

RADIO TEST REPORT

S I S

Report No.:STS2208127W01

Issued for

Shenzhen Huion Trend Technology Co., Ltd.

Huion Science and Technology Park, Keji 1st Road, Bao'an District, Shenzhen, China.

Product Name:	Creative Pen Tablet
Brand Name:	HLION
Model Name:	Q630M
Series Model:	X10, X20, H330M, Q11K V2, Q620M, WH1409 V2, G930L, KD200, KD300
FCC ID:	2A8IG-T221
Test Standard:	FCC Part 15.247

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APPROV

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TEST RESULT CERTIFICATION

Applicant's Name:	Shenzhen Huion Trend Technology Co., Ltd.
Address:	Huion Science and Technology Park, Keji 1st Road, Bao'an District, Shenzhen, China.
	Shenzhen Huion Trend Technology Co., Ltd.
Address:	Huion Science and Technology Park, Keji 1st Road, Bao'an District, Shenzhen, China.
Product Description	
Product Name:	Creative Pen Tablet
Brand Name:	
Model Name:	Q630M
Series Model:	X10, X20, H330M, Q11K V2, Q620M, WH1409 V2, G930L, KD200, KD300
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 of receipt of test item:	26 Aug. 2022

Date (s) of performance of tests	26 Aug. 2022 ~ 01 Sept. 2022
Date of Issue:	01 Sept. 2022

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Test Result..... Pass

Testing Engineer

(Chris Chen)

Technical Manager :

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(Sean she)

APPROVAL 6

Authorized Signatory :

(Bovey Yang)

Shenzhen STS Test Services Co., Ltd.

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Revision History

Rev.	Rev. Issue Date Report NO.		Effect Page	Contents	
00	01 Sept. 2022 STS2208127W01		ALL	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	Last Itam						
15.207	Conducted Emission	PASS					
15.247 (a)(2)	6dB Bandwidth	PASS					
15.247 (b)(3)	Output Power	PASS					
15.209	Radiated Spurious Emission	PASS					
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS					
15.247 (e)	Power Spectral Density PASS						
15.205	Restricted bands of operation PASS						
Part 15.247(d)/ Part 15.209(a)	Band Edge Emission PAS						
15.203							

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. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China FCC test Firm Registration Number: 625569 IC test Firm Registration Number: 12108A 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 %.

No.	Item	Uncertainty
1	RF output power, conducted	±0.87dB
2	Unwanted Emissions, conducted	±2.895dB
3	All emissions, radiated 9K-30MHz	±3.80dB
4	All emissions, radiated 30M-1GHz	±4.09dB
5	All emissions, radiated 1G-6GHz	±4.92dB
6	All emissions, radiated>6G	±5.49dB
7	Conducted Emission (9KHz-30MHz)	±2.73dB



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Creative Pen Tablet					
Trade Name						
Model Name	Q630M					
Series Model	X10, X20, H330M, C KD200, KD300	Q11K V2, Q620M, WH1409 V2, G930L,				
Model Difference	Only different in mo	del name.				
Product Description	The EUT is a Creative Pen TabletOperation Frequency:2402~2480 MHzModulation Type:GFSKRadio Technology:BLEBluetooth Configuration:LE(Support 1M PHY, 2M PHY)Number Of Channel:40Antenna 					
Channel List	Please refer to the N	Note 2.				
Rating	Input: DC 5V/500m	A				
Battery	Rated Voltage: 3.7V Charge Limit Voltage: 4.2V Capacity: 1300mAh					
Hardware version number	Rev.1.0					
Software version number	HUION_T216_220725					
Connecting I/O Port(s)	Please refer to the Note 1.					

Note:

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





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	Channel List								
Channel Frequency (MHz) Channel Frequency (MHz) Channel (MHz)							Channel	Frequenc y (MHz)	
	00	2402	10	2422	20	2442	30	2462	
	01	2404	11	2424	21	2444	31	2464	
	02	2406	12	2426	22	2446	32	2466	
	03	2408	13	2428	23	2448	33	2468	
	04	2410	14	2430	24	2450	34	2470	
	05	2412	15	2432	25	2452	35	2472	
	06	2414	16	2434	26	2454	36	2474	
	07	2416	17	2436	27	2456	37	2476	
	08	2418	18	2438	28	2458	38	2478	
	09	2420	19	2440	29	2460	39	2480	

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE		
1		Q630M	РСВ	N/A	1.34dBi	BLE ANT		

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.







2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions

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

Worst Mode	Description	Data/Modulation
Mode 1	TX CH00(2402MHz)	1 MHz/GFSK
Mode 2	TX CH19(2440MHz)	1 MHz/GFSK
Mode 3	TX CH39(2480MHz)	1 MHz/GFSK

Worst Mode	Description	Data/Modulation
Mode 4	TX CH00(2402MHz)	2M PHY /GFSK
Mode 5	TX CH19(2440MHz)	2M PHY /GFSK
Mode 6	TX CH39(2480MHz)	2M PHY /GFSK

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.

(3) The battery is fully-charged during the radited and RF conducted test.

For AC Conducted Er	nission
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	Test Case
AC Conducted Emission	Mode 7 : Keeping BT TX

2.3 TEST SOFTWARE AND POWER LEVEL

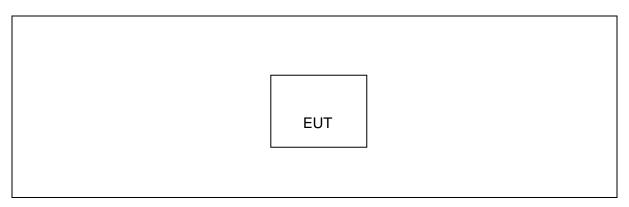
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Туре	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
BLE(With 2M	BLE_1M PHY	GFSK	1.34	3.9	EMI Tool
PHY)	BLE_2M PHY	GFSK	1.34	3.9	

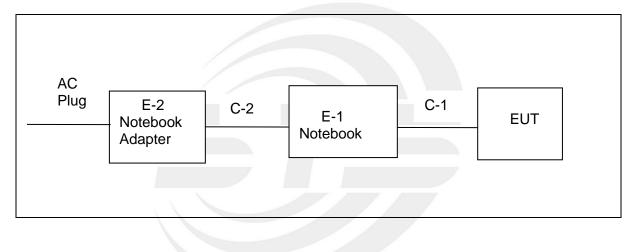


2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test







2.5 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.

	Necessary accessories						
Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note		
C-1	Type-c Cable	N/A	N/A	160cm	NO		

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-2	Notebook Adapter	LENOVO	ADLX45DLC3A	N/A	N/A
E-1	Notebook	LENOVO	ThinkPad E470	N/A	N/A
C-2	USB Cable	N/A	N/A	150cm	NO

Note:

- (1) For detachable type I/O cable should be specified the length in cm in ^r Length ^a column.
- (2) "YES" is means "with core"; "NO" is means "without core".



2.6 EQUIPMENTS LIST

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Active loop Antenna	ZHINAN	ZN30900C	16035	2021.04.11	2023.04.10
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2021.09.28	2022.09.27
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
LISN	R&S	ENV216	101242	2021.09.30	2022.09.29
LISN	EMCO	3810/2NM	23625	2021.09.30	2022.09.29
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			

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RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
			MY55520005	2021.09.30	2022.09.29
Power Sensor		U2021XA	MY55520006	2021.09.30	2022.09.29
Power Sensor	Keysight	02021XA -	MY56120038	2021.09.30	2022.09.29
			MY56280002	2021.09.30	2022.09.29
Signal Analyzer	Agilent	N9020A	MY51110105	2022.03.01	2023.02.28
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			



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3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

	Conducted Emission limit (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



3.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 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 is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

Vertical Reference Ground Plane EUT 40cm EUT 80cm Horizontal Reference Ground Plane

3.3 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 cm from other units and other metal planes support units.

3.4 EUT 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.



3.5 TEST RESULTS

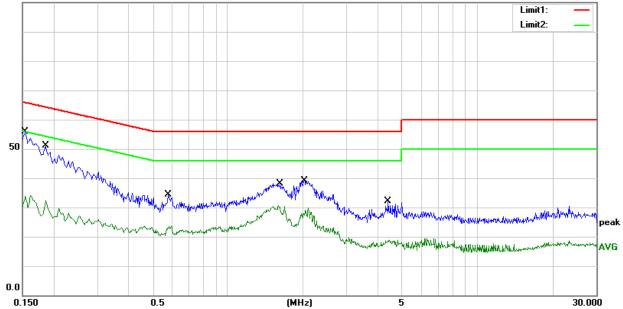
Temperature:	25.4(C)	Relative Humidity:	51%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 7		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(d B)	(dBuV)	(dBuV)	(dB)	
1	0.1540	35.42	20.33	55.75	65.78	-10.03	QP
2	0.1540	13.75	20.33	34.08	55.78	-21.70	AVG
3	0.1860	30.89	20.31	51.20	64.21	-13.01	QP
4	0.1860	11.96	20.31	32.27	54.21	-21.94	AVG
5	0.5780	13.89	20.47	34.36	56.00	-21.64	QP
6	0.5780	3.24	20.47	23.71	46.00	-22.29	AVG
7	1.6220	17.74	20.30	38.04	56.00	-17.96	QP
8	1.6220	10.38	20.30	30.68	46.00	-15.32	AVG
9	2.0260	18.85	20.30	39.15	56.00	-16.85	QP
10	2.0260	9.49	20.30	29.79	46.00	-16.21	AVG
11	4.4060	11.61	20.42	32.03	56.00	-23.97	QP
12	4.4060	-0.94	20.42	19.48	46.00	-26.52	AVG

Remark:

- 1. All readings are Quasi-Peak and Average values
- 2. Margin = Result (Result = Reading + Factor)–Limit
- 3. Factor=LISN factor+Cable loss+Limiter (10dB)

100.0 dBuV



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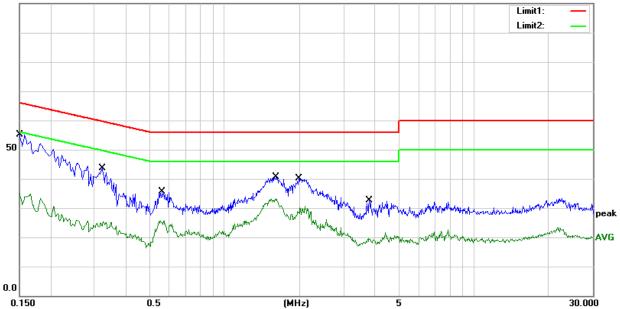
Temperature:	25.4(C)	Relative Humidity:	51%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 7		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(d B)	(dBuV)	(dBuV)	(dB)	
1	0.1500	34.86	20.29	55.15	66.00	-10.85	QP
2	0.1500	14.94	20.29	35.23	56.00	-20.77	AVG
3	0.3220	22.93	20.74	43.67	59.66	-15.99	QP
4	0.3220	4.92	20.74	25.66	49.66	-24.00	AVG
5	0.5620	15.30	20.45	35.75	56.00	-20.25	QP
6	0.5620	5.16	20.45	25.61	46.00	-20.39	AVG
7	1.6060	20.31	20.35	40.66	56.00	-15.34	QP
8	1.6060	12.75	20.35	33.10	46.00	-12.90	AVG
9	1.9820	19.82	20.39	40.21	56.00	-15.79	QP
10	1.9820	10.28	20.39	30.67	46.00	-15.33	AVG
11	3.8060	12.03	20.49	32.52	56.00	-23.48	QP
12	3.8060	1.06	20.49	21.55	46.00	-24.45	AVG

Remark:

- 1. All readings are Quasi-Peak and Average values
- 2. Margin = Result (Result = Reading + Factor)-Limit
- 3. Factor=LISN factor+Cable loss+Limiter (10dB)

100.0 dBuV



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4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED 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 (Frequency Range 9kHz-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 (Above 1000MHz)

	(dBuV/m) (at 3M)		
FREQUENCY (MHz)	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).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

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For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
	200Hz (From 9kHz to 0.15MHz)/
RB / VB (emission in restricted	9KHz (From 0.15MHz to 30MHz);
band)	200Hz (From 9kHz to 0.15MHz)/
	9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 KHz / 300 KHz

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 / 3 MHz(Peak)
band)	1 MHz/1/T MHz(AVG)

For Restricted band

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stan Fraguanay	Lower Band Edge: 2310 to 2410 MHz
Start/Stop Frequency	Upper Band Edge: 2475 to 2500 MHz
	1 MHz / 3 MHz(Peak)
RB / VB	1 MHz/1/T MHz(AVG)

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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 for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2 TEST PROCEDURE

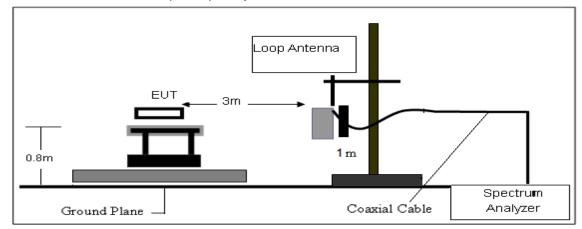
- a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the 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 polarization 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 QuasiPeak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

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

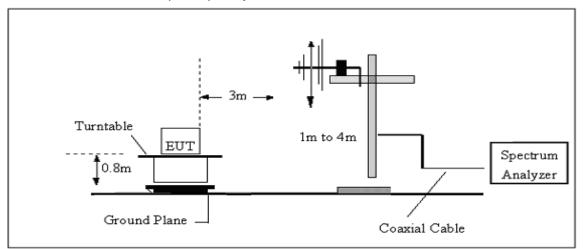


4.3 TEST SETUP

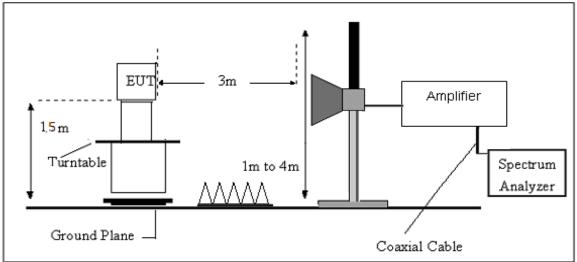
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.4 EUT OPERATING CONDITIONS Please refer to section 3.4 of this report.



4.5 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





4.6 TEST RESULTS

(Between 9KHz - 30 MHz)

Temperature:	23.1(C)	Relative Humidtity:	60%RH
Test Voltage:	DC 3.7V	Polarization:	
Test Mode:	TX Mode		

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





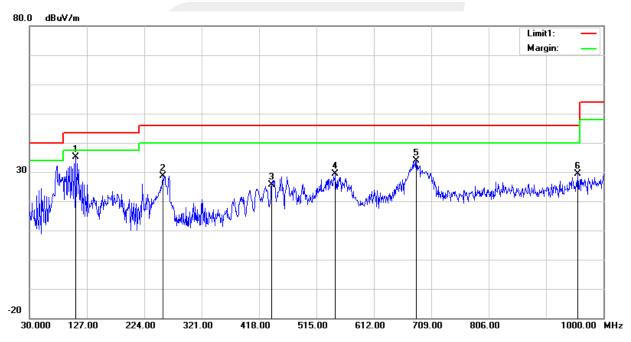
(30MHz -1000MHz)

Temperature:	23.1(C)	Relative Humidity:	60%RH		
Test Voltage:	DC 3.7V	Phase:	Horizontal		
Test Mode:	Mode 1/2/3 (Mode 3 worst mode)				

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	108.5700	54.35	-19.22	35.13	43.50	-8.37	peak
2	256.0100	43.81	-15.24	28.57	46.00	-17.43	peak
3	439.3400	35.66	-10.10	25.56	46.00	-20.44	peak
4	547.0100	35.46	-6.10	29.36	46.00	-16.64	peak
5	683.7800	38.31	-4.31	34.00	46.00	-12.00	peak
6	956.3500	27.57	1.70	29.27	46.00	-16.73	peak

Remark:

- 1. Margin = Result (Result = Reading + Factor)-Limit
- 2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain





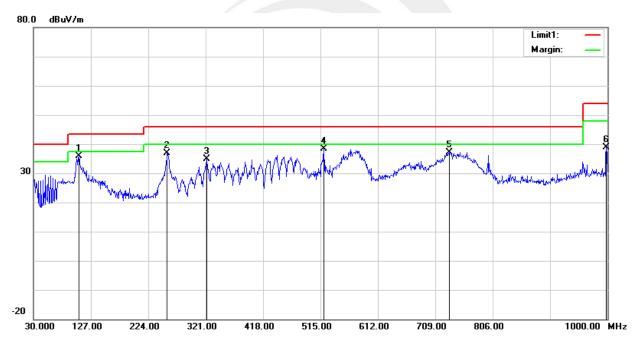
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Temperature:	23.1(C)	Relative Humidity:	60%RH		
Test Voltage:	DC 3.7V	Phase:	Vertical		
Test Mode:	Mode 1/2/3 (Mode 3 worst mode)				

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	106.6300	55.42	-19.42	36.00	43.50	-7.50	peak
2	256.0100	52.00	-15.24	36.76	46.00	-9.24	peak
3	322.9400	48.86	-13.91	34.95	46.00	-11.05	peak
4	520.8200	46.11	-7.79	38.32	46.00	-7.68	peak
5	733.2500	39.60	-2.35	37.25	46.00	-8.75	peak
6	998.0600	36.92	2.04	38.96	54.00	-15.04	peak

Remark:

- 1. Margin = Result (Result = Reading + Factor)-Limit
- 2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain





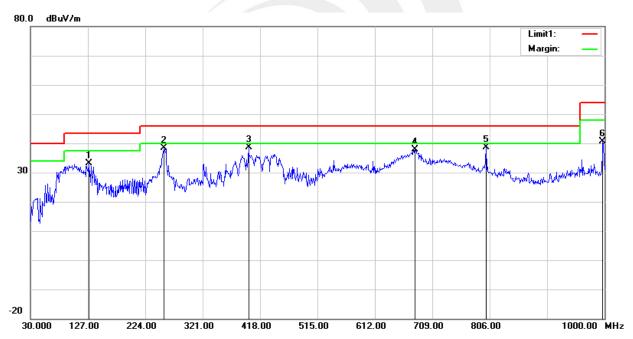
2M PHY

Temperature:	23.1(C)	Relative Humidity:	60%RH		
Test Voltage:	DC 3.7V	Phase:	Horizontal		
Test Mode:	Mode 4/5/6 (Mode 6 worst mode)				

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	128.9400	51.42	-18.26	33.16	43.50	-10.34	peak
2	255.0400	53.74	-15.35	38.39	46.00	-7.61	peak
3	398.6000	49.77	-11.20	38.57	46.00	-7.43	peak
4	679.9000	42.16	-4.28	37.88	46.00	-8.12	peak
5	800.1800	40.60	-2.05	38.55	46.00	-7.45	peak
6	997.0900	38.65	2.04	40.69	54.00	-13.31	peak

Remark:

- 1. Margin = Result (Result = Reading + Factor)-Limit
- 2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain





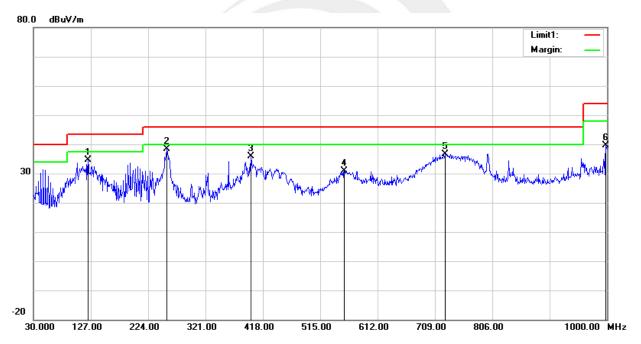
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Temperature:	23.1(C)	Relative Humidity:	60%RH			
Test Voltage:	DC 3.7V	Phase:	Vertical			
Test Mode:	Mode 4/5/6 (Mode 6 worst mode)					

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	122.1500	52.82	-18.29	34.53	43.50	-8.97	peak
2	255.0400	53.73	-15.35	38.38	46.00	-7.62	peak
3	397.6300	47.08	-11.24	35.84	46.00	-10.16	peak
4	555.7400	36.60	-5.60	31.00	46.00	-15.00	peak
5	726.4600	39.47	-2.74	36.73	46.00	-9.27	peak
6	998.0600	37.68	2.04	39.72	54.00	-14.28	peak

Remark:

- 1. Margin = Result (Result = Reading + Factor)-Limit
- 2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain



Shenzhen STS Test Services Co., Ltd.



(1GHz-25GHz) Spurious emission Requirements

1M PHY GFSK

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment	
(MHz)	(dBµV)	(dB)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
	•			Low Cl	nannel (GFSK/	2402 MHz)			•		
3264.82	61.33	44.70	6.70	28.20	-9.80	51.53	74.00	-22.47	PK	Vertical	
3264.82	49.83	44.70	6.70	28.20	-9.80	40.03	54.00	-13.97	AV	Vertical	
3264.66	61.45	44.70	6.70	28.20	-9.80	51.65	74.00	-22.35	PK	Horizontal	
3264.66	50.54	44.70	6.70	28.20	-9.80	40.74	54.00	-13.26	AV	Horizontal	
4804.42	58.94	44.20	9.04	31.60	-3.56	55.38	74.00	-18.62	PK	Vertical	
4804.42	49.92	44.20	9.04	31.60	-3.56	46.36	54.00	-7.64	AV	Vertical	
4804.57	58.95	44.20	9.04	31.60	-3.56	55.39	74.00	-18.61	PK	Horizontal	
4804.57	49.40	44.20	9.04	31.60	-3.56	45.84	54.00	-8.16	AV	Horizontal	
5359.70	49.11	44.20	9.86	32.00	-2.34	46.77	74.00	-27.23	PK	Vertical	
5359.70	40.16	44.20	9.86	32.00	-2.34	37.82	54.00	-16.18	AV	Vertical	
5359.60	47.38	44.20	9.86	32.00	-2.34	45.04	74.00	-28.96	PK	Horizontal	
5359.60	39.52	44.20	9.86	32.00	-2.34	37.17	54.00	-16.83	AV	Horizontal	
7205.80	54.25	43.50	11.40	35.50	3.40	57.65	74.00	-16.35	PK	Vertical	
7205.80	43.68	43.50	11.40	35.50	3.40	47.08	54.00	-6.92	AV	Vertical	
7205.87	54.56	43.50	11.40	35.50	3.40	57.96	74.00	-16.04	PK	Horizontal	
7205.87	44.03	43.50	11.40	35.50	3.40	47.43	54.00	-6.57	AV	Horizontal	
			1	Middle 0	Channel (GFSK	(/2440 MHz)			•		
3263.22	61.04	44.70	6.70	28.20	-9.80	51.24	74.00	-22.76	PK	Vertical	
3263.22	49.95	44.70	6.70	28.20	-9.80	40.15	54.00	-13.85	AV	Vertical	
3263.21	61.86	44.70	6.70	28.20	-9.80	52.06	74.00	-21.94	PK	Horizontal	
3263.21	50.95	44.70	6.70	28.20	-9.80	41.15	54.00	-12.85	AV	Horizontal	
4880.06	58.32	44.20	9.04	31.60	-3.56	54.76	74.00	-19.24	PK	Vertical	
4880.06	50.01	44.20	9.04	31.60	-3.56	46.45	54.00	-7.55	AV	Vertical	
4880.13	59.48	44.20	9.04	31.60	-3.56	55.92	74.00	-18.08	PK	Horizontal	
4880.13	50.40	44.20	9.04	31.60	-3.56	46.84	54.00	-7.16	AV	Horizontal	
5357.05	48.30	44.20	9.86	32.00	-2.34	45.95	74.00	-28.05	PK	Vertical	
5357.05	40.38	44.20	9.86	32.00	-2.34	38.03	54.00	-15.97	AV	Vertical	
5357.39	47.96	44.20	9.86	32.00	-2.34	45.62	74.00	-28.38	PK	Horizontal	
5356.94	39.29	44.20	9.86	32.00	-2.34	36.95	54.00	-17.05	AV	Horizontal	
7320.85	53.55	43.50	11.40	35.50	3.40	56.95	74.00	-17.05	PK	Vertical	
7320.85	43.51	43.50	11.40	35.50	3.40	46.91	54.00	-7.09	AV	Vertical	
7320.50	53.77	43.50	11.40	35.50	3.40	57.17	74.00	-16.83	PK	Horizontal	
7320.50	44.66	43.50	11.40	35.50	3.40	48.06	54.00	-5.94	AV	Horizontal	

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				High Char	nnel (GFSK/	2480 MHz)				
3264.66	60.92	44.70	6.70	28.20	-9.80	51.12	74.00	-22.88	PK	Vertical
3264.66	50.51	44.70	6.70	28.20	-9.80	40.71	54.00	-13.29	AV	Vertical
3264.59	62.23	44.70	6.70	28.20	-9.80	52.43	74.00	-21.57	PK	Horizontal
3264.59	50.55	44.70	6.70	28.20	-9.80	40.75	54.00	-13.25	AV	Horizontal
4960.40	58.88	44.20	9.04	31.60	-3.56	55.32	74.00	-18.68	PK	Vertical
4960.40	50.02	44.20	9.04	31.60	-3.56	46.46	54.00	-7.54	AV	Vertical
4960.56	58.40	44.20	9.04	31.60	-3.56	54.84	74.00	-19.16	PK	Horizontal
4960.56	50.23	44.20	9.04	31.60	-3.56	46.67	54.00	-7.33	AV	Horizontal
5359.71	49.35	44.20	9.86	32.00	-2.34	47.00	74.00	-27.00	PK	Vertical
5359.71	39.29	44.20	9.86	32.00	-2.34	36.95	54.00	-17.05	AV	Vertical
5359.78	47.16	44.20	9.86	32.00	-2.34	44.82	74.00	-29.18	PK	Horizontal
5359.78	38.54	44.20	9.86	32.00	-2.34	36.20	54.00	-17.80	AV	Horizontal
7439.78	54.97	43.50	11.40	35.50	3.40	58.37	74.00	-15.63	PK	Vertical
7439.78	43.54	43.50	11.40	35.50	3.40	46.94	54.00	-7.06	AV	Vertical
7439.80	54.36	43.50	11.40	35.50	3.40	57.76	74.00	-16.24	PK	Horizontal
7439.80	44.65	43.50	11.40	35.50	3.40	48.05	54.00	-5.95	AV	Horizontal

Note:

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

Emission Level = Reading + Factor.

2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.





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2M PHY GFSK

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment	
(MHz)	(dBµV)	(dB)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
				Low Ch	nannel (GFSK/2	2402 MHz)					
3264.85	61.91	44.70	6.70	28.20	-9.80	52.11	74.00	-21.89	PK	Vertical	
3264.85	51.16	44.70	6.70	28.20	-9.80	41.36	54.00	-12.64	AV	Vertical	
3264.76	61.03	44.70	6.70	28.20	-9.80	51.23	74.00	-22.77	PK	Horizontal	
3264.76	49.85	44.70	6.70	28.20	-9.80	40.05	54.00	-13.95	AV	Horizontal	
4804.58	58.80	44.20	9.04	31.60	-3.56	55.24	74.00	-18.76	PK	Vertical	
4804.58	50.55	44.20	9.04	31.60	-3.56	46.99	54.00	-7.01	AV	Vertical	
4804.31	59.45	44.20	9.04	31.60	-3.56	55.89	74.00	-18.11	PK	Horizontal	
4804.31	49.75	44.20	9.04	31.60	-3.56	46.19	54.00	-7.81	AV	Horizontal	
5359.70	48.60	44.20	9.86	32.00	-2.34	46.26	74.00	-27.74	PK	Vertical	
5359.70	39.10	44.20	9.86	32.00	-2.34	36.76	54.00	-17.24	AV	Vertical	
5359.86	47.85	44.20	9.86	32.00	-2.34	45.51	74.00	-28.49	PK	Horizontal	
5359.86	38.69	44.20	9.86	32.00	-2.34	36.34	54.00	-17.66	AV	Horizontal	
7205.90	54.25	43.50	11.40	35.50	3.40	57.65	74.00	-16.35	PK	Vertical	
7205.90	44.52	43.50	11.40	35.50	3.40	47.92	54.00	-6.08	AV	Vertical	
7205.71	54.46	43.50	11.40	35.50	3.40	57.86	74.00	-16.14	PK	Horizontal	
7205.71	43.58	43.50	11.40	35.50	3.40	46.98	54.00	-7.02	AV	Horizontal	
				Middle C	Channel (GFSK	(/2440 MHz)					
3263.20	62.12	44.70	6.70	28.20	-9.80	52.32	74.00	-21.68	PK	Vertical	
3263.20	51.71	44.70	6.70	28.20	-9.80	41.91	54.00	-12.09	AV	Vertical	
3263.03	61.14	44.70	6.70	28.20	-9.80	51.34	74.00	-22.66	PK	Horizontal	
3263.03	50.52	44.70	6.70	28.20	-9.80	40.72	54.00	-13.28	AV	Horizontal	
4879.87	59.31	44.20	9.04	31.60	-3.56	55.75	74.00	-18.25	PK	Vertical	
4879.87	49.72	44.20	9.04	31.60	-3.56	46.16	54.00	-7.84	AV	Vertical	
4880.09	59.60	44.20	9.04	31.60	-3.56	56.04	74.00	-17.96	PK	Horizontal	
4880.09	49.59	44.20	9.04	31.60	-3.56	46.03	54.00	-7.97	AV	Horizontal	
5357.27	49.30	44.20	9.86	32.00	-2.34	46.95	74.00	-27.05	PK	Vertical	
5357.27	39.01	44.20	9.86	32.00	-2.34	36.66	54.00	-17.34	AV	Vertical	
5357.39	48.47	44.20	9.86	32.00	-2.34	46.12	74.00	-27.88	PK	Horizontal	
5357.12	39.17	44.20	9.86	32.00	-2.34	36.83	54.00	-17.17	AV	Horizontal	
7320.85	54.29	43.50	11.40	35.50	3.40	57.69	74.00	-16.31	PK	Vertical	
7320.85	44.71	43.50	11.40	35.50	3.40	48.11	54.00	-5.89	AV	Vertical	
7320.31	53.65	43.50	11.40	35.50	3.40	57.05	74.00	-16.95	PK	Horizontal	
7320.31	43.60	43.50	11.40	35.50	3.40	47.00	54.00	-7.00	AV	Horizontal	



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				High Char	nnel (GFSK/	2480 MHz)				
3264.83	61.74	44.70	6.70	28.20	-9.80	51.94	74.00	-22.06	PK	Vertical
3264.83	51.72	44.70	6.70	28.20	-9.80	41.92	54.00	-12.08	AV	Vertical
3264.80	61.39	44.70	6.70	28.20	-9.80	51.59	74.00	-22.41	PK	Horizontal
3264.80	50.54	44.70	6.70	28.20	-9.80	40.74	54.00	-13.26	AV	Horizontal
4960.32	58.43	44.20	9.04	31.60	-3.56	54.87	74.00	-19.13	PK	Vertical
4960.32	49.80	44.20	9.04	31.60	-3.56	46.24	54.00	-7.76	AV	Vertical
4960.34	59.62	44.20	9.04	31.60	-3.56	56.06	74.00	-17.94	PK	Horizontal
4960.34	50.03	44.20	9.04	31.60	-3.56	46.47	54.00	-7.53	AV	Horizontal
5359.65	48.35	44.20	9.86	32.00	-2.34	46.01	74.00	-27.99	PK	Vertical
5359.65	40.29	44.20	9.86	32.00	-2.34	37.94	54.00	-16.06	AV	Vertical
5359.58	47.28	44.20	9.86	32.00	-2.34	44.93	74.00	-29.07	PK	Horizontal
5359.58	38.99	44.20	9.86	32.00	-2.34	36.64	54.00	-17.36	AV	Horizontal
7439.80	54.24	43.50	11.40	35.50	3.40	57.64	74.00	-16.36	PK	Vertical
7439.80	43.77	43.50	11.40	35.50	3.40	47.17	54.00	-6.83	AV	Vertical
7439.74	54.67	43.50	11.40	35.50	3.40	58.07	74.00	-15.93	PK	Horizontal
7439.74	44.72	43.50	11.40	35.50	3.40	48.12	54.00	-5.88	AV	Horizontal

Note:

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

Emission Level = Reading + Factor.

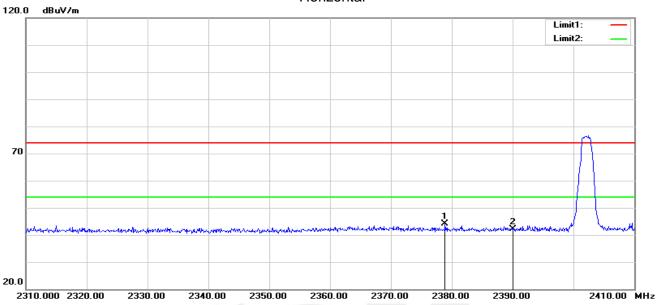
2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.



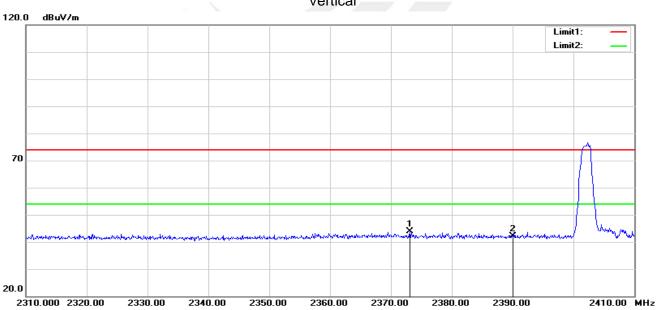


4.6 TEST RESULTS (Restricted Bands Requirements)

1M PHY GFSK-Low Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2378.900	39.98	4.18	44.16	74.00	-29.84	peak
2	2390.000	37.75	4.34	42.09	74.00	-31.91	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2373.100	39.84	4.09	43.93	74.00	-30.07	peak
2	2390.000	37.67	4.34	42.01	74.00	-31.99	peak

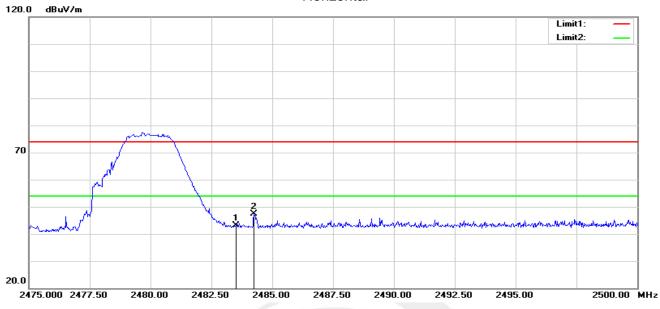
Vertical



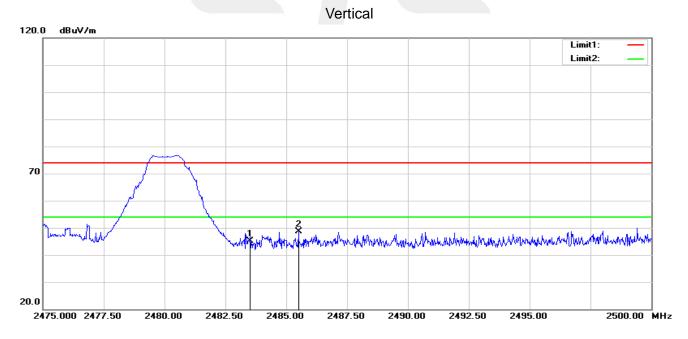
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GFSK-High Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	38.49	4.60	43.09	74.00	-30.91	peak
2	2484.250	42.82	4.61	47.43	74.00	-26.57	peak

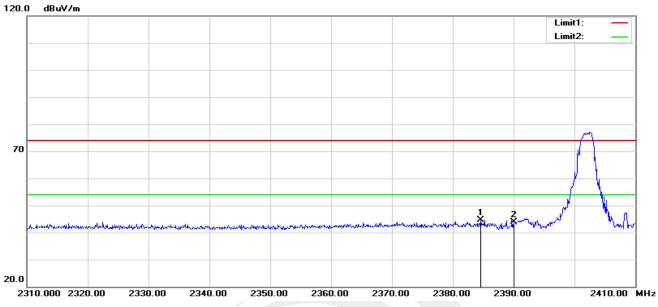


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	40.50	4.60	45.10	74.00	-28.90	peak
2	2485.500	44.06	4.61	48.67	74.00	-25.33	peak

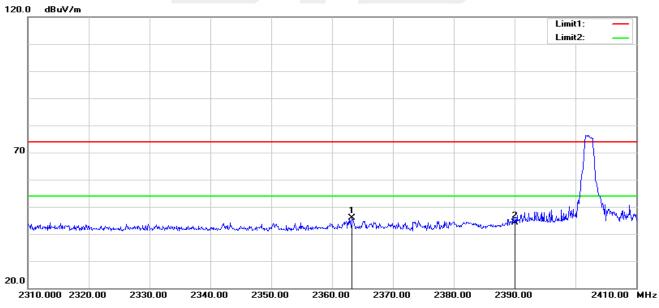


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2M PHY GFSK-Low Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2384.600	40.38	4.26	44.64	74.00	-29.36	peak
2	2390.000	39.42	4.34	43.76	74.00	-30.24	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2363.300	41.97	3.94	45.91	74.00	-28.09	peak
2	2390.000	39.73	4.34	44.07	74.00	-29.93	peak

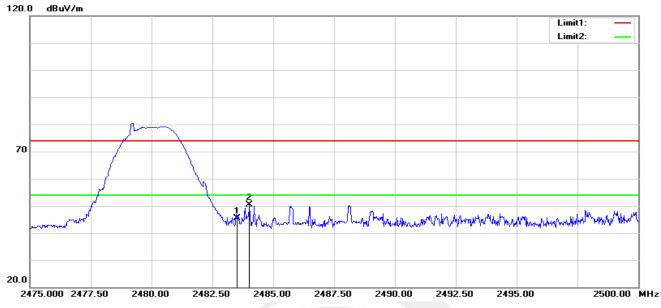
Vertical



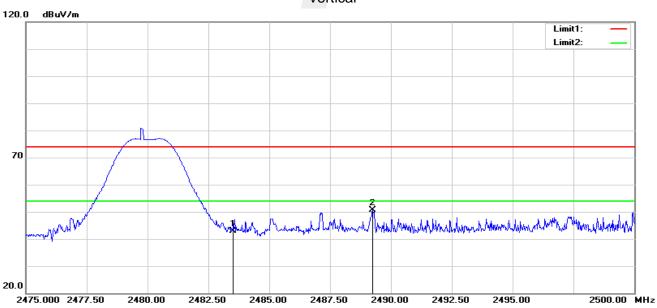
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GFSK-High Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	40.73	4.60	45.33	74.00	-28.67	peak
2	2484.025	45.76	4.61	50.37	74.00	-23.63	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	38.17	4.60	42.77	74.00	-31.23	peak
2	2489.250	46.09	4.62	50.71	74.00	-23.29	peak

Vertical

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5. CONDUCTED SPURIOUS & BAND EDGE EMISSION

5.1 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.

5.2 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
Spectrum Parameter Detector	Setting Peak
Detector	
	Peak
Detector	Peak Lower Band Edge: 2300 – 2407 MHz

5.3 TEST SETUP



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna termina is 50 Ohm; 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.

5.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

5.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



6. POWER SPECTRAL DENSITY TEST

6.1 LIMIT

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

6.2 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 RBW to: 100 kHz \ge RBW \ge 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.

6.3 TEST SETUP

Specturm Analyzer		EUT
----------------------	--	-----

6.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

6.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



7. BANDWIDTH TEST

7.1 LIMIT

FCC Part 15.247,Subpart C						
Section	Test Item	Limit	Frequency Range (MHz)	Result		
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS		

7.2 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.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

7.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



8. PEAK OUTPUT POWER TEST

8.1 LIMIT

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

8.2 TEST PROCEDURE

One of the following procedures may be used to determine the maximum peak conducted output power of a DTS EUT.

 $RBW \ge DTS$ bandwidth

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

a) Set the RBW \geq DTS bandwidth.

b) Set VBW \geq [3 × RBW].

c) Set span \geq [3 × RBW].

d) Sweep time = auto couple.

e) Detector = peak.

f) Trace mode = max hold.

g) Allow trace to fully stabilize.

h) Use peak marker function to determine the peak amplitude level.

Integrated band power method:

The following procedure can be used when the maximum available RBW of the instrument is less than the

DTS bandwidth:

a) Set the RBW = 1 MHz.

b) Set the VBW \geq [3 × RBW].

c) Set the span \geq [1.5 × DTS bandwidth].

d) Detector = peak.

e) Sweep time = auto couple.

f) Trace mode = max hold.

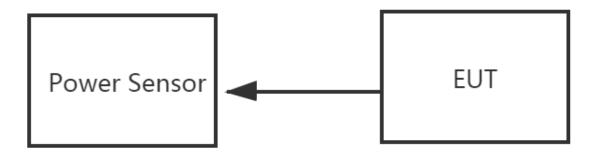
g) Allow trace to fully stabilize.

h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select the peak detector). If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS channel bandwidth.

PKPM1 Peak power meter method:

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.





8.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

8.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.





9. ANTENNA REQUIREMENT

9.1 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 party shall be used with the device.

9.2 EUT ANTENNA

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



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APPENDIX 1-TEST DATA

1. Duty Cycle

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	100	0	0.1
NVNT	BLE 1M	2440	100	0	0.1
NVNT	BLE 1M	2480	100	0	0.1
NVNT	BLE 2M	2402	100	0	0.1
NVNT	BLE 2M	2440	100	0	0.1
NVNT	BLE 2M	2480	100	0	0.1



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Keysight Spectrum Analyzer - Swe				M 2402MHz	
RL RF 50 Ω Center Freg 2.40200	AC	SENSE:PULSE		ALIGN AUTO Avg Type: Log-Pwr	03:12:22 PM Aug 29, 202 TRACE 1 2 3 4 5
Senter Frey 2.40200	PNO	:Fast ⊶⊶ Trig:F n:Low #Atten:	ree Run 30 dB		
Ref Offset 0.5 10 dB/div Ref 20.50 d					Mkr1 50.00 m -2.57 dBr
10.5					
0.500			^1		
-9.50					
-19.5					
-29.5					
-49.5					
-59.5					
-69.5					
Center 2.402000000 G Res BW 1.0 MHz	Hz	#VBW 3.0 M	Hz	Swee	Span 0 H 2000 span 0 H
MKR MODE TRC SCL	x		FUNCTION		FUNCTION VALUE
1 N 1 t 2	50.00 ms	-2.57 dBm			
3 4					
5					
6 7					
8					
10 11					
• [
ISG					
		ycle NVNT	BLE 1	status M 2440MHz	
Keysight Spectrum Analyzer - Swe RL RF 50 Ω	pt SA AC		BLE 1	M 2440MHz	03:14:58 PM Aug 29, 202
Keysight Spectrum Analyzer - Swe C RL RF 50 Ω	Pt SA AC OOOO GHZ PNO	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PM Aug 29, 20 TRACE 1 2 3 4 5
Keysight Spectrum Analyzer - Swe R RL RF 50 Ω Center Freq 2.44000	AC AC PNO BAC PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE WWWWW DET P N N N
Keysight Spectrum Analyzer - Swe RL RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PMAug 29,20 TRACE 1 2 3 4 5 TYPE WWWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Swe	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PMAug 29, 20 TRACE 1 2 3 4 5 TYPE WWWW DET P NNN1 Mkr1 50.00 m
Keysight Spectrum Analyzer - Swe RL RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 Ref 30.00 d 20.0 10.0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PMAug 29,20 TRACE 1 2 3 4 5 TYPE WWWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Sive R RL RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d 20.0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PMAug 29,20 TRACE 1 2 3 4 5 TYPE WWWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Sive R RL RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d 20.0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PM Aug 29,202 TRACE 1 2 3 4 5 TYPE WWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Sive R RL RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d 20.0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PMAug 29,20 TRACE 1 2 3 4 5 TYPE WWWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Sive R L RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d 20 0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PMAug 29,202 TRACE 1 2 3 4 5 TYPE WWWWW DET P NNNN Mkr1 50.00 m -2.70 dBr
Keysight Spectrum Analyzer - Sive ℝL< ℝF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d 20.0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PM Aug 29,202 TRACE 1 2 3 4 5 TYPE WWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Six @ ℝ RL ℝ F 50 Ω Center Freq 2.44000 Ref Offset 0.5 0 dB/div Ref 30.00 d 20.0	AC 0000 GHz PNO IFGai	SENSE:PULSE	ree Run	M 2440MHz	03:14:58 PM Aug 29,202 TRACE 1 2 3 4 5 TYPE WWWW DET P NNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Sive RL RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 10 dB/div Ref 30.00 d 20.0	AC OOOO GHz PNO IFGai dB Bm	SENSE:PULSE Fast → Trig: F Atten: Atten:	1	ALIGN AUTO Avg Type: Log-Pwr	03:14:58 PMAug 29, 20, TRACE 23, 45 TYPE WANN DET P NNNN Mkr1 50.00 m -2.70 dBr
Keysight Spectrum Analyzer - Swe RL<	AC OOOO GHz PNO IFGai dB Bm	SENSE:PULSE Fast → Trig: F Atten: #VBW 3.0 M	ree Run 40 dB	M 2440MHz	03:14:59 PMAug 29, 20. TRACE 1 2, 3, 4 5 TYPE WANN DET P NNNN Mkr1 50.00 m -2.70 dBr -2.70 dB
Keysight Spectrum Analyzer - Sou 2 Rel RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 Ref 30.00 d 10 dB/div Ref 30.00 d Ref 30.00 d 20.0	AC OOOO GHz PNO IFGai dB Bm	SENSE:PULSE Fast → Trig: F Atten: #VBW 3.0 M	ree Run 40 dB	ALIGN AUTO Avg Type: Log-Pwr	03:14:58 PMAug 29, 202 TRACE 1 2 3 4 5 TYPE WWWW DET P NNNN Mkr1 50.00 m
Keysight Spectrum Analyzer - Sou 2 Rel RF 50 Ω Center Freq 2.44000 Ref Offset 0.5 Ref 30.00 d 10 dB/div Ref 30.00 d Ref 30.00 d 20.0	AC DOUD GHZ PNO IFGai dB Bm DUD GHZ PNO IFGai dD GHZ PNO DD G	SENSE:PULSE Fast → Trig: F Atten: Atten: #VBW 3.0 M	ree Run 40 dB	M 2440MHz	03:14:59 PMAug 29, 20. TRACE 1 2, 3, 4 5 TYPE WANN DET P NNNN Mkr1 50.00 m -2.70 dBr -2.70 dB
RL RF 50 fl Center Freq 2.44000 Ref Offset 0.5 Ref Offset 0.5 Ref Offset 0.5 Ref 30.00 d Ref 30.00 d Og Ref 30.00 d Ref 30.00 d Output Ref 30.00 d Ref 30.00 d Contert Ref 30.00 d Ref 30.00 d Center 2.4400000000 G Res BW 1.0 MHz Ref 30.00 d In 1 1 1 2 3 4 3 4 5 S S S	AC DOUD GHZ PNO IFGai dB Bm DUD GHZ PNO IFGai dD GHZ PNO DD G	SENSE:PULSE Fast → Trig: F Atten: Atten: #VBW 3.0 M	ree Run 40 dB	M 2440MHz	03:14:59 PMAug 29, 20. TRACE 1 2, 3, 4 5 TYPE WANN DET P NNNN Mkr1 50.00 m -2.70 dBr -2.70 dB
Keysight Spectrum Analyzer - Sive Rel RF 50 g Center Freq 2.44000 Ref 30.00 d Od Og Ref 30.00 d Od Od Og Ref 30.00 d Od Od Od Og Ref 30.00 d Od Od Od Od O Od Od <thod< th=""> Od Od</thod<>	AC DOUD GHZ PNO IFGai dB Bm DUD GHZ PNO IFGai dD GHZ PNO DD G	SENSE:PULSE Fast → Trig: F Atten: Atten: #VBW 3.0 M	ree Run 40 dB	M 2440MHz	03:14:58 MAug 29, 20 TRACE 1 2 3 4 5 TYPE WWW DET / P NNN Mkr1 50.00 m -2.70 dBr -2.70 dBr -
Keysight Spectrum Analyzer - Sive R RL RF 50 Q Center Freq 2.44000 Ref Offset 0.5 Q 10 dB/div Ref Offset 0.5 Q Q 20.0 Ref 00ffset 0.5 Q Q 10.0 Ref 30.00 d Q Q Q 10.0 Ref 30.00 d Q <thq< th=""> Q Q <</thq<>	AC DOUD GHZ PNO IFGai dB Bm DUD GHZ PNO IFGai dD GHZ PNO DD G	SENSE:PULSE Fast → Trig: F Atten: Atten: #VBW 3.0 M	ree Run 40 dB	M 2440MHz	03:14:58 MAug 29, 20 TRACE 1 2 3 4 5 TYPE WWW DET / P NNN Mkr1 50.00 m -2.70 dBr -2.70 dBr -
Keysight Spectrum Analyzer - Sive Rel Rf 50 fl Center Freq 2.44000 Ref Offset 0.5 Ref 30.00 d Od B/div Ref 30.00 d Ref 30.00 d 20.0	AC DOUD GHZ PNO IFGai dB Bm DUD GHZ PNO IFGai dD GHZ PNO DD G	SENSE:PULSE Fast → Trig: F Atten: Atten: #VBW 3.0 M	ree Run 40 dB	M 2440MHz	03:14:58 MAug 29, 20 TRACE 1 2 3 4 5 TYPE WWW DET / P NNN Mkr1 50.00 m -2.70 dBr -2.70 dBr -



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	Duty		VINT BLE	1M 2480			
Keysight Spectrum Analyzer - S R L RF 50		SENS	E:PULSE	ALIGN AUTO		03:17:0	2 PM Aug 29, 20
enter Freq 2.4800		PNO: Fast	Trig: Free Run	Avg Ty	pe: Log-Pwr	т	RACE 1 2 3 4 TYPE WWWW
		FGain:Low	#Atten: 30 dB				DET P NNN
Ref Offset (50.00 m 2.12 dB
odB/div Ref 20.50	Jabm					-	
0.5			1				
500			?				
.50							
9.5							
9.5							
9.5							
9.5							
9.5							
							0
enter 2.480000000 es BW 1.0 MHz	GHZ	#VBW	3.0 MHz		Sweep) 100.0 ms	Span 0 (10001 p
R MODE TRC SCL	x	Y		FUNCTION WIDTH	·	FUNCTION VALUE	(
1 N 1 t 2	50.00 ms	-2.12 d					
3							
3 4 5 6 7 8 9							
			III				Þ
3				STATUS			
		Cycle N	VNT BLE	2M 2402	2MHz		
Keysight Spectrum Analyzer - S RL RF 50		SENS	E:PULSE	ALIGN AUTO		03:19:4	9 PM Aug 29, 2
enter Freq 2.4020					pe: Log-Pwr		RACE 1 2 3 4
				•	•		TYPE WWW
		PNO: Fast ↔ FGain:Low	Trig: Free Run #Atten: 30 dB				TYPE WWWW
Ref Offset (0.5 dB	PNO: Fast ↔ FGain:Low				Mkr1	DET P NNP
dB/div Ref 20.00	0.5 dB	PNO: Fast ↔→ FGain:Low				Mkr1	DET P NNP
dB/div Ref 20.00	0.5 dB	PNO: Fast ↔→				Mkr1	DET P NNP
dB/div Ref 20.00	0.5 dB	PNO: Fast +++ FGain:Low				Mkr1	DET P NNP
dB/div Ref 20.00 9	0.5 dB	PNO: Fast +++ FGain:Low				Mkr1	DET P NNP
dB/div Ref 20.00 9 00 00 00 00	0.5 dB	PNO: Fast +++ FGain:Low				Mkr1	DET P NNP
dB/div Ref 20.00 gv 000 000 000 000 000 000 000 000 00	0.5 dB	PNO: Fast →- FGain:Low				Mkr1	DET P NNN
dB/div Ref 20.00 gv 00 00 00 00 00 00 00 00 00 0	0.5 dB	PNO: Fast →→ FGain:Low				Mkr1	DET P NNN
dB/div Ref 20.00 9	0.5 dB	PNO: Fast →→ FGain:Low				Mkr1	DET P NNN
dB/div Ref 20.00 9	0.5 dB	FGain:Low				Mkr1	DET P NNN
Berlaiv Ref 20.00 0 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 - 00 -	0.5 dB 0 dBm	PNO: Fast ++ FGain:Low				Mkr1	50.00 n 2.97 dB
Bildiv Ref 20.00 9 - 00 -	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB			Mkr1	50.00 r 2.97 dE
dB/div Ref 20.00 9 - 00 -	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB
Bydiv Ref 20.00 9 - 00 -	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB	FUNCTION WIDTH	Sweep	Mkr1	50.00 n 2.97 dB
Bydiv Ref 20.00 9 - 00 -	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB
dB/div Ref 20.00 9	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB
dB/div Ref 20.00 9	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB
Bydiv Ref 20.00 9 - 00 -	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB
Bydiv Ref 20.00 9 - 9 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 11 1 12 - 13 - 14 - 15 - 16 - 17 1 18 - 19 - 10 -	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB
Bildiv Ref 20.00 Image: State of the state of	0.5 dB 0 dBm	FGain:Low	#Atten: 30 dB		Sweep	Mkr1 -:	50.00 n 2.97 dB



Duty Cycle NVNT BLE 2M 2440MHz Keysight Spectrum Analyzer - Swept SA 03:27:05 PM Aug 29, 2022 Center Freq 2.440000000 GHz Avg Type: Log-Pwr TRACE 1 2 3 4 5 TYPE WWWWW DET P N N N N Trig: Free Run #Atten: 30 dB PNO: Fast IFGain:Low **н**н Mkr1 50.00 ms -2.85 dBm Ref Offset 0.5 dB Ref 20.00 dBm 10 dB/div 0.00 40.0 50.0 Center 2.440000000 GHz Span 0 Hz Sweep 100.0 ms (10001 pts) Res BW 1.0 MHz #VBW 3.0 MHz MRR MOD: 1 N 2 3 4 5 6 7 7 8 9 10 11 MKR MODE TRC SCL FUNCTION FUNCTION WIDTH FUNCTION VALUE 50.00 ms -2.85 dBm t STATUS Duty Cycle NVNT BLE 2M 2480MHz Keysight Spectrum Analyzer - Swept S κ RL RF 50 Ω Α 03:29:28 PM Aug 29, 2022 Avg Type: Log-Pwr TRACE 1 2 3 4 5 TYPE WWWWW DET P N N N N Center Freq 2.480000000 GHz PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 50.00 ms Ref Offset 0.5 dB Ref 20.00 dBm -2.19 dBm 0 dB/div 0.0 10.0 20.0 30.0 40.0 Center 2.480000000 GHz Span 0 Hz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 100.0 ms (10001 pts) Y FUNCTION FUNCTION WIDTH -2.19 dBm MKR MODE TRC SCL FUNCTION VALUE 50.00 ms Ν t 2 3 4 5 6 7 8 9 10 11 STATUS sG



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2. Maximum Average Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	-2.62	0	-2.62	<=30	Pass
NVNT	BLE 1M	2440	-2.78	0	-2.78	<=30	Pass
NVNT	BLE 1M	2480	-2.16	0	-2.16	<=30	Pass
NVNT	BLE 2M	2402	-3	0	-3	<=30	Pass
NVNT	BLE 2M	2440	-2.84	0	-2.84	<=30	Pass
NVNT	BLE 2M	2480	-2.2	0	-2.2	<=30	Pass



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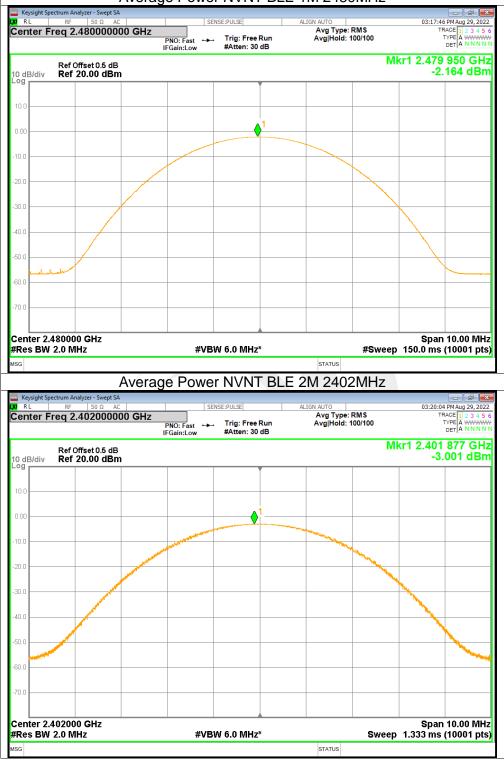
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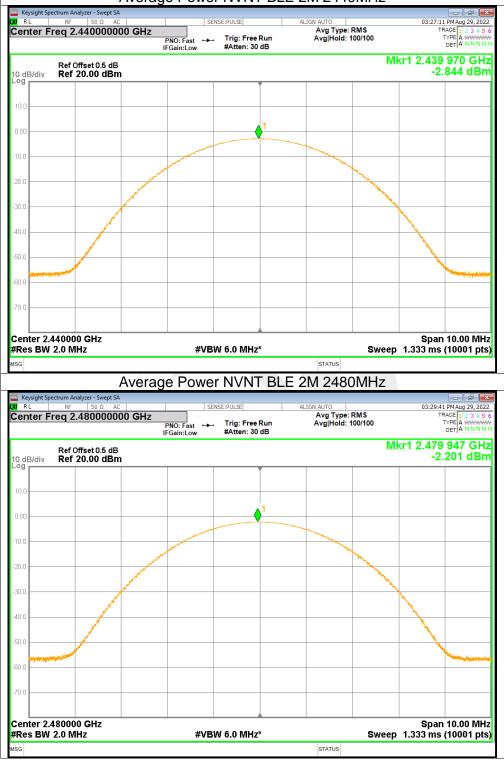


Average Power NVNT BLE 1M 2480MHz

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Average Power NVNT BLE 2M 2440MHz

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3. Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	-2.43	<=30	Pass
NVNT	BLE 1M	2440	-2.59	<=30	Pass
NVNT	BLE 1M	2480	-1.96	<=30	Pass
NVNT	BLE 2M	2402	-2.52	<=30	Pass
NVNT	BLE 2M	2440	-2.69	<=30	Pass
NVNT	BLE 2M	2480	-2.04	<=30	Pass



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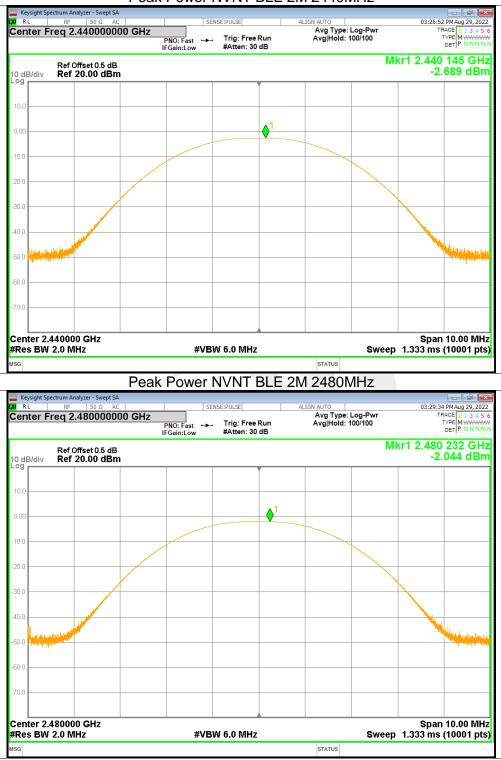


Peak Power NVNT BLE 1M 2480MHz

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Peak Power NVNT BLE 2M 2440MHz

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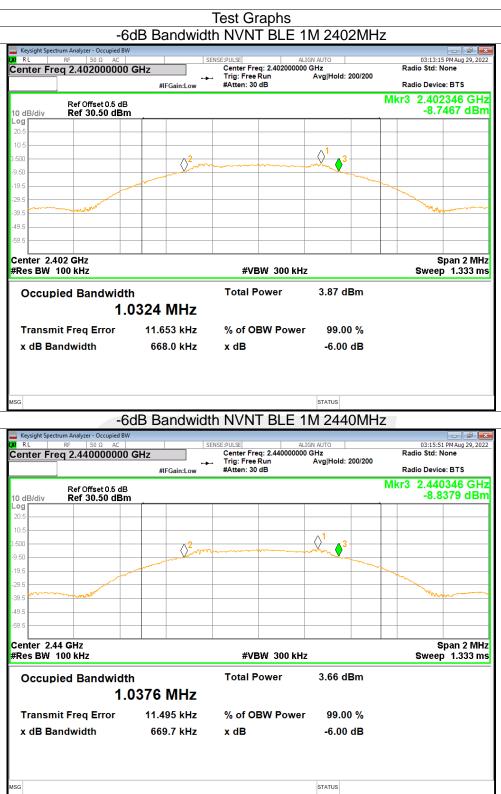
4. -6dB Bandwidth

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	0.67	>=0.5	Pass
NVNT	BLE 1M	2440	0.67	>=0.5	Pass
NVNT	BLE 1M	2480	0.67	>=0.5	Pass
NVNT	BLE 2M	2402	1.37	>=0.5	Pass
NVNT	BLE 2M	2440	1.36	>=0.5	Pass
NVNT	BLE 2M	2480	1.45	>=0.5	Pass



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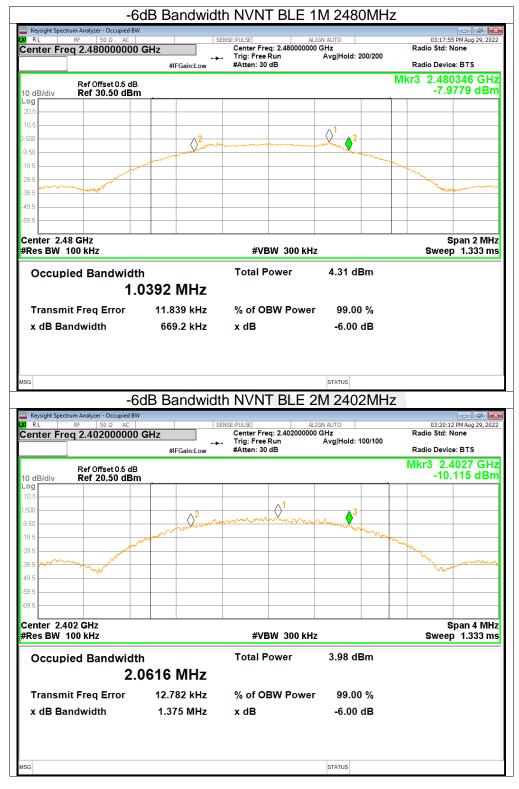




Shenzhen STS Test Services Co., Ltd.

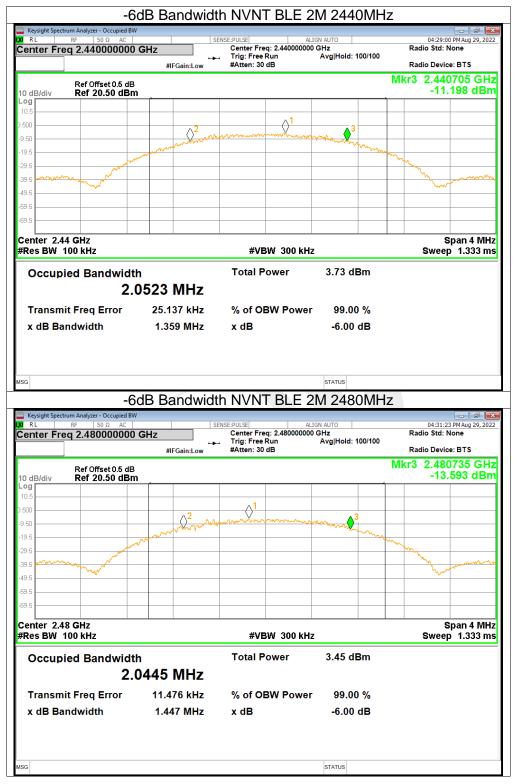


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5. Maximum Power Spectral Density Level

			· · · · · · · · · · · · · · · · · · ·		
Condition	Mode	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	-13.9	<=8	Pass
NVNT	BLE 1M	2440	-12.76	<=8	Pass
NVNT	BLE 1M	2480	-13.63	<=8	Pass
NVNT	BLE 2M	2402	-15.55	<=8	Pass
NVNT	BLE 2M	2440	-15.49	<=8	Pass
NVNT	BLE 2M	2480	-16.08	<=8	Pass



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		Г \	יועאו שכ	IT BLE 1M	Z4UZIVINZ	
	ectrum Analyzer - Swept SA RF 50 Ω AC			NSE:PULSE	ALIGN AUTO	03:13:24 PM Aug 29, 2
	req 2.4020000	00 GHz	NO: Wide	Trig: Free Run	Avg Type: Log-Pwr Avg Hold: 20/20	TRACE 1 2 3 4 TYPE MWWW DET P N N N
	D.(07 1		FGain:Low	#Atten: 30 dB	м	kr1 2.402 015 1 G
dB/div	Ref Offset 0.5 dB Ref 20.00 dBm	1				-13.896 dE
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.0	wanter and talk	ለለ መሰ		Marthalan	March March and March	An way poli and any may
	and an a start of the start of	Yynthu (mar	Υ		. IL JAI AMARIAN	AU THAN MULLING MARY
° M NY						· · · · · · · · · · · · · · · ·
.0						_
.0						
.0						
enter 2-	4020000 GHz					Span 1.005 M
es BW	4020000 GHz 3.0 kHz		#VB	W 10 kHz		Span 1.005 M eep 106.0 ms (1001 p
es BW					STATUS	
es BW				W 10 KHZ	STATUS	
Keysight Sp	3.0 kHz	00 GHz	SD NVN	NT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr	eep 106.0 ms (1001 p 03:16:02 PM Aug 29, 2 TRACE []: 23 4
Keysight Sp	3.0 kHz ectrum Analyzer - Swept SA RF 50 Ω AC	00 GHz	SD NVN	NT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50	eep 106.0 ms (1001 p 03:16:02 PM Aug 29, 2 TRACE 1: 3 3 4 TYPE M UPPE M DET P NNN DET P NNN
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA RF 50 Ω AC	00 GHz		NT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 3.3 4 TYPE M WWA
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA RF 50 Ω AC req 2.44000000 Ref Offset 0.5 dB	00 GHz		NT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 3.3 4 TYPE MUN DET PININ kr1 2.439 882 4 G
Keysight Sp RL Inter F	3.0 kHz ectrum Analyzer - Swept SA RF 50 Ω AC req 2.44000000 Ref Offset 0.5 dB	00 GHz		NT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 3.3 4 TYPE MUN DET PININ kr1 2.439 882 4 G
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA RF 50 Ω AC req 2.44000000 Ref Offset 0.5 dB	00 GHz		NT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 3 4 TYPE MUN DET PININ kr1 2.439 882 4 G
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
dB/div g dB/div g dB/div g dB/div g dB/div g dB/div g dB/div	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
dB/div dB/div g a a a a a a b a a b a b a a b a a a b a a a a a a a a a a a a a	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
dB/div dB/div g a a a a a a b a a b a b a a b a a a b a a a a a a a a a a a a a	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
Keysight Sp RL enter F	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
dB/div	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz	SD NVN	JT BLE 1M	STATUS 2440MHz ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 50/50 M	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE
dB/div	3.0 kHz ectrum Analyzer - Swept SA № 50 Ω AC req 2.44000000 Ref Offset 0.5 dB Ref 20.00 dBm	00 GHz		JT BLE 1M	STATUS	eep 106.0 ms (1001 p 03:16:02 PM Aug 29,2 TRACE [] 23 4 TYPE M VDET P NNN kr1 2.439 882 4 G -12.764 dE



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PSD NVNT BLE 1M 2480MHz Keysight Spectrum Analyzer - Swept SA 03:18:03 PM Aug 29, 2022 Center Freq 2.480000000 GHz TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN Avg Type: Log-Pwi Avg|Hold: 20/20 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low -----Mkr1 2.479 968 8 GHz Ref Offset 0.5 dB Ref 20.00 dBm 10 dB/div -13.626 dBm n nr 0 manity & AMANDAN Marked la mM MWWWWWWWWW Mart maller Varia 20. 30.0 40.0 50. 60. Center 2.4800000 GHz Span 1.005 MHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 106.0 ms (1001 pts) SG STATUS PSD NVNT BLE 2M 2402MHz Keysight Spectrum Analyzer - Swept SA XI R L RF 50 Ω A0 03:20:40 PM Aug 29, 2022 SENSE:PULS Avg Type: Log-Pwr Avg|Hold: 100/100 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N Center Freq 2.402000000 GHz PNO: Wide +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.402 143 9 GHz Ref Offset 0.5 dB Ref 20.00 dBm -15.553 dBm 10 dB/div 10. Ø hour white and the second stand and the second stand and the second stand and the second stand stan www.halawria.happy.www.halabar 20. 30.0 40.0 Center 2.402000 GHz Span 2.055 MHz Sweep 216.7 ms (1001 pts) #Res BW 3.0 kHz #VBW 10 kHz STATUS SG



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PSD NVNT BLE 2M 2440MHz Keysight Spectrum Analyzer - Swept SA 04:29:28 PM Aug 29, 2022 Center Freq 2.440000000 GHz TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N Avg Type: Log-Pwi Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low -----Mkr1 2.439 689 92 GHz Ref Offset 0.5 dB Ref 20.00 dBm 10 dB/div -15.487 dBm n nr nto phylologo the training and and an and dight the liter of the stranged with the 20. MANNAL M 30.0 40.0 50. 60. Center 2.440000 GHz Span 2.040 MHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 215.1 ms (1001 pts) SG STATUS PSD NVNT BLE 2M 2480MHz Keysight Spectrum Analyzer - Swept SA K R R S0 Ω A0 04:31:52 PM Aug 29, 2022 SENSE:PULS Avg Type: Log-Pwr Avg|Hold: 100/100 TRACE 1 2 3 4 5 TYPE MWWWW DET PNNNN Center Freq 2.480000000 GHz PNO: Wide +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.480 100 1 GHz -16.083 dBm Ref Offset 0.5 dB Ref 20.00 dBm 10 dB/div 10. many as and the second particular for a first for the second particular for the second particula how degrade of all all when a with ANNING 30.0 40.0 Center 2.480000 GHz Span 2.175 MHz Sweep 229.3 ms (1001 pts) #Res BW 3.0 kHz #VBW 10 kHz STATUS SG



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6. Band Edge

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-55.05	<=-20	Pass
NVNT	BLE 1M	2480	-55.63	<=-20	Pass
NVNT	BLE 2M	2402	-32.5	<=-20	Pass
NVNT	BLE 2M	2480	-52.85	<=-20	Pass



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Keysight R L	Spectrum A	nalyzer - Swept S 50 Ω A	A			M 2402MH		02:12:20 DM Aug	
		.4020000	00 GHz	NO: Wide	ISE:PULSE	ALIGN AUTO Avg Type: Avg Hold:		03:13:39 PM Aug 2 TRACE 1 2 TYPE M #	34 ////////////////////////////////////
				Gain:Low	#Atten: 30 dB	, trainera.		DET P	INN
dB/div		Offset 0.5 dB 20.50 dBr					MI	kr1 2.401 768 -2.646	
					The second secon				
0.5									
					A 1				
					hing				
50									
9.5									
9.5									
9.5				-		Y			
9.5									
2.0				all					
9.5 pal ing	dychongol	and the second second	ndrander Malladahe	ester 1			March and the second	physical him in the office of the second	M-Maga
9.5									
enter 2	2.40200	00 GHz						Span 8.000	M
	2.40200 N 100 H			#VB\	N 300 kHz		#Swee	Span 8.000 p 100.0 ms (100	
Res Bl		(Hz	· - ·			STATUS		p 100.0 ms (100	
Res Bl	N 100	кнz Ва				status 2402MHz E		p 100.0 ms (100 N	1 pt
Res Bl	N 100 I	KHZ Ba nalyzer - Swept S 50 Ω A		e NVNT		2402MHz E	Emissio	p 100.0 ms (100	1 pt
Res Bl	N 100 I	KHZ Ba nalyzer - Swept Sv	00 GHz		BLE 1M 2	2402MHz E	Emissioi	p 100.0 ms (100 N 03:13:54 PM Aug TRACE 1 TYPE M	1 pt
Res Bl	N 100 F	KHz Ba nalyzer - Swept S. 50 Ω A 2.35600000	a c 00 GHz P F		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 03:13:54 PM Aug TRACE 1 TYPE M DET P	1 pt
Res Bl G Keysight RL enter	N 100 H Spectrum A RF Freq 2 Ref	KHZ Ba nalyzer - Swept S 50 Ω A	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 N 03:13:54 PM Aug TRACE 1 TYPE M	1 pt
Keysight RL enter	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Keysight RL enter	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Keysight RL Banter	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Keysight RL enter	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Keysight RL RL B 0.5	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Keysight Keysight RL RL enter 0 0 0.5 0 9.5 9.5 9.5	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Respiration G Keysight RL RL Comparison SO O O O O O O SO O	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 pt
Keysight RL RL RL RL SO <	N 100 H Spectrum A RF Freq 2 Ref	KHz Ba nalyzer - Swept Sa 50 Ω A 2.35600000	A OO GHz IF		BLE 1M 2	2402MHz E	Emissioi Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 TRACE 1 DET PN DET PN Mkr1 2.402 2	1 p1
Res Bi g keysight RL enter 0 dB/dlv s <t< td=""><td>N 100 F</td><td>Contract of the second second</td><td>A OO GHz IF</td><td>e NVNT</td><td>BLE 1M :</td><td>2402MHz E</td><td>Emission Log-Pwr 100/100</td><td>p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRAC</td><td></td></t<>	N 100 F	Contract of the second	A OO GHz IF	e NVNT	BLE 1M :	2402MHz E	Emission Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRAC	
Res Bi c c keysight c RL c enter c 0 dB/div c 0 s <td>N 100 F</td> <td>Contract of the second second</td> <td>A OO GHz IF</td> <td>e NVNT</td> <td>BLE 1M 2</td> <td></td> <td>Emission Log-Pwr 100/100</td> <td>p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 03:13:54 PMAug 03:13:54 PMAug TRACE 1 03:13:54 PMAug 03:13:54 PMAug 04:13:54 PMAug 04:14:54 PMAug 04:154 PM</td> <td></td>	N 100 F	Contract of the second	A OO GHz IF	e NVNT	BLE 1M 2		Emission Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 03:13:54 PMAug 03:13:54 PMAug TRACE 1 03:13:54 PMAug 03:13:54 PMAug 04:13:54 PMAug 04:14:54 PMAug 04:154 PM	
Keysight RL RL enter 0 dE/div 0.5 0.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.6 9.7 9.8 9.5 9.6 9.7 9.8 9.9 9.5 9.6 9.7 9.8 9.9 9.9 9.5 9.6 9.7 9.8 9.9 9.9 9.5 9.6 9.7 9.8 9.9 9.9 9.1 10	W 100 H Spectrum A RF Freq 2 Ref Ref 306000 (W 100) Incessor 1	Contract of the second	2 00 GHz P IF 3 n 2.402 2 GHz	e NVNT	BLE 1M 2 ISE:PULSE Trig: Free Run #Atten: 30 dB	2402MHz E	Emission Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRAC	
Keysight RL RL enter 0 dE/div 0.5 0.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.6 9.7 9.8 9.5 9.6 9.7 9.8 9.9 9.5 9.6 9.7 9.8 9.9 9.9 9.5 9.6 9.7 9.8 9.9 9.9 9.5 9.6 9.7 9.8 9.9 9.9 9.1 10	N 100 F	Contract of the second	X 2.402 2 GHz 2.400 0 GHz 2.400 0 GHz	e NVNT SET SGain:Low #VB1 ************************************	BLE 1M 2 ISE:PULSE Trig: Free Run #Atten: 30 dB Value Value Value Value UNCTION dBm dBm dBm		Emission Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 03:13:54 PMAug 03:13:54 PMAug TRACE 1 03:13:54 PMAug 03:13:54 PMAug 04:13:54 PMAug 04:14:54 PMAug 04:154 PM	
Res Bi keysight RL RL enter 0 dB/div 0.05 <td>N 100 Spectrum A RF Freq 2 Ref Ref 30600 (M 100 IRC SSL 1 f</td> <td>Contract of the second second</td> <td>x 2.400 2 GHz</td> <td>E NVNT</td> <td>BLE 1M 2 ISE:PULSE Trig: Free Run #Atten: 30 dB Value Value Value Value UNCTION dBm dBm dBm</td> <td></td> <td>Emission Log-Pwr 100/100</td> <td>p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 03:13:54 PMAug 03:13:54 PMAug TRACE 1 03:13:54 PMAug 03:13:54 PMAug 04:13:54 PMAug 04:14:54 PMAug 04:154 PM</td> <td></td>	N 100 Spectrum A RF Freq 2 Ref Ref 30600 (M 100 IRC SSL 1 f	Contract of the second	x 2.400 2 GHz	E NVNT	BLE 1M 2 ISE:PULSE Trig: Free Run #Atten: 30 dB Value Value Value Value UNCTION dBm dBm dBm		Emission Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 03:13:54 PMAug 03:13:54 PMAug TRACE 1 03:13:54 PMAug 03:13:54 PMAug 04:13:54 PMAug 04:14:54 PMAug 04:154 PM	
Res B} G Keysight RL enter 0	N 100 F	Contract of the second	X 2.402 2 GHz 2.400 0 GHz 2.400 0 GHz	e NVNT SET SGain:Low #VB1 ************************************	BLE 1M 2 ISE:PULSE Trig: Free Run #Atten: 30 dB Value Value Value Value UNCTION dBm dBm dBm		Emission Log-Pwr 100/100	p 100.0 ms (100 n 03:13:54 PMAug TRACE 1 TRACE 1 03:13:54 PMAug 03:13:54 PMAug TRACE 1 03:13:54 PMAug 03:13:54 PMAug 04:13:54 PMAug 04:14:54 PMAug 04:154 PM	

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China Tel: +86-755 3686 6288 Fax:+86-755 3686 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



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RL RF 50 S enter Freq 2.4800	00000 GHz		E : Free Run en: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	03:18:19 PMAug 29, 20 TRACE 1 2 3 4 TYPE M WWW DET P NNN
Ref Offset 0.	5 dB	Same with			Mkr1 2.479 768 GH -2.279 dB
odB/div Ref 20.50	dBm				-2.279 UDI
10.5					
0.0					
500					
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9.5					
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39.5					
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		www.		Maryland .	
9.5 - 	Harthout the per the state of				addinana waaloo aliningay koo faana wixii kadaa
9.5					
enter 2.480000 GHz	:	20 (DIM 0.00			Span 8.000 MH
Res BW 100 kHz		#VBW 300	KHZ	#SW	veep 100.0 ms (1001 pt
				011100	
	Rand Edge	NIVNIT DI	E 1M 249		ion
		NVNT BL	E 1M 248	80MHz Emiss	
Keysight Spectrum Analyzer - Sv R L RF 50 S	wept SA Ω AC	SENSE:PULS		ALIGN AUTO	03:18:32 PM Aug 29, 20
Keysight Spectrum Analyzer - Sv	wept SA □ AC 00000 GHz	SENSE:PULS			03:18:32 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE M WWWW
Keysight Spectrum Analyzer - Sv RL RF 50 S enter Freq 2.5260	AC A	SENSE:PULS	E Free Run	ALIGN AUTO Avg Type: Log-Pwr	03:18:32 PMAug 29, 20 TRACE 1 2 3 4 TYPE MWWW DET P NN N Mkr1 2.479 8 GH
Keysight Spectrum Analyzer - Sv RL RF 50 12 enter Freq 2.5260 Ref Offset 0 0 dB/div Ref 20.50	wept SA Q AC 000000 GHz PN IFC .5 dB	SENSE:PULS	E Free Run	ALIGN AUTO Avg Type: Log-Pwr	03:18:32 PMAug 29, 20 TRACE 1 2 3 4 TYPE MWWW DET P NN N Mkr1 2.479 8 GH
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Band Edge NVNT BLE 1M 2480MHz Ref



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dB/div add div add di add di add div add div add div add div add div add di	RF req 2 Ref Ref 06000 (100) RE SEL 1 f 1 f	nalyzer - Swept 5/ 50 Ω At 2.3560000 Offset 0.5 dE 20.00 dBr	2 00 GHz 1 3 n 2.401 5 GHz 2.400 0 GHz 2.400 0 GHz	PN0: Fast - FGain:Low #VV -4.0 -37.0(-37.0(SENSE:PULSE → Trig: Fi #Atten: #Atten: BW 300 k BW 300 k 11 dBm 34 dBm	ree Run 30 dB		Log-Pwr 00/100	Mkr Sep 9.6	1 2.40 -4.1	PMaug 29, 20 ACE 1 2 3 4: YPE M WWW DET P NNN DI 1 5 GH D11 dB D11 dB D11 dB 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Band Edge NVNT BLE 2M 2402MHz Ref



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Keysight Spectrum Analyzer - Swe RL RF 50 Ω enter Freq 2.48000	AC 0000 GHz		:PULSE Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	04:31:58 PMAug 29, 20: TRACE 1 2 3 4 5 TYPE M WWW DET P N NN
Ref Offset 0.5 dB/div Ref 20.00 d	dB	-Gain:Low	#Atten: 50 dB		Mkr1 2.479 856 GH -5.407 dBr
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and a second					- Andrew Marine
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enter 2.480000 GHz		<i>#</i>) (5) (1)			Span 8.000 MH
Res BW 100 kHz		#VBW	300 kHz	S	weep 1.000 ms (1001 pt
G				STATUS	
	Band Edg	e NVNT E	BLE 2M 24	status 180MHz Emiss	sion
Keysight Spectrum Analyzer - Swe	ept SA			180MHz Emiss	
Keysight Spectrum Analyzer - Swe RL RF 50 Ω	pt SA AC 0000 GHz	SENSE			04:32:03 PM Aug 29, 202 TRACE 12, 3, 4, 5
E Keysight Spectrum Analyzer - Swe RL RF 50 Ω Center Freq 2.52600 Ref Offset 0.5	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:03 PMAug 29, 202 TRACE 1 2 34 5 TYPE MWWW DET P NNNN Mkr1 2.479 9 GH
Everysight Spectrum Analyzer - Swe RL RF 50 Q center Freq 2.52600 Ref Offset 0.5 0 dB/div Ref 20.00 c	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:03 PMAug 29, 202 TRACE 1 2 34 5 TYPE MWWW DET P NNNN Mkr1 2.479 9 GH
E Keysight Spectrum Analyzer - Swe RL RF 50 Ω center Freq 2.526000 Ref Offset 0.5 0 dB/div Ref 20.00 c	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:03 PMAug 29, 202 TRACE 1 2 34 5 TYPE MWWW DET P NNNN Mkr1 2.479 9 GH
Exercise A contract of the second contract of	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:33 PMAug 29, 202 TRACE [12:345 TYPE MWWW DETP NNNN Mkr1 2.479 9 GH -5.695 dBr
Exercise to the second	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:03 PM Aug 29, 202
Exercise for the formation of the format	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:33 PMAug 29, 202 TRACE [12:345 TYPE MWWW DETP NNNN Mkr1 2.479 9 GH -5.695 dBr
Exercise to the second	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:03 PMAug 29, 202 TRACE [12:345 TYPE MWWW DETP NNNN Mkr1 2.479 9 GH -5.695 dBr
E Keysight Spectrum Analyzer - Swe RL RF S0 Q center Freq 2.52600 CodB/div Ref Offset 0.5 CodB/div Ref 20.00 c Cod Cod Cod Cod Cod Cod Cod Cod Cod Co	AC 0000 GHz	PNO: Fast	:PULSE	480MHz Emiss	04:32:03 PM Aug 29, 202 TRACE 2.3.4 TYPE M WWW DET P N N N Mkr1 2.479 9 GH -5.695 dBr -25.41 dE
E Keysight Spectrum Analyzer - Swe RL RF 50 Q center Freq 2.526000 0 dB/div Ref Offset 0.5 0 dB/div Ref 20.00 c 0 0 0 0 0 0 0 0 0 0 0 0 0 0	AC 0000 GHz	SENSE PNO: Fast FGain:Low	PULSE	Align Auto Avg Type: Log-Pwr Avg Hold: 100/100	Contraction of the second seco
E Keysight Spectrum Analyzer - Swe RL RF 50 Q center Freq 2.526000 Content of the second	AC 0000 GHz F	SENSE FGain:Low	PULSE	Align Auto Avg Type: Log-Pwr Avg Hold: 100/100	04:32:33 PMAug 29, 202 TRACE [12:345 TYPE MWWW DETP NNNN Mkr1 2.479 9 GH -5.695 dBr
Exercise Action Analyser - Sweether Analyser - Sweether Analyser - Sweether Analyser - Sweether Freq 2.52600 Ref Offset 0.5 Ref Offset 0.5 Ref Offset 0.5 Ref Offset 0.5 Ref 2.000 c	AC OCOUNT OF THE ACTION OF THE	SENSE PNO: Fast → FGain:Low #VBW 56.695 dB -59.845 dB -61.860 dB	PULSE	Align Auto Avg Type: Log-Pwr Avg Hold: 100/100	Contraction of the second seco
Exercise A section Analyzer - Swe RL RF 50 Ω center Freq 2.52600 Ref Offset 0.5 0 dB/div Ref 20.00 c 0 dB	x 2.479 9 GHz 2.483 5 GHz	SENSE PNO: Fast → FGain:Low #VBW 56.695 dB -59.845 dB -61.860 dB	PULSE	Align Auto Avg Type: Log-Pwr Avg Hold: 100/100	04:32:03 PM Aug 29, 202 TRACE 12, 23 A 5 TYPE IN AVAIL DET P NNN Mkr1 2.479 9 GH -5.695 dBr -2541 dE -2541 dE Stop 2.57600 GH weep 9.600 ms (1001 pts
Exercise Approximate Approxima	x 2.479 9 GHz 2.483 5 GHz	SENSE PNO: Fast → FGain:Low #VBW 56.695 dB -59.845 dB -61.860 dB	PULSE	Align Auto Avg Type: Log-Pwr Avg Hold: 100/100	04:32:03 PM Aug 29, 202 TRACE 12, 23 A 5 TYPE IN AVAIL DET P NNN Mkr1 2.479 9 GH -5.695 dBr -2541 dE -2541 dE Stop 2.57600 GH weep 9.600 ms (1001 pts
Keysight Spectrum Analyzer - Swe RL RF 50 @ Ref Offset 0.5 Ref Offset 0.5 Ref 20.00 c 00 0 0 0 00 0 0 0 0 00 0 0 0 0 0 00 0 0 0 0 0 0 00 0	x 2.479 9 GHz 2.483 5 GHz	SENSE PNO: Fast → FGain:Low #VBW 56.695 dB -59.845 dB -61.860 dB	PULSE	Align Auto Avg Type: Log-Pwr Avg Hold: 100/100	Contraction of the second seco

Band Edge NVNT BLE 2M 2480MHz Ref

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7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-30.71	<=-20	Pass
NVNT	BLE 1M	2440	-41.27	<=-20	Pass
NVNT	BLE 1M	2480	-32.42	<=-20	Pass
NVNT	BLE 2M	2402	-42.42	<=-20	Pass
NVNT	BLE 2M	2440	-45.83	<=-20	Pass
NVNT	BLE 2M	2480	-46.71	<=-20	Pass



Shenzhen STS Test Services Co., Ltd.



RL	n Analyzer - Swept SA RF 50 Ω AC		SENS	SE:PULSE	ALIO	GN AUTO	Dem	03:14:1	LO PM Aug 29, 202
enter Fred	2.402000000 G	Hz PNO: I IFGain		Trig: Free Ru Atten: 40 dB	n	Avg Type: L Avg Hold: 1		I	RACE 1 2 3 4 5 TYPE MWWW DET P N N N N
	ef Offset 0.5 dB ef 30.00 dBm						Mkr		267 0 GH 620 dBr
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10.0									
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20.0	and amount in the second se								
30.0									- No
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enter 2.402									
Res BW 100			#VBW	/ 300 kHz		STATUS	#Swee		
Res BW 100) kHz	urious			M 2402			p 100.0 m	
Res BW 100	D kHz Tx. Sp n Analyzer - Swept SA	urious	NVNT	BLE 1		2MHz E		p 100.0 m DN	is (1001 pts
Res BW 100	окни Тх. Sp	GHz			ALIO		Emissic	p 100.0 m DN 03:14:2	20 PM Aug 29, 202 RACE 1 2 3 4 5 TYPE 1 2 3 4 5
Res BW 100 sg Keysight Spectrur RL Center Freq	0 kHz Tx. Sp m Analyzer - Swept SA NF 50 Ω AC 13.2650000000 ef Offset 0.5 dB	GHz PNO:		TBLE 11 SE:PULSE Trig: Free Ru	ALIO	2MHz E	Emissic	p 100.ó m DN 03:14:2 T Mkr1 2.4	20 PMAug 29, 202 TRACE 1 2 3 4 5 TYPE M WWWW DET P NNNN 102 6 GH
Res BW 100 ss Keysight Spectrum RL Center Freq R 0 dB/div R	D kHz Tx. Sp n Analyzer - Swept SA RF 50 Ω AC 13.2650000000	GHz PNO:		TBLE 11 SE:PULSE Trig: Free Ru	ALIO	2MHz E	Emissic	p 100.ó m DN 03:14:2 T Mkr1 2.4	20 PMAug 29, 202 TRACE 1 2 3 4 5 TYPE M WWWW DET P NNNN 102 6 GH
Res BW 100 sc Keysight Spectrur R Center Freq Center Freq 20.0	0 kHz Tx. Sp m Analyzer - Swept SA NF 50 Ω AC 13.2650000000 ef Offset 0.5 dB	GHz PNO:		TBLE 11 SE:PULSE Trig: Free Ru	ALIO	2MHz E	Emissic	p 100.ó m DN 03:14:2 T Mkr1 2.4	20 PMAug 29, 202 TRACE 1 2 3 4 5 TYPE M WWWW DET P NNNN 102 6 GH
Res BW 100 sc Versight Spectrum R R Center Freq 20.0 10.0 0.00	0 kHz Tx. Sp m Analyzer - Swept SA NF 50 Ω AC 13.2650000000 ef Offset 0.5 dB	GHz PNO:		TBLE 11 SE:PULSE Trig: Free Ru	ALIO	2MHz E	Emissic	p 100.ó m DN 03:14:2 T Mkr1 2.4	20 PMAug 29, 202 TRACE 1 2 3 4 5 TYPE M WWWW DET P NNNN 102 6 GH
Res BW 100 sc Keysight Spectrur R Center Freq 20 10.0 R R R R R R R R R R R R R	0 kHz Tx. Sp m Analyzer - Swept SA NF 50 Ω AC 13.2650000000 ef Offset 0.5 dB	GHz PNO:		TBLE 11 SE:PULSE Trig: Free Ru	ALIO	2MHz E	Emissic	p 100.ó m DN 03:14:2 T Mkr1 2.4	1.500 MH s (1001 pts 20 PMAug 29, 202 TYPE MWWWW DET P NNNN 1022 6 GH: .484 dBn
Res BW 100 sc	0 kHz Tx. Sp m Analyzer - Swept SA NF 50 Ω AC 13.2650000000 ef Offset 0.5 dB	GHz PNO:	NVNT SENS Fast ↔	BLE 11 SE:PULSE Trig: Free Ru Atten: 40 dB	ALIC n	Avg Type: L Avg Type: L Avg Hold: 1	Emissic	p 100.ó m DN 03:14:2 T Mkr1 2.4	E (1001 pts 20 PMAug 29,202 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN 102 6 GH
Res BW 100 ss Keysight Spectrum RL Center Freq 20.0 10.0 0.00 10.0 0.00 10.0 0.00 10.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	D kHz Tx. Sp n Analyzer - Swept SA NF 500 AC 13.265000000 ef Offset 0.5 dB ef 30.00 dBm	GHz PNO: IFGain	NVNT SENS Fast ↔	BLE 11	ALIC N	Avg Type: L Avg Type: L Avg Hold: 1	Emissic	p 100.0 m DN 03:14:2 T Mkr1 2.4	E (1001 pts 20 PMAug 29,202 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN 102 6 GH
Res BW 100 ss Keysight Spectrum RL Center Freq 20.0 10.0 0.00 10.0 0.00 10.0 0.00 10.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0 kHz Tx. Sp m Analyzer - Swept SA NF 50 Ω AC 13.2650000000 ef Offset 0.5 dB	GHz PNO: IFGain	NVNT SENS Fast ↔	BLE 11 SE:PULSE Trig: Free Ru Atten: 40 dB	ALIC N	Avg Type: L Avg Type: L Avg Hold: 1	Emissic	p 100.0 m DN 03:14:2 T Mkr1 2.4	E (1001 pts 20 PMAug 29,202 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN 102 6 GH
Res BW 100 ss	D kHz Tx. Sp n Analyzer - Swept SA NF 500 AC 13.265000000 1 ef Offset 0.5 dB ef 30.00 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	GHz PNO: IFGain		BLE 11	ALIC N	Avg Type: L Avg Type: L Avg Hold: 1	emissic	p 100.0 m DN 03:14:2 Mkr1 2.4 -6	1001 pts 1001 pts 1000 pm Aug 29, 202 1000 pm Au
Res BW 100 ss Keysight Spectrum RL Center Freq CodB/div R 200 R 200 <thr< td=""><td>D kHz Tx. Sp n Analyzer - Swept SA NF 500 AC 13.265000000 ef Offset 0.5 dB ef 30.00 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1</td><td>GHz PNO: IFGain</td><td>NVNT</td><td>SE:PULSE Trig: Free Ru Atten: 40 dB</td><td>ALIC N</td><td>2MHz E</td><td>Emissic</td><td>p 100.0 m DN 03:14:2 Mkr1 2.4 -6</td><td>E (1001 pts 20 PMAug 29,202 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN 102 6 GH</td></thr<>	D kHz Tx. Sp n Analyzer - Swept SA NF 500 AC 13.265000000 ef Offset 0.5 dB ef 30.00 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	GHz PNO: IFGain	NVNT	SE:PULSE Trig: Free Ru Atten: 40 dB	ALIC N	2MHz E	Emissic	p 100.0 m DN 03:14:2 Mkr1 2.4 -6	E (1001 pts 20 PMAug 29,202 TRACE 1 2 3 4 5 TYPE MWWWW DET P NNNN 102 6 GH
Res BW 100 ss Start Spectrum RL Conter Freq Center Freq RL Conter Freq RL Start 0.03 GF RL MODE Freq RL Conter Freq RL RL Conter Freq RL RL RL Conter Freq RL RL RL RL Conter Freq RL RL RL RL Conter Freq	D kHz Tx. Sp n Analyzer - Swept SA NF 500 AC 13.265000000 ef Offset 0.5 dB ef 30.00 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	GHz PNO: IFGain	NVNT SENS Fast → :Low #VBW -6.484 d -3.3384 d	BLE 11		2MHz E	Emissic	p 100.0 m DN 03:14:2 Mkr1 2.4 -6 	1001 pts 10 pt 4 pt
Res BW 100 sc Sc R Center Freq Conter Freq C	D kHz Tx. Sp n Analyzer - Swept SA NF 50 Ω AC 13.265000000 1 ef Offset 0.5 dB ef 30.00 dBm 1 1 1 1 2 1 2 1 2 1 2 4 1 2 5 4 4 4 1 2 5 4 4 4 4 4 4 4 4 4 4 4 4 4	GHz PNO: IFGain	NVNT sens Fast ↔ clow \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	BLE 11		2MHz E	Emissic	p 100.0 m DN 03:14:2 Mkr1 2.4 -6 	1001 pts 1001 pts 1000 pm Aug 29, 202 1000 pm Au
Res BW 100 sc Sc Keysight Spectrur RL Center Freq RL Center Freq RL Conter	D kHz Tx. Sp n Analyzer - Swept SA NF 50 Ω AC 13.265000000 1 ef Offset 0.5 dB ef 30.00 dBm 1 1 1 1 2 1 2 1 2 1 2 4 1 2 5 4 4 4 1 2 5 4 4 4 4 4 4 4 4 4 4 4 4 4	GHz PNO: IFGain	NVNT SENS Fast → - :Low	BLE 11		2MHz E	Emissic	p 100.0 m DN 03:14:2 Mkr1 2.4 -6 	1001 pts 1001 pts 1000 pm Aug 29, 202 1000 pm Au



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Kauninht Ca		and an an Count	CA		VNIBL					
R L	ectrum Ar RF	nalyzer - Swept 50 Ω		S	ENSE:PULSE	AI	LIGN AUTO			19 PM Aug 29, 20
enter F	req 2	.440000	000 GHz	PNO: Wide ↔	. Trig: Free R	un	Avg Type: Avg Hold:		1	TYPE MWWW
				PNO: Wide ↔ IFGain:Low	#Atten: 30 d					DET P N N N
	Ref	Offset 0.5 dl	в					Mki	r1 2.440 2	
dB/div		20.50 dB							-2	.747 dB
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enter 2.4 Res BW				#VE	300 kHz			#Swee	ep 100.0 m	n 1.500 MH Is (1001 pt
G									•	
1							STATUS			
		Tv	Courio			M 044		Emiaai	- n	
				us NVN	IT BLE 1	M 244		Emissi	on	
		Tx. nalyzer - Swept 1 50 Ω	SA		IT BLE 1					
RL	RF	nalyzer - Swept 50 Ω	SA	S	ENSE:PULSE	A		Log-Pwr	03:16:	29 PM Aug 29, 20
RL	RF	nalyzer - Swept 50 Ω	sa ac 0000 GHz			un		Log-Pwr	03:16:	29 PM Aug 29, 20 IRACE 1 2 3 4 5 TYPE MWWW DET P N N N
RL	_R , req 1	nalyzer - Swept 50 Ω	sa ac 0000 GHz	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
enter F	RF req 1 Ref 0	alyzer - Swept 1 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNI 40 5 GH
enter F	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
enter F	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
enter F	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
RL enter F 0 dB/div 0 g 0.5 .50	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
RL enter F 0 dB/div 0 g 0.5 500 .50 9.5	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PMAug 29,200 29 PMAug 29,200 TYPE MWWWW Det PNNNT 1400 5 GH .521 dBr -22.75 ut
RL enter F 0 dB/div 0 0.5	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE	un		Log-Pwr	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
RL enter F 0 dB/div 90 0.5 9.5 9.5 9.5	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast +	ENSE:PULSE - Trig: Free R #Atten: 30 d	un B		Log-Pwr 10/10	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNI 40 5 GH
RL 0 dB/div 0 dB/div 0 g 0.5 9.5 9.5 9.5 9.5 9.5 9.5	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast IFGain:Low	ENSE:PULSE - Trig: Free R #Atten: 30 d			Log-Pwr 10/10	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNT 40 5 GH
RL enter F 0 dB/div 0 d5/div 9 d5	RF req 1 Ref 0	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast IFGain:Low	ENSE:PULSE - Trig: Free R #Atten: 30 d		LIGN AUTO AVIG TYPE: Avig Type: Avig Hold:	Log-Pwr 10/10	03:16: Mkr1 2.4	29 PM Aug 29, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P NNNI 40 5 GH
RL enter F 0 dB/div 0.05 0.05 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5	Ref C Ref	nalyzer - Swept : 50 Ω 3.265000	sa AC 00000 GHz IB	PNO: Fast IFGain:Low	ENSE:PULSE - Trig: Free R #Atten: 30 d		LIGN AUTO AVIG TYPE: Avig Type: Avig Hold:	Log-Pwr 10/10	03:16: Mkr1 2.4 -8	29 PM Aug 29, 20 RACE 1 2 34 3 TYPE MWWW DET P NNN L40 5 GH .521 dBr -2275 d
RL Penter F 0 dB/div 90 0 db/div 90 0 db/div 90 0 db/div 90 9 db/div	Ref 0 Ref 0	nalyzer - Swept 50 Ω 3.265000 Dffset 0.5 d 20.50 dB 1 1 1 1 1 1 1 1 1 1 1 1 1	sa AC 00000 GHz IB	PNO: Fast IFGein:Low	ENSE:PULSE		LIGN AUTO AVIG TYPE: Avig Type: AvigHold:	Log-Pwr 10/10	03:16: Mkr1 2.4 -8	29 PM ug 29, 20, IRACE 1 2, 34 5 IFACE 1 2, 34 5 DET P NNN L40 5 GH .521 dBr -22.75 dt -22.75 dt
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RL enter F 0 dB/div	RF (req 1 Ref (Ref)	nalyzer - Swept 50 Ω 3.265000 Dffset 0.5 d 20.50 dB 1 1 1 1 1 1 1 1 1 1 1 1 1	SA AC 00000 GHz B m Sm 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	PNO: Fast IFGain:Low	ENSE:PULSE - Trig: Free R #Atten: 30 d		LIGN AUTO AVIG TYPE: Avig Type: AvigHold:	Log-Pwr 10/10	03:16: Mkr1 2.4 -8	29 PM ug 29, 20, IRACE 1 2, 34 5 IFACE 1 2, 34 5 DET P NNN L40 5 GH .521 dBr -22.75 dt -22.75 dt
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RL enter F 0 dB/div	RF (Ref (Ref)	nalyzer - Swept 50 Ω 3.265000 Dffset 0.5 d 20.50 dB 1 1 1 1 1 1 1 1 1 1 1 1 1	SA AC 00000 GHz B m Sm 2.440 5 GH 26.441 8 GH 26.441 8 GH	PNO: Fast IFGain:Low	ENSE:PULSE - Trig: Free R #Atten: 30 d - Hold -			Log-Pwr 10/10	03:16: Mkr1 2.4 -8 -8 -8 -8 -8 -8 -8 -8 -8 -8	29 PM ug 29, 20, IRACE 1 2, 34 5 IFACE 1 2, 34 5 DET P NNN L40 5 GH .521 dBr -22.75 dt -22.75 dt
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RL enter F 0 dB/div 0 0.0 5 0 0.0 5 0 0.0 5 0 0.0 5 0 0.0 5 0 0.0 5 0 0.0 5 0 0.0 5 0 9.5 5 0 9.5 5 0 9.5 5 0 9.5 5 0 9.5 5 0 9.5 5 0 10 0 0 20 N 1 1 N 2 N 3 N 4 N 5 N 7 8 9 9	RF (Ref 1 Ref (Ref) 3 GHz 1 1 f 1 f	nalyzer - Swept 50 Ω 3.265000 Dffset 0.5 d 20.50 dB 1 1 1 1 1 1 1 1 1 1 1 1 1	SA AC 00000 GHz B m 3 4 4 4 4 4 4 4 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 5 4 5 4 5 4 5 4 5 5 5 6 5 5 5 5	PNO: Fast IFGain:Low	ENSE:PULSE - Trig: Free R #Atten: 30 d - Hold -			Log-Pwr 10/10	03:16: Mkr1 2.4 -8 -8 -8 -8 -8 -8 -8 -8 -8 -8	29 PM ug 29, 20, IRACE 1 2, 34 5 IFACE 1 2, 34 5 DET P NNN L40 5 GH .521 dBr -22.75 dt -22.75 dt
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Tx. Spurious NVNT BLE 1M 2440MHz Ref

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		wept SA						
	RF 50 S		SENSE	:PULSE	ALIGN AUTO		03:18:4	19 PM Aug 29, 2
	req 2.4800	00000 GHz			Avg Type: L		т	RACE 1 2 3 4
		Р	NO: Wide	Trig: Free Run Atten: 40 dB	Avg Hold: 1	00/100		DET P N N N
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Keysight Sp	ectrum Analyzer - Sv				2480MHz E	11115510		
RL	RF 50 9	wept SA 2 AC 000000 GHz	SENSE	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T	59 PM Aug 29, 20
RL	RF 50 9	wept SA 2 AC 000000 GHz	SENSE		ALIGN AUTO	.og-Pwr	03:18:5 T	TYPE NNN
enter F	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	TYPE NNN BO 2 GH
enter F	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	TYPE NNN BO 2 GH
enter F	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	TYPE NNN BO 2 GH
enter F	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	TYPE NNN BET PNNN
enter F	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	IN 10 10 10 10 10 10 10 10 10 10 10 10 10
enter F	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	TYPE NNN BET P NNN
RL enter F 0 dB/div 0 0 0 0 0.0	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	59 PM Aug 29, 20 RACE [] 2 3 4 TYPE M WWW DET P NNN 180 2 GH .729 dB
RL Image: constraint of the second seco	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	TYPE NNN BET P NNN
RL Image: constraint of the second seco	RF 50 G	wept SA 2 AC 0000000 GHz F IF 5 dB	SENSE PNO: Fast ↔	:PULSE	ALIGN AUTO Avg Type: L	.og-Pwr	03:18:5 T Mkr1 2.4	59 PM Aug 29, 2(RACE 1 2.3 4 TYPE M WW DET P NNN 180 2 GH .729 dB
RL enter F 0 dB/div 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	RF 50 G	xept SA 2 AC 000000 GHz 5 dB dBm	SENSE NO: Fast ↔ Gain:Low	:PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO Avg Type: L Avg Hold: 1	.og-Pwr //10	03:18:5 T Mkr1 2.4	59 PM Aug 29, 21 RACE 1 2 3 4 TYPE M WHW DET P N N N 180 2 GH .729 dB .2215c
RL Image: constraint of the second seco	RF 50 G	xept SA 2 AC 000000 GHz 5 dB dBm	SENSE Sense Gain:Low	PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO Avg Type: L Avg Hold: 1	.og-Pwr //10	03:18:5 T Mkr1 2.4	59 PM Aug 29, 21 RACE 1 2 3 4 TYPE M WHW DET P N N N 180 2 GH .729 dB .2215c
RL Image: constraint of the second seco	RF 50 G	xept SA 2 AC 000000 GHz 5 dB dBm	SENSE Sense Gain:Low	:PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO Avg Type: L Avg Hold: 1	.og-Pwr //10	03:18:5 T Mkr1 2.4	59 PM Aug 29, 21 RACE 11 2:3 4 TYPE M WWW DET P NNN 800 2 GH .729 dB .22150
RL anter F dB/div 9 9 0.0 0.0 0.0 0.0 0.0 0.0 0.	RF 50 4 Ref Offset 0 Ref 30.00	xept SA 2 AC 000000 GHz 5 dB dBm	SENSE Sense Gain:Low	PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO Avg Type: L Avg Hold: 1	.og-Pwr //10	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 21, 23 4 (RACE]] 23 4 PTPE MWWW DET P NNN 180 2 GH .729 dB
RL enter F 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Ref Offset 0 Ref 30.00	xept SA 2 AC 000000 GHz 5 dB dBm	SENSE Sense Gain:Low Sense Sens	PULSE	ALIGN AUTO Avg Type: L Avg Hold: 1	og-Pwr //10	03:18:5 T Mkr1 2.4 -7.	59 PM AU 29, 21 34 PRACE [] 2 34 TYPE M YMW DET P NNN 180 2 GF .729 dB -22.15.
RL enter F 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	RF 50 4 Ref Offset 0 Ref 30.00	xept SA 2 AC 000000 GHz 5 dB dBm	SENSE Sense Gain:Low Sense Sens	PULSE	ALIGN AUTO Avg Type: L Avg Hold: 1	og-Pwr //10	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 21, 23 4 PRACE 1, 23 4 TYPE M WWW DET P NNN 180 2 GH
dB/div 0 0.0	Ref Offset 0 Ref 30.00	x	SENSE Source S	PULSE	ALIGN AUTO Avg Type: L Avg Hold: 1	og-Pwr //10 //10 ////10 //////////	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 21, 23 4 PRACE 1, 23 4 TYPE M WWW DET P NNN 180 2 GH
RL Image: constraint of the second seco	Ref Offset 0 Ref 30.00 Ref 30.00 1 3 GHz 1 0 KHz	xept SA 2 AC 3 AC 5 dB dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SENSE Solution Sense Soluti	PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO	og-Pwr //10 //10 ////10 //////////	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 21 (27 3 4 PRACE 1) 27 4 PRACE 1)
RL enter F 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Ref Offset 0 Ref 30.00	xept SA 2 AC 3 AC 5 dB dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SENSE PNO: Fast Gain:Low 5 5 #VBW 4 -7.729 dB -34.578 dB -43.900 dB	PULSE	ALIGN AUTO	og-Pwr //10 //10 ////10 //////////	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 21, 23 4 PRACE 1, 23 4 TYPE M WWW DET P NNN 180 2 GH
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RL a enter F a a b a b a b a b a b b b b b b b b b b b b b b b b b b b b b b b b b c b c b c b c b c b c b c b c b c b c b c b c b c c c c c c c c c c	Ref Offset 0 Ref 30.00	xept SA 2 AC 3 AC 5 dB dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SENSE SO: Fast Gain:Low 5 5 5 5 5 5 5 5 5 5 5 5 5	PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO	og-Pwr //10 //10 ////10 /////////10 //////////	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 27 PRACE 11 23 4 TPREM WWW DET P NNN 180 2 GH -22150
RL enter F ente	Ref Offset 0 Ref 30.00	xept SA 2 AC 3 AC 5 dB dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SENSE SO: Fast Gain:Low 5 5 5 5 5 5 5 5 5 5 5 5 5	PULSE Trig: Free Run Atten: 40 dB	ALIGN AUTO	og-Pwr //10 //10 ////10 /////////10 //////////	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 27 PRACE 11 23 4 TPREM WWW DET P NNN 180 2 GH -22150
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RL enter F odB/div 29 0.0 <td>Ref Offset 0 Ref 30.00</td> <td>xept SA 2 AC 3 AC 5 dB dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4</td> <td>SENSE SO: Fast Gain:Low 5 5 5 5 5 5 5 5 5 5 5 5 5</td> <td>PULSE Trig: Free Run Atten: 40 dB</td> <td></td> <td>og-Pwr //10 //10 ////10 /////////10 //////////</td> <td>03:18:5 T Mkr1 2.4 -7.</td> <td>59 PMAU 29, 27 PRACE 11 23 4 TPREM WWW DET P NNN 180 2 GH -22150</td>	Ref Offset 0 Ref 30.00	xept SA 2 AC 3 AC 5 dB dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SENSE SO: Fast Gain:Low 5 5 5 5 5 5 5 5 5 5 5 5 5	PULSE Trig: Free Run Atten: 40 dB		og-Pwr //10 //10 ////10 /////////10 //////////	03:18:5 T Mkr1 2.4 -7.	59 PMAU 29, 27 PRACE 11 23 4 TPREM WWW DET P NNN 180 2 GH -22150

Tx. Spurious NVNT BLE 1M 2480MHz Ref



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	Avg Type: L	Trig: Free Run	NO: Wide 🛶 T	00 GHz	Analyzer - Swept SA 50 Ω AC 2.40200000	L
#Atten: 20 dB Avg Hold: 100/100 Mkr1 2.402 027 GF	Avg Type: L Avg Hold: 10				2.4020000	
#Atten: 20 dB Mkr1 2.402 027 GF -4.295 dB		#Atten: 20 dB	Coloria #/			
			-Gain:Low #/	IFO		
				a	Offset 0.5 dB f 10.50 dBm	
					1 10.30 UBII	
	-					
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Span 3.000 Mł		A			00 GHz	ter 2.402
#VBW 300 kHz Sweep 1.000 ms (1001 pt		/ 300 kHz	#VBW 3			s BW 100
STATUS	STATUS					
/NT BLE 2M 2402MHz Emission	1 2402MHz F	BLE 2M	IS NVNT F	Souriou	Τv	
					Analyzer - Swept SA	sight Spectrur
SENSE:PULSE ALIGN AUTO 03:21:31 PM Aug 29, 20		SE:PULSE	SENSE:P	2	50 Ω AC	L
Avg Type: Log-Pwr TRACE 1 2 3 4 4				PI	13.2650000	ter Frec
#Atten: 20 dB DET P NAME		#Atten: 20 dB	Gain:Low #/	IFO		
-6.214 dBr					f Offset 0.5 dB f 10.50 dBm	
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-24.30 dt						
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Stop 26.50 GH WBW 300 kHz Sweep -2,530 c (30001 pt		(300 kH-	#\/D\// 0			t 0.03 GH
			#VDVI J	×		
.214 dBm	N FUNCTION WIDTH	Bm	-6.214 dBm	x 2.401 7 GHz		N 1 1
714 dBm		Bm Bm	-46.714 dBm -46.714 dBm	4.805 2 GHz		N 1 1
.714 dBm		Bm	-56.521 dBm	7.207 8 GHz		N 1 1
.714 dBm .521 dBm		5.0	-00.000 uBII	3.020 9 GHZ		
.714 dBm .521 dBm						
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.714 dBm .521 dBm						
.714 dBm .521 dBm						
#VBW 300 kHz Sweep 2.530 s (300) Y FUNCTION FUNCTION WIDTH FUNCTION VALUE .214 dBm FUNCTION VALUE FUNCTION VALUE	N FUNCTION WIDTH	Function Bm Bm Bm Bm	-6.214 dBm -46.714 dBm -46.714 dBm	4.805 2 GHz 4.805 2 GHz	kHz	SBW 100 NODETROS N 1 1 N 1 1 N 1 1

Tx. Spurious NVNT BLE 2M 2402MHz Ref



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		IOUS NVN				
Keysight Spectrum Anal	yzer - Swept SA 50 Ω AC	SENSE:PU	.SE	ALIGN AUTO		04:29:34 PM Aug 29, 20
	40000000 GHz			Avg Type: Log	-Pwr	TRACE 1 2 3 4 TYPE M WWW
			g: Free Run tten: 20 dB	Avg Hold: 100/	100	DET P N N N
Bef Of	fset 0.5 dB				Mkr1	2.439 940 GI
dB/div Ref 1	0.50 dBm					-5.279 dB
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Res BW 100 kH	Z	#VBW 30	UKHZ		Sweep 1.	000 ms (1001 p
G				STATUS		
Keysight Spectrum Anal	Tx. Spuriou				11551011	
	50 Ω AC	SENSE:PU	SE	ALIGN AUTO		04:30:09 PM Aug 29, 20
	.265000000 GHz	NO: Fast 🛶 Tri	g: Free Run	ALIGN AUTO Avg Type: Log Avg Hold: 10/10		04:30:09 PM Aug 29, 20 TRACE 1 2 3 4 TYPE M WWW
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enter Freq 13	265000000 GHz P IF fset 0.5 dB 0.50 dBm	NO: Fast 🛶 Tri	g: Free Run ten: 20 dB	Avg Type: Log Avg Hoid: 10/11	) Mki	04:30:09 PM Aug 29,2 TRACE 1 2 3 4 TYPE MWWW DET P N NN 1 2.439 7 GF -6.668 dB -25:20 0 -25:20 0 Stop 26:50 GF
enter Freq 13	265000000 GHz P IF fset 0.5 dB 0.50 dBm	NO: Fast $\leftrightarrow$ Tri Gain:Low #A	g: Free Run ten: 20 dB	Avg Type: Log Avg Hold: 10/11	) Mki Sweep 2	04:30:09 PMAug 29,2 X TRACE 1 2 3 4 TYPE MWWW DET P NNN 1 2.439 7 GF -6.668 dB -25:20 0 -25:20 0 -25:20 -25:20 -25:20 0 -25:20 -25:20 -25:
Ref Of           0 dB/div         Ref Of           0 dB/div         Ref Of           0 g         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0           9 f         0	265000000 GHz P IF 7set 0.5 dB 0.50 dBm 0.50 dBm 0.50 dBm 0.50 dBm	NO: Fast → Tri Gain:Low #A	g: Free Run ten: 20 dB	Avg Type: Log Avg Hoid: 10/11	) Mki	04:30:09 PMAug 29,2 X TRACE 1 2 3 4 TYPE MWWW DET P NNN 1 2.439 7 GF -6.668 dB -25:20 0 -25:20 0 -25:20 -25:20 -25:20 0 -25:20 -25:20 -25:
enter Freq 13	1265000000 GHz P IF Tset 0.5 dB 0.50 dBm 0.50 dBm 4 2.439 7 GHz 12.202 7 GHz 4.793 7 GHz 4.793 7 GHz	NO: Fast → Tri Gain:Low #A	g: Free Run ten: 20 dB	Avg Type: Log Avg Hold: 10/11	) Mki Sweep 2	04:30:09 PMAug 29,2 TRACE 1 2 3 4 TYPE MWWW DET P NNN 1 2.439 7 GH -6.668 dBI -25.28 d -25.28 d -2
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### Tx. Spurious NVNT BLE 2M 2440MHz Ref



Page 74 of 75 Report No.: STS2208127W01

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	¹						-25.27 df
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19 5	100 kHz G <mark>SCL</mark> f f f f	2.480 2 GHz 12.403 0 GHz 4.769 0 GHz 7.3401 GHz	Y -5.505 dBm -51.989 dBm -67.399 dBm -67.724 dBm	D0 kHz		Stop 2( veep 2.530 s (3)	
19 5       29 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 5       39 6       39 79 5       30 6       30 7       30 7       30 8       30 8       30 8       30 8       4       4       1       4       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1    1	100 kHz Gesel f f f	2.480 2 GHz 12.403 0 GHz 4.769 0 GHz	-5.505 dBm -51.989 dBm -67.399 dBm	D0 kHz		Stop 2( veep 2.530 s (3)	
2 N 1 3 N 1 4 N 1 5 N 1 6 7	100 kHz G <mark>SCL</mark> f f f f	2.480 2 GHz 12.403 0 GHz 4.769 0 GHz 7.3401 GHz	Y -5.505 dBm -51.989 dBm -67.399 dBm -67.724 dBm	D0 kHz		Stop 2( veep 2.530 s (3)	
19.5       39.5       39.5       39.5       39.5       39.5       start 0.03       Res BW       IN 12       2 N 1       3 N 1       4 N 1       5 N 1       6       7       8       9	100 kHz G <mark>SCL</mark> f f f f	2.480 2 GHz 12.403 0 GHz 4.769 0 GHz 7.3401 GHz	Y -5.505 dBm -51.989 dBm -67.399 dBm -67.724 dBm	D0 kHz		Stop 2( veep 2.530 s (3)	
95 95 95 95 95 95 195 195 195 1	100 kHz G <mark>SCL</mark> f f f f	2.480 2 GHz 12.403 0 GHz 4.769 0 GHz 7.3401 GHz	Y -5.505 dBm -51.989 dBm -67.399 dBm -67.724 dBm	DO KHZ		Stop 2( veep 2.530 s (3)	.50 GH
19 5       29 5       39 5       59 5       39 5       39 5       39 5       39 5       39 5       30 6       30 79 5       30 70 5       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8       30 8	100 kHz G <mark>SCL</mark> f f f f	2.480 2 GHz 12.403 0 GHz 4.769 0 GHz 7.3401 GHz	Y -5.505 dBm -51.989 dBm -67.399 dBm -67.724 dBm	D0 kHz		Stop 2( veep 2.530 s (3)	.50 GH

## Tx. Spurious NVNT BLE 2M 2480MHz Ref



## APPENDIX 2- EUT TEST PHOTO

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

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Shenzhen STS Test Services Co., Ltd.