

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
Email:	ee.shenzhen@sgs.com

Report No.: SZEM171101183001 Page: 1 of 60

TEST REPORT

Application No.:	SZEM1711011830CR
Applicant:	FLYSKY RC MODEL TECHNOLOGY CO., LTD
Address of Applicant:	West building3, Huangjianyuan Ind, Park QIAOLI North Gate Changping Town, Dongguan, China
Manufacturer:	ShenZhen FLYSKY Technology Co., Ltd
Address of Manufacturer:	ADD 16F, Huafeng Building, No. 6006 Shennan Road, Futian District, Shenzhen, Guangdong, China
Factory:	FLYSKY RC MODEL TECHNOLOGY CO., LTD
Address of Factory:	West building3, Huangjianyuan Ind, Park QIAOLI North Gate Changping Town, Dongguan, China
Equipment Under Test (EUT	·):
EUT Name:	Digital proportional radio control system
Model No.:	FS-GT5
FCC ID:	N4ZGT500
Standard(s) :	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2017-11-23
Date of Test:	2017-11-30 to 2017-12-01
Date of Issue:	2017-12-05
Test Result:	Pass*

* In the configuration tested, the EUT complied with the standards specified above.



Jack Zhang EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



Report No.: SZEM171101183001 Page: 2 of 60

Revision Record					
Version Chapter Date Modifier Remark					
01		2017-12-05		Original	

Authorized for issue by:		
	Home	
	Harry Wu /Project Engineer	
	Eric Fu	
	Eric Fu /Reviewer	



Report No.: SZEM171101183001 Page: 3 of 60

2 Test Summary

Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass
Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)	Pass

N/A: Not applicable

Radio Spectrum Matter Part						
Item	Standard	Method	Requirement	Result		
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(1)	Pass		
20dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass		
Carrier Frequencies Separation	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.2	47 CFR Part 15, Subpart C 15.247a(1)	Pass		
Hopping Channel Number	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.3	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass		
Dwell Time	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.4	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass		
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.8	47 CFR Part 15, Subpart C 15.247(d)	Pass		
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247			Pass		
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass		
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass		

N/A: Not applicable



Report No.: SZEM171101183001 Page: 4 of 60

3 Contents

		Page				
1	1 COVER PAGE					
2	2 TEST SUMMARY					
3	3 CONTENTS					
4	4 GENERAL INFORMATION	6				
	 4.1 DETAILS OF E.U.T. 4.2 DESCRIPTION OF SUPPORT UNITS					
5	5 EQUIPMENT LIST					
6	6 RADIO SPECTRUM TECHNICAL REQUIREMENT	12				
	 6.1 ANTENNA REQUIREMENT					
7						
7	 7.1 CONDUCTED PEAK OUTPUT POWER	14 15 15 15 16 16 16 16 16 16 16 17 17 17 17 17 17 17 17 18 18 18				
7	 7.1 CONDUCTED PEAK OUTPUT POWER	$\begin{array}{c} 14\\ 15\\ 15\\ 15\\ 15\\ 16\\ 16\\ 16\\ 16\\ 16\\ 16\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17\\ 17$				



Report No.: SZEM171101183001 Page: 5 of 60

9	APPENDIX	
	8.2 EUT CONSTRUCTIONAL DETAILS	
	8.1 Test Setup	43
8	3 PHOTOGRAPHS	43
	7.9.3 Measurement Procedure and Data	33
	7.9.2 Test Setup Diagram	
	7.9.1 E.U.T. Operation	
	7.9 RADIATED SPURIOUS EMISSIONS	
	7.8.3 Measurement Procedure and Data	
	7.8.2 Test Setup Diagram	
	7.8.1 E.U.T. Operation	
	7.8 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS	
	7.7.3 Measurement Procedure and Data	
	7.7.2 Test Setup Diagram	
	7.7.1 E.U.T. Operation	
	7.7 CONDUCTED SPURIOUS EMISSIONS	



Report No.: SZEM171101183001 Page: 6 of 60

4 General Information

4.1 Details of E.U.T.

Power supply:	TX: DC6.0V (4 x 1.5V "AA" batteries)
Modulation technique:	FHSS
Frequency Range:	2.408GHz to 2.475GHz
Modulation Type:	GFSK
Number of Channels:	135
Channel Space:	0.5MHz
Antenna Type:	Integral
Antenna Gain:	2dBi

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.25 x 10 ⁻⁸
2	Duty cycle	0.37%
3	Occupied Bandwidth	3%
4	RF conducted power	0.75dB
5	RF power density	2.84dB
6	Conducted Spurious emissions	0.75dB
7	DE Dedicted newer	4.5dB (below 1GHz)
/	RF Radiated power	4.8dB (above 1GHz)
0	Dedicted Coursieurs emission test	4.5dB (30MHz-1GHz)
8	Radiated Spurious emission test	4.8dB (1GHz-18GHz)
9	Temperature test	1 °C
10	Humidity test	3%
11	Supply voltages	1.5%
12 Time		3%



Report No.: SZEM171101183001 Page: 7 of 60

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

FCC – Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



Report No.: SZEM171101183001 Page: 8 of 60

5 Equipment List

Conducted Peak Output Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26

20dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26

Carrier Frequencies Separation					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26



Report No.: SZEM171101183001 Page: 9 of 60

Hopping Channel Number					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26

Dwell Time					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26

Conducted Band Edges Measurement					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26



Report No.: SZEM171101183001 Page: 10 of 60

Conducted Spurious Emissions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2017-05-02	2020-05-01
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2017-07-13	2018-07-12
Spectrum Analyzer	Rohde & Schwarz	FSU43	SEM004-08	2017-04-14	2018-04-13
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-13
Horn Antenna (15GHz-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16
Pre-amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2017-09-27	2018-09-26
Low Noise Amplifier (100MHz-18GHz)	Black Diamond Series	BDLNA-0118- 352810	SEM005-05	2017-09-27	2018-09-27
Pre-amplifier (18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2017-12-04	2018-12-03
Pre-amplifier (26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2017-04-14	2018-04-13
DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Active Loop Antenna	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21
Band filter	N/A	N/A	SEM023-01	N/A	N/A



Report No.: SZEM171101183001 Page: 11 of 60

Radiated Spurious Emissions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2017-05-02	2020-05-01
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2017-07-13	2018-07-12
Spectrum Analyzer	Rohde & Schwarz	FSU43	SEM004-08	2017-04-14	2018-04-13
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017-06-27	2020-06-26
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-13
Horn Antenna (15GHz-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16
Pre-amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2017-09-27	2018-09-26
Low Noise Amplifier (100MHz-18GHz)	Black Diamond Series	BDLNA-0118- 352810	SEM005-05	2017-09-27	2018-09-27
Pre-amplifier (18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2017-12-04	2018-12-03
Pre-amplifier (26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2017-04-14	2018-04-13
DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Active Loop Antenna	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21
Band filter	N/A	N/A	SEM023-01	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2017-09-29	2018-09-28
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-17



Report No.: SZEM171101183001 Page: 12 of 60

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(c)

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2dBi.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 13 of 60

6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)

6.2.2 Conclusion

Standard Requirement:

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1):

According to Technical Specification, the pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- > Number of shift register stages: 9
- > Length of pseudo-random sequence: 29 -1 = 511 bits
- > Longest sequence of zeros: 8 (non-inverted signal)

Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

Each frequency used equally on the average by each transmitter.

According to Technical Specification, the receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(g):

According to Technical Specification, the system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short burst transmission from the RF system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

Compliance for section 15.247(h):

According to Technical specification, the system incorporates with an adaptive system to detect other user within the spectrum band s



Report No.: SZEM171101183001 Page: 14 of 60

7 Radio Spectrum Matter Test Results

7.1 Conducted Peak Output Power

Test Requirement	47 CFR Part 15, Subpart C 15.247(b)(1)
Test Method:	ANSI C63.10 (2013) Section 7.8.5
Limit:	

Frequency range(MHz)	Output power of the intentional radiator(watt)
	1 for ≥50 hopping channels
902-928	0.25 for 25≤ hopping channels <50
	1 for digital modulation
	1 for ≥75 non-overlapping hopping channels
2400-2483.5	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation



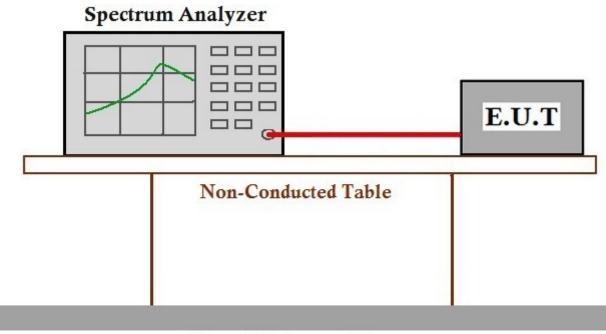
Report No.: SZEM171101183001 Page: 15 of 60

7.1.1 E.U.T. Operation

Operating Environment:

Temperature:	25.5 °C	Humidity:	50.3 % RH	Atmospheric Pressure: 1005 mbar
Test mode	b:TX_non-Hop mode.	o mode_Keep	o the EUT in con	tinuously transmitting with modulation

7.1.2 Test Setup Diagram



Ground Reference Plane

7.1.3 Measurement Procedure and Data



Report No.: SZEM171101183001 Page: 16 of 60

7.2 20dB Bandwidth

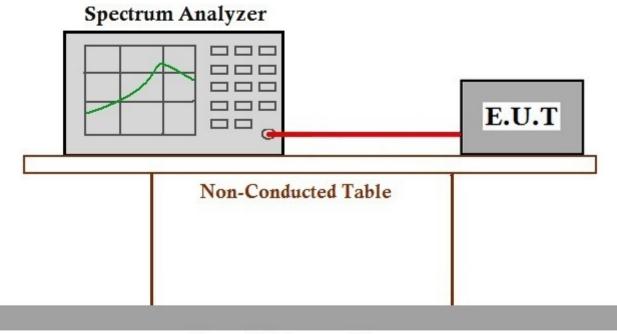
Test Requirement	47 CFR Part 15, Subpart C 15.215
Test Method:	ANSI C63.10 (2013) Section 6.9

7.2.1 E.U.T. Operation

Operating Environment:

Temperature:25.5 °CHumidity:50.2 % RHAtmospheric Pressure:1005mbarTest modeb:TX_non-Hop mode_Keep the EUT in continuously transmitting with modulation
mode.modemode

7.2.2 Test Setup Diagram



Ground Reference Plane

7.2.3 Measurement Procedure and Data



Report No.: SZEM171101183001 Page: 17 of 60

7.3 Carrier Frequencies Separation

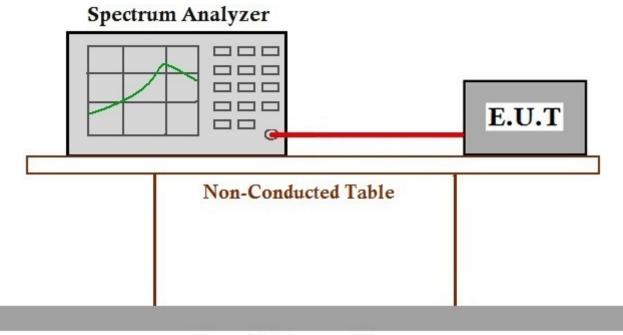
Test Requirement	47 CFR Part 15, Subpart C 15.247a(1)
Test Method:	ANSI C63.10 (2013) Section 7.8.2
Limit:	2/3 of the 20dB bandwidth base on the transmission power is less than 0.125W

7.3.1 E.U.T. Operation

Operating Environment:

Temperature:	25.5 °C	Humidity:	50.3 % RH	Atmospheric Pressure: 10)5 mbar
Test mode	a:TX_Hop mod	le_Keep the	EUT in frequency	y hopping with modulation m	ode.

7.3.2 Test Setup Diagram



Ground Reference Plane

7.3.3 Measurement Procedure and Data



Report No.: SZEM171101183001 Page: 18 of 60

7.4 Hopping Channel Number

Test Requirement	47 CFR Part 15, Subpart C 15.247a(1)(iii)
Test Method:	ANSI C63.10 (2013) Section 7.8.3
Limit:	

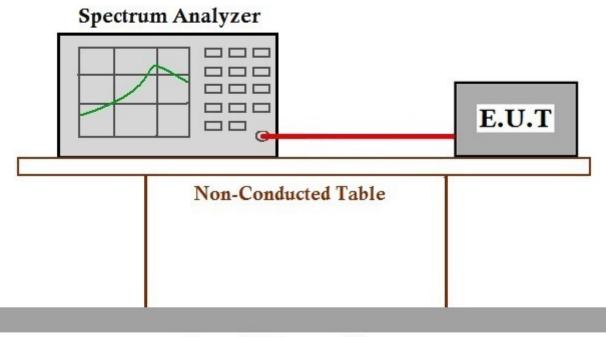
Frequency range(MHz)	Number of hopping channels (minimum)
902-928	50 for 20dB bandwidth <250kHz
902-928	25 for 20dB bandwidth ≥250kHz
2400-2483.5	15
5725-5850	75

7.4.1 E.U.T. Operation

Operating Environment:

Temperature:	25.5 °C	Humidity:	50.4 % RH	Atmospheric Pressure: 1005 mbar
Test mode	a:TX_Hop mo	ode_Keep the	EUT in frequen	cy hopping with modulation mode.

7.4.2 Test Setup Diagram



Ground Reference Plane

7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



Report No.: SZEM171101183001 Page: 19 of 60

7.5 Dwell Time

Limit:

Test Requirement47 CFR Part 15, Subpart C 15.247a(1)(iii)Test Method:ANSI C63.10 (2013) Section 7.8.4

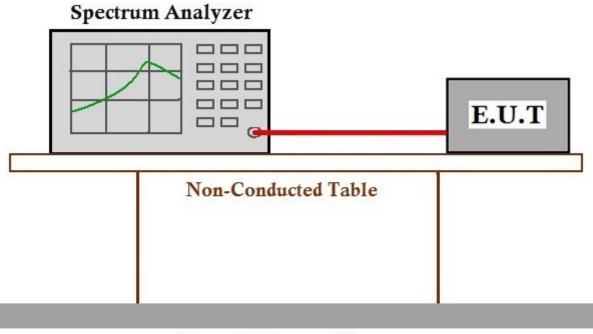
Frequency(MHz)	Limit				
902-928	0.4S within a 20S period(20dB bandwidth<250kHz)				
902-928	0.4S within a 10S period(20dB bandwidth≥250kHz)				
0400 0400 5	0.4S within a period of 0.4S multiplied by the number				
2400-2483.5	of hopping channels				
5725-5850	0.4S within a 30S period				

7.5.1 E.U.T. Operation

Operating Environment:

Temperature:	25.5 °C	Humidity:	50.4 % RH	Atmospheric Pressure: 1005 mbar	ŗ
Test mode	a:TX_Hop mod	de_Keep the	EUT in frequenc	y hopping with modulation mode.	

7.5.2 Test Setup Diagram



Ground Reference Plane

7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



Report No.: SZEM171101183001 Page: 20 of 60

7.6 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d) Test Method: ANSI C63.10 (2013) Section 7.8.8 Limit: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-



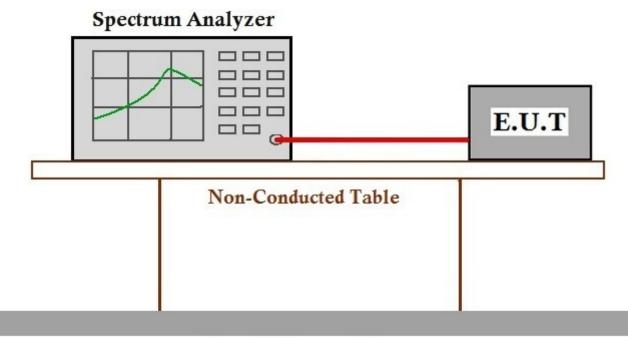
Report No.: SZEM171101183001 Page: 21 of 60

7.6.1 E.U.T. Operation

Operating Environment:

Temperature:25.5 °CHumidity:50.4 % RHAtmospheric Pressure:1005mbarTest modea:TX_Hop mode_Keep the EUT in frequency hopping with modulation mode.b:TX_non-Hop mode_Keep the EUT in continuously transmitting with modulation mode.

7.6.2 Test Setup Diagram



Ground Reference Plane

7.6.3 Measurement Procedure and Data



Report No.: SZEM171101183001 Page: 22 of 60

7.7 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d) Test Method: ANSI C63.10 (2013) Section 7.8.6 Limit: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-



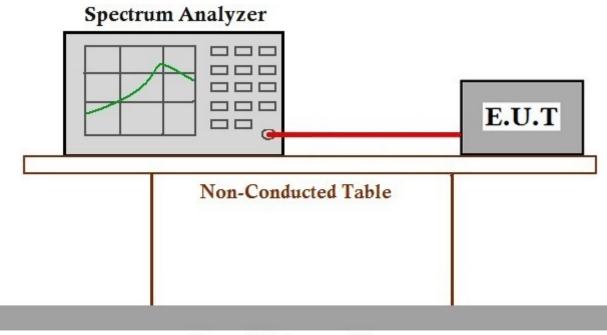
Report No.: SZEM171101183001 Page: 23 of 60

7.7.1 E.U.T. Operation

Operating Environment:

Temperature:	25.5 °C	Humidity:	50.4 % RH	Atmospheric Pressure: 1005 mba	ır
Test mode	b:TX_non-Hop mode.	o mode_Keep	o the EUT in con	tinuously transmitting with modulation	

7.7.2 Test Setup Diagram



Ground Reference Plane

7.7.3 Measurement Procedure and Data



Report No.: SZEM171101183001 Page: 24 of 60

7.8 Radiated Emissions which fall in the restricted bands

Test Requirement47 CFR Part 15, Subpart C 15.209 & 15.247(d)Test Method:ANSI C63.10 (2013) Section 6.10.5Measurement Distance:3mLimit:Image: Compare the section of the se

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-



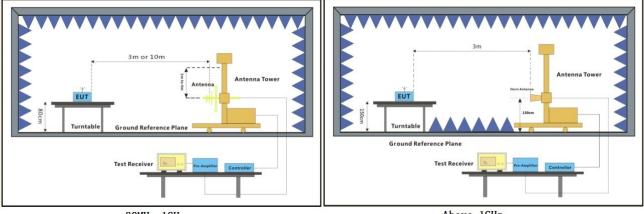
Report No.: SZEM171101183001 25 of 60 Page:

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: Atmospheric Pressure: 1005 mbar 23.2 °C Humidity: 60.1 % RH Test mode b:TX non-Hop mode Keep the EUT in continuously transmitting with modulation mode.

7.8.2 Test Setup Diagram



30MHz-1GHz

Above 1GHz

7.8.3 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

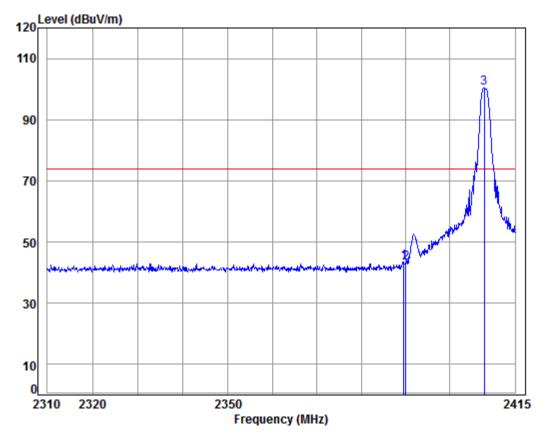
Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document to a transaction from exercising all their rights and obligations under the transaction document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample() laterd and such aspectations. falsification of the content or appearance of this document is unlawful and offender refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 26 of 60

Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low

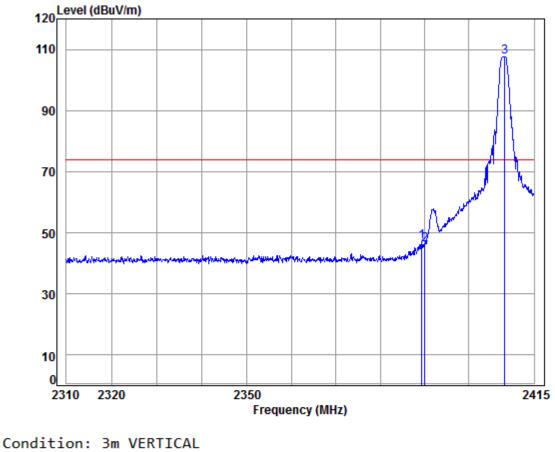


	tion: 3m 5 : 118		NTAL						
Mode	: 240	8 Band	edge						
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
							-		
							-		
1	2389.585	5.47	29.08	37.66	46.62	43.51	74.00	-30.49	peak
1 2							74.00 74.00		
2		5.47	29.08	37.66	46.14	43.03	74.00	-30.97	peak



Report No.: SZEM171101183001 Page: 27 of 60

Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:Low

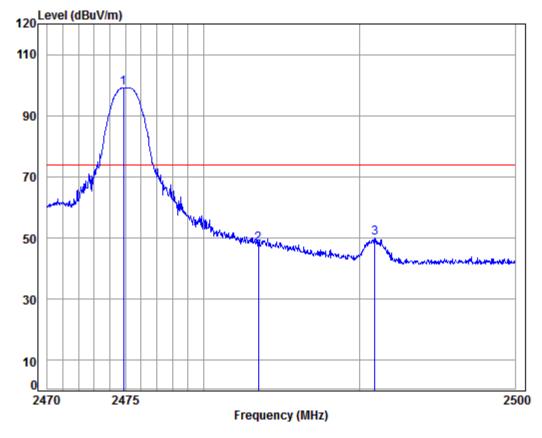


CONGIN	LION: SM	VENTED							
Job No	: 118	30CR							
Mode	: 240	8 Band	edge						
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	MHz						dBuV/m		peak
1 2		5.47	29.08	37.66	50.16	47.05		-26.95	•
2	2389.373	5.47 5.47	29.08 29.08	37.66 37.66	50.16 49.37	47.05 46.26	74.00 74.00	-26.95 -27.74	peak



Report No.: SZEM171101183001 Page: 28 of 60

Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:High

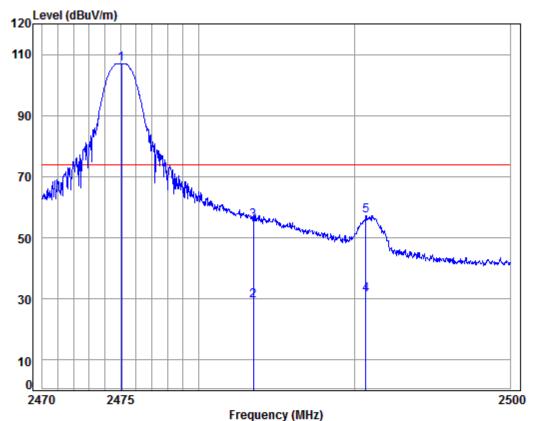


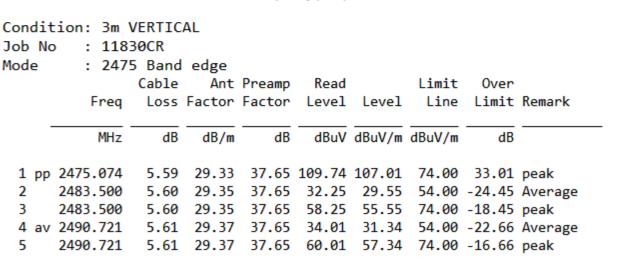
Condit Job No	tion: 3m 5 : 118		NTAL						
Mode	: 247	5 Band	edge						
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2474.865	5.59	29.33	37.65	101.81	99.08	74.00	25.08	peak
2	2483.500	5.60	29.35	37.65	50.64	47.94	74.00	-26.06	peak
3	2490.962	5.61	29.37	37.65	52.61	49.94	74.00	-24.06	peak



Report No.: SZEM171101183001 Page: 29 of 60

Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:High







Report No.: SZEM171101183001 Page: 30 of 60

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

2) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.



Report No.: SZEM171101183001 Page: 31 of 60

7.9 Radiated Spurious Emissions

Test Requirement47 CFR Part 15, Subpart C 15.209 & 15.247(d)Test Method:ANSI C63.10 (2013) Section 6.10.4Measurement Distance:3mLimit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)		
0.009-0.490	2400/F(kHz)	300		
0.490-1.705	24000/F(kHz)	30		
1.705-30.0	30	30		
30-88	100	3		
88-216	150	3		
216-960	200	3		
Above 960	500	3		

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-



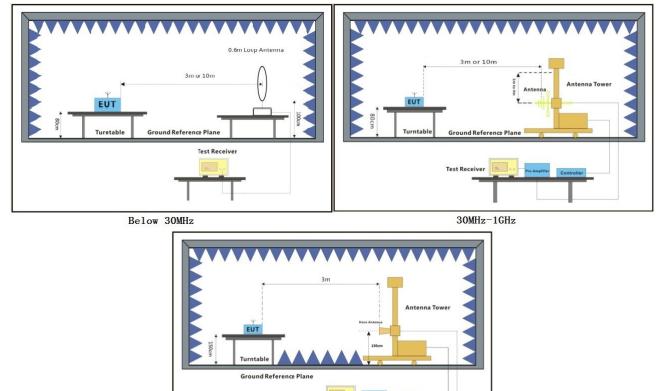
Report No.: SZEM171101183001 Page: 32 of 60

7.9.1 E.U.T. Operation

Operating Environment:

Temperature:24.3 °CHumidity:69.2 % RHAtmospheric Pressure:1005mbarTest modeb:TX_non-Hop mode_Keep the EUT in continuously transmitting with modulation
mode.modemode

7.9.2 Test Setup Diagram



Above 1GHz

Test Receiver



Report No.: SZEM171101183001 Page: 33 of 60

7.9.3 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

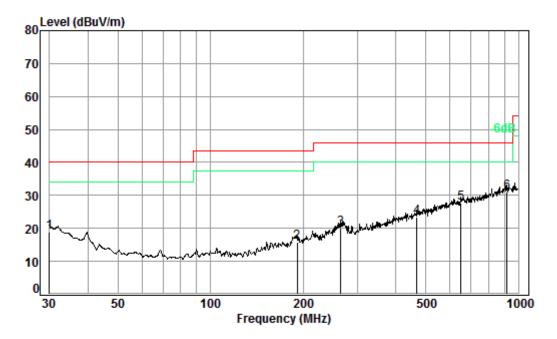
Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 34 of 60

30MHz~1GHz QP value: Mode:b; Polarization:Horizontal;



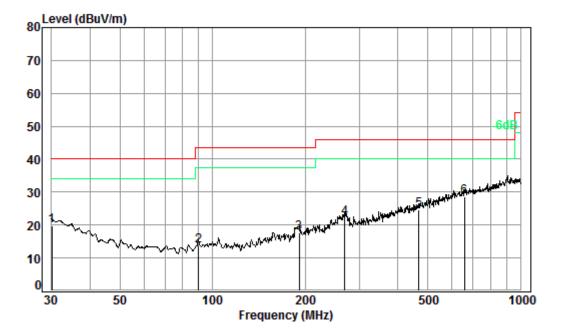
Condition: 3m HORIZONTAL Job No. : 11830CR Test mode: b

		Cable	Ant	Preamp	Read		Limit	0ver
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.00	0.60	22.50	27.36	23.22	18.96	40.00	-21.04
2	191.07	1.39	16.24	26.73	24.82	15.72	43.50	-27.78
3	264.75	1.74	19.03	26.49	25.94	20.22	46.00	-25.78
4	467.24	2.48	23.93	27.54	24.54	23.41	46.00	-22.59
5	649.66	2.80	27.27	27.47	25.03	27.63	46.00	-18.37
6 pp	919.29	3.62	29.90	26.68	24.20	31.04	46.00	-14.96



Report No.: SZEM171101183001 Page: 35 of 60

Mode:b; Polarization:Vertical



Condition: 3m Vertical Job No. : 11830CR Test mode: b

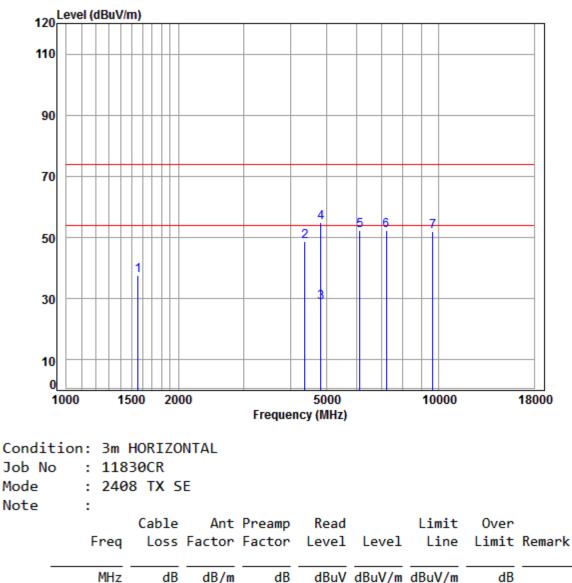
		Cable	Ant	Preamp	Read		Limit	0ver
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
_								
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.11	0.60	22.44	27.36	24.06	19.74	40.00	-20.26
2	90.22	1.10	13.12	27.21	26.61	13.62	43.50	-29.88
3	191.07	1.39	16.24	26.73	26.82	17.72	43.50	-25.78
4	268.49	1.76	18.97	26.49	27.94	22.18	46.00	-23.82
5	468.88	2.49	23.97	27.54	25.62	24.54	46.00	-21.46
6 pp	658.84	2.82	27.39	27.46	25.89	28.64	46.00	-17.36



Report No.: SZEM171101183001 Page: 36 of 60

Above 1GHz

Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low

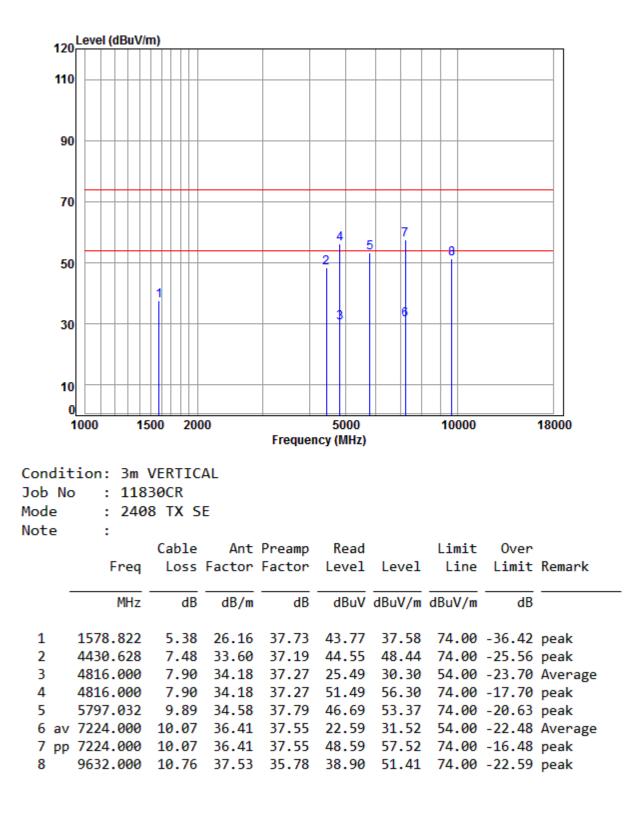


1	1556.169	5.41	26.06	37.74	43.88	37.61	74.00	-36.39	peak
2	4367.058	7.41	33.60	37.18	44.77	48.60	74.00	-25.40	peak
3 av	4816.000	7.90	34.18	37.27	24.10	28.91	54.00	-25.09	Average
4 pp	4816.000	7.90	34.18	37.27	50.10	54.91	74.00	-19.09	peak
5	6142.019	10.85	34.82	37.85	44.43	52.25	74.00	-21.75	peak
6	7224.000	10.07	36.41	37.55	43.27	52.20	74.00	-21.80	peak
7	9632.000	10.76	37.53	35.78	39.54	52.05	74.00	-21.95	peak



Report No.: SZEM171101183001 Page: 37 of 60

Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:Low

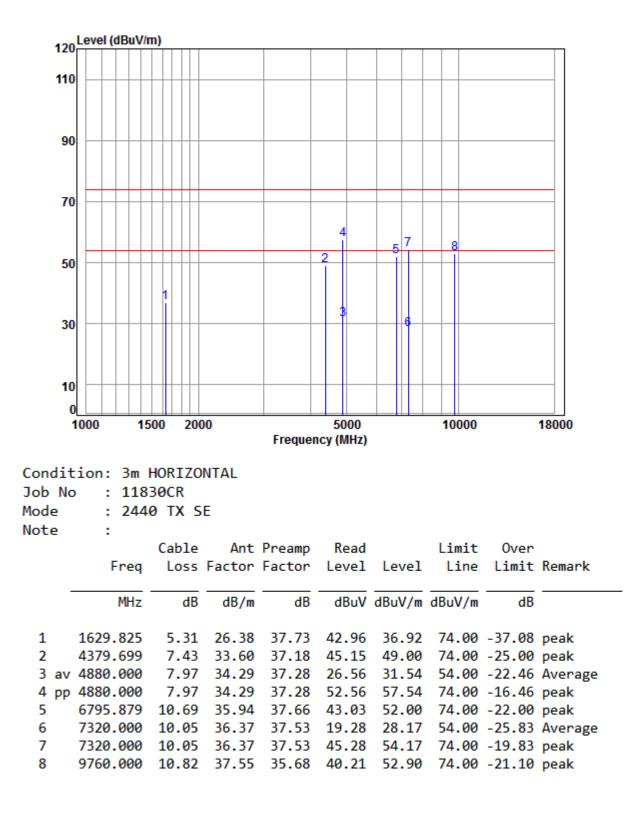


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 38 of 60

Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:middle

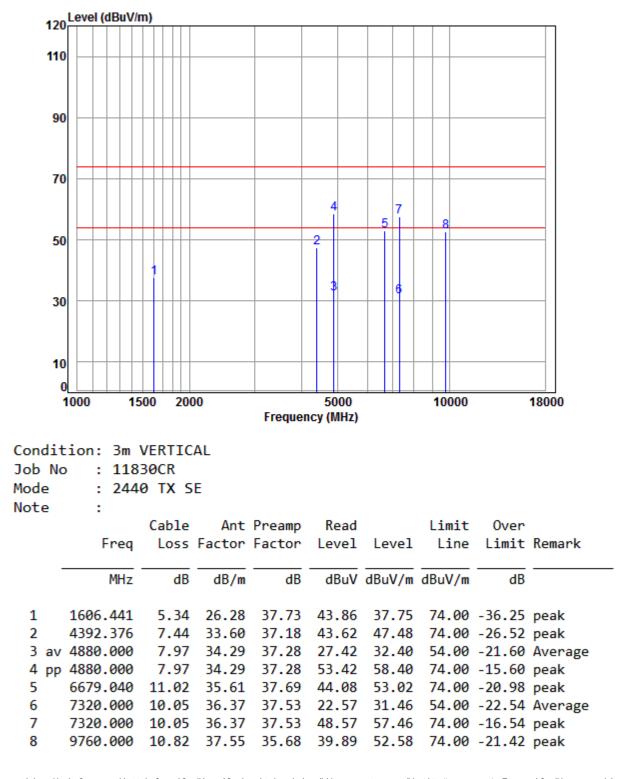


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 39 of 60

Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:middle

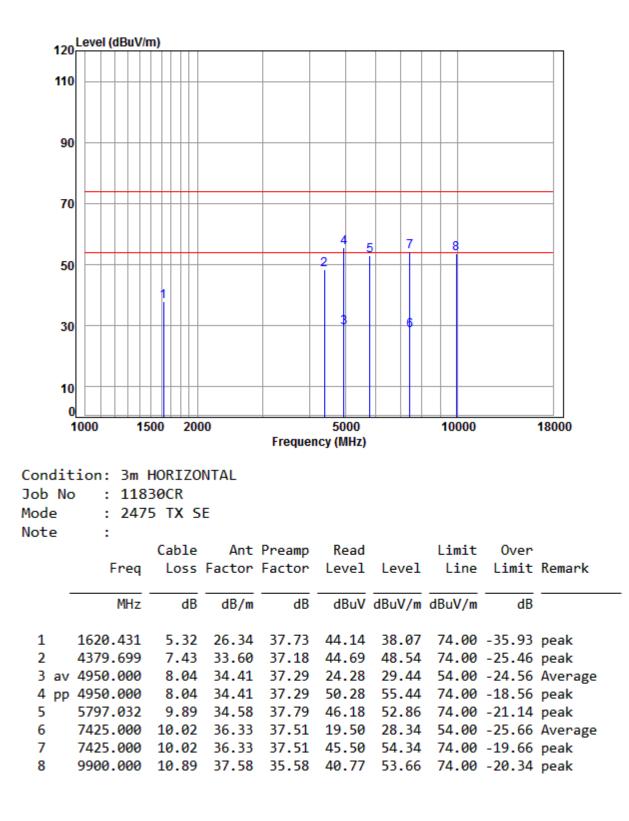


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sqs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this documents. This document be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 40 of 60

Mode:b; Polarization:Horizontal; Modulation:GFSK; ; Channel:High

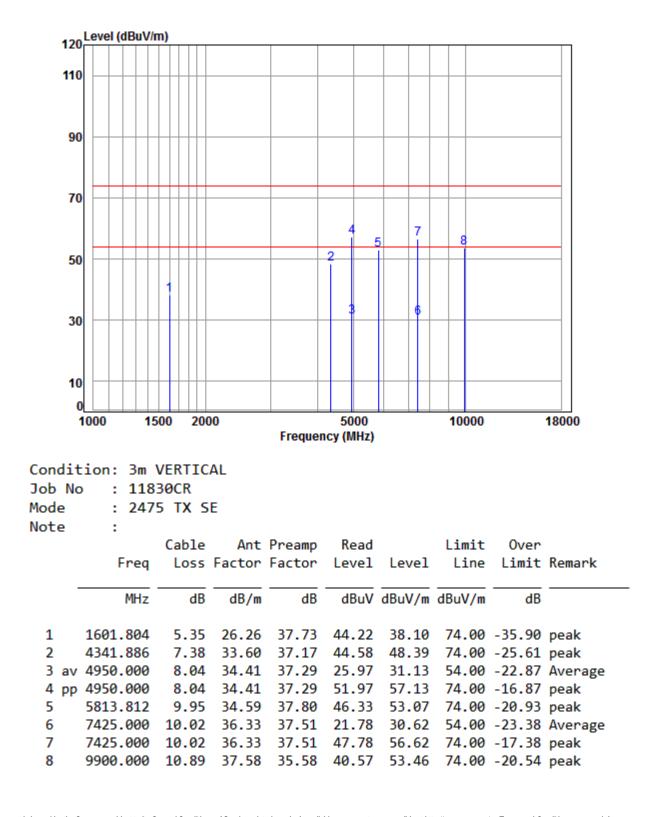


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM171101183001 Page: 41 of 60

Mode:b; Polarization:Vertical; Modulation:GFSK; ; Channel:High



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions/Ter



Report No.: SZEM171101183001 Page: 42 of 60

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

2) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-and-Conditions/Terms-en-Document.sgs.com/en/Terms-



Report No.: SZEM171101183001 Page: 43 of 60

8 Photographs

8.1 Test Setup

Refer to Setup Photos.

8.2 EUT Constructional Details

Refer to External Photos and Internal Photos.



Report No.: SZEM171101183001 Page: 44 of 60

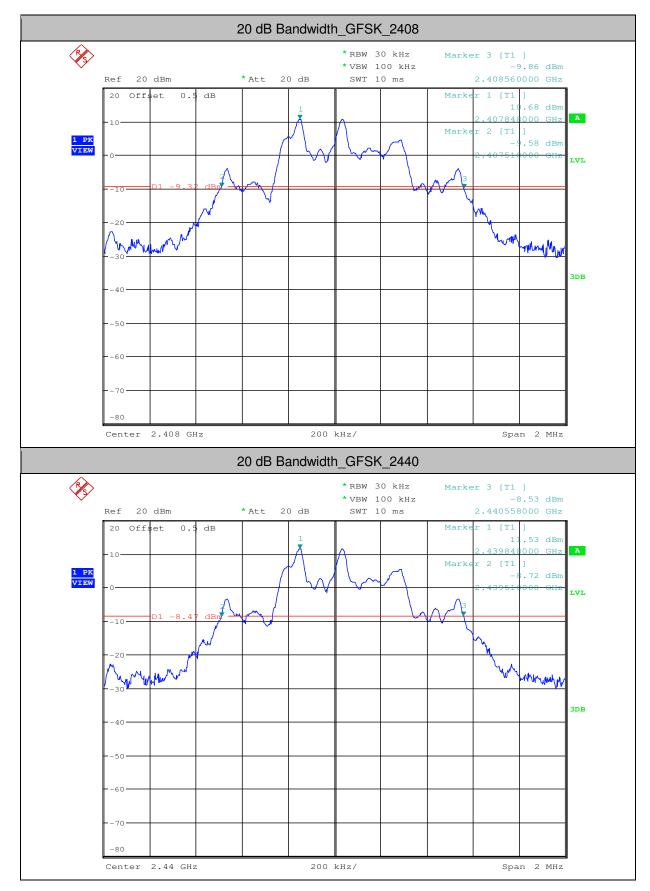
9 Appendix

1.20 dB Bandwidth

Test Mode	Test Channel	EBW[MHz]	Limit[MHz]	Verdict
GFSK	2408	1.050		PASS
GFSK	2440	1.048		PASS
GFSK	2475	1.050		PASS

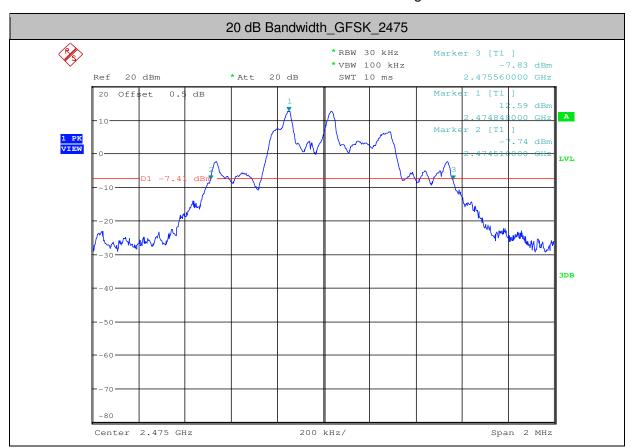


Report No.: SZEM171101183001 Page: 45 of 60





Report No.: SZEM171101183001 Page: 46 of 60

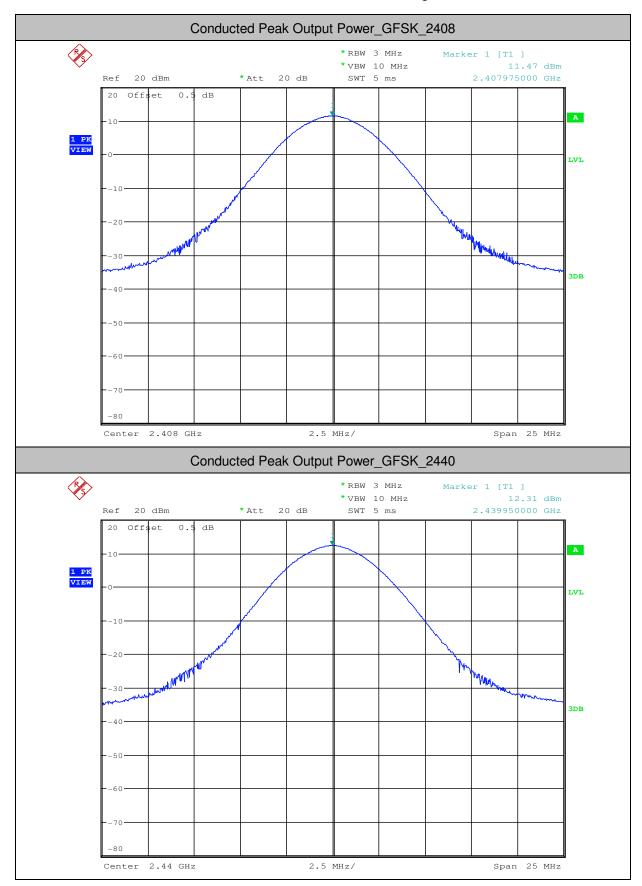


2.Conducted Peak Output Power

Test Mode	Test Channel	Power[dBm]	Limit[dBm]	Verdict
GFSK	2408	11.47	<=20.97	PASS
GFSK	2440	12.31	<=20.97	PASS
GFSK	2475	13.35	<=20.97	PASS

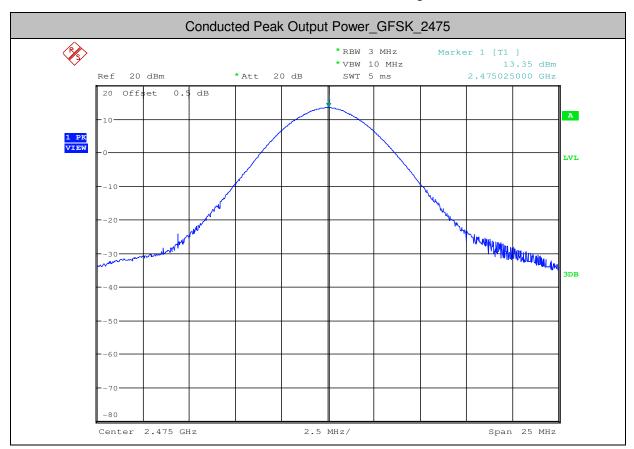


Report No.: SZEM171101183001 Page: 47 of 60





Report No.: SZEM171101183001 Page: 48 of 60

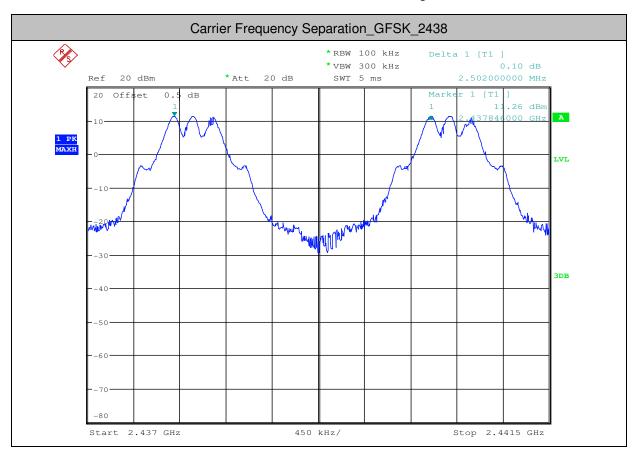


3.Carrier Frequency Separation

Test Mode	Test Channel	Result[MHz]	Limit[MHz]	Verdict
GFSK	2438	2.502	>=0.70	PASS



Report No.: SZEM171101183001 Page: 49 of 60

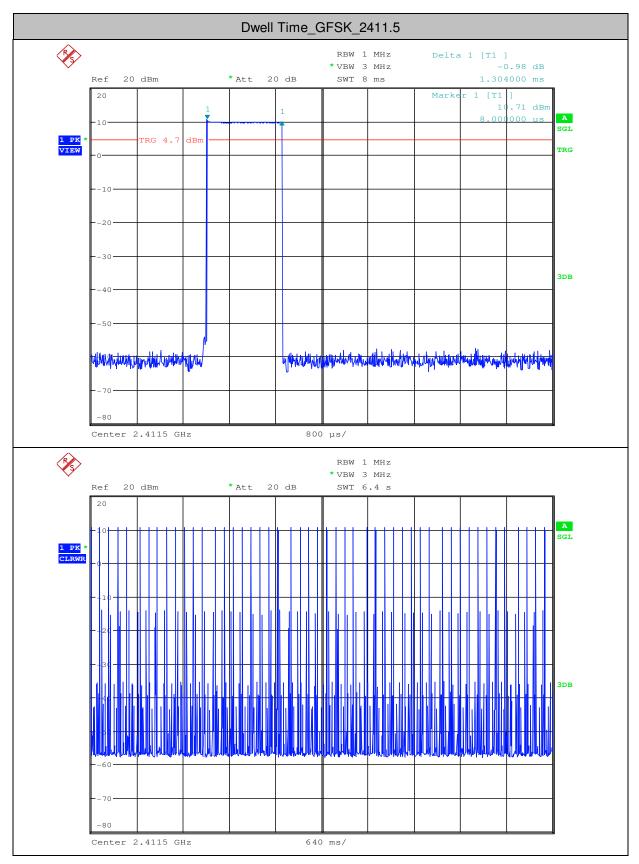


5.Dwell Time

Test Mode	Test Burst Channel Width[ms/hop/ch]		Total Hops[hop*ch]	Dwell Time[s]	Limit[s]	Verdict
GFSK	2411.5	1.3	48	0.063	<0.4	PASS



Report No.: SZEM171101183001 Page: 50 of 60





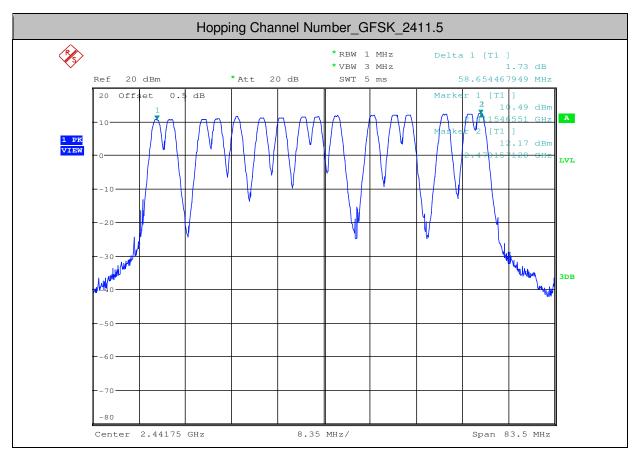
Report No.: SZEM171101183001 Page: 51 of 60

6.Hopping Channel Number

Test Mode	Test Channel	Number of Hopping Channel[N]	Limit[N]	Verdict
GFSK	2411.5	16	>=15	PASS



Report No.: SZEM171101183001 Page: 52 of 60

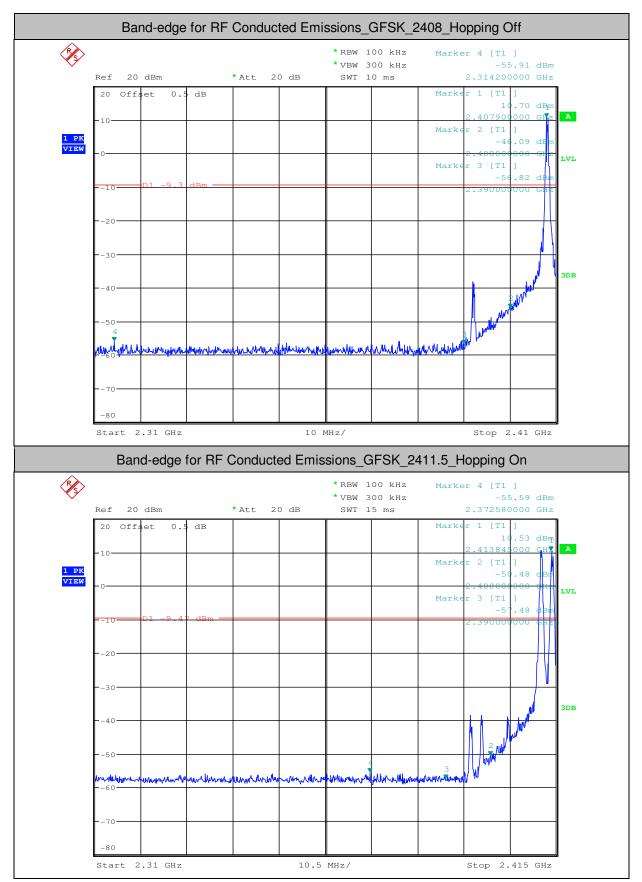


7.Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Hopping	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit[dBm]	Verdict
GFSK	2408	Off	10.700	-55.915	<-9.3	PASS
GFSK	2411.5	On	10.530	-55.587	<-9.47	PASS
GFSK	2470	On	12.200	-37.975	<-7.8	PASS
GFSK	2475	Off	12.570	-37.589	<-7.43	PASS

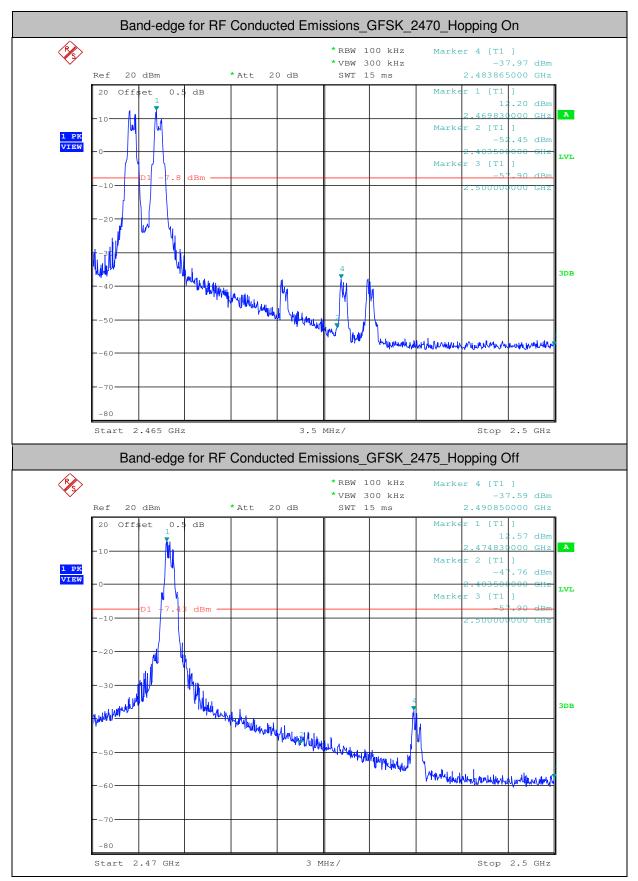


Report No.: SZEM171101183001 Page: 53 of 60





Report No.: SZEM171101183001 Page: 54 of 60





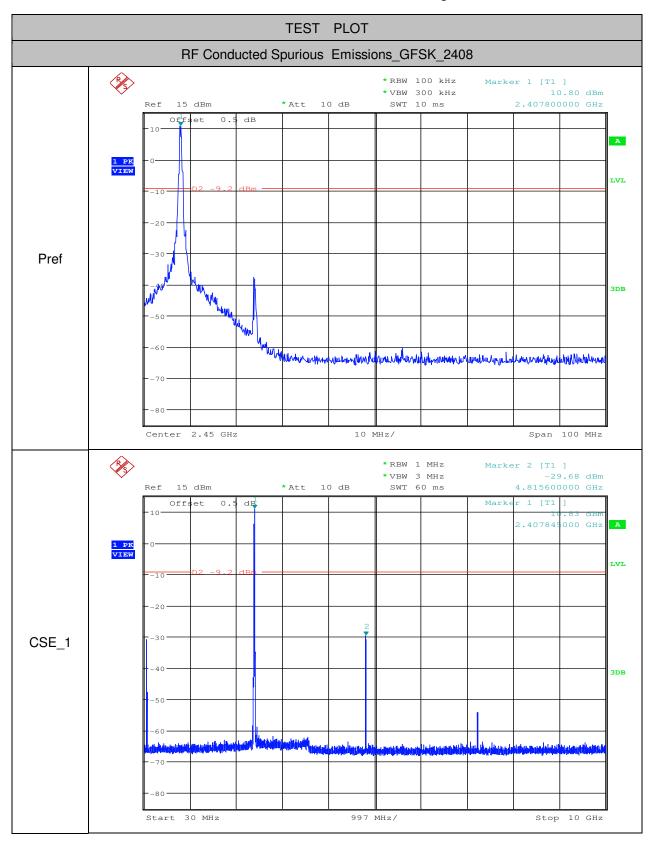
Report No.: SZEM171101183001 Page: 55 of 60

Max. Test StartFre StopFre RBW VBW Limit **Test Mode** Pref[dBm] Level Verdict [MHz] [dBm] Channel [MHz] [kHz] [kHz] [dBm] GFSK 2408 30 10000 1000 3000 -29.680 <-9.2 PASS 10.8 GFSK 2408 10000 25000 1000 3000 10.8 -62.540 <-9.2 PASS PASS GFSK 2440 30 10000 1000 3000 11.56 -29.450 <-8.44 PASS GFSK 2440 10000 25000 1000 3000 11.56 -62.110 <-8.44 GFSK 2475 30 10000 1000 3000 12.58 -27.070 <-7.42 PASS GFSK 2475 10000 25000 1000 3000 12.58 -62.270 <-7.42 PASS

8.RF Conducted Spurious Emissions

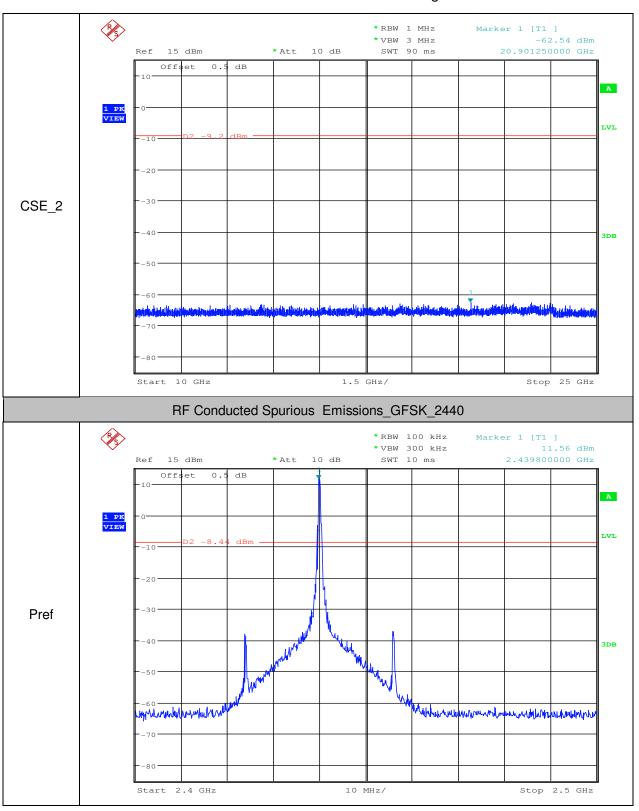


Report No.: SZEM171101183001 Page: 56 of 60



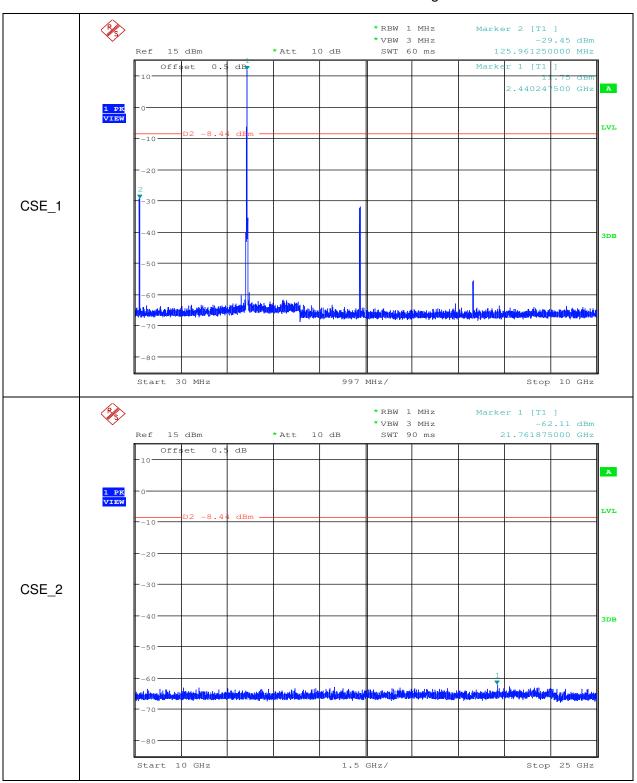


Report No.: SZEM171101183001 Page: 57 of 60



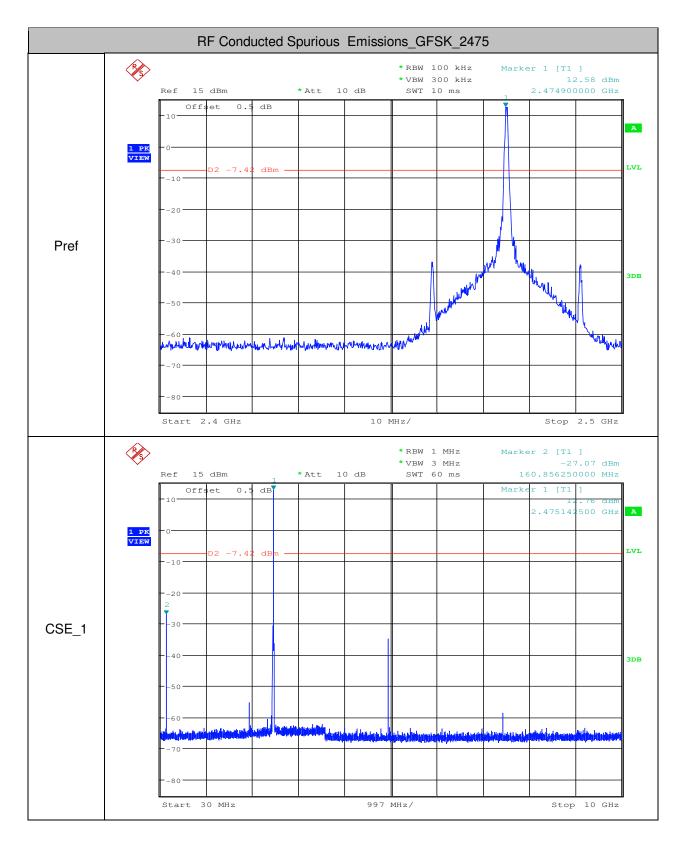


Report No.: SZEM171101183001 Page: 58 of 60



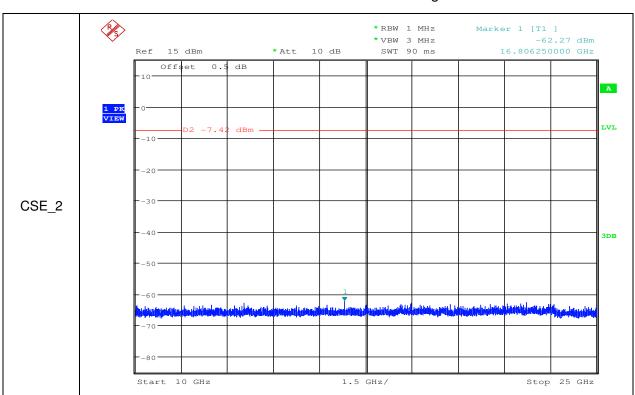


Report No.: SZEM171101183001 Page: 59 of 60





Report No.: SZEM171101183001 Page: 60 of 60



- End of the Report -