ATEYEGRT-09

:	2204C105
:	HUAWEI Sound Joy
:	HUAWEI
:	EGRT-09
:	N/A
:	Huawei Device Co., Ltd.
:	No.2 of Xincheng Road, Songshan Lake Zone, Dongguan, Guangdong
	523808, People's Republicof China
:	Huawei Device Co., Ltd.
:	No.2 of Xincheng Road, Songshan Lake Zone, Dongguan, Guangdong
	523808, People's Republicof China
:	Apr. 25, 2022
:	Apr. 25, 2022 ~ May 06, 2022
:	May 07, 2022
:	R00
:	Engineering Sample No.: DG2022042036
:	FCC CFR Title 47, Part 15, Subpart B

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Dave Hong Prepared by : Dave Hong

kang shang

Approved by : Kang Zhang



Add: No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China. Tel: +86-769-8318-3000 Web: www.newbtl.com



### Declaration

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL**'s reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

**BTL**'s laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

### Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective. Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.





Table of Contents	Page
REPORT ISSUED HISTORY	4
1 . SUMMARY OF TEST RESULTS	5
1.1 TEST FACILITY	6
1.2 MEASUREMENT UNCERTAINTY	6
1.3 TEST ENVIRONMENT CONDITIONS	6
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	8
2.3 EUT OPERATING CONDITIONS	9
2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
2.5 DESCRIPTION OF SUPPORT UNITS	9
3 . EMC EMISSION TEST	10
3.1 AC POWER LINE CONDUCTED EMISSIONS TEST	10
3.1.1 LIMIT	10
3.1.2 MEASUREMENT INSTRUMENTS LIST	10
3.1.3 TEST PROCEDURE 3.1.4 DEVIATION FROM TEST STANDARD	10 10
3.1.5 TEST SETUP	10
3.1.6 TEST RESULTS	11
3.2 RADIATED EMISSIONS 30 MHZ TO 1 GHZ	14
3.2.1 LIMIT	14
3.2.2 MEASUREMENT INSTRUMENTS LIST	14
3.2.3 TEST PROCEDURE 3.2.4 DEVIATION FROM TEST STANDARD	15
3.2.5 TEST SETUP	15
3.2.6 TEST RESULTS	15
3.3 RADIATED EMISSIONS ABOVE 1 GHZ	18
3.3.1 LIMIT	18
3.3.2 MEASUREMENT INSTRUMENTS LIST	18
3.3.3 IEST PRUGEDURE	19 10
3.3.5 TEST SETUP	19
3.3.6 TEST RESULTS	20
4.EUT TEST PHOTO	25



# **REPORT ISSUED HISTORY**

Report No.	Version	Description	Issued Date	Note
BTL-FCCE-1-2204C105	R00	Original Report	May 07, 2022	Valid



# **1. SUMMARY OF TEST RESULTS**

Emission			
Standard(s)	Test Item	Result	
	AC Power Line Conducted Emissions	PASS	
FCC CFR Title 47,Part 15,Subpart B	Radiated Emissions 30 MHz to 1 GHz	PASS	
ANOI 003.4-2014	Radiated Emissions Above 1 GHz	PASS	



# 1.1 TEST FACILITY

The test facilities used to collect the test data in this report at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China. BTL's Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

# 1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)) The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-C02	CISPR	150kHz ~ 30MHz	2.60

### B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB02 (3m) CISPR	30MHz ~ 200MHz	V	4.34	
		30MHz ~ 200MHz	Н	4.00
	CISER	200MHz ~ 1,000MHz	V	4.50
		200MHz ~ 1,000MHz	Н	4.26

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB02		1GHz ~ 6GHz	4.04
(3m)	) CISPR	6GHz ~ 18GHz	5.10

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

# **1.3 TEST ENVIRONMENT CONDITIONS**

Test Item	Temperature	Humidity	Tested By
AC Power Line Conducted Emissions	24°C	52%	Jolly Su
Radiated emissions 30 MHz to 1 GHz	25°C	60%	Larry Yuan
Radiated emissions above 1 GHz	25°C	60%	Larry Yuan



# 2. GENERAL INFORMATION

# 2.1 GENERAL DESCRIPTION OF EUT

Equipment	HUAWEI Sound Joy
Brand Name	HUAWEI
Test Model	EGRT-09
Series Model	N/A
Model Difference(s)	N/A
Hardware Version	IA1EGRTM00
Software Version	5.0.3.0(H100SP82C00)D
Power Source	1# DC voltage supplied from AC adapter. (Supports Unit) 2# Supplied from battery.
Power Rating	1# I/P: 100-240V~50/60Hz 1.2A O/P: 5Vdc, 2A OR 9Vdc, 2A or 10Vdc, 4A 2# DC 3.87V
Connecting I/O Port(s)	1* USB port
Classification of EUT	Class B
Highest Internal Frequency(Fx)	2483.5MHz

### Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

### 2. The EUT contains following accessory devices:

Items	Trademark / Manufacturer / Factory	Model Name	Description	
Rechargeable Li-ion Polymer Battery	Huawei Device Co., Ltd. (SCUD / Sunwoda)	HB125290EFW-12	Rated capacity: 8800mAh Nominal Voltage: +3.87V Charging Voltage: +4.45V	
Data Cable	Broad Telecmmunication CO.,Ltd	WA0046		
	Freeport JI an Electronics Co.,Ltd	AU2-CHO006HF	USB2.0 USB-A to USB-C Charge Data	
	MING JI Electronics Co.,Ltd	213-00989-0	Cable,1.0meter, Shield not Grounded	
	ASAP TECHNOLOGY (JIANGXI) CO LTD	L99UC138-CS-H		

## 2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Charge+Standby+NFC
Mode 2	Charge+BT PLAY+NFC
Mode 3	BT PLAY+NFC

AC Power Line Conducted Emissions test		
Final Test Mode	Description	
Mode 1	Charge+Standby+NFC	

Radiated Emissions 30 MHz to 1 GHz test				
Final Test Mode	Description			
Mode 1	Charge+Standby+NFC			

Radiated emissions above 1 GHz test				
Final Test Mode	Description			
Mode 1	Charge+Standby+NFC			

ltem	Model	Trademark / Manufacturer / Factory	Config1	Config2	Config3	Config4
Potton	HB125290EFW-12	Huawei Device Co., Ltd.(Manufacturer: SCUD)				
Dallery	HB125290EFW-12	Huawei Device Co., Ltd.(Manufacturer: Sunwoda)		V	V	V
	WA0046	Broad Telecmmunication CO.,Ltd	V			
Cabla	AU2-CHO006HF	Freeport JI an Electronics Co.,Ltd		V		
Capie	213-00989-0	MING JI Electronics Co.,Ltd			V	
	L99UC138-CS-H	ASAP TECHNOLOGY (JIANGXI) CO LTD				V

Note:

- 1. Config 1 tested Mode 1-Mode 3 and used the worst mode to test Config 2-Config4. In this report only recorded the worst case.
- 2. For radiated emissions: The placement direction for Vertical and Horizontal are evaluated, the worst case is Vertical and recorded.
- 3. The product supports BT function. The frequency exemption is 2400-2483.5MHz.
- 4. Radiated emission above 1GHz tested with 2.4G filter.

## 2.3 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The standard test signals and output signal as following:

- 1. EUT connected to Mobile Phone via NFC.
- 2. EUT connected to Mobile Phone via BT.
- 3. EUT connected to Adapter via USB Cable.

### 2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



### 2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
А	Mobile Phone	SAMSUNG	SM-3650/DS	R28KA0BBEEE
В	Adapter	HUAWEI	HW-100400E01	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	NO	NO	1m



# **3. EMC EMISSION TEST**

# 3.1 AC POWER LINE CONDUCTED EMISSIONS TEST

## 3.1.1 LIMIT

Frequency of Emission (MHz)	Class B (dBuV)			
Frequency of Emission (Minz)	Quasi-peak	Average		
0.15 - 0.5	66 - 56 *	56 - 46 *		
0.5 - 5	56	46		
5 - 30	60	50		

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use) Margin Level = Measurement Value - Limit Value

## 3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Jan. 22, 2023
2	LISN	EMCO	3816/2	52765	Jan. 23, 2023
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Jan. 23, 2023
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	Cable	N/A	RG223	12m	Mar. 08, 2023

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

## 3.1.3 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.
- f. Measuring frequency range from 150KHz to 30MHz.

### 3.1.4 DEVIATION FROM TEST STANDARD

No deviation





# 3.1.5 TEST SETUP

# 3.1.6 TEST RESULTS

Remark:

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=10 kHz, VBW=10 kHz, Swp. Time =0.3 sec./MHz.
- (2) All readings are QP Mode value unless otherwise stated AVG in column of [Note]. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a "\*" marked in AVG Mode column of Interference Voltage Measured.





No. M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1612	22.10	9.67	31.77	55.40	-23.63	AVG	
2	0.1655	38.03	9.67	47.70	65.18	-17.48	QP	
3	0.2421	23.72	9.68	33.40	52.02	-18.62	AVG	
4	0.2983	23.89	9.69	33.58	50.29	-16.71	AVG	
5	0.8652	21.35	9.77	31.12	46.00	-14.88	AVG	
6 *	0.9374	40.51	9.77	50.28	56.00	-5.72	QP	
7	1.7340	35.72	9.84	45.56	56.00	-10.44	QP	
8	1.7452	13.89	9.84	23.73	46.00	-22.27	AVG	
9	3.1356	35.08	9.95	45.03	56.00	-10.97	QP	
10	4.2967	33.70	10.02	43.72	56.00	-12.28	QP	
11	5.9660	33.19	10.11	43.30	60.00	-16.70	QP	
12	6.1101	12.38	10.12	22.50	50.00	-27.50	AVG	





No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1522	39.27	9.63	48.90	65.88	-16.98	QP	
2		0.1814	39.01	9.63	48.64	64.42	-15.78	QP	
3		0.1814	23.11	9.63	32.74	54.42	-21.68	AVG	
4		0.2736	24.14	9.66	33.80	51.01	-17.21	AVG	
5		0.3660	22.06	9.67	31.73	48.59	-16.86	AVG	
6		0.3704	36.66	9.67	46.33	58.49	-12.16	QP	
7	*	0.9172	40.49	9.75	50.24	56.00	-5.76	QP	
8		0.9172	18.54	9.75	28.29	46.00	-17.71	AVG	
9		1.5830	36.68	9.89	46.57	56.00	-9.43	QP	
10		1.6800	15.68	9.88	25.56	46.00	-20.44	AVG	
11		3.0750	36.80	9.93	46.73	56.00	-9.27	QP	
12		3.3607	14.63	9.96	24.59	46.00	-21.41	AVG	



# 3.2 RADIATED EMISSIONS 30 MHZ TO 1 GHZ

# 3.2.1 LIMIT

	Class B (at 3m)					
Frequency (MHz)	(uV/m) Quasi-peak	(dBuV/m) Quasi-peak				
30 - 88	100	40				
88 - 216	150	43.5				
216 - 960	200	46				
960 - 1000	500	54				

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m) = 20log Emission level (uV/m).
   3m Emission level = 10m Emission level + 20log(10m/3m).
- (3) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value

# 3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Amplifier	HP	8447D	1937A02847	Jan. 22, 2023
2	Cable	Cable emci LMR-400(30MHz-1GHz)(1 0m+2.5m)		N/A	Jun. 01, 2022
3	Controller	MF	MF-7802BS	N/A	N/A
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	EMI Test Receiver	Keysight	N9038A	MY56400060	Jan. 22, 2023
6	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	9168-806	Aug. 17, 2022
7	Attenuator	EMCI	EMCI-N-6-06	N0657	Aug. 17, 2022

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

All calibration period of equipment list is one year.



### 3.2.3 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- f. For the actual test configuration, please refer to the related Item EUT Test Photos.

### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation

## 3.2.5 TEST SETUP



### 3.2.6 TEST RESULTS

### Remark:

- (1) Measuring frequency range from 30 MHz to 1000 MHz
- (2) If the peak scan value lower limit more than 20 dB, then this signal data does not show in table.











# 3.3 RADIATED EMISSIONS ABOVE 1 GHZ

### 3.3.1 LIMIT

Frequency	Class B				
	(dBuV/m) (at 3m)				
(MHZ)	Peak	Average			
Above 1000	74	54			

### FREQUENCY RANGE OF RADIATED MEASUREMENT (FOR UNINTENTIONAL RADIATORS)

Highest internal frequency (Fx)	Highest measurement frequency $(F_M)$
$Fx \leqslant 108 MHz$	1 GHz
108 MHz < Fx $\leqslant$ 500 MHz	2 GHz
500 MHz < Fx $\leq$ 1 GHz	5 GHz
Fx > 1 GHz	5 x Fx up to a maximum of 40 GHz
Note: Fx is the highest fundamental frequency gene	erated and/or used in the ITE or digital apparatus

NOTE:

under test.

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m) = 20log Emission level (uV/m). 1m Emission level = 3m Emission level + 20log(3m/1m).
  (3) The test result calculated as following:
  - Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value

# 3.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	May 10, 2022
2	Amplifier	Agilent	8449B	3008A02334	Jan. 22, 2023
3	Cable	mitron	RWLP50-4.0A-KJ-SMSM- 12M	N/A	Sep. 23, 2022
4	Controller	MF	MF-7802BS	N/A	N/A
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	EMI Test Receiver	Keysight	N9038A	MY56400060	Jan. 22, 2023
7*	Band Reject Filter	Wairrwright Instruments Gmbh	WRCG 2400/2483-2375/2505-50/ 10SS	16	Feb. 28, 2024

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

"\*" calibration period of equipment list is three year.

Except \* item, all calibration period of equipment list is one year.



# 3.3.3 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then AVG detector mode re-measured.
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.
- g. For the actual test configuration, please refer to the related Item EUT Test Photos.

### 3.3.4 DEVIATION FROM TEST STANDARD

No deviation

# 3.3.5 TEST SETUP







# 3.3.6 TEST RESULTS

### Remark:

- (1) Radiated emissions measured in frequency range above 1000 MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (2) Data of measurement within this frequency range shown "\*" in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
- (3) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.



Test Volta	age	AC	AC 120V/60Hz Polarization Vertical								
Test Mod	е	Mod	Mode 1 (Config1)								
Note		BT( radi	3T(2400-2483.5MHz) is intentional transmissions, which is not applicable to the adiation emission requirements in this standard.								
80.0	dBuV/m										1
70											-
60											
50									9 J	,	
40	1	www.	www.	ANY MAY AND MARKA	Mar Mariant	utrimateral	dimenti and the second s	mannade	<b>[η.η.μ.μ.μ.μ.μ.]</b> 10 × ×	ydar ywydd	-
30	2 ×	ו••	۱ ۲		×						
20											
10											-
0.0											1
11	000.000 1500.00	2000.00	2500.00	3000.00	3500.00	4000.0	0 4500	.00 5000.0	00	6000.00	MHz
No. MI	k. Freq.	2000.00 Reading Level	2500.00 Correct Factor	3000.00 Measure- ment	3500.00 Limit	4000.0 Margin	0 4500.	.00 5000.1	00	6000.00	MHz
No. MI	600.000 1500.00 F k. Freq. MHz	2000.00 Reading Level dBuV	2500.00 Correct Factor dB	3000.00 Measure- ment dBuV/m	3500.00 Limit dBuV/m	4000.0 Margin dB	0 4500. Detector	.00 5000.0 Comment	00	6000.00	MHz
No. MI	k. Freq. MHz 1407.500	2000.00 Reading Level dBuV 39.30	2500.00 Correct Factor dB -3.75	3000.00 Measure- ment dBuV/m 35.55	3500.00 Limit dBuV/m 74.00	4000.0 Margin dB -38.45	0 4500 Detector peak	.00 5000. Comment	00	6000.00	Milz
No. MI	k. Freq. MHz 1407.500	2000.00 Reading Level dBuV 39.30 29.33	2500.00 Correct Factor dB -3.75 -3.75	3000.00 Measure- ment dBuV/m 35.55 25.58	3500.00 Limit dBuV/m 74.00 54.00	4000.0 Margin dB -38.45 -28.42	0 4500 Detector peak AVG	.00 5000.1	00	6000.00	MIIz
11 No. MI	k. Freq. MHz 1407.500 2155.000	2000.00 Reading Level dBuV 39.30 29.33 37.53 27.62	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79	3000.00 Measure- ment dBuV/m 35.55 25.58 38.32 28.41	3500.00 Limit dBuV/m 74.00 54.00 74.00	4000.0 Margin dB -38.45 -28.42 -35.68 25.59	0 4500. Detector peak AVG peak	.00 5000.0 Comment	00	6000.00	MHz
10 No. Mi 1 2 3 4 5	k. Freq. MHz 1407.500 2155.000 2400.000	2000.00 Reading Level dBuV 39.30 29.33 37.53 27.62 36.60	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.94	3000.00 Measure- ment dBuV/m 35.55 25.58 38.32 28.41 37.54	3500.00 Limit dBuV/m 74.00 54.00 74.00 54.00 74.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46	0 4500 Detector peak AVG peak AVG	.00 5000.	00	6000.00	MIIz
11 No. MI 1 2 3 4 5 6	D00.000         1500.00           k.         Freq.           MHz           1407.500           1407.500           2155.000           2155.000           2400.000           2483.500	2000.00 Reading Level 39.30 29.33 37.53 27.62 36.60 35.94	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.79 0.94 0.99	3000.00 Measure- ment dBuV/m 35.55 25.58 38.32 28.41 37.54 36.93	3500.00 Limit dBuV/m 74.00 54.00 74.00 54.00 74.00 74.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46 -37.07	0 4500 Detector peak AVG peak AVG peak peak	.00 5000.0 Comment	00	6000.00	MHz
11 No. MI 1 2 3 4 5 6 7	MHz           1407.500           2155.000           2155.000           2400.000           2483.500           3545.000	2000.00 Reading Level 39.30 29.33 37.53 27.62 36.60 35.94 35.41	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.94 0.99 5.74	3000.00 Measure- ment 35.55 25.58 38.32 28.41 37.54 36.93 41.15	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 74.00 74.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46 -37.07 -32.85	0 4500 Detector peak AVG peak AVG peak peak peak	.00 5000.	00	6000.00	MHz
11 No. MI 1 2 3 4 5 6 7 8	D00.000         1500.00           k.         Freq.           MHz           1407.500           1407.500           2155.000           2155.000           2400.000           2483.500           3545.000           3545.000	2000.00 Reading Level 39.30 29.33 37.53 27.62 36.60 35.94 35.41 25.31	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.79 0.94 0.99 5.74 5.74	3000.00 Measure- ment 35.55 25.58 38.32 28.41 37.54 36.93 41.15 31.05	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 74.00 74.00 54.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46 -37.07 -32.85 -22.95	0 4500 Detector peak AVG peak AVG peak peak peak AVG	.00 5000.0 Comment	00	6000.00	MHz
11 No. MI 1 2 3 4 5 6 7 8 9	MHz           1407.500           2155.000           2155.000           2400.000           2483.500           3545.000           5077.500	2000.00 Reading Level 39.30 29.33 37.53 27.62 36.60 35.94 35.41 25.31 34.22	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.94 0.99 5.74 5.74 9.69	3000.00 Measure- ment 35.55 25.58 38.32 28.41 37.54 36.93 41.15 31.05 43.91	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 74.00 54.00 74.00 74.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46 -37.07 -32.85 -22.95 -30.09	0 4500 Detector peak AVG peak AVG peak peak AVG peak	.00 5000.0 Comment		6000.00	MHz
10 No. Mi 1 2 3 4 5 6 7 8 9 10	D00.000         1500.00           k.         Freq.           MHz           1407.500           2155.000           2155.000           2400.000           2483.500           3545.000           3545.000           5077.500	2000.00 Reading Level 39.30 29.33 37.53 27.62 36.60 35.94 35.41 25.31 34.22 24.88	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.79 0.94 0.99 5.74 5.74 9.69 9.69	3000.00 Measure- ment 35.55 25.58 38.32 28.41 37.54 36.93 41.15 31.05 43.91 34.57	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 74.00 74.00 54.00 74.00 54.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46 -37.07 -32.85 -22.95 -30.09 -19.43	0 4500 Detector peak AVG peak peak peak AVG peak AVG	.00 5000.0		6000.00	MHz
10 No. MI 1 2 3 4 5 6 7 8 9 10 11	D00.000         1500.00           k.         Freq.           MHz           1407.500           2155.000           2155.000           2400.000           2483.500           3545.000           5077.500           5097.500           5495.000	2000.00 Reading Level 39.30 29.33 37.53 27.62 36.60 35.94 35.41 25.31 34.22 24.88 33.51	2500.00 Correct Factor dB -3.75 -3.75 0.79 0.79 0.94 0.99 5.74 5.74 5.74 9.69 9.69 10.70	3000.00 Measure- ment 35.55 25.58 38.32 28.41 37.54 36.93 41.15 36.93 41.15 31.05 43.91 34.57 44.21	3500.00 Limit dBuV/m 74.00 54.00 74.00 54.00 74.00 74.00 54.00 54.00 74.00 54.00 74.00	4000.0 Margin dB -38.45 -28.42 -35.68 -25.59 -36.46 -37.07 -32.85 -22.95 -30.09 -19.43 -29.79	0 4500 Detector peak AVG peak AVG peak AVG peak AVG peak AVG	.00 5000.0		6000.00	MHz



			_								
Т	est Volta	age	AC	120V/60H	Ηz		Polar	ization		Horizontal	
Т	est Mod	le	Mod	le 1 (Con	fig1)						
Ν	lote		BT(2 radia	2400-248 ation emi	3.5MHz) ssion req	is intenti uiremen	ional tr ts in thi	ansmiss is stand	sions, wh ard.	ich is not applicable	to the
	80.0	dBuV/m									
	70										
	60										
	50										
	40		ţ	3	Andre Antonia Antonia	MAR MAR		WAR WAR	www.www.	von Murpinnenn	
	30	www.man.white.	n/Waxiiwan S	(VALO V) - 200700		6 ×	8 ×		^	x	
	20		^								
	10										
	10 0.0 10	000.000 1500.00	2000.00	2500.00	3000.00	3500.00	4000.0	0 4500.	00 5000.	00 6000.00 MHz	
	10 0.0 10	000.000 1500.00 R	2000.00	2500.00 Correct	3000.00 Measure-	3500.00	4000.0	0 4500.	00 5000.	00 6000.00 MHz	
	10 0.0 10 No. Mł	000.000 1500.00 R k. Freq.	2000.00 eading Level	2500.00 Correct Factor	3000.00 Measure- ment	3500.00 Limit	4000.0 Margin	0 4500.	00 5000.	00 6000.00 MHz	
	10 0.0 10 No. Mł	000.000 1500.00 R k. Freq. MHz	2000.00 leading Level dBuV 26.55	2500.00 Correct Factor dB	3000.00 Measure- ment dBuV/m	3500.00 Limit dBuV/m	4000.0 Margin dB	0 4500. Detector	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł	000.000 1500.00 R k. Freq. MHz 1952.500	2000.00 eeading Level dBuV 36.55 26.31	2500.00 Correct Factor dB 0.32	3000.00 Measure- ment dBuV/m 36.87 26.63	3500.00 Limit dBuV/m 74.00	4000.00 Margin dB -37.13	0 4500. Detector peak	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3	000.000 1500.00 R k. Freq. MHz 1952.500 1952.500 2400.000	2000.00 eading Level dBuV 36.55 26.31 39.70	2500.00 Correct Factor dB 0.32 0.32	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64	3500.00 Limit dBuV/m 74.00 54.00 74.00	4000.0 Margin dB -37.13 -27.37 -33.36	0 4500. Detector peak AVG	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4	000.000 1500.00 R k. Freq. MHz 1952.500 1952.500 2400.000 2483.500	2000.00 eading Level dBuV 36.55 26.31 39.70 35.64	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00	4000.0 Margin dB -37.13 -27.37 -33.36 -37.37	0 4500. Detector peak AVG peak peak	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5	000.000 1500.00 R. Freq. MHz 1952.500 1952.500 2400.000 2483.500 3407.500	2000.00 eading Level dBuV 36.55 26.31 39.70 35.64 36.11	2500.00 Correct Factor dB 0.32 0.32 0.32 0.94 0.99 5.29	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 41.40	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00	4000.0 Margin dB -37.13 -27.37 -33.36 -37.37 -32.60	0 4500. Detector peak AVG peak peak peak	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5 6	000.000 1500.00 R k. Freq. MHz 1952.500 1952.500 2400.000 2483.500 3407.500 3407.500	2000.00 eeading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99 5.29 5.29	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 41.40 32.24	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 54.00	4000.0 Margin dB -37.13 -37.37 -33.36 -37.37 -32.60 -21.76	0 4500. Detector peak AVG peak peak peak	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5 6 7	000.000 1500.00 K. Freq. MHz 1952.500 1952.500 2400.000 2483.500 3407.500 3407.500 3842.500	2000.00 eading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95 35.93	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99 5.29 5.29 6.62	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 40.64 36.63 41.40 32.24 42.55	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 54.00 74.00	4000.0 Margin dB -37.13 -27.37 -33.36 -37.37 -32.60 -21.76 -31.45	0 4500. Detector peak AVG peak peak peak AVG peak	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5 6 7 8	000.000 1500.00 k. Freq. MHz 1952.500 1952.500 2400.000 2483.500 3407.500 3407.500 3842.500 3842.500	2000.00 eeading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95 35.93 25.61	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99 5.29 5.29 5.29 6.62	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 40.64 36.63 41.40 32.24 42.55 32.23	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 54.00 74.00 54.00	4000.0 Margin dB -37.13 -37.37 -33.36 -37.37 -32.60 -21.76 -31.45 -21.77	0 4500. Detector peak AVG peak peak AVG peak AVG	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5 6 7 8 9	000.000 1500.00 K. Freq. R MHz 1952.500 2400.000 2483.500 3407.500 3407.500 3842.500 3842.500 4852.500	2000.00 eading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95 35.93 25.61 34.30	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99 5.29 5.29 6.62 6.62 9.00	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 40.64 36.63 41.40 32.24 42.55 32.23 43.30	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 54.00 54.00 74.00 54.00 74.00	4000.0 Margin dB -37.13 -27.37 -33.36 -37.37 -32.60 -21.76 -31.45 -21.77 -30.70	0 4500. Detector peak AVG peak peak AVG peak AVG peak	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5 6 7 8 9 9 10 *	000.000 1500.00 k. Freq. MHz 1952.500 1952.500 2400.000 2483.500 3407.500 3407.500 3842.500 3842.500 4852.500	2000.00 eeading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95 35.93 25.61 34.30 27.59	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99 5.29 5.29 5.29 5.29 6.62 6.62 6.62 6.62 9.00	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 40.64 36.63 41.40 32.24 42.55 32.23 43.30 36.59	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 54.00 54.00 54.00 54.00 54.00	4000.0 Margin dB -37.13 -27.37 -33.36 -37.37 -32.60 -21.76 -31.45 -21.77 -30.70 -17.41	0 4500. Detector peak AVG peak AVG peak AVG peak AVG peak AVG	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mł 1 2 3 4 5 6 7 8 9 10 * 11	000.000 1500.00 R K. Freq. MHz 1952.500 1952.500 2400.000 2483.500 3407.500 3407.500 3842.500 3842.500 4852.500 4852.500 5612.500	2000.00 eading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95 35.93 25.61 34.30 27.59 33.73	2500.00 Correct Factor dB 0.32 0.32 0.94 0.99 5.29 5.29 5.29 6.62 6.62 6.62 9.00 9.00 11.09	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 40.64 36.63 41.40 32.24 42.55 32.23 43.30 36.59 44.82	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 54.00 54.00 54.00 54.00 54.00 74.00	4000.0 Margin dB -37.13 -27.37 -33.36 -37.37 -32.60 -21.76 -31.45 -21.77 -30.70 -17.41 -29.18	0 4500. Detector peak AVG peak AVG peak AVG peak AVG peak AVG	00 5000. Comment	00 6000.00 MHz	
	10 0.0 10 No. Mi 1 2 3 4 5 6 7 8 9 9 10 * 11 12	000.000 1500.00 k. Freq. R MHz 1952.500 1952.500 2400.000 2483.500 3407.500 3407.500 3842.500 3842.500 4852.500 4852.500 5612.500	2000.00 eeading Level dBuV 36.55 26.31 39.70 35.64 36.11 26.95 35.93 25.61 34.30 27.59 33.73 23.55	2500.00 Correct Factor dB 0.32 0.94 0.99 5.29 5.29 5.29 5.29 6.62 6.62 9.00 9.00 11.09	3000.00 Measure- ment dBuV/m 36.87 26.63 40.64 36.63 40.64 36.63 41.40 32.24 42.55 32.23 43.30 36.59 44.82 34.64	3500.00 Limit dBuV/m 74.00 54.00 74.00 74.00 74.00 54.00 74.00 54.00 74.00 54.00 74.00 54.00	4000.0 Margin dB -37.13 -37.37 -33.36 -37.37 -32.60 -21.76 -21.76 -31.45 -21.77 -30.70 -17.41 -29.18 -19.36	0 4500. Detector peak AVG peak AVG peak AVG peak AVG peak AVG	00 5000.		



t Volta	age	AC	AC 120V/60Hz Polarization Vertical								
est Mode			Mode 1 (Config1)								
80.0	dBuV/m										
70											
60											
50				1	3 Martin Martin	www.	5	e Kummund	water water the state of the		
40	man the way and the second	ene-memberserment	under and the second	2 X	4 X	· · ·	6 ×	3 1 < X	0	12 ×	
30											
20											
10											
0.0											
60	00.000 7200.0	0 8400.00	9600.00	10800.00	12000.00	13200	).00 1440	D.00 156	00.00	18000.00 MHz	
No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margi	n				
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comme	nt		
1	10344.00	33.32	14.56	47.88	74.00	-26.12	peak				
2	10344.00	22.42	14.56	36.98	54.00	-17.02	AVG				
3	12252.00	31.21	17.69	48.90	74.00	-25.10	peak				
4	12252.00	21.16	17.69	38.85	54.00	-15.15	AVG				
5	13524.00	30.71	18.82	49.53	74.00	-24.47	peak				
6	13524.00	20.19	18.82	39.01	54.00	-14.99	AVG				
7	14484.00	28.77	20.92	49.69	74.00	-24.31	peak				
8	14484.00	18.64	20.92	39.56	54.00	-14.44	AVG				
9	15504.00	32.58	17.48	50.06	74.00	-23.94	peak				
10	15504.00	22.16	17.48	39.64	54.00	-14.36	AVG				
11	17292.00	30.31	20.60	50.91	74.00	-23.09	peak				
	~						-				



Test Volta	Test Voltage AC 120V/60Hz					Pola	rization		Horizo	ntal	
Test Mod	le	Мос	de 1 (Cor	ifig1)							
80.0	dBuV/m										
70											
60											
50				1 X., A	June 3	mmh	www.w.luch	pha war had	Annapar	9 11 Augusta	
40	monorman	ner fren Harlington and	introposed with	2 X	4 ×		6 X	8 X		10 X X	
30											
20											
10											
0.0 60	00.000 7200.00	) 8400.00	9600.00	10800.00	12000.00	13200	).00 1440	0.00 1560	D. <b>00</b>	18000.00	MHz
No. Mł	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margir	<u>ו</u>				
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	1		
1	10128.00	32.96	14.25	47.21	74.00	-26.79	peak				
2	10128.00	21.52	14.25	35.77	54.00	-18.23	AVG				
3	12132.00	31.44	17.75	49.19	74.00	-24.81	peak				
4	12132.00	20.16	17.75	37.91	54.00	-16.09	AVG				
5	14148.00	29.66	20.62	50.28	74.00	-23.72	peak				
6	14148.00	18.46	20.62	39.08	54.00	-14.92	AVG				
7	15636.00	33.75	17.56	51.31	74.00	-22.69	peak				
8	15636.00	22.16	17.56	39.72	54.00	-14.28	AVG				
9	16944.00	31.95	19.67	20.02	74.00 54.00	-22.38	реак				
10	17640.00	20.10	21.62	51 70	74.00	-14.17	AVG				
12 *	17640.00	20.41	21.03	42.04	54.00	-22.20					
12	11040.00	20.41	21.00	72.04	00.00	-11.00	710				



# 4. EUT TEST PHOTO

AC Power Line Conducted Emissions











Radiated Emissions Above 1 GHz





End of Test Report