

Report No.: DL-240918018ER

# FCC Part 15C Test Report FCC ID: 2BLFD-PXPX643

Applicant:	Whele LLC
Address:	Wilmington DE 19801 USA
Manufacturer:	TIGERSNIFF TECHNOLOGY CO., LTD
Address:	Chenghai District, Shantou City, Guangdong Province, China
EUT:	Remote control for dinosaur car
Trade Mark:	Prextex
Model Number:	PXPX-000643
Date of Receipt:	Sep. 18, 2024
Test Date:	Sep. 18, 2024 - Sep. 26, 2024
Date of Report:	Sep. 26 , 2024
Prepared By:	Shenzhen DL Testing Technology Co., Ltd.
Address:	101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China
Applicable Standards:	FCC PART 15 C 15.249 ANSI C63.10:2013
Test Result:	Pass of the state
Report Number:	DL-240918018ER

Prepared (Test Engineer):

Alisa Song

Reviewer (Supervisor):

Approved (Manager):

Jack Bu

Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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# 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

9	FCC Part15 (15.249) , Subpart C						
Standard Section	Test Item	Judgment	Remark				
15.207	Conducted Emission	N/A	est in the second se				
15.205(a), 15.209(a) 15.249(a), 15.249(c)	Fundamental &Radiated Spurious Emission Measurement	PASS					
15.249(d)	Band Edge Emission	PASS					
15.215(c)	20dB Bandwidth	PASS					
15.203	Antenna Requirement	PASS	St. O				

#### NOTE:

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

Test Lab: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China FCC Test Firm Registration Number: 854456

Designation Number: CN1307 IC Registered No.: 27485 CAB ID.: CN0118

# **1.1 MEASUREMENT UNCERTAINTY**

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

No.	Item	Uncertainty
ð Ý	Conducted Emission Test	±2.56dB
2	RF power,conducted	±0.42dB
3	Spurious emissions, conducted	±2.76dB
4	All emissions, radiated (<1G)	±3.65dB
5	All emissions, radiated (>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%



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# 2. GENERAL INFORMATION

# 2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Remote control for dinosaur car
Trademark	Prextex
Model No.:	PXPX-000643
Test Model:	PXPX-000643
Model Difference	N/A N/A
Operation Frequency:	2405~2475MHz
Channel numbers:	25 Channels
Modulation technology:	GFSK
Antenna Type:	Internal Antenna
Antenna gain:	0.59 dBi
Power supply:	TX: DC 3V (1.5V battery*2) RX: DC 4.5V (1.5V battery*3)

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

2. The EUT's all information provided by client.

3.

× ×		Chann	el List	V Go	$\sim$
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2405	<u> </u>	2428	21	2471
N 02	2407	<u> </u>	2435	22	2472
03 0	2408	13	2445	23	2473
04	2410	14	2451	24	2474
05	2411	✓ 15 _Ø	2452	25	2475
06 🔿	2414	16	2453 🛇	de la	1
07	2418	17	2454	<u> </u>	
08	2422	18	2462		1
60 09	2425	<u>~</u> 19 ~	2469		~ /
10	2427	20	2470	$\sim$	0 1



# 2.2 DESCRIPTION OF TEST MODES

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 above was evaluated respectively.

Pretest Mode	Description	
Mode 1	CH01	ON ret
Mode 2	CH13	GFSK
Mode 3	CH25	
Mode 4	Link Mode	× .
	For Conducted & Radiated Emission	
Final Test Mode	Description	
Mode 1	CH01	
Mode 2	CH13	GFSK
Mode 3	CH25	
Mode 4	Link Mode	× OV

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

#### 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test





#### 2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Model/Type No.	Series No.	Note	
E-1	Remote control for dinosaur car PXPX-000643		N/A	EUT	5~
	ON cont		or cor		Ó

lt	tem	Shielded Type	Ferrite Core	Length	Note
	Š		Cert		

Note:

(1) For detachable type I/O cable should be specified the length in cm in <sup>®</sup>Length <sup>\_</sup> column.

#### 2.5 TABLE OF PARAMETERS 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 end product.

	Test software Version	o'	Test program: Test1.	0.1
	Frequency	2402 MHz	2441 MHz	2480 MHz
X	Power Setting of Softwave	10	10	10



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# 2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 20db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Jok	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 04, 2023	Nov. 03, 2024
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 04, 2023	Nov. 03, 2024
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 04, 2023	Nov. 03, 2024
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 04, 2023	Nov. 03, 2024
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 04, 2023	Nov. 03, 2024
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 04, 2023	Nov. 03, 2024
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 04, 2023	Nov. 03, 2024
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 04, 2023	Nov. 03, 2024
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 04, 2023	Nov. 03, 2024
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 04, 2023	Nov. 03, 2024
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 04, 2023	Nov. 03, 2024
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 04, 2023	Nov. 03, 2024
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 04, 2023	Nov. 03, 2024
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 04, 2023	Nov. 03, 2024
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 04, 2023	Nov. 03, 2024
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 04, 2023	Nov. 03, 2024

#### Conduction Test equipment

	Cond	double rest equipment	· 0	$\sim$			
	Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
J	ູ1	843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	2	EMI Receiver	R&S	C ESR	101421	Nov. 04, 2023	Nov. 03, 2024
ſ	3	LIŚN	R&S	ENV216	102417	Nov. 04, 2023	Nov. 03, 2024
	4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 04, 2023	Nov. 03, 2024

#### Other

			0.2	
Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



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#### 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

#### 3.1.1 POWER LINE CONDUCTED EMISSION Limits

#### (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dE	BuV)	Stondard	
	Quasi-peak	Average	Standard	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC	
0.50 -5.0	56.00	46.00	FCC	
5.0 -30.0	60.00	50.00	FCC	
Alata, V 68				

Note:

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

#### The following table is the setting of the receiver

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

#### 3.1.2 TEST PROCEDURE

- a. 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.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

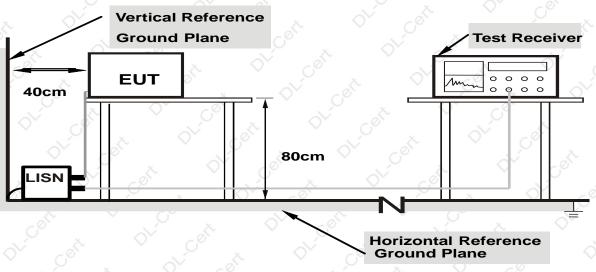
# 3.1.3 DEVIATION FROM TEST STANDARD

No deviation



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# 3.1.4 TEST SETUP



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

#### 3.1.5 EUT OPERATING CONDITIONS

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

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

#### 3.1.6 TEST RESULTS

The EUT is powered by battery, no requirements for this item.



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#### 3.2 RADIATED EMISSION MEASUREMENT 3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)				
0.009~0.490	2400/F(KHz)	300				
0.490~1.705	24000/F(KHz)	30				
1.705~30.0	30 0	30				
30~88	100	3				
88~216	150	3				
216~960	200	3 0				
Above 960	500					

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental	Field Strength of Fundamental	Field Strength of Harmonics		
Frequency	(millivolts/meter)	(microvolts/meter)		
902 - 928 MHz	50	500		
2400 - 2483.5 MHz	50	500		
5725 - 5875 MHz	50	500		
24.0 - 24.25 GHz	250	2500		

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

		Limit (dBuV/m) (at 3M)						
FREQUENCY (MHz)		PEAK		AVERAGE				
Above 1000	, Con	74	ON	- 05	54	0 X		
NL. C		0				00		

Notes:

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

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

#### Receiver setup:

.00			. / X.		
	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
- 9	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
_	Above 1GHz	Peak	1MHz	3MHz	Peak
	Above TGHZ	Peak	1MHz	10Hz	Average



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#### 3.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- g. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. ( Above 18GHz the distance is 3 meter and table is 1.5 metre).
- h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel Note:

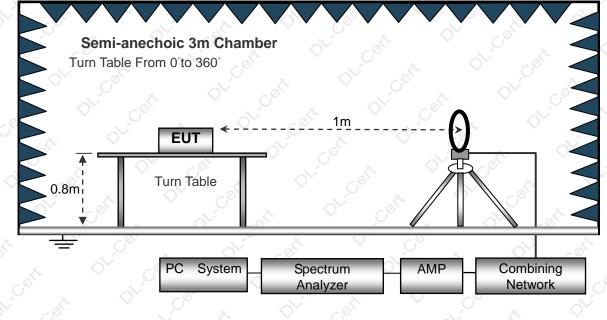
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

# 3.2.3 DEVIATION FROM TEST STANDARD

No deviation

# 3.2.4 TEST SETUP

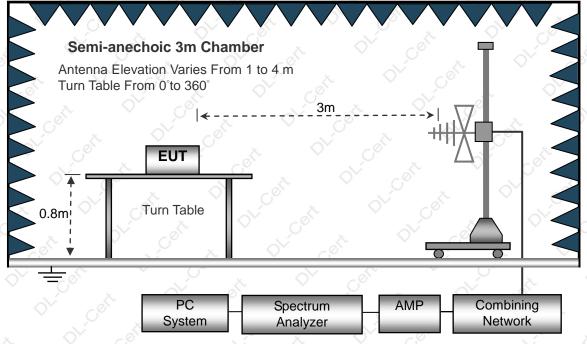
(A) Radiated Emission Test-Up Frequency Below 30MHz



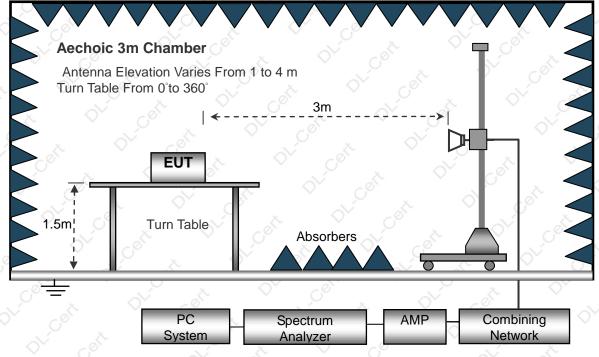


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(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



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



# 3.2.5 EUT OPERATING CONDITIONS

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



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# 3.2.6 TEST RESULTS (BETWEEN 9KHZ - 30 MHZ)

Temperature:	20°C	V cot	Relative Humidtity:	48%
Pressure:	1010 hPa		Test Voltage :	TX: DC 3V
Test Mode :	Mode 4		Polarization :	

ſ	Freq.	Reading	Limit	Margin	State
	(MHz)	(MHz) (dBuV/m)		(dB)	P/F
č.	Q <sup>1</sup> O		~~~ Ø	Ce <u>s</u>	PASS
	x - 0 <sup>1</sup>	- <sup>-</sup>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Dr - Cor	PASS

# NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported. Distance extrapolation factor =40 log (specific distance/test distance)(dB); Limit line = specific limits(dBuv) + distance extrapolation factor.



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# 3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

	$\sim$	e				0	~ -			2	· ·		0			
Temperatur	e:	<b>26</b> ℃	X		$\circ$	<u> </u>		elative Hu			54%	$\bigcirc^{\vee}$		CO'		
Pressure:		10101				N	۲	olarizatio	n :	ł	Horizon	tal	N		- di	N.
Test Voltage	е:	TX: D	C 3V	\$° _		$\sim$		X	<	$\sim$	- or		$\sim$		$\mathcal{O}^{r}$	
Fest Mode	:	Mode	4													
.0 dBuV	all a	$\sim$		Ģ	)	b.c	ar'	- 05		$\sim$	Ģ	0	5		0	Ý
											FCC Cla Margin	ss B 3 <mark>6-dB</mark>	N Rac	liated		1
								<u>+</u>								
								<b>T</b>								
									F			and between		- softwar	-	erde
Without manual	and the second	turn the			Å	1 August		Land Marine Marine	Jerrer	havenan	- Andrew Martin					
			- Wern	and the second second		- America	Vilymon all and the second second									
)																
30.000		60.00					(MHz)		3	00.00					10	00

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin	
	MHz	dBuV	dB	dBuV	dB	dB	Detector
1	43.6584	25.70	-13.29	12.41	40.00	-27.59	QP
2	49.8814	26.61	-12.84	13.77	40.00	-26.23	QP
3	59.8588	26.66	-13.61	13.05	40.00	-26.95	QP
4	104.5361	25.80	-14.54	11.26	43.50	-32.24	QP
5	266.6089	27.74	-12.71	15.03	46.00	-30.97	QP
6 *	793.3960	27.48	-2.26	25.22	46.00	-20.78	QP

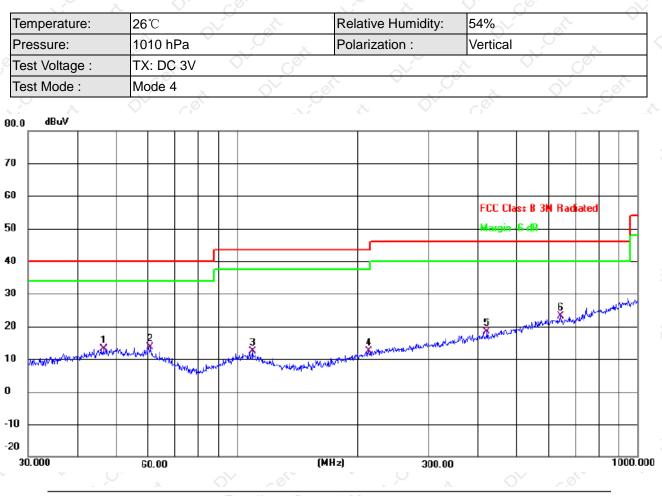
#### Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit



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	No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		ų.
Ś		MHz	dBuV	dB	dBuV	dB	dB	Detector	, Ç
	1	46.3402	25.79	-12.59	13.20	40.00	-26.80	QP	1
<	2	60.7044	27.42	-13.89	13.53	40.00	-26.47	QP	
	3	109.0286	27.37	-15.06	12.31	43.50	-31.19	QP	-
×	4	213.0151	26.72	-14.35	12.37	43.50	-31.13	QP	- 2
	5	420.5803	27.52	-9.10	18.42	46.00	-27.58	QP	3
	6 *	642.8613	28.04	-4.82	23.22	46.00	-22.78	QP	-

# Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit



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# 3.2.8 TEST RESULTS (1GHZ~25GHZ)

GFSK

Polar	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detecto
(H/V)	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Туре
	0	d'	ор 💦	eration f	requency:	2405	V of		Ģ
V	2405.00	114.15	52.16	2.78	27.41	92.18	114.00	-21.82	PK
V	2405.00	<ul> <li>104.32 </li> </ul>	52.16	2.78	27.41	82.35	94.00	-11.65	AV
V	4810.00	78.27	51.74	3.08	31.25	60.86	74.00	-13.14	PK
V	4810.00	61.23	51.74	3.08	31.25 🔇	43.82	54.00	-10.18	AV
V	16132.00	55.02	51.56	7.36	41.57	52.39	74.00	-21.61	🌮 PK
Н	2405.00	113.46	52.16	2.78	27.41	91.49	114.00	-22.51	PK
H,	2405.00	106.71	52.16	2.78	27.41	84.74	94.00	-9.26	AV
Ĥ	4810.00	76.92	51.74	3.08	31.25	59.51	74.00	-14.49	💙 РК 🤇
Н	4810.00	60.17	51.74	3.08	31.25	42.76	54.00	-11.24	AV
Н	16132.00	55.89	51.56	7.36	41.57	53.26	74.00	-20.74	PK
, Č			op	eration f	requency:2	2445	. 0	Ý cê	Č.
V	2445.00	113.92	52.11	2.82	27.47	92.10	114.00	-21.90	PK
V.	2445.00	106.09	> 52.11	2.82	<sup>©</sup> 27.47	84.27	94.00	-9.73	AV
V	4890.00	78.46	51.77	3.03	31.34	61.06	74.00	-12.94	PK 🖉
V	4890.00	61.39	51.77	3.03	31.34	🔪 43.99 🛇	54.00	-10.01	AV
V	16132.00	55.11	51.56	7.36	41.57	52.48	74.00	-21.52	PK
Н	2445.00	113.82	52.11	2.82	27.47	92.00	114.00	-22.00	PK
Н	2445.00	105.56	52.11	2.82	27.47	83.74	94.00	-10.26	AV
Ĕ,	4890.00	77.03	51.77	3.03	31.34	59.63	74.00	-14.37	PK
H	4890.00	59.70	51.77	3.03	31.34	42.30	54.00	-11.70	AV
HG	16132.00	55.64	51.56	7.36	41.57	53.01	74.00	-20.99	PK
0V	- of		ၟၜႃၜ	eration f	requency:2	2475	00	x	OV C
V	2475.00	114.18	52.23	2.86	27.44	<b>82.25</b>	114.00	-21.75	PK
V	2475.00	106.52	52.23	2.86	27.44	84.59	94.00	-9.41	AV
× V	4950.00	78.81	51.69	3.05	31.39	61.56	74.00	-12.44	PK
V	4950.00	60.80	51.69	3.05	31.39	43.55	54.00	-10.45	AV
V	16132.00	54.53	51.56 🧹	7.36	41.57	51.90	74.00	-22.10	PK
H	2475.00	113.70	52.23	2.86	27.44	91.77	114.00	-22.23	PK
Н	2475.00	105.78	52.23	2.86	27.44	83.85	94.00	-10.15	AV
ЪV	4950.00	77.82	51.69	3.05	31.39	60.57	74.00	-13.43	PK
Н	4950.00	59.96 🛇	51.69	3.05	31.39	42.71	54.00	-11.29	AV
Н	16132.00	55.05	51.56	7.36	41.57	52.42	74.00	-21.58	PK

# Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss - Pre-amplifier,

Margin= Emission Level - Limit

2. If peak below the average limit, the average emission was no test.

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



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## 3.3 RADIATED BAND EMISSION MEASUREMENT 3.3.1 TEST REQUIREMENT:

FCC Part15 C Section 15.209 and 15.205

# LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

	Limit (dBuV/m) (at 3M)				
FREQUENCY (MHz)	PEAK	AVERAGE			
Above 1000	74	54 0			

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

# 3.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

- a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the Highest channel

Note:

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

#### 3.3.3 DEVIATION FROM TEST STANDARD

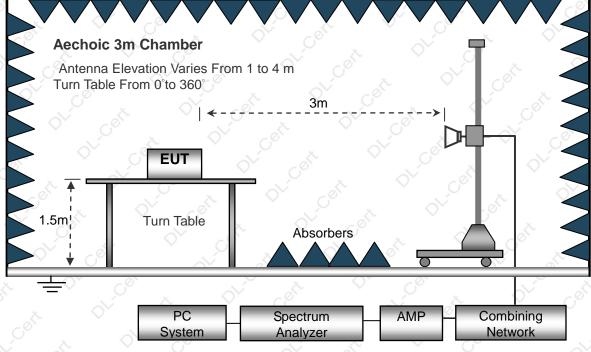
No deviation



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# 3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



# **3.3.5 EUT OPERATING CONDITIONS**

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



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# 3.3.6 TEST RESULT

#### GFSK

Polar	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	
(H/V)	(MHz)	(dBuV)	(dB)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Туре
		$\bigcirc$ <sup>*</sup>	္တ op	eration f	requency:	2405	C <sup>o</sup>		
v	2390.00	76.29	52.12	2.73	27.38	54.28	74.00	-19.72	PK
V	2390.00	65.51	52.12	2.73	27.38	43.50	54.00	-10.50	AV
V	2400.00	76.27	52.16	2.78	27.41 <	54.30	74.00	-19.70	PK
<b>V</b>	2400.00	64.65	52.16	2.78	27.41	42.68	54.00	-11.32	AV
H	2390.00	76.16	52.12	2.73	27.38	54.15	74.00	-19.85	PK
Ĥ	2390.00	65.47	52.12	2.73	27.38	43.46	54.00	-10.54	AV C
н	2400.00	75.98	52.16	2.78	27.41	54.01	74.00	-19.99	PK
Н	2400.00	65.52	52.16	2.78	27.41	43.55	54.00	-10.45	AV

Polar		Reading		Cable Loss		Emission Level (dBuV/m)	Limits	Margin (dB)	Detector Type
(H/V)				(dB)			(dBuV/m)		
)`	C <sup>°</sup>		ор	eration f	requency:	2475	N at	$\vee$	C°
V	2483.50	76.25	52.23	2.86	27.44	54.32	74.00	-19.68	PK
V	2483.50	65.94 🤇	52.23	2.86	27.44	44.01	54.00	-9.99	AV
V	2500.00	76.53	52.26	2.88	27.49	54.64	74.00	-19.36	PK
Ň.	2500.00	64.99	52.26	2.88	27.49	43.10	54.00	-10.90	AV
Н	2483.50	76.64	52.23	2.86	27.44	54.71	74.00	-19.29	PK
Η,C	2483.50	65.89	52.23	2.86	27.44	43.96	54.00	-10.04	AV
Ĥ	2500.00	76.45	52.26	2.88	27.49	54.56	74.00	-19.44	РК 🤇
н <	2500.00	65.41	52.26	2.88×	27.49	43.52	54.00	-10.48	AV

#### Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss - Pre-amplifier, Margin= Emission Level - Limit

2. If peak below the average limit, the average emission was no test.3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



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# 4. BANDWIDTH TEST

# 4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.215), Subpart C					
Section	C <sup>O</sup>	Test Item	Oh con		
15.215		Bandwidth	ON C		

# 4.1.1 TEST PROCEDURE

- 1. Set RBW = 30 kHz.
- 2. Set the video bandwidth (VBW) ≥RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

# 4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



# SPECTRUM ANALYZER

# 4.1.4 EUT OPERATION CONDITIONS

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

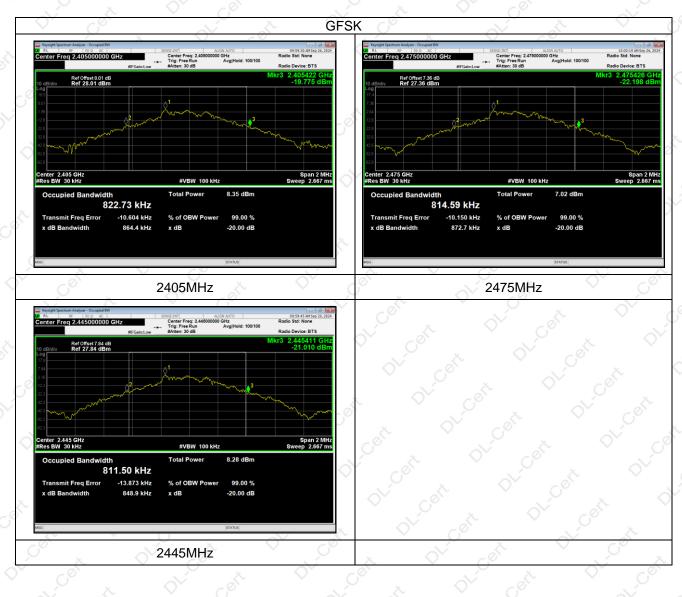


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# 4.1.5 TEST RESULTS

		$\langle \rangle^* = 0$		
Temperature:	<b>25℃</b>	Relative Humidity:	60%	Or Col
Pressure:	1012 hPa	Test Voltage :	DC 3V	d'é at
Test Mode :	TX Mode /CH01, CH13, CH25		Cor	

Ó		Frequency (MHz)	20dB Bandwidth (MHz)	Result
	ON con	2405	0.864	Pass
	GFSK	2445	0.849	Pass
X	Qr Ce	2475	0.873	Pass





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#### 5. ANTENNA REQUIREMENT

#### 5.1 STANDARD REQUIREMENT

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

## 5.2 EUT ANTENNA

The EUT antenna is internal antenna, It comply with the standard requirement.

#### 6. TEST SEUUP PHOTO

Reference to the appendix I for details.

# 7. EUT PHOTO

Reference to the appendix II for details.

\*\*\*\*\* END OF REPORT \*\*\*\*