

Shenzhen Toby Technology Co., Ltd.



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Radio Test Report

FCC ID:2A4DV-D1221

Original Grant

Report No. TBR-C-202302-0086-5

Applicant HUNAN ETOE Technology Co., Ltd

Equipment Under Test (EUT)

ETOE TV EUT Name

Model No. D1221

Series Model No.

Brand Name ETOE

Sample ID 202302-0086 01-01 & 202302-0086 01-02

Receipt Date 2023-02-23

Test Date 2023-02-23 to 2023-03-24

Issue Date 2023-03-24

Standards FCC Part 15 Subpart C 15.247

Test Method ANSI C63.10: 2013

KDB 558074 D01 15.247 Meas Guidance v05r02

Conclusions **PASS**

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

Witness Engineer

LVAN SV fuy Lai. **Engineer Supervisor**

Engineer Manager

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



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Revision History

Report No.	Version	Description	Issued Date
TBR-C-202302-0086-5	Rev.01	Initial issue of report	2023-03-24
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1. General Information about EUT

1.1 Client Information

Applicant	÷	HUNAN ETOE Technology Co., Ltd	
Address		Room 603, Building 3, Zone A, Jindaoyuan, NO.169, Huizhi Zhon Road, High-tech District, Changsha, China	
Manufacturer		HUNAN ETOE Technology Co., Ltd	
Address		Room 603, Building 3, Zone A, Jindaoyuan, NO.169, Huizhi Zhong Road, High-tech District, Changsha, China	

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	ETOE TV				
Model(s) No.	:	D1221				
Model Difference						
4000		Operation Frequency:	Bluetooth V5.0: 2402MHz~2480MHz			
		Number of Channel:	79 channels			
Product		Antenna Gain:	2dBi Ceramic Antenna			
Description	3		GFSK			
		Modulation Type:	π /4-DQPSK			
		0000	8-DPSK			
W.	Ì,	For Adapter (Model: TF	PA-46B050100UU)			
Power Rating	:	Input: 100-240V~50/60Hz 0.2A				
an B	8	Output: 5.0V=1000mA				
Software Version	•					
Hardware Version		DV6071Z-LD4-V2				

Remark:

- (1) The antenna gain and adapter provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.
- (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- (3) Antenna information provided by the applicant.





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(4) Channel List:

Bluetooth 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
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		
26	2428	53	2455		

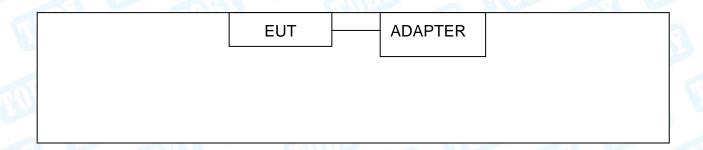




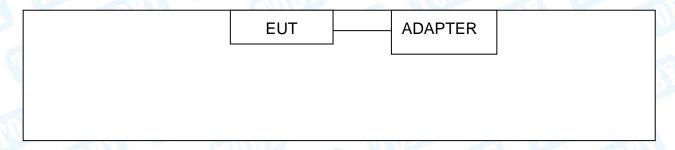
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1.3 Block Diagram Showing the Configuration of System Tested

Conducted Test



Radiated Test



1.4 Description of Support Units

Equipment Information					
Name	Model	FCC ID/VOC	Manufacturer	Used "√"	
Adapter	TPA-46B050100UU			V	
		Cable Information			
Number	Shielded Type	Ferrite Core	Length	Note	
Cable 1			1.0M	Accessory	
	Remark: The USB	Cable and adapter provide	ed by the Applicant.	U.S.	





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

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: π /4-DQPSK (2 Mbps)

TX Mode:8-DPSK (3 Mbps)

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a Mobile unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.





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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 RF setting.

Test Software Version	WORD	CMD.EXE	
Frequency	2402 MHz	2441MHz	2480 MHz
GFSK	DEF	DEF	DEF
π /4-DQPSK	DEF	DEF	DEF
8-DPSK	DEF	DEF	DEF

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 150kHz to 30MHz	$\pm 3.50~\mathrm{dB}$ $\pm 3.10~\mathrm{dB}$
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB





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1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, 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: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.





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2. Test Summary

Standard Section	To at Home	Toot Sample(a) Judgment		
FCC	Test Item	Test Sample(s)	Judgment	Remark
FCC 15.207(a)	Conducted Emission	202302-0086_01-01	PASS	N/A
FCC 15.209 & 15.247(d)	Radiated Unwanted Emissions	202302-0086_01-01	PASS	N/A
FCC 15.203	Antenna Requirement	202302-0086_01-02	PASS	N/A
FCC 15.247(a)	99% Occupied Bandwidth & 20dB Bandwidth	202302-0086_01-02	PASS	N/A
FCC 15.247(b)(1)	Peak Output Power	202302-0086_01-02	PASS	N/A
FCC 15.247(a)(1)	Carrier frequency separation	202302-0086_01-02	PASS	N/A
FCC 15.247(a)(1)	Time of occupancy	202302-0086_01-02	PASS	N/A
FCC 15.247(a)(1)	Number of Hopping Frequency	202302-0086_01-02	PASS	N/A
FCC 15.247(d)	Band Edge	202302-0086_01-02	PASS	N/A
FCC 15.207(a)	Conducted Unwanted Emissions	202302-0086_01-02	PASS	N/A
FCC 15.205	Emissions in Restricted Bands	202302-0086_01-02	PASS	N/A
	On Time and Duty Cycle	202302-0086_01-02		N/A

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0
RF Test System	JS1120	Tonscend	V2.6.88.0336





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4. Test Equipment

Conducted Emissi	Uli lest	1	T	Г	T
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jun. 23, 2022	Jun. 22, 2023
	Compliance	000	THU:	3 6	
RF Switching Unit	Direction Systems	RSU-A4	34403	Jun. 23, 2022	Jun. 22, 2023
	Inc	a war		WURR	
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jun. 22, 2022	Jun. 21, 2023
LISN	Rohde & Schwarz	ENV216	101131	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	NTFM 8131	8131-193	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	CAT3 8158	cat3 5158-0094	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	NTFM5158	NTFM5158 0145	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	CAT 8158	cat5 8158-179	Jun. 22, 2022	Jun. 21, 2023
Radiation Emissio	n Test (B Site)				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep.01.2022	Aug. 31, 2023
Spectrum	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
Analyzer	Ronde & Conwarz	1074017	102107	0d11. 20, 2022	0d11. 22, 2020
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb. 23, 2023	Feb.22, 2024
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Dec. 05, 2021	Dec. 04, 2023
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Feb. 26, 2022	Feb.25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Jun. 26, 2022	Jun.25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 26, 2022	Jun.25, 2024
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP051845	AP21C806141	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep.01.2022	Aug. 31, 2023
Antenna Conducte	d Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 23, 2022	Jun. 22, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
MXA Signal Analyzer	KEYSIGT	N9020B	MY60110172	Sep.01.2022	Aug. 31, 2023
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Sep.01.2022	Aug. 31, 2023
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep.01.2022	Aug. 31, 2023
Analog Signal Generator	Agilent	N5181A	MY48180463	Sep.01.2022	Aug. 31, 2023





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Vector Signal Generator	KEYSIGT	N5182B	MY59101429	Sep.01.2022	Aug. 31, 2023
Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Dec. 15, 2022	Dec. 14, 2023
7	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep.01.2022	Aug. 31, 2023
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep.01.2022	Aug. 31, 2023
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep.01.2022	Aug. 31, 2023
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep.01.2022	Aug. 31, 2023
RF Control Unit	Tonsced	JS0806-1	21C8060380	N/A	N/A
RF Control Unit	Tonsced	JS0806-2	21F8060439	Sep.01.2022	Aug. 31, 2023
Band Reject Filter Group	Tonsced	JS0806-F	21D8060414	Jun. 23, 2022	Jun. 22, 2023
Power Control Box	Tonsced	JS0806-4ADC	21C8060387	N/A	N/A
Wideband Radio Comunication Tester	Rohde & Schwarz	CMW500	144382	Sep.01.2022	Aug. 31, 2023
Universal Radio Communication Tester	Rohde&Schwarz	CMW500	168796	Jun. 23, 2022	Jun. 22, 2023
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 22, 2022	Jun. 21, 2023





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5. Conducted Emission

5.1 Test Standard and Limit

5.1.1 Test Standard

FCC Part 15.207

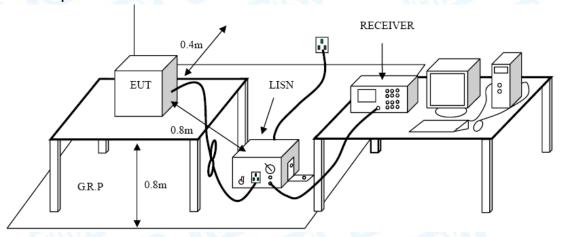
5.1.2 Test Limit

F	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.

5.2 Test Setup



5.3 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.
- ●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.





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

5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

Please refer to the Attachment A inside test report.



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6. Radiated and Conducted Unwanted Emissions

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.209 & FCC Part 15.247(d)

6.1.2 Test Limit

General field strength limits at frequencies Below 30MHz			
Frequency	Field Strength	Measurement Distance	
(MHz)	(microvolt/meter)**	(meters)	
0.009~0.490	2400/F(KHz)	300	
0.490~1.705	24000/F(KHz)	30	
1.705~30.0	30	30	

Note: 1, The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

General field strength limits at frequencies above 30 MHz			
Frequency	Field strength Measurement Distance		
(MHz)	(µV/m at 3 m)	(meters)	
30~88	100	3	
88~216	150	3	
216~960	200	3	
Above 960	500	3	

General field strength limits at frequencies Above 1000MHz			
Distance of 3m (dBuV/m)			
Peak Average			
74	54		
	Distance of 3r		

Note:

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

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the



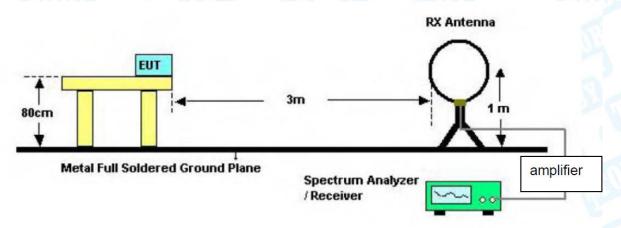


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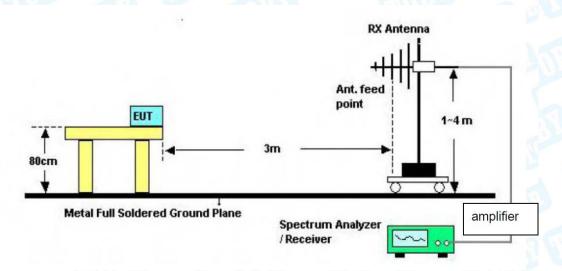
transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

6.2 Test Setup

Radiated measurement



Below 30MHz Test Setup

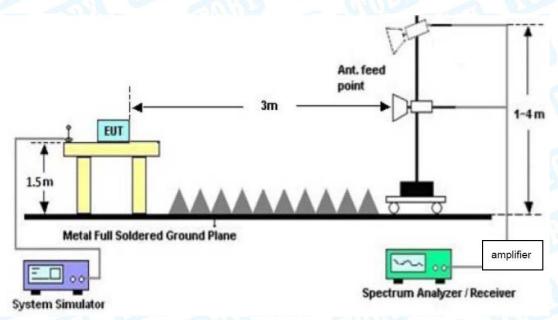


Below 1000MHz Test Setup

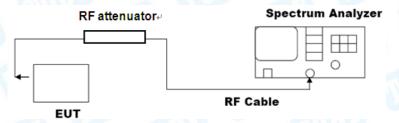




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Above 1GHz Test Setup Conducted measurement



6.3 Test Procedure

---Radiated measurement

- The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- 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.
- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- 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.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Below 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode





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measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

- Testing frequency range 30MHz-1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection. Testing frequency range 9KHz-150Hz the measuring instrument use VBW=200Hz with Quasi-peak detection. Testing frequency range 9KHz-30MHz the measuring instrument use VBW=9kHz with Quasi-peak detection.
- ●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.
- For the actual test configuration, please see the test setup photo.





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--- Conducted measurement

Reference level measurement

Establish a reference level by using the following procedure:

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set the span to≥1.5 times the DTS bandwidth.
- c) Set the RBW = 100 kHz.
- d) Set the VBW≥[3*RBW].
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

Emission level measurement

Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW≥[3*RBW].
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Mode

Please refer to the description of test mode.

6.6 Test Data

Radiated measurement please refer to the Attachment B inside test report.

Conducted measurement please refer to the Appendix A.



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7. Emissions in Restricted Bands

7.1 Test Standard and Limit

7.1.1 Test Standard

FCC Part 15.205 & FCC Part 15.247(d)

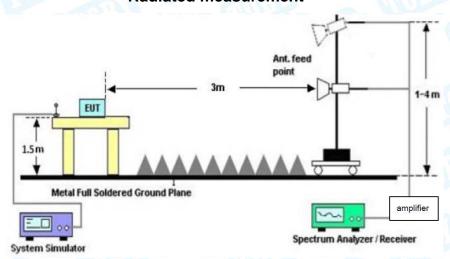
7.1.2 Test Limit

Restricted Frequency	Restricted Frequency Distance Meters(at 3m)				
Band (MHz)	Peak (dBuV/m)	Average (dBuV/m)			
2310 ~2390	74	54			
2483.5 ~2500	74	54			
	Peak (dBm) _{see 7.3 e)}	Average (dBm) see 7.3 e)			
2310 ~2390	-41.20	-21.20			
2483.5 ~2500	-41.20	-21.20			

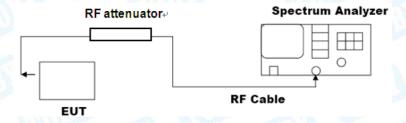
Note: According the ANSI C63.10 11.12.2 antenna-port conducted measurements may also be used as an alternative to radiated measurements for determining compliance in the restricted frequency bands requirements. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test forcabinet/case emissions is required.

7.2 Test Setup

Radiated measurement



Conducted measurement







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7.3 Test Procedure

---Radiated measurement

- 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.
- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- 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.
- ●The Peak Value and average value both need to comply with applicable limit above 1 GHz.
- 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.
- For the actual test configuration, please see the test setup photo.

--- Conducted measurement

- a) Measure the conducted output power (in dBm) using the detector specified by the appropriate regulatory agency (see 11.12.2.3 through 11.12.2.5 for guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
- b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP (see 11.12.2.6 for guidance on determining the applicable antenna gain).
- c) Add the appropriate maximum ground reflection factor to the EIRP (6 dB for frequencies ≤30 MHz; 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive; and 0 dB for frequencies > 1000 MHz).
- d) For MIMO devices, measure the power of each chain and sum the EIRP of all chains in linear terms (i.e., watts and mW).
- e) Convert the resultant EIRP to an equivalent electric field strength using the following relationship:

 $E = EIRP-20 \log d + 104.8$

where

E is the electric field strength in dBuV/m





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EIRP is the equivalent isotropically radiated power in dBm *d* is the specified measurement distance in m

- f) Compare the resultant electric field strength level with the applicable regulatory limit.
- g) Perform the radiated spurious emission test.





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7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Mode

Please refer to the description of test mode.

7.6 Test Data

Remark: The test uses antenna-port conducted measurements as an alternative to radiated measurements for determining compliance in the restricted frequency bands requirements.

Please refer to the Appendix A.





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8. 99% Occupied and 20dB Bandwidth

8.1 Test Standard and Limit

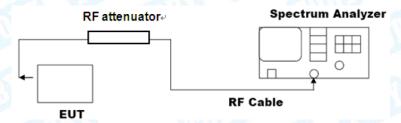
8.1.1 Test Standard

FCC Part 15.205 & FCC Part 15.247(a)

8.1.2 Test Limit

For an FHSS system operating in the 2400 to 2483.5 MHz band, there are no limits for 20dB bandwidth and 99% occupied bandwidth.

8.2 Test Setup



8.3 Test Procedure

- ●The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:
- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data





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points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

8.4 Deviation From Test Standard

No deviation

8.5 EUT Operating Mode

Please refer to the description of test mode.

8.6 Test Data

Please refer to the Appendix A.





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9. Peak Output Power Test

9.1 Test Standard and Limit

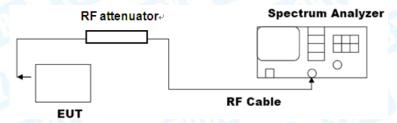
9.1.1 Test Standard

FCC Part 15.247(b)(1)

9.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
3	P _{max-pk} ≤ 1 W	WOOD
	N _{ch} ≥ 75	
	f ≥ MAX { 25 kHz, BW _{20dB} }	
A Marie	max. BW20dB not specified	
0.33	tch ≤ 0.4 s for $T = 0.4*N$ ch	
Peak Output Power	<i>P</i> max-pk ≤ 0.125 W	2400~2483.5
0	Nch ≥ 15	
Dr. William	f ≥ [MAX{25 kHz, 0.67*BW _{20dB} }	
WURT .	OR MAX{25 kHz, BW20dB}]	
	max. BW20dB not specified	
	<i>t</i> ch ≤ 0.4 s for $T = 0.4*N_{ch}$	
	cupancy; $T = \text{period}$; $N_{\text{ch}} = \#$ hopping for the hopping channel carrier frequency s	

9.2 Test Setup



9.3 Test Procedure

- ●This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test:
- a) Use the following spectrum analyzer settings:
 - 1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
 - 2) RBW > 20 dB bandwidth of the emission being measured.
 - 3) VBW≥ RBW.
 - 4) Sweep: Auto.
 - 5) Detector function: Peak.





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- 6) Trace: Max hold.
- b) Allow trace to stabilize.
- c) Use the marker-to-peak function to set the marker to the peak of the emission.
- d) The indicated level is the peak output power, after any corrections for external attenuators and cables.
- e) A plot of the test results and setup description shall be included in the test report.

NOTE-A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Mode

Please refer to the description of test mode.

9.6 Test Data

Please refer to the Appendix A.





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10. Carrier frequency separation

10.1 Test Standard and Limit

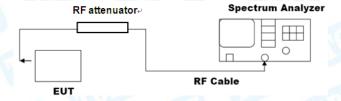
10.1.1 Test Standard

FCC Part 15.247(a)(1)

10.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
A MAGE	<i>P</i> max-pk ≤ 1 W	
	<i>N_{ch}</i> ≥ 75	
	f ≥ MAX { 25 kHz, BW20dB }	
The state of the s	max. BW20dB not specified	
Comion from 1000	<i>t</i> ch ≤ 0.4 s for $T = 0.4*N$ ch	
Carrier frequency	<i>P</i> max-pk ≤ 0.125 W	2400~2483.5
separation	Nch ≥ 15	
DE COLUMN	f ≥ [MAX{25 kHz, 0.67*BW _{20dB} }	
COUNTY OF	OR MAX{25 kHz, BW20dB}]	
108	max. BW20dB not specified	
	t ch $\leq 0.4 \text{ s for } T = 0.4*N_{ch}$	
	ccupancy; $T = \text{period}$; $N_{\text{ch}} = \#$ hopping ff = hopping channel carrier frequency s	

10.2 Test Setup



10.3 Test Procedure

- ●The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
- a) Span: Wide enough to capture the peaks of two adjacent channels.
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) Video (or average) bandwidth (VBW) ≥ RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.
- g) Allow the trace to stabilize.





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Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

Compliance of an EUT with the appropriate regulatory limit shall be determined. A plot of the data shall be included in the test report.

10.4 Deviation From Test Standard

No deviation

10.5 Antenna Connected Construction

Please refer to the description of test mode.

10.6 Test Data

Please refer to the Appendix A.





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11. Time of occupancy (dwell time)

11.1 Test Standard and Limit

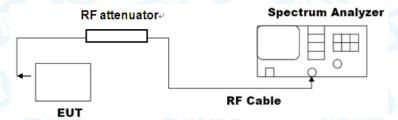
11.1.1 Test Standard

FCC Part 15.247(a)(1)

11.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
A VIVE	P _{max-pk} ≤ 1 W	0.000
	<i>N</i> _{ch} ≥ 75	
	f ≥ MAX { 25 kHz, BW _{20dB} }	
	max. BW20dB not specified	
Time of accompany	<i>t</i> ch ≤ 0.4 s for <i>T</i> = 0.4* <i>N</i> ch	
Time of occupancy	<i>P</i> max-pk ≤ 0.125 W	2400~2483.5
(dwell time)	Nch ≥ 15	A DIVIS
	f≥[MAX{25 kHz, 0.67*BW _{20dB} }	
	OR MAX{25 kHz, BW20dB}]	
	max. BW20dB not specified	
	tch ≤ 0.4 s for $T = 0.4*N$ ch	

11.2 Test Setup



11.3 Test Procedure

- The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
- a) Span: Zero span, centered on a hopping channel.
- b) RBW shall be \Box channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel.
- c) Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed





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with a longer sweep time to show two successive hops on a channel.

d) Detector function: Peak.

e) Trace: Max hold.

Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time.

Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements. Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation:

(Number of hops in the period specified in the requirements) = (number of hops on spectrum analyzer)x(period specified in the requirements / analyzer sweep time)

The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified in the requirements. If the number of hops in a specific time varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation.

The measured transmit time and time between hops shall be consistent with the values described in the operational description for the EUT.

11.4 Deviation From Test Standard

No deviation

11.5 Antenna Connected Construction

Please refer to the description of test mode.

11.6 Test Data

Please refer to the Appendix A.





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12. Number of hopping frequencies

12.1 Test Standard and Limit

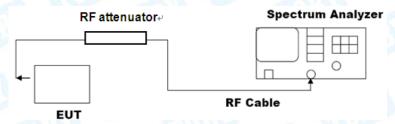
12.1.1 Test Standard

FCC Part 15.247(a)(1)

12.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
	<i>P</i> max-pk ≤ 1 W	
mnB3	<i>N</i> _{ch} ≥ 75	
	f ≥ MAX { 25 kHz, BW20dB }	
The state of the s	max. BW20dB not specified	
Carrier fraguency	<i>t</i> ch ≤ 0.4 s for $T = 0.4*N$ ch	
Carrier frequency	<i>P</i> max-pk ≤ 0.125 W	2400~2483.5
separation	Nch ≥ 15	
	f≥ [MAX{25 kHz, 0.67*BW _{20dB} }	
4027	OR MAX{25 kHz, BW20dB}]	
	max. BW20dB not specified	
	t ch $\leq 0.4 \text{ s for } T = 0.4*N_{ch}$	
	ccupancy; $T = \text{period}$; $N_{\text{ch}} = \#$ hopping f f = hopping channel carrier frequency s	

12.2 Test Setup



12.3 Test Procedure

- ●The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
- a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
- b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW ≥ RBW.
- d) Sweep: Auto.





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e) Detector function: Peak.

f) Trace: Max hold.

g) Allow the trace to stabilize.

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies.

Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A plot of the data shall be included in the test report.

12.4 Deviation From Test Standard

No deviation

12.5 Antenna Connected Construction

Please refer to the description of test mode.

12.6 Test Data

Please refer to the Appendix A.





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13. Antenna Requirement

13.1 Test Standard and Limit

11.1.1 Test Standard

FCC Part 15.203

11.1.2 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.

13.2 Deviation From Test Standard

No deviation

13.3 Antenna Connected Construction

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

13.4 Test Data

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

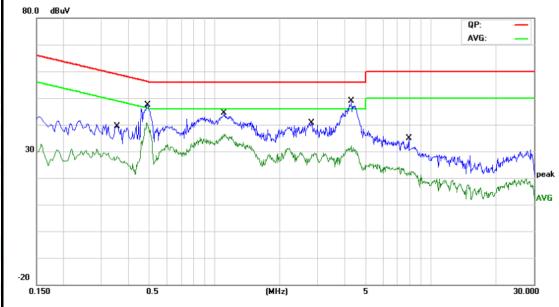
Antenna Type	
⊠Permanent attached antenna	
☐Unique connector antenna	
Professional installation antenna	6





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Attachment A-- Conducted Emission Test Data



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3539	28.55	10.88	39.43	58.87	-19.44	QP
2		0.3539	18.45	10.88	29.33	48.87	-19.54	AVG
3		0.4899	36.34	10.93	47.27	56.17	-8.90	QP
4	*	0.4899	29.71	10.93	40.64	46.17	-5.53	AVG
5		1.1060	33.76	10.66	44.42	56.00	-11.58	QP
6		1.1060	25.67	10.66	36.33	46.00	-9.67	AVG
7		2.8060	30.50	10.24	40.74	56.00	-15.26	QP
8		2.8060	21.00	10.24	31.24	46.00	-14.76	AVG
9		4.3059	38.80	10.07	48.87	56.00	-7.13	QP
10		4.3059	22.12	10.07	32.19	46.00	-13.81	AVG
11		7.9099	24.88	10.06	34.94	60.00	-25.06	QP
12		7.9099	13.98	10.06	24.04	50.00	-25.96	AVG

- 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)





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Temperature:	26 ℃		3 13	Relative H	umidity:	54%	- ATT
Test Voltage:	AC 12	0V/60Hz	13	" Offi	11/2		Alle
Terminal:	Neutra				6	(1)27	
Test Mode:	Mode	1	Alle		1		
Remark:	Only w	orse case is	s reported.	CHO			13
80.0 dBuV							
30 WWWW	- Marin Missiphy	in a second to the second to t	May have the		Mark July Market	of white the second	how have show a
0.150 No. Mk.	o.5	Reading Level	(MHz) Correct Factor	Measure- ment	Limit	Over	30.000
0.150	Freq.	Level	Correct Factor	Measure- ment dBuV	dBuV	dB	Detector
No. Mk.	Freq. MHz 0.2300	dBuV 33.49	Correct Factor dB 11.08	Measure- ment dBuV 44.57	dBuV 62.45	dB -17.88	Detector QP
No. Mk.	Freq.	Level	Correct Factor	Measure- ment dBuV	dBuV 62.45	dB	Detector
No. Mk.	Freq. MHz 0.2300	dBuV 33.49	Correct Factor dB 11.08	Measure- ment dBuV 44.57	dBuV 62.45	dB -17.88	Detector QP
No. Mk.	Freq. MHz 0.2300 0.2300	dBuV 33.49 16.37	Correct Factor dB 11.08 11.08	Measure- ment dBuV 44.57 27.45	dBuV 62.45 52.45 56.00	dB -17.88 -25.00	Detector QP AVG
No. Mk. 1 2 3 *	Freq. MHz 0.2300 0.2300 0.5100	dBuV 33.49 16.37 39.48	Correct Factor dB 11.08 11.08	Measure- ment dBuV 44.57 27.45 50.40	dBuV 62.45 52.45 56.00 46.00	dB -17.88 -25.00 -5.60	Detector QP AVG QP
No. Mk. 1 2 3 *	Freq. MHz 0.2300 0.2300 0.5100 0.5100	dBuV 33.49 16.37 39.48 20.09	Correct Factor dB 11.08 11.08 10.92	Measure- ment dBuV 44.57 27.45 50.40 31.01	dBuV 62.45 52.45 56.00 46.00 56.00	dB -17.88 -25.00 -5.60 -14.99	Detector QP AVG QP AVG
No. Mk. 1 2 3 * 4 5	Freq. MHz 0.2300 0.2300 0.5100 0.5100 1.6298	Level dBuV 33.49 16.37 39.48 20.09 31.04	Correct Factor dB 11.08 11.08 10.92 10.92 10.60	Measure- ment dBuV 44.57 27.45 50.40 31.01 41.64	dBuV 62.45 52.45 56.00 46.00 46.00	dB -17.88 -25.00 -5.60 -14.99 -14.36	Detector QP AVG QP AVG QP
No. Mk. 1 2 3 * 4 5 6	Freq. MHz 0.2300 0.2300 0.5100 0.5100 1.6298 1.6298	Level dBuV 33.49 16.37 39.48 20.09 31.04 14.40	Correct Factor dB 11.08 11.08 10.92 10.92 10.60 10.60	Measure- ment dBuV 44.57 27.45 50.40 31.01 41.64 25.00	dBuV 62.45 52.45 56.00 46.00 56.00 56.00	dB -17.88 -25.00 -5.60 -14.99 -14.36 -21.00	Detector QP AVG QP AVG QP AVG
No. Mk. 1 2 3 * 4 5 6 7	Freq. MHz 0.2300 0.2300 0.5100 0.5100 1.6298 1.6298 2.7900	Level dBuV 33.49 16.37 39.48 20.09 31.04 14.40 30.48	Correct Factor dB 11.08 11.08 10.92 10.92 10.60 10.60 10.27	Measure- ment dBuV 44.57 27.45 50.40 31.01 41.64 25.00 40.75	dBuV 62.45 52.45 56.00 46.00 56.00 46.00 46.00	dB -17.88 -25.00 -5.60 -14.99 -14.36 -21.00 -15.25	Detector QP AVG QP AVG QP AVG QP
No. Mk. 1 2 3 * 4 5 6 7 8	Freq. MHz 0.2300 0.2300 0.5100 0.5100 1.6298 1.6298 2.7900 2.7900	Level dBuV 33.49 16.37 39.48 20.09 31.04 14.40 30.48 12.97	Correct Factor dB 11.08 11.08 10.92 10.92 10.60 10.60 10.27	Measure- ment dBuV 44.57 27.45 50.40 31.01 41.64 25.00 40.75 23.24	dBuV 62.45 52.45 56.00 46.00 56.00 46.00 56.00	dB -17.88 -25.00 -5.60 -14.99 -14.36 -21.00 -15.25 -22.76	Detector QP AVG QP AVG QP AVG AVG
No. Mk. 1 2 3 * 4 5 6 7 8 9	Freq. MHz 0.2300 0.2300 0.5100 0.5100 1.6298 1.6298 2.7900 2.7900 3.9660	Level dBuV 33.49 16.37 39.48 20.09 31.04 14.40 30.48 12.97 34.14	Correct Factor dB 11.08 11.08 10.92 10.92 10.60 10.60 10.27 10.27	Measurement dBuV 44.57 27.45 50.40 31.01 41.64 25.00 40.75 23.24 44.25	dBuV 62.45 52.45 56.00 46.00 56.00 46.00 56.00	dB -17.88 -25.00 -5.60 -14.99 -14.36 -21.00 -15.25 -22.76 -11.75	Detector QP AVG QP AVG QP AVG QP AVG QP AVG

- Remark:
 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)





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Attachment B--Unwanted Emissions Data

--- Radiated Unwanted Emissions

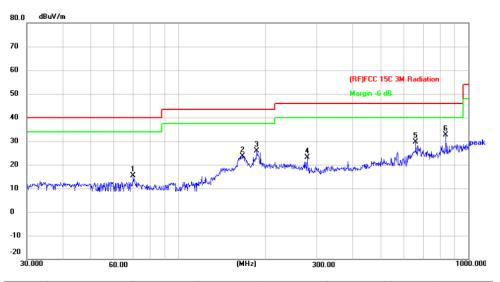
9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

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

30MHz~1GHz

Temperature:	24.3℃	Relative Humidity:	45%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Horizontal	TUE D	
Test Mode:	Mode 1		
Remark:	Only worse case is reported	101	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	69.8448	39.70	-24.41	15.29	40.00	-24.71	peak
2	166.0680	46.28	-22.66	23.62	43.50	-19.88	peak
3	186.4407	50.03	-24.21	25.82	43.50	-17.68	peak
4	278.0668	44.54	-21.49	23.05	46.00	-22.95	peak
5	658.8360	41.42	-11.81	29.61	46.00	-16.39	peak
6 *	836.2441	41.07	-8.51	32.56	46.00	-13.44	peak

^{*:}Maximum data x:Over limit !:over margin

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB μ V/m)-Limit QPK(dB μ V/m)





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emper	ature:	24.3°	C	R	Relative Hun	nidity:	45%	
est Vol	tage:	AC 12	20V/60Hz	33		11000	47	Alle
nt. Pol		Vertic	al		1.13		1737	
est Mo	de:	Mode	1	Alle				M'S
Remark	:	Only	worse case	is reported.	CAD:		A V	
30.0 dBu	V/m							
70								
50						(RF)FCC 15	C 3M Radiatio	n _
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10	Man	60.00		(MHz)	300.	V W *	U de	
10 20 30.000		60.00				00		1000.0
10	Frequ (MI	60.00 iency	Reading (dBuV)	(MHz) Factor (dB/m)	Joo. Level (dBuV/m)	00 Limit	Margin (dB)	1000.0
10 20 30.000	Frequ	60.00 lency Hz)	Reading	Factor	Level	00 Limit	Margin	1000.0
10 20 30.000	Frequ (Mł	60.00 lency Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	1000.0 Detector
10 20 30.000 No.	Frequ (MI 39.0	60.00 Jency Hz) 1243	Reading (dBuV) 51.17	Factor (dB/m) -22.92	Level (dBuV/m) 28.25	Limit (dBuV/m) 40.00	Margin (dB) -11.75	Detector peak
0 10 20 30.000 No.	Frequ (MI 39.0	60.00 lency Hz) 1243 1989 7881	Reading (dBuV) 51.17 50.84	Factor (dB/m) -22.92 -24.16	Level (dBuV/m) 28.25 26.68	Limit (dBuV/m) 40.00 40.00	Margin (dB) -11.75 -13.32	Detector peak peak
No. 1 2 3	Frequ (MI 39.0 66.4 185.7	60.00 lency Hz) 1243 1989 7881 6225	Reading (dBuV) 51.17 50.84 44.99	Factor (dB/m) -22.92 -24.16 -24.18	Level (dBuV/m) 28.25 26.68 20.81	Limit (dBuV/m) 40.00 40.00 43.50	Margin (dB) -11.75 -13.32 -22.69	Detector peak peak peak

*:Maximum data

- Remark: 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. QuasiPeak (dB μ V/m)= Corr. (dB/m)+ Read Level (dB μ V)
- 3. Margin (dB) = QuasiPeak (dB μ V/m)-Limit QPK(dB μ V/m)

x:Over limit !:over margin

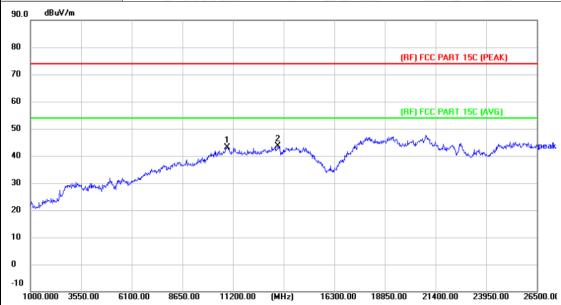




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Above 1-25GHz





No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10894.000	44.98	-1.80	43.18	74.00	-30.82	peak
2 *	13469.500	43.48	0.13	43.61	74.00	-30.39	peak

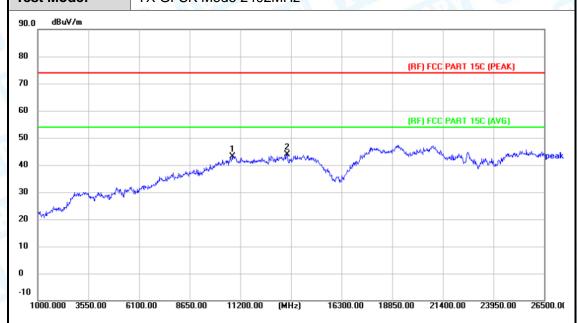
- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		1133
Ant. Pol.	Vertical		CONTRACT OF THE PARTY OF THE PA
Test Mode:	TX GFSK Mode 2402MHz	A GIVO	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10817.500	45.34	-2.17	43.17	74.00	-30.83	peak
2 *	13546.000	43.87	0.02	43.89	74.00	-30.11	peak

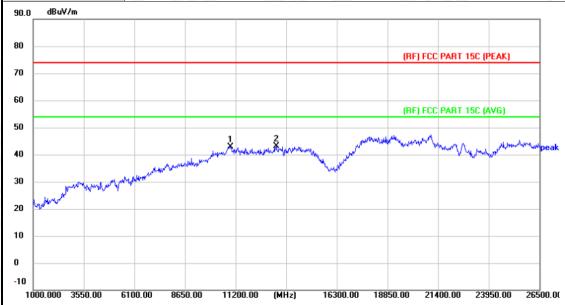
- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





43 of 70 Page:

	The second secon		
Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		
Ant. Pol.	Horizontal		military in the second
Test Mode:	TX GFSK Mode 2441MHz	THU:	
90.0 dBuV/m			



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10945.000	44.72	-1.80	42.92	74.00	-31.08	peak
2 *	13240.000	43.35	-0.20	43.15	74.00	-30.85	peak

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dB μ V/m)= Corr. (dB/m)+ Read Level (dB μ V) 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7 ℃	Relative Humidity: 48%
Test Voltage:	DC 5V	
Ant. Pol.	Vertical	
Test Mode:	TX GFSK Mode 2441MH:	2
90.0 dBuV/m		
80		(RF) FCC PART 15C (PEAK)
70		(nt) rec rant 13c (reak)
60		(RF) FCC PART 15C (AVG)
50	1 2	
40	and the second second	when the state of

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10894.000	44.61	-1.80	42.81	74.00	-31.19	peak
2 *	13546.000	42.87	0.02	42.89	74.00	-31.11	peak

(MHz)

16300.00 18850.00 21400.00

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1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

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8650.00

- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
 The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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16300.00 18850.00 21400.00 23950.00

Ten	nperature:	23.7℃			Re	lative H	umidity:	48%		1550
Tes	t Voltage:	DC 5V	DC 5V							A.
Ant	. Pol.	Horizont	Horizontal							
Tes	t Mode:	TX GFSI	TX GFSK Mode 2480MHz							6
90.0	dBuV/m									1
80							455, 555			
70							(RF) FCC PA	ART 15C (P	EAKJ	
60							(RF) FCC PA	ART 15C (A	vei	
50			1	2						
40			A STAN DOWN THE REAL PROPERTY OF THE PARTY O	man mander of the	my to	photo have made	-de-particular	Min	Handler of the State of the Sta	peak
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10894.000	45.57	-1.80	43.77	74.00	-30.23	peak
2 *	13928.500	43.47	0.85	44.32	74.00	-29.68	peak

11200.00 (MHz)

Remark:

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- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

8650.00

- 4. The tests evaluated1-26.5GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%				
Test Voltage:	DC 5V	m a	11/11/20				
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX GFSK Mode 2480MHz						
90.0 dBuV/m							
80		(BE) FCC	PART 15C (PEAK)				
70		, , , , ,					
60		(RF) FCC	PART 15C (AVG)				
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30 John Mally May	youth of her Market "	***					
20							
10							
0							

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10817.500	45.23	-2.17	43.06	74.00	-30.94	peak
2 *	12679.000	43.83	-0.36	43.47	74.00	-30.53	peak

16300.00 18850.00

21400.00 23950.00

26500.00

11200.00 (MHz)

Remark:

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6100.00

- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
 Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
 The tests evaluated-26.5GHz, The testing has been conformed to the 10th harmonic of the high section demands of the proportion. highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%					
Test Voltage:	DC 5V	130						
Ant. Pol.	Horizontal	Horizontal TX π/4-DQPSK Mode 2402MHz						
Test Mode:	TX π/4-DQPSK Mode 240							
90.0 dBuV/m								



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10919.500	45.04	-1.79	43.25	74.00	-30.75	peak
2 *	13954.000	42.97	0.70	43.67	74.00	-30.33	peak

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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16300.00 18850.00 21400.00 23950.00

Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		000
Ant. Pol.	Vertical		6003
Test Mode:	TX π/4-DQPSK Mod	le 2402MHz	50
90.0 dBuV/m			
80		(BF) FC	C PART 15C (PEAK)
70			
60		(RF) FC	C PART 15C (AVG)
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40	all the second of the second o	with the same of t	Mary My white what peal
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10			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10919.500	45.65	-1.79	43.86	74.00	-30.14	peak
2	13571.500	43.15	-0.02	43.13	74.00	-30.87	peak

11200.00 (MHz)

Remark:

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1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

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- Con. = Antenna ractor (dB/m) + Cashe Loss (dB)
 Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
 Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
 The tests evaluated1-26.5GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

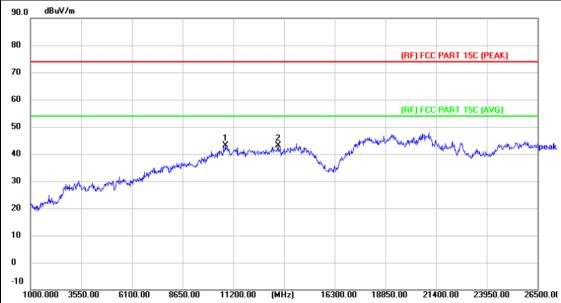
 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%				
Test Voltage:	DC 5V		المرازا				
Ant. Pol. Horizontal							
Test Mode:	TX π/4-DQPSK Mode 2441MHz						
90.0 dBuV/m							



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10792.000	45.34	-2.31	43.03	74.00	-30.97	peak
2	13444.000	42.86	0.15	43.01	74.00	-30.99	peak

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		anl's L
Test Mode:	TX π/4-DQPSK Mode 24	41MHz	7
90.0 dBuV/m			
80		(BE) ECC	PART 15C (PEAK)
70		(m)rec	Ani ise (reak)
60		(RF) FCC I	PART 15C (AVG)
50	1 2	And the state of t	
40	A STATE OF THE STA	Maring Ma	und y peak
20	And Aller		
10			
0			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10792.000	44.90	-2.31	42.59	74.00	-31.41	peak
2 *	13546.000	42.76	0.02	42.78	74.00	-31.22	peak

(MHz)

11200.00

16300.00 18850.00

21400.00

23950.00

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

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- 2. Peak/AVG (dB μ V/m)= Corr. (dB/m)+ Read Level (dB μ V) 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

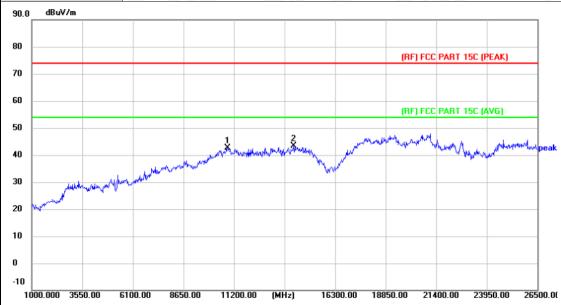
 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%					
Test Voltage:	DC 5V		333					
Ant. Pol.	Horizontal		mn33					
Test Mode:	Test Mode: ΤΧ π/4-DQPSK Mode 2480MHz							
90.0 dBuV/m								



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10868.500	44.61	-1.93	42.68	74.00	-31.32	peak
2 *	14209.000	43.07	0.26	43.33	74.00	-30.67	peak

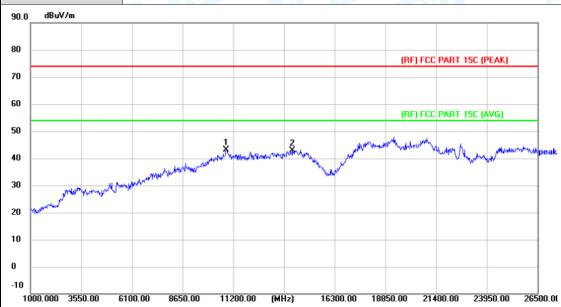
- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated 1-26.5 GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		mn's s
Test Mode:	TX π/4-DQPSK Mode 2480N	ИНz	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10843.000	45.06	-2.04	43.02	74.00	-30.98	peak
2	14183.500	42.58	0.25	42.83	74.00	-31.17	peak

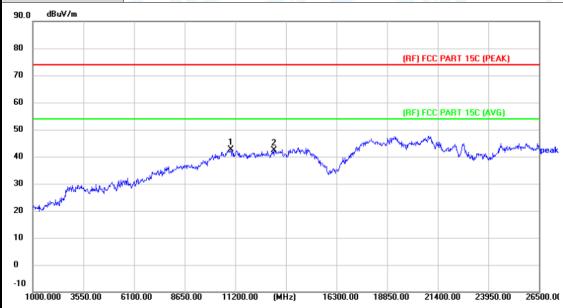
- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated 1-26.5 GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		
Ant. Pol.	Horizontal		COUNTY OF THE PROPERTY OF THE
Test Mode:	TX 8-DPSK Mode 2402MHz	W.O.	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	10970.500	44.44	-1.82	42.62	74.00	-31.38	peak
2	13163.500	42.54	-0.19	42.35	74.00	-31.65	peak

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated 1-26.5 GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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16300.00 18850.00 21400.00 23950.00

Temperature:	23.7℃	Relative Humidi	ty: 48%
Test Voltage:	DC 5V		COUNTY OF
Ant. Pol.	Vertical	The same of the sa	
Test Mode:	TX 8-DPSK Mod	e 2402MHz	
90.0 dBuV/m			
80			RF) FCC PART 15C (PEAK)
70			III J TOC FAIT TOC (I EAK)
60		e e e e e e e e e e e e e e e e e e e	RF) FCC PART 15C (AVG)
50	1	2	MALINA .
40	the world was the state of the	and a second second	My May Market pea
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10945.000	45.36	-1.80	43.56	74.00	-30.44	peak
2	13520.500	42.81	0.07	42.88	74.00	-31.12	peak

11200.00 (MHz)

Remark:

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1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

6100.00

- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
 The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

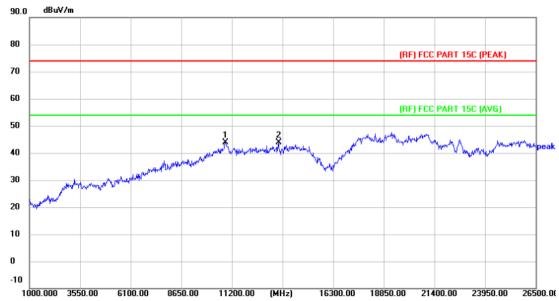
 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%				
Test Voltage:	DC 5V						
Ant. Pol.	Horizontal						
Test Mode: TX 8-DPSK Mode 2441MHz							
ID VI							



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1 *	10868.500	45.93	-1.93	44.00	74.00	-30.00	peak
2	13546.000	43.77	0.02	43.79	74.00	-30.21	peak

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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16300.00 18850.00 21400.00 23950.00

26500.00

	UNIVERSE		
Temperature:	23.7℃	Relative Humi	dity: 48%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		Commission of the Commission o
Test Mode:	TX 8-DPSK Mode	e 2441MHz	
90.0 dBuV/m			
80			RF) FCC PART 15C (PEAK)
70			
60			RF) FCC PART 15C (AVG)
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40	y and the continue of the cont	water a Marile a market water	and the second of the second o
30 Mary Mary Mary Mary Mary Mary Mary Mary	V-Mydra.		
20			
10			
0			
-10			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	10945.000	44.26	-1.80	42.46	74.00	-31.54	peak
2 *	14413.000	42.76	0.94	43.70	74.00	-30.30	peak

11200.00 (MHz)

1000.000 3550.00

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

6100.00

- 2. Peak/AVG (dB μ V/m)= Corr. (dB/m)+ Read Level (dB μ V) 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated1-26.5GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.

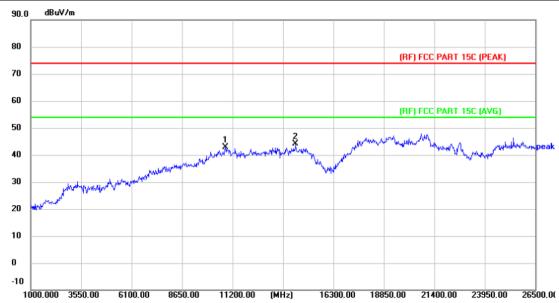
 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		
Ant. Pol.	Horizontal		
Test Mode:	TX 8-DPSK Mode 2480MHz	NO.	10



No.	Frequency (MHz)	, , , , ,		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	10843.000	44.88	-2.04	42.84	74.00	-31.16	peak
2 *	14387.500	43.25	0.91	44.16	74.00	-29.84	peak

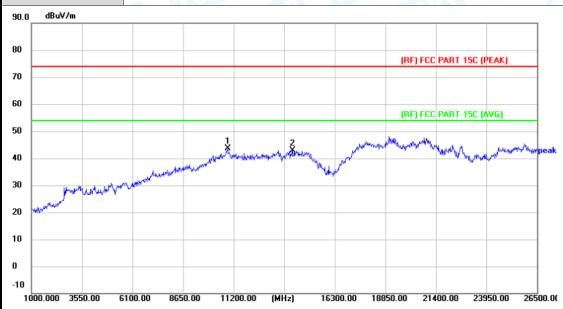
- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated 1-26.5 GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Temperature:	23.7℃	Relative Humidity:	48%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		mn's s
Test Mode:	TX 8-DPSK Mode 2480MHz	THU	1



No		uency Hz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector
1	* 1089	4.000	45.35	-1.80	43.55	74.00	-30.45	peak
2	1415	8.000	42.69	0.22	42.91	74.00	-31.09	peak

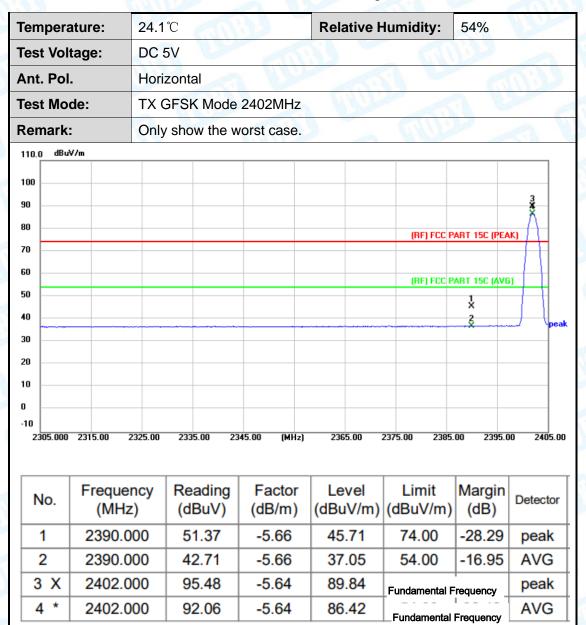
- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)
- 4. The tests evaluated 1-26.5 GHz, The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
- 5. No report for the emission which more than 20dB below the prescribed limit.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.





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Attachment C-- Restricted Bands Requirement Test Data



- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)





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Tempe	rature:	24.1	$^{\circ}$	m	33		Relati	ive Hu	ımidity:	5	54%	Ri	
Test Vo	oltage:	DC 5	5V			1	18				137.3		
Ant. Po	ol.	Verti	cal		1 1/1	VE		260	1			M	
Test M	ode:	TX	TX GFSK Mode 2402MHz										
Remar	k:	Only	show	the w	orst cas	se.	9			V			
110.0 dE	BuV/m												_
100													
90												3	
80									(DE) E	ee na	ART 15C (PEA		_
70									(HF) F	LL PA	ART TOU (PE	N)	_
60									(RF) F	CC PA	ART 15C (AV	G)	
50									(,		1 ×	+	
40											2 Z	+	pea
30													-
20													-
10													+
0													
2306.00	00 2316.00	2326.00	2336.00	D 23	46.00 (M	(Hz)	236	6.00	2376.00	2386.0	00 2396.	00 2	2406.00
No.	Freque (MH		Read (dBu	_	Facto (dB/m			vel V/m)	Limit (dBuV/		Margin (dB)	Dete	ector
1	2390.	000	50.	80	-5.66	3	45	.14	74.00)	-28.86	ре	ak
2	2390.	000	42.	26	-5.66	3	36	.60	54.00)	-17.40	A۱	/G

91.69

87.77

Fundamental Frequency

Fundamental Frequency

3 X

2402.000

2402.100

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

97.33

93.41

-5.64

-5.64



peak

AVG



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emperature:	24.1 ℃	Relative Humidity:	54%				
est Voltage:	DC 5V		000				
Ant. Pol.	Horizontal		-ani-				
est Mode:	TX GFSK Mode 2480MH	z	50				
Remark:	Cemark: Only show the worst case.						
110.0 dBuV/m							
00							
00 2							
30							
70		(RF) FC	PART 15C (PEAK)				
50							
		(RF) FC	PART 15C (AVG)				
X							
V %			реа				
30							
20							
10							
-10							

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m) Margin		Detector
1 X	2479.900	97.06	-5.37	91.69	Fundamental Frequency		peak
2 *	2480.100	92.74	-5.37	87.37	Fundamental Frequency		AVG
3	2483.500	52.95	-5.35	47.60	74.00 -26.40		peak
4	2483.500	42.59	-5.35	37.24	54.00 -16.76		AVG

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)





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Ten	nperature: 24.1 °C Relative Humidity: 54%					Alte				
es	t Vol	tage:	DC	5V		19.7	GIL	11.35		
۱nt	. Po	l .		W. C.						
es	t Mode: TX GFSK Mode 2480MHz									
Ren	nark	:	Only show the worst case.							
110.0) dBu	V/m			616162					
00										
10	ž X									
10	Α						(DE) FOO	DADT 450 (DE	140	
'O	\vdash						(HF) FLL	PART 15C (PE	AKJ	
0							(BE) FCC	PART 15C (AV	<u></u>	
i0	ŝ	}					(III) TCC	AIT ISC (AT	<u>.,</u>	
ю	4	<u> </u>				·····	****		pe	
30										
20										
0										
) 10										
	78.000	2488.00 2	2498.00	2508.00	2518.00 (MHz	2538.00	2548.00 255	B.00 2568.	00 2578.0	
N	lo.	Freque (MHz		Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1	X	2480.0	00	98.60	-5.37	93.23	Fundamental F	requency	peak	
2	*	2480.0	00	94.62	-5.37	89.25	Fundamental F	requency	AVG	
- ;	3	2483.5	00	52.45	-5.35	47.10	74.00	-26.90	peak	

2483.500

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

42.68

-5.35

37.33

54.00



AVG

-16.67



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Temperature:	24.1 °C	Relative Humidity:	54%
Test Voltage:	DC 5V		Miles of
Ant. Pol.	Horizontal	All and a second	
Test Mode:	TX π/4-DQPSK M	ode 2402MHz	
Remark:	Only show the wors	st case.	1
110.0 dBuV/m			
100			
90			3
80		(DE) EC)	C PART 15C (PEAK)
70		(iii) rea	CTAIT ISC (I EAK)
60		(BE) FC	C PART 15C (AVG)
50		(11)	1 *
40			pea
30			
20			
10			
-10			
2305.000 2315.00	2325.00 2335.00 2345.0	D (MHz) 2365.00 2375.00 23	85.00 2395.00 2405.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Margin (dBuV/m)		Detector
1	2390.000	52.34	-5.66	46.68	74.00	-27.32	peak
2	2390.000	42.49	-5.66	36.83	54.00	-17.17	AVG
3 X	2401.900	95.99	-5.64	90.35	Fundamental Frequency		peak
4 *	2402.100	92.82	-5.64	87.18	Fundamental Frequency		AVG

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)





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Temperature: 24.1 °C								Relative Humidity: 54%					A STATE OF
Tes	t Vo	Itage:	DC !	5V	P.		-11	S.B.			17373		n
Ant. Pol. Vertical										65	M		
Tes	est Mode: TX 17/4-DQPSK Mode 2402MHz												
Rei	mark	α:	Only	/ sho	w the v	vorst	case.	3		MIL			1
110.0	0 dBu	W/m											7
100 90 80												8	
70										(RF) FCC	PART 15C (PEA	iK)	
60										(RF) FCC	PART 15C (AVG	i)	
50 40											1 X 2	$\int \int$	peak
30 20													
10													
-10 -2	306.000	2316.00 2	326.00	233	6.00 23	346.00	(MHz)	236	6.00	2376.00 2386	5.00 2396.0	10 24	106.00
N	lo.	Frequer (MHz	- 1		ading BuV)		actor B/m)		vel V/m)	Limit (dBuV/m)	Margin (dB)	Detec	ctor
	1	2390.00	00	52	2.35	-5	5.66	46	.69	74.00	-27.31	pea	ak
	2	2390.00	00	42	2.46	-5	5.66	36	.80	54.00	-17.20	AV	G
3	3 *	2402.00	00	93	3.69	-5	5.64	88	.05	Fundamental	Frequency	AV	G

4 X

2402.100

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

97.16

-5.64

91.52



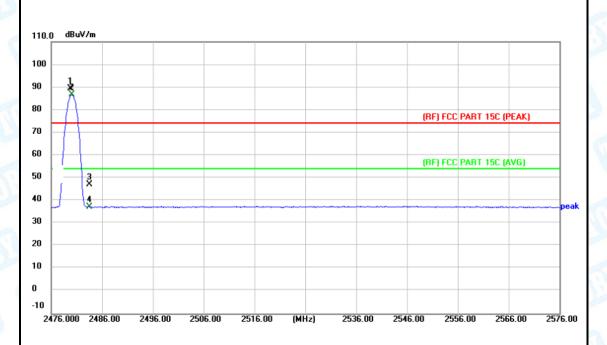
peak

Fundamental Frequency



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Temperature:	24.1℃	Relative Humidity:	54%
Test Voltage:	DC 5V		000
Ant. Pol.	Horizontal		
Test Mode:	TX π/4-DQPSK Mode 24	180MHz	
Remark:	Only show the worst case		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)		
1 X	2479.800	94.75	-5.37	89.38	Fundamental Frequency Fundamental Frequency		peak
2 *	2480.100	92.13	-5.37	86.76			AVG
3	2483.500	52.55	-5.35	47.20	74.00 -26.80		peak
4	2483.500	42.57	-5.35	37.22	54.00	-16.78	AVG

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)





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-27.06

-16.82

peak

AVG

74.00

54.00

Tempera	ature:	24.1 ℃			Relative H	Humidity:	54%					
Test Vol	tage:	DC 5V	1		(E)		1979					
Ant. Pol	l.	Vertical		Alle			6	THE STATE OF THE S				
Test Mo	de:	TX π/4	TX π/4-DQPSK Mode 2480MHz									
Remark	:	Only sh	ow the v	vorst case.		Will.						
110.0 dBu	W/m											
100												
90												
80						(DE) Fee B	PART 15C (PEA	K)				
70						(NF) FCC F	Ant 13C (FEA	, K)				
60						(RF) FCC P	ART 15C (AVE					
50	3 X					(11)1111						
40	4							peal				
30												
20												
0												
-10												
2476.500	2486.50 2	2496.50 25	506.50 2	516.50 (MHz)	2536.50	2546.50 2556.	.50 2566.5	50 257 _{6.50}				
	_											
No.	Frequer (MHz	•	eading IBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector				
1 X	2480.0	00 9	8.84	-5.37	93.47	Fundamental	Frequency	peak				
2 *	2480.0	00 9	5.41	-5.37	90.04	Fundamental I	Frequency	AVG				

4

2483.500

2483.500

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

52.29

42.53

-5.35

-5.35

46.94





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Tem	nper	ature:	24.1	$^{\circ}$	1:30	Relative H	lumidity:	54%	A ROLL
Tes	t Vo	ltage:	DC :	5V					
Ant	. Po	l <u>.</u>	Hori	zontal	a Viv			67	7:35
Tes	t Mo	de:	TX 8	B-DPSK M	ode 2402MH	z		1	
Ren	nark	:	Only	show the	worst case.		CALL!		
110.0) dBu	W/m							
100									
90									4
80							(BE) FCC P	PART 15C (PEA	AK)
70							(m)rec	rait too (i Er	1
60							(RF) FCC P	ART 15C (AVE	a
50								×	
40									peak
30									
20									
10 0									
-10									
23	06.500	2316.50 2	326.50	2336.50	2346.50 (MHz)	2366.50	2376.50 2386	.50 2396.5	50 2406.50
N	lo.	Frequer (MHz	•	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1	2390.0	00	54.12	-5.66	48.46	74.00	-25.54	peak
2	2	2390.0	00	42.54	-5.66	36.88	54.00	-17.12	AVG
3	*	2402.1	00	92.83	-5.64	87.19	Fundamental F	requency	AVG

-5.63

90.30

4 X

2402.200

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

95.93



peak

Fundamental Frequency



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-27.67

-17.10

peak

AVG

peak

AVG

74.00

54.00

Fundamental Frequency

Fundamental Frequency

Tem	pera	ture:	24.1°	C		33		Relat	ive Hu	ımidity:	54%	A	1	1550
Test	Volt	age:	DC 5	V	P.		1	S.B.						n.
Ant.	Pol.		Vertic	cal		1	Par I				6	T		
Test	Mod	le:	TX 8	-DP	SK Mod	de 240	D2MH	z	An		9			d
Rem	nark:		Only	sho	w the v	orst o	case.	33		- CULT			1	1
110.0	dBuV	/m												,
100														
90													3 ¥	
80										(BE) ECC	PART 15C (P	EAKI	Λ	
70										(mr) rec	PART 13C (F	LAKJ		
60										(RF) FCC	PART 15C (A	vei	-	
50										1	1 X			
40													-\	peak
30														
20														
10														
0 -10														
230	05.000	2315.00	325.00	233	5.00 23	45.00	(MHz)	236	5.00 2	2375.00 238	5.00 239	5.00	240	55.00
No	0.	Frequer (MHz			ading BuV)		ctor /m)		vel V/m)	Limit (dBuV/m	Margi (dB)		etec	tor

-5.66

-5.66

-5.64

-5.64

46.33

36.90

91.78

88.10

1

2

3 X

4 *

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

51.99

42.56

97.42

93.74

2390.000

2390.000

2402.000





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Temperature:	24.1 ℃	Relative F	lumidity:	54%							
Test Voltage:	DC 5V	11.13	CI								
Ant. Pol.	Horizontal	Horizontal									
Test Mode:	TX 8-DPSK Mode 2480	OMHz		1 6	-						
Remark:	Only show the worst ca	ase.	WILL.		1						
110.0 dBuV/m											
00											
90 \$											
30											
70			(RF) FCC	PART 15C (PEAK)							
50											
50			(RF) FCC	PART 15C (AVG)							
×											
80					pea						
20											
10											
10											
2477.000 2487.00	2497.00 2507.00 2517.00	(MHz) 2537.00 2	2547.00 2557	7.00 2567.00	2577.0						

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 X	2480.000	96.61	-5.37	91.24	Fundamental Frequency		peak
2 *	2480.100	93.36	-5.37	87.99	Fundamental Frequency		AVG
3	2483.500	50.83	-5.35	45.48	74.00	-28.52	peak
4	2483.500	42.51	-5.35	37.16	54.00	-16.84	AVG

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)







Temperatu	re: 24	.1℃	3/8	Relative Hu	imidity:	54%				
Test Volta	ge: DC	C 5V		18		177				
Ant. Pol.	Ve	ertical	A Alle			6	M'S			
Test Mode	: TX	TX 8-DPSK Mode 2480MHz								
Remark:	Or	nly show the v	MUL							
110.0 dBuV/m										
100										
90										
80										
70					(RF) FCC P	ART 15C (PEA	K)			
60										
50 3					(RF) FCC P	ART 15C (AVG	J			
40										
30							ре			
20										
10										
0										
-10 2476.500 24	86.50 2496.5	0 2506.50 25	516.50 (MHz)	2536.50	2546.50 2556.	50 2566.5	0 2576.			
2110.000	2100.0		oro.co (mile)	2000.00	2000.	200.0	2010.			
	requency	Reading	Factor	Level	Limit	Margin				
No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)		_	Detector			
1 *	2480.000	94.78	-5.37	89.41	Fundamental F	requency	AVG			
2 X	2480.200	97.98	-5.37	92.61	Fundamental F		peak			
3	2483.500	51.27	-5.35	45.92	74.00	-28.08	peak			
4	2483.500	42.47	-5.35	37.12	54.00	-16.88	AVG			

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dB μ V/m)-Limit PK/AVG(dB μ V/m)

-- END OF REPORT-

