

Prüfbericht-Nr.: <i>Test Report No.:</i>	17039136 001	Auftrags-Nr.: <i>Order No.:</i>	164012012	Seite 1 von 37 <i>Page 1 of 37</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	26.03.2014	
Auftraggeber: <i>Client:</i>	Compupal (Group) Corporation No. 1555 Jiashan Avenue, Jiashan, Zhejiang 314113, P.R.China			
Prüfgegenstand: <i>Test item:</i>	Bluetooth Portable speaker with handle			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	NS-SPBT02-BL, NS-SPBT02-G, NS-SPBT02-P, NS-SPBT02-Y, NS-SPBT02-BL-C, NS-SPBT02-G-C, NS-SPBT02-P-C, NS-SPBT02-Y-C			
Auftrags-Inhalt: <i>Order content:</i>	FCC Certification and Verification			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart C Section 15.107 CFR47 FCC Part 15: Subpart C Section 15.109 RSS-210 Issue 8 December 2010 RSS-Gen Issue 3 December 2010 RSS-102 Issue 4 March 2010			
Wareneingangsdatum: <i>Date of receipt:</i>	27.03.2014			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000042346-001, A000042346-002			
Prüfzeitraum: <i>Testing period:</i>	28.03.2014 - 30.03.2014			
Ort der Prüfung: <i>Place of testing:</i>	Shenzhen Accurate Technology Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Bitte wählen / Please select...			
				
geprüft von / tested by: 14.04.2014  Owen Tian / Project Manager		kontrolliert von / reviewed by: 15.04.2014  Winnie Hou / 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:				
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(fail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(fail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <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>				

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TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT

RESULT: Passed

5.1.2 PEAK OUTPUT POWER

RESULT: Passed

5.1.3 20dB BANDWIDTH

RESULT: Passed

5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100kHz BANDWIDTH

RESULT: Passed

5.1.5 SPURIOUS EMISSION

RESULT: Passed

5.1.6 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

5.1.10 RADIATED EMISSION

RESULT: Passed

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1. General Remarks

1.1 Complementary Materials

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

Appendix 1: Test Result

2. Test Sites

2.1 Test Facilities

Shenzhen Accurate Technology Co., Ltd.

F1, Bldg. A, Changyuan New Material Port, Keyuan Rd., Science & Industry Park Nanshan District, Shenzhen 518057, P.R. China

FCC Registration No.: 752051

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

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission				
Signal Generator	Rohde&Schwarz	SMT03	100059	2015-01-11
Voltage Probe	Rohde&Schwarz	URV5-Z2	100012	2015-01-11
Voltage Probe	Rohde&Schwarz	URV5-Z2	100013	2015-01-11
Field Probe	ETS	HI-6005	121578	2015-01-11
Power Amplifier	AR	250W1000A	335304	2015-01-11
Power Amplifier	MILMEGA	AS0860-75/45	1040084	2015-01-11
Power Meter	Rohde & Schwarz	NRVD	100041	2015-01-11
Broadband antenna	CHASE	CBL6111C	2576	N/A
Horn Antenna	AR	AT4002A	305754	N/A
Radio Test Suite				
Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
Conducted Emission				
Test Receiver	Rohde & Schwarz	ESCS30	100307	2015-01-11
L.I.S.N.	Schwarzbeck	NLSK8126	8126431	2015-01-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	2015-01-11
50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	2015-01-11

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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 basics using in house standards or comparisons.

2.5 Measurement Uncertainty

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

2.6 Location of Original Data

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

The Shenzhen 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 EUTs are Bluetooth Portable speaker with handle.

All EUTs are identical in function, circuit design and components employed, except different color of enclosure.

For details refer to the User Manual and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	Bluetooth Portable speaker with handle
Type Designation:	NS-SPBT02-BL, NS-SPBT02-G, NS-SPBT02-P, NS-SPBT02-Y, NS-SPBT02-BL-C, NS-SPBT02-G-C, NS-SPBT02-P-C, NS-SPBT02-Y-C
FCC ID	Z5YNS-SPBT02
IC	10828A-SPBT02

Table 3: Technical Specification of EUT

Technical Specification	Value
Operating Frequency band	2402 – 2480 MHz
Channel separation	1MHz
Extreme Temperature Range	-20°C to +55°C
Operation Voltage	DC3.7V via lithium Battery
Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	2dBi
RF Output Power	0.00114W (0.56dBm)

Table 4: Frequency hopping information

Technical Specification	Description
Hopping Range	Hereby we declare that the maximum frequency of this device is: 2402-2480MHz. This is according the Bluetooth Core Specification V2.1+EDR for devices which will be operated in the USA. This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/04-E).
Hopping Sequence	Example of a 79 hopping sequence in data mode: 33,04,21,44,23,42,53,46,55,48,40,59,72,29,76,31,08,73, 07,75,09,45,60,39,58,13,47,11,77,52,35,50,65,54,67,56, 69,62,71,64, 7,25,27,66,57,70,74,61,78,63,10,41,05,43, 15,44,64,68,02,70,06,01,51,03,55,05,03,66,53,49,36,47,
Receiver input bandwidth	The input bandwidth of the receiver is 1MHz. In every connection one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings. Repeating of a packer has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

3.3 Independent Operation Modes

The basic operation modes are:

- A. BT Transmitting
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. BT Receiving
- C. Audio in
- D. Charging
- E. Off

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3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

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

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2003.

Due to models' description indicated in clause 3.1, full test was applied on models NS-SPBT02-Y and NS-SPBT02-BL only.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested with following accessories

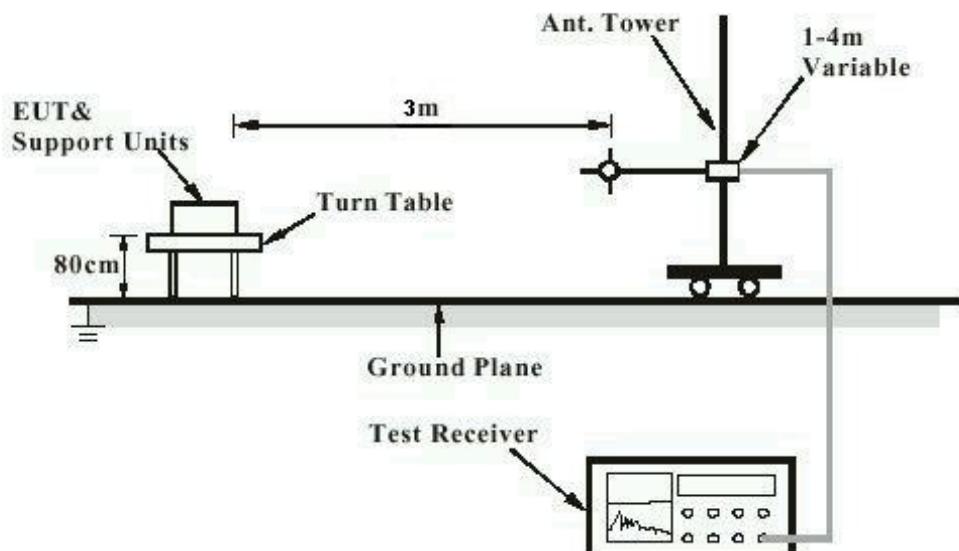
Description	Manufacturer	Type	S/N
Notebook	Lenovo	4290-RT8	R9-FW93G
Printer	HP	HP laserjet 1015	CNFG030424
iPhone	Apple	MD235ZP/A	C8PJLWZNDTC0

4.4 Countermeasures to achieve EMC Compliance

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

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



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Diagram of Measurement Equipment Configuration for Mains Conduction Measurement

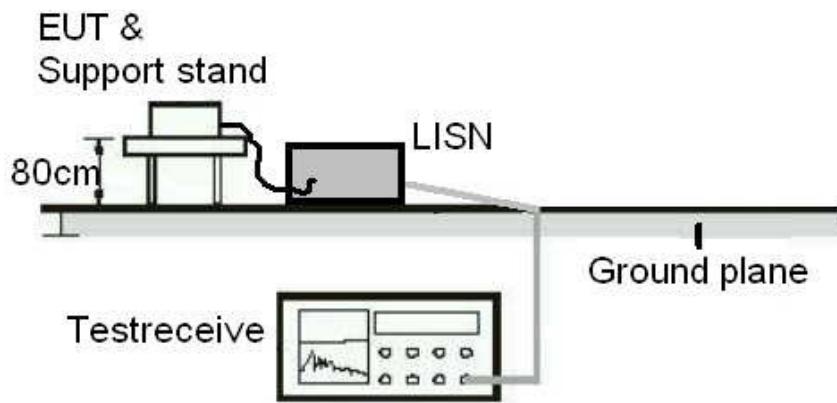
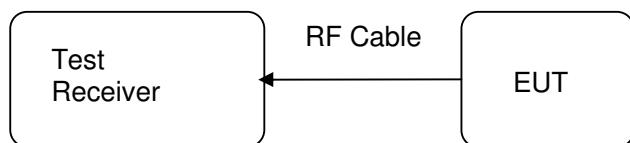


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test date	:	2014-03-29
Test standard	:	FCC Part 15.247(b)(4) and Part 15.203 RSS-Gen 7.1.4
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

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

Refer to EUT photo for details.

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5.1.2 Peak Output Power

RESULT:

Passed

Test date	:	2014-03-29
Test standard	:	FCC Part 15.247(b)(1) RSS-210 A8.4 (2)
Basic standard	:	ANSI C63.4: 2003
Limit	:	0.125 Watt
Kind of test site	:	Shielded room

Test setup

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

Table 5: Test result of Peak Output Power, GFSK modulation

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
Low Channel	2402	-0.46	0.00090	0.125
Middle Channel	2441	0.23	0.00105	0.125
High Channel	2480	0.56	0.00114	0.125

Remark: RBW is 1MHz

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

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
Low Channel	2402	-1.81	0.00066	0.125
Middle Channel	2441	-1.02	0.00079	0.125
High Channel	2480	-0.65	0.00086	0.125

Remark: RBW is 3MHz

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5.1.3 20dB Bandwidth

RESULT:

Passed

Date of testing : 2013-03-26
 Test standard : FCC Part 15.247(a)(1)
 RSS-210 A8.1 (a)
 Basic standard : ANSI C63.4: 2003
 Kind of test site : Shielded room

Test setup

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

Table 7: Test result of 20dB Bandwidth, GFSK modulation

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	930	/	Pass
Mid Channel	2441	936	/	Pass
High Channel	2480	930	/	Pass

Table 8: Test result of 20dB Bandwidth, 8DPSK modulation

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	1206	/	Pass
Mid Channel	2441	1206	/	Pass
High Channel	2480	1200	/	Pass

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5.1.4 99% Bandwidth

RESULT:

Passed

Date of testing : 2013-03-26
 Test standard : RSS-Gen clause 4.6.1
 Basic standard : ANSI C63.4: 2003
 Kind of test site : Shielded room

Test setup

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

Table 9: Test result of 99% Bandwidth, GFSK modulation

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	942	/	Pass
Mid Channel	2441	948	/	Pass
High Channel	2480	936	/	Pass

Table 10: Test result of 99% Bandwidth, 8DPSK modulation

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Limit (MHz)	Result
Low Channel	2402	1206	/	Pass
Mid Channel	2441	1206	/	Pass
High Channel	2480	1206	/	Pass

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*Test Report No.*Seite 17 von 37
*Page 17 of 37***5.1.5 Conducted spurious emissions measured in 100kHz Bandwidth****RESULT:****Passed**

Date of testing	:	2013-03-26
Test standard	:	FCC part 15.247(d) RSS-210 A8.5
Basic standard	:	ANSI C63.4: 2003
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

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

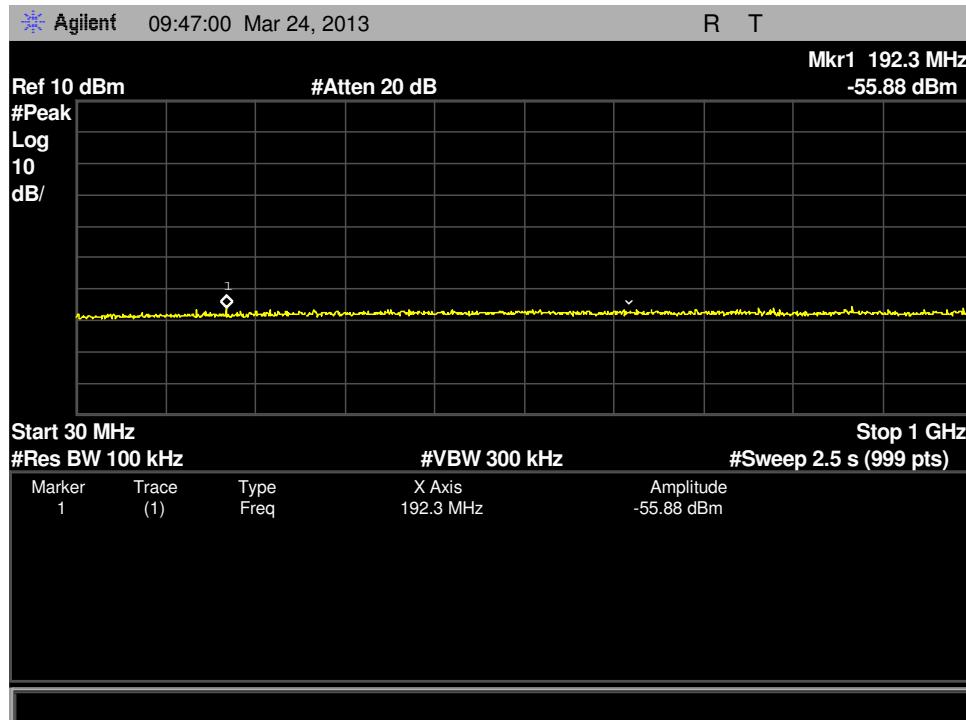
All emissions are more than 20dB below fundamental, details refer to following test plot, and compliance is achieved as well.

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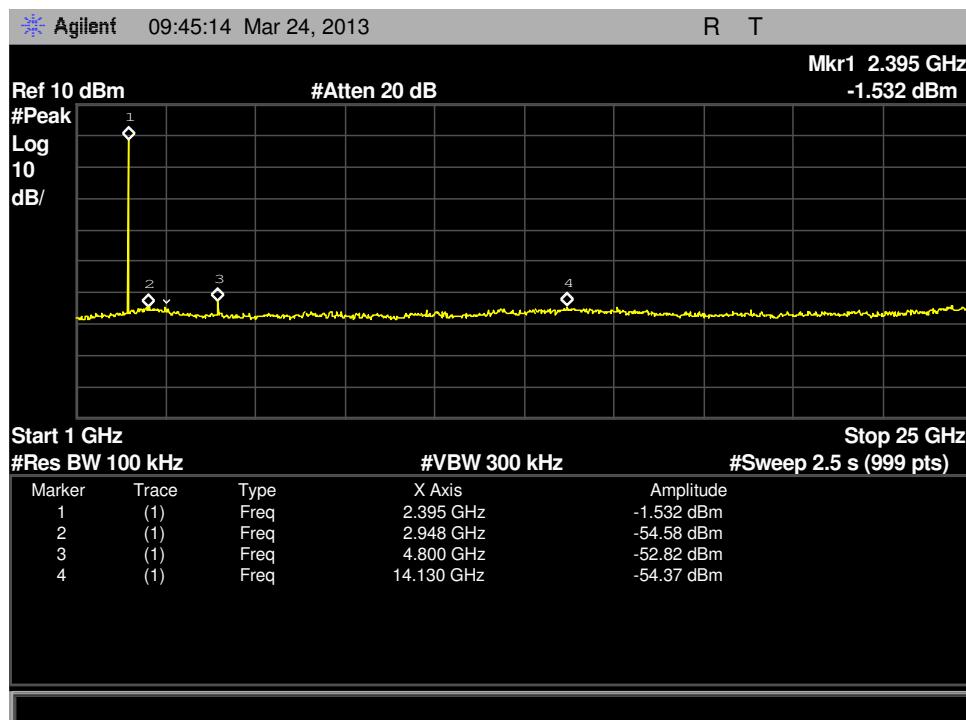
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Test Plot of 100kHz Bandwidth of Frequency Band Edge, GFSK modulation

Low Channel, below 1GHz



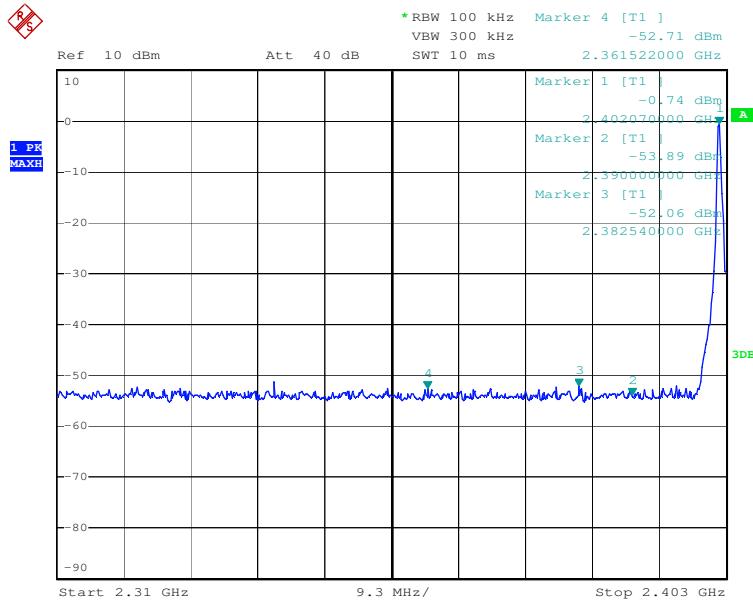
Low Channel, above 1GHz



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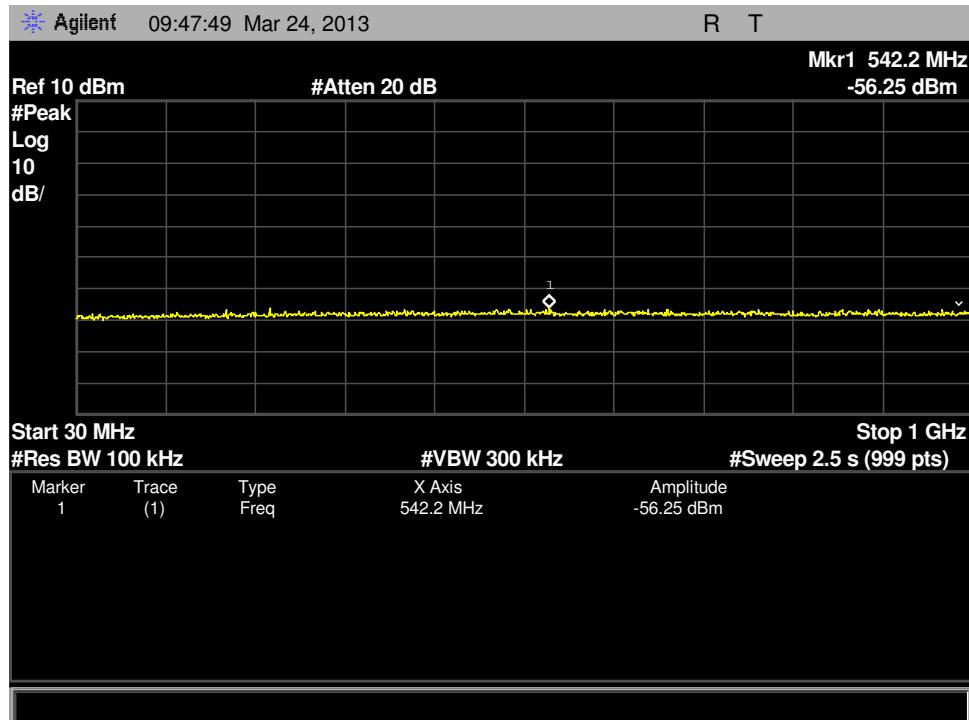
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Low Channel, Band Edge



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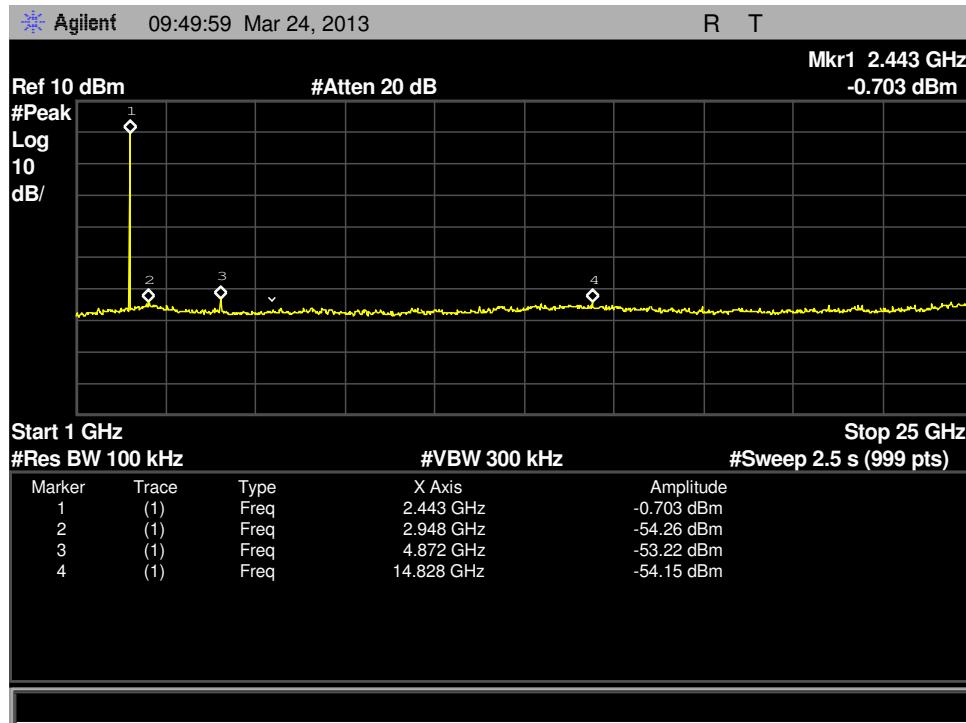
Middle Channel, below 1GHz



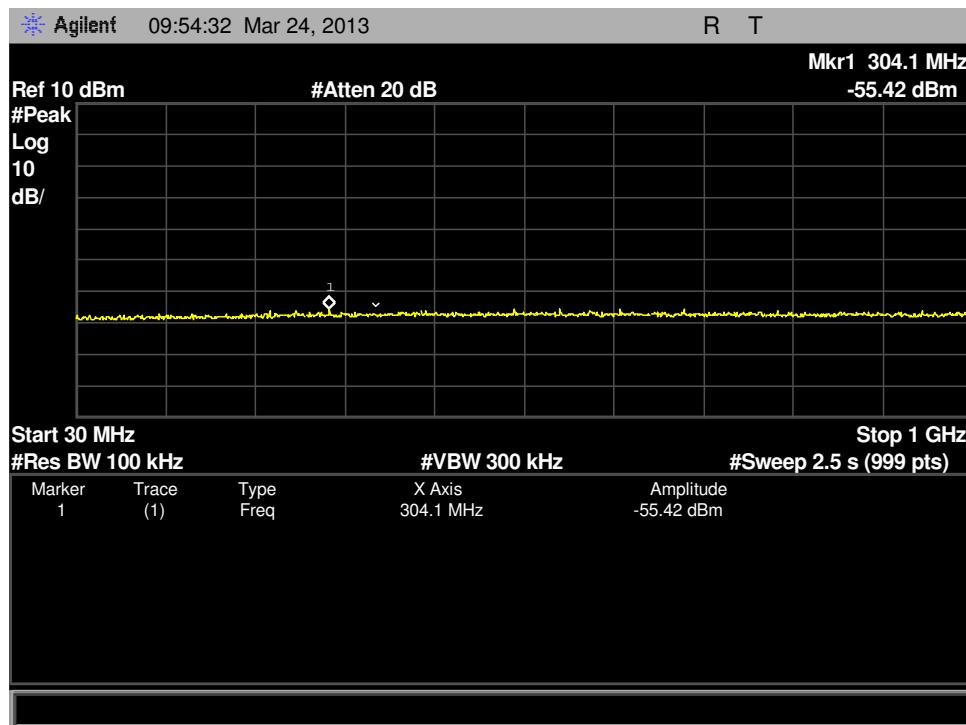
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Middle Channel, above 1GHz



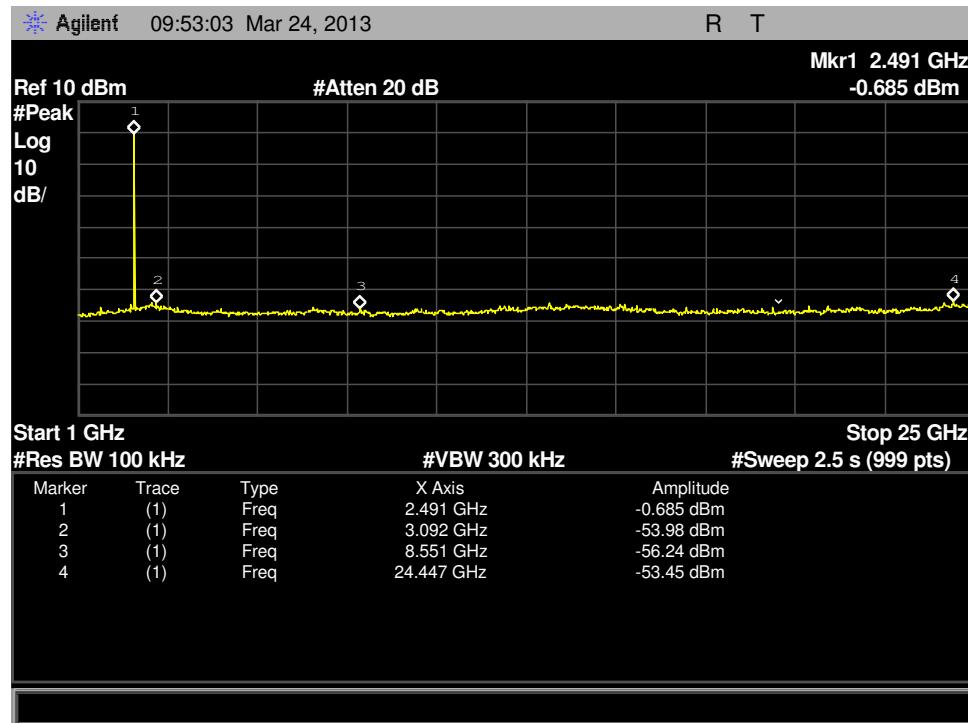
High Channel, below 1GHz



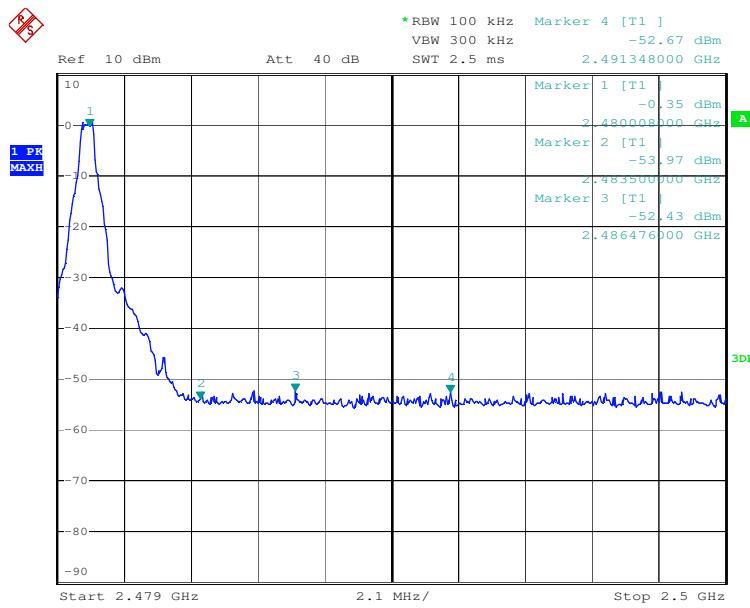
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High Channel, above 1GHz



High Channel, Band Edge



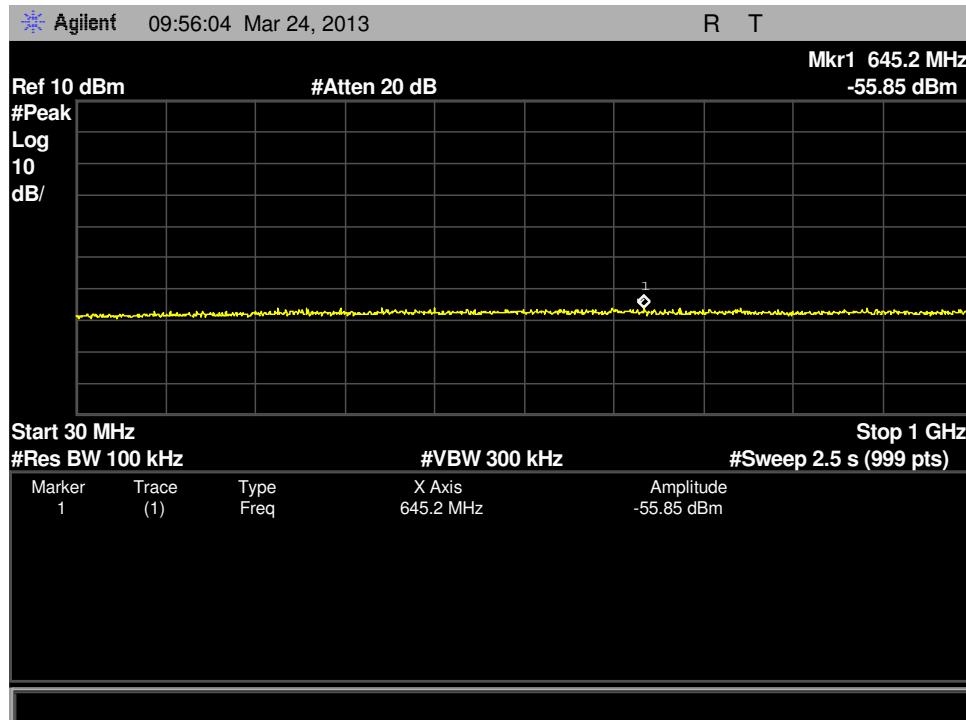
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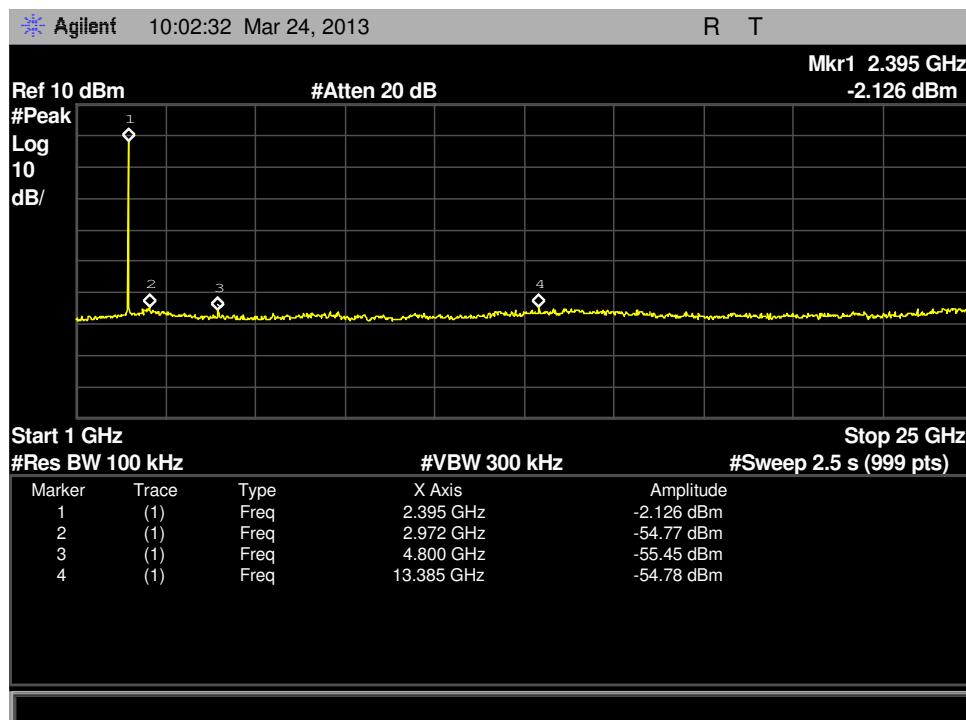
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Test Plot of 100kHz Bandwidth of Frequency Band Edge, 8DPSK modulation

Low Channel, below 1GHz



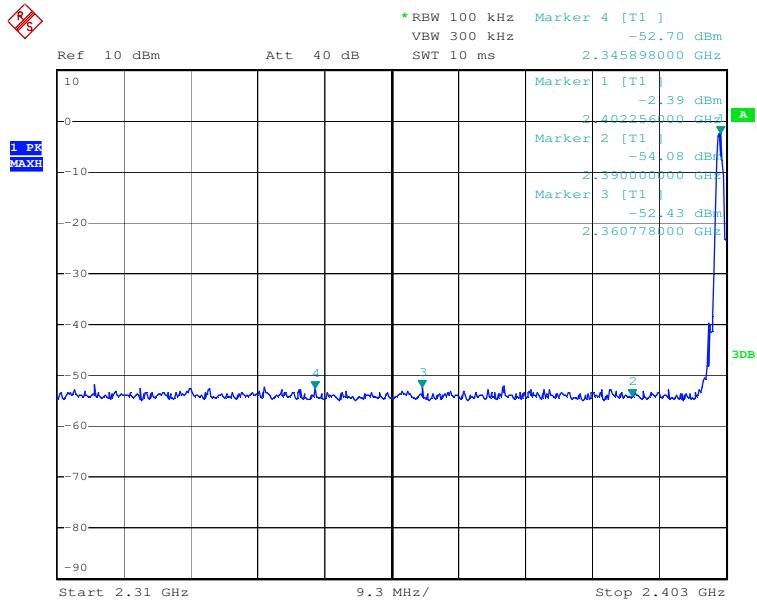
Low Channel, above 1GHz



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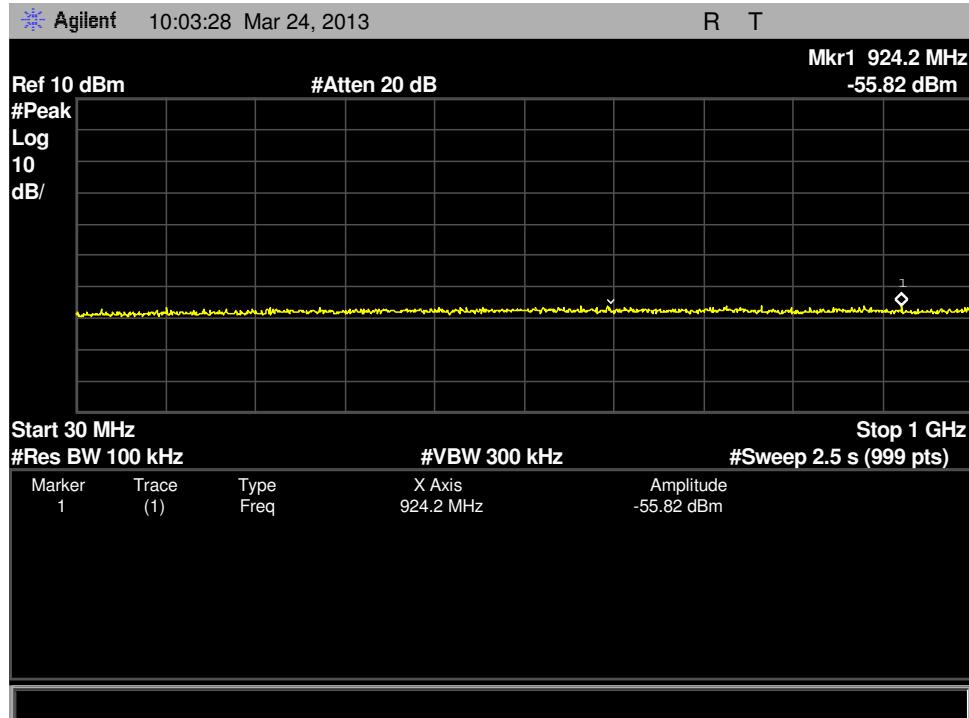
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Low Channel, Band Edge



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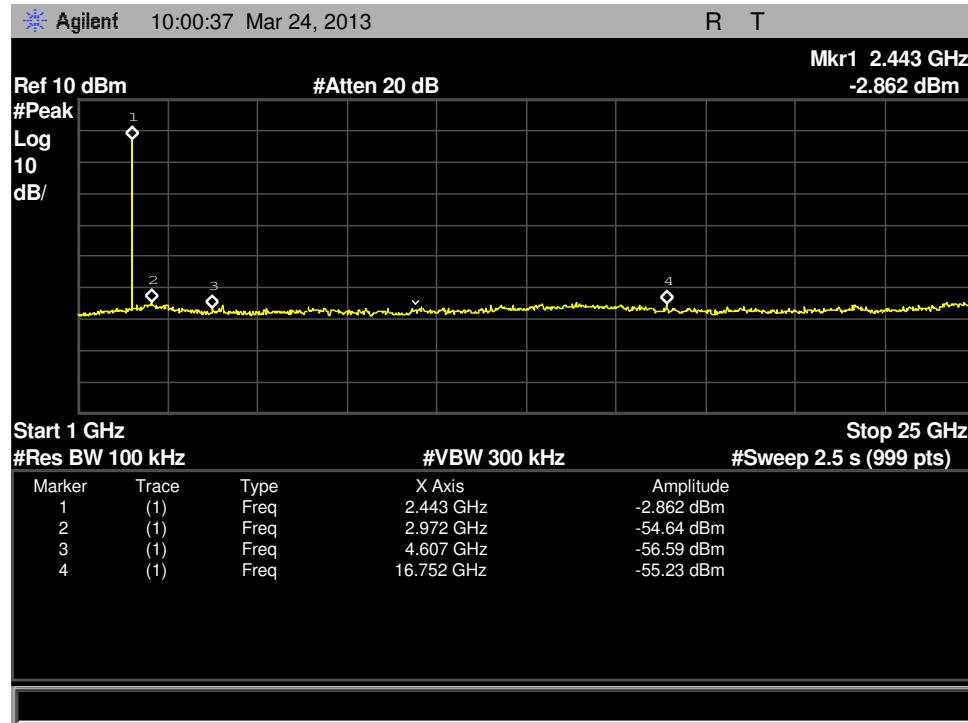
Middle Channel, below 1GHz



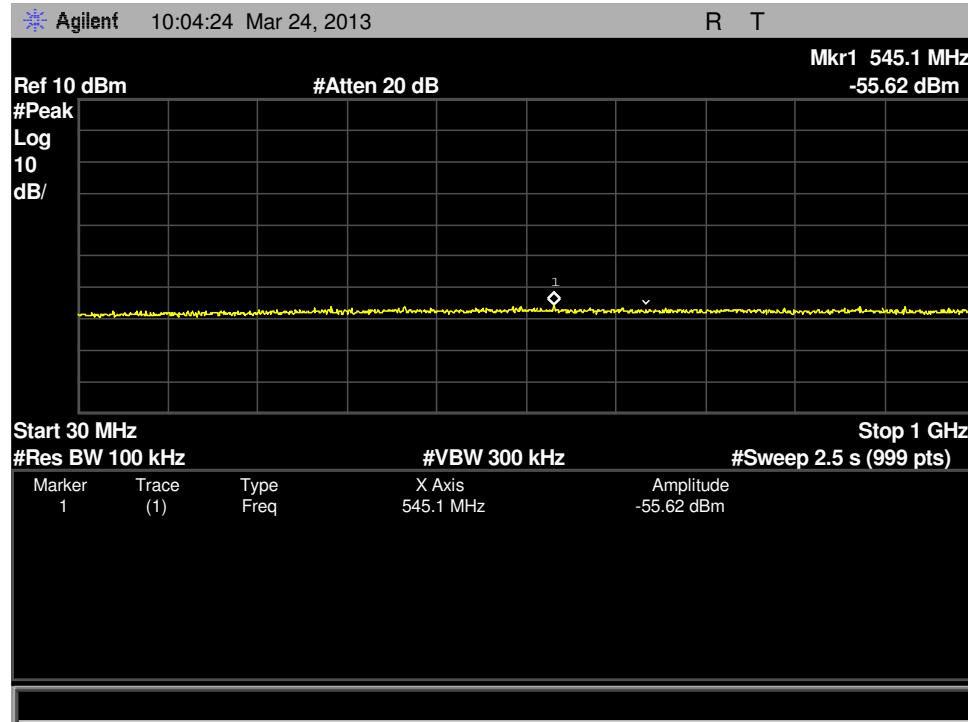
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Middle Channel, above 1GHz



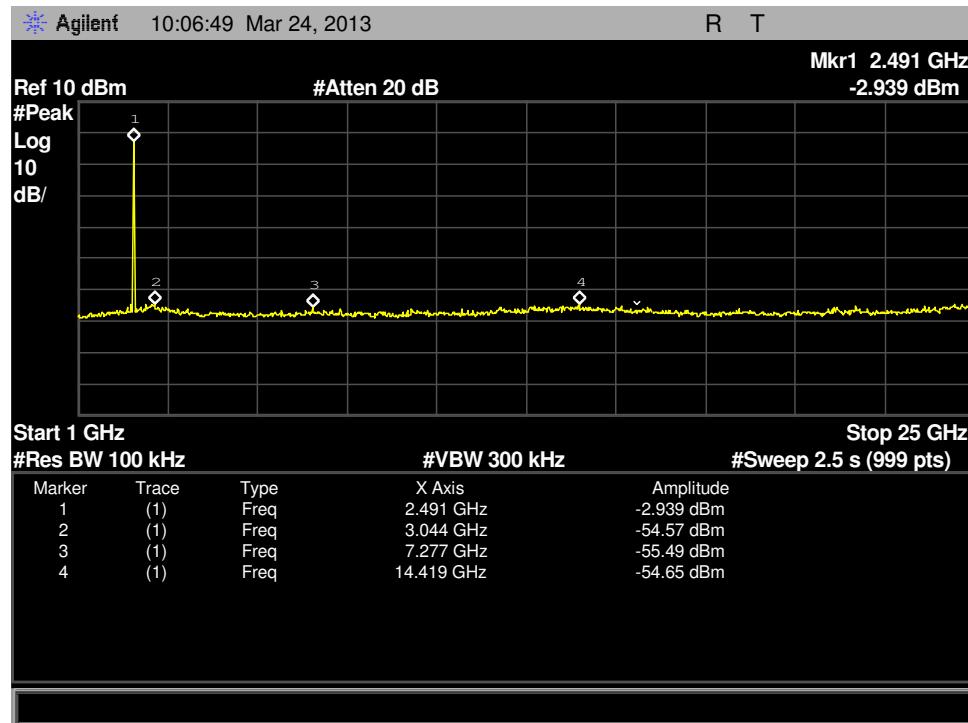
High Channel, below 1GHz



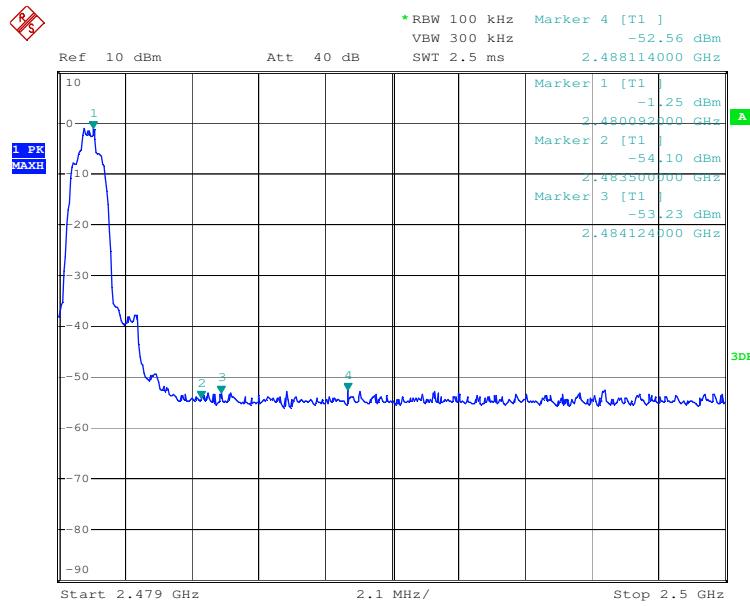
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High Channel, above 1GHz



High Channel, Band Edge



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5.1.6 Spurious Emission

RESULT:**Passed**

Date of testing	:	2013-03-16 to 2013-03-22
Test standard	:	FCC part 15.247(d) FCC Part 15.205 RSS-210 Clause 2.2
Basic standard	:	ANSI C63.4: 2003
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

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

Remark:

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

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

For details refer to Appendix 1.

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5.1.7 Frequency Separation

RESULT:

Passed

Date of testing	:	2013-03-26
Test standard	:	FCC part 15.247(a)(1) RSS-210 A8.1 (b)
Basic standard	:	ANSI C63.4: 2003
Limit	:	≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater

Test setup

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

Table 11: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (MHz)	Limit (kHz)	Result
Low Channel	2402	1	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2403			
Mid Channel	2441	1	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2442			
High Channel	2480	1	≥ 25kHz or 2/3 of 20dB bandwidth	Pass
Adjacency Channel	2479			

5.1.8 Number of hopping frequency

RESULT:**Passed**

Date of testing	:	2013-03-26
Test standard	:	FCC part 15.247(a)(1)(iii) RSS-210 A8.1 (d)
Basic standard	:	ANSI C63.4: 2003
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shield room

Test setup

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

Table 12: Test result of Number of hopping frequency

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

5.1.9 Time of Occupancy

RESULT:**Passed**

Date of testing	:	2013-03-26
Test standard	:	FCC part 15.247(a)(1)(iii) RSS-210 A8.1 (d)
Basic standard	:	ANSI C63.4: 2003
Limits	:	0.4s
Kind of test site	:	Shield room

Test setup

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

Table 13: Test result of Time of Occupancy, GFSK modulation

Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	DH1	0.43	0.14	0.4	Pass
	DH3	1.72	0.28	0.4	Pass
	DH5	2.97	0.32	0.4	Pass
Mid Channel	DH1	0.43	0.14	0.4	Pass
	DH3	1.70	0.27	0.4	Pass
	DH5	2.97	0.32	0.4	Pass
High Channel	DH1	0.43	0.14	0.4	Pass
	DH3	1.70	0.27	0.4	Pass
	DH5	2.97	0.32	0.4	Pass

Table 14: Test result of Time of Occupancy, 8DPSK modulation

Channel	Data Mode	Pulse width (ms)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	DH1	0.44	0.14	0.4	Pass
	DH3	1.72	0.28	0.4	Pass
	DH5	3.00	0.32	0.4	Pass
Mid Channel	DH1	0.45	0.14	0.4	Pass
	DH3	1.72	0.28	0.4	Pass
	DH5	3.00	0.32	0.4	Pass
High Channel	DH1	0.44	0.14	0.4	Pass
	DH3	1.72	0.28	0.4	Pass
	DH5	3.00	0.32	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

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5.1.10 Conducted emissions

RESULT:

Passed

Date of testing	:	2013-03-18
Test standard	:	FCC Part 15.207(a)
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a)
Kind of test site	:	Shield room

Test setup

Input Voltage	:	AC 120V, 60Hz via AC input of Notebook
Operation Mode	:	D
Earthing	:	Not connected
Ambient temperature	:	25°C
Relative humidity	:	55%
Atmospheric pressure	:	101 kPa

For details refer to Appendix 1.

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5.1.11 Radiated Emission

RESULT:**Passed**

Date of testing	:	2013-03-26
Test standard	:	FCC Part 15 Per Section 15.209(a) Clause 5.5 of ICES-003 RSS-Gen 7.1.4
Frequency range	:	30 - 6000MHz
Classification	:	Class B
Test procedure	:	ANSI C63.4: 2003 CAN/CSA-CEI/IEC CISPR 22-02 RSS-Gen Table 5
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Input Voltage	:	DC 3.7V
Operation mode	:	C, D
Earthing	:	Not connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

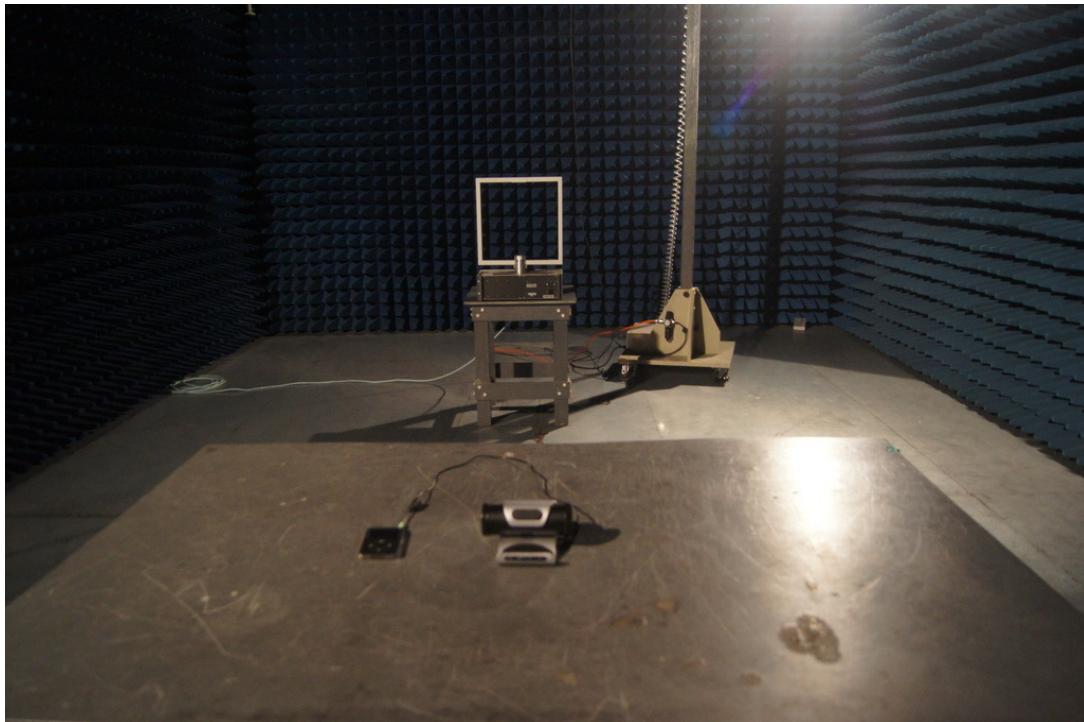
Test data refer to Appendix 1.

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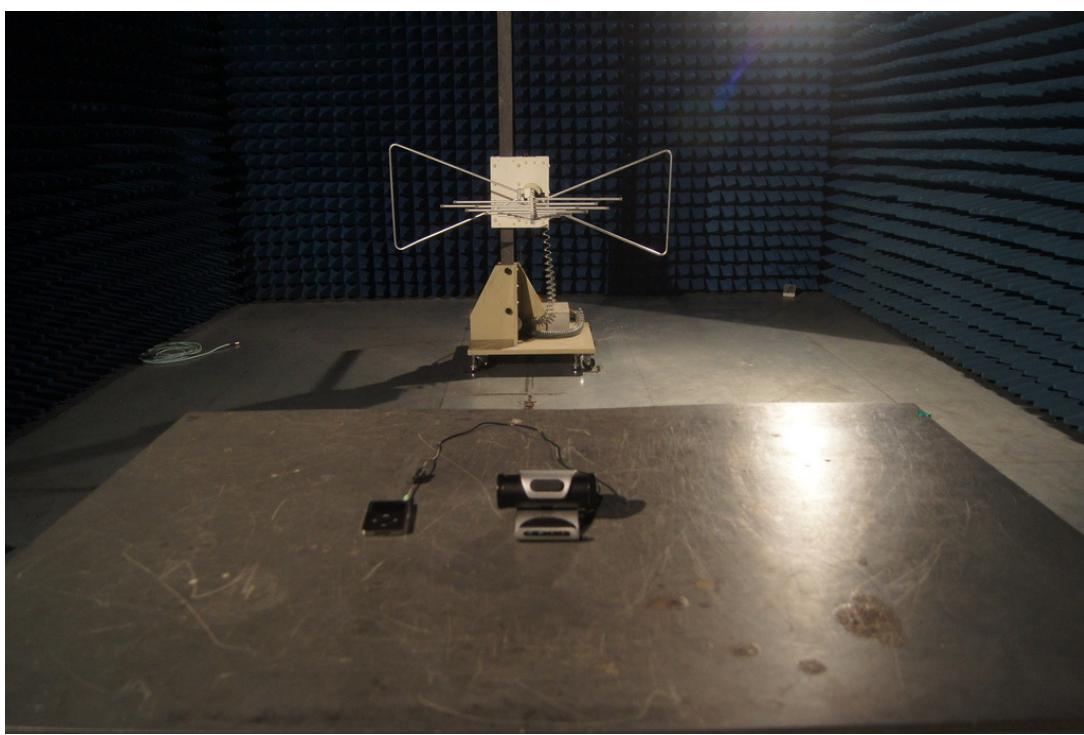
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6. Photographs of the Test Set-Up

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



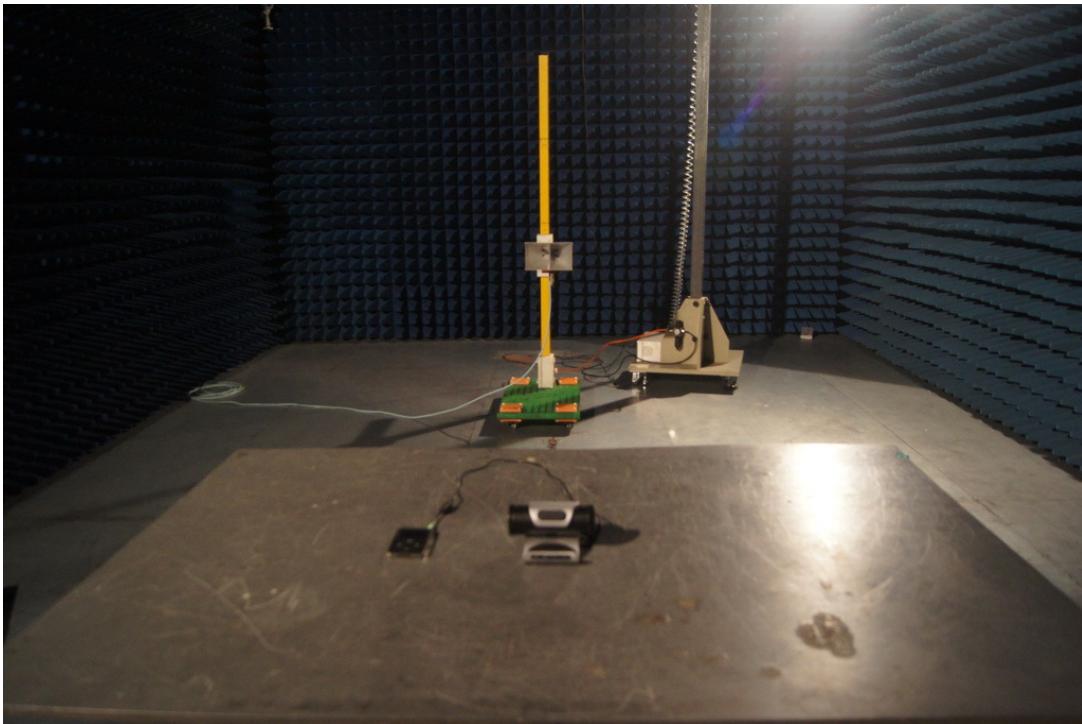
Photograph 2: Set-up for Spurious Emissions (30MHz-1GHz)



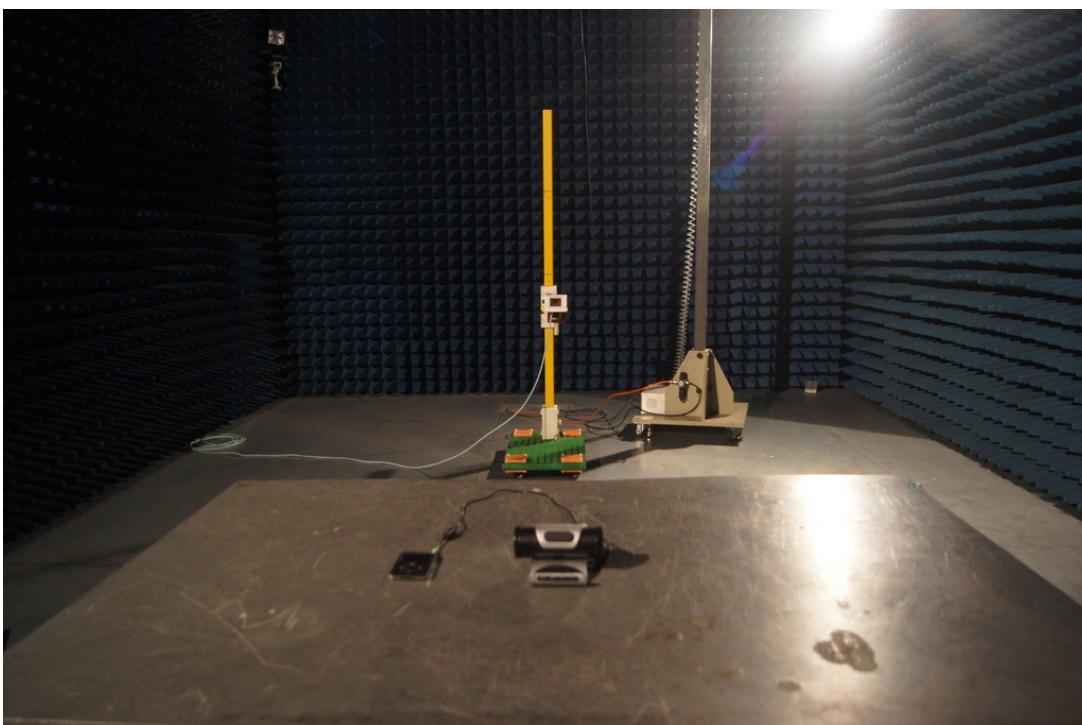
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Photograph 3: Set-up for Spurious Emissions (1GHz-18GHz)



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



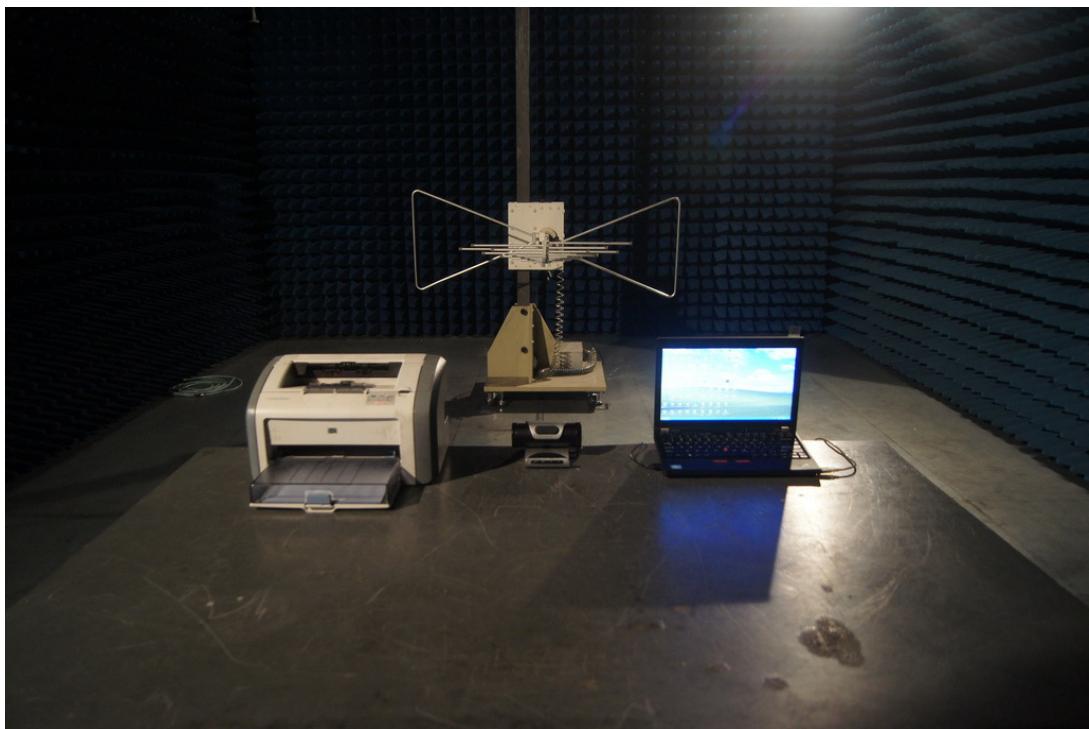
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Photograph 5: Set-up for Conducted Emissions



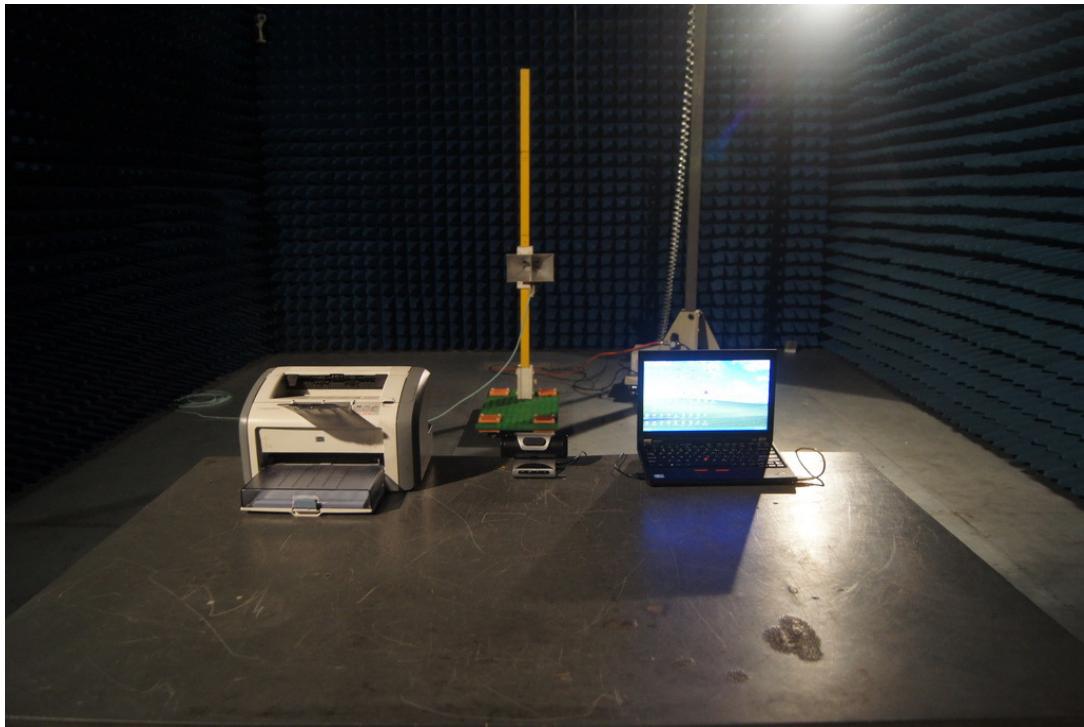
Photograph 6: Set-up for Radiated Emissions, below 1GHz



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Photograph 7: Set-up for Radiated Emissions, above 1GHz



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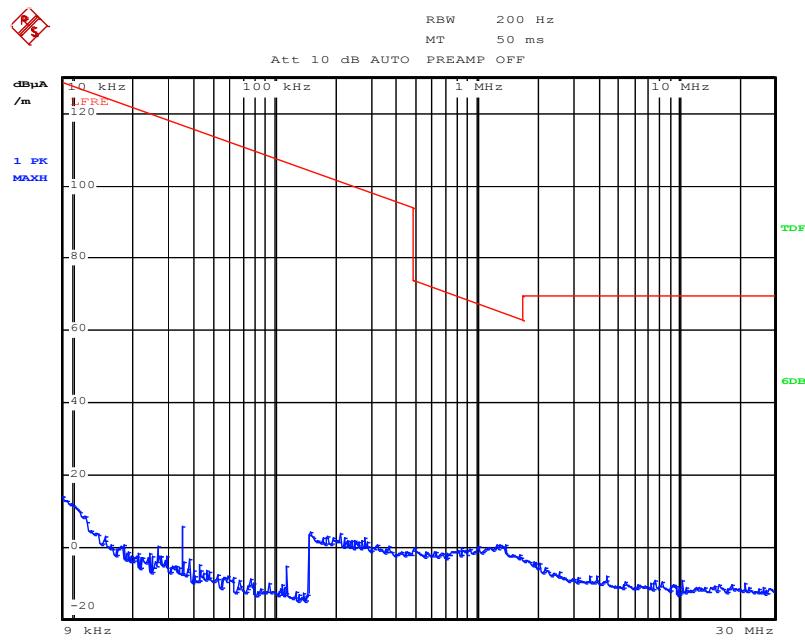
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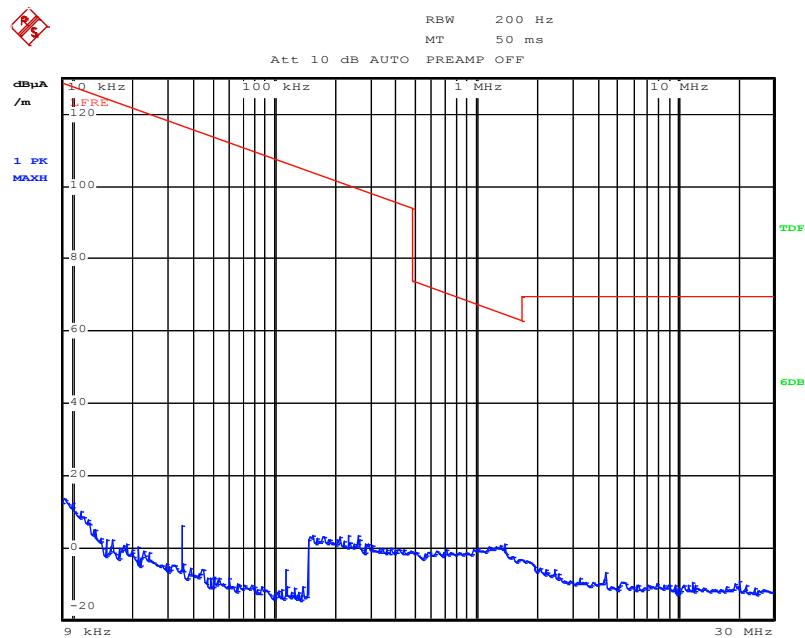
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Figure 1: Test figure of spurious emissions, mode A.1, Horizontal polarity (9kHz – 30MHz), GFSK Modulation



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Figure 2: Test figure of spurious emissions, mode A.1, Vertical polarity (9kHz – 30MHz), GFSK Modulation



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

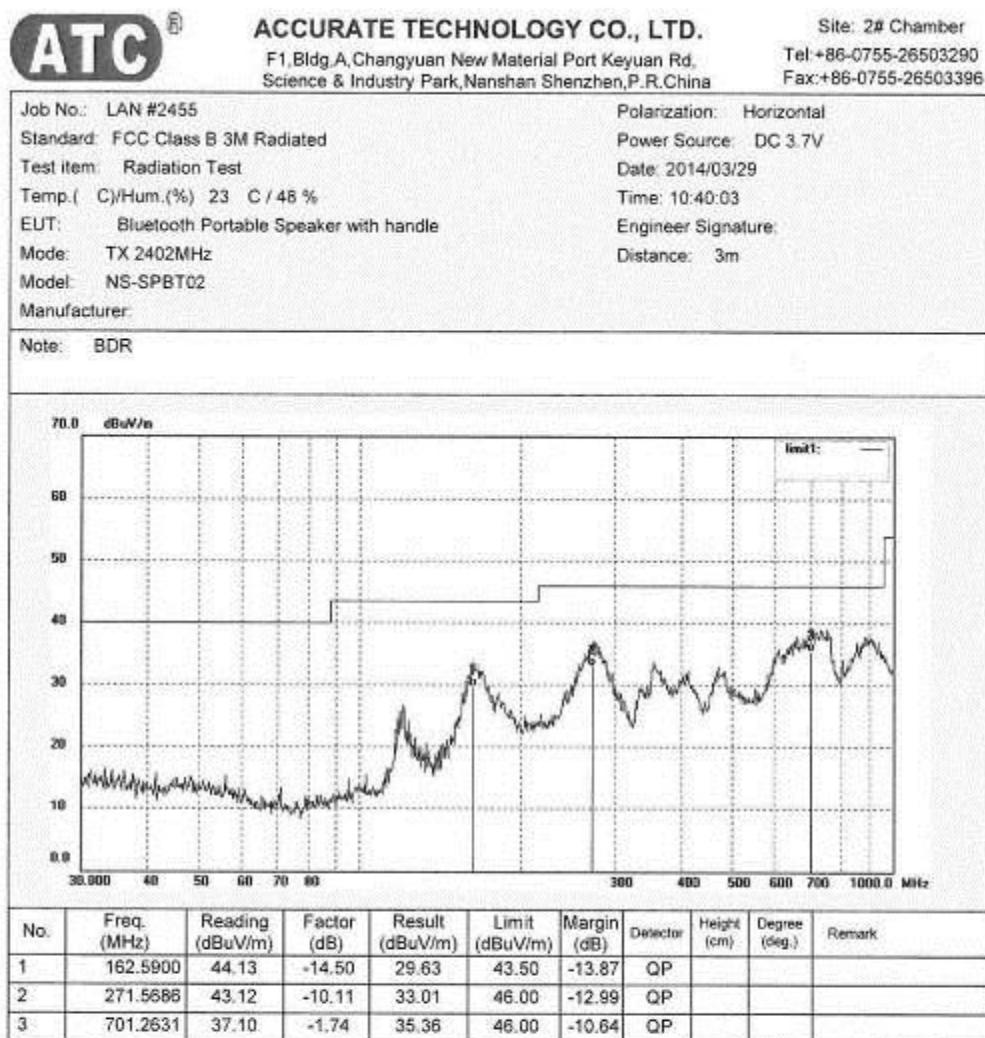


Figure 4: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz), GFSK Modulation

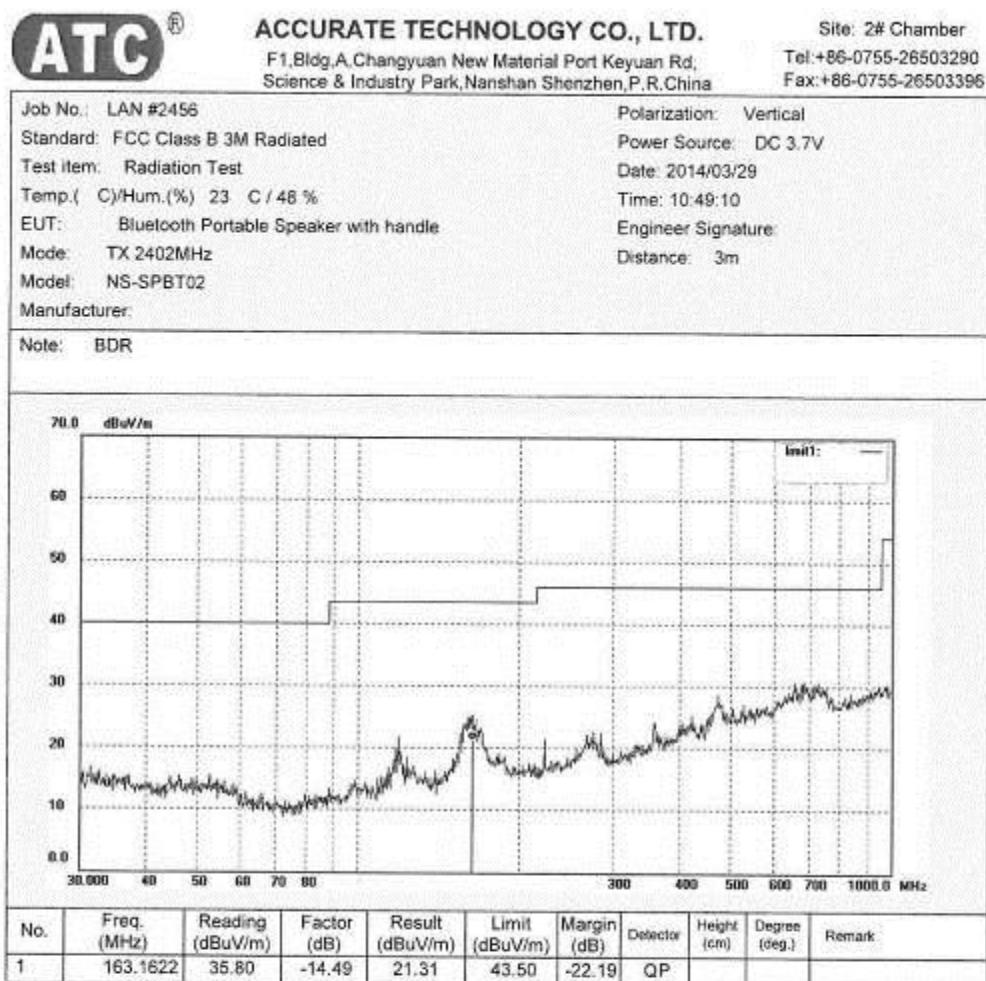


Figure 5: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz –18GHz), GFSK Modulation

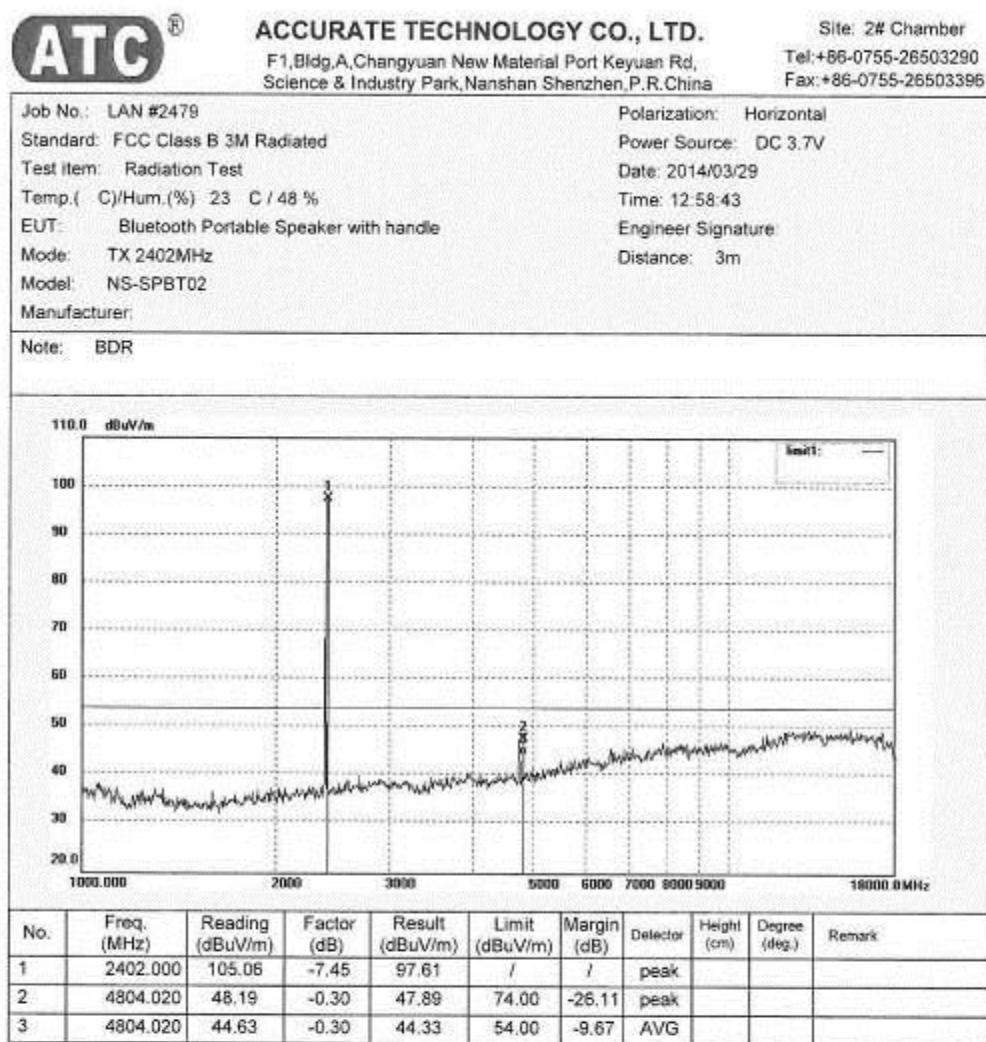


Figure 6: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz), GFSK Modulation

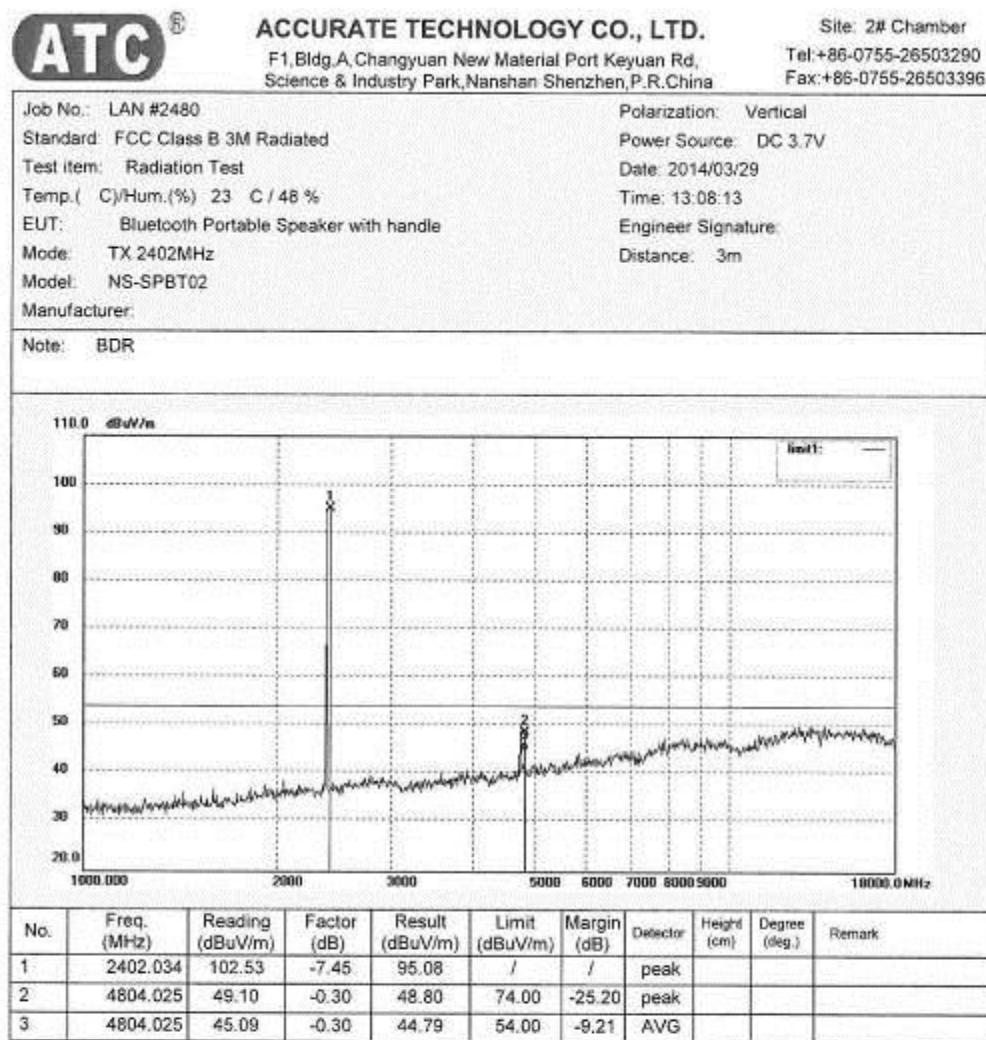


Figure 7: Test figure of spurious emissions, mode A.1, Horizontal polarity (18GHz –25GHz), GFSK Modulation

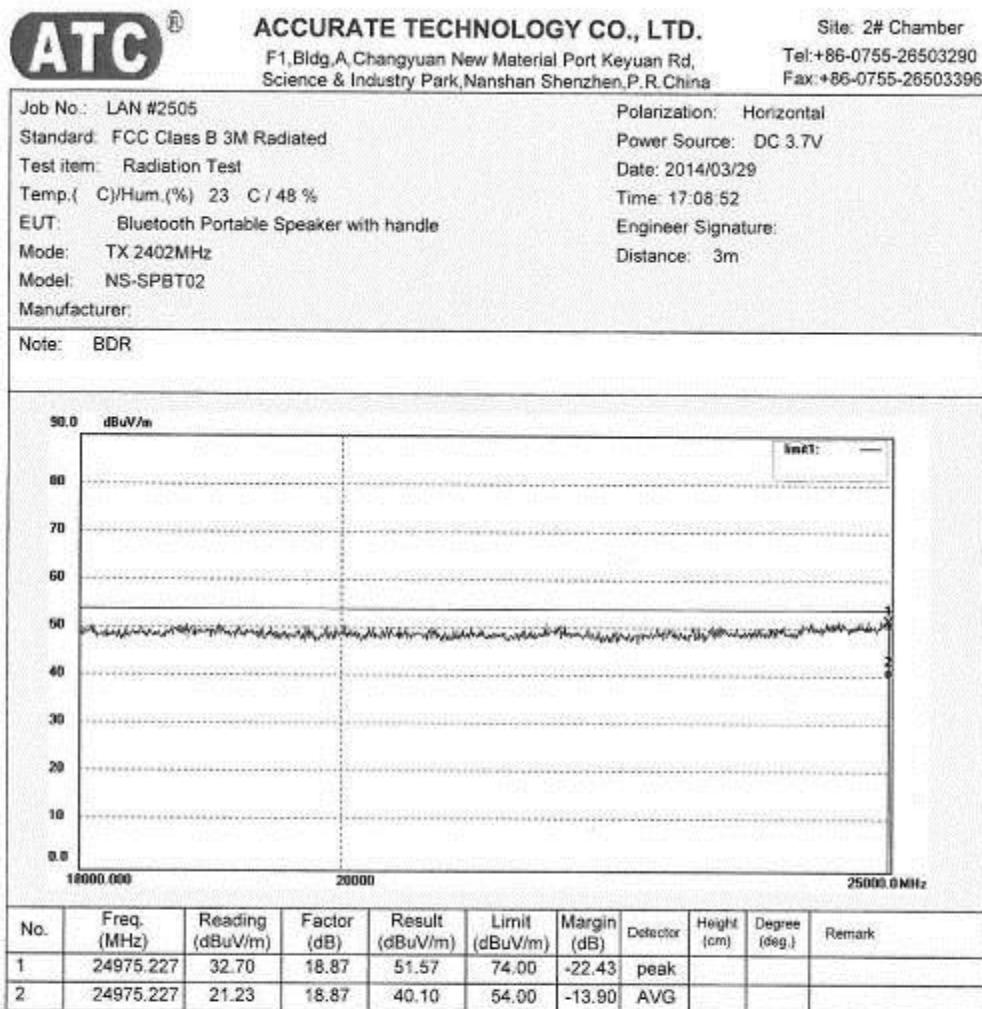


Figure 8: Test figure of spurious emissions, mode A.1, Vertical polarity (18GHz – 25GHz), GFSK Modulation

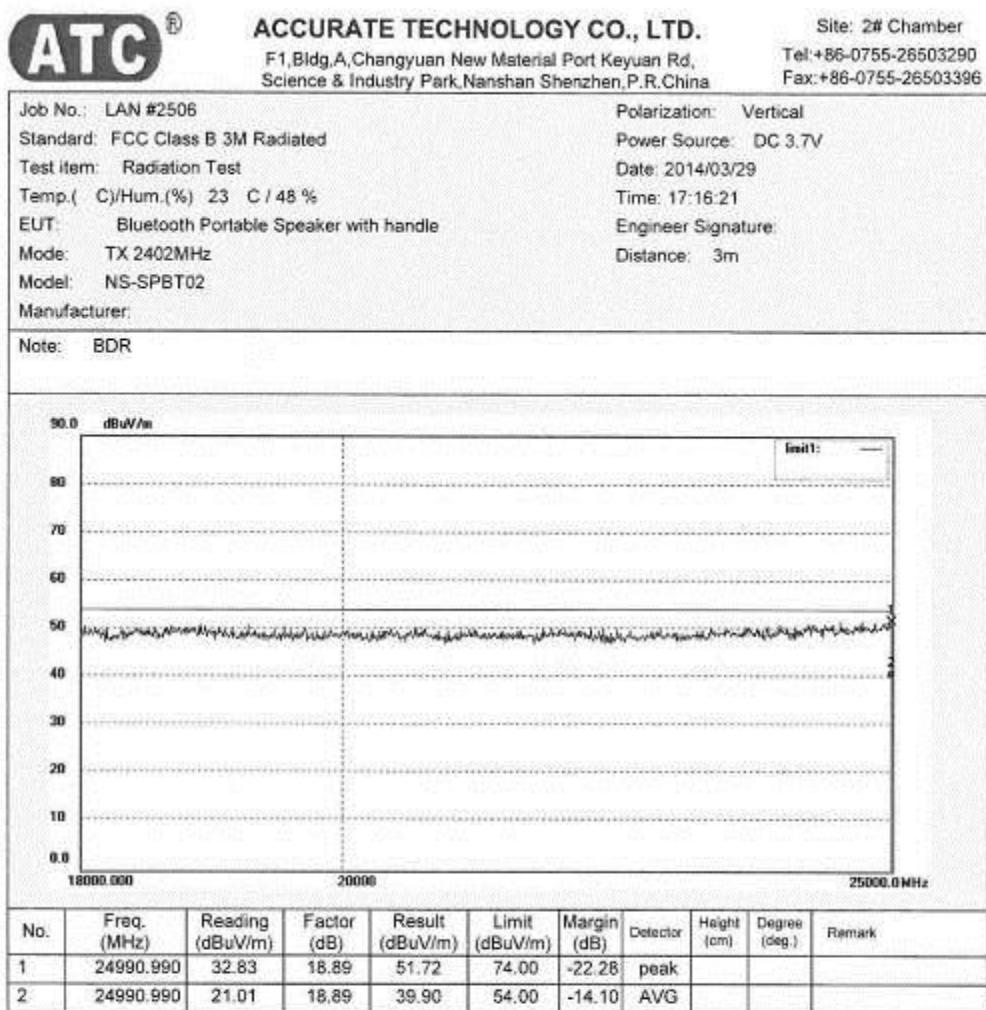
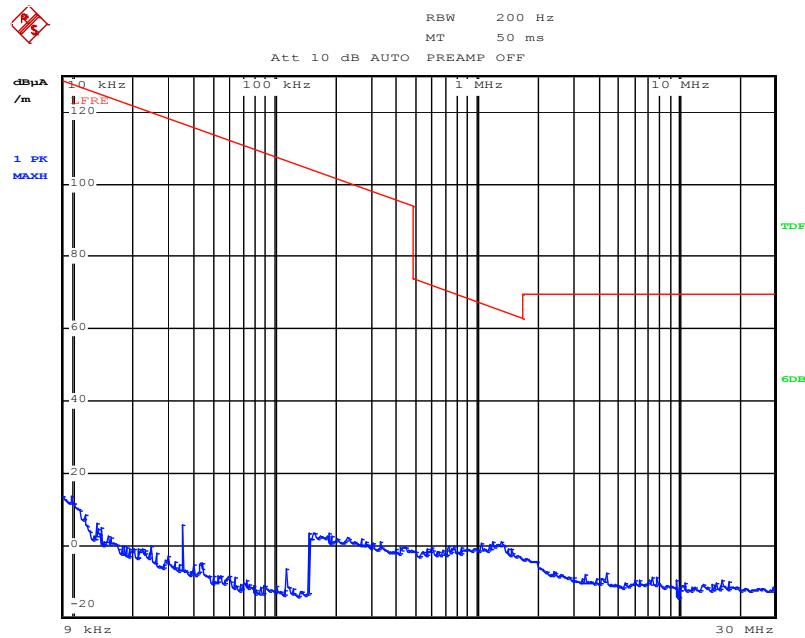
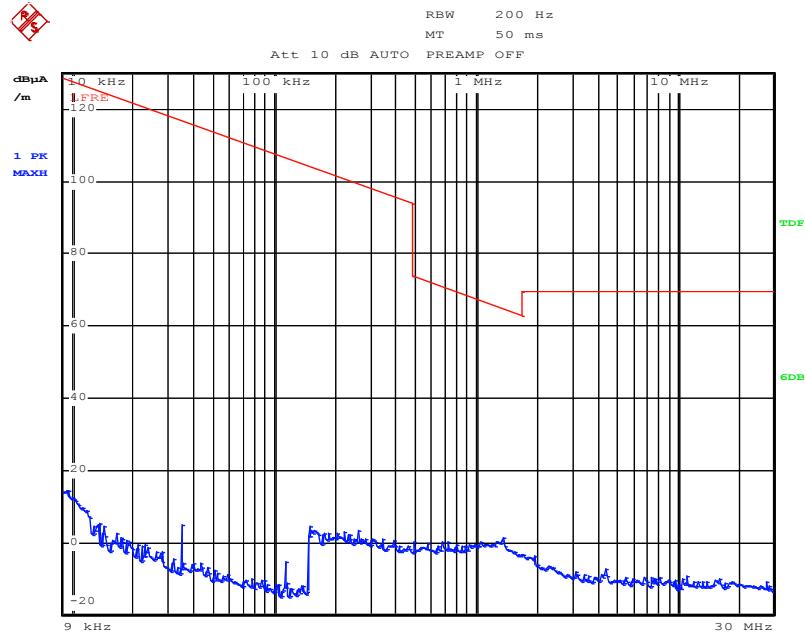


Figure 9: Test figure of spurious emissions, mode A.2, Horizontal polarity (9kHz – 30MHz), GFSK Modulation



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Figure 10: Test figure of spurious emissions, mode A.2, Vertical polarity (9kHz – 30MHz), GFSK Modulation



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Figure 11: Test figure of spurious emissions, mode A.2, Horizontal polarity (30MHz – 1GHz), GFSK Modulation

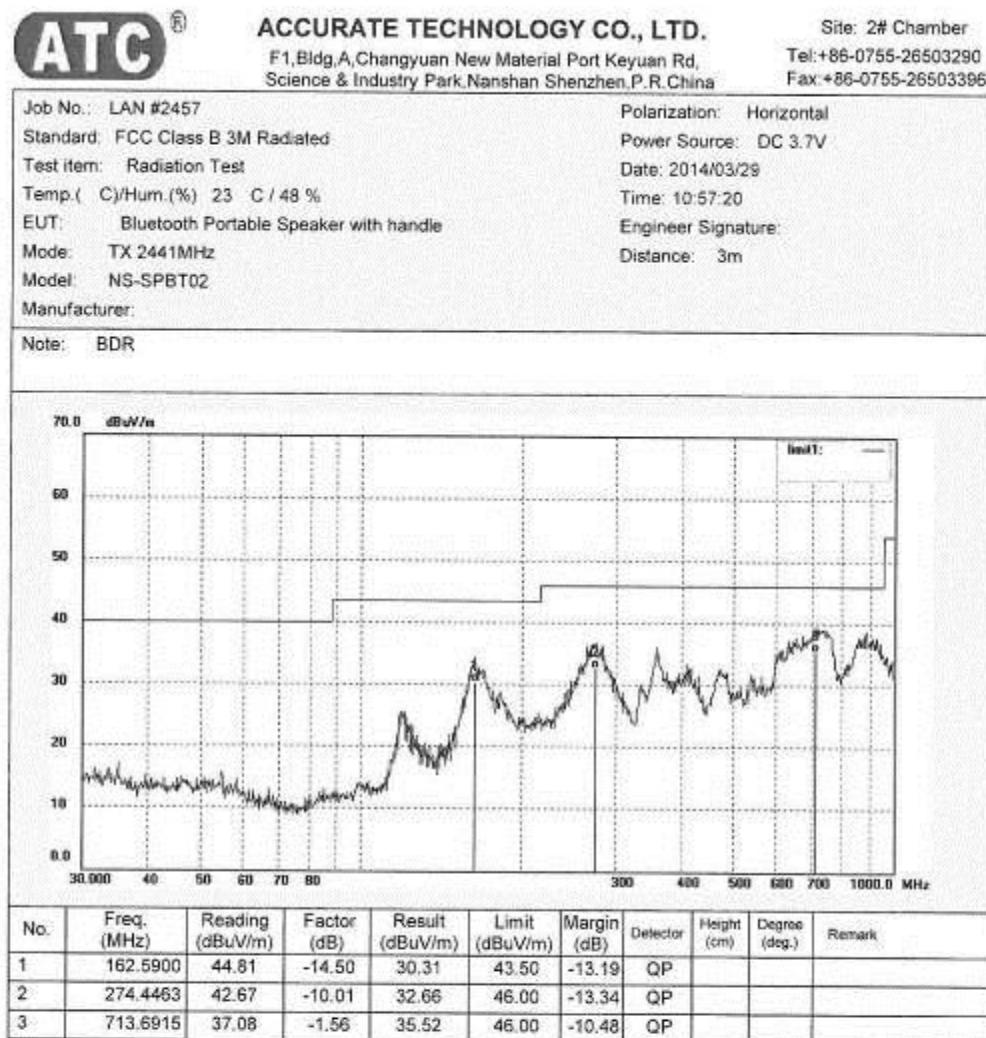


Figure 12: Test figure of spurious emissions, mode A.2, Vertical polarity (30MHz – 1GHz), GFSK Modulation

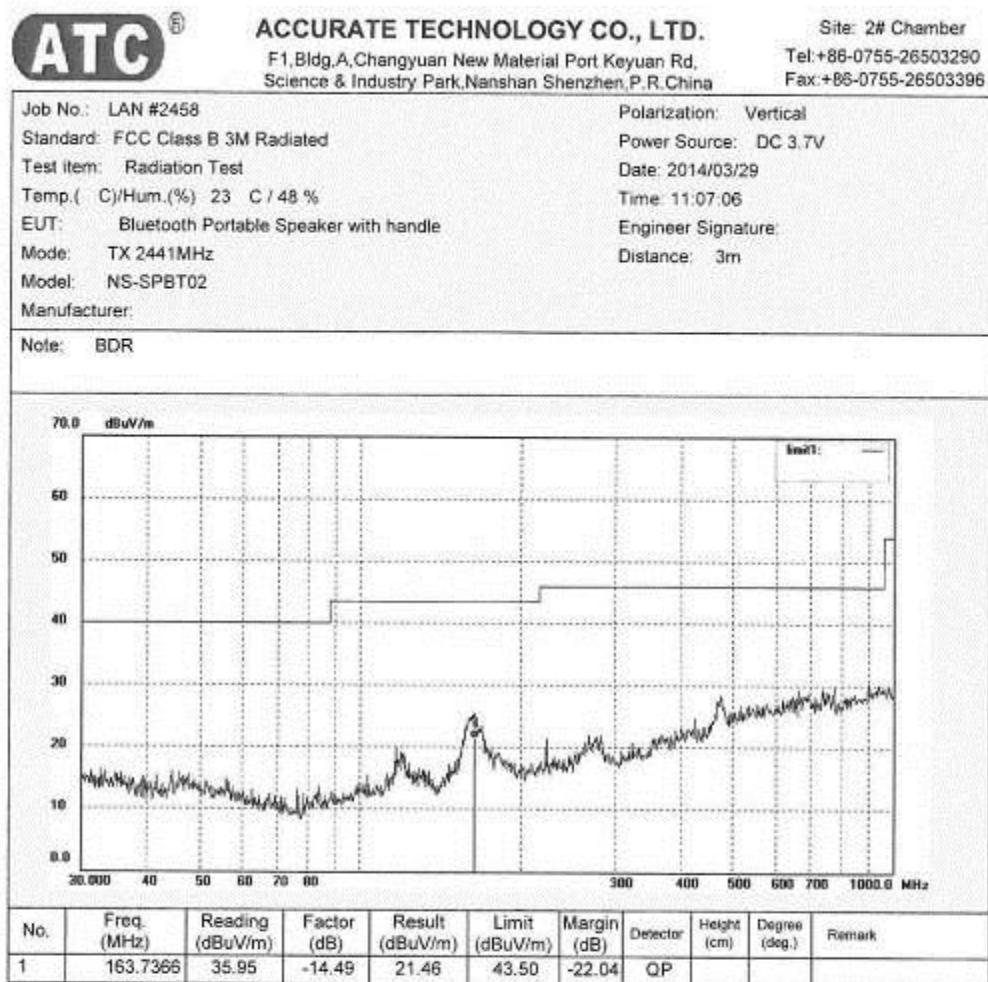


Figure 13: Test figure of spurious emissions, mode A.2, Horizontal polarity (1GHz – 18GHz), GFSK Modulation

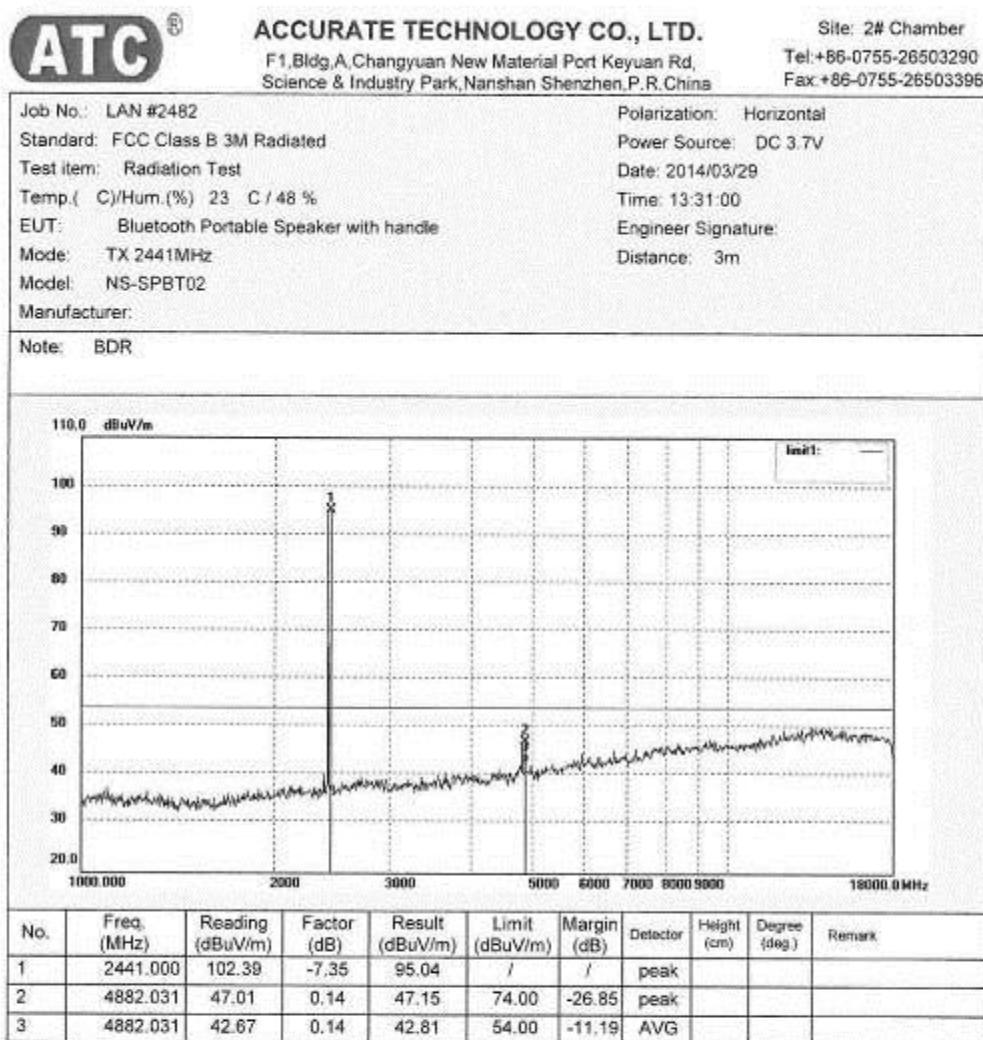


Figure 14: Test figure of spurious emissions, mode A.2, Vertical polarity (1GHz – 18GHz), GFSK Modulation

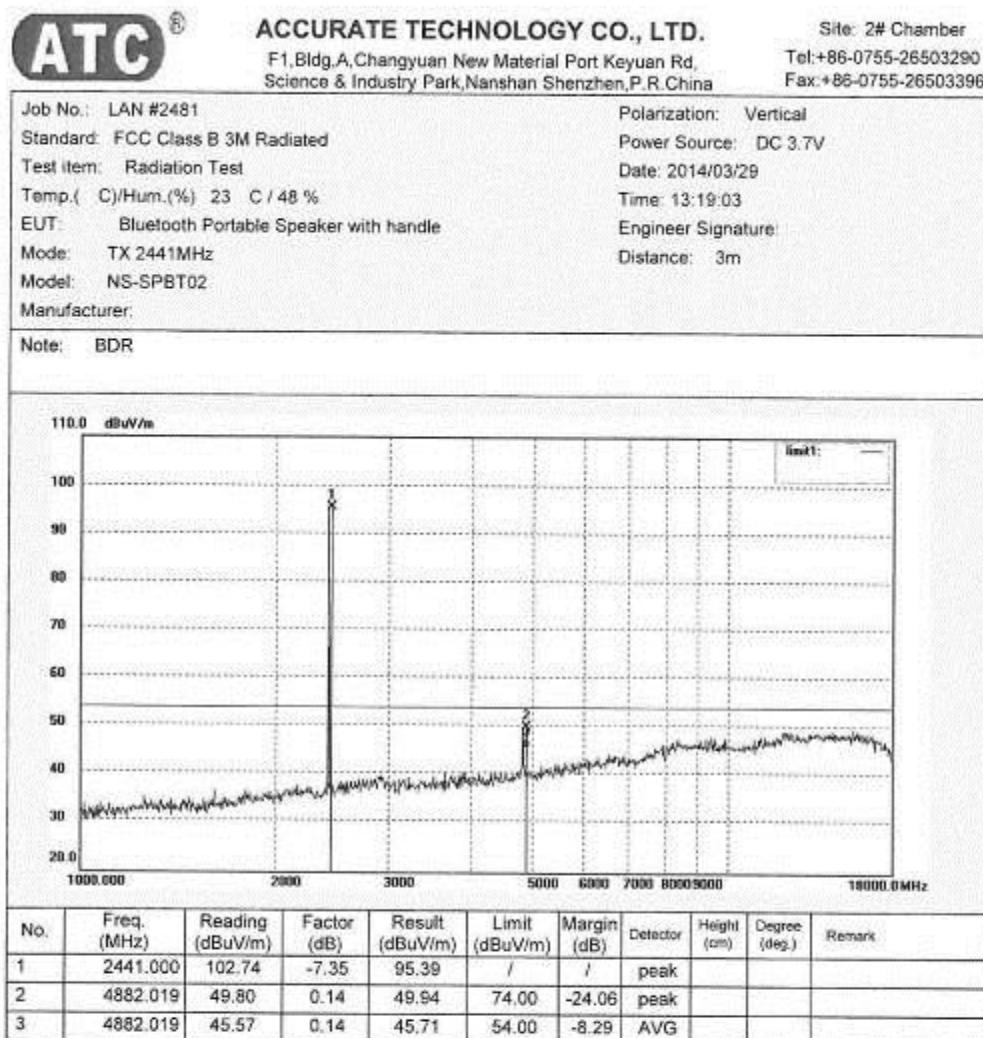


Figure 15: Test figure of spurious emissions, mode A.2, Horizontal polarity (18GHz – 25GHz), GFSK Modulation

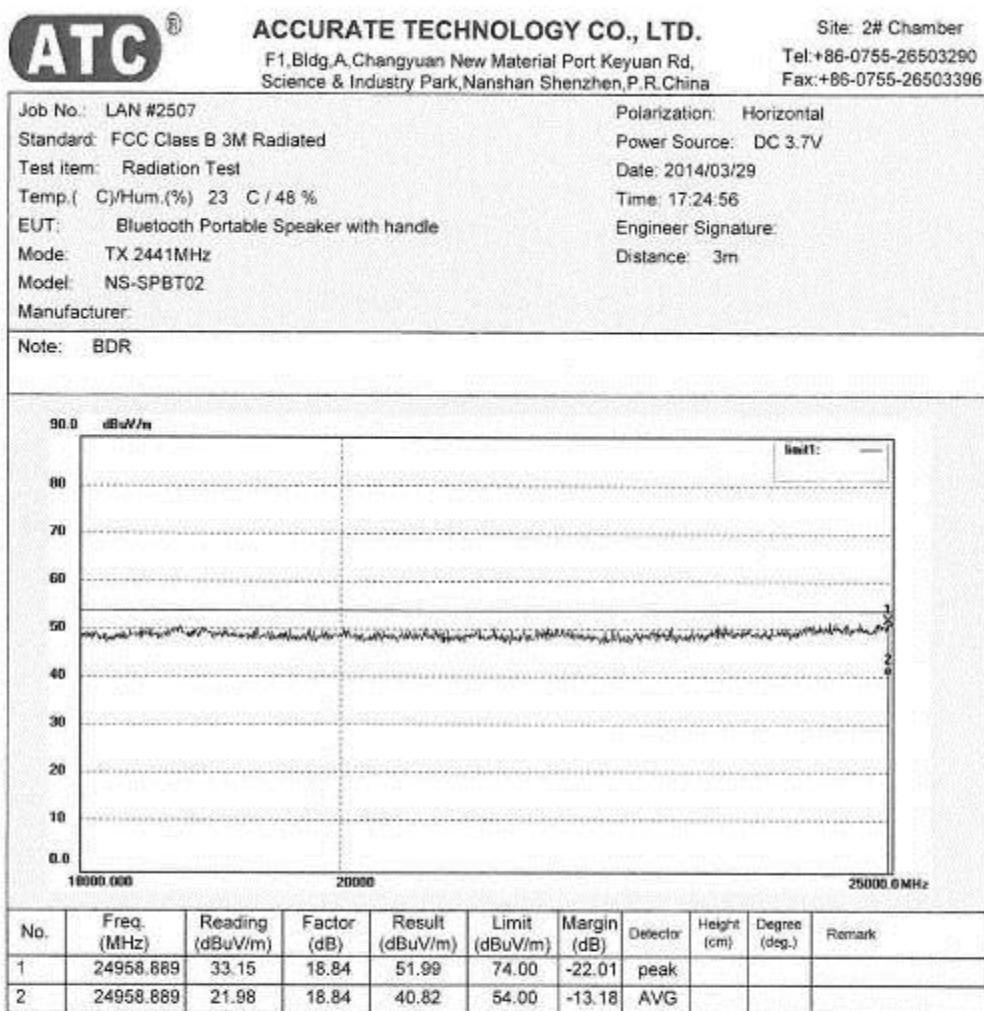


Figure 16: Test figure of spurious emissions, mode A.2, Vertical polarity (18GHz – 25GHz), GFSK Modulation

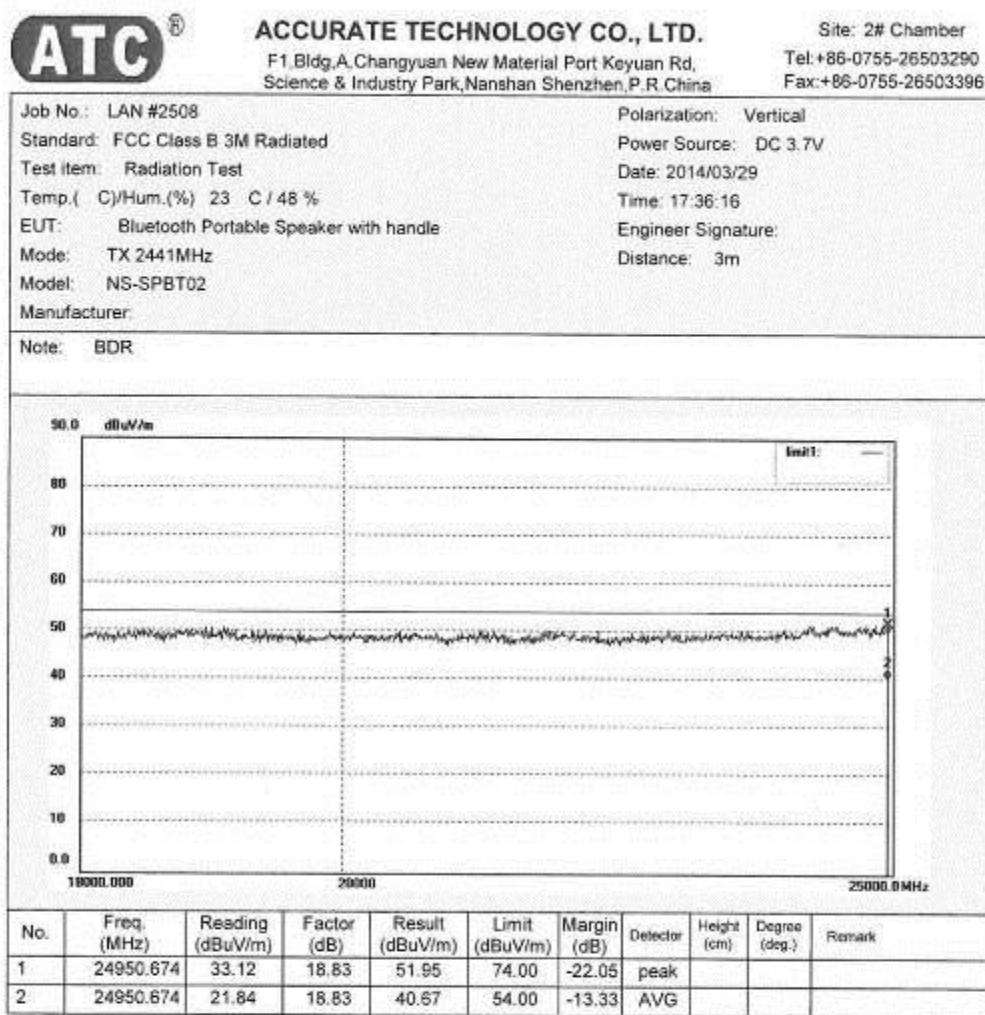
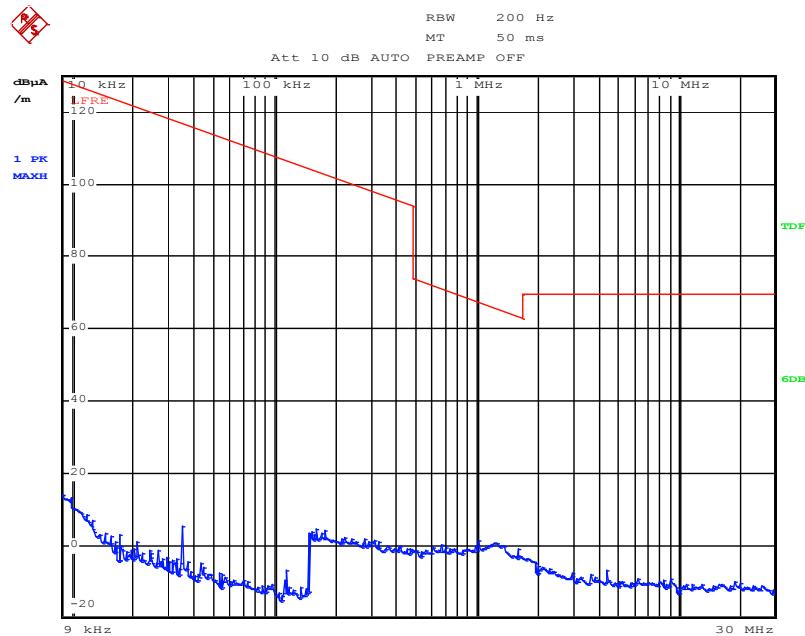
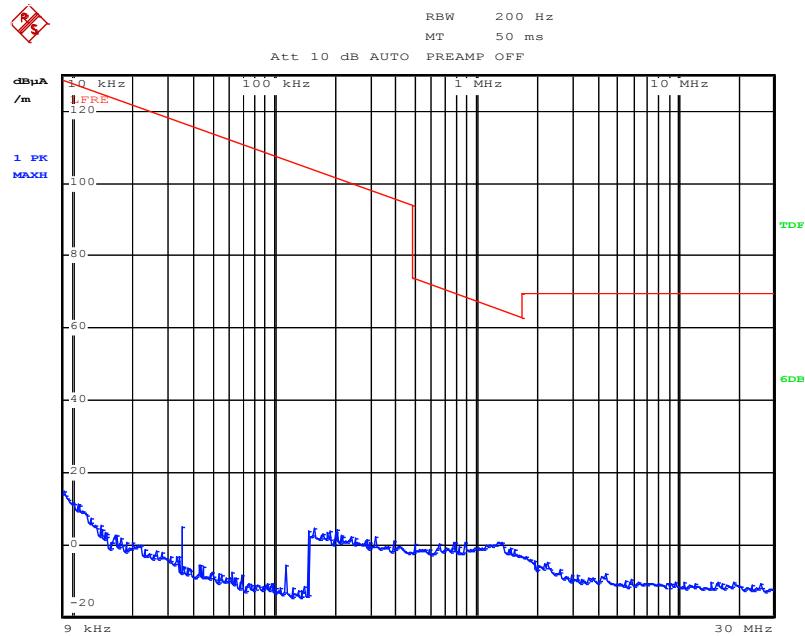


Figure 17: Test figure of spurious emissions, mode A.3, Horizontal polarity (9kHz – 30MHz), GFSK Modulation



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Figure 18: Test figure of spurious emissions, mode A.3, Vertical polarity (9kHz – 30MHz), GFSK Modulation



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Figure 19: Test figure of spurious emissions, mode A.3, Horizontal polarity (30MHz – 1GHz), GFSK Modulation

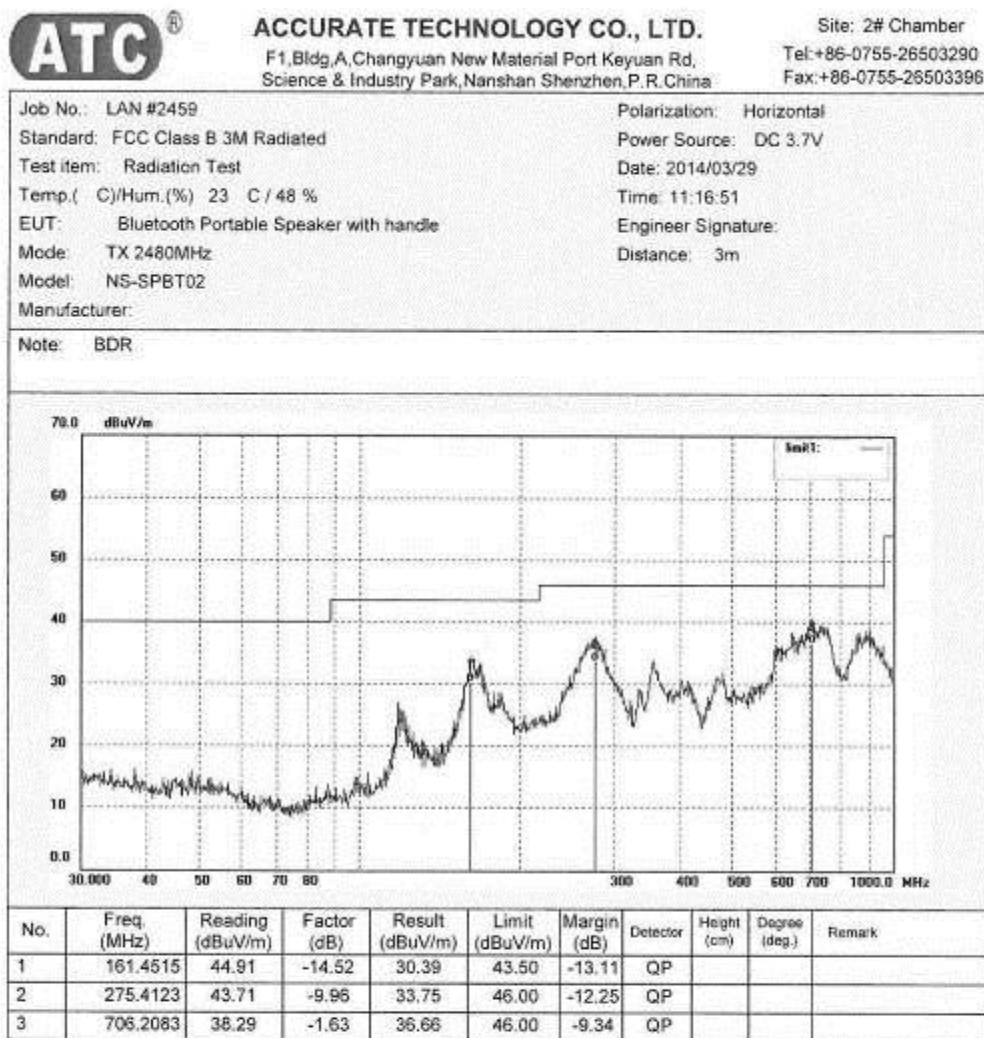


Figure 20: Test figure of spurious emissions, mode A.3, Vertical polarity (30MHz – 1GHz), GFSK Modulation

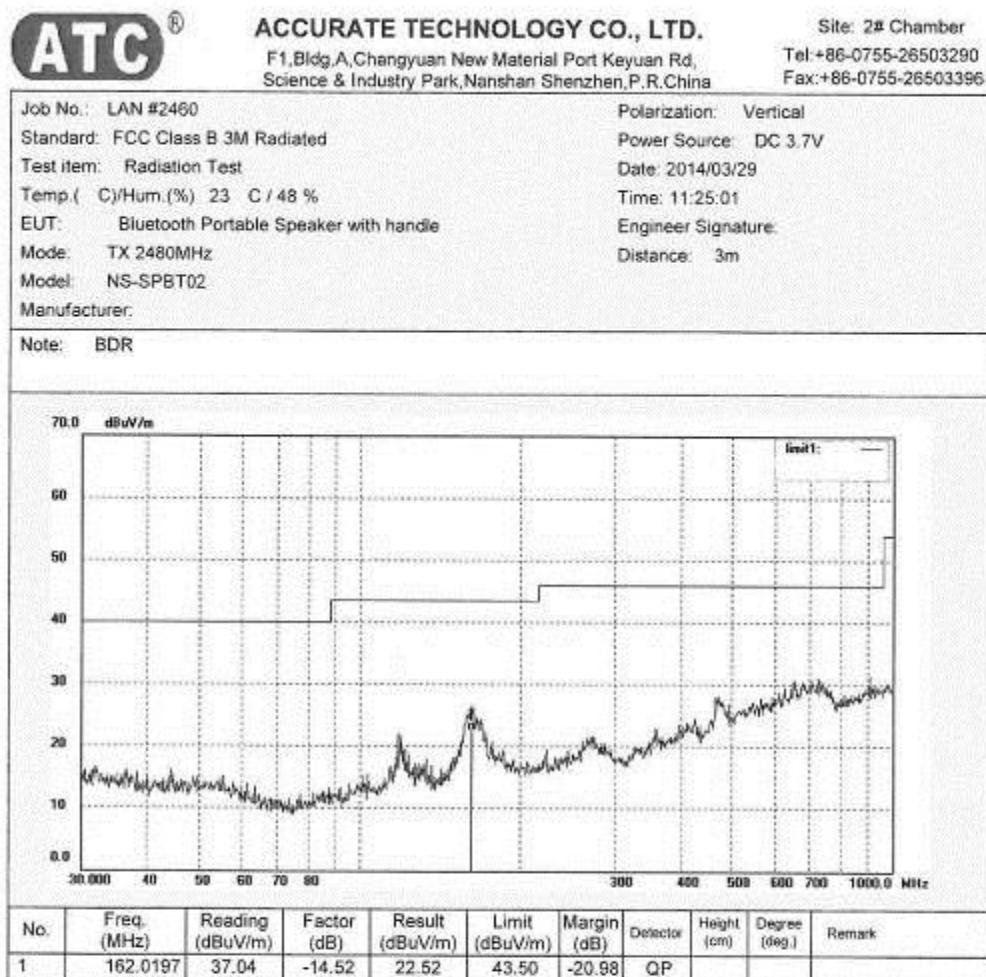


Figure 21: Test figure of spurious emissions, mode A.3, Horizontal polarity (1GHz –18GHz), GFSK Modulation

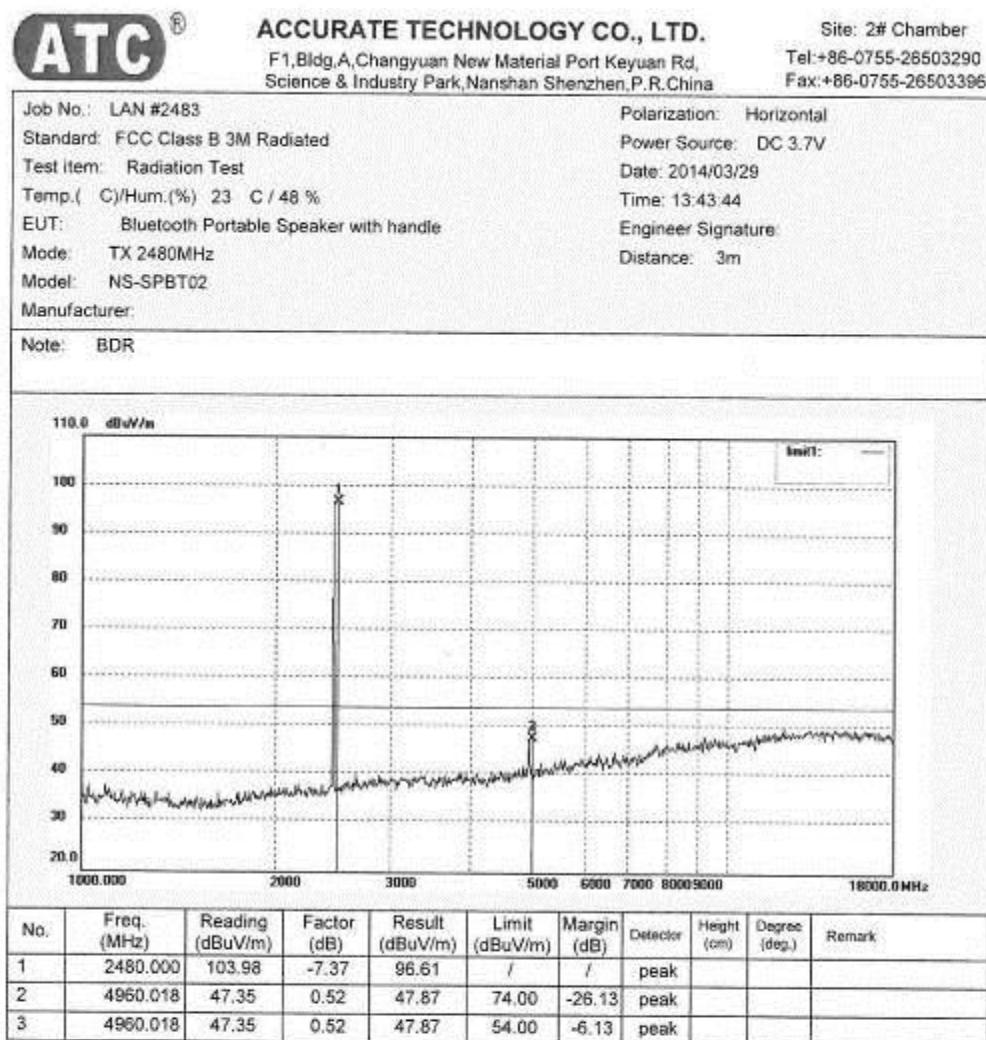


Figure 22: Test figure of spurious emissions, mode A.3, Vertical polarity (1GHz – 18GHz), GFSK Modulation

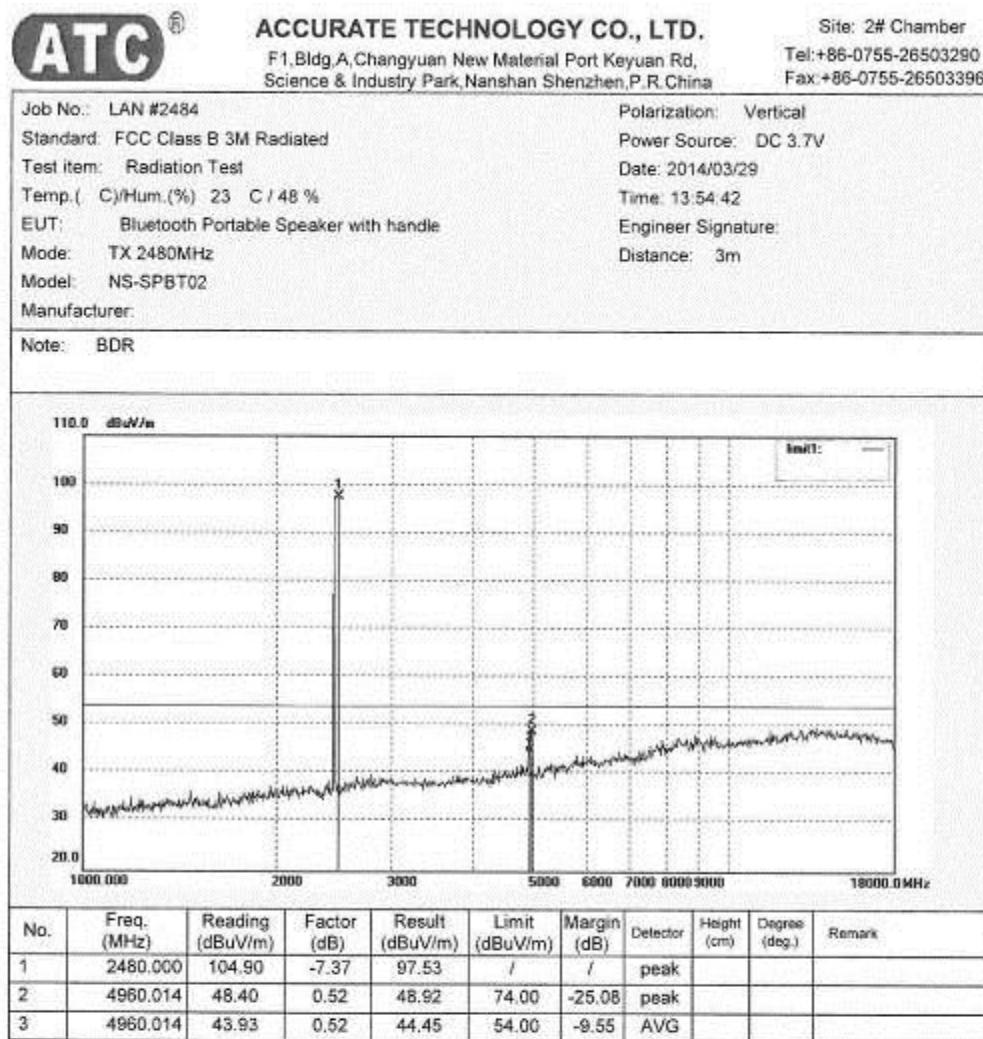


Figure 23: Test figure of spurious emissions, mode A.3, Horizontal polarity (18GHz –25GHz), GFSK Modulation

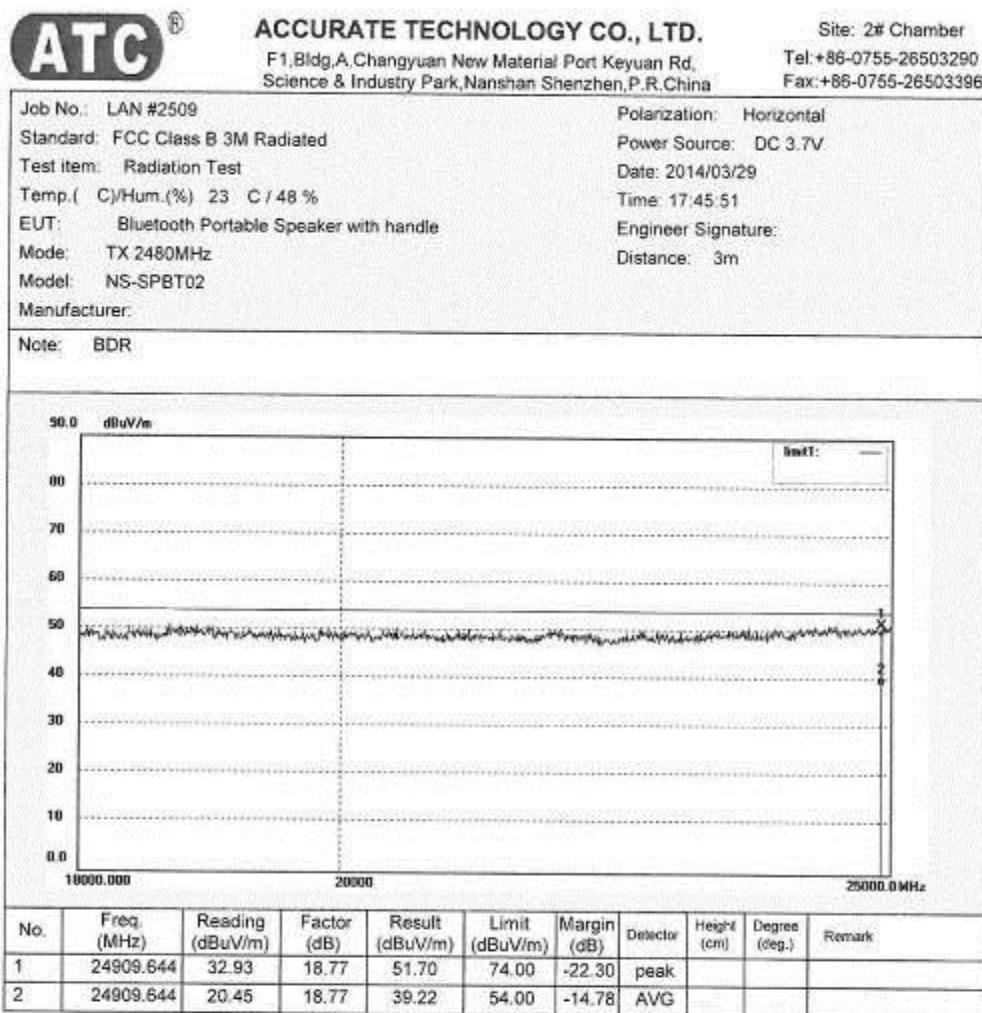


Figure 24: Test figure of spurious emissions, mode A.3, Vertical polarity (18GHz – 25GHz), GFSK Modulation

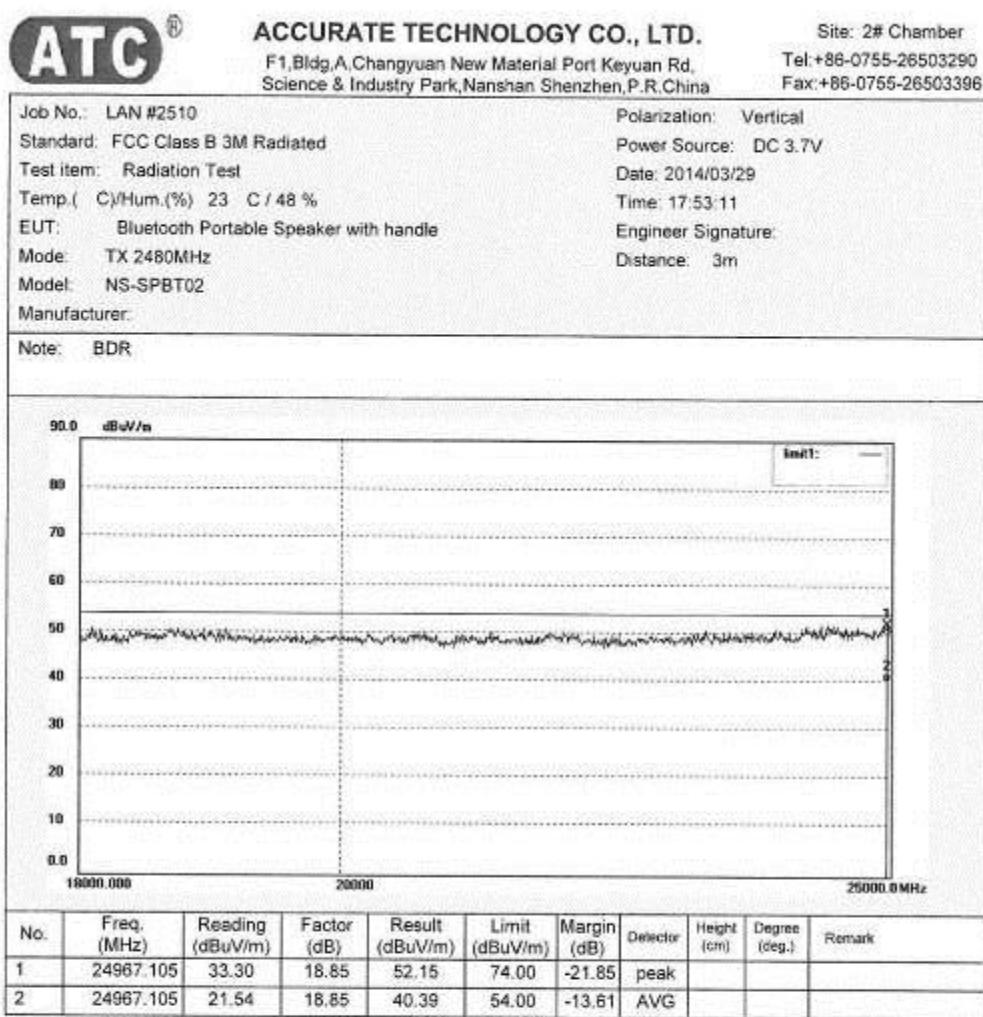
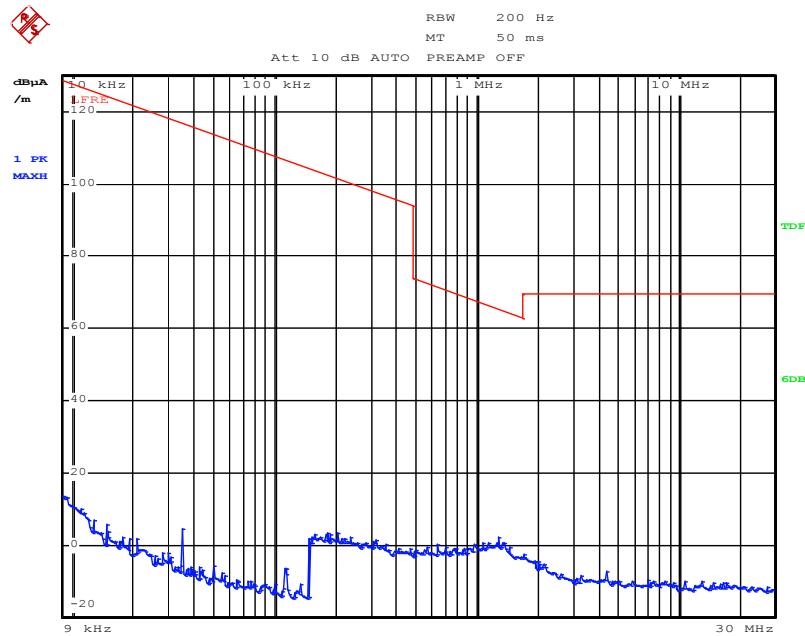
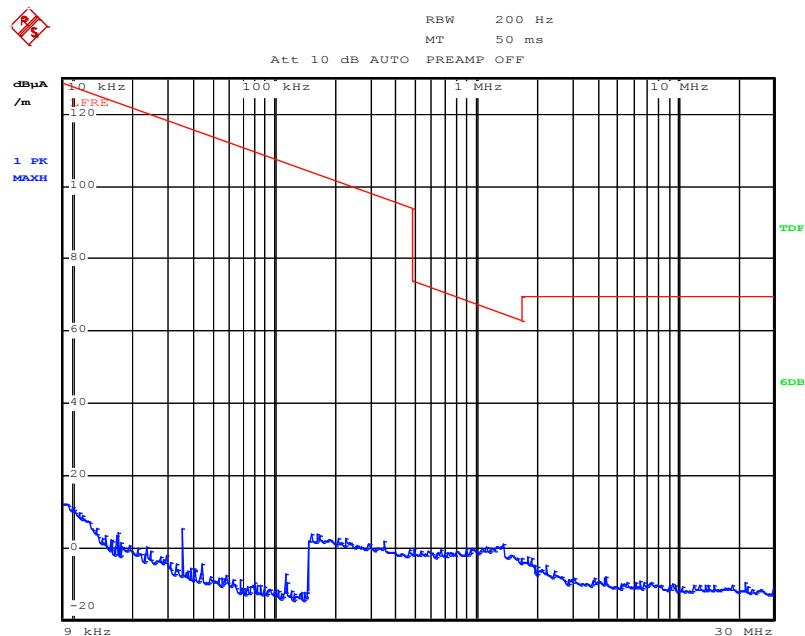


Figure 25: Test figure of spurious emissions, mode A.1, Horizontal polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 26: Test figure of spurious emissions, mode A.1, Vertical polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 27: Test figure of spurious emissions, mode A.1, Horizontal polarity (30MHz – 1GHz), 8DPSK Modulation

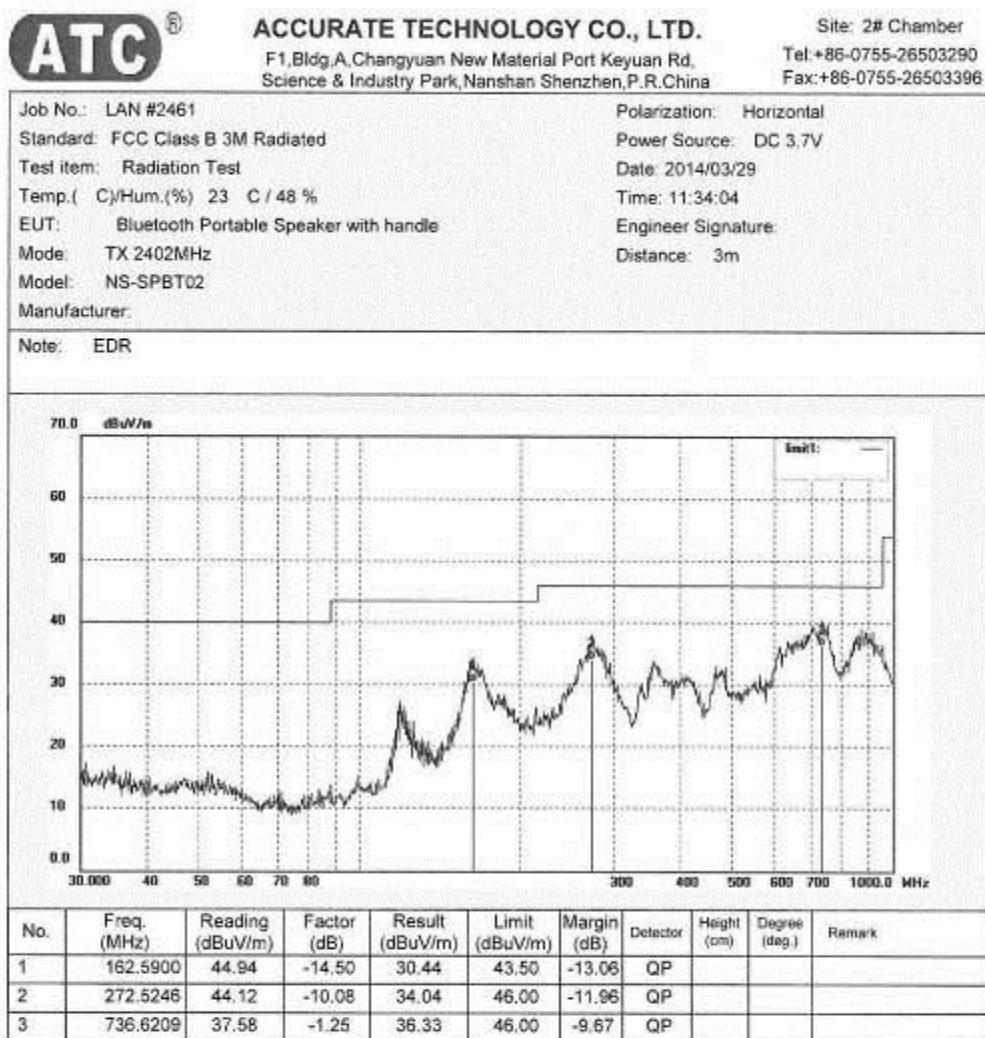


Figure 28: Test figure of spurious emissions, mode A.1, Vertical polarity (30MHz – 1GHz), 8DPSK Modulation

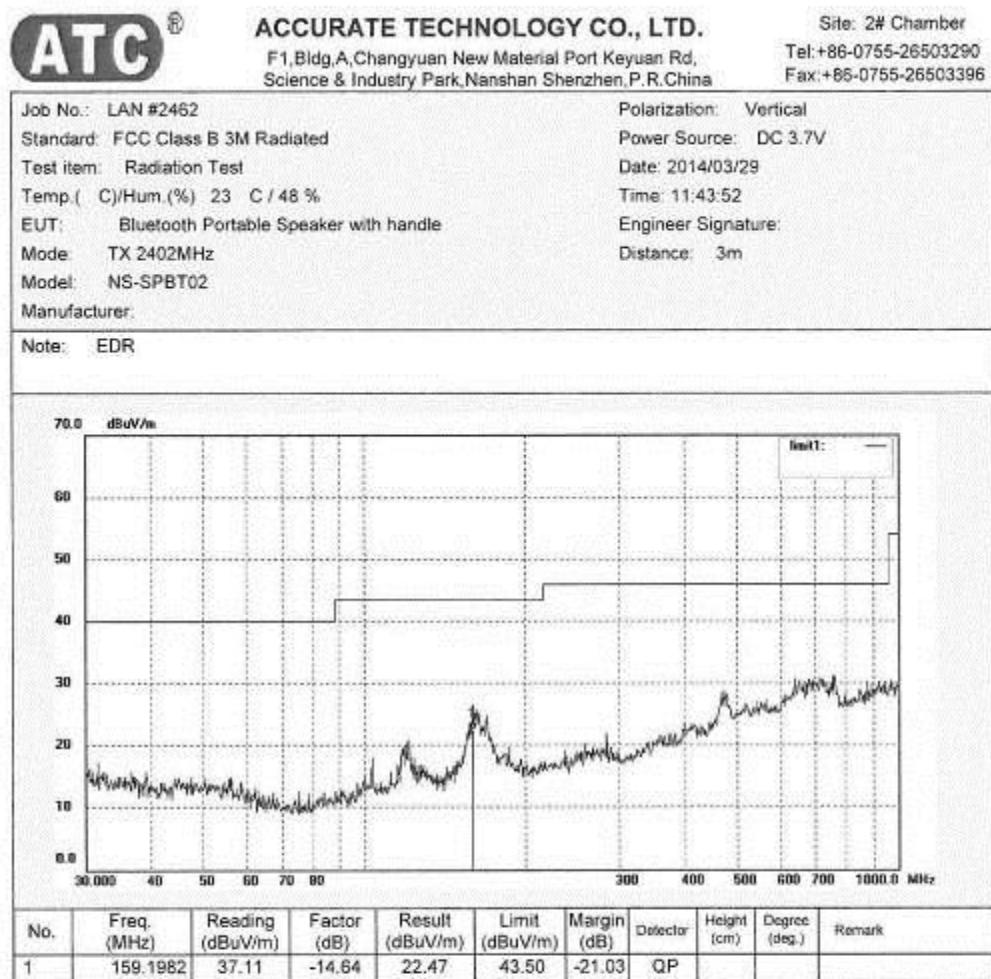


Figure 29: Test figure of spurious emissions, mode A.1, Horizontal polarity (1GHz –18GHz), 8DPSK Modulation

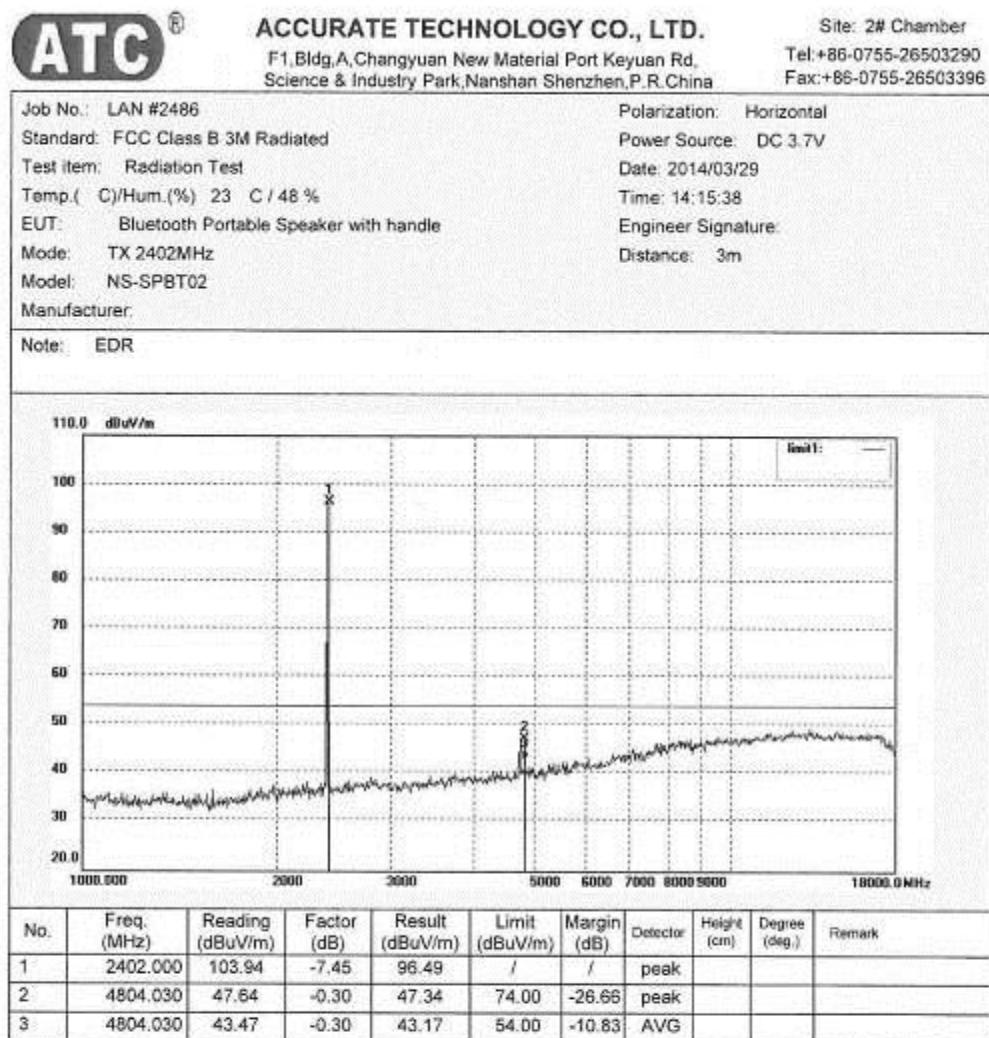


Figure 30: Test figure of spurious emissions, mode A.1, Vertical polarity (1GHz – 18GHz), 8DPSK Modulation

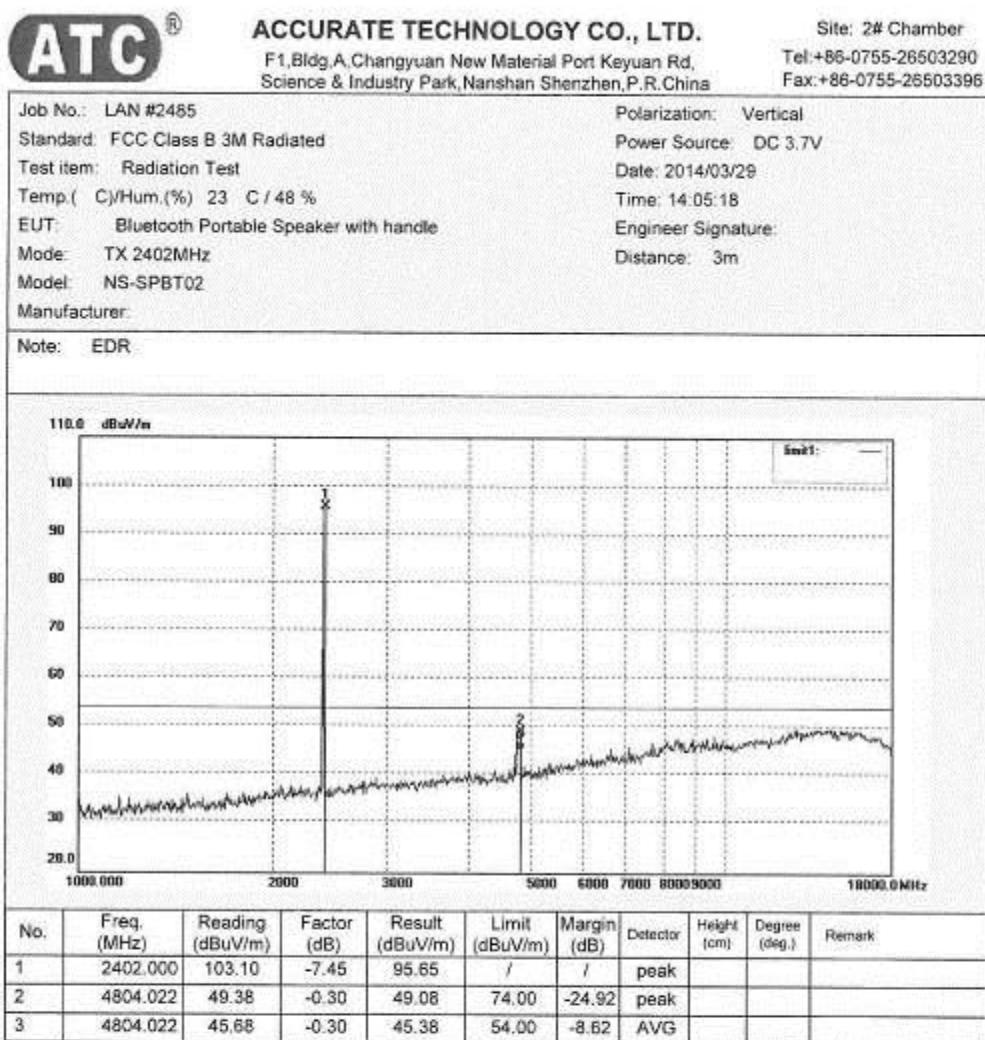


Figure 31: Test figure of spurious emissions, mode A.1, Horizontal polarity (18GHz –25GHz), 8DPSK Modulation

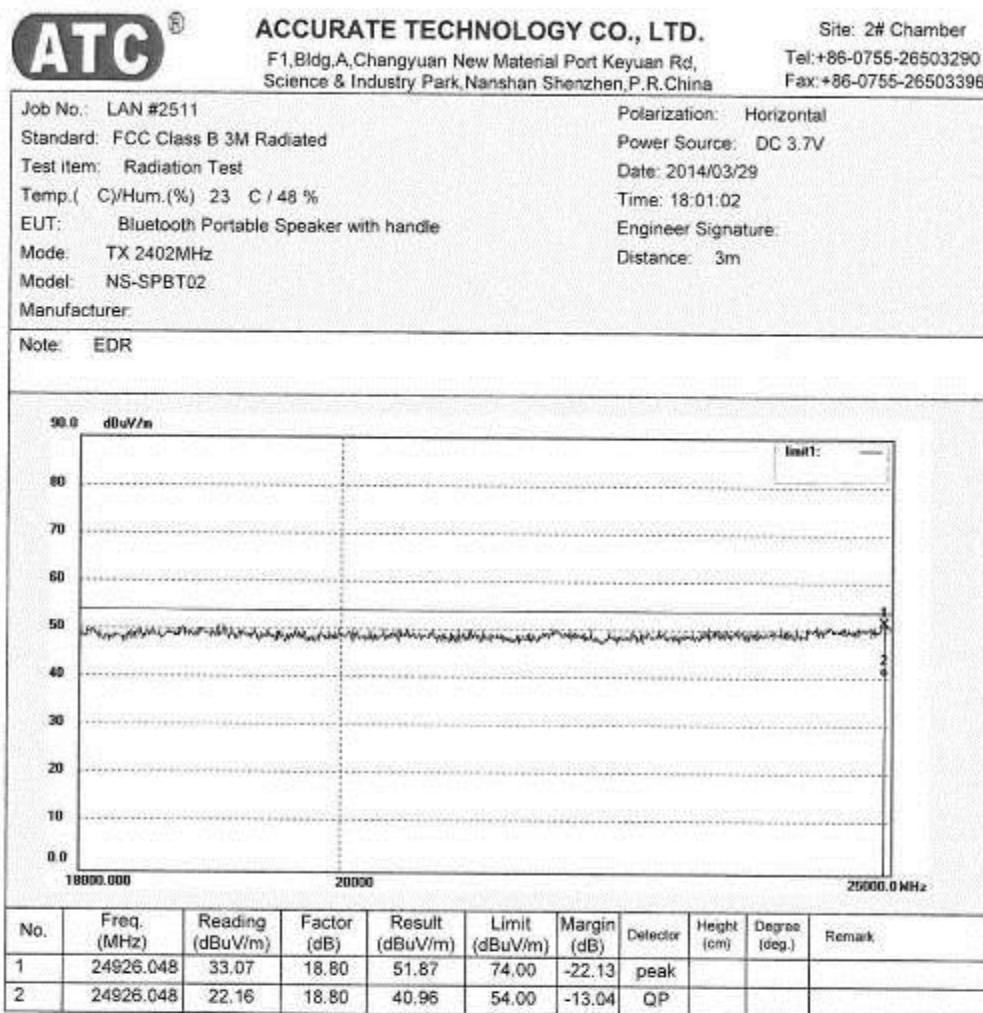


Figure 32: Test figure of spurious emissions, mode A.1, Vertical polarity (18GHz – 25GHz), 8DPSK Modulation

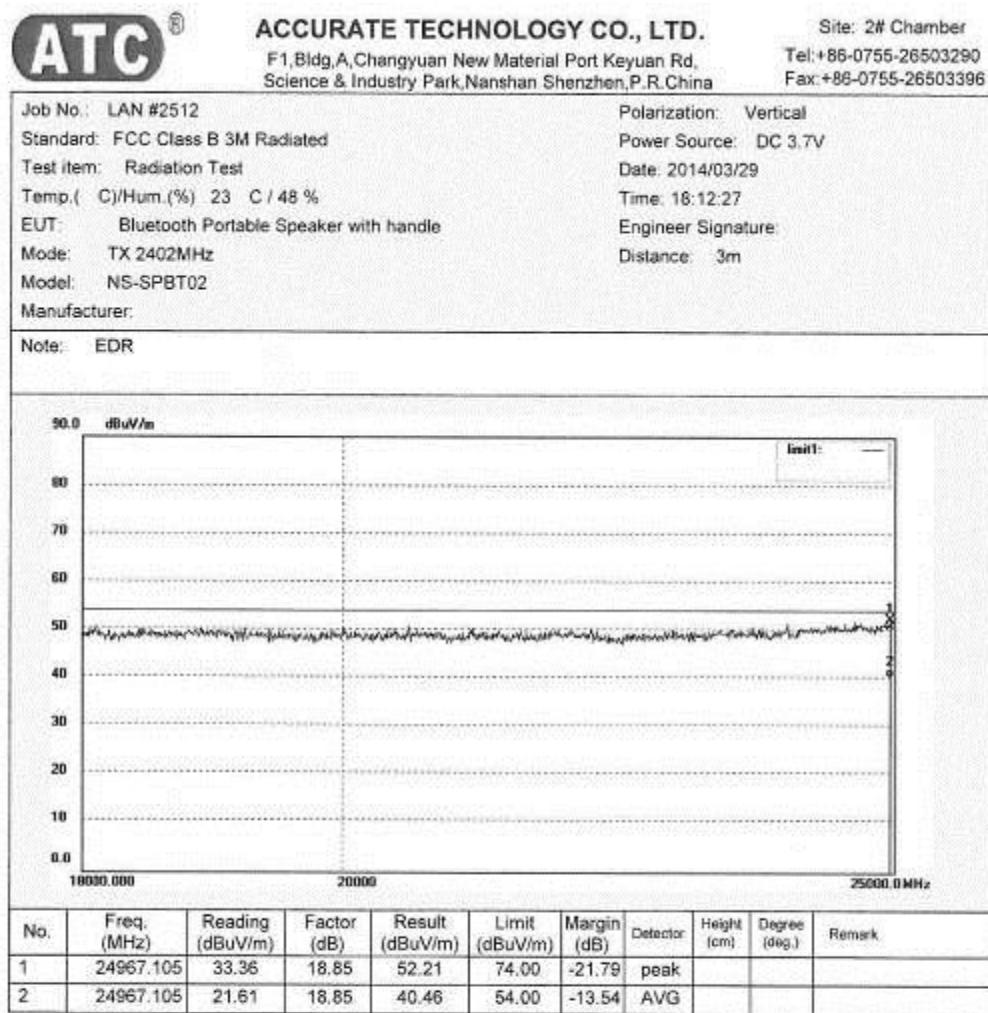
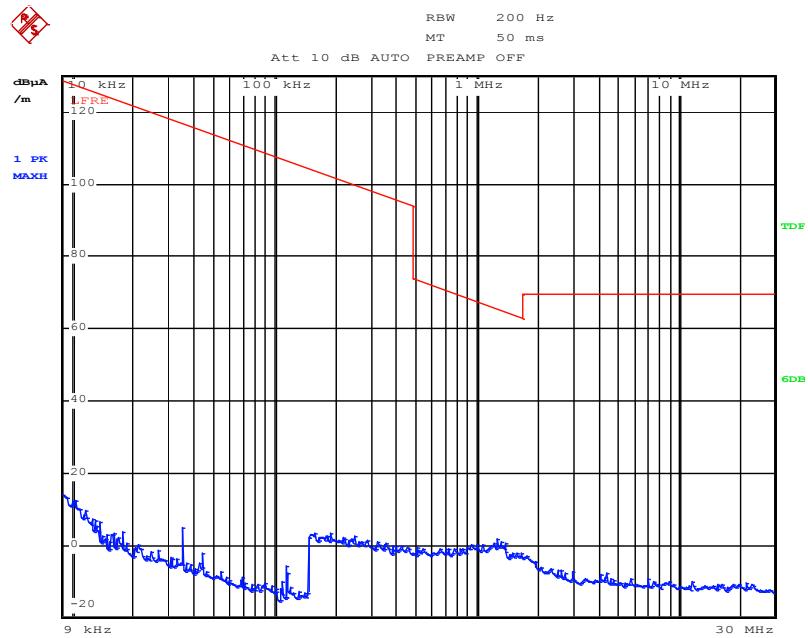
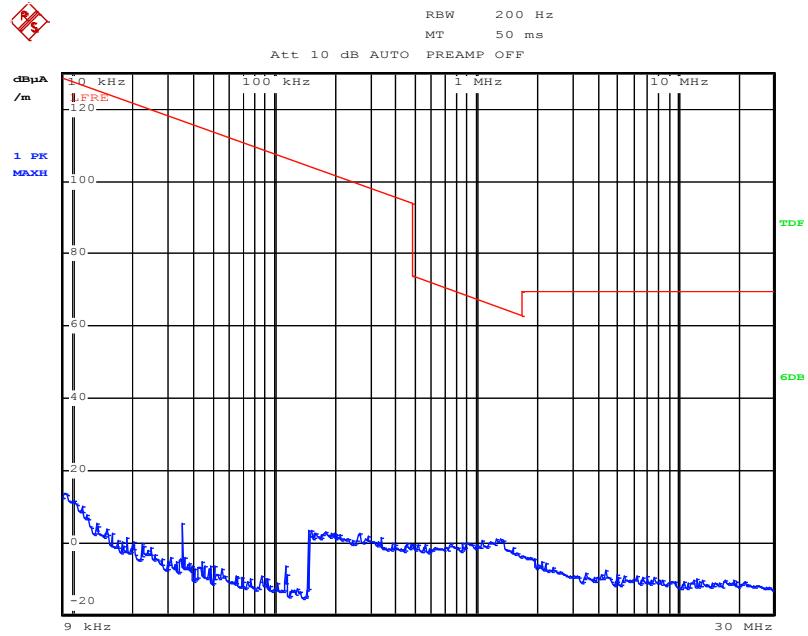


Figure 33: Test figure of spurious emissions, mode A.2, Horizontal polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 34: Test figure of spurious emissions, mode A.2, Vertical polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 35: Test figure of spurious emissions, mode A.2, Horizontal polarity (30MHz – 1GHz), 8DPSK Modulation

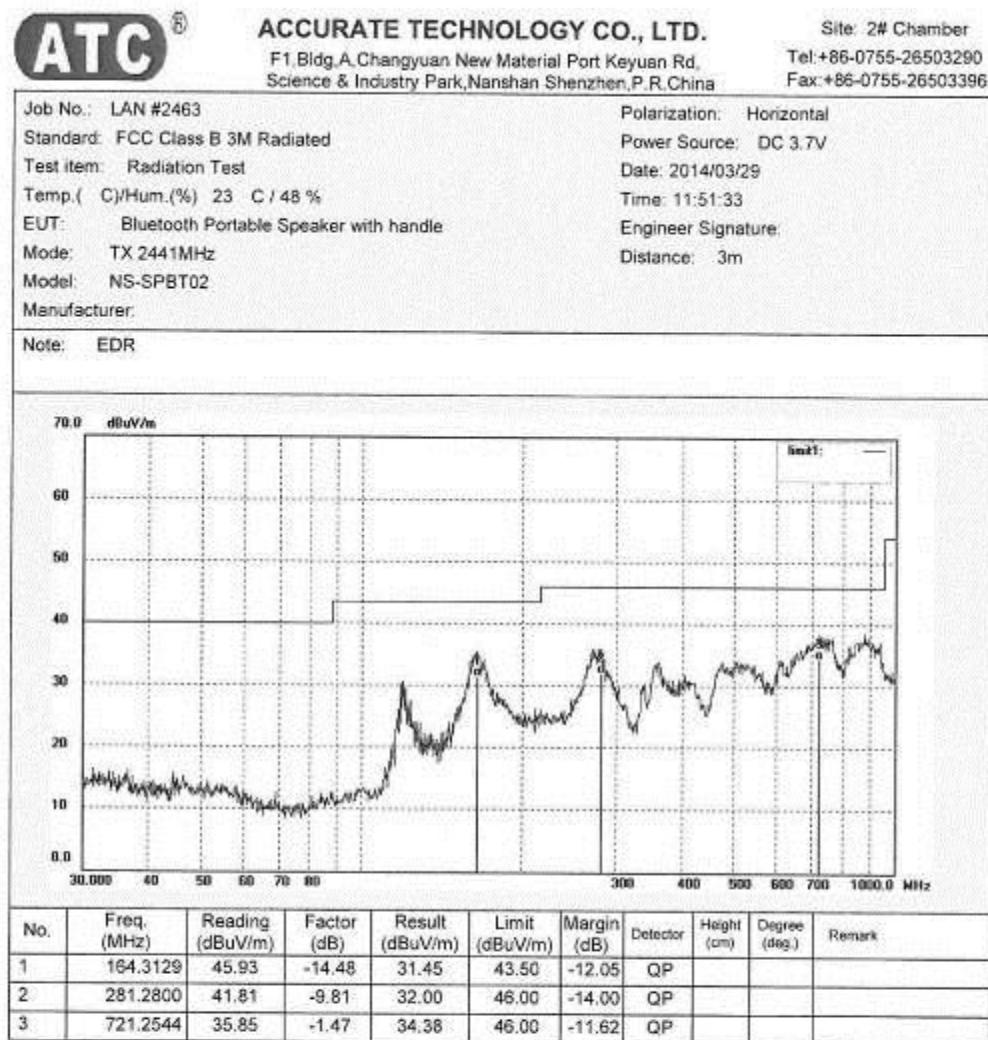


Figure 36: Test figure of spurious emissions, mode A.2, Vertical polarity (30MHz – 1GHz), 8DPSK Modulation

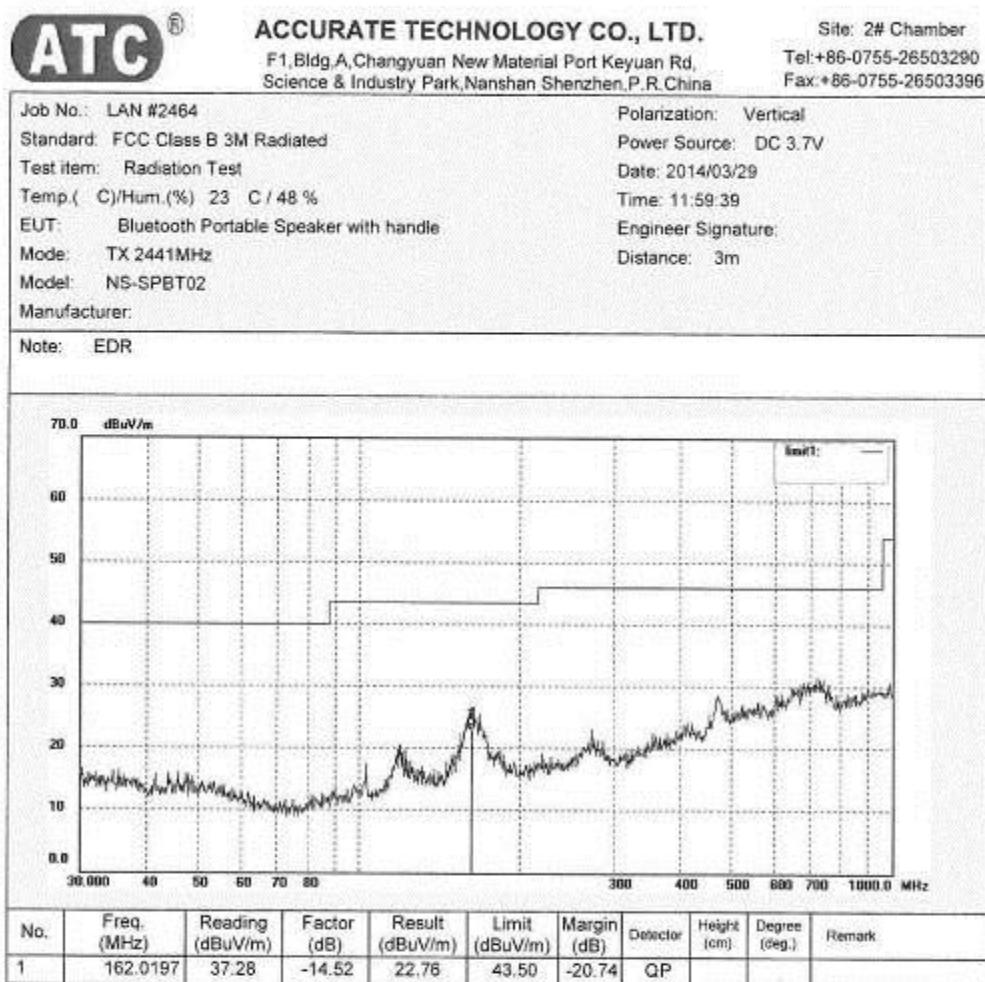


Figure 37: Test figure of spurious emissions, mode A.2, Horizontal polarity (1GHz – 18GHz), 8DPSK Modulation

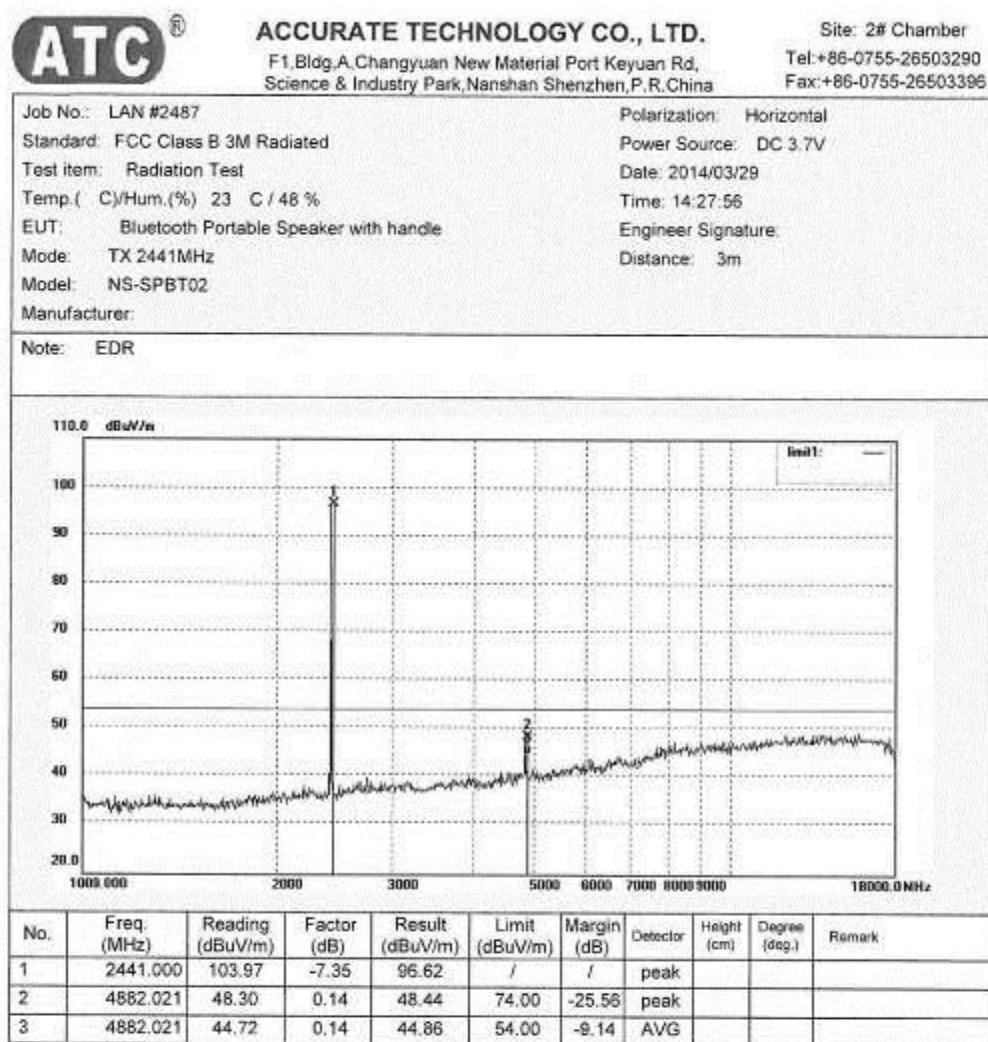


Figure 38: Test figure of spurious emissions, mode A.2, Vertical polarity (1GHz – 18GHz), 8DPSK Modulation

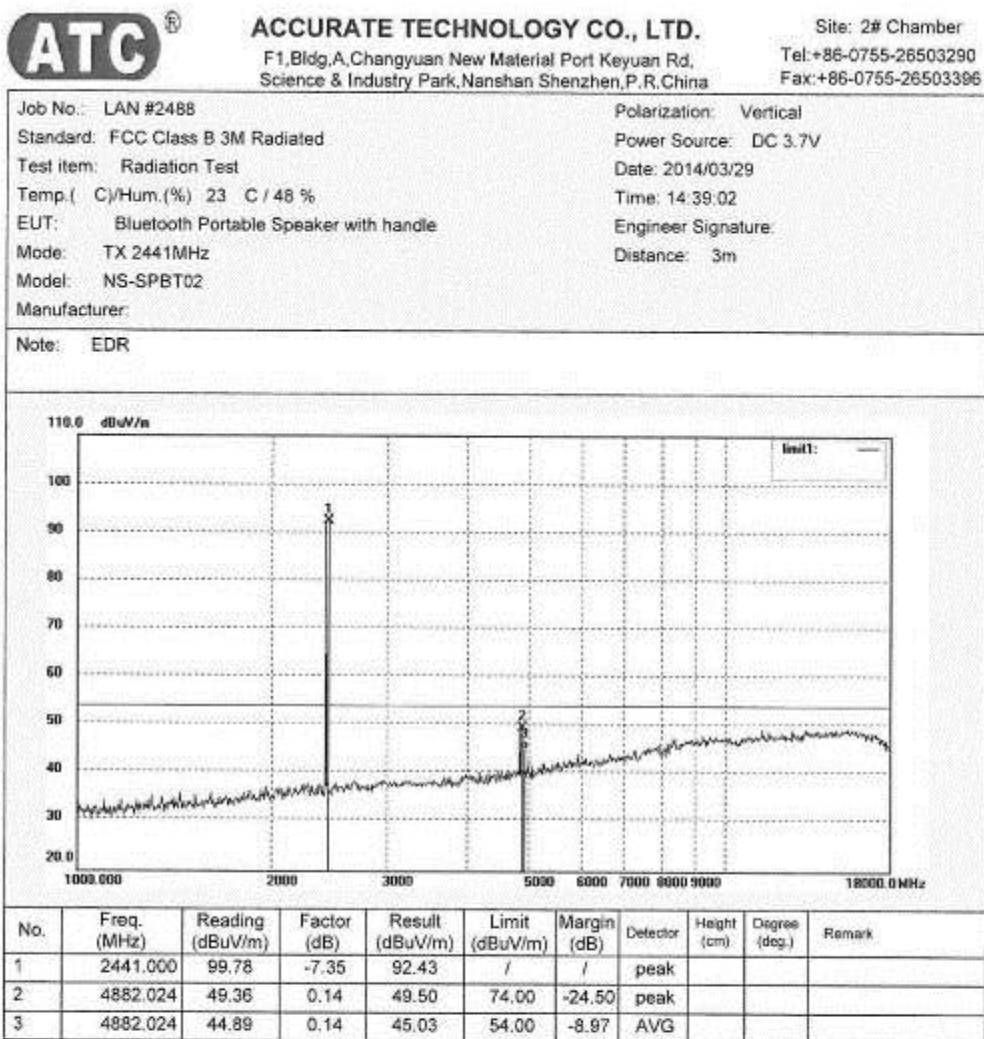


Figure 39: Test figure of spurious emissions, mode A.2, Horizontal polarity (18GHz – 25GHz), 8DPSK Modulation

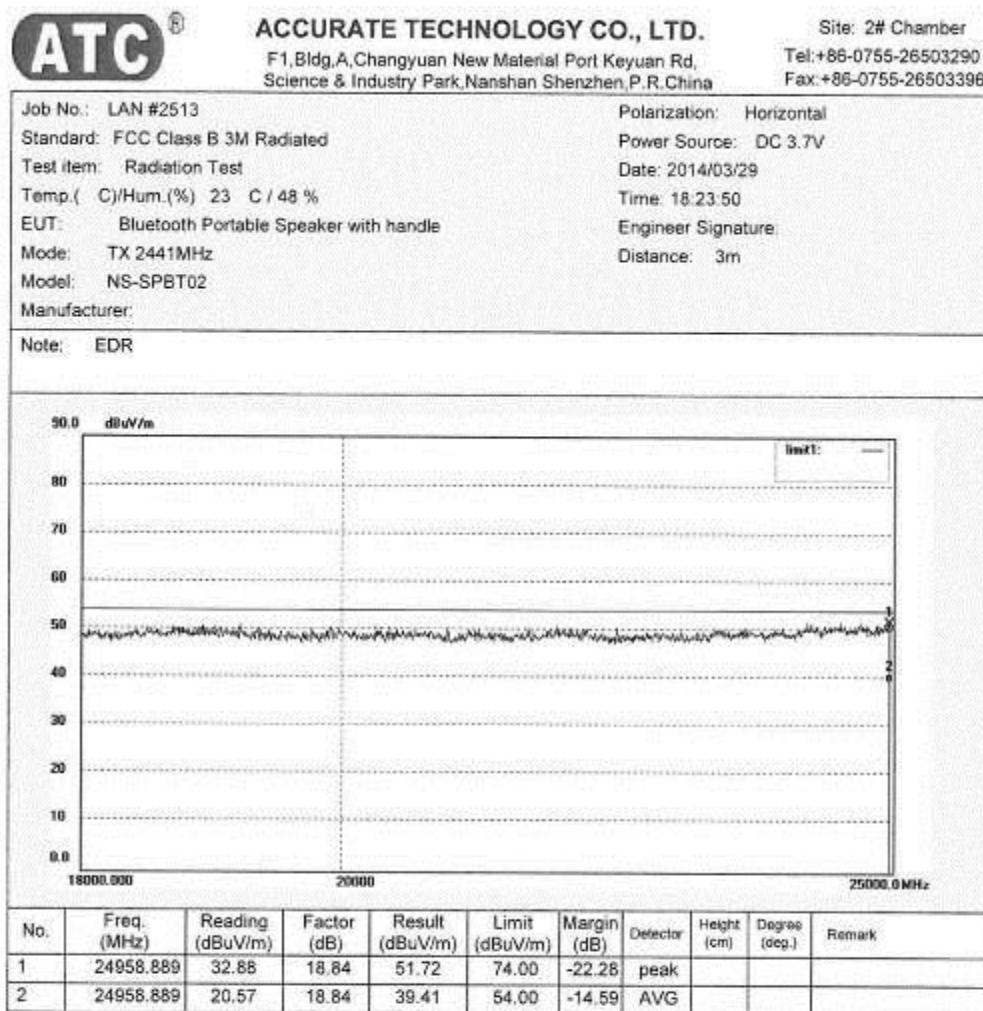


Figure 40: Test figure of spurious emissions, mode A.2, Vertical polarity (18GHz – 25GHz), 8DPSK Modulation

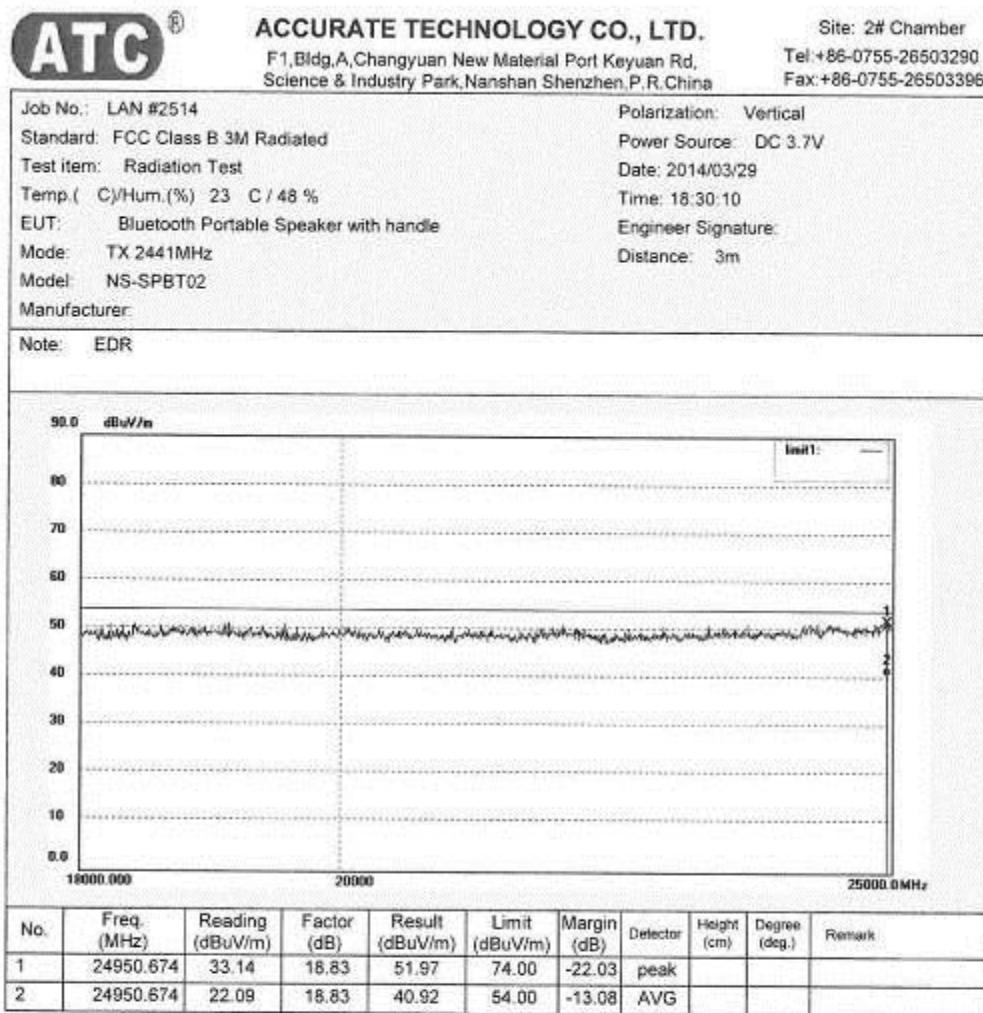
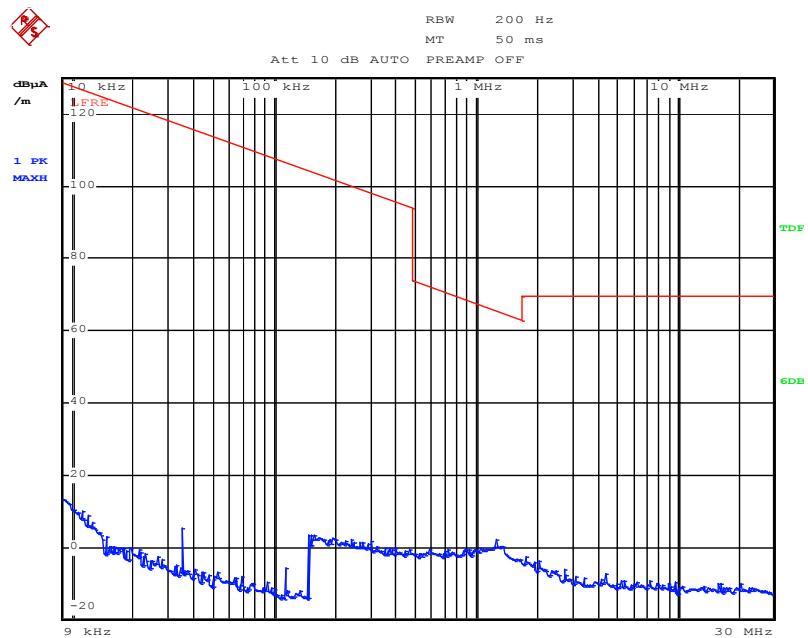
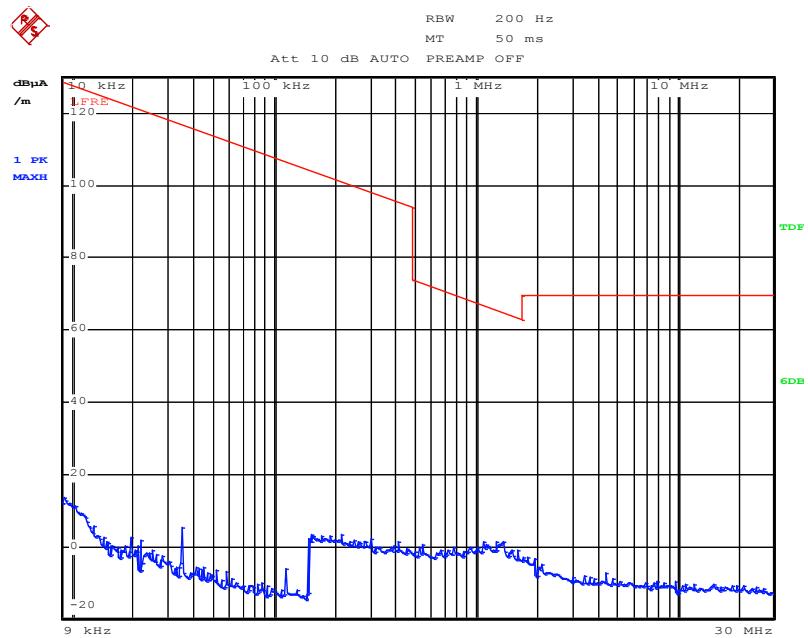


Figure 41: Test figure of spurious emissions, mode A.3, Horizontal polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 42: Test figure of spurious emissions, mode A.3, Vertical polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 43: Test figure of spurious emissions, mode A.3, Horizontal polarity (30MHz – 1GHz), 8DPSK Modulation

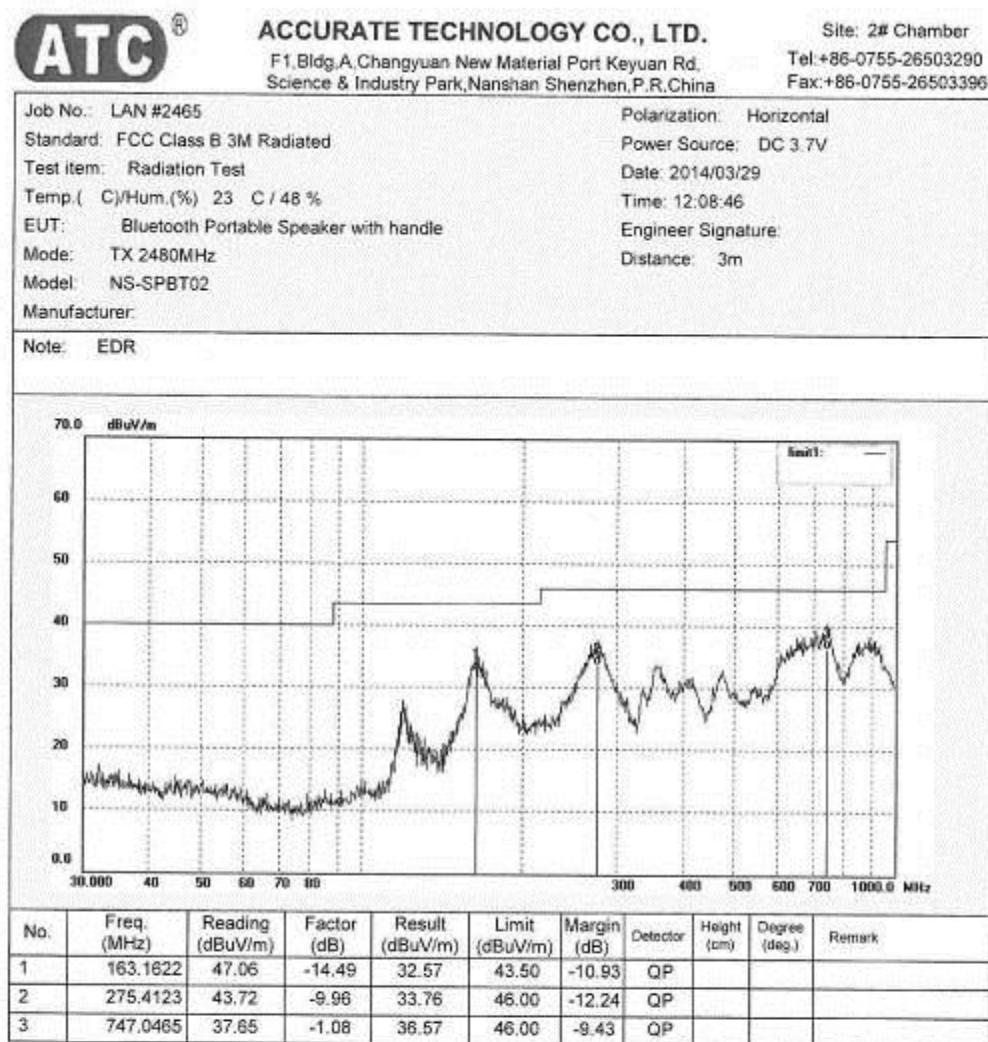


Figure 44: Test figure of spurious emissions, mode A.3, Vertical polarity (30MHz – 1GHz), 8DPSK Modulation

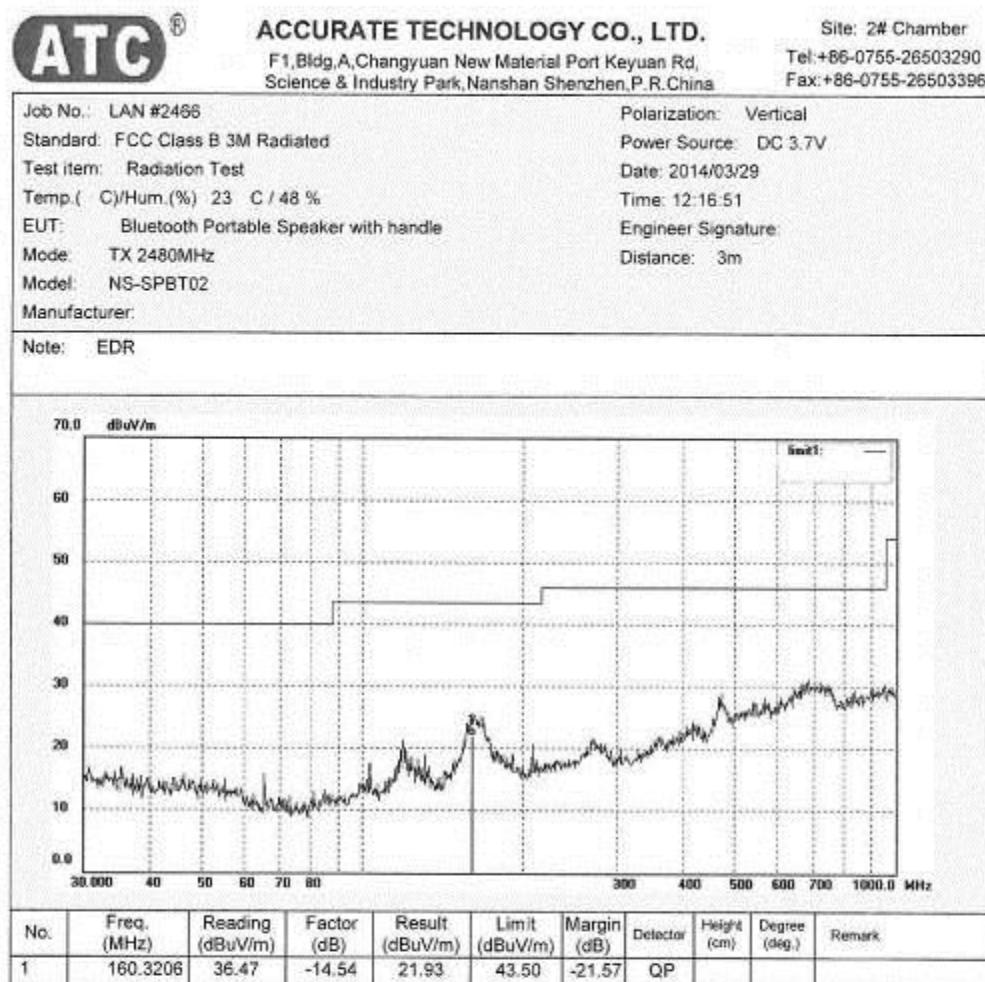


Figure 45: Test figure of spurious emissions, mode A.3, Horizontal polarity (1GHz –18GHz), 8DPSK Modulation

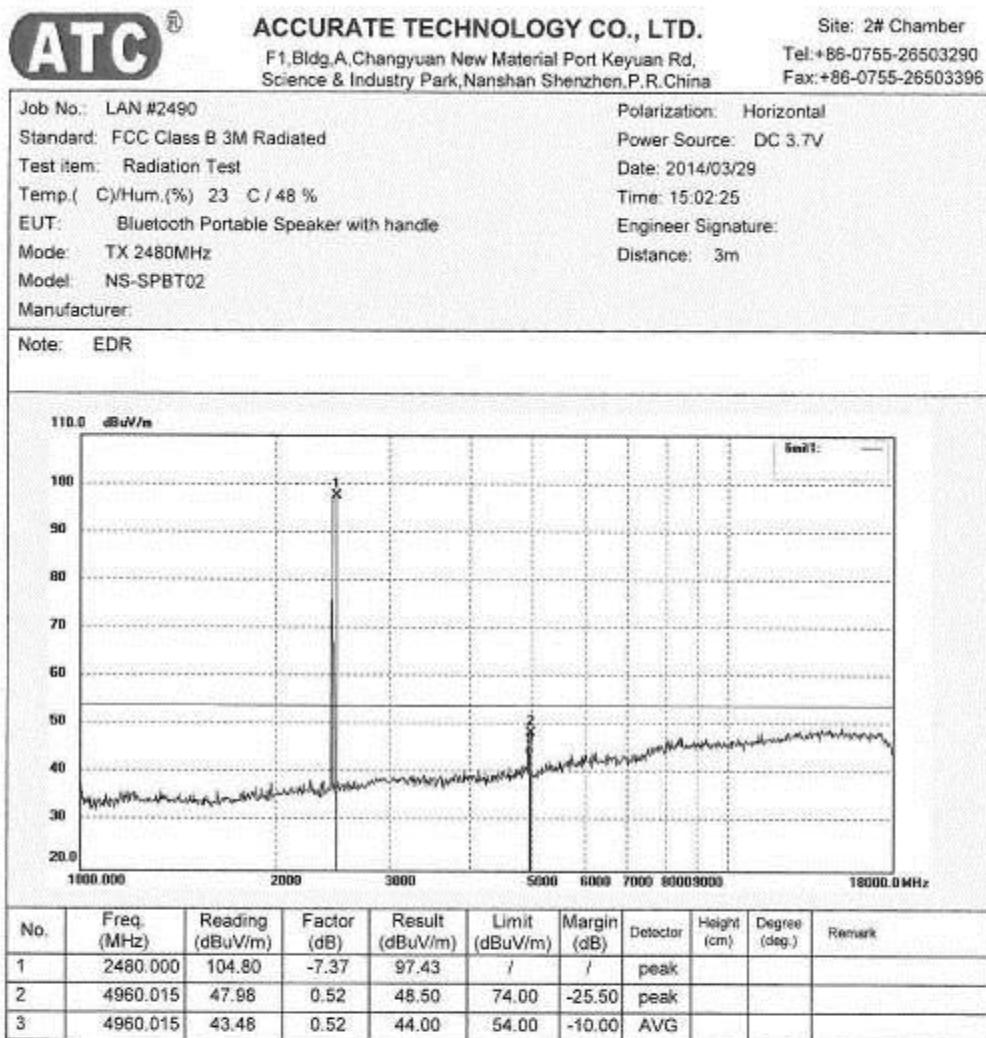


Figure 46: Test figure of spurious emissions, mode A.3, Vertical polarity (1GHz – 18GHz), 8DPSK Modulation

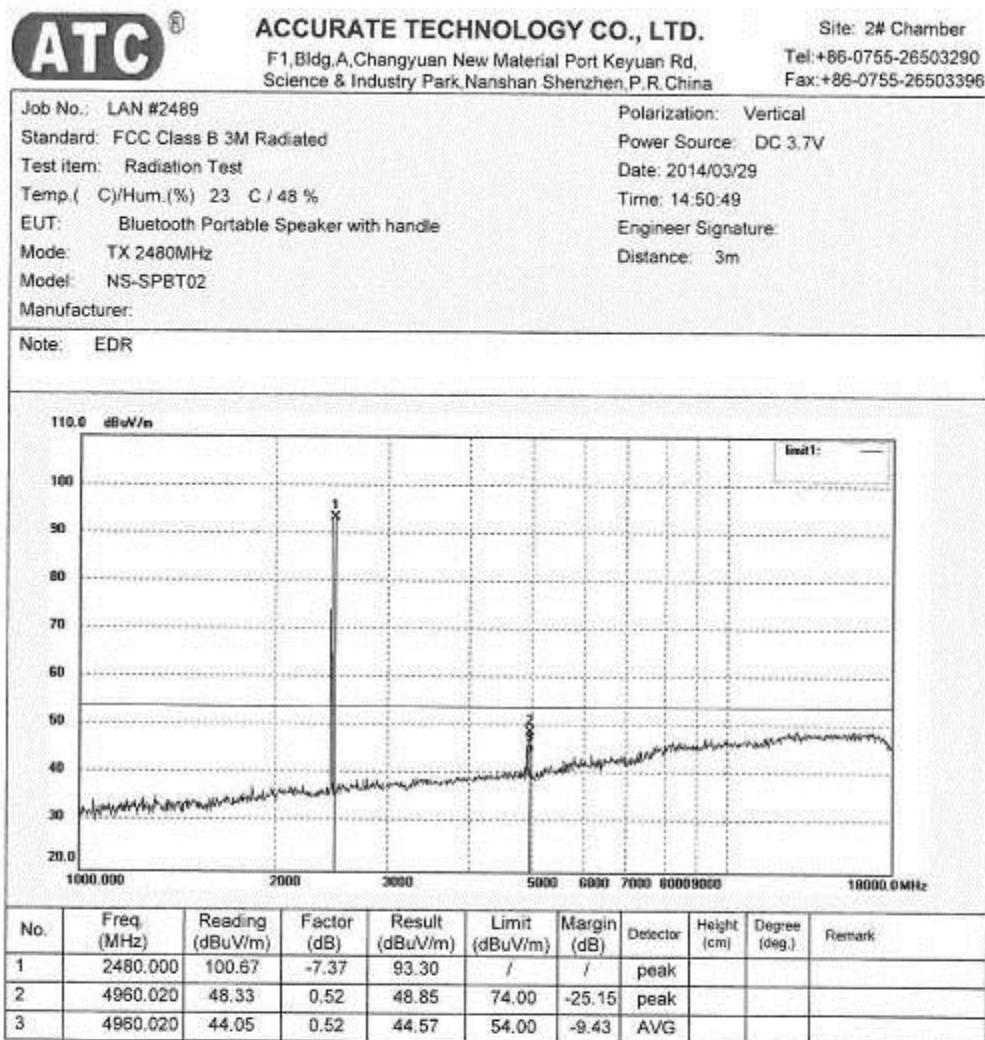


Figure 47: Test figure of spurious emissions, mode A.3, Horizontal polarity (18GHz –25GHz), 8DPSK Modulation

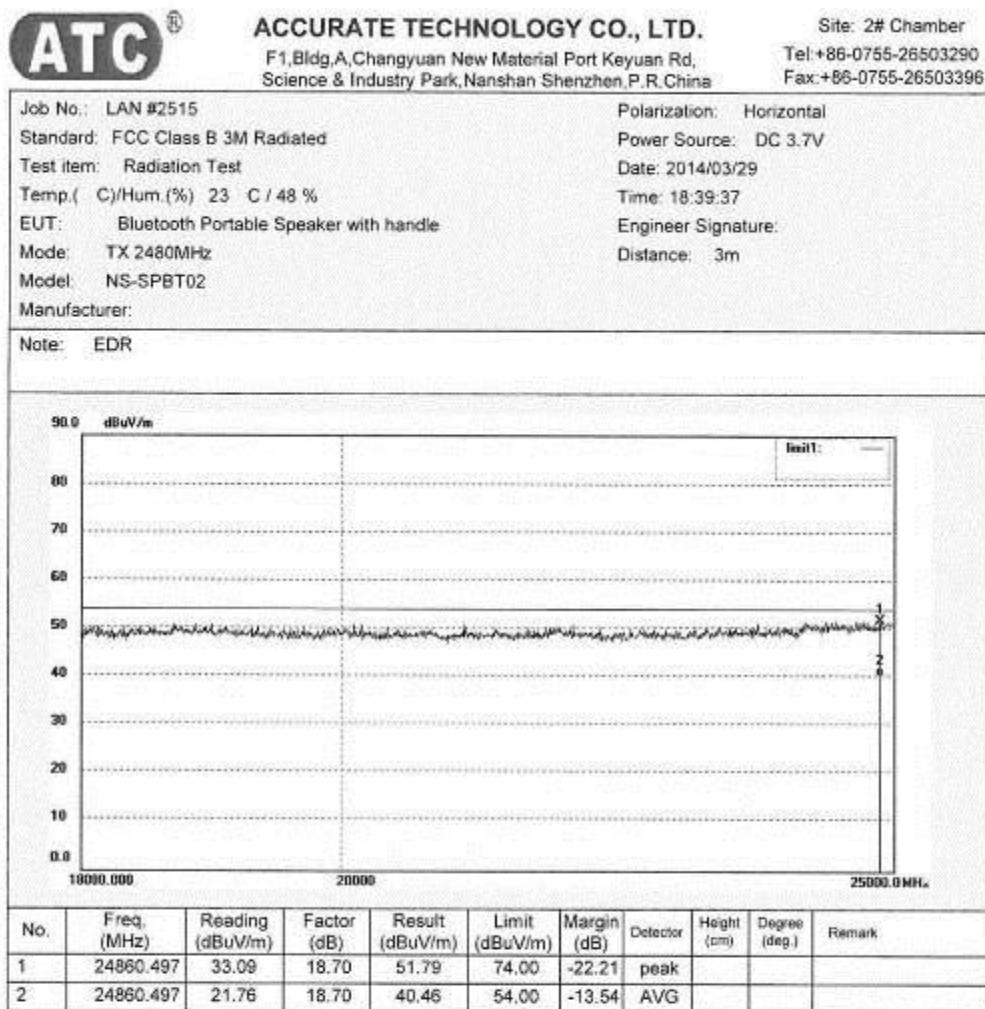


Figure 48: Test figure of spurious emissions, mode A.3, Vertical polarity (18GHz – 25GHz), 8DPSK Modulation

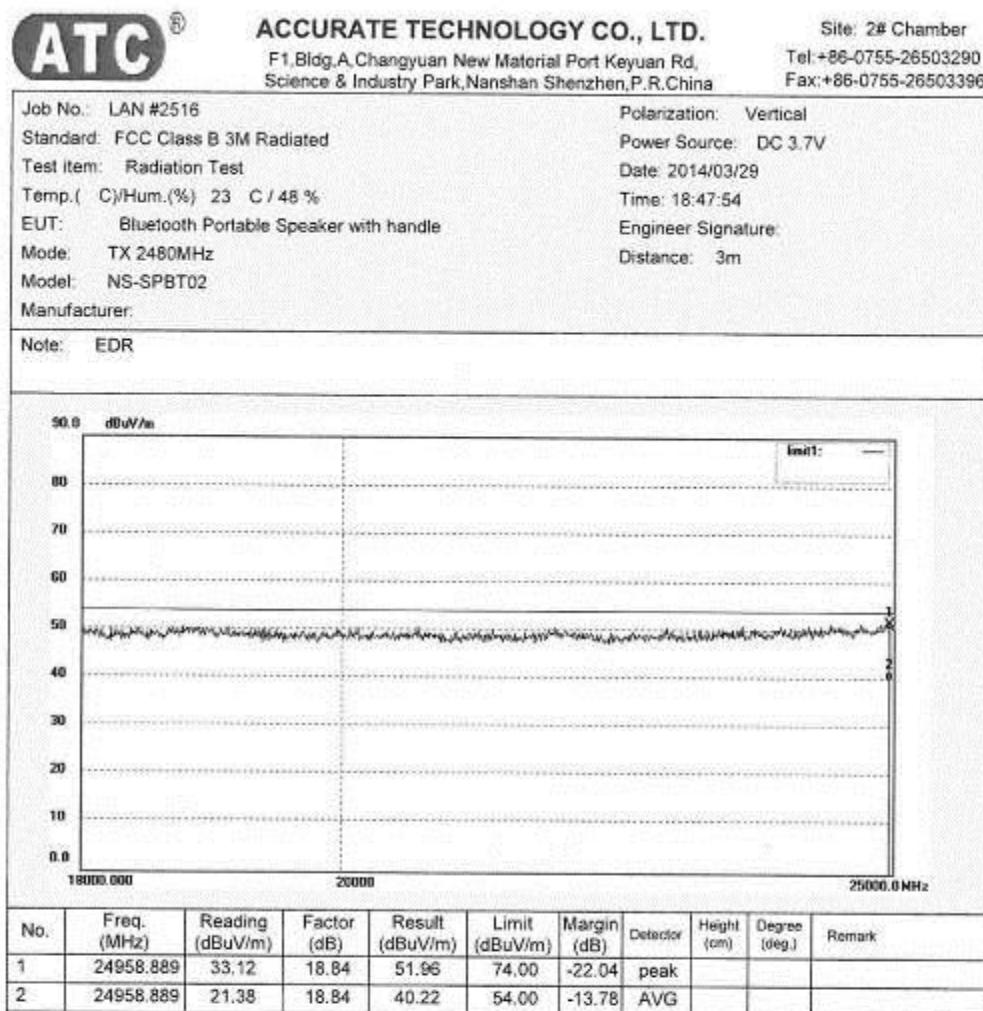
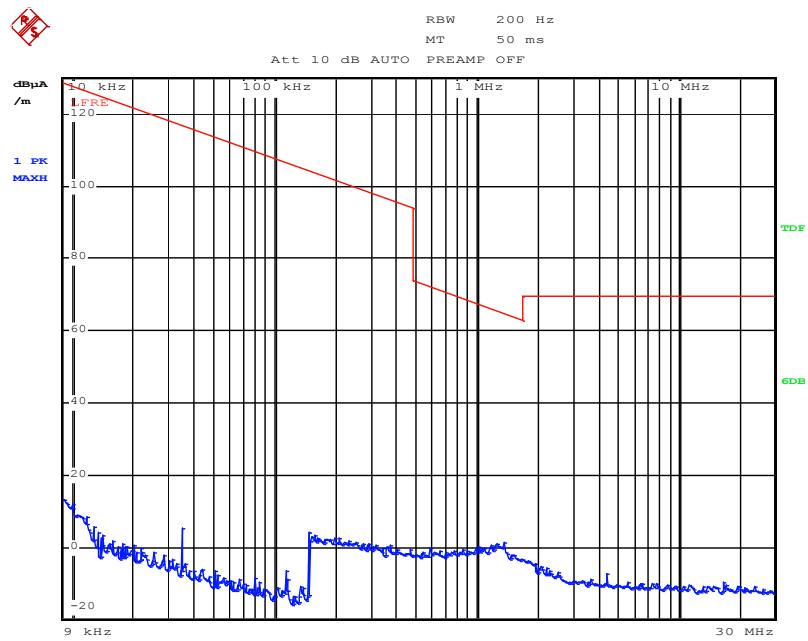
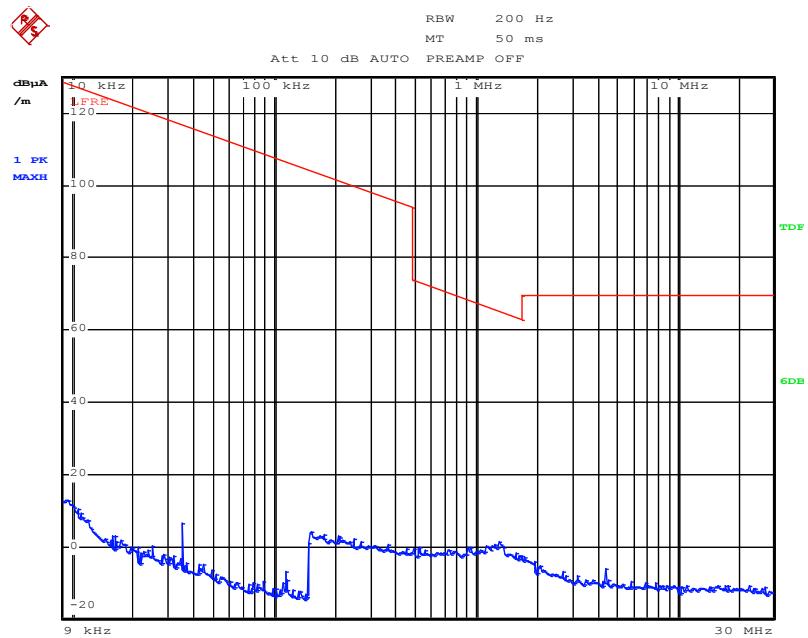


Figure 49: Test figure of spurious emissions, mode B, Horizontal polarity (9kHz – 30MHz), GFSK Modulation



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Figure 50: Test figure of spurious emissions, mode B, Vertical polarity (9kHz – 30MHz), GFSK Modulation



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Figure 51: Test figure of spurious emissions, mode B, Horizontal polarity (30MHz – 1GHz), GFSK Modulation

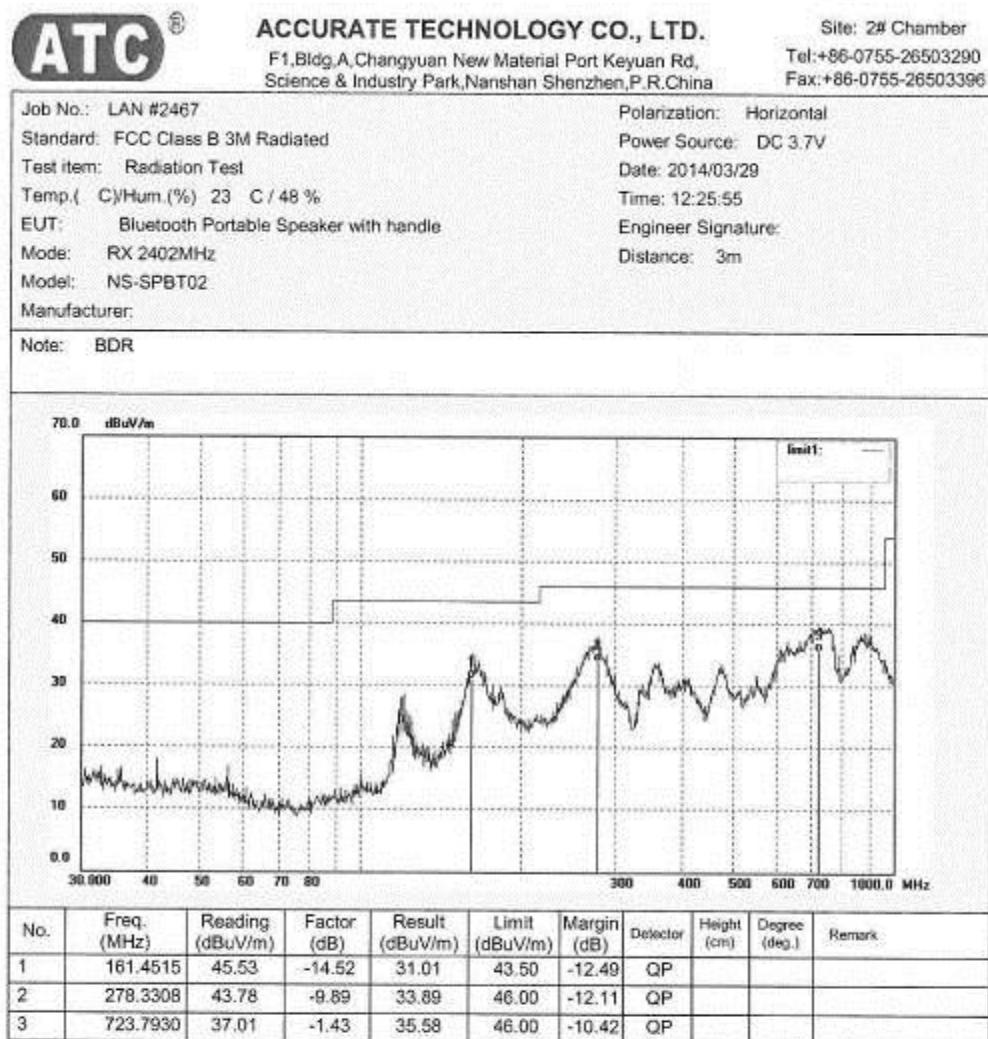


Figure 52: Test figure of spurious emissions, mode B, Vertical polarity (30MHz – 1GHz), GFSK Modulation

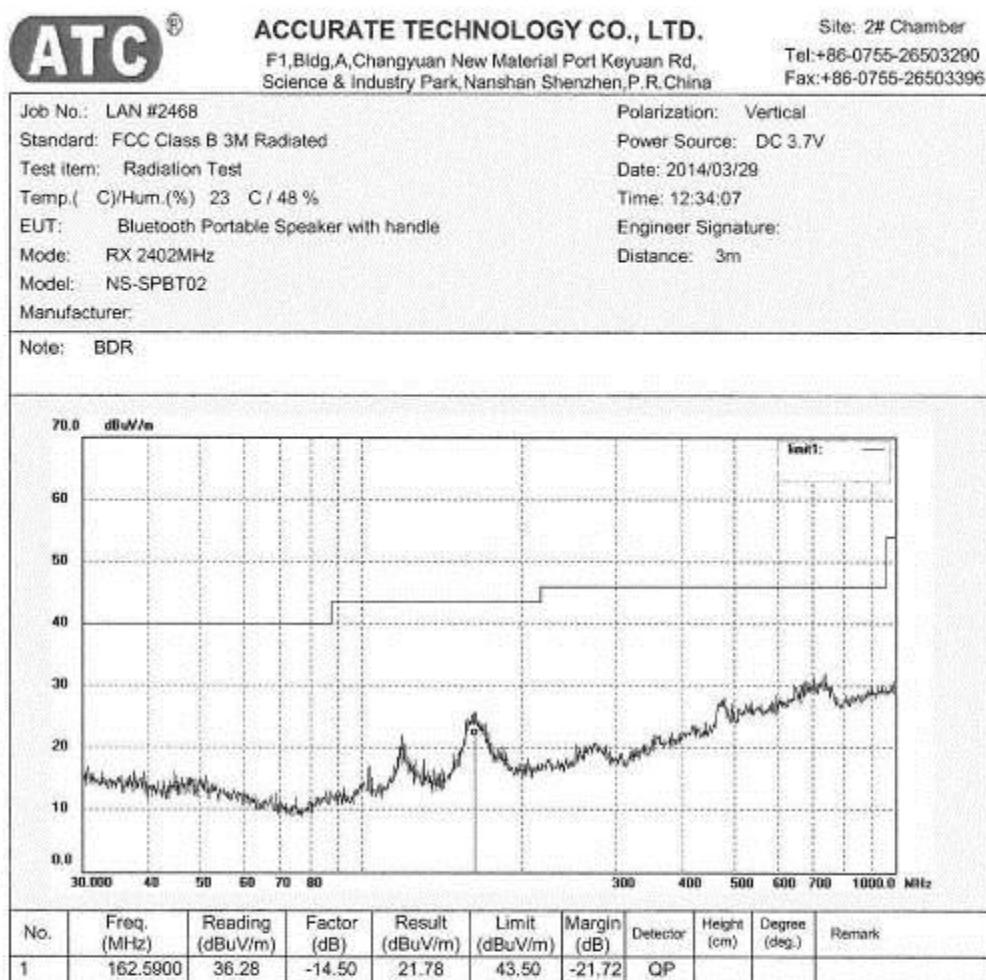


Figure 53: Test figure of spurious emissions, mode B, Horizontal polarity (1GHz –18GHz), GFSK Modulation

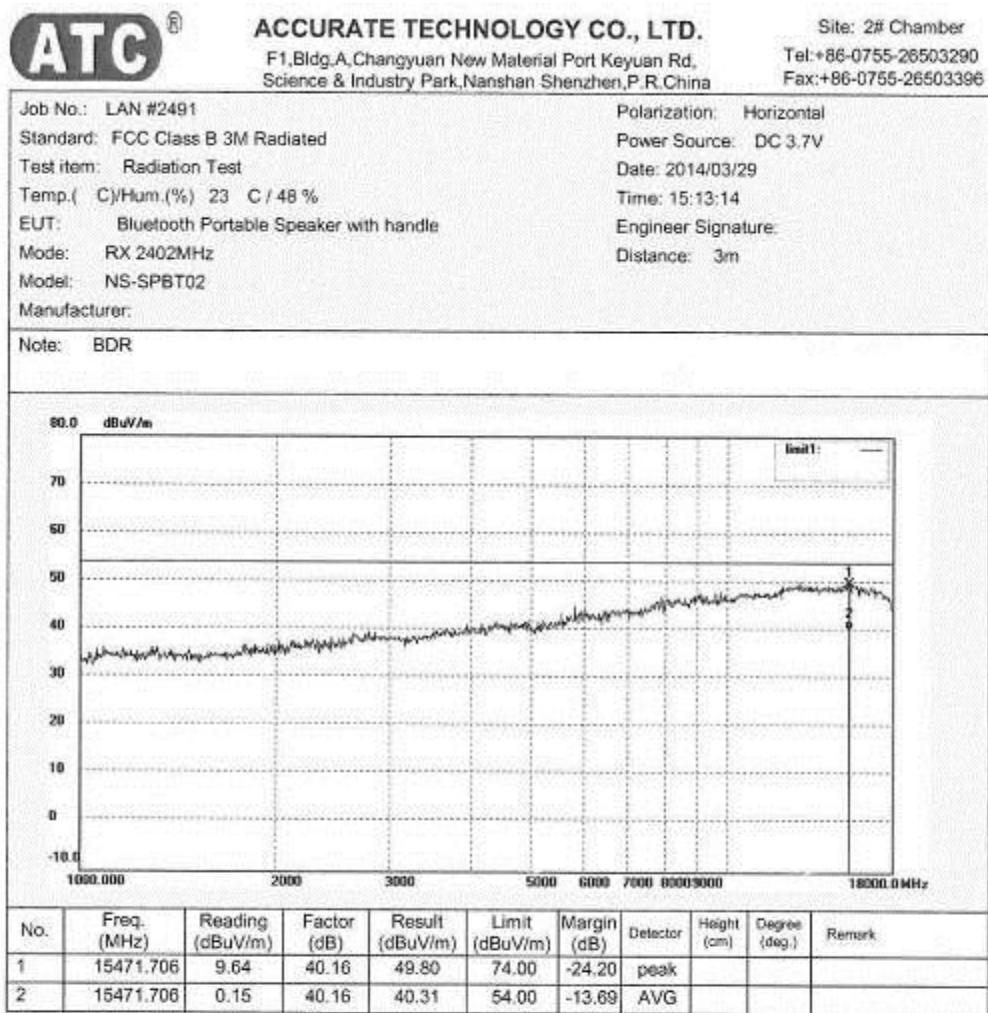


Figure 54: Test figure of spurious emissions, mode B, Vertical polarity (1GHz – 18GHz), GFSK Modulation

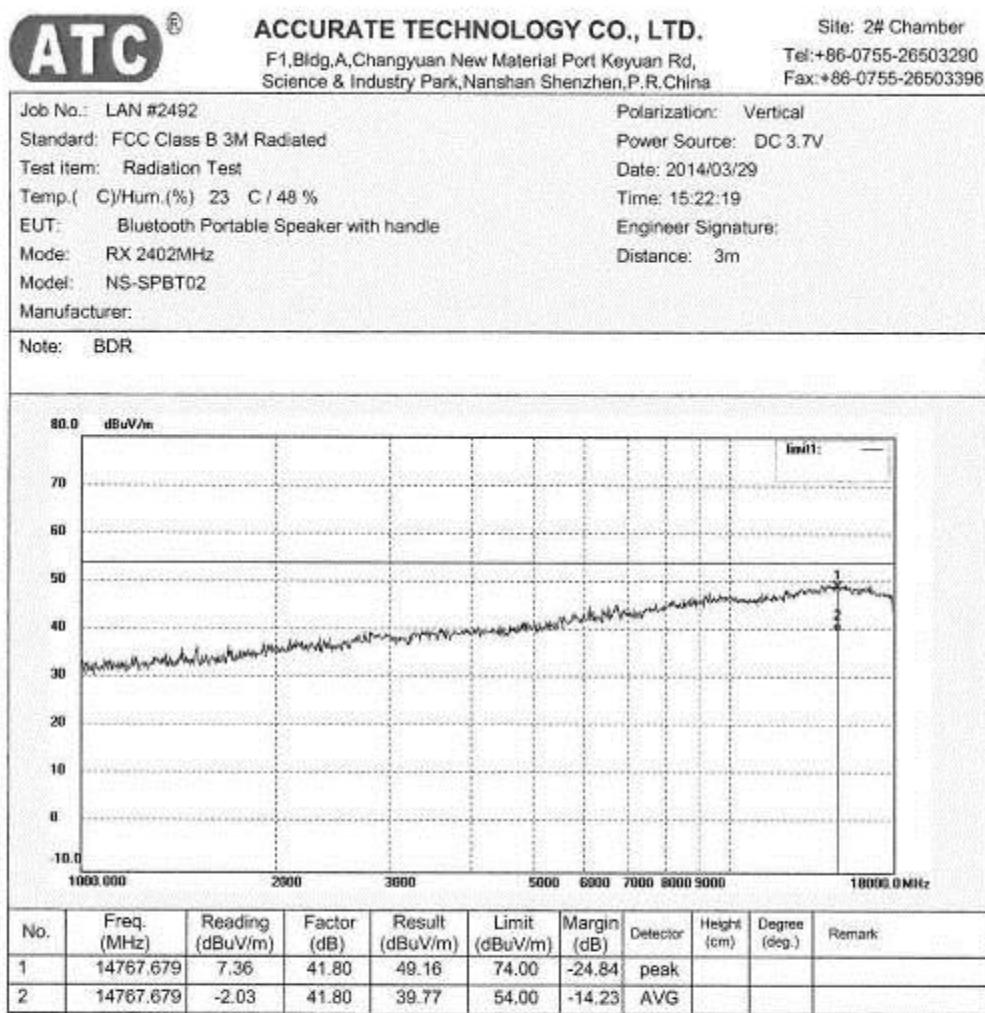


Figure 55: Test figure of spurious emissions, mode B, Horizontal polarity (18GHz –25GHz), GFSK Modulation

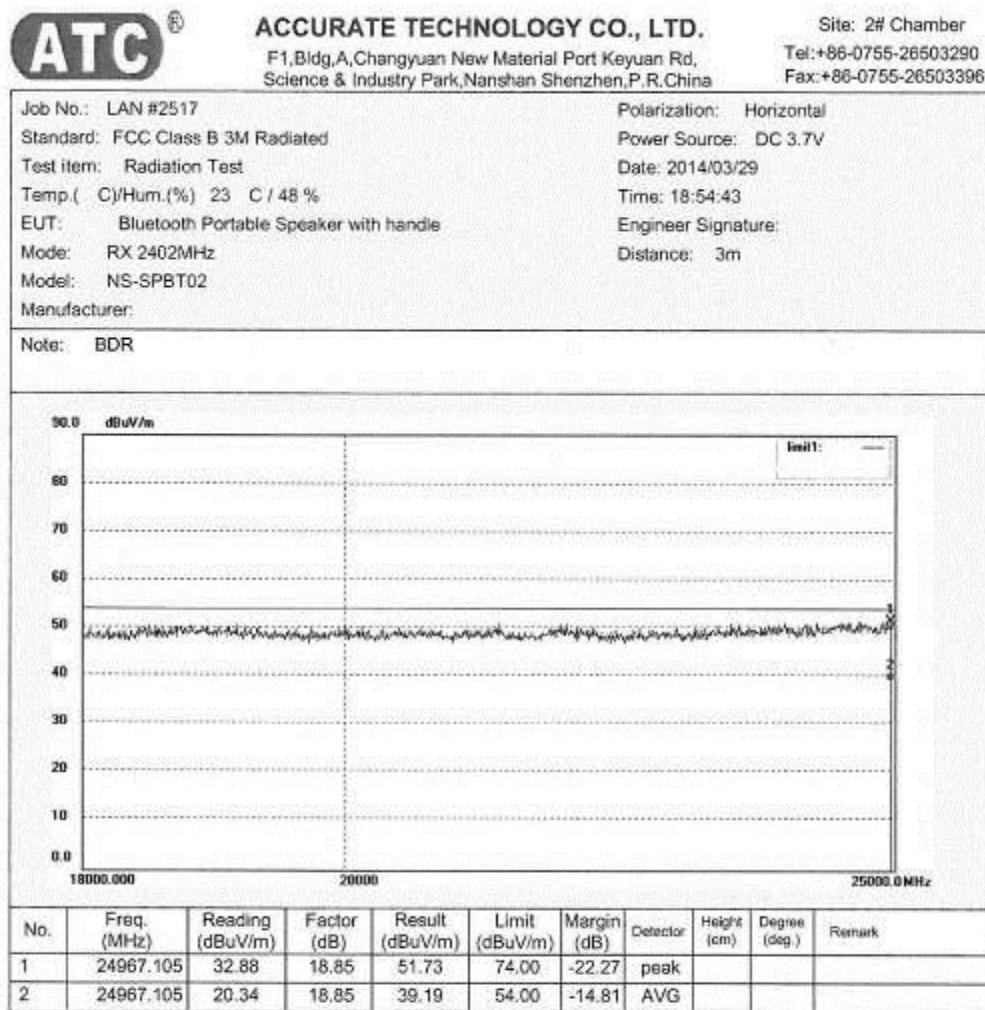


Figure 56: Test figure of spurious emissions, mode B, Vertical polarity (18GHz – 25GHz), GFSK Modulation

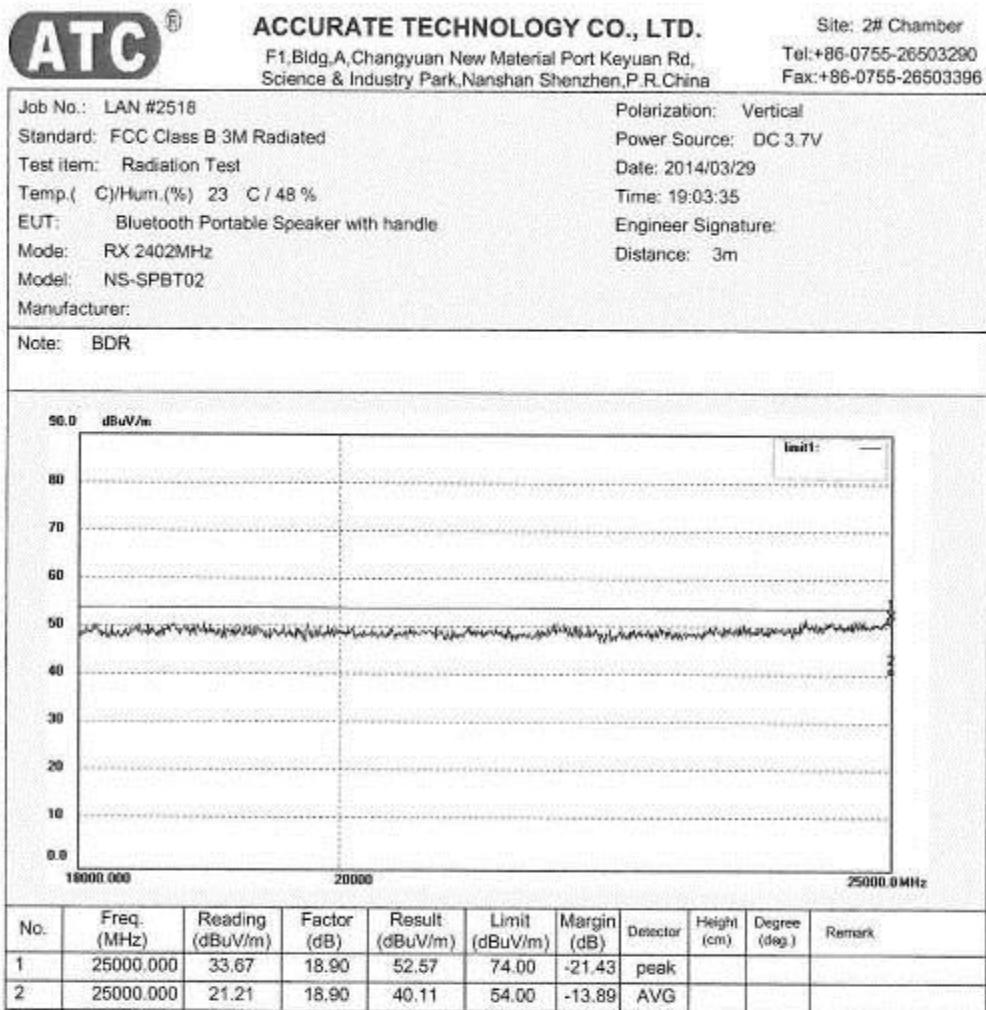
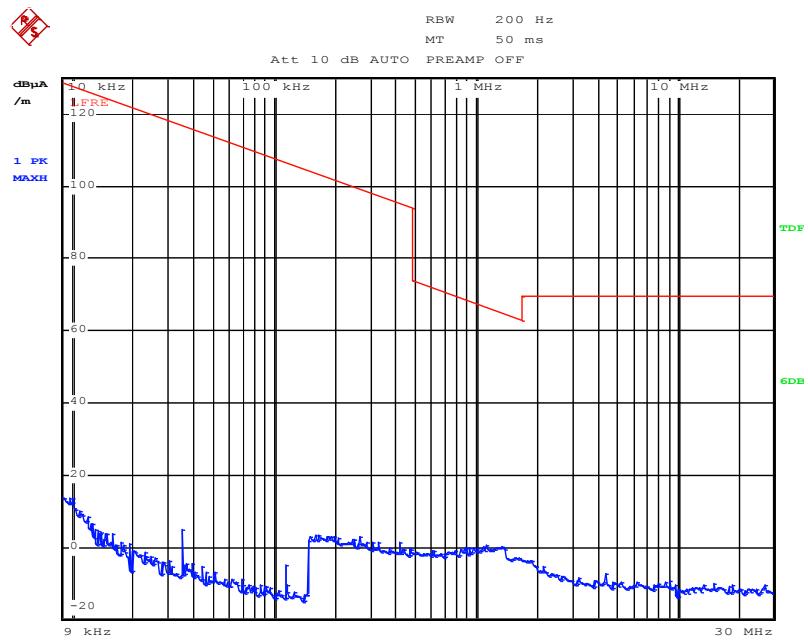
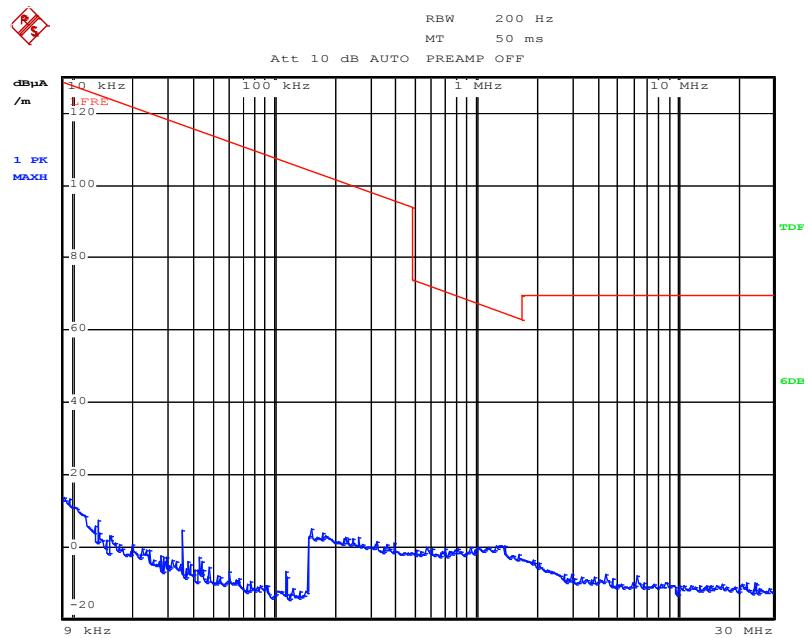


Figure 57: Test figure of spurious emissions, mode B, Horizontal polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 58: Test figure of spurious emissions, mode B, Vertical polarity (9kHz – 30MHz), 8DPSK Modulation



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Figure 59: Test figure of spurious emissions, mode B, Horizontal polarity (30MHz – 1GHz), 8DPSK Modulation

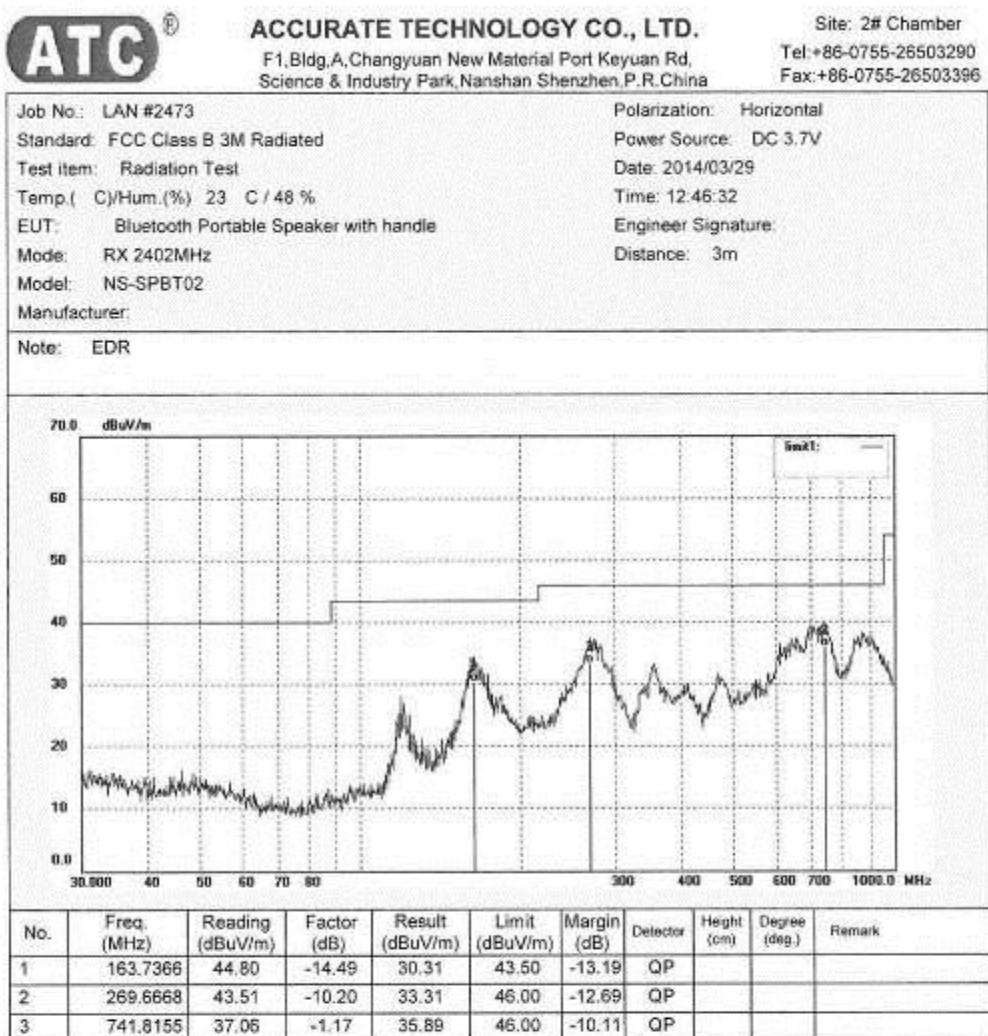


Figure 60: Test figure of spurious emissions, mode B, Vertical polarity (30MHz – 1GHz), 8DPSK Modulation

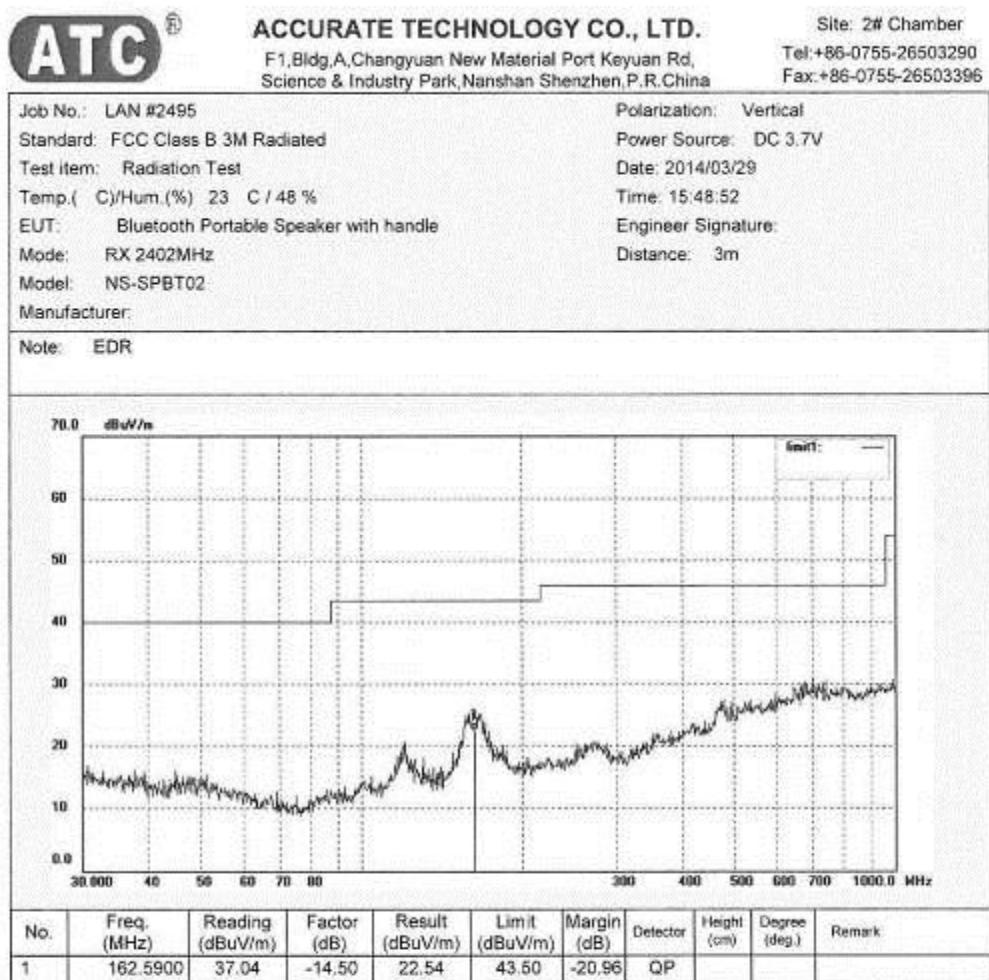


Figure 61: Test figure of spurious emissions, mode B, Horizontal polarity (1GHz –18GHz), 8DPSK Modulation

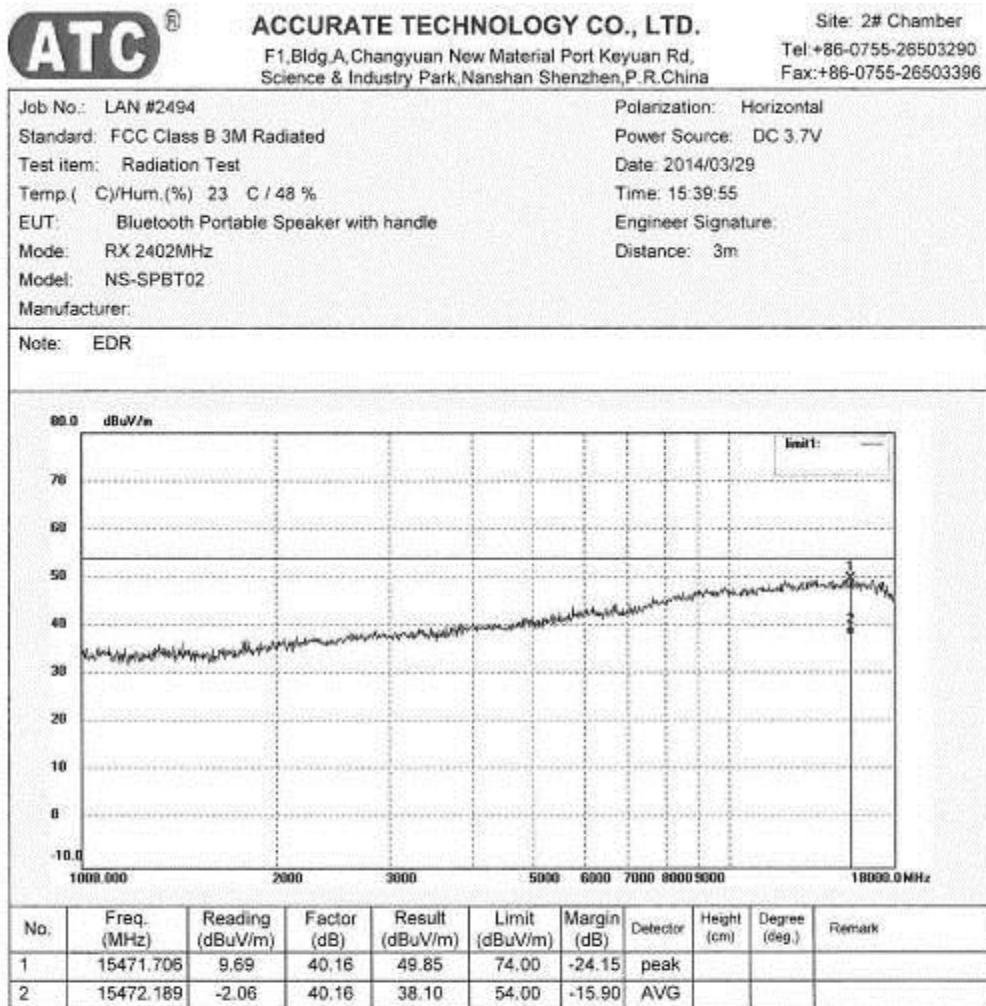


Figure 62: Test figure of spurious emissions, mode B, Vertical polarity (1GHz – 18GHz), 8DPSK Modulation

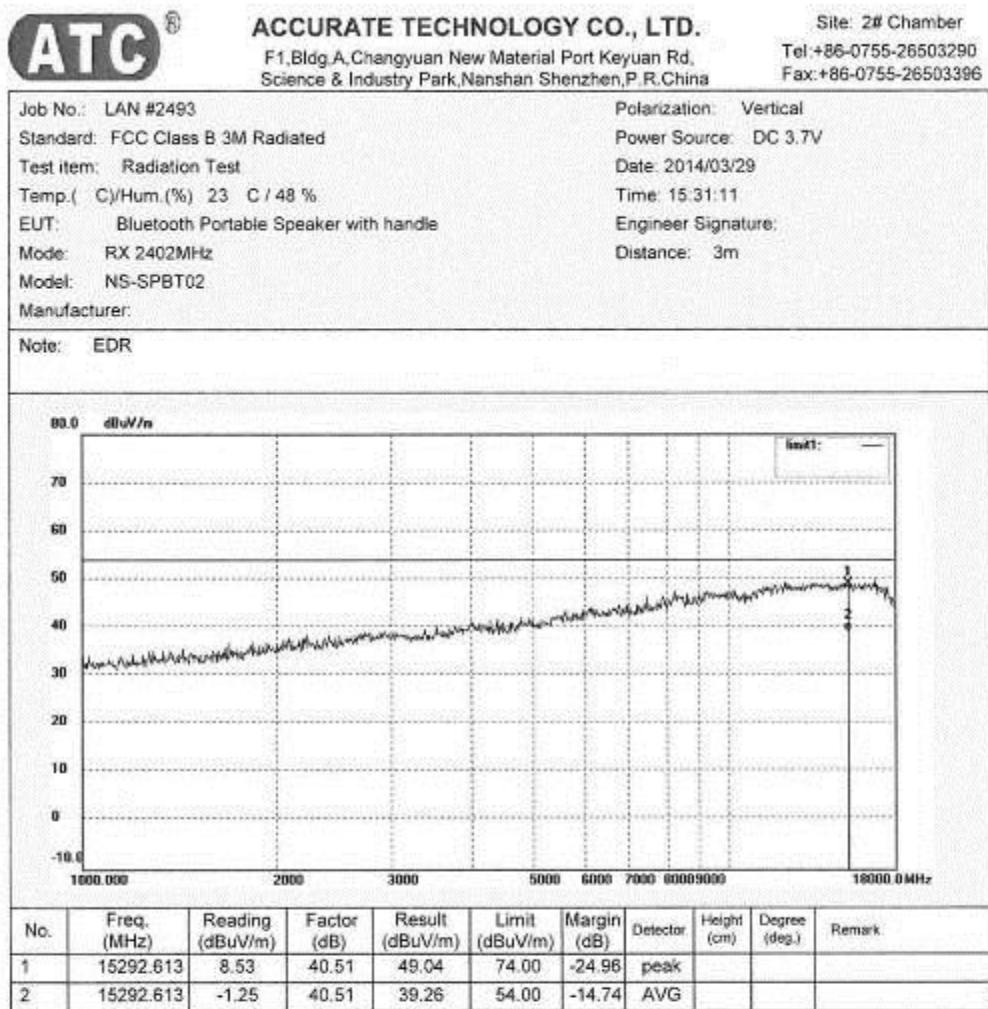


Figure 63: Test figure of spurious emissions, mode B, Horizontal polarity (18GHz –25GHz), 8DPSK Modulation

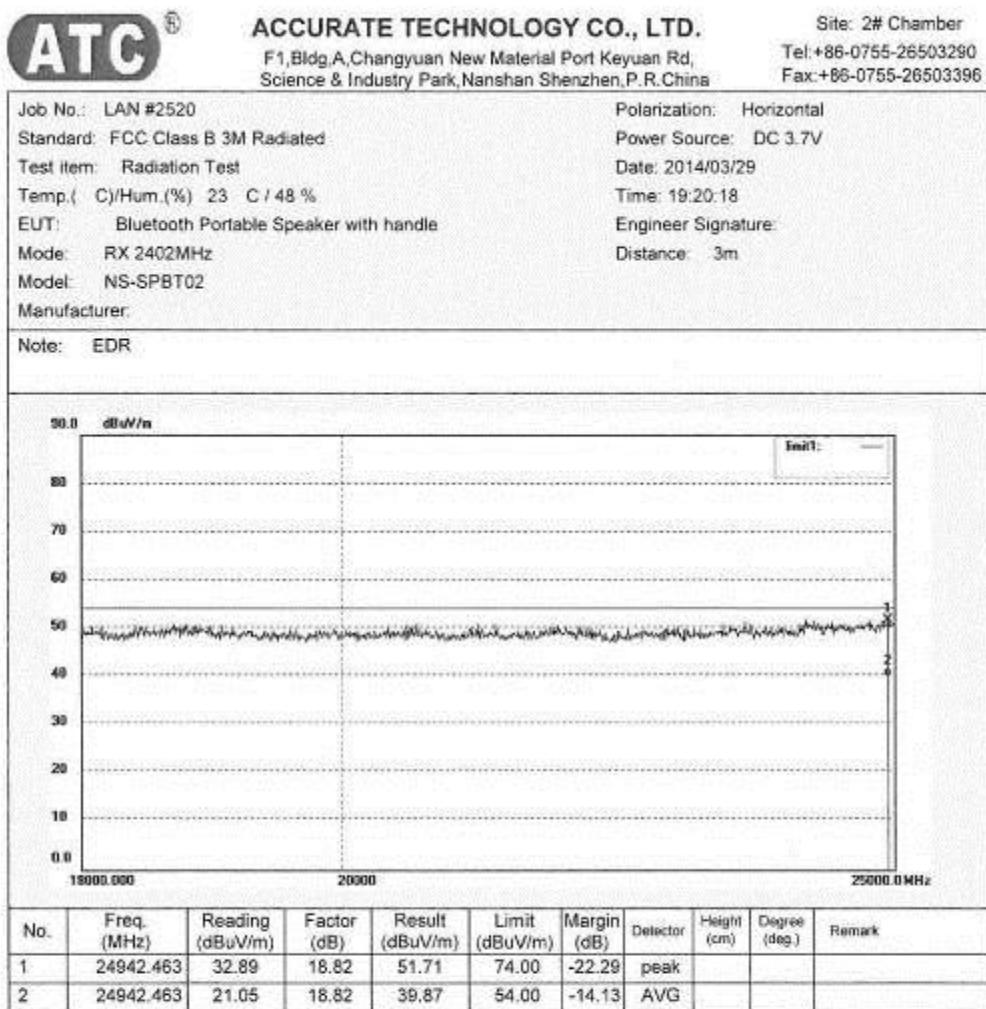


Figure 64: Test figure of spurious emissions, mode B, Vertical polarity (18GHz – 25GHz), 8DPSK Modulation

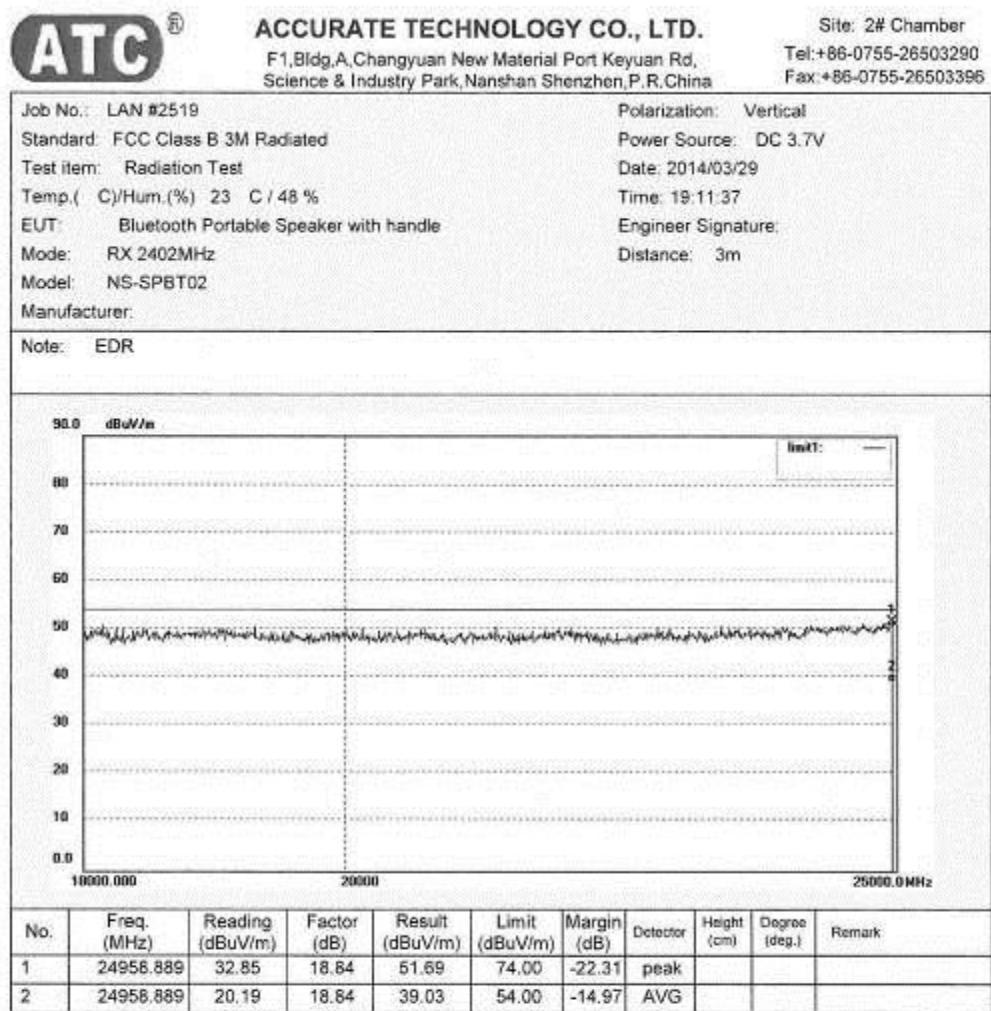


Figure 65: Test figure of Radiated emissions in restricted bands, Mode A.1, Horizontal, GFSK Modulation

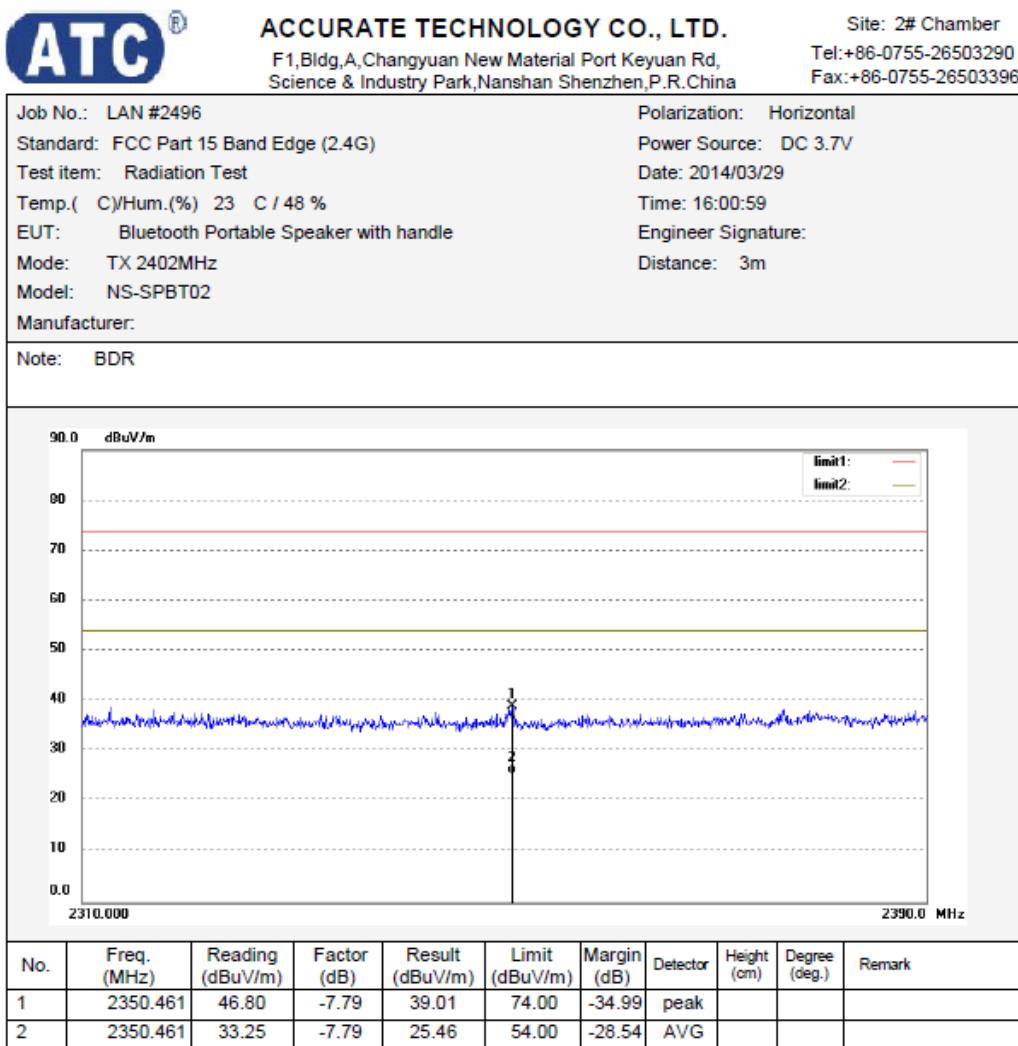


Figure 66: Test figure of Radiated emissions in restricted bands, Mode A.1, Vertical, GFSK Modulation

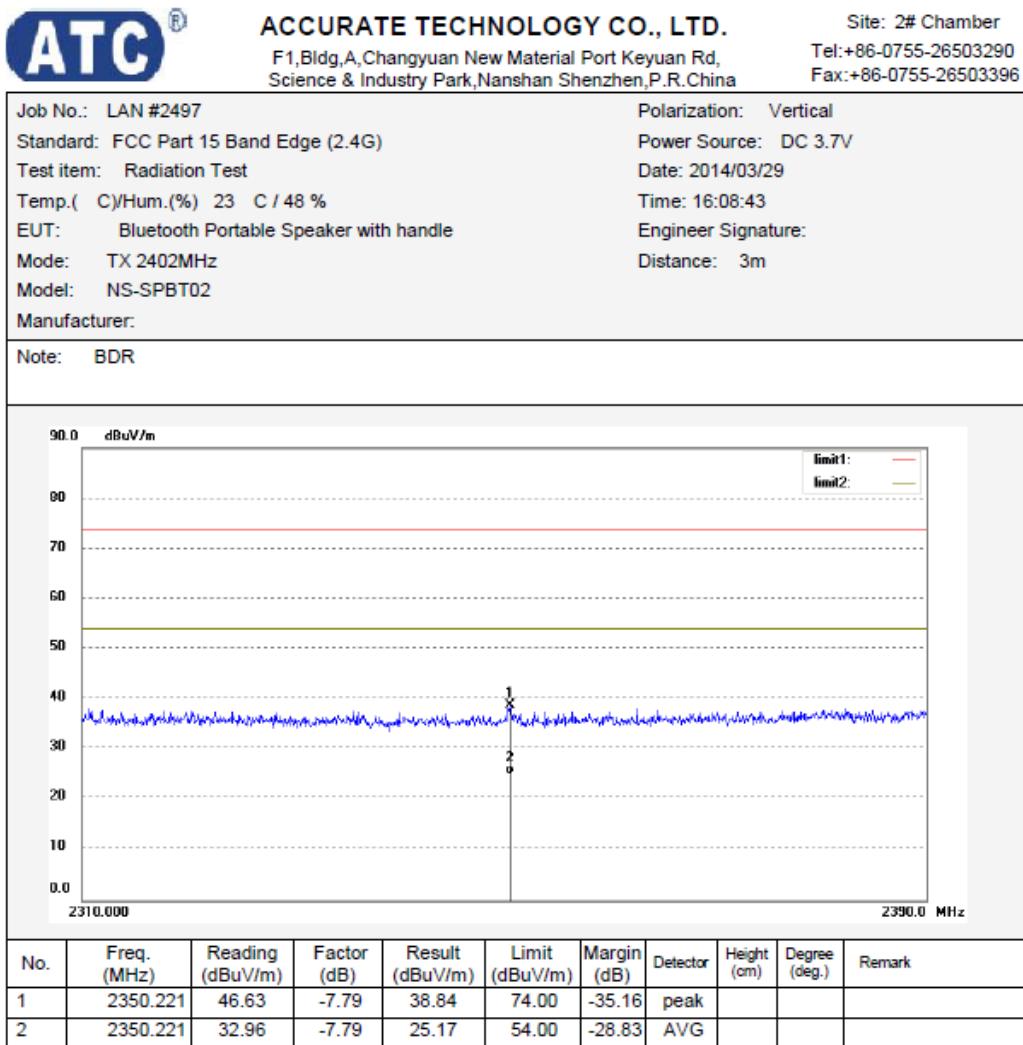


Figure 67: Test figure of Radiated emissions in restricted bands, Mode A.3, Horizontal, GFSK Modulation

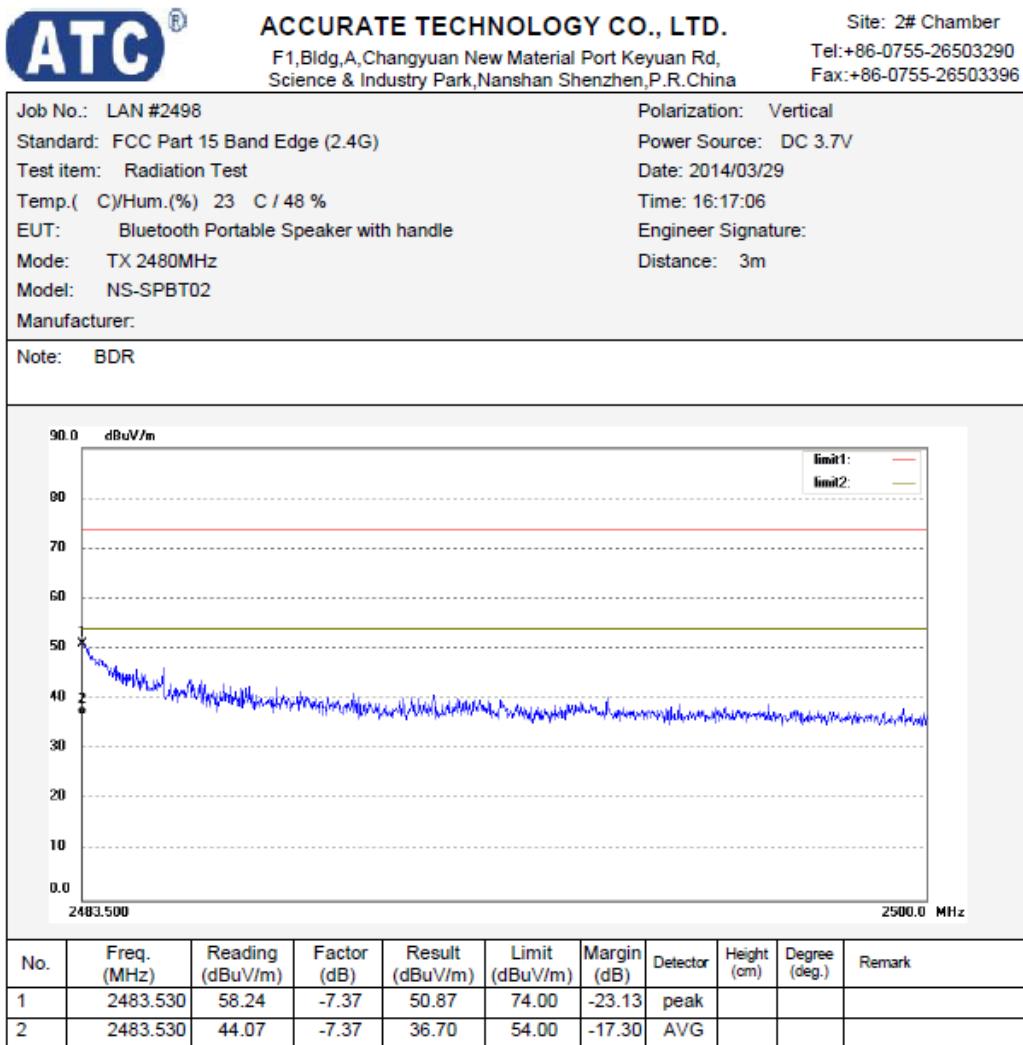


Figure 68: Test figure of Radiated emissions in restricted bands, Mode A.3, Vertical, GFSK Modulation

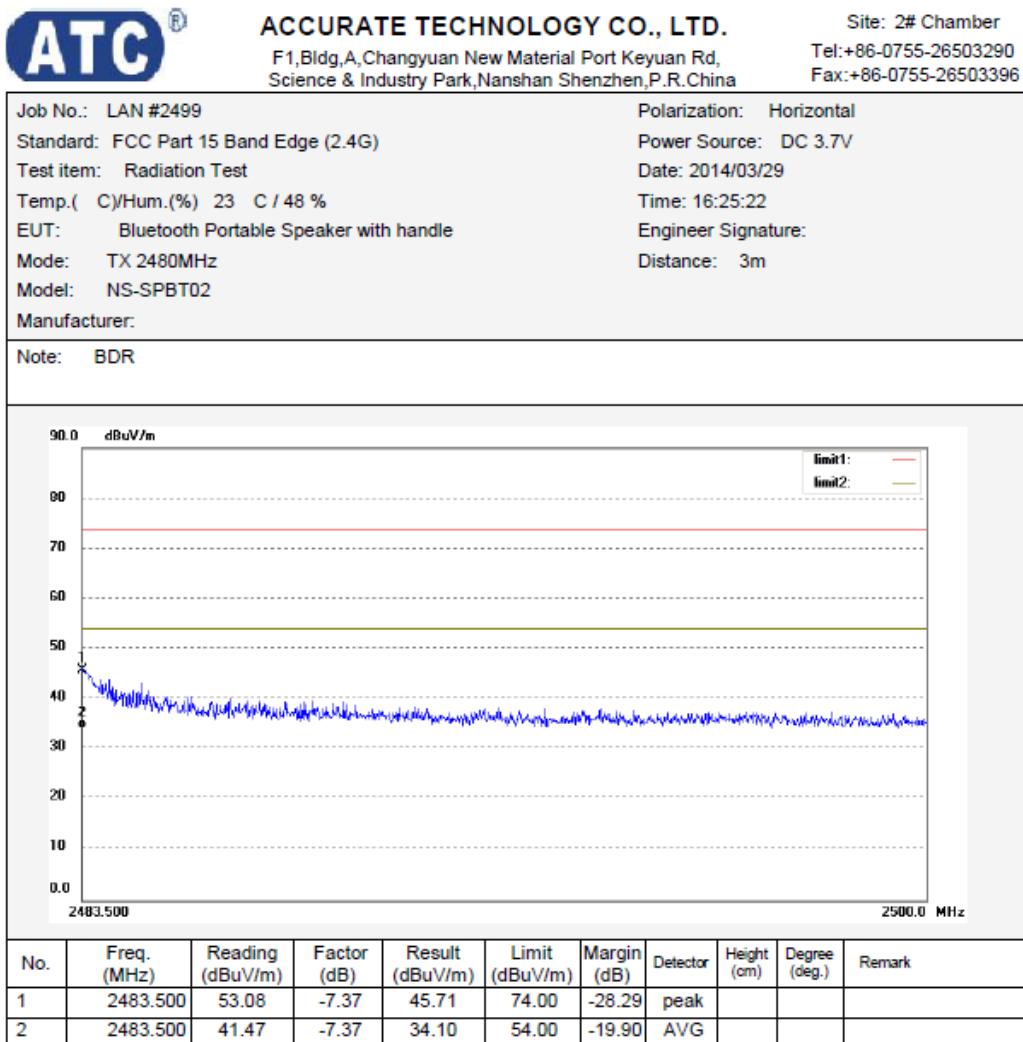


Figure 69: Test figure of Radiated emissions in restricted bands, Mode A.1, Horizontal, 8DPSK Modulation

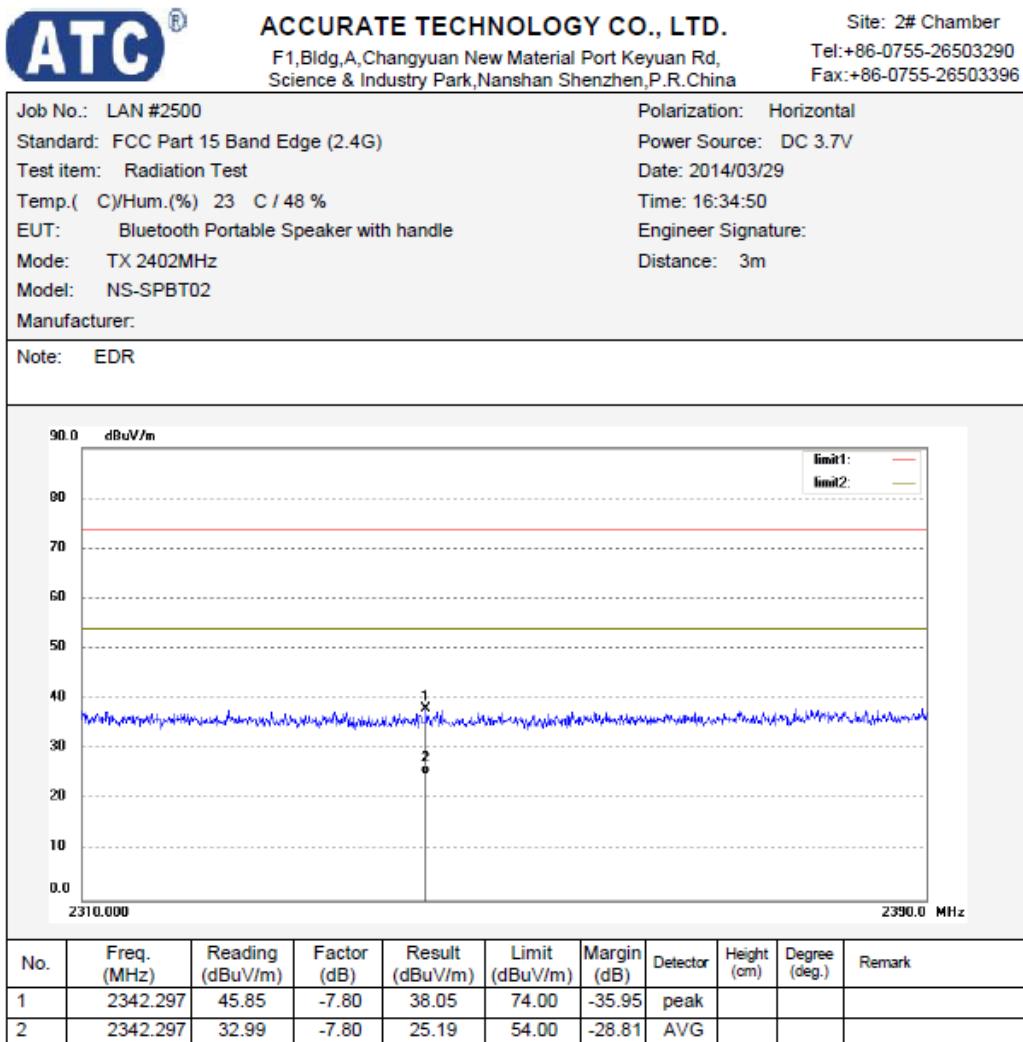


Figure 70: Test figure of Radiated emissions in restricted bands, Mode A.1, Vertical, 8DP SK Modulation

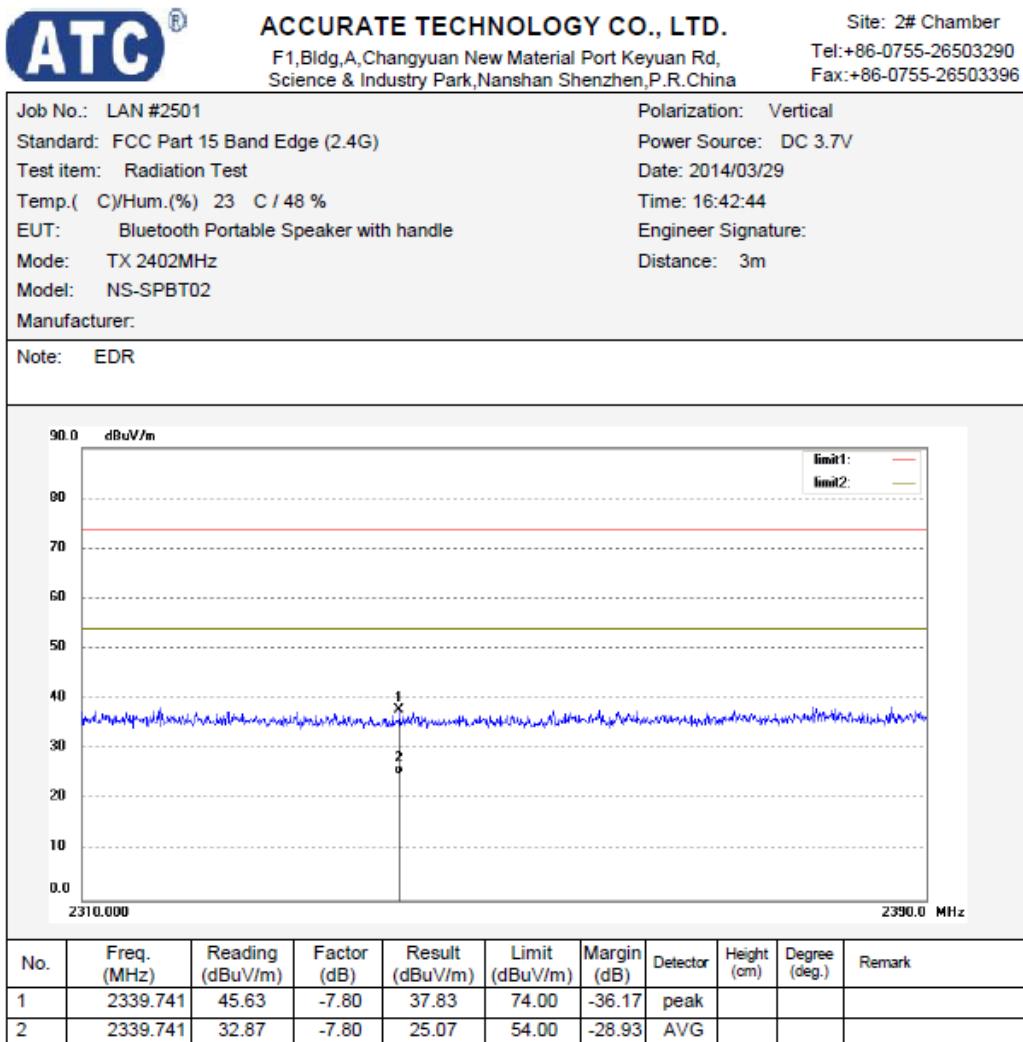


Figure 71: Test figure of Radiated emissions in restricted bands, Mode A.3, Horizontal, 8DPSK Modulation

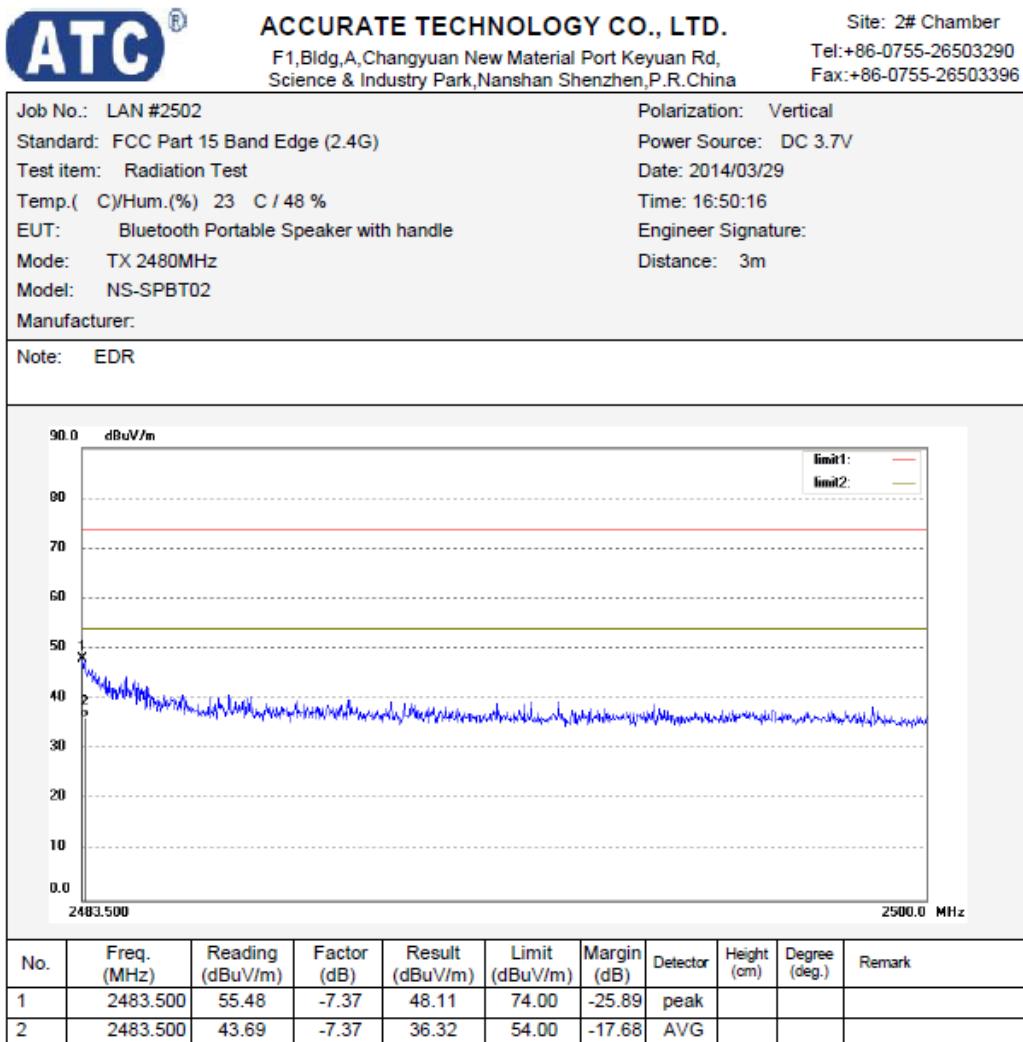


Figure 72: Test figure of Radiated emissions in restricted bands, Mode A.3, Vertical, 8DPSK Modulation

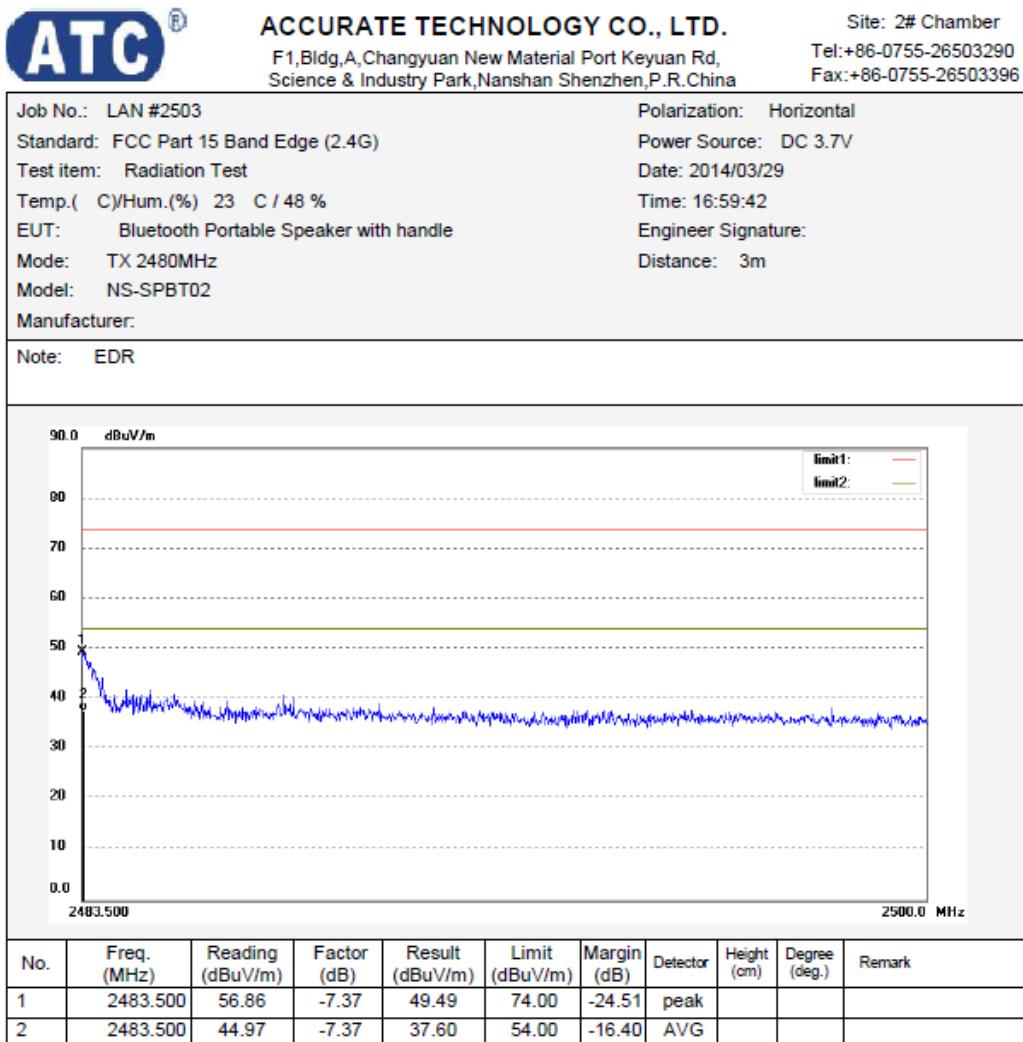
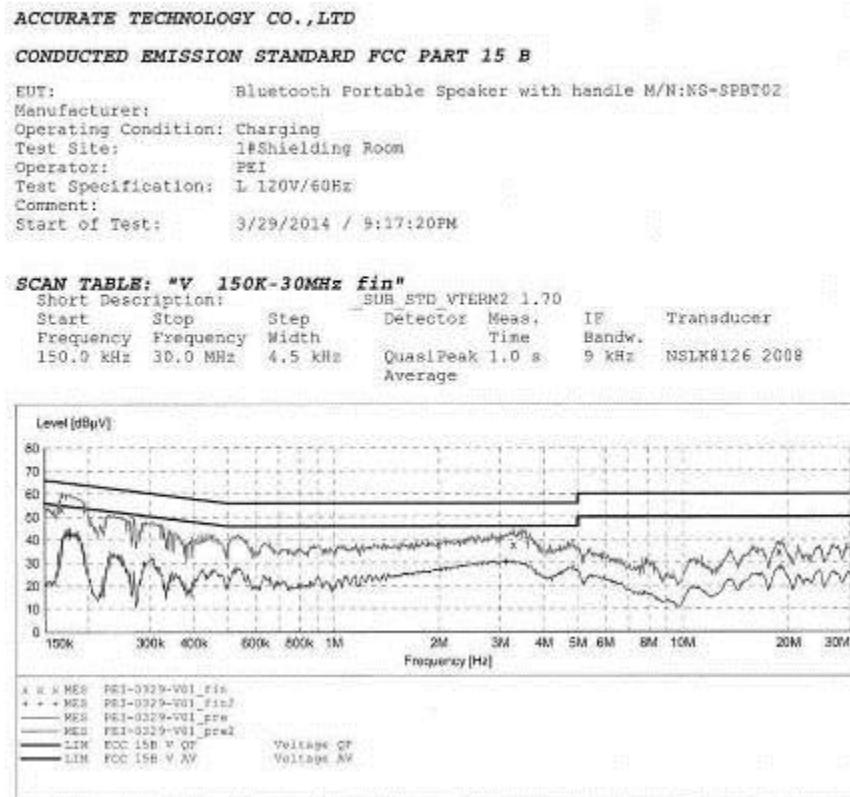


Figure 73: Test figure of Conducted emissions, Mode C, line live



MEASUREMENT RESULT: "PEI-0329-V01_fin"

3/29/2014 9:25PM	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB μ V	dB	dB μ V	dB			
	0.167071	53.80	10.5	65	11.6	QP	L1	GND
	3.269773	37.90	11.1	56	18.1	QP	L1	GND
	18.788139	34.60	11.4	60	25.4	QP	L1	GND

MEASUREMENT RESULT: "PEI-0329-V01_fin2"

3/29/2014 9:25PM	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB μ V	dB	dB μ V	dB			
	0.176674	41.70	10.5	55	12.9	AV	L1	GND
	3.104411	30.30	11.1	46	15.7	AV	L1	GND
	19.014499	27.80	11.4	50	22.2	AV	L1	GND

Figure 74: Test figure of Conducted emissions, Mode C, line neutral

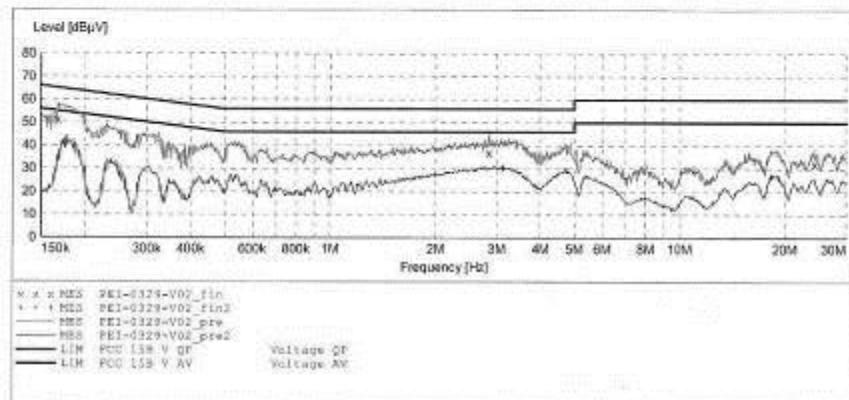
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: Bluetooth Portable Speaker with handle M/N: NS-SFBT02
Manufacturer: BMZ
Operating Condition: Charging
Test Site: 1#Shielding Room
Operator: PEI
Test Specification: N 120V/60Hz
Comment:
Start of Test: 3/29/2014 / 9:26:20PM

SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB_STD_VTERM2 1.70
Start Stop Step Detector Meas. IF Transducer
Frequency Frequency Width Time Bandw.
150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
Average



MEASUREMENT RESULT: "PEI-0329-V02_fin"

3/29/2014 9:35PM	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB μ V	dB	dB μ V	dB			
	0.167071	51.30	10.5	65	13.8	QP	N	GND
	2.843398	36.90	11.0	56	19.1	QP	N	GND
	24.257240	32.20	11.5	60	27.8	QP	N	GND

MEASUREMENT RESULT: "PEI-0329-V02_fin2"

3/29/2014 9:35PM	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB μ V	dB	dB μ V	dB			
	0.175970	41.00	10.5	55	13.7	AV	N	GND
	3.116829	30.30	11.1	46	15.7	AV	N	GND
	18.270388	26.40	11.4	50	23.6	AV	N	GND

Figure 75: Test figure of Radiated emissions, Mode C, Below 1GHz, Horizontal

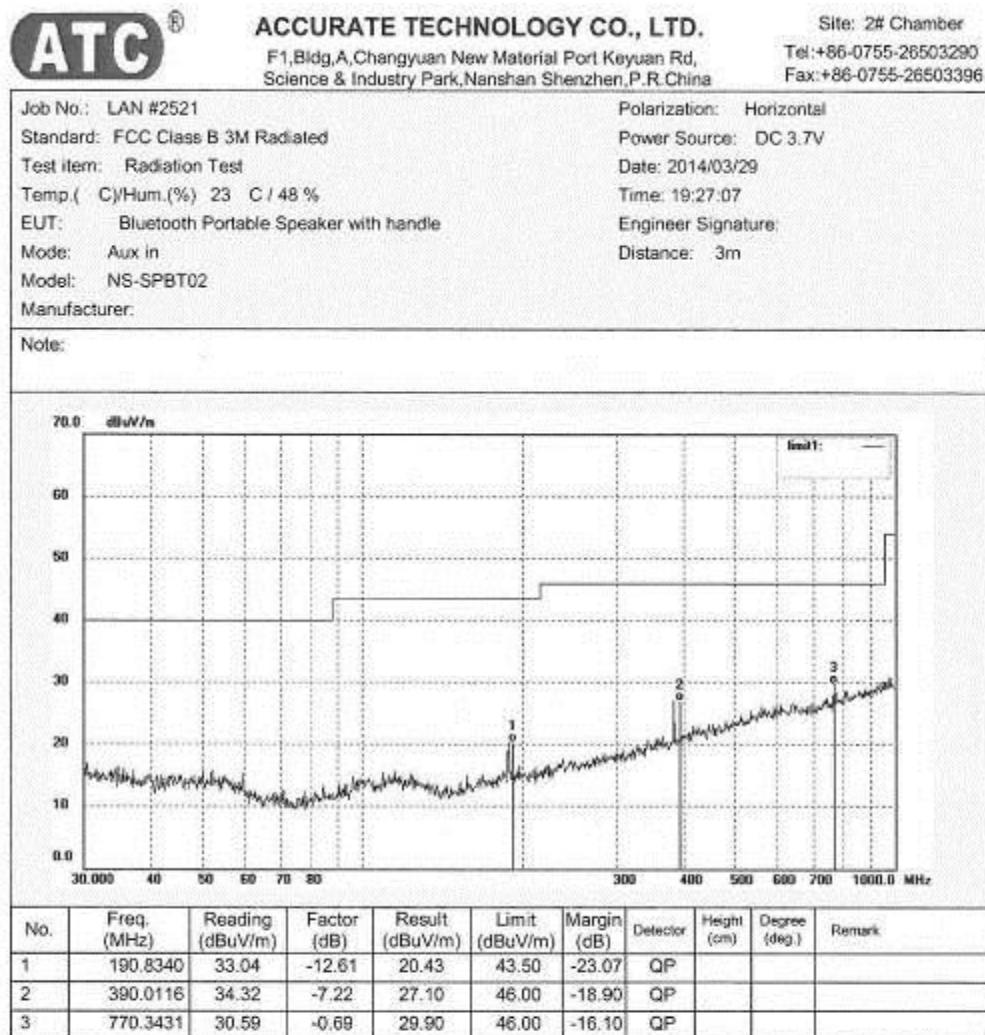


Figure 76: Test figure of Radiated emissions, Mode C, Below 1GHz, Vertical

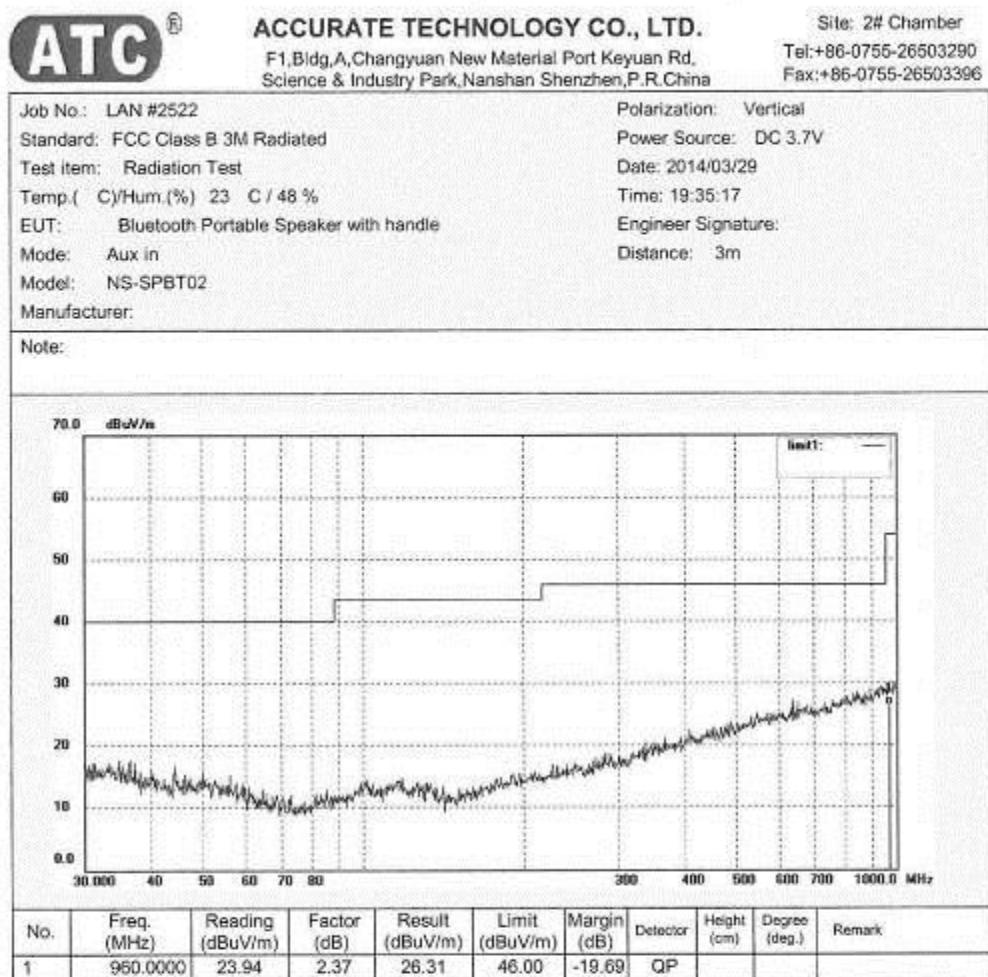


Figure 77: Test figure of Radiated emissions, Mode C, Above 1GHz, Horizontal

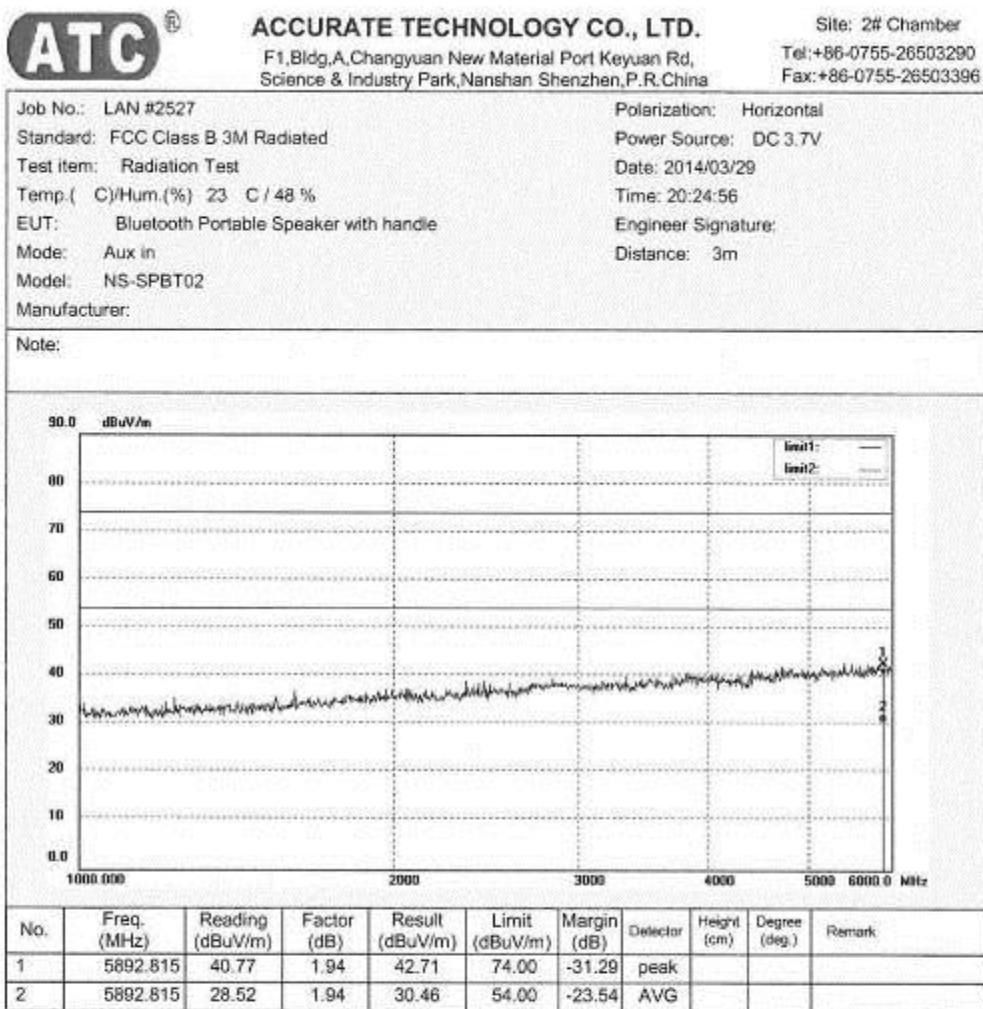


Figure 78: Test figure of Radiated emissions, Mode C, Above 1GHz, Vertical



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Fax:+86-0755-26503396

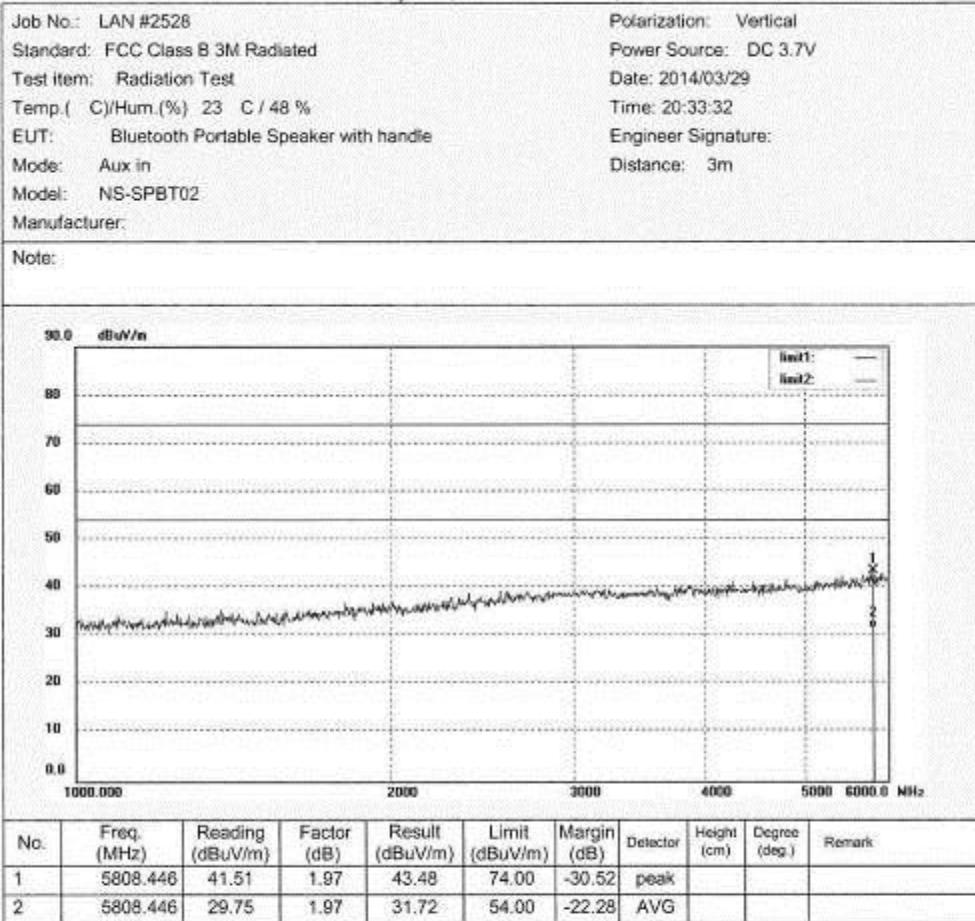


Figure 79: Test figure of Radiated emissions, Mode D, Below 1GHz, Horizontal

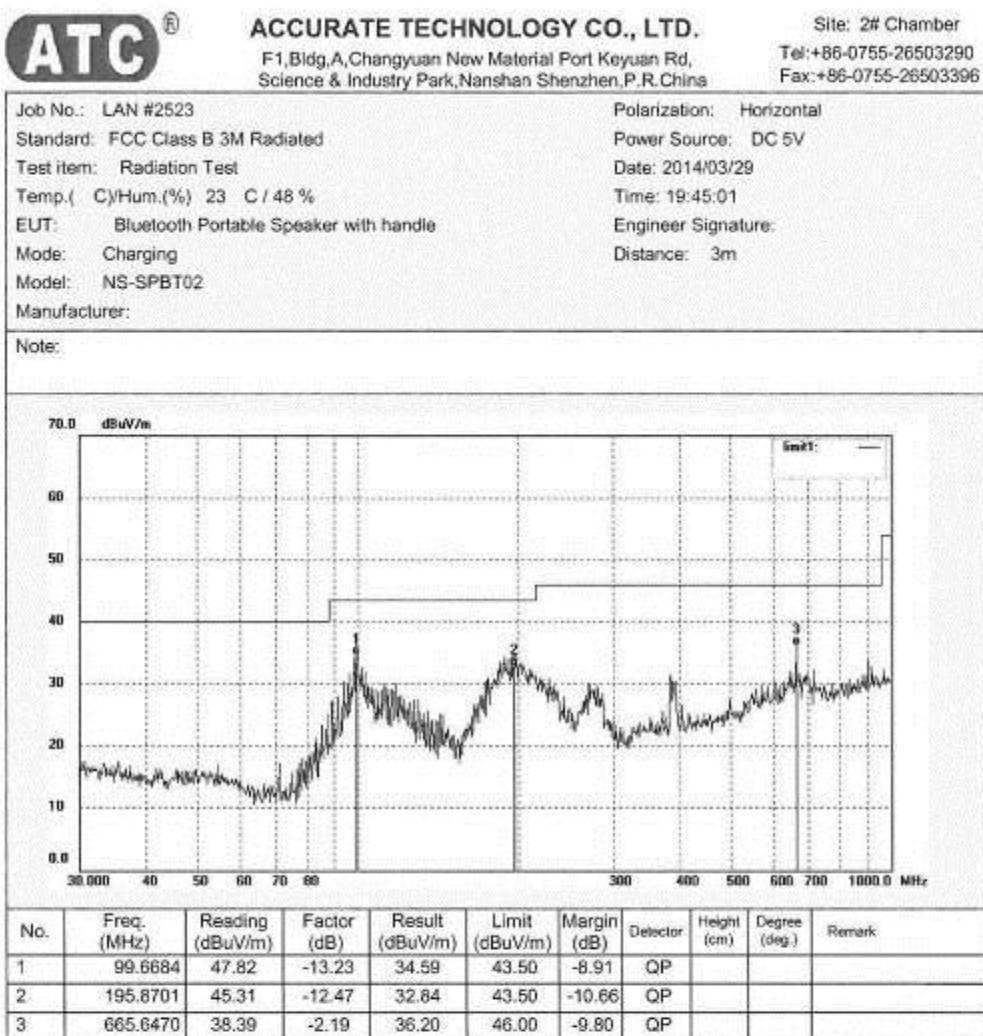


Figure 80: Test figure of Radiated emissions, Mode D, Below 1GHz, Vertical

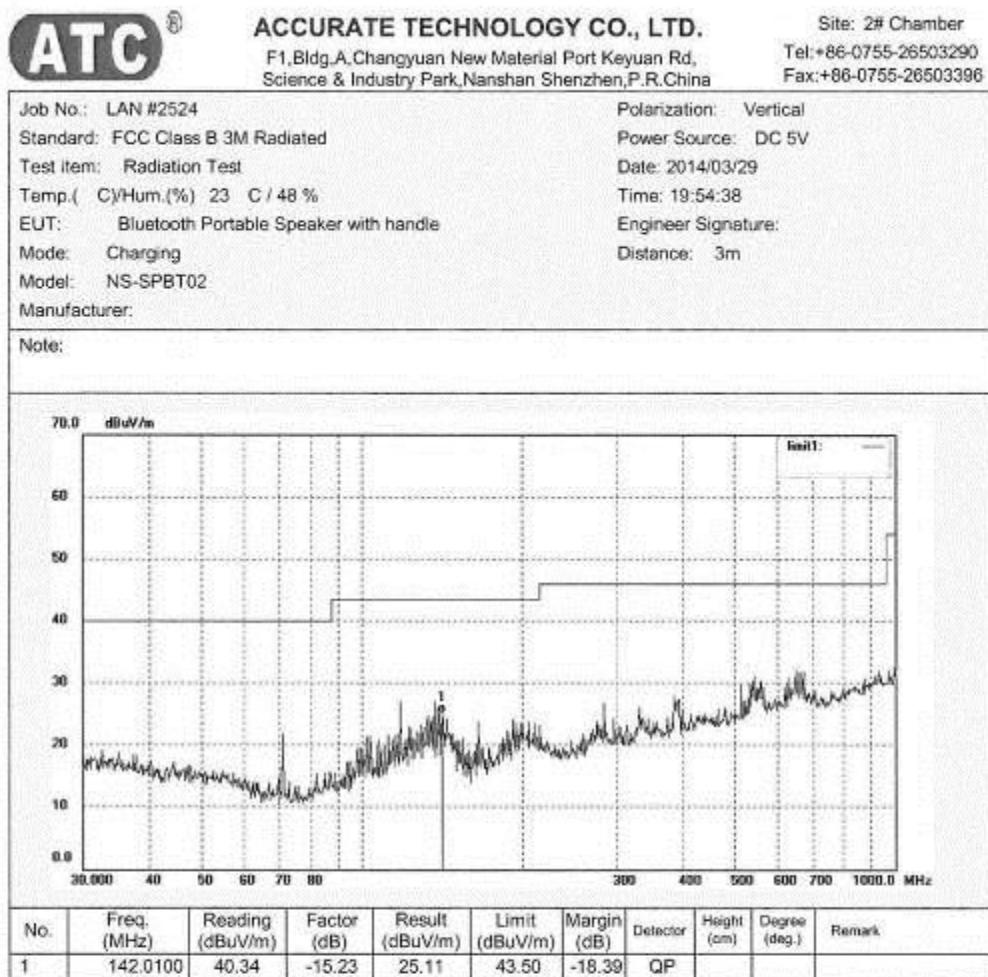


Figure 81: Test figure of Radiated emissions, Mode D, Above 1GHz, Horizontal

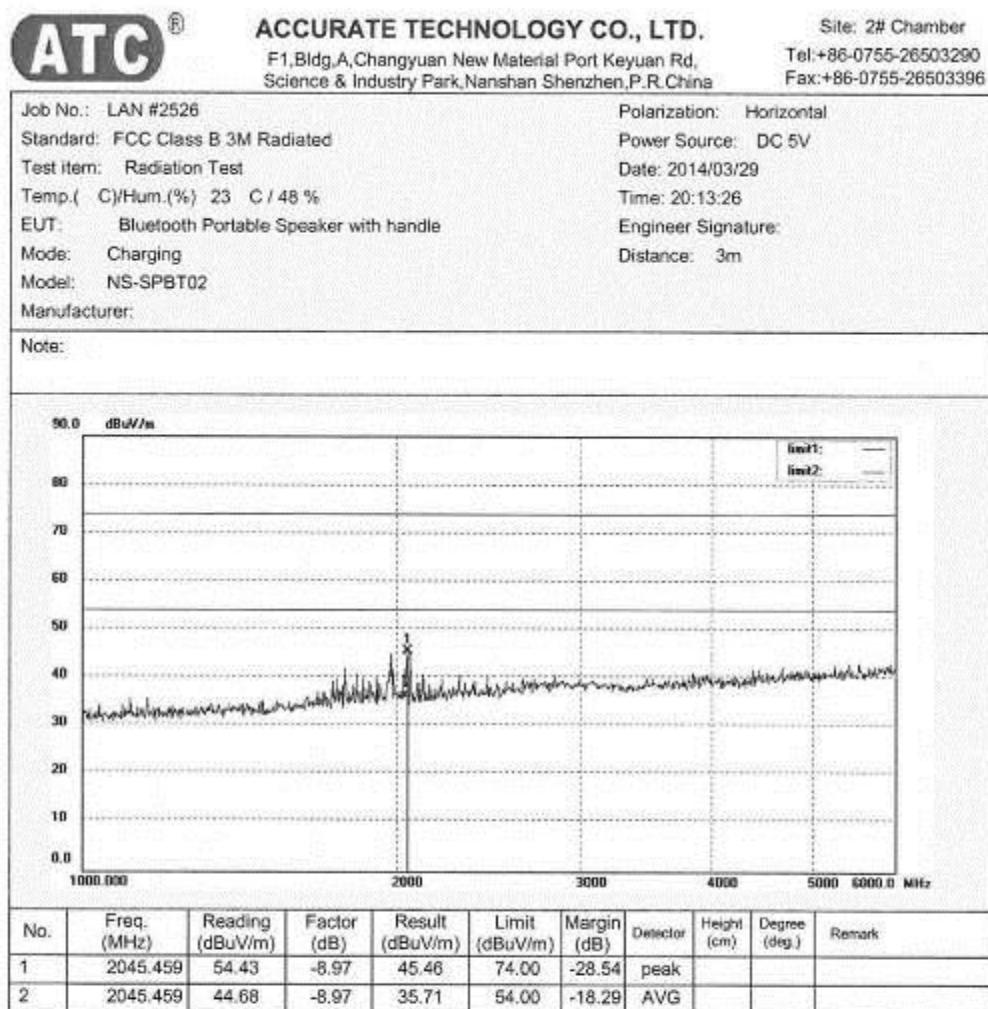


Figure 82: Test figure of Radiated emissions, Mode D, Above 1GHz, Vertical

