FCC PART 15C
TEST REPORT
No. I16N00975-BLE

for

OnePlus Technology(Shenzhen) Co., Ltd.

Mobile Phone

Model Name: ONEPLUS A3000

With

Hardware Version: 28

Software Version: oxygen 3.5.1

FCC ID: 2ABZ2-A3000

Issued Date: Nov. 14th, 2016

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.

Test Laboratory:

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I16N00975-BLE	Rev.0	1st edition	2016-11-14

CONTENTS

1. Test Laboratory

1.1. Testing Location

Location: CTTL(South Branch)

Address: TCL International E city No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong, China 518000

1.2. Testing Environment

Normal Temperature:	15-35℃
Extreme Temperature:	-20/+55℃
Relative Humidity:	20-75%

1.3. Project data

Testing Start Date:	2016-04-06
Testing End Date:	2016-11-01

1.4. Signature

An Ran

(Prepared this test report)

Tang Weisheng

(Reviewed this test report)

Zhang Bojun

(Approvedthis test report)

2. Client Information

2.1. Applicant Information

Company Name:	OnePlus Technology(Shenzhen) Co., Ltd.
Address:	18/F, Tower C, Tai Ran Building,No.8 Tai Ran Road, Shenzhen, China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755 61898696 EXT 7023
Fax:	/

2.2. Manufacturer Information

Company Name:	OnePlus Technology(Shenzhen) Co., Ltd.
Address:	18/F, Tower C, Tai Ran Building,No.8 Tai Ran Road, Shenzhen, China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755 61898696 EXT 7023
Fax:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Mobile Phone
Model Name	ONEPLUS A3000
Market Name	/
Frequency Band	2402MHz~2480MHz
Type of Modulation	GFSK
Number of Channels	40
FCC ID	2ABZ2-A3000

*Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
EUT1	860046030164299	28	oxygen 3.5.1	2016-04-06

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

3.3. Internal Identification of AE

AE ID*	Description	Type	SN
AE1	Power Supply Unit	HK0504	HC1608500001
AE2	Power Supply Unit	DC0504A5	H11619000004
AE3	Power Supply Unit	DC0504B5GB	LCYYWWWSSSSSS

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

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant 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; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz.	Nov,2015
ANSI C63.10	American National Standard for Testing Unlicensed Wireless Devices	Jun,2013

5. Test Results

5.1. Summary of Test Results

No	Test cases	Standard Sub-clause	Verdict
0.	Antenna Requirement	15.203	**P**
1.	Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	**P**
2.	AC Powerline Conducted Emission	15.107, 15.207	**P**

See **ANNEX B and ANNEX C** for details.

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. Terms used in the result table

Terms used in Verdict column

P	Pass
NA	Not Available
F	Fail

Abbreviations

AC	Alternating Current
AFH	Adaptive Frequency Hopping
BW	Band Width
E.I.R.P.	equivalent isotropical radiated power
ISM	Industrial, Scientific and Medical
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
Tx	Transmitter

5.4. Laboratory Environment

Semi-anechoic chamber did not exceed following limits along the EMC testing

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ±4dB, 3m/10m distance,from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Shielded room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

Fully-anechoic chamber did not exceed following limits along the EMC testing

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Voltage Standing Wave Ratio (VSWR)	≤6dB, from 1 to 18 GHz,3m distance

6. Test Facilities Utilized

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Chamber	FACT5-2.0	4166	ETS-Lindgren	2018-05-13	3 years
2	Test Receiver	ESCI	100701	Rohde & Schwarz	2017-08-09	1 year
3	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2017-01-20	3 years
4	Horn Antenna	3117	00066585	ETS-Lindgren	2019-03-05	3 years
5	Spectrum Analyser	FSP40	100378	Rohde & Schwarz	2016-12-18	1 year
6	Loop Antenna	HLA6120	35779	TESEQ	2019-05-10	3 years
7	Test Receiver	ESCI	100702	Rohde & Schwarz	2017-06-26	1 year
8	LISN	ESH2-Z5	100196	Rohde & Schwarz	2017-01-12	1 year

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

ANNEX A: MEASUREMENT RESULTS FOR RECEIVER

A.0 Antenna requirement

Measurement Limit:

Standard	Requirement
FCC CRF Part 15.203	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, § 15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Conclusion: The Directional gains of antenna used for transmitting is -3.5 dBi.
The RF transmitter uses an integrate antenna without connector.

A.1 Transmitter Spurious Emission

A.1.1 Transmitter Spurious Emission - Radiated

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 of emission (MHz)	Field strength(μV/m)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Note:

According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band from 9kHz to 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic.

The measurement results include the horizontal polarization and vertical polarization measurements.

Measurement Results:

GFSK	0	1 GHz ~18 GHz	Fig.1	P
	19	9 kHz ~30 MHz	Fig.2	P
		30 MHz ~1 GHz	Fig.3	P
		1 GHz ~18 GHz	Fig.4	P
	39	1 GHz ~18 GHz	Fig.5	P
	Power(CH0)	2.38 GHz ~ 2.45 GHz	Fig.6	P
	Power(CH39)	2.45 GHz ~ 2.5 GHz	Fig.7	P
/	All channels	18 GHz~ 26.5 GHz	Fig.8	P

GFSK CH0 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
13981.500	56.1	V	10.8	17.9	74.0	
15065.000	56.2	V	12.1	17.8	74.0	
15611.500	58.2	H	12.5	15.8	74.0	
16241.500	58.4	H	13.2	15.6	74.0	
16798.500	59.0	H	13.9	15.0	74.0	
17326.000	58.9	H	14.0	15.1	74.0	

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
14546.000	43.8	H	11.9	10.2	54.0	
15154.500	44.8	H	12.1	9.2	54.0	
15675.000	46.4	H	12.6	7.6	54.0	
16208.000	47.0	H	13.1	7.0	54.0	
16785.000	47.5	V	13.9	6.5	54.0	
17315.500000	47.2	H	13.9	6.8	54.0	

GFSK CH19 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
14462.000	56.0	H	11.7	18.0	74.0	
14624.000	56.4	V	11.9	17.6	74.0	
15803.500	59.0	V	12.8	15.0	74.0	
16218.000	58.8	H	13.1	15.2	74.0	
16780.500	59.4	H	13.9	14.6	74.0	
17406.000	58.8	V	14.0	15.2	74.0	

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
14132.500	43.9	H	11.2	10.1	54.0	
15159.500	44.8	H	12.1	9.2	54.0	
15676.500	46.4	V	12.6	7.6	54.0	
16215.500	47.0	H	13.1	7.0	54.0	
16785.500	47.8	H	13.9	6.2	54.0	
17349.000000	47.1	V	14.0	6.9	54.0	

GFSK CH39 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
14511.000	56.8	V	11.8	17.2	74.0	
14616.000	56.9	H	11.9	17.1	74.0	
15774.000	58.3	V	12.8	15.7	74.0	
16180.000	59.1	H	13.1	14.9	74.0	
16854.000	58.9	V	13.9	15.1	74.0	
17404.500	59.0	V	14.0	15.0	74.0	

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
14538.500	44.2	V	11.9	9.8	54.0	
15159.000	45.1	V	12.1	8.9	54.0	
15687.000	46.5	V	12.6	7.5	54.0	
16205.500	47.1	H	13.1	6.9	54.0	
16768.000	47.5	V	13.9	6.5	54.0	
17299.500 000	47.1	V	13.9	6.9	54.0	

See ANNEX C for test graphs.

Conclusion: Pass

Note:

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.

The measurement results are obtained as described below:

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

A.2 AC Powerline Conducted Emission

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

BLE (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.9	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.			

BLE (Average Limit)-AE1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.9	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.			

BLE (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	66 to 56	Fig.10	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.			

BLE (Average Limit)-AE1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.10	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.			

Test Condition:

Voltage（V）	Frequency（Hz）
240	60

Measurement Result and limit:

BLE (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.11	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.			

BLE (Average Limit)-AE1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.11	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.			

BLE (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	66 to 56	Fig.12	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.			

BLE (Average Limit)-AE1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.12	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.			

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

BLE (Quasi-peak Limit)-AE2

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.13	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.			

BLE (Average Limit)-AE2

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.13	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.			

BLE (Quasi-peak Limit)-AE2

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	66 to 56	Fig.14	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.			

BLE (Average Limit)-AE2

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.14	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.			

Test Condition:

Voltage（V）	Frequency（Hz）
240	60

Measurement Result and limit:

BLE (Quasi-peak Limit)-AE2

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.15	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.			

BLE (Average Limit)-AE2

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.15	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.			

BLE (Quasi-peak Limit)-AE2

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	66 to 56	Fig.16	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.			

BLE (Average Limit)-AE2

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.16	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.			

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

BLE (Quasi-peak Limit)-AE3

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.17	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.			

BLE (Average Limit)-AE3

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.17	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.			

BLE (Quasi-peak Limit)-AE3

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	66 to 56	Fig.18	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.			

BLE (Average Limit)-AE3

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.18	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.			

Test Condition:

Voltage（V）	Frequency（Hz）
240	60

Measurement Result and limit:

BLE (Quasi-peak Limit)-AE3

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.19	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.			

BLE (Average Limit)-AE3

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.19	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.			

BLE (Quasi-peak Limit)-AE3

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	66 to 56	Fig.20	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.			

BLE (Average Limit)-AE3

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.20	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: The measurement results include the L1 and N measurements.
See ANNEX C for test graphs.

Conclusion: Pass

ANNEX B: TEST FIGURE LIST

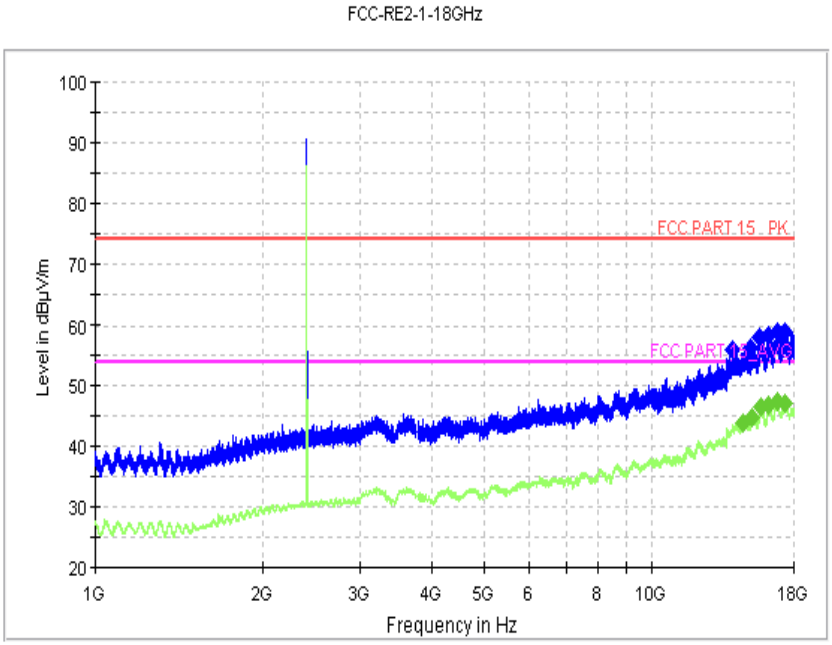

Fig. 1 Radiated Spurious Emission (GFSK, Ch0, 1 GHz ~18 GHz)

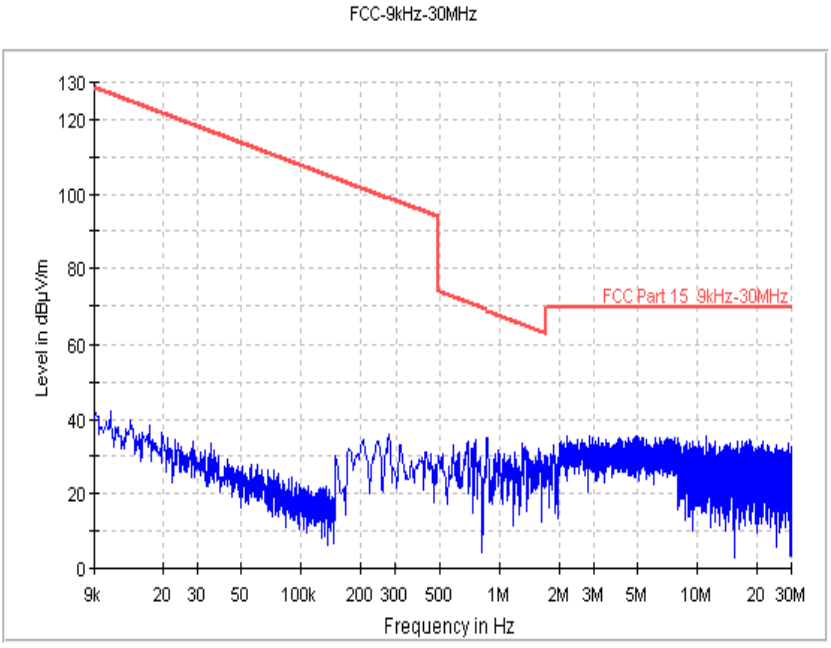

Fig. 2 Radiated Spurious Emission (Ch19, 9 kHz-30 MHz)

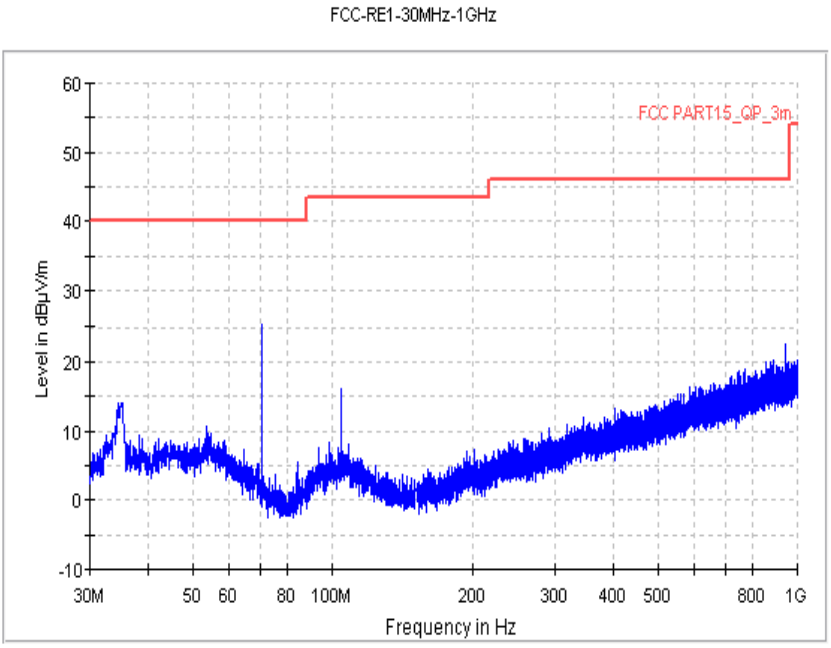

Fig. 3 Radiated Spurious Emission (Ch19, 30 MHz-1 GHz)

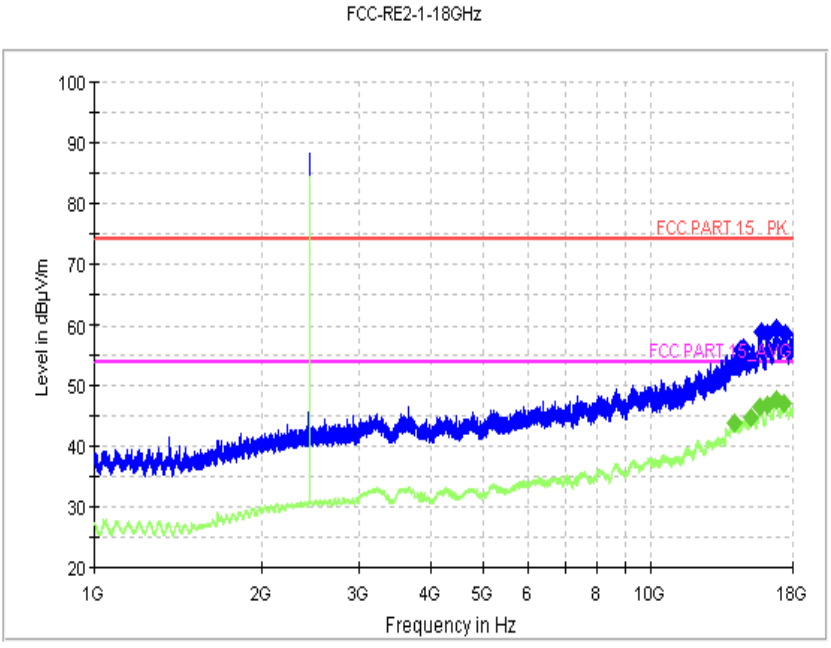

Fig. 4 Radiated Spurious Emission (Ch19, 1 GHz-18 GHz)

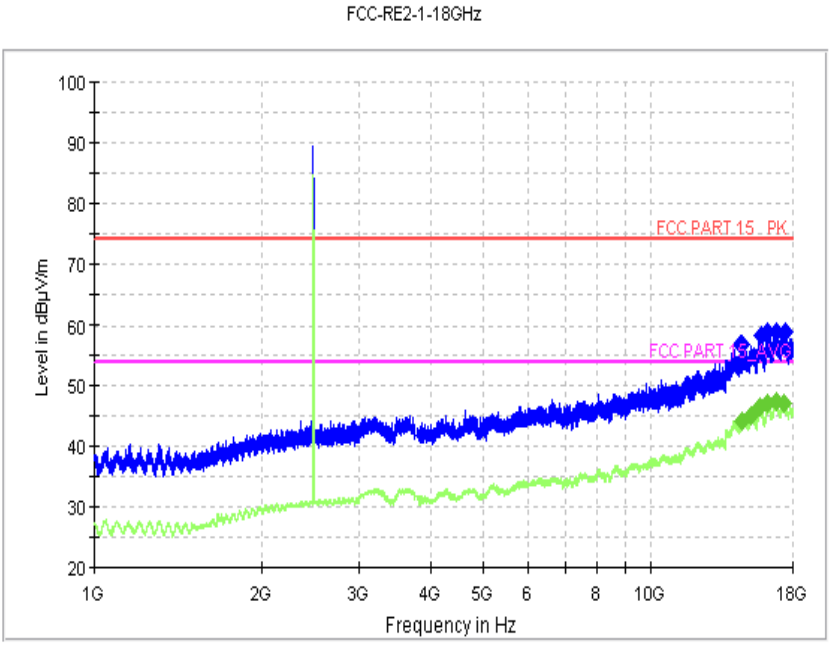

Fig. 5 Radiated Spurious Emission (Ch39, 1 GHz-18 GHz)

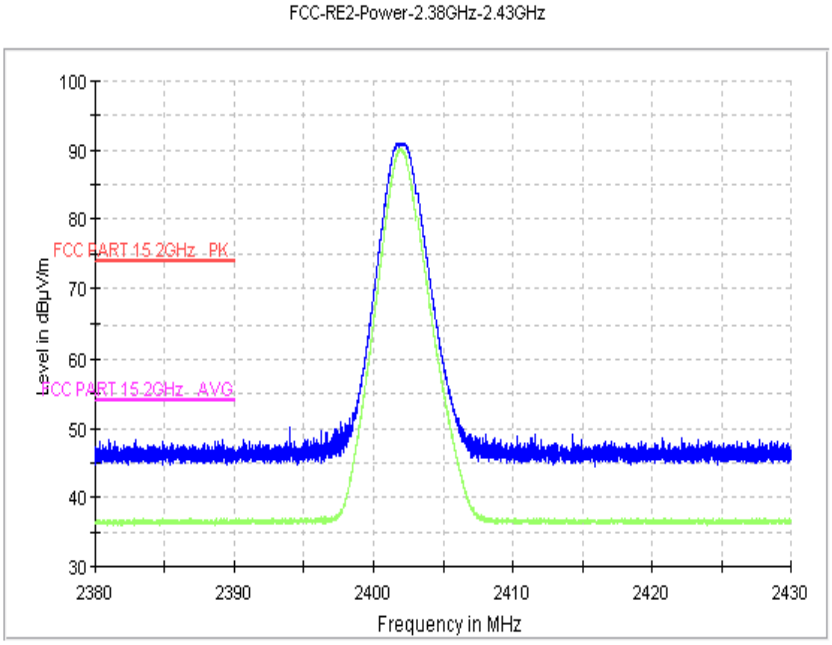

Fig. 6 Radiated Emission Power (GFSK, Ch0, 2380GHz~2450GHz)

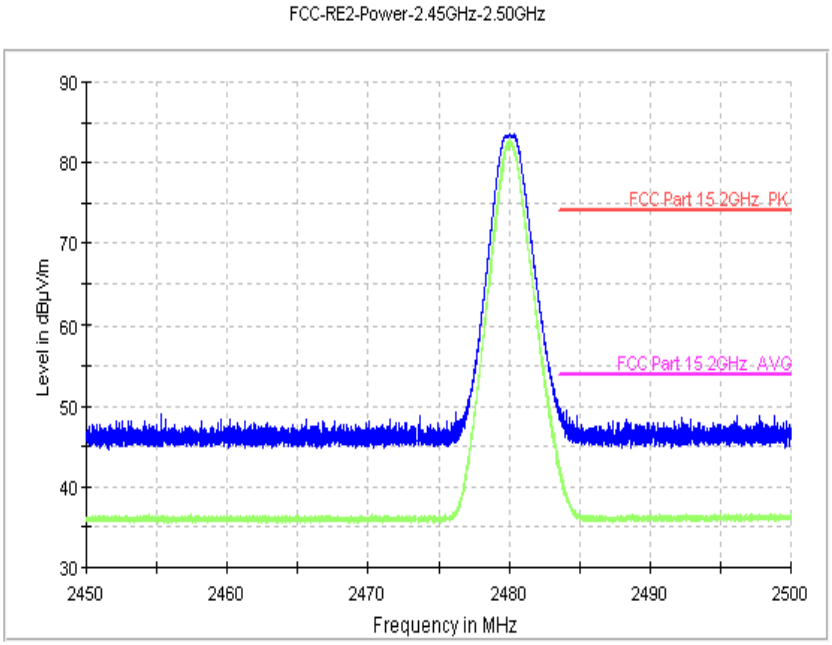

Fig. 7 Radiated Emission Power (GFSK, Ch39, 2450GHz~2500GHz)

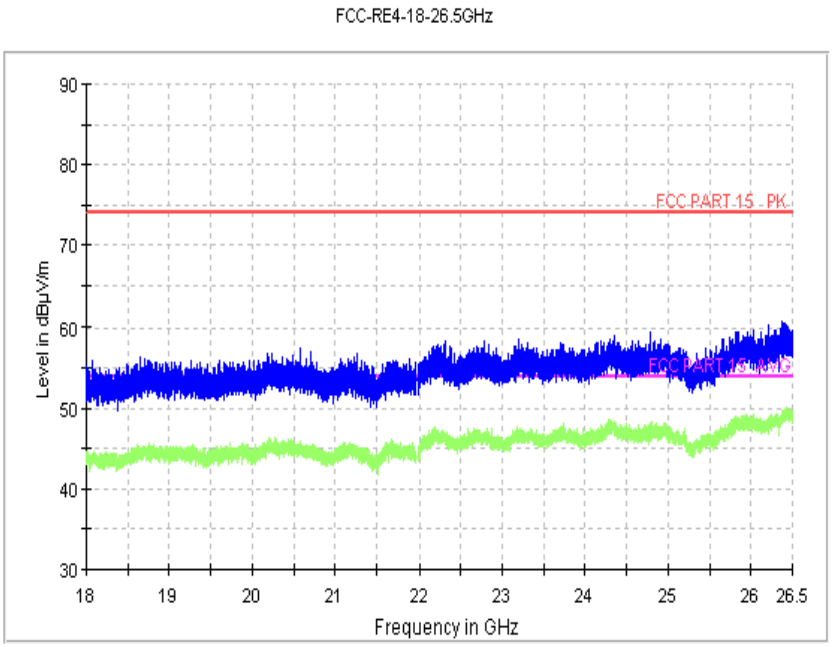

Fig. 8 Radiated emission: 18 GHz – 26.5 GHz

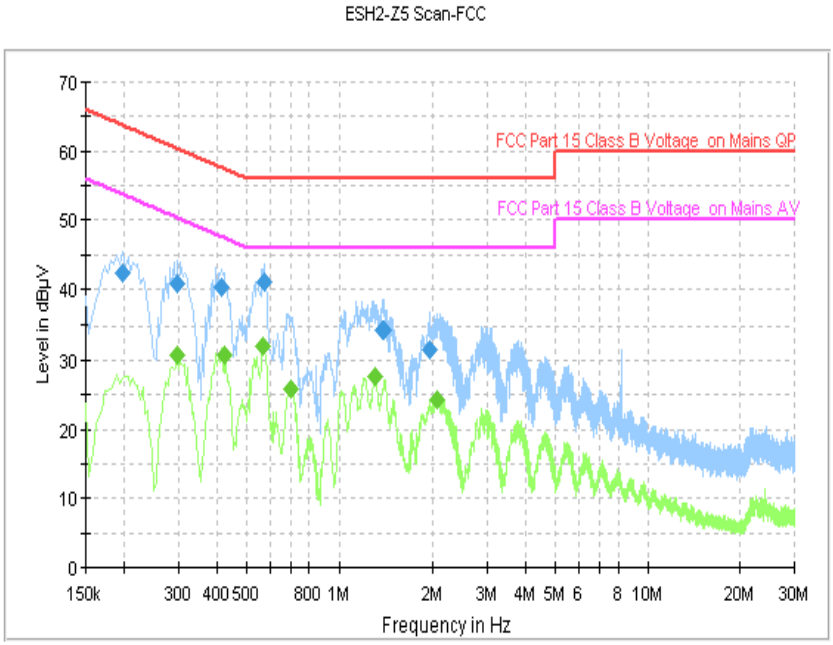

Fig. 9 AC Powerline Conducted Emission (Traffic, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	42.4	GND	L1	9.8	21.3	63.7
0.298000	40.7	GND	N	9.6	19.6	60.3
0.414000	40.2	GND	L1	9.8	17.4	57.6
0.570000	41.1	GND	L1	9.8	14.9	56.0
1.382000	34.3	GND	L1	9.8	21.7	56.0
1.954000	31.6	GND	L1	9.8	24.4	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.298000	30.8	GND	L1	9.8	19.5	50.3
0.422000	30.7	GND	L1	9.8	16.7	47.4
0.566000	32.1	GND	L1	9.8	13.9	46.0
0.698000	25.8	GND	L1	9.8	20.2	46.0
1.306000	27.6	GND	L1	9.8	18.4	46.0
2.062000	24.2	GND	L1	9.8	21.8	46.0

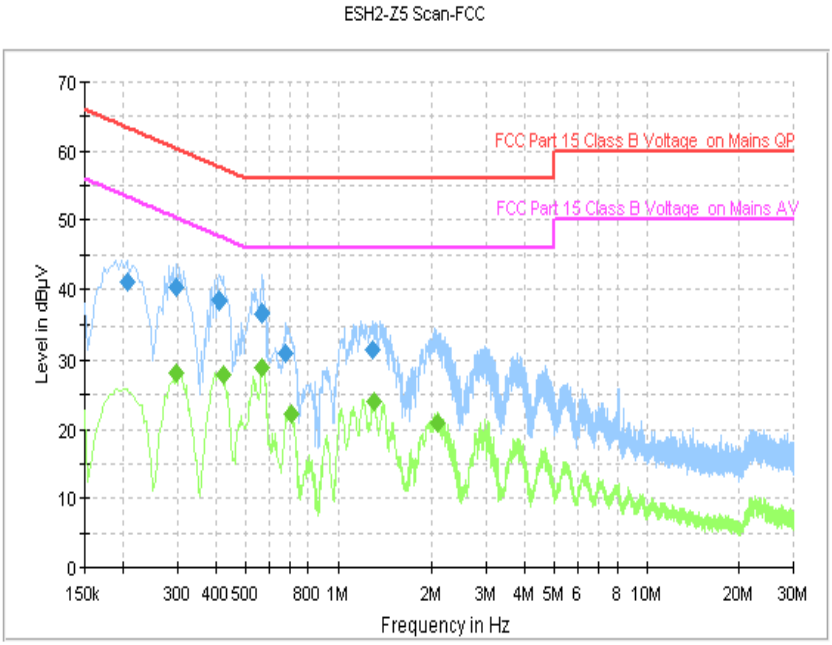

Fig. 10 AC Power line Conducted Emission (Idle, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.206000	41.1	GND	N	9.6	22.3	63.4
0.298000	40.4	GND	N	9.6	19.9	60.3
0.410000	38.6	GND	N	9.7	19.1	57.6
0.566000	36.7	GND	N	9.7	19.3	56.0
0.678000	30.9	GND	L1	9.8	25.1	56.0
1.290000	31.4	GND	L1	9.8	24.6	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.298000	28.1	GND	L1	9.8	22.2	50.3
0.422000	27.9	GND	L1	9.8	19.5	47.4
0.566000	28.8	GND	L1	9.8	17.2	46.0
0.706000	22.2	GND	L1	9.8	23.8	46.0
1.306000	23.9	GND	L1	9.8	22.1	46.0
2.078000	20.8	GND	L1	9.8	25.2	46.0

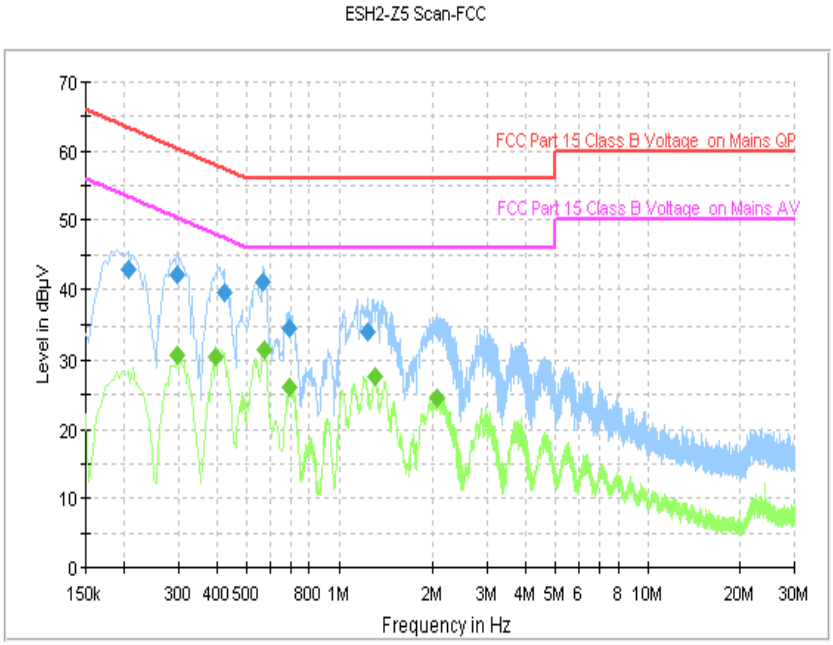

Fig. 11 AC Powerline Conducted Emission (Traffic, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.206000	42.8	GND	L1	9.8	20.6	63.4
0.298000	42.1	GND	L1	9.8	18.2	60.3
0.426000	39.5	GND	L1	9.8	17.8	57.3
0.566000	41.0	GND	L1	9.8	15.0	56.0
0.690000	34.5	GND	L1	9.8	21.5	56.0
1.242000	34.1	GND	L1	9.8	21.9	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.298000	30.7	GND	L1	9.8	19.6	50.3
0.398000	30.6	GND	L1	9.8	17.3	47.9
0.574000	31.6	GND	L1	9.8	14.4	46.0
0.690000	26.1	GND	L1	9.8	19.9	46.0
1.306000	27.6	GND	L1	9.8	18.4	46.0
2.062000	24.5	GND	L1	9.8	21.5	46.0

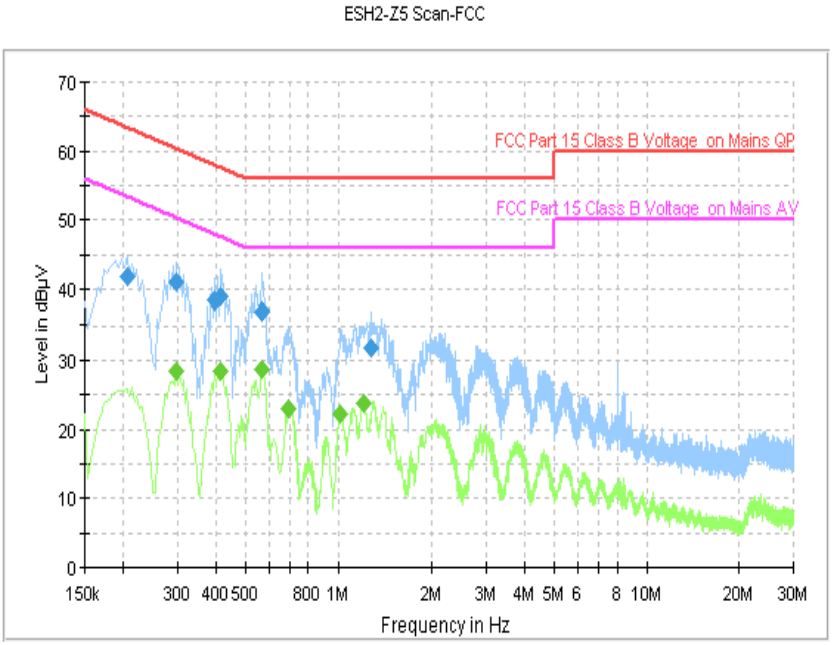

Fig. 12 AC Power line Conducted Emission (Idle, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.206000	41.7	GND	L1	9.8	21.6	63.4
0.298000	41.1	GND	L1	9.8	19.2	60.3
0.398000	38.6	GND	N	9.6	19.3	57.9
0.414000	39.0	GND	N	9.7	18.5	57.6
0.566000	36.9	GND	N	9.7	19.1	56.0
1.282000	31.8	GND	L1	9.8	24.2	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.298000	28.4	GND	L1	9.8	21.9	50.3
0.414000	28.3	GND	L1	9.8	19.3	47.6
0.566000	28.8	GND	L1	9.8	17.2	46.0
0.690000	22.9	GND	L1	9.8	23.1	46.0
1.018000	22.2	GND	L1	9.8	23.8	46.0
1.218000	23.7	GND	L1	9.8	22.3	46.0

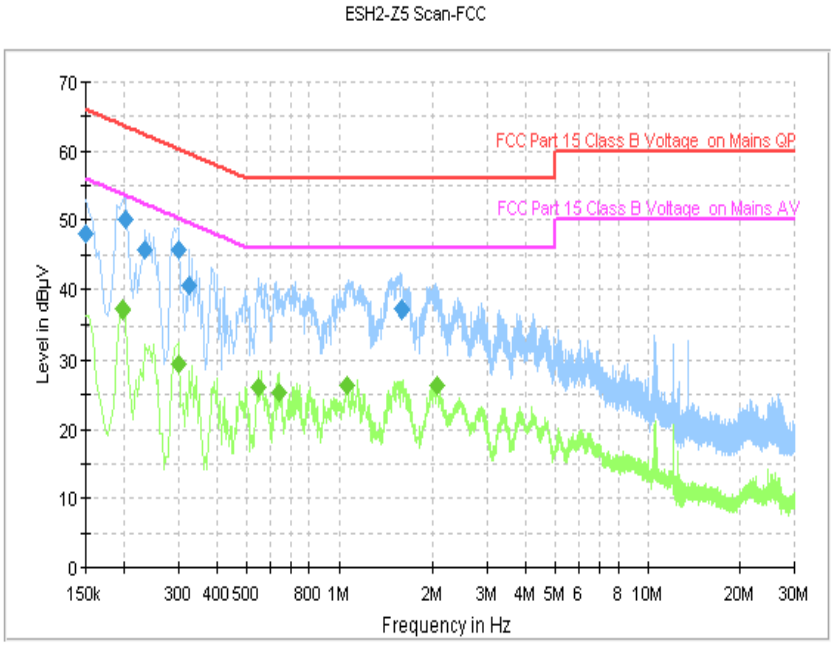

Fig. 13 AC Powerline Conducted Emission (Traffic, AE2)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	48.0	GND	N	9.6	18.0	66.0
0.202000	50.2	GND	L1	9.8	13.3	63.5
0.234000	45.8	GND	L1	9.8	16.5	62.3
0.302000	45.7	GND	L1	9.8	14.5	60.2
0.326000	40.5	GND	L1	9.8	19.1	59.6
1.574000	37.2	GND	L1	9.8	18.8	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	37.1	GND	L1	9.8	16.6	53.7
0.302000	29.6	GND	L1	9.8	20.6	50.2
0.550000	26.2	GND	L1	9.8	19.8	46.0
0.642000	25.2	GND	L1	9.8	20.8	46.0
1.062000	26.3	GND	L1	9.8	19.7	46.0
2.054000	26.3	GND	L1	9.8	19.7	46.0

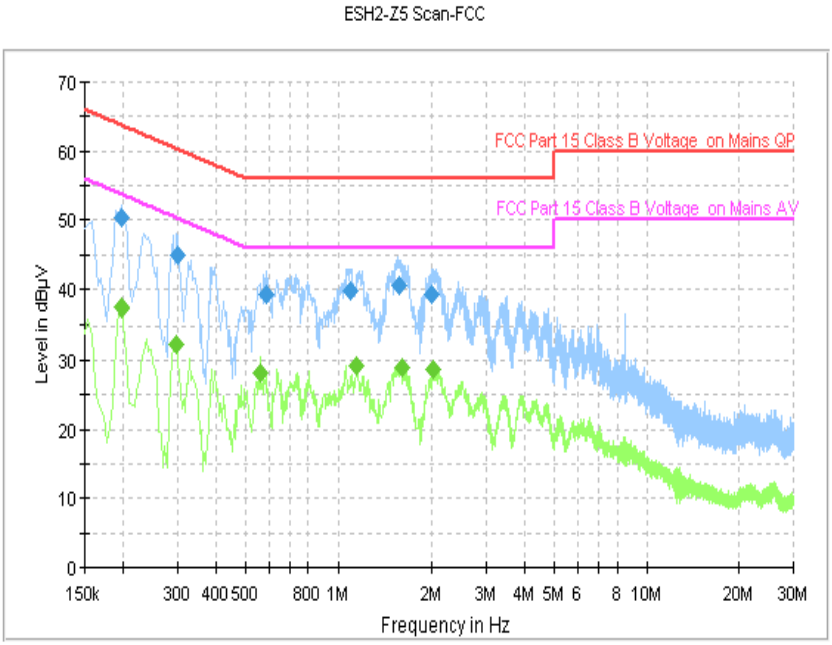

Fig. 14 AC Power line Conducted Emission (Idle, AE2)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	50.0	GND	N	9.6	13.7	63.7
0.290000	45.5	GND	N	9.6	15.0	60.5
0.590000	39.5	GND	L1	9.8	16.5	56.0
1.106000	39.9	GND	L1	9.8	16.1	56.0
1.554000	40.6	GND	L1	9.8	15.4	56.0
2.026000	39.3	GND	L1	9.8	16.7	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	37.4	GND	L1	9.8	16.3	53.7
0.298000	31.9	GND	L1	9.8	18.4	50.3
0.574000	28.0	GND	L1	9.8	18.0	46.0
1.150000	28.9	GND	L1	9.8	17.1	46.0
1.554000	29.1	GND	L1	9.8	16.9	46.0
2.014000	29.0	GND	L1	9.8	17.0	46.0

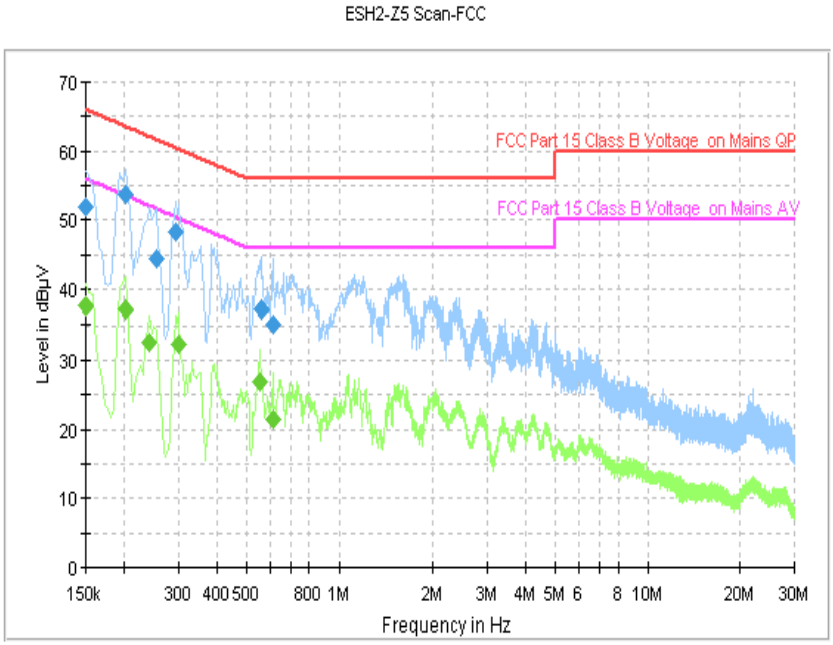

Fig. 15 AC Powerline Conducted Emission (Traffic, AE2)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	51.9	GND	L1	9.7	14.1	66.0
0.202000	53.6	GND	L1	9.8	9.9	63.5
0.254000	44.4	GND	L1	9.8	17.2	61.6
0.294000	48.4	GND	L1	9.8	12.0	60.4
0.562000	37.3	GND	L1	9.8	18.7	56.0
0.610000	35.1	GND	L1	9.8	20.9	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.8	GND	L1	9.7	18.2	56.0
0.202000	37.1	GND	L1	9.8	16.4	53.5
0.242000	32.5	GND	L1	9.8	19.5	52.0
0.302000	32.3	GND	L1	9.8	17.8	50.2
0.554000	27.0	GND	L1	9.8	19.0	46.0
0.610000	21.4	GND	L1	9.8	24.6	46.0

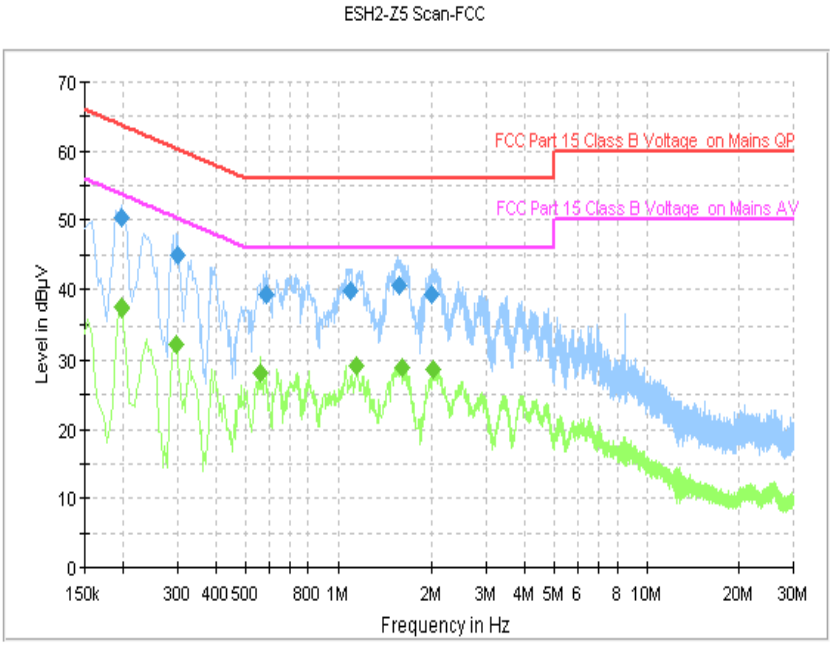

Fig. 16 AC Power line Conducted Emission (Idle, AE2)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	50.3	GND	N	9.6	13.4	63.7
0.302000	45.1	GND	N	9.6	15.1	60.2
0.582000	39.4	GND	L1	9.8	16.6	56.0
1.094000	39.7	GND	L1	9.8	16.3	56.0
1.566000	40.6	GND	L1	9.8	15.4	56.0
2.006000	39.3	GND	L1	9.8	16.7	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	37.5	GND	L1	9.8	16.2	53.7
0.298000	32.3	GND	L1	9.8	18.0	50.3
0.558000	28.3	GND	L1	9.8	17.7	46.0
1.150000	29.1	GND	L1	9.8	16.9	46.0
1.606000	29.0	GND	L1	9.8	17.0	46.0
2.018000	28.6	GND	L1	9.8	17.4	46.0

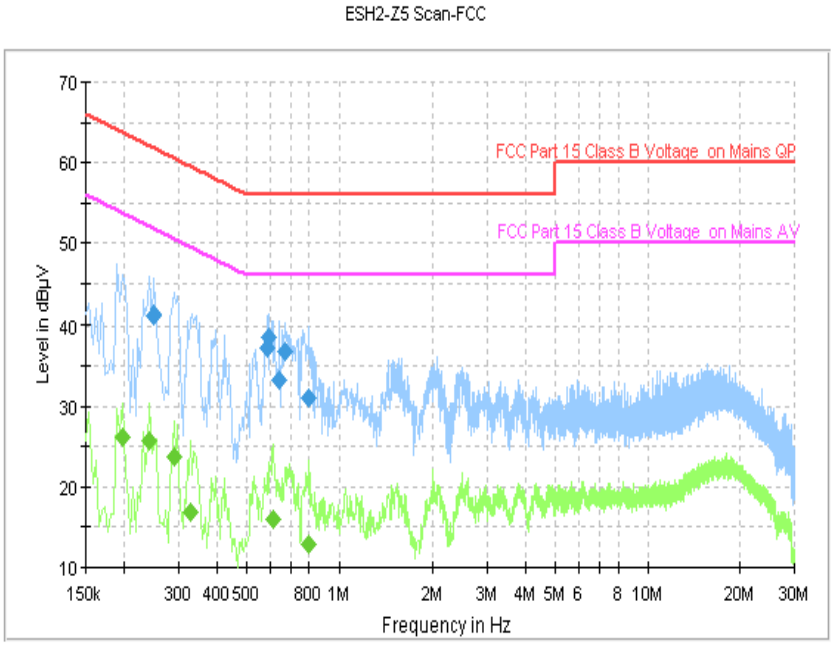

Fig. 17 AC Powerline Conducted Emission (Traffic, AE3)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.250000	41.3	GND	N	9.6	20.4	61.8
0.586000	37.3	GND	N	9.6	18.7	56.0
0.594000	38.6	GND	N	9.6	17.4	56.0
0.642000	33.2	GND	N	9.6	22.8	56.0
0.670000	36.8	GND	N	9.5	19.2	56.0
0.798000	31.0	GND	L1	9.8	25.0	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	26.2	GND	L1	9.8	27.5	53.7
0.242000	25.7	GND	N	9.6	26.3	52.0
0.290000	23.6	GND	L1	9.8	26.9	50.5
0.330000	16.8	GND	L1	9.8	32.7	49.5
0.614000	16.1	GND	L1	9.8	29.9	46.0
0.798000	12.9	GND	L1	9.8	33.1	46.0

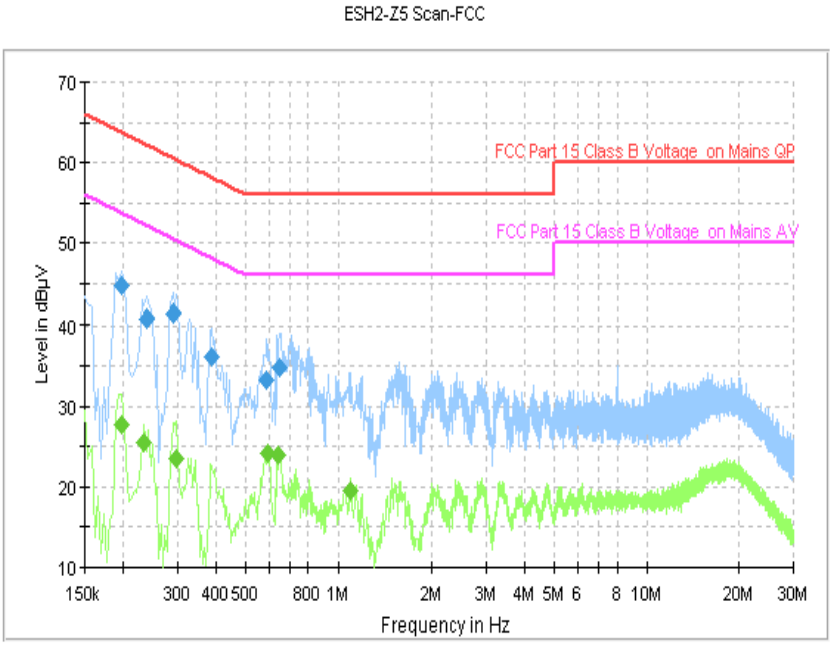

Fig. 18 AC Power line Conducted Emission (Idle, AE3)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	44.7	GND	N	9.6	19.0	63.7
0.238000	40.8	GND	N	9.6	21.4	62.2
0.290000	41.5	GND	N	9.6	19.0	60.5
0.390000	36.2	GND	N	9.6	21.9	58.1
0.586000	33.3	GND	L1	9.8	22.7	56.0
0.646000	34.9	GND	L1	9.8	21.1	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	27.7	GND	N	9.6	26.0	53.7
0.234000	25.5	GND	L1	9.8	26.8	52.3
0.298000	23.5	GND	N	9.6	26.8	50.3
0.594000	24.2	GND	L1	9.8	21.8	46.0
0.642000	24.0	GND	L1	9.8	22.0	46.0
1.102000	19.5	GND	L1	9.8	26.5	46.0

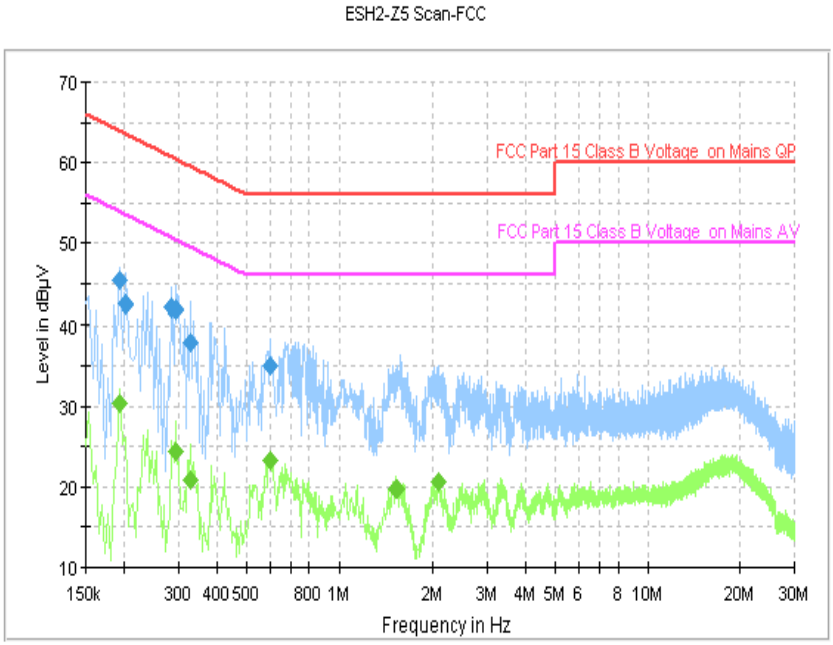

Fig. 19 AC Powerline Conducted Emission (Traffic, AE3)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	45.3	GND	N	9.6	18.5	63.9
0.202000	42.5	GND	N	9.6	21.1	63.5
0.286000	42.1	GND	N	9.6	18.6	60.6
0.294000	41.8	GND	N	9.6	18.6	60.4
0.330000	38.0	GND	N	9.6	21.5	59.5
0.598000	35.1	GND	L1	9.8	20.9	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	30.3	GND	L1	9.8	23.6	53.9
0.294000	24.4	GND	N	9.6	26.0	50.4
0.330000	21.0	GND	N	9.6	28.5	49.5
0.598000	23.4	GND	L1	9.8	22.6	46.0
1.534000	19.8	GND	L1	9.8	26.2	46.0
2.094000	20.5	GND	L1	9.8	25.5	46.0

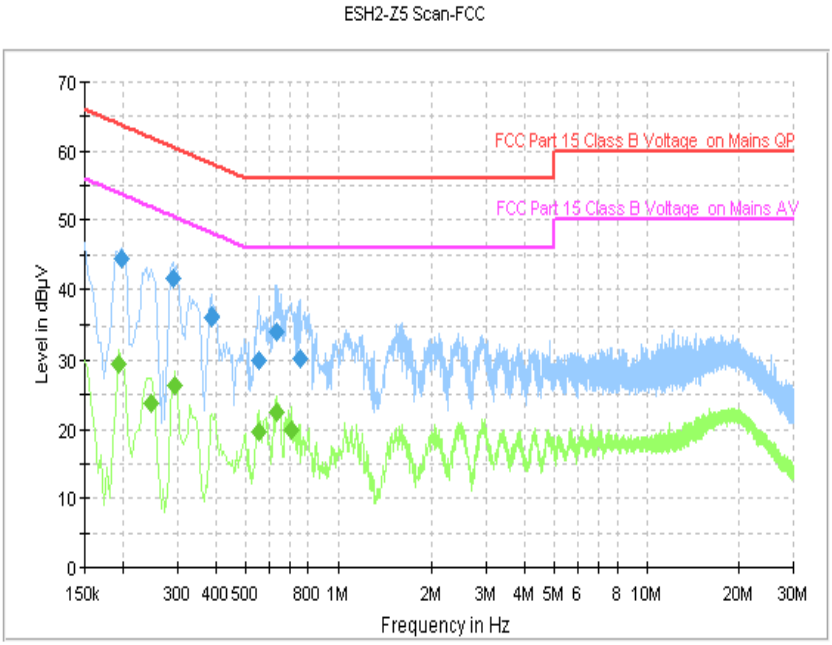

Fig. 20 AC Power line Conducted Emission (Idle, AE3)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	44.5	GND	N	9.6	19.2	63.7
0.290000	41.5	GND	N	9.6	19.0	60.5
0.390000	36.2	GND	N	9.6	21.9	58.1
0.554000	30.0	GND	L1	9.8	26.0	56.0
0.630000	34.1	GND	L1	9.8	21.9	56.0
0.754000	30.2	GND	L1	9.8	25.8	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	29.5	GND	L1	9.8	24.4	53.9
0.246000	23.7	GND	N	9.6	28.2	51.9
0.294000	26.2	GND	L1	9.8	24.2	50.4
0.554000	19.7	GND	L1	9.8	26.3	46.0
0.630000	22.5	GND	L1	9.8	23.5	46.0
0.702000	20.0	GND	L1	9.8	26.0	46.0

ANNEX C: Persons involved in this testing

Test Name	Tester
Transmitter Spurious Emission - Radiated	An Ran, Tang Weisheng
AC Powerline Conducted Emission	An Ran, Tang Weisheng

END OF REPORT