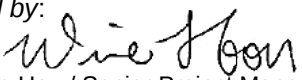


Prüfbericht-Nr.: Test Report No.:	50052503 001	Auftrags-Nr.: Order No.:	164069410	Seite 1 von 28 Page 1 of 28
Kunden-Referenz-Nr.: Client Reference No.:	60008704	Auftragsdatum: Order date:	19.07.2016	
Auftraggeber: Client:	SHENZHEN DEHUIDA TECHNOLOGY CO.,LTD. Dehuida Industrial Park, No. 237, Xikeng Road, Guanlan Street, Baoan			
Prüfgegenstand: Test item:	HP Bluetooth Mini Speaker 300			
Bezeichnung / Typ-Nr.: Identification / Type No.:	BM1138 (HP)			
Auftrags-Inhalt: Order content:	FCC Certification and Verification			
Prüfgrundlage: Test specification:	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 FCC KDB Publication 447498 v06 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 RSS-247 Issue 1 May 2015 RSS-102 Issue 5 March 2015 RSS-Gen Issue 4 November 2014			
Wareneingangsdatum: Date of receipt:	19.07.2016			
Prüfmuster-Nr.: Test sample No.:	N/A			
Prüfzeitraum: Testing period:	27.07.2016 - 30.07.2016			
Ort der Prüfung: Place of testing:	refer to clause 2.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:  21.08.2016 Winnie Hou / Senior Project Manager		kontrolliert von / reviewed by:  01.09.2016 Owen Tian / Technical Certifier		
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position
Sonstiges / Other: FCC ID: RWY-DHDBM1138, IC: 10425A-DHDBM1138				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

V04

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT

RESULT: *Passed*

5.1.2 PEAK OUTPUT POWER

RESULT: *Passed*

5.1.3 99% BANDWIDTH

RESULT: *Passed*

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100KHZ BANDWIDTH

RESULT: *Passed*

5.1.5 SPURIOUS EMISSION

RESULT: *Passed*

5.1.6 20dB BANDWIDTH

RESULT: *Passed*

5.1.7 FREQUENCY SEPARATION

RESULT: *Passed*

5.1.8 NUMBER OF HOPPING FREQUENCY

RESULT: *Passed*

5.1.9 TIME OF OCCUPANCY

RESULT: *Passed*

5.1.10 CONDUCTED EMISSIONS

RESULT: *Passed*

5.1.11 RADIATED EMISSION

RESULT: *Passed*

Contents

1.	GENERAL REMARKS	4
1.1	COMPLEMENTARY MATERIALS	4
2.	TEST SITES	4
2.1	TEST FACILITIES	4
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	5
2.3	TRACEABILITY	6
2.4	CALIBRATION	6
2.5	MEASUREMENT UNCERTAINTY	6
2.6	LOCATION OF ORIGINAL DATA	6
2.7	STATUS OF FACILITY USED FOR TESTING	6
3.	GENERAL PRODUCT INFORMATION	7
3.1	PRODUCT FUNCTION AND INTENDED USE	7
3.2	RATINGS AND SYSTEM DETAILS	7
3.3	INDEPENDENT OPERATION MODES	8
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	9
3.5	SUBMITTED DOCUMENTS	9
4.	TEST SET-UP AND OPERATION MODES	10
4.1	PRINCIPLE OF CONFIGURATION SELECTION	10
4.2	TEST OPERATION AND TEST SOFTWARE	10
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	10
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	10
4.5	TEST SETUP DIAGRAM	11
5.	TEST RESULTS	13
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	13
5.1.1	<i>Antenna Requirement</i>	<i>13</i>
5.1.2	<i>Peak Output Power</i>	<i>14</i>
5.1.3	<i>99% Bandwidth</i>	<i>15</i>
5.1.4	<i>Conducted spurious emissions measured in 100kHz Bandwidth</i>	<i>16</i>
5.1.5	<i>Spurious Emission</i>	<i>17</i>
5.1.6	<i>20dB Bandwidth</i>	<i>18</i>
5.1.7	<i>Frequency Separation</i>	<i>19</i>
5.1.8	<i>Number of hopping frequency</i>	<i>20</i>
5.1.9	<i>Time of Occupancy</i>	<i>21</i>
5.1.10	<i>Conducted emissions</i>	<i>22</i>
5.1.11	<i>Radiated Emission</i>	<i>23</i>
6.	PHOTOGRAPHS OF THE TEST SET-UP	24
7.	LIST OF TABLES	28
8.	LIST OF PHOTOGRAPHS	28

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix 1: Test Result

2. Test Sites

2.1 Test Facilities

Shenzhen Academy of Metrology and Quality Inspection.

NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China

FCC Registration No.: 446246, 806614, 994606

Test site Industry Canada No.: 11177A-1, 11177A-2

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission				
Spectrum Analyzer	Rohde&Schwarz	ESU40	100263	2017-03-22
Test Receiver	Rohde&Schwarz	ESI26	100307	2016-12-10
Bilog Antenna	Schwarzbeck	VULB9163	172	2017-01-06
Loop Antenna	Schwarzbeck	FMZB1516	113	2018-01-06
Horn Antenna	Schwarzbeck	HF907	100309	2017-3-20
Horn Antenna	Schwarzbeck	3160-10	10025	2017-03-27
Pre-Amplifier	Rohde&Schwarz	SCU-26	10020	2017-3-20
Pre-Amplifier	Rohde&Schwarz	SCU-18	10118	2017-3-20
Radio Spectrum Test				
Spectrum Analyzer	Rohde & Schwarz	FSQ40	200112	2017-04-24
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	100003	2016-12-10
L.I.S.N.	Schwarzbeck	ENV216	100042	2016-09-24

2.3 Traceability

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

2.4 Calibration

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

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are $\pm 3\text{dB}$.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center) located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUT is HP Bluetooth Mini Speaker 300 with Bluetooth function.
For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	HP Bluetooth Mini Speaker 300
Type Designation:	BM1138
FCC ID	RWY-DHDBM1138
IC	10425A-DHDBM1138

Table 3: Technical Specification of Bluetooth (BDR & EDR)

Technical Specification	Value
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	3.0
Channel Number	79 channels
Channel separation	1MHz
Extreme Temperature Range	0°C to +60°C
Operation Voltage	DC 3.7V via lithium Battery (PT803030) DC 5.0V via USB port for charging
Modulation	GFSK, 8DPSK, $\pi/4$ DQPSK
Antenna Type	Integral antenna
Antenna Gain	0 dBi
RF Output Power	0.00185W (2.67dBm)

Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402.00	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00		

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth mode (BDR & EDR)
 - 1. Transmitting on low channel
 - 2. Transmitting on middle channel
 - 3. Transmitting on high channel
- B. On, Bluetooth hopping mode
- C. Play with Audio in
- D. Charging
- E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- | | |
|-------------------------|----------------------|
| - Bill of Material | - Circuit Diagram |
| - PCB Layout | - Instruction Manual |
| - Photo Document | - Rating Label |
| - Technical Description | |

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

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

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested with following accessories:

Description	Manufacturer	Type	S/N
iPhone6S	Apple	MKQL2ZP/A	DNPQGYT9GRY7
Adaptor	BYD	TUAU050200-L00	60213200045B

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

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

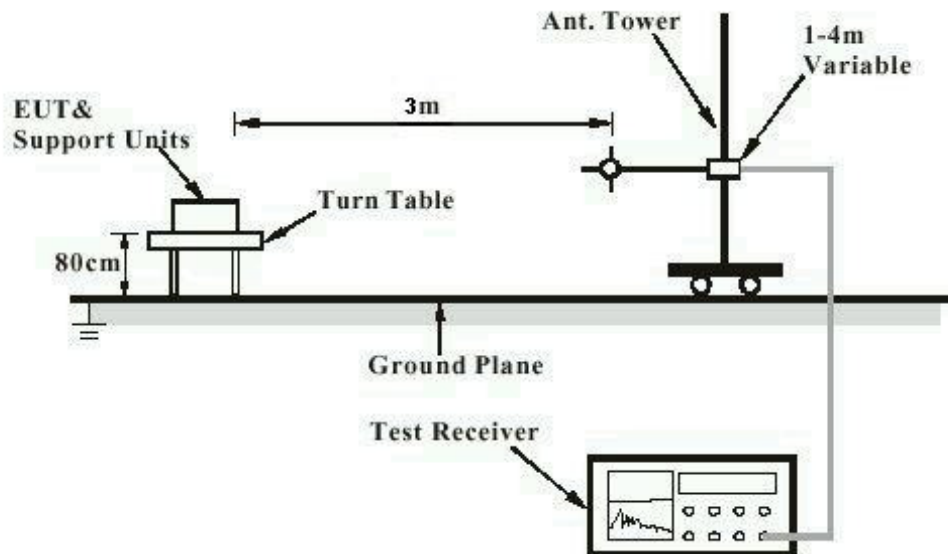


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

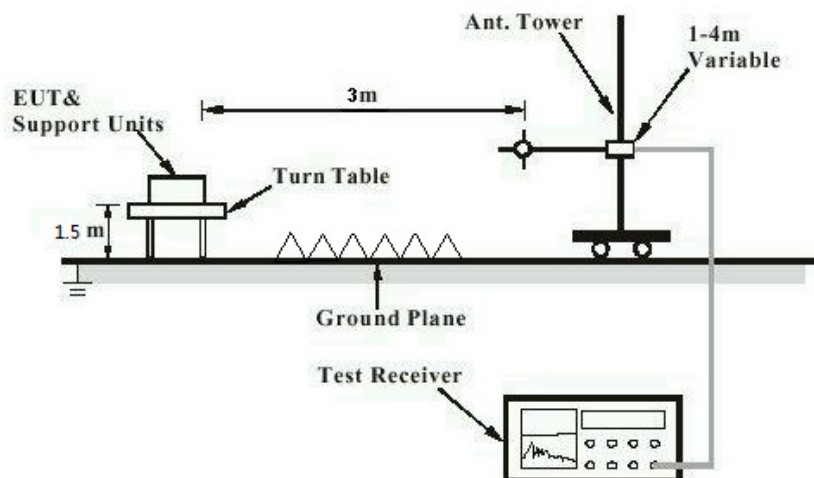


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

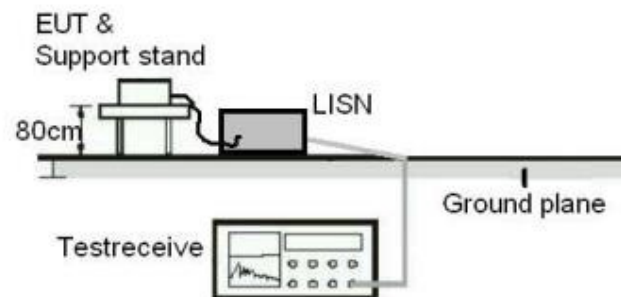
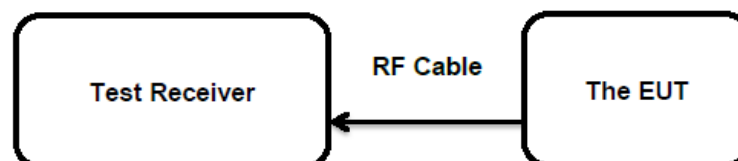


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203 RSS-Gen 6.7
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 0 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT photo for details.

Note: The cable loss is taken into account in results.

5.1.3 99% Bandwidth

RESULT:
Passed

Date of testing : 2016-07-30
 Test standard : RSS-Gen clause 6.6
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
 Operation Mode : A
 Ambient temperature : 25°C
 Relative humidity : 55%
 Atmospheric pressure : 101 kPa

Table 6: Test result of 99% Bandwidth

Test Mode	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (kHz)
BDR	2402	965.625	/
	2441	968.750	
	2480	984.375	
EDR	2402	1303.129	/
	2441	1293.750	
	2480	1334.375	

Note: The cable loss is taken into account in results.

5.1.4 Conducted spurious emissions measured in 100kHz Bandwidth

RESULT:**Passed**

Date of testing	:	2016-07-30
Test standard	:	FCC part 15.247(d) RSS-247 Clause 5.5
Basic standard	:	ANSI C63.10: 2013
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ High
Operation mode	:	A
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

All emissions are more than 20dB below fundamental, details refer to Appendix 1, and compliance is achieved as well.

5.1.5 Spurious Emission

RESULT:**Passed**

Date of testing	:	2016-07-27
Test standard	:	FCC part 15.247(d) FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

Remark:

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test setup photos.

Testing was carried out within frequency range 9kHz to the tenth harmonics.

For details refer to Appendix 1.

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BDR	2402	1101.8	734.533	/
	2441	1101.8	734.533	
	2480	1105.8	737.200	
EDR	2402	1358.2	905.467	/
	2441	1358.2	905.467	
	2480	1358.2	905.467	

5.1.8 Number of hopping frequency**RESULT:****Passed**

Date of testing : 2016-07-30
Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(4)
Basic standard : ANSI C63.10: 2013
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shield room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : B
Ambient temperature : 25°C
Relative humidity : 55%
Atmospheric pressure : 101 kPa

Table 9: Test result of Number of hopping frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
<u>2400</u> to <u>2483.5</u> MHz	79	≥ 15	Pass

5.1.10 Conducted emissions

RESULT:**Passed**

Date of testing	:	2016-07-27
Test standard	:	FCC Part 15.107(a) & FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	:	ANSI C63.10: 2013 & ANSI C63.4: 2014
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) & FCC Part 15.207(a) RSS-Gen Table 3
Kind of test site	:	Shield room

Test setup

Input Voltage	:	DC5V via AC/DC Adapter
Operation Mode	:	B+D, C+D
Earthing	:	Not connected
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

For details refer to Appendix 1.

5.1.11 Radiated Emission

RESULT:**Passed**

Date of testing	:	2016-07-28
Test standard	:	FCC Part 15.109(a) & FCC Part 15.209(a) RSS-Gen 8.9
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	30 - 6000MHz
Classification	:	Class B
Limit	:	FCC Part 15.109(a) & FCC Part 15.209(a) RSS-Gen Table 4
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Input Voltage	:	DC5V via AC/DC Adapter
Operation mode	:	D
Earthing	:	Not connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

Test data refer to Appendix 1.

7. List of Tables

Table 1: List of Test and Measurement Equipment	5
Table 2: Rating of EUT	7
Table 3: Technical Specification of Bluetooth (BDR & EDR)	7
Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)	8
Table 5: Test result of Peak Output Power	14
Table 6: Test result of 99% Bandwidth	15
Table 7: Test result of 20dB Bandwidth	18
Table 8: Test result of Frequency Separation	19
Table 9: Test result of Number of hopping frequency	20
Table 10: Test result of Time of Occupancy	21

8. List of Photographs

Photograph 1: Set-up for Spurious Emissions (9kHz-30MHz)	24
Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)	24
Photograph 3: Set-up for Spurious Emissions (1GHz-18GHz)	25
Photograph 4: Set-up for Spurious Emissions (18GHz-26GHz)	25
Photograph 5: Set-up for Conducted Emissions	26
Photograph 6: Set-up for Radiated Emissions, below 1GHz	26
Photograph 7: Set-up for Radiated Emissions, above 1GHz	27

List of Figures

Figure 1: Test figure of spurious emissions, mode A.1, X plane (9kHz – 30MHz).....	2
Figure 2: Test figure of spurious emissions, mode A.1, Horizontal polarity (30MHz – 1GHz)	3
Figure 3: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz)	3
Figure 4: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz – 18GHz)	4
Figure 5: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz)	4
Figure 6: Test figure of spurious emissions, mode A.1, Horizontal polarity (18GHz – 25GHz)	5
Figure 7: Test figure of spurious emissions, mode A.1, Vertical polarity (18GHz – 25GHz)	5
Figure 8: Test figure of spurious emissions, mode A.2, X plane (9kHz – 30MHz).....	6
Figure 9: Test figure of spurious emissions, mode A.2, Horizontal polarity (30MHz – 1GHz)	7
Figure 10: Test figure of spurious emissions, mode A.2, Vertical polarity (30MHz – 1GHz)	7
Figure 11: Test figure of spurious emissions, mode A.2, Horizontal polarity (1GHz – 18GHz)	8
Figure 12: Test figure of spurious emissions, mode A.2, Vertical polarity (1GHz – 18GHz)	8
Figure 13: Test figure of spurious emissions, mode A.2, Horizontal polarity (18GHz – 25GHz)	9
Figure 14: Test figure of spurious emissions, mode A.2, Vertical polarity (18GHz – 25GHz)	9
Figure 15: Test figure of spurious emissions, mode A.3, X plane (9kHz – 30MHz).....	10
Figure 16: Test figure of spurious emissions, mode A.3, Horizontal polarity (30MHz – 1GHz)	11
Figure 17: Test figure of spurious emissions, mode A.3, Vertical polarity (30MHz – 1GHz)	11
Figure 18: Test figure of spurious emissions, mode A.3, Horizontal polarity (1GHz – 18GHz)	12
Figure 19: Test figure of spurious emissions, mode A.3, Vertical polarity (1GHz – 18GHz)	12
Figure 20: Test figure of spurious emissions, mode A.3, Horizontal polarity (18GHz – 25GHz)	13
Figure 21: Test figure of spurious emissions, mode A.3, Vertical polarity (18GHz – 25GHz)	13
Figure 22: Test figure of Radiated emissions in restricted bands, Mode A.1, Horizontal	14
Figure 23: Test figure of Radiated emissions in restricted bands, Mode A.1, Vertical	16
Figure 24: Test figure of Radiated emissions in restricted bands, Mode A.3, Horizontal	18
Figure 25: Test figure of Radiated emissions in restricted bands, Mode A.3, Vertical	20
Figure 26: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.1	22
Figure 27: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.2	24
Figure 28: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.3	26
Figure 29: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.1	28
Figure 30: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.3	29
Figure 31: Test figure of Conducted emissions, Mode B+D, line live	30
Figure 32: Test figure of Conducted emissions, Mode B+D, line neutral	31
Figure 33: Test figure of Conducted emissions, Mode C+D, line live	32
Figure 34: Test figure of Conducted emissions, Mode C+D, line neutral	33
Figure 35: Test figure of Radiated emissions, Mode D, below 1GHz, Horizontal & Vertical	34
Figure 36: Test figure of Radiated emissions, Mode D, above 1GHz, Horizontal & Vertical	35

Figure 1: Test figure of spurious emissions, mode A.1, X plane (9kHz – 30MHz)

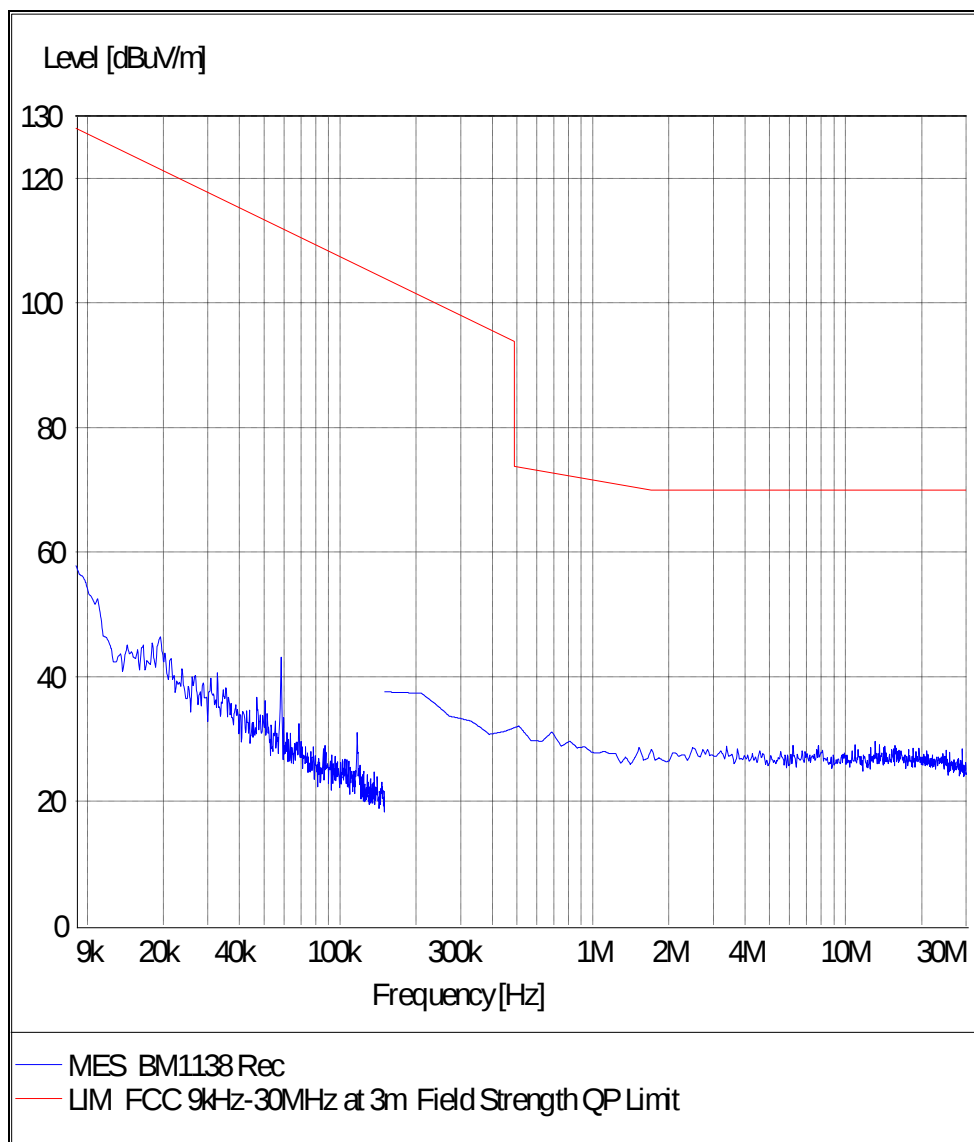


Figure 2: Test figure of spurious emissions, mode A.1, Horizontal polarity (30MHz – 1GHz)

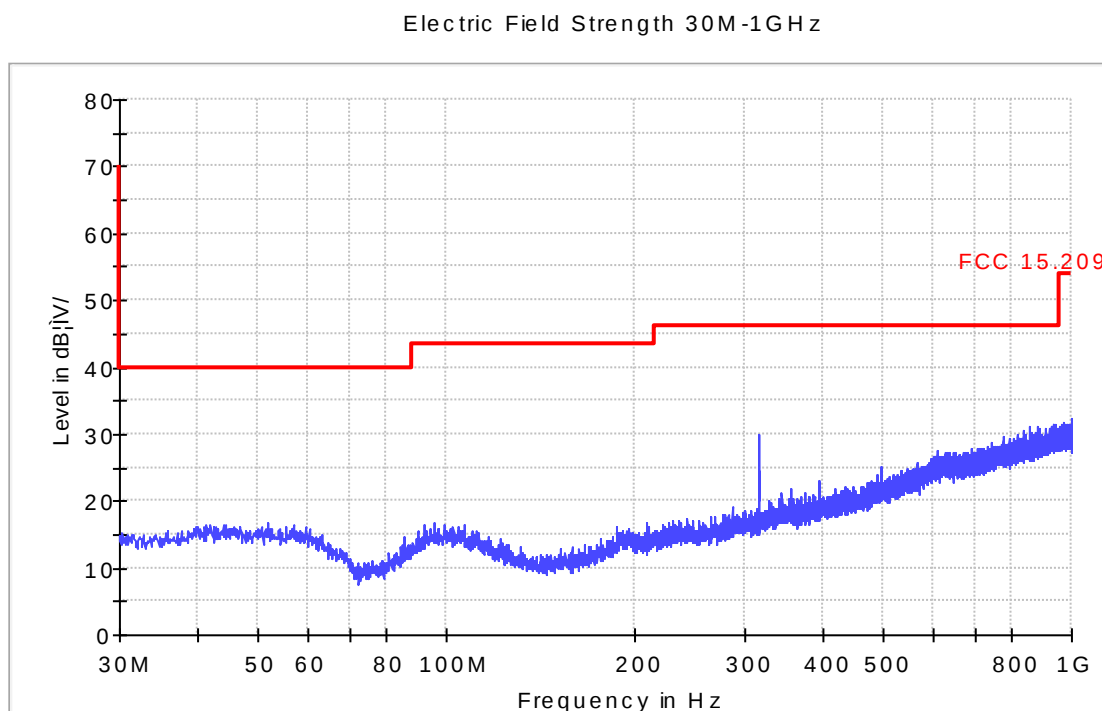


Figure 3: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz)

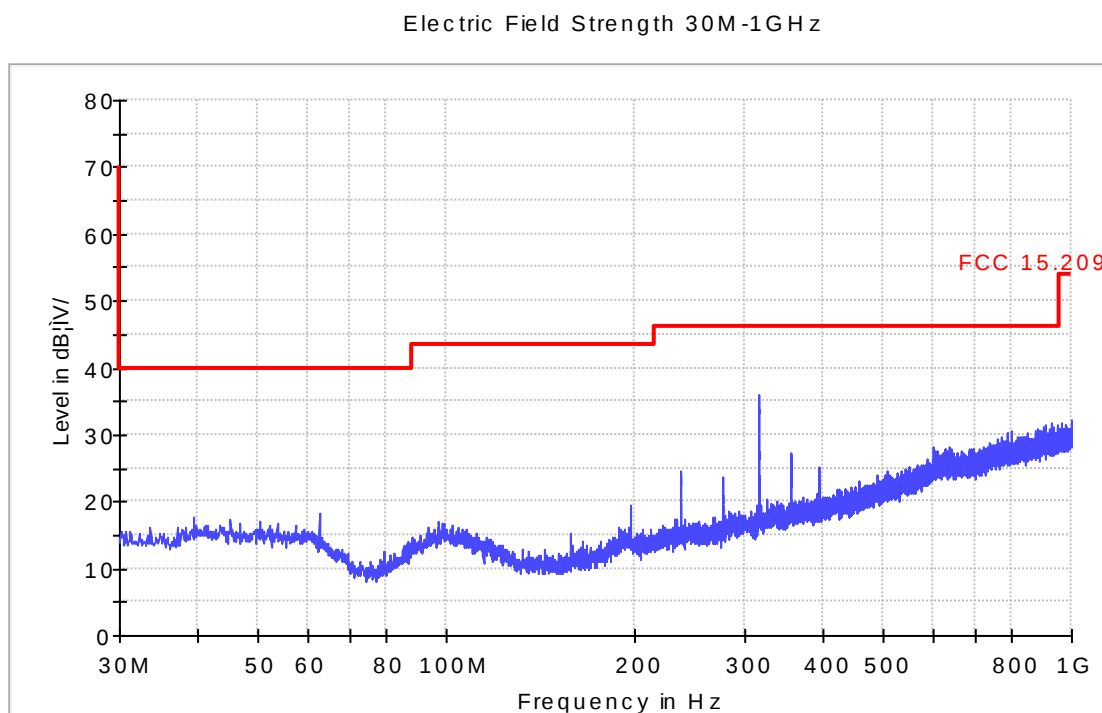


Figure 4: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz –18GHz)

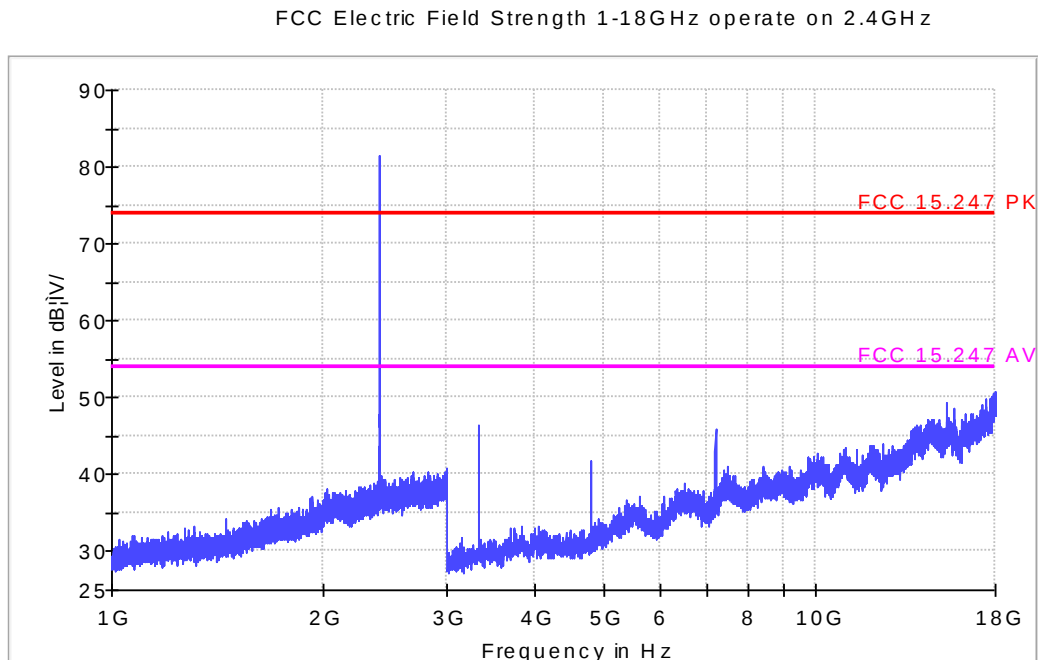


Figure 5: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz)

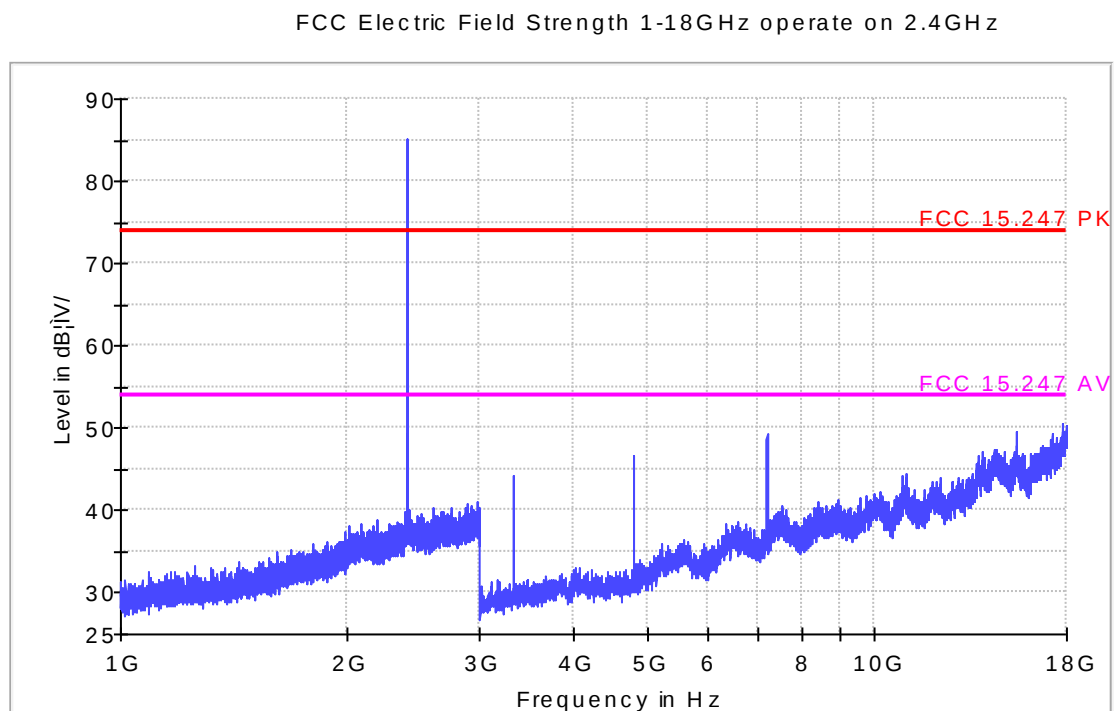


Figure 6: Test figure of spurious emissions, mode A.1, Horizontal polarity (18GHz –25GHz)

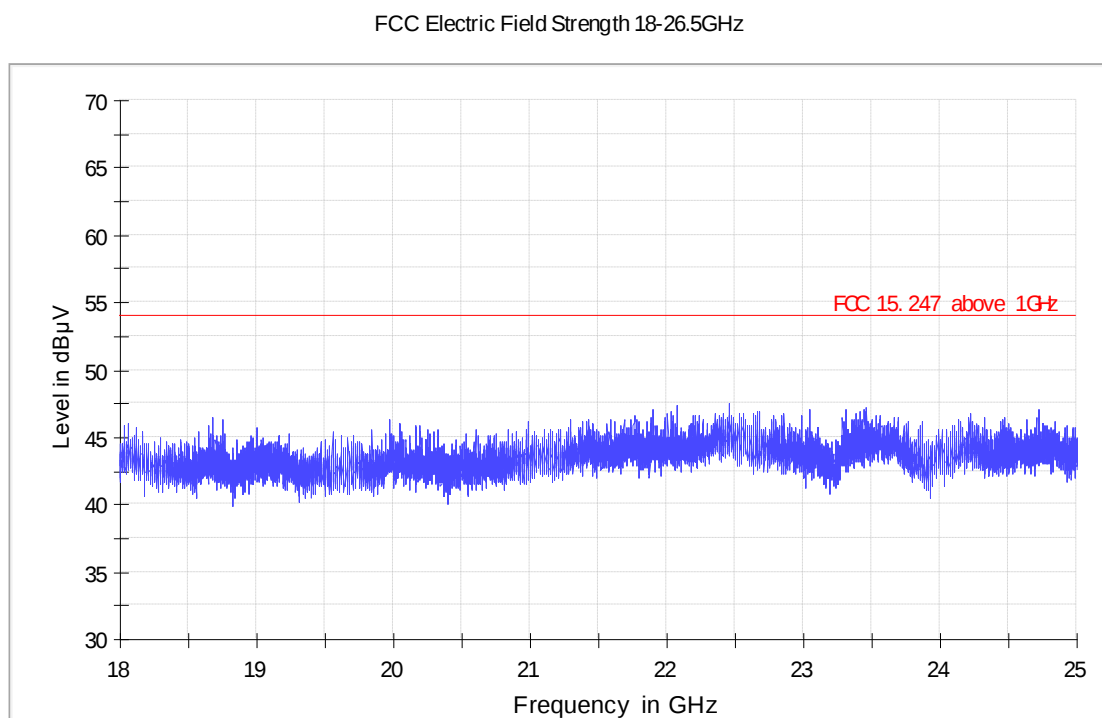


Figure 7: Test figure of spurious emissions, mode A.1, Vertical polarity (18GHz – 25GHz)

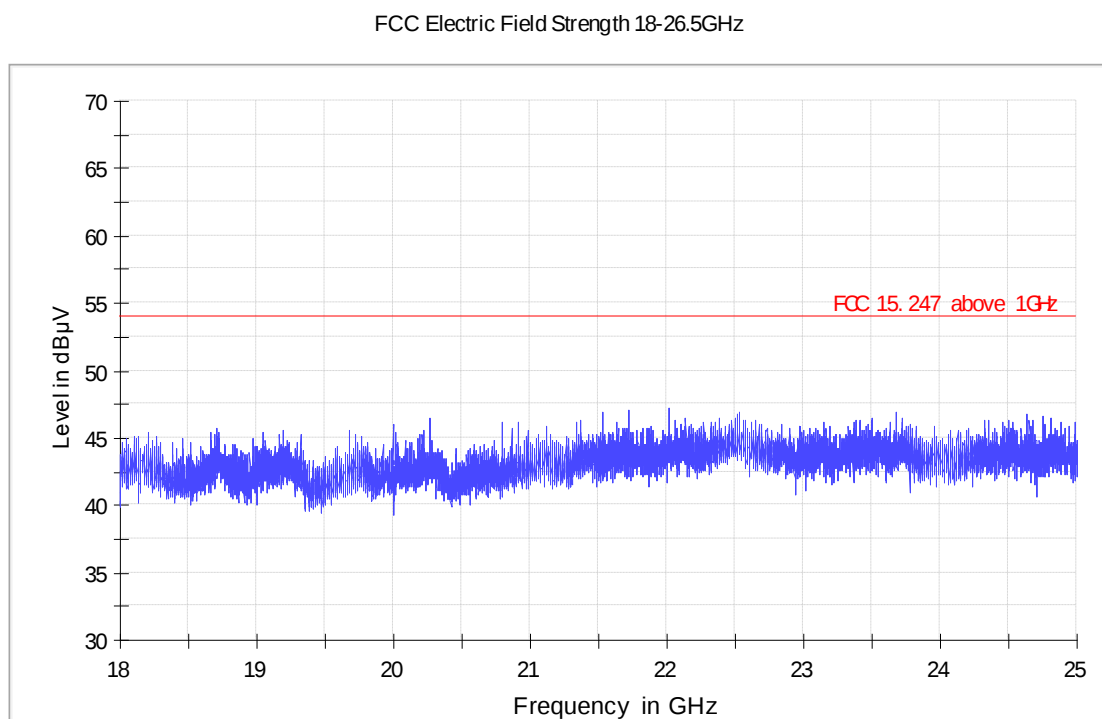


Figure 8: Test figure of spurious emissions, mode A.2, X plane (9kHz – 30MHz)

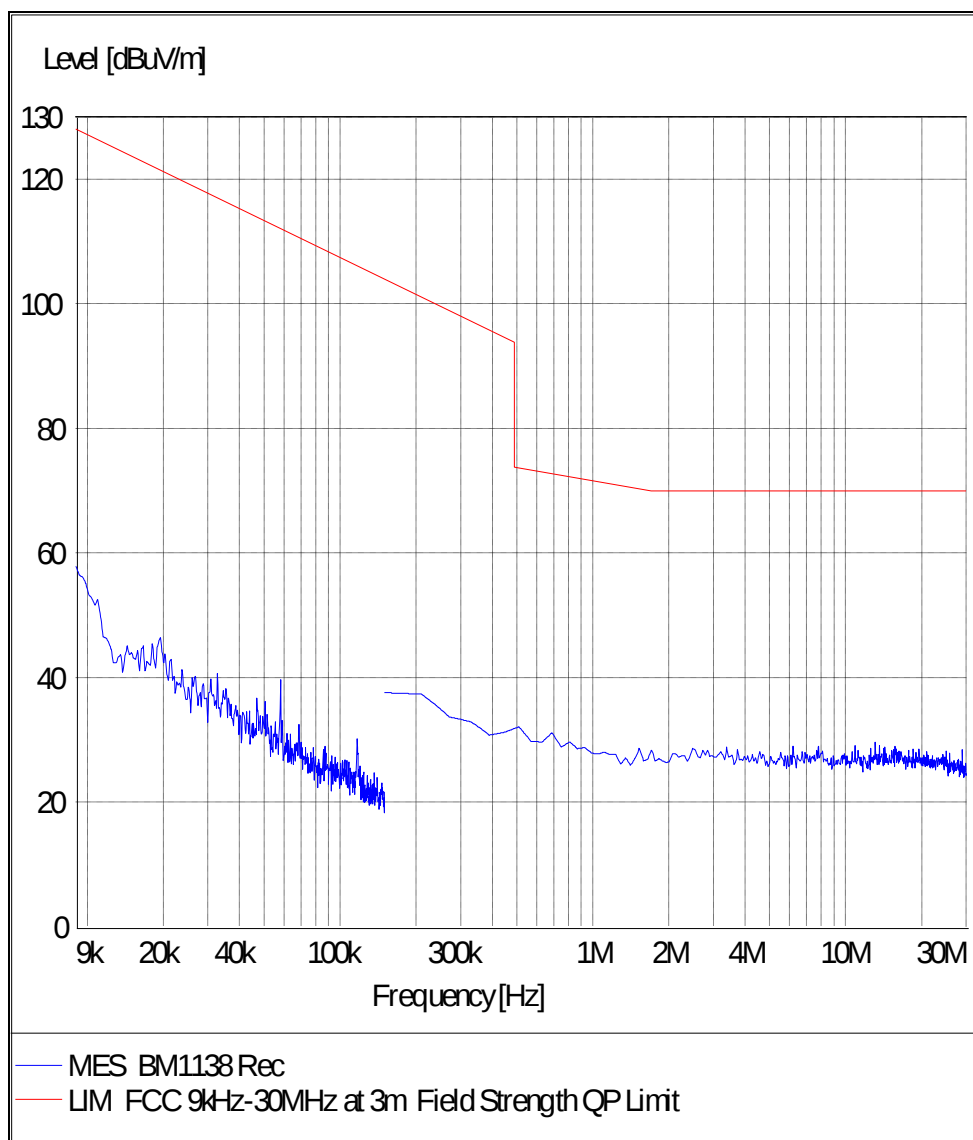


Figure 9: Test figure of spurious emissions, mode A.2, Horizontal polarity (30MHz – 1GHz)

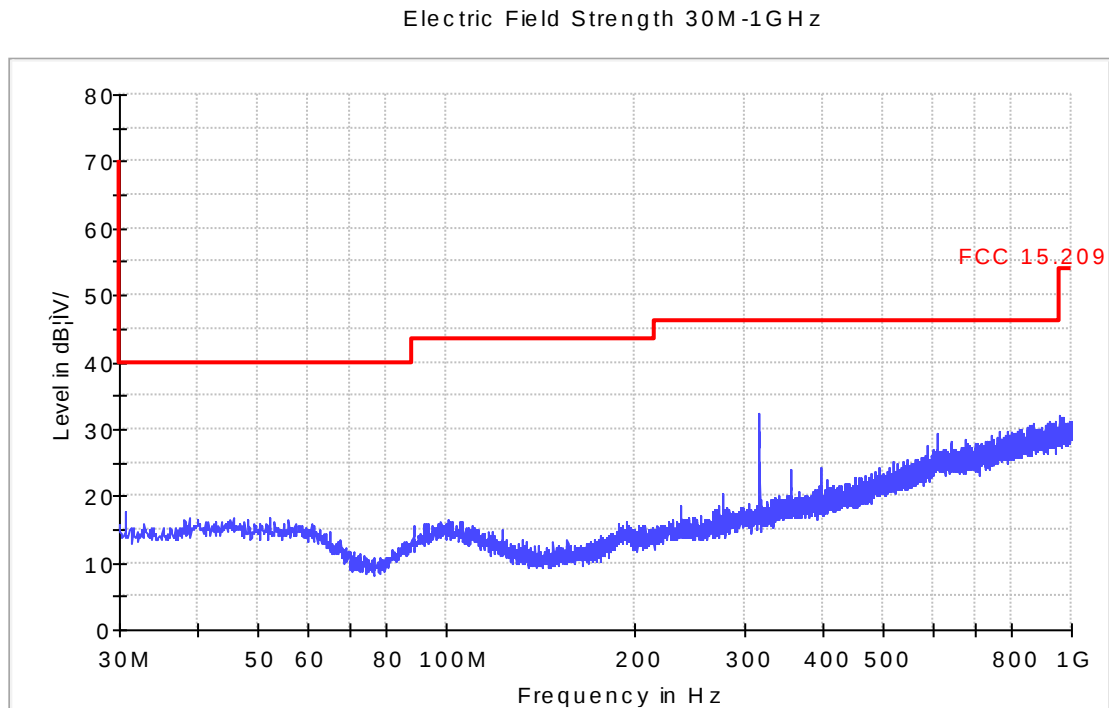


Figure 10: Test figure of spurious emissions, mode A.2, Vertical polarity (30MHz – 1GHz)

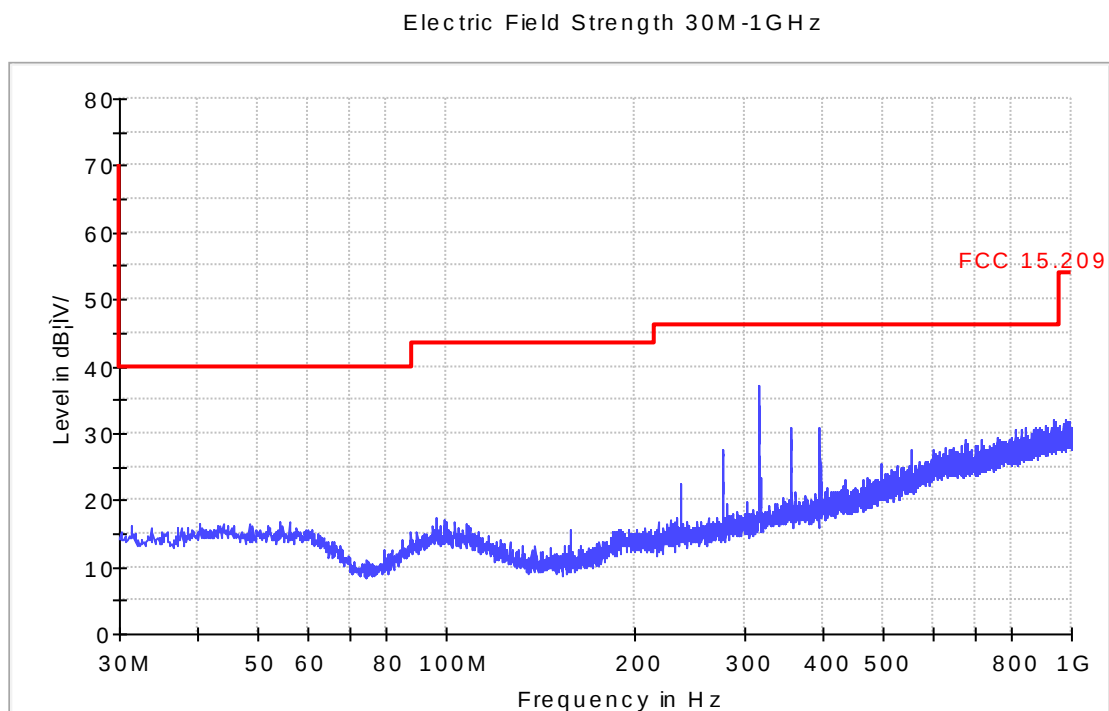


Figure 11: Test figure of spurious emissions, mode A.2, Horizontal polarity (1GHz – 18GHz)

FCC Electric Field Strength 1-18GHz operate on 2.4GHz

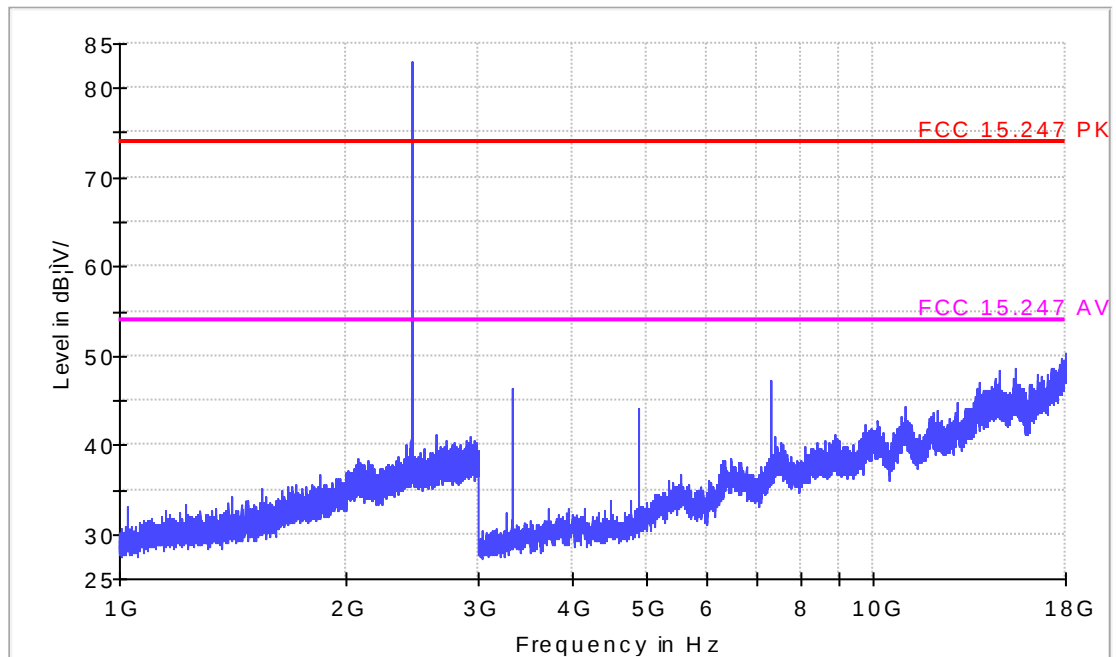


Figure 12: Test figure of spurious emissions, mode A.2, Vertical polarity (1GHz – 18GHz)

FCC Electric Field Strength 1-18GHz operate on 2.4GHz

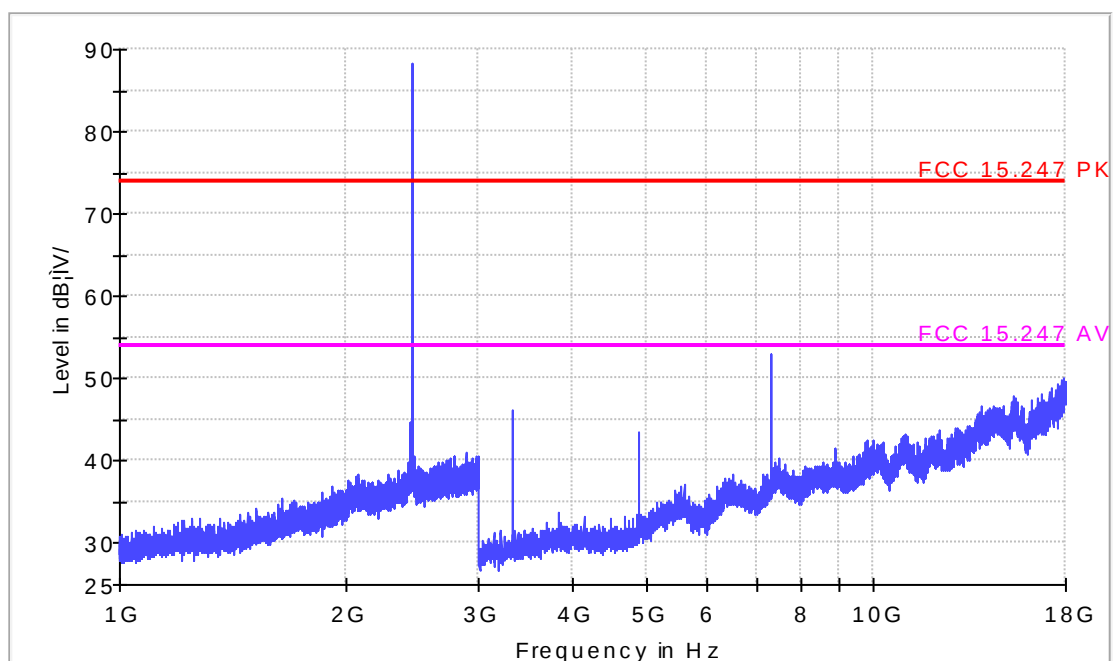


Figure 13: Test figure of spurious emissions, mode A.2, Horizontal polarity (18GHz – 25GHz)

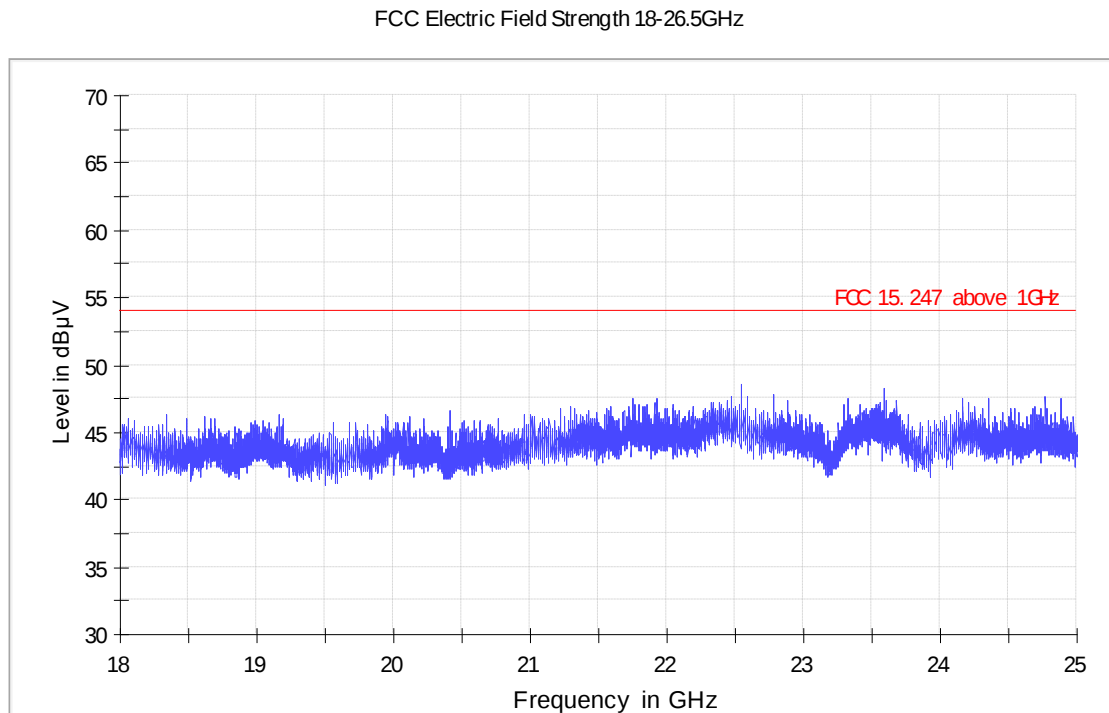


Figure 14: Test figure of spurious emissions, mode A.2, Vertical polarity (18GHz – 25GHz)

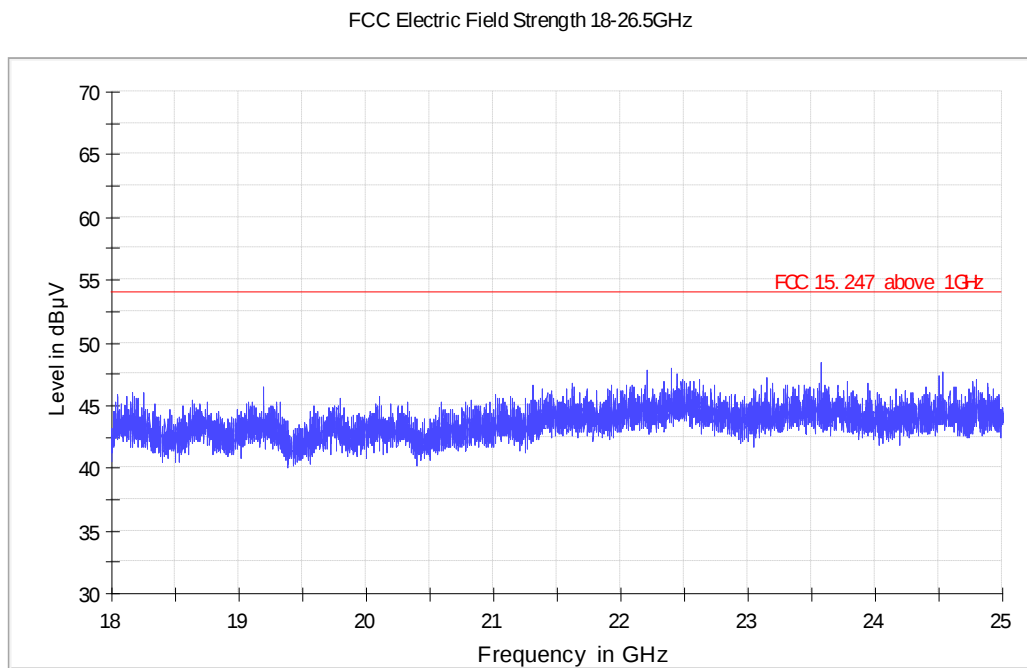


Figure 15: Test figure of spurious emissions, mode A.3, X plane (9kHz – 30MHz)

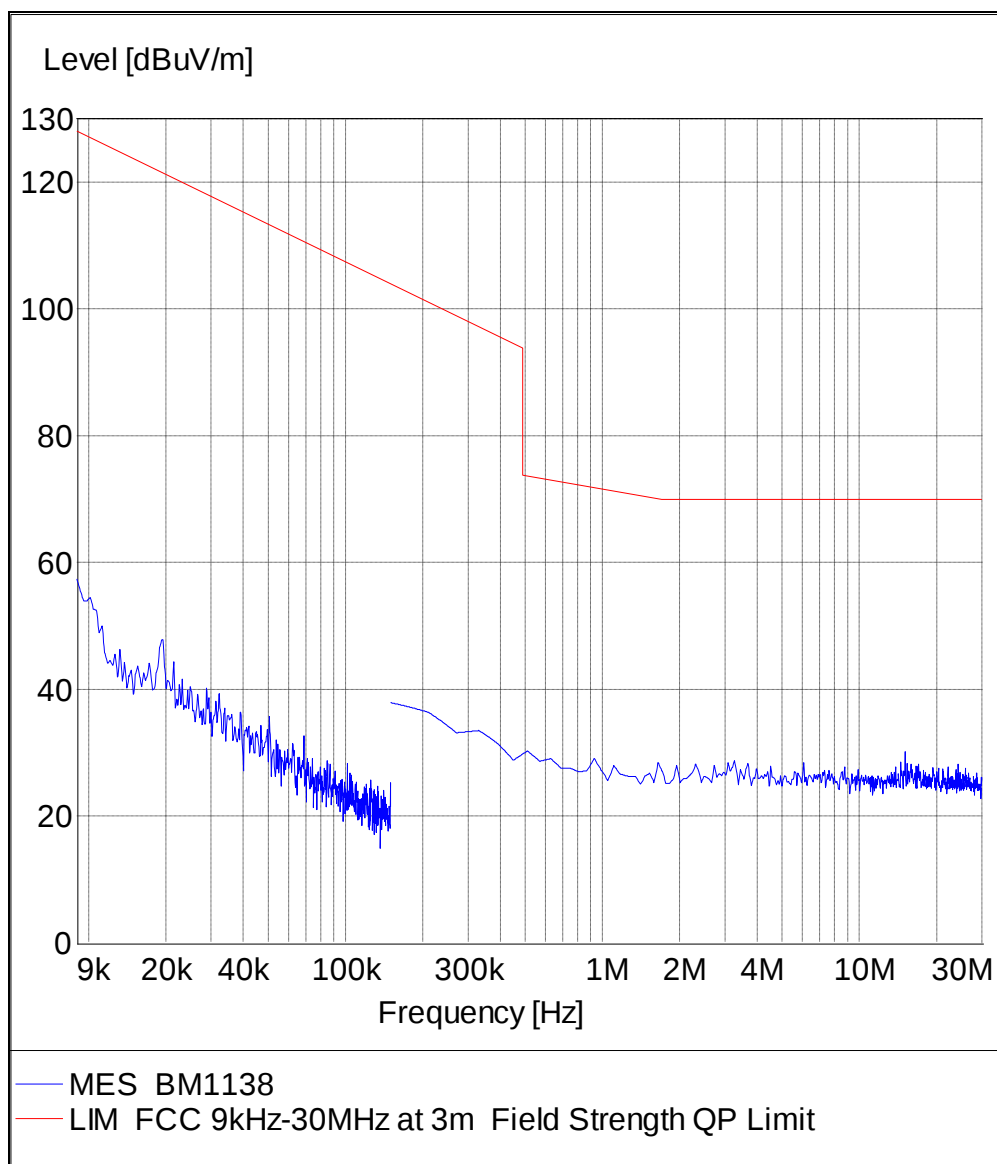


Figure 16: Test figure of spurious emissions, mode A.3, Horizontal polarity (30MHz – 1GHz)

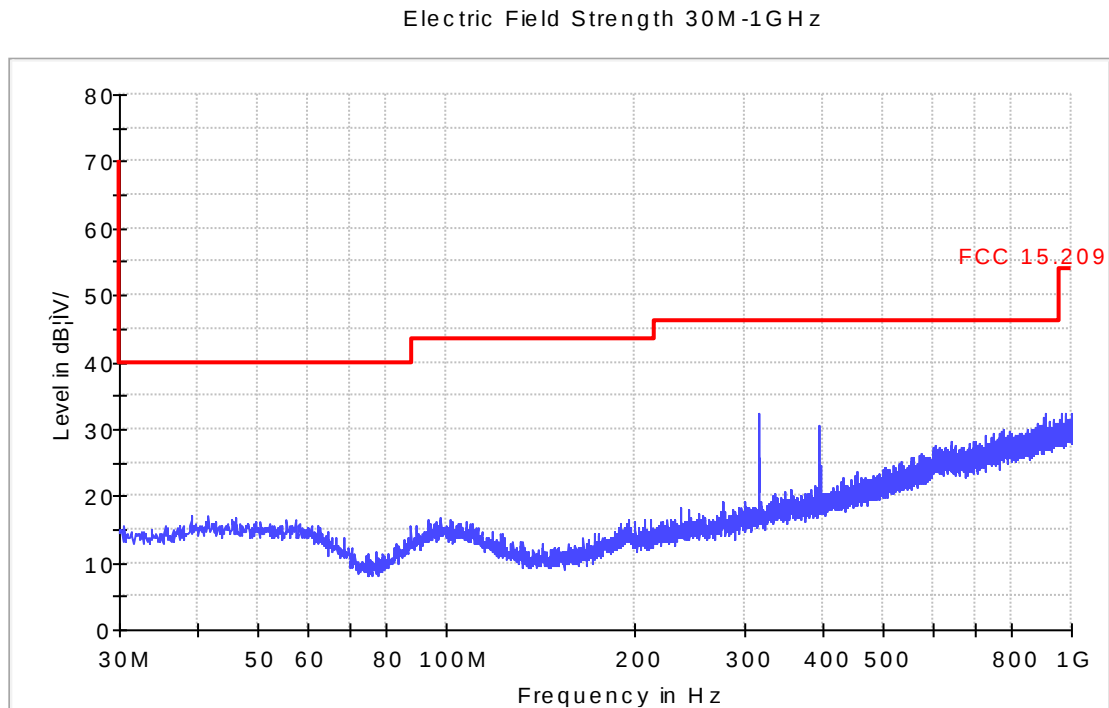


Figure 17: Test figure of spurious emissions, mode A.3, Vertical polarity (30MHz – 1GHz)

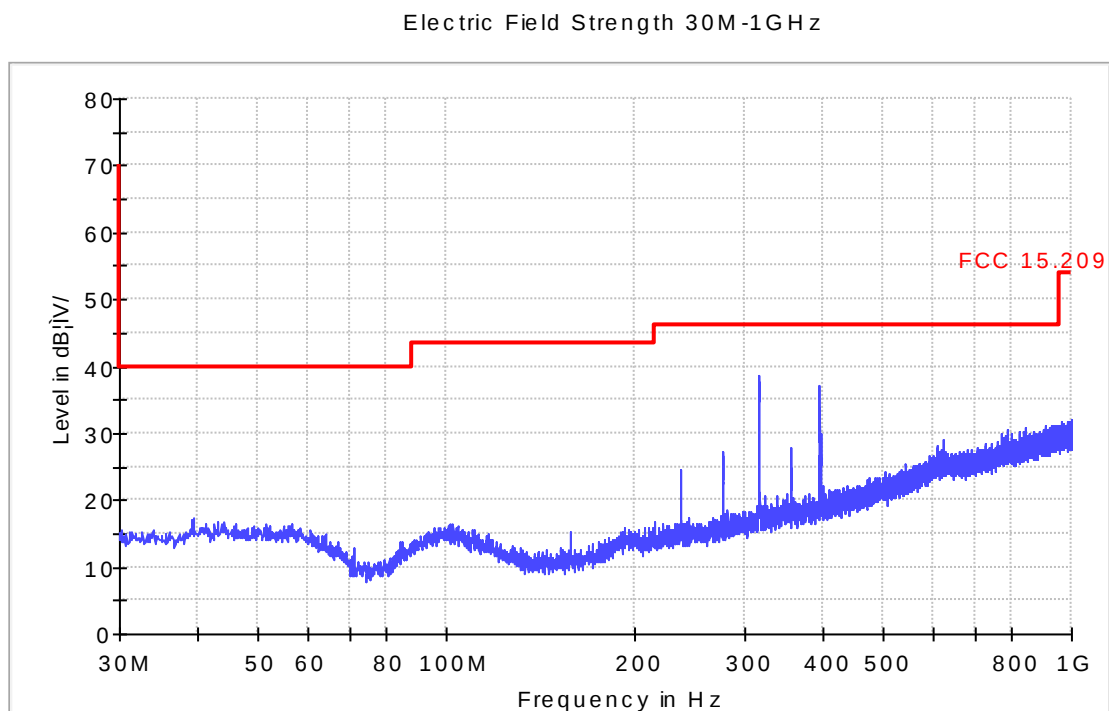


Figure 18: Test figure of spurious emissions, mode A.3, Horizontal polarity (1GHz –18GHz)

FCC Electric Field Strength 1-18GHz operate on 2.4GHz

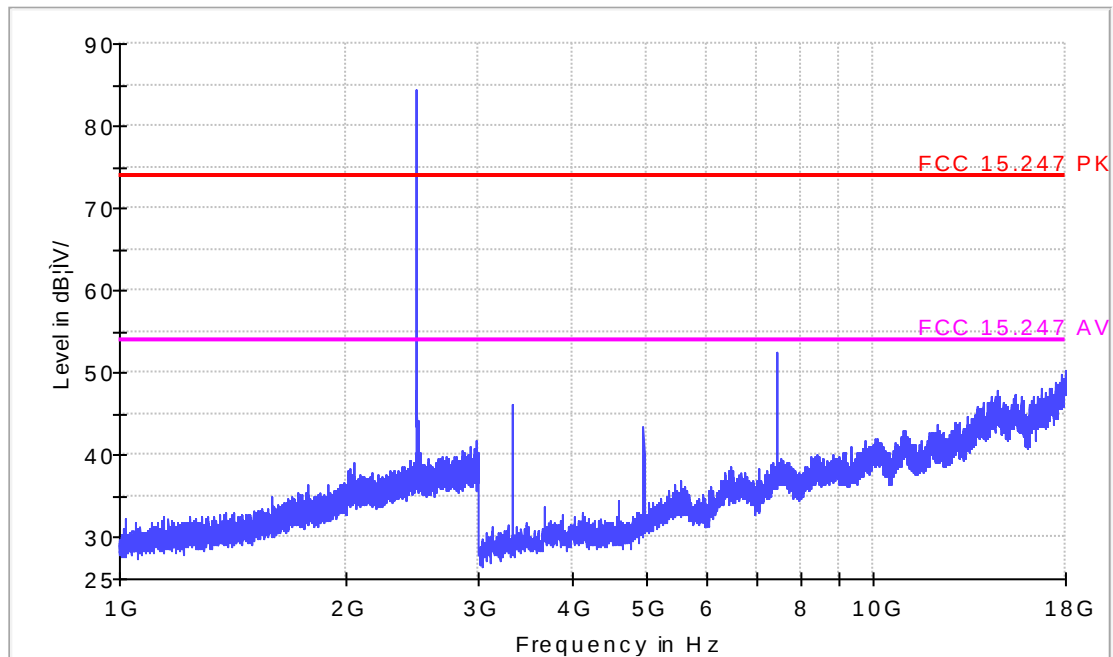


Figure 19: Test figure of spurious emissions, mode A.3, Vertical polarity (1GHz – 18GHz)

FCC Electric Field Strength 1-18GHz operate on 2.4GHz

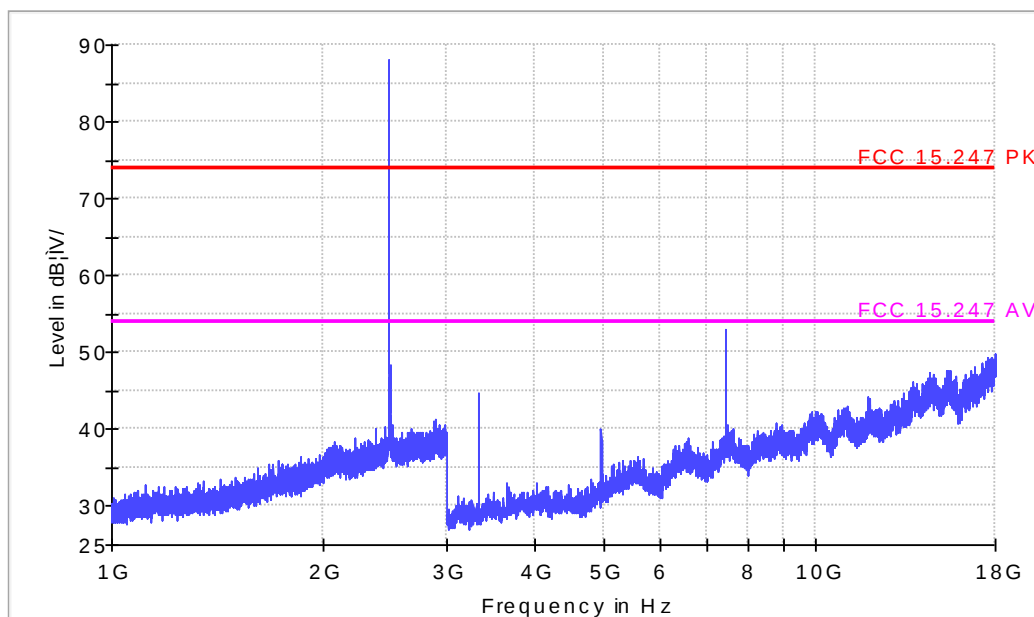


Figure 20: Test figure of spurious emissions, mode A.3, Horizontal polarity (18GHz –25GHz)

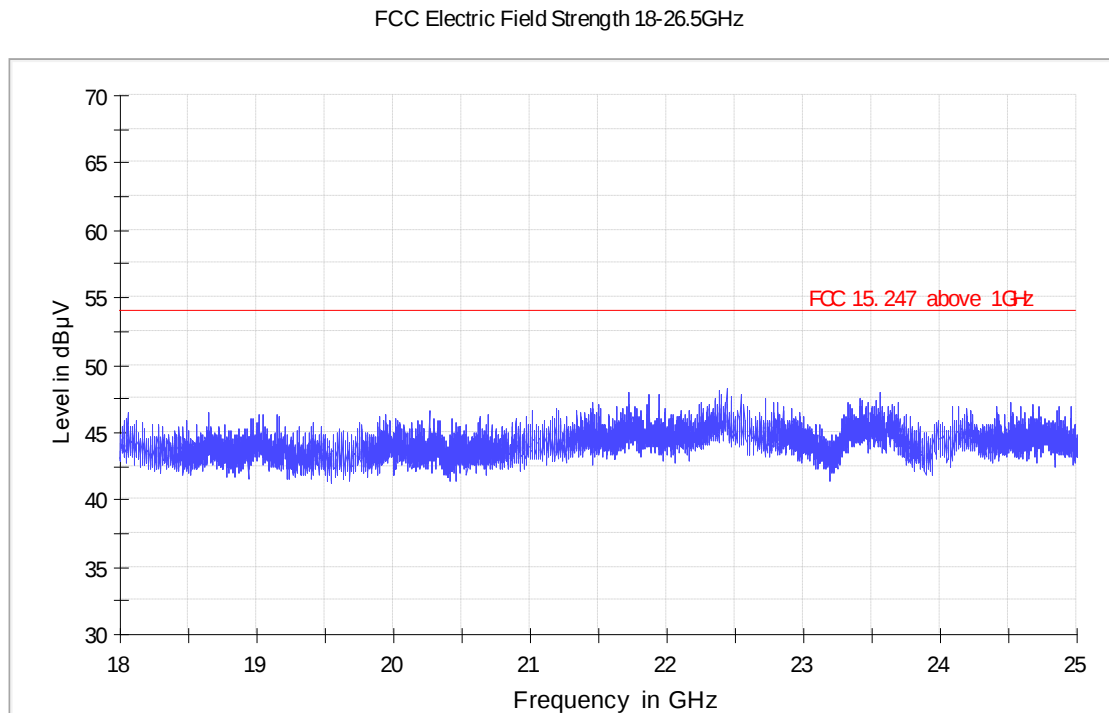


Figure 21: Test figure of spurious emissions, mode A.3, Vertical polarity (18GHz – 25GHz)

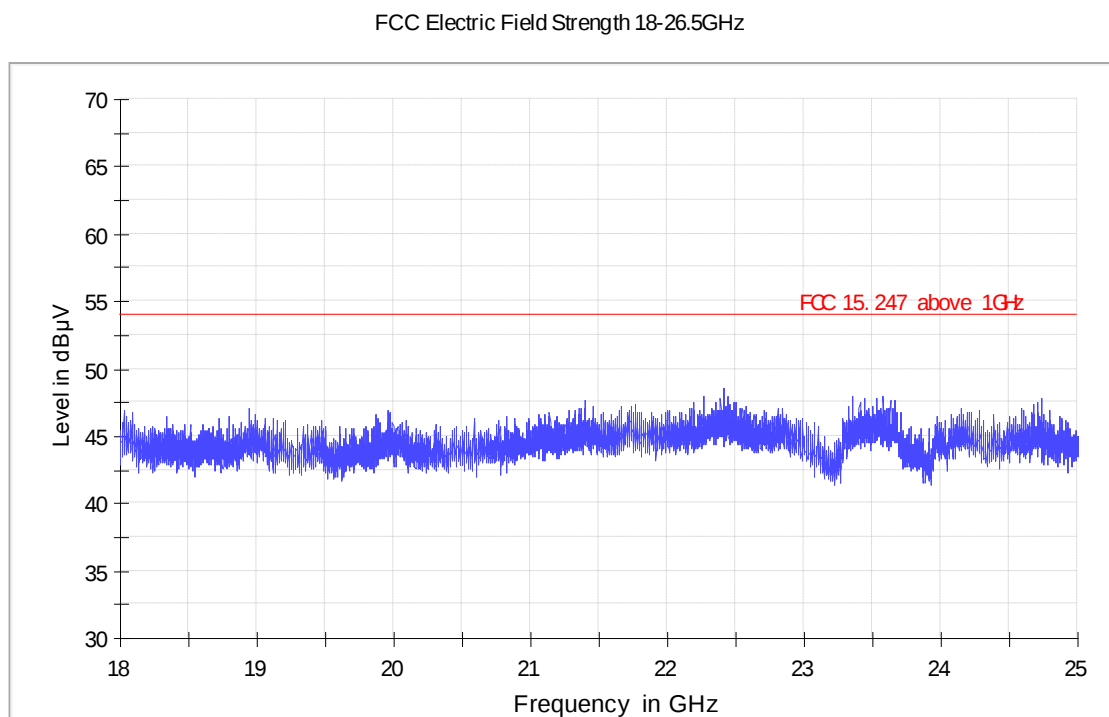
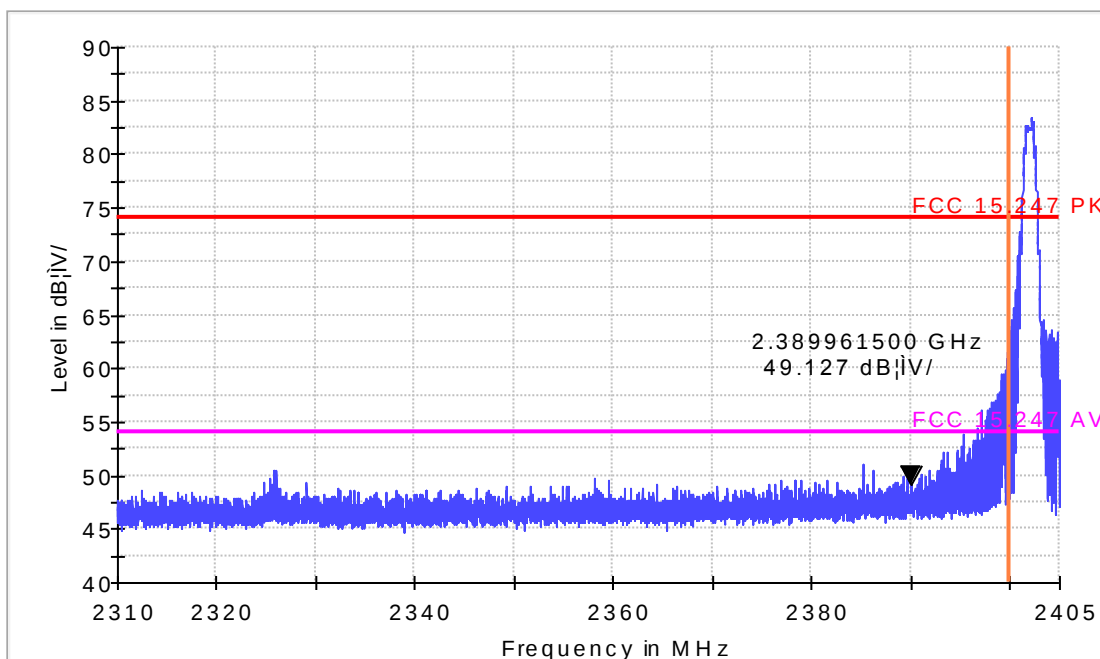


Figure 22: Test figure of Radiated emissions in restricted bands, Mode A.1, Horizontal

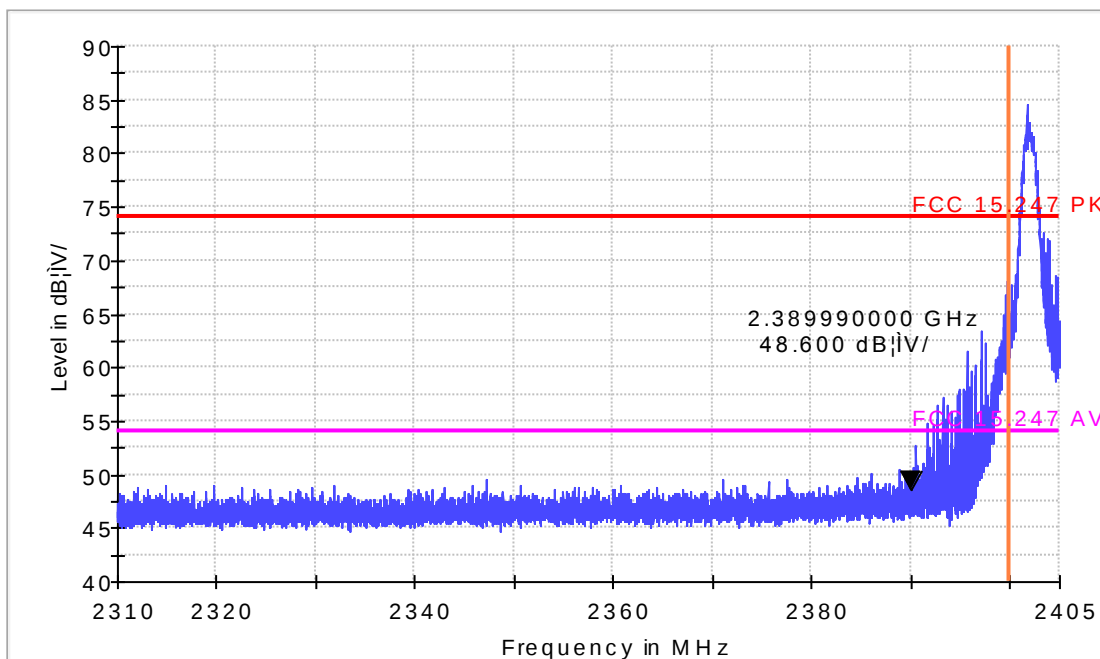
BDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



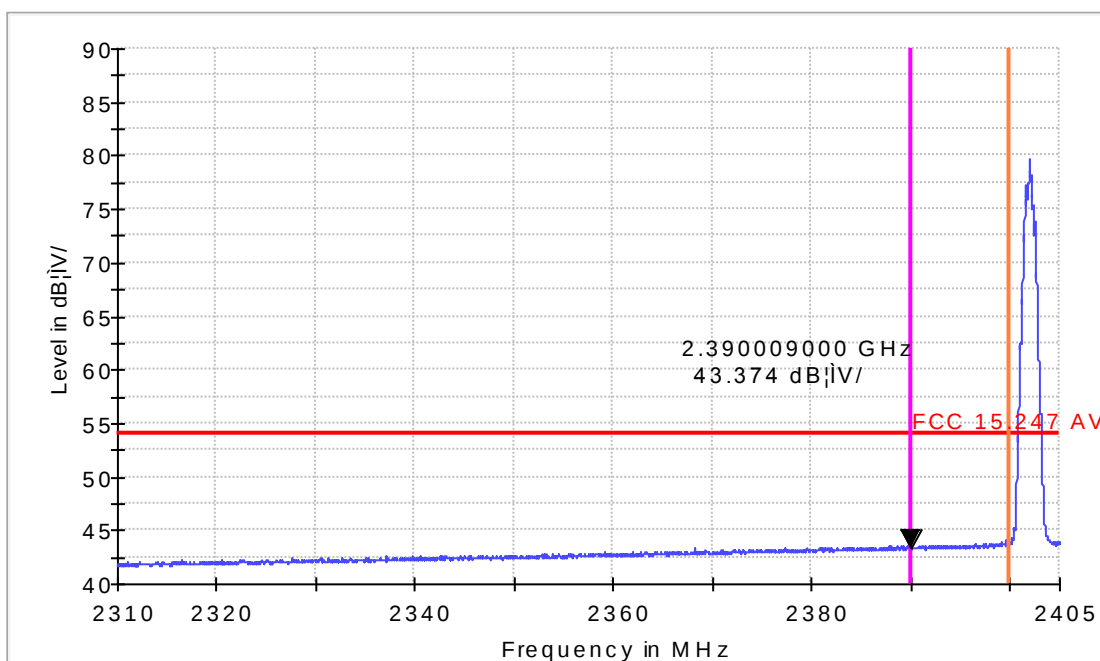
EDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



BDR

FCC Electric Field Strength 2.4GHz Bandedge-AV



EDR

FCC Electric Field Strength 2.4GHz Bandedge-AV

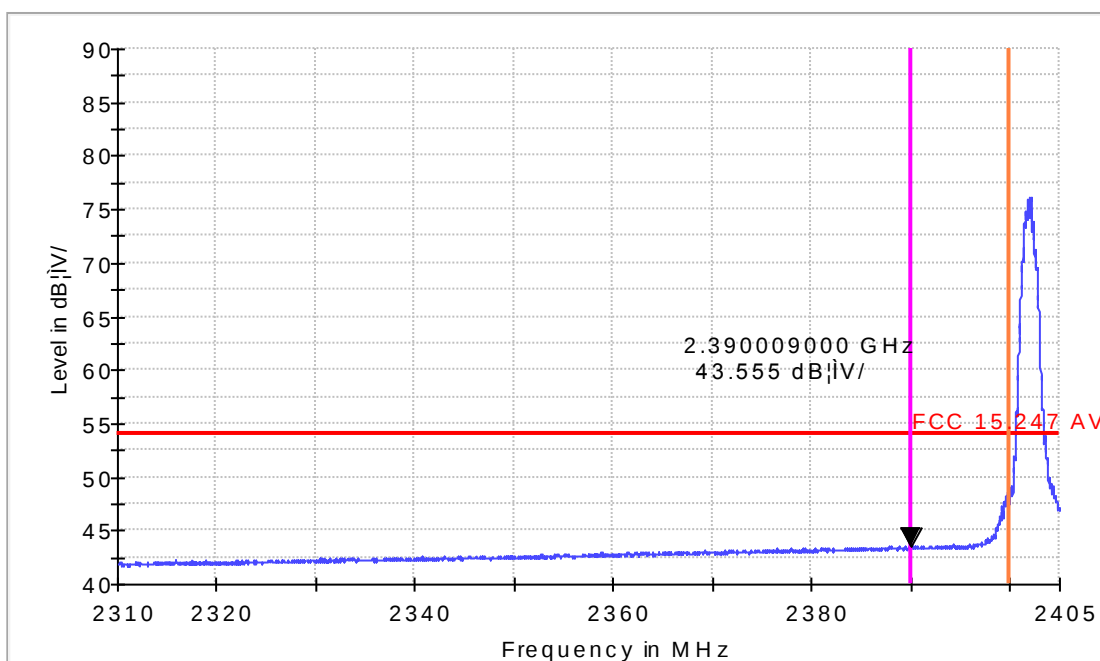
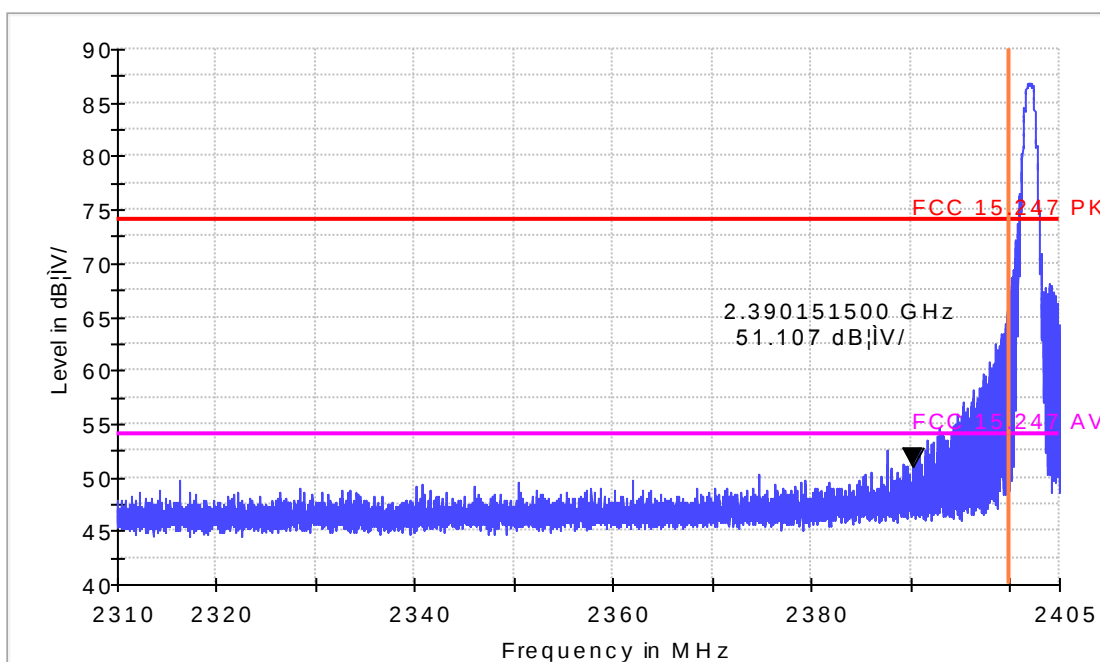


Figure 23: Test figure of Radiated emissions in restricted bands, Mode A.1, Vertical

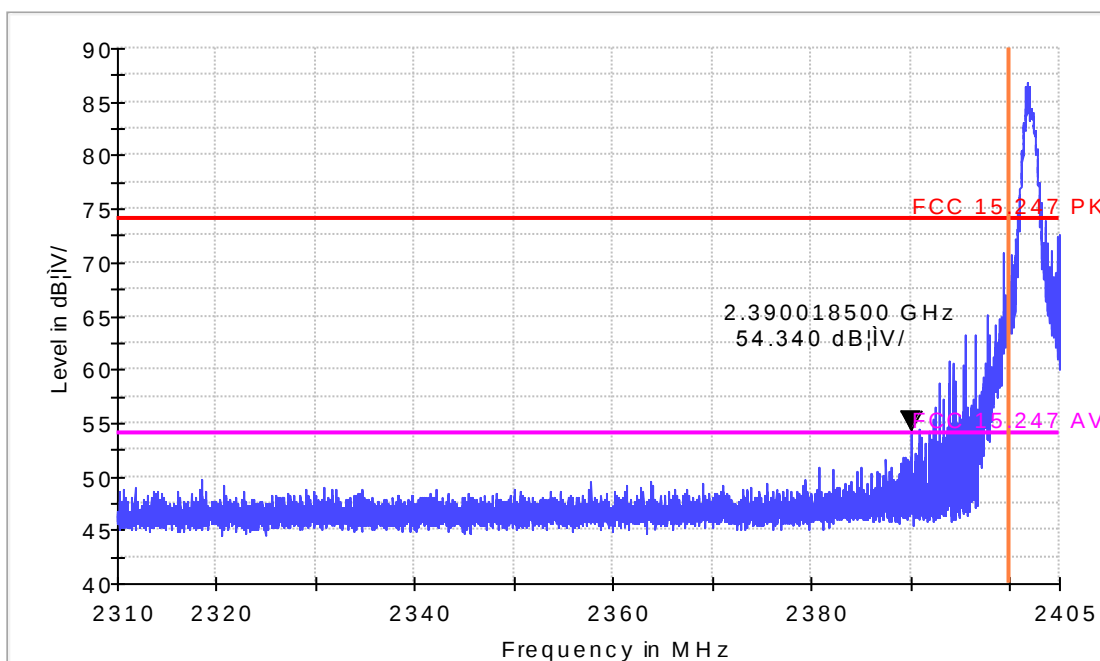
BDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



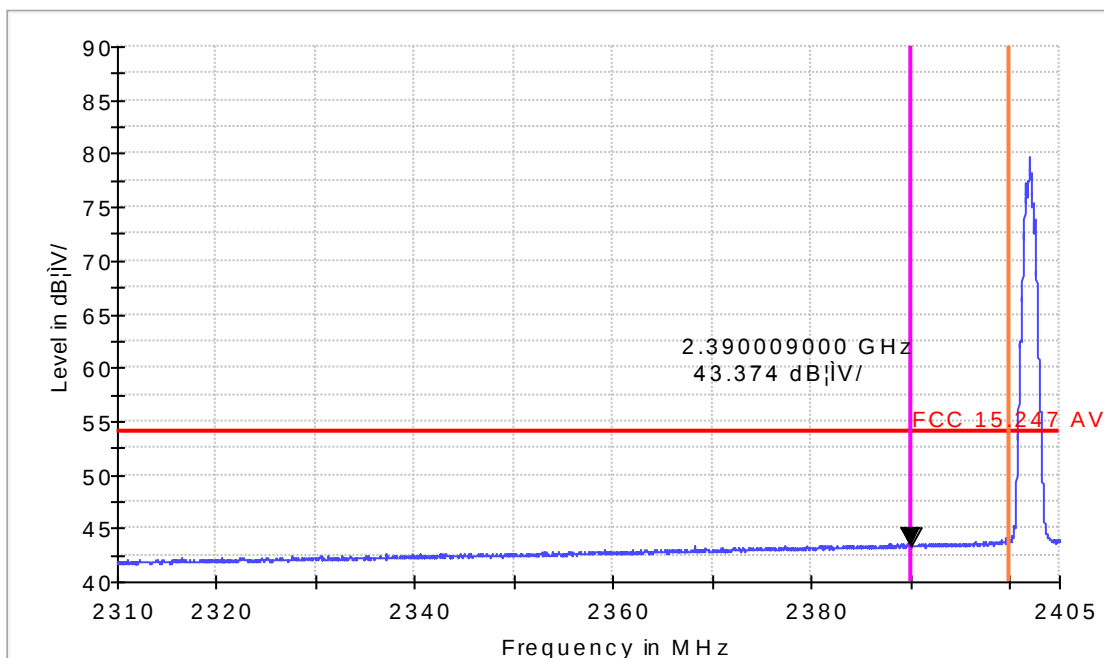
EDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



BDR

FCC Electric Field Strength 2.4GHz Bandedge-AV



EDR

FCC Electric Field Strength 2.4GHz Bandedge-AV

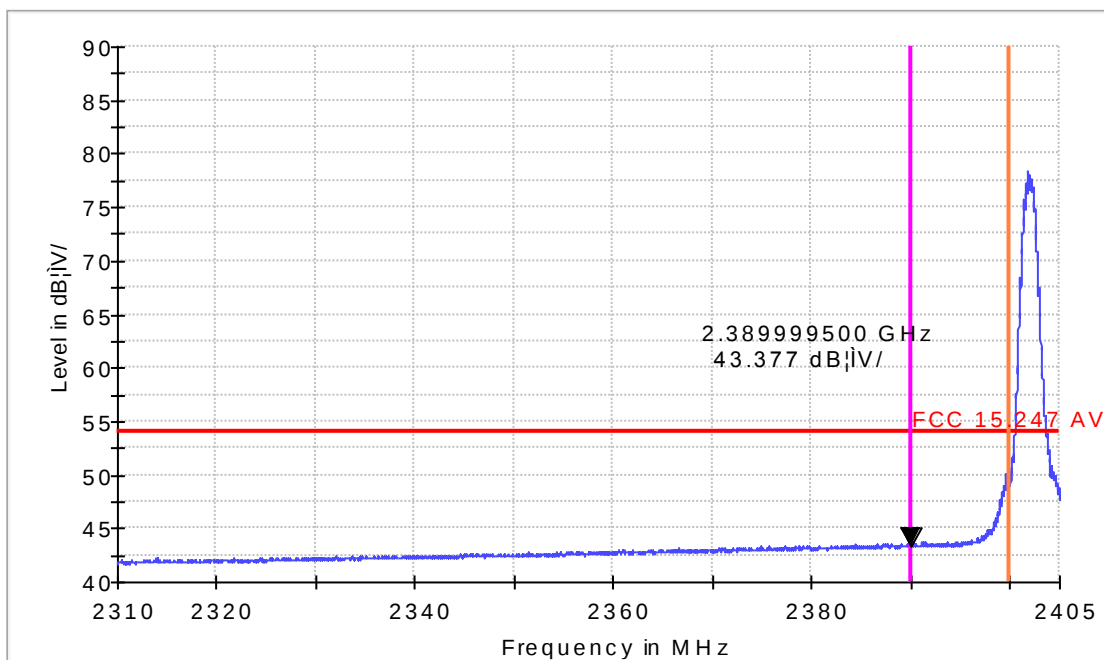
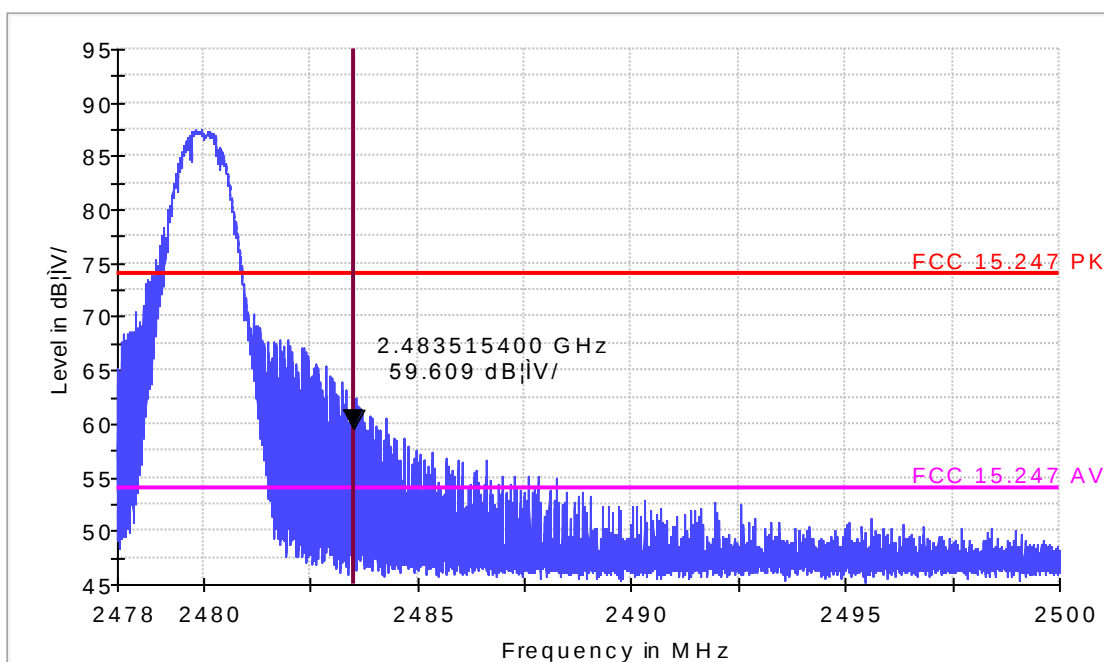


Figure 24: Test figure of Radiated emissions in restricted bands, Mode A.3, Horizontal

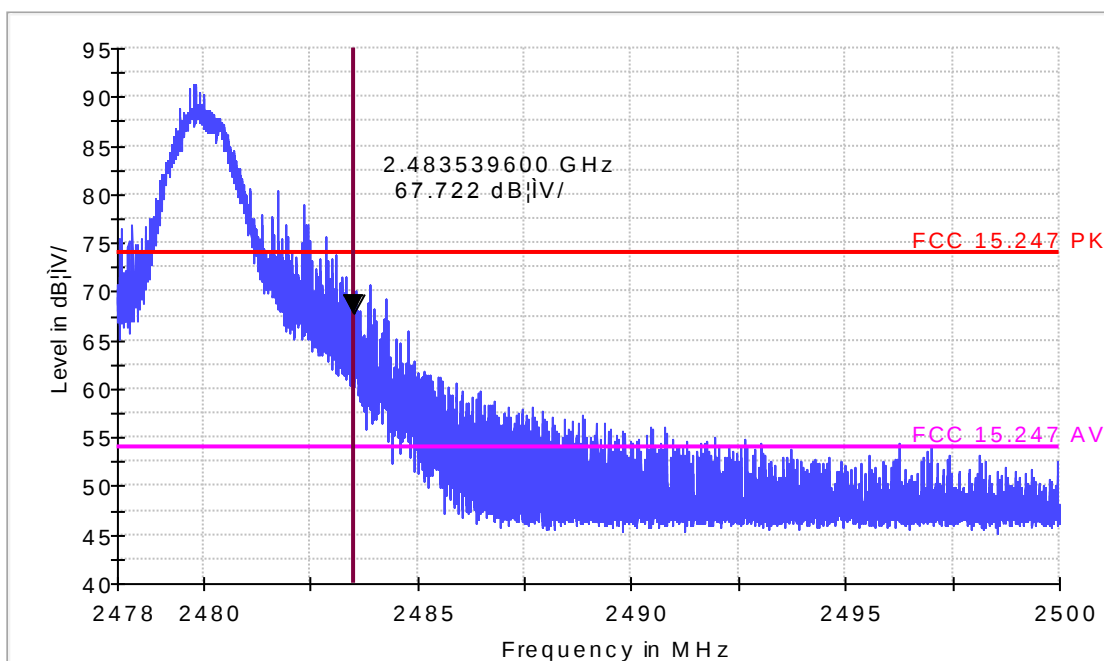
BDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



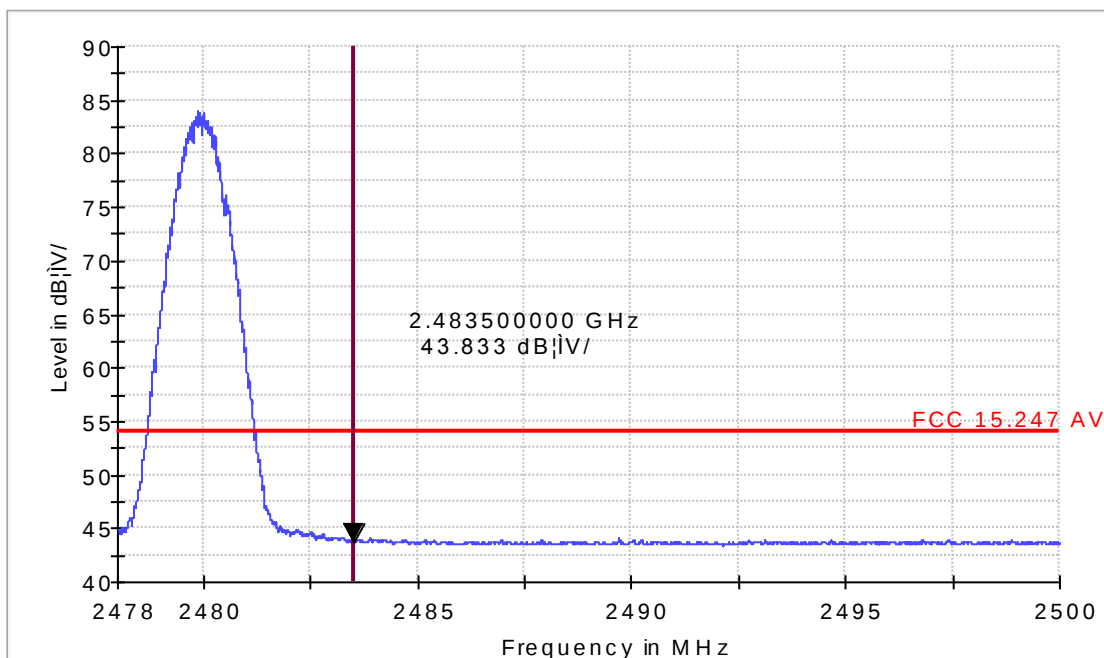
EDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



BDR

FCC Electric Field Strength 2.4GHz Bandedge-AV



EDR

FCC Electric Field Strength 2.4GHz Bandedge-AV

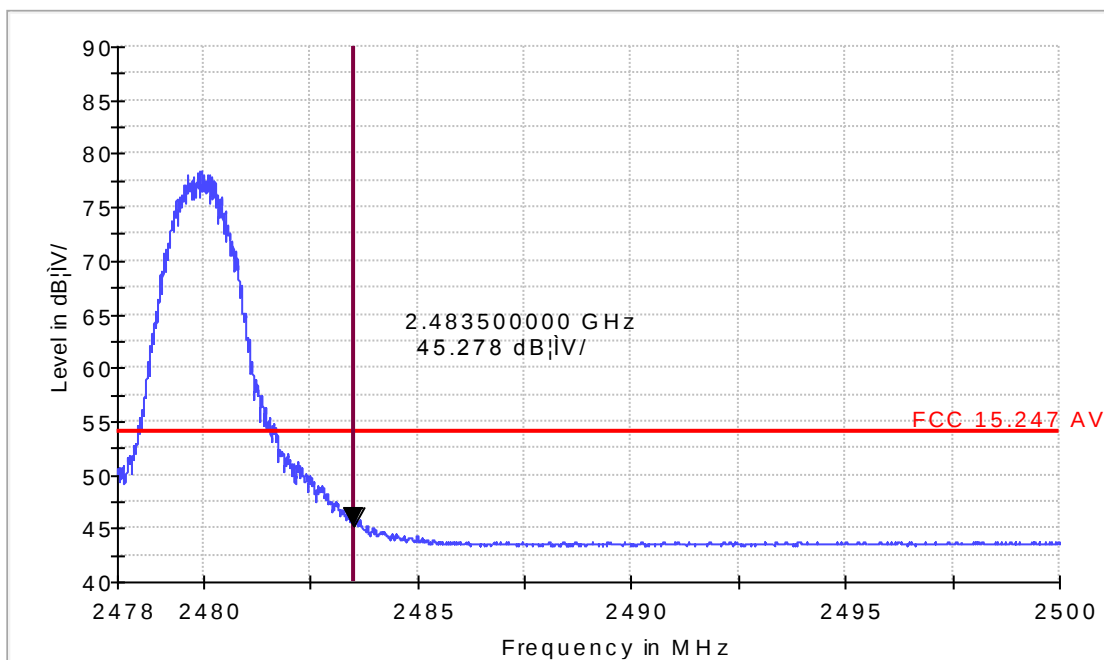
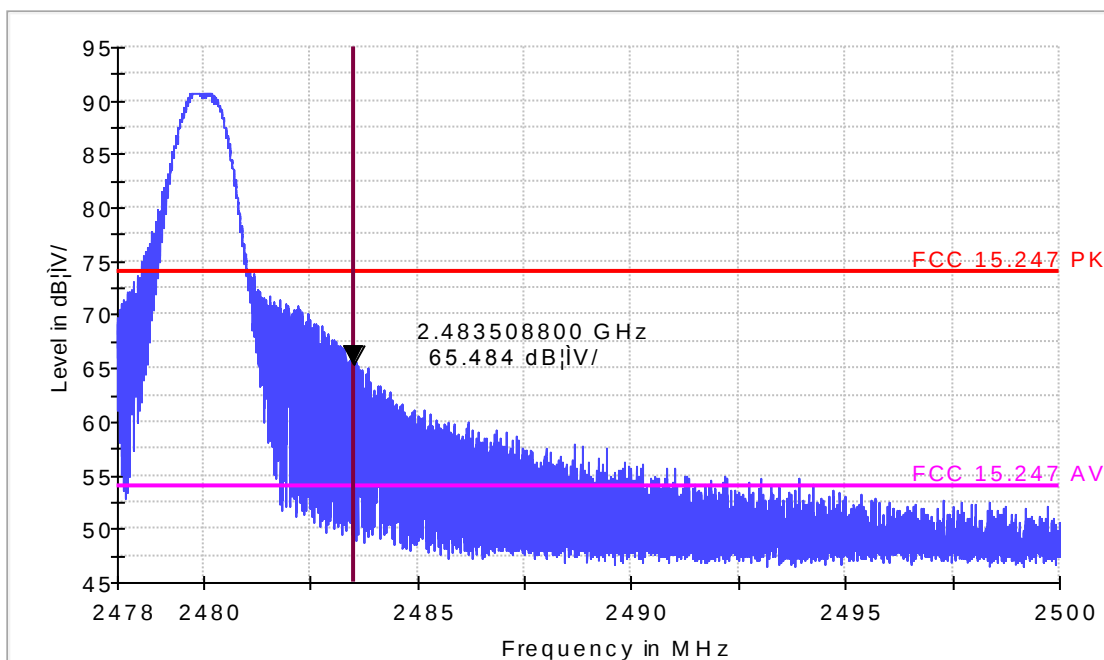


Figure 25: Test figure of Radiated emissions in restricted bands, Mode A.3, Vertical

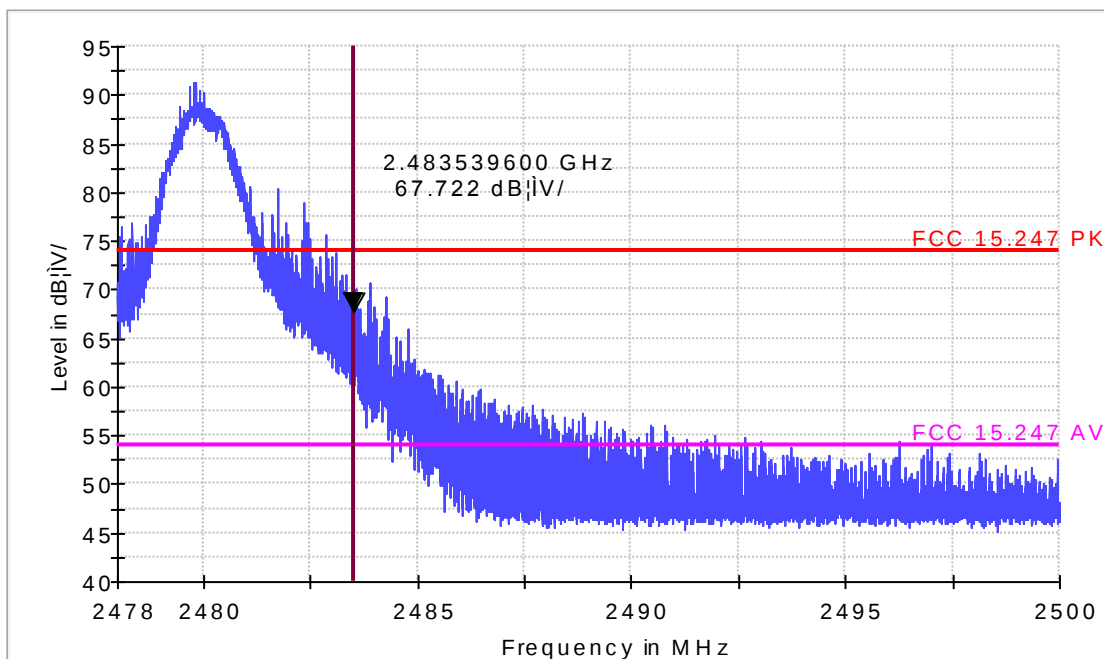
BDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



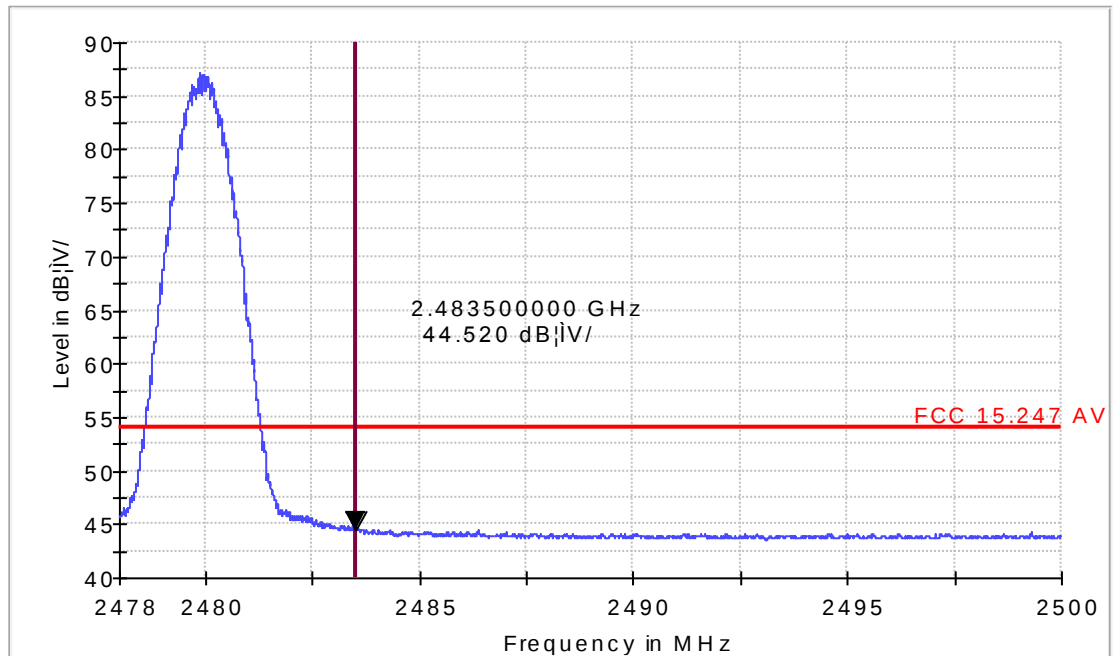
EDR

FCC Electric Field Strength 2.4GHz Bandedge-PK



BDR

FCC Electric Field Strength 2.4GHz Bandedge-AV



EDR

FCC Electric Field Strength 2.4GHz Bandedge-AV

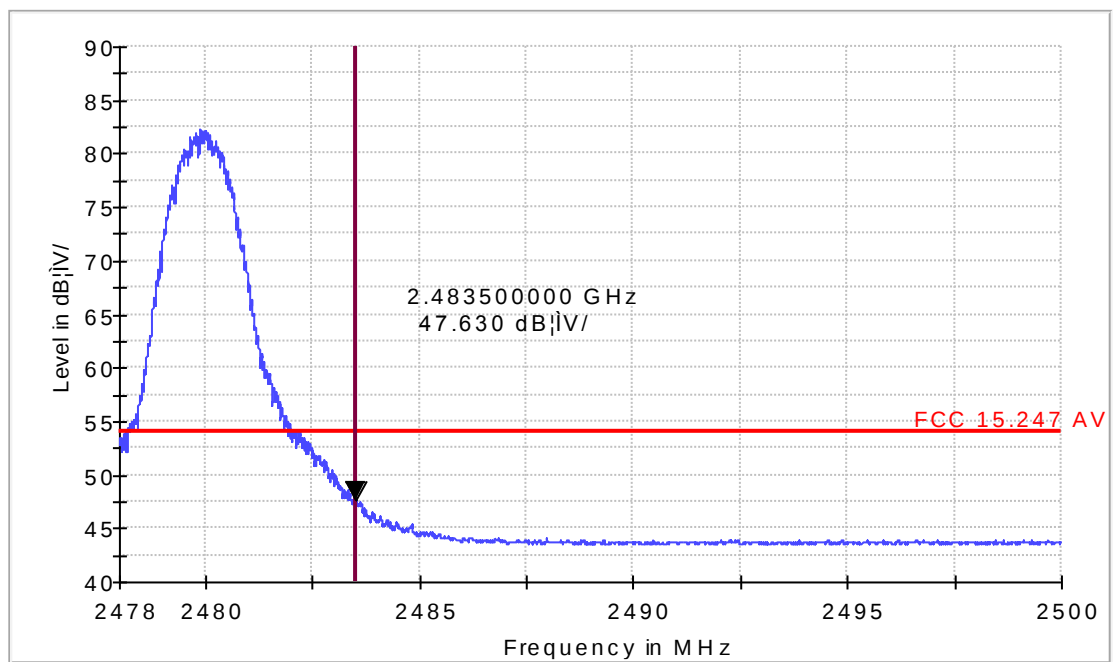
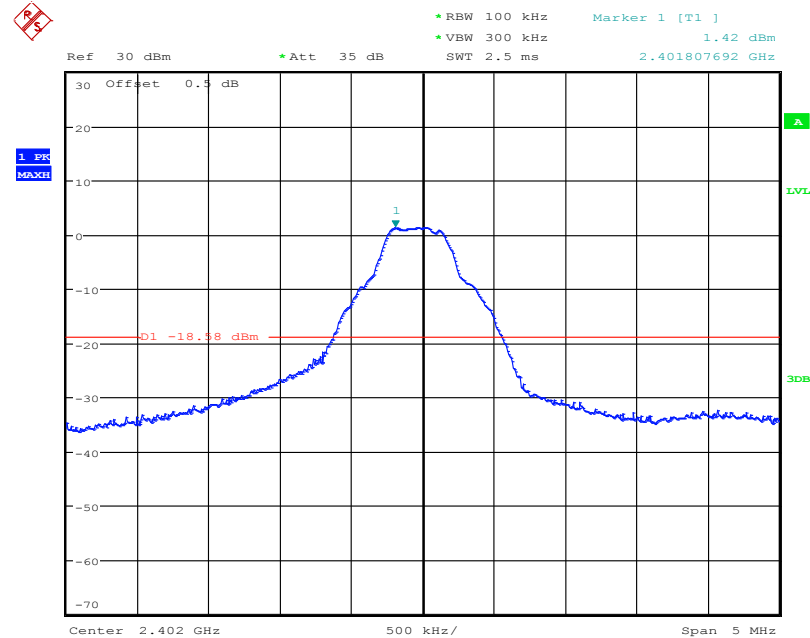
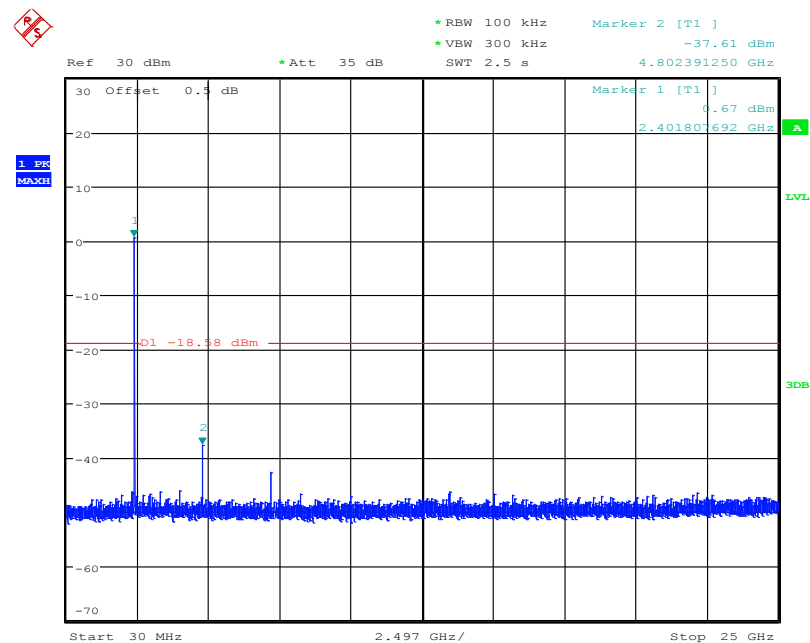


Figure 26: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.1

BDR

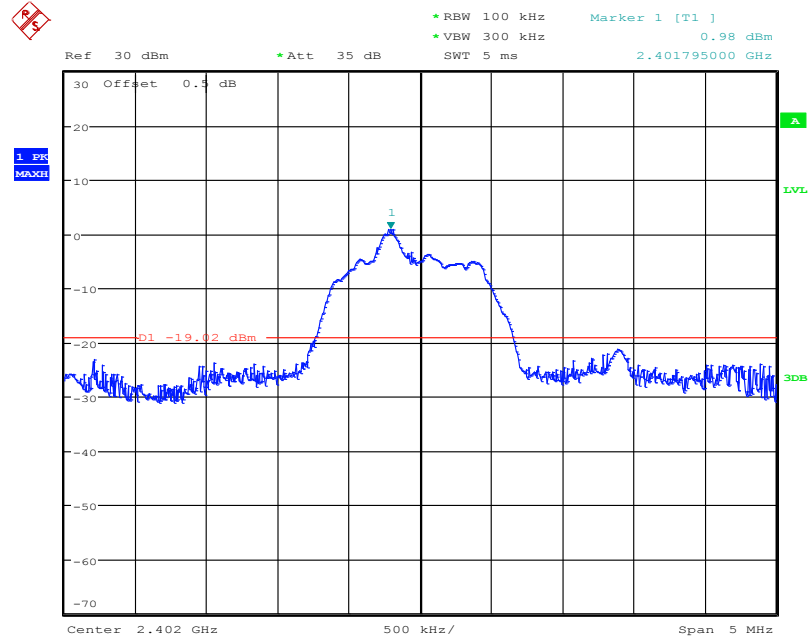


Date: 30.JUL.2016 12:04:58

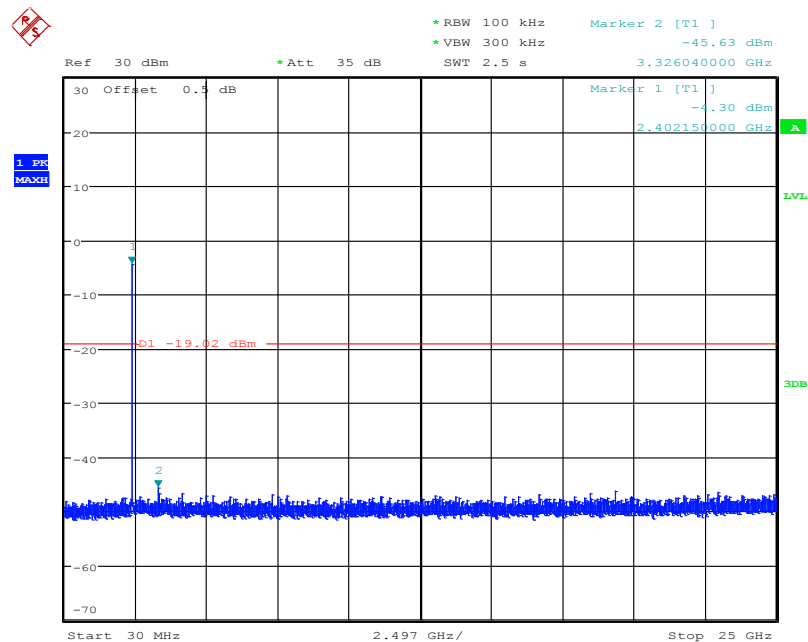


Date: 30.JUL.2016 12:06:14

EDR



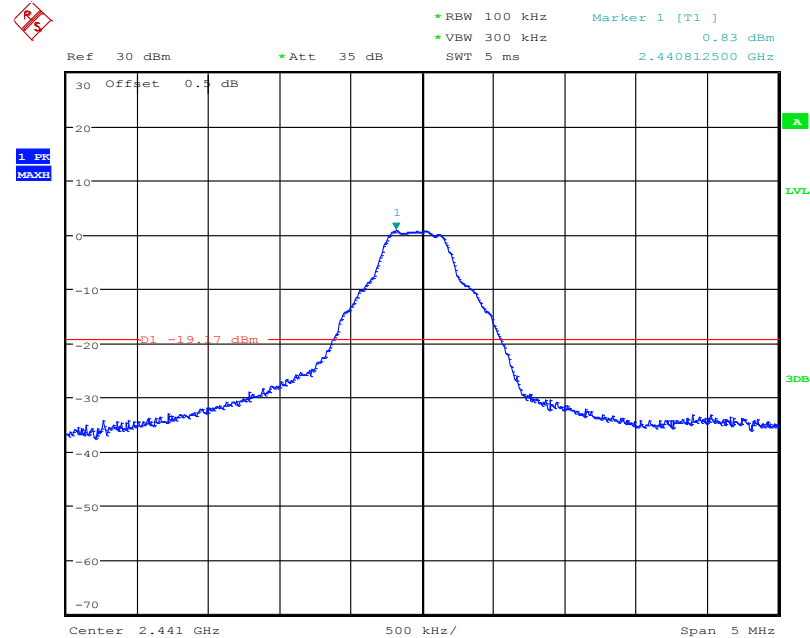
Date: 30.JUL.2016 12:42:51



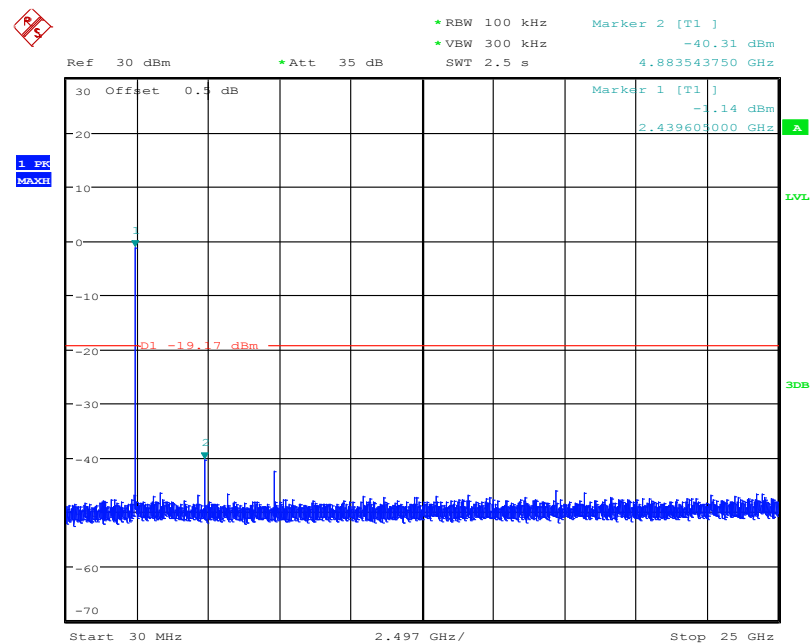
Date: 30.JUL.2016 12:44:15

Figure 27: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.2

BDR

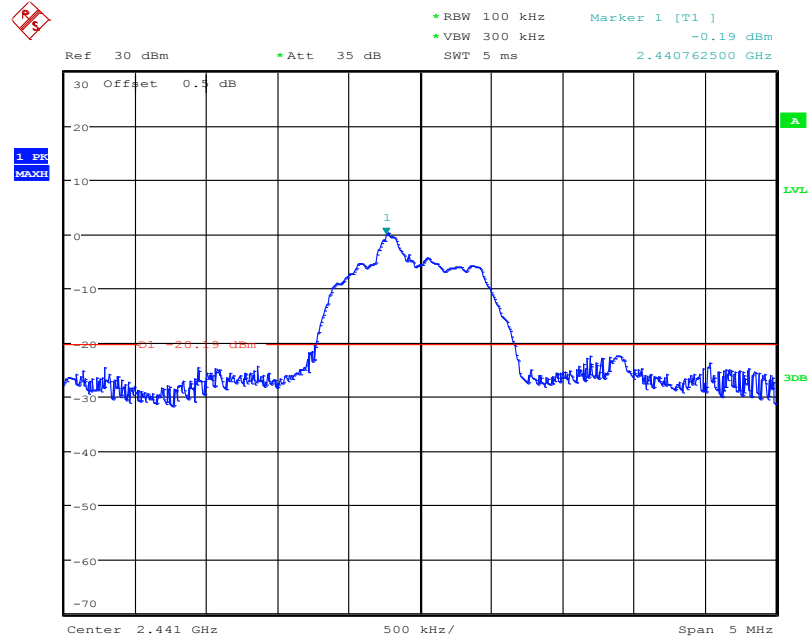


Date: 30.JUL.2016 12:07:50

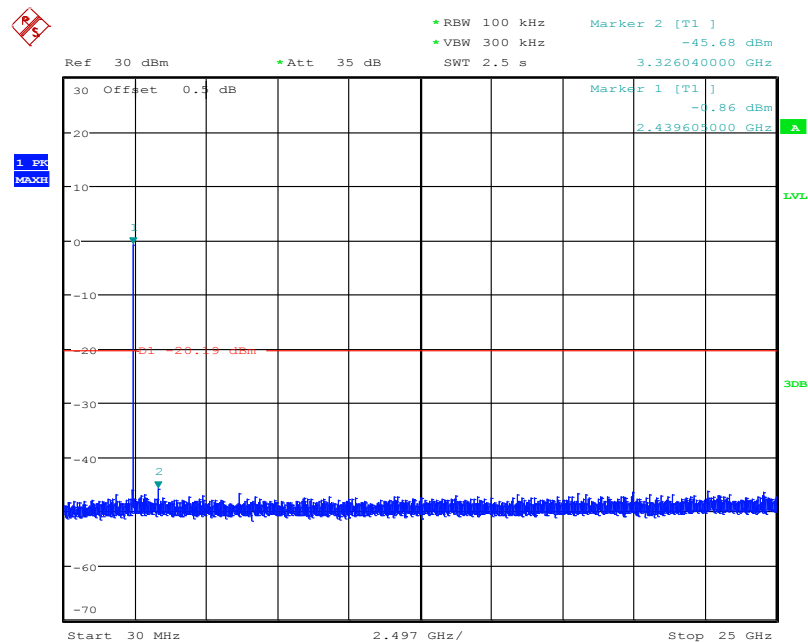


Date: 30.JUL.2016 12:28:16

EDR



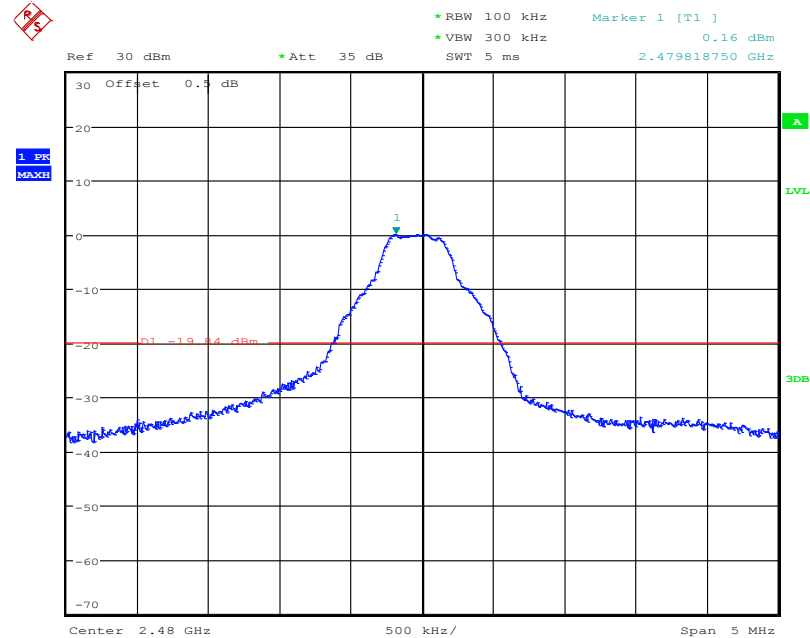
Date: 30.JUL.2016 12:45:42



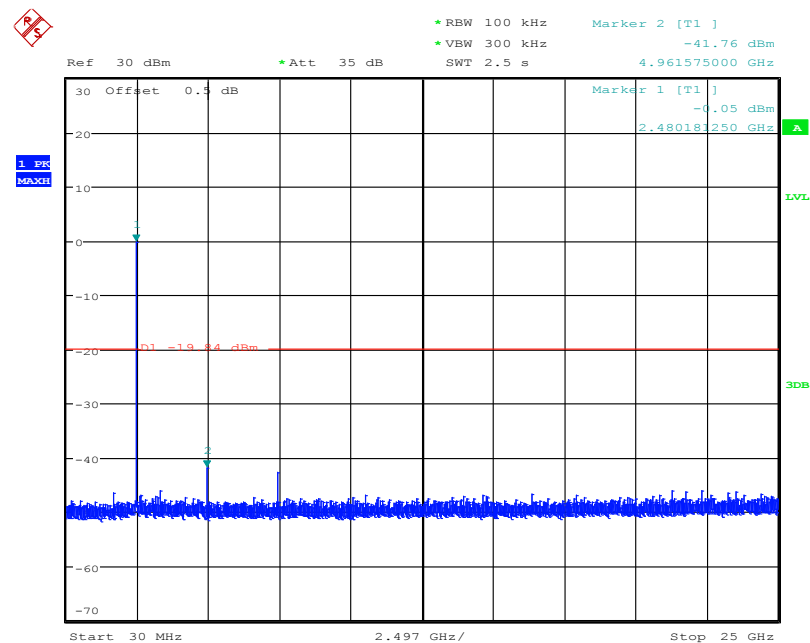
Date: 30.JUL.2016 12:47:18

Figure 28: Test figure of conducted emissions in 100kHz Bandwidth, Mode A.3

BDR

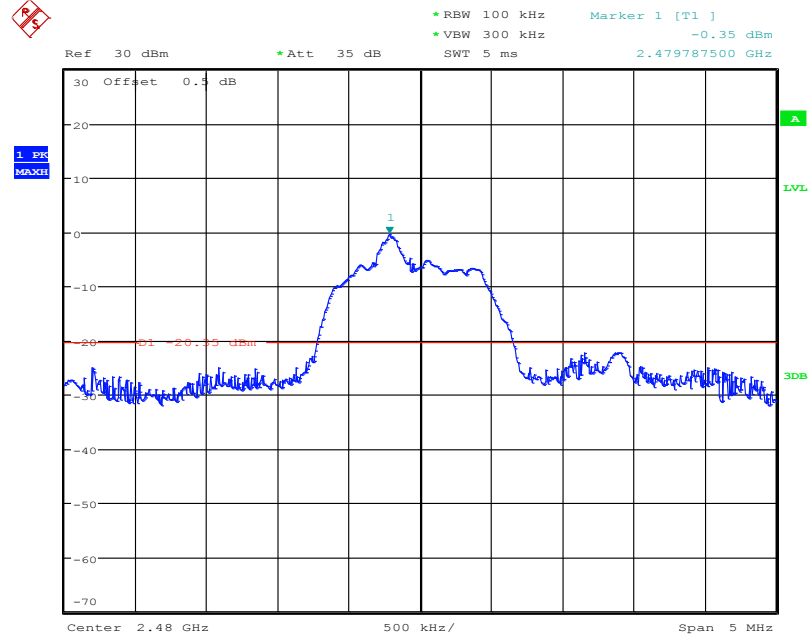


Date: 30.JUL.2016 12:29:27

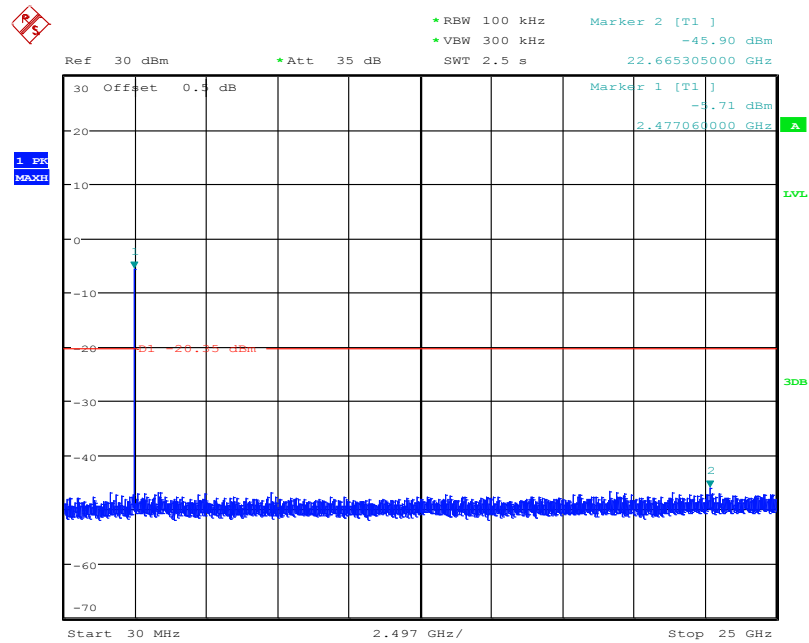


Date: 30.JUL.2016 12:30:48

EDR



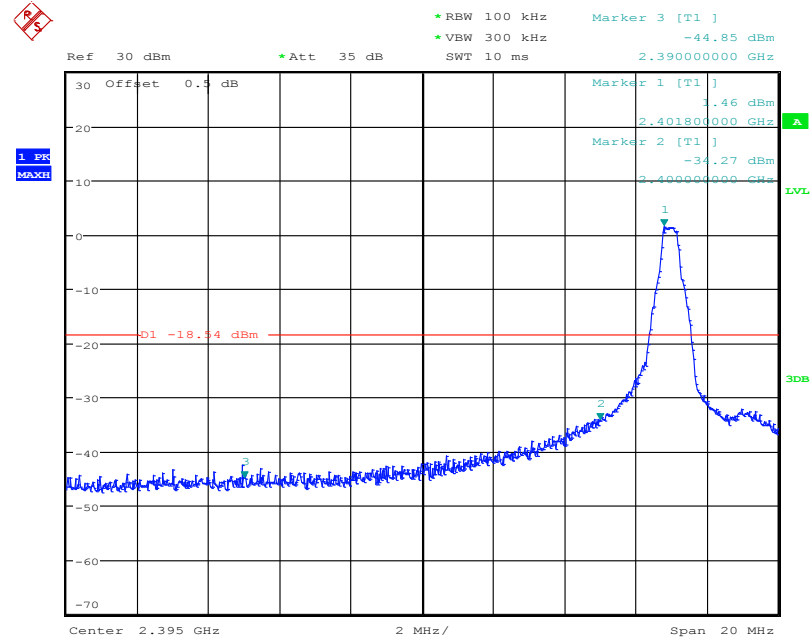
Date: 30.JUL.2016 12:48:36



Date: 30.JUL.2016 12:49:36

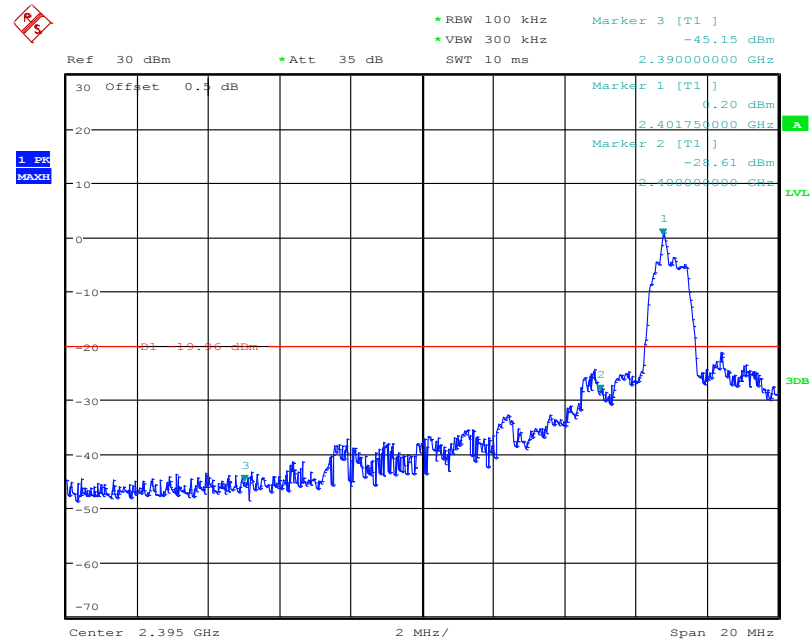
Figure 29: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.1

BDR



Date: 30.JUL.2016 12:36:31

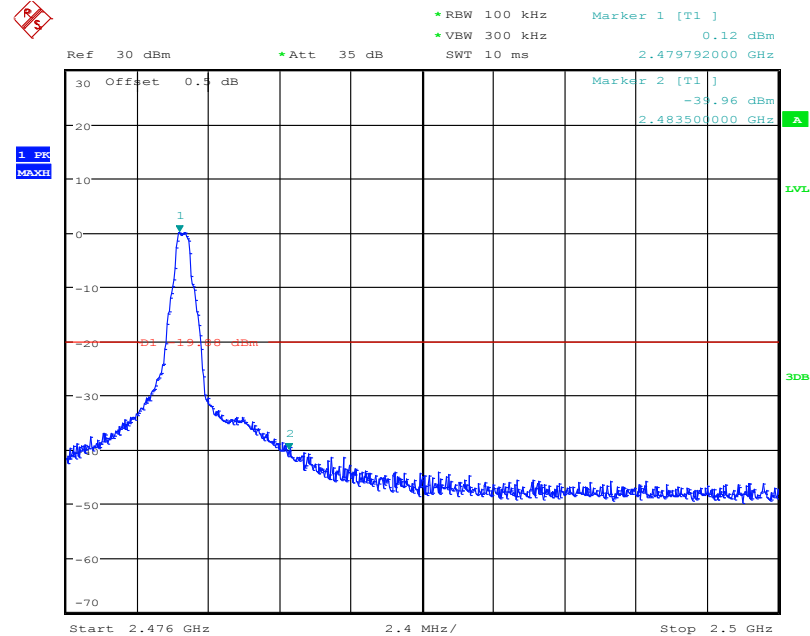
EDR



Date: 30.JUL.2016 12:52:19

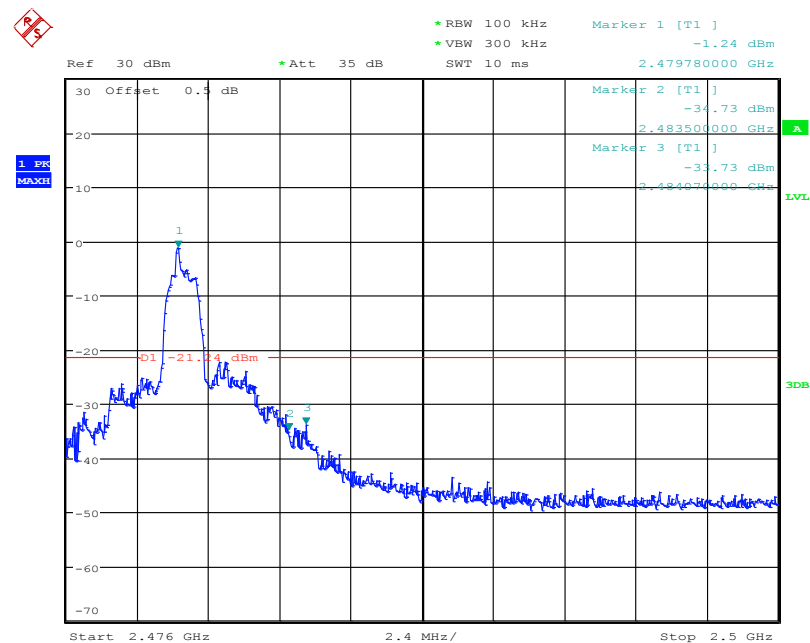
Figure 30: Test figure of Frequency Band Edge in 100kHz Bandwidth, Mode A.3

BDR



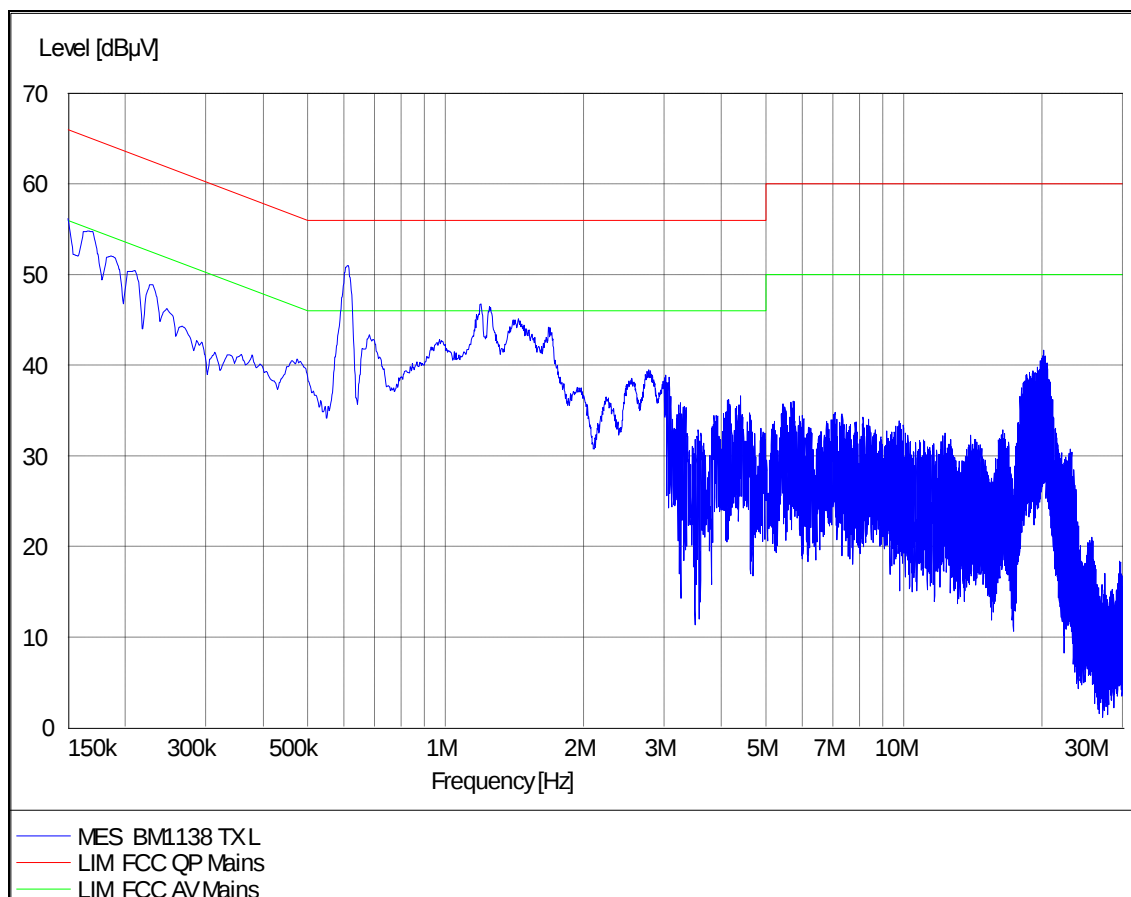
Date: 30.JUL.2016 12:41:12

EDR



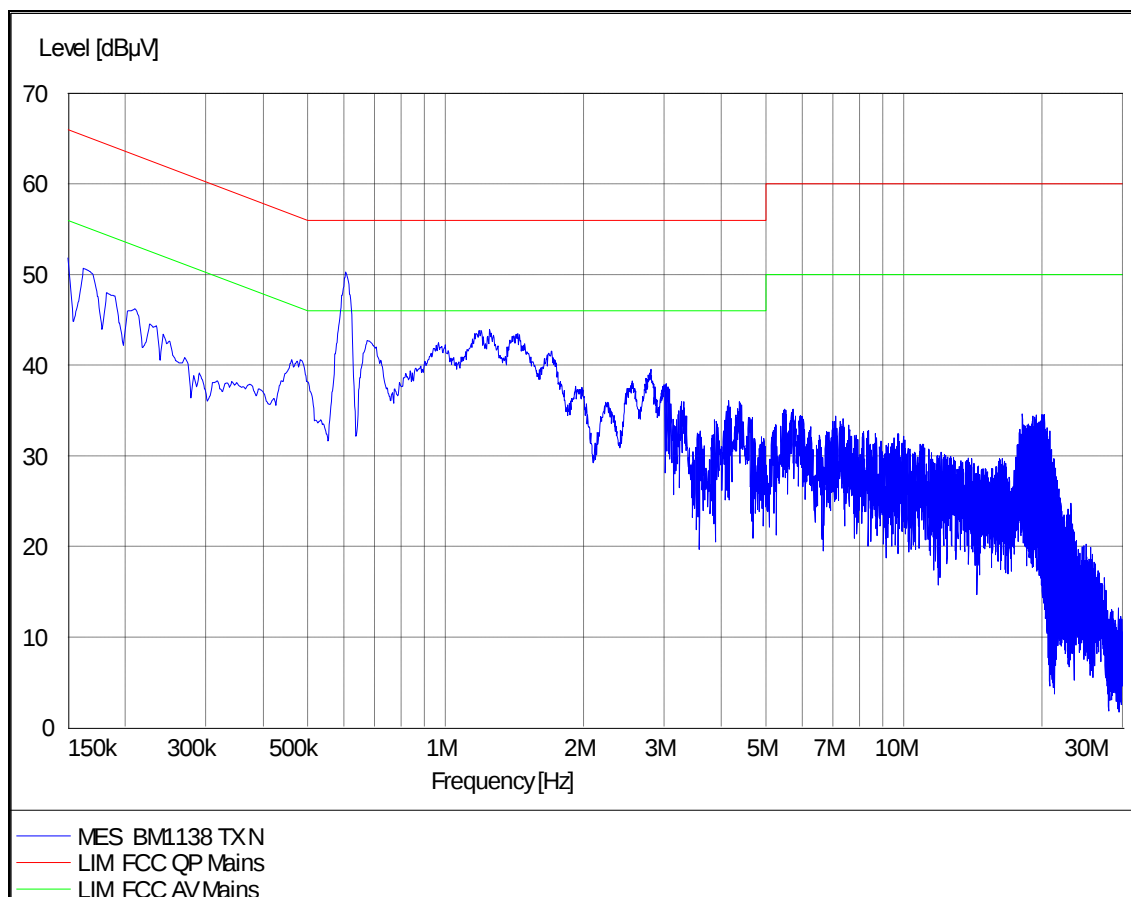
Date: 30.JUL.2016 12:59:13

Figure 31: Test figure of Conducted emissions, Mode B+D, line live



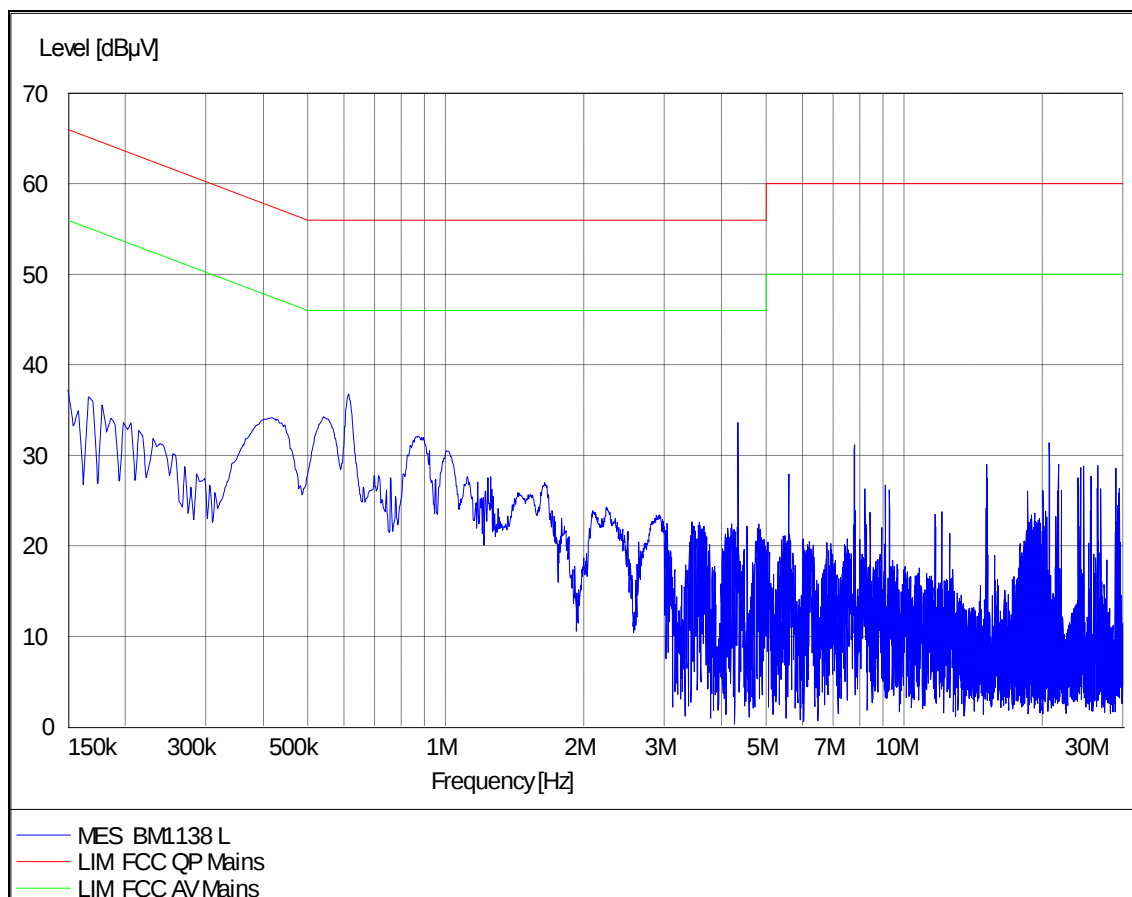
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)
0.15	9.7	39.7	49.4	66	23.9	33.6	56
0.17	9.7	38.5	48.2	65.0	24.2	33.9	55.0
0.606	9.8	37.9	47.7	56	28.9	38.7	46
1.194	9.8	30.3	40.1	56	19.2	29	46
1.246	9.8	30.1	39.9	56	19.2	29	46
1.442	9.8	29.5	39.3	56	18.4	28.2	46

Figure 32: Test figure of Conducted emissions, Mode B+D, line neutral



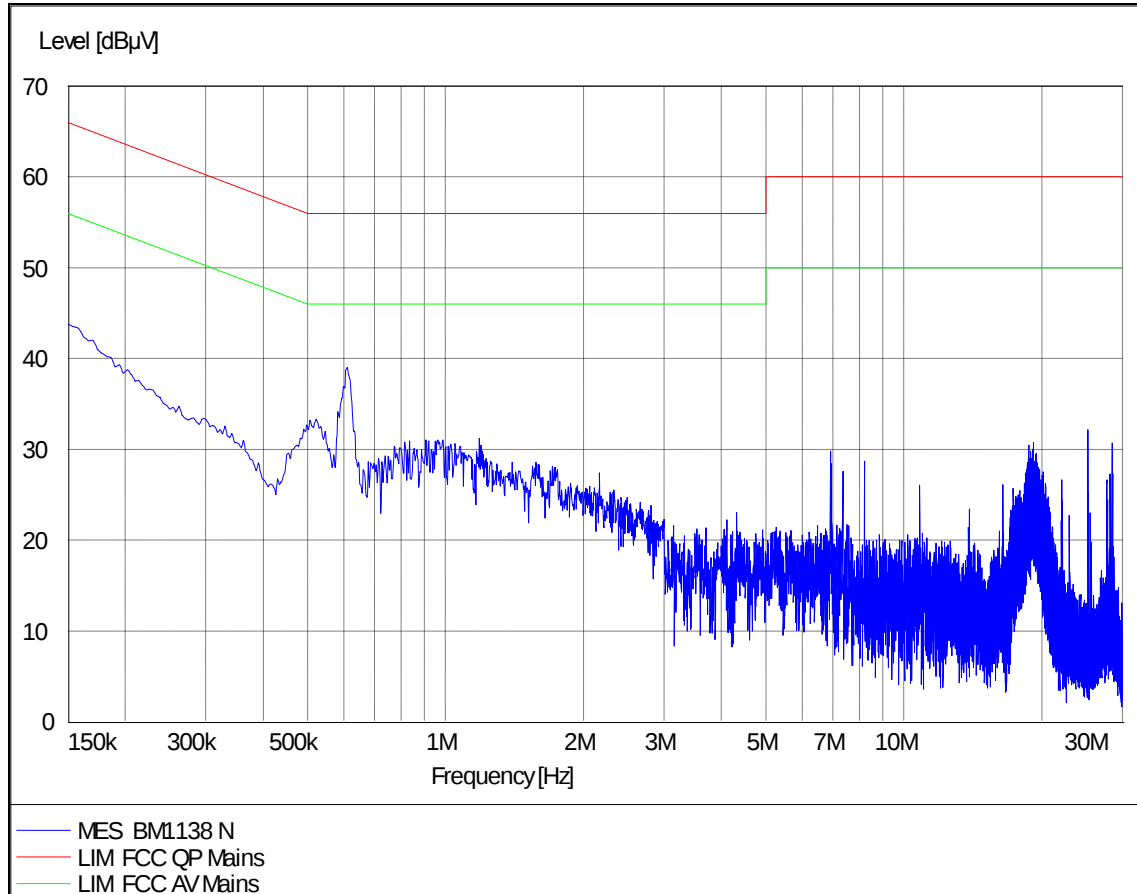
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.162	9.7	36.7	46.4	65.4	23.3	33	55.4
0.606	9.8	37.7	47.5	56	31.1	40.9	46
0.666	9.8	29.6	39.4	56	23.2	33	46
0.974	9.8	30.6	40.4	56	20.4	30.2	46
1.198	9.8	30.3	40.1	56	19.9	29.7	46
1.422	9.8	30.0	39.8	56	19.1	28.9	46

Figure 33: Test figure of Conducted emissions, Mode C+D, line live



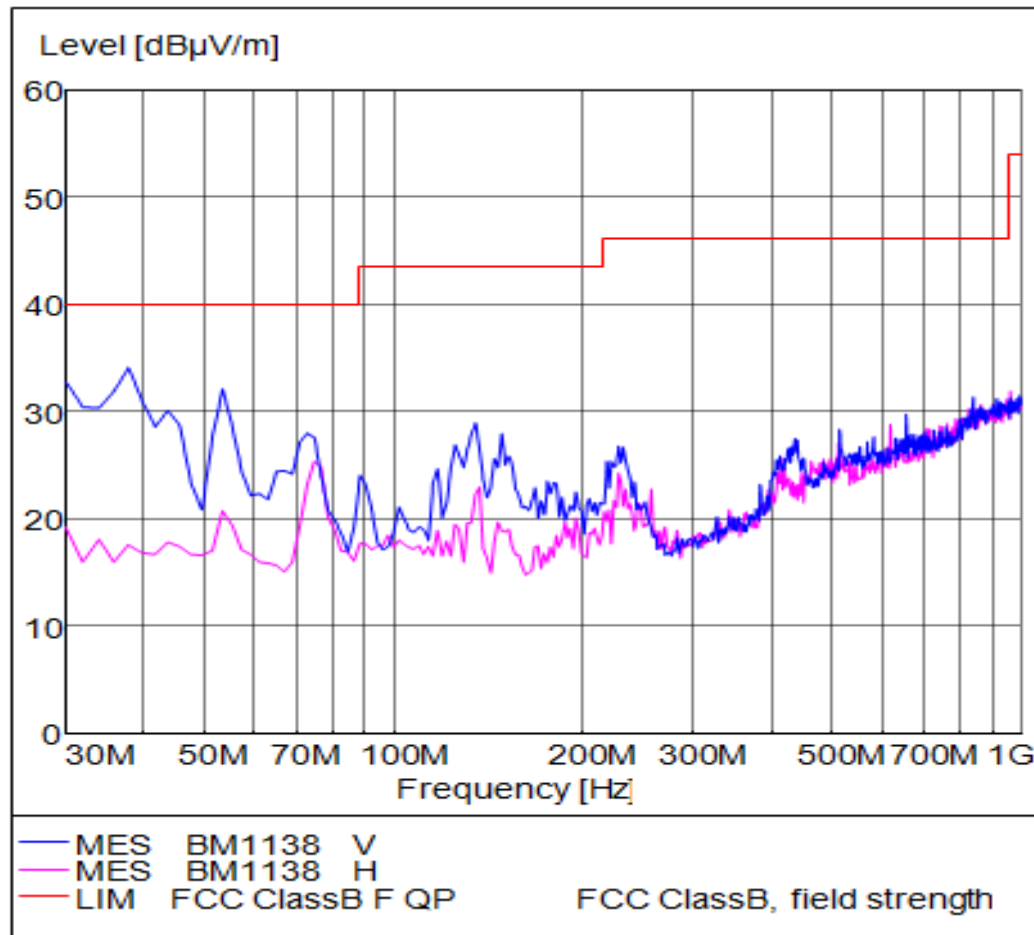
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.41	9.7	29.6	39.3	57.6	-0.4	9.3	47.6
0.542	9.8	20.4	30.2	56	-0.3	9.5	46
0.614	9.8	23.1	32.9	56	2.4	12.2	46
0.87	9.8	18.1	27.9	56	-2.6	7.2	46
1.006	9.8	16.5	26.3	56	-3.2	6.6	46
4.34	9.9	8.4	18.3	56	0.6	10.5	46

Figure 34: Test figure of Conducted emissions, Mode C+D, line neutral



Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.15	9.7	29.6	39.3	66	12.7	22.4	56
0.522	9.8	17.9	27.7	56	9.9	19.7	46
0.606	9.8	21.0	30.8	56	17.2	27	46
0.818	9.8	10.2	20	56	3.7	13.5	46
0.974	9.8	11.0	20.8	56	1.8	11.6	46
1.186	9.8	10.5	20.3	56	5.6	15.4	46

Figure 35: Test figure of Radiated emissions, Mode D, below 1GHz, Horizontal & Vertical



Frequency (MHz)	Cable Loss +preamp(dB)	Antenna Factor (dB)	Readings (dBµV/m)	Level (dBµV/m)	Polarity (H/V)	Turntable Angle(deg)	Antenna Height(m)	Limits (dBµV/m)	Margin (dB)
30.11	0.6	12.3	3.4	16.3	H	20	2.0	40.0	23.7
33.887	0.7	12.3	2.7	15.7	H	60	2.0	40.0	24.3
53.331	0.7	13.3	3.1	17.1	H	320	2.0	40.0	22.9
76.653	1.0	7.8	13.6	22.4	H	0	2.0	40.0	17.6
136.913	1.4	8.9	11.3	21.6	H	120	2.0	43.5	21.9
228.275	1.8	11.2	9.1	22.1	H	20	2.0	46.0	23.9
30.152	0.6	12.3	12.3	25.2	V	30	1.0	40	14.8
37.775	0.7	12.3	12.4	25.4	V	280	1.0	40	14.6
43.607	0.7	13.6	9.6	23.9	V	300	1.0	40	16.1
53.326	0.7	13.3	8.3	22.3	V	30	1.0	40	17.7
72.756	1.0	8.7	13.5	23.2	V	70	1.0	40	16.8
134.969	1.4	8.9	11.4	21.7	V	200	1.0	43.5	21.8

Figure 36: Test figure of Radiated emissions, Mode D, above 1GHz, Horizontal & Vertical

