

RADIO TESTREPORT

S

Report No:STS1904087W02

Issued for

People and Technology

Hayoung Building 3F, 24, Samsung-ro 104-gil, Gangnam-gu, Seoul, South Korea

BLE USB TYPE SCANNER
N/A
IP-BS-US
N/A
2AS6EIP-BS-US
FCC Part 15.247

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Report No.:STS1904087W02



TEST RESULT CERTIFICATION

Applicant's Name	People and Technology
Address	Hayoung Building 3F, 24, Samsung-ro 104-gil, Gangnam-gu, Seoul, South Korea
Manufacture's Name	People and Technology
Address	Hayoung Building 3F, 24, Samsung-ro 104-gil, Gangnam-gu, Seoul, South Korea
Product Description	
Product Name:	BLE USB TYPE SCANNER
Brand Name:	N/A
Model Name:	IP-BS-US
SeriesModel	N/A
Test Standards	FCC Part15.247
Test Procedure:	ANSI C63.10-2013

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test

Date (s) of performance of tests	22 Apr. 2019 ~ 24 Apr. 2019
Date of Issue	25 Apr. 2019

Test Result Pass

Testing Engineer : (Chris chen) Technical Manager : (Sunday Hu) Authorized Signatory : (Sunday Hu)

(Vita Li)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	25 Apr. 2019	STS1904087W02	ALL	Initial Issue



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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: KDB 558074 D01 15.247 Meas Guidance v05r02

FCC Part 15.247,Subpart C				
Standard Section	Test Item	Judgment	Remark	
15.207	Conducted Emission	PASS		
15.247 (a)(2)	6dB Bandwidth	PASS		
15.247 (b)(3)	Output Power	PASS		
15.247 (c)	Radiated Spurious Emission	PASS		
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS		
15.247 (e)	Power Spectral Density	PASS		
15.205	Restricted Band Edge Emission	PASS		
Part 15.247(d)/part 15.209(a)	Band Edge Emission	PASS		
15.203	Antenna Requirement	PASS		

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2) all tests are according to ANSI C63.10-2013 .

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1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd. Add. : 1/F., Building B, Zhuoke Science Park, No.190,Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong,China FCC test Firm Registration Number: 625569

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y \pm U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

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No.	Item	Uncertainty
1	RF output power, conducted	±0.71dB
2	Unwanted Emissions, conducted	±0.63dB
3	All emissions, radiated 30-200MHz	±3.43dB
4	All emissions, radiated 200MHz-1GHz	±3.57dB
5	All emissions, radiated>1G	±4.13dB
6	Conducted Emission(9KHz-150KHz)	±3.18dB
7	Conducted Emission(150KHz-30MHz)	±2.70dB



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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	BLE USB TYPE SCANNER		
Trade Name	N/A		
Model Name	IP-BS-US		
Series Model	N/A		
Model Difference	N/A		
Product Description	The EUT is aBLEOperation Frequency:Modulation Type:Modulation Type:Bit Rate of Transmitter:Number of Channel: Antenna Designation: AntennaGain (dBi):Duty Cycle:	E USB TYPE SCANNER 802.11b/g/n 20: 2412~2462 MHz 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20MHz): 65/58.5/52/39/26/19.5/13/6.5Mbps 802.11b/g/n20: 11CH Please see Note 3. 3.1 dBi >98%	
Channel List	Please refer to the	Note 2.	
Power Rating	DC 5V		
Hardware version number	0.4		
Software versionnumber	3.06		
Connecting I/O Port(s)	Please refer to the User's Manual		

Note:

1 For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

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Operation Frequency of channel				
802.11b/g/n(20MHz)				
Channel	Frequency			
01	2412			
02	2417			
03	2422			
04	2427			
05	2432			
06	2437			
07	2442			
08	2447			
09	2452			
10	2457			
11	2462			

3 Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, themiddle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below: Carrier Frequency Channel

2.4GHz Test Frequency:

For 802.11b/g/n (HT20)			
Channel Freq.(MHz)			
01	2412		
06	2437		
11	2462		

3

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	IP-BS-US	Ceramic	N/A	3.1 dBi	WLAN Antenna

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2.2 DESCRIPTION OF THE TEST MODES

Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11b CH1	1 Mbps
Mode 2	TX IEEE 802.11b CH6	1 Mbps
Mode 3	TX IEEE 802.11 b CH11	1 Mbps
Mode 4	TX IEEE 802.11g CH1	6 Mbps
Mode 5	TX IEEE 802.11g CH6	6 Mbps
Mode 6	TX IEEE 802.11g CH11	6 Mbps
Mode 7	TX IEEE 802.11n HT20 CH1	MCS 0
Mode 8	TX IEEE 802.11n HT20 CH6	MCS 0
Mode 9	TX IEEE 802.11n HT20 CH11	MCS 0

Note:

- (1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported
- (2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz
- and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V /60Hz is shown in the report

AC Conducted Emission

	Test Case			
AC Conducted	Mada10: Kaaping WIELTY			
Mode10: Keeping WIFI TX Emission				

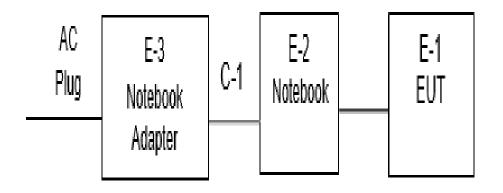


2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiation Test Set



conduction Test Set



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2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
N/A	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
E-2	Notebook	HP	500-320cx	N/A	N/A
E-3	Notebook Adapter	HP	HSTNN-CA15	N/A	N/A
C-1	DC Cable	N/A	100cm	N/A	N/A

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in $\[\]$ Length $\[\]$ column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".



2.5 EQUIPMENTS LISTS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
Signal Analyzer	Agilent	N9020A	MY51110105	2019.03.02	2020.03.01
Active loop Antenna	ZHINAN	ZN30900C	16035	2018.03.11	2021.03.10
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2020.11.1
Horn Antenna	SCHWARZBECK	BBHA 9120D(1201)	9120D-1343	2018.10.19	2021.10.18
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2018.03.11	2021.03.10
Pre-Amplifier(0.1M-3G Hz)	EM	EM330	060665	2018.10.13	2019.10.12
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK201808090 1	2018.10.13	2019.10.12
Temperature & Humidity	HH660	Mieo	N/A	2018.10.11	2019.10.10
turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
LISN	R&S	ENV216	101242	2018.10.11	2019.10.10
LISN	EMCO	3810/2NM	23625	2018.10.11	2019.10.10
Temperature & Humidity	HH660	Mieo	N/A	2018.10.11	2019.10.10

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
USB RF power sensor	DARE	RPR3006W	15100041SNO03	2018.10.13	2019.10.12
Signal Analyzer	Agilent	N9020A	MY49100060	2018.10.13	2019.10.12
Temperature & Humidity	HH660	Mieo	N/A	2018.10.11	2019.10.10

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3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

operating frequency band. In case the emission fall within the restricted band specified on Part 15. 207(a) limit in the table below has to be followed.

	Conducted Emissionlimit (dBuV)		
FREQUENCY (MHz)	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	
0.50 -5.0	56.00	46.00	
5.0 -30.0	60.00	50.00	

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

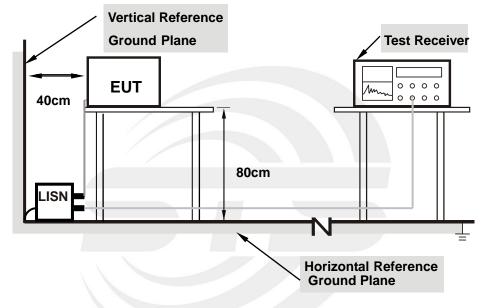
Receiver Parameters	Setting	
Attenuation	10 dB	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

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3.1.2 TEST PROCEDURE

- a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.



3.1.3 TEST SETUP

Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



3.1.5 TEST RESULT

Temperature:	25.9 ℃	Relative Humidity:	65%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 10		

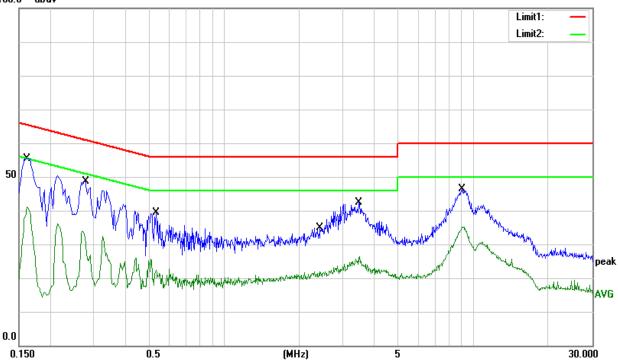
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1620	35.17	20.23	55.40	65.36	-9.96	QP
2	0.1620	15.79	20.23	36.02	55.36	-19.34	AVG
3	0.2780	28.09	20.61	48.70	60.88	-12.18	QP
4	0.2780	11.80	20.61	32.41	50.88	-18.47	AVG
5	0.5340	19.01	20.44	39.45	56.00	-16.55	QP
6	0.5340	0.54	20.44	20.98	46.00	-25.02	AVG
7	2.4220	14.87	20.03	34.90	56.00	-21.10	QP
8	2.4220	6.25	20.03	26.28	46.00	-19.72	AVG
9	3.4660	22.43	19.97	42.40	56.00	-13.60	QP
10	3.4660	2.64	19.97	22.61	46.00	-23.39	AVG
11	9.0180	26.22	20.07	46.29	60.00	-13.71	QP
12	9.0180	12.83	20.07	32.90	50.00	-17.10	AVG

Remark:

1. All readings are Quasi-Peak and Average values.

2. Margin = Result (Result = Reading + Factor)-Limit

100.0 dBuV



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Temperature:	25.9 ℃	Relative Humidity:	65%RH
Test Voltage:	AC 120V/60Hz	Phase:	Ν
Test Mode:	Mode 10		

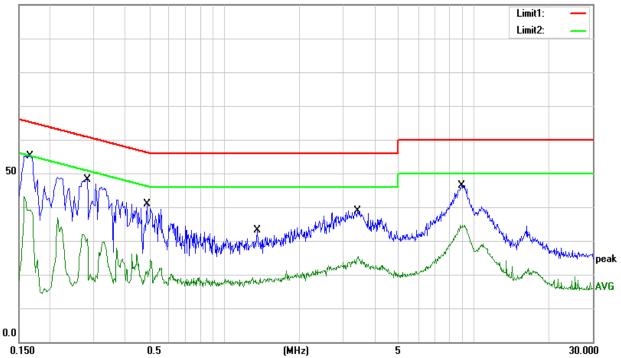
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1660	34.91	20.23	55.14	65.16	-10.02	QP
2	0.1660	16.68	20.23	36.91	55.16	-18.25	AVG
3	0.2820	27.57	20.63	48.20	60.76	-12.56	QP
4	0.2820	8.95	20.63	29.58	50.76	-21.18	AVG
5	0.4900	20.47	20.48	40.95	56.17	-15.22	QP
6	0.4900	1.43	20.48	21.91	46.17	-24.26	AVG
7	1.3540	13.00	20.12	33.12	56.00	-22.88	QP
8	1.3540	2.52	20.12	22.64	46.00	-23.36	AVG
9	3.4180	18.81	19.97	38.78	56.00	-17.22	QP
10	3.4180	5.91	19.97	25.88	46.00	-20.12	AVG
11	8.9420	26.42	20.06	46.48	60.00	-13.52	QP
12	8.9420	8.97	20.06	29.03	50.00	-20.97	AVG

Remark:

1. All readings are Quasi-Peak and Average values.

2. Margin = Result (Result = Reading + Factor)-Limit

100.0 dBu¥



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3.2 RADIATED EMISSION MEASUREMENT

3.2.1RADIATED EMISSION LIMITS

in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

Frequencies	Field Strength	Measurement Distance
(MHz)	(micorvolts/meter)	(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

LIMITS OF RADIATED EMISSION MEASUREMENT (1000MHz-25GHz)

FREQUENCY (MHz)	(dBuV/	m) (at 3M)
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted	1 MHz /3MHz
band)	
For Band edge	

9	
Spectrum Parameter	Setting
Detector	Peak/AV
Stort/Ston Fraguency	Lower Band Edge: 2300 to 2412 MHz
Start/Stop Frequency	Upper Band Edge: 2462to 2500 MHz
RB / VB (emission in restricted band)	1 MHz /3MHz

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Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz/9kHz for PK & AV/QP
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

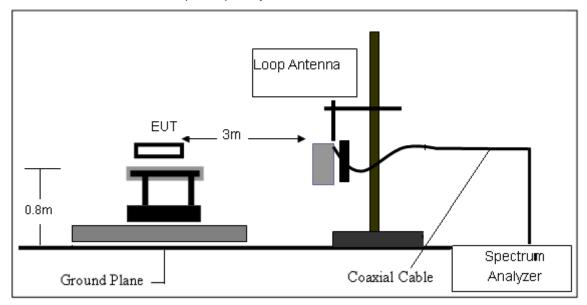
- a. The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz
- b. The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m(above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarizations of the antenna are set to make the measurement
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

Both horizontal and vertical antenna polarities were testedand performed test to three orthogonal axis. The worst case emissions were reported

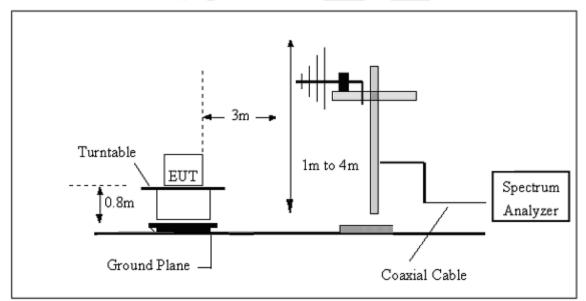


3.2.3 TEST SETUP

(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz

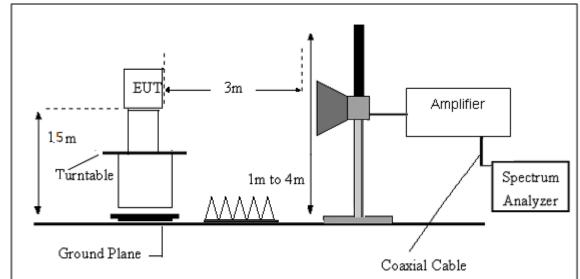


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(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.





3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AGWhere FS = Field Strength CL = Cable Attenuation Factor (Cable Loss) RA = Reading Amplitude AG = Amplifier Gain AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG



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3.2.6 TEST RESULT

9KHz-30MHz

Temperature:	24.6℃	Relative Humidtity:	70%
Test Voltage:	DC 5V	Polarization:	
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State	Test
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F	Result
					PASS
					PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



Shenzhen STS Test Services Co., Ltd.



(30MHz - 1000MHz)

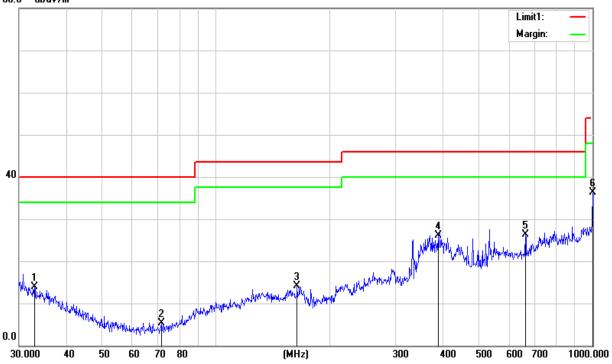
Temperature:	24.6 ℃	Relative Humidtity:	70%	
Test Voltage:	DC 5V	Polarization :	Horizontal	
Test Mode:	Mode 1/2/3/4/5/6/7/8/9 (Mode 1 worst mode)			

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	32.9791	26.55	-12.72	13.83	40.00	-26.17	QP
2	71.5806	29.25	-23.87	5.38	40.00	-34.62	QP
3	164.3301	32.92	-18.86	14.06	43.50	-29.44	QP
4	389.3548	38.09	-11.97	26.12	46.00	-19.88	QP
5	663.4728	32.53	-6.16	26.37	46.00	-19.63	QP
6	1000.0000	36.28	-0.07	36.21	54.00	-17.79	QP

Remark:

1. Margin = Result (Result = Reading + Factor)-Limit

80.0 dBuV/m





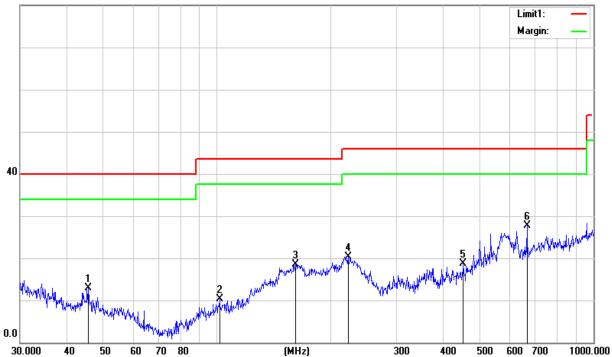
Page 25 of 57 Report No.:STS1904087W02

Temperature:	24.6℃	Relative Humidtity:	70%	
Test Voltage:	DC 5V	Polarization:	Vertical	
Test Mode:	Mode 1/2/3/4/5/6/7/8/9 (Mode 1 worst mode)			

No.	Frequency	Reading Correct		Result Limit		Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	45.5347	32.16	-19.18	12.98	40.00	-27.02	QP
2	101.6443	29.35	-19.05	10.30	43.50	-33.20	QP
3	161.4740	37.18	-18.62	18.56	43.50	-24.94	QP
4	222.9501	39.27	-18.93	20.34	46.00	-25.66	QP
5	451.1350	29.15	-10.46	18.69	46.00	-27.31	QP
6	665.8034	33.75	-6.11	27.64	46.00	-18.36	QP

Remark:.

80.0 dBuV/m



^{1.} Margin = Result (Result = Reading + Factor)–Limit



(1000MHz-25GHz) Restricted band and Spurious emission Requirements

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Orrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	001111011
				Low Cha	nnel (2412 N	/Hz)				
3264.62	61.06	44.70	6.70	28.20	-9.80	51.26	74.00	-22.74	PK	Vertical
3264.62	50.26	44.70	6.70	28.20	-9.80	40.46	54.00	-13.54	AV	Vertical
3264.59	61.48	44.70	6.70	28.20	-9.80	51.68	74.00	-22.32	PK	Horizontal
3264.59	51.13	44.70	6.70	28.20	-9.80	41.33	54.00	-12.67	AV	Horizontal
4824.56	58.78	44.20	9.04	31.60	-3.56	55.22	74.00	-18.78	PK	Vertical
4824.56	49.19	44.20	9.04	31.60	-3.56	45.63	54.00	-8.37	AV	Vertical
4824.56	58.47	44.20	9.04	31.60	-3.56	54.91	74.00	-19.09	PK	Horizontal
4824.56	50.59	44.20	9.04	31.60	-3.56	47.03	54.00	-6.97	AV	Horizontal
5359.79	48.67	44.20	9.86	32.00	-2.34	46.33	74.00	-27.67	PK	Vertical
5359.79	40.14	44.20	9.86	32.00	-2.34	37.80	54.00	-16.20	AV	Vertical
5359.63	47.44	44.20	9.86	32.00	-2.34	45.10	74.00	-28.90	PK	Horizontal
5359.63	38.33	44.20	9.86	32.00	-2.34	35.99	54.00	-18.01	AV	Horizontal
7235.86	53.52	43.50	11.40	35.50	3.40	56.92	74.00	-17.08	PK	Vertical
7235.86	44.27	43.50	11.40	35.50	3.40	47.67	54.00	-6.33	AV	Vertical
7235.85	54.59	43.50	11.40	35.50	3.40	57.99	74.00	-16.01	PK	Horizontal
7235.71	44.29	43.50	11.40	35.50	3.40	47.69	54.00	-6.31	AV	Vertical
				Middle Ch	annel (2437	MHz)				
3264.79	61.81	44.70	6.70	28.20	-9.80	52.01	74.00	-21.99	PK	Vertical
3264.79	51.11	44.70	6.70	28.20	-9.80	41.31	54.00	-12.69	AV	Vertical
3264.78	61.83	44.70	6.70	28.20	-9.80	52.03	74.00	-21.97	PK	Horizontal
3264.78	50.11	44.70	6.70	28.20	-9.80	40.31	54.00	-13.69	AV	Horizontal
4874.41	59.34	44.20	9.04	31.60	-3.56	55.78	74.00	-18.22	PK	Vertical
4874.41	49.73	44.20	9.04	31.60	-3.56	46.17	54.00	-7.83	AV	Vertical
4874.41	59.26	44.20	9.04	31.60	-3.56	55.70	74.00	-18.30	PK	Horizontal
4874.41	50.55	44.20	9.04	31.60	-3.56	46.99	54.00	-7.01	AV	Horizontal
5359.82	48.10	44.20	9.86	32.00	-2.34	45.76	74.00	-28.24	PK	Vertical
5359.82	40.03	44.20	9.86	32.00	-2.34	37.69	54.00	-16.31	AV	Vertical
5359.59	47.85	44.20	9.86	32.00	-2.34	45.51	74.00	-28.49	PK	Horizontal
5359.59	38.49	44.20	9.86	32.00	-2.34	36.15	54.00	-17.85	AV	Horizontal
7310.81	54.08	43.50	11.40	35.50	3.40	57.48	74.00	-16.52	PK	Vertical
7310.81	44.86	43.50	11.40	35.50	3.40	48.26	54.00	-5.74	AV	Vertical
7310.77	54.75	43.50	11.40	35.50	3.40	58.15	74.00	-15.85	PK	Horizontal
7310.77	44.39	43.50	11.40	35.50	3.40	47.79	54.00	-6.21	AV	Horizontal

802.11b

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				High C	hannel (246	2 MHz)				
3264.66	61.30	44.70	6.70	28.20	-9.80	51.50	74.00	-22.50	PK	Vertical
3264.66	51.40	44.70	6.70	28.20	-9.80	41.60	54.00	-12.40	AV	Vertical
3264.75	60.88	44.70	6.70	28.20	-9.80	51.08	74.00	-22.92	PK	Horizontal
3264.75	49.85	44.70	6.70	28.20	-9.80	40.05	54.00	-13.95	AV	Horizontal
4924.44	58.16	44.20	9.04	31.60	-3.56	54.60	74.00	-19.40	PK	Vertical
4924.44	49.15	44.20	9.04	31.60	-3.56	45.59	54.00	-8.41	AV	Vertical
4924.33	59.12	44.20	9.04	31.60	-3.56	55.56	74.00	-18.44	PK	Horizontal
4924.33	50.45	44.20	9.04	31.60	-3.56	46.89	54.00	-7.11	AV	Horizontal
5359.72	48.40	44.20	9.86	32.00	-2.34	46.06	74.00	-27.94	PK	Vertical
5359.72	40.04	44.20	9.86	32.00	-2.34	37.70	54.00	-16.30	AV	Vertical
5359.78	47.67	44.20	9.86	32.00	-2.34	45.33	74.00	-28.67	PK	Horizontal
5359.78	38.58	44.20	9.86	32.00	-2.34	36.24	54.00	-17.76	AV	Horizontal
7385.75	54.81	43.50	11.40	35.50	3.40	58.21	74.00	-15.79	PK	Vertical
7385.75	43.84	43.50	11.40	35.50	3.40	47.24	54.00	-6.76	AV	Vertical
7385.76	54.13	43.50	11.40	35.50	3.40	57.53	74.00	-16.47	PK	Horizontal
7385.76	43.77	43.50	11.40	35.50	3.40	47.17	54.00	-6.83	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. Scan with 802.11b, 802.11g, 802.11n (HT-20), the worst case is 802.11b.

Emission Level = Reading + Factor Margin = Limit - Emission Level

3. The frequency emission of peak points that did not show above the forms are at least 20dB below

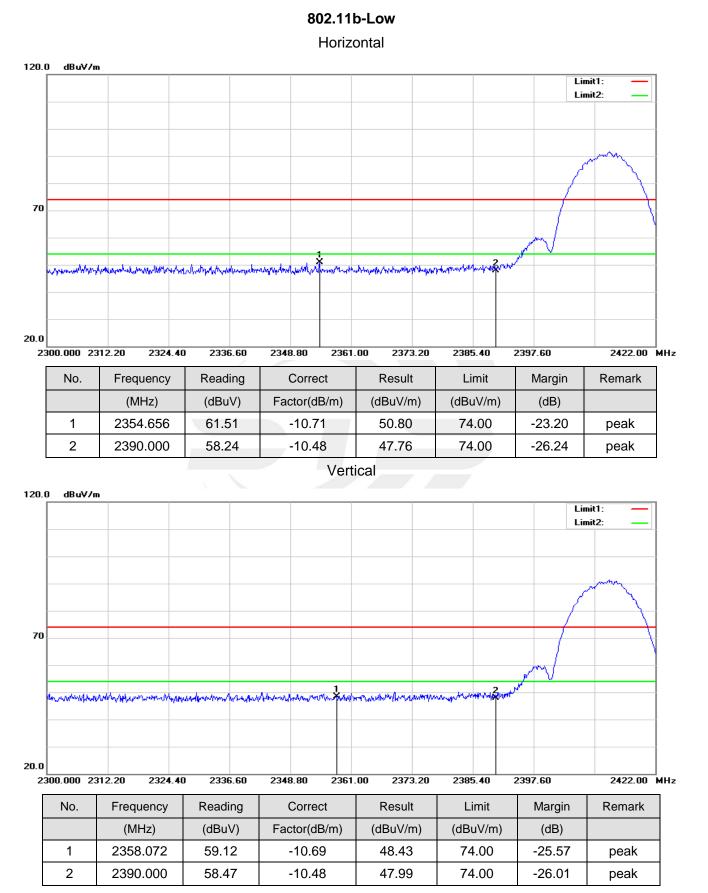
thelimit, the frequency emission is mainly from the environment noise.

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Report No.:STS1904087W02

3.2.6 TEST RESULTS(Band edge Requirements)



Shenzhen STS Test Services Co., Ltd.

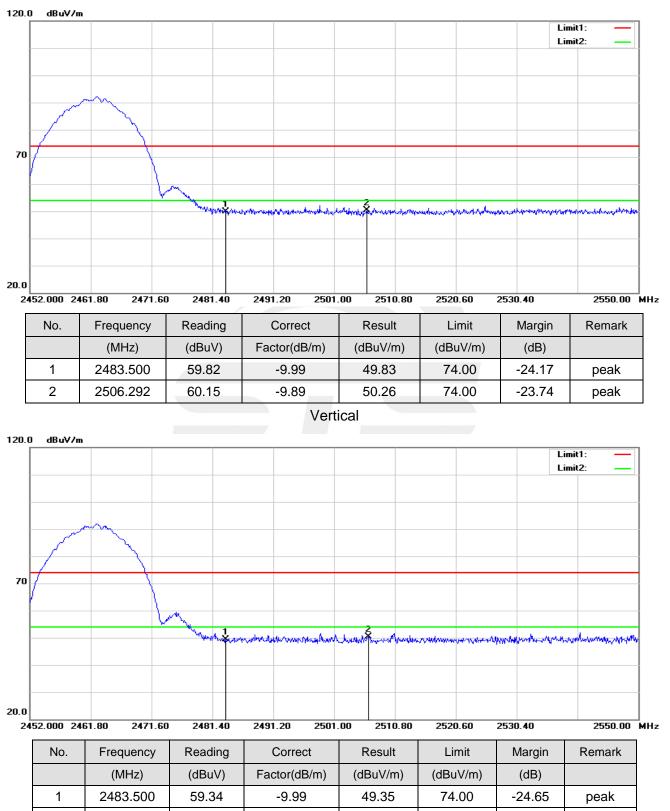
1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China Tel: + 86-755 3688 6288 Fax:+ 86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



Report No.:STS1904087W02

802.11b-High

Horizontal



Note: 802.11b, 802.11g, 802.11n (HT-20) mode all have been tested, the worst case is 802.11b, only show the worst case.

50.26

-9.89

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 6277
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-23.74

peak

74.00



4.CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 LIMIT

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

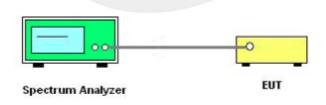
Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

For Band edge

Spectrum Parameter	Setting				
Detector	Peak Lower Band Edge: 2300 to 2412 MHz Upper Band Edge: 2462to 2500 MHz 100 KHz/300 KHz				
Stort/Stop Fraguenov	Lower Band Edge: 2300 to 2412 MHz				
Start/Stop Frequency	Upper Band Edge: 2462to 2500 MHz				
RB / VB (emission in restricted band)	100 KHz/300 KHz				
Trace-Mode:	Max hold				

4.3 DEVIATION FROM STANDARD No deviation.

4.4 TEST SETUP



The EUT which is powered by the PC, is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

4.5 EUT OPERATION CONDITIONS

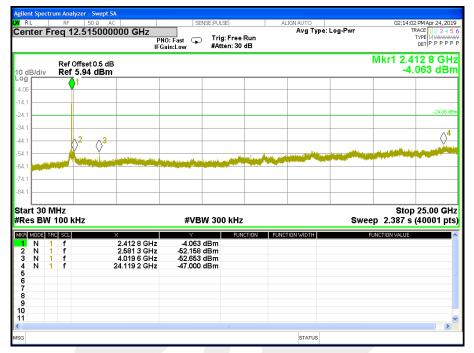
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



4.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX b Mode /CH01, CH06, CH11

CH 01



CH	0C
	UD
U	00

RL	RF	50 Ω	AC	SEN	SE:PULSE	AL	IGN AUTO		02:16:	:27 PM Apr 24, 20
enter	Freq	12.51500	10000 GHz F	PNO: Fast 😱 Gain:Low	Trig: Free F #Atten: 30 c		Avg Type:	Log-Pwr		TRACE 1 2 3 4 TYPE MWWWW DET P P P P
dB/div		Offset 0.5 of f 6.23 dB								436 5 GH 3.774 dB
77		0 1								
.8										
.8										-23.77 c
.8										
.8		2 13	3							\rightarrow
.8		V V	d at a		day	an Minan at th		يبيا والمأسا سيستيه وال		And State
.8		" Withdaw								
.8 8.										
.8										
art 30 es BV	MHz N 100	kHz		#VBV	V 300 kHz			Swe	Sto ep 2.387 s	p 25.00 Gł s (40001 pi
	TRC SCL		X	Y	FUNC	TION FUNC	TION WIDTH		FUNCTION VALUE	
N N	1 f 1 f		2.436 5 GHz 2.508 9 GHz	-3.774 c -51.894 c	dBm					
	1 f		4.062 7 GHz 24.317 1 GHz	-52.901 c -47.861 c						
N										
N										
N										
Ň										>



CH 11

	spectru		lyzer - Swept SA								
RL		RF	50 Ω AC		SEI	VSE:PULSE		ALIGNAUTO AVG Type:	La a Daan	02:18	3:35 PM Apr 24, 201 TRACE 1 2 3 4 5
Cente	er Fro	eq 1	2.5150000		0: Fast 😱	Trig: Free F	Run	Avg Type:	Log-Pwr		TYPE M WAAAAAA
				IFG	ain:Low	#Atten: 30 c	IB				DETPPPP
		Rof	Offset 0.5 dB								460 8 GH
0 dB/	div		3.43 dBm							-	6.575 dBr
-og 6.57			1								
16.6											-26.57 dE
26.6											-26.57 dE
36.6											
46.6		_	2 3								<u>2</u>
56.6			Y L	and the second		. North State	THE R. LANSING	a second base			
6.6 📕				and a state of the state of the	de la casa d		Server Server				
6.6											
36.6											
	30 M										op 25.00 GH
Res	BW 1	100 H	Hz		#VB	N 300 kHz			Swe	ep 2.387	s (40001 pt
	DE TRO		X		Y	FUNC	TION FUN	ICTION WIDTH		FUNCTION VALU	
1 N 2 N		f		2.460 8 GHz 2.532 6 GHz	-6.575 -53.406						
3 N	1 1	f	4	1.103 2 GHz	-54.858	dBm					
	1 1	f	24	1.226 6 GHz	-48.784	dBm					
5 6											
5											
5 6 7 8 9											
5 6 7 8 9											
5 6 7											



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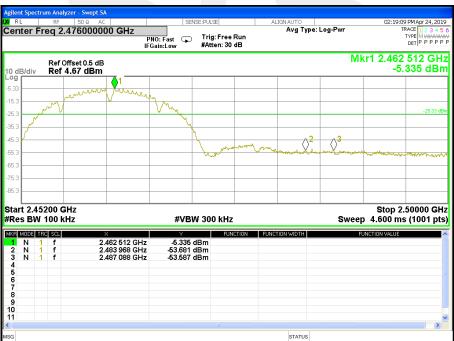


Band edge

CH 01



CH 11





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Report No.:STS1904087W02

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX g Mode /CH01, CH06, CH11

CH 01



CH06

RL	rum Analyz RF	50 Ω AC		SENSE:PULSE	ALIGN AUTO		02:09:30 PM Apr 24, 20
		515000000 GI			Avg Type:	Log-Pwr	TRACE 1 2 3 4 TYPE MWWW DET P P P P
dB/div		set 0.5 dB .16 dBm				Mk	r1 2.435 9 GH -14.162 dB
2							
.2							
							-34.16
.2							
2	2	3					
2		alan tana ang katalan	and the second sec	and a manufacture of the state	And an and the second second		
2		And a second		li la contra de la c			
2							
2							
2							
art 30 I es BW	MHZ 100 kH	z	#VI	BW 300 kHz		Sweep 2	Stop 25.00 G 2.387 s (40001 p
R MODE T		×	Y	FUNCTION	FUNCTION WIDTH	FUNCTION	DN VALUE
N N	1 f 1 f	2.435 9 2.518 9		2 dBm 8 dBm			
N	1 f	5.647 6	GHz -56.29	8 dBm			
N	1 f	24.301 5	GHz -4/.//	5 dBm			
7 3 3 1 1					STATUS		



CH 11

ilent Spe	ectrur	n Ana RE	<mark>lyzer - Swept</mark> 50 Ω /		Lon	NSE:PULSE		JGN AUTO		20.07.4	0.0144-004-0046
	Fre			0000 GHz	PNO: Fast Gain:Low		lun	Avg Type:	Log-Pwr		12 PM Apr 24, 2019 IRACE 1 2 3 4 5 TYPE MWWWMM DET P P P P P
) dB/di			Offset 0.5 dl -6.77 dBr								63 3 GHz .771 dBm
6.8			1								
6.8											
6.8											-36.77 dB
6.8			\Diamond^2	\bigcirc^3				and the second	and the second		
5.8 5.8	di din						ang bingin				
5.8											
5.8											
6.8											
tart 3 Res B			(Hz		#VB	W 300 kHz			Swe	Stop ep 2.387 s	o 25.00 GH (40001 pts
Te Mode 1 N 2 N 3 N 4 N 5	E TRC 1 1 1	SCL f f f		× 2.463 3 GHz 3.159 4 GHz 5.799 9 GHz 24.528 1 GHz	-16.771 -57.398 -57.082 -48.423	dBm dBm	TION FUNC	TION WIDTH		FUNCTION VALUE	
5 7 3 9 0											
3								STATUS			



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Band edge

CH 01



CH11



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Report No.:STS1904087W02

Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX n Mode(20M) /CH01, CH06, CH11

CH 01

		ctrun		lyzer - Swept									
X/R		Fre	RF	50 Ω	AC 0000 GHz	SE	NSE:PULSE		ALI	GNAUTO Avg Type:	Log-Pwr	01	:59:10 PM Apr 24, 201 TRACE 1 2 3 4 5
Cerr	lei	110	'Y I	2.51500	Р	NO: Fast 🖵 Gain:Low	Trig: Fr #Atten:						DET P P P P
			D . 6			Junicow						Mkr1	2.410 3 GH
10 dl	B/div			Offset 0.5 d -8.82 dB									18.824 dBr
-18.8				1									
-28.8													
-38.8													-38.82 dB
-48.8	<u> </u>			<u>2</u>	3						n		$\sum_{i=1}^{n}$
-58.8	استنبان ا	الاداني		V	X	THE PERMIT		Part and	ul grade	and the second			Sector Suffrance
-68.8		~ 11											
-78.8	\vdash												
-88.8													
-98.8													
Star #Re				Hz		#VB	W 300 KI	Ηz			Sw		top 25.00 GH 7 s (40001 pts
MKR		TRC			Х	Y		UNCTION	FUNCT	ON WIDTH		FUNCTION VA	LUE
1 2 3	N N N	1 1 1	f f		2.410 3 GHz 3.161 9 GHz 5.902 3 GHz	-18.824 -57.113 -56.721	dBm dBm						
4	N	1	f		24.454 4 GHz	-49.097	dBm						
67													
8 9													
10 11													
<													>
SG										STATUS			

CH 06

gilent Spectr	rum Analyzer - Si	wept SA						
RL	RF 50		SENSE:PULS	E	ALIGNAUTO	_		4 Apr 24, 201
Center F	req 12.515			: Free Run en: 30 dB	Avg Type: I	Log-Pwr	TY	2E 1 2 3 4 5 PE MWWWW ET P P P P P
0 dB/div	Ref Offset 0 Ref8.22						Mkr1 2.43 -18.2	5 9 GH: 19 dBn
18.2	1							
28.2								-38.22 dE
18.2	2	03						\sim
			ang bana ang panang di kapa ang bahar kara					
68.2								
8.2								
8.2								
tart 30 N Res BW	viHz 100 kHz		#VBW 300) kHz		Swee	Stop 2 p 2.387 s(4	5.00 GH 0001 pt
KR MODE TH		× 2.435 9 GHz	ĭ -18.219 dBm	FUNCTION	FUNCTION WIDTH	FL	JNCTION VALUE	
2 N 1 3 N 1	f	3.249 3 GHz 5.821 2 GHz	-54.513 dBm -56.966 dBm					
4 N 1 5		24.278 4 GHz	-47.659 dBm					
6 7								
8								
9 0 1								
0					STATUS			

П



CH 11

RL	rn Analyzer - Sw	Vept SA	SENSE:PULSE		ALIGNAUTO		02:04:11	. PM Apr 24, 2019
		000000 GHz	NO: Fast Trig: I	Free Run n: 30 dB	Avg Type:	Log-Pwr	TR	TYPE M WWWWWW DET P P P P P
0 dB/div	Ref Offset 0 Ref -7.99						Mkr1 2.40 -17.	65 8 GHz 991 dBm
8.0	1							
8.0								-37.99 dB
3.0	2	<u>^3</u>						\bigcirc
3.0 					and a sufficient			
3.0								
3.0								
3.0	IHz						Stop	25.00 GH
a.o a.o tart 30 M Res BW 1	100 kHz		#VBW 300	kHz			ep 2.387 s	25.00 GH (40001 pt
art 30 M Res BW 1 8 M009 rec 2 N 1 2 N 1 3 N 1 4 N 1	100 kHz	X 2.465 8 GHz 3.283 0 GHz 5.857 4 GHz 24.323 9 GHz	#VBW 300 -17.991 dBm -52.830 dBm -55.867 dBm -48.708 dBm		CTION WIDTH			
a.0 cart 30 Mi Res BW 1 F MODE I Re N 1 N 1 2 N 1 3 N 1	100 kHz f f f	2.465 8 GHz 3.283 0 GHz 5.857 4 GHz	-17.991 dBm -52.830 dBm -55.867 dBm		CTION WIDTH		ep 2.387 s	
art 30 M art 30	100 kHz f f f	2.465 8 GHz 3.283 0 GHz 5.857 4 GHz	-17.991 dBm -52.830 dBm -55.867 dBm	FUNCTION FUN	CTION WIDTH		ep 2.387 s	



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Band edge

CH 01



CH 11



Shenzhen STS Test Services Co., Ltd.



5. POWER SPECTRAL DENSITY TEST

5.1 LIMIT

FCC Part15.247 , Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(e)	Power Spectral Density	≤8 dBm (RBW ≥3KHz)	2400-2483.5	PASS	

5.2 TEST PROCEDURE

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS channel bandwidth.
- 3. Set the 100 kHz \geq RBW \geq 3 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3 DEVIATION FROM STANDARD No deviation.

5.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



5.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX b Mode /CH01, CH06, CH11

Frequency	Power Density	Limit (dPm/2KHz)	Popult	
Frequency	(dBm/3kHz)	Limit (dBm/3KHz)	Result	
2412 MHz	-18.09	≤8	PASS	
2437 MHz	-18.322	≤8	PASS	
2462 MHz	-20.268	≤8	PASS	

TX CH01



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TX CH11





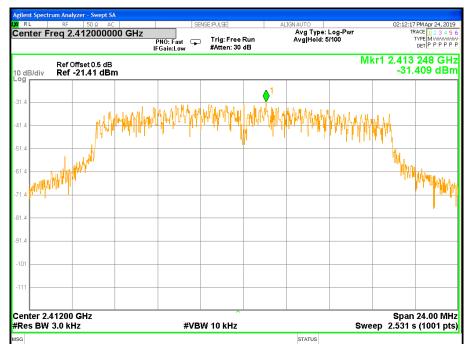
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Report No.:STS1904087W02

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX g Mode /CH01, CH06, CH11

Frequency	Power Density	Limit (dBm/3KHz)	Pocult	
Frequency	(dBm/3kHz)		Result	
2412 MHz	-31.409	≤8	PASS	
2437 MHz	-30.076	≤8	PASS	
2462 MHz	-31.948	≤8	PASS	

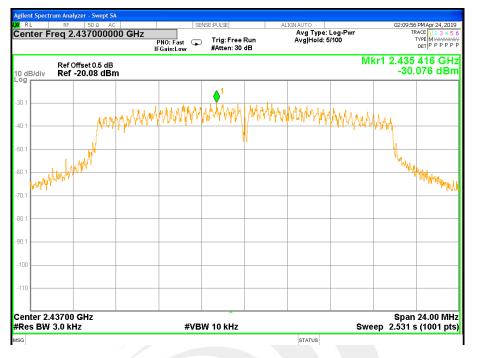
TX CH01



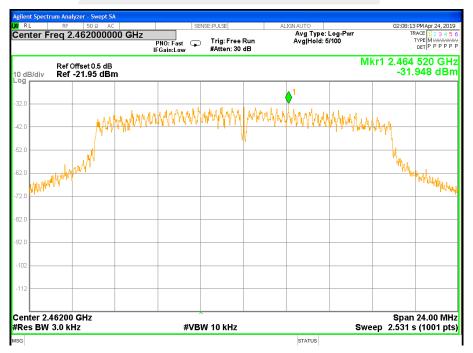
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TX CH11





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Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX n Mode(20M) /CH01, CH06, CH11

Fraguanay	Power Density	Limit (dBm/2KHz)	Deput	
Frequency	(dBm/3kHz)	Limit (dBm/3KHz)	Result	
2412 MHz	-29.807	≤8	PASS	
2437 MHz	30.555	≤8	PASS	
2462 MHz	-32.388	≤8	PASS	

TX CH01

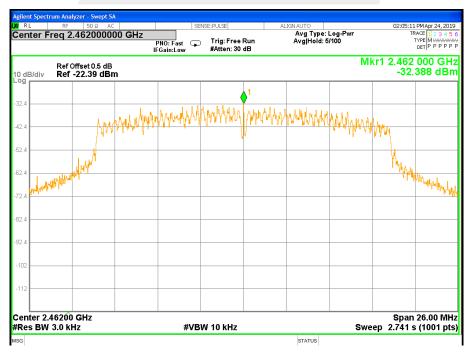


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TX CH11





6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15.247,Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(a)(2)	Bandwidth	≥500KHz (6dB bandwidth)	2400-2483.5	PASS	

6.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW \geq 3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be \geq 6 dB.

6.3 DEVIATION FROM STANDARD No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



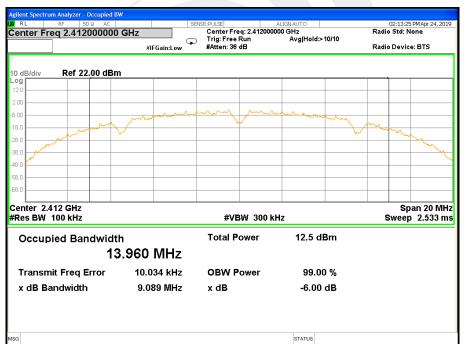
6.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX b Mode /CH01, CH06, CH11

Remark: PEAK DETECTOR IS USED

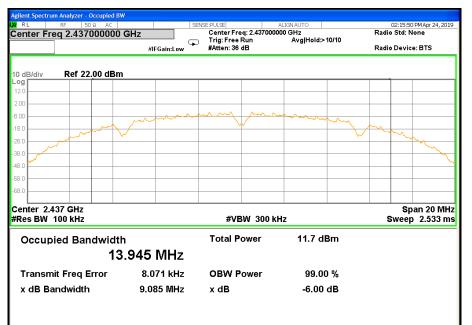
Frequency	6dB Bandwidth	Channel Separation	Result
ricqueriey	(MHz)	(KHz)	Rooun
2412 MHz	9.089	≥500KHz	PASS
2437 MHz	9.085	≥500KHz	PASS
2462 MHz	9.091	≥500KHz	PASS

TX CH 01



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TX CH 11

STATUS





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Report No.:STS1904087W02

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX g Mode /CH01, CH06, CH11

Frequency	6dB Bandwidth	Channel Separation	Result
	(MHz)	(KHz)	rtesuit
2412 MHz	15.09	≥500KHz	PASS
2437 MHz	15.11	≥500KHz	PASS
2462 MHz	15.10	≥500KHz	PASS

TX CH 01

gilent Spectrum Analyzer - Occupied BV RL RF 50 Ω AC		ENSE:PULSE	ALIGNAUTO	02:1	0:40 PM Apr 24, 2019
enter Freq 2.412000000	GHz	Center Freq: 2.412000		Radio Sto	d: None
	#IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Hold:>10/10	Radio De	vice: BTS
0 dB/div Ref 22.00 dBm	l				
og 2.0					
2.00					
.00					
		aa	0 0 0		
8.0 mm	Marrie American	a margan surger and a surger surger	Man man hand	work	
				L.	
8.0					my un non approved
8.0					Contraction of the local sector
8.0					
0.0					
enter 2.412 GHz		#V/DW/ 000 h			Span 24 MH
Res BW 100 kHz		#VBW 300 k	HZ		Sweep 3 ms
Occupied Bandwidtl	ı	Total Power	1.58 dBm		
16	.240 MHz				
10	.240 101112				
Transmit Freq Error	4.695 kHz	OBW Power	99.00 %		
x dB Bandwidth	15.09 MHz	x dB	-6.00 dB		
G			STATUS		

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Shenzhen STS Test Services Co., Ltd.



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TX CH 06

RL RF 50Ω AC			ALIGNAUTO	02:08:52 PM Apr 24, 201
nter Freq 2.43700000) GHz	Center Freq: 2.4370000 Trig: Free Run	000 GHz AvglHold:>10/10	Radio Std: None
	#IFGain:Low	#Atten: 36 dB		Radio Device: BTS
B/div Ref 22.00 dB	n			
)				
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Mullion -				
nter 2.437 GHz				Span 24 MH
es BW 100 kHz		#VBW 300 k	Hz	Sweep 3 m
Occupied Bandwid	th	Total Power	2.51 dBm	
-	6.267 MHz			
ransmit Freq Error	5.586 kHz	OBW Power	99.00 %	
dB Bandwidth	15.11 MHz	x dB	-6.00 dB	

TX CH 11

STATUS





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Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 5V	Test Mode:	TX n Mode(20M) /CH01, CH06, CH11

Frequency	6dB Bandwidth	Channel Separation	Result
	(MHz)	(KHz)	Result
2412 MHz	15.10	≥500KHz	PASS
2437 MHz	15.10	≥500KHz	PASS
2462 MHz	15.10	≥500KHz	PASS

TX CH 01

gilent Spectrum Analyzer - Occupied BV G RL RF 50 Ω AC		ENSE:PULSE	ALIGNAUTO	01:58:33 PM Apr 24, 2019
Center Freq 2.412000000		Center Freq: 2.4120000	000 GHz	Radio Std: None
	#IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 22.00 dBm	۱			
12.0				
2.00				
-8.00				
-18.0	meneto marinter	Auton Amon Mar Amor	Amananan	
-28.0	word Mound approved and		the second contract such and allow	many
-38.0				
48.0 where where the second second				" " " " " " " " " " " " " " " " " " "
-58.0				
-68.0				
Center 2.412 GHz				Span 26 MHz
#Res BW 100 kHz		#VBW 300 ki	Hz	Sweep 3.267 ms
Occupied Bandwidt	'n	Total Power	1.55 dBm	
17	.421 MHz			
Transmit Freq Error	3.934 kHz	OBW Power	99.00 %	
x dB Bandwidth	15.10 MHz	x dB	-6.00 dB	
ISG			STATUS	

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Shenzhen STS Test Services Co., Ltd.



nter Fre	- 0 40700000			ALIGNAUTO	02:01:37 PM Apr 24, 201
	q 2.437000000	/ GHz #IFGain:Low	Center Freq: 2.4370000 Trig: Free Run #Atten: 36 dB	00 GHz Avg Hold:>10/10	Radio Std: None Radio Device: BTS
dB/div	Ref 22.00 dBn	n			
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) White the second	Mart				Adreaman
ı —					
nter 2.43	37 GHz				Span 26 MH
es BW 1	00 kHz		#VBW 300 ki	Hz	Sweep 3.267 m
iquooC	ed Bandwidt	h	Total Power	1.35 dBm	
-	17	7.441 MHz			
Transmi	t Freq Error	1.586 kHz	OBW Power	99.00 %	
	ndwidth	15.10 MHz	x dB	-6.00 dB	

TX CH 11

STATUS





7. PEAK OUTPUT POWER TEST

7.1 LIMIT

FCC Part15.247,Subpart C					
Section Test Item Limit Frequency Range (MHz) Resul					
15.247(b)(3) Output Power 1 watt or 30dBm 2400-2483.5 PASS					

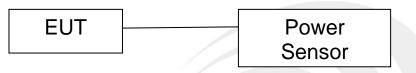
7.2 TEST PROCEDURE

a. The EUT was directly connected to the Power Sensor&PC

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



7.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	DC 5V		

TX 802.11b Mode					
Test Channe	Frequency	Peak Conducted Output Power	Average Conducted Output Power	LIMIT	
	(MHz)	(dBm)	(dBm)	dBm	
CH01	2412	7.23	3.53	30	
CH06	2437	6.78	2.95	30	
CH11	2462	5.57	1.66	30	

TX 802.11g Mode						
Test Channe	Frequency	Peak Conducted Output Power	Average Conducted Output Power	LIMIT		
	(MHz)	(dBm)	(dBm)	dBm		
CH01	2412	5.08	-10.45	30		
CH06	2437	6.17	-9.37	30		
CH11	2462	3.14	-12.58	30		

TX 802.11n20 Mode						
Test Channe	Frequency	Peak Conducted Output Power	Average Conducted Output Power	LIMIT		
	(MHz)	(dBm)	(dBm)	dBm		
CH01	2412	5.82	-10.65	30		
CH06	2437	4.38	-10.85	30		
CH11	2462	3.34	-12.32	30		

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8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible partyshall be used with the device.

8.2 EUT ANTENNA

The EUT antenna is Ceramic Antenna. It comply with the standard requirement.



Shenzhen STS Test Services Co., Ltd.



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APPENDIX-PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

* * * * * END OF THE REPORT * * * * *



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