



FCC PART 15C TEST REPORT No.I22Z60151-EMC03

for

Honor Device Co., Ltd.

Smart Phone

Model Name: LGE-NX9

FCC ID: 2AYGCLGE-NX9

with

Hardware Version: HN1LGEHM

Software Version: 6.0.0.108(C900E103R1P3)

Issued Date: 2022-04-20

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

No.52, HuayuanNorth Road, Haidian District, Beijing, P. R. China 100191.

Tel: +86(0)10-62304633-2512, Fax: +86(0)10-62304633-2504

Email: cttl_terminals@caict.ac.cn, website: www.chinattl.com

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z60151-EMC03	Rev.0	1 st edition	2022-04-20

CONTENTS

1. TEST LABORATORY	4
1.1. INTRODUCTION & ACCREDITATION	4
1.2. TESTING LOCATION	4
1.3. TESTING ENVIRONMENT	4
1.4. PROJECT DATA	4
1.5. SIGNATURE	4
2. CLIENT INFORMATION	5
2.1. APPLICANT INFORMATION	5
2.2. MANUFACTURER INFORMATION	5
3. PRODUCT INFORMATION	6
3.1. ABOUT EUT	6
3.2. INTERNAL IDENTIFICATION OF EUT	6
3.3. INTERNAL IDENTIFICATION OF AE	6
3.4. GENERAL DESCRIPTION	6
3.5. TEST CONFIGURATION	7
3.6. INTERPRETATION OF THE TEST ENVIRONMENT	7
4. REFERENCE DOCUMENTS	8
4.1. DOCUMENTS SUPPLIED BY APPLICANT	8
4.2. REFERENCE DOCUMENTS FOR TESTING	8
5. TEST RESULTS	9
5.1. SUMMARY OF TEST RESULTS	9
5.2. STATEMENTS	9
5.3. TEST CONDITIONS	9
6. TEST FACILITIES UTILIZED	10
7. MEASUREMENT UNCERTAINTY	11
ANNEX A: EUT PARAMETERS	12
ANNEX B: ANTENNA REQUIREMENTS	12
ANNEX C: DETAILED TEST RESULTS	13
C.1. RADIATED SPURIOUS EMISSION	13
C.1.1 RADIATED SPURIOUS EMISSION- ABOVE 1GHz	15
C.1.2 RADIATED SPURIOUS EMISSION-BELOW 1GHz	21
C.1.3 RADIATED SPURIOUS EMISSION-ABOVE 18GHz	23
C.1.4 BAND EDGES COMPLIANCE-- RADIATED	24
C.2. AC POWERLINE CONDUCTED EMISSION	27

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISCED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Test Location: CTTL (Huayuan North Road)

Address: No. 52 Huayuan North Road, Haidian District, Beijing 100191, P.R. China

1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.4. Project data

Testing Start Date: 2022-02-07

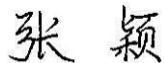
Testing End Date: 2022-03-25

1.5. Signature



An Hui

(Prepared this test report)



Zhang Ying

(Reviewed this test report)



Zhang Xia

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Honor Device Co., Ltd.
Address /Post: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Contact: /
Email: /
Telephone: /

2.2. Manufacturer Information

Company Name: Honor Device Co., Ltd.
Address /Post: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Contact: /
Email: /
Telephone: /

3. PRODUCT INFORMATION

3.1. About EUT

Description	Smart Phone
Model name	LGE-NX9
FCC ID	2AYGCLGE-NX9

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of T CTTL-Telecommunication Technology Labs, CAICT

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	867843050023477/ 867843050024970	HN1LGEHM	6.0.0.108(C900E103R1P3)
EUT2	867843050056592/ 867843050057699	HN1LGEHM	6.0.0.108(C900E103R1P3)

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Description	Note
AE2-1	USB Cable	L125UC008-CS-H
AE2-2	USB Cable	AU2-CRO015HF
AE2-3	USB Cable	RY0001
AE4-1	Battery	HB586680EFW(SUNWODA)
AE4-2	Battery	HB586680EFW(SCUD)
AE6	PC	/

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

LGE-NX9 is subscriber equipment in the GSM/WCDMA/LTE/NR system. The Mobile Phone implements such functions as RF signal receiving/transmitting, NR/LTE/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS, Wi-Fi etc. dual SIM/single SIM card interface. LGE-NX9 is dual/single SIM smart phone. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet , or to exchange data with other Bluetooth devices.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

For more EUT information please refers to the manufacturer's specifications or user's manual.

3.5. Test Configuration

For all modes the EUT can transmit at both CHAIN A(Chain A) and CHAIN B(Chain B) RF outputs individually.

3.6. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor $k=2$.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters, referring to Annex A for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C:	
	15.205 Restricted bands of operation;	
	15.209 Radiated emission limits, general requirements;	2021
ANSI C63.10	15.247 Operation within the bands 902-928MHz,	
	2400-2483.5 MHz, and 5725-5850 MHz.	
	American National Standard of Procedures for	2013
KDB 558074 D01	Compliance Testing of Unlicensed Wireless Devices	
	Federal Communications Commission Office of	
	Engineering and Technology Laboratory Division	
	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON	
KDB 558074 D01	DIGITAL TRANSMISSION SYSTEM, FREQUENCY	2019
	HOPPING SPREAD SPECTRUM SYSTEM, AND	
	HYBRID SYSTEM DEVICES OPERATING UNDER	
KDB 558074 D01	SECTION 15.247 OF THE FCC RULES	

Note: The test methods have no deviation with standards.

5. Test Results

5.1. Summary of Test Results

Abbreviations used in this clause:

- P** Pass, The EUT complies with the essential requirements in the standard.
F Fail, The EUT does not comply with the essential requirements in the standard
NA Not Applicable, The test was not applicable
NP Not Performed, The test was not performed by CTTL

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Verdict
Radiated Spurious Emission	15.247, 15.205, 15.209	P
AC Power line Conducted Emission	15.107, 15.207	P

Please refer to **ANNEX C** for detail.

The measurement is made according to ANSI C63.10.

5.2. Statements

CTTL has evaluated the test cases requested by the applicant /manufacturer as listed in section 5.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.2

5.3. Test Conditions

For this report, if the test cases listed above are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	Normal Temperature	26℃
Voltage	Normal Voltage	4.0V
Humidity	Normal Humidity	20-75%

6. Test Facilities Utilized

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2022-12-22
2	EMI Antenna	3115	00167250	ETS-Lindgren	1 year	2022-07-01
3	EMI Antenna	VULB9163	9163-483	Schwarzbeck	1 year	2022-08-24
4	Test Receiver	ESW44	103023	R&S	1 year	2022-10-28
5	EMI Antenna	LB-18040025-C-KF	211008400000 6	A-INFO	1 year	2023-02-23
6	Analytical Spectrometer	FSV40	101047	R&S	1 year	2022-06-02

AC Powerline Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101200	Rohde & Schwarz	1 year	2022-05-30
2	Test Receiver	ESCI 7	100344	Rohde & Schwarz	1 year	2023-02-21

7. Measurement Uncertainty

Radiated Spurious Emission

Measurement Uncertainty:

Frequency Range	Uncertainty(dBm) (k=2)
9kHz-30MHz	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.16
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.74
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.28

AC Power-line Conducted Emission

Measurement Uncertainty (k=2)	3.08dB
-------------------------------	--------

ANNEX A: EUT parameters

Disclaimer: The antenna gain and setting power provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX B: 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 the EUT are permanently attached.
- (2) The EUT complies with the requirement of §15.203

ANNEX C: Detailed Test Results

C.1. Radiated Spurious Emission

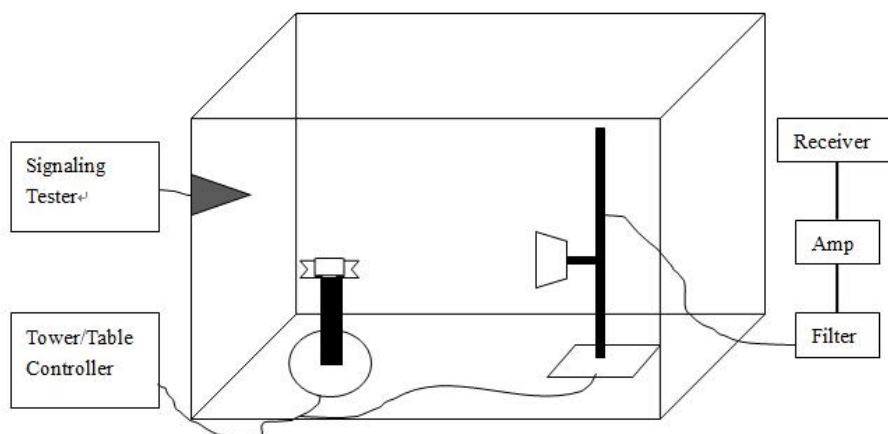
Specification Reference

FCC 47 CFR Part 15.247, 15.205, 15.209

Method of Measurement

Testing was performed in according with ANSI C63.10-2013 and KDB 558074.

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.



Measurement Limit

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency (MHz)	Field strength($\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Test settings

Frequency of emission (MHz)	RBW/VBW
30-1000	100kHz/300kHz
1000-4000	1MHz/3MHz
4000-18000	1MHz/3MHz
18000-26500	1MHz/3MHz

Sample Calculation

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}} = P_{\text{Mea}} + \text{Cable Loss} + \text{Antenna Factor}$$

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

Test Notes

1. The EUT is operating at its maximum duty cycle and its maximum power control level.
2. Investigation has been done on all channel, modes and modulations/data rates. Only the radiated emissions of the configurations that produced the worst case emissions are reported in this section.
3. For EUT1 and EUT2 the measurements were performed separately in Chain A, Chain B and only the worst cases are shown in this report.

C.1.1 Radiated Spurious Emission- above 1GHz

EUT set-up No.	Combination of EUT and AE	ANT NO.
Set.1-1	EUT1 + AE6+AE2-1	Chain A
		Chain B
Set.1-2	EUT2 + AE6+AE2-2/AE2-3	Chain A

For EUT1 and EUT2 the measurements were performed separately in Chain A, Chain B and only the worst cases are shown in this report.

Results Set.1-1, Chain A

Peak Measurement results

GFSK Ch 0

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17956.500	53.22	-25.50	46.70	32.02	74.00	20.78	H
13581.500	51.38	-29.50	40.40	40.48	74.00	22.62	H
12840.000	48.91	-30.70	39.10	40.41	74.00	25.09	H
9238.500	45.96	-33.70	38.00	41.66	74.00	28.04	H
7816.500	45.08	-35.10	37.00	43.18	74.00	28.92	V
2311.300	54.97	-20.10	27.90	47.07	74.00	19.03	H

GFSK Ch 39

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17282.000	53.17	-25.90	44.40	34.77	74.00	20.83	H
13736.500	50.36	-29.10	40.90	38.56	74.00	23.64	H
12836.000	48.63	-30.70	39.10	40.13	74.00	25.37	H
9174.000	46.21	-33.80	38.10	42.01	74.00	27.79	H
7143.000	44.39	-35.40	36.30	43.49	74.00	29.61	H
4652.500	39.92	-37.50	32.80	44.62	74.00	34.08	V

GFSK Ch 78

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17761.500	53.53	-25.50	46.70	32.33	74.00	20.47	V
13572.000	51.36	-29.50	40.40	40.46	74.00	22.64	H
12472.000	48.76	-31.20	38.90	41.06	74.00	25.24	H
9586.000	45.93	-33.10	38.00	41.03	74.00	28.07	H
7220.500	44.25	-35.50	36.40	43.35	74.00	29.75	H
2492.800	55.38	-20.00	28.30	47.08	74.00	18.62	H

$\pi/4$ DQPSK Ch 0

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17718.500	52.48	-25.70	46.00	32.28	74.00	21.52	V
13695.500	50.15	-29.10	40.90	38.35	74.00	23.85	H
12764.500	47.73	-30.50	39.10	39.13	74.00	26.27	V
9195.500	46.19	-33.80	38.10	41.99	74.00	27.81	H
7628.000	44.85	-34.70	36.90	42.55	74.00	29.15	V
2385.600	55.08	-20.00	28.10	47.08	74.00	18.92	H

$\pi/4$ DQPSK Ch 39

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.500	52.94	-25.50	46.70	31.74	74.00	21.06	V
14198.500	51.22	-29.00	42.00	38.22	74.00	22.78	H
12432.000	47.83	-31.20	38.90	40.13	74.00	26.17	H
9216.500	46.22	-33.70	38.00	41.92	74.00	27.78	H
7296.500	44.80	-35.00	36.50	43.20	74.00	29.20	V
4785.000	39.47	-37.30	33.00	43.67	74.00	34.53	H

$\pi/4$ DQPSK Ch 78

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17657.000	52.51	-25.70	46.00	32.31	74.00	21.49	H
14030.000	50.47	-29.40	41.70	38.27	74.00	23.53	H
12437.500	47.69	-31.20	38.90	39.99	74.00	26.31	V
8813.000	45.59	-33.90	38.10	41.39	74.00	28.41	H
7222.000	44.20	-35.50	36.40	43.30	74.00	29.80	V
2492.800	55.31	-20.00	28.30	47.01	74.00	18.69	V

8DPSK Ch 0

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17702.000	52.91	-25.70	46.00	32.71	74.00	21.09	H
13661.000	50.34	-29.50	40.40	39.44	74.00	23.66	V
12850.500	47.98	-30.70	39.10	39.48	74.00	26.02	H
9411.000	46.34	-32.90	37.90	41.34	74.00	27.66	V
7985.000	44.74	-34.80	37.10	42.44	74.00	29.26	V
2338.500	54.84	-20.10	28.00	46.94	74.00	19.16	H

8DPSK Ch 39

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17287.500	53.03	-25.90	44.40	34.63	74.00	20.97	V
13685.000	50.25	-29.50	40.40	39.35	74.00	23.75	V
12836.500	47.64	-30.70	39.10	39.14	74.00	26.36	V
9196.500	45.79	-33.80	38.10	41.59	74.00	28.21	H
7611.500	44.23	-35.00	36.90	42.43	74.00	29.77	H
4974.500	40.76	-36.60	33.40	43.96	74.00	33.24	V

8DPSK Ch 78

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17380.500	52.78	-25.90	44.40	34.38	74.00	21.22	V
14103.500	50.53	-29.40	41.70	38.33	74.00	23.47	V
12925.000	49.07	-30.50	39.20	40.37	74.00	24.93	H
8949.000	46.20	-33.30	38.20	41.30	74.00	27.80	V
7998.000	44.42	-34.80	37.10	42.12	74.00	29.58	H
2492.500	55.45	-20.00	28.30	47.15	74.00	18.55	H

Average Measurement results

GFSK Ch 0

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17770.000	41.51	-25.50	46.70	20.31	54.00	12.49	V
13685.000	39.31	-29.50	40.40	28.41	54.00	14.69	V
12849.500	36.89	-30.70	39.10	28.39	54.00	17.11	V
9110.000	34.35	-33.80	38.10	30.15	54.00	19.65	V
7701.500	33.40	-34.80	37.00	31.30	54.00	20.60	H
2343.600	43.02	-20.10	28.00	35.12	54.00	10.98	V

GFSK Ch 39

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17777.500	41.47	-25.50	46.70	20.27	54.00	12.53	H
13506.500	39.11	-29.60	40.00	28.71	54.00	14.89	V
12861.000	36.86	-30.70	39.10	28.36	54.00	17.14	H
9802.500	34.23	-33.50	38.00	29.73	54.00	19.77	V
7221.000	33.23	-35.50	36.40	32.33	54.00	20.77	V
4941.500	28.07	-37.10	33.30	31.87	54.00	25.93	V

GFSK Ch 78

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17600.500	41.51	-25.70	46.00	21.31	54.00	12.49	H
13576.000	39.31	-29.50	40.40	28.41	54.00	14.69	H
12836.500	36.92	-30.70	39.10	28.42	54.00	17.08	V
9119.000	34.41	-33.80	38.10	30.21	54.00	19.59	V
7222.500	33.42	-35.50	36.40	32.52	54.00	20.58	V
2485.300	43.26	-20.00	28.30	34.96	54.00	10.74	H

$\pi/4$ DQPSK Ch 0

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17952.000	41.35	-25.50	46.70	20.15	54.00	12.65	H
13558.500	38.89	-29.50	40.40	27.99	54.00	15.11	V
12852.000	37.09	-30.70	39.10	28.59	54.00	16.91	V
9886.000	34.15	-33.50	38.10	29.55	54.00	19.85	H
7996.000	33.16	-34.80	37.10	30.86	54.00	20.84	H
2344.200	42.88	-20.10	28.00	34.98	54.00	11.12	H

 $\pi/4$ DQPSK Ch 39

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17703.500	41.49	-25.70	46.00	21.29	54.00	12.51	H
13659.000	38.96	-29.50	40.40	28.06	54.00	15.04	V
12850.000	37.17	-30.70	39.10	28.67	54.00	16.83	V
9794.000	34.27	-33.50	38.00	29.77	54.00	19.73	H
7221.500	33.18	-35.50	36.40	32.28	54.00	20.82	V
4835.500	28.01	-37.50	33.10	32.31	54.00	25.99	V

 $\pi/4$ DQPSK Ch 78

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17707.000	41.35	-25.70	46.00	21.15	54.00	12.65	V
13718.000	39.06	-29.10	40.90	27.26	54.00	14.94	V
12996.500	37.16	-30.50	39.20	28.46	54.00	16.84	V
9404.500	34.24	-32.90	37.90	29.24	54.00	19.76	H
7217.000	33.38	-35.50	36.40	32.48	54.00	20.62	V
2487.500	42.95	-20.00	28.30	34.65	54.00	11.05	H

8DPSK Ch 0

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.500	41.73	-25.50	46.70	20.53	54.00	12.27	V
13602.500	38.99	-29.50	40.40	28.09	54.00	15.01	V
12847.000	36.84	-30.70	39.10	28.34	54.00	17.16	H
9095.500	34.43	-33.80	38.10	30.03	54.00	19.57	H
7996.000	33.32	-34.80	37.10	31.02	54.00	20.68	V
2356.300	42.67	-20.10	28.00	34.67	54.00	11.33	V

8DPSK Ch 39

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17606.000	41.57	-25.70	46.00	21.37	54.00	12.43	V
13698.500	38.90	-29.10	40.90	27.10	54.00	15.10	V
12855.000	37.35	-30.70	39.10	28.85	54.00	16.65	H
9797.000	34.45	-33.50	38.00	29.95	54.00	19.55	H
7996.000	33.73	-34.80	37.10	31.43	54.00	20.27	V
4942.500	28.07	-37.10	33.30	31.87	54.00	25.93	H

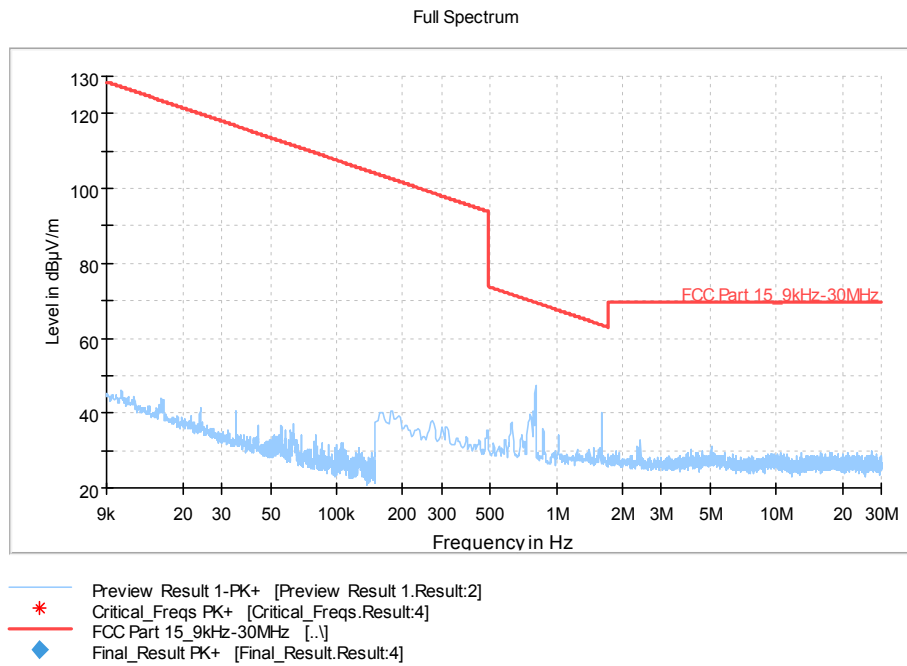
8DPSK Ch 78

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17597.000	41.39	-25.70	46.00	21.19	54.00	12.61	H
13610.500	39.11	-29.50	40.40	28.21	54.00	14.89	V
12932.000	37.03	-30.50	39.20	28.33	54.00	16.97	V
9692.500	34.23	-33.00	38.00	29.23	54.00	19.77	V
7230.500	33.19	-35.50	36.40	32.29	54.00	20.81	V
2487.600	42.99	-20.00	28.30	34.69	54.00	11.01	H

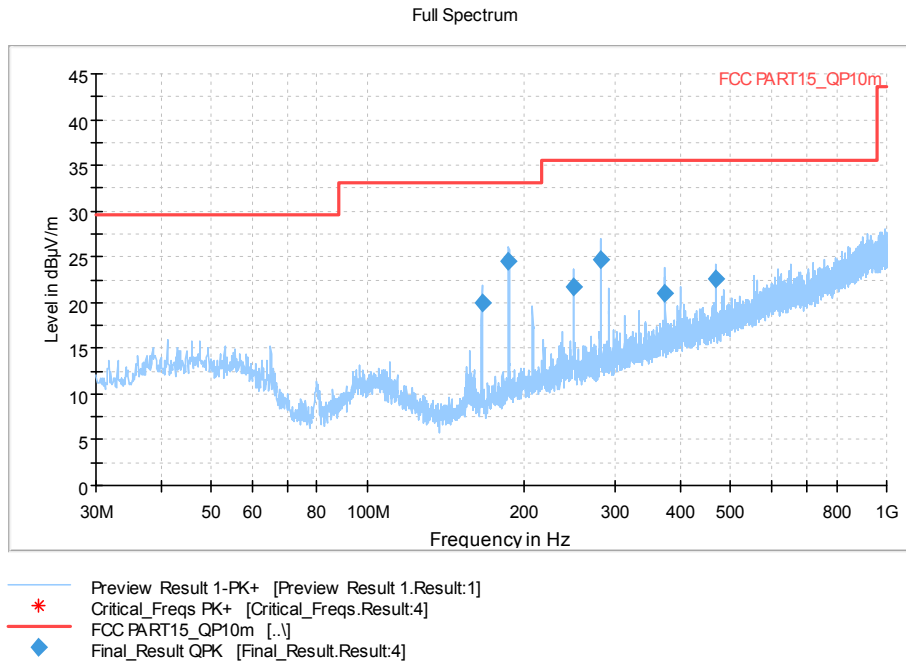
Conclusion: Pass

C.1.2 Radiated Spurious Emission-BELOW 1GHz

WOSRT CASE BELOW 30MHz (GFSK Ch 0, Chain A)



WOSRT CASE BELOW 1GHz (GFSK Ch 0, Chain A)



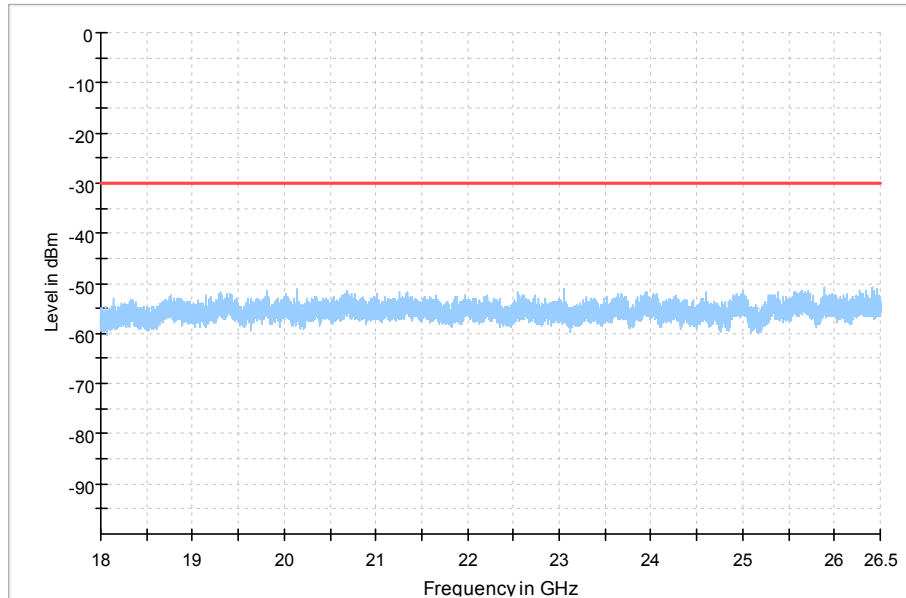
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
166.091000	19.89	33.06	13.17	2000.0	120.000	109.0	V	84.0
187.237000	24.48	33.06	8.58	2000.0	120.000	98.0	V	270.0
249.705000	21.64	35.56	13.92	2000.0	120.000	325.0	H	268.0
281.230000	24.74	35.56	10.82	2000.0	120.000	325.0	H	224.0
374.641000	21.01	35.56	14.55	2000.0	120.000	275.0	H	0.0
468.537000	22.64	35.56	12.92	2000.0	120.000	325.0	V	35.0

C.1.3 Radiated Spurious Emission-ABOVE 18GHz

WOSRT CASE FOR ABOVE 18GHz (GFSK Ch 0, Chain A)

Full Spectrum



C.1.4 Band Edges Compliance– Radiated

EUT set-up No.	Combination of EUT and AE	ANT NO.
Set.1-1	EUT1 + AE6+AE2-1	Chain A
		Chain B
Set.1-2	EUT2 + AE6+AE2-2/AE2-3	Chain A

For EUT1 and EUT2 the measurements were performed separately in Chain A, Chain B and only the worst cases are shown in this report.

Results Set.1-1, Chain A

Mode	Channel	Frequency Range	Test Results	Conclusion
GFSK	0	2.31GHz ~2.43GHz	Fig.1	P
	78	2.45GHz ~2.5GHz	Fig.2	P

Mode	Channel	Frequency Range	Test Results	Conclusion
$\pi/4$ DQPSK	0	2.31GHz ~2.43GHz	Fig.3	P
	78	2.45GHz ~2.5GHz	Fig.4	P

Mode	Channel	Frequency Range	Test Results	Conclusion
8DPSK	0	2.31GHz ~2.43GHz	Fig.5	P
	78	2.45GHz ~2.5GHz	Fig.6	P

Conclusion: PASS

Test graphs as below

The Result for Chain A

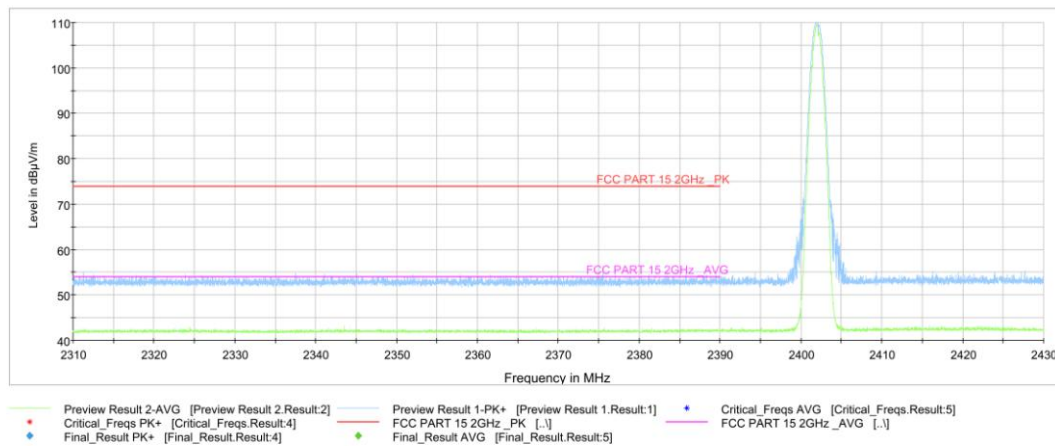


Fig.1. Frequency Band Edges: GFSK, Channel 0, 2.31 GHz – 2.43GHz

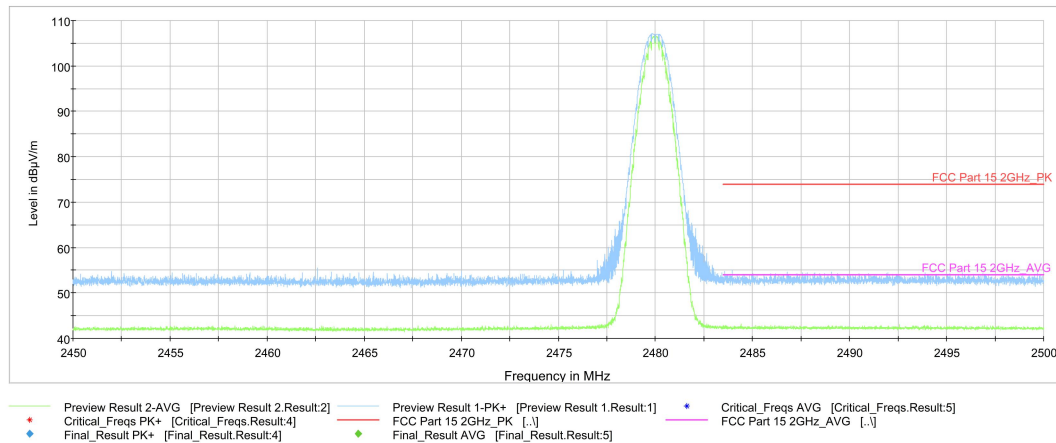


Fig.2. Frequency Band Edges: GFSK, Channel 78, 2.45 GHz - 2.50GHz

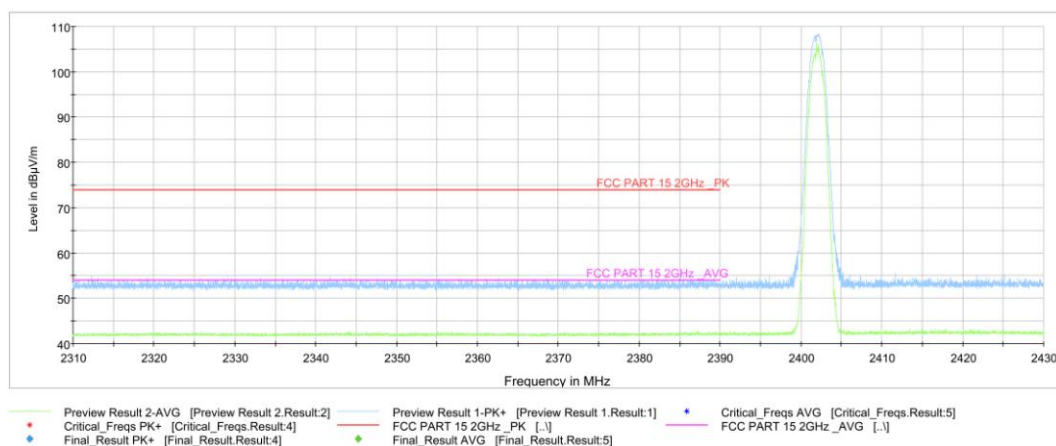


Fig.3. Frequency Band Edges: $\pi/4$ DQPSK, Channel 0, H2.31 GHz - 2.43GHz

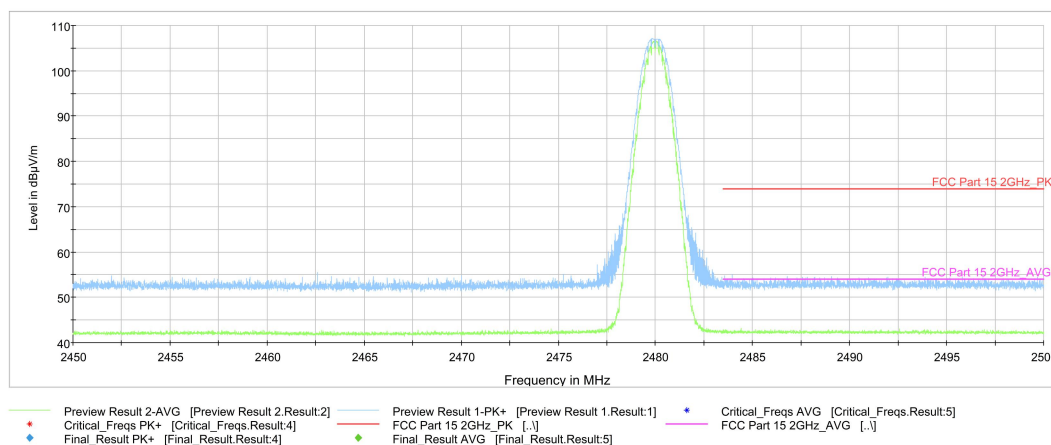


Fig.4. Frequency Band Edges: $\pi/4$ DQPSK, Channel 78, 2.45 GHz - 2.50GHz

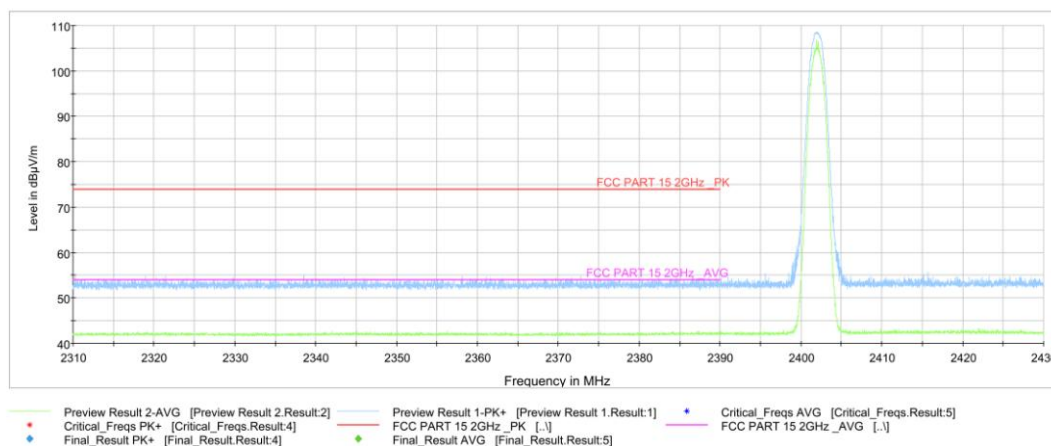


Fig.5. Frequency Band Edges: 8DPSK, Channel 0, 2.31 GHz - 2.43GHz

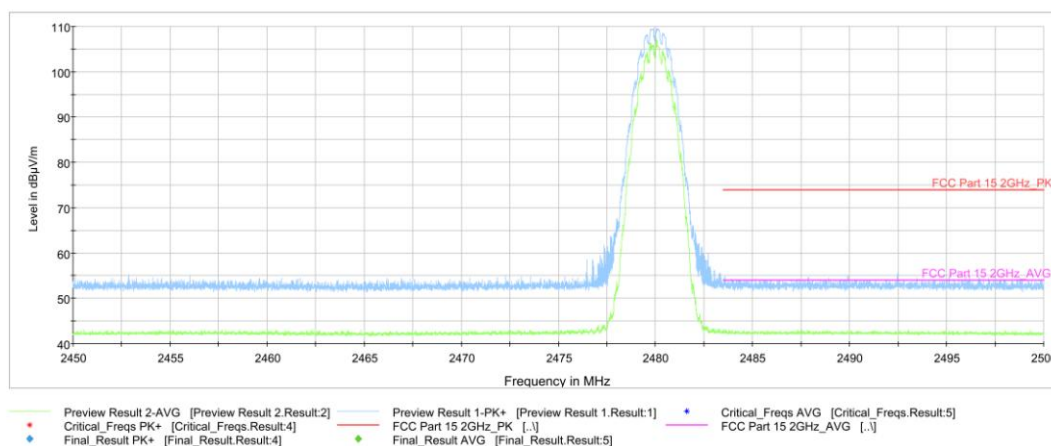


Fig.6. Frequency Band Edges: 8DPSK, Channel 78, 2.45 GHz - 2.50GHz

C.2. AC Powerline Conducted Emission

Specification Reference

FCC 47 CFR Part 15.207, 15.107

Method of Measurement:

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

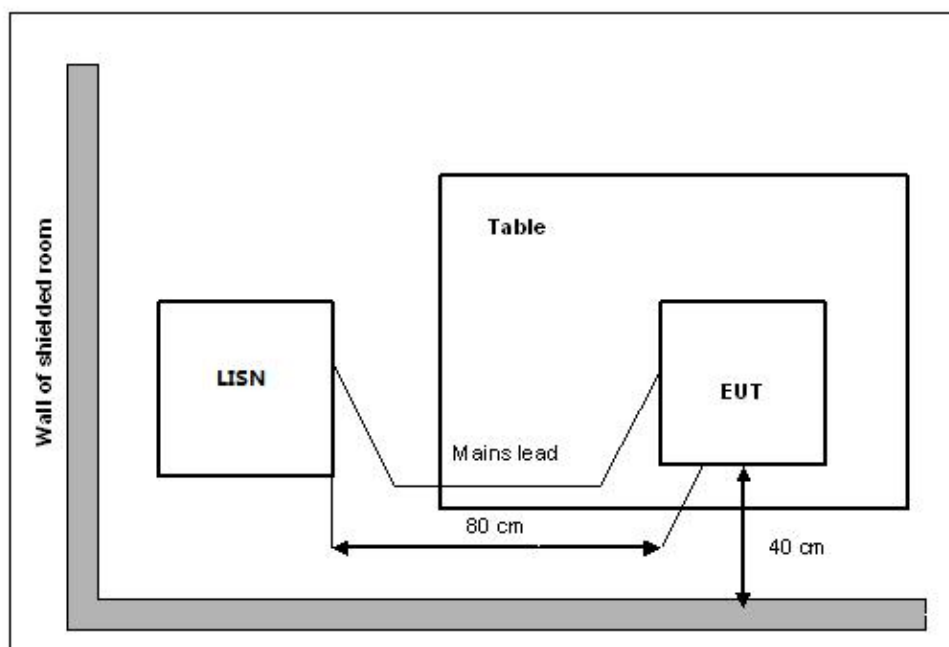
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/IF bandwidth	Sweep Time(s)
0.15-30	9kHz	1

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Setup



EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state.

The EUT is powered by an AC/travel adapter.

Measurement Result and limit:

EUT set-up No.	Combination of EUT and AE	ANT NO.
Set.1-1	EUT1 + AE6+AE2-1	Chain A
		Chain B
Set.1-2	EUT2 + AE6+AE2-2/AE2-3	Chain A

For EUT1 and EUT2 the measurements were performed separately in Chain A, Chain B and only the worst cases are shown in this report.

Results Set.1-1, GFSK Ch 0, Chain A
Bluetooth (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		bluetooth	Idle	
0.15 to 0.5	66 to 56	Fig.C.2.1	Fig.C.2.2	P
0.5 to 5	56			
5 to 30	60			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Bluetooth (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		bluetooth	Idle	
0.15 to 0.5	56 to 46	Fig.C.2.1	Fig.C.2.2	P
0.5 to 5	46			
5 to 30	50			
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.				

Note: all modes have been tested and the worst results shown here.

Conclusion: Pass

Test graphs as below:

Set.1-1, GFSK Ch 0, Chain A

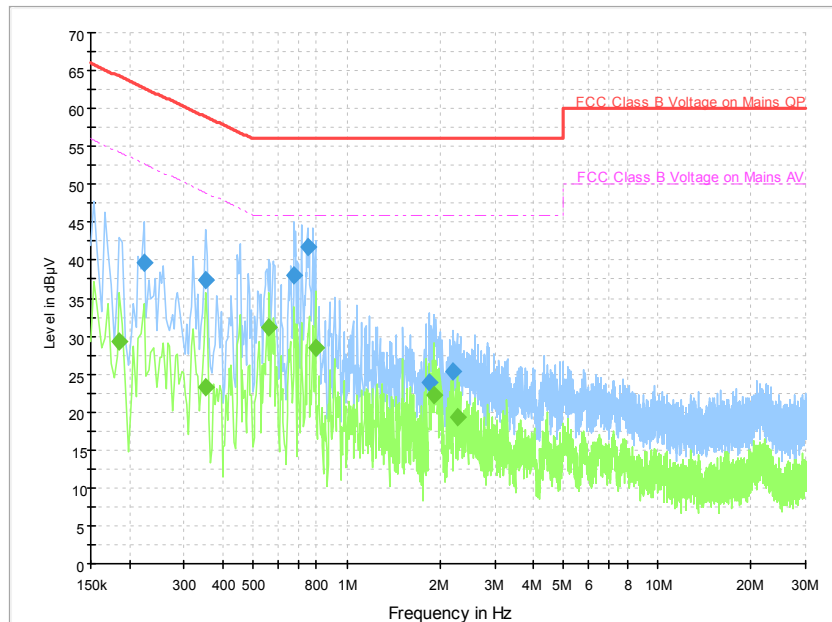


Fig.C.2.1 AC Power line Conducted Emission- Bluetooth

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.222000	39.6	5000.0	9.000	On	L1	20.0	23.1	62.7
0.350000	37.5	5000.0	9.000	On	L1	19.9	21.5	59.0
0.678000	38.0	5000.0	9.000	On	L1	19.7	18.0	56.0
0.750000	41.8	5000.0	9.000	On	N	19.8	14.2	56.0
1.838000	23.9	5000.0	9.000	On	L1	19.5	32.1	56.0
2.206000	25.3	5000.0	9.000	On	L1	19.5	30.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.186000	29.2	5000.0	9.000	On	L1	20.0	25.0	54.2
0.350000	23.2	5000.0	9.000	On	L1	19.9	25.8	49.0
0.562000	31.2	5000.0	9.000	On	L1	19.9	14.8	46.0
0.794000	28.4	5000.0	9.000	On	N	19.8	17.6	46.0
1.906000	22.3	5000.0	9.000	On	N	19.7	23.7	46.0
2.262000	19.3	5000.0	9.000	On	L1	19.5	26.7	46.0

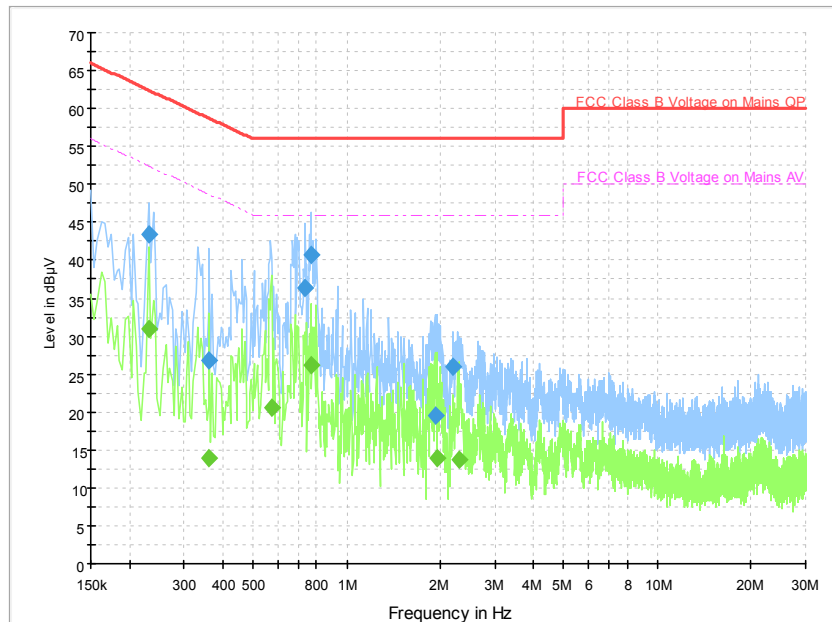


Fig.C.2.2 AC Power line Conducted Emission-Idle

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.230000	43.5	5000.0	9.000	On	L1	20.0	19.0	62.4
0.362000	26.9	5000.0	9.000	On	L1	19.9	31.8	58.7
0.734000	36.4	5000.0	9.000	On	N	19.8	19.6	56.0
0.766000	40.7	5000.0	9.000	On	N	19.8	15.3	56.0
1.922000	19.6	5000.0	9.000	On	N	19.7	36.4	56.0
2.194000	25.9	5000.0	9.000	On	N	19.7	30.1	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.230000	31.0	5000.0	9.000	On	L1	20.0	21.4	52.4
0.362000	14.0	5000.0	9.000	On	L1	19.9	34.7	48.7
0.574000	20.5	5000.0	9.000	On	L1	19.8	25.5	46.0
0.766000	26.3	5000.0	9.000	On	N	19.8	19.7	46.0
1.954000	14.0	5000.0	9.000	On	N	19.7	32.0	46.0
2.310000	13.7	5000.0	9.000	On	N	19.8	32.3	46.0

END OF REPORT