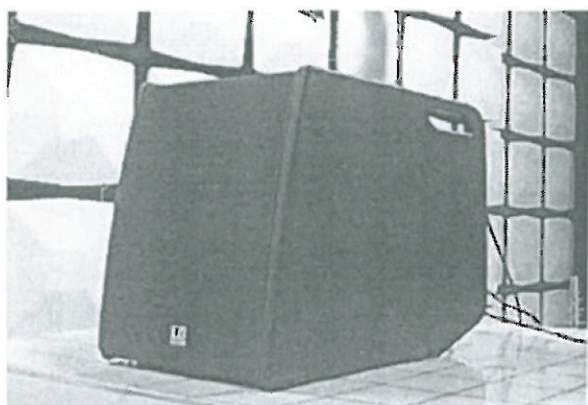


Prüfbericht-Nr.: Test Report No.:	16068945 001	Auftrags-Nr.: Order No.:	174036115	Seite 1 von 44 Page 1 of 44
Kunden-Referenz-Nr.: Client Reference No.:	628017	Auftragsdatum: Order date.:	10 Jun, 2015	
Auftraggeber: Client:	Adam Hall GmbH Daimlerstrasse 9, 61267 Neu-Anspach, Germany			
Prüfgegenstand: Test item:	Loudspeaker System	FCC ID: FCC ID:	2AFF6- LDCURV500	
Bezeichnung / Typ-Nr.: Identification / Type No.:	CURV500S			
Auftrags-Inhalt: Order content:	TUV Rheinland - EMC service			
Prüfgrundlage: Test specification:	FCC Part 15: 2014-10 Subpart C section 15.207, 15.209 and 15.247 ANSI C63.10: 2013			
Wareneingangsdatum: Date of receipt:	22 Jul, 2015			
Prüfmuster-Nr.: Test sample No.:	Engineering samples			
Prüfzeitraum: Testing period:	Refer to test report			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Guangdong) Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
29 Jul, 2015 Frank Du / Project Manager 		14 Aug 2015 Max Y. C. Yao / Department Manager 		
Datum Date	Name/Stellung Name/Position	Unterschrift Signature	Datum Date	Name/Stellung Name/Position
Sonstiges / Other:				
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 specifications(s) F(ail) = failed a.m. test specifications(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 auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines <i>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.</i>				

v04

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Passed

5.1.2 PEAK OUTPUT POWER

RESULT: Passed

5.1.3 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 kHz BANDWIDTH

RESULT: Passed

5.1.4 SPURIOUS EMISSION

RESULT: Passed

5.1.5 20dB BANDWIDTH

RESULT: Passed

5.1.6 FREQUENCY SEPARATION

RESULT: Passed

5.1.7 NUMBER OF HOPPING FREQUENCY

RESULT: Passed

5.1.8 TIME OF OCCUPANCY

RESULT: Passed

5.1.9 CONDUCTED EMISSIONS

RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Passed

Contents

1	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS	5
2	TEST SITES	5
2.1	TEST FACILITIES	5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
2.3	TRACEABILITY.....	6
2.4	CALIBRATION.....	6
2.5	MEASUREMENT UNCERTAINTY.....	7
2.6	LOCATION OF ORIGINAL DATA.....	7
2.7	STATUS OF FACILITY USED FOR TESTING	7
3	GENERAL PRODUCT INFORMATION.....	8
3.1	PRODUCT FUNCTION AND INTENDED USE.....	8
3.2	RATINGS AND SYSTEM DETAILS	8
3.3	INDEPENDENT OPERATION MODES	10
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	10
3.5	SUBMITTED DOCUMENTS	10
4	TEST SET-UP AND OPERATION MODES.....	11
4.1	PRINCIPLE OF CONFIGURATION SELECTION.....	11
4.2	TEST OPERATION AND TEST SOFTWARE	11
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	11
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	11
4.5	TEST SET-UP	12
5	TEST RESULTS	14
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	14
<i>5.1.1</i>	<i>Antenna Requirement.....</i>	<i>14</i>
<i>5.1.2</i>	<i>Peak Output Power.....</i>	<i>15</i>
<i>5.1.3</i>	<i>Conducted Spurious Emissions Measured in 100 kHz Bandwidth</i>	<i>19</i>
<i>5.1.4</i>	<i>Spurious Emission.....</i>	<i>25</i>
<i>5.1.5</i>	<i>20dB Bandwidth.....</i>	<i>26</i>
<i>5.1.6</i>	<i>Frequency Separation</i>	<i>30</i>
<i>5.1.7</i>	<i>Number of Hopping Frequency</i>	<i>33</i>
<i>5.1.8</i>	<i>Time of Occupancy</i>	<i>35</i>
<i>5.1.9</i>	<i>Conducted Emissions</i>	<i>38</i>
6	SAFETY HUMAN EXPOSURE	39
6.1	RADIO FREQUENCY EXPOSURE COMPLIANCE	39

6.1.1	Electromagnetic Fields	39
7	PHOTOGRAPHS OF THE TEST SET-UP	40
8	LIST OF TABLES.....	44
9	LIST OF PHOTOGRAPHS	44

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

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

No.102, 1F of Southwest and No.205, 2F of West Warehouse Building, No.767 Tianyuan Road, Tianhe District, Guangzhou, Guangdong, P.R.China

Test item: others

FCC Registration No. 833845

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Type	Manufacturer	S/N	Calibrated until	Calibrated Interval
EMI Test Receiver	ESCI-3	Rohde & Schwarz	100216	16.Mar.2016	1 year
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	16.Mar.2016	1 year
Trilog-Broadband Antenna	VULB9168 (30MHz-1GHz)	SCHWARZBECK MESSELEKTRO NIK	209	16.Mar.2016	2 years
Double-Ridged Waveguide Horn Antenna	HF906 (1-18GHz)	Rohde & Schwarz	100385	16.Mar.2016	2 years
Pre-amplifier	AFS42-00101800-25-S-42	MITEQ	1101599	16.Mar.2016	2 years
Band Reject Filter	BRM50702	Micro-Tronics	023	16.Mar.2016	2 years
Standard Gain Horn Antenna	3160-09 (18-26.5GHz)	EMCO	21642	16.Mar.2016	5 years
Pre-amplifier	AFS33-18002650-30-8P-44	MITEQ	1108282	16.Mar.2016	2 years
3m Anechoic Chamber	N/A	Albatross Project GmbH	N/A	16.Mar.2016	1 year
Loop Antenna	HFH2-Z2 (<30MHz)	Rohde & Schwarz	100111	16.Mar.2016	2 years
EMI Test Receiver	ESCS30	Rohde & Schwarz	100316	16.Mar.2016	1 year
Two-Line V-Network	ESH3-Z5	Rohde & Schwarz	100308	16.Mar.2016	1 year
Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100701	16.Mar.2016	1 year

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

Uncertainty for conducted emissions measurements is 2.68dB.

Uncertainty for radiated emissions measurements is 4.42dB (9KHz-30MHz), 5.16dB (30M-1GHz) and 2.22dB (> 1GHz)

The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

2.6 Location of original data

The original copies of 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 (Guangdong) file for certification follow-up purposes.

2.7 Status of facility used for testing

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory
No.102, 1F of Southwest and No.205, 2F of West Warehouse Building, No.767 Tianyuan Road, Tianhe District, Guangzhou, Guangdong, P.R.China
FCC Registration No. 833845

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Speaker with Bluetooth 2.1+EDR, which is intended to enable Bluetooth connectivity with Notebook or smart phone, and play the music from Bluetooth device.

For more details refer to the Technical Documentation or User manual.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment	Loudspeaker System
Type Designation	CURV500S
FCC ID	2AFF6- LDCURV500

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

Technical Specification	Value
Operating Frequency band	2402 – 2480 MHz
Bluetooth Core Version	V2.1+EDR
Channel separation	1MHz
Extreme Temperature Range	-10°C to +55°C
Operation Voltage	100~240Vac, 50/60Hz;
Modulation	GFSK, 8DPSK, $\pi/4$ DQPSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	0 dBi
RF Output Power	0.00101W (0.06dBm)

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, Traditional Bluetooth
 - 1. Transmitting on low channel
 - 2. Transmitting on middle channel
 - 3. Transmitting on high channel
- B. On, Traditional Bluetooth on Hopping channel
- C. On, Bluetooth connecting mode
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- 1. Block Diagram
- 2. Circuit Diagram
- 3. Operation Description
- 4. PCB Layout
- 5. BOM
- 6. FCC label and location
- 7. User Manual
- 8. Internal Photos
- 9. External Photos
- 10. Application form

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 C63.10: 2013.

4.3 Special Accessories and Auxiliary Equipment

None.

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the technical document. No additional measures were employed to achieve compliance.

4.5 Test set-up

Diagram of Measurement Configuration for Radiation Test below 1GHz

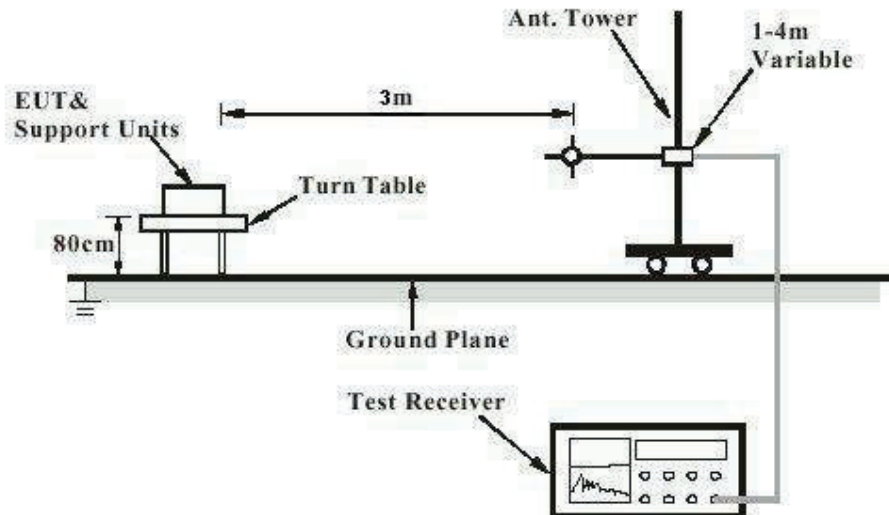


Diagram of Measurement Configuration for Radiation Test above 1GHz

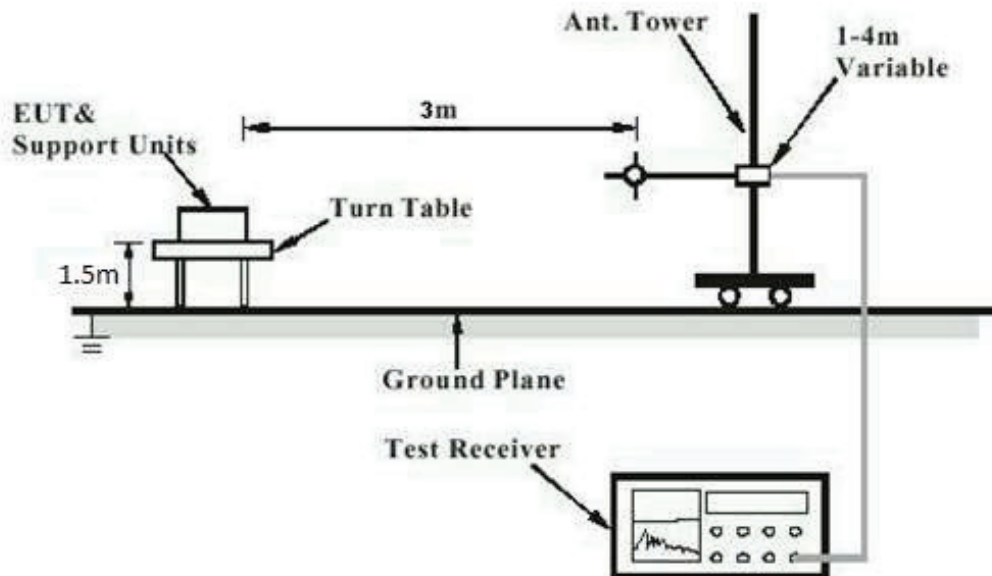


Diagram of Measurement Configuration for Mains Conduction Measurement

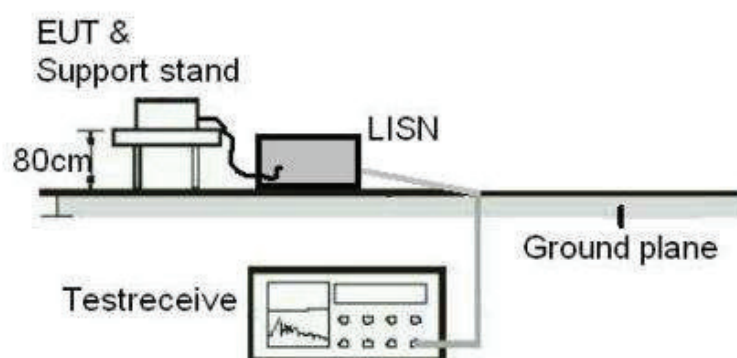
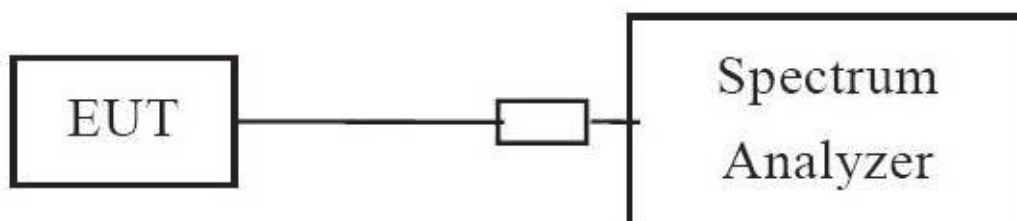


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Passed

Test Specification

Test standard	: FCC Part 15.247(b)(4) and Part 15.203
Limits	: 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 3.14 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.

For more details, refer to EUT photo.

5.1.2 Peak Output Power

RESULT:

Passed

Test Specification

Test standard	: FCC Part 15.247(b)(1) & (b)(3)
Basic standard	: ANSI C63.10: 2013
Limits	: BDR/ EDR: 0.125 Watts
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 21 Jul, 2015
Power supply	: 120Vac, 60Hz
Operation mode	: A (See 3.3)
Test channel	: Low / Middle / High
Ambient temperature	: 22-26 °C
Relative humidity	: 50-65 %
Atmospheric pressure	: 100-103 kPa

Table 5: Test result of Peak Output Power, GFSK

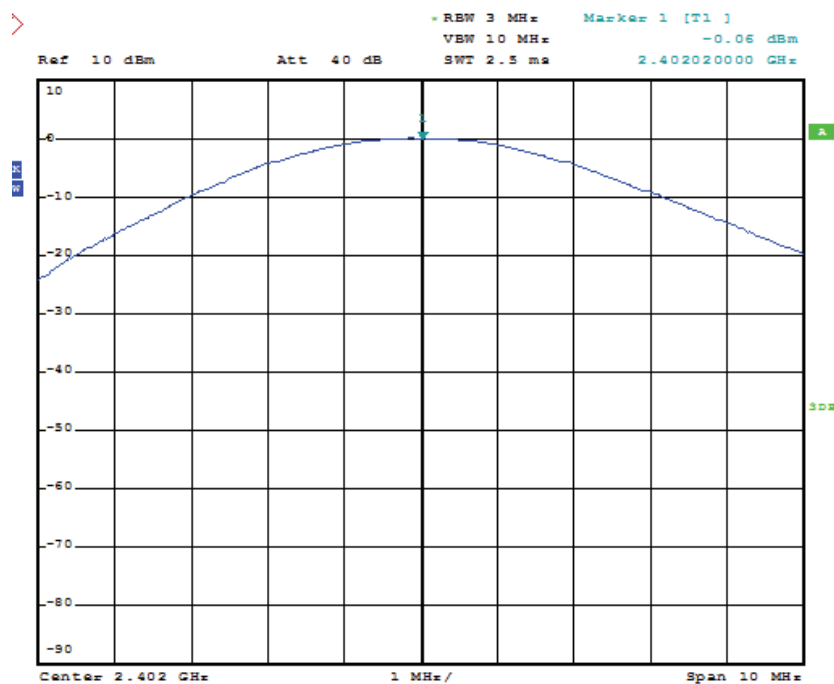
Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2402	-0.06	0.00099	0.125
Middle Channel	2441	0.06	0.00101	0.125
High Channel	2480	-0.06	0.00099	0.125

Table 6: Test result of Peak Output Power, 8DPSK

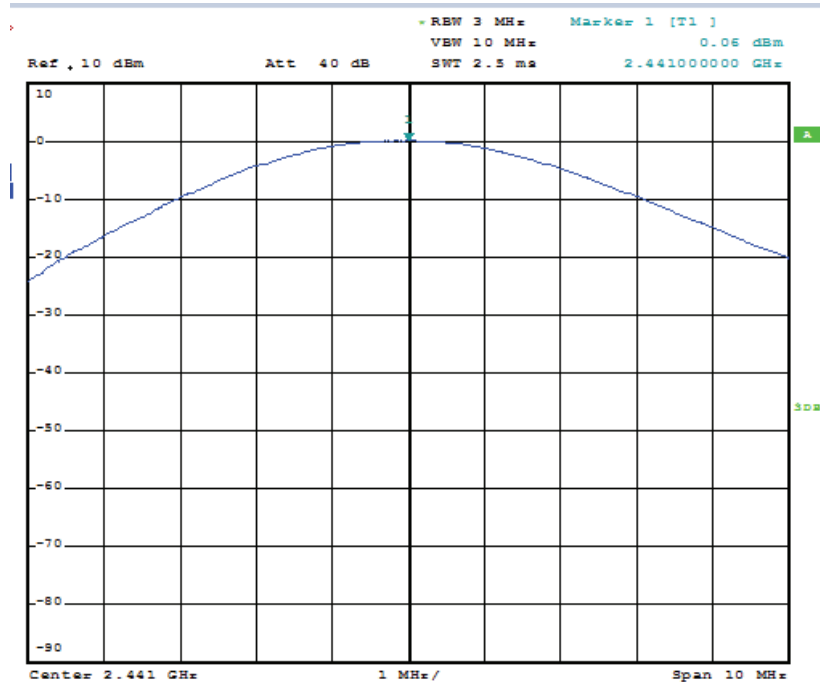
Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2402	-1.47	0.00071	0.125
Middle Channel	2441	-1.95	0.00064	0.125
High Channel	2480	-2.41	0.00057	0.125

Test Plot of Peak Output Power, GFSK modulation

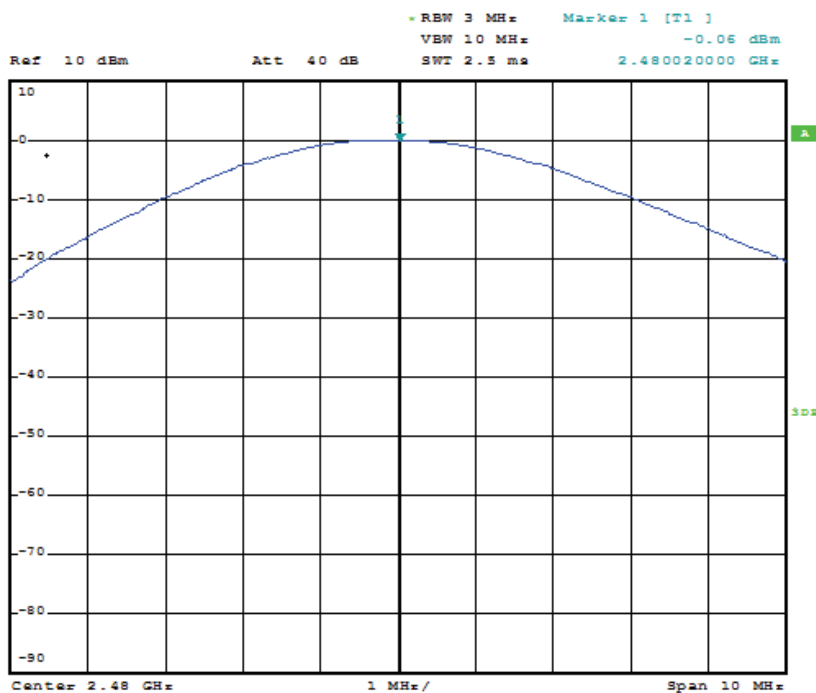
Low Channel



Middle Channel

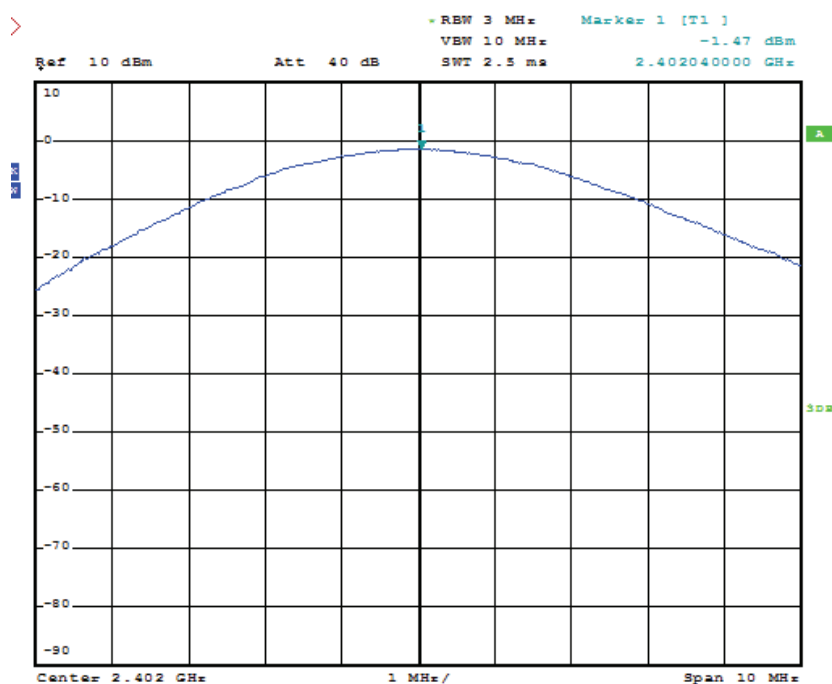


High Channel



Test Plot of Peak Output Power, 8DPSK modulation

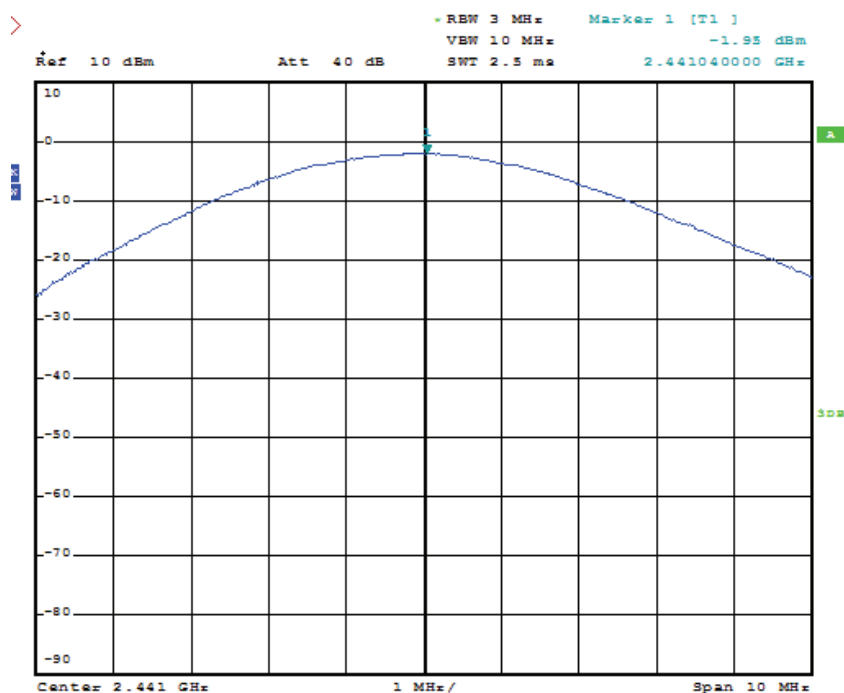
Low Channel



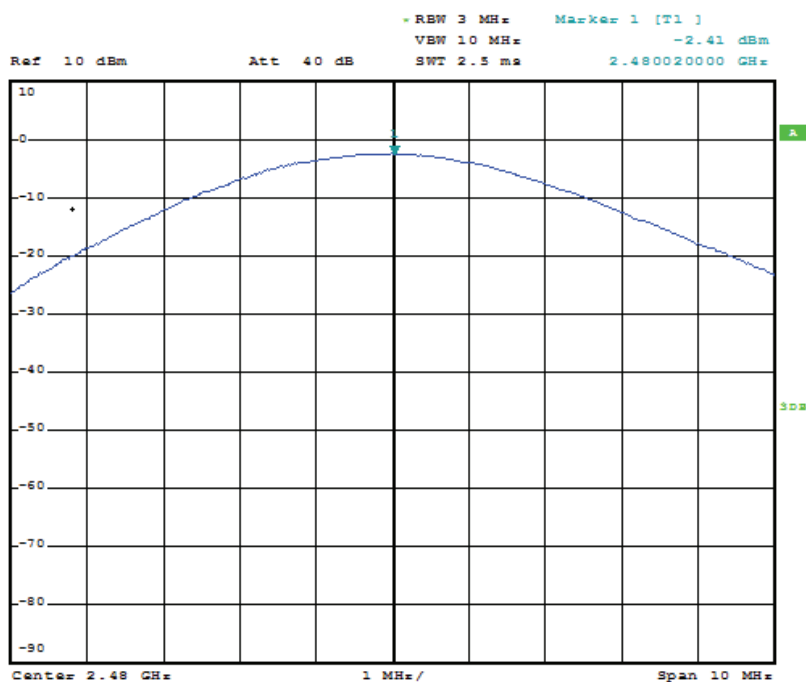
Prüfbericht - Nr.: 16068945 001
Test Report No.

Seite 18 von 44
Page 18 of 44

Middle Channel



High Channel



5.1.3 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Passed**

Test Specification

Test standard	: FCC Part 15.247(d)
Basic standard	: ANSI C63.10: 2013
Limits	: 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	: Shielded Room
-------------------	-----------------

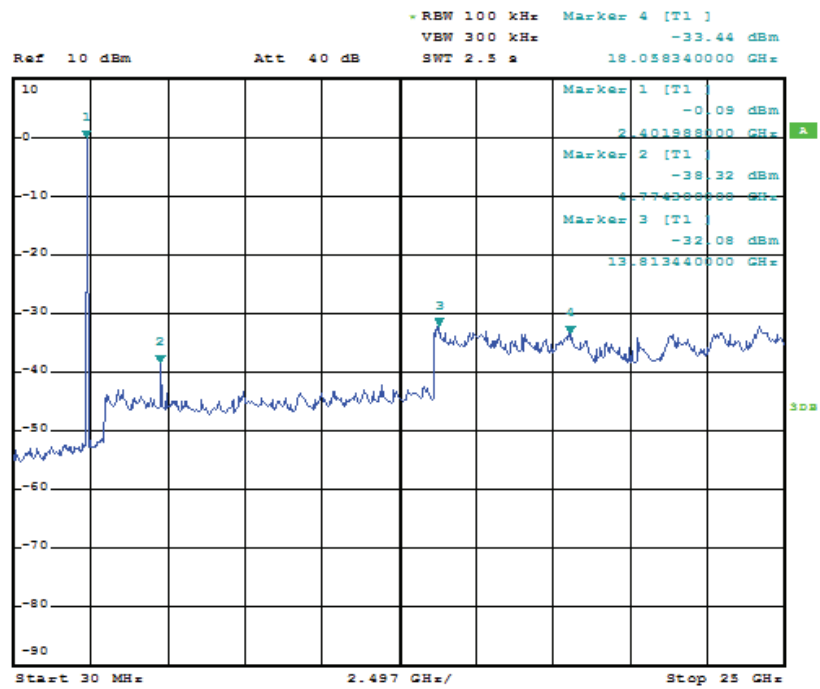
Test Setup

Date of testing	: 21 Jul, 2015
Power supply	: 120Vac, 60Hz
Operation mode	: A(See 3.3)
Test channel	: Low / Middle / High
Ambient temperature	: 22-26 °C
Relative Humidity	: 50-65 %
Atmospheric pressure	: 101 kPa

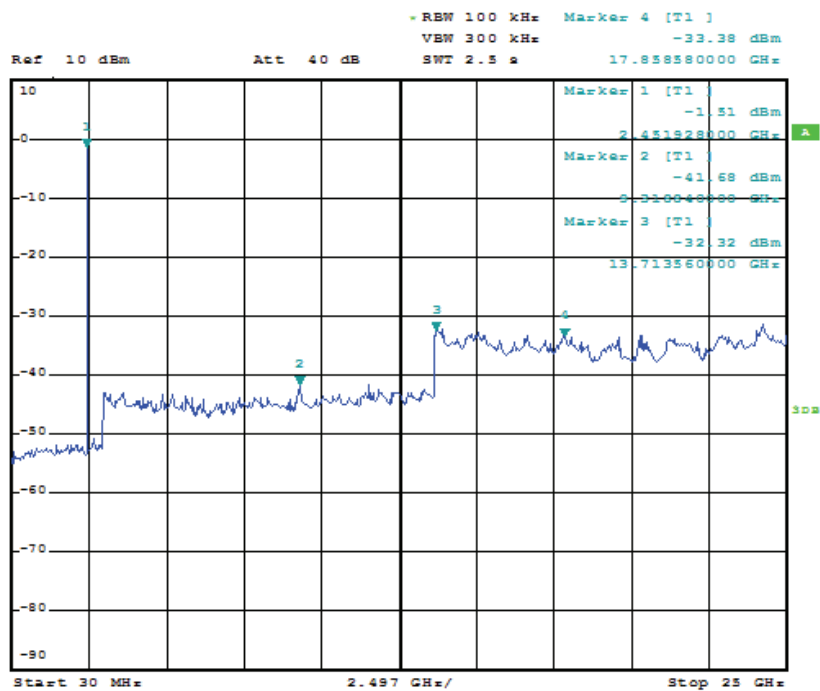
All emissions are more than 20dB below fundamental, details refer to following test plot, and compliance is achieved as well.

Due to the small size of the product and that there are no inductive components of significant size, 9kHz to 30MHz frequency range is not tested based on technical judgment.

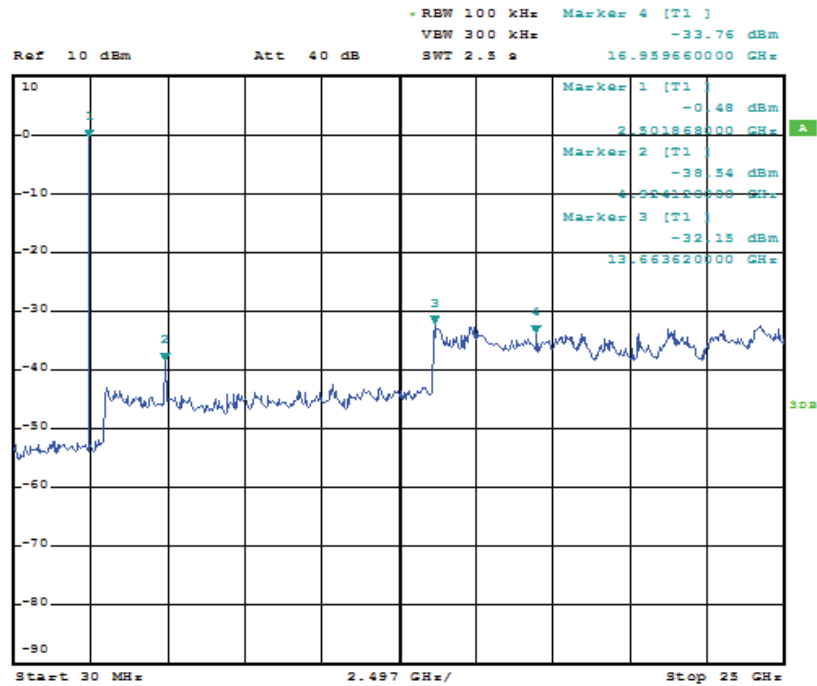
Test Plot of 100kHz Conducted Emissions, GFSK modulation Low Channel



Middle Channel

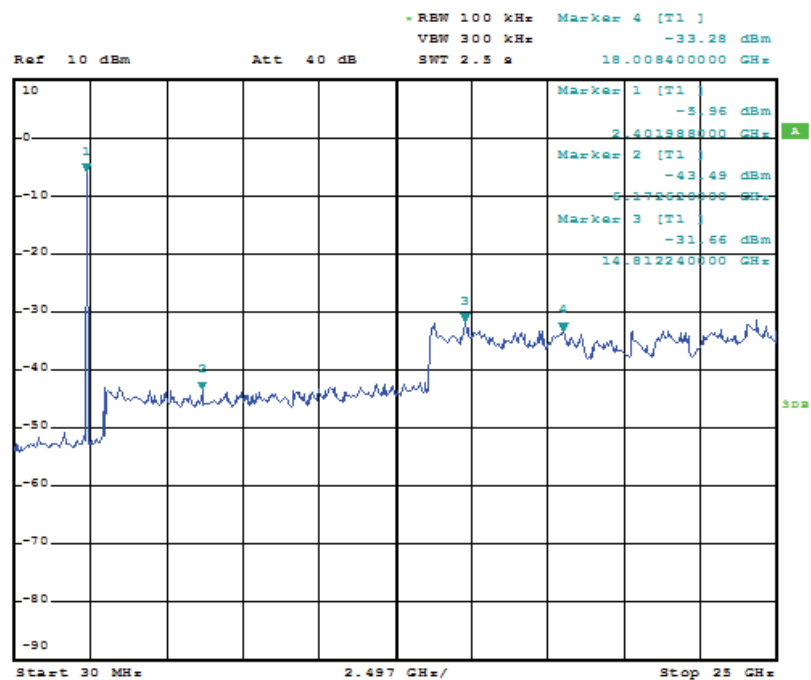


High Channel

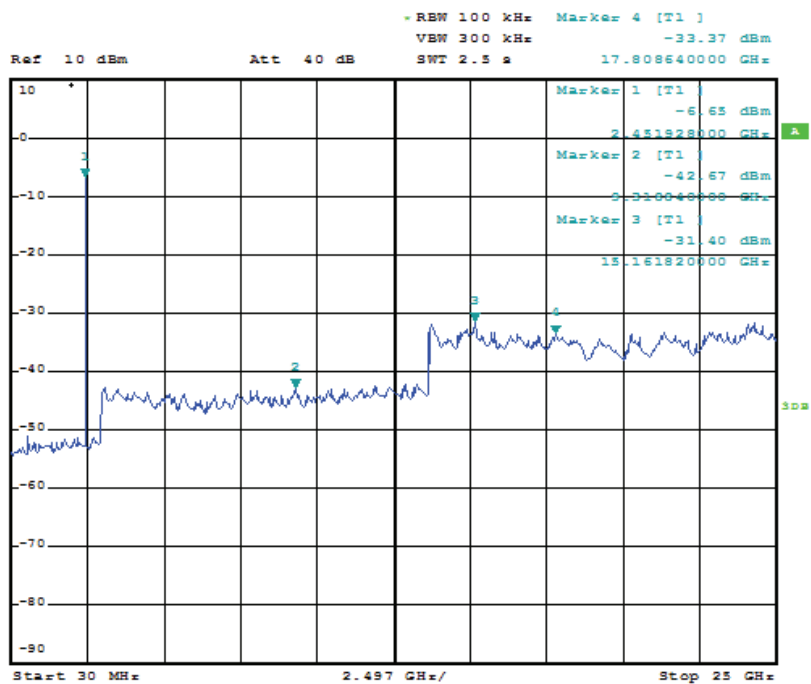


Test Plot of 100kHz Conducted Emissions, 8DPSK modulation

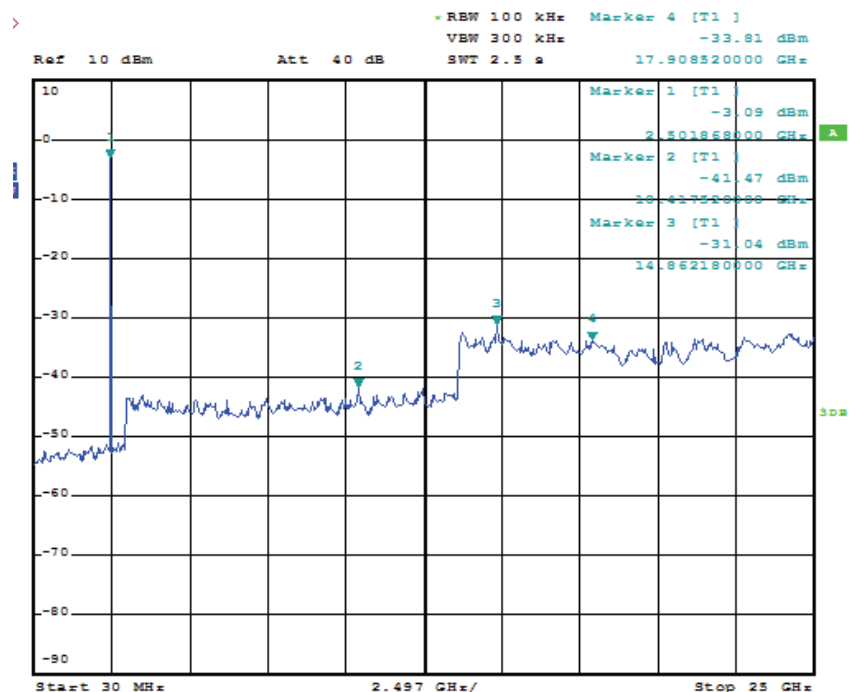
Low Channel



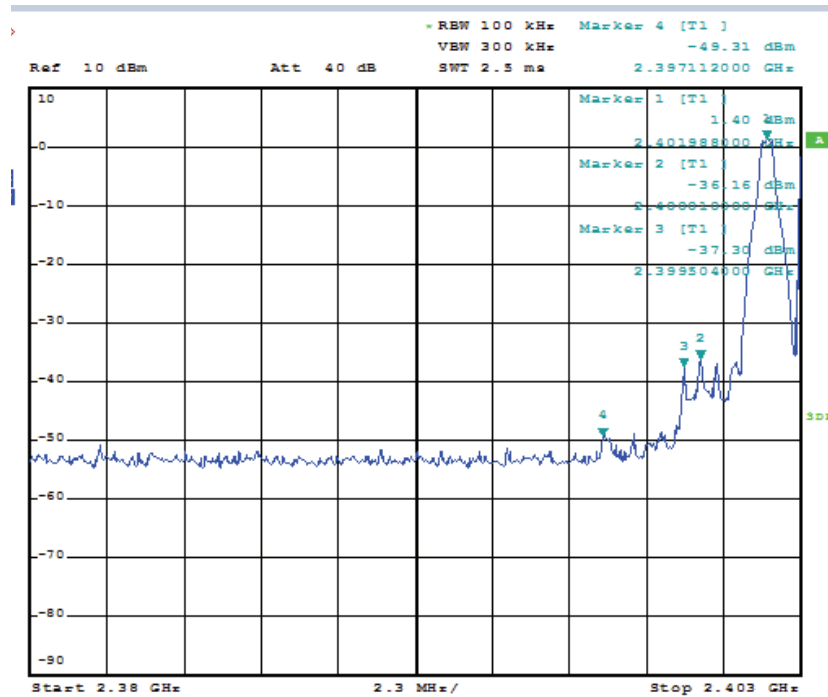
Middle Channel



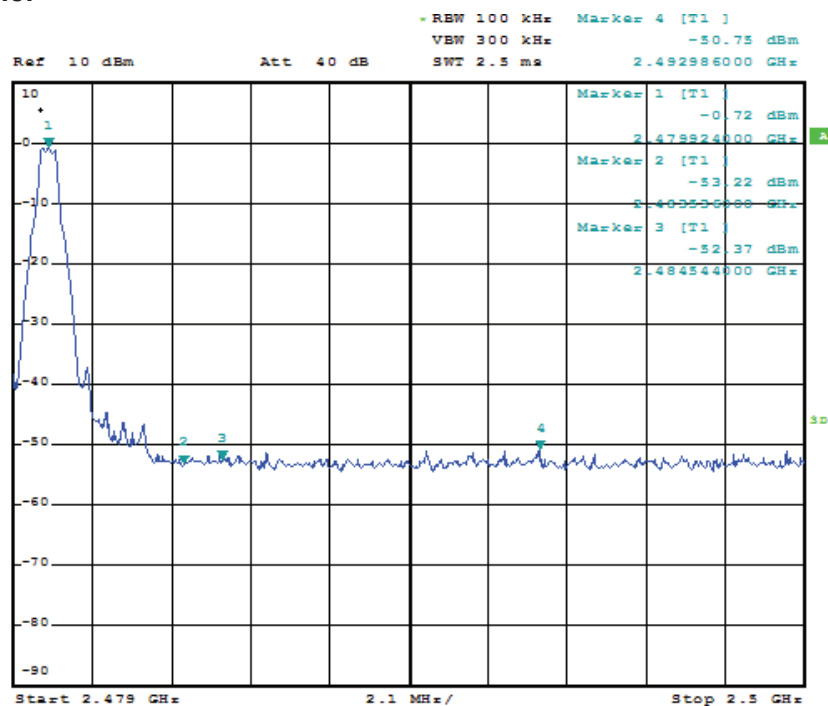
High Channel



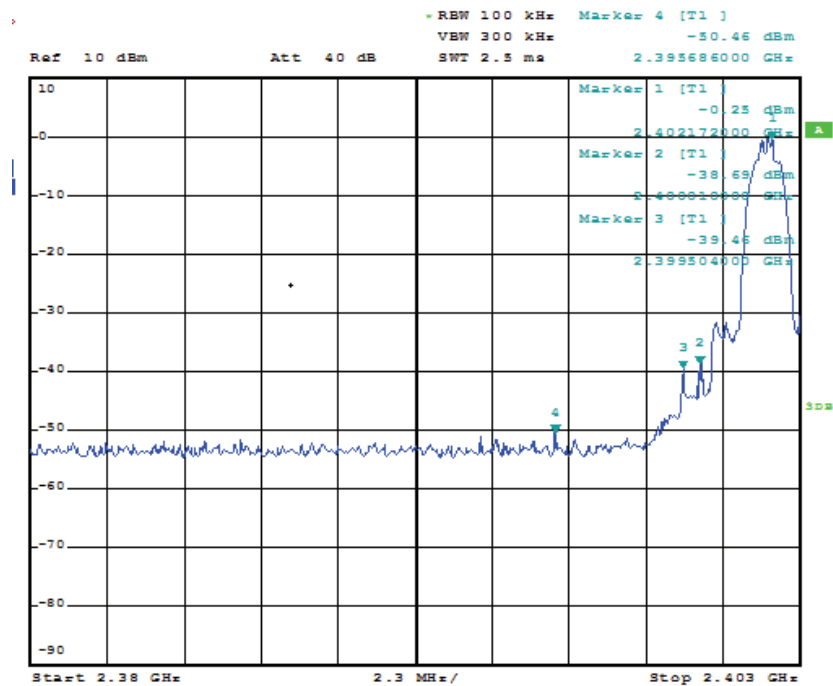
Test Plot of 100kHz Bandwidth of Frequency Band Edge, GFSK modulation Low Channel



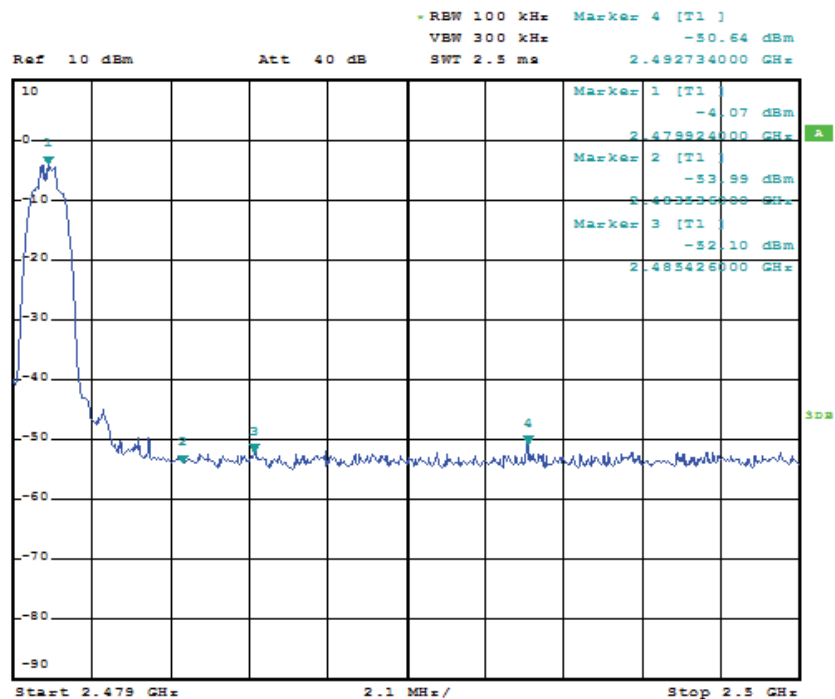
High Channel



Test Plot of 100kHz Bandwidth of Frequency Band Edge, 8DPSK modulation Low Channel



High Channel



5.1.4 Spurious Emission

RESULT:

Passed

Test Specification

Test standard	: FCC Part 15.247(d), FCC Part 15.205
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic chamber

Test Setup

Date of testing	: Refer to the appendix 1.
Power supply	: 120Vac, 60Hz
Operation mode	: A (See 3.3)
Test channel	: Low / Middle / High
Ambient temperature	: Refer to the appendix 1.
Relative Humidity	: Refer to the appendix 1.
Atmospheric pressure	: Refer to the appendix 1.

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 the measurement records, refer to the appendix 1.

5.1.5 20dB Bandwidth

RESULT:

Passed

Test Specification

Test standard : FCC Part 15.247(a)(1)
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 30 Mar, 2015
Power supply : 120Vac, 60Hz
Operation mode : A (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 22-26 °C
Relative humidity : 50-65 %
Atmospheric pressure : 100-103 kPa

Table 7: Test result of 20dB Bandwidth, BDR mode

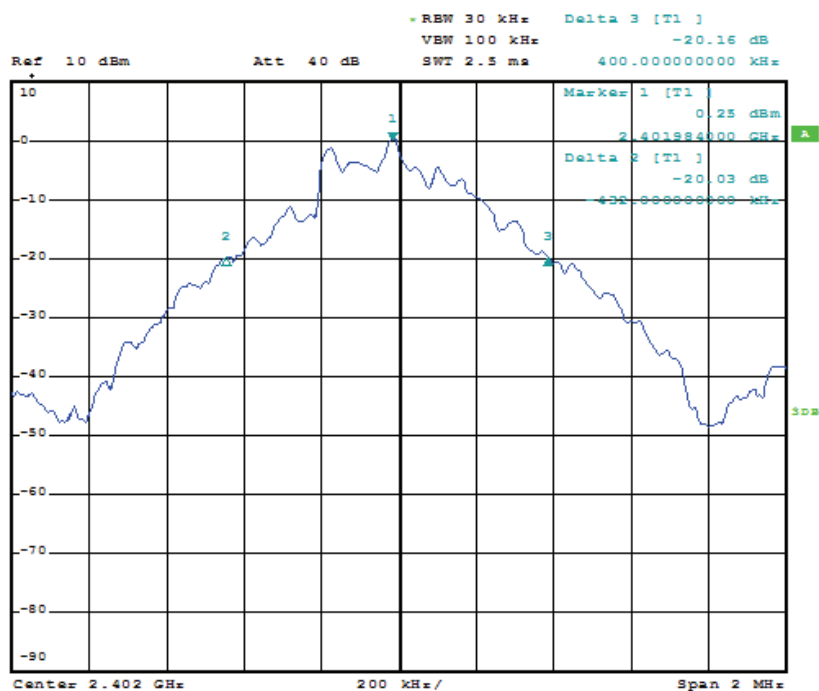
Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	943	/	Pass
Mid Channel	2441	942	/	Pass
High Channel	2480	939	/	Pass

Table 8: Test result of 20dB Bandwidth, EDR mode

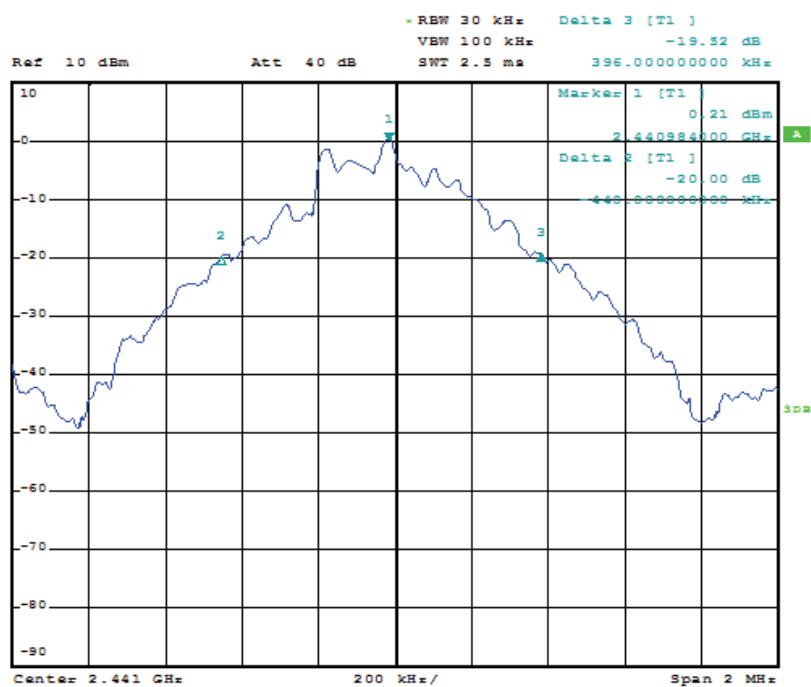
Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	1263	/	Pass
Mid Channel	2441	1261	/	Pass
High Channel	2480	1262	/	Pass

Test Plot of 20dB Bandwidth, GFSK modulation

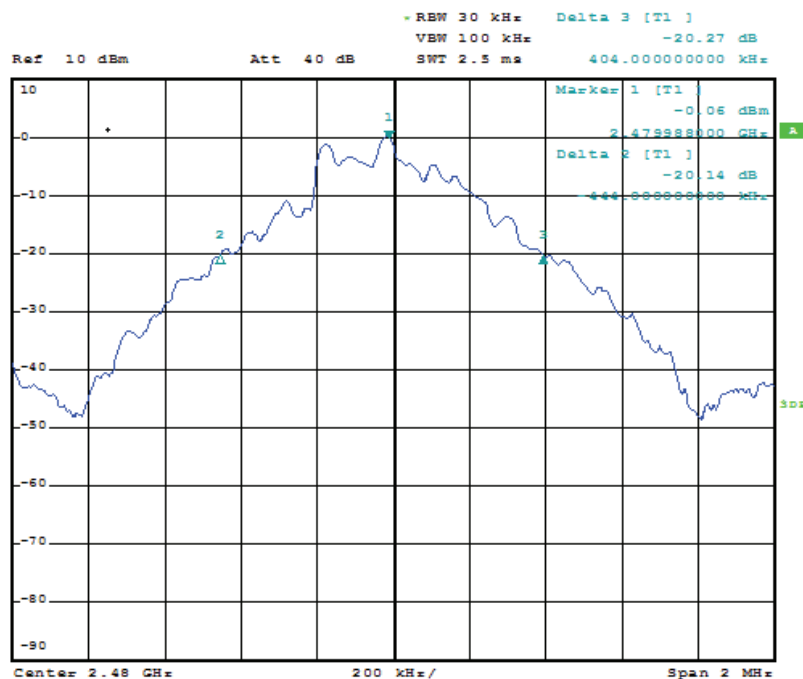
Low Channel



Middle Channel

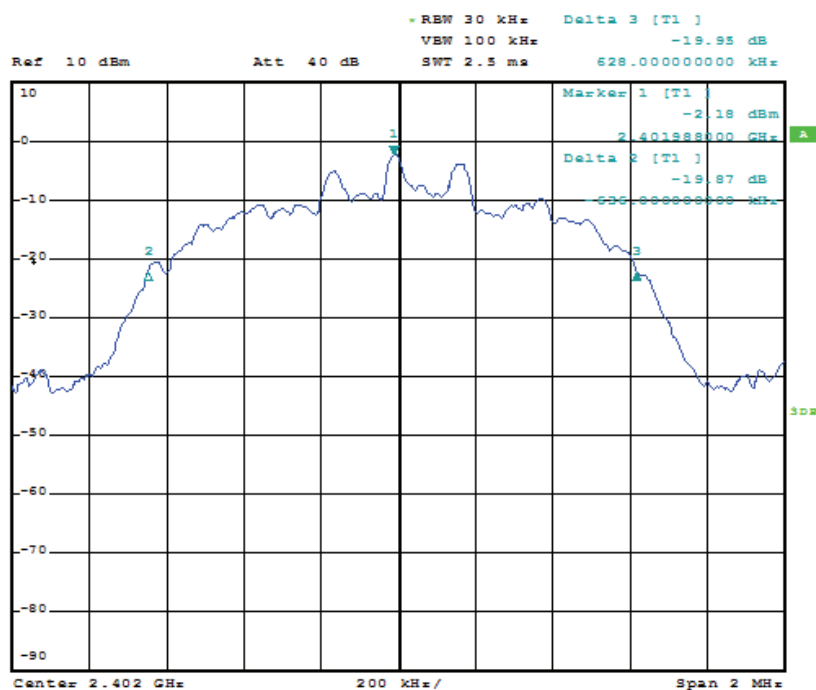


High Channel

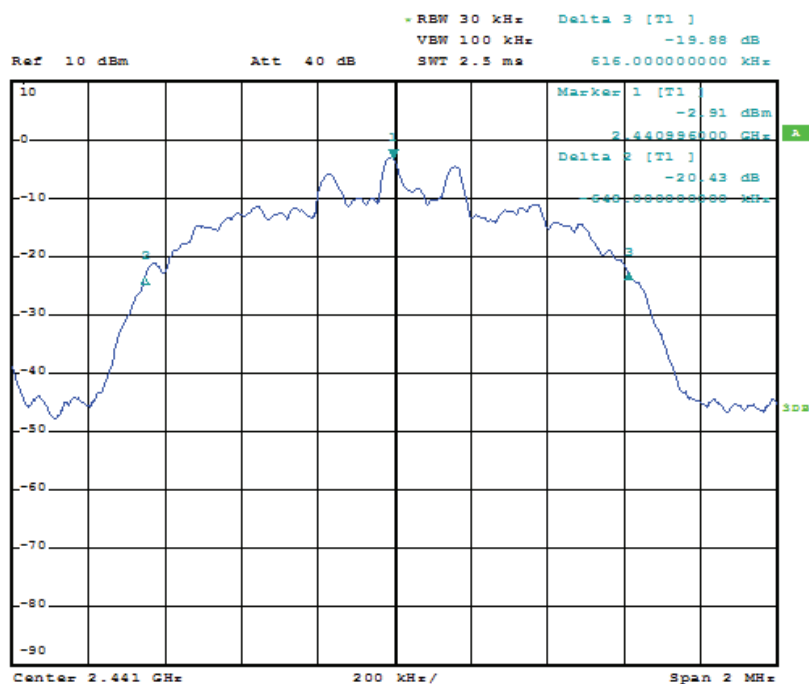


Test Plot of 20dB Bandwidth, 8DPSK modulation

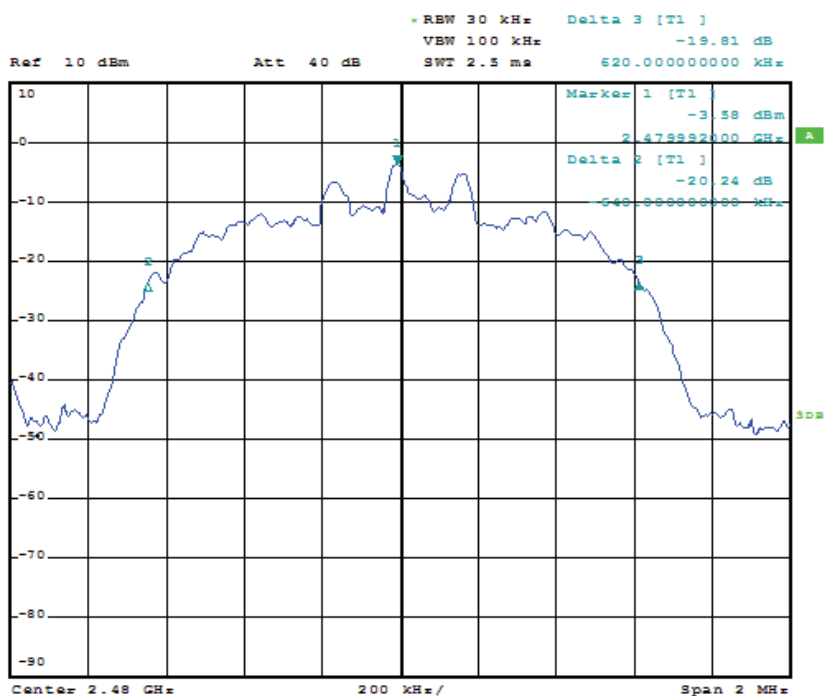
Low Channel



Middle Channel



High Channel



5.1.6 Frequency Separation

RESULT:

Passed

Test Specification

Test standard : FCC Part 15.247(a)(1)
Basic standard : ANSI C63.10: 2013
Limits : $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater
Kind of test site : Shielded Room

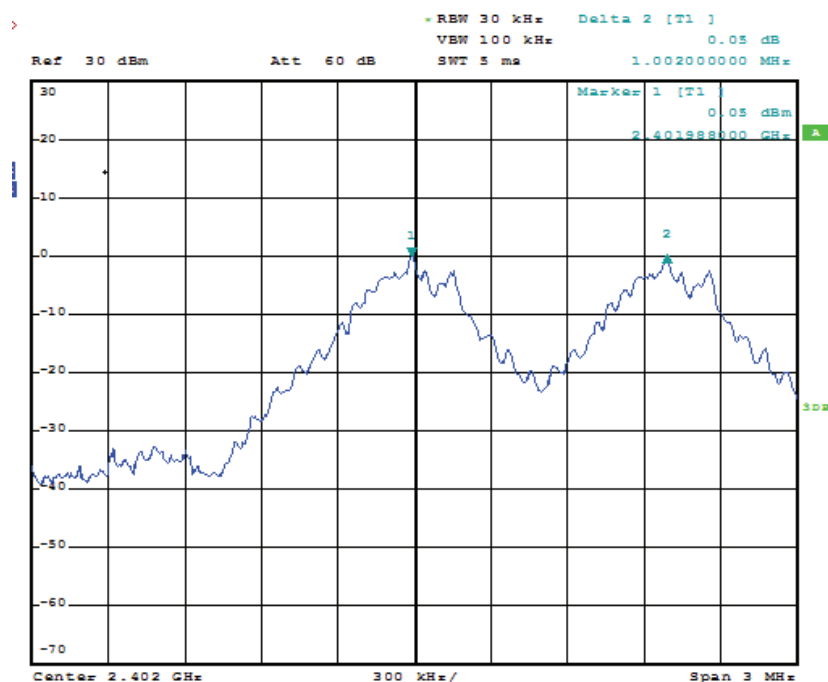
Test Setup

Date of testing : 15 Jul, 2015
Power supply : 120Vac, 60Hz
Operation mode : A (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 22-26 °C
Relative humidity : 50-65 %
Atmospheric pressure : 100-103 kPa

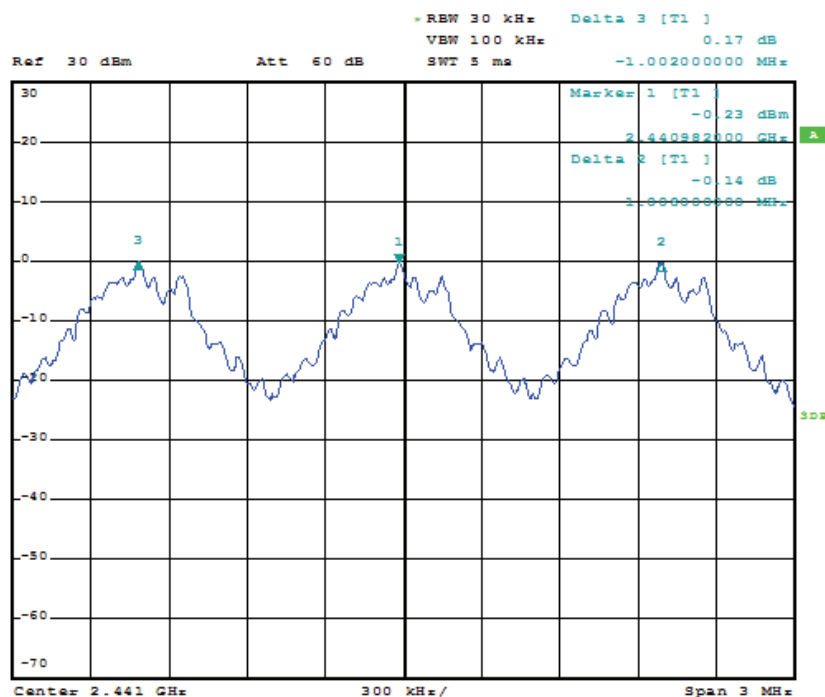
Table 9: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (MHz)	Limit (kHz)	Result
Low Channel	2400	1.0	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2401			
Mid Channel	2440	1.0		Pass
Adjacency Channel	2439			
High Channel	2480	1.0		Pass
Adjacency Channel	2479			

Test Plot of Frequency Separation, GFSK Low Channel



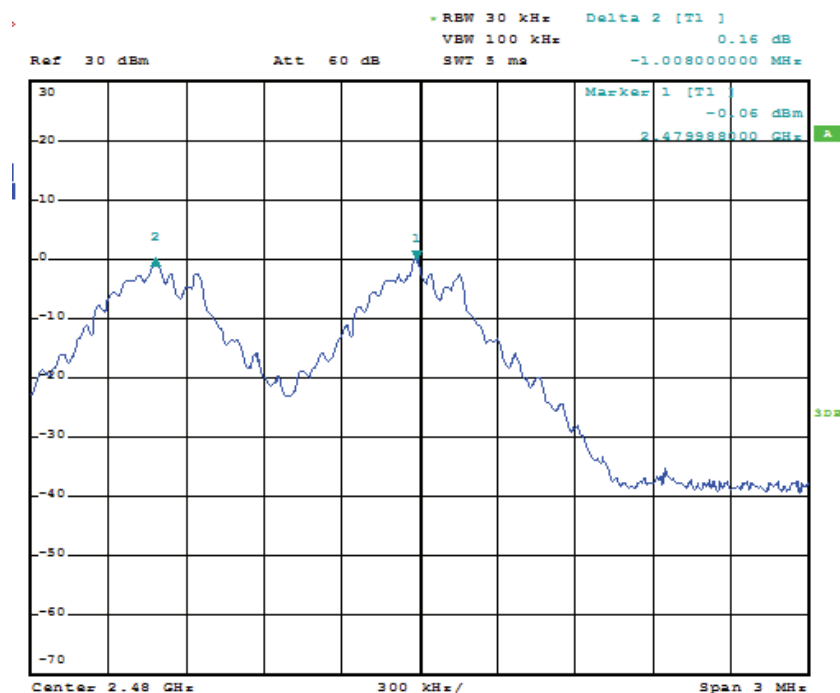
Middle Channel



Prüfbericht - Nr.: 16068945 001
Test Report No.

Seite 32 von 44
Page 32 of 44

High Channel



5.1.7 Number of Hopping Frequency

RESULT:

Passed

Test Specification

Test standard : FCC part 15.247(a)(1)(iii)
Basic standard : ANSI C63.10: 2013
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shielded Room

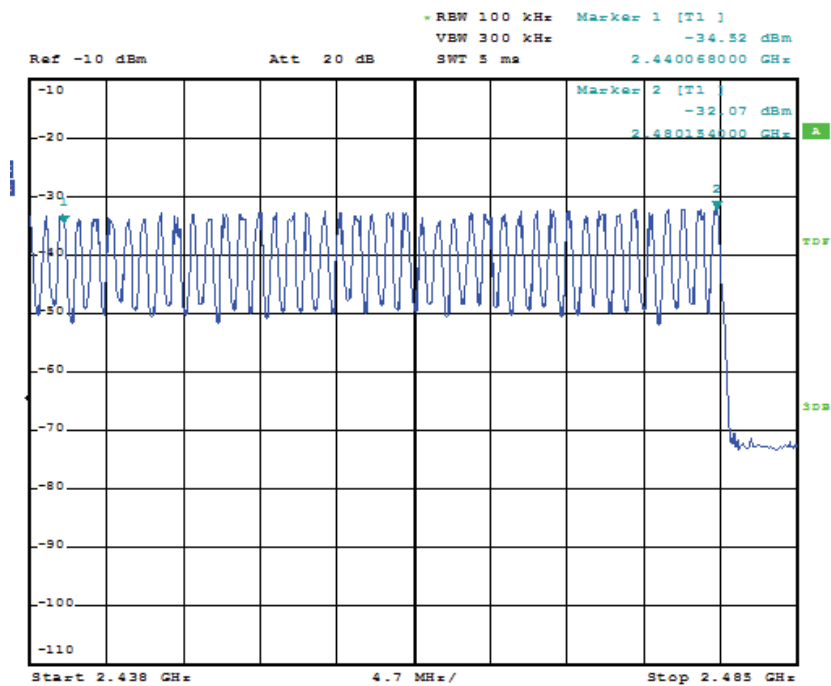
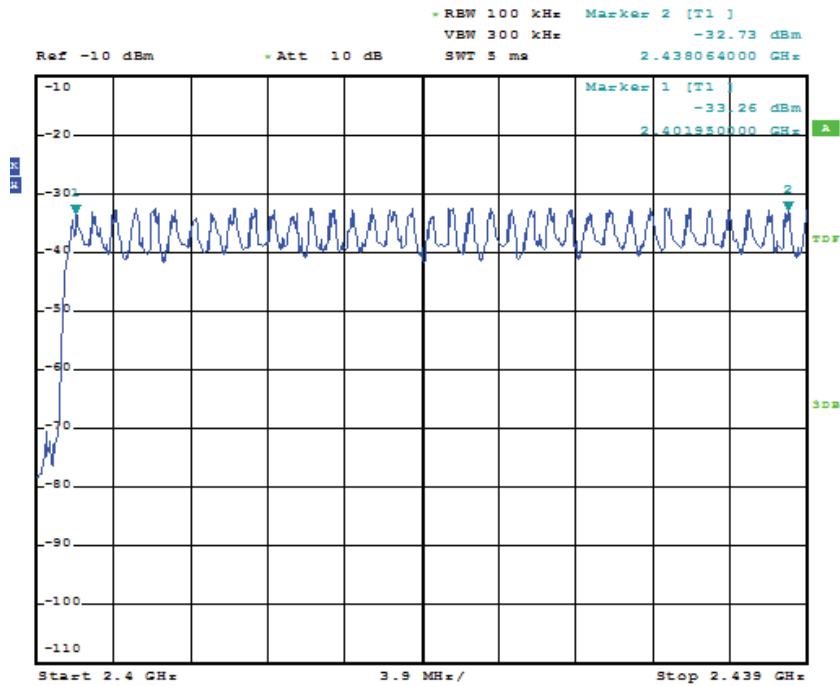
Test Setup

Date of testing : 15 Jul, 2015
Power supply : 120Vac, 60Hz
Operation mode : B (See 3.3)
Ambient temperature : 22-26 °C
Relative humidity : 50-65 %
Atmospheric pressure : 100-103 kPa

Table 10: 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

Test Plot of Number of hopping frequencies



5.1.8 Time of Occupancy

RESULT:

Passed

Test Specification

Test standard : FCC part 15.247(a)(1)(iii)
Basic standard : ANSI C63.10: 2013
Limits : 0.4s
Kind of test site : Shielded Room

Test Setup

Date of testing : 15 Jul, 2015
Power supply : 120Vac, 60Hz
Operation mode : A (See 3.3)
Test channel : Low / Middle / High
Ambient temperature : 22-26 °C
Relative humidity : 50-65 %
Atmospheric pressure : 100-103 kPa

Table 11: Test result of Time of Occupancy, GFSK mode

Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	DH1	0.44	0.141	0.4	Pass
	DH3	1.40	0.224	0.4	Pass
	DH5	2.90	0.309	0.4	Pass
Mid Channel	DH1	0.46	0.147	0.4	Pass
	DH3	2.41	0.386	0.4	Pass
	DH5	2.96	0.316	0.4	Pass
High Channel	DH1	0.31	0.099	0.4	Pass
	DH3	1.51	0.242	0.4	Pass
	DH5	2.97	0.317	0.4	Pass

Table 12: Test result of Time of Occupancy, 8DPSK mode

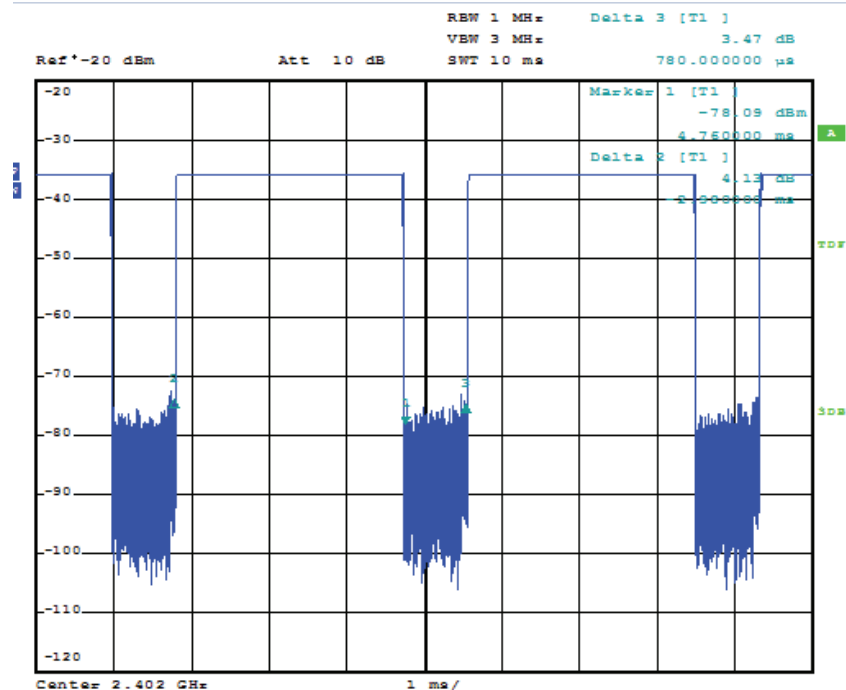
Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	DH1	0.48	0.154	0.4	Pass
	DH3	1.73	0.277	0.4	Pass
	DH5	2.99	0.319	0.4	Pass
Mid Channel	DH1	0.47	0.150	0.4	Pass
	DH3	1.72	0.386	0.4	Pass
	DH5	3.00	0.320	0.4	Pass
High Channel	DH1	0.47	0.150	0.4	Pass
	DH3	1.73	0.277	0.4	Pass
	DH5	2.99	0.319	0.4	Pass

Note:

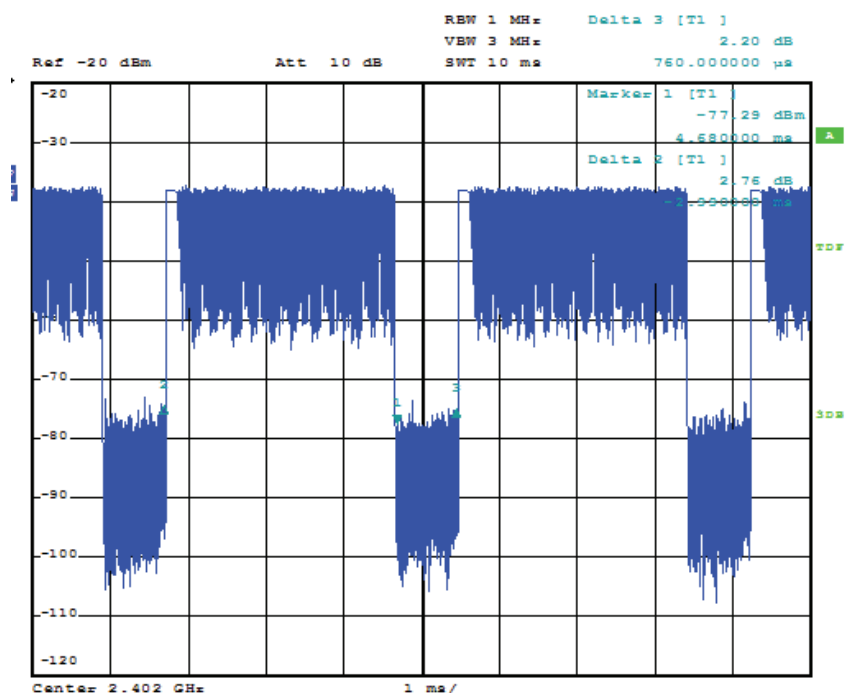
Dwell time = Pulse width x (Hopping rate / Number of channels) x Period

Period = 0.4 (seconds/ channel) x 79 (channel) = 31.6 seconds.

Test Plot of Time of Occupancy, GFSK modulation



Test Plot of Time of Occupancy, 8DPSK modulation



5.1.9 Conducted Emissions

RESULT:

Passed

Test Specification

Test standard	: FCC part 15.207
Basic standard	: ANSI C63.4: 2009
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 15 Jul, 2015
Power supply	: 120Vac, 60Hz
Operation mode	: C (See 3.3)
Earthing	: Not connected
Ambient temperature	: 22 °C
Relative Humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix 1.

6 Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT: **Passed**

Test Specification

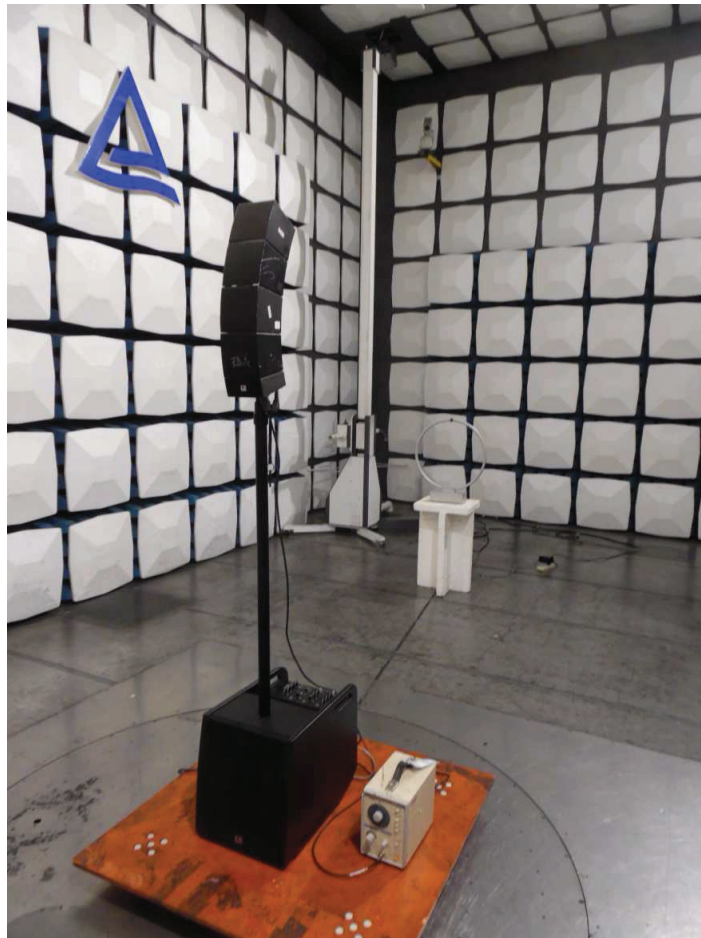
Test standard : FCC KDB Publication 447498 v05r02

The maximum peak output power of the transmitter is 1.01mW, only, which less than 20mW.

The minimum distance for the EUT is 5mm, since maximum peak output power of the transmitter is 1.01mW <10 mW, hence the EUT is excluded from SAR evaluation according to FCC KDB Publication 447498 D01 General RF Exposure Guidance v05r02.

7 Photographs of the Test Set-Up

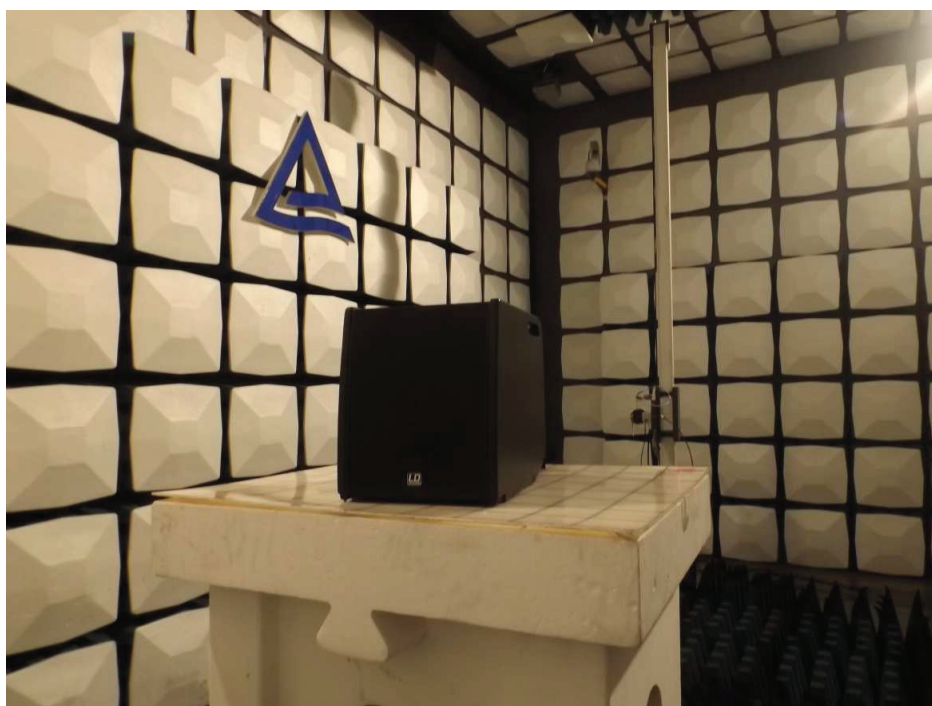
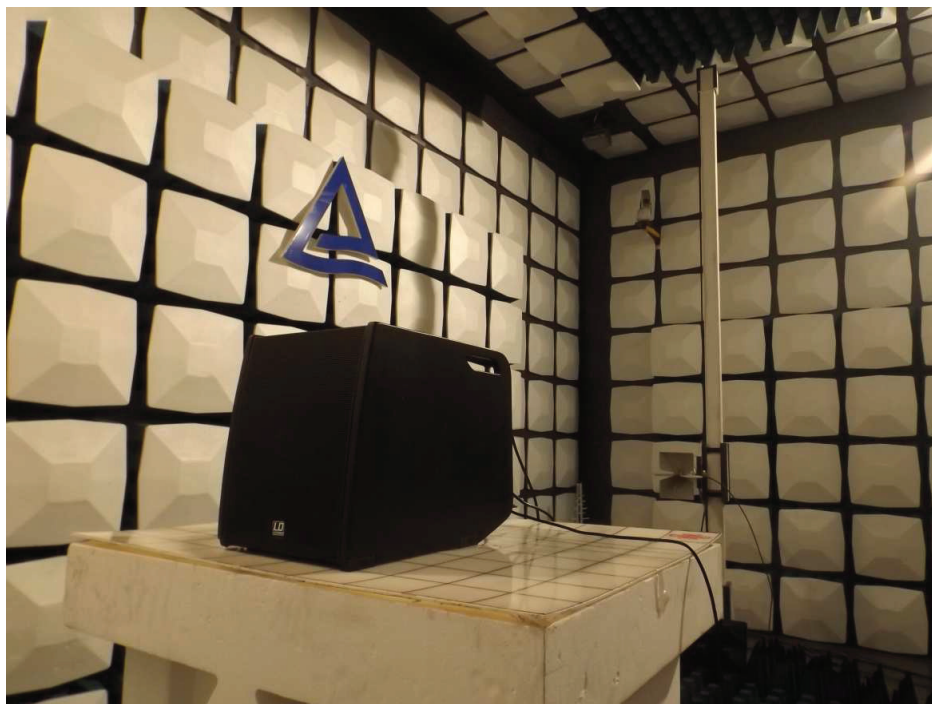
Photograph 1: Set-up for Spurious Emissions (9kHz - 30MHz)



Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)



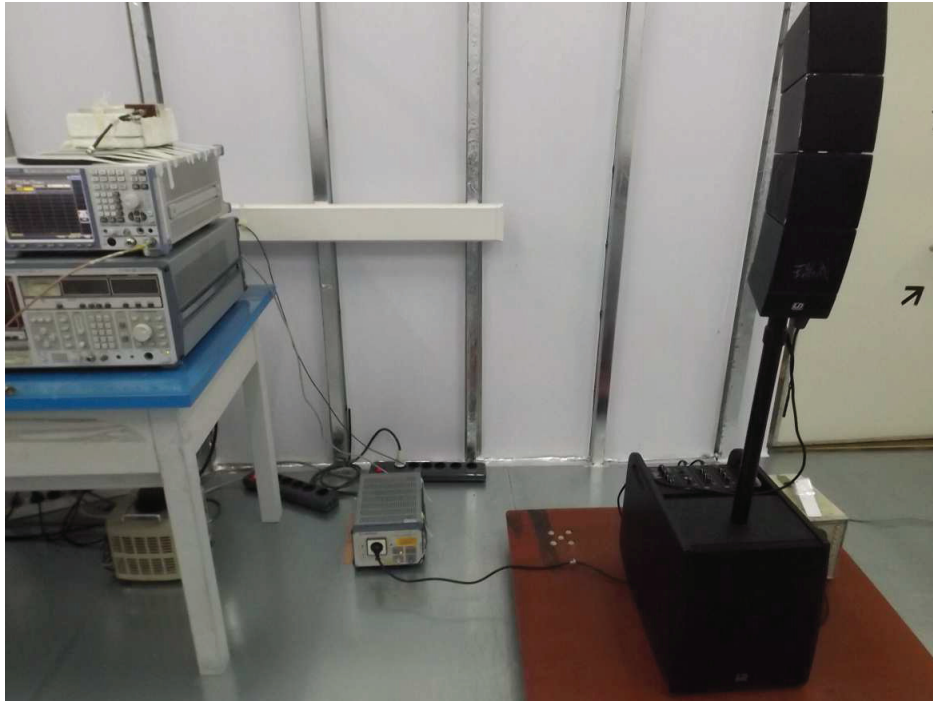
Photograph 3: Set-up for Spurious Emissions (above 1GHz)



Prüfbericht - Nr.: 16068945 001
Test Report No.

Seite 43 von 44
Page 43 of 44

Photograph 4: Set-up for Conducted Emissions



8 List of Tables

Table 1: List of Test and Measurement Equipment	6
Table 2: Rating of EUT	8
Table 3: Technical Specification of Bluetooth (BDR & EDR)	9
Table 4: RF channel and frequency of Bluetooth (BDR & EDR mode)	9
Table 5: Test result of Peak Output Power, GFSK	15
Table 6: Test result of Peak Output Power, 8DPSK	15
Table 7: Test result of 20dB Bandwidth, BDR mode	26
Table 8: Test result of 20dB Bandwidth, EDR mode	26
Table 9: Test result of Frequency Separation	30
Table 10: Test result of Number of hopping frequency	33
Table 11: Test result of Time of Occupancy, GFSK mode	35
Table 12: Test result of Time of Occupancy, 8DPSK mode	36

9 List of Photographs

Photograph 1: Set-up for Spurious Emissions (9kHz - 30MHz)	40
Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)	41
Photograph 3: Set-up for Spurious Emissions (above 1GHz)	42
Photograph 4: Set-up for Conducted Emissions	43