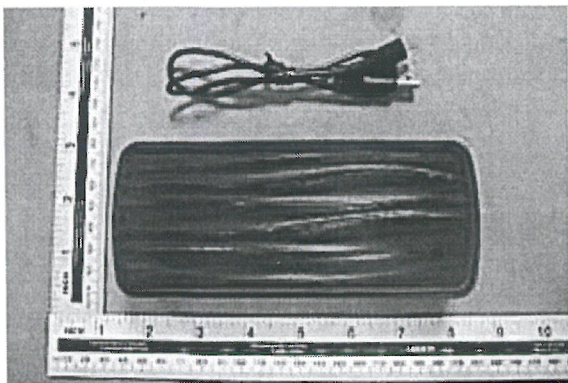


Prüfbericht-Nr.: <i>Test Report No.:</i>	17051604 002	Auftrags-Nr.: <i>Order No.:</i>	164041129	Seite 1 von 58 <i>Page 1 of 58</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date.:</i>	06.08.2015	
Auftraggeber: <i>Client:</i>	Dongguan Alllike Electronics Co., Ltd. ChuanCha Development Zone, Machong Town, Dongguan, Guangdong, China			
Prüfgegenstand: <i>Test item:</i>	Bluetooth Stereo Speaker			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	NS-CSPBTHOLxxxxxx (x=0~9, A~Z, "-" or Blank, means different color and market)			
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 FCC KDB Publication 447498 v05r02 RSS-247 Issue 1 May 2015 RSS-Gen Issue 4 November 2014 ICES-003 Issue 5 August 2012 RSS-102 Issue 5 March 2015			
Wareneingangsdatum: <i>Date of receipt:</i>	06.08.2015			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000244978-001~002			
Prüfzeitraum: <i>Testing period:</i>	06.08.2015 - 10.08.2015			
Ort der Prüfung: <i>Place of testing:</i>	Accurate Technology Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
01.09.2015  Ryan Yang / Senior Project Engineer		01.09.2015  Sam Lin / Technical Certifier		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
Sonstiges / Other:				
FCC ID: BUQBT40				
IC: 11059A-CSPBTHOL				
Only three models NS-CSPBTHOL-BL, NS-CSPBTHOL-BK and NS-CSPBTHOL-R are for IC certification.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>		
* 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: Pass***5.1.2 PEAK CONDUCTED OUTPUT POWER***RESULT: Pass***5.1.3 99% BANDWIDTH***RESULT: Pass***5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH***RESULT: Pass***5.1.5 RADIATED SPURIOUS EMISSION***RESULT: Pass***5.1.6 20dB BANDWIDTH***RESULT: Pass***5.1.7 CARRIER FREQUENCY SEPARATION***RESULT: Pass***5.1.8 NUMBER OF HOPPING FREQUENCY***RESULT: Pass***5.1.9 TIME OF OCCUPANCY***RESULT: Pass***5.1.10 CONDUCTED EMISSIONS***RESULT: Pass***5.1.11 RADIATED EMISSION***RESULT: Pass***6.1.1 ELECTROMAGNETIC FIELDS***RESULT: Pass*

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.....	7
2.4	CALIBRATION.....	7
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 SETUP DIAGRAM.....	12
5	TEST RESULTS	14
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	14
5.1.1	Antenna Requirement.....	14
5.1.2	Peak Conducted Output Power.....	15
5.1.3	99% Bandwidth.....	20
5.1.4	Conducted Spurious Emissions Measured in 100 kHz Bandwidth	24
5.1.5	Radiated Spurious Emission.....	30
5.1.6	20dB Bandwidth.....	31
5.1.7	Carrier Frequency Separation	35
5.1.8	Number of Hopping Frequency	38
5.1.9	Time of Occupancy	40
5.1.10	Conducted Emissions	51
5.1.11	Radiated Emission.....	52

6	SAFETY HUMAN EXPOSURE.....	53
6.1	RADIO FREQUENCY EXPOSURE COMPLIANCE	53
6.1.1	Electromagnetic Fields	53
7	PHOTOGRAPHS OF THE TEST SET-UP	54
8	LIST OF TABLES.....	58
9	LIST OF PHOTOGRAPHS	58

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

Accurate Technology Co., Ltd.

F1, Bldg. A, Changyuan New Material Port Keyuan Rd., Science & Industry Park, Nanshan Shenzhen,
P.R. China

FCC Registration No.: 752051

Test site Industry Canada No.: 5077A-2

The tests at the test sites 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
Accurate Technology Co., Ltd.

Radio Spectrum Test				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	ESPI3	100396/003	09.01.2016
Spectrum Analyzer	Agilent	E7405A	MY45115511	09.01.2016
Temp. & Humid. Chamber	Gongwen	HSD-500	0109	09.01.2016
Conducted Emissions				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Test Receiver	R&S	ESCS30	100307	09.01.2016
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	09.01.2016
Pulse Limiter	R&S	ESH3-Z2	100815	09.01.2016
50_ Coaxial Switch	Anritsu Corp	MP59B	6200283933	09.01.2016
Radiated Emission & Spurious Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	FSV40	101495	01.01.2016
Test Receiver	R&S	ESCS30	100307	01.01.2016
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	01.01.2016
Loop Antenna	Schwarzbeck	FMZB1516	1516131	01.01.2016
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	01.01.2016
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	01.01.2016
RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	01.01.2016
Pre-Amplifier	R&S	CBLU11835 40-01	3791	01.01.2016
50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	01.01.2016
RF Coaxial Cable	SUHNER	N-3m	No.8	01.01.2016
RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	01.01.2016
RF Coaxial Cable	SUHNER	N-6m	No.10	01.01.2016
RF Coaxial Cable	RESENBERGER	N-12m	No.11	01.01.2016
50_ Coaxial Switch	Anritsu Corp	MP59B	6200283933	09.01.2016

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

Parameter	Uncertainty
Radio Spectrum	± 0.60 dB
All emission, radiated	± 4.42 dB
Conducted Emission	± 2.23 dB
Radiated Emission	± 4.42 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix1 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

Accurate Technology Co., Ltd. Test facility located at F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. 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 a "Bluetooth 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.

NS-CSPBTHOLxxxxxx (x=0~9, A~Z, "-" or Blank, means different color and market)

According to the declaration of the applicant, The adding model No. NS-CSPBTHOL-BL, NS-CSPBTHOL-BK, NS-CSPBTHOL-R has the same circuit diagram and PCB layouts except the color of appearance.

Refer to User Manual and Circuit Diagram for further details.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

Technical Specification	Value
Product Name	Bluetooth Stereo Speaker
Model Number	NS-CSPBTHOLxxxxxx (x=0~9, A~Z, "-" or Blank, means different color and market)
Operating Frequency	2402-2480MHz
Channel separation	1MHz
Extreme Temperature Range	-20°C ~ +55°C
Operation Voltage	DC 3.7V via Internal rechargeable lithium battery
	DC 5.0V via USB port
Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK
Bluetooth Version	Bluetooth 2.1+ EDR
Antenna Type and Gain	PCB Antenna, 0 dBi

Table 3: RF Channel and Frequency of Bluetooth

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	20	2422.00	40	2442.00	60	2462.00
01	2403.00	21	2423.00	41	2443.00	61	2463.00
02	2404.00	22	2424.00	42	2444.00	62	2464.00
03	2405.00	23	2425.00	43	2445.00	63	2465.00
04	2406.00	24	2426.00	44	2446.00	64	2466.00
05	2407.00	25	2427.00	45	2447.00	65	2467.00
06	2408.00	26	2428.00	46	2448.00	66	2468.00
07	2409.00	27	2429.00	47	2449.00	67	2469.00
08	2410.00	28	2430.00	48	2450.00	68	2470.00
09	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 transmitting mode (BDR & EDR mode)
 - 1. Low Channel
 - 2. Middle Channel
 - 3. High Channel
- B. On, Transmitting on Hopping channel
- C. Bluetooth connecting mode
- D. AUX IN
- E. Charging
- F. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|---------------------------|--------------------|
| - Model Difference Letter | - User Manual |
| - Circuit Diagram | - Block Diagram |
| - Bill of Material | - Rating Label |
| - Operation Description | - Photo Document |
| - FCC label and location | - 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 & ANSI C63.4: 2014

According to clause 3.1, all tests were applied on model **NS-CSPBTHOL-BK** only.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested together with the following accessories:

Description	Manufacturer	Part No.	S/N
Mobile phone	SAMSUNG	GT-N7100	n.a
Notebook PC	Lenovo	ThinkPad X240	n.a
Printer	HP	HP laserjet 1015	CNFG030424

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

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

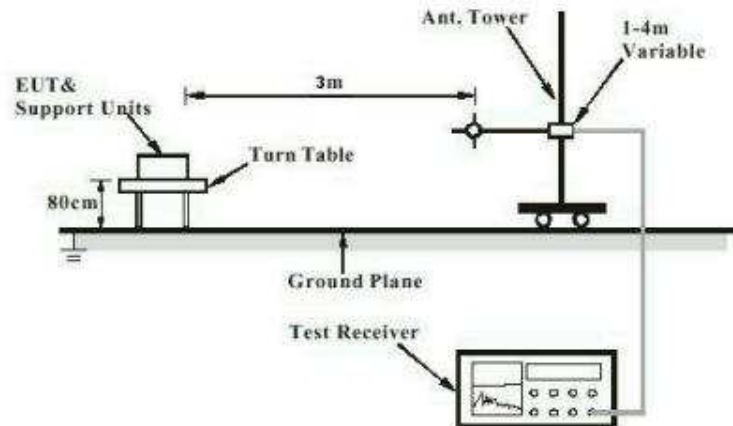


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

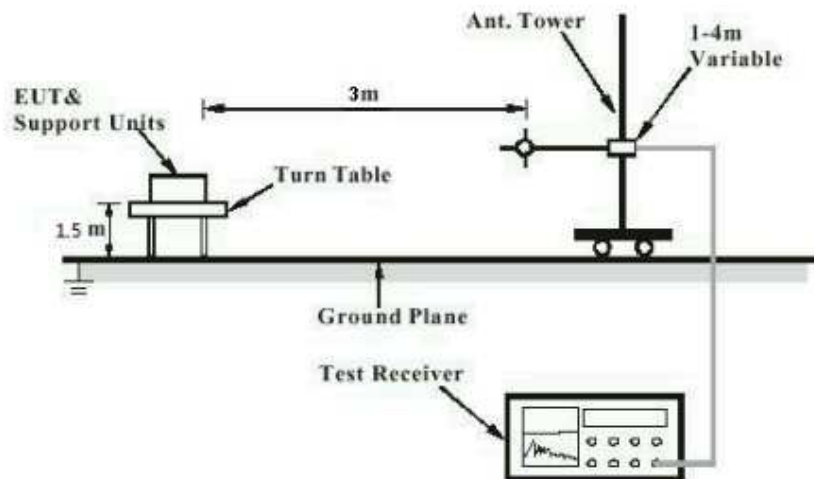


Diagram of Measurement Configuration for Mains Conduction Measurement

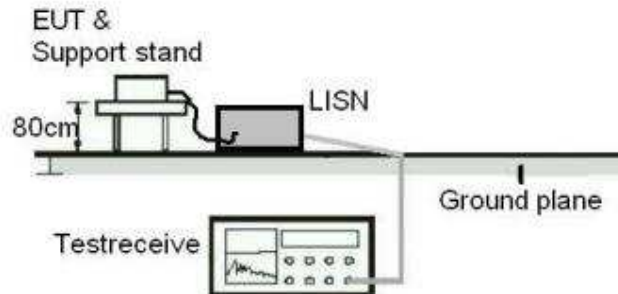
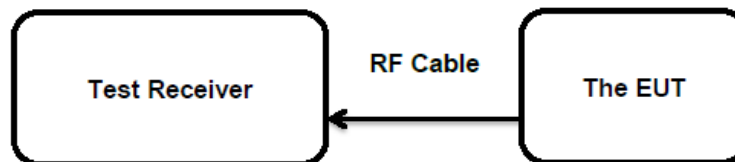


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

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

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.

Therefore the EUT is considered sufficient to comply with the provision.

5.1.2 Peak Conducted Output Power**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.247(b)(1)
RSS-247 Clause 5.4(2)

Basic standard : ANSI C63.10: 2013

Limits : 0.125 Watts

Kind of test site : Shielded Room

Test Setup

Date of testing : 06.08.2015

Input voltage : DC 3.7V via Internal rechargeable lithium battery

Operation mode : A

Test channel : Low / Middle/ High

Ambient temperature : 25°C

Relative humidity : 56%

Atmospheric pressure : 101 kPa

Table 4: Test Result of Peak Conducted Output Power, BDR

Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2402	-3.17	0.00048	0.125
Middle Channel	2441	-3.61	0.00044	0.125
High Channel	2480	-3.77	0.00042	0.125

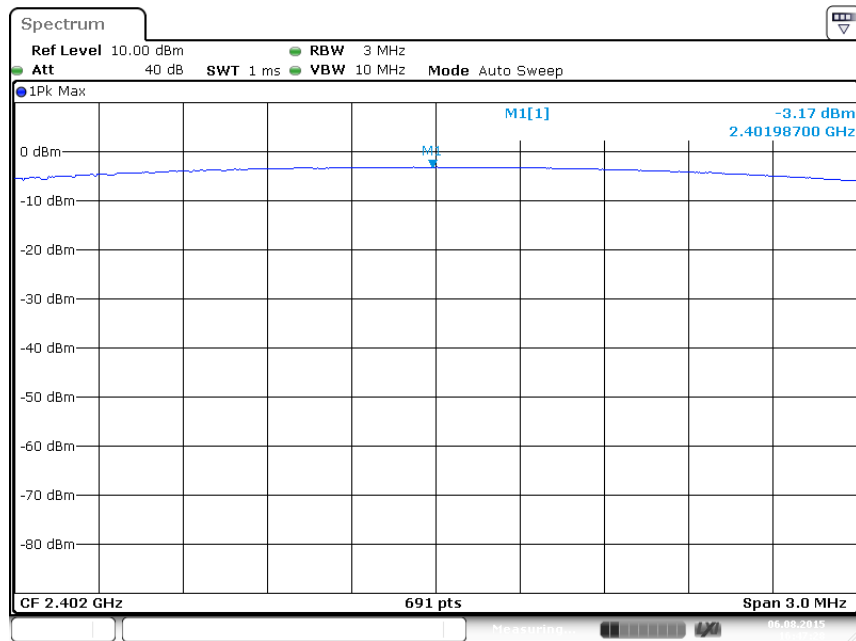
Table 5: Test Result of Peak Conducted Output Power, EDR

Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2402	-3.15	0.00048	0.125
Middle Channel	2441	-3.65	0.00043	0.125
High Channel	2480	-3.76	0.00042	0.125

For the measurement records, refer to following test plot:

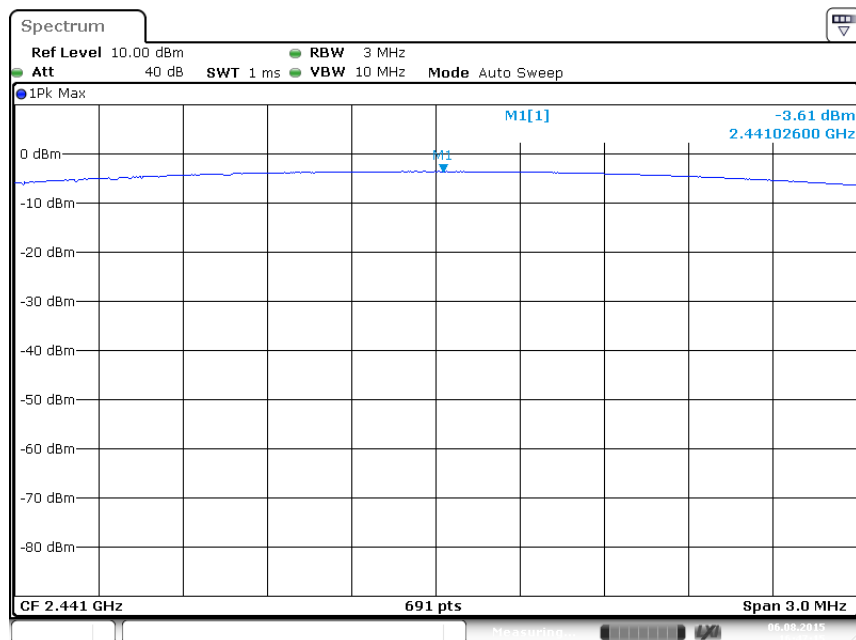
Test Plot of Peak Conducted Output Power, BDR

Low channel:



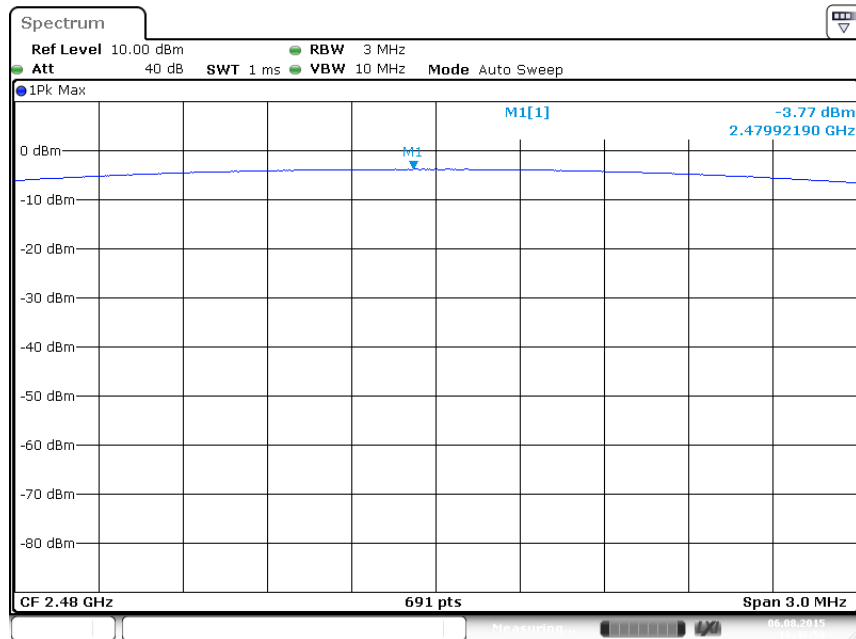
Date: 6.AUG.2015 16:47:28

Middle channel:



Date: 6.AUG.2015 16:47:16

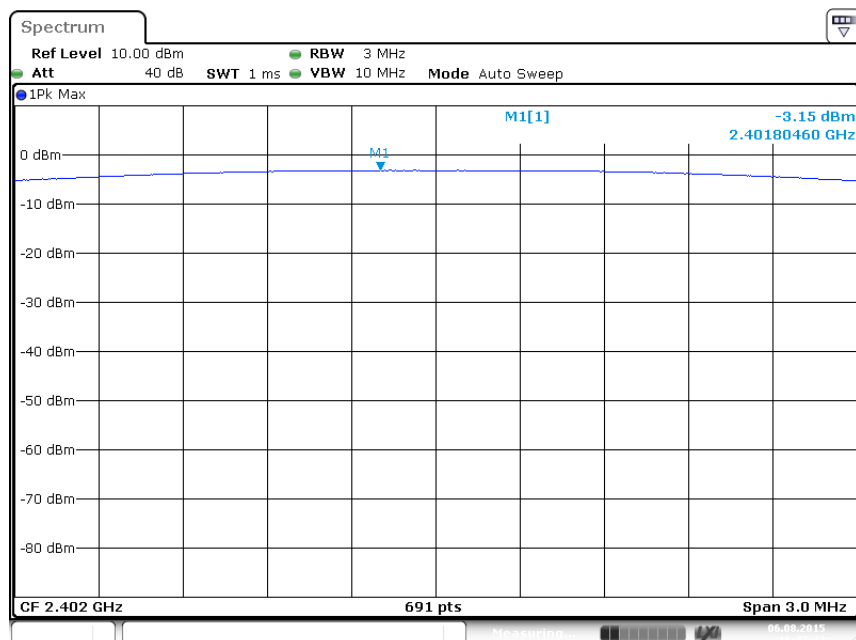
High channel:



Date: 6.AUG.2015 16:47:00

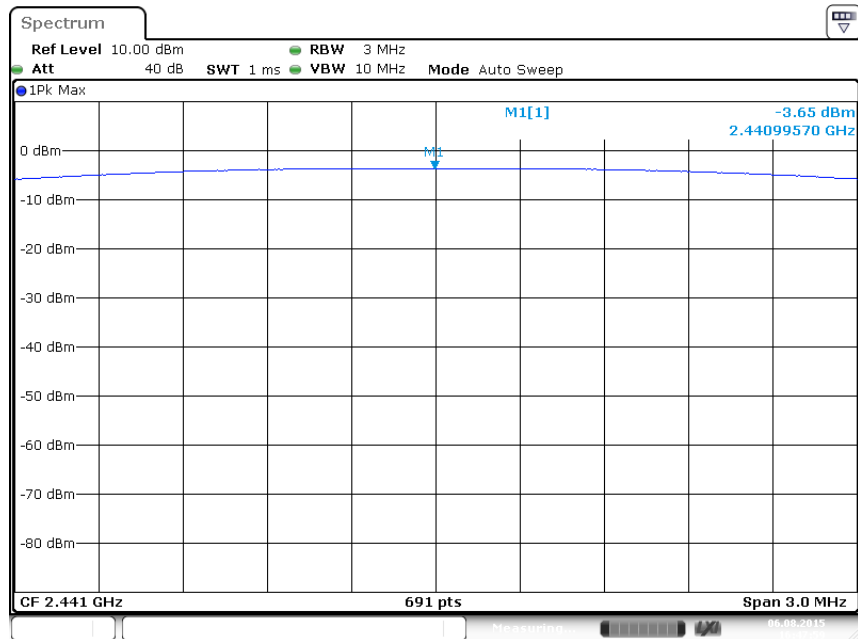
Test Plot of Peak Conducted Output Power, EDR

Low channel:



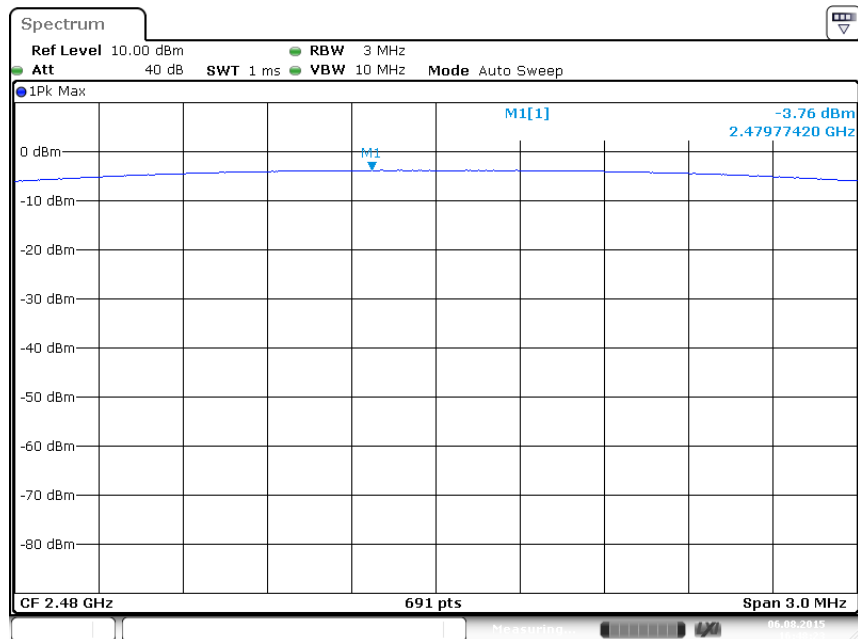
Date: 6.AUG.2015 16:47:42

Middle channel:



Date: 6.AUG.2015 16:48:00

High channel:



Date: 6.AUG.2015 16:48:23

5.1.3 99% Bandwidth

RESULT:
Pass
Test Specification

Test standard : RSS-Gen Clause 6.6
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded Room

Test Setup

Date of testing : 06.08.2015
 Input voltage : DC 3.7V via Internal rechargeable lithium battery
 Operation mode : A
 Test channel : Low / Middle/ High
 Ambient temperature : 25°C
 Relative humidity : 56%
 Atmospheric pressure : 101 kPa

Table 6: Test Result of 99% Bandwidth, BDR mode

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2402	1011.577	/	Pass
Middle Channel	2441	1011.577	/	Pass
High Channel	2480	1020.260	/	Pass

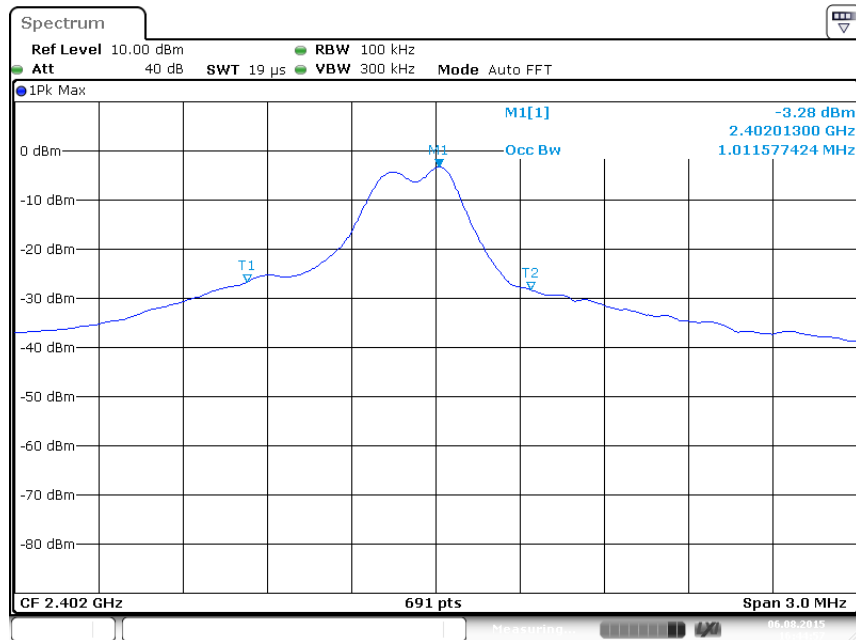
Table 7: Test Result of 99% Bandwidth, EDR mode

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2402	1228.654	/	Pass
Middle Channel	2441	1120.116	/	Pass
High Channel	2480	1107.091	/	Pass

For the measurement records, refer to following test plot:

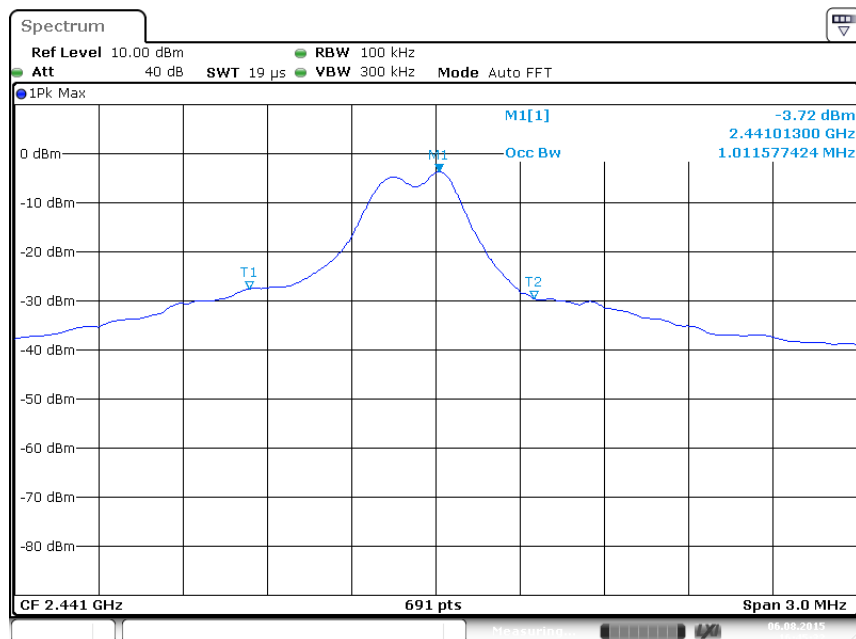
Test Plot of 99% Bandwidth, BDR

Low channel:



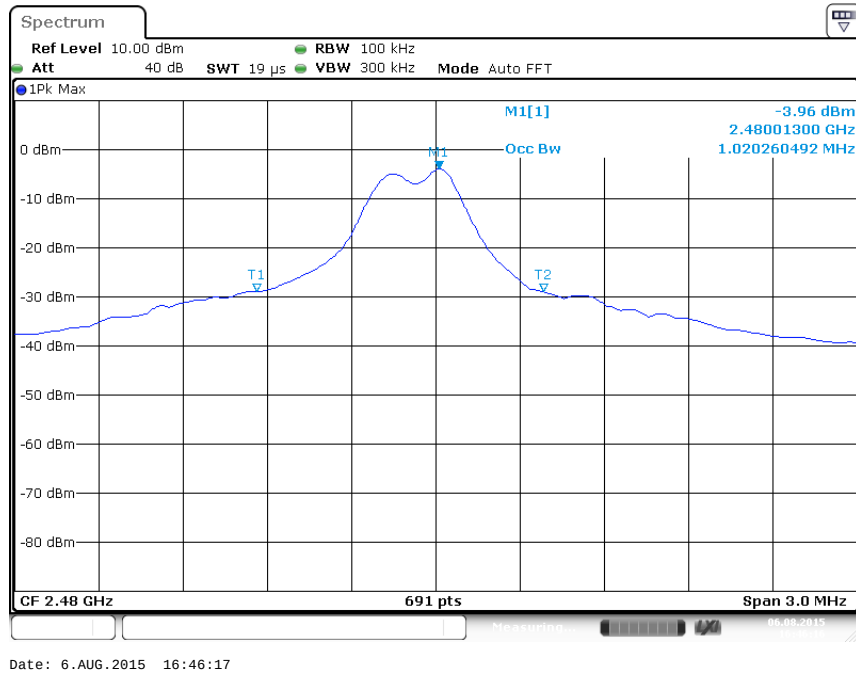
Date: 6.AUG.2015 16:44:58

Middle channel:



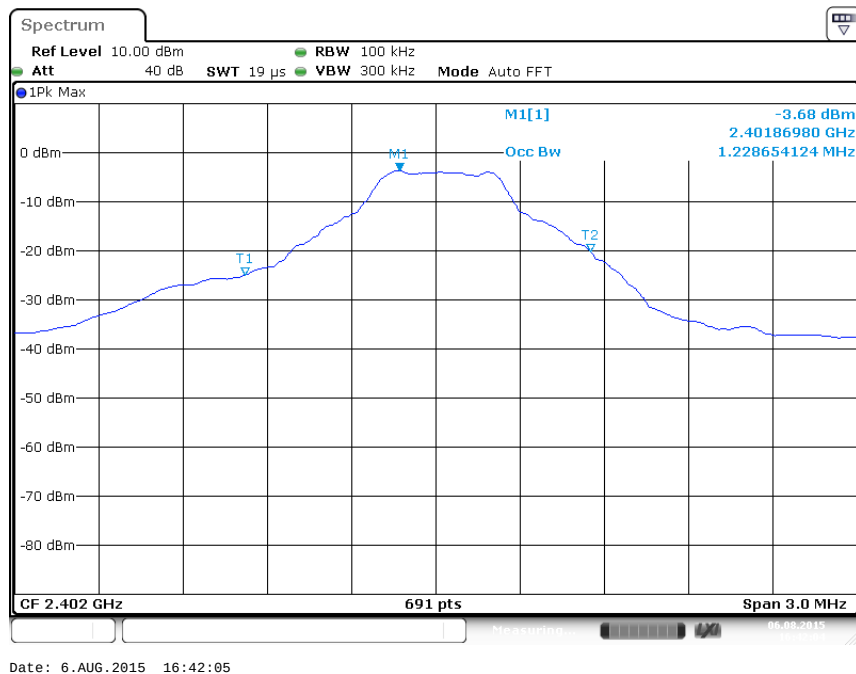
Date: 6.AUG.2015 16:45:32

High channel:

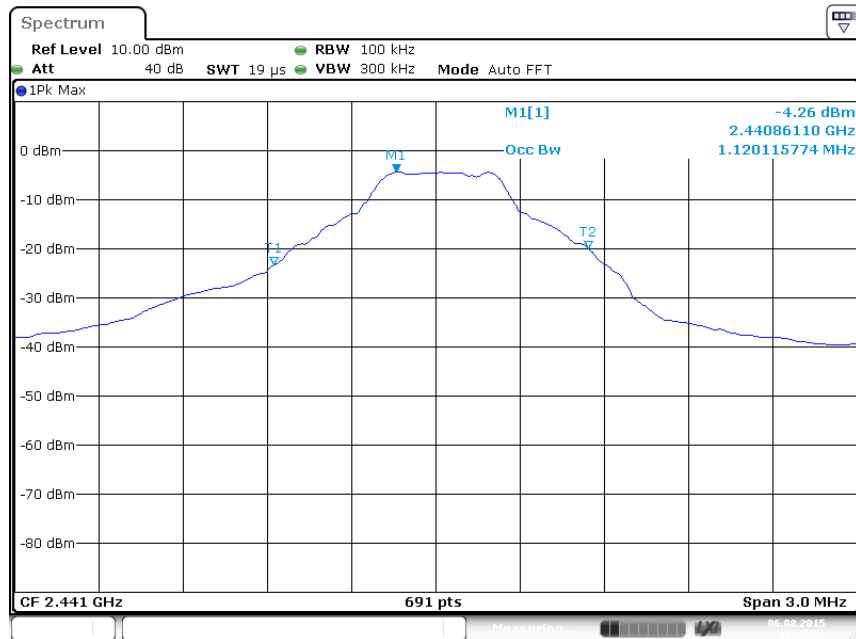


Test Plot of 99% Bandwidth, EDR

Low channel:

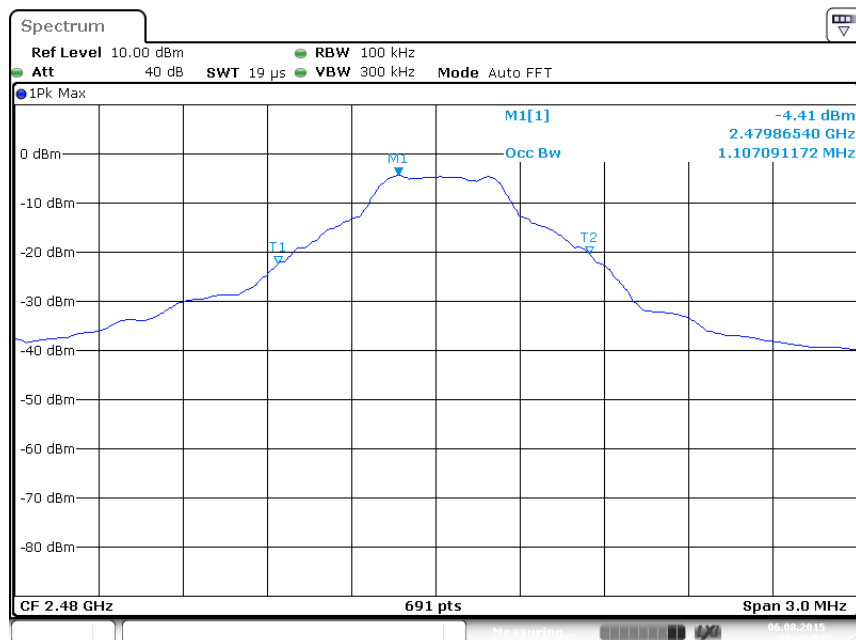


Middle channel:



Date: 6.AUG.2015 16:42:37

High channel:



Date: 6.AUG.2015 16:42:58

5.1.4 Conducted Spurious Emissions Measured in 100 kHz Bandwidth**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
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

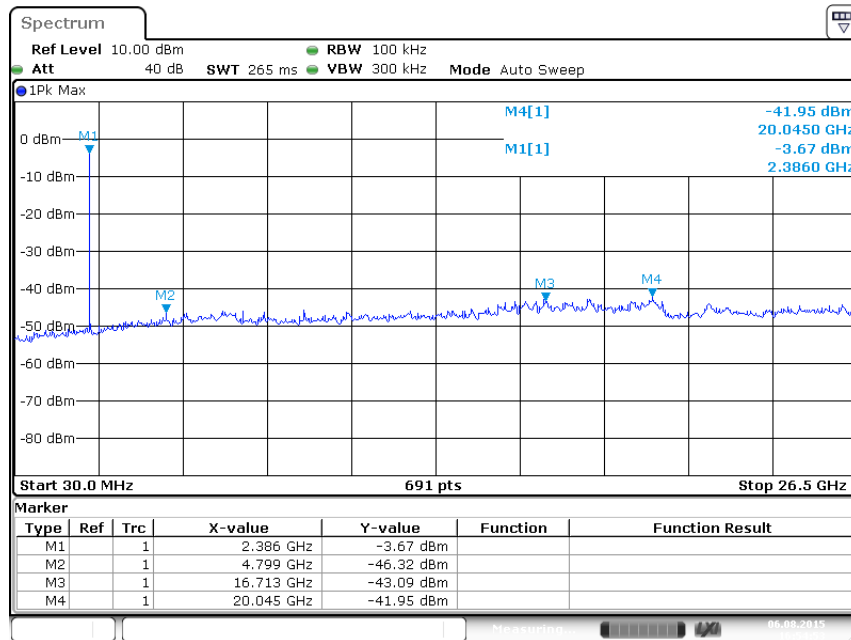
Date of testing	: 06.08.2015
Input voltage	: DC 3.7V via Internal rechargeable lithium battery
Operation mode	: A
Test channel	: Low / Middle/ High
Ambient temperature	: 25°C
Relative humidity	: 56%
Atmospheric pressure	: 101 kPa

All emissions are more than 20dB below fundamental, compliance is achieved as well.

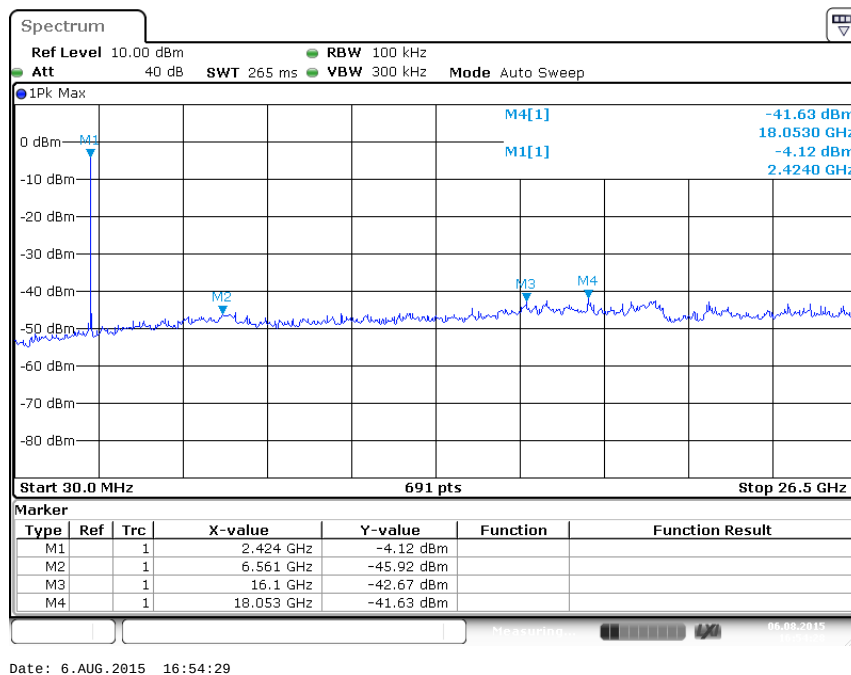
For the measurement records, refer to following test plot:

Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of BDR mode

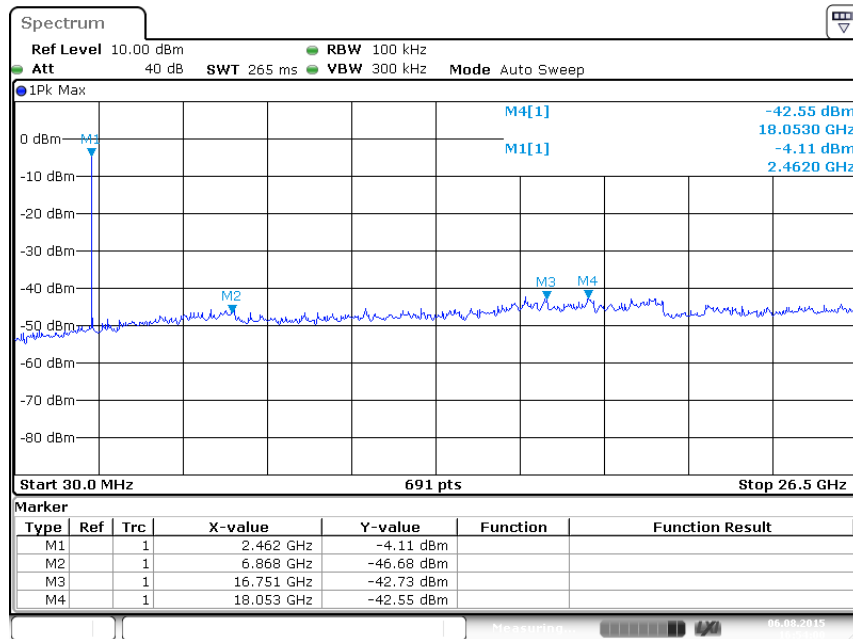
Low channel:



Middle channel:



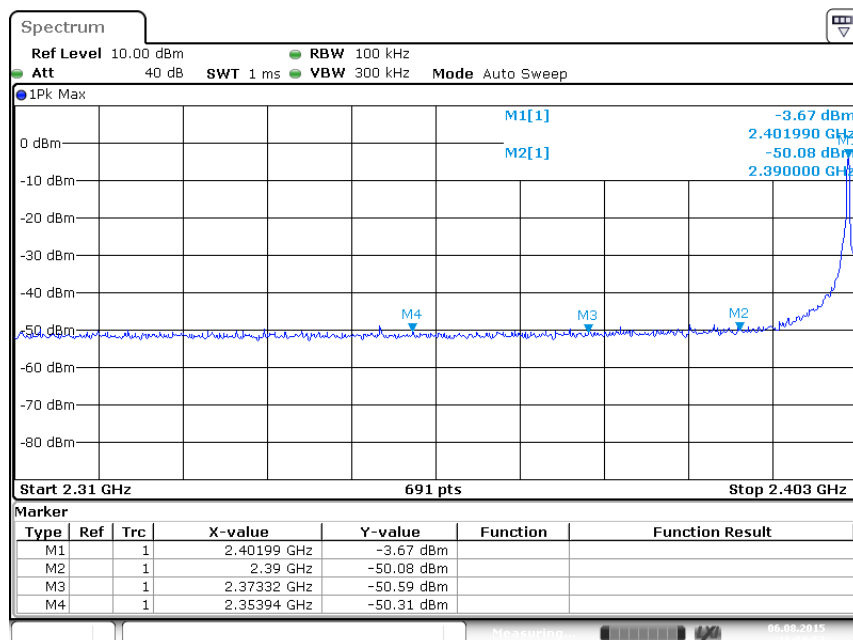
High channel:



Date: 6.AUG.2015 16:54:00

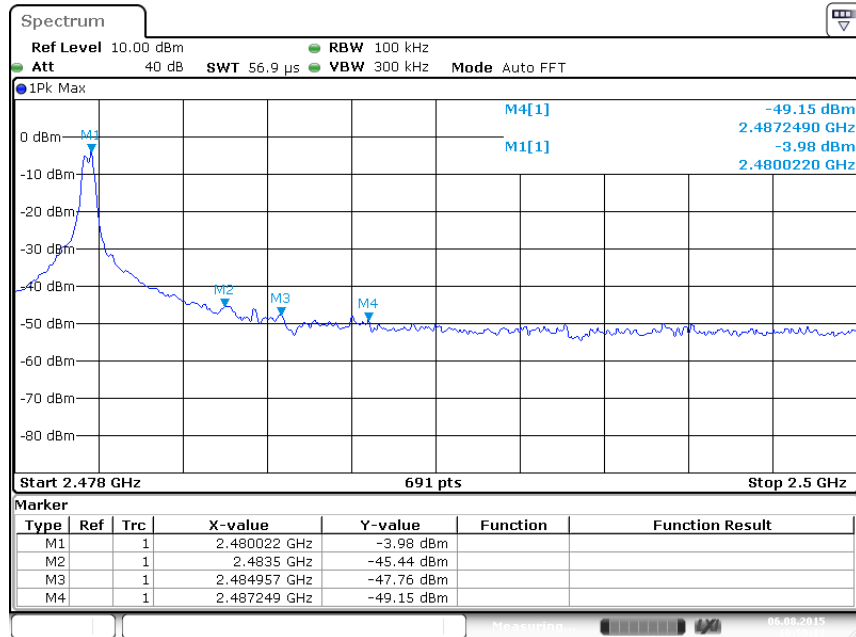
Test Plot of 100 kHz Bandwidth of Frequency Band Edge

Low channel:



Date: 6.AUG.2015 16:50:57

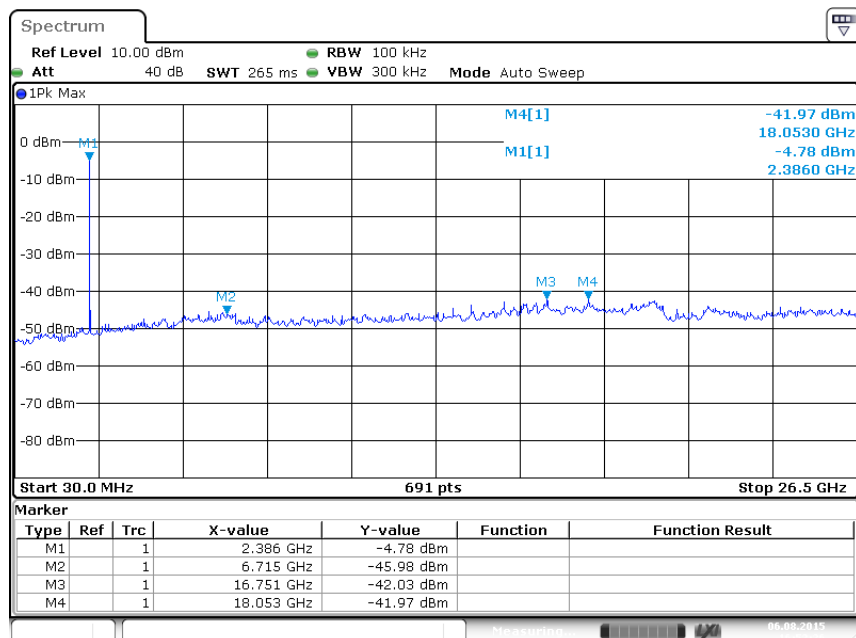
High channel:



Date: 6.AUG.2015 16:50:13

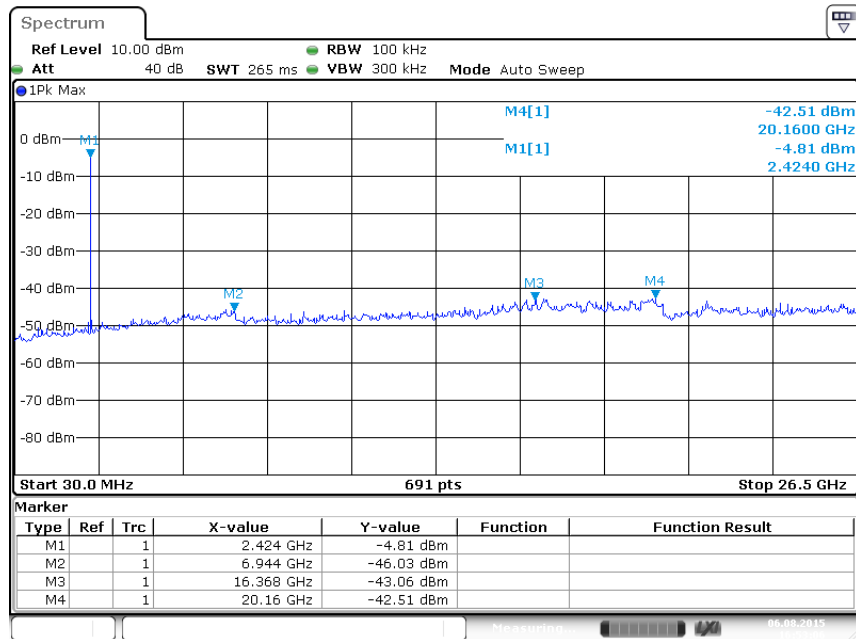
Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of EDR mode

Low channel:



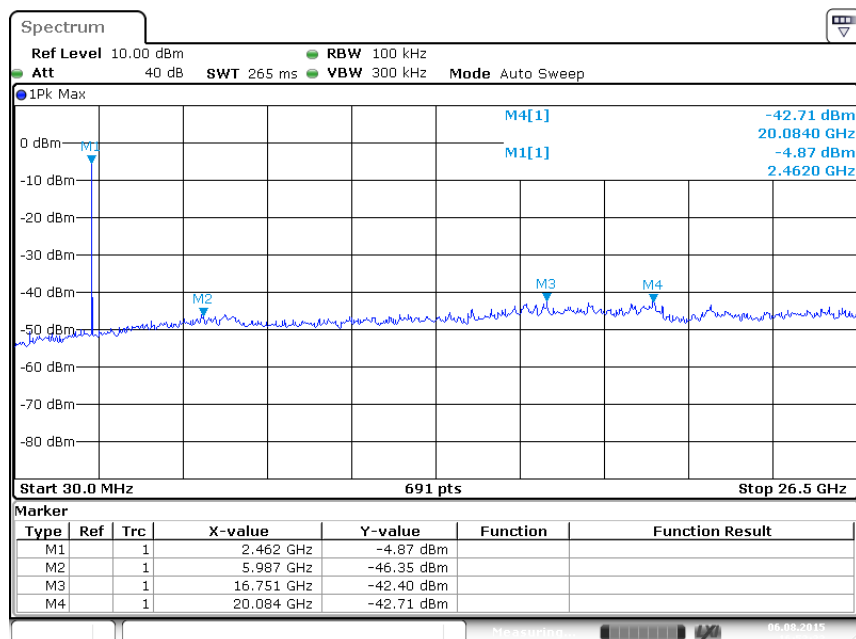
Date: 6.AUG.2015 16:52:26

Middle channel:



Date: 6.AUG.2015 16:53:06

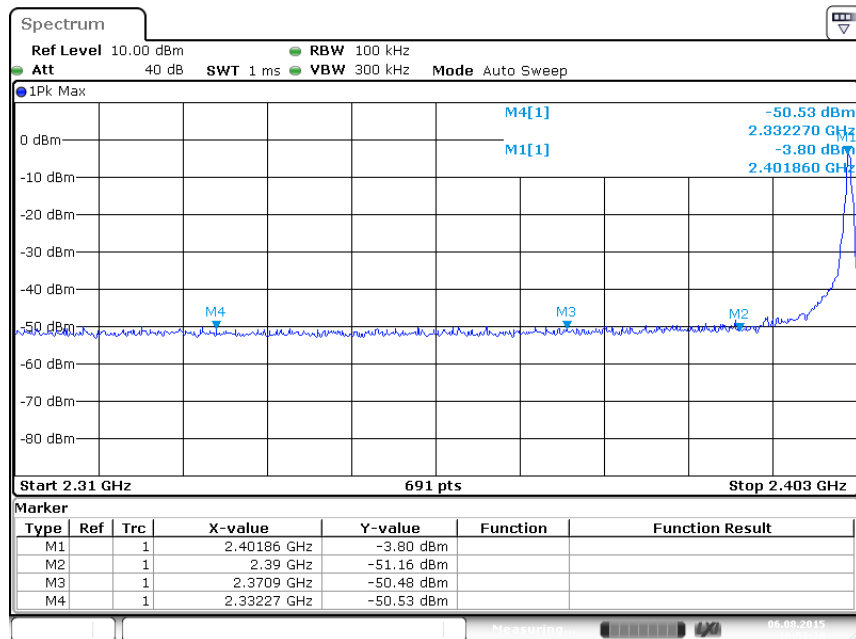
High channel:



Date: 6.AUG.2015 16:53:33

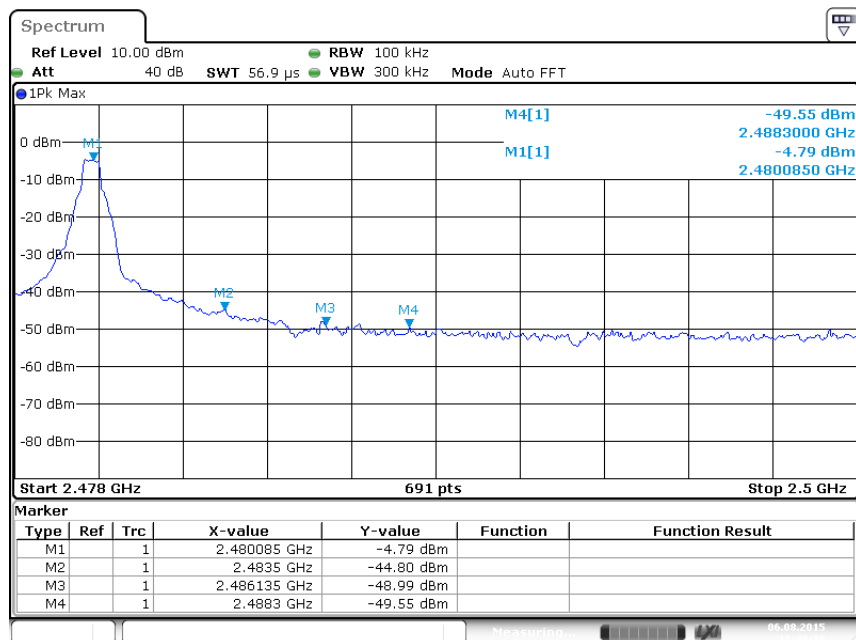
Test Plot of 100 kHz Bandwidth of Frequency Band Edge

Low channel:



Date: 6.AUG.2015 16:51:21

High channel:



Date: 6.AUG.2015 16:49:40

5.1.5 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

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
Kind of test site	: 3m Semi-anechoic chamber

Test Setup

Date of testing	: 06.08.2015
Input voltage	: DC 3.7V via Internal rechargeable lithium battery
Operation mode	: A
Test channel	: Low / Middle/ High
Ambient temperature	: 25°C
Relative humidity	: 56%
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 set-up photos.

Pre-test the EUT in continuous transmitting mode at the low (2402 MHz), middle (2441 MHz) and high (2480 MHz) channel with different data packet. Compliance test in continuous transmitting mode with BDR mode (DH5) as the worst case was found.

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

For the measurement records, refer to the appendix 1.

5.1.6 20dB Bandwidth

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(a)(1)
 RSS-247 Clause 5.1(1)

Basic standard : ANSI C63.10: 2013

Kind of test site : Shielded Room

Test Setup

Date of testing : 06.08.2015

Input voltage : DC 3.7V via Internal rechargeable lithium battery

Operation mode : A

Test channel : Low / Middle/ High

Ambient temperature : 25°C

Relative humidity : 56%

Atmospheric pressure : 101 kPa

Table 8: Test Result of 20dB Bandwidth, BDR mode

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	621.20	414.133	/	Pass
Middle Channel	2441	621.20	414.133	/	Pass
High Channel	2480	668.60	445.733	/	Pass

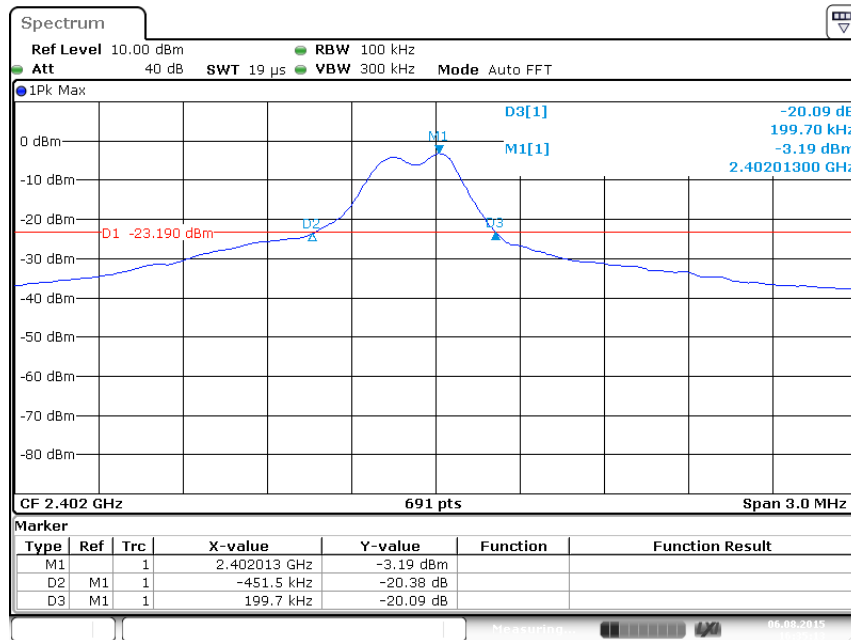
Table 9: Test Result of 20dB Bandwidth, EDR mode

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	1270.10	846.733	/	Pass
Middle Channel	2441	1220.00	813.333	/	Pass
High Channel	2480	1237.30	824.867	/	Pass

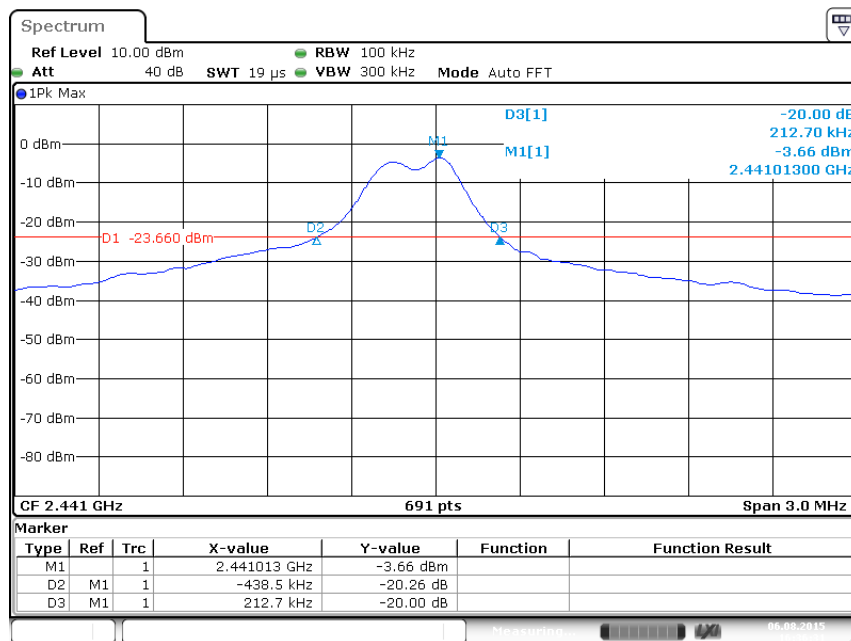
For the measurement records, refer to following test plot:

Test Plot of 20dB Bandwidth, BDR

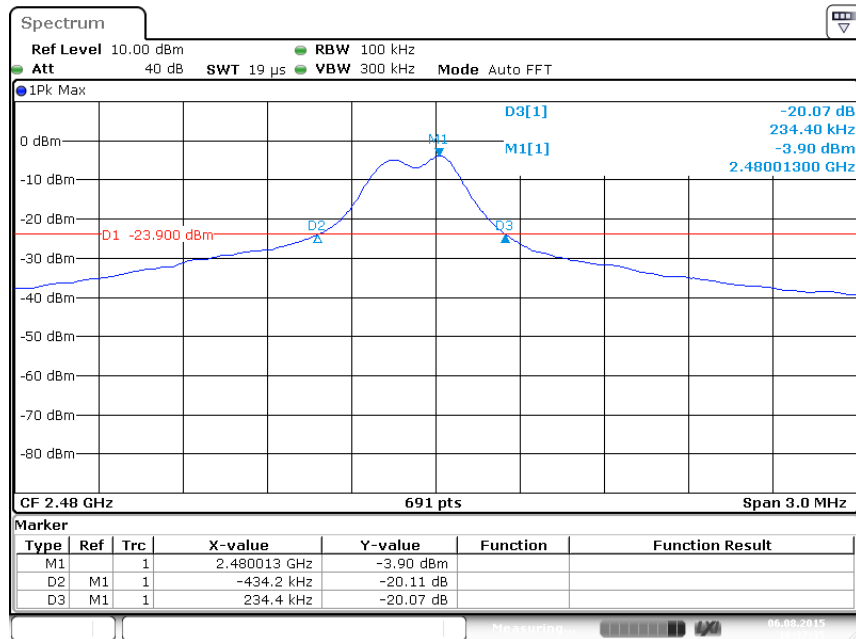
Low channel:



Middle channel:



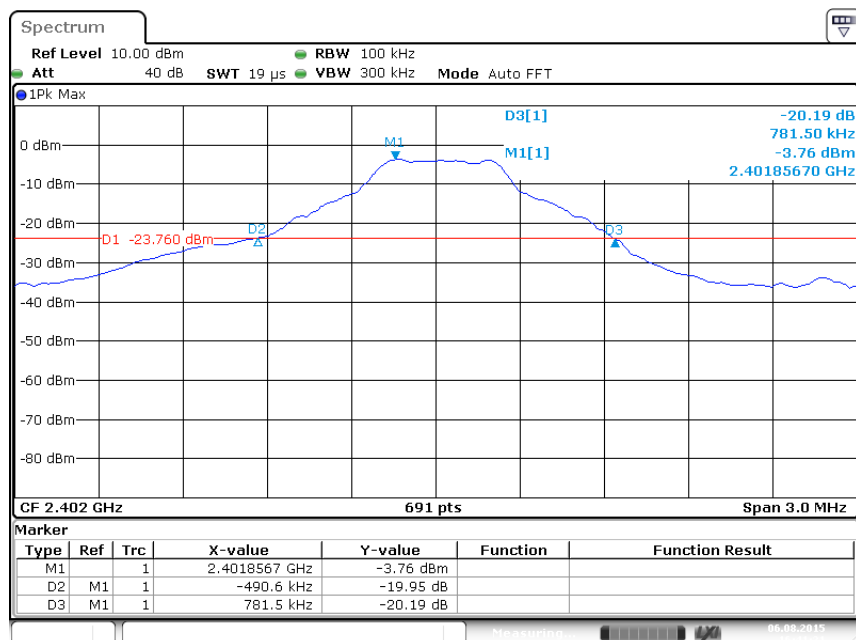
High channel:



Date: 6.AUG.2015 16:37:35

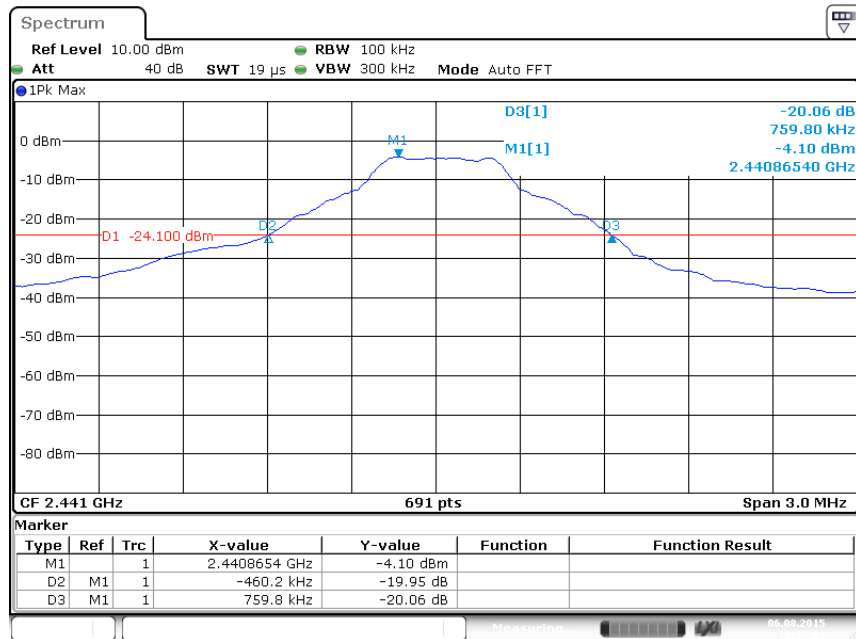
Test Plot of 20dB Bandwidth, EDR

Low channel:



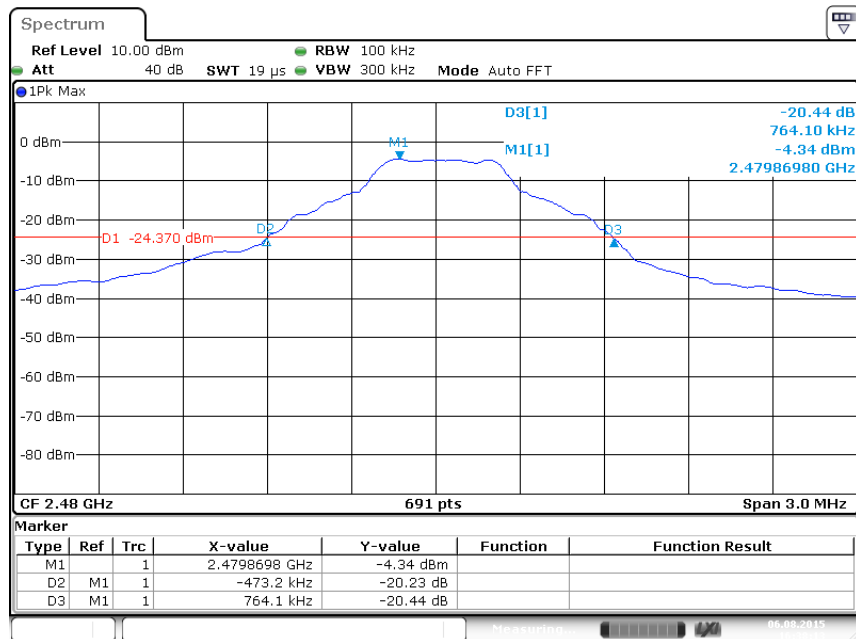
Date: 6.AUG.2015 16:41:21

Middle channel:



Date: 6.AUG.2015 16:39:02

High channel:



Date: 6.AUG.2015 16:38:14

5.1.7 Carrier Frequency Separation

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(a)(1)
 RSS-247 Clause 5.1(2)

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 : 06.08.2015

Input voltage : DC 3.7V via Internal rechargeable lithium battery

Operation mode : A

Test channel : Low / Middle/ High

Ambient temperature : 25°C

Relative humidity : 56%

Atmospheric pressure : 101 kPa

Table 10: Test Result of Carrier Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (KHz)	Limit (kHz)	Result
Low Channel	2402	1000.0	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2403			
Middle Channel	2441	1002.9		Pass
Adjacency Channel	2442			
High Channel	2480	1002.9		Pass
Adjacency Channel	2479			

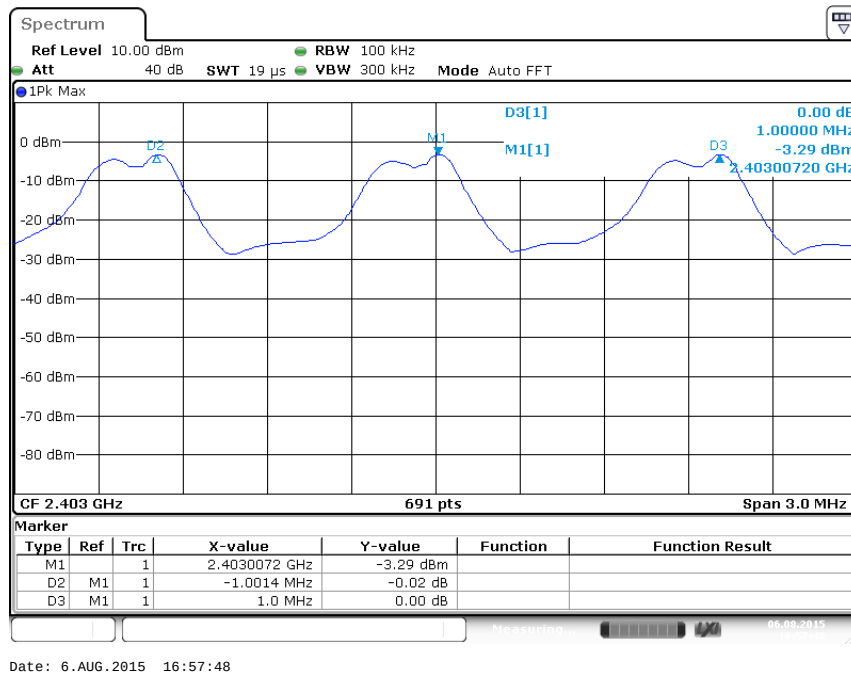
Note:

The limit is maximum $2/3$ of the 20 dB bandwidth: 846.733 KHz.

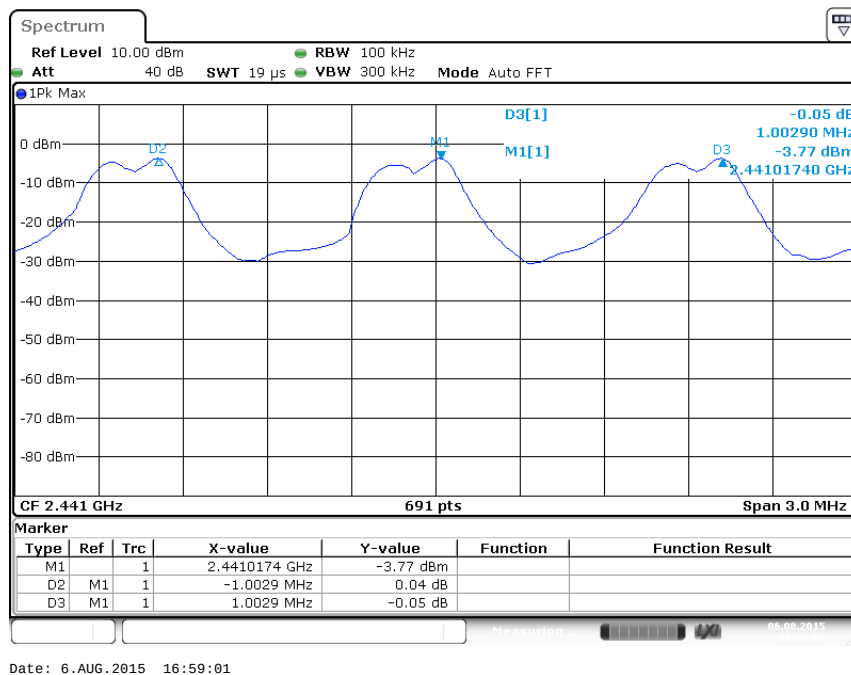
For the measurement records, refer to following test plot:

Test Plot of Carrier Frequency Separation

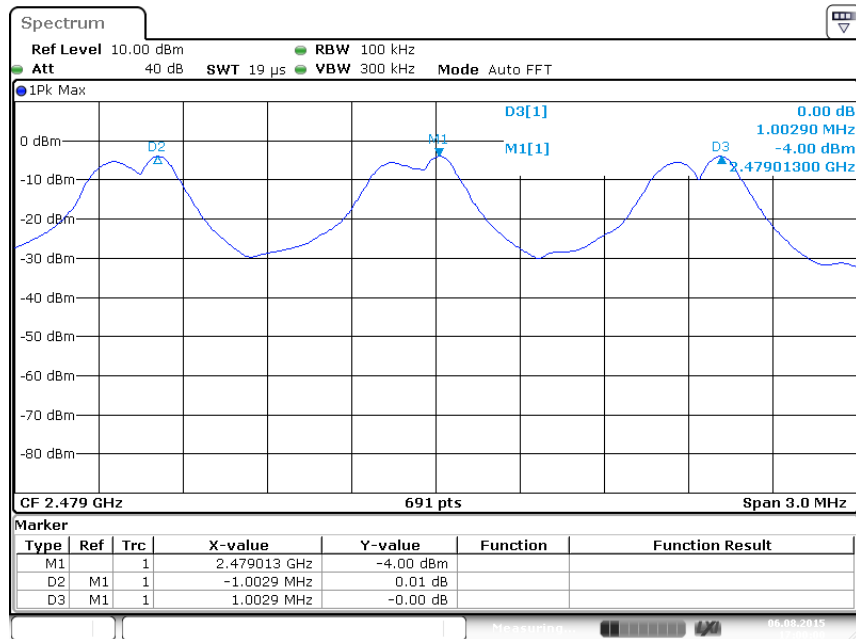
Low channel:



Middle channel:



High channel:



Date: 6.AUG.2015 17:00:00

5.1.8 Number of Hopping Frequency

RESULT:**Pass****Test Specification**

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 : Shielded Room

Test Setup

Date of testing : 06.08.2015

Input voltage : DC 3.7V via Internal rechargeable lithium battery

Operation mode : B

Ambient temperature : Low / Middle/ High

Relative humidity : 25°C

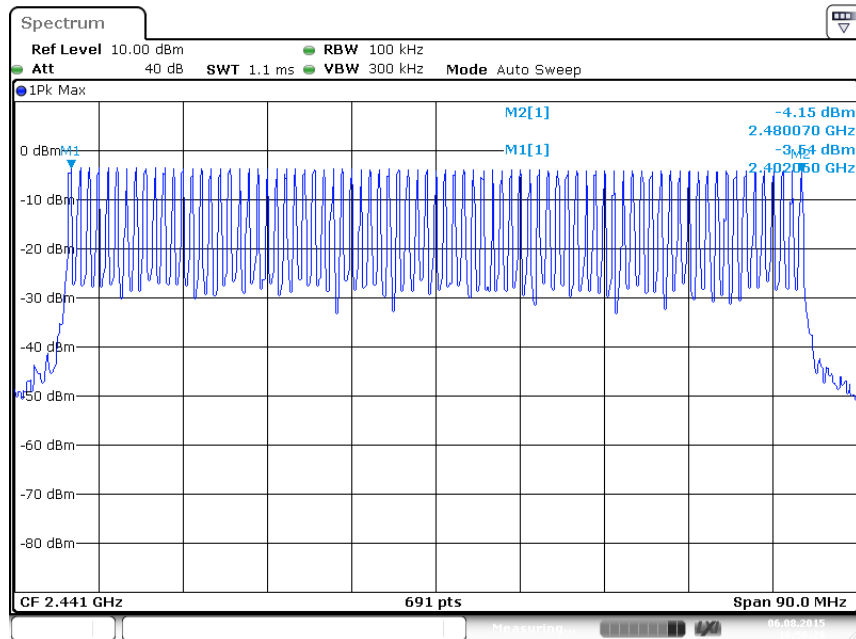
Atmospheric pressure : 56%

Table 11: Test Result of Number of Hopping Frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
2402 to 2480 MHz	79	≥ 15	Pass

For the measurement records, refer to following test plot:

Test Plot of Number of hopping frequency



Date: 6.AUG.2015 16:56:28

5.1.9 Time of Occupancy

RESULT:**Pass****Test Specification**

Test standard : FCC part 15.247(a)(1)(iii)
RSS-247 Clause 5.1(4)

Basic standard : ANSI C63.10: 2013

Limits : 0.4s

Kind of test site : Shielded Room

Test Setup

Date of testing : 06.08.2015

Input voltage : DC 3.7V via Internal rechargeable lithium battery

Test channel : A

Operation mode : Low / Middle/ High

Ambient temperature : 25°C

Relative humidity : 56%

Atmospheric pressure : 101 kPa

Table 12: Test Result of Time of Occupancy, BDR mode

Channel	Data Mode	Pulse width (ms)	Measured Dwell time(s)	Limit (s)	Result
Low Channel	1DH1	0.434	0.139	0.4	Pass
	1DH3	1.913	0.306	0.4	Pass
	1DH5	3.109	0.332	0.4	Pass
Middle Channel	1DH1	0.565	0.181	0.4	Pass
	1DH3	1.855	0.297	0.4	Pass
	1DH5	3.087	0.329	0.4	Pass
High Channel	1DH1	0.565	0.181	0.4	Pass
	1DH3	1.900	0.304	0.4	Pass
	1DH5	3.109	0.332	0.4	Pass

Table 13: Test Result of Time of Occupancy, EDR mode

Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	3DH1	0.408	0.131	0.4	Pass
	3DH3	1.855	0.297	0.4	Pass
	3DH5	2.978	0.318	0.4	Pass
Middle Channel	3DH1	0.557	0.178	0.4	Pass
	3DH3	1.855	0.297	0.4	Pass
	3DH5	2.935	0.313	0.4	Pass
High Channel	3DH1	0.572	0.183	0.4	Pass
	3DH3	1.739	0.278	0.4	Pass
	3DH5	3.152	0.336	0.4	Pass

Note:

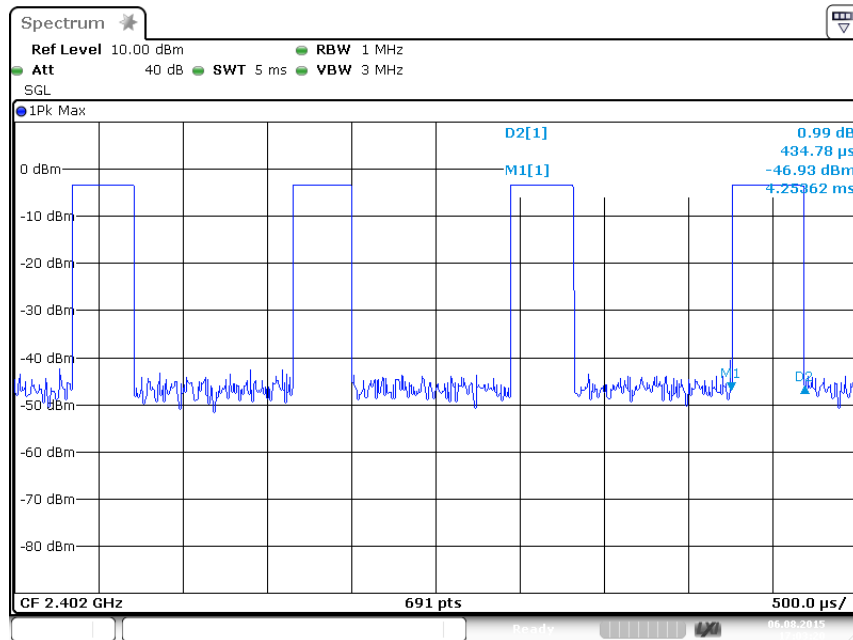
Dwell time = Pulse width x (Hopping rate / Number of channels) x Period

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

For the measurement records, refer to following test plot:

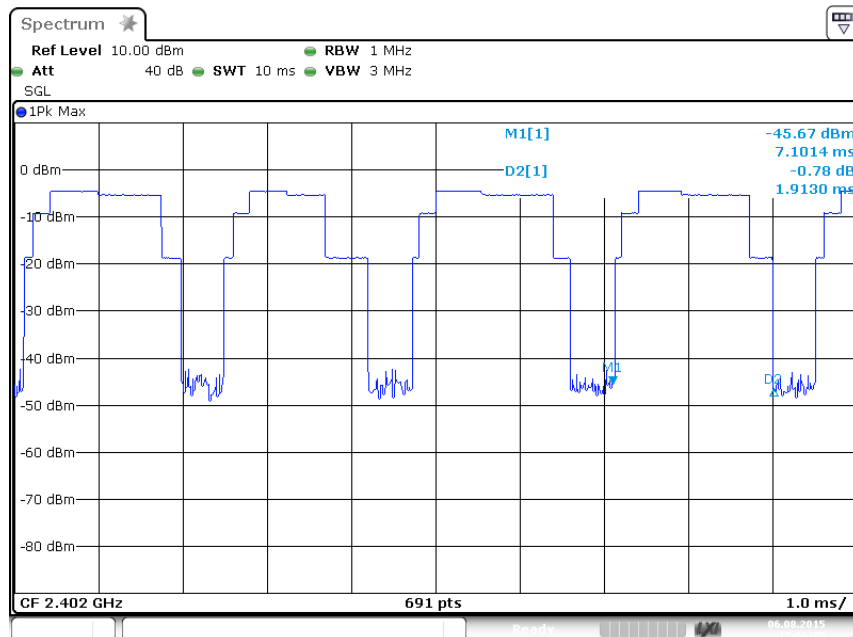
Test Plot of Time of Occupancy, BDR

Low channel: DH1

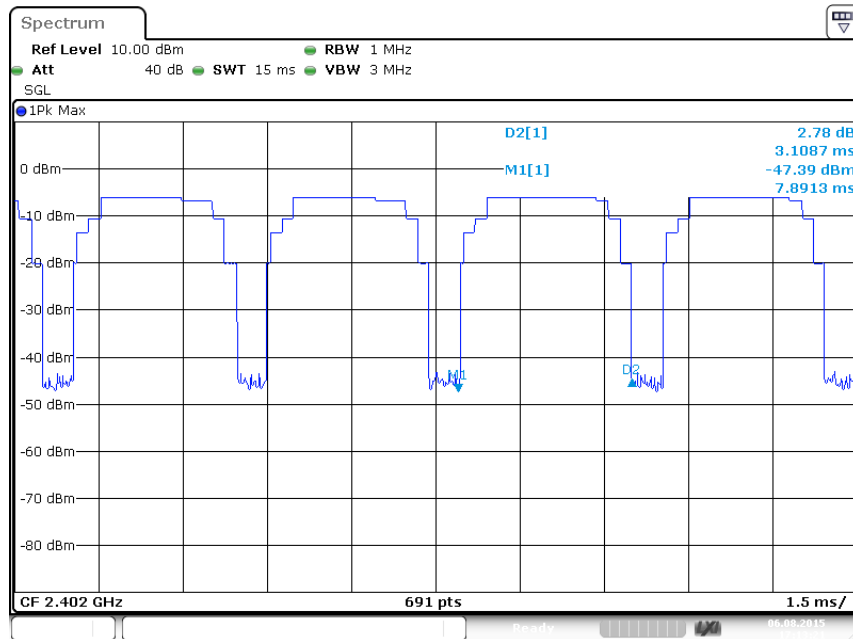


Date: 6.AUG.2015 17:03:21

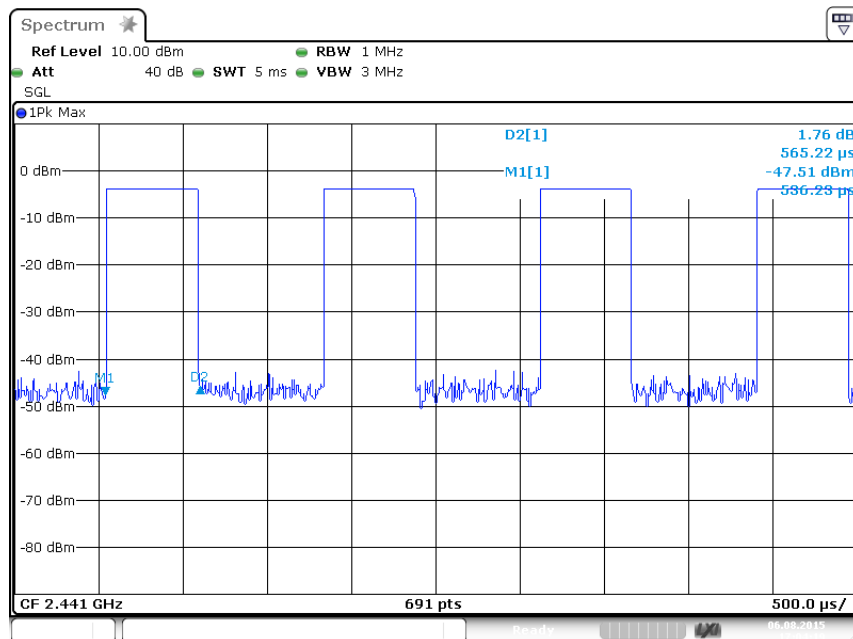
Low channel: DH3



Date: 6.AUG.2015 17:06:35

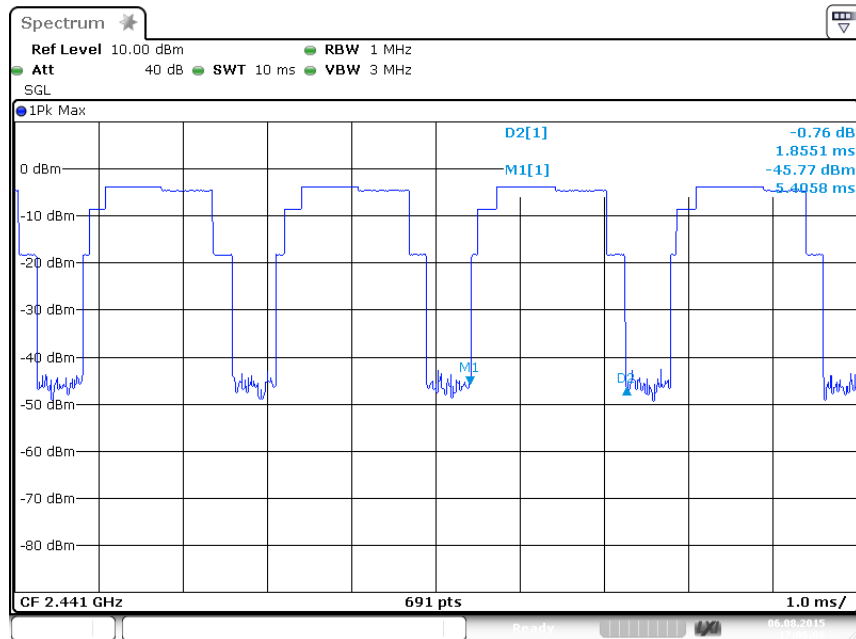
Low channel: DH5


Date: 6.AUG.2015 17:13:22

Middle channel: DH1


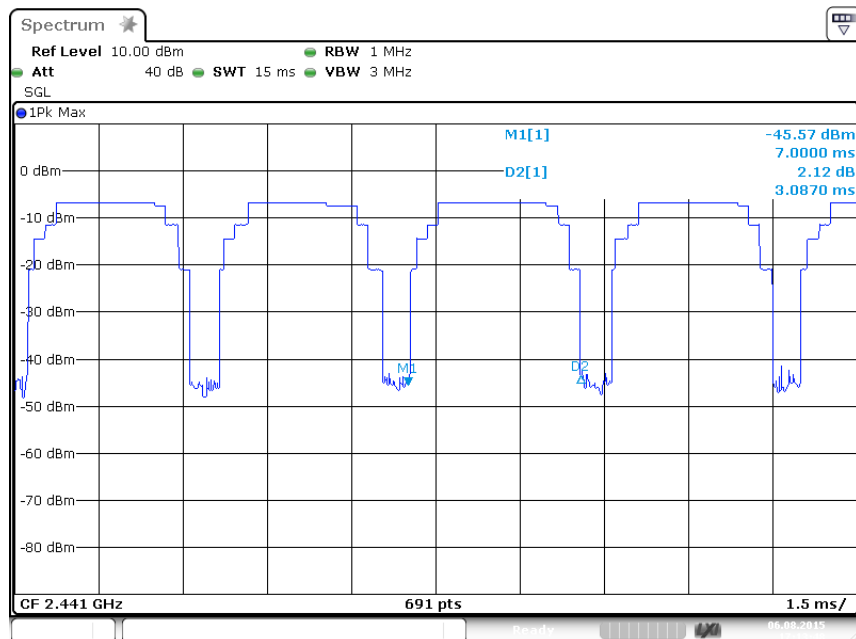
Date: 6.AUG.2015 17:04:19

Middle channel: DH3



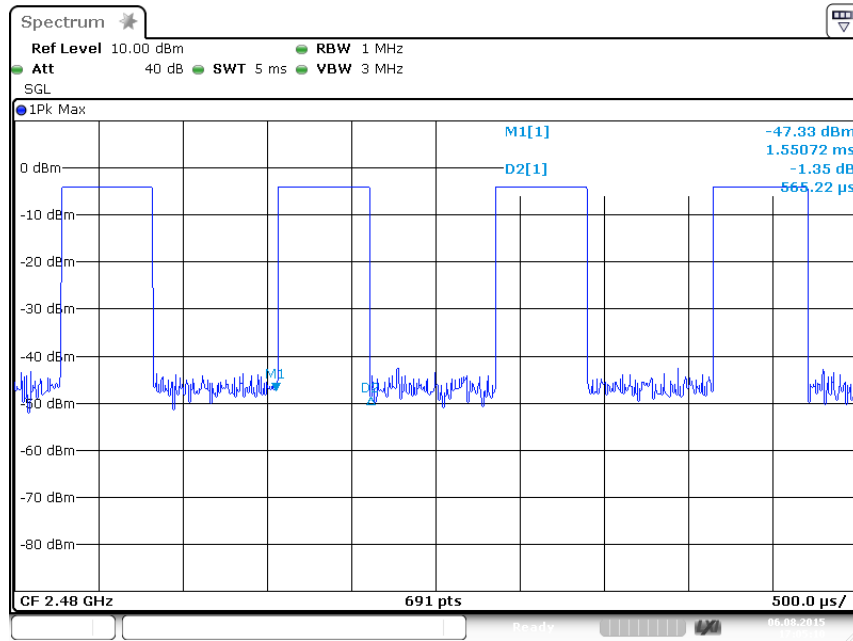
Date: 6.AUG.2015 17:06:08

Middle channel: DH5



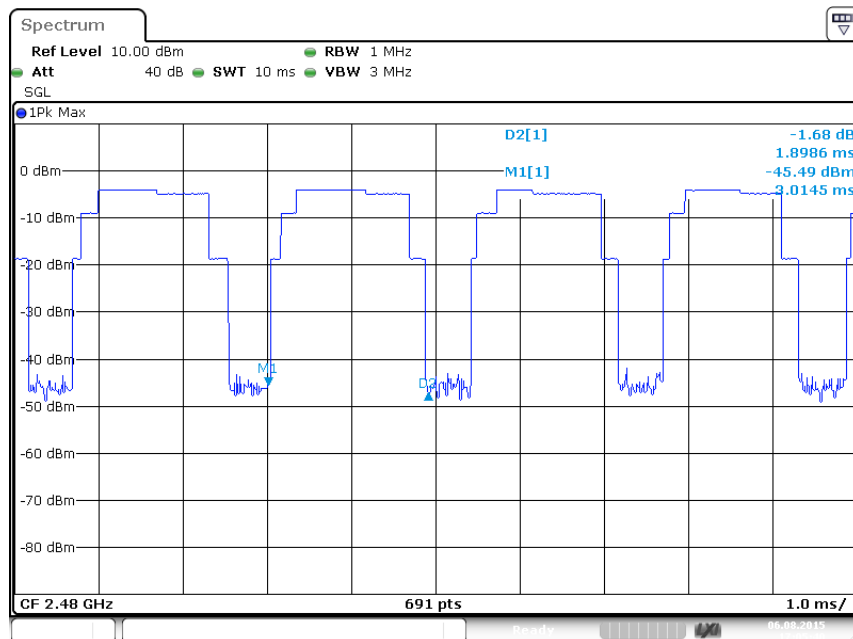
Date: 6.AUG.2015 17:13:48

High channel: DH1



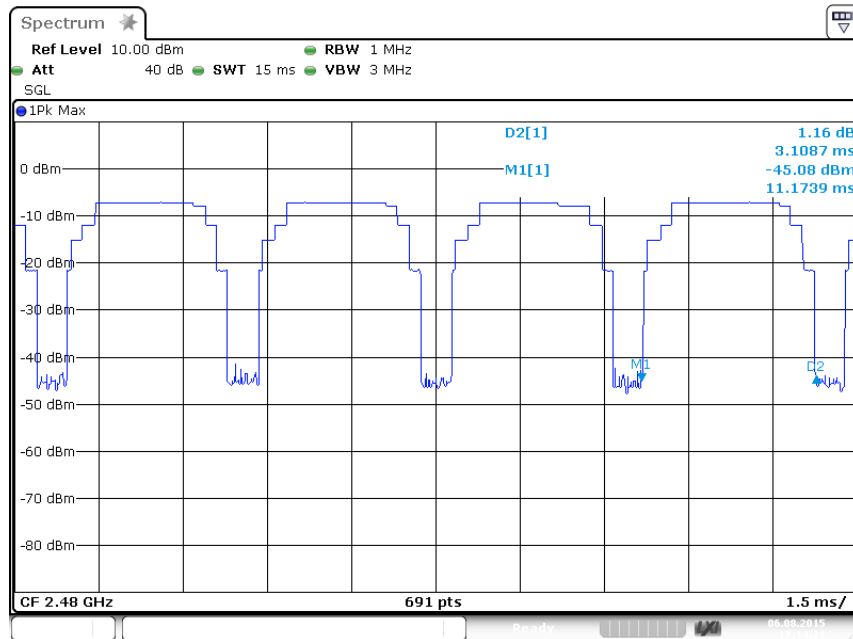
Date: 6.AUG.2015 17:05:10

High channel: DH3



Date: 6.AUG.2015 17:05:40

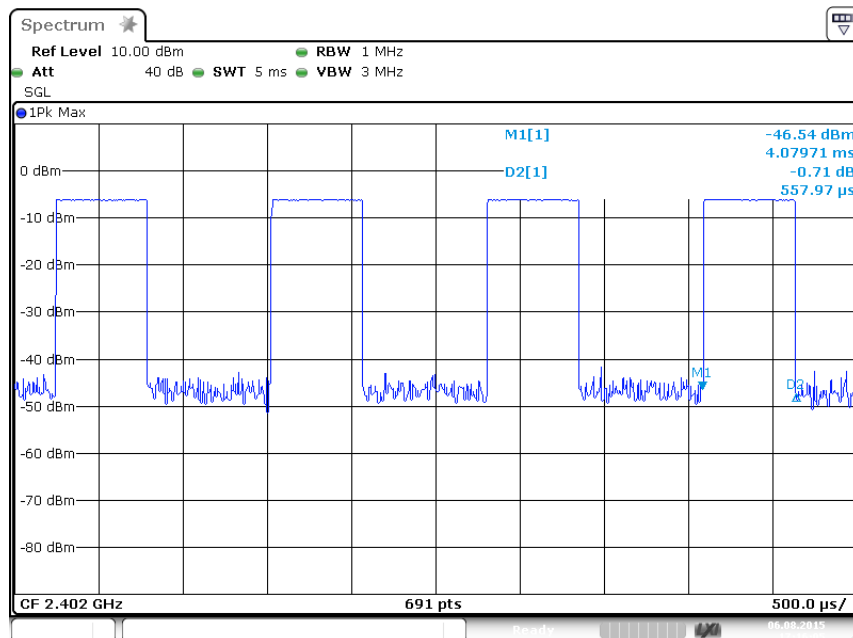
High channel: DH5



Date: 6.AUG.2015 17:14:21

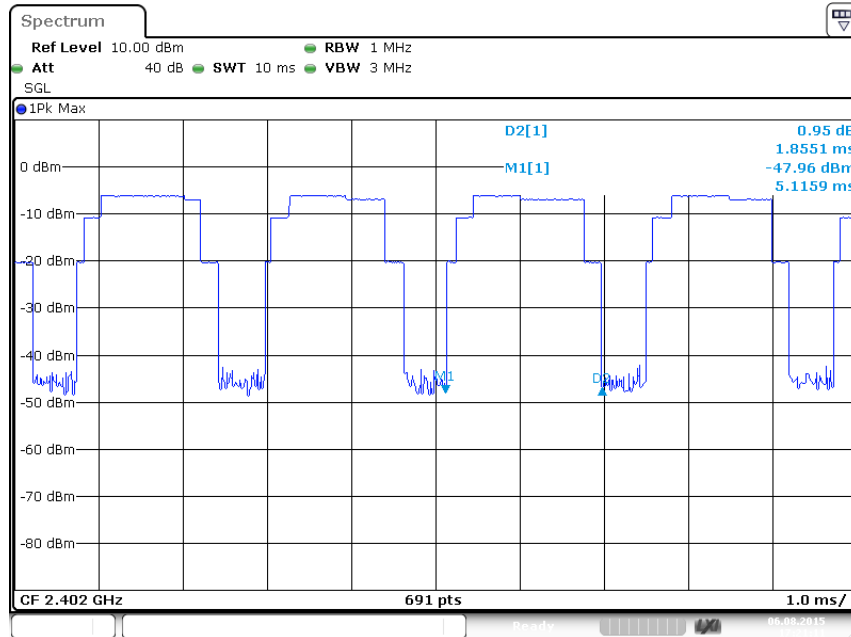
Test Plot of Time of Occupancy, EDR

Low channel: 3DH1



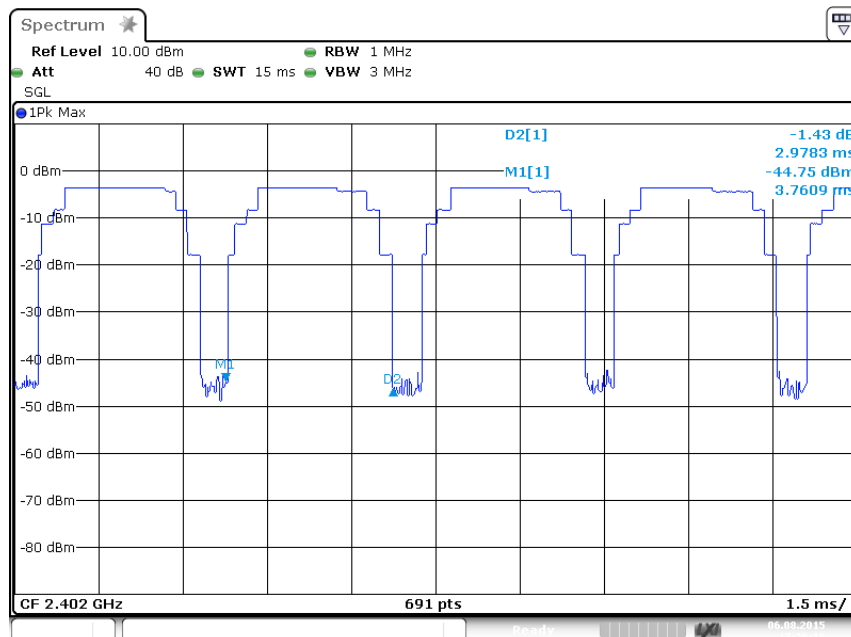
Date: 6.AUG.2015 17:16:06

Low channel: 3DH3



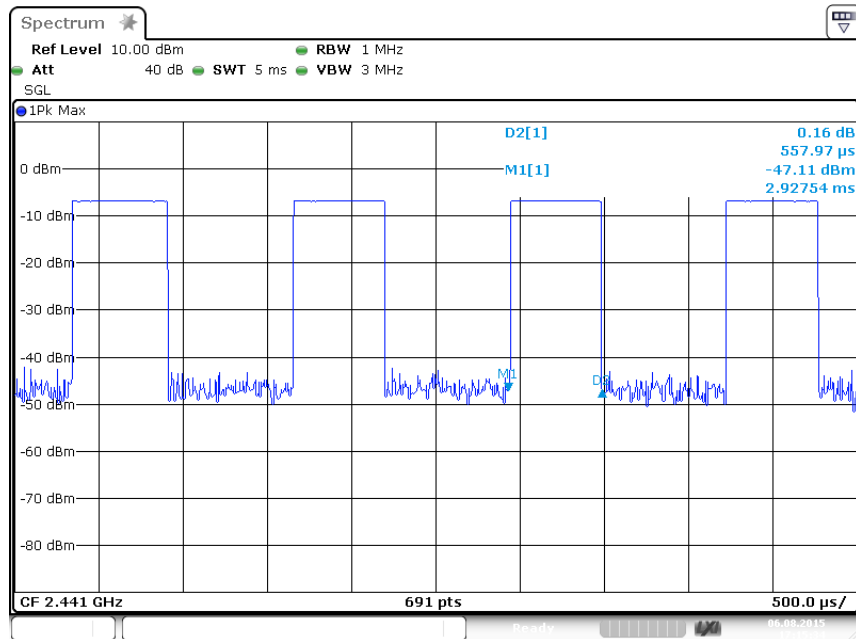
Date: 6.AUG.2015 17:21:11

Low channel: 3DH5



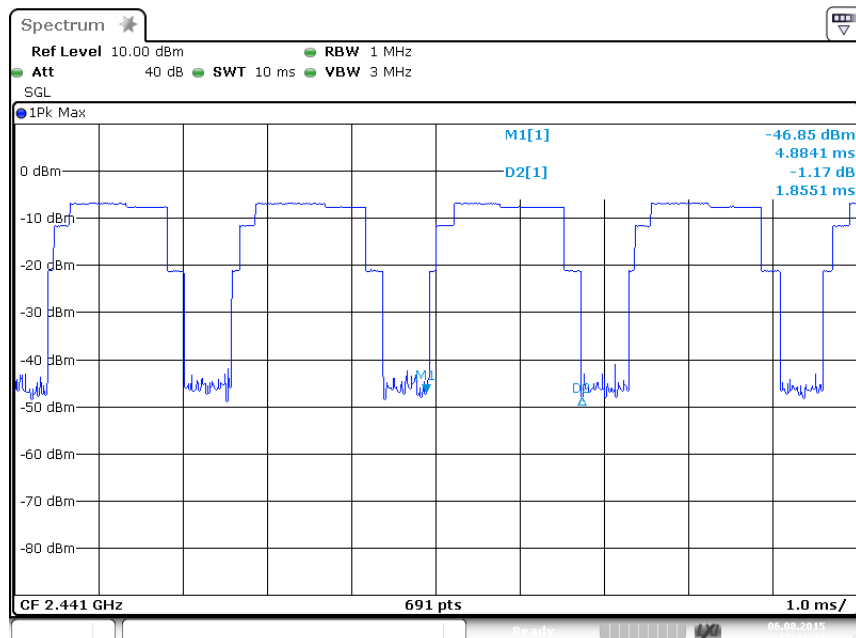
Date: 6.AUG.2015 17:26:17

Middle channel: 3DH1



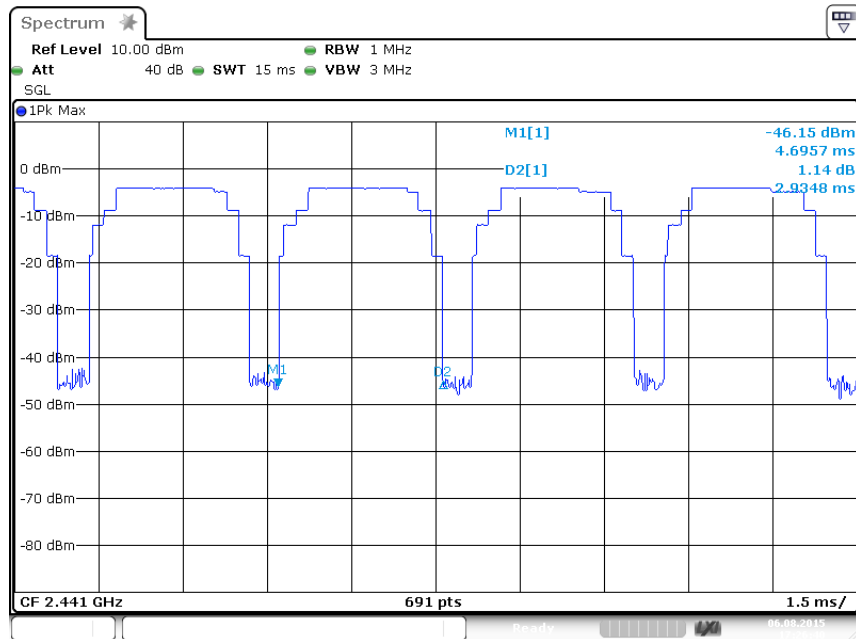
Date: 6.AUG.2015 17:15:34

Middle channel: 3DH3



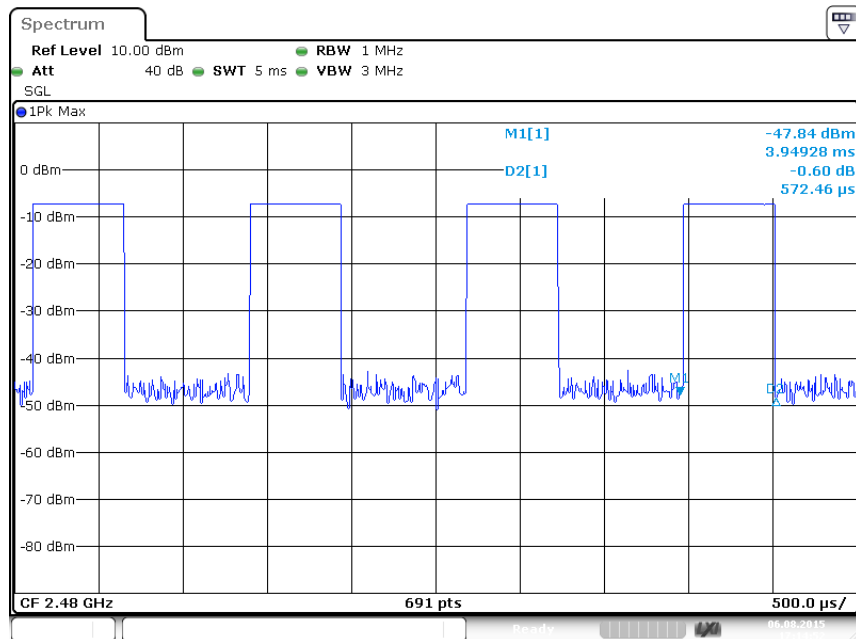
Date: 6.AUG.2015 17:21:34

Middle channel: 3DH5



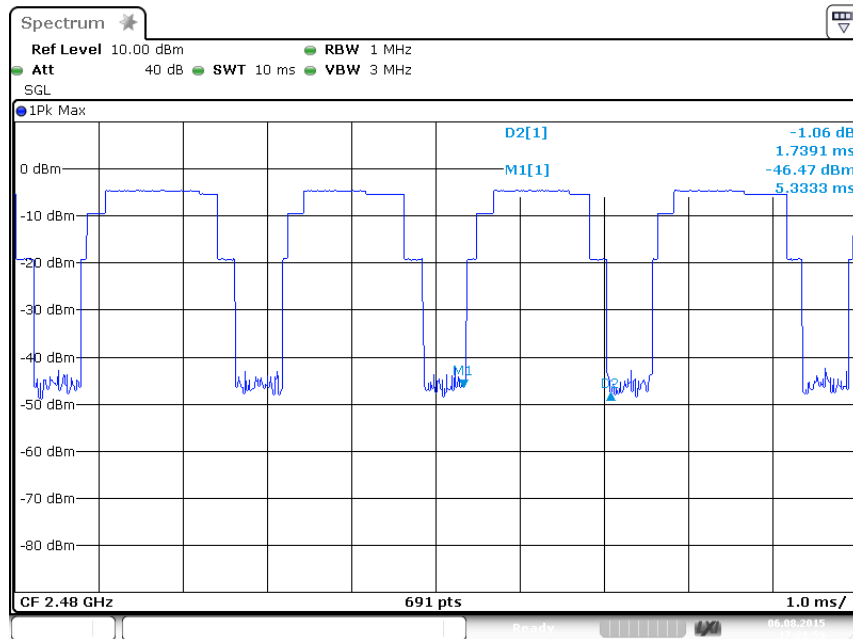
Date: 6.AUG.2015 17:26:40

High channel: 3DH1



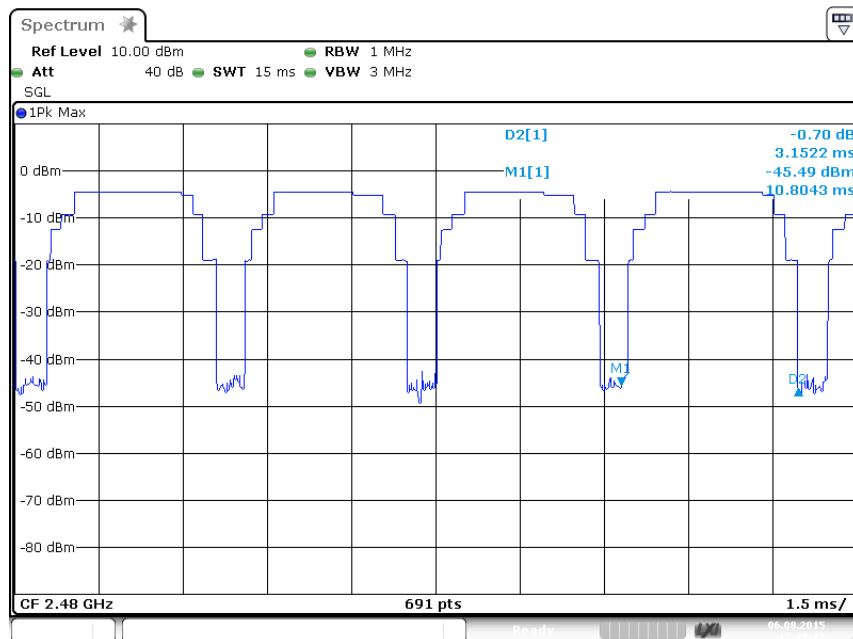
Date: 6.AUG.2015 17:14:52

High channel: 3DH3



Date: 6.AUG.2015 17:22:00

High channel: 3DH5



Date: 6.AUG.2015 17:27:13

5.1.10 Conducted Emissions**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.107(a) ICES-003 Issue 5
Basic standard	: ANSI C63.4: 2014
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.107(a) ICES-003 Issue 5 Table 2
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 10.08.2015
Input voltage	: AC 120V 60Hz
Operation mode	: D, E
Earthing	: Not connected
Ambient temperature	: 25°C
Relative humidity	: 56%
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix 1.

5.1.11 Radiated Emission**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.109(a) ICES-003 Issue 5
Basic standard	: ANSI C63.4: 2014
Frequency range	: 30 - 6000MHz
Classification	: Class B
Limits	: FCC Part 15.109(a) ICES-003 Issue 5 Table 5 & Table 7
Kind of test site	: 3m Semi-anechoic chamber

Test Setup

Date of testing	: 06.08.2015
Input voltage	: AC 120V, 60Hz
Operation mode	: D, E
Earthing	: Not connected
Ambient temperature	: 23°C
Relative humidity	: 48%
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:**Pass****Test Specification**

Test standard : FCC KDB Publication 447498 v05r02
RSS-102 Issue 5 March 2015

The minimum distance for the EUT is less than 5mm.

Since maximum peak output power of the transmitter is 1.54 mW <10 mW.

Hence the EUT is excluded from SAR evaluation according to FCC KDB Publication 447498 D01 General RF Exposure Guidance v05r02.

The maximum peak output power of the transmitter is 1.54 mW (1.87 dBm), which is far below the SAR exclusion threshold level 4 mW≈6.02 dBm.

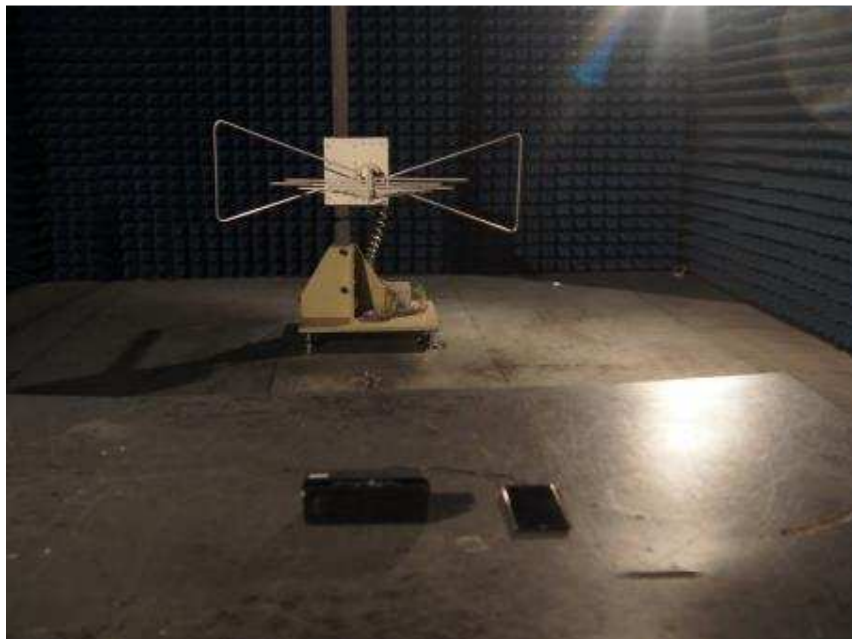
Hence the EUT is exempted from routine evaluation limits (SAR Evaluation) according to clause 2.5.1 of RSS-102 Issue 5.

7 Photographs of the Test Set-Up

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



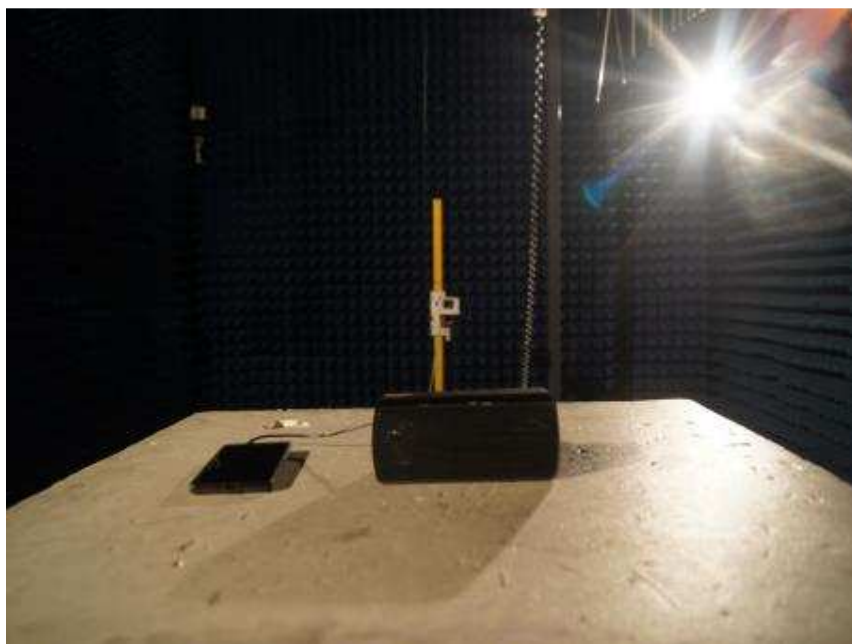
Photograph 2: Set-up for Radiated Spurious Emissions (30MHz-1GHz)



Photograph 3: Set-up for Radiated Spurious Emissions (1GHz ~ 18GHz)



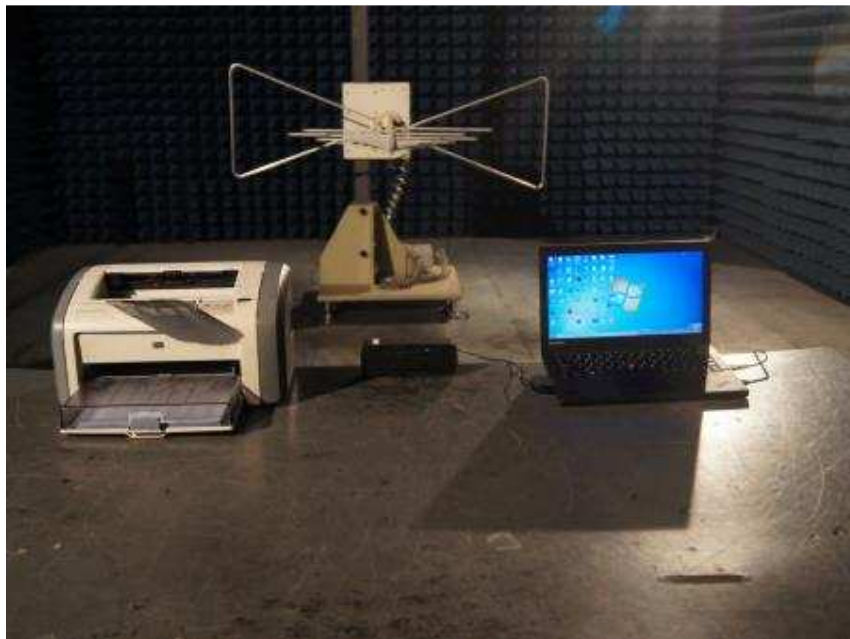
Photograph 4: Set-up for Radiated Spurious Emissions (18GHz ~ 26GHz)



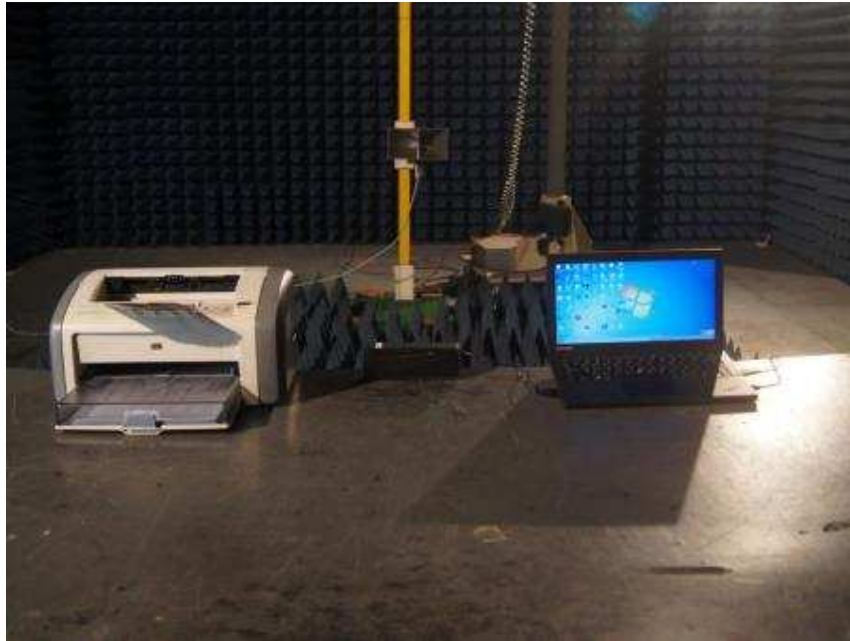
Photograph 5: Set-up for Conducted Emissions



Photograph 6: Set-up for Radiated Emission (Below 1GHz)



Photograph 7: Set-up for Radiated Emission (Above 1GHz)



8 List of Tables

Table 1: List of Test and Measurement Equipment.....	6
Table 2: Technical Specification of EUT	8
Table 3: RF Channel and Frequency of Bluetooth	9
Table 4: Test Result of Peak Conducted Output Power, BDR	16
Table 5: Test Result of Peak Conducted Output Power, EDR	16
Table 6: Test Result of 99% Bandwidth, BDR mode.....	20
Table 7: Test Result of 99% Bandwidth, EDR mode.....	20
Table 8: Test Result of 20dB Bandwidth, BDR mode.....	31
Table 9: Test Result of 20dB Bandwidth, EDR mode.....	31
Table 10: Test Result of Carrier Frequency Separation	35
Table 11: Test Result of Number of Hopping Frequency	38
Table 12: Test Result of Time of Occupancy, BDR mode.....	41
Table 13: Test Result of Time of Occupancy, EDR mode.....	41

9 List of Photographs

Photograph 1: Set-up for Radiated Spurious Emissions (9kHz - 30MHz).....	54
Photograph 2: Set-up for Radiated Spurious Emissions (30MHz-1GHz).....	54
Photograph 3: Set-up for Radiated Spurious Emissions (1GHz ~ 18GHz)	55
Photograph 4: Set-up for Radiated Spurious Emissions (18GHz ~ 26GHz)	55
Photograph 5: Set-up for Conducted Emissions	56
Photograph 6: Set-up for Radiated Emission (Below 1GHz)	56
Photograph 7: Set-up for Radiated Emission (Above 1GHz).....	57

List of Figures

Figure 1: Test figure of Radiated Spurious Emissions (9kHz – 30MHz), BDR (Low).....	2
Figure 2: Test figure of Radiated Spurious Emissions (30MHz – 1GHz), BDR (Low).....	3
Figure 3: Test figure of Radiated Spurious Emissions (1GHz –25GHz), BDR (Low).....	5
Figure 4: Test figure of Radiated Spurious Emissions (9kHz – 30MHz), BDR (Mid).....	9
Figure 5: Test figure of Radiated Spurious Emissions (30MHz – 1GHz), BDR (Mid).....	10
Figure 6: Test figure of Radiated Spurious Emissions (1GHz –25GHz), BDR (Mid).....	12
Figure 7: Test figure of Radiated Spurious Emissions (9kHz – 30MHz), BDR (High).....	16
Figure 8: Test figure of Radiated Spurious Emissions (30MHz – 1GHz), BDR (High).....	17
Figure 9: Test figure of Radiated Spurious Emissions (1GHz –25GHz), BDR (High).....	19
Figure 10: Test figure of Radiated Emissions in Restricted Bands, BDR (Low).....	23
Figure 11: Test figure of Radiated Emissions in Restricted Bands, BDR (High).....	25
Figure 12: Test figure of Conducted Emissions.....	27
Figure 13: Test figure of Radiated Emissions	29

Note: The measurements with active loop antenna were greater than 20dB below the limit, so Radiated Spurious Emissions (9kHz – 30MHz) tests were applied on BDR mode only.

Figure 1: Test figure of Radiated Spurious Emissions (9kHz – 30MHz), BDR (Low)

ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Bluetooth Stereo Speaker M/N:HS-CSPBTHOL-BK
Manufacturer:
Operating Condition: TX 2402MHz
Test Site: 2# Chamber
Operator: LAN
Test Specification: DC 3.7V
Comment: X
Start of Test: 2015-8-8 /

SCAN TABLE: "LFRE Fin"

Short Description:			SUB STD VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M

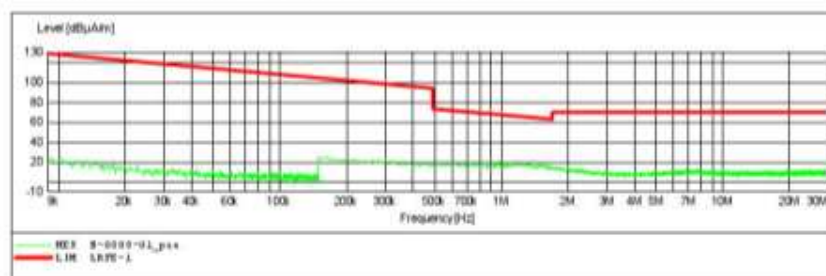
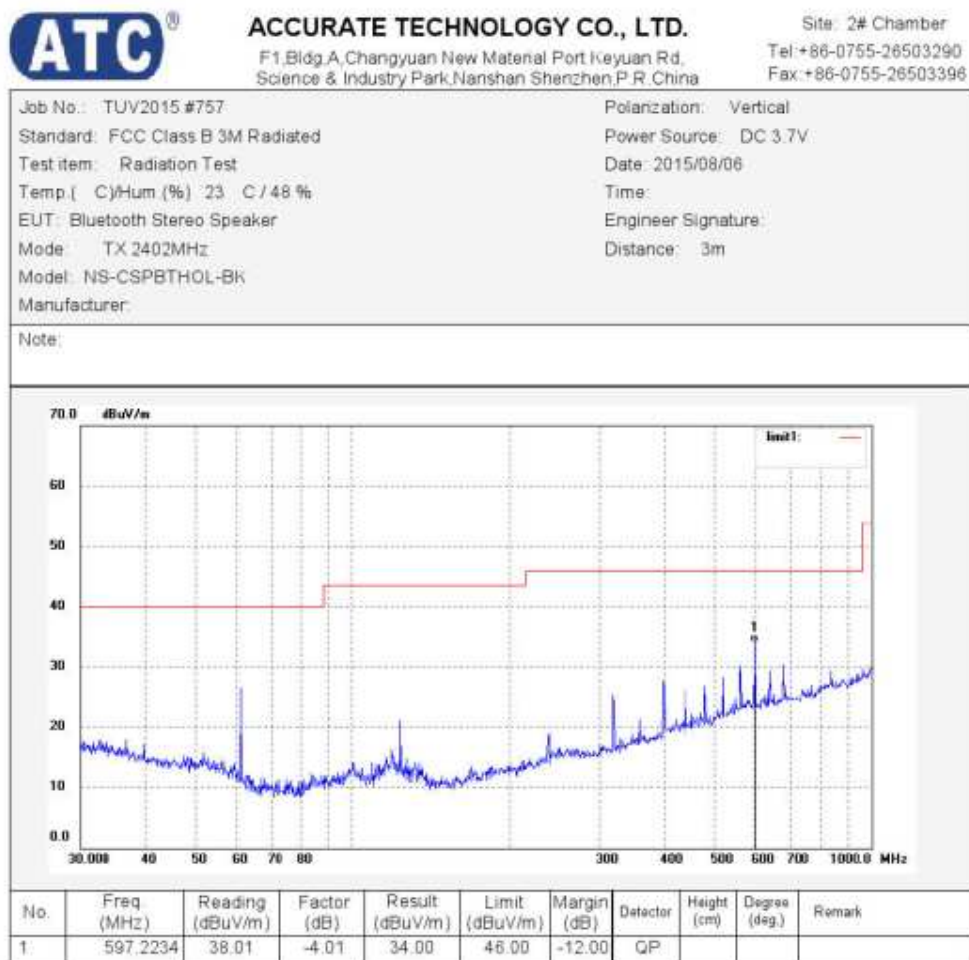


Figure 2: Test figure of Radiated Spurious Emissions (30MHz – 1GHz), BDR (Low)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #758

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2402MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

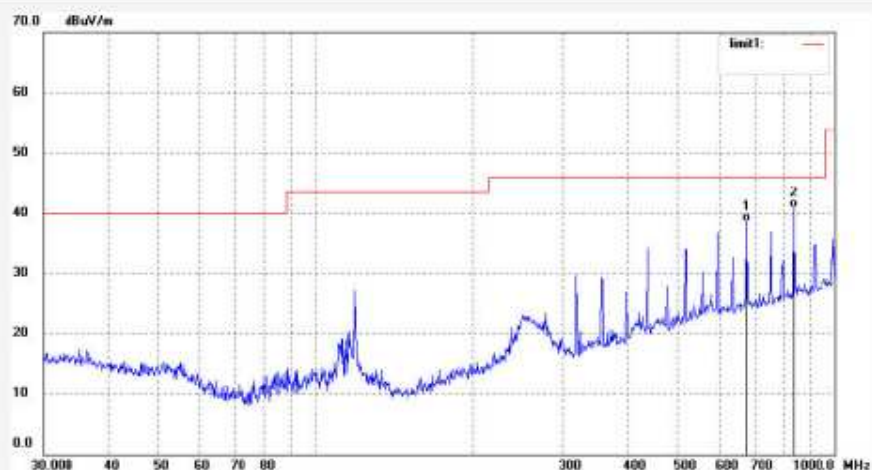
Date: 2015/08/06

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	677.5797	41.68	-3.04	38.64	46.00	-7.36	QP			
2	833.3170	41.26	-0.41	40.85	46.00	-5.15	QP			

Figure 3: Test figure of Radiated Spurious Emissions (1GHz –25GHz), BDR (Low)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #790

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2402MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

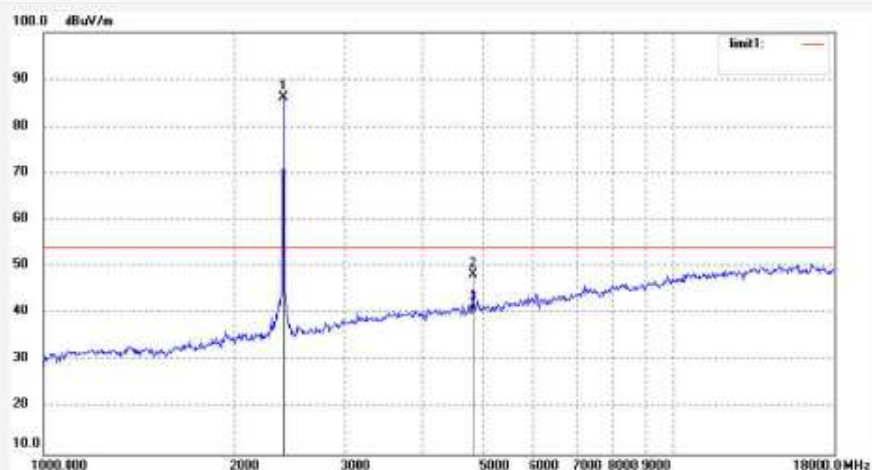
Date: 15/08/07/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	2402.000	93.54	-7.45	86.09	/	/	peak			
2	4804.027	48.58	-0.30	48.28	74.00	-25.72	peak			
3	4804.027	40.75	-0.30	40.45	54.00	-13.55	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #844

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) : 23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2402MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

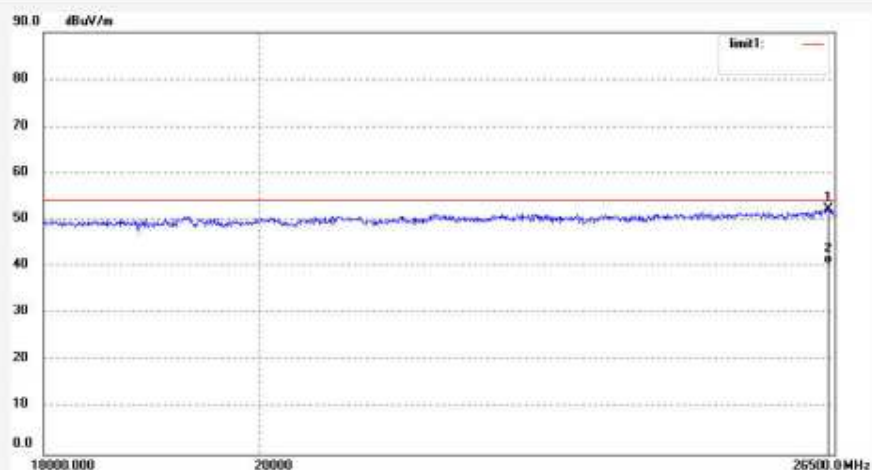
Date: 15/08/08/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	26428.351	35.41	18.95	52.36	74.00	-21.64	peak			
2	26428.351	23.60	18.95	40.55	54.00	-13.45	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #845

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2402MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

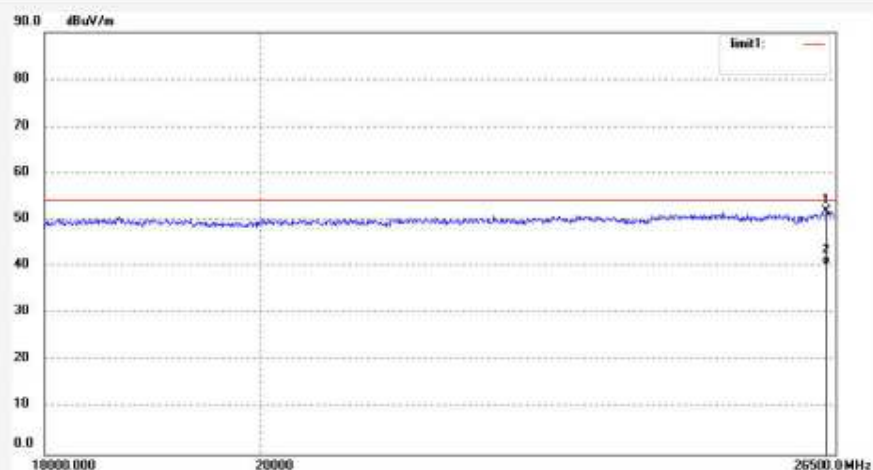
Date: 15/08/08/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	26387.495	34.95	18.97	51.92	74.00	-22.08	peak			
2	26387.495	23.45	18.97	40.42	54.00	-13.58	AVG			

Figure 4: Test figure of Radiated Spurious Emissions (9kHz – 30MHz), BDR (Mid)

ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Bluetooth Stereo Speaker M/N: NS-CSPBTHOL-BK
 Manufacturer:
 Operating Condition: TX 3441MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: X
 Start of Test: 2015-8-8 /

SCAN TABLE: "LFRE Fin"

Short Description: SUB STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M

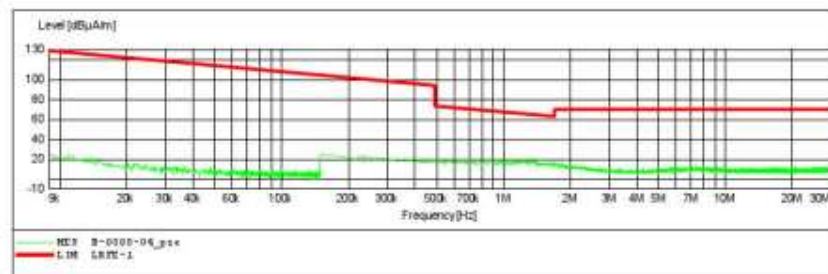
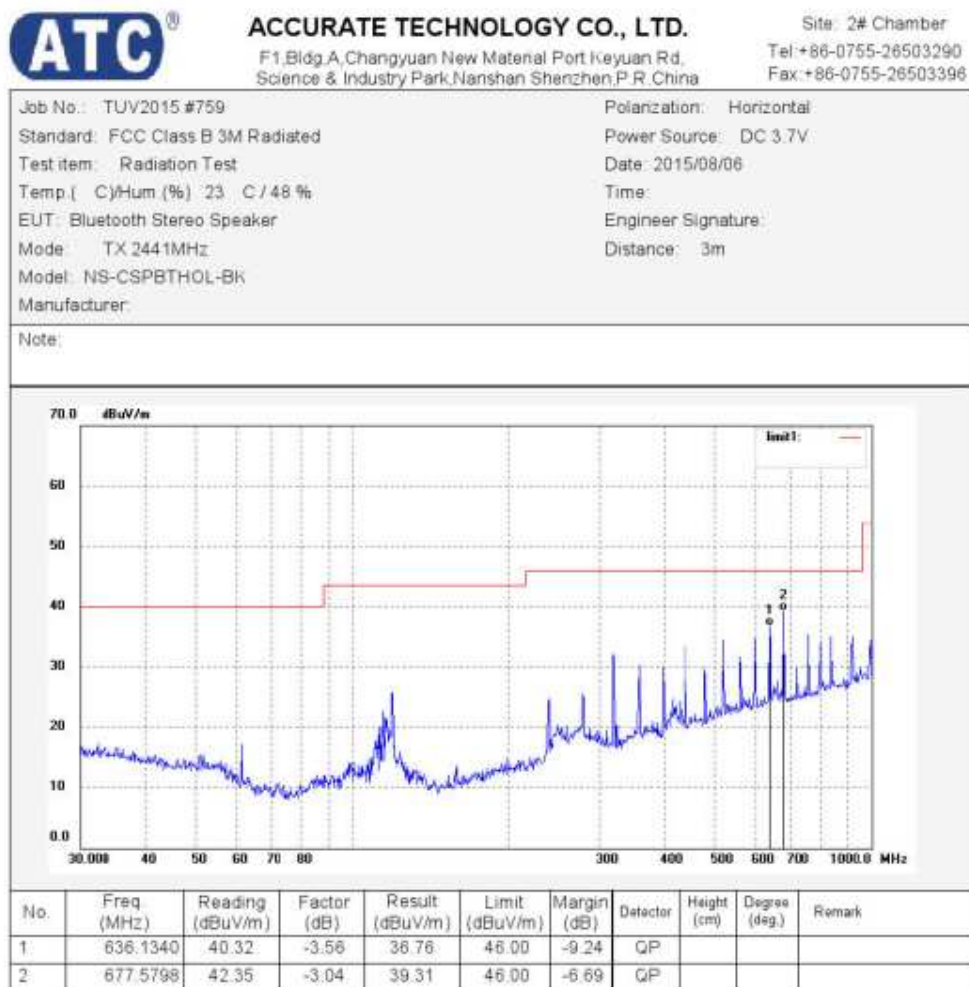


Figure 5: Test figure of Radiated Spurious Emissions (30MHz – 1GHz), BDR (Mid)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #760

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2441MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

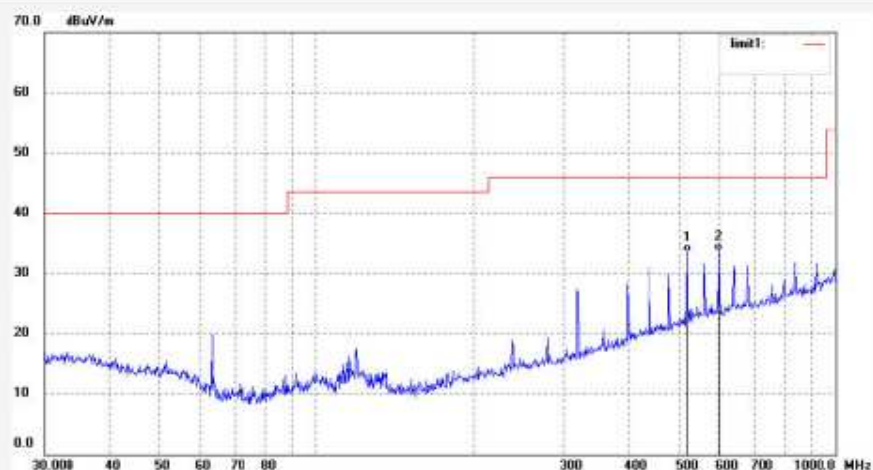
Date: 2015/08/06

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	517.2480	38.89	-5.41	33.48	46.00	-12.52	QP			
2	597.2234	37.69	-4.01	33.68	46.00	-12.32	QP			

Figure 6: Test figure of Radiated Spurious Emissions (1GHz –25GHz), BDR (Mid)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #794

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2441MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

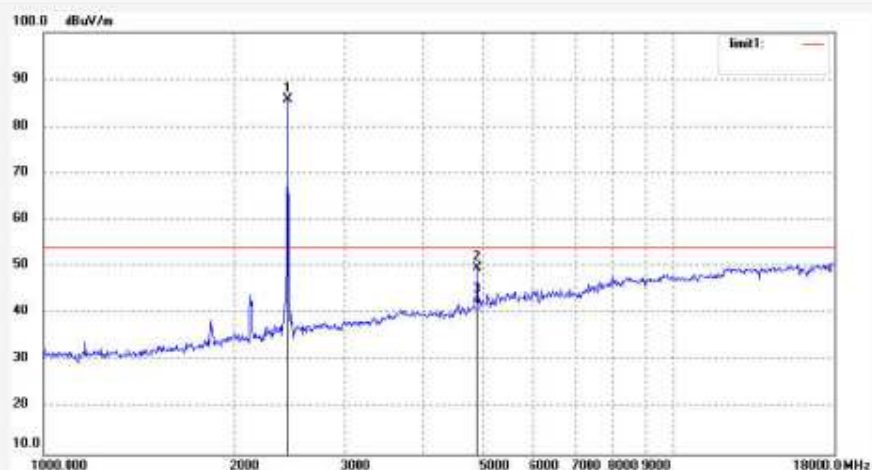
Date: 15/08/07/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	2441.000	93.03	-7.35	85.68	/	/	peak			
2	4882.024	49.52	0.14	49.66	74.00	-24.34	peak			
3	4882.024	41.68	0.14	42.02	54.00	-11.98	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #846

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2441MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

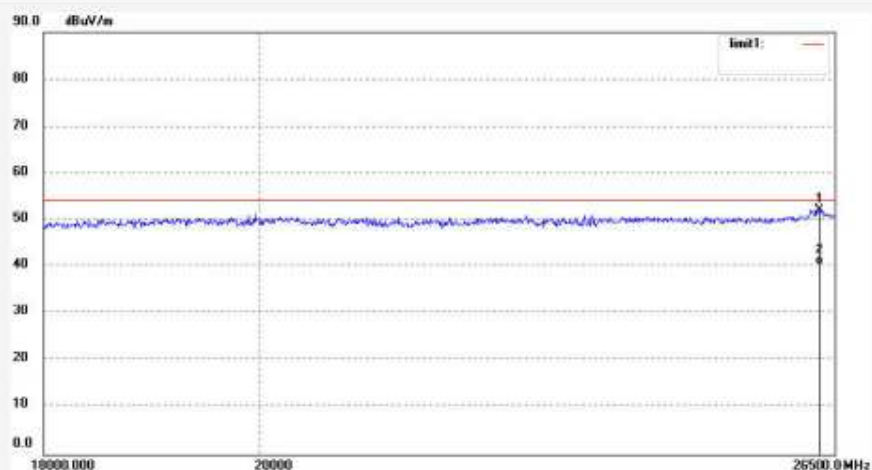
Date: 15/08/08/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	26305.974	35.10	17.03	52.13	74.00	-21.87	peak			
2	26305.974	23.47	17.03	40.50	54.00	-13.50	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #847

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2441MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

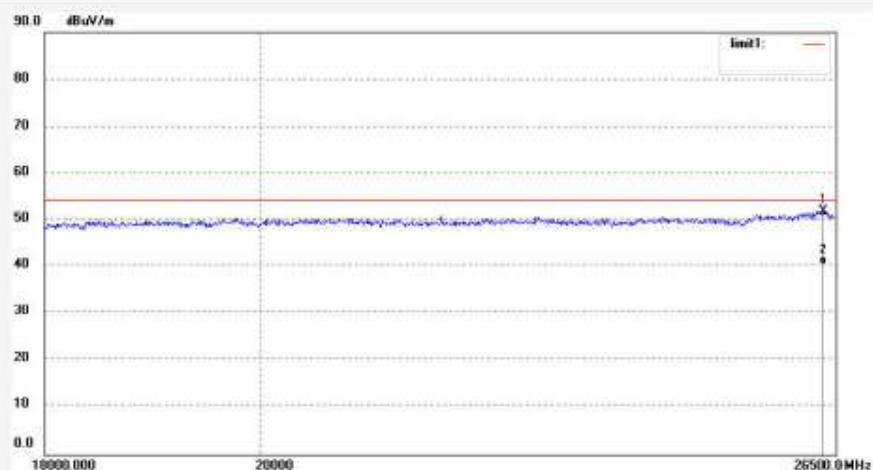
Date: 15/08/08/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	26346.703	34.85	17.00	51.85	74.00	-22.15	peak			
2	26346.703	23.38	17.00	40.38	54.00	-13.62	AVG			

Figure 7: Test figure of Radiated Spurious Emissions (9kHz – 30MHz), BDR (High)

ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3m Radiated

EUT: Bluetooth Stereo Speaker M/N: NS-CSPBTHOL-BK
 Manufacturer:
 Operating Condition: TX 0480MHz
 Test Site: 2# Chamber
 Operator: LAN
 Test Specification: DC 3.7V
 Comment: X
 Start of Test: 2015-8-8 /

SCAN TABLE: "LFRE Fin"

Short Description:			SUB_STD_VTERM 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M

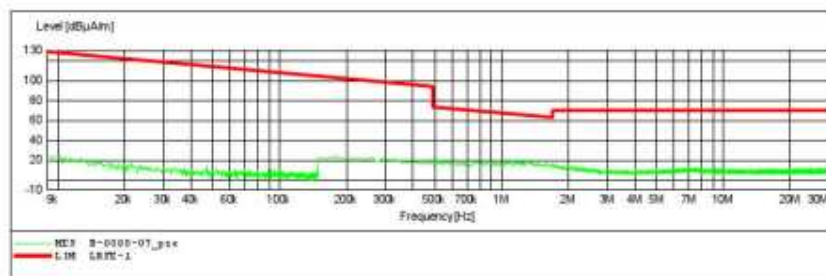
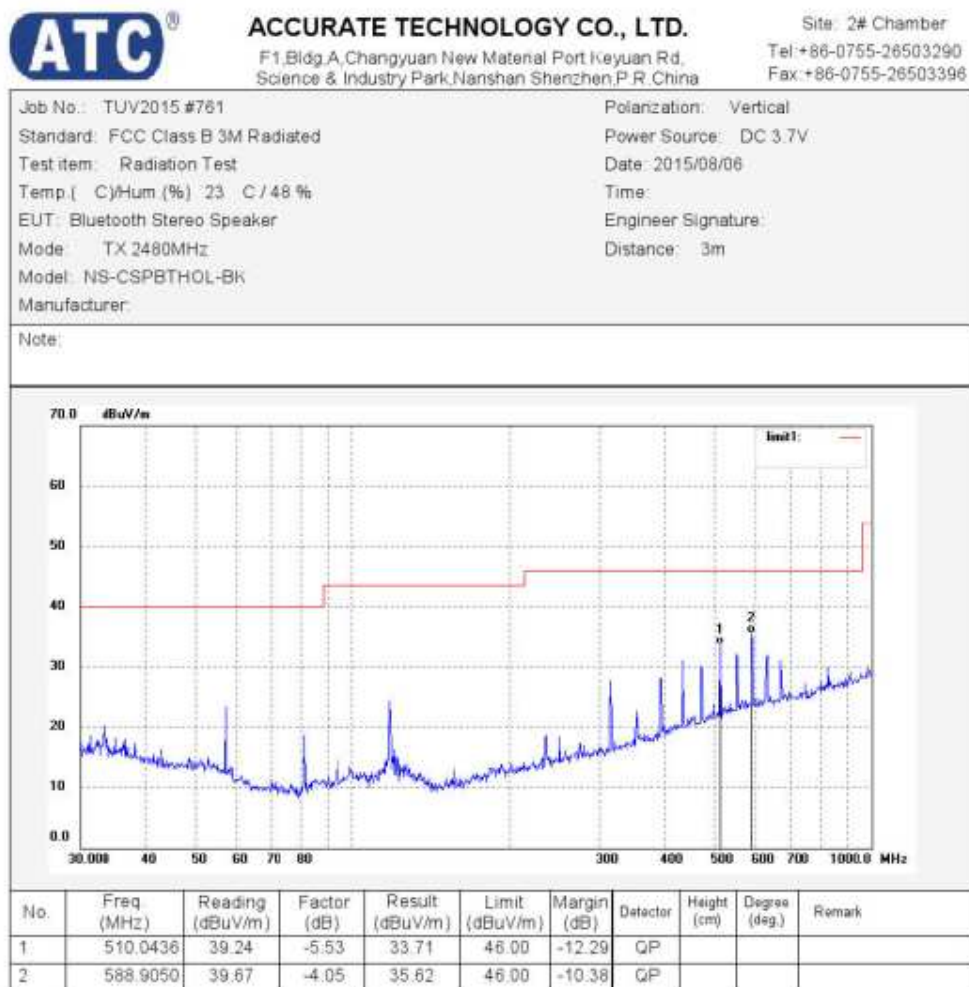


Figure 8: Test figure of Radiated Spurious Emissions (30MHz – 1GHz), BDR (High)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #762

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C/48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2480MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

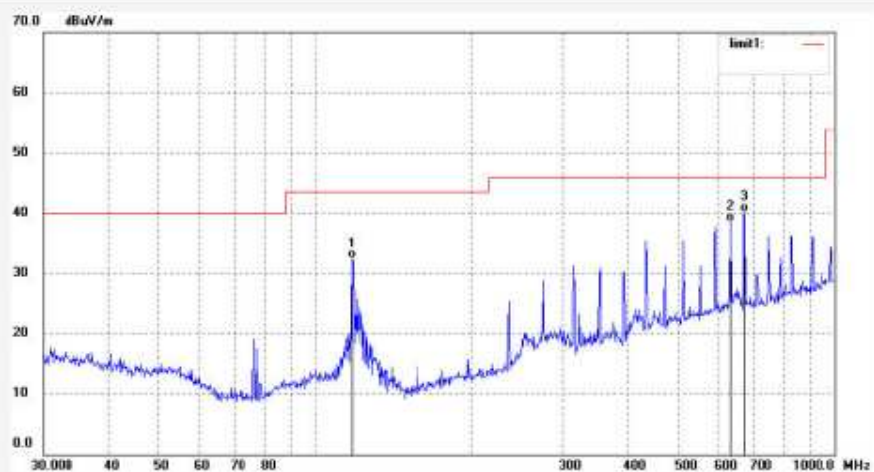
Date: 2015/08/06

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	117.7724	46.68	-14.14	32.54	43.50	-10.96	QP			
2	631.6884	42.24	-3.57	38.67	46.00	-7.33	QP			
3	670.4892	43.21	-3.13	40.08	46.00	-5.92	QP			

Figure 9: Test figure of Radiated Spurious Emissions (1GHz –25GHz), BDR (High)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #796

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2480MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

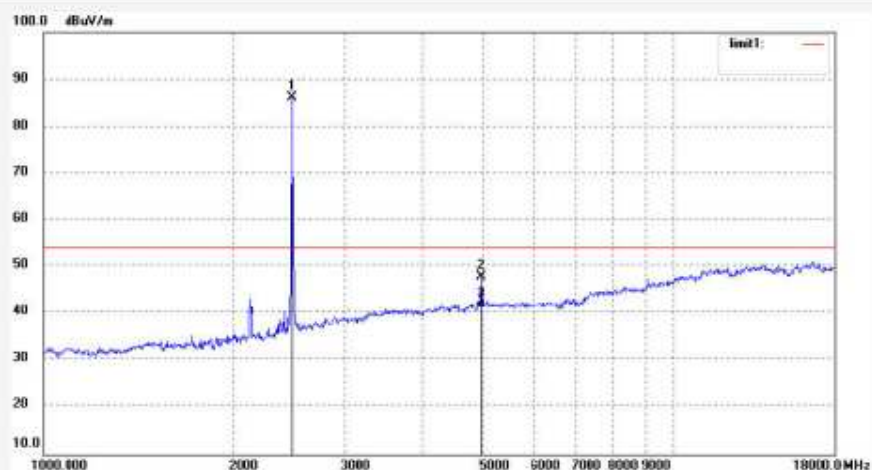
Date: 15/08/07/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	2480.000	93.63	-7.37	86.26	/	/	peak			
2	4960.028	47.48	0.52	48.00	74.00	-26.00	peak			
3	4960.028	40.57	0.52	41.09	54.00	-12.91	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #848

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) : 23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2480MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

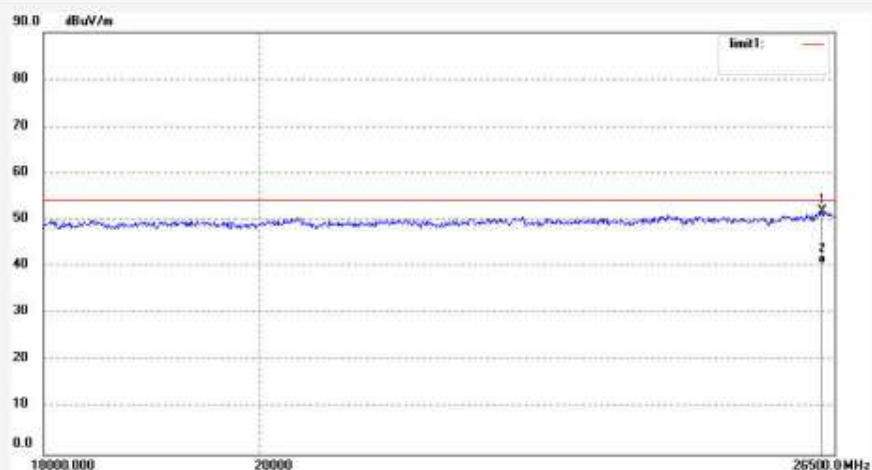
Date: 15/08/08/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Hight (cm)	Degree (deg.)	Remark
1	26346.703	34.76	17.00	51.76	74.00	-22.24	peak			
2	26346.703	23.58	17.00	40.58	54.00	-13.42	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #84

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) : 23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2480MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

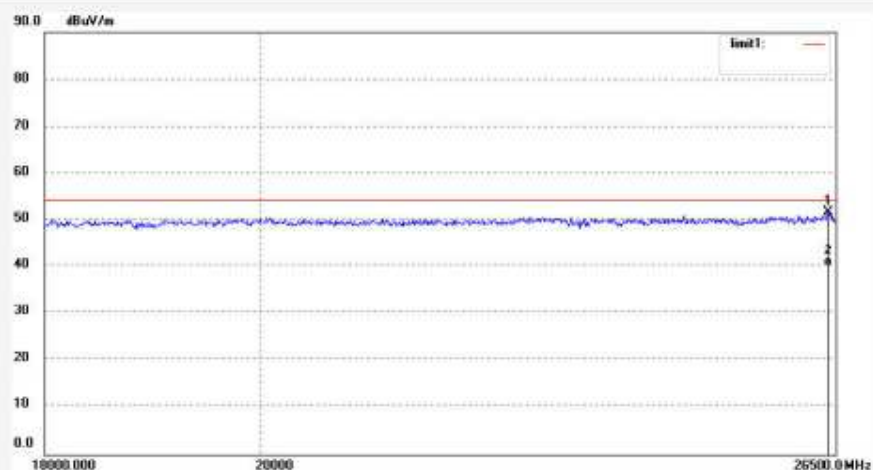
Date: 15/08/08/

Time:

Engineer Signature:

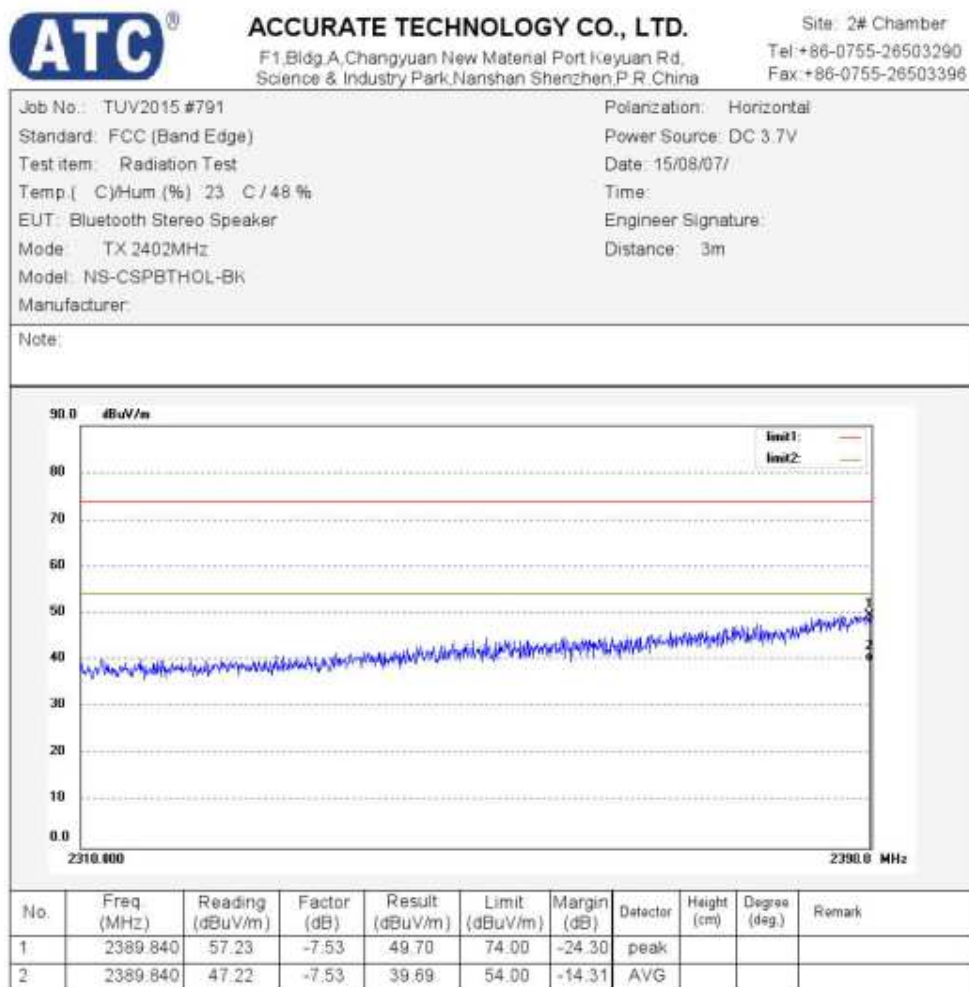
Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	26407.915	34.59	16.96	51.55	74.00	-22.45	peak			
2	26407.915	23.25	16.96	40.21	54.00	-13.79	AVG			

Figure 10: Test figure of Radiated Emissions in Restricted Bands, BDR (Low)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #792

Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2402MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

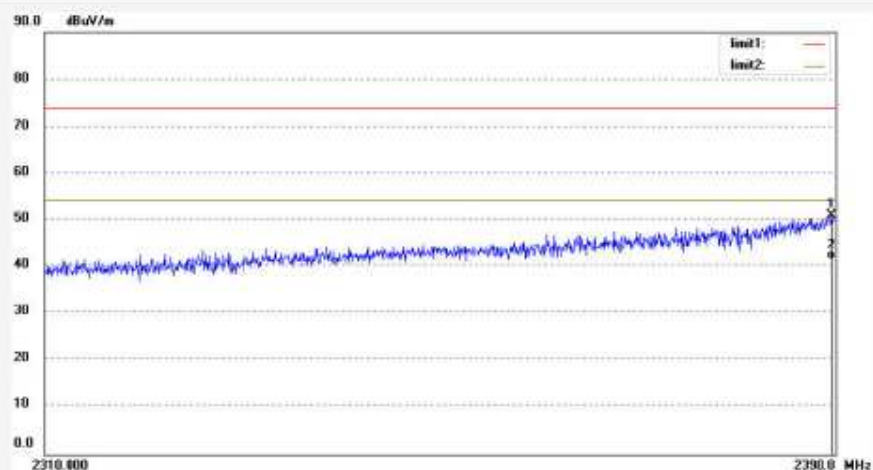
Date: 15/08/07/

Time:

Engineer Signature:

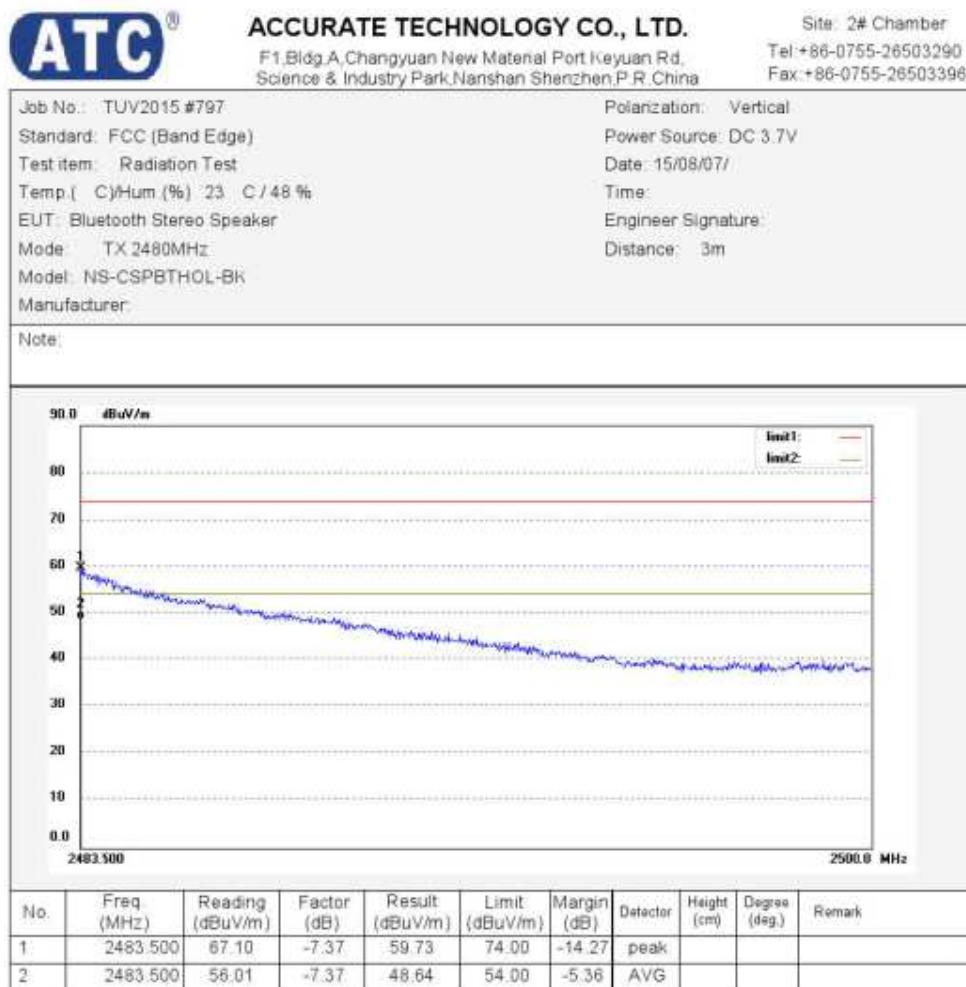
Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	2389.600	58.46	-7.53	50.93	74.00	-23.07	peak			
2	2389.600	49.05	-7.53	41.52	54.00	-12.48	AVG			

Figure 11: Test figure of Radiated Emissions in Restricted Bands, BDR (High)





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #798

Standard: FCC (Band Edge)

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: TX 2480MHz

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

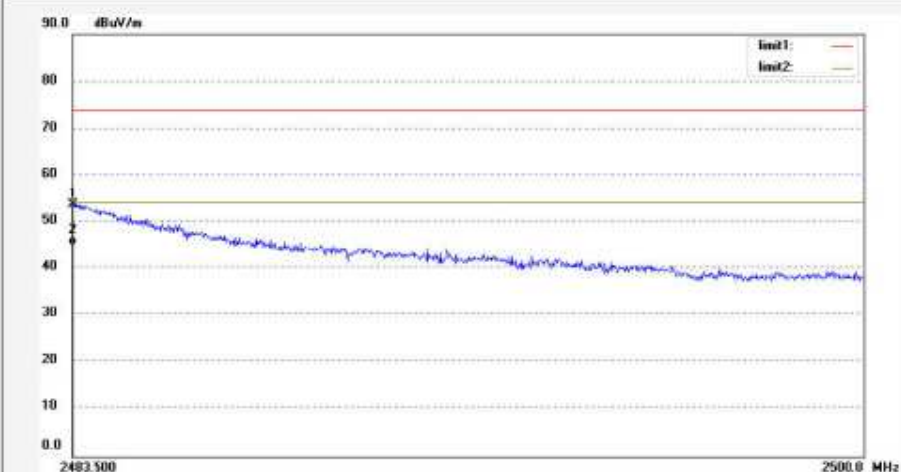
Date: 15/08/07/

Time:

Engineer Signature:

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	2483.500	61.13	-7.37	53.76	74.00	-20.24	peak			
2	2483.500	52.56	-7.37	45.19	54.00	-8.81	AVG			

Figure 12: Test figure of Conducted Emissions

ACCURATE TECHNOLOGY CO., LTD

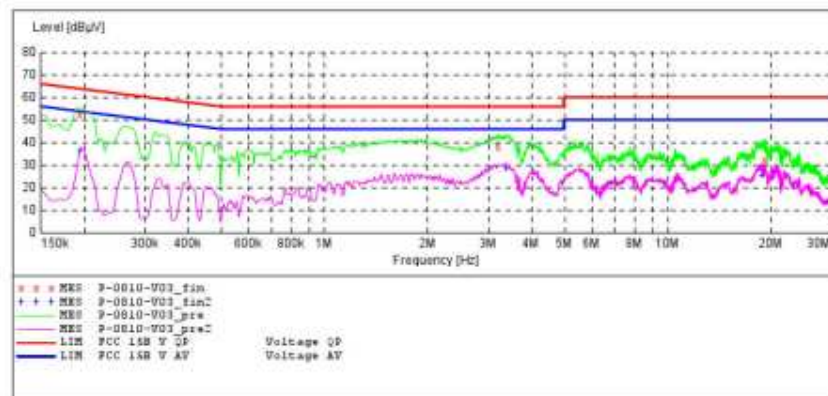
CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Stereo Speaker M/N: NS-CSPBTHOL-BK
 Manufacturer:
 Operating Condition: Charging+Aux in
 Test Site: 1#Shielding Room
 Operator: PEI
 Test Specification: L 120V/60Hz
 Comment:
 Start of Test: 8/10/2015 /

SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	NSLK8126 2008
150.0 kHz	30.0 MHz	5.0 kHz	Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "P-0810-V03_fin"

8/10/2015

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.195000	52.48	10.5	64	11.4	QP	L1	GND
3.220000	37.90	11.1	56	18.1	QP	L1	GND
19.210000	31.60	11.4	60	28.4	QP	L1	GND

MEASUREMENT RESULT: "P-0810-V03_fin2"

8/10/2015

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.195000	36.20	10.5	54	17.6	AV	L1	GND
3.390000	28.20	11.1	46	17.8	AV	L1	GND
18.850000	25.00	11.4	50	25.0	AV	L1	GND

ACCURATE TECHNOLOGY CO., LTD

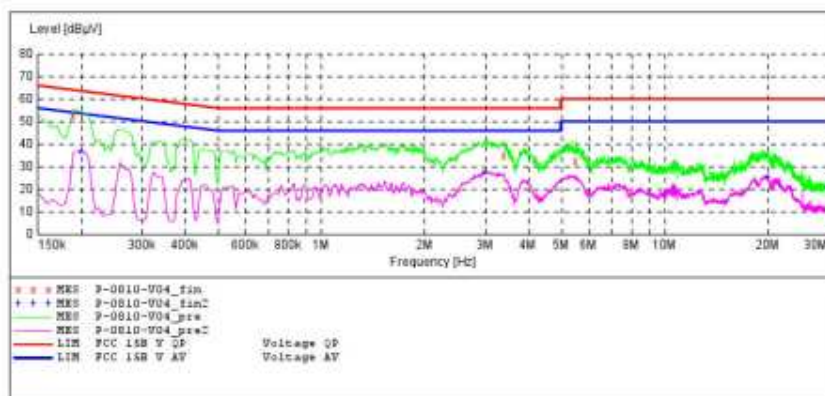
CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Stereo Speaker M/N:MS-CSPBTHOL-BK
 Manufacturer:
 Operating Condition: Charging+Aux in
 Test Site: 1#Shielding Room
 Operator: PEI
 Test Specification: N 120V/60Hz
 Comment:
 Start of Test: 8/10/2015 /

SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	NSLK8126 2008
150.0 kHz	30.0 MHz	5.0 kHz	Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "P-0810-V04_fin"

8/10/2015

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.190000	52.40	10.5	64	11.6	QP	N	GND
3.410000	34.60	11.1	56	21.4	QP	N	GND
5.520000	32.50	11.2	60	27.5	QP	N	GND

MEASUREMENT RESULT: "P-0810-V04_fin2"

8/10/2015

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.200000	36.10	10.5	54	17.5	AV	N	GND
2.980000	26.90	11.1	46	19.1	AV	N	GND
19.960000	25.10	11.4	50	24.9	AV	N	GND

Figure 13: Test figure of Radiated Emissions





ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #766

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C/48 %

EUT: Bluetooth Stereo Speaker

Mode: Charging

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 5V

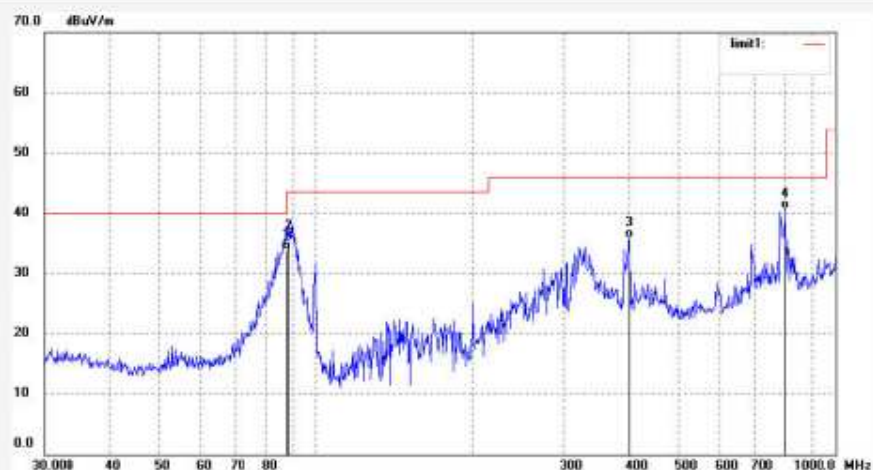
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	87.8620	50.01	-16.21	33.80	40.00	-6.20	QP			
2	88.6524	51.68	-16.16	35.52	43.50	-7.98	QP			
3	400.4318	43.69	-7.81	35.88	46.00	-10.12	QP			
4	798.9796	41.68	-0.98	40.70	46.00	-5.30	QP			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #767

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: Charging

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 5V

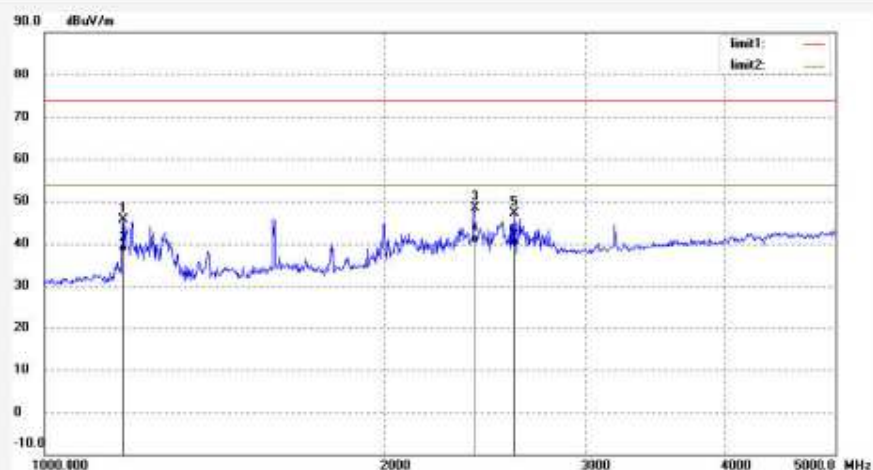
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1172.730	58.20	-12.49	45.71	74.00	-28.29	peak			
2	1172.730	50.25	-12.49	37.76	54.00	-16.24	AVG			
3	2400.157	55.79	-7.46	48.33	74.00	-25.67	peak			
4	2400.157	47.56	-7.46	40.10	54.00	-13.90	AVG			
5	2601.287	53.89	-6.72	47.17	74.00	-26.83	peak			
6	2601.287	46.25	-6.72	39.53	54.00	-14.47	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #768

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) : 23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: Charging

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 5V

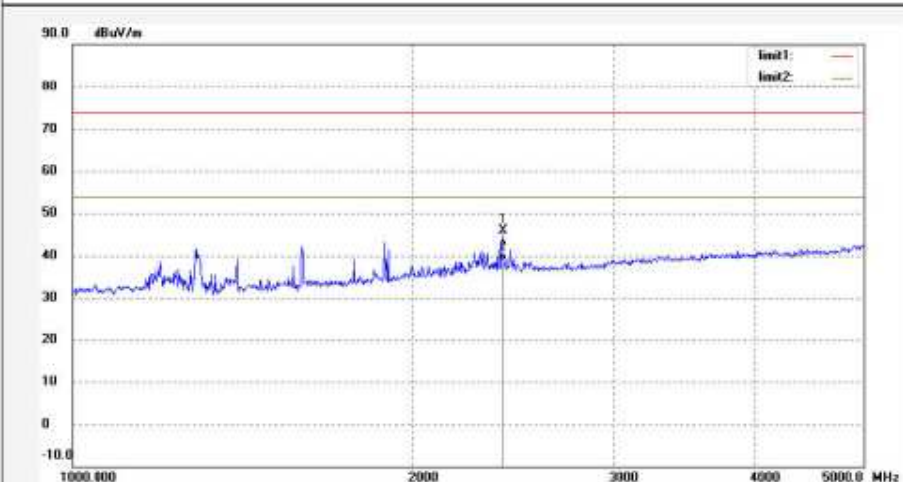
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Haight (cm)	Degree (deg.)	Remark
1	2400.157	53.29	-7.46	45.83	74.00	-28.17	peak			
2	2400.157	46.05	-7.46	38.59	54.00	-15.41	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #763

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: Aux in

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

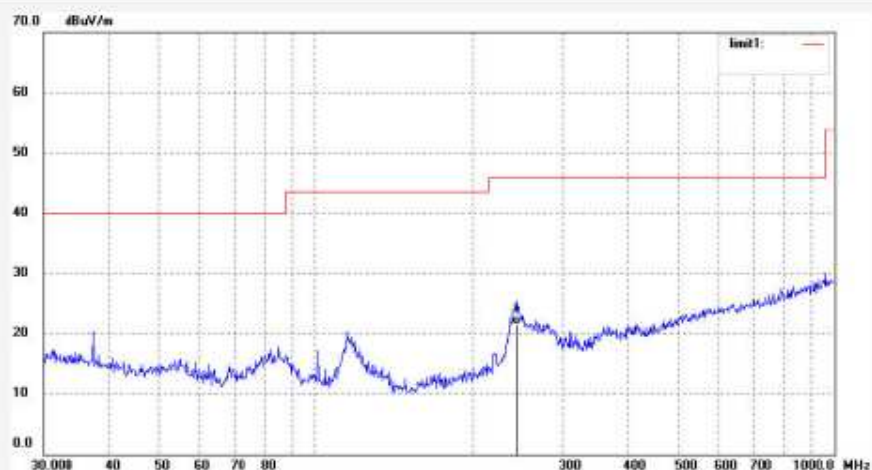
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Hight (cm)	Degree (deg.)	Remark
1	244.2321	33.32	-11.82	21.50	46.00	-24.50	QP			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #764

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) :23 C /48 %

EUT: Bluetooth Stereo Speaker

Mode: Aux in

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

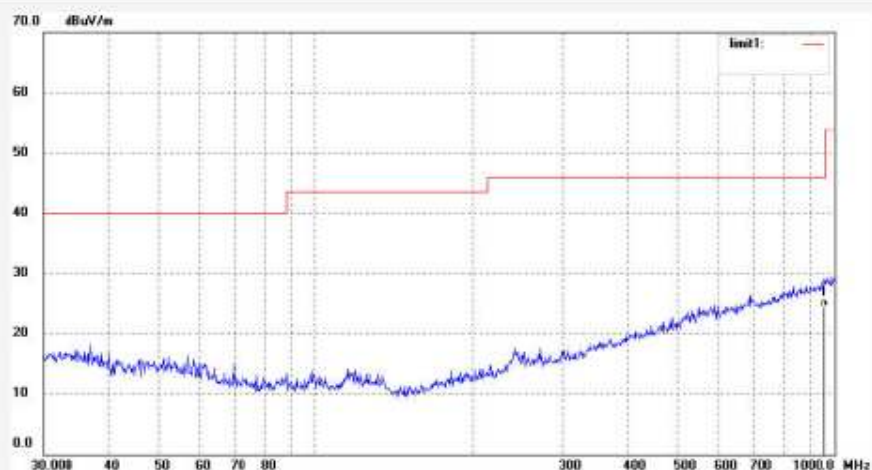
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Hight (cm)	Degree (deg.)	Remark
1	960.0000	23.07	1.37	24.44	46.00	-21.56	QP			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #769

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) : 23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: Aux in

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Horizontal

Power Source: DC 3.7V

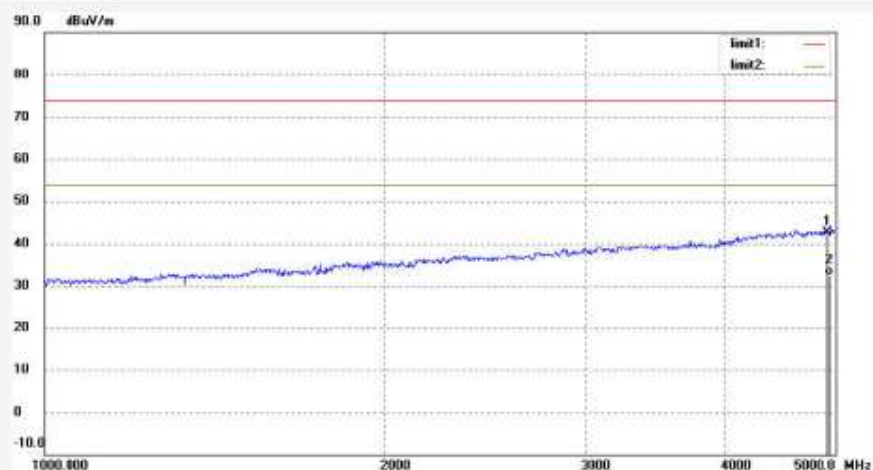
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Hight (cm)	Degree (deg.)	Remark
1	4920.172	42.42	0.33	42.75	74.00	-31.25	peak			
2	4920.172	32.05	0.33	32.38	54.00	-21.62	AVG			



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax: +86-0755-26503396

Job No.: TUV2015 #770

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) : 23 C / 48 %

EUT: Bluetooth Stereo Speaker

Mode: Aux in

Model: NS-CSPBTHOL-BK

Manufacturer:

Polarization: Vertical

Power Source: DC 3.7V

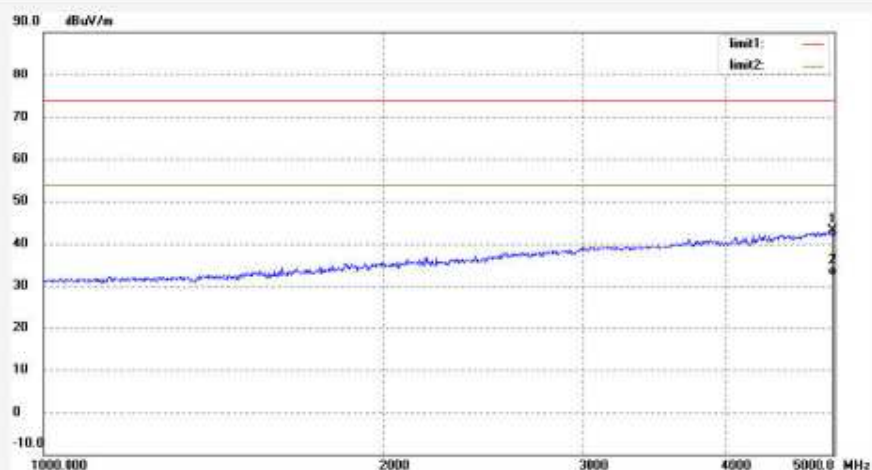
Date: 2015/08/06

Time:

Engineer Signature: PEI

Distance: 3m

Note:



No.	Freq (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Hight (cm)	Degree (deg.)	Remark
1	4983.931	42.55	0.62	43.17	74.00	-30.83	peak			
2	4983.931	31.86	0.62	32.48	54.00	-21.52	AVG			