# FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

# HUIZHOU FORYOU GENERAL ELECTRONICS CO.,LTD.

Car Multimedia Player

Model Number: VX7022

Additional Model: VX4022; DMX5022

FCC ID: VIP-VX7022

Prepared for: HUIZHOU FORYOU GENERAL ELECTRONICS CO.,LTD

North Shangxia Road, Dongjiang Hi-tech Industry Park, Huizhou,

Guangdong Province, 516005, PR China

Prepared By: EST Technology Co., Ltd.

Santun(guantai Road), Houjie Town, DongGuan City, GuangDong,

China.

Tel: 86-769-83081888-808

Report Number: ESTE-R1504001

Date of Test : March 17~ April 02, 2015

Date of Report: April 02, 2015



# TABLE OF CONTENTS

<u>Des</u>	<u>eription</u>		Page
TEST	REPORT VERIFICATION.		3
1.	GENERAL INFORMAT	TION	5
	1.1. Description of I	Device (EUT)	5
2.	SUMMARY OF TEST		6
		st result	
	•		
		ncertainty	
	2.4. Assistant equip	ment used for test	8
	2.5. Block Diagram.		8
	2.6. Test mode		9
	2.7. Channel List fo	r Bluetooth	9
	2.8. Test Equipment	t	10
3.	MAXIMUM PEAK OU	TPUT POWER	11
	3.1. Limit		11
	3.2. Test Procedure		11
	3.3. Test Result		11
	3.4. Test Data		12
4.	20 DB BANDWIDTH		16
	4.1. Limit		16
	4.2. Test Procedure		16
	4.3. Test Result		16
	4.4. Test Data		17
5.	CARRIER FREQUENCY	Y SEPARATION	21
	5.1. Limit		21
	5.2. Test Procedure		21
	5.3. Test Result		21
	5.4. Test Data		22
6.	NUMBER OF HOPPIN	G CHANNEL	26
	6.1. Limit		26
	6.2. Test Procedure		26
	6.3. Test Result		26
	6.4. Test Data		27
7.	DWELL TIME		29
	7.1. Limit		29
	7.3. Test Data		30
8.	RADIATED EMISSIONS	S	36
	8.1. Limit		36
		of Test setup	
	•	r	



## FCC ID:VIP-VX7022

	8.5. Test Data	39
9.	BAND EDGE COMPLIANCE	75
	9.1. Limit	75
	9.2. Block Diagram of Test setup	75
	9.3. Test Procedure	
	9.4. Test Result	
	9.5. Test Data	77
10.	Antenna Requirements	93
	10.1. Limit	93
	10.2. Result	93
11.	TEST SETUP PHOTO	94
12	PHOTOS OF FUT	95

**Test Report Verification** 

	Test Keport					
Applicant:	HUIZHOU FORYO	U GENERAL ELEC'	TRONICS CO.,LTD.			
Address:	North Shangxia Road, Dongjiang Hi-tech Industry Park, Huizhou,					
Audiess.	Guangdong Province, 516005, P R China HUIZHOU FORYOU GENERAL ELECTRONICS CO.,LTD.					
Manufacturer			· ·			
Address:	North Shangxia Roa	d, Dongjiang Hi-tec	h Industry Park, Huizhou,			
	Guangdong Province					
E.U.T:	Car Multimedia Play	er				
Model Number:	VX7022					
	VX4012; DMX5022					
	Note: The three mod	els have the same tec	chnical construction			
	including circuit diag	gram, PCB Layout, co	omponents and component			
	layout, all electrical of	construction and med	chanical construction,			
Additional Model:	except the different r	nodel name, print sill	k. And, the "VX7022"			
			is 6Vrms; the "VX4022"			
	without GPS function					
	"DMX5022" without	•				
Power Supply:	DC 12V	L D \ D Tulletion.				
Test Voltage:	DC 12V					
Trade Name:	JENSEN	Serial No.:				
			March 17~ April 02,			
Date of Receipt:	March 17, 2015	Date of Test:	2015			
Test Specification:	FCC Rules and Regu ANSI C63.10:2013	•				
			EST Technology Co., Ltd			
			in this test report and EST			
Test Result:	Technology Co., Ltd					
			urements. Also, this report			
			pliance with the ETN EN			
	FCC Rules and Regu	llations Part 15 Subp	art & requirements.			
	Th:		15 ES 14			
			e only and shall not be			
	reproduced in part w Co., Ltd.	imout written approv	al of CST reciniology			
	Co., Liu.		Date: April 02, 2015			
Prepared by:	Tested	hv:	Approved by:			
riepared by.	Tested	oy.	Approved by:			
. /			T 11			
Ada	to	my/	Trementhe			
Ada / Assistant	Tony Tan	g/ Engineer	IcemanHu / Manager			
rida / rissistant	Tony. Tun	g/ Eligineer	icemani iu / Wanagei			
Other Aspects: None.						
Abbreviations: OK/P=pas.	sed fail/F=failed r	n.a/N=not applicable	E.U.T=equipment under tested			
	a a single evaluation of one s s without written approval o		ed products ,It is not permitted td.			



# 1. GENERAL INFORMATION

1.1. Description of Device (EUT)

**Product Name** : Car Multimedia Player

**Model Number** : VX7022

**FCC ID** : VIP-VX7022

**Operation frequency** : 2402MHz~2480MHz

**Number of channel**: 79

Antenna : Internal antenna, 0 dBi gain

**Modulation** : FHSS (GFSK,  $\pi/4$ -DQPSK, 8-DPSK)

**Sample Type** : Prototype production



# 2. SUMMARY OF TEST

# 2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
20dB Bandwidth	FCC Part 15: 15.215 DA 00-705	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10: 2013 DA 00-705	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) DA 00-705	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.4: 2003 DA 00-705	N/A
Antenna requirement	FCC Part 15: 15.203	PASS



### 2.2. Test Facilities

EMC Lab : Certificated by CNAL, CHINA

Registration No.: L5288

Date of registration: November 13, 2014

Certificated by FCC, USA Registration No.: 989591

Date of registration: November 20, 2013

Certificated by Industry Canada Registration No.: 46405-9405 Test Side Number: 9405A-1

Date of registration: January 03, 2013

Certificated by VCCI, Japan

Registration No.: R-3663 & C-4103 Date of registration: July 25, 2011

Certificated by TUV Rheinland, Germany Registration No.: UA 50195514 0001 Date of registration: January 07, 2011

Certificated by TUV/PS, Shenzhen

Registration No.: SCN1017

Date of registration: January 27, 2011

Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L1-18 Date of registration: April 28, 2011

Certificated by Siemic, Inc. Registration No.: SLCN021

Date of registration: November 8, 2011

Certificated by Nemko, Hong Kong

Registration No.: 175193

Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : San Tun Management Zone, Houjie Town, Dongguan,

Guangdong, China



# 2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.54dB
Uncertainty for Radiation Emission test (30MHz-1GHz)	3.62
Uncertainty for Radiation Emission test (1GHz to 18GHz)	4.86
Uncertainty for radio frequency	7×10-8
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

# 2.4. Assistant equipment used for test

## 2.4.1. N/A

# 2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was be set into BT test mode by software before test.



(EUT: Car Multimedia Player)



EST Technology Co., Ltd Report No. ESTE-R1504001

Page 8 of 105

# 2.6. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Mode	Channel	Frequency
	Low	2402MHz
GFSK	Middle	2441MHz
	High	2480MHz
	Low	2402MHz
8-DPSK	Middle	2441MHz
	High	2480MHz

# 2.7. Channel List for Bluetooth

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	
No.	(MHz)	No.	(MHz)	No.	(MHz)	No.	(MHz)	
1	2402	2	2403	3	2404	4	2405	
5	2406	6	2407	7	2408	8	2409	
9	2410	10	2411	11	2412	12	2413	
13	2414	14	2415	15	2416	16	2417	
17	2418	18	2419	19	2420	20	2421	
21	2422	22	2423	23	2424	24	2425	
25	2426	26	2427	27	2428	28	2429	
29	2430	30	2431	31	2432	32	2433	
33	2434	34	2435	35	2436	36	2437	
37	2438	38	2439	39	2440	40	2441	
41	2442	42	2443	43	2444	44	2445	
45	2446	46	2447	47	2448	48	2449	
49	2450	50	2451	51	2452	52	2453	
53	2454	54	2455	55	2456	56	2457	
57	2458	58	2459	59	2460	60	2461	
61	2462	62	2463	63	2464	64	2465	
65	2466	66	2467	67	2468	68	2469	
69	2470	70	2471	71	2472	72	2473	
73	2474	74	2475	75	2476	76	2477	
77	2478	78	2479	79	2480	-	-	



# 2.8. Test Equipment

# 2.8.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	832354	June,28,14	1 Year
Artificial Mains Networ	Rohde & Schwarz	ENV216	101260	June,28,14	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	101100	June,28,14	1 Year

# 2.8.2. For radiated emission test(30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10		June,28,14	
Spectrum Analyzer	Agilent	E4411B	MY5014069 7	June,28,14	1 Year
Bilog Antenna	Teseq	CBL 6111D	27090	June,28,14	1 Year
Signal Amplifier	Agilent	310N	187037	June,28,14	1 Year

# 2.8.3. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	SCHWARZBECK		BBHA9120D1 002	June,28,14	1 Year
Signal Amplifier	SCHWARZBECK	BBV9718	9718-212	June,28,14	1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211139	June,28,14	1 Year

EST

# 3. MAXIMUM PEAK OUTPUT POWER

# 3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

# 3.2. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

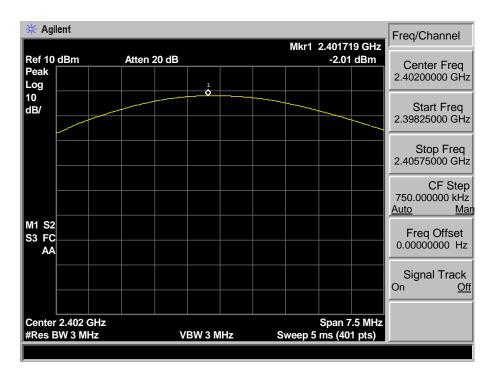
## 3.3. Test Result

EUT: Car Mt M/N: VX702		yer			
Test date: 20		Test site: RF site	Tested by: Tony Tang		
Mode	Freq	Result	L	Margin	
Wiode	(MHz)	(dBm)	dBm	W	(dB)
	2402	-2.010	30.00	1	32.020
GFSK	2441	1.674	30.00	1	28.326
	2480	-0.573	30.00	1	30.573
	2402	-2.576	21.00	0.125	23.576
8-DPSK	2441	1.220	21.00	0.125	19.780
	2480	-1.052	21.00	0.125	22.052
Conclusion: PASS					

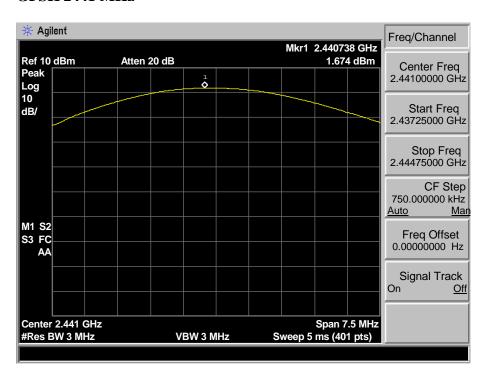


## 3.4. Test Data

#### GFSK 2402 MHz

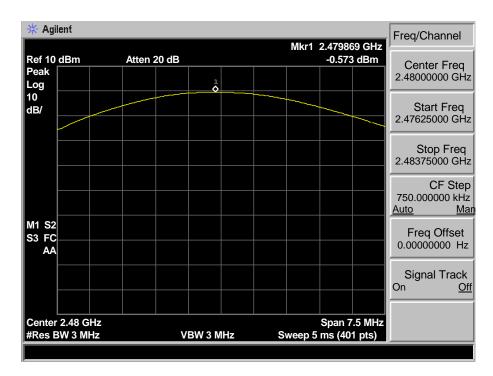


#### GFSK 2441 MHz



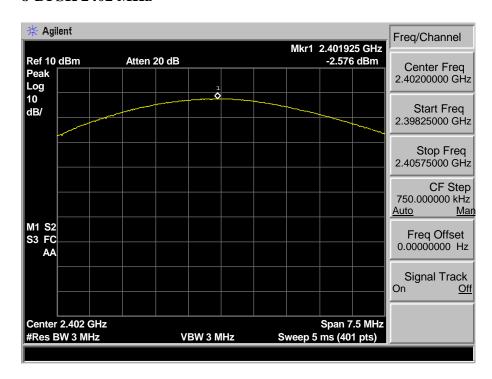


## GFSK 2480 MHz

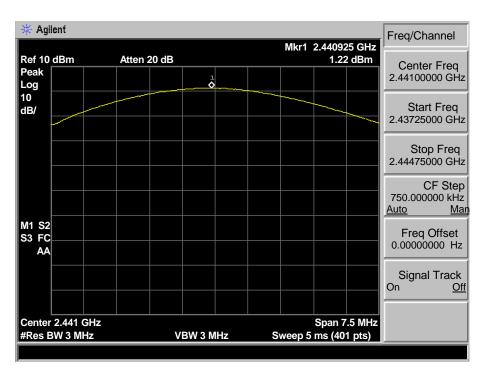




#### 8-DPSK 2402 MHz

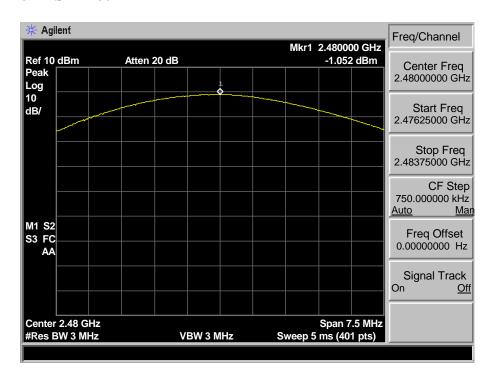


#### 8-DPSK 2441 MHz





## 8-DPSK 2480 MHz





## 4. 20 DB BANDWIDTH

## 4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

#### 4.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

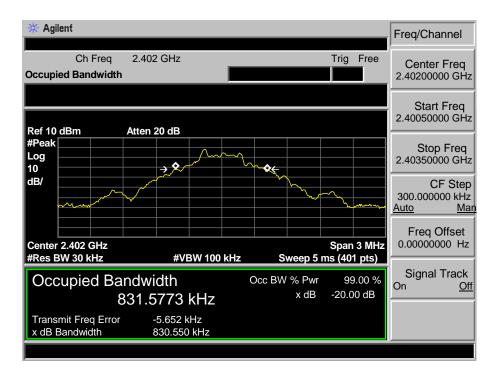
#### 4.3. Test Result

EUT: Car Multimedia Player						
M/N: VX7022 Test date: 2015-03-25 Test site: RF site Tested by: Tony Tang						
Mode Freq (MHz)		20dB Bandwidth (MHz)	Limit (kHz)	Conclusion		
	2402	0.831	/	PASS		
GFSK	2441	0.831	/	PASS		
	2480	0.831	/	PASS		
	2402	1.173	/	PASS		
8-DPSK	2441	1.174	/	PASS		
	2480	1.172	/	PASS		

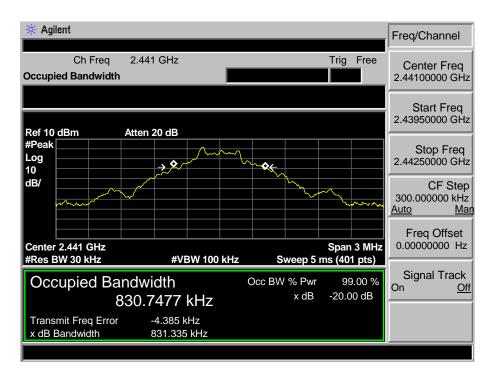


## 4.4. Test Data

#### GFSK 2402MHz

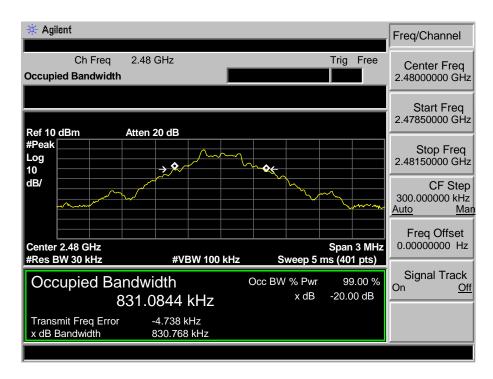


#### GFSK 2441MHz



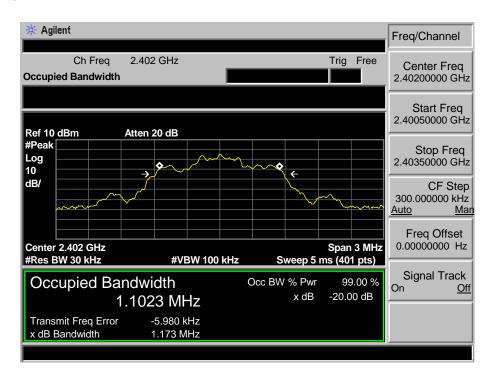


#### GFSK 2480MHz

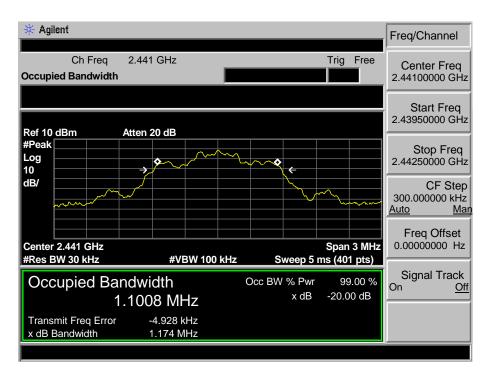




#### 8-DPSK 2402MHz

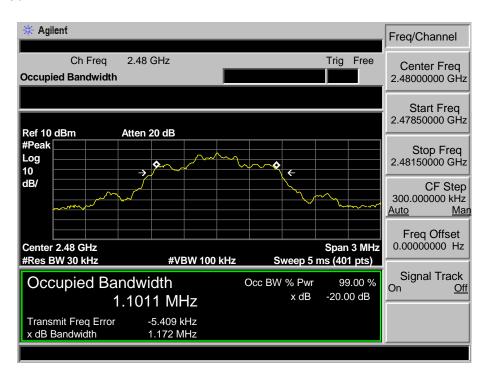


#### 8-DPSK 2441MHz





#### 8-DPSK 2480MHz





# 5. CARRIER FREQUENCY SEPARATION

## 5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW

## 5.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

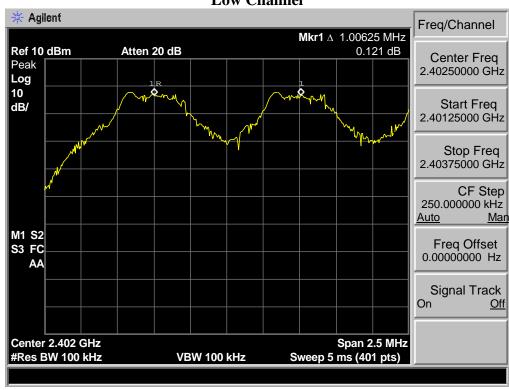
## 5.3. Test Result

EUT: Car Multimedia Player				
M/N: VX7022				
Test date: 2015-03-25			Test site: RF site Tested by: Tony Tang	
Mode	Channel	Channel separation (MHz)	Limit	Conclusion
GFSK	Low CH	1.006	0.831 MHz	PASS
	Mid CH	1.006	0.831 MHz	PASS
	High CH	1.000	0.831 MHz	PASS
8-DPSK	Low CH	1.006	> 2/3 of the 20dB Bandwidth or 25[kHz]( whichever is greater)	PASS
	Mid CH	1.006		PASS
	High CH	1.006		PASS

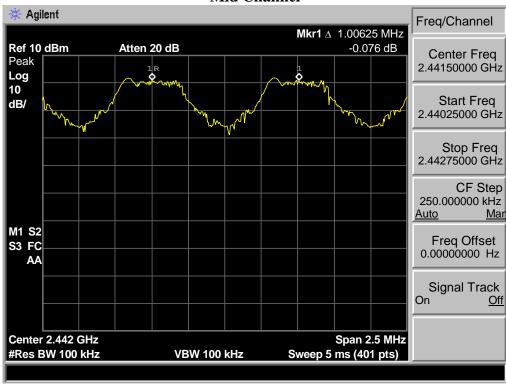


#### 5.4. Test Data

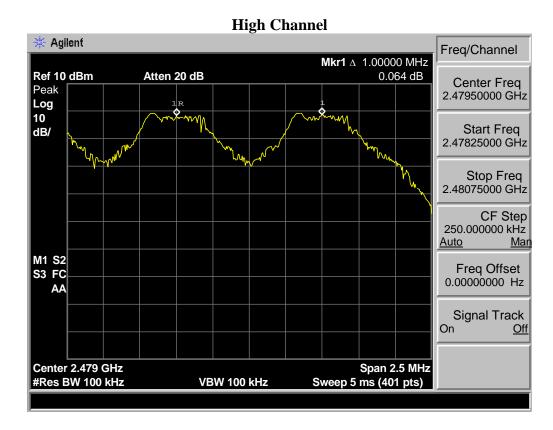
**GFSK**Low Channel



#### **Mid Channel**

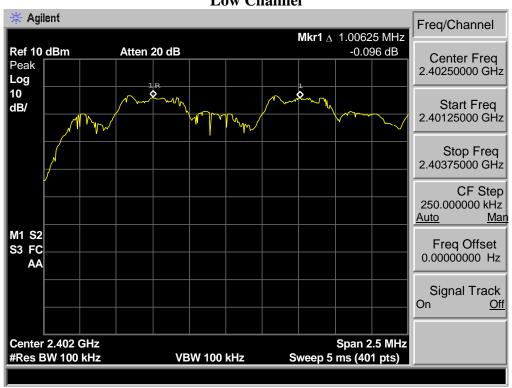




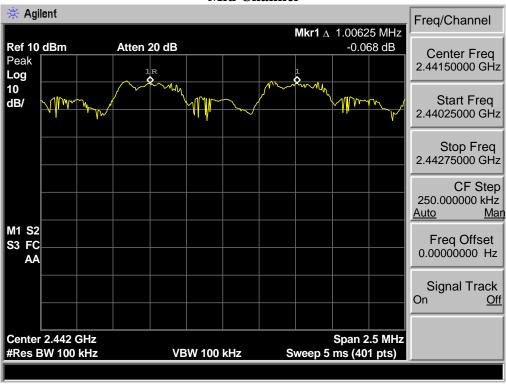




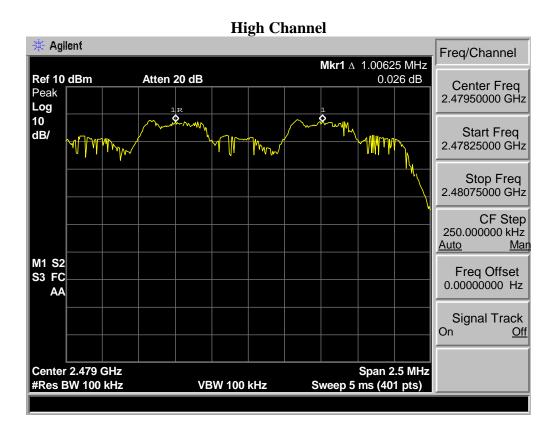
8-DPSK Low Channel



#### **Mid Channel**









# 6. NUMBER OF HOPPING CHANNEL

# 6.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

# 6.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 300kHz VBW.

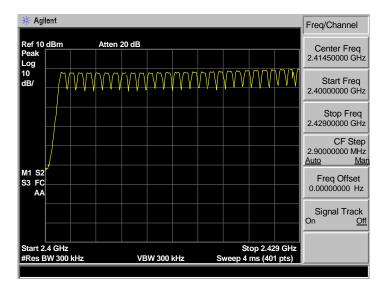
# 6.3. Test Result

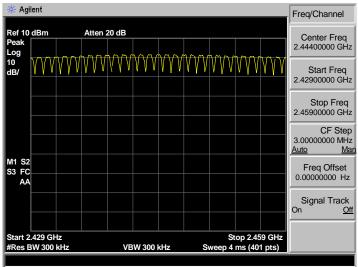
EUT: Car Multimedia Player M/N: VX7022					
Test date: 20	15-03-25	Test site: RF site	Tested by: Tony.Tang		
Mode	Number of hopping channel		Limit	Conclusion	
GFSK	79		>15	PASS	
8-DPSK	79		>15	PASS	

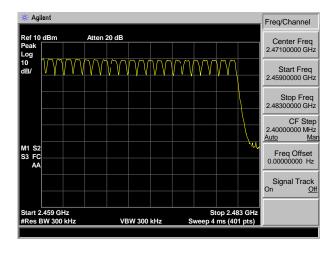


## 6.4. Test Data

#### **GFSK**

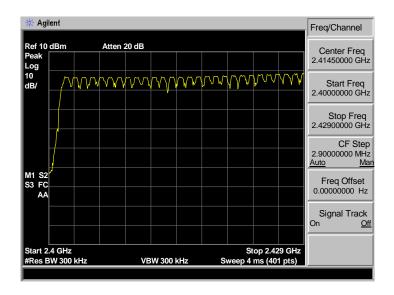


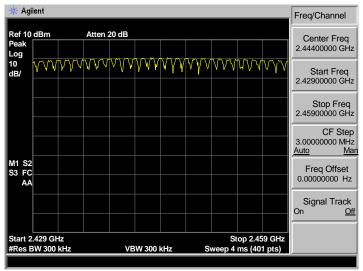


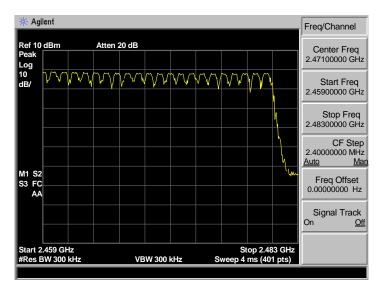




#### 8-DPSK









# 7. DWELL TIME

# 7.1. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

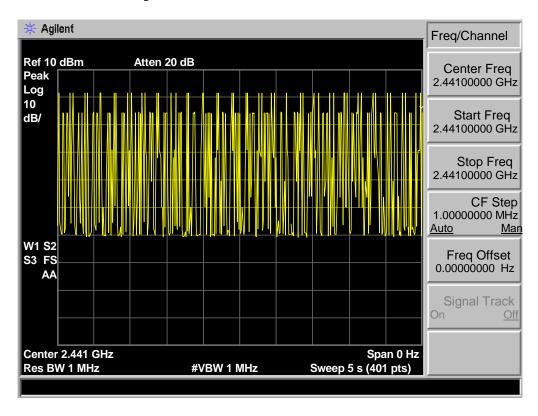
# 7.2. Test Result

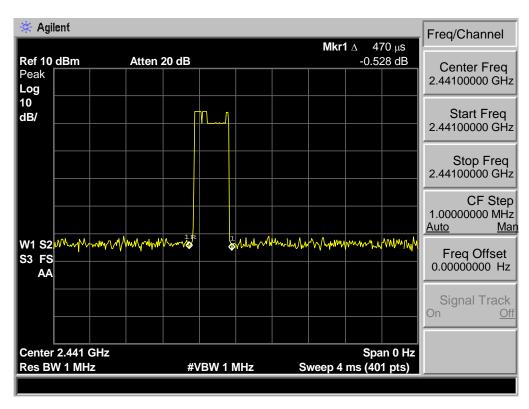
EUT: Car Multimedia Player M/N: VX7022				
Test date: 2015-03-25	Test site: RF site	Test site: RF site Tested by: Tony Ta		
Mode	Dwell time (ms)	Limit	Conclusion	
GFSK DH1	142.58	<400ms	PASS	
GFSK DH3	267.02	<400ms	PASS	
GFSK DH5	294.26	<400ms	PASS	
8-DPSK DH1	127.73	<400ms	PASS	
8-DPSK DH3	277.70	<400ms	PASS	
8-DPSK DH5	355.44	<400ms	PASS	



### 7.3. Test Data

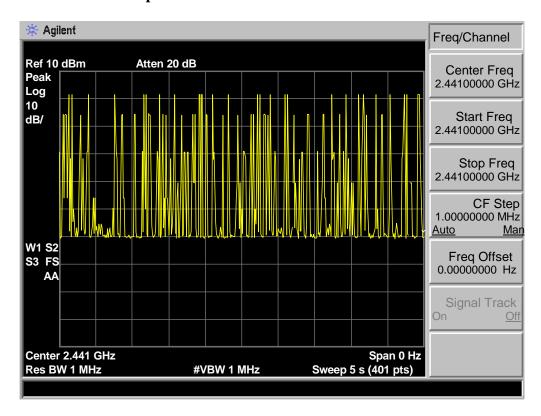
# GFSK DH1: 48hop/5s \* 0.4 \* 79 \* 0.47ms = 142.58ms

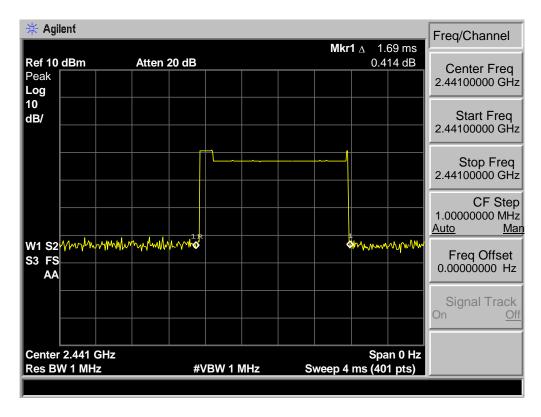






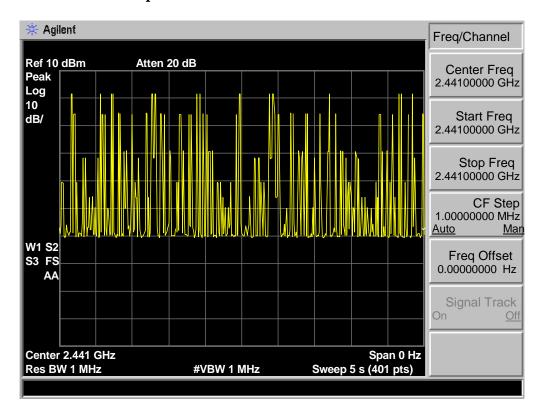
GFSK DH3: 25hop/5s \* 0.4 \* 79 \* 1.69ms= 267.02ms

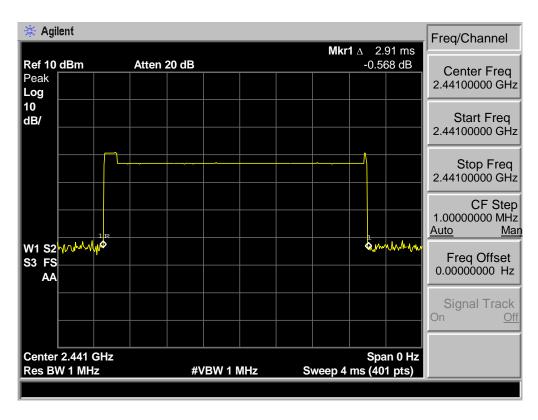






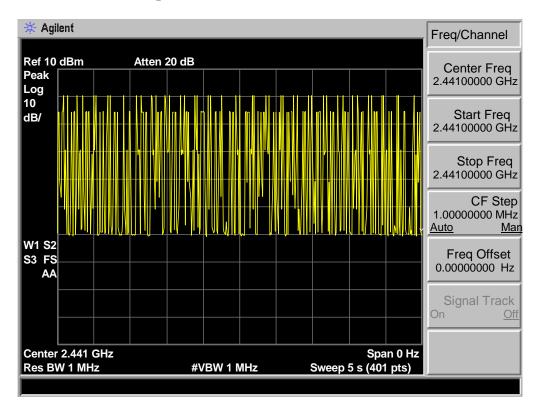
## GSFK DH5: 16hop/5s \* 0.4 \* 79 \*2.91ms = 294.26ms

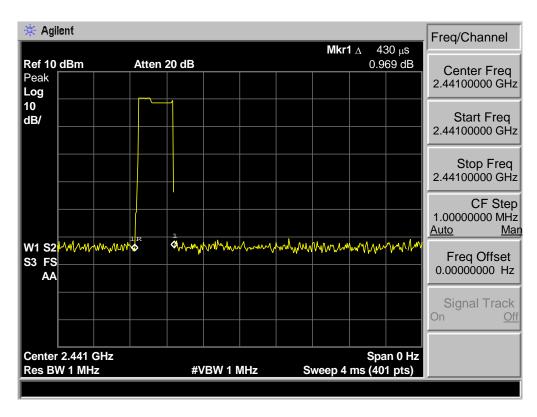






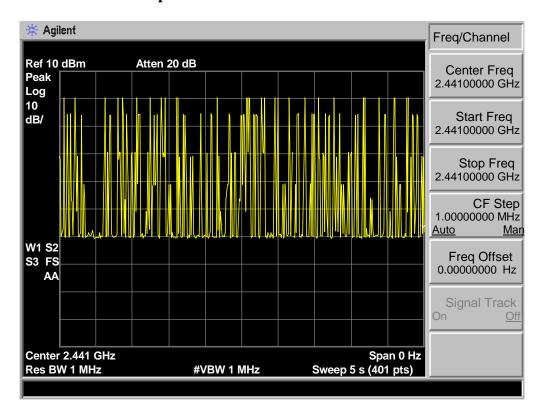
# 8-DPSK DH1 : 47hop/5s \* 0.4 \* 79 \* 0.43ms = 127.73ms

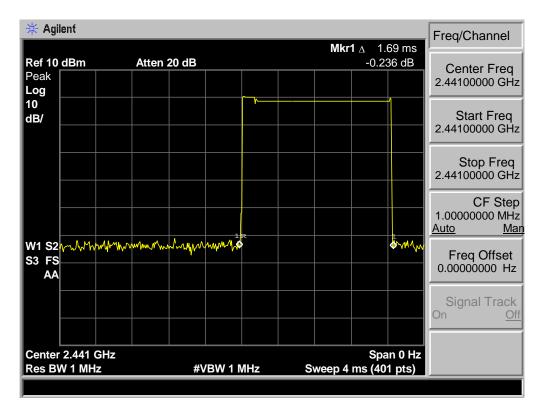






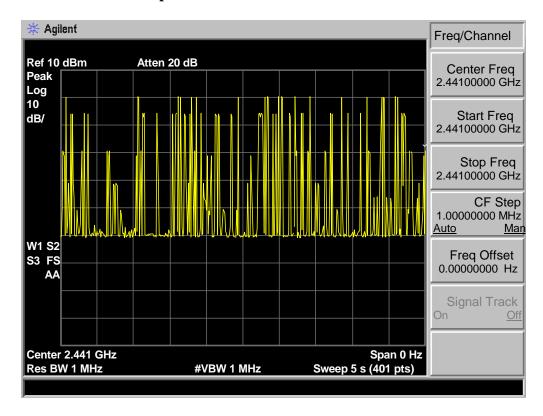
## 8-DPSK DH3: 26hop/5s \* 0.4 \* 79 \* 1.69ms= 277.70ms

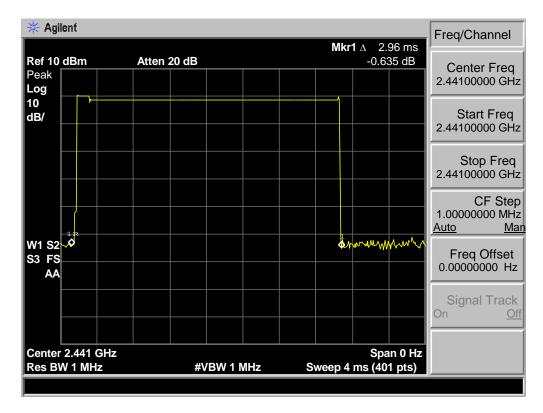






## 8-DPSK DH5: 19hop/5s \* 0.4 \* 79 \*2.96ms = 355.44ms









# 8. RADIATED EMISSIONS

# 8.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 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	( <sup>2</sup> )

15.209 Limit

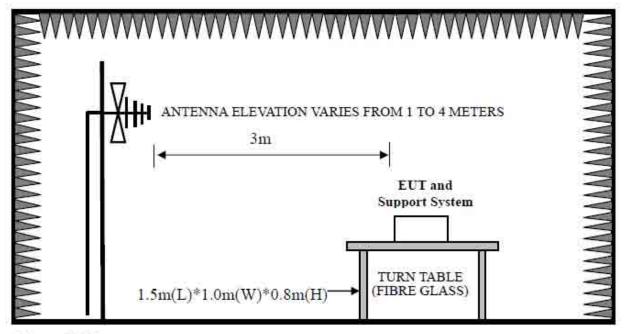
FREQ	UENCY	DISTANCE	FIELD STRENGTHS LIMIT	
MHz		Meters	μV/m	dB(μV)/m
30 ~ 88		3	100	40.0
88 ~ 216		3	150	43.5
216 ~ 960		3	200	46.0
960 ~ 1000		3	500	54.0
Above	1000	3	74.0 dB(µV)/m (Peak)	
			54.0 dB(µV)/m (Average)	

EST Technology Co., Ltd Report No. ESTE-R1504001 Page 36 of 105

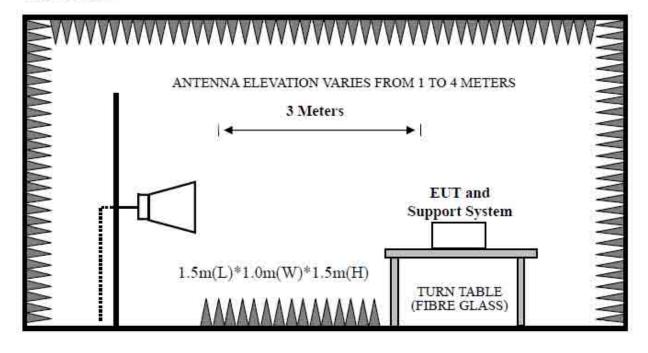


# 8.2. Block Diagram of Test setup

30~1000MHz



Above 1GHz



EST Technology Co., Ltd Report No. ESTE-R1504001 Page 37 of 105

### 8.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 30~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement, PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

## 8.4. Test Result

30MHz—25GHz Radiated emissison Test result								
EUT: Car Multimedia Player								
M/N: VX7022								
Power: DC 12V								
Test date: 2015-03-31~2015-04-01	Test site: 3m Chamber	Tested by: Tony Tang						
Test mode: Tx Mode								
	Pass							

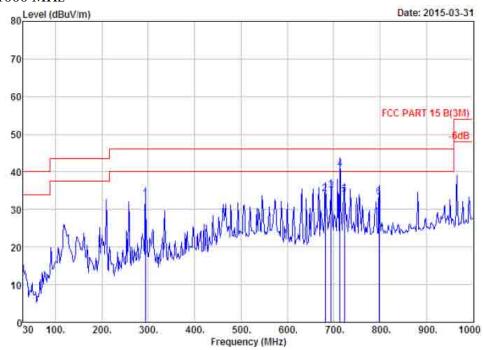
Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2. The frequency 2402MHz \ 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

EST Technology Co., Ltd Report No. ESTE-R1504001 Page 38 of 105

# 8.5. Test Data

## 30 MHz - 1000 MHz



Data no. : 335 Site no. : 1# 966 chamber : 3m 27137 : FCC PART 15 B (3M) Dis. / Ant. Ant. pol. : VERTICAL

Limit

Eny. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

: Tony Engineer

EUI : Car Multimedia Player

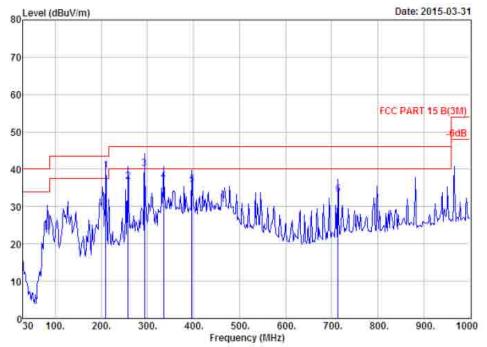
: DC 12V : VX7022 Power M/N

: GFSK TX 2402MHz Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	293.84	12.92	2.33	17.52	32.77	46.00	13.23	QP
2	681.84	20.30	3.67	10.07	34.04	46.00	11.96	QP
3	694.45	20.46	3.64	10.86	34.96	46.00	11.04	QP
4	714.08	21.20	3.78	15.80	40.78	46.00	5,22	QP
5	723.55	21,73	3.33	8.48	33.98	46.00	12.02	QP:
6	798.24	22.03	3.92	7.39	33.34	46.00	12.66	OP.







Site no. : 1# 966 chamber Data no.
Dis. / Ant. : 3m 27137 Ant. pol
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa Data no. : 336 Ant. pol. : HORIZONTAL

Engineer

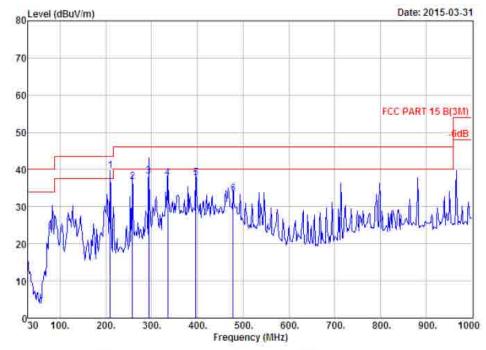
: Tony : Car Multimedia Player EUT

: DC 12V : VX7022 Power M/N

Test Mode : GFSK TX 2402MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	209.45	3.37	1.91	29.43	39.71	43.50	3.79	QP
2	257.95	12.75	2.19	21.72	36.66	46.00	9.34	QP
3	293.84	12.92	2.33	24.84	40209	46.00	5.91	QF
4	335.55	14.02	2.50	20.32	36.84	46.00	9.16	QP
5	396.66	15,91	2.63	17.24	35.78	46.00	10.22	QP
6	713.85	21.20	3.78	8.31	33.79	45.00	12.71	OP





Data no. : 337 Ant. pol. : HORIZONTAL : 1# 966 chamber Site no. Dis. / Ant.

: 3m 27137 : FCC PART 15 B(3M) Limit

: Temp:23.6';Humi:56%;Press:101.52kPa : Tony Env. / Ins.

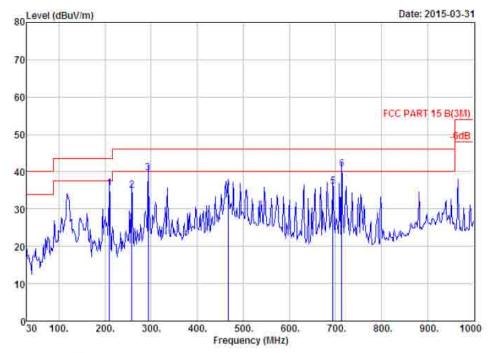
Engineer

: Car Multimedia Player EUI

Power : DC 12V M/H : VX7022 Test Mode GESK TX 2441MHz

	Freq.	Ant, Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	210,03	8,46	1,88	29.30	39.64	43.50	3.86	QP
2	257,95	12.75	2.19	21.72	36.66	46.00	9.34	
3	294.01	12.97	2.33	22.80	38.10	46.00	7.90	QP QP
4	335.55	14.02	2.50	21.32	37.84	46.00	8,16	QF
5	396.66	15.91	2.63	19.24	37.78	46.00	8.22	QP QP
6	478.14	17.40	3,07	13,02	33,49	46.00	12,51	QP





Date no. : 338 Ant. pol. : VERTICAL Site no. : 1# 966 chamber Dis. / Ant. : 3m 27137 Limit : FCC FARI 15 B(3M)

Env. / Ins. : Temp:23.6';Humi:56%;Fress:101.52kPa

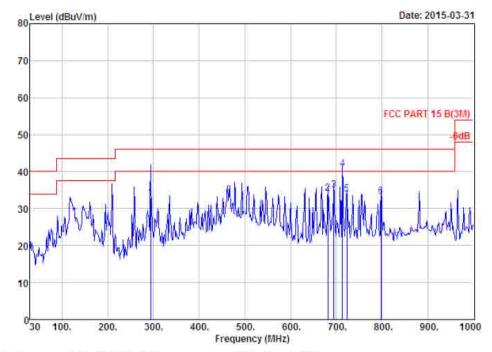
Engineer ; Tony

: Car Multimedia Player : DC 12V EUI

Power : VX7022 M/H Test Mode : GFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
	209.45	8.37	1,91	25.43	35.71	43,50	7.79	QP
	257,95	12,75	2.19	19.97	34.91	46.00	11.09	QP
1	293.84	12.92	2.33	24.52	39.77	46.00	6.23	QP
1	466.50	17.08	3,02	15.27	35.37	46.00	10.63	QP
3	694.45	20.46	3.64	11.86	35.96	46.00	10.04	QP
- 1	713.85	21.20	3.78	15.70	40.68	46.00	5.32	QB





Site no. : 1# 966 chamber
Dis. / Ant. : 3m 27137
Limit : FCC PART 15 B(3M) Data no. : 339 Ant. pol. : VERTICAL

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

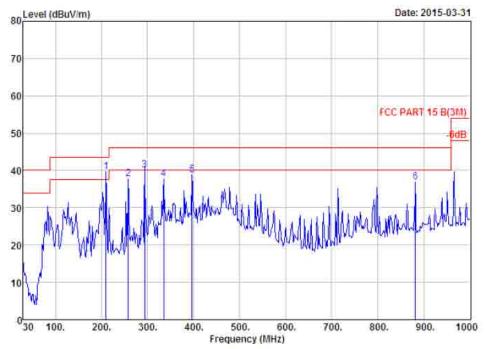
: Car Multimedia Player EUT

: DC 12V Power : VX7022 M/H

Test Mode : GFSM TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	293.84	12.92	2.33	17.52	32.77	46.00	13.23	02
2	681.84	20.30	3.67	10.07	34.04	46.00	11.96	QP
3	694.45	20.46	3.64	10.86	34.96	46.00	11.04	QP
4	714.08	21,20	3.78	15.80	40.78	46.00	5.22	QP
5	723.55	21.73	3.77	8.48	33.98	46.00	12.02	QP
ő.	798.24	22.03	3.92	7.39	33.34	46.00	12.66	QF





Data no. : 340 Ant. pol. : HORIZONTAL Site no. : 1# 866 chamber Dis. / Ant. Limit Env. / Ins. : 3m 27137 Ant. pol : FCC PARI 15 B(3M) : Temp:23.6';Humi:56%;Press:101.52kPa

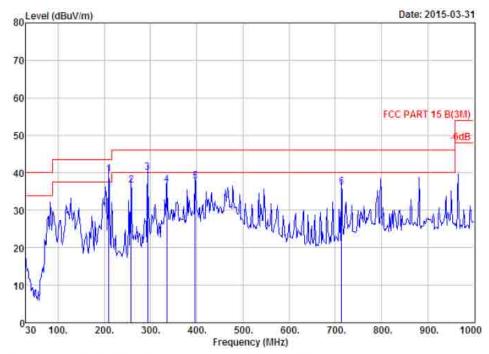
: Tony Engineer

EUT : Car Multimedia Player

: DC 12V : VX7022 Power M/II Test Mode : GFSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	210.03	8.46	1.88	29.30	39.64	43.50	3.86	QF
	257.95	12.75	2.19	22.72	37,66	46,00	8.34	QF
3	294.01	12.97	2.33	24.80	40.10	46.00	5.90	QP
: 4:	335,55	14.02	2.50	21.32	37.84	46.00	8.16	QP
5	396.66	15,91	2,63	20.24	38.78	46.00	7.22	QP
.6	881.66	22.69	4.00	10.17	36.86	46.00	9.14	OP





Site no. : 1# 966 chamber Data no. : 341 Ant. pol. : HORIZONTAL

Dis. / Ant. Limit : 3m 27137 : FCC PART 15 B(3M)

: Temp:23.6'; Humi:56%; Press:101.52kPa Env. / Ins.

Engineer : Tony

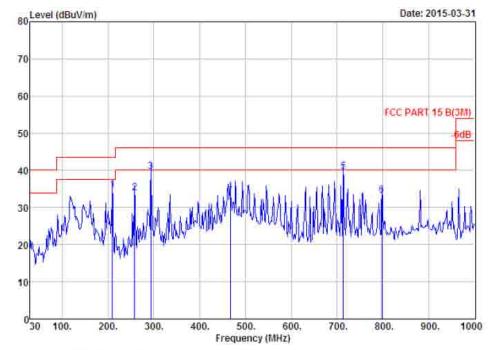
EUI : Car Multimedia Player

: DC 12V : VX7022 Power M/H

: 8-DPSK TX 2402MHz Test Mode

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	209.45	8.37	1.91	29.43	39.71	43.50	3.79	QP
2	257.95	12.75	2,19	21.72	36.66	46.00	9.34	QP QP
3	293.84	12.92	2.33	24.84	40.09	46.00	5.91	QP
4	335.55	14.02	2.50	20.32	36.84	46.00	9.16	QP
5	396.66	15.91	2.63	19.24	37.78	46.00	8.22	QP
6	713.85	2120	3.78	11:31	36:29	46:00	9.71	OP:





Site no. : 1# 966 chamber Dis. / Ant. : 3m 27137 Data no. : 342 Ant. pol. : VERTICAL

: FCC PARI 15 B (3M) Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer ; Teny

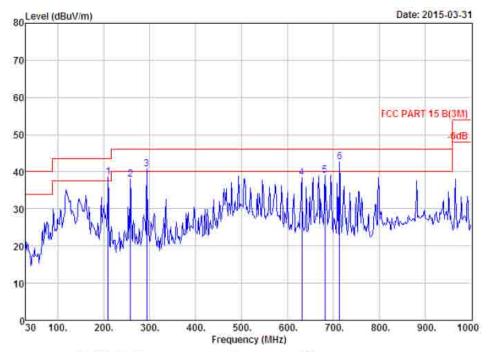
EUT : Car Multimedia Player

: DC 12V Fower M/17

: VX7022 : 8-DPSK TX 2402MHz Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	209.45	8.37	1.91	24.43	34.71	43.50	8.79	QP
- 2	257.95	12.75	2.19	16.97	33.91	46.00	12.09	QB
3	293.84	12.92	2.33	24.52	39,77	46.00	6.23	QP
: 4	466.50	17,08	3.02	14.27	34.37	46.00	11.63	QP
3	713.85	21.20	3.78	14.70	39.68	46.00	6.32	QP
16	798.24	22.03	3.92	7.39	33.34	46.00	12.66	DP.





Data no. : 343 Ant. pol. : YERIICAL Site no. : 1# 966 chamber : 3m 27137 : FCC PART 15 B(3M) Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer

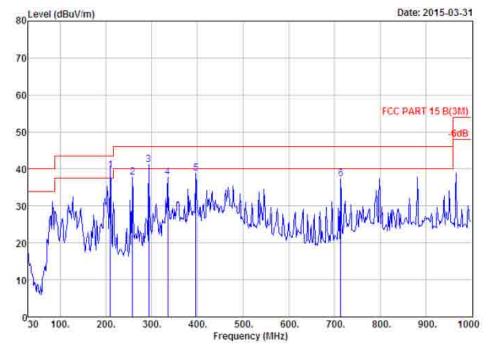
: Tony : Car Multimedia Flayer : DC 12V EUI

Fower : VX7022 M/N

Test Mode : 8-DFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
 1	209.45	8.37	1.91	28.43	38.71	43.50	4.79	QP
2	257.95	12.75	2.19	22.97	37.91	46.00	8.09	QP
3	293.84	12.92	2.33	25.52	40.77	46.00	5,23	QP
4	631.40	20.15	3.49	14.79	38.43	46.00	7.57	QF
5	681,84	20.30	3.67	15.07	39.04	46.00	6,96	QP
6	713.85	21.20	3.78	17.70	42.68	46.00	3.32	QP





Site no. : 1# 966 chamber Data no.
Dis. / Ant. : 3m 27137 Ant. pol
Limit : FCC FART 15 B(3M)
Env. / Ins. : Temp:23.6': Sumi:56%; Press:101.52kFa Data no. : 344 Ant. pol. : HORIZONTAL

Engineer

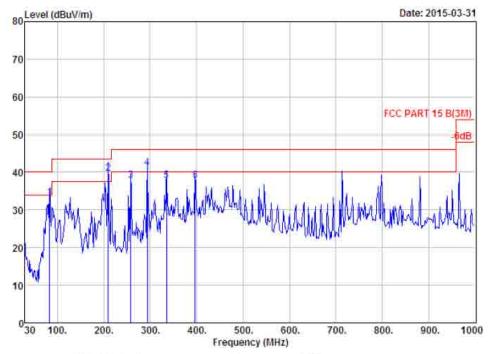
: Tony : Car Multimedia Player EUT

Power : VX7022 M/H

Test Mode : B-DPSK TX 2441MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	209,45	8,37	1.91	29,43	39.71	43,50	3,79	QP
- 2	257.95	12.75	2.19	22.72	37.66	46.00	8.34	QP
3	293.84	12.92	2,33	25.84	41.09	46.00	4.91	QP
4	335.55	14.02	2.50	21.32	37.84	46.00	8.16	QP
5	396.66	15.91	2.63	20,24	38.78	46.00	7.22	QP
6	713.85	21.20	3.78	12.31	37.29	46.00	8.71	QP





: 1# 966 chamber Data no. : 345 Site no. Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

Limit

: FCC PART 15 B(3M) : Temp:23.6';Humi:56%;Press:101.52kPa Env. / Ins.

Engineer

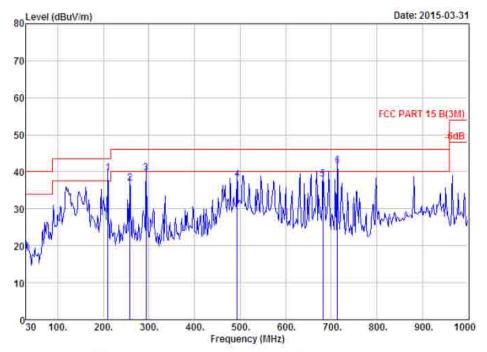
: Tony : Car Multimedia Player EUT

Power : DC 12V M/H : VX7022

: 8-DPSK IX 2480MHz Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1.	83,35	7,47	1.23	24.54	33.24	40.00	6.76	QP
2	209.45	8.37	1.91	29.43	39.71	43.50	3.79	QP
3	257.95	12.75	2.19	22.72	37.66	46.00	8.34	QP
4	293.84	12.92	2.33	25.84	41.09	46.00	4.91	QP
5	335.55	14,02	2,50	21.32	37.84	46.00	8.16	QF
6	396.66	15.91	2.63	19.24	37.79	46.00	8.22	OP





Site no. : 1# 966 chamber Dis. / Ant. : 3m 27137 Limit : FCC FART 15 B(3M) Data no. : 346 Ant. pol. : VERTICAL

Env. / Ins. : Temp:23.6';Humi:56%;Fress:101.52kPa

Engineer : Tony

: Car Multimedia Player : DC 12V : VX7022 EUI

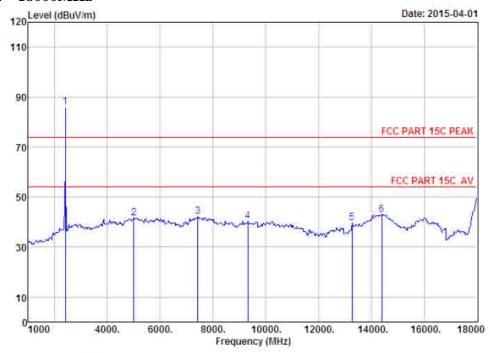
Power M/II

Test Mode : 8-DPSK IX 2480MHz

	Freq.	Ant: Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	209.45	8,37	1.91	29.43	39.71	43.50	3,79	QP
2	257.95	12.75	2.19	21.97	36.91	46.00	9.09	QF.
3	293,84	12.92	2.33	24.52	39.77	46.00	6.23	QF
4	493.66	17,84	3.14	16.91	37.89	46.00	9,11	QP QP
5	681.84	20.30	3.67	14.07	38.04	46.00	7.96	QP
6	713.85	21,20	3,78	16.70	41.68	46.00	4.32	QP.



### 1000 MHz - 18000 MHz



Site no. : 1# 966 chamber Dis. / Ant. : 3m ANT 1-18G Limit : FCC PART 15C PEAK Date no. : 293 Ant. pol. : VERTICAL

: Temp:23.6';Humi:56%;Press:101.52kPa Env. / Ins.

: Tony Engineer

EUT : Car Multimedia Player

Power : DC 12V M/N : VX7022

Test Mode : GFSK TX 2402MHz

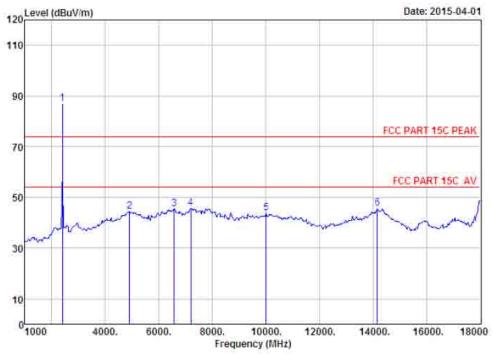
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	86.02	86.07	74.00	-12.07	Feak
2	4995.00	31.54	12.59	32.00	29.41	41.54	74.00	32,46	Peak
3	7426.00	36.56	11.60	31.95	25.88	42.09	74,00	31.91	Feak
4	9330.00	37.97	11.62	32.12	22.79	40.25	74,00	33,75	Peak
5	13274.00	39.54	11.47	34,79	23.37	39.59	74.00	34.41	Feak
6	14396.00	41.79	10.92	32.83	23.15	43.03	74,00	30.97	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



EST Technology Co., Ltd Report No. ESTE-R1504001 Page 51 of 105



: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Data no. : 294 Ant. pol. : HORIZONTAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer : Tony

: Car Multimedia Player EUT

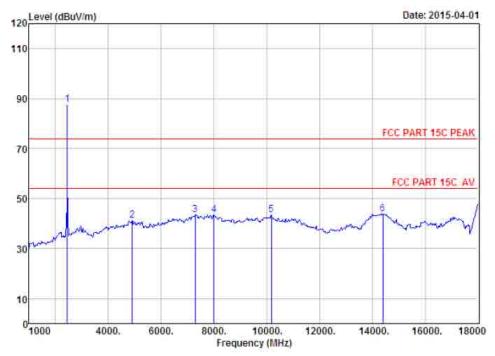
: DC 12V Power M/H ; VX7022

Test Mode : GFSK TX 2402MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	86.90	86.95	74.00	-12.95	Peak
2	4910.00	31,42	12.22	31.93	32.85	44.56	74.00	29.44	Peak
3	6576.00	34,42	12.13	32.14	31.00	45.41	74.00	28,59	Peak
4	7205.00	36.52	11.54	32.11	29.69	45.64	74.00	28.36	Peak
5	10010.00	38,12	11,58	31.79	25.94	43.85	74.00	30.15	Peak
6	14175.00	41.61	10.91	33.44	26.59	45.67	74.00	28.33	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 295 Ant. pol. : VERTICAL : 1# 966 chamber Site no. : 3m ANT 1-18G : FCC PART 15C PEAK Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Car Multimedia Player EUT

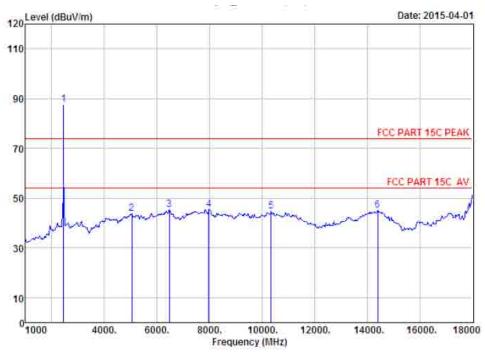
Power 1 DC 12V M/H : VX7022

: GFSK TX 2441MHz Test Mode

	Freq.	Ant, Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	87.49	87.64	74.00	-13.64	Peak
2	4910.00	31.42	12.22	31,93	29.44	41.15	74.00	32.85	Peak
3	7290.00	36.54	11.56	32.02	27.50	43.58	74.00	30.42	Peak
4	8004.00	37.01	11.40	31,22	26.39	43.58	74.00	30.42	Peak
5	10180.00	38.42	11.49	32.11	25.66	43.46	74.00	30.54	Feak
16	14396.00	41.79	10.92	32.83	23.89	43.77	74.00	30.23	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber Site no. Data no. : 296 : 3m ANT 1-18G : FCC PART 15C PEAK Dis. / Ant. Ant. pol. : HORIZONTAL

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

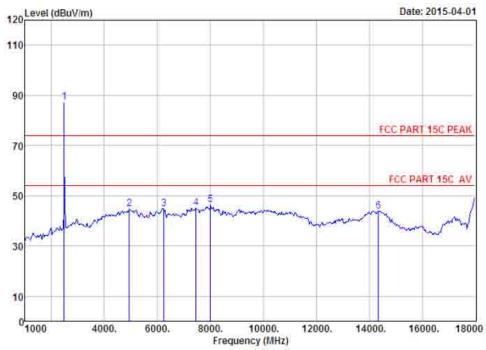
: Car Multimedia Flayer EUT

Power : DC 12V : VX7022 : GFSK TX 2441MHz M/N Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6,67	34,12	87754	87.69	74.00	-13.69	Peak
2	5046.00	31.57	12.53	32.08	31.68	43.70	74.00	30.30	Peak
3	6474.00	34.16	12,22	31.98	31.09	45.49	74.00	28,51	Peak
4	7970.00	36,94	11.41	31.25	28.30	45.40	74.00	28.60	Peak
5	10350.00	38.71	11,39	32.43	27.11	44.78	74.00	29.22	Feak
6	14396.00	41.79	10.92	32.83	25.09	44.97	74.00	29.03	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber Data no. : 3m ANT 1-18G Ant. pol : FCC PART 15C PEAK : Temp:23.6':Humi:56%:Press:101.52kPa Data no. : 297 Ant. pol. : HORIZONTAL Site no. Dia. / Ant.

Limit Env. / Ins.

Engineer : Tony

EUT : Car Multimedia Player

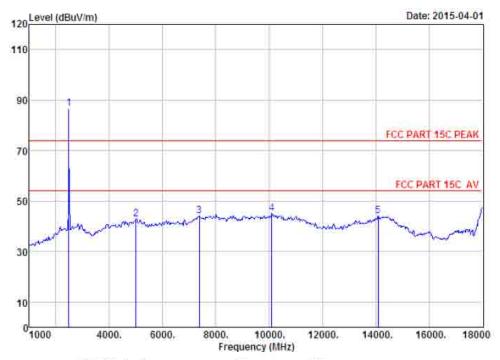
Power : DC 12V : VX7022 M/N

Test Mode : GFSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Cable Losa (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	86,99	87.25	74.00	-13.25	Feak
2	4944.00	31.47	12.37	31.96	32.89	44.77	74.00	29.23	Feak
3	6236,00	33,36	12,17	31.97	31,24	44.80	74.00	29,20	Peak
4	7460,00	36.52	11,61	31,91	28,94	45.16	74,00	28.84	Peak
5	8004.00	37.01	11.40	31.22	29.08	46.27	74.00	27.73	Peak
6	14345.00	41.76	10,92	32,93	24,11	43.86	74.00	30.14	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FOC PARI 15C PEAK Data no. : 298 Ant. pol. : VERTICAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

: Iony Engineer

: Car Multimedia Player EUT

: DC 12V Power H/H : VX7022

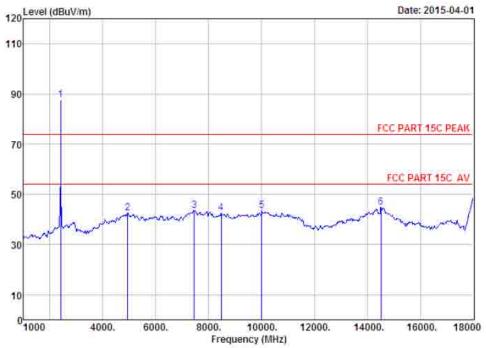
Test Mode : GFSK TX 2480MHz

	Freq.	Ant, Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	86.36	86.62	74.00	-12.62	Peak
2	4995.00	31.54	12.59	32.00	30.74	42.87	74.00	31.13	Feak
3	7375.00	36.57	11.59	31.98	27.85	44.03	74.00	29.97	Peak
4	10095.00	38.27	11,53	31,95	27.22	45,07	74.00	28,93	Peak
5	14090.00	41.54	10.91	33,69	25.33	44.09	74.00	29,91	Feak

Remarks: 1, Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading, 2, The emission levels that are 20dB below the official

limit are not reported.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Date no. : 299 Ant. pol. : HORIZONTAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer

: Tony : Car Multimedia Player : DC 12V EUT

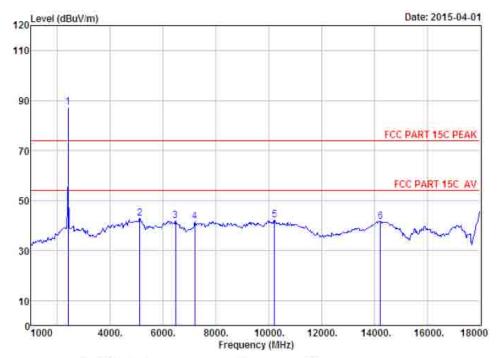
Power : VX7022 M/N

Test Mode : 8-DPSK TX 2402MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.61	6.62	34.18	87.68	87.73	74.00	-13.73	Peak
2	4944.00	31.47	12.37	31.96	30.61	42.49	74.00	31.51	Feak
3	7460.00	36.52	11,61	31.91	27.31	43.53	74.00	30.47	Feak
4	8480.00	36.91	11.45	31.89	25.95	42.42	74,00	31.58	Feak
5	10010.00	38.12	11.58	31,79	25.46	43.37	74.00	30.63	Feak
6	14515.00	41.89	10.93	33.14	25.25	44.93	74,00	29.07	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Data no. : 300 Ant. pol. : VERTICAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer

: Tony : Car Multimedia Player EUI

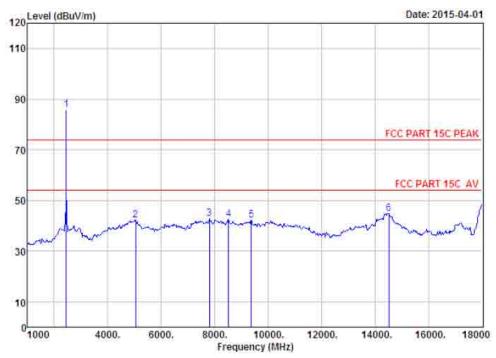
: DC 12V Power M/H : VX7022

: 8-DPSK IX 2402MHz Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402,00	27.61	6.62	34.18	87,43	87,48	74.00	-13,48	Peak
2	5114.00	31.62	12,45	32,17	30.99	42.89	74.00	31.11	Peak
3	6474.00	34.16	12.22	31.98	27.49	41.89	74.00	32.11	Peak
4	7205.00	36.52	11.54	32.11	25.68	41.63	74.00	32.37	Peak
5	10214,00	38,48	11:47	32.17	24.38	42.16	74.00	31,84	Peak
6	14226.00	41,66	10.91	33.29	22.45	41.73	74.00	32.27	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PARI 15C PEAK Data no. : 301 Ant. pol. : HORIZONTAL Site no. Dis. / Ant.

Limit

: Temp:23.6';Humi:56%;Press:101.52kPa : Tony Env. / Ins.

Engineer

EUT : Car Multimedia Player

: DC 12V Power M/H : VX7022

: 8-DPSK TX 2441MHz Test Mode

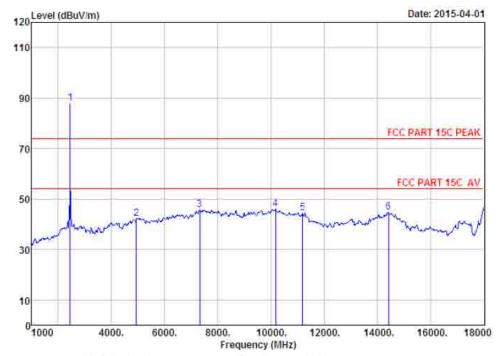
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	85.59	85.74	74.00	-11.74	Peak
2	5046.00	31.57	12.53	32.08	30.18	42.20	74.00	31.80	Peak
3	7800.00	36.61	11.49	31.44	26.35	43.01	74.00	30,99	Peak
4	8514.00	36.96	11.45	31.91	25.98	42.48	74.00	31.52	Feak
5	9364.00	38.02	11.64	32.06	24.71	42.31	74.00	31.69	Feak
6	14515.00	41.89	10,93	33.14	25.03	44.71	74.00	29.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading,

2. The emission levels that are 20dB below the official limit are not reported.



Page 59 of 105



: 1# 966 chamber : 3m ANT 1-18G Data no. : 302 Ant. pol. : YERTICAL Site no. Dis. / Ant.

; FCC PART 15C PEAK

Limit Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa : Tony

Engineer

: Car Multimedia Player : DC 12V EUI

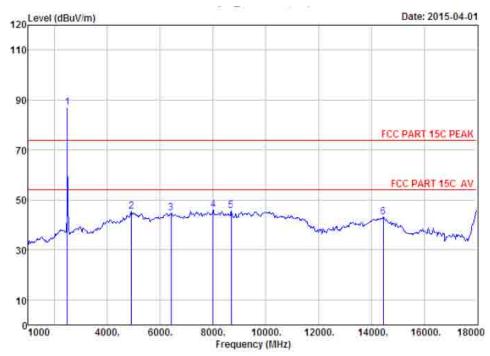
Power M/N : VX7022

Test Mode : 8-DPSK TX 2441MHz

Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
2441.00	27.60	6.67	34,12	87.83	87.98	74.00	-13.98	Peak
4944.00	31.47	12.37	31.96	30.41	42.29	74.00	31.71	Feak
7324.00	36.55	11.57	31.99	29.49	45.62	74.00	28.38	Peak
10180,00	38,42	11.49	32.11	28.33	46.13	74,00	27.87	Peak
11200.00	39,39	11.14	34.03	28.05	44.55	74,00	29.45	Peak
14430.00	41.82	10.93	32.84	24.76	44.67	74.00	29.33	Peak
	(MHz) 2441.00 4944.00 7324.00 10180.00 11200.00	(MHz) (dB/m) 2441.00 27.60 4944.00 31.47 7324.00 36.55 10180.00 38.42 11200.00 39.39	(MHz) (dB/m) (dB)  2441.00 27.60 6.67 4944.00 31.47 12.37 7324.00 36.55 11.57 10180.00 38.42 11.49 11200.00 39.39 11.14	(MHz) (dB/m) (dB) (dB) 2441.00 27.60 6.67 34.12 4944.00 31.47 12.37 31.96 7324.00 36.55 11.57 31.99 10180.00 38.42 11.49 32.11 11200.00 39.39 11.14 34.03	(MHz) (dB/m) (dB) (dB) (dBuV)  2441.00 27.60 6.67 34.12 57.83 4944.00 31.47 12.37 31.96 30.41 7324.00 36.55 11.57 31.99 29.49 10180.00 38.42 11.49 32.11 28.33 11200.00 39.39 11.14 34.03 28.05	(MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m)  2441.00 27.60 6.67 34.12 87.83 87.98 4944.00 31.47 12.37 31.96 30.41 42.29 7324.00 36.55 11.57 31.99 29.49 45.62 10180.00 38.42 11.49 32.11 28.33 46.13 11200.00 39.39 11.14 34.03 28.05 44.55	(MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m)  2441.00 27.60 6.67 34.12 87.83 87.98 74.00 4944.00 31.47 12.37 31.96 30.41 42.29 74.00 7324.00 36.55 11.57 31.99 29.49 45.62 74.00 10180.00 38.42 11.49 32.11 28.33 46.13 74.00 11200.00 39.39 11.14 34.03 28.05 44.55 74.00	(MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m) (dB)  2441.00 27.60 6.67 34.12 87.83 87.98 74.00 -13.98 4944.00 31.47 12.37 31.96 30.41 42.29 74.00 31.71 7324.00 36.55 11.57 31.99 29.49 45.62 74.00 28.38 10180.00 38.42 11.49 32.11 28.33 46.13 74.00 27.87 11200.00 39.39 11.14 34.03 28.05 44.55 74.00 29.45

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C FEAK Data no. : 303 Ant. pol. : VERTICAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

: Car Multimedia Player : DC 12V EUI

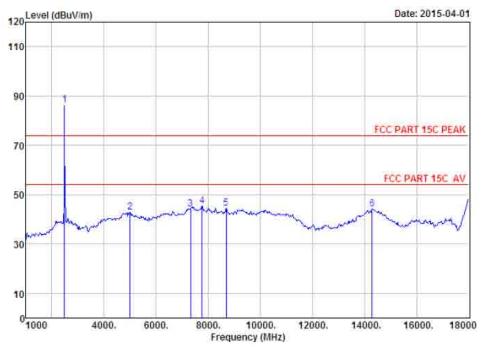
Power M/N

: VX7022 : 8-DPSK TX 2480MHz Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
L	2480.00	27,58	6.71	34.03	86.91	87,17	74.00	-13,17	Peak
2	4910.00	31.42	12.22	31.93	33.85	45.56	74.00	28.44	Peak
1	6406.00	33.99	12.21	31.91	30.41	44.70	74.00	29.30	Peak
1	2004.00	37.01	11.40	31.22	29.01	46.20	74,00	27.80	Feak
5	8684.00	37.32	11.45	32.43	29.30	45.64	74.00	28.36	Peak
5	14464.00	41.85	10.93	32,96	23.23	43.05	74.00	30.95	Feak
		(MHz) 2480.00 24910.00 86406.00 18004.00 8684.00	Freq. Factor (MHz) (dB/m)  2480.00 27.58 2 4910.00 31.42 8 6406.00 33.99 1 2004.00 37.01 8 8684.00 37.32	Freq. Factor Loss (MHz) (dB/m) (dB) 2480.00 27.58 6.71 4910.00 31.42 12.22 6406.00 33.99 12.21 8004.00 37.01 11.40 8684.00 37.32 11.45	Freq. Factor Loss Factor (MHz) (dB/m) (dB) (dB)  2480.00 27.58 6.71 34.03  4910.00 31.42 12.22 31.93  6406.00 33.99 12.21 31.91  8004.00 37.01 11.40 31.22  8684.00 37.32 11.45 32.43	Freq. Factor Loss Factor Reading (MHz) (dB/m) (dB) (dB) (dBuV)  2480.00 27.58 6.71 34.03 86.91 4910.00 31.42 12.22 31.93 33.85 6406.00 33.99 12.21 31.91 30.41 8004.00 37.01 11.40 31.22 29.01 8684.00 37.32 11.45 32.43 29.30	Freq. Factor Loss Factor Reading Level (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m)  2480.00 27.58 6.71 34.03 86.91 87.17 4910.00 31.42 12.22 31.93 33.85 45.56 6406.00 33.99 12.21 31.91 30.41 44.70 2004.00 37.01 11.40 31.22 29.01 46.20 8684.00 37.32 11.45 32.43 29.30 45.64	Freq. Factor Loss Factor Reading Level Limits (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m)  2480.00 27.58 6.71 34.03 86.91 87.17 74.00 4910.00 31.42 12.22 31.93 33.85 45.56 74.00 6406.00 33.99 12.21 31.91 30.41 44.70 74.00 804.00 37.01 11.40 31.22 29.01 46.20 74.00 8684.00 37.32 11.45 32.43 29.30 45.64 74.00	Freq. Factor Loss Factor Reading Level Limits Margin (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m) (dB)  2480.00 27.58 6.71 34.03 86.91 87.17 74.00 -13.17 4910.00 31.42 12.22 31.93 33.85 45.56 74.00 28.44 6406.00 33.99 12.21 31.91 30.41 44.70 74.00 29.30 8004.00 37.01 11.40 31.22 29.01 46.20 74.00 27.80 8684.00 37.32 11.45 32.43 29.30 45.64 74.00 28.36

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Amp Factor + Reading. 2. The emission levels that are 20dB below the official limit are not reported.





: 1# 966 chamber Data no. : 3m ANT 1-18G Ant. pol : FCC PART 15C PEAK : Temp:23.6';Humi:56%;Press:101.52kPa Data no. : 304 Ant. pol. : HORIZONTAL Site no. Dis. / Ant.

Limit

Env. / Ins.

Engineer : Tony

: Car Multimedia Player EUT

: DC 12V Power M/H : VX7022

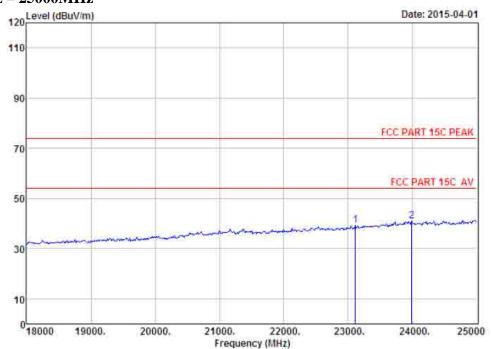
: 8-DPSK TX 2480MHz Test Mode

	Freq. (MHz)	Ant, Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1.	2480.00	27.58	6.71	34,03	86.10	86.36	74.00	-12,36	Feak
2	4995.00	31.54	12.59	32.00	30.82	42.95	74.00	31.05	Feak
3	7324.00	36.55	11.57	31.99	28.18	44.31	74.00	29.69	Peak
4	7766.00	36.57	11.50	31.47	28.94	45.54	74.00	28.46	Feak
5	8684.00	37,32	11.45	32.43	28.15	44.49	74.00	29.51	Peak
6	14294.00	41.71	10.92	33.08	24.56	44.11	74.00	29.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



### 18000MHz - 25000MHz



Site no. : 1# 966 chamber
Dis. / Ant. : 3m ANT ABVOE 18G
Limit : FCC PART 15C FEAK Data no. : 305 Ant. pol. : HORIZONTAL

: Temp:23.6';Humi:56%;Press:101.52kPa : Tony Env. / Ins.

Engineer

: Car Multimedia Player EUT

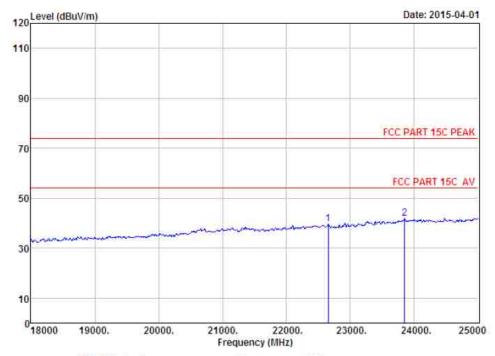
Power : DC 12V : VX7022 H/H

: GFSK TX 2402MHz Test Mode

	Freq. (MHz)	Ant, Factor (dB/m)	Loss		Reading (dBuV)	Emission level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	23110.00	45.62	21.25	33.74	6.16	39,29	74.00	34.71	Peak
2	23985.00	45.60	22.03	32.83	6.26	41.06	74.00	32.94	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading. 2. The emission levels that are 20dB below the official limit are not reported.





: 1# 966 chamber Site no. Data no. : 306 Dis. / Ant. : 3m ANT ABOVE 18G Limit : FCC PART 15C PEAK Ant. pol. : VERTICAL

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer

: Tony : Car Multimedia Player EUI

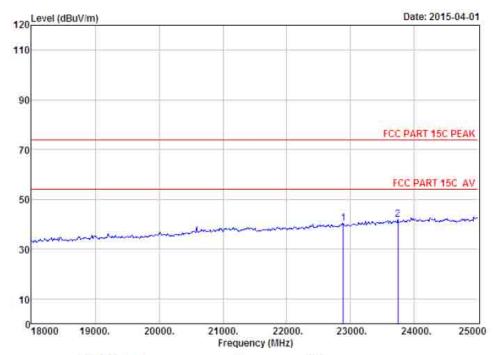
Power M/N : VX7022

Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)		Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
200	22655.00 23845.00		41.0	1000	7.33 7.47	39.79 42.04	74.00 74.00	34.21 31.96	Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 307 Ant. pol. : VERTICAL Site no. : 1# 966 chamber Dis. / Ant. Limit : 3m ANT ABOVE 18G : FCC PART 15C PEAK

: Temp:23.6';Humi:56%;Press:101.52kPa Env. / Ins.

: Tony Engineer

EUI : Car Multimedia Player

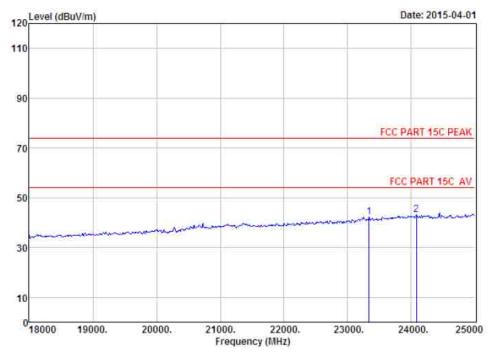
Fower : DC 12V : VX7022 M/N

: GFSK TX 2441MHz Test Mode

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)		Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	22886.00	45.65	21.08	33.98	7.58	40,33	74.00	33.67	Peak
2	23740.00	45.65	21.81	33.06	7.48	41.88	74.00	32.12	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 308 Ant. pol. : HORIZONTAL Site no. : 1# 966 chamber : 3m ANT ABVOE 18G : FCC PART 15C PEAK Dis. / Ant.

Limit

: Temp:23.6'; Humi:56%; Press:101.52kPa Env. / Ins.

: Tony Engineer

EUT : Car Multimedia Player

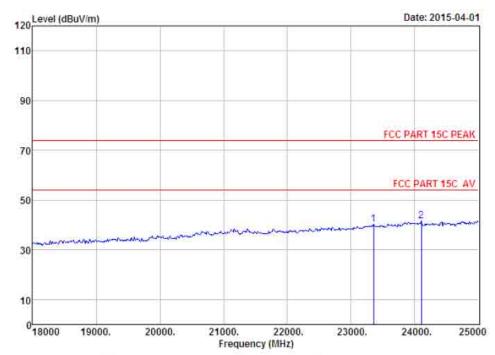
Fower : DC 12V M/N : VX7022

Test Mode : GFSK TX 2441MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	23334.00			8.75 8.54	42.36 43.32	74.00 74.00	31,64	Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT ABVOE 18G : FCC PART 15C PEAK Data no. : 309 Ant. pol. : HORIZONTAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

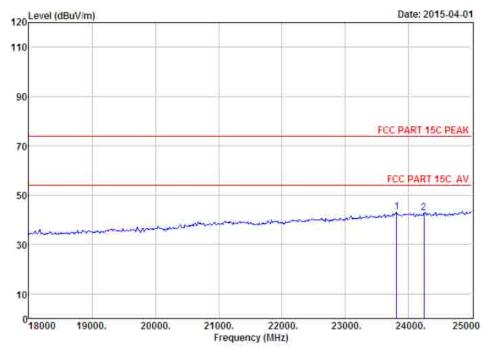
EUI : Car Multimedia Player

: DC 12V : VX7022 Power M/N Test Mode : GFSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)		Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	23355.00	45.67	21.47	33.48	6.56	40.22	74.00	33,78	Peak
2	24104.00	45,62	22.10	32.95	6.88	41.65	74.00	32.35	Peak

Remarks: 1, Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT ABOVE 18G : FCC FART 15C PEAK Data no. : 310 Ant. pol. : VERTICAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Fress:101.52kPa

Engineer : Teny

EUI : Car Multimedia Player

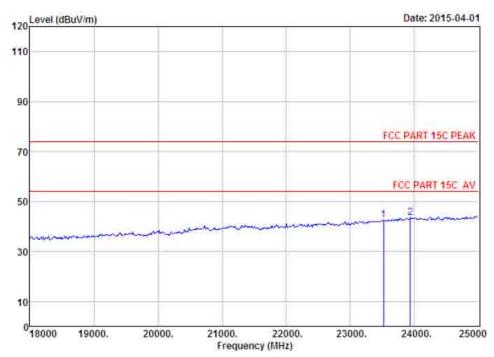
: DC 12V : VX7022 Power M/N

: GFSK TX 2480MHz Test Mode

	Freq.				Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	23810.00	45.64	21.88	33.01	8.56	43.07	74.00	30,93	Peak
2	24244.00	45.65	22.18	33.19	8.36	43.00	74.00	31.00	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT ABVOE 18G : FCC PART 15C PEAK Data no. : 311 Ant. pol. : VERIICAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kFa

Engineer

: Tony : Car Multimedia Player : DC 12V EUT

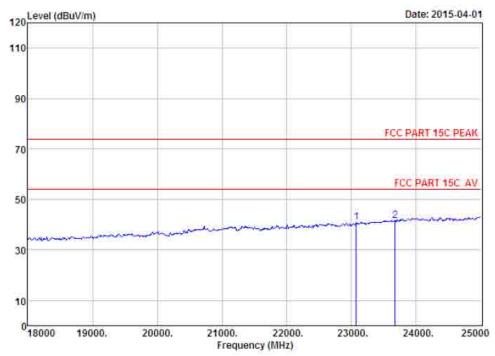
Power M/II : VX7022

: 8-DPSK IX 2402MHz Test Mode

	Freq. (MHz)			-	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
	23516.00				54.32	42,63	74.00	31.37	Feak
2	23936.00	0.00	21.99	32.88	54.31	43,42	74.00	30.58	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 312 Ant. pol. : HORIZONTAL : 1# 966 chamber : 3m ANT ABVOE 189 : FCC PARI 15C PEAK Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6':Humi:56%;Press:101.52kPa

: Tony Engineer

: Car Multimedia Player EUT

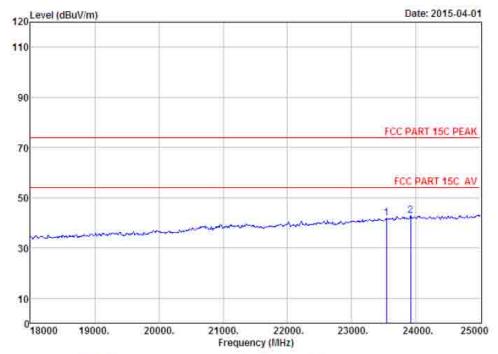
Power : DC 12V : VX7022 M/N

: 8-DPSM TX 2402MHz Test Mode

	Freq. (MHz)	Ant, Factor (dB/m)			Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	23075.00	45.62	21.21	33.77	7.80	40.86	74.00	33.14	Peak
2	23670.00	45.57	21.75	33,14	7.43	41.71	74.00	32.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 313 Ant. pol. : HORIZONTAL Site no. : 1# 966 chamber Dis. / Ant. : 3m ANT ABVOE 18G : FCC PART 15C PEAK

Limit Env. / Ins. ; Temp:23.6';Humi:56%;Press:101.52kPa

Engineer ; Tony

: Car Multimedia Player : DC 12V EUI

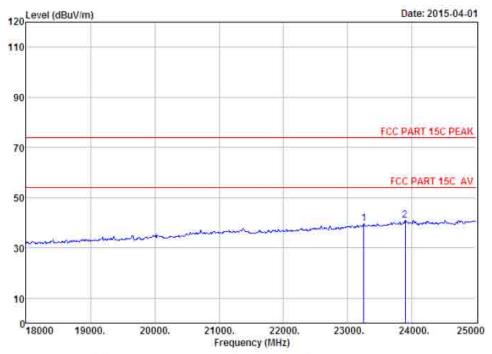
Power ; VX7022 M/N

Test Mode ; 8-DFSK IX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Loss		Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
	23544.00					41.81	74.00	32.19	Peak
2	23915.00	45.62	21.97	32.88	8.10	42.81	74.00	31.19	Peak

Remarks: 1. Emission Lével= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 314 Ant. pol. : VERTICAL Site no. : 1# 966 chamber : 3m ANT ABOVE 18G : FCC PART 15C PEAK Dis. / Ant.

Limit Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

: Tony Engineer

EUT : Car Multimedia Player

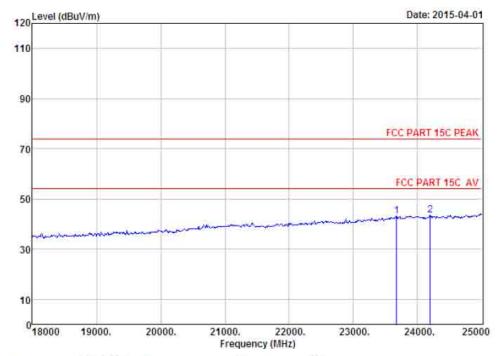
: DC 12V Power : VX7022 M/N

Test Mode ; S-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	23250,00	45.65	21.37	33.59	6,37	39.80	74.00	34,20	Feak
2	23894.00			32.90	6.36	41.03	74.00	32.97	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading,





Site no. : 1# 966 chamber Data no. : 315 : 3m ANT ABOVE 18G : FCC PART 15C PEAK Dis. / Ant. Ant. pol. : VERTICAL

Limit

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Car Multimedia Player EUI

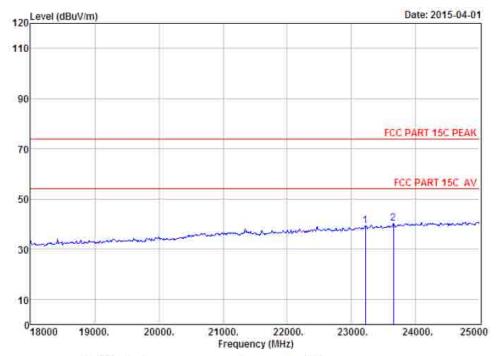
Fower : DC 12V M/N : VX7022

Test Mode : 8-DPSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Loss (dB)		Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	23670.00	45.67	21.75	33.14	8.96	43.24	74.00	30.76	Peak
2	24195.00	45.64	22,15	33.11	8.73	43.41	74.00	30.59	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Site no. : 1# 966 chamber Data no. : 316 : 3m ANT ABVOE 18G : FOC PART 15C PEAK Dis. / Ant. Ant. pol, : HORIZONTAL

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

: Tony Engineer

: Car Multimedia Player EUT

Power : DC 12V M/N

: VX7022 : 8-DFSK TX 2480MHz Test Mode

	Freq.	Ant: Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	23215.00	45.64	21.34	33.61	5.97	39.34	74.00	34.66	Feak.
2	23656.00	45.67	21.73	33.17	6.01	40.24	74.00	33.76	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



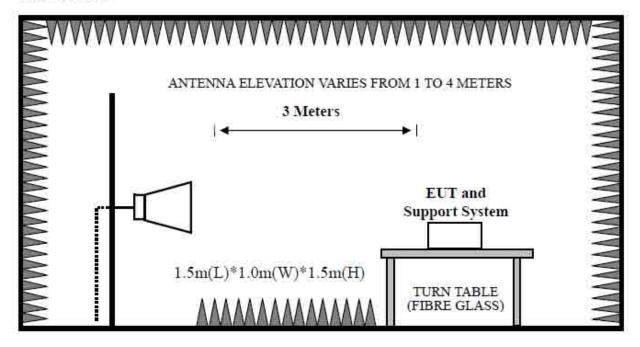
#### 9. BAND EDGE COMPLIANCE

#### 9.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 9.2. Block Diagram of Test setup

Above 1GHz



EST Technology Co., Ltd Report No. ESTE-R1504001 Page 75 of 105

#### 9.3. Test Procedure

EUT was placed on a turn table, which is 1.5 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

- (a) Peak: RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto
- (b) AV: RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

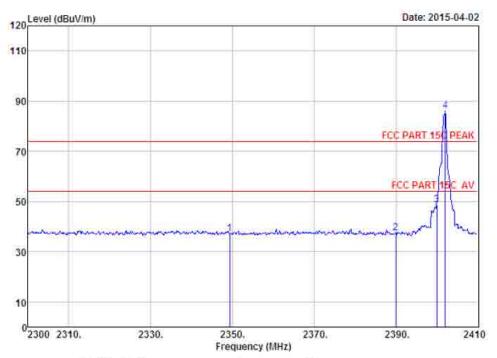
#### 9.4. Test Result

EUT: Car Multimedia Player								
M/N: VX7022								
Power: DC 12V								
Test date: 2015-04-02 Test site: 3m Chamber Tested by: Tony Tang								
Test mode: Tx Mode (Hopping On & No Hopping)								
Pass								

- Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
  - 2. The frequency 2402MHz . 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

EST Technology Co., Ltd Report No. ESTE-R1504001 Page 76 of 105

#### 9.5. Test Data



Site no. : 1# 966 chamber Data no. : 395 : 3m ANT 1-18G Anu. pol : FCC PART 15C PEAK : Temp:23.6';Humi:56%;Press:101.52kPa Dis. / Ant. Ant. pol. : YERTICAL

Limit

Env. / Ins.

Engineer : Tony

EUI : Car Multimedia Flayer

Fower : DC 12V M/N : VX7022

: GFSK TX 2402MHz (No Hopping) Test Mode

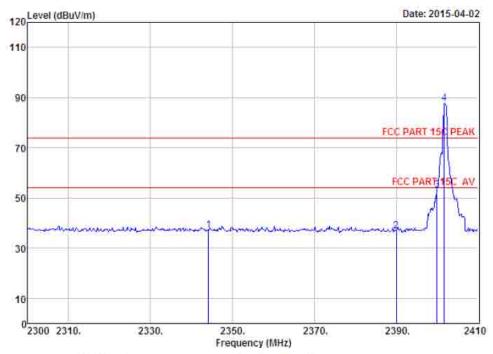
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2349,39	27.70	6.56	34,22	37.22	37.26	74.00	36.74	Peak
2	2390,00	27.64	6.62	34.19	37.34	37.41	74.00	36.59	Peak
3	2400.00	27.61	6.62	34.18	48.68	48.73	74.00	25.27	Peak
4	2402,08	27.61	6,62	34.18	85.95	86.00	74.00	-12.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading. 2. The emission levels that are 20dB below the official

limit are not reported.



EST Technology Co., Ltd Report No. ESTE-R1504001 Page 77 of 105



Site no. : 1# 966 chamber Data no. : 396 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FOC PART 15C PEAK

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

: Tony Engineer

: Car Multimedia Flayer EUT

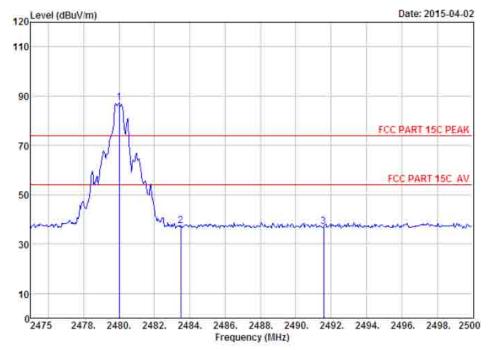
Power : DC 12V M/N

: VX7022 : GFSK IX 2402MHz (No Hopping) Test Mode

Freq.	Ant: Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
2344.11	27.70	6.56	34.22	37.12	37.16	74.00	36.84	Feak
2389.98	27.64	6.62	34.19	36.76	36.83	74.00	37.17	Feak
2399.99	27.61	6.62	34.18	53.08	53.13	74.00	20.87	Peak
2401.75	27.61	6.62	34.18	87.70	87.75	74.00	-13.75	Peak
	(MHz) 2344.11 2389.98 2399.99	Freq. Factor (MHz) (dB/m) 2344.11 27.70 2389.98 27.64	Freq. Factor Loss (MHz) (dB/m) (dB) 2344.11 27.70 6.56 2389.98 27.64 6.62 2399.99 27.61 6.62	Freq. Factor Loss Factor (MHI) (dB/m) (dB) (dB)  2344.11 27.70 6.56 34.22 2389.98 27.64 6.62 34.19 2399.99 27.61 6.62 34.18	Freq. Factor Loss Factor Reading (MHz) (dB/m) (dB) (dB) (dBuV)  2344.11 27.70 6.56 34.22 37.12 2389.98 27.64 6.62 34.19 36.76 2399.99 27.61 6.62 34.18 53.08	Freq. Factor Loss Factor Reading Level (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m)  2344.11 27.70 6.56 34.22 37.12 37.16 2389.98 27.64 6.62 34.19 36.76 36.83 2399.99 27.61 6.62 34.18 53.08 53.13	Freq. Factor Loss Factor Reading Level Limits (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m)  2344.11 27.70 6.56 34.22 37.12 37.16 74.00 2389.98 27.64 6.62 34.19 36.76 36.83 74.00 2399.99 27.61 6.62 34.18 53.08 53.13 74.00	Freq. Factor Loss Factor Reading Level Limits Margin (MHz) (dB/m) (dB) (dBoV) (dBoV/m) (dBoV/m) (dB)  2344.11 27.70 6.56 34.22 37.12 37.16 74.00 36.84 2389.98 27.64 6.62 34.19 36.76 36.83 74.00 37.17 2399.99 27.61 6.62 34.18 53.08 53.13 74.00 20.87

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 397 Ant. pol. : VERTICAL Site no. : 1# 966 chamber Dis. / Ant.

: 3m ANT 1-18G : FCC PART 15C PEAK Limit

: Temp:23.6';Humi:56%;Press:101.52kPa : Tony Env. / Ins.

Engineer

: Car Multimedia Player : DC 12V EUT

Power : VX7022 M/N

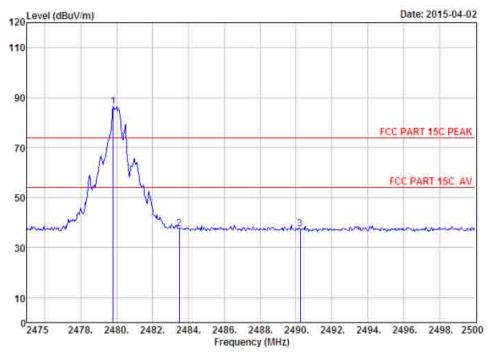
Test Mode : GFSK TX 2480MHz (No Hopping)

	Freq.				Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	37.09	87.35	74.00	-13.35	Peak
2	2483,50	27.58	6.71	34.03	37.24	37.50	74.00	36.50	Peak
3	2491.58	27.58	6.73	34.03	36.92	37.20	74.00	36.80	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading. 2. The emission levels that are 20dB below the official

limit are not reported.





Data no. : 398 Ant. pol. : HORIZONTAL : 1# 966 chamber Site no. Dis. / Ant. : 3m ANT 1-18G Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Car Multimedia Player EUT

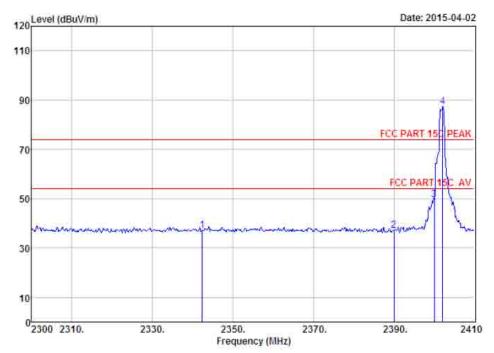
Power 3 DC 12V 30/H

: VX7022 : GFSK IX 2480MHz (No Hopping) Test Mode

	Freq.	Ant. Factor (dB/m)			Reading (dBuV)	Emission Level (dBqV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	2479.80	27.58	6.71	34.03	86.17	86.43	74.00	-12.43	Peak
2	2483.50	27.58	6.71	34.03	37,30	37.56	74.00	36.44	Peak
3	2490.23	27.58	6.73	34.03	37.17	37.45	74.00	36.55	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 399 Ant. pol. : VERTICAL Site no. : 1# 966 chamber : 3m ANT 1-18G : FCC PARI 15C PEAK Dis. / Ant.

Limit

: Temp:23.6';Humi:56%;Fress:101.52kPa : Tony Env. / Ins.

Engineer

: Car Multimedia Player : DC 12V EUI

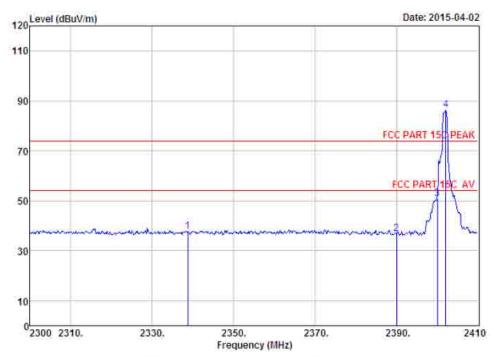
Power : VX7022 M/N

Test Mode : 8-DPSK TX 2402MHz (No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)		Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2342.35	27.70	6.56	34.22	35.93	36.97	74.00	37.03	Peak
2	2390.00	27.64	6.62	34.19	36.90	36.97	74.00	37.03	Feak
3	2400.00	27.61	6.62	34.18	49.65	49.70	74,00	24.30	Feak
4	2402.08	27.61	6.62	34.18	87.40	87.45	74.00	-13.45	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Site no. : 1# 966 chamber Data no. : 400 : 3m ANT 1-18G : FCC PART 15C PEAK Ant. pol. : HORIZONTAL Dis. / Ant.

Limit

Eny. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer : Teny

EUT : Car Multimedia Player

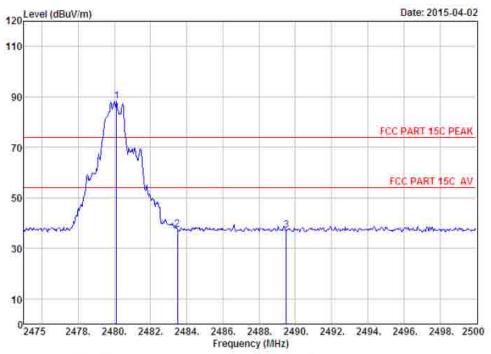
: DC 12V : VX7022 Power M/N

Test Mode : 8-DPSK TX 2402MHz (No Hopping)

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1)	2338.72	27.73	6.56	34.23	37.56	37.62	74.00	36.38	Peak
2	2390.00	27.64	6.62	34.19	36.68	36.75	74.00	37.25	Peak
3	2400.00	27.61	6.62	34.18	50.94	50.99	74.00	23.01	Peak
4	2402.08	27.61	6.62	34.18	86.51	86.56	74.00	-12.56	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Data no. : 401 Ant. pol. : HORIZONTAL Site no. Dis. / Ant.

Limit

Env. / Ins. ; Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer : Iony

: Car Multimedia Player EUI

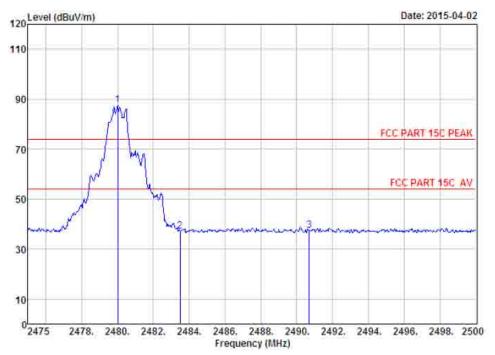
Power : DC 12V M/N : VX7022

Test Mode ; 8-DFSK IX 2480MHz (No Hopping)

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	2480.13	27.58	6.71	34.03	87.94	88.20	74.00	-14.20	Peak
2:	2483.50	27.58	6.71	34.03	37.07	37.33	74.00	36.67	Peak
3	2489.50	27.58	6,73	34.03	36,68	36,96	74.00	37.04	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 402 Ant. pol. : VERTICAL Site no. : 1# 966 chamber : 3m ANI 1-18G : FCC PARI 15C PEAK Dis. / Ant.

Limit

: Temp:23.6';Humi:56%;Presa:101.52kPa : Tony Env. / Ins.

Engineer

EUT : Car Multimedia Player

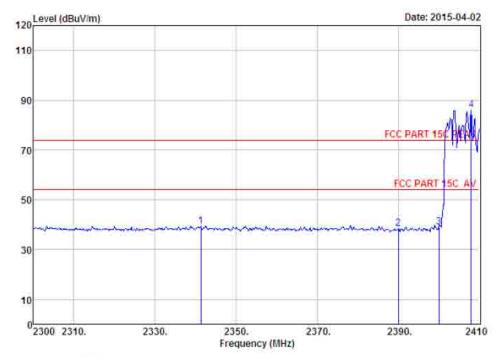
Power : DC 12V M/N : VX7022

: 8-DFSK IX 2480MHz (No Hopping) Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.52	6,71	34.03	87.34	87,60	74.00	-13,60	Peak
2	2483.50	27.58	6.71	34.03	36.73	36,99	74.00	37.01	Peak
3	2490,70	27.58	6.73	34,03	37.10	37.38	74.00	36.62	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Data no. : 387 Ant. pol. : VERTICAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Fress:101.52kPa

Engineer

: Tony : Car Multimedia Player EUI

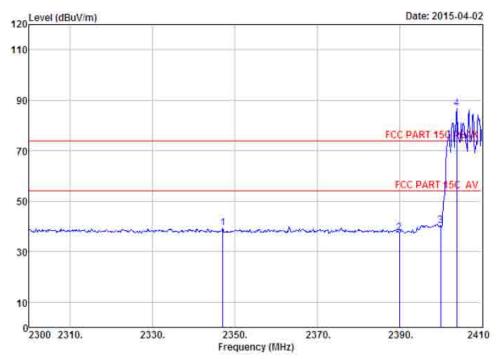
; DC 12V Power ; VX7022 R/N

Test Mode : GFSK TX 2402MHz (Hopping On)

	Freq.				Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2341.25	27.70	6.56	34.22	39.31	39.35	74.00	34.65	Peak
2	2390.00	27.64	6,62	34.19	38,35	38.42	74.00	35.58	Peak
3	2400.00	27.61	6,62	34.18	38.93	38,98	74.00	35,02	Peak
4	2408,02	27.61	6.64	34.18	86.09	86.16	74.00	-12.16	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber Site no. Data no. : 388 Dis. / Ant. Ant. pol. : HORIZONTAL

: 3m ANT 1-18G : FCC PARI 15C PEAK Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer : Tony

: Car Multimedia Player EUT

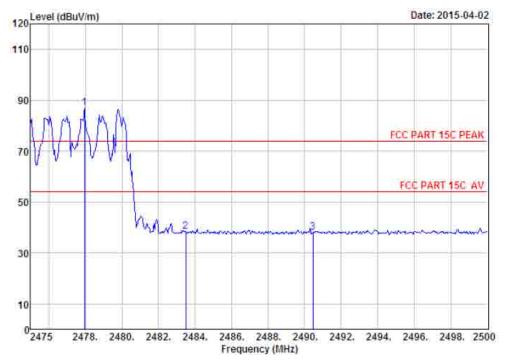
Power : DC 12V M/N : VX7022

: GFSK TX 2402MHz (Hopping On) Test Mode

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2347.08	27,70	6.56	34,22	39,29	39.33	74.00	34,67	Peak
2	2390.00	27.64	€.62	34.19	37.30	37.37	74.00	36,63	Peak
3	2400.00	27.61	6.62	34.18	40.14	40.19	74.00	33.81	Peak
4	2403.95	27.61	6.64	34.18	86.74	36.31	74,00	-12.81	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Site no. : 1# 966 chamber Data no. : 389 Dis. / Ant. : 3m ANT 1-18G Limit : FCC PART 15C PEAK Ant. pol. : HORIZONIAL

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer : Tony

: Car Multimedia Flayer EUI

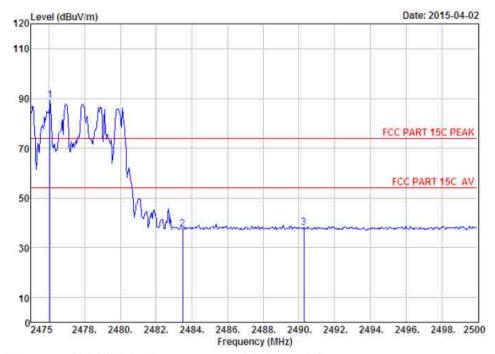
: DC 12V Fower M/H : VX7022

Test Mode : GFSK TX 2480MHz (Hopping On)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	2477.95	27,58	6.71	34,03	86,72	86,98	74.00	-12,98	Peak
2	2483.50	27.58	6.71	34.03	37.98	38.24	74.00	35.76	Peak
3	2490.45	27.58	6.73	34.03	37.81	38.09	74.00	35.91	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Data no. : 390 Ant. pol. : VERTICAL Site no. : 1# 966 chamber Dis. / Ant. : 3m ANT 1-18G : FCC PART 15C PEAK

Limit

: Temp:23.6';Humi:56%;Press:101.52kPa : Tony Env. / Ins.

Engineer

: Car Multimedia Player EUI

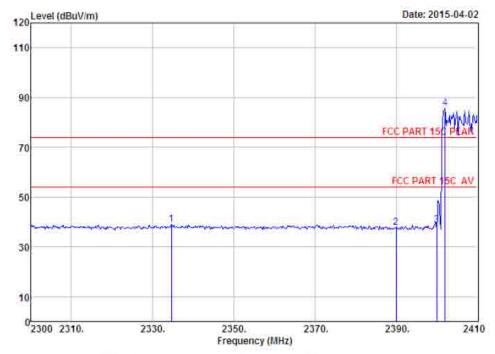
Power : DC 12V M/H : VX7022

Test Mode : GFSK TX 2480MHz (Hopping On)

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.05	27.58	6.71	34.06	88.93	89.16	74.00	-15.16	Peak
2	2483.50	27.58	6.71	34.03	37.21	37.47	74.00	36.53	Peak
3	2490.28	27.58	6.73	34.03	37.65	37.93	74.00	36.07	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Data no. : 391 Ant. pol. : VERTICAL Site no, Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6':Humi:56%:Press:101.52kFa

Engineer : Tony

EUT : Car Multimedia Player

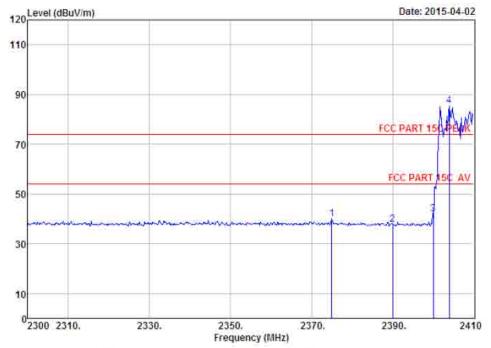
: DC 12V Power : VX7022 M/N

Test Mode : B-DPSK TX 2402MHz (Hopping On)

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2334.65	27.73	6.56	34.23	39,12	39.18	74.00	34.82	Feak
2	2390.00	27.64	6.62	34.19	37.59	37,66	74.00	36.34	Feak
3	2400,00	27.61	6.62	34.18	38.64	38.69	74.00	35,31	Peak
4	2402,08	27.61	6.62	34,18	85.75	85.80	74,00	-11.80	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber : 3m ANT 1-18G : FCC PART 15C PEAK Data no. : 392 Ant. pol. : HORIZONIAL Site no. Dis. / Ant.

Limit

Env. / Ins. : Temp:23.6';Humi:56%;Press:101.52kPa

Engineer ; Iony

: Car Multimedia Player EUI

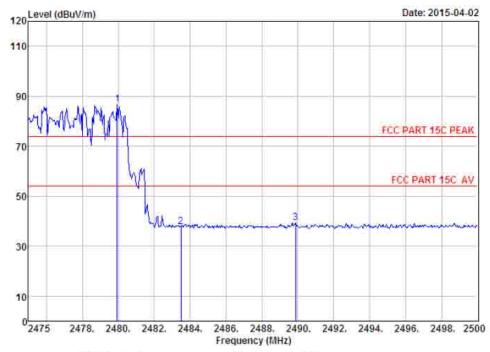
: DC 12V Power : VX7022 M/N

Test Mode : 8-DPSK IX 2402MHz (Hopping On)

	Freq.				Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2375.02	27.64	6.60	34.19	39.98	40.03	74,00	33,97	Feak
2	2390.00	27.64	6.62	34.19	37.82	37.89	74.00	36.11	Peak
3	2400.00	27.61	6.62	34.18	41.81	41.86	74.00	32.14	Feak
4	2403.95	27,61	6.64	34.18	85,46	85.53	74,00	-11.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





: 1# 966 chamber Site no. Data no. : 393 Dis. / Ant. : 3m ANT 1-18G Limit : FCC PART 15C PEAK Ant. pol. : HORIZONTAL

Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa

Engineer

: Tony : Car Multimedia Player EUT

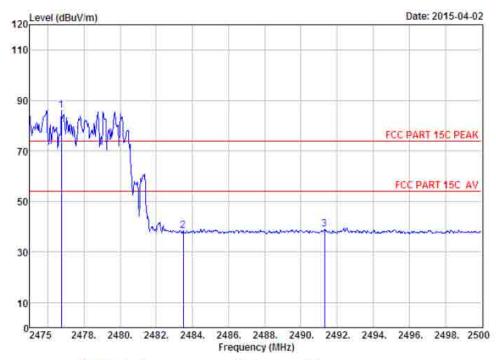
Power : DC 12V M/M : VX7022

Test Mode : 8-DPSK TX 2480MHz (Hopping On)

	Freq.				Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	2479.95	27.58	5.71	34.03	86.45	86.71	74,00	-12.71	Peak
2	2483.50	27.58	6.71	34,03	37.34	37.60	74.00	36.40	Feak
3	2489.88	27.58	6.73	34.03	38.95	39.23	74.00	34.77	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Amp Factor + Reading.





Data no. : 394 Ant. pol. : VERTICAL : 1# 966 chamber : 3m ANT 1-18G Site no. Dis. / Ant.

; FCC PARI 15C PEAK Limit

Env. / Ins. ; Temp:23.6'; Humi:56%; Freas:101.52kPa

Engineer : Tony

: Car Multimedia Player : DC 12V EUI

Power M/II : VX7022

Test Mode : 8-DPSK IX 2480MHz (Hopping On)

	Freq.	Ant. Factor (dB/m)		-	Reading (dBuV)	Emission Level (dBuV/m)	Limita (dBuV/m)	Margin (dB)	Remark
1	2476,75	27.58	6,71	34.06	85.79	86.02	74.00	-12.02	Peak
2	2483.50	27.58	6.71	34.03	38.25	38.51	74.00	35.49	Peak
3	2491.30	27.58	6.73	34.03	38.63	38.91	74.00	35.09	Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



#### 10. ANTENNA REQUIREMENTS

#### 10.1.Limit

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

#### 10.2.Result

The antennas used for this product are internal antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0 dBi.

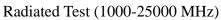
EST Technology Co., Ltd Report No. ESTE-R1504001 Page 93 of 105

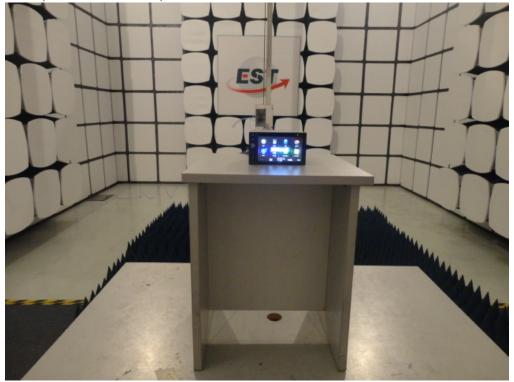


## 11. TEST SETUP PHOTO

Radiated Test (30-1000 MHz)





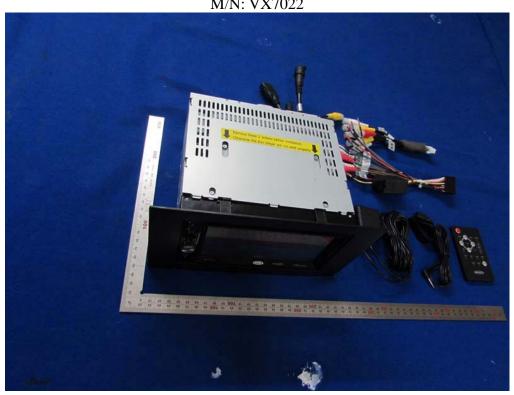


EST Technology Co., Ltd Report No. ESTE-R1504001

Page 94 of 105

## 12.PHOTOS OF EUT

External Photos M/N: VX7022





EST Technology Co., Ltd Report No. ESTE-R1504001 Page 95 of 105

**External Photos** M/N: VX7022

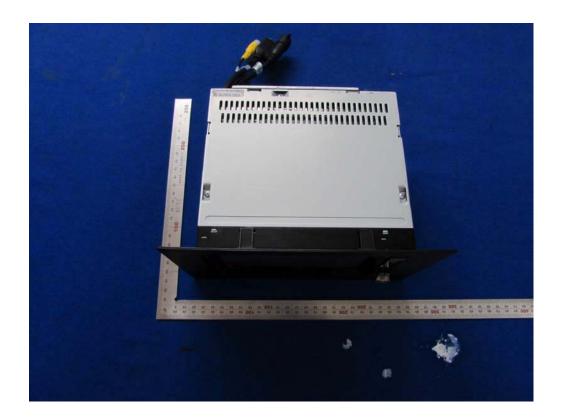




EST Technology Co., Ltd Report No. ESTE-R1504001 Page 96 of 105

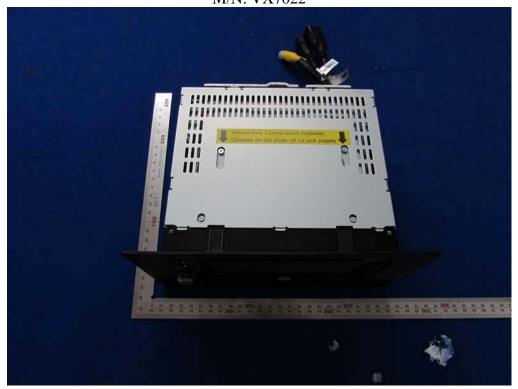
**External Photos** M/N: VX7022

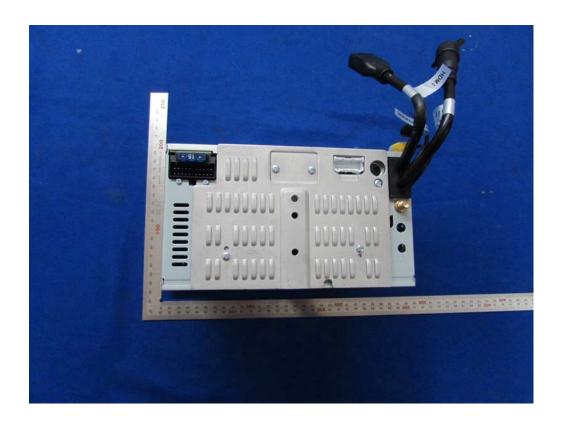




EST Technology Co., Ltd Report No. ESTE-R1504001 Page 97 of 105

**External Photos** M/N: VX7022





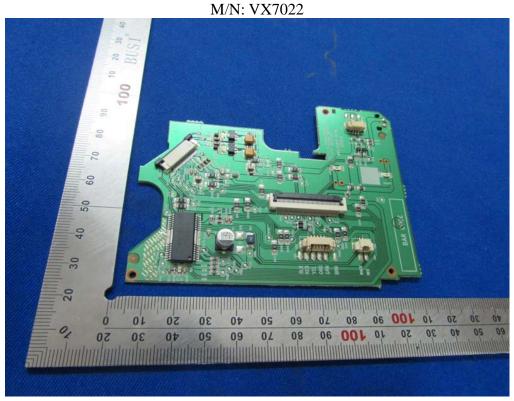
EST Technology Co., Ltd Report No. ESTE-R1504001 Page 98 of 105

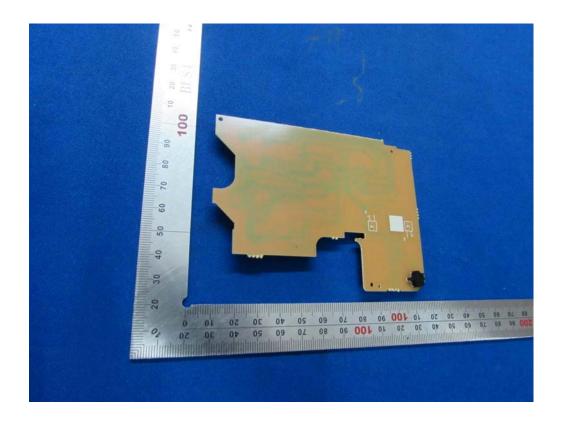
**Internal Photos** M/N: VX7022





EST Technology Co., Ltd Report No. ESTE-R1504001 Page 99 of 105



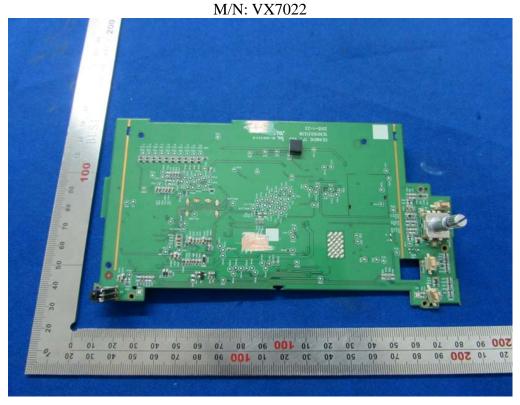


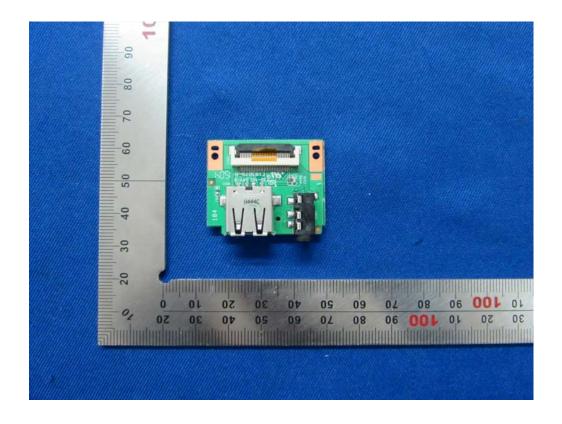




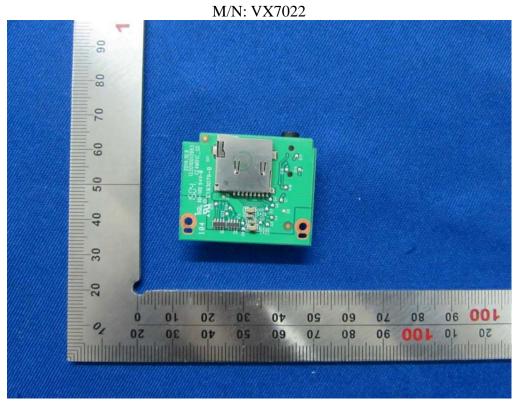






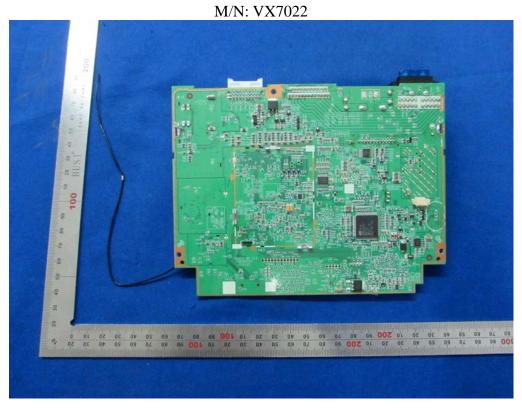








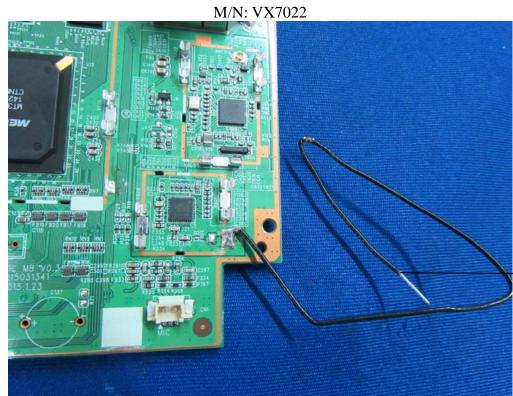
EST







EST Technology Co., Ltd Report No. ESTE-R1504001



Bluetooth Antenna

Page 105 of 105

EST Technology Co., Ltd Report No. ESTE-R1504001