

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC144439

1 of 92 Page:

FCC Radio Test Report FCC ID: 2ABHA0001

Original Grant

TB-FCC144439 Report No.

NINGBO CSTAR IMP&EXP CO., LTD **Applicant**

Equipment Under Test (EUT)

EUT Name : Voyager Bluetooth Keyboard and Case

: SL008 Model No.

Series No. 7140-53

Brand Name Cstar

Receipt Date 2015-06-02

Test Date : 2015-06-02 to 2015-06-10

Issue Date 2015-06-11

FCC Part 15: 2014, Subpart C(15.247) **Standards**

Test Method ANSI C63.10:2013

Conclusions PASS

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

The EUT technically complies with the FCC requirements

Test/Witness Engineer

Approved& Authorized

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0

Tel: +86 75526509301



Contents

COI	NTENTS	2
1.	GENERAL INFORMATION ABOUT EUT	4
	1.1 Client Information	4
	1.2 General Description of EUT (Equipment Under Test)	
	1.3 Block Diagram Showing the Configuration of System Tested	
	1.4 Description of Support Units	6
	1.5 Description of Test Mode	6
	1.6 Description of Test Software Setting	7
	1.7 Measurement Uncertainty	8
	1.8 Test Facility	
2.	TEST SUMMARY	9
3.	TEST EQUIPMENT	10
4.	CONDUCTED EMISSION TEST	11
	4.1 Test Standard and Limit	11
	4.2 Test Setup	
	4.3 Test Procedure	
	4.4 EUT Operating Mode	12
	4.5 Test Data	
5.	RADIATED EMISSION TEST	15
	5.1 Test Standard and Limit	15
	5.2 Test Setup	
	5.3 Test Procedure	17
	5.4 EUT Operating Condition	18
	5.5 Test Data	18
6.	RESTRICTED BANDS REQUIREMENT	37
	6.1 Test Standard and Limit	37
	6.2 Test Setup	37
	6.3 Test Procedure	37
	6.4 EUT Operating Condition	38
	6.5 Test Data	38
7.	NUMBER OF HOPPING CHANNEL	51
	7.1 Test Standard and Limit	51
	7.2 Test Setup	51
	7.3 Test Procedure	
	7.4 EUT Operating Condition	51
	7.5 Test Data	51
8.	AVERAGE TIME OF OCCUPANCY	53
	8.1 Test Standard and Limit	53
	8.2 Test Setup	



Page: 3 of 92

11	8.3 Test Procedure	53
	8.4 EUT Operating Condition	
	8.5 Test Data	
9.	CHANNEL SEPARATION AND BANDWIDTH TEST	72
	9.1 Test Standard and Limit	72
	9.2 Test Setup	
	9.3 Test Procedure	72
	9.4 EUT Operating Condition	72
	9.5 Test Data	73
10.	PEAK OUTPUT POWER TEST	85
	10.1 Test Standard and Limit	85
	10.2 Test Setup	85
	10.3 Test Procedure	85
	10.4 EUT Operating Condition	85
	10.5 Test Data	86
11.	ANTENNA REQUIREMENT	92
	10.1 Standard Requirement	92
	10.2 Antenna Connected Construction	



Page: 4 of 92

1. General Information about EUT

1.1 Client Information

Applicant : NINGBO CSTAR IMP&EXP CO., LTD

Address : Floor 4, Building E, No. 655-90, Qiming Road, Yinzhou Investment &

Innovation Center, Ningbo, China

Manufacturer : ShenZhen C-Star Electronic Tech. co., Ltd

Address : 2, 3/F, Building B, No. 2 Bada Industrial Park, Yongfu Road, Heping

Community, Fuyong Town, Baoan District, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Voyager Bluetooth Keyboa	ard and Case			
Models No.):	SL008, 7140-53				
Model Difference		All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.				
4000		Operation Frequency: Bluetooth:2402~2480MHz				
		Number of Channel:	Bluetooth:79 Channels see note (2)			
Product Description		Max Peak Output Power:	8-DPSK: 0.19 dBm			
Besonption		Antenna Gain:	2 dBi PCB Antenna			
		Modulation Type:	GFSK 1Mbps(1 Mbps) π /4-DQPSK(2 Mbps)			
Power Supply	DC Volto		8-DPSK(3 Mbps)			
rower Supply	i	DC Voltage supplied from Host System by USB cable. DC power by Li-ion Battery.				
Power Rating		DC 5.0V by USB cable.				
(11)		DC 3.7V 310mAh Li-ion Battery.				
Connecting I/O Port(S)		Please refer to the User's Manual				

Note:

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

(2) Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459

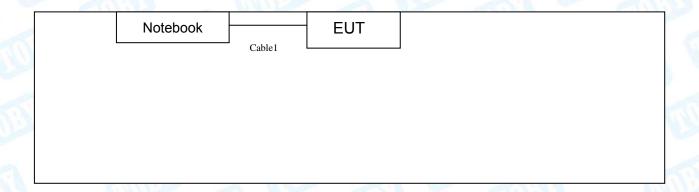


Page: 5 of 92

		6211111	7 A 11		
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454	U	
26	2428	53	2455		

- (3) The Antenna information about the equipment is provided by the applicant.
- 1.3 Block Diagram Showing the Configuration of System Tested

USB Charging with TX Mode





6 of 92 Page:

TX Mode	CHILDRE	A HOUSE		
		EUT		

1.4 Description of Support Units

Equipment Information					
Name Model FCC ID/DOC Manufacturer Used "√'					
Notebook	T60P	42W3244	Lenovo	1	
an in	2 City			(40)	
		Cable Information			
Number Shielded Type Ferrite Core Length Note					
Cable 1	NO	NO	0.8M	Accessorise	
	N Company		61013		

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test				
Final Test Mode Description				
Mode 1 USB Charging with TX GFSK Mode				

For Radiated Test				
Final Test Mode	Description			
Mode 1	USB Charging with TX GFSK Mode			
Mode 2	TX Mode(GFSK) Channel 00/39/78			
Mode 3	TX Mode(π /4-DQPSK) Channel 00/39/78			



Page: 7 of 92

Mode 4	TX Mode(8-DPSK) Channel 00/39/78
Mode 5	Hopping Mode(GFSK)
Mode 6	Hopping Mode(π /4-DQPSK)
Mode 7	Hopping Mode(8-DPSK)

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate. We have pretested all the test mode above.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: GFSK (1 Mbps)
TX Mode: 8-DPSK (3 Mbps)

(2) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on X-plane as the normal use. Therefore only the test data of this X-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of Bluetooth mode.

Test Software Version	ftware Version BlueTool		
Frequency	2402 MHz	2441MHz	2480 MHz
GFSK	DEF	DEF	DEF
π /4-DQPSK	DEF	DEF	DEF
8-DPSK	DEF	DEF	DEF



Page: 8 of 92

1.7 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 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz	±3.42 dB
Conducted Emission	150kHz to 30MHz	±3.42 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



Page: 9 of 92

2. Test Summary

FCC Part 15 Subpart C(15.247)/ RSS 247 Issue 1								
Standard Section								
FCC IC		Test Item	Judgment	Remark				
15.203	J	Antenna Requirement	PASS	N/A				
15.207	RSS-GEN 7.2.2	Conducted Emission	PASS	N/A				
15.205	RSS-Gen 7.2.3	Restricted Bands	PASS	N/A				
15.247(a)(1)	RSS 247 5.1 (2)	Hopping Channel Separation	PASS	N/A				
15.247(a)(1)	RSS 247 5.1 (4)	Dwell Time	PASS	N/A				
15.247(b)(1)	RSS 247 5.4 (2)	Peak Output Power	PASS	N/A				
15.247(b)(1)	RSS 247 5.1 (4)	Number of Hopping Frequency	PASS	N/A				
15.247(c)	RSS 247 5.5	Radiated Spurious Emission	PASS	N/A				
15.247(a)	RSS 247 99% Occupied Bandwidth & 20dB		PASS	99%OBW GFSK:840.6225kHz π/4-DQPSK: 1151.20kHz 8-DPSK:1136.30kHz				

Note: N/A is an abbreviation for Not Applicable.



Page: 10 of 92

3. Test Equipment

AC Main Cond	ucted Emission				
Description	Manufacturer	Manufacturer Model No. Serial No.		Cal. Date	Cal. Due Date
EMI Test Receiver	ROHDE& SCHWARZ	ESCI	100321	Aug. 08, 2014	Aug. 07, 2015
50ΩCoaxial Switch	Anritsu	MP59B	X10321	Aug. 08, 2014	Aug. 07, 2015
L.I.S.N	Rohde & Schwarz	ENV216	101131	Aug. 08, 2014	Aug. 07, 2015
L.I.S.N	SCHWARZBECK	NNBL 8226-2	8226-2/164	Aug. 08, 2014	Aug. 07, 2015
Radiation Spur	rious Emission				
Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Sep. 01, 2014	Aug. 31, 2015
Spectrum Analyzer	Rohde & Schwarz	FSP30	DE25181	Aug. 08, 2014	Aug.07, 2015
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Aug. 08, 2014	Aug.07, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 06, 2015	Mar.05, 2016
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 06, 2015	Mar.05, 2016
Pre-amplifier	HP	11909A	185903	Mar. 06, 2015	Mar.05, 2016
Pre-amplifier	HP	8447B	3008A00849	Mar. 06, 2015	Mar.05, 2016
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 06, 2015	Mar.05, 2016
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Mar. 28, 2015	Mar. 27, 2016
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A



Page: 11 of 92

4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard FCC 15.207

4.1.2 Test Limit

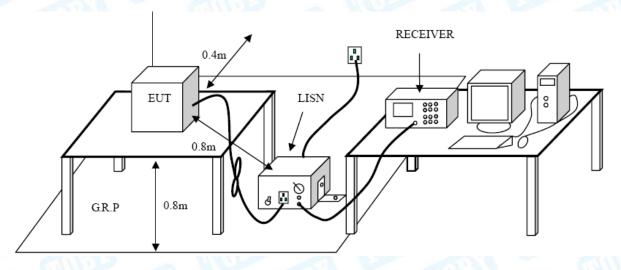
Conducted Emission Test Limit

Eroguanov	Maximum RF Line Voltage (dBμV)				
Frequency	Quasi-peak Level	Average Level			
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *			
500kHz~5MHz	56	46			
5MHz~30MHz	60	50			

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup



4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

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.



Report No.: TB-FCC144439 Page: 12 of 92

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.

LISN at least 80 cm from nearest part of EUT chassis

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Please see the next page.



Voyager Bluetooth EUT: SL008 **Model Name:** Keyboard and Case **25** ℃ 55% Temperature: **Relative Humidity:** AC 120V/60 Hz **Test Voltage:** Terminal: Line Test Mode: USB Charging with TX GFSK Mode 2402 MHz Remark: Only worse case is reported 80.0 dBu∀ QP: AVG: AVG 0.150 0.5 (MHz) 30.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment dB MHz dBu∀ dΒ dBuV dBuV Detector 38.26 48.22 64.96 -16.74 QΡ 1 0.1700 9.96 2 0.1700 34.98 9.96 44.94 54.96 -10.02 AVG 0.2060 37.58 QP 3 10.02 47.60 63.36 -15.76 0.2060 34.73 44.75 53.36 -8.61 AVG 4 10.02 QΡ 5 0.5740 31.93 10.06 41.99 56.00 -14.01 0.5740 6 24.53 10.06 34.59 46.00 -11.41 AVG 7 0.9660 28.14 10.07 38.21 QΡ 56.00 -17.79 8 0.9660 22.43 10.07 32.50 46.00 -13.50 AVG

Emission Level= Read Level+ Correct Factor

27.03

22.05

25.31

20.78

10.06

10.06

10.05

10.05

37.09

32.11

35.36

30.83

56.00 -18.91

46.00 -13.89

56.00 -20.64

46.00 -15.17

1.5859

1.5859

2.1820

2.1820

9

10

11

12

QΡ

AVG QP

AVG



Voyager Bluetooth

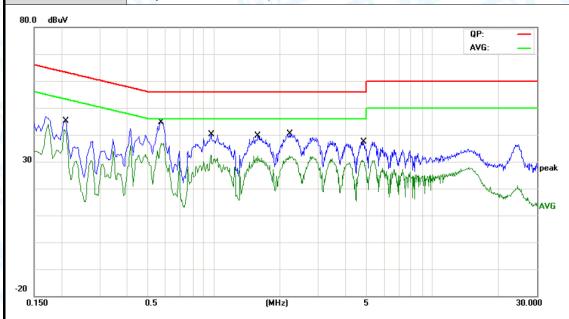
	AND A COLOR OF THE PARTY OF THE		
Temperature:	25 ℃	Relative Humidity:	55%
EUT:	Keyboard and Case	Model Name :	SL008

Test Voltage: AC 120V/60 Hz

Terminal: Neutral

Test Mode: USB Charging with TX GFSK Mode 2402 MHz

Remark: Only worse case is reported



No. IV	1k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBu∀	dB	dBu∀	dBuV	dB	Detector
1	0.2100	33.41	10.02	43.43	63.20	-19.77	QP
2	0.2100	30.71	10.02	40.73	53.20	-12.47	AVG
3	0.5740	33.83	10.06	43.89	56.00	-12.11	QP
4 *	0.5740	26.44	10.06	36.50	46.00	-9.50	AVG
5	0.9700	28.15	10.07	38.22	56.00	-17.78	QP
6	0.9700	22.32	10.07	32.39	46.00	-13.61	AVG
7	1.5859	26.61	10.06	36.67	56.00	-19.33	QP
8	1.5859	21.78	10.06	31.84	46.00	-14.16	AVG
9	2.2260	25.18	10.05	35.23	56.00	-20.77	QP
10	2.2260	21.18	10.05	31.23	46.00	-14.77	AVG
11	4.8380	23.47	9.97	33.44	56.00	-22.56	QP
12	4.8380	19.94	9.97	29.91	46.00	-16.09	AVG



Page: 15 of 92

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard FCC 15.209

5.1.2 Test Limit

Radiated Emission Limit (9 kHz~1000MHz)

Frequency (MHz	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Radiated Emission Limit (Above 1000MHz)

Frequency	(dBuV/m)(a	t 3m)
(MHz)	Peak	Average
Above 1000	74	54

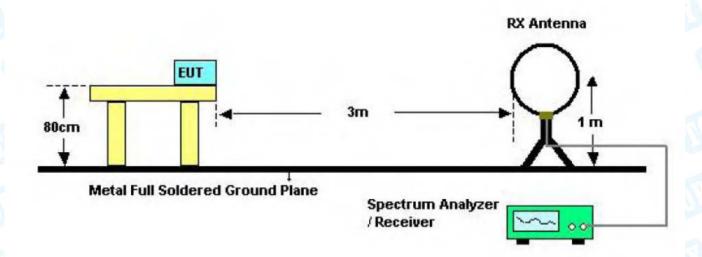
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m)

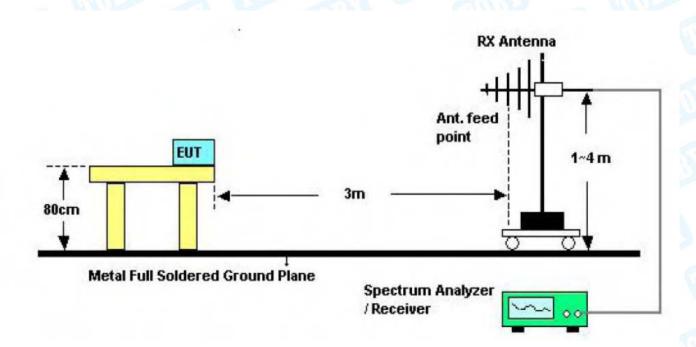


Page: 16 of 92

5.2 Test Setup



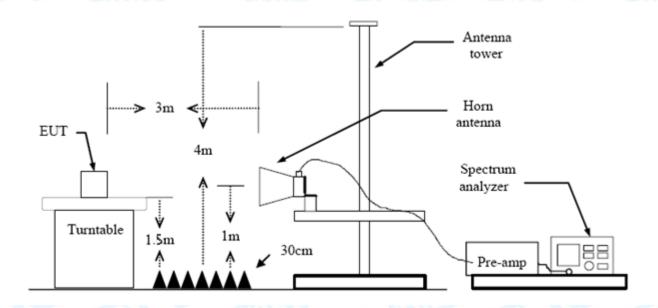
Bellow 30MHz Test Setup



Bellow 1000MHz Test Setup



Page: 17 of 92



Above 1GHz Test Setup

5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.



Page: 18 of 92

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power in TX mode.

5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 KHz with Peak Detector for Average Values.

Test data please refer the following pages.



Page: 19 of 92

EUT:	1 10 1 1	ger Bluetoot pard and Ca		Model Nan	ne :	SL008	
Temperature:	· / / / / / / / / / / / / / / / / / / /		Relative H	umidity:	55%		
Test Voltage:	DC 5		CITI'				
Ant. Pol.	Horizo	ontal	11311			61	
Test Mode:	TX GI	FSK Mode	2402MHz	Alle		a v	-
Remark:	Only	worse case	is reported		CALL		a 1
80.0 dBuV/m							
					(RF)FCC 1	5C 3M Radiation	1
						Margin -6	dB [
30			3 '	5 1	ě		
1 2			, , <u>,</u> ,)		of James	المال المالا	ALL LAND
m X m A			100 W	VV-		. Aug Allery lean.	
A Land		a a de a de la constante de la	<u> </u>				
	men and the second	elected and a supplied of the					
30.000 40 50	60 70	80	(MHz)	300	400 5	00 600 700	1000.000
No. Mk. F	roa	Reading	Correct	Measure-	Limit	Over	
	req.	Level	Factor	ment			<u> </u>
	ИHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1 35.0	6240	36.39	-17.45	18.94	40.00	-21.06	peak
2 49.	7068	44.44	-24.27	20.17	40.00	-19.83	peak
3 162.	6106	48.53	-20.68	27.85	43.50	-15.65	peak
4 196.	.5098	49.66	-20.57	29.09	43.50	-14.41	peak
5 293.	.0842	49.42	-17.22	32.20	46.00	-13.80	peak
6 * 368.	.1116	48.89	-14.50	34.39	46.00	-11.61	peak
							-
*:Maximum data x:	Over limit	!:over margin					
Emission Level=	Read L	-evel+ Cori	ect Factor	•			



Page: 20 of 92

EUT:	Voyager Bluetoo Keyboard and C		Model Nam	e:	SL008	
Temperature:	25 ℃		Relative Hu	55%		
Test Voltage:	DC 5V	CIN.		1 1111		
Ant. Pol.	Vertical	1		3	_ 67	1100
Test Mode:	TX GFSK Mode	2402MHz	The same		11 B	6
Remark:	Only worse case	e is reported		EMIT:		
80.0 dBuV/m						
30		3 ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Wy was a second	5 **	5C 3M Radiation Margin -6	dB
-20 30.000 40 50 No. Mk. Fre	Reading Level	(MHz) Correct Factor	Measure- ment	400 5	00 600 700 Over	1000.000
MH	Hz dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 * 35.87	746 49.27	-17.60	31.67	40.00	-8.33	peak
2 50.23	324 54.42	-24.40	30.02	40.00	-9.98	peak
3 162.0	414 44.63	-20.65	23.98	43.50	-19.52	peak
4 195.1	365 43.42	-20.64	22.78	43.50	-20.72	peak
5 359.1	859 38.26	-14.55	23.71	46.00	-22.29	peak
6 696.8	567 36.24	-6.95	29.29	46.00	-16.71	peak
*:Maximum data x:O Emission Level=	ver limit !:over margin					



Page: 21 of 92

EUT:	Voyager Bluetoo Keyboard and Ca		Model Name	e :	SL008	m
Temperature:	25 ℃		Relative Hu	55%		
Test Voltage:	DC 5V	and the		BH		
Ant. Pol.	Horizontal		CITE OF	91		1
Test Mode:	TX π /4-DQPSK	Mode 2402	MHz		il c	6
Remark:	Only worse case	is reported		BITTE.		
80.0 dBuV/m						
-20 30.000 40 50	60 70 80	(MHz)	300	•	5C 3M Radiation Margin - 6	1000.000
No. Mk. F	Reading req. Level	Correct Factor	Measure- ment	Limit	Over	
M	1Hz dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 49.7	7068 45.44	-24.27	21.17	40.00	-18.83	peak
2 135.	0319 47.32	-22.08	25.24	43.50	-18.26	peak
3 162.	6106 49.03	-20.68	28.35	43.50	-15.15	peak
4 196.	5098 50.16	-20.57	29.59	43.50	-13.91	peak
5 281.	9946 50.18	-17.44	32.74	46.00	-13.26	peak
	7139 50.28	-14.54	35.74	46.00	-10.26	peak
	Over limit !:over margin					



Page: 22 of 92

EUT:		Bluetooth		Model N	ame :	SL008	
		rd and Case		EE0/			
Temperature:		25 °C			Humidity:	55%	
Test Voltage:	DC 5V	1000				130	
Ant. Pol.	Vertical	00001414					
Test Mode:		OQPSK M		a W	Ulder		
Remark:	Only wor	se case i	s reported	1			- 6
80.0 dBuV/m							
					(RF)FCC 19	iC 3M Radiation	
						Margin -6	dB
, 2 3							
30 🗶 🕺			4 -		6		
			Ž Ž	بالبدء	WALL STATE	the second	muluh
1, 1				May your front	May apply	W. W.	
	Sold of the Plant of the sold from	and the second second	- W.	- V'			
	in the first of	Pilot IF To 1					
20							
30.000 40 50	60 70 80		(MHz)	3	00 400 50	0 600 700	1000.000
	P ₄	eading	Correct	Measure	<u>-</u>		
No. Mk. F		.evel	Factor	ment	Limit	Over	
		dBuV	dB/m	dBuV/m	n dBuV/m	dB	Detector
1 31.3	2893 4	5.27	-14.76	30.51	40.00	-9.49	peak
		19.77	-17.60	32.17		-7.83	peak
		5.92	-24.40	31.52		-8.48	peak
		5.63	-20.65	24.98		-18.52	peak
		4.42	-20.64	23.78		-19.72	peak
		39.26	-14.55	24.71			peak
							•
***************************************	O						
*:Maximum data x:	Over limit !:o	ver margin					



Page: 23 of 92

EUT:		ger Bluetoo oard and C		Model Nan	ne:	SL008	
Temperature:				Relative Humidity:		55%	
Гest Voltage:	DC 5	V	CILL		NH e		
Ant. Pol.	Horiz	ontal	10				M. De
Test Mode:	TX 8-	DPSK Mod	e 2402MH:	Z		A C	
Remark:	Only	worse case	is reported		CHA		a
80.0 dBuV/m							
					(RF)FCC 1	5C 3M Radiation	
						Margin -6	dB
					b		
30			3 2 X	4 × × ×			
1			<u>*</u> ~ /		. March	rangella belle	Marine Product
			1				
, ,	mercaphonenic	and the same of the same	ď				
20 30.000 40 50	60 70	80	(MHz)	300	400 5	00 600 700	1000.00
30.000 40 30	00 70		(M112)	300	400 3	00 000 700	1000.00
No. Mk. F	roa	Reading	Correct	Measure-	Limit	Over	
	req.	Level	Factor	ment			D -11-
	ИHz	dBuV	dB/m	dBuV/m	dBuV/m		Detecto
1 49.	7068	44.44	-24.27	20.17	40.00	-19.83	peak
2 135	.0319	46.82	-22.08	24.74	43.50	-18.76	peak
3 162	.6106	48.53	-20.68	27.85	43.50	-15.65	peak
4 196	.5098	49.66	-20.57	29.09	43.50	-14.41	peak
5 281	.9945	49.68	-17.44	32.24	46.00	-13.76	peak
	.7139	49.78	-14.54	35.24	46.00	-10.76	peak
301	.1 100	40.70	17.07	55.2 1	70.00	10.70	peak
			_				
*:Maximum data x	:Over limit	!:over margin					



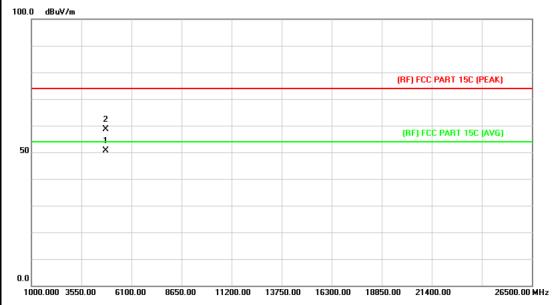
Page: 24 of 92

:UT:		ger Bluetoo pard and C		Model Nan	ne :	SL008	
Temperature:		25 ℃			umidity:	55%	
геst Voltage:	DC 5	V	CITI!		NIV s		
Ant. Pol.	Vertic	al	100				M
Test Mode:	TX 8-	DPSK Mod	e 2402MHz			A B	
Remark:	Only	worse case	is reported		OHT.		a
80.0 dBuV/m							
30	Secret Stange	hardwar ben			(RF)FCC 1	5C 3M Radiation Margin -6	
30.000 40 50	60 70	80	(MHz)	300	400 5	00 600 700	1000.0
No. Mk. Fr	eq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
M	Hz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detect
1 * 35.8	746	49.27	-17.60	31.67	40.00	-8.33	peal
2 40.2	757	47.53	-20.27	27.26	40.00	-12.74	peal
3 50.2	2324	55.42	-24.40	31.02	40.00	-8.98	peal
	0414	44.63	-20.65	23.98	43.50	-19.52	peal
	1365	43.42	-20.64	22.78	43.50	-20.72	peal
	1859	39.26	-14.55	24.71	46.00	-21.29	peal
	Over limit	!:over margin	-		40.00	-21.29	pea



Page: 25 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name :		SL008			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Horizontal					
Test Mode:	TX GFSK Mode 2402MHz	The same				
Remark: No report for the emission which more than 10 dB below the prescribed limit.						

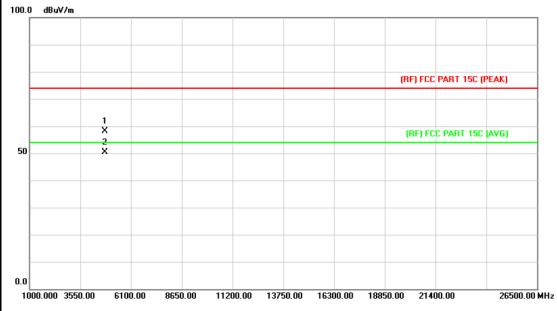


N	0.	Mk.	Freq.	•		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	'n	k	4803.541	37.26	13.44	50.70	54.00	-3.30	AVG
2			4803.643	45.20	13.44	58.64	74.00	-15.36	peak



Page: 26 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	je: DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	TX GFSK Mode 2402MHz	N. S.				
Remark: No report for the emission which more than 10 dB below the prescribed limit.						

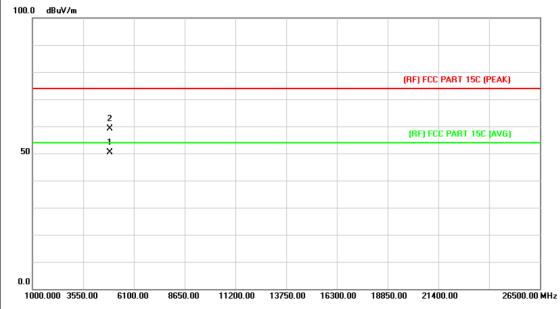


No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.222	44.70	13.44	58.14	74.00	-15.86	peak
2	*	4804.234	37.00	13.44	50.44	54.00	-3.56	AVG



Page: 27 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name :		SL008		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal				
Test Mode:	TX GFSK Mode 2441MHz	The same of the sa			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

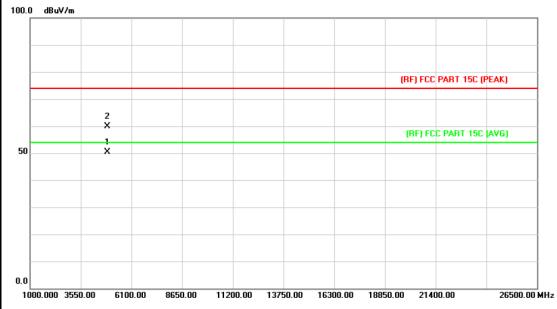


N	o. M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.924	36.56	13.90	50.46	54.00	-3.54	AVG
2		4883.173	45.13	13.91	59.04	74.00	-14.96	peak



Page: 28 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 3.7V	D W		
Ant. Pol.	Vertical			
Test Mode:	TX GFSK Mode 2441MHz	N. S.		
Remark: No report for the emission which more than 10 dB below the prescribed limit.				

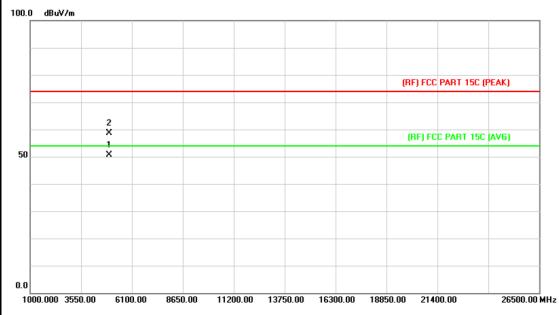


N	o. M	k. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4881.916	36.44	13.90	50.34	54.00	-3.66	AVG
2		4882.639	45.94	13.90	59.84	74.00	-14.16	peak



Page: 29 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name:		SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX GFSK Mode 2480MHz	130	
Remark: No report for the emission which more than 10 dB below the prescribed limit.			

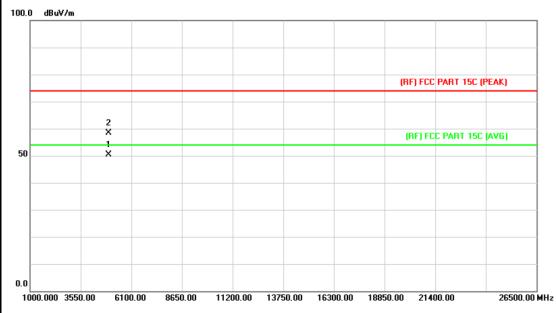


No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.880	36.37	14.36	50.73	54.00	-3.27	AVG
2		4959.892	44.28	14.36	58.64	74.00	-15.36	peak



Page: 30 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name		SL008		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Vertical		WILLIAM STATE		
Test Mode:	TX GFSK Mode 2480MHz	The same			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				



No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4960.159	35.96	14.36	50.32	54.00	-3.68	AVG
2		4960.261	43.95	14.36	58.31	74.00	-15.69	peak



Page: 31 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name:		SL008	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 3.7V	The state of the s		
Ant. Pol.	Horizontal			
Test Mode:	TX 8-DPSK Mode 2402MHz			
Remark: No report for the emission which more than 10 dB below the prescribed limit.				



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4803.554	37.08	13.44	50.52	54.00	-3.48	AVG
2		4803.675	44.54	13.44	57.98	74.00	-16.02	peak



Page: 32 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	TX 8-DPSK Mode 2402MHz	Z				
Remark: No report for the emission which more than 10 dB below prescribed limit.						
	•					

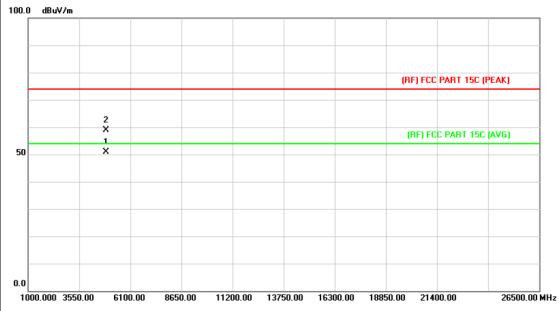


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.254	44.20	13.44	57.64	74.00	-16.36	peak
2	*	4804.261	36.63	13.44	50.07	54.00	-3.93	AVG



Page: 33 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Horizontal					
Test Mode:	TX 8-DPSK Mode 2441MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

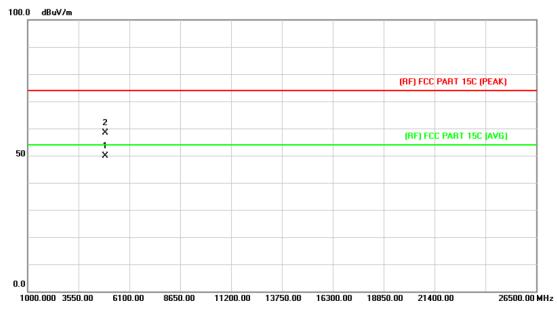


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.938	36.88	13.90	50.78	54.00	-3.22	AVG
2		4883.271	44.97	13.91	58.88	74.00	-15.12	peak



Page: 34 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name :		SL008			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	age: DC 3.7V					
Ant. Pol.	Vertical		CHILL STORY			
Test Mode:	TX 8-DPSK Mode 2441MHz	The same	1			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

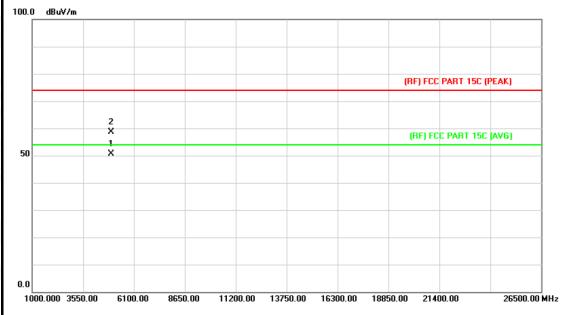


N	o. MI	κ. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4881.935	36.08	13.90	49.98	54.00	-4.02	AVG
2		4882.627	44.37	13.90	58.27	74.00	-15.73	peak



Page: 35 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name:		SL008		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal		WILLIAM STATE		
Test Mode:	TX 8-DPSK Mode 2480MHz	The same			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

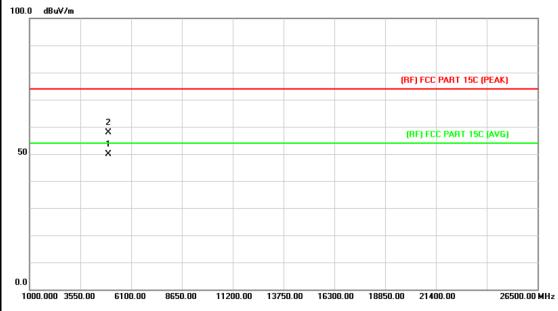


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.865	36.17	14.36	50.53	54.00	-3.47	AVG
2		4959.874	44.38	14.36	58.74	74.00	-15.26	peak



Page: 36 of 92

EUT:	Voyager Bluetooth Keyboard and Case Model Name :		SL008			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	TX 8-DPSK Mode 2480MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					



No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4960.167	35.54	14.36	49.90	54.00	-4.10	AVG
2		4960.354	43.62	14.36	57.98	74.00	-16.02	peak



Page: 37 of 92

6. Restricted Bands Requirement

6.1 Test Standard and Limit

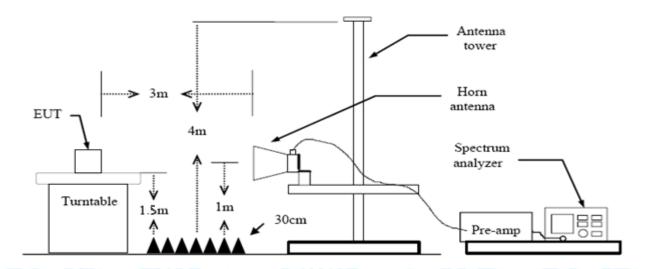
6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

Restricted Frequency	Class B (dE	BuV/m)(at 3m)
Band (MHz)	Peak	Average
310 ~2390	74	54
2483.5 ~2500	74	54

Note: All restriction bands have been tested, only the worst case is reported.

6.2 Test Setup



6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.



Report No.: TB-FCC144439
Page: 38 of 92

(4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 KHz with Peak Detector for Average Values.

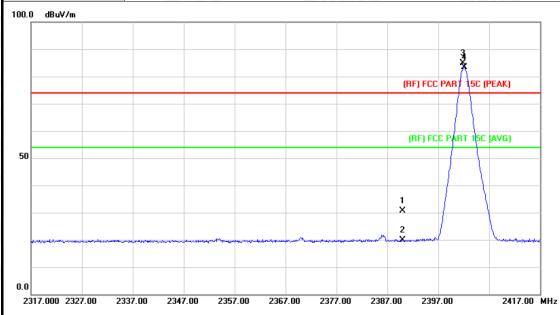
All restriction bands have been tested, only the worst case is reported.



Page: 39 of 92

(1) Radiation Test

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal	VIII TO	
Test Mode:	TX GFSK Mode 2402MHz		A CO
Remark:	N/A		



No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	29.91	0.77	30.68	74.00	-43.32	peak
2		2390.000	19.10	0.77	19.87	54.00	-34.13	AVG
3	Χ	2401.900	84.16	0.82	84.98	Fundamental Frequeny		peak
4	*	2402.100	82.44	0.82	83.26	Fundamental	Frequeny	AVG



Page: 40 of 92

EUT:		Voyager Bluetoo Keyboard and C					Mode	el Na	me :		SL008	3	
Temperatu	re:	25 °	С	M			Relat	tive F	łumidi	ty:	55%		
Test Voltag	e:	DC 3	3.7V		60	W	13		, V			1	A
Ant. Pol.		Verti	cal	1	16		A		9		_ G	WE	
Test Mode:		TX C	SFSK	Mode	2402MI	Ηz	1/7			A	1 6		1
Remark:		N/A	1						EW.				
100.0 dBuV/m													_
										3			
									(RF) F	CC P	RT 15C (PEA	ıK)	
										- 1			7
						-			(BE)	ECT E	ART 15C (AV	(G)	-
50									(1117)		ACT TOC (AT		-
										1			
									1	1			
									2	$f \vdash$			
-		سمساسمته			talay ta	,	·	-	X	_	- hour	and the same	1
						-							-
0.0	200 00	10.00	2250 00	2 220	0.00	70.00	2200.00	220	0.00	100.0		2422.00	<u> </u>
2320.000 233	J.UU 234	40.00	2350.00	J 236	0.00 237	70.00	2380.00	239	0.00 2	400.00	J	2420.00	мн
No. Mk	Fre	q.	Rea Le	ding vel	Corre		Measu men		Limit	!	Over		
	MH	Z	dB	u∨	dB/m	1	dBuV	/m	dBuV	/m	dB	Dete	cto
1	2390.0	000	29	.68	0.77	,	30.4	5	74.0	0	-43.55	pe	ak
2	2390.0	000	19	.38	0.77	,	20.1	5	54.0	0	-33.85	A۱	/G
3 X	2402.	100	81	.52	0.82	2	82.3	4	Fundame	ental	Frequeny	pe	ak
4 *	2402.	100	70	.66	0.82)	79.4	0			Frequeny	A۷	/G



Page: 41 of 92

EUT:		1 1 2 3	ger Blue oard an		Model Name :			SL008	
Temperatu	re:	25 °C	2	مالال		Relativ	e Humidity:	55%	
Test Voltaç	ge:	DC 3.7V							
Ant. Pol.		Horiz	zontal				39 -		Mr. Ba
Test Mode	•	TX G	FSK Mo	ode 2480	MHz	MA		A R	
Remark:		N/A		(11)	NO.		DATE:		
100.0 dBuV/m									
	1 X								
	$\perp \Lambda$						(RF) FCC F	PART 15C (PEA	K)
							(BE) ECC	PART 15C (AV	re)
50	3 X						()100	TAIT 150 AY	-
	*								
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Jumes	and the same of th			Processor - Andrewson - Andrew		Maryahanan andrew	no-dolorium
0.0	7.00	107.00	2407.00	2507.00	2517.00	2527.00	2527.00	00	2507.00 1411
2467.000 247	7.00 24	187.00	2497.00	2507.00	2517.00	2527.00	2537.00 2547.	UU	2567.00 MH
			Readir	ng Cor	rect	Measure	; -		
No. Mk	. Fre	q.	Leve	_	ctor	ment	Limit	Over	
	MH	Z	dBuV	dB	/m	dBuV/m	dBuV/m	dB	Detector
1 X	2480.	100	82.50	1.	15	83.65	Fundament	al Frequeny	peak
2 *	2480.	100	80.00	1.	15	81.15	Fundament	al Frequeny	AVG
	2483.	500	47.40	1.	17	48.57	74.00	-25.43	peak
3									



Page: 42 of 92

EUT:	Voyager Blue		Model Na	ame :	SL008	
Temperature:	Keyboard ar 25 °C	iu Case	Relative	Humidity:	55%	A BOND
Test Voltage:	DC 3.7V	-	Relative	Trainiaity.	0070	
Ant. Pol.	Vertical	a 15	100		64	
Test Mode:		ode 2480 MHz			J W	Chor.
Remark:	N/A	200 2 100 1111 12			>	a 1
100.0 dBuV/m	1071	THE PLANTS				V.18
100.0 dBd47iii						
1						
 				(RF) FCC PAI	RT 15C (PEA	K)
				(RF) FCC PA	ART 15C (AV	G)
50 3 X						
and the state of t	Mary Mary Mary Mary Mary Mary Mary Mary	and the second s			hand the state of	~~~~~~
0.0 2467.000 2477.00 2	2487.00 2497.00	2507.00 2517.00) 2527.00 25	537.00 2547.00		2567.00 MH:
	Readi	ng Correct	Measure-			
No. Mk. Fr	eq. Leve	•	ment	Limit	Over	
MH			dBuV/m	dBuV/m	dB	Detector
1 X 2480	.100 79.0		80.24	Fundamental	Frequeny	peak
2 * 2480	.100 77.5	1 1.15	78.66	Fundamental		AVG
3 2483		7 1.17	47.34	74.00	-26.66	peak
		9 1.17	37.76	54.00	-16.24	AVG



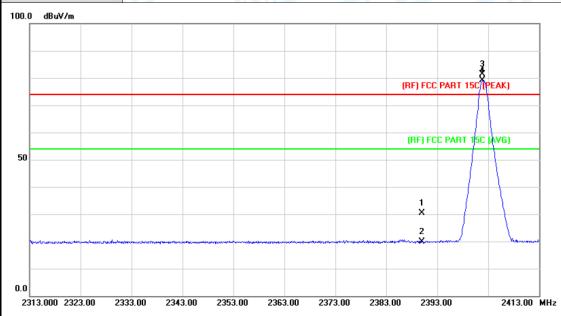
Page: 43 of 92

UT:			1 10 1	ager Bl ooard a				Mod	lel N	lame :		SL0	08	
empe	ratu	re:	25 °					Rela	tive	Humi	dity:	55%		
est V			DC 3	3.7V		65				a 1	7//			ħ
nt. P	ol.		Horiz	zontal		1		A		10		. (1111	
est M	ode:		TX 8	-DPSI	< Mod	de 2402	MHz	M)	Ŋ,					
Remar	k:		N/A	1500						01				
00.0 d	BuV/m													_
												3		
										(RI) FCC F	ART 15C (PEAK)	
														1
										(F	RF) FCC	PART 15C	(AVG)	\parallel
50														1
											1 X			
											2			
		an the second			paghydig nygronnadda,	A description of the second	and the same of th					an jednik	Widows	~
0.0														
	00 232	3.00 2	333.00	2343.00	235	3.00 2	363.00	2373.00	0 2	2383.00	2393.	00	2413.00	_ MI
					ding	Corr		Meas	ure-					
No.	Mk.	. Fr	eq.	Le	vel	Fac	tor	mer	nt	Lim	nit	Ove	r	
		M	Ηz	dB	u∨	dB/ı	m	dBu∖	//m	dBu	V/m	dB	Dete	cto
				20	.47	0.7	7	31.2	24	74	.00	-42.7	76 pe	ak
1		2390	.000	30.										
1		2390 2390			.24	0.7	7	20.0	01	54	.00	-33.9	99 A\	/G
<u> </u>	X		.000	19.		0.7		20.0 82.0				-33.9		



Page: 44 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical						
Test Mode:	TX 8-DPSK Mode 2402MHz						
Remark:	N/A	THU !					



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	29.68	0.77	30.45	74.00	-43.55	peak
2		2390.000	19.02	0.77	19.79	54.00	-34.21	AVG
3	Χ	2401.900	80.52	0.82	81.34	Fundamenta	l Frequeny	peak
4	*	2401.900	78.21	0.82	79.03	Fundamenta	I Frequeny	AVG

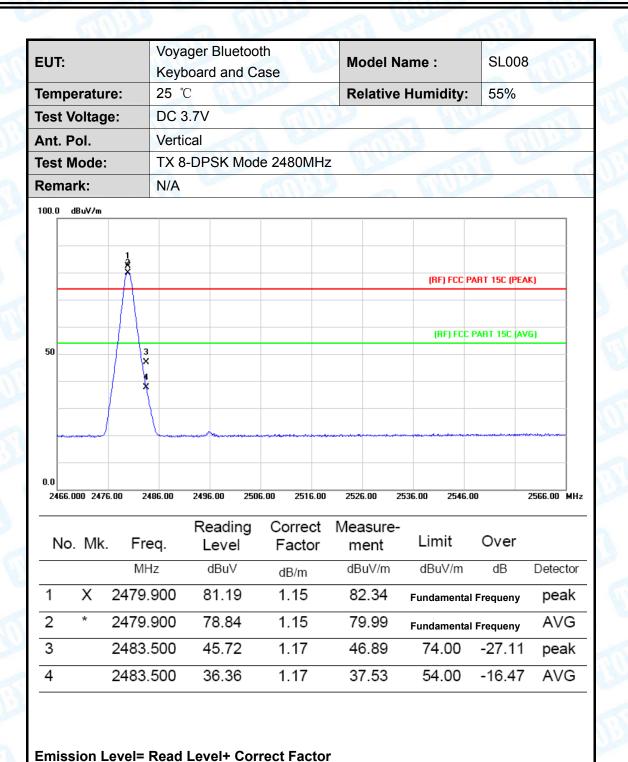


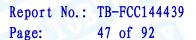
Page: 45 of 92

EUT:		ager Bluetoo		Model Na	ame :	SL008	ME
Temperature:	25 °			Relative	Humidity:	55%	-
Test Voltage:	DC 3	3.7V	Call!		a WILL		
Ant. Pol.	Hori	zontal	1				Millian
Test Mode:	TX 8	B-DPSK Mod	le 2480MHz	MAG		1 6	
Remark:	N/A		4007		alle		
100.0 dBuV/m							
1 8							
<u> </u>					(RF) FCC PAI	RT 15C (PEA	K)
50	3				(RF) FCC P/	ART 15C (AV	G)
30	X						
	*						
	+						
	__	and the second second	n der augerstelle der der der der der der der der der de	and the second s	***************************************	- Carrier Marie	
0.0							
2466.000 2476.00	2486.00	2496.00 250	6.00 2516.00	2526.00 25	36.00 2546.00		2566.00 MHz
No. Mk. F	req.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
							5
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 X 247	9.900	82.44	1.15	83.59	Fundamental	Frequeny	peak
		80.32	1.15	81.47	Fundamental	Frequeny	AVG
2 * 247	9.900	00.52					
	9.900 3.500	46.81	1.17	47.98	74.00	-26.02	peak



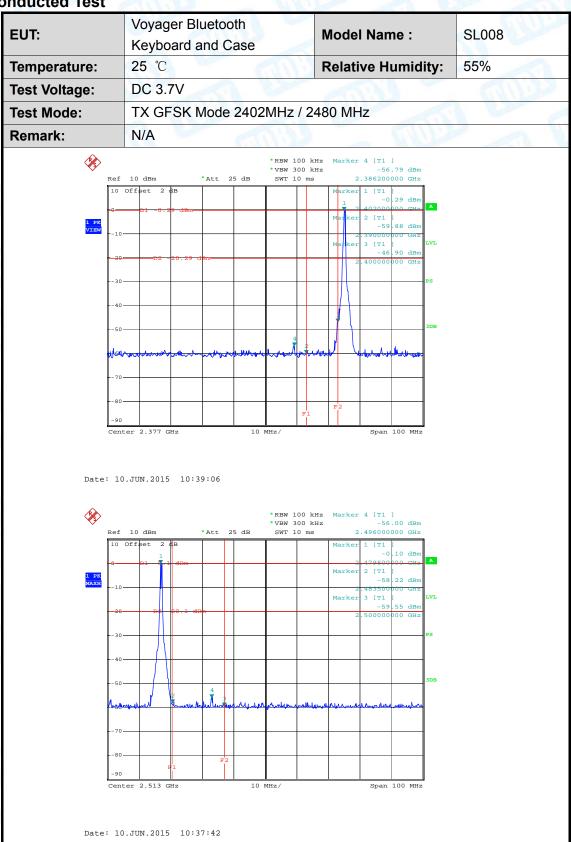
Page: 46 of 92







(2) Conducted Test





Voyager Bluetooth SL008 EUT: **Model Name:** Keyboard and Case 25 ℃ Temperature: **Relative Humidity:** 55% DC 3.7V Test Voltage: **Test Mode: GFSK Hopping Mode** Remark: N/A **%** Ref 10 dBm *Att 25 dB Center 2.386 GHz Span 100 MHz Date: 10.JUN.2015 10:46:57 *RBW 100 kHz Marker 4 [T1]

*VBW 300 kHz -56.98 dBm
SWT 10 ms 2.486000000 GHz 10 dBm Date: 10.JUN.2015 10:49:13



Voyager Bluetooth SL008 EUT: **Model Name:** Keyboard and Case 25 ℃ Temperature: **Relative Humidity:** 55% DC 3.7V **Test Voltage: Test Mode:** TX 8-DPSK Mode 2402MHz / 2480 MHz Remark: N/A **%** Ref 10 dBm *Att 25 dB Center 2.378 GHz Span 100 MHz Date: 10.JUN.2015 10:40:19 *RBW 100 kHz Marker 4 [T1]

*VBW 300 kHz -58.06 dBm
SWT 10 ms 2.496000000 GHz 10 dBm *Att 25 dB 10 Offset Date: 10.JUN.2015 10:41:31



Voyager Bluetooth SL008 EUT: **Model Name:** Keyboard and Case 25 ℃ Temperature: **Relative Humidity:** 55% DC 3.7V Test Voltage: **Test Mode:** 8-DPSK Hopping Mode Remark: N/A *RBW 100 kHz Marker 4 [T1]

*VBW 300 kHz -56.42 dBm
SWT 10 ms 2.388000000 GHz **%** Ref 10 dBm *Att 25 dB Center 2.381 GHz Span 100 MHz Date: 10.JUN.2015 10:54:53 *RBW 100 kHz Marker 4 [T1]

*VBW 300 kHz -57.88 dBm
SWT 10 ms 2.493200000 GHz Date: 10.JUN.2015 10:52:05



Page: 51 of 92

7. Number of Hopping Channel

7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.247 (a)(1)

7.1.2 Test Limit

Section	Test Item	Limit
15.247	Number of Hopping Channel	>15

7.2 Test Setup



7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=100 KHz, VBW=100 KHz, Sweep time= Auto.

7.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.

7.5 Test Data



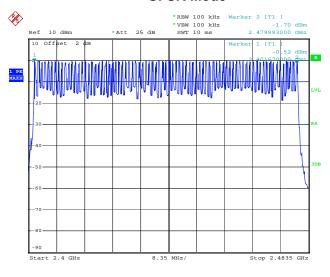
Report No.: TB-FCC144439 Page: 52 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	NIII NIII	

Test Mode: Hopping Mode (GFSK/ 8-DPSK)

Frequency Range	Quantity of Hopping Channel	Limit
2402MHz~2480MHz	79	\4E
2402WH2~2460WH2	79	>15

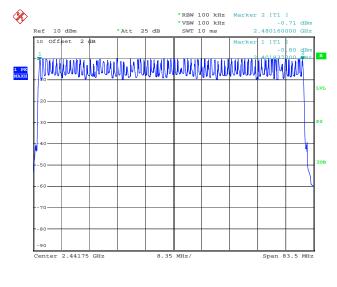
GFSK Mode



Date: 10.JUN.2015 10:44:28

Date: 10.JUN.2015 10:56:57

8-DPSK Mode





Page: 53 of 92

8. Average Time of Occupancy

8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (a)(1)

8.1.2 Test Limit

Section	Test Item	Limit
15.247(a)(1)/ RSS-210	Average Time of	0.4.000
Annex 8(A8.1d)	Occupancy	0.4 sec

8.2 Test Setup



8.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=1MHz, VBW=1MHz.
- (3) Use video trigger with the trigger level set to enable triggering only on full pulses.
- (4) Sweep Time is more than once pulse time.
- (5) Set the center frequency on any frequency would be measure and set the frequency span to zero.
- (6) Measure the maximum time duration of one single pulse.
- (7) Set the EUT for packet transmitting.
- (8) Measure the maximum time duration of one single pulse.

8.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.



Page: 54 of 92

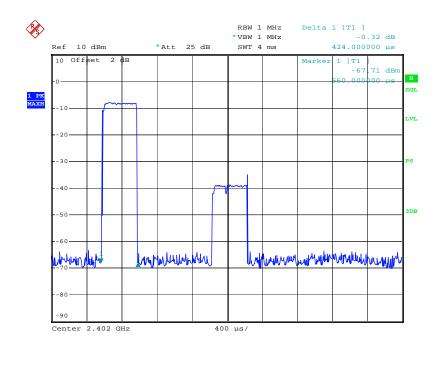
8.5 Test Data

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 3.7V	COLUMN TO SERVICE SERV	A PROPERTY	
Test Mode:	Test Mode: Hopping Mode (GFSK DH1)			

annel	Pulse Time	Total of Dwell	Period Time	Limit	Result
ИHz)	(ms)	(ms)	(s)	(ms)	Result
402	0.424	135.68			
2441	0.424	135.68	31.60	400	PASS
2480	0.424	135.68			

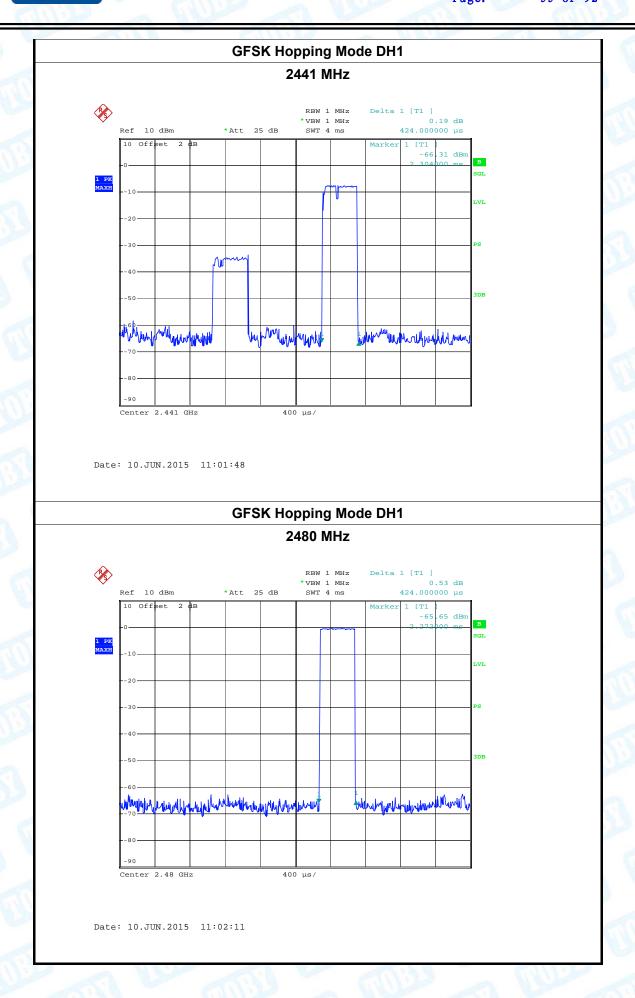
GFSK Hopping Mode DH1

2402 MHz



Date: 10.JUN.2015 11:01:02







56 of 92 Page:

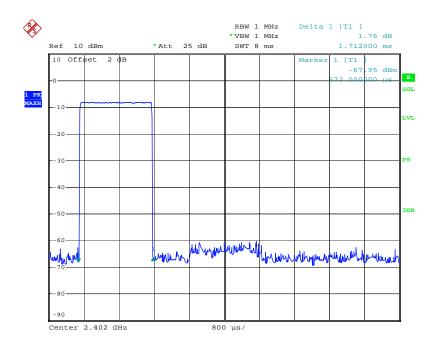
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	130 ~ UV	

Hopping Mode (GFSK DH3) **Test Mode:**

Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	1.712	273.92	. ,	, ,	
2441	1.712	273.92	31.60	400	PASS
2480	1.712	273.92			

GFSK Hopping Mode DH3

2402 MHz

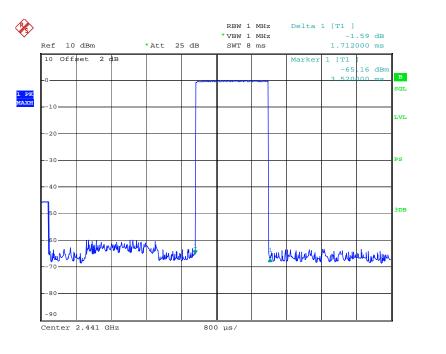


Date: 10.JUN.2015 11:04:24





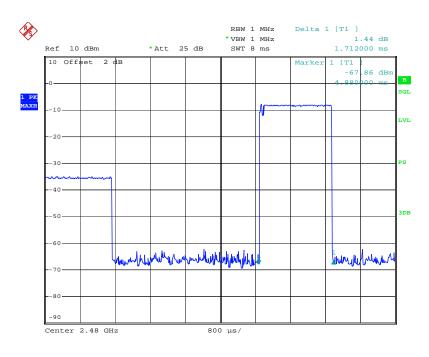
57 of 92 Page: **GFSK Hopping Mode DH3** 2441 MHz



Date: 10.JUN.2015 11:03:55

GFSK Hopping Mode DH3

2480 MHz



Date: 10.JUN.2015 11:03:06



Page: 58 of 92

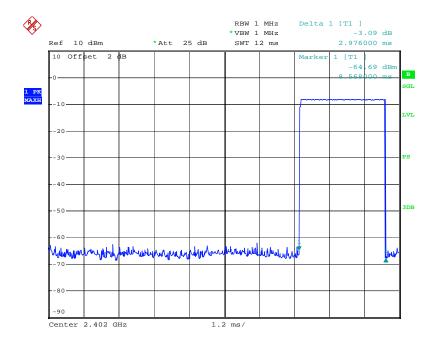
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: Hopping Mode (GFSK DH5)

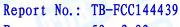
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	2.976	317.44			
2441	2.952	314.88	31.60	400	PASS
2480	2.976	317.44			

GFSK Hopping Mode DH5

2402 MHz

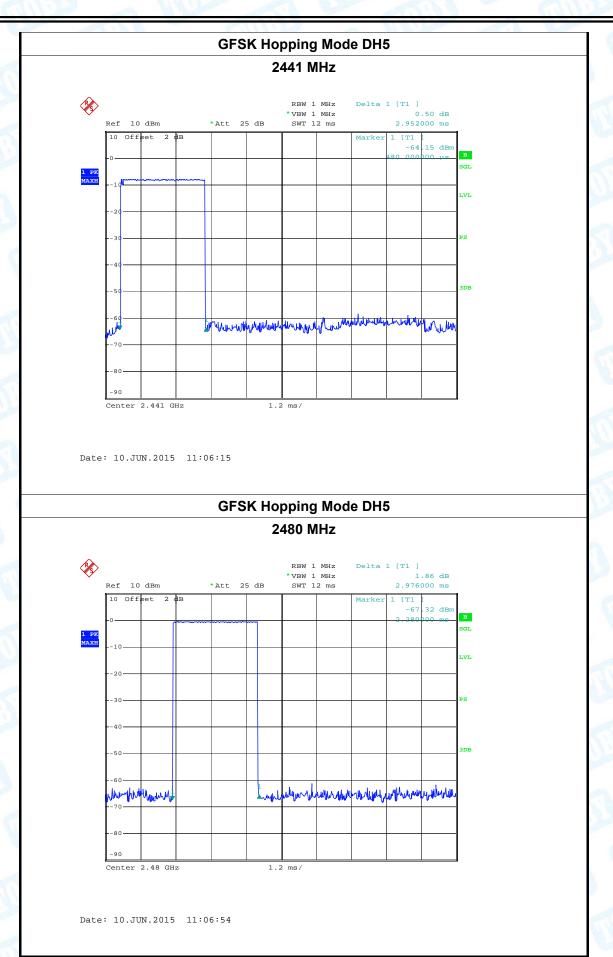


Date: 10.JUN.2015 11:05:38





Page: 59 of 92





Page: 60 of 92

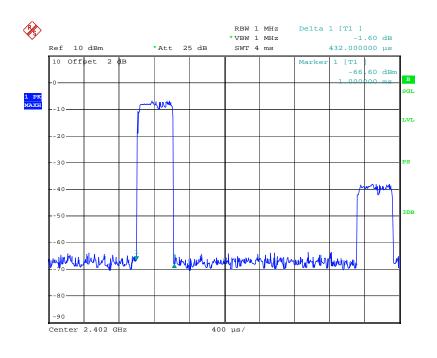
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: Hopping Mode (π /4-DQPSK DH1)

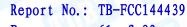
Channel	Pulse Time	Total of Dwell	Period Time	Limit	D
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	0.432	138.24			
2441	0.440	140.80	31.60	400	PASS
2480	0.440	140.80			

π /4-DQPSK Hopping Mode DH1

2402 MHz

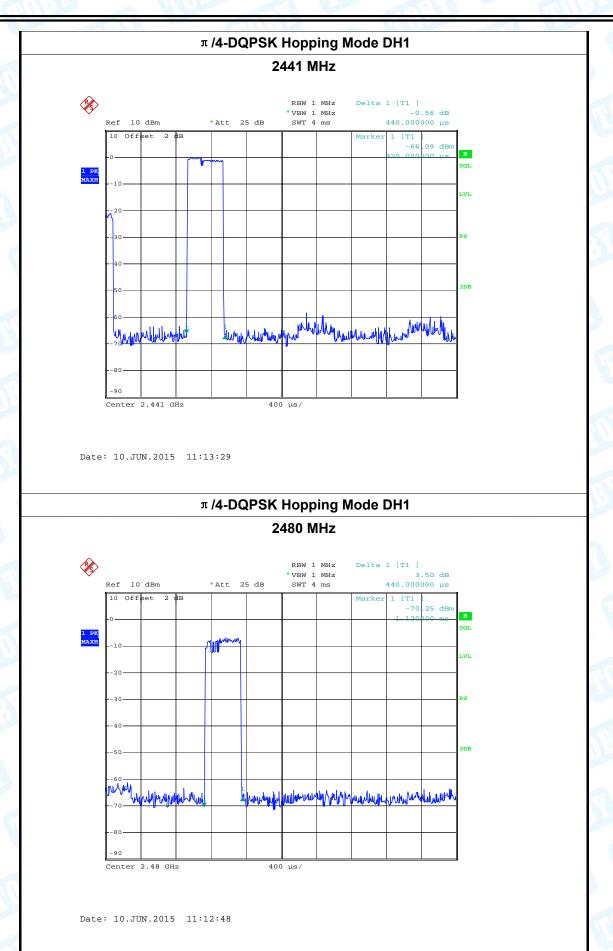


Date: 10.JUN.2015 11:14:00





Page: 61 of 92





Page: 62 of 92

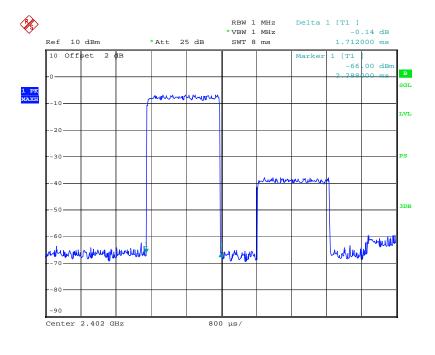
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: Hopping Mode (π /4-DQPSK DH3)

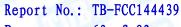
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Dooult
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	1.712	273.92			
2441	1.712	273.92	31.60	400	PASS
2480	1.712	273.92			

π /4-DQPSK Hopping Mode DH3

2402 MHz

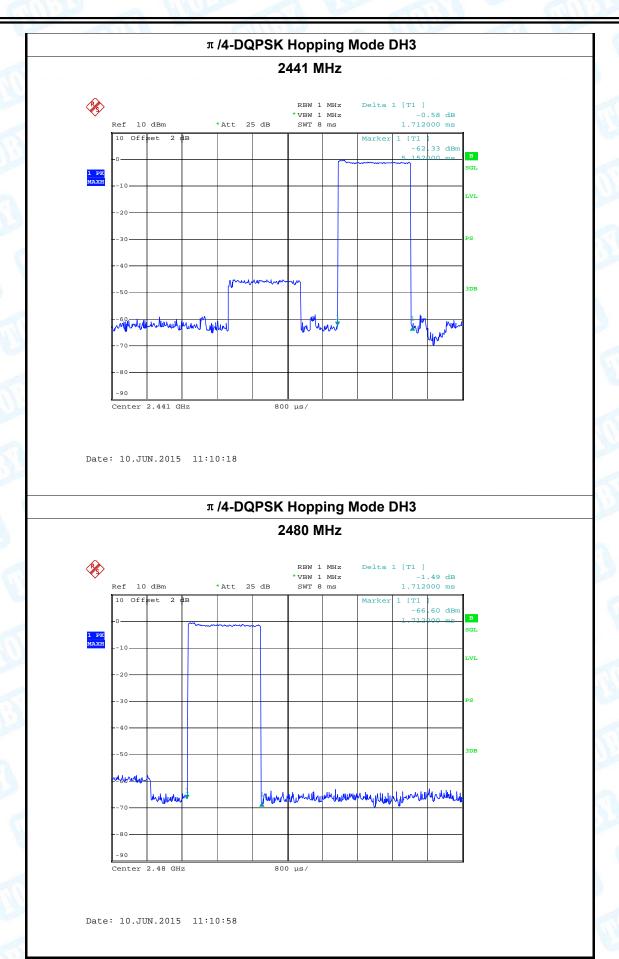


Date: 10.JUN.2015 11:09:46





Page: 63 of 92





Page: 64 of 92

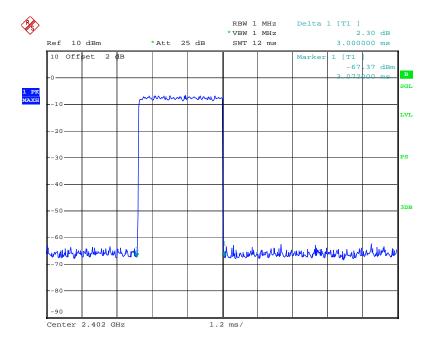
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	130 ~ UV	

Test Mode: Hopping Mode (π /4-DQPSK DH5)

Channel	Pulse Time	Total of Dwell	Period Time	Limit	Dooult
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	3.000	320.00			
2441	3.000	320.00	31.60	400	PASS
2480	2.976	317.44			

π /4-DQPSK Hopping Mode DH5

2402 MHz

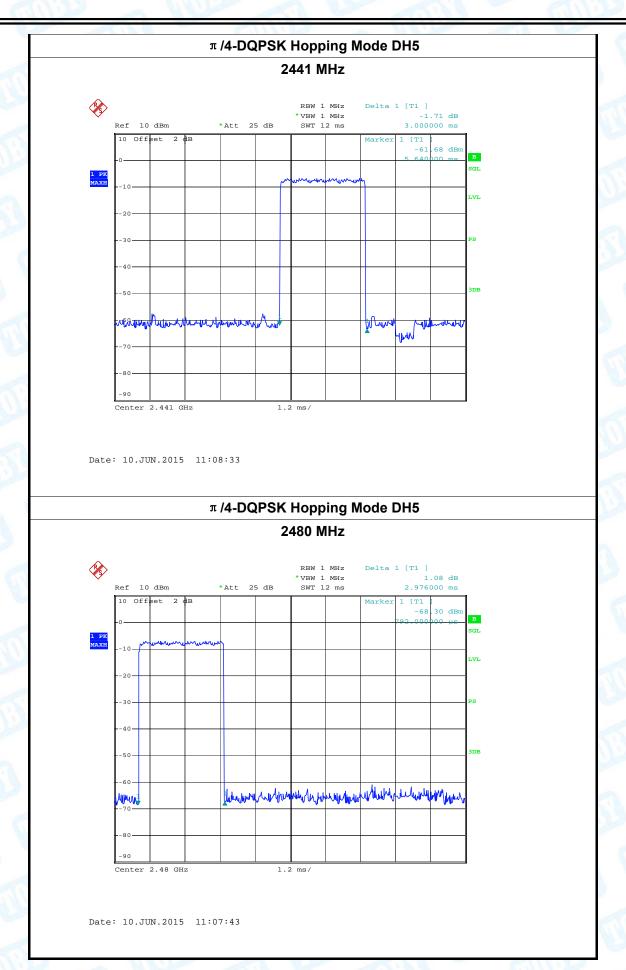


Date: 10.JUN.2015 11:08:58





Page: 65 of 92





Page: 66 of 92

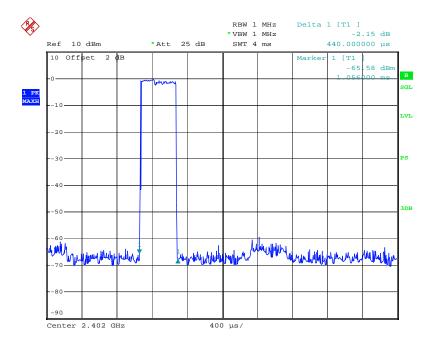
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: Hopping Mode (8-DPSK DH1)

Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	0.440	140.80			
2441	0.432	138.24	31.60	400	PASS
2480	0.440	140.80			

8-DPSK Hopping Mode DH1

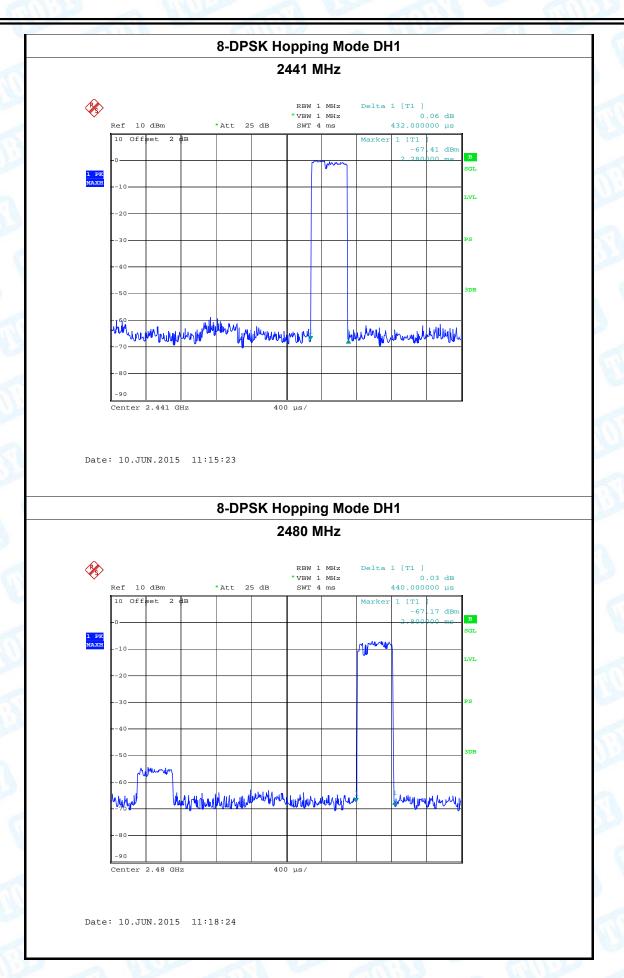
2402 MHz



Date: 10.JUN.2015 11:14:36









Page: 68 of 92

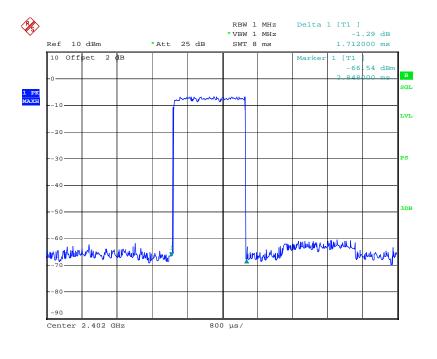
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: Hopping Mode (8-DPSK DH3)

Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	1.712	273.92			
2441	1.720	275.20	31.60	400	PASS
2480	1.720	275.20			

8-DPSK Hopping Mode DH3

2402 MHz

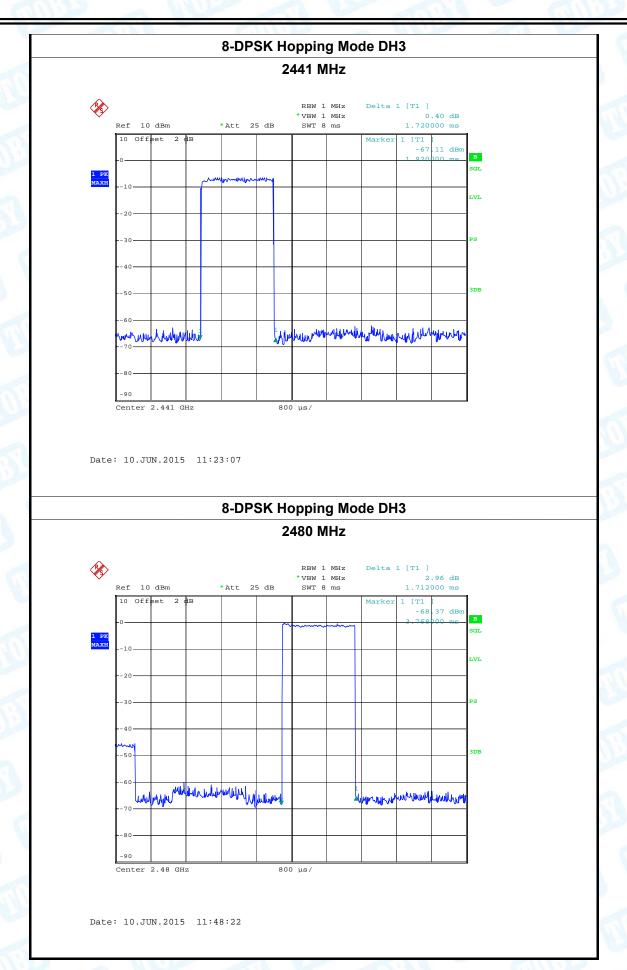


Date: 10.JUN.2015 11:41:59





Page: 69 of 92





Page: 70 of 92

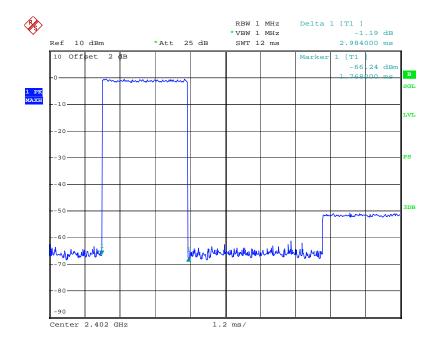
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	THE CASE	

Test Mode: Hopping Mode (8-DPSK DH5)

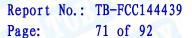
Channel	Pulse Time	Total of Dwell	Period Time	Limit	D
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	2.984	318.29			
2441	3.008	320.85	31.60	400	PASS
2480	2.976	317.44			

8-DPSK Hopping Mode DH5

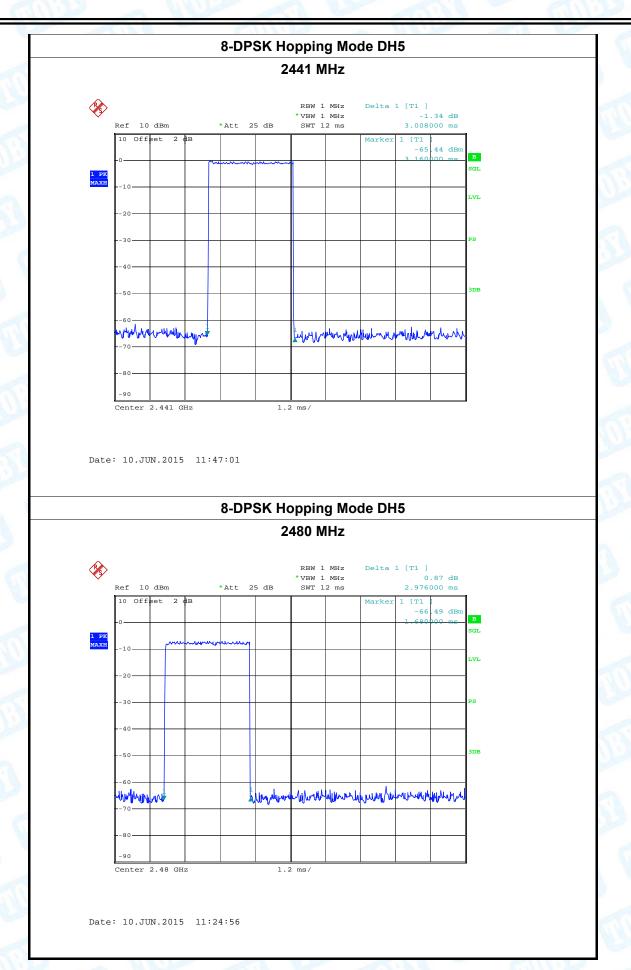
2402 MHz



Date: 10.JUN.2015 11:44:52









Page: 72 of 92

9. Channel Separation and Bandwidth Test

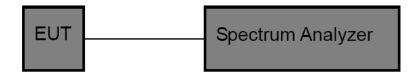
9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247

9.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
Bandwidth	<=1 MHz (20dB bandwidth)	2400~2483.5
Channel Separation	>25KHz or >two-thirds of the 20 dB bandwidth Which is greater	2400~2483.5

9.2 Test Setup



9.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Channel Separation: RBW=30 kHz, VBW=100 kHz.

Bandwidth: RBW=30 kHz, VBW=100 kHz.

- (3) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
 - (4) Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:30 kHz, and Video Bandwidth:100 kHz. Sweep Time set auto.

9.4 EUT Operating Condition

The EUT was set to the Hopping Mode for Channel Separation Test and continuously transmitting for the Bandwidth Test.



Page: 73 of 92

9.5 Test Data

EUT:		er Bluetooth ard and Case	Model Nan	ne:	SL008
Temperature:	25 ℃	0/	Relative H	umidity:	55%
Test Voltage:	DC 3.	7V		31	LINE TO SERVICE
Test Mode:	TX Mo	ode (GFSK)	1	THE REAL PROPERTY.	13
Channel freque	ncy	99% OBW	20dB Band	width	20dB Bandwidth
(MHz)		(kHz)	(kHz)		*2/3 (kHz)
2402		834.00	870.00	0	
2441		834.00	858.00	0	
2480		834.00	864.00	0	
GFSK TX Mode					
		2402	MHz		
Ref	10 dBm	* VB	W 30 kHz Delta 1 [TI W 100 kHz T 5 ms 870.0000	-0.63 dB	
1 PK MAXH10	D1 -1.58	iBm.	Temp 1 [T1	r1]	В

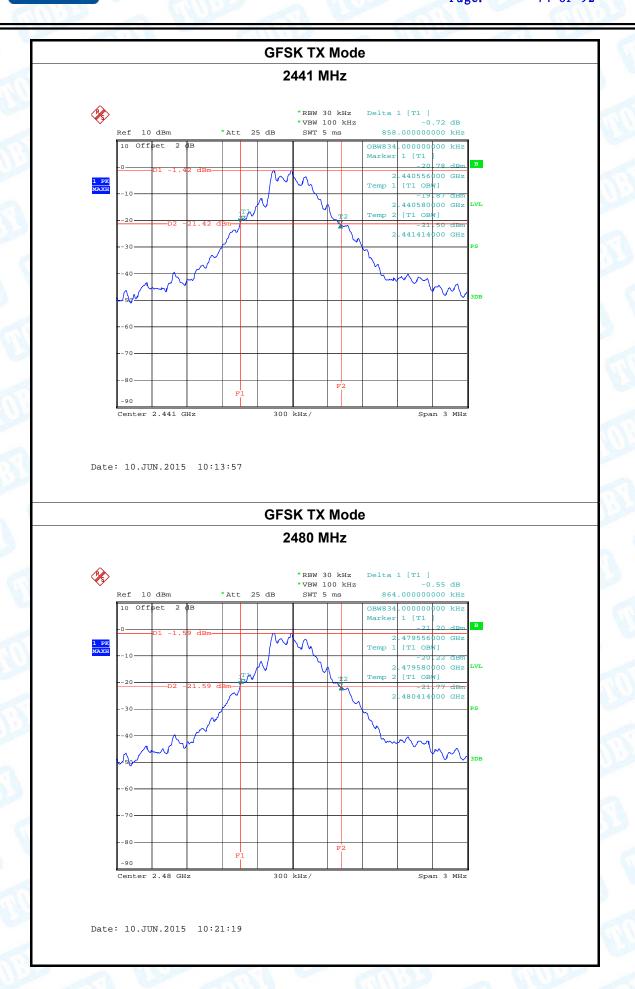
-21.62 dBn .402414000 GHz

Span 3 MHz

Date: 10.JUN.2015 10:11:49

Center 2.402 GHz







Page: 75 of 92

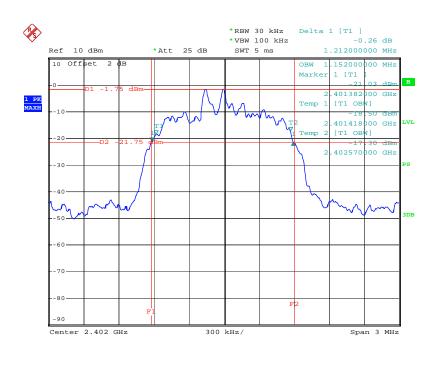
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: TX Mode (π/4-DQPSK)

Channel frequency	99% OBW	20dB Bandwidth	20dB
(MHz)	(kHz)	(kHz)	Bandwidth
			*2/3 (kHz)
2402	1152.00	1212.00	808.00
2441	1152.00	1218.00	812.00
2480	1152.00	1218.00	812.00

π/4-DQPSK TX Mode

2402 MHz



Date: 10.JUN.2015 10:23:45



π/4-DQPSK TX Mode 2441 MHz Delta 1 [T1] -0.44 dB *RBW 30 kHz *VBW 100 kHz *Att 25 dB Ref 10 dBm SWT 5 ms 1.218000000 MHz 1.152000000 MHz 10 Offset 2 dB 440376000 GHz [T1 OBW] [T1 OBW] 441570000 GHz Center 2.441 GHz 300 kHz/ Date: 10.JUN.2015 10:25:58 π/4-DQPSK TX Mode 2480 MHz Delta 1 [T1] -0.41 dB *RBW 30 kHz *VBW 100 kHz SWT 5 ms Ref 10 dBm *Att 25 dB 1.218000000 MHz 1.152000000 MHz er 1 [T1] 10 Offset 2 di OBW Marke 479376000 GHz Temp 479418000 GHz [T1 OB -17.28 dBm Center 2.48 GHz 300 kHz/ Span 3 MHz Date: 10.JUN.2015 10:27:45



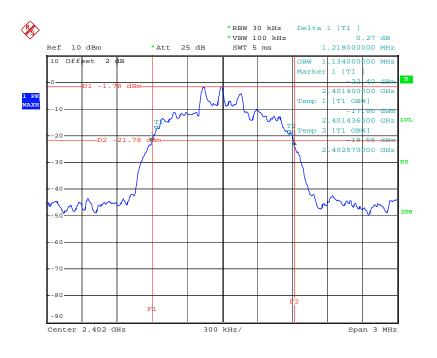
Page: 77 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	D VIII	

Test Mode: TX Mode (8-DPSK)

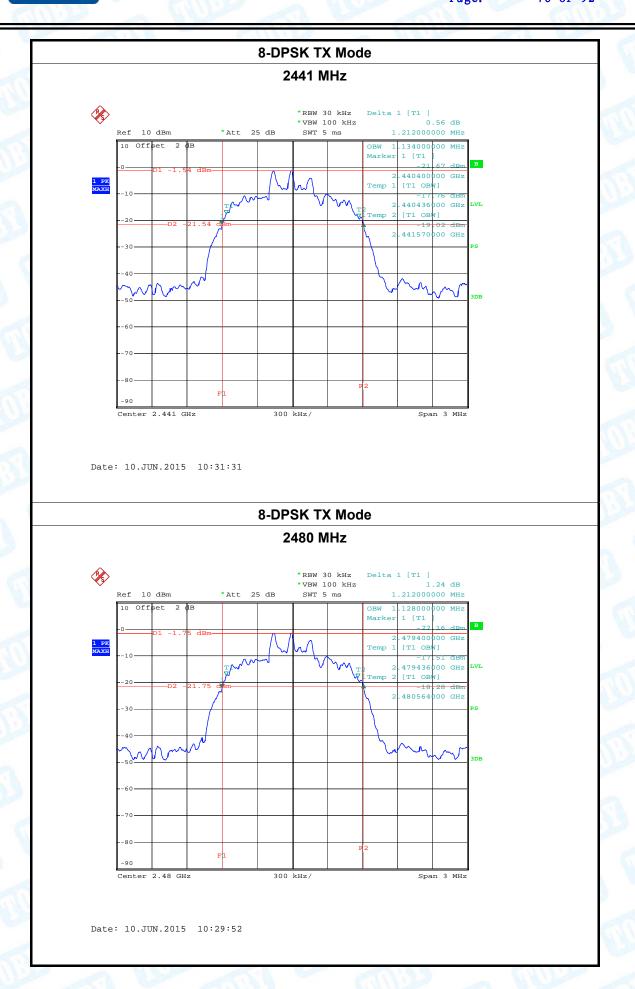
Channel frequency	99% OBW	20dB Bandwidth	20dB Bandwidth
(MHz)	(kHz)	(kHz)	*2/3 (kHz)
2402	1134.00	1218.00	812.00
2441	1134.00	1212.00	808.00
2480	1134.00	1212.00	808.00

8-DPSK TX Mode 2402 MHz



Date: 10.JUN.2015 10:33:49







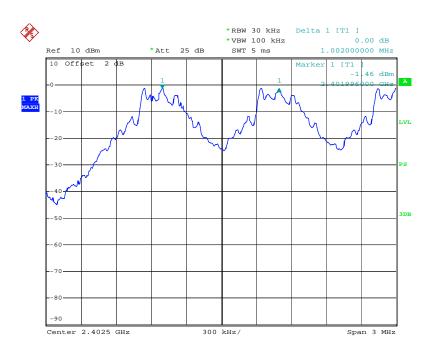
Page: 79 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode:	Hopping Mode (GFSK)				
Channel frequency		Separation Read Value	Separation Limit		
(MHz)		(kHz)	(kHz)		
2402		1002.00	870.00		
2441		1002.00	858.00		
2480		1002.00	864.00		

GFSK Hopping Mode

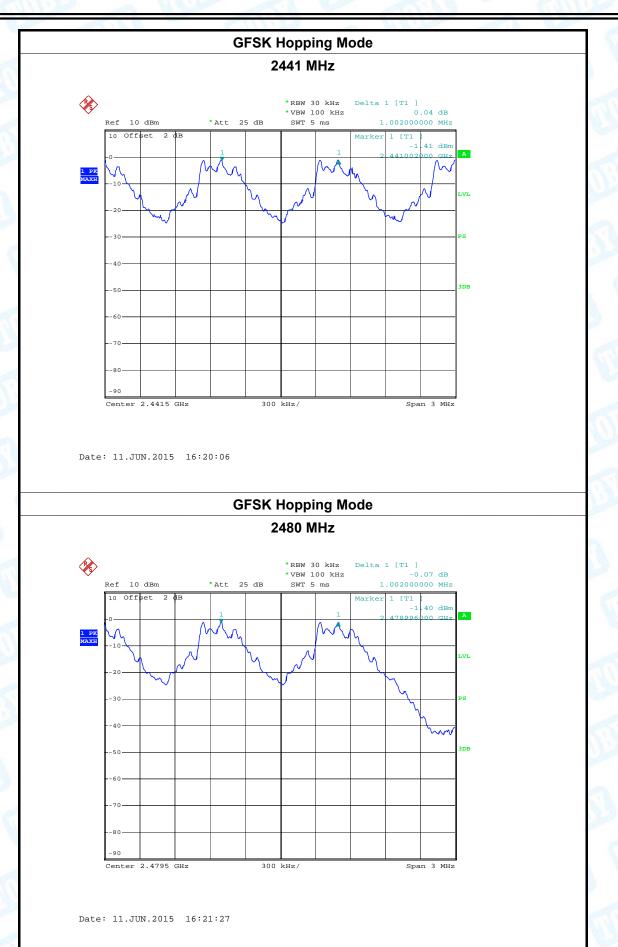
2402 MHz



Date: 11.JUN.2015 16:18:44



TOBY Report No.: TB-FCC144439 Page: 80 of 92





Page: 81 of 92

EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Took Voltone	DC 2.7\/	100	

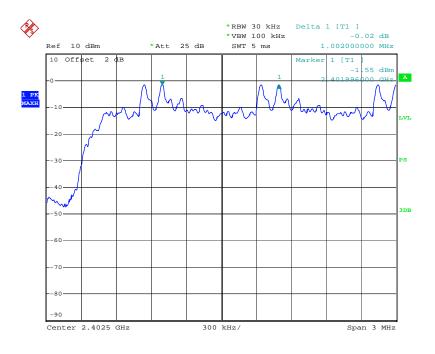
Test Voltage: DC 3.7V

Test Mode: Hopping Mode (π /4-DQPSK)

Channel frequency	Separation Read Value	Separation Limit
(MHz)	(kHz)	(kHz)
2402	1002.00	808.00
2441	1002.00	812.00
2480	1002.00	812.00

π /4-DQPSK Hopping Mode

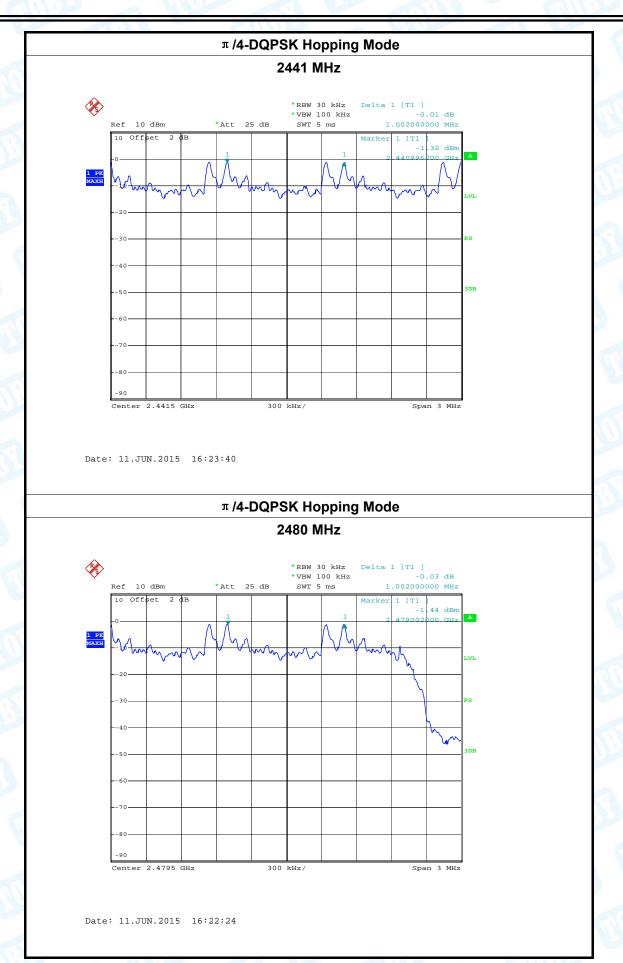
2402 MHz



Date: 11.JUN.2015 16:24:34



Page: 82 of 92





83 of 92 Page:

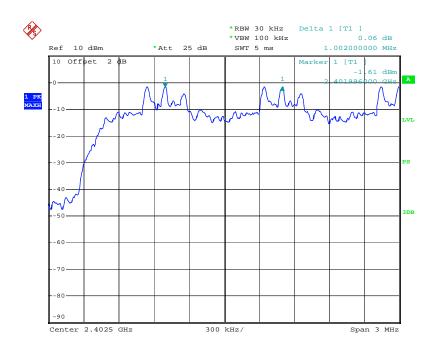
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3 7V		

Test Mode: Hopping Mode (8-DPSK)

11 0				
Channel frequency	Separation Read Value	Separation Limit		
(MHz)	(kHz)	(kHz)		
2402	1002.00	812.00		
2441	1002.00	808.00		
2480	1002.00	808.00		

8-DPSK Hopping Mode

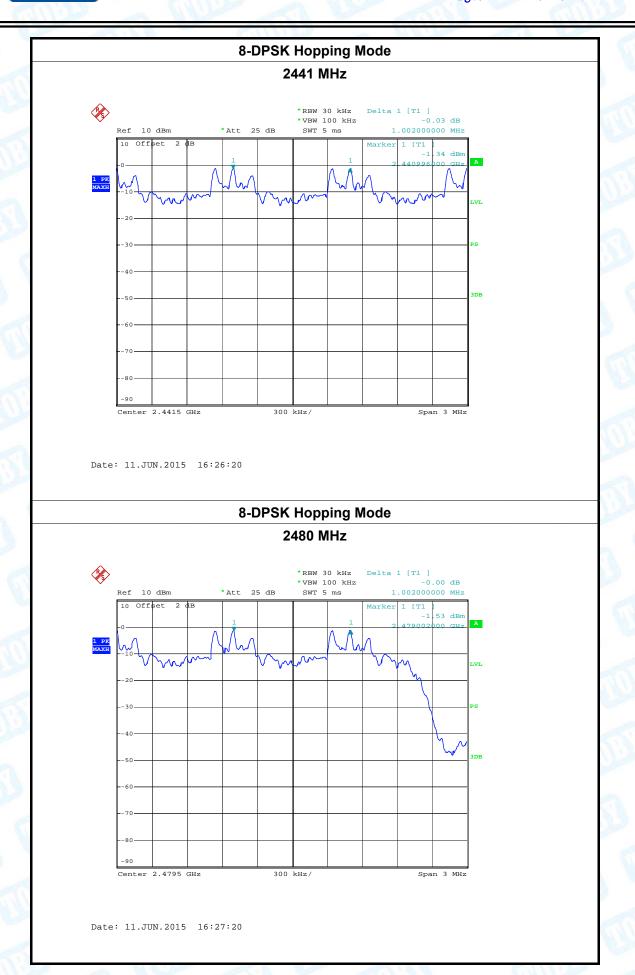
2402 MHz



Date: 11.JUN.2015 16:25:22



Page: 84 of 92





Page: 85 of 92

10. Peak Output Power Test

10.1 Test Standard and Limit

10.1.1 Test Standard FCC Part 15.247 (b) (1)

10.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
Peak Output Power	Hopping Channels>75 Power<1W(30dBm) Other <125 mW(21dBm)	2400~2483.5

10.2 Test Setup



10.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Peak Detector: RBW=1 MHz, VBW=3 MHz for bandwidth less than 1MHz. RBW=3 MHz, VBW=3 MHz for bandwidth more than 1MHz.

10.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

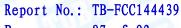


Page: 86 of 92

10.5 Test Data

EUT:		_	_	Blueto			N	lodel	Nam	e:		SL008
Temperature:		25 °	C	Relative Humio		midity	7 :	55%				
Test Voltage: DO			3.7V	V			1		1			
Test Mode:		TX Mode (GFSK)										
Channel fre	quen	су (М	Hz)		Test	Resul	t (dB	m)		L	.imi	t (dBm)
2	402					-0.14	4					
2	441					0.10)					30
2	480					-0.14	4					
				1	GFS	SK TX	Mod	е				
					2	2402 N	1Hz					
%		dBm set 2 d	ів	*Att 2	25 dB	*VBW 3	MHz MHz 2.5 ms] 0.14 dBm 6000 GHz	1	
%			В	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm		
1 PK			iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	1	
	10 Offs		iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	1	
	10 Off		iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A	
	10 Offs		B	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A	
	10 Off		iв	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A	
	10 Offs		iв	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A	
	10 Off		iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A LVL	
	10 Off = -0102030505060		iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A LVL	
	10 Off = -010203050		iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A LVL	
	10 Off = -0102030505060		iB	*Att 2	25 dB	*VBW 3	MHz		-	0.14 dBm	A LVL	

Date: 10.JUN.2015 10:12:10



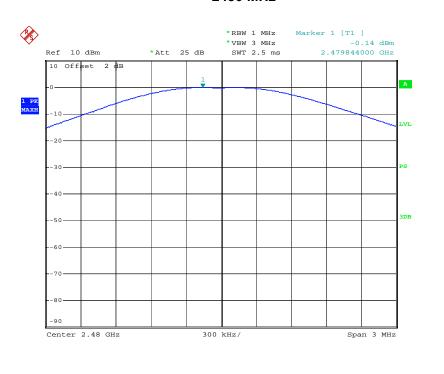


87 of 92 Page:



GFSK TX Mode

2480 MHz



Date: 10.JUN.2015 10:20:18



Page: 88 of 92

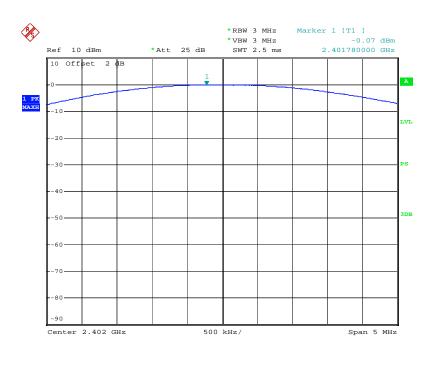
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	3	

Test Mode: ΤΧ Mode (π /4-DQPSK)

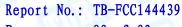
Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	-0.07	
2441	0.18	21
2480	-0.09	

π /4-DQPSK TX Mode

2402 MHz

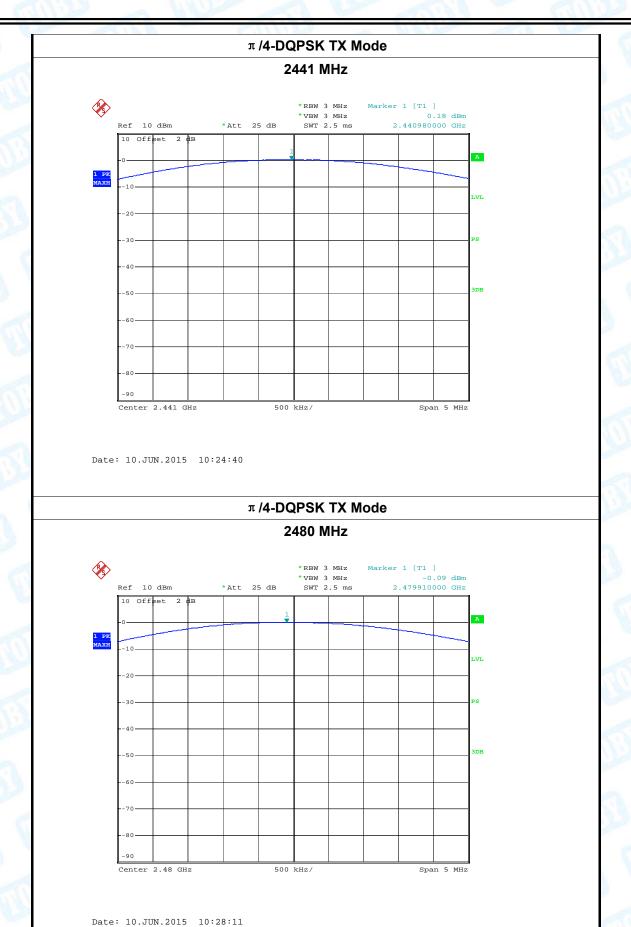


Date: 10.JUN.2015 10:24:12





Page: 89 of 92





Page: 90 of 92

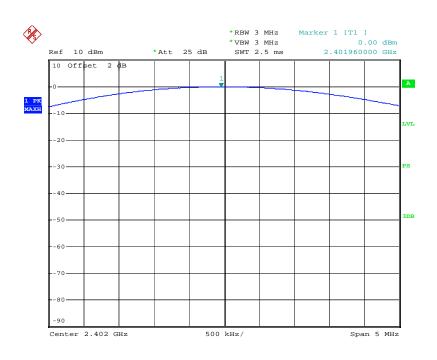
EUT:	Voyager Bluetooth Keyboard and Case	Model Name :	SL008
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: TX Mode (8-DPSK)

Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	0.00	
2441	0.19	21
2480	0.01	

8-DPSK TX Mode

2402 MHz

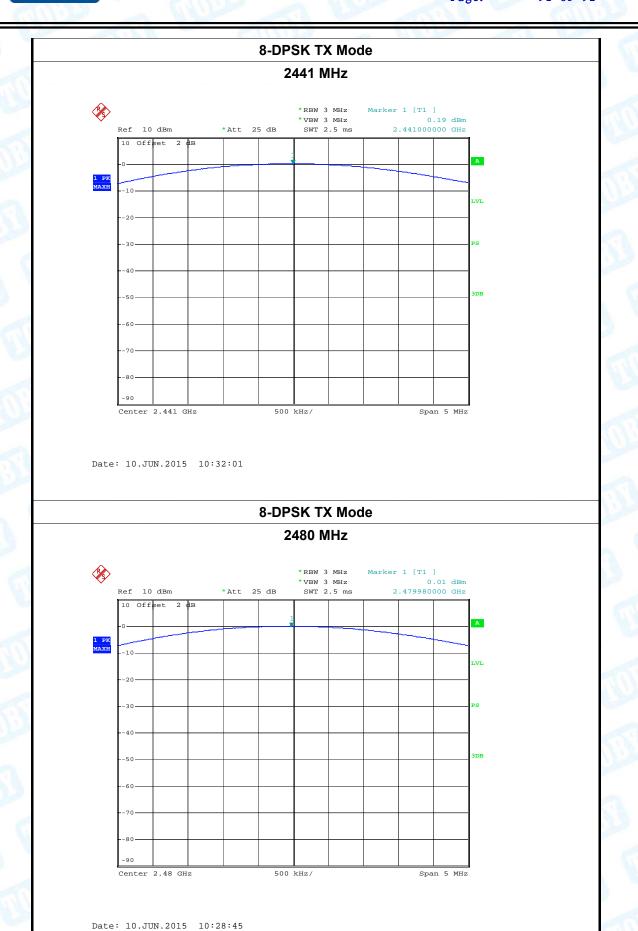


Date: 10.JUN.2015 10:32:48



TOBY

91 of 92 Page:





Page: 92 of 92

11. Antenna Requirement

10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

10.1.2 Requirement

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

10.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 2 dBi, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

Result

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

Antenna Type				
a Tu	▼ Permanent attached antenna			
	□ Unique connector antenna			
1	□ Professional installation antenna			