FCC PART 15C
TEST REPORT
No. I17N00290-BLE

For

Doro AB

LTE phone

Model Name: DSB-0090

With

Hardware Version: 1011

Software Version: FRANK01A-S10A_DSB0090_201_USER_170503

FCC ID: WS5DSB0090

Issued Date: 2017-05-05

Test Laboratory:

FCC 2.948 Listed: No.342690

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:

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I17N00290-BLE	Rev.0	1st edition	2017-05-05

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℃

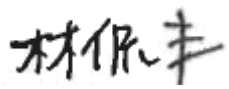
Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2017-03-21

Testing End Date: 2017-04-26

1.4. Signature



Lin Kanfeng

(Prepared this test report)

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(Reviewed this test report)

Zhang Bojun

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Doro AB
Address:	Magistratsvägen 10 SE-226 43 Lund Sweden
City:	Lund
Postal Code:	/
Country:	Sweden
Telephone:	+46 46 280 5000
Fax:	+46 46 280 5001

2.2. Manufacturer Information

Company Name:	CK TELECOM LTD.
Address:	Technology Road. High-Tech Development Zone. Heyuan, Guangdong, P.R. China
City:	Heyuan
Postal Code:	/
Country:	China
Telephone:	0755-26739100 ext.8515
Fax:	0755-26739600

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

3.1. About EUT

Description	LTE phone
Model Name	DSB-0090
Market Name	Doro8040
Frequency Band	2402MHz~2480MHz
Type of Modulation	GFSK
Number of Channels	40
FCC ID	WS5DSB0090

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
EUT1	35511508 0003723	1011	FRANK01A-S10A_DSB0090_201_USER_170503	2017-03-21

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

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	Charger	/
AE2	Charger	/

AE1

Model	A2-3762-501000
Manufacturer	Dongguan Aohai Power Technology Co., LTD

AE2

Model	A806A-050100U-UK1
Manufacturer	Dongguan Aohai Power Technology Co., LTD

*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	Sub-clause of Part15C	Verdict
0.	Antenna Requirement	15.203	**P**
1.	Maximum Peak Output Power	15.247 (b)	**P**
2.	Peak Power Spectral Density	15.247 (e)	**P**
3.	Occupied 6dB Bandwidth	15.247 (a)	**P**
4.	Band Edges Compliance	15.247 (d)	**P**
5.	Transmitter Spurious Emission - Conducted	15.247 (d)	**P**
6.	Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	**P**
7.	AC Powerline Conducted Emission	15.107, 15.207	**P**

See **ANNEX A and ANNEX B** 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 isotropic 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

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2018-01-18	1 year

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	LISN	ESH2-Z5	100196	R&S	2018-01-05	1 year
2	Test Receiver	ESCI	100701	R&S	2017-08-09	1 year
3	Loop Antenna	HLA6120	35779	TESEQ	2019-05-02	3 years
4	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2020-02-17	3 years
5	Horn Antenna	3117	00066585	ETS-Lindgren	2019-03-05	3 years
6	Test Receiver	ESR7	101675	R&S	2017-07-21	1 year
7	Spectrum Analyzer	FSP 40	100378	R&S	2017-12-15	1 year
8	Chamber	FACT5-2.0	4166	ETS-Lindgren	2018-05-13	3 years

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 1.0dBi.
The RF transmitter uses an integrate antenna without connector.

A.1 Maximum Average Output Power

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)(1)	< 30

Measurement Results:

Mode	Channel	Maximum Peak Output Power（dBm）		Conclusion
GFSK	0	Fig.1	-0.41	P
	19	Fig.2	0.17	P
	39	Fig.3	-1.58	P

See ANNEX B for test graphs.

Conclusion: Pass

A.2 Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(d)	< 8 dBm/3 kHz

Measurement Results:

Mode	Channel	Peak Power Spectral Density（dBm）		Conclusion
GFSK	0	Fig.4	-15.68	P
	19	Fig.5	-15.21	P
	39	Fig.6	-16.86	P

See ANNEX B for test graphs.

Conclusion: PASS

A.3 Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

Measurement Result:

Mode	Channel	Test Results (kHz)		conclusion
GFSK	0	Fig.7	707.5	P
	19	Fig.8	703.5	P
	39	Fig.9	707.0	P

See ANNEX B for test graphs.

Conclusion: PASS

A.4 Band Edges Compliance

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	> 20

Measurement Result:

Mode	Channel	Test Results	Conclusion
GFSK	0	Fig.10	P
	39	Fig.11	P

See ANNEX B for test graphs.

Conclusion: Pass

A.5 Transmitter Spurious Emission

A.5.1 Transmitter Spurious Emission - Conducted

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

Measurement Results:

MODE	Channel	Frequency Range	Test Results	Conclusion
GFSK	0	2.402 GHz	Fig.12	P
		30 MHz-3 GHz	Fig.13	P
		3GHz-18GHz	Fig.14	P
	19	2.440 GHz	Fig.15	P
		30 MHz-3 GHz	Fig.16	P
		3GHz-18GHz	Fig.17	P
	39	2.480 GHz	Fig.18	P
		30 MHz-3 GHz	Fig.19	P
		3GHz-18GHz	Fig.20	P
/	All channels	18GHz-26GHz	Fig.21	P

See ANNEX B for test graphs.

Conclusion: Pass

A.5.2 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.22	P
	19	9 kHz ~30 MHz	Fig.23	P
		30 MHz ~1 GHz	Fig.24	P
		1 GHz ~18 GHz	Fig.25	P
		18 GHz~ 26.5 GHz	Fig.26	P
	39	1 GHz ~18 GHz	Fig.27	P
	Power(CH0)	2.38 GHz ~ 2.45 GHz	Fig.28	P
	Power(CH39)	2.45 GHz ~ 2.5 GHz	Fig.29	P

GFSK CH0 (1-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
13999.00000	55.72	74.00	18.28	20.0	H
14679.50000	56.79	74.00	17.21	21.4	V
15078.00000	58.62	74.00	15.38	22.2	V
15719.50000	61.12	74.00	12.88	24.0	H
16594.00000	62.01	74.00	11.99	26.3	H
17710.50000	61.00	74.00	13.00	27.7	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
13913.00000	44.60	54.00	9.40	20.9	V
14676.00000	45.33	54.00	8.67	21.4	V
15111.50000	46.82	54.00	7.18	22.8	H
15969.00000	48.43	54.00	5.57	25.6	V
16589.50000	50.15	54.00	3.85	26.3	V
17707.50000	49.97	54.00	4.03	27.6	V

GFSK CH19 (1-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
12788.50000	55.49	74.00	18.51	19.6	V
14693.50000	56.73	74.00	17.27	21.6	H
15572.00000	58.52	74.00	15.48	23.6	V
15968.00000	60.37	74.00	13.63	25.6	V
16592.50000	61.55	74.00	12.45	26.3	V
17706.50000	61.46	74.00	12.54	27.6	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
13909.00000	44.55	54.00	9.45	21.1	V
14677.00000	44.92	54.00	9.08	21.4	V
15577.00000	46.77	54.00	7.23	23.8	H
15959.00000	48.38	54.00	5.62	25.3	V
16592.50000	50.06	54.00	3.94	26.3	H
17705.50000	49.84	54.00	4.16	27.6	V

GFSK CH39 (1-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
13910.00000	56.07	74.00	17.93	21.2	V
14629.00000	56.34	74.00	17.66	21.4	H
15576.50000	58.44	74.00	15.56	23.8	V
15623.00000	60.04	74.00	13.96	24.2	V
16617.00000	61.85	74.00	12.15	26.1	V
17992.50000	62.57	74.00	11.43	27.5	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
13909.50000	44.42	54.00	9.58	21.1	V
14683.00000	44.81	54.00	9.19	21.5	H
15108.50000	46.69	54.00	7.31	22.7	H
15740.00000	48.53	54.00	5.47	24.4	V
17110.00000	49.97	54.00	4.03	26.2	V
17705.50000	49.89	54.00	4.11	27.6	H

See ANNEX B 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.6 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.30	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.30	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.31	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.31	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) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.32	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.32	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.33	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.33	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.34	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.34	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.35	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.35	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) Traffic	Conclusion
0.15 to 0.5	66 to 56	Fig.36	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.36	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.37	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.37	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 B for test graphs.

Conclusion: Pass

ANNEX B: TEST FIGURE LIST

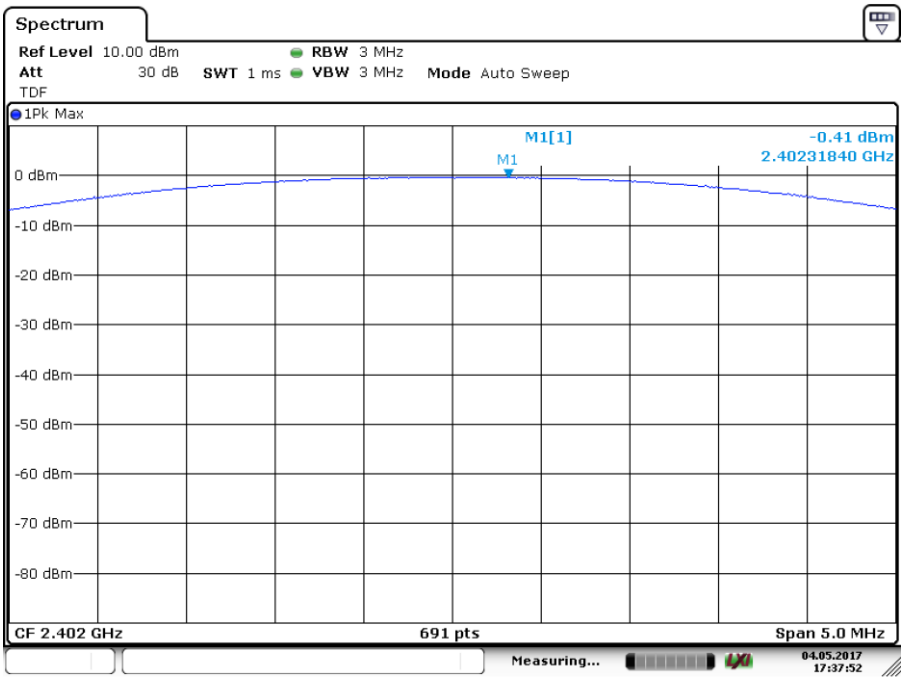


Fig.1 Maximum Peak Output Power(GFSK, Ch 0)

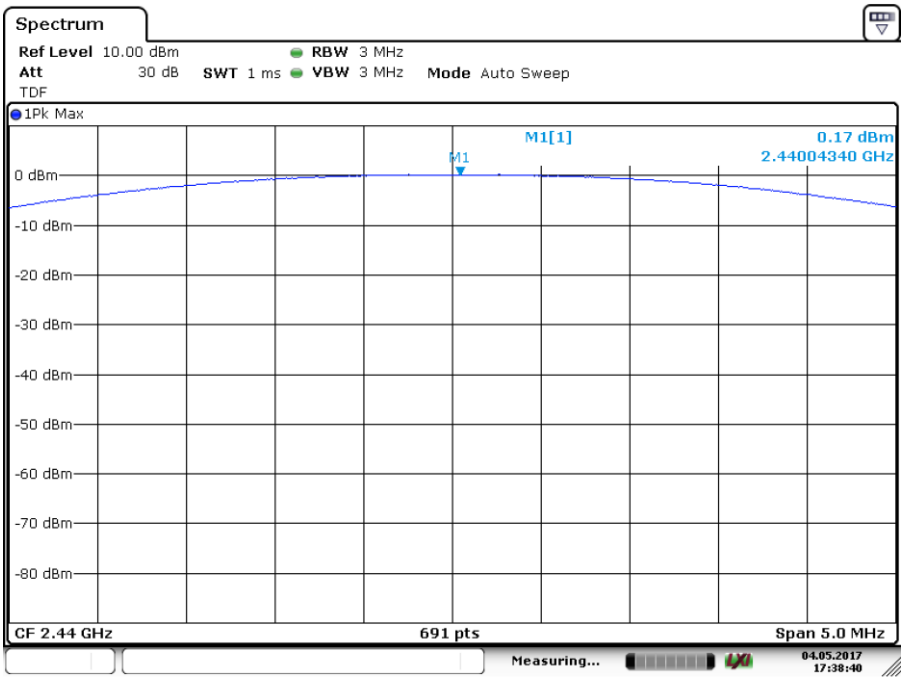


Fig.2 Maximum Peak Output Power(GFSK, Ch 19)

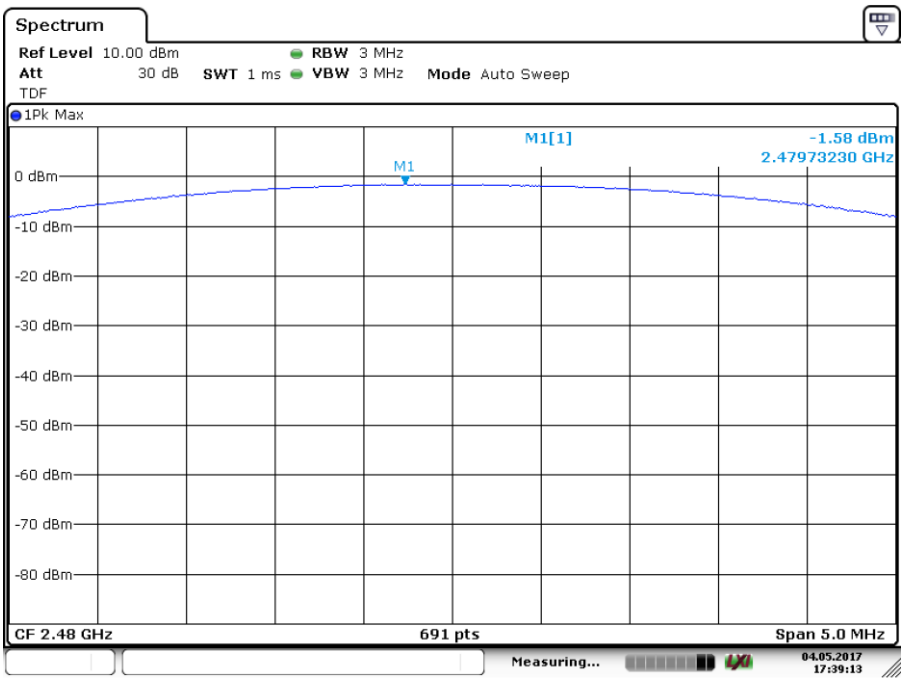


Fig.3 Maximum Peak Output Power(GFSK, Ch 39)

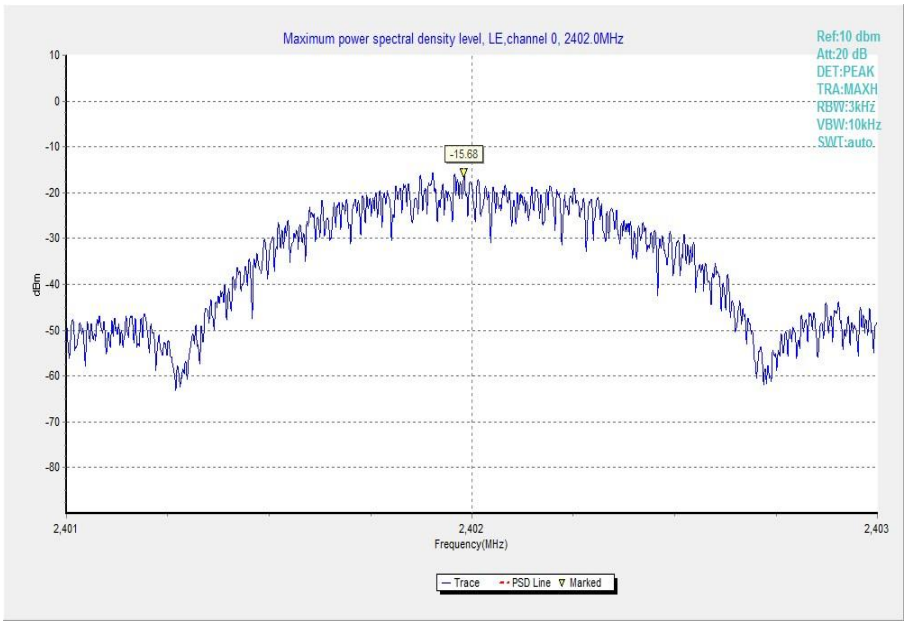


Fig.4 Power Spectral Density (Ch 0)

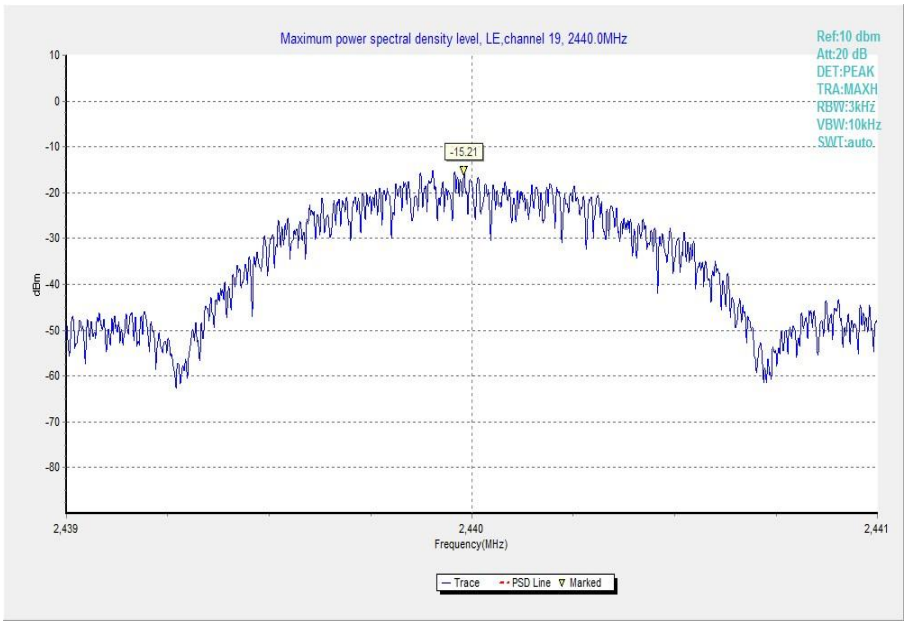


Fig.5 Power Spectral Density (Ch 19)

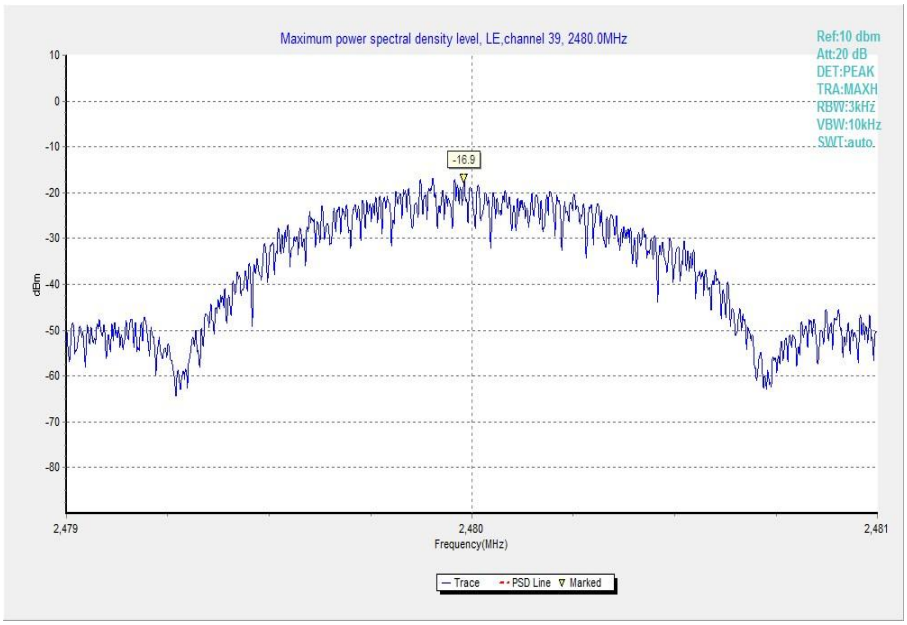


Fig.6 Power Spectral Density (Ch 39)

Fig.7 Occupied 6dB Bandwidth (Ch 0)

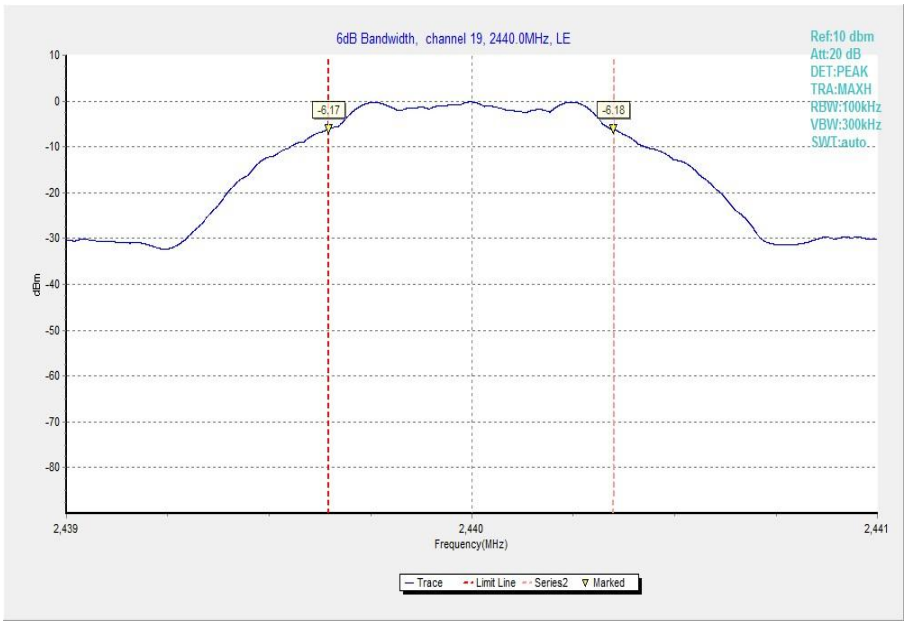


Fig.8 Occupied 6dB Bandwidth (Ch 19)

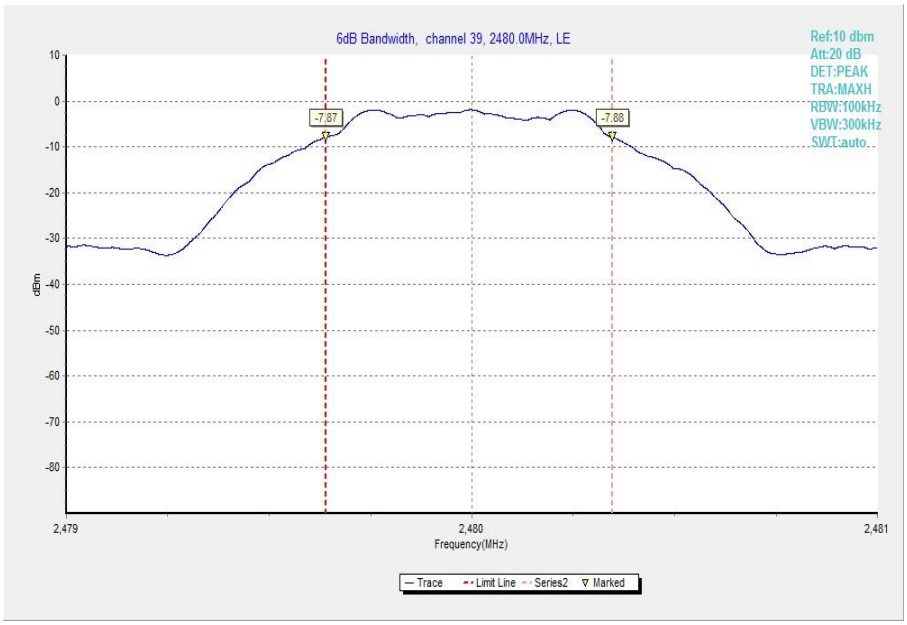


Fig.9 Occupied 6dB Bandwidth (Ch 39)

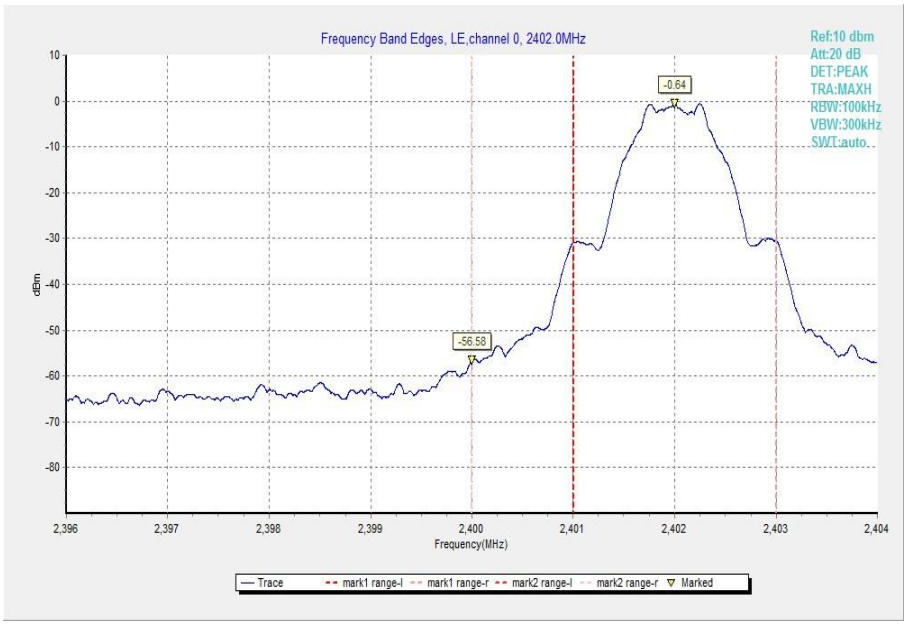


Fig.10 Band Edges (Ch 0)

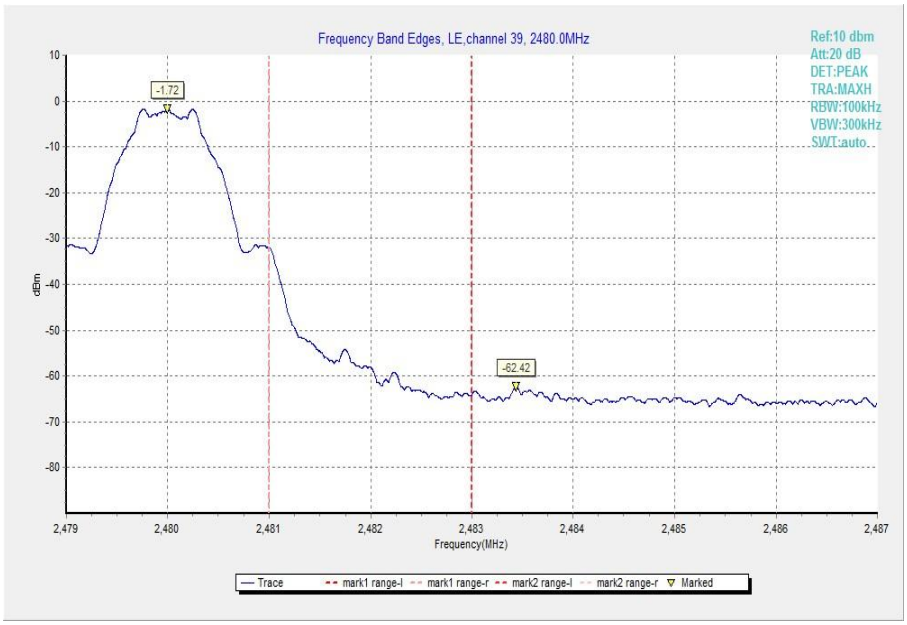


Fig.11 Band Edges (Ch 39)

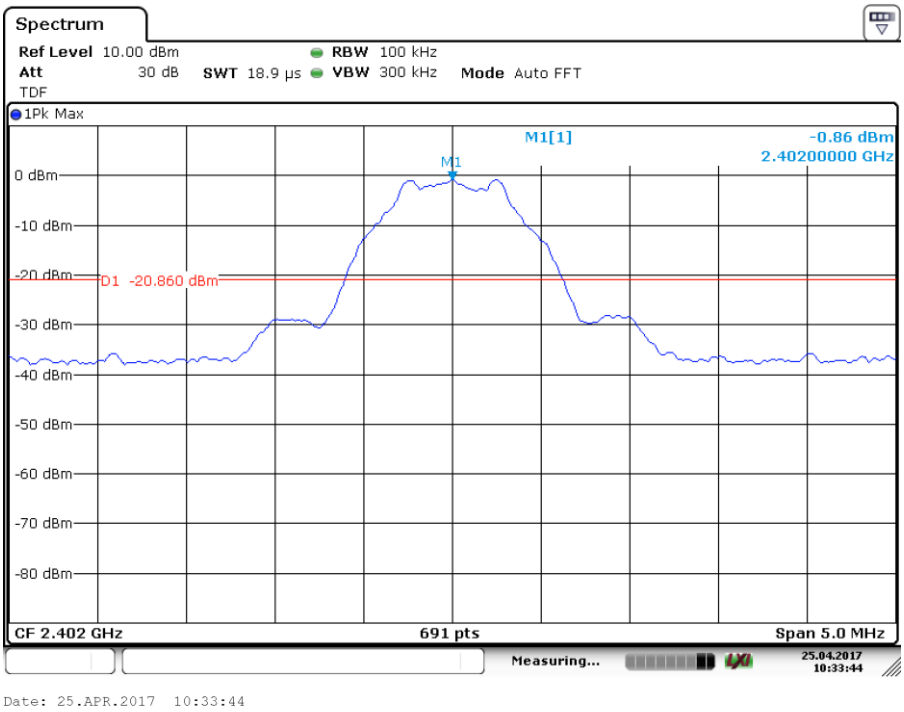
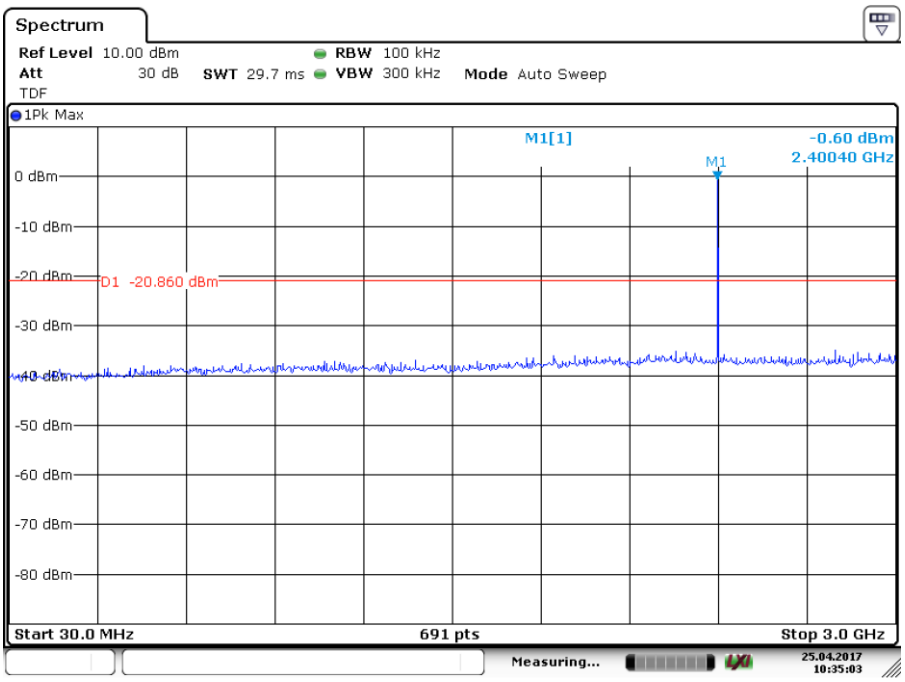


Fig.12 Conducted Spurious Emission (Ch0, Center Frequency)



Date: 25.APR.2017 10:35:03

Fig.13 Conducted Spurious Emission (Ch0, 30 MHz-3 GHz)

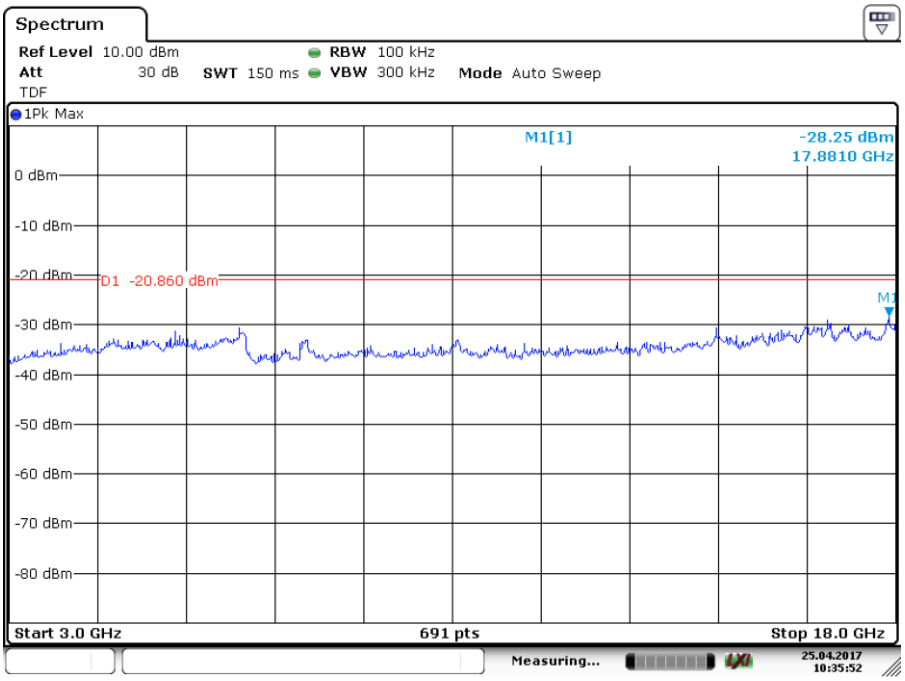


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Fig.14 Conducted Spurious Emission (Ch0, 3 GHz-18 GHz)

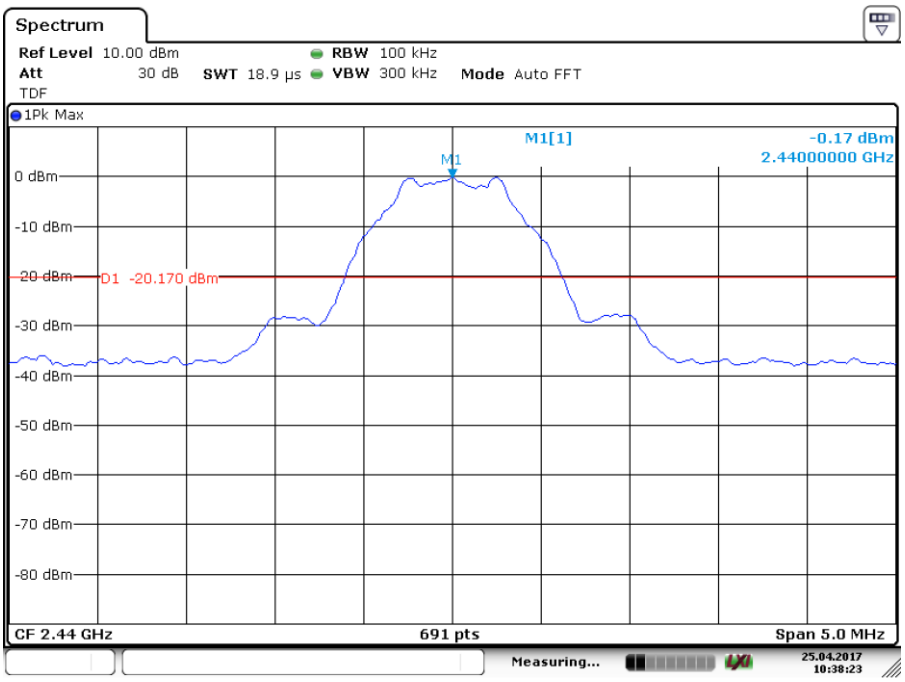

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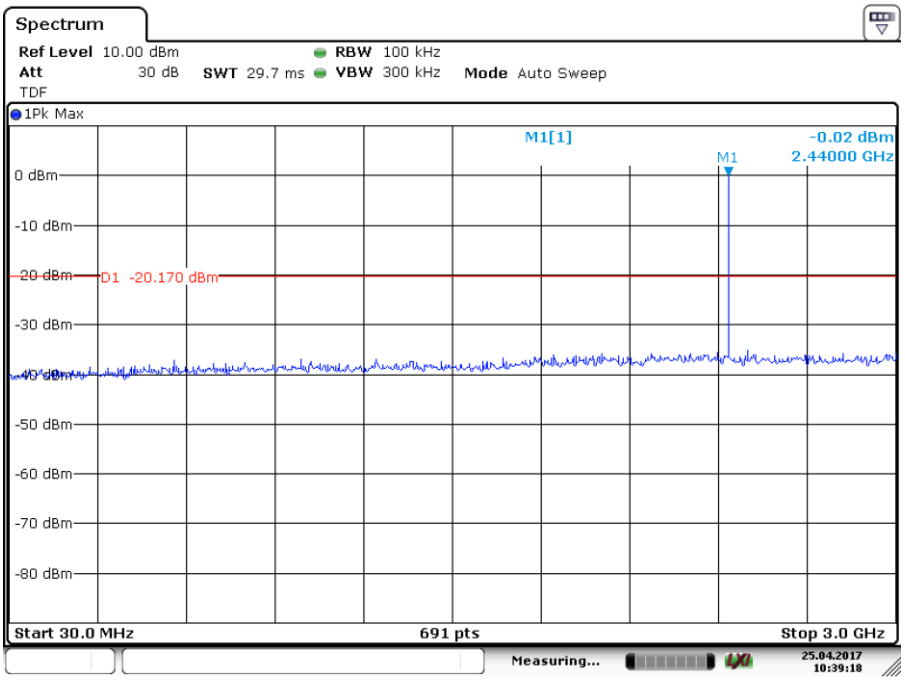
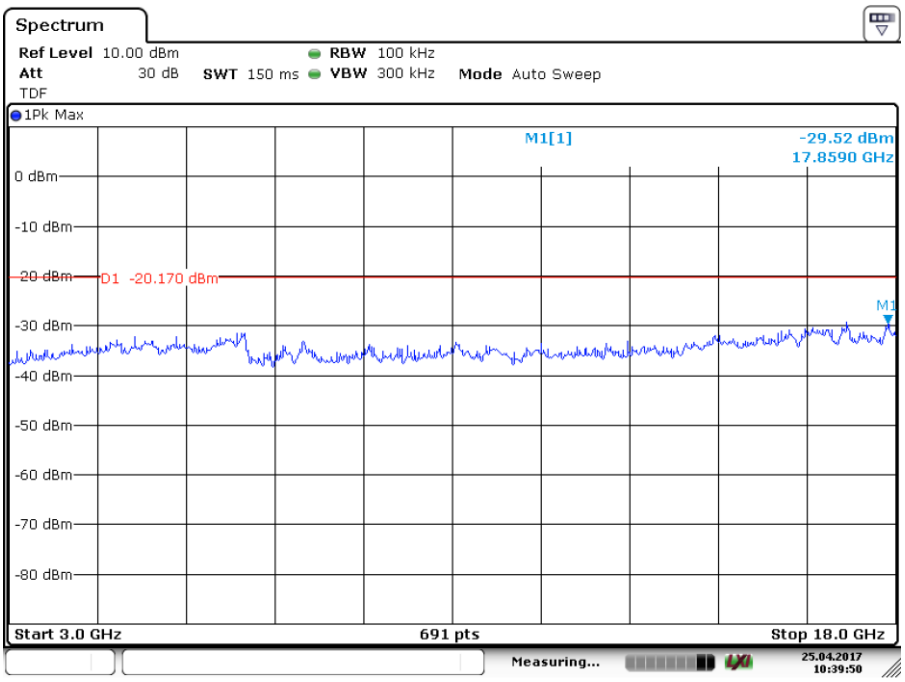
Fig.15 Conducted Spurious Emission (Ch19, Center Frequency)



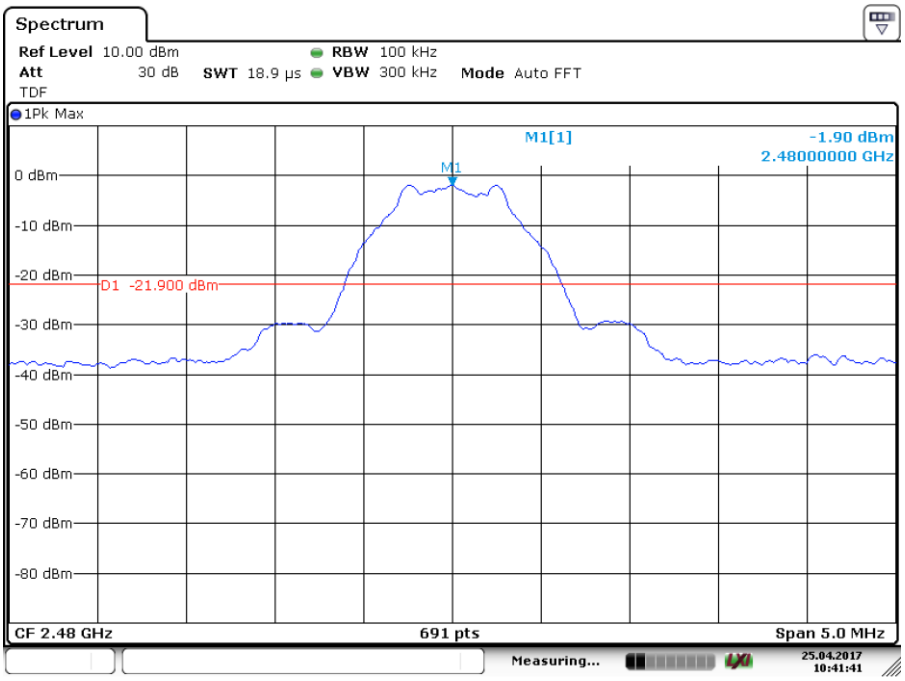
Date: 25.APR.2017 10:39:19

Fig.16 Conducted Spurious Emission (Ch19, 30 MHz-3 GHz)



Date: 25.APR.2017 10:39:50

Fig.17 Conducted Spurious Emission (Ch19, 3 GHz-18 GHz)



Date: 25.APR.2017 10:41:41

Fig.18 Conducted Spurious Emission (Ch39, Center Frequency)

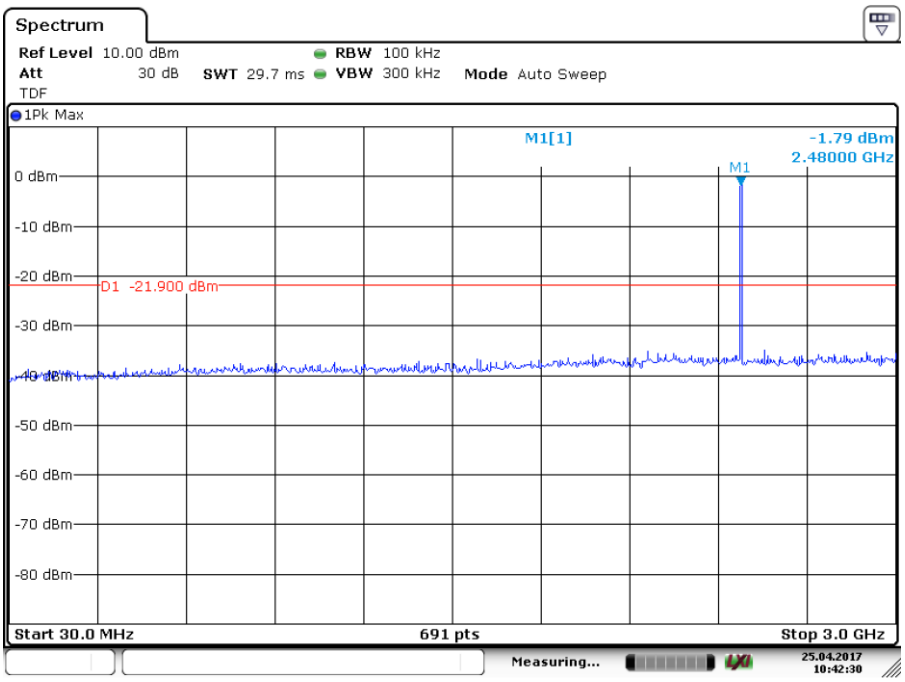


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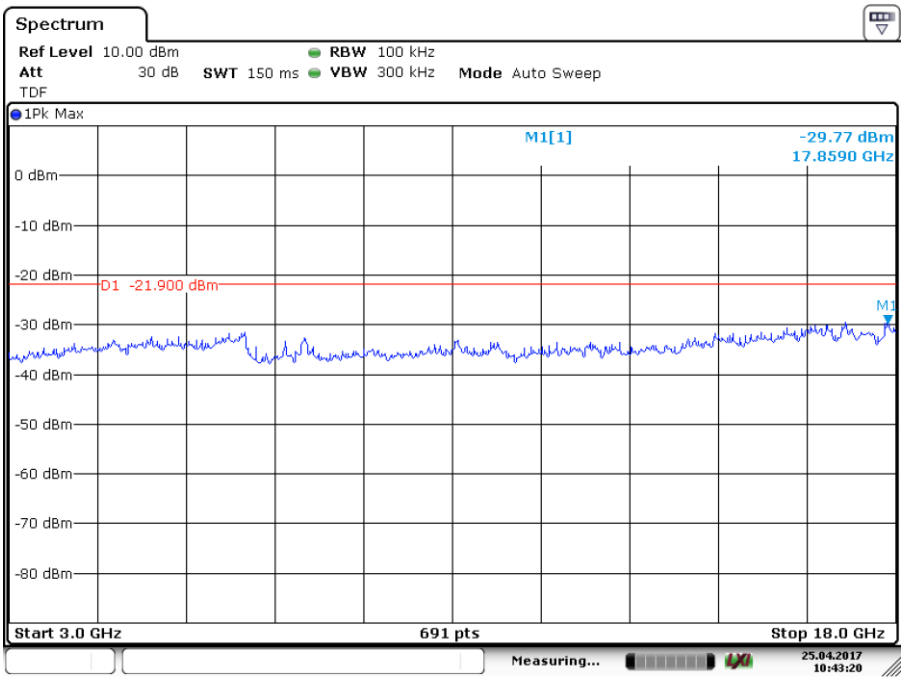
Fig.19 Conducted Spurious Emission (Ch39, 30 MHz-3 GHz)



Date: 25.APR.2017 10:43:20

Fig.20 Conducted Spurious Emission (Ch39, 3 GHz-18 GHz)

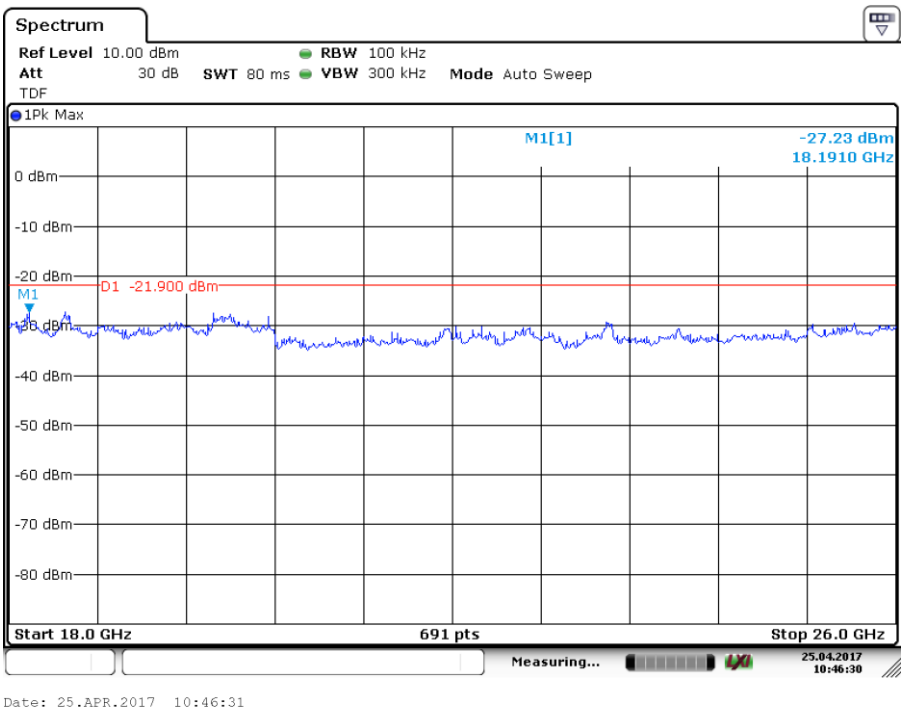


Fig.21 Conducted Spurious Emission (All channels, 18 GHz-26 GHz)

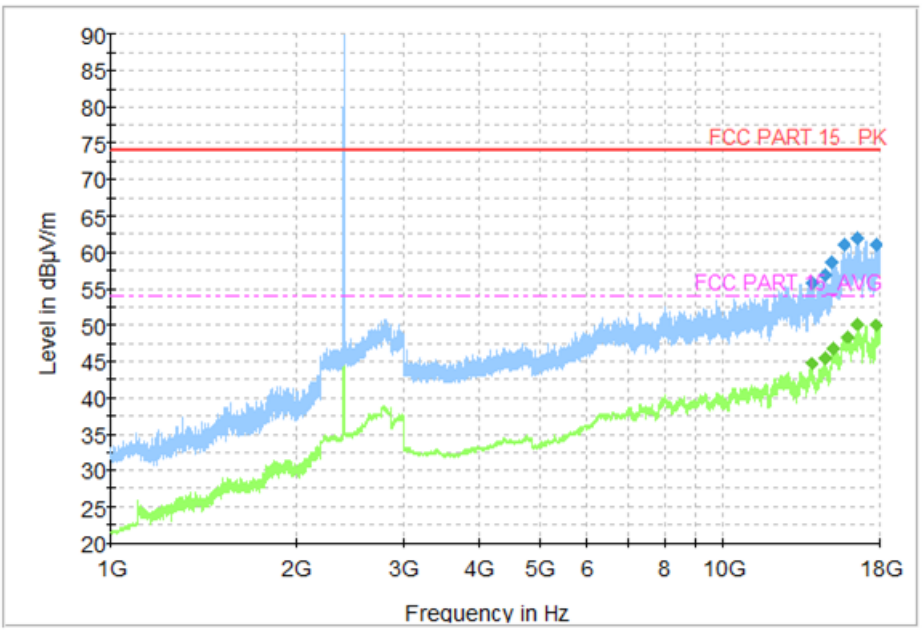


Fig.22 Radiated Spurious Emission (GFSK, Ch0, 1 GHz ~18 GHz)

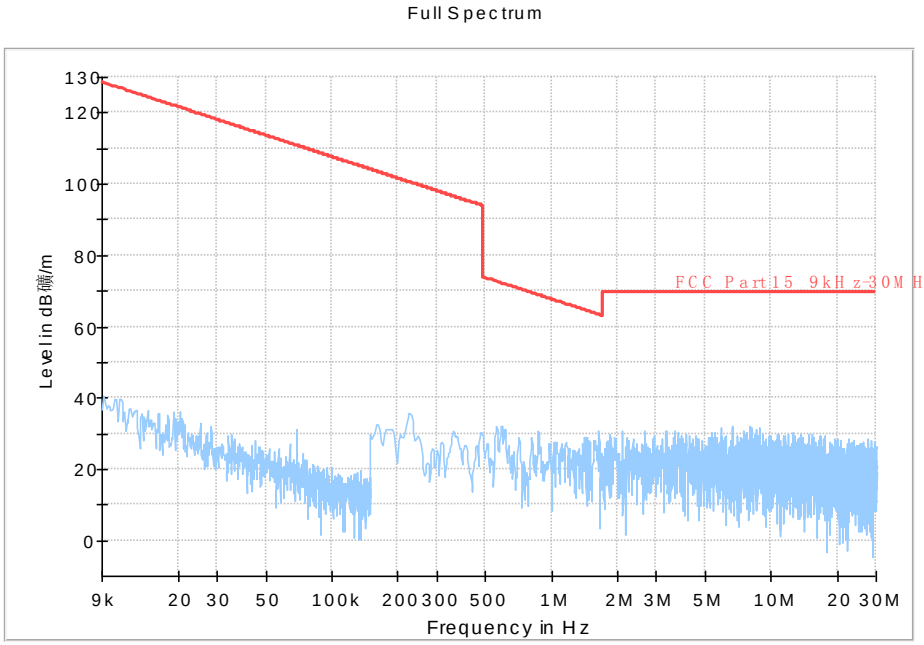


Fig.23 Radiated Spurious Emission (Ch19, 9 kHz-30 MHz)

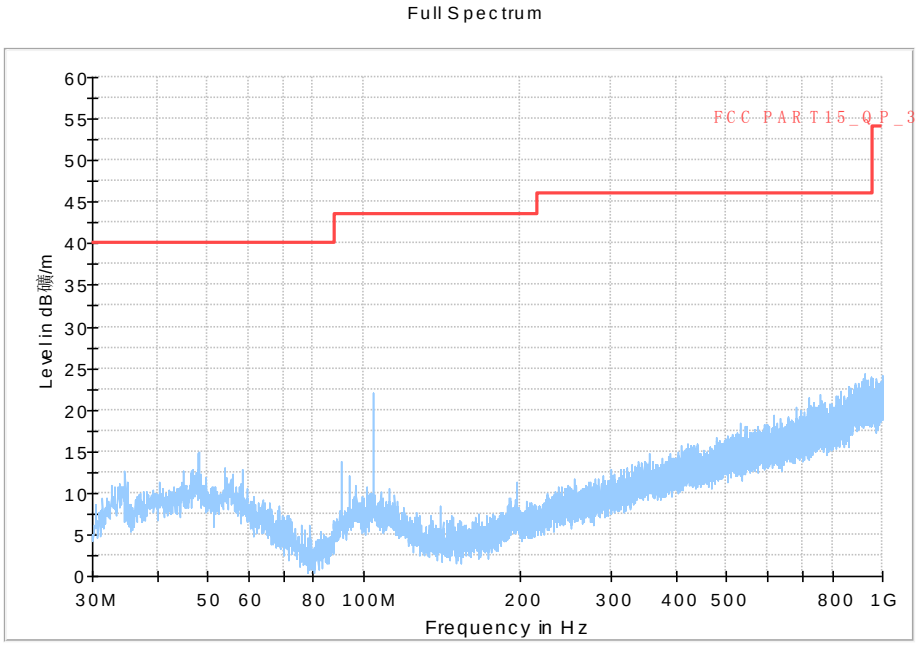


Fig.24 Radiated Spurious Emission (Ch19, 30 MHz-1 GHz)

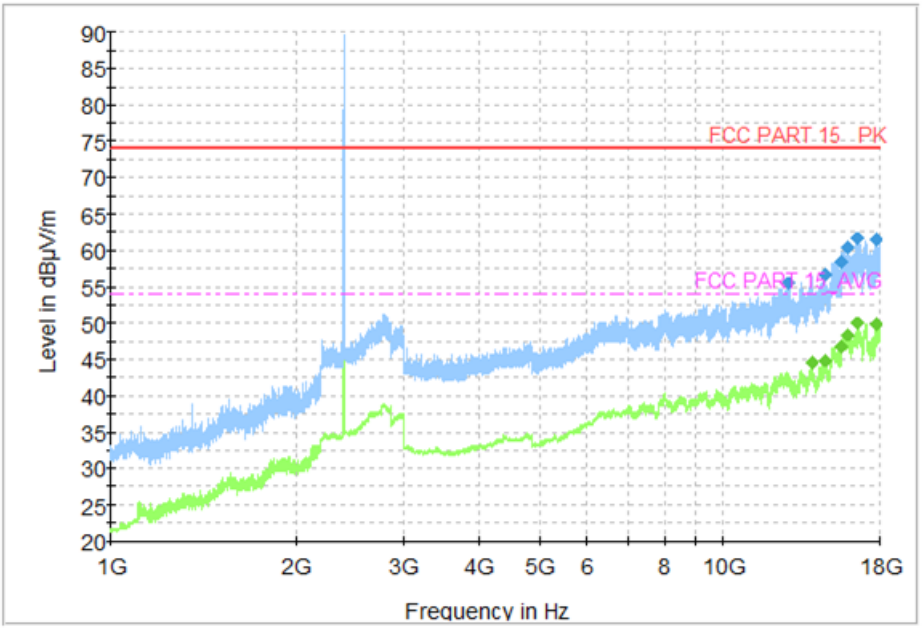


Fig.25 Radiated Spurious Emission (Ch19, 1 GHz- 18 GHz)

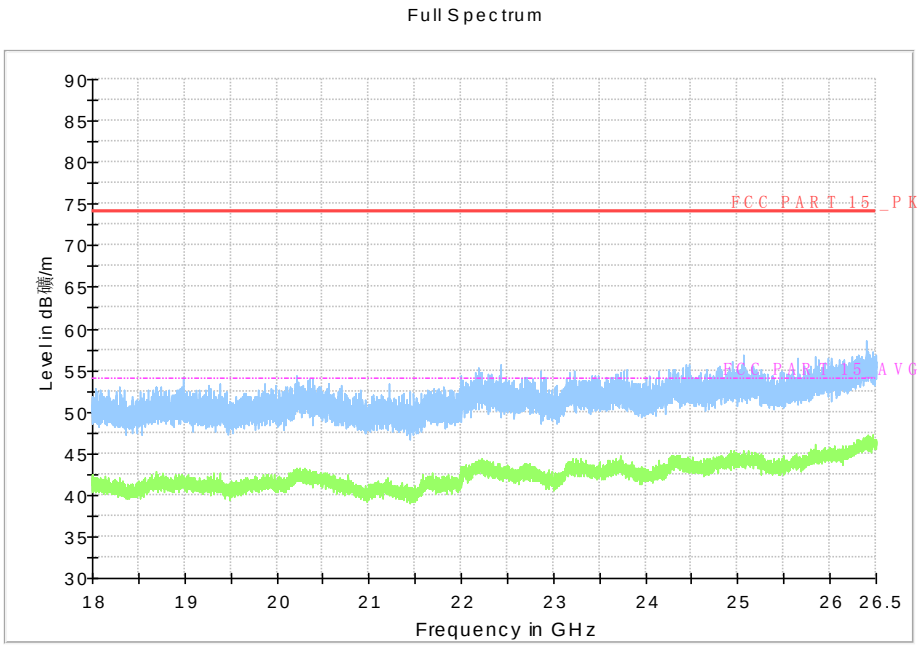


Fig.26 Radiated Spurious Emission (Ch19, 18 GHz-26.5 GHz)

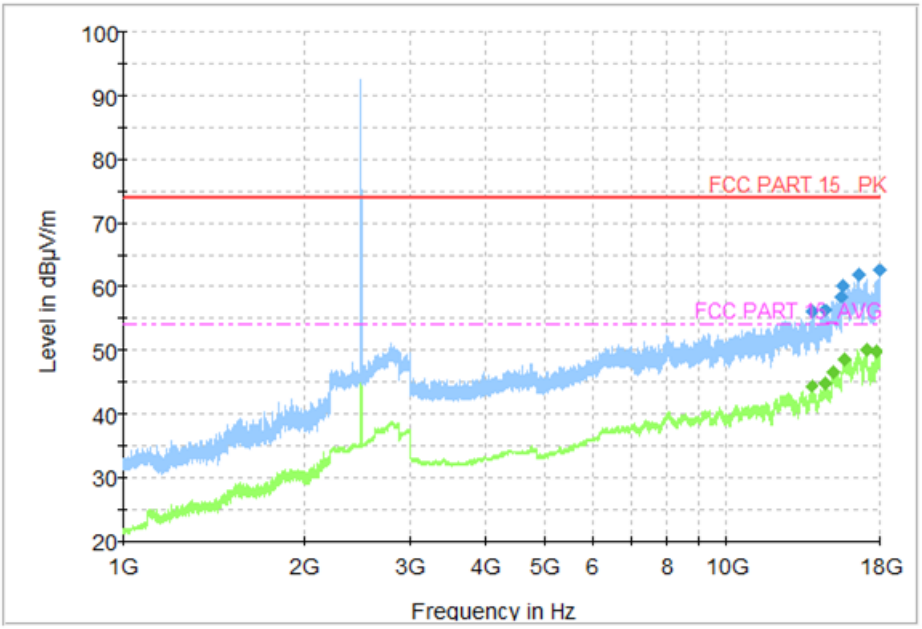


Fig.27 Radiated Spurious Emission (Ch39, 1 GHz-18 GHz)

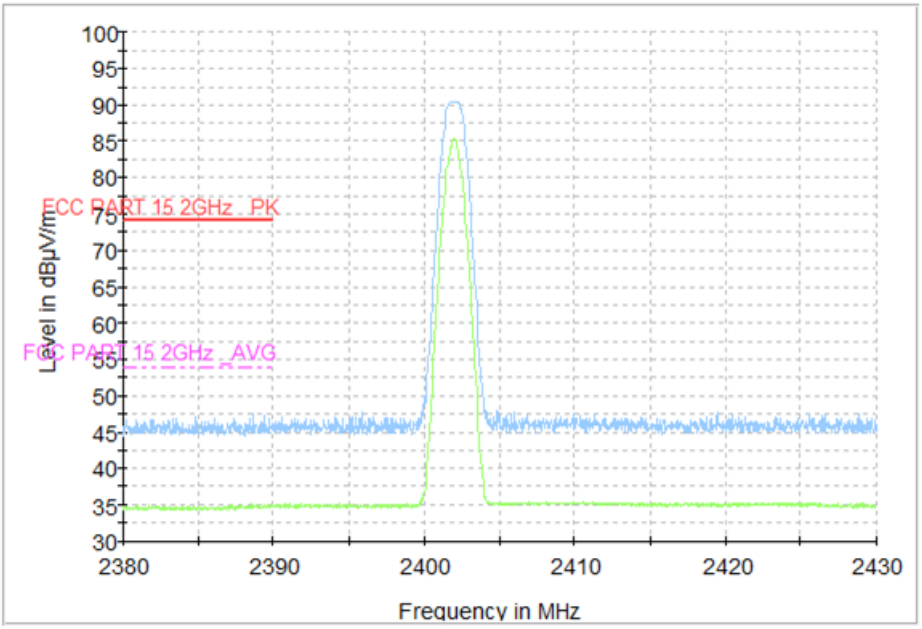


Fig.28 Radiated Emission Power (GFSK, Ch0, 2380GHz~2450GHz)

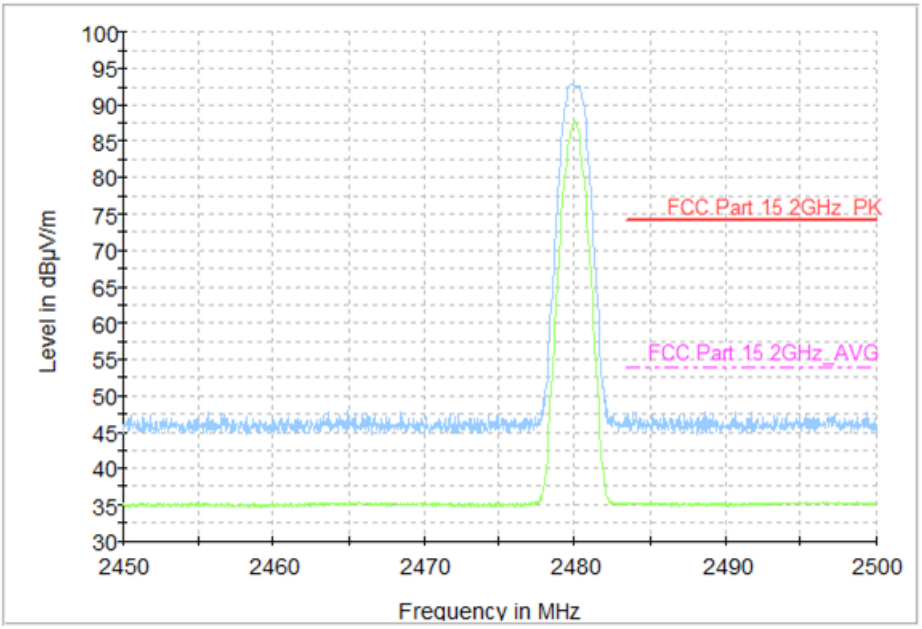


Fig.29 Radiated Emission Power (GFSK, Ch39, 2450GHz~2500GHz)

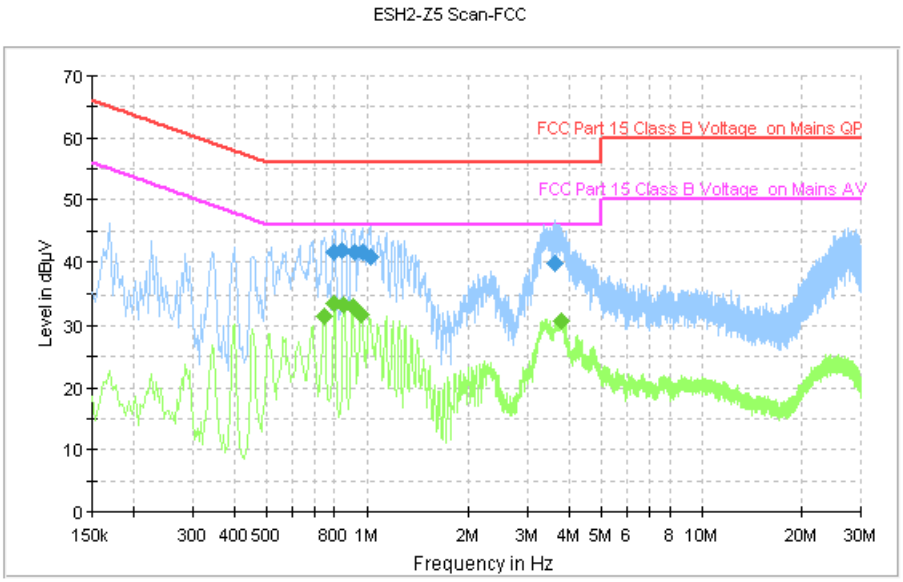


Fig.30 AC Powerline Conducted Emission (Traffic, AE1, 120V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.794000	41.7	GND	N	9.6	14.3	56.0
0.846000	41.8	GND	N	9.5	14.2	56.0
0.918000	41.6	GND	N	9.6	14.4	56.0
0.974000	41.6	GND	N	9.6	14.4	56.0
1.026000	40.8	GND	N	9.5	15.2	56.0
3.610000	39.7	GND	N	9.6	16.3	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.742000	31.5	GND	N	9.5	14.5	46.0
0.798000	33.5	GND	N	9.6	12.5	46.0
0.854000	33.3	GND	N	9.5	12.7	46.0
0.906000	33.0	GND	N	9.6	13.0	46.0
0.962000	31.7	GND	N	9.6	14.3	46.0
3.790000	30.7	GND	N	9.6	15.3	46.0

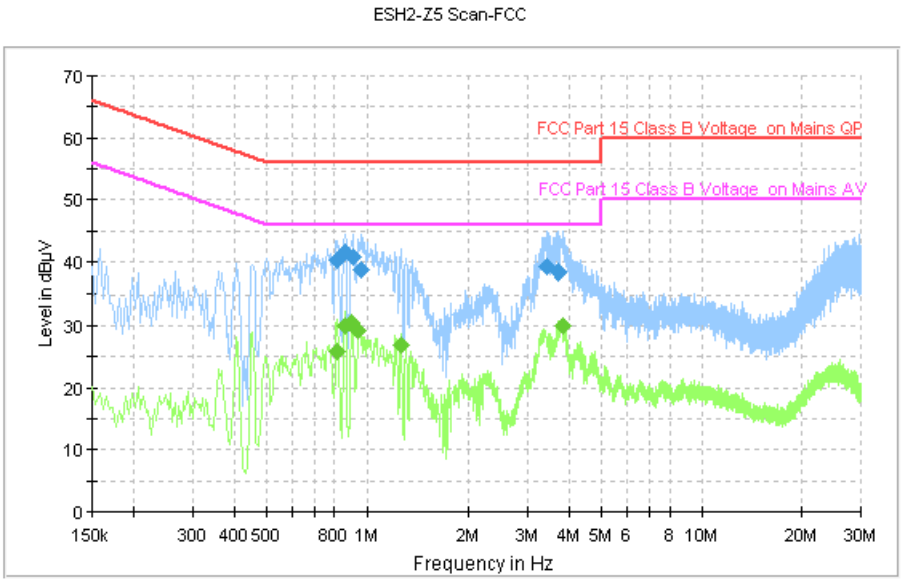


Fig.31 AC Power line Conducted Emission (Idle, AE1, 120V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.814000	40.3	GND	N	9.6	15.7	56.0
0.862000	41.6	GND	N	9.6	14.4	56.0
0.910000	40.9	GND	N	9.6	15.1	56.0
0.958000	38.6	GND	N	9.6	17.4	56.0
3.414000	39.3	GND	N	9.6	16.7	56.0
3.718000	38.4	GND	N	9.6	17.6	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.814000	25.9	GND	N	9.6	20.1	46.0
0.858000	30.1	GND	N	9.5	15.9	46.0
0.902000	30.5	GND	N	9.6	15.5	46.0
0.942000	29.3	GND	N	9.6	16.7	46.0
1.270000	27.0	GND	N	9.6	19.0	46.0
3.822000	29.9	GND	N	9.6	16.1	46.0

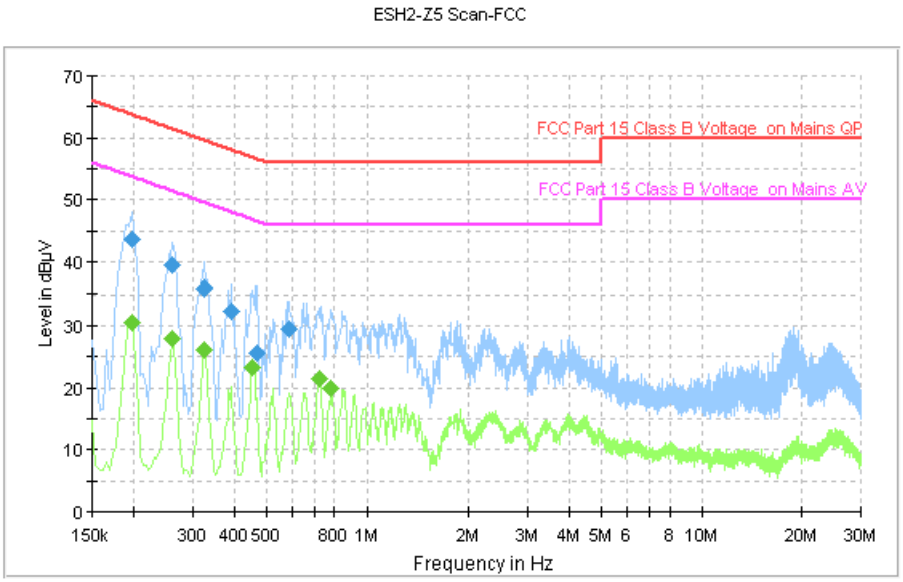


Fig.32 AC Powerline Conducted Emission (Traffic, AE2, 120V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	43.6	GND	N	9.6	20.1	63.7
0.262000	39.6	GND	N	9.6	21.8	61.4
0.326000	35.8	GND	N	9.6	23.7	59.6
0.394000	32.2	GND	N	9.6	25.8	58.0
0.470000	25.6	GND	N	9.7	30.9	56.5
0.582000	29.5	GND	N	9.6	26.5	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	30.6	GND	N	9.6	23.1	53.7
0.262000	27.8	GND	N	9.6	23.6	51.4
0.326000	26.0	GND	N	9.6	23.5	49.6
0.454000	23.4	GND	N	9.7	23.4	46.8
0.722000	21.5	GND	N	9.5	24.5	46.0
0.782000	19.9	GND	N	9.6	26.1	46.0

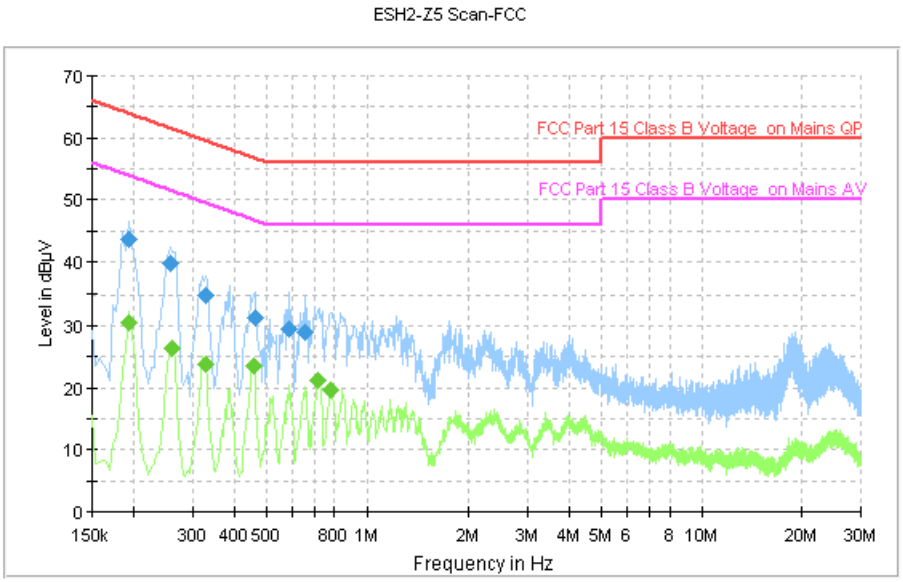


Fig.33 AC Power line Conducted Emission (Idle, AE2, 120V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	43.6	GND	N	9.6	20.3	63.9
0.258000	39.8	GND	N	9.6	21.7	61.5
0.330000	34.9	GND	N	9.6	24.6	59.5
0.462000	31.2	GND	N	9.7	25.5	56.7
0.582000	29.3	GND	N	9.6	26.7	56.0
0.650000	29.0	GND	N	9.6	27.0	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	30.4	GND	N	9.6	23.4	53.9
0.262000	26.4	GND	N	9.6	25.0	51.4
0.330000	23.7	GND	N	9.6	25.7	49.5
0.458000	23.5	GND	N	9.7	23.2	46.7
0.714000	21.2	GND	N	9.5	24.8	46.0
0.782000	19.5	GND	N	9.6	26.5	46.0

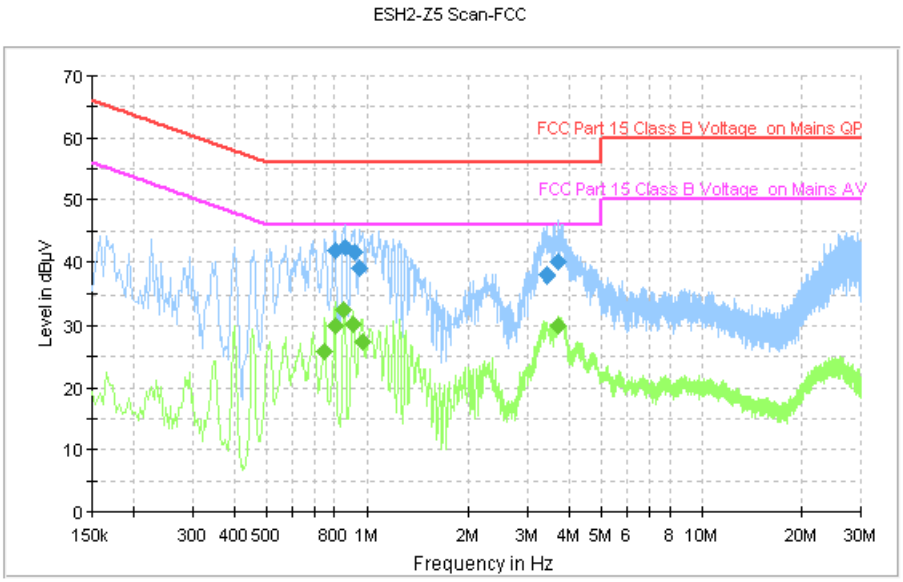


Fig.34 AC Powerline Conducted Emission (Traffic, AE1, 240V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.802000	41.7	GND	N	9.6	14.3	56.0
0.858000	42.4	GND	N	9.5	13.6	56.0
0.918000	41.6	GND	N	9.6	14.4	56.0
0.954000	39.0	GND	N	9.6	17.0	56.0
3.430000	38.0	GND	N	9.6	18.0	56.0
3.722000	40.0	GND	N	9.6	16.0	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.746000	25.9	GND	N	9.6	20.1	46.0
0.802000	30.0	GND	N	9.6	16.0	46.0
0.854000	32.5	GND	N	9.5	13.5	46.0
0.914000	30.1	GND	N	9.6	15.9	46.0
0.970000	27.4	GND	N	9.6	18.6	46.0
3.718000	29.8	GND	N	9.6	16.2	46.0

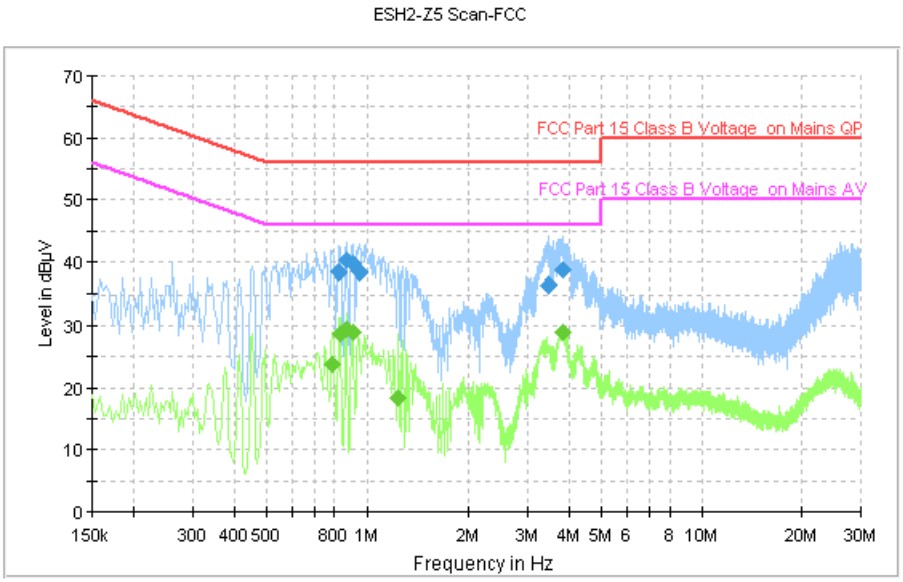


Fig.35 AC Power line Conducted Emission (Idle, AE1, 240V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.826000	38.5	GND	N	9.5	17.5	56.0
0.870000	40.2	GND	N	9.6	15.8	56.0
0.910000	39.9	GND	N	9.6	16.1	56.0
0.954000	38.5	GND	N	9.6	17.5	56.0
3.482000	36.4	GND	N	9.6	19.6	56.0
3.834000	38.7	GND	N	9.6	17.3	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.790000	23.8	GND	N	9.6	22.2	46.0
0.830000	28.8	GND	N	9.5	17.2	46.0
0.866000	29.5	GND	N	9.6	16.5	46.0
0.906000	28.9	GND	N	9.6	17.1	46.0
1.242000	18.4	GND	N	9.6	27.6	46.0
3.838000	29.0	GND	N	9.6	17.0	46.0

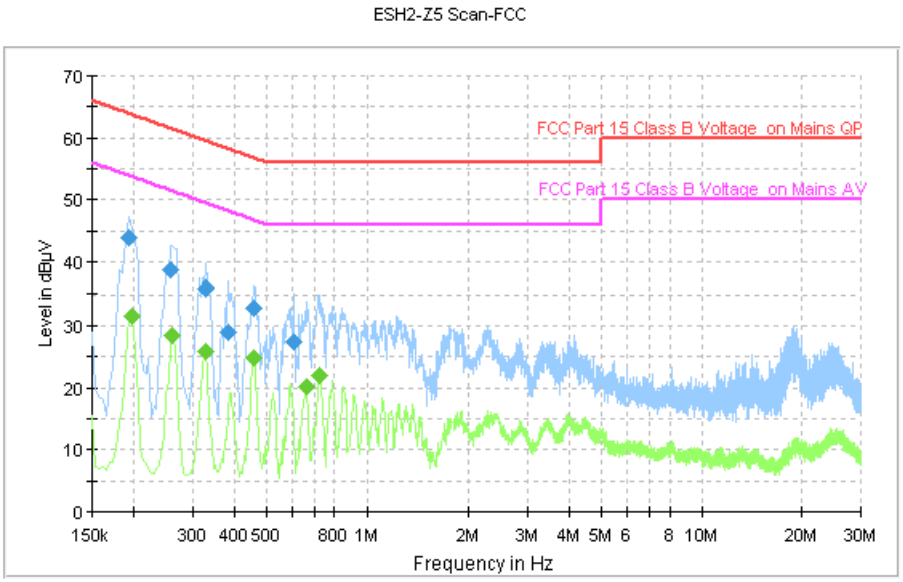


Fig.36 AC Powerline Conducted Emission (Traffic, AE2, 240V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	43.9	GND	N	9.6	20.0	63.9
0.258000	38.8	GND	N	9.6	22.7	61.5
0.330000	35.9	GND	N	9.6	23.5	59.5
0.382000	29.0	GND	N	9.6	29.2	58.2
0.458000	32.7	GND	N	9.7	24.0	56.7
0.602000	27.4	GND	N	9.6	28.6	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	31.5	GND	N	9.6	22.2	53.7
0.262000	28.5	GND	N	9.6	22.9	51.4
0.330000	25.7	GND	N	9.6	23.7	49.5
0.458000	24.8	GND	N	9.7	22.0	46.7
0.658000	20.3	GND	N	9.6	25.7	46.0
0.718000	22.0	GND	N	9.5	24.0	46.0

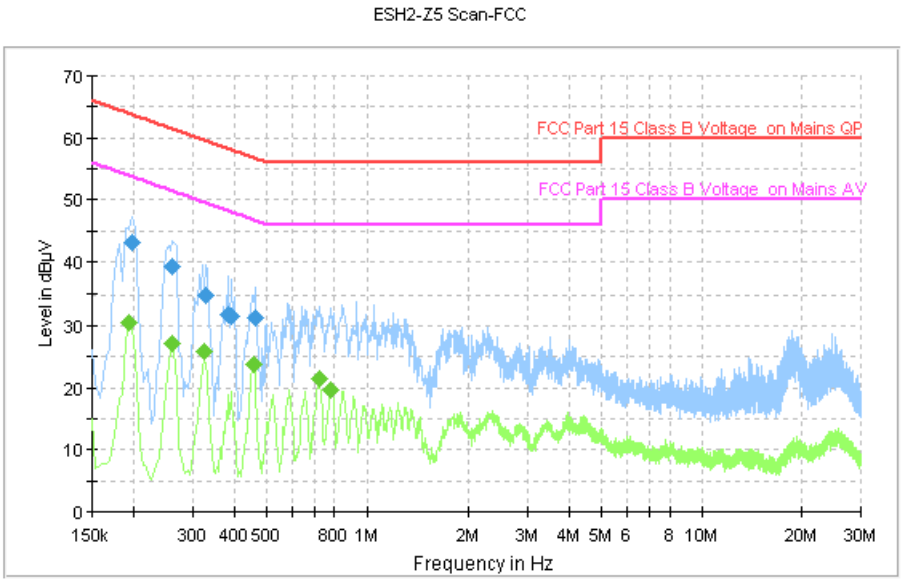


Fig.37 AC Power line Conducted Emission (Idle, AE2, 240V)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	43.2	GND	N	9.6	20.5	63.7
0.262000	39.3	GND	N	9.6	22.1	61.4
0.330000	34.8	GND	N	9.6	24.7	59.5
0.386000	31.8	GND	N	9.6	26.3	58.1
0.394000	31.5	GND	N	9.6	26.5	58.0
0.462000	31.3	GND	N	9.7	25.3	56.7

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.194000	30.6	GND	N	9.6	23.3	53.9
0.262000	27.1	GND	N	9.6	24.2	51.4
0.326000	25.8	GND	N	9.6	23.8	49.6
0.458000	23.7	GND	N	9.7	23.0	46.7
0.718000	21.5	GND	N	9.5	24.5	46.0
0.782000	19.7	GND	N	9.6	26.3	46.0

ANNEX C: Persons involved in this testing

Test Name	Tester
Maximum Peak Output Power	Lin Kanfeng, Tang Weisheng
Peak Power Spectral Density	Lin Kanfeng, Tang Weisheng
Occupied 6dB Bandwidth	Lin Kanfeng, Tang Weisheng
Band Edges Compliance	Lin Kanfeng, Tang Weisheng
Transmitter Spurious Emission - Conducted	Lin Kanfeng, Tang Weisheng
Transmitter Spurious Emission - Radiated	Lin Kanfeng, Tang Weisheng
AC Powerline Conducted Emission	Lin Kanfeng, Tang Weisheng

*****END OF REPORT*****