

Report No.: CTA231102003W07

Issued for

Trackimo INC.

680 Central Ave, Cedarhurst, New York 11516, USA Product Name:

Product Name: NickWatch V1 Brand Name: Trackimo. Trac

Trackimo, Tracki, Watchinu

Model Name:

NICKW001-2

Series Model(s):

NICKW001-5, NICKW001-6, NICKW001-7, NICKW001-8, NICKW001-9, NICKW001-10

FCC ID: 2AAI6-NICKW001-2

Test Standard:

d: FCC Part 15.247

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Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

Page 2 of 58

Report No.: CTA231102003W07

TEST RESULT CERTIFICATION

		102			
Applicant's Name:	Trackimo I	NC.			
Address:	680 Centra	al Ave, Cedarhur	st, New York 1	1516, USA	
Manufacturer's Name:	Trackimo I	NC.			
Address:	680 Centra	al Ave, Cedarhur	st, New York 1	1516, USA	
Product Description					
Product Name:	NickWatch	V1			
Brand:	Trackimo,	Tracki, Watchinu			
Model Number:					
Series Model(s):	NICKW001 NICKW001	I-5, NICKW001- I-9, NICKW001-	5, NICKW001-7 10	7, NICKW001-8,	ESTIN
Test Standards	FCC Part1	5.247			
Test Procedure:	ANSI C63.	10-2013			
This device described above ha test (EUT) is in compliance with identified in the report. This report shall not be reproduce may be altered or revised by CT Date of Test	the FCC re ced except i A, personal	quirements. And	l it is applicable e written appro	e only to the test	ed sample document
Date of receipt of test item	: ;	25 Aug. 2022			
Date (s) of performance of tests.	: ;	25 Aug. 2022 ~ 3	31 Oct. 2022		
Date of Issue	: ;	31 Oct. 2022			
Test Result	n ^{NG}	Pass			
Testing Engi	neer :	6 70	ey Caro	CTAT	
		(Z	oey Cao)		
Technical Ma	anager :	Ar	ng Won		
		ASTING (A	lmy Wen)		
Authorized S	Signatory :	Ēri	e Wang	ESTING	
		(E	ric Wang)		

Report No.: CTA231102003W07

Table of Contents 1. SUMMARY OF TEST RESULTS 6 **1.1 TEST FACTORY** 7 **1.2 MEASUREMENT UNCERTAINTY** 7 **2. GENERAL INFORMATION** 8 2.1 GENERAL DESCRIPTION OF THE EUT 8 2.2 DESCRIPTION OF THE TEST MODES 10 2.3 TEST SOFTWARE AND POWER LEVEL 10 2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 11 2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS 12 2.6 EQUIPMENTS LIST 13 **3. EMC EMISSION TEST** 15 3.1 CONDUCTED EMISSION MEASUREMENT 15 **3.2 TEST PROCEDURE** 16 3.3 TEST SETUP 16 3.4 EUT OPERATING CONDITIONS 16 3.5 TEST RESULTS 17 4. RADIATED EMISSION MEASUREMENT 19 **4.1 RADIATED EMISSION LIMITS** 19 est PROCE 4.3 TEST SETUP 4.4 EUT C **4.2 TEST PROCEDURE** 21 22 22 **4.4 EUT OPERATING CONDITIONS 4.5 FIELD STRENGTH CALCULATION** 23 4.6 TEST RESULTS 24 5. CONDUCTED SPURIOUS & BAND EDGE EMISSION 30 **5.1 LIMIT** 30 **5.2 TEST PROCEDURE** 30 5.3 TEST SETUP 30 5.4 EUT OPERATION CONDITIONS 30 5.5 TEST RESULTS 30 TATESTING 6. POWER SPECTRAL DENSITY TEST 31 6.1 LIMIT 31 6.2 TEST PROCEDURE 31 6.3 TEST SETUP 31 CTA TES

Page 4 of 58

Report No.: CTA231102003W07

6.4 EUT OPERATION CONDITIONS 1 6.5 TEST RESULTS 3 7.1 LIMIT 32 7.2 TEST FORCEDURE 32 7.3 TEST SETUP 32 7.4 EUT OPERATION CONDITIONS 32 7.5 TEST RESULTS 32 8.1 LIMIT 33 8.2 TEST SETUP 33 8.1 LIMIT 33 8.2 TEST SETUP 33 8.1 LIMIT 33 8.2 TEST SETUP 33 8.1 LIMIT 33 8.2 TEST SETUP 34 8.4 EUT OPERATION CONDITIONS 34 8.5 TEST RESULTS 34 9.1 STANDARD REQUIREMENT 35 9.2 EUT ANTENNA 35 7.5 TEST RESULTS 36 1.0 LIVIT OYCLE 36 1.0 LIVIT OYCLE 36 1.0 LIVIT OYCLE 36 1.0 LINUT POWER SPECTRAL DENSITY LEVEL 36 <th>TATES</th> <th>Table of Conte</th> <th>ents</th> <th></th>	TATES	Table of Conte	ents	
6.4 EUT OPERATION CONDITIONS316.5 TEST RESULTS317. BANDWIDTH TEST327.1 LIMIT327.2 TEST PROCEDURE327.3 TEST SETUP327.4 EUT OPERATION CONDITIONS327.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.2 TEST PROCEDURE338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER324. 6DB BANDWIDTH455. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58				
7.1 LIMIT327.1 LIMIT327.2 TEST PROCEDURE327.3 TEST SETUP327.4 EUT OPERATION CONDITIONS327.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER393. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58				.31
7.1 LIMIT327.1 LIMIT327.2 TEST PROCEDURE327.3 TEST SETUP327.4 EUT OPERATION CONDITIONS327.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER393. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RESISION54APPENDIX 2- EUT TEST PHOTO58				-
7.2 TEST PROCEDURE327.3 TEST SETUP327.4 EUT OPERATION CONDITIONS327.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER424. 6DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	7. BANDW	IDTH TEST		32
7.3 TEST SETUP327.4 EUT OPERATION CONDITIONS327.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	7.1 LIMI	т		
7.4 EUT OPERATION CONDITIONS327.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	7.2 TES	T PROCEDURE		32
7.5 TEST RESULTS328. PEAK OUTPUT POWER TEST338.1 LIMIT338.1 LIMIT338.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35PPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER42460B BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED R SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	7.3 TES	ST SETUP		32
8.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	7.4 EUT	OPERATION CONDITIONS		32
8.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	7.5 TES	T RESULTS		32
8.2 TEST PROCEDURE338.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	8. PEAK O	UTPUT POWER TEST		33
8.3 TEST SETUP348.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	8.1 LIMI	T C		33
8.4 EUT OPERATION CONDITIONS348.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58				33
8.5 TEST RESULTS349. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58				
9. ANTENNA REQUIREMENT359.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58				-
9.1 STANDARD REQUIREMENT359.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	8.5 TES	ST RESULTS		34
9.2 EUT ANTENNA35APPENDIX 1-TEST DATA361. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	9. ANTENN			35
1. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	9.1 STA	NDARD REQUIREMENT		35
1. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	9.2 EUT	ANTENNA		35
1. DUTY CYCLE362. MAXIMUM AVERAGE CONDUCTED OUTPUT POWER393. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	APPENDIX	1-TEST DATA		36
3. MAXIMUM PEAK CONDUCTED OUTPUT POWER4246DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	1. DUTY CY	YCLE		36
46DB BANDWIDTH456. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	2. MAXIMU	IM AVERAGE CONDUCTED OUT	PUT POWER	39
6. MAXIMUM POWER SPECTRAL DENSITY LEVEL487. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	3. MAXIMU	IM PEAK CONDUCTED OUTPUT	POWER	42
7. BAND EDGE518. CONDUCTED RF SPURIOUS EMISSION54APPENDIX 2- EUT TEST PHOTO58	46DB BA	NDWIDTH		45
8. CONDUCTED RF SPURIOUS EMISSION 54 APPENDIX 2- EUT TEST PHOTO 58	6. MAXIMU	IM POWER SPECTRAL DENSITY	LEVEL STING	48
8. CONDUCTED RF SPURIOUS EMISSION 54 APPENDIX 2- EUT TEST PHOTO 58	7. BAND E	DGE		51 NG
ATTENDIATE LOT TEOT THOTO	8. CONDUC	CTED RF SPURIOUS EMISSION		54
STING	APPENDIX	2- EUT TEST PHOTO		58

Page 5 of 58

Report No.: CTA231102003W07

Revision History

ev.	Issue Date	Report No.	Effect Page	Contents
00	31 Oct. 2022	CTA231102003W07	ALL	Initial Issue
		0	C C	100

Report No.: CTA231102003W07

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: KDB 558074 D01 15.247 Meas Guidance v05r02.

Standard Section	Test Item	Judgment	Remark
15.207	PASS	- 6	
15.247 (a)(2)	PASS		
15.247 (b)(3)	Output Power	PASS	
15.209	Radiated Spurious Emission	PASS	
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	TEST
15.247 (e)	Power Spectral Density	PASS	CIP 1
15.205	Restricted bands of operation	PASS	
Part 15.247(d)/ Part 15.209(a)	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	
	st is not applicable in this Test Report. ording to ANSI C63.10-2013.	TATESTIN	6

NOTE:

CTATESTIN

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2013.

Page 7 of 58

Report No.: CTA231102003W07

1.1 TEST FACTORY

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an JCI, District, Shenzhen, China

FCC test Firm Registration Number: 517856

IC test Firm Registration Number: 27890

A2LA Certificate No.: 6534.01

IC CAB ID: CN0127

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

Test	Range	Measurement Uncertainty	TING		
Radiated Emission	30~1000MHz	4.06 dB	TED		
Radiated Emission	1~18GHz	5.14 dB			
Radiated Emission	18-40GHz	5.38 dB			
Conducted Disturbance	0.15~30MHz	2.14 dB			
Output Peak power	30MHz~18GHz	0.55 dB			
Power spectral density	/	0.57 dB			
Spectrum bandwidth		1.1%			
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB			
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB			
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB]		

Report No.: CTA231102003W07

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

	189			
Product Name	NickWatch V1	STING		
Brand	Trackimo, Tracki, Watch	inucte		
Model Number	NICKW001-2			
Series Model(s)	NICKW001-5, NICKW00 NICKW001-8, NICKW00			
Model Difference	The difference only in the model name and brand name.			
	The EUT is a NickWatch	1 V1		
	Operation Frequency: 240	2~2480 MHz		
	Modulation Type: GFS	SK		
	Radio Technology: BLE	TATES		
Product Description	Bluetooth	Support 1M PHY)		
	Configuration:	Support IM PHT)		
	Number Of Channel: 40			
	Antenna Type: Buil	t-in LDS		
	Antenna Gain (dBi) -1.2	dBi		
Channel List	Please refer to the Note	3. ESTING		
Ratings	DC 5V 500mA	35\/		
Battery	Rated Voltage: 3.85V Charge Limit Voltage: 4.35V Capacity: 460mAh			
Hardware version number	UW02 AUO V0.3			
Software version number	0.2			
Connecting I/O Port(s)	Please refer to the Note	1.		
Note:	ATA			

Note:

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

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

Page 9 of 58

Report No.: CTA231102003W07

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

Page 10 of 58

2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions

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

	Worst Mode	Description	Data/Modulation	205
	Mode 1	TX CH00(2402MHz)	1 Mbps/GFSK	CTATE
CTING	Mode 2	TX CH19(2440MHz)	1 Mbps/GFSK	
CTA TES.	Mode 3	TX CH39(2480MHz)	1 Mbps/GFSK	
	Note:	51	3.91	

Note:

(1) We tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/ 60Hz is CTA TESTING shown in the report.

(2) The battery is fully-charged during the radiated and RF conducted test.

For AC Conducted Emission

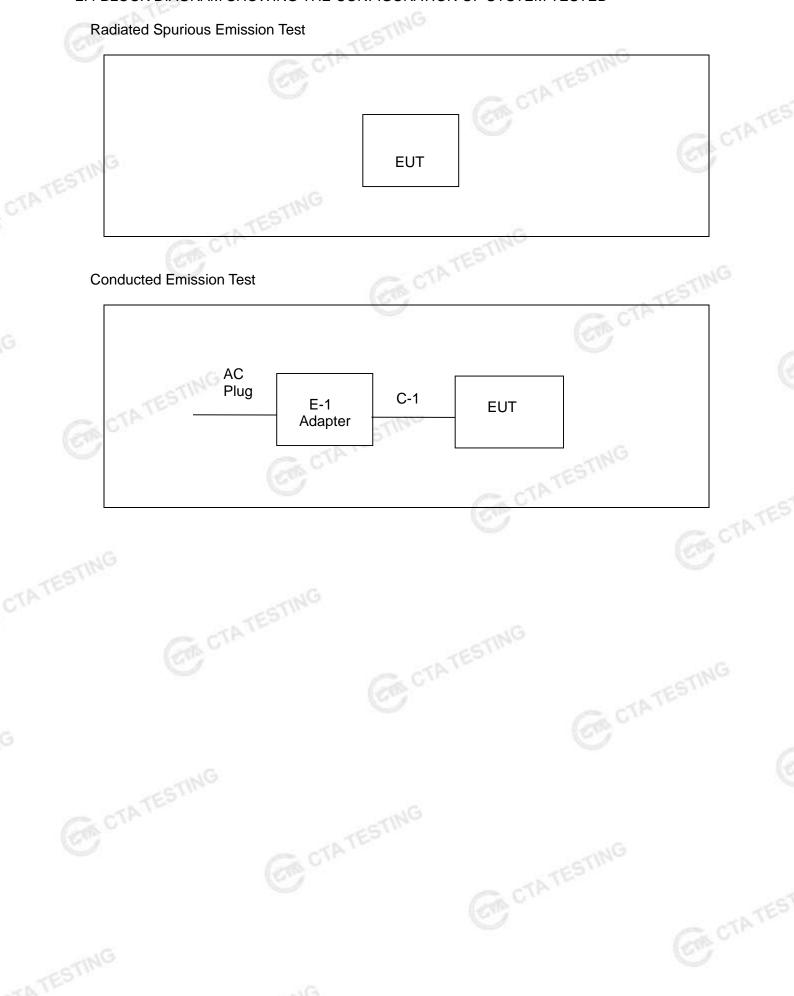
	Test Case
AC Conducted Emission	Mode 4 : Keeping BT TX

2.3 TEST SOFTWARE AND POWER LEVEL

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

RF Function	Туре	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing	
BLE	BLE	GFSK	-1.2	Default	Pandora	TATES
NG					G	C/m

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



Report No.: CTA231102003W07 Page 12 of 58

2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	lecessary accessories Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A
NG					C
		TING			
	TAT	EST		GING	
<u> </u>	614		Support units	3711-	

	U.S.	•	Support units		- Sie
Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-1	Adapter	HUAWEI	HW-050450C00	N/A	N/A
C-1	USB Cable	N/A	N/A	100cm	NO
	STING				
10	ATES		TING		
9		- 51	TES		MAG
Note	э:				

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

Page 13 of 58

Report No.: CTA231102003W07

2.6 EQUIPMENTS LIST

Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	CTA-308	2023/08/02	2024/08/01
LISN	R&S	ENV216	CTA-314	2023/08/02	2024/08/01
EMI Test Receiver	R&S	ESPI	CTA-307	2023/08/02	2024/08/01
EMI Test Receiver	R&S	ESCI	CTA-306	2023/08/02	2024/08/01
Spectrum Analyzer	Agilent	N9020A	CTA-301	2023/08/02	2024/08/01
Spectrum Analyzer	R&S	FSP	CTA-337	2023/08/02	2024/08/01
Vector Signal generator	Agilent	N5182A	CTA-305	2023/08/02	2024/08/01
Analog Signal Generator	R&S	SML03	CTA-304	2023/08/02	2024/08/01
WIDEBAND RADIO COMMUNICATIO N TESTER	CMW500	R&S	CTA-302	2023/08/02	2024/08/01
Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2023/08/02	2024/08/01
Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2024/10/16
Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2024/10/12
Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2024/10/16
Horn Antenna	Beijing Hangwei Dayang	OBH100400	CTA-336	2021/08/07	2024/08/06
Amplifier	Schwarzbeck	BBV 9745	CTA-312	2023/08/02	2024/08/01
Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2023/08/02	2024/08/01
Directional coupler	NARDA	4226-10	CTA-303	2023/08/02	2024/08/01
High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2023/08/02	2024/08/01
High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2023/08/02	2024/08/01
Automated filter bank	Tonscend	JS0806-F	CTA-404	2023/08/02	2024/08/01
Power Sensor	Agilent	U2021XA	CTA-405	2023/08/02	2024/08/01
Amplifier	Schwarzbeck	BBV9719	CTA-406	2023/08/02	2024/08/01

Page	14	of	58
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Report No.: CTA231102003W07

2	Test Equipment	Manufacturer	Model No.	Version number	Calibration Date	Calibration Due Date
0	EMI Test Software	Tonscend	TS®JS32-RE	5.0.0.2	N/A	N/A
	EMI Test Software	Tonscend	TS®JS32-CE	5.0.0.1	N/A	N/A
	RF Test Software	Tonscend	TS®JS1120-3	3.1.65	N/A	N/A
TATES	RF Test Software	Tonscend	TS®JS1120	3.1.46	N/A	N/A
	G	TATESTIN	Ge CTA	resting	GGT	TESTING

Page 15 of 58

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

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

	61	P. C.	
	Conducted Emiss	sion limit (dBuV)	TE
	Quasi-peak	Average	CIM
0.15 -0.5	66 - 56 *	56 - 46 *	
0.50 -5.0	56.00	46.00	-
5.0 -30.0	60.00	50.00	-
	0.50 -5.0	Conducted Emiss Quasi-peak 0.15 -0.5 66 - 56 * 0.50 -5.0 56.00	Conducted Emission limit (dBuV) Quasi-peak Average 0.15 -0.5 66 - 56 * 56 - 46 * 0.50 -5.0 56.00 46.00

Note:

CTATESTI

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

The following table is the setting of the receiver

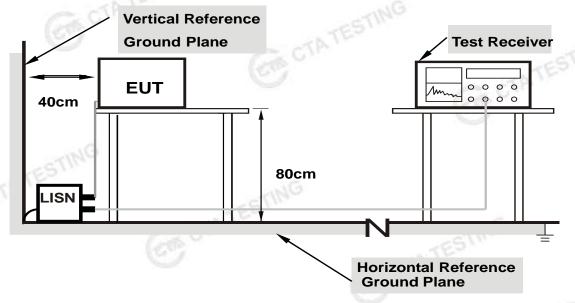
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz
· · · · ·	CO.

Page 16 of 58

3.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

3.4 EUT OPERATING CONDITIONS

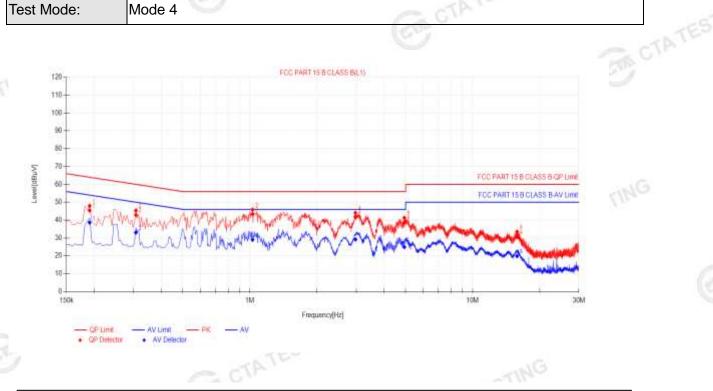
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

Page 17 of 58

Report No.: CTA231102003W07

3.5 TEST RESULTS

		Co.	
Temperature:	26.8(C)	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	STING
Test Mode:	Mode 4	- CTAT	



Fina	l Data Lis	st									
NO.	Freq. [MHz]	Factor [dB]	QP Reading[d <u>R</u> JV	QP Value [dBuV]	QP Limit [dBuV]	QP Margin [dB]	AV Reading [dBuV]	AV Value [dBuV]	AV Limit [dBuV]	AV Margin [dB]	Verdict
1	0.1905	10.50	34.93	45.43	64.01	18.58	28.15	38.65	54.01	15.36	PASS
2	0.3075	10.50	32.36	42.86	60.04	17.18	22.60	33.10	50.04	16.94	PASS
3	1.0275	10.50	32.89	43.39	56.00	12.61	18.52	29.02	46.00	16.98	PASS
4	2.976	10.50	31.35	41.85	56.00	14.15	18.71	29.21	46.00	16.79	PASS
5	4.9335	10.50	27.95	38.45	56.00	17.55	14.47	24.97	46.00	21.03	PASS
6	15.8325	10.50	20.08	30.58	60.00	29.42	9.36	19.86	50.00	30.14	PASS

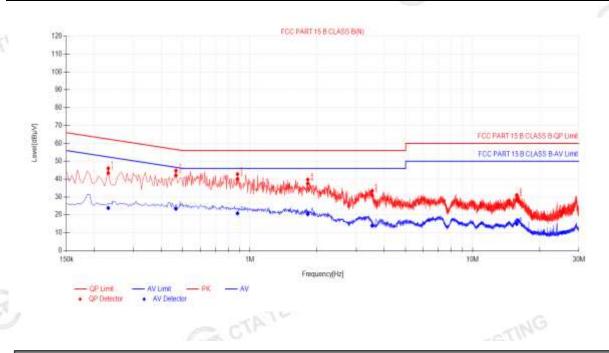
Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)

- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin(dB) = QP Limit (dB μ V) QP Value (dB μ V)
- 4). AVMargin(dB) = AV Limit (dB μ V) AV Value (dB μ V)

Page 18 of 58

CTING

		Page 18 of 58 R	eport No.: CTA231102003W07
CTATEST			
Temperature:	26.2(C)	Relative Humidity:	54%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 4	(20)	



NO.	Freq. [MHz]	Factor (dB)	QP Reading[d <u>R</u> W	QP Value [dBuV]	QP Limit [dBuV]	QP Margin [dB]	AV Reading [dBuV]	AV Value [dBuV]	AV Limit [dBuV]	AV Margin [dB]	Verdict	ć
1	0.231	10.50	32.90	43.40	62.41	19.01	13.32	23.82	52.41	28.59	PASS]
2	0.465	10.50	31.60	42.10	56.60	14.50	12.90	23.40	46.60	23.20	PASS	
3	0.879	10.50	29.62	40.12	56.00	15.88	10.32	20.82	46.00	25.18	PASS]
4	1.8195	10.50	27.03	37.53	56.00	18.47	9.88	20.38	46.00	25.62	PASS]
5	3.5385	10.50	20.39	30.89	56.00	25.11	3.38	13.88	46.00	32.12	PASS	
6	15.7785	10.50	18.26	28.76	60.00	31.24	4.42	14.92	50.00	35.08	PASS	
2). Fac 3). QP).QP Value ctor (dB)=ii Margin(dB Margin(dB)	nsertion) = QP L	loss of L _imit (dB	.ISN (dB µV) - QF) + Cabl P Value (e loss (c dBµV)						

- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin(dB) = QP Limit (dB μ V) QP Value (dB μ V)
- 4). AVMargin(dB) = AV Limit (dBµV) AV Value (dBµV)

4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (Frequency Range 9kHz-1000MHz)

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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

Notes:

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

(2) The tighter limit applies at the band edges.

^с п	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
_		, <i>,</i>	. ,	, ,
⊢	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
⊢	0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
F	2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
	4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
L	4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
L	4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
	6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
	6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
	6.31175-6.31225	123-138	2200-2300	14.47-14.5
	8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
	8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
-	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
10	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
1	12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
	12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
	12.57675-12.57725	322-335.4	3600-4400	Above 38.6
⊢	13.36-13.41		(and a	Ge

Page 20 of 58

Report No.: CTA231102003W07

For	Radiated	Emission
гог	Radiated	Emission

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

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

	band)		
6	- C1P	TING	
6	Spectrum Parameter	Setting	
	Attenuation	Auto	
	Detector	Peak/AV	
	Start Frequency	1000 MHz(Peak/AV)	TATE
	Stop Frequency	10th carrier hamonic(Peak/AV)	Gos Chi
-01	RB / VB (emission in restricted	1 MHz / 3 MHz(Peak)	0
TATES	band)	1 MHz/1/T MHz(AVG)	
F	or Restricted band		

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

Page 21 of 58

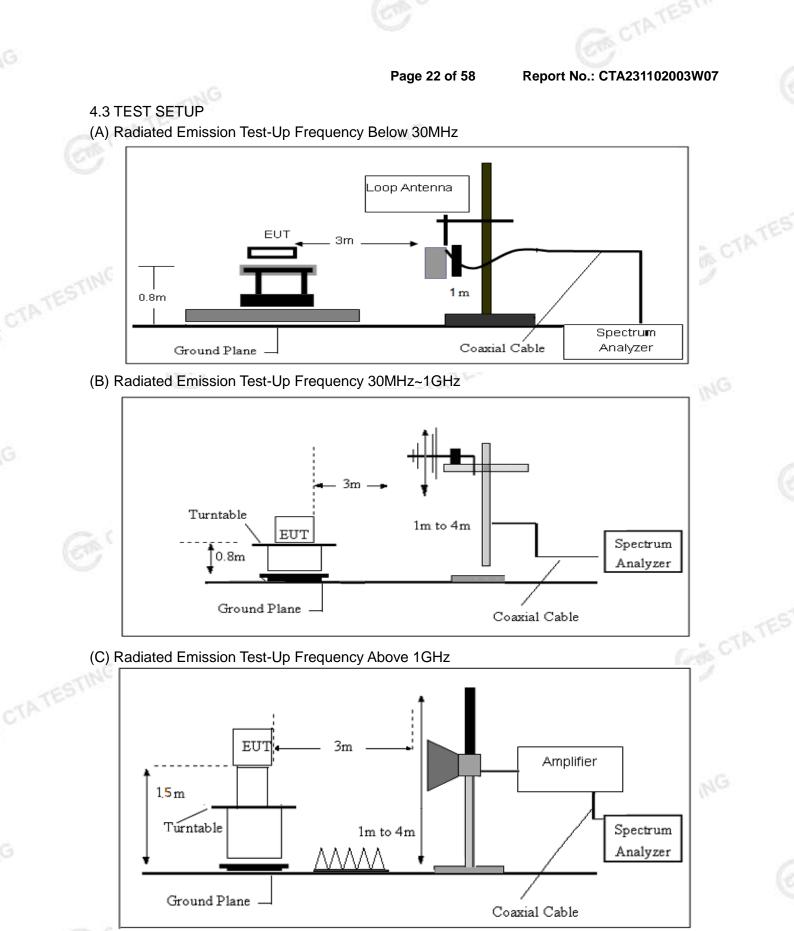
Report No.: CTA231102003W07

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2 TEST PROCEDURE

- a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item -EUT Test Photos. Note:

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



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

Page 23 of 58

4.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic , eac equation with a sample calculation is as follows:

FS = RA + AF + CL - AGWhere

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1
Factor=AF+CL-AG		(21				TESI

Page 24 of 58

Report No.: CTA231102003W07



(Between 9KHz – 30 MHz)	
-------------------------	--

(Between 9KHz	- 30	MHz)					
Temperature:	23.	1(C)	Relative	Humidtity:	60%F	RH	
Test Voltage:	DC	3.85V	Polarizat	ion:	- 20 M		
Test Mode:	ΤX	Mode		C CIM			
				64			
Freq.		Reading	Limit	Margin		State	185

	Freq.	Reading	Limit	Margin	State
4	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
		ING			PASS
		TEST			PASS
- е:	Good			ESTING	

Note:

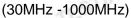
CTA TESTING The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

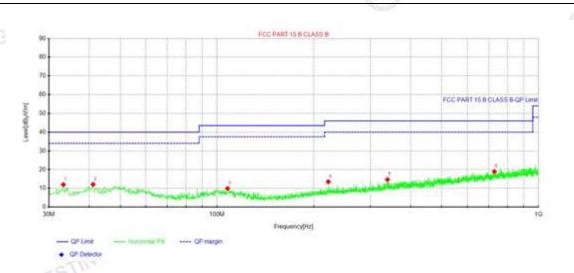
Limit line = specific limits(dBuv) + distance extrapolation factor.

Page 25 of 58

Report No.: CTA231102003W07



Test Voltage: DC 3.85V Phase: Horizontal Test Mode: Mode 1/2/3 (Mode 1 worst mode) Horizontal	Temperature:	23.1(C)	Relative Humidity:	60%RH	
	Test Voltage:	DC 3.85V	Phase:	Horizontal	
	Test Mode:	Mode 1/2/3 (Mode 1 wor	st mode)	ATCO	
			63		-
10 T	NG WI	ro	C PART 15 B CLASS B		



Suspe	ected Data	List							
NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity
NO.	[MHz]	[dBuV]	[dBuV/m]	[dB/m]	[dBuV/m]	[dB]	[cm]	[°]	Folding
1	33.2738	30.14	11.98	-18.16	40.00	28.02	100	43	Horizontal
2	41.155	29.09	12.10	-16.99	40.00	27.90	100	197	Horizontal
3	107.842	28.64	9.90	-18.74	43.50	33.60	100	115	Horizontal
4	221.817	32.29	13.54	-18.75	46.00	32.46	100	3	Horizontal
5	338.945	31.00	14.66	-16.34	46.00	31.34	100	10	Horizontal
6	728.885	30.12	18.96	-11.16	46.00	27.04	100	26	Horizontal

CTATESTING Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)

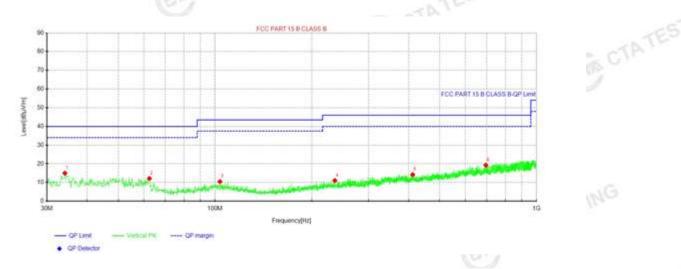
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB) CTA TESTING

3). Margin(dB) = Limit (dB μ V/m) - Level (dB μ V/m)

Page 26 of 58

Report No.: CTA231102003W07

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 3.85V	Phase:	Vertical
Test Mode:	Mode 1/2/3 (Mode 1 worst mo	ode)	STING



	Suspe	ected Data	List								10
	NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity	
	NU.	[MHz]	[dBuV]	[dBuV/m]	[dB/m]	[dBuV/m]	[dB]	[cm]	[°]	Polanty	
	1	34.1225	33.01	15.00	-18.01	40.00	25.00	100	3	Vertical	
	2	62.495	31.02	12.14	-18.88	40.00	27.86	100	350	Vertical	•
	3	103.598	29.00	10.46	-18.54	43.50	33.04	100	334	Vertical	
	4	235.882	29.37	11.02	-18.35	46.00	34.98	100	334	Vertical	•
	5	411.816	29.62	14.18	-15.44	46.00	31.82	100	90	Vertical	•
	6	695.541	31.01	19.24	-11.77	46.00	26.76	100	318	Vertical	
							9			Gen	TATES
): í).Lev	el (dBµV/	′m)= Readi	ng (dBµV) [,]	+ Factor	(dB/m)					
2	. Fact	tor(dB/m)	=Antenna I	actor (dB	/m) + Ca	able loss (dE	B) - Pre Am	nplifier ga	in (dB)		
2	Mor	, ain(dD) _	Limit (dBu	$\frac{1}{2}$		(/m)			. /		

Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)

3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m) .m)

Page 27 of 58

212

Report No.: CTA231102003W07

(1GHz-25GHz) Spurious emission Requirements

					GFSK	L				
ency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
lz)	(dBµV)	(dB)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
			150	Low Cl	nannel (GFSK/2	2402 MHz)	- 31	27 A		
.85	62.27	44.70	6.70	28.20	-9.80	52.47	74.00	-21.53	PK	Vertical
.85	51.73	44.70	6.70	28.20	-9.80	41.93	54.00	-12.07	AV	Vertical
.66	61.66	44.70	6.70	28.20	-9.80	51.86	74.00	-22.14	PK	Horizonta
.66	51.23	44.70	6.70	28.20	-9.80	41.43	54.00	-12.57	AV	Horizonta
.29	58.90	44.20	9.04	31.60	-3.56	55.34	74.00	-18.66	PK	Vertical
.29	49.50	44.20	9.04	31.60	-3.56	45.94	54.00	-8.06	AV	Vertical
.35	59.59	44.20	9.04	31.60	-3.56	56.03	74.00	-17.97	PK	Horizonta
.35	49.69	44.20	9.04	31.60	-3.56	46.13	54.00	-7.87	AV	Horizonta
9.78	49.28	44.20	9.86	32.00	-2.34	46.94	74.00	-27.06	PK	Vertical
9.78	39.19	44.20	9.86	32.00	-2.34	36.84	54.00	-17.16	AV	Vertical
9.63	48.49	44.20	9.86	32.00	-2.34	46.15	74.00	-27.85	PK	Horizonta
9.63	38.27	44.20	9.86	32.00	-2.34	35.92	54.00	-18.08	AV	Horizonta
5.85	54.16	43.50	11.40	35.50	3.40	57.56	74.00	-16.44	PK	Vertical
5.85	43.76	43.50	11.40	35.50	3.40	47.16	54.00	-6.84	AV	Vertical
5.79	54.38	43.50	11.40	35.50	3.40	57.78	74.00	-16.22	PK	Horizonta
5.79	44.95	43.50	11.40	35.50		48.35	54.00	-5.65	AV	Horizonta
		ı						1000		
3.11	60.92	44.70	6.70	28.20	-9.80	51.12	74.00	-22.88	PK	Vertical
3.11	51.30	44.70	6.70	28.20	-9.80	41.50	54.00	-12.50	AV	Vertical
8.08	61.21	44.70	6.70	28.20	-9.80	51.41	74.00	-22.59	PK	Horizonta
8.08					-9.80			-13.58		Horizonta
).13	59.29	44.20	9.04	31.60	-3.56	55.73	74.00	-18.27	PK	Vertical
).13	50.01	44.20	9.04	31.60	-3.56	46.45	54.00	-7.55	AV	Vertical
0.13	58.89	44.20	9.04	31.60	-3.56	55.33	74.00	-18.67	PK	Horizonta
).13	50.56	44.20	9.04			47.00			AV	Horizonta
.25	49.20	44.20	9.86	32.00	-2.34	46.86	74.00	-27.14	PK	Vertical
.25	39.93	44.20	9.86	32.00	-2.34	37.59	54.00	-16.41	AV	Vertical
.39	48.04	44.20	9.86	32.00	-2.34	45.70	74.00	-28.30	PK	Horizonta
6.91	38.72		9.86			36.38		-17.62	AV	Horizonta
.85			11.40					-16.09	PK	Vertical
).85	44.39	43.50	11.40	35.50	3.40	47.79	54.00	-6.21	AV	Vertical
0.46	54.91	43.50	11.40	35.50	3.40	58.31	74.00	-15.69	PK	Horizonta
0.46	11 19	43.50	11.40	25 50	3.40	47.88	54.00	-6.12	AV	Horizonta
	.85 .85 .66 .29 .35 .35 .78 .63 .63 .63 .63 .63 .63 .79 .79 .11 .11 .08 .13 .13 .13 .13 .13 .91 .85 .85 .39 .91 .85 .46	.85 62.27 .85 51.73 .66 61.66 .66 51.23 .29 58.90 .29 49.50 .35 59.59 .35 49.69 .78 49.28 .78 39.19 .63 48.49 .63 38.27 .85 54.16 .85 44.95 .79 54.38 .79 54.38 .79 54.38 .79 54.38 .79 54.38 .79 54.38 .79 54.38 .79 54.38 .79 54.38 .79 44.95 .11 50.50 .13 50.22 .13 50.56 .25 49.20 .25 39.93 .39 48.04 .91 38.72 .85 <td>.85$62.27$$44.70$.85$51.73$$44.70$.66$61.66$$44.70$.66$51.23$$44.70$.29$58.90$$44.20$.29$49.50$$44.20$.35$59.59$$44.20$.35$49.69$$44.20$.35$49.69$$44.20$.78$49.28$$44.20$.78$49.28$$44.20$.63$48.49$$44.20$.63$48.49$$44.20$.63$38.27$$44.20$.63$38.27$$44.20$.85$54.16$$43.50$.79$54.38$$43.50$.79$54.38$$43.50$.79$44.95$$43.50$.79$44.95$$43.50$.11$60.92$$44.70$.11$51.30$$44.70$.08$61.21$$44.70$.13$59.29$$44.20$.13$50.56$$44.20$.13$50.56$$44.20$.25$49.20$$44.20$.25$39.93$$44.20$.39$48.04$$44.20$.91$38.72$$44.20$.85$54.51$$43.50$.85$44.39$$43.50$</td> 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Cl.85$62.27$$44.70$$6.70$$28.20$.85$51.73$$44.70$$6.70$$28.20$.66$61.66$$44.70$$6.70$$28.20$.29$58.90$$44.20$$9.04$$31.60$.29$49.50$$44.20$$9.04$$31.60$.35$59.59$$44.20$$9.04$$31.60$.35$49.69$$44.20$$9.04$$31.60$.35$49.69$$44.20$$9.04$$31.60$.78$49.28$$44.20$$9.86$$32.00$.63$48.49$$44.20$$9.86$$32.00$.63$38.27$$44.20$$9.86$$32.00$.63$38.27$$44.20$$9.86$$32.00$.85$54.16$$43.50$$11.40$$35.50$.79$54.38$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.50$.79$44.95$$43.50$$11.40$$35.0$.11$51.30$$44.70$$6.70$$28.20$.13$59.29$$44.20$$9.04$$31.60$.13$50.56$$44.20$$9.04$$31.60$</td> <td>Low Channel (GFSK/).$85$$62.27$$44.70$$6.70$$28.20$$-9.80$$85$$51.73$$44.70$$6.70$$28.20$$-9.80$$86$$61.66$$44.70$$6.70$$28.20$$-9.80$$86$$51.23$$44.70$$6.70$$28.20$$-9.80$$29$$58.90$$44.20$$9.04$$31.60$$-3.56$$29$$49.50$$44.20$$9.04$$31.60$$-3.56$$35$$49.69$$44.20$$9.04$$31.60$$-3.56$$35$$49.69$$44.20$$9.86$$32.00$$-2.34$$78$$49.28$$44.20$$9.86$$32.00$$-2.34$$63$$48.49$$44.20$$9.86$$32.00$$-2.34$$63$$48.77$$44.20$$9.86$$32.00$$-2.34$$63$$43.76$$43.50$$11.40$$35.50$$3.40$$79$$54.38$$43.50$$11.40$$35.50$$3.40$$79$$44.95$$43.50$$11.40$$35.50$$3.40$$79$$44.95$$43.50$$11.40$$35.50$$3.40$$79$$44.95$$43.50$$11.40$$35.50$$3.40$$79$$44.95$$43.50$$11.40$$35.50$$3.40$$79$$44.95$$43.50$$11.40$$35.50$$3.40$$79$$44.95$$43.50$$11.40$$35.6$$32.00$$-2.34$$79$$44.95$$43.50$$11.40$<td>Low Channel (GFSK/2402 MHz)$85$$62.27$$44.70$$6.70$$28.20$$-9.80$$52.47$$85$$51.73$$44.70$$6.70$$28.20$$-9.80$$41.93$$66$$61.66$$44.70$$6.70$$28.20$$-9.80$$41.33$$29$$58.90$$44.20$$9.04$$31.60$$-3.56$$55.34$$29$$49.50$$44.20$$9.04$$31.60$$-3.56$$56.03$$35$$59.59$$44.20$$9.04$$31.60$$-3.56$$56.03$$35$$49.69$$44.20$$9.04$$31.60$$-3.56$$46.13$$78$$49.28$$44.20$$9.86$$32.00$$-2.34$$46.94$$78$$39.19$$44.20$$9.86$$32.00$$-2.34$$36.84$$63$$48.49$$44.20$$9.86$$32.00$$-2.34$$35.92$$85$$54.16$$43.50$$11.40$$35.50$$3.40$$57.76$$85$$43.76$$43.50$$11.40$$35.50$$3.40$$47.16$$79$$54.38$$43.50$$11.40$$35.50$$3.40$$48.35$Middle Channel (GFSK/2440 MHz)$.11$$60.92$$44.70$$6.70$$28.20$$-9.80$$51.12$$.11$$51.30$$44.70$$6.70$$28.20$$-9.80$$51.12$$.11$$51.30$$44.70$$6.70$$28.20$$-9.80$$51.12$$.11$$50.22$$44.70$$6.$</td><td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 86 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 35 59.59 44.20 9.04 31.60 -3.56 56.03 74.00 35 49.69 44.20 9.04 31.60 -3.56 46.94 74.00 7.8 49.28 44.20 9.86 32.00 -2.34 46.15 74.00 .63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 .63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00<td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 66 61.66 44.70 6.70 28.20 -9.80 51.86 74.00 -22.14 66 51.23 44.70 6.70 28.20 -9.80 51.86 74.00 -18.66 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 -8.06 35 49.95 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 46.13 54.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 35.92 54.00 -18.08 85 54.16 43.50 11.40 35.50 3.40 57.56 74.00 <t< td=""><td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 PK 86 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 AV 66 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 55.34 74.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 AV 35 59.59 44.20 9.04 31.60 -3.56 46.13 54.00 -7.87 AV 78 39.19 44.20 9.86 32.00 -2.34 46.94 74.00 -27.85 PK 63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 -16.44 PK 85 <</td></t<></td></td></td>	.85 62.27 44.70 .85 51.73 44.70 .66 61.66 44.70 .66 51.23 44.70 .29 58.90 44.20 .29 49.50 44.20 .35 59.59 44.20 .35 49.69 44.20 .35 49.69 44.20 .78 49.28 44.20 .78 49.28 44.20 .63 48.49 44.20 .63 48.49 44.20 .63 38.27 44.20 .63 38.27 44.20 .85 54.16 43.50 .79 54.38 43.50 .79 54.38 43.50 .79 44.95 43.50 .79 44.95 43.50 .11 60.92 44.70 .11 51.30 44.70 .08 61.21 44.70 .13 59.29 44.20 .13 50.56 44.20 .13 50.56 44.20 .25 49.20 44.20 .25 39.93 44.20 .39 48.04 44.20 .91 38.72 44.20 .85 54.51 43.50 .85 44.39 43.50	.85 62.27 44.70 6.70 .85 51.73 44.70 6.70 .66 61.66 44.70 6.70 .29 58.90 44.20 9.04 .29 49.50 44.20 9.04 .35 59.59 44.20 9.04 .35 59.59 44.20 9.04 .35 49.69 44.20 9.04 .35 49.69 44.20 9.04 .35 49.69 44.20 9.86 .78 39.19 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .63 38.27 44.20 9.86 .79 54.38 43.50 11.40 .79 54.38 43.50 11.40 .79 44.95 43.50 11.40 .79 44.95 43.50 11.40 .71 6.70 6.70 .13 59.29 44.20 9.04 .13 50.56 44.20 9.04 .13 50.56 44.20 9.86 .25 39.93 44.20 9.86 .25 39.93 44.20 9.86 .3	Low Cl.85 62.27 44.70 6.70 28.20 .85 51.73 44.70 6.70 28.20 .66 61.66 44.70 6.70 28.20 .29 58.90 44.20 9.04 31.60 .29 49.50 44.20 9.04 31.60 .35 59.59 44.20 9.04 31.60 .35 49.69 44.20 9.04 31.60 .35 49.69 44.20 9.04 31.60 .78 49.28 44.20 9.86 32.00 .63 48.49 44.20 9.86 32.00 .63 38.27 44.20 9.86 32.00 .63 38.27 44.20 9.86 32.00 .85 54.16 43.50 11.40 35.50 .79 54.38 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.50 .79 44.95 43.50 11.40 35.0 .11 51.30 44.70 6.70 28.20 .13 59.29 44.20 9.04 31.60 .13 50.56 44.20 9.04 31.60	Low Channel (GFSK/). 85 62.27 44.70 6.70 28.20 -9.80 85 51.73 44.70 6.70 28.20 -9.80 86 61.66 44.70 6.70 28.20 -9.80 86 51.23 44.70 6.70 28.20 -9.80 29 58.90 44.20 9.04 31.60 -3.56 29 49.50 44.20 9.04 31.60 -3.56 35 49.69 44.20 9.04 31.60 -3.56 35 49.69 44.20 9.86 32.00 -2.34 78 49.28 44.20 9.86 32.00 -2.34 63 48.49 44.20 9.86 32.00 -2.34 63 48.77 44.20 9.86 32.00 -2.34 63 43.76 43.50 11.40 35.50 3.40 79 54.38 43.50 11.40 35.50 3.40 79 44.95 43.50 11.40 35.50 3.40 79 44.95 43.50 11.40 35.50 3.40 79 44.95 43.50 11.40 35.50 3.40 79 44.95 43.50 11.40 35.50 3.40 79 44.95 43.50 11.40 35.50 3.40 79 44.95 43.50 11.40 35.6 32.00 -2.34 79 44.95 43.50 11.40 <td>Low Channel (GFSK/2402 MHz)$85$$62.27$$44.70$$6.70$$28.20$$-9.80$$52.47$$85$$51.73$$44.70$$6.70$$28.20$$-9.80$$41.93$$66$$61.66$$44.70$$6.70$$28.20$$-9.80$$41.33$$29$$58.90$$44.20$$9.04$$31.60$$-3.56$$55.34$$29$$49.50$$44.20$$9.04$$31.60$$-3.56$$56.03$$35$$59.59$$44.20$$9.04$$31.60$$-3.56$$56.03$$35$$49.69$$44.20$$9.04$$31.60$$-3.56$$46.13$$78$$49.28$$44.20$$9.86$$32.00$$-2.34$$46.94$$78$$39.19$$44.20$$9.86$$32.00$$-2.34$$36.84$$63$$48.49$$44.20$$9.86$$32.00$$-2.34$$35.92$$85$$54.16$$43.50$$11.40$$35.50$$3.40$$57.76$$85$$43.76$$43.50$$11.40$$35.50$$3.40$$47.16$$79$$54.38$$43.50$$11.40$$35.50$$3.40$$48.35$Middle Channel (GFSK/2440 MHz)$.11$$60.92$$44.70$$6.70$$28.20$$-9.80$$51.12$$.11$$51.30$$44.70$$6.70$$28.20$$-9.80$$51.12$$.11$$51.30$$44.70$$6.70$$28.20$$-9.80$$51.12$$.11$$50.22$$44.70$$6.$</td> <td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 86 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 35 59.59 44.20 9.04 31.60 -3.56 56.03 74.00 35 49.69 44.20 9.04 31.60 -3.56 46.94 74.00 7.8 49.28 44.20 9.86 32.00 -2.34 46.15 74.00 .63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 .63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00<td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 66 61.66 44.70 6.70 28.20 -9.80 51.86 74.00 -22.14 66 51.23 44.70 6.70 28.20 -9.80 51.86 74.00 -18.66 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 -8.06 35 49.95 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 46.13 54.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 35.92 54.00 -18.08 85 54.16 43.50 11.40 35.50 3.40 57.56 74.00 <t< td=""><td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 PK 86 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 AV 66 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 55.34 74.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 AV 35 59.59 44.20 9.04 31.60 -3.56 46.13 54.00 -7.87 AV 78 39.19 44.20 9.86 32.00 -2.34 46.94 74.00 -27.85 PK 63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 -16.44 PK 85 <</td></t<></td></td>	Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 85 51.73 44.70 6.70 28.20 -9.80 41.93 66 61.66 44.70 6.70 28.20 -9.80 41.33 29 58.90 44.20 9.04 31.60 -3.56 55.34 29 49.50 44.20 9.04 31.60 -3.56 56.03 35 59.59 44.20 9.04 31.60 -3.56 56.03 35 49.69 44.20 9.04 31.60 -3.56 46.13 78 49.28 44.20 9.86 32.00 -2.34 46.94 78 39.19 44.20 9.86 32.00 -2.34 36.84 63 48.49 44.20 9.86 32.00 -2.34 35.92 85 54.16 43.50 11.40 35.50 3.40 57.76 85 43.76 43.50 11.40 35.50 3.40 47.16 79 54.38 43.50 11.40 35.50 3.40 48.35 Middle Channel (GFSK/2440 MHz) $.11$ 60.92 44.70 6.70 28.20 -9.80 51.12 $.11$ 51.30 44.70 6.70 28.20 -9.80 51.12 $.11$ 51.30 44.70 6.70 28.20 -9.80 51.12 $.11$ 50.22 44.70 $6.$	Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 86 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 35 59.59 44.20 9.04 31.60 -3.56 56.03 74.00 35 49.69 44.20 9.04 31.60 -3.56 46.94 74.00 7.8 49.28 44.20 9.86 32.00 -2.34 46.15 74.00 .63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 .63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 <td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 66 61.66 44.70 6.70 28.20 -9.80 51.86 74.00 -22.14 66 51.23 44.70 6.70 28.20 -9.80 51.86 74.00 -18.66 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 -8.06 35 49.95 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 46.13 54.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 35.92 54.00 -18.08 85 54.16 43.50 11.40 35.50 3.40 57.56 74.00 <t< td=""><td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 PK 86 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 AV 66 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 55.34 74.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 AV 35 59.59 44.20 9.04 31.60 -3.56 46.13 54.00 -7.87 AV 78 39.19 44.20 9.86 32.00 -2.34 46.94 74.00 -27.85 PK 63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 -16.44 PK 85 <</td></t<></td>	Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 85 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 66 61.66 44.70 6.70 28.20 -9.80 51.86 74.00 -22.14 66 51.23 44.70 6.70 28.20 -9.80 51.86 74.00 -18.66 29 58.90 44.20 9.04 31.60 -3.56 55.34 74.00 -8.06 35 49.95 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 46.13 54.00 -7.87 78 49.28 44.20 9.86 32.00 -2.34 35.92 54.00 -18.08 85 54.16 43.50 11.40 35.50 3.40 57.56 74.00 <t< td=""><td>Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 PK 86 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 AV 66 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 55.34 74.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 AV 35 59.59 44.20 9.04 31.60 -3.56 46.13 54.00 -7.87 AV 78 39.19 44.20 9.86 32.00 -2.34 46.94 74.00 -27.85 PK 63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 -16.44 PK 85 <</td></t<>	Low Channel (GFSK/2402 MHz) 85 62.27 44.70 6.70 28.20 -9.80 52.47 74.00 -21.53 PK 86 51.73 44.70 6.70 28.20 -9.80 41.93 54.00 -12.07 AV 66 61.66 44.70 6.70 28.20 -9.80 41.43 54.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 55.34 74.00 -12.57 AV 29 49.50 44.20 9.04 31.60 -3.56 56.03 74.00 -7.87 AV 35 59.59 44.20 9.04 31.60 -3.56 46.13 54.00 -7.87 AV 78 39.19 44.20 9.86 32.00 -2.34 46.94 74.00 -27.85 PK 63 38.27 44.20 9.86 32.00 -2.34 35.92 54.00 -16.44 PK 85 <

Page 28 of 58

Report No.: CTA231102003W07

			10		High Cha	nnel (GFSK/	2480 MHz)				
	3264.88	61.71	44.70	6.70	28.20	-9.80	51.91	74.00	-22.09	PK	Vertical
	3264.88	50.44	44.70	6.70	28.20	-9.80	40.64	54.00	-13.36	AV	Vertical
	3264.63	62.25	44.70	6.70	28.20	-9.80	52.45	74.00	-21.55	PK	Horizontal
	3264.63	50.02	44.70	6.70	28.20	-9.80	40.22	54.00	-13.78	AV	Horizontal
	4960.32	59.39	44.20	9.04	31.60	-3.56	55.83	74.00	-18.17	PK	Vertical
	4960.32	50.23	44.20	9.04	31.60	-3.56	46.67	54.00	-7.33	AV	Vertical
	4960.40	58.40	44.20	9.04	31.60	-3.56	54.84	74.00	-19.16	PK	Horizontal
	4960.40	49.91	44.20	9.04	31.60	-3.56	46.35	54.00	-7.65	AV	Horizontal
	5359.84	48.84	44.20	9.86	32.00	-2.34	46.49	74.00	-27.51	PK	Vertical
	5359.84	40.29	44.20	9.86	32.00	-2.34	37.95	54.00	-16.05	AV	Vertical
	5359.70	47.50	44.20	9.86	32.00	-2.34	45.16	74.00	-28.84	PK	Horizontal
	5359.70	38.27	44.20	9.86	32.00	-2.34	35.93	54.00	-18.07	AV	Horizontal
-10	7439.77	53.79	43.50	11.40	35.50	3.40	57.19	74.00	-16.81	PK	Vertical
1	7439.77	44.23	43.50	11.40	35.50	3.40	47.63	54.00	-6.37	AV	Vertical
	7439.74	54.02	43.50	11.40	35.50	3.40	57.42	74.00	-16.58	PK	Horizontal
	7439.74	44.57	43.50	11.40	35.50	3.40	47.97	54.00	-6.03	AV	Horizontal

Note:

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

Emission Level = Reading + Factor

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

Page 29 of 58

Report No.: CTA231102003W07

CTATES

4.6 TEST RESULTS (Restricted Bands Requirements)

Γ	CXP 1	Meter			Antenna	GFSK Orrected	Emission				
	Frequency	Reading	Amplifier	Loss	Factor	Factor	Level	Limits	Margin	Detector	Comment
	(MHz)	(dBµV)	(dB)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
	2390.00	67.21	43.80	4.91	25.90	-12.99	54.22	74.00	-19.78	РК	Vertical
	2390.00	54.24	43.80	4.91	25.90	-12.99	41.25	54.00	-12.75	AV	Vertical
1	2390.00	69.35	43.80	4.91	25.90	-12.99	56.36	74.00	-17.64	PK	Horizontal
	2390.00	52.55	43.80	4.91	25.90	-12.99	39.56	54.00	-14.44	AV	Horizontal
	2483.50	69.06	43.80	5.12	25.90	-12.78	56.28	74.00	-17.72	PK	Vertical
	2483.50	52.06	43.80	5.12	25.90	-12.78	39.28	54.00	-14.72	AV	Vertical
	2483.50	69.37	43.80	5.12	25.90	-12.78	56.59	74.00	-17.41	PK	Horizontal
	2483.50	52.80	43.80	5.12	25.90	-12.78	40.02	54.00	-13.98	AV	Horizontal

G

Report No.: CTA231102003W07

5. CONDUCTED SPURIOUS & BAND EDGE EMISSION

5.1 LIMIT

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in CTATES the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

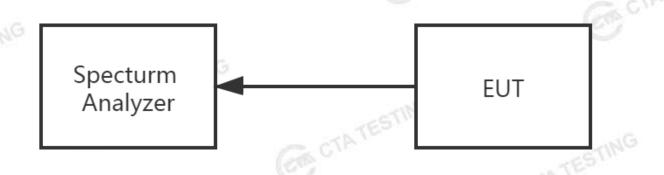
5.2 TEST PROCEDURE

Peak
30 MHz to 10th carrier harmonic
100 KHz/300 KHz
Max hold

Band edge

Spectrum Parameter	Setting
Detector	Peak
Stort/Stop Eroguopou	Lower Band Edge: 2300 – 2407 MHz
Start/Stop Frequency	Upper Band Edge: 2475 – 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold
5.3 TEST SETUP	CTATE CTATE

5.3 TEST SETUP



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna termina is 50 Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

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

5.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.

Page 31 of 58

Report No.: CTA231102003W07

6. POWER SPECTRAL DENSITY TEST

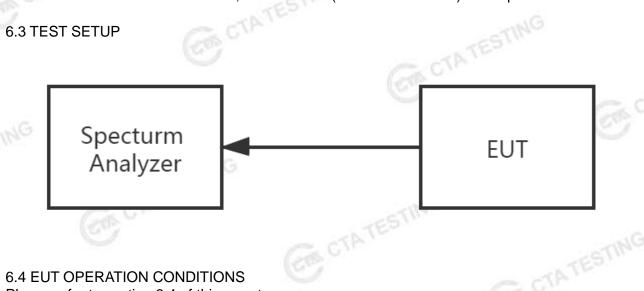
	FCC Par	t 15.247,Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(e)	Power Spectral Density	≤8 dBm (RBW≥3KHz)	2400-2483.5	PASS	A

6.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.

- CTATESTING 2. Set the span to 1.5 times the DTS channel bandwidth.
- 3. Set the RBW to: 100 kHz \ge RBW \ge 3 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 TEST SETUP



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

6.5 TEST RESULTS

CTA TESTING Note: The test data please refer to APPENDIX 1.

Page 32 of 58

Report No.: CTA231102003W07

2400-2483.5

Result

PASS

7. BANDWIDTH TEST

4 1 18 417

1.				
		F	CC Part 15.247,Subpa	irt C
	Section	Test Item	Limit	Frequency Range (MHz)
			>= 500KHz	\sim

Bandwidth

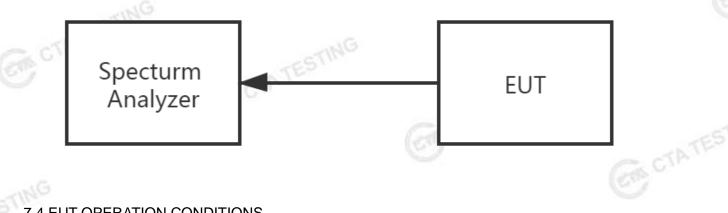
7.2 TEST PROCEDURE

15.247(a)(2)

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be≥6 dB.

(6dB bandwidth)

7.3 TEST SETUP



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

Note: The test data please refer to APPENDIX 1.

Page 33 of 58

Report No.: CTA231102003W07

8. PEAK OUTPUT POWER TEST

8.1 LIMIT				
	F	CC Part 15.247,Subpa	art C	
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.2 TEST PROCEDURE

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

RBW \geq DTS bandwidth

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

a) Set the RBW \geq DTS bandwidth.

b) Set VBW \geq [3 \times RBW].

c) Set span \geq [3 × RBW].

d) Sweep time = auto couple.

e) Detector = peak.

f) Trace mode = max hold.

g) Allow trace to fully stabilize.

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

Integrated band power method:

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

DTS bandwidth:

a) Set the RBW = 1 MHz.

b) Set the VBW \geq [3 \times RBW].

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

d) Detector = peak.

e) Sweep time = auto couple.

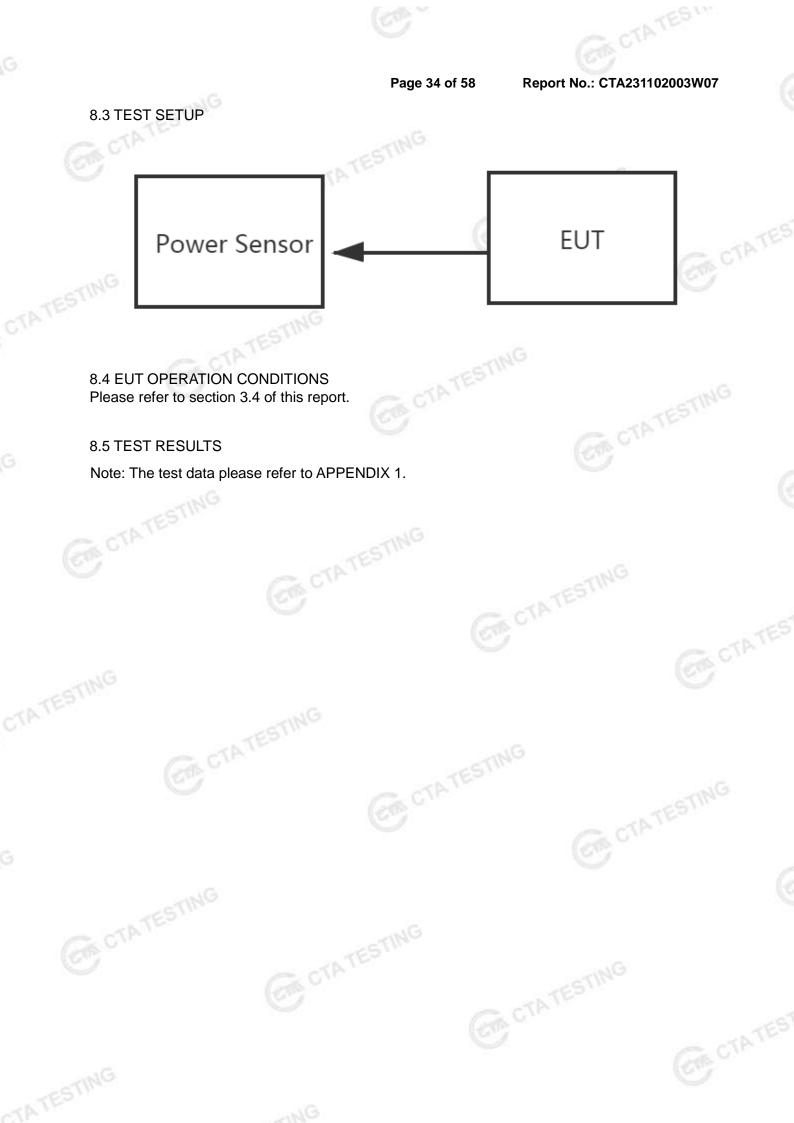
f) Trace mode = max hold.

g) Allow trace to fully stabilize.

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

PKPM1 Peak power meter method:

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



Page 35 of 58

9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

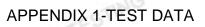
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

9.2 EUT ANTENNA

The EUT antenna is Built-in LDS Antenna. It comply with the standard requirement.

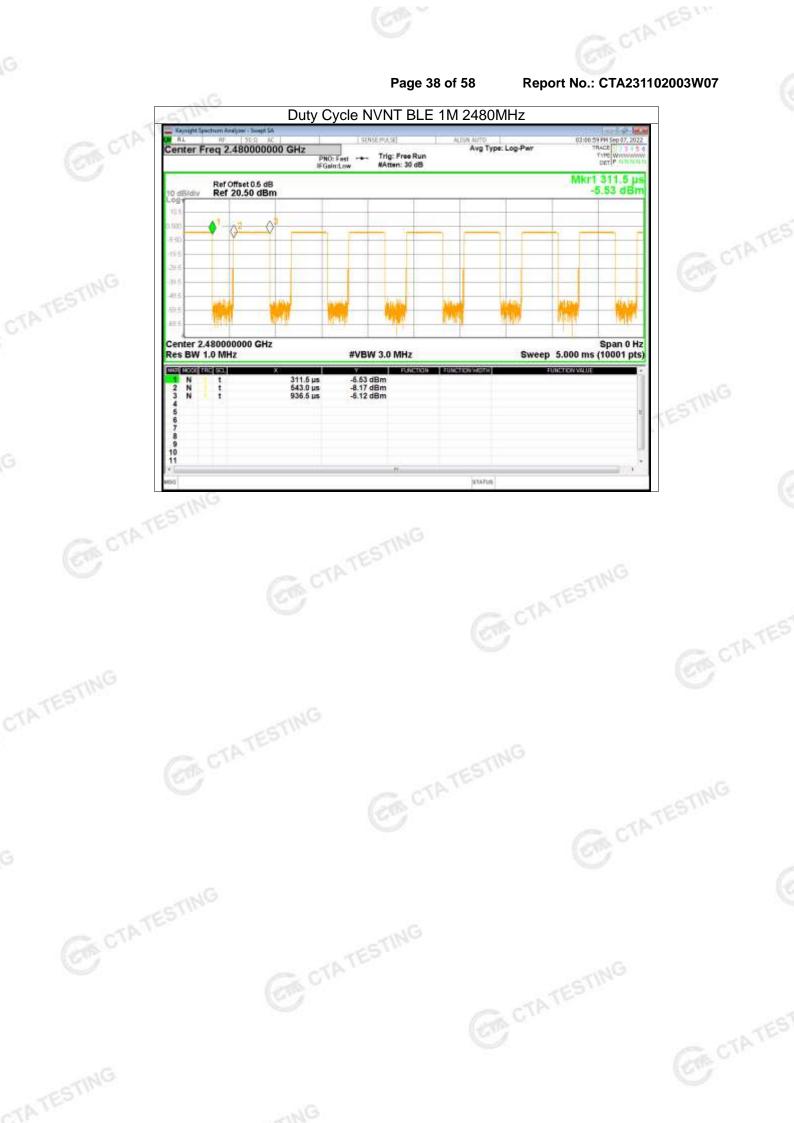
Page 36 of 58

Report No.: CTA231102003W07



Condition	ty Cycle Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	63.07	2	2.53
NVNT	BLE 1M	2440	63.04	2	2.54
NVNT	BLE 1M	2480	62.96	2.01	2.54

Page 37 of 58 Report No.: CTA231102003W07 Test Graphs CTAT Duty Cycle NVNT BLE 1M 2402MHz 11:62:21 PM Sep 67, 2022 TRACE 7 7 1 4 5 8. Center Freq 2.402000000 GHz Avg Type: Log-Pwr PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB DET P Mkr1 607.5 µs -4.27 dBm Ref Offset 0.5 dB Ref 20.50 dBm 0 -11 141 Center 2.402000000 GHz Res BW 1.0 MHz Span 0 Hz Sweep 5.000 ms (10001 pts) #VBW 3.0 MHz ESTING COOCE ENDINE COOL STREET STREET -4.27 dBm -11.89 dBm -14.10 dBm 607.5 µs 838.5 µs 1.233 ms NNN 23 t 567 8 9 10 STATUS Duty Cycle NVNT BLE 1M 2440MHz CO CTAT Kay R.L 1:04 57 PM Sep 07, 2022 TRACE 1 3 4 5 6 THE WHITE Center Freq 2.440000000 GHz Avg Type: Log-Pw PNO: Fast --- Trig: Free Run IFGain:Low Atten: 40 dB Mkr1 496.5 us Ref Offset 0.5 dB Ref 30.00 dBm -8.24 dBn 0 Center 2.440000000 GHz Span 0 Hz Sweep 5.000 ms (10001 pts) Res BW 1.0 MHz #VBW 3.0 MHz CONTRACTOR DOCUMENT EXPERIMENTAL FUNCTION MOTOR EDUCATION NOT ESTING -8.24 dBm -10.78 dBm -6.96 dBm 496.5 µs 727.5 µs 1.122 ms NNN ţ 23456789011 CTA TESTING STATUS



Report No.: CTA231102003W07

2. Maximum Average Conducted Output Power

NVNT BLE 1M 2440 -4.04 2 -2.04 <=	Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
	NVNT	BLE 1M	2402	-3.01	2	-1.01	<=30	Pass
NVNT BLE 1M 2480 -4.97 2.01 -2.96 <=	NVNT	BLE 1M	2440	-4.04	2	-2.04	<=30	Pass
(Contraction of the contraction	NVNT	BLE 1M	2480	-4.97	2.01	-2.96	<=30	Pass
		0			6 C		Œ	CTAT





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Verdict Pass Pass Pass

			Page 42 of 58	Report No	.: CTA231102003
3. Ma :	ximum P	eak Conducted	Output Powe	er	
Condition	Mode	Frequency (MHz)	Conducted Pow	er (dBm)	Limit (dBm)
NVNT	BLE 1M	2402	-1.11	• •	<=30
NVNT	BLE 1M	2440	-2.37		<=30
NVNT	BLE 1M	2480	-3.33	209	<=30
	G			CTA TES	

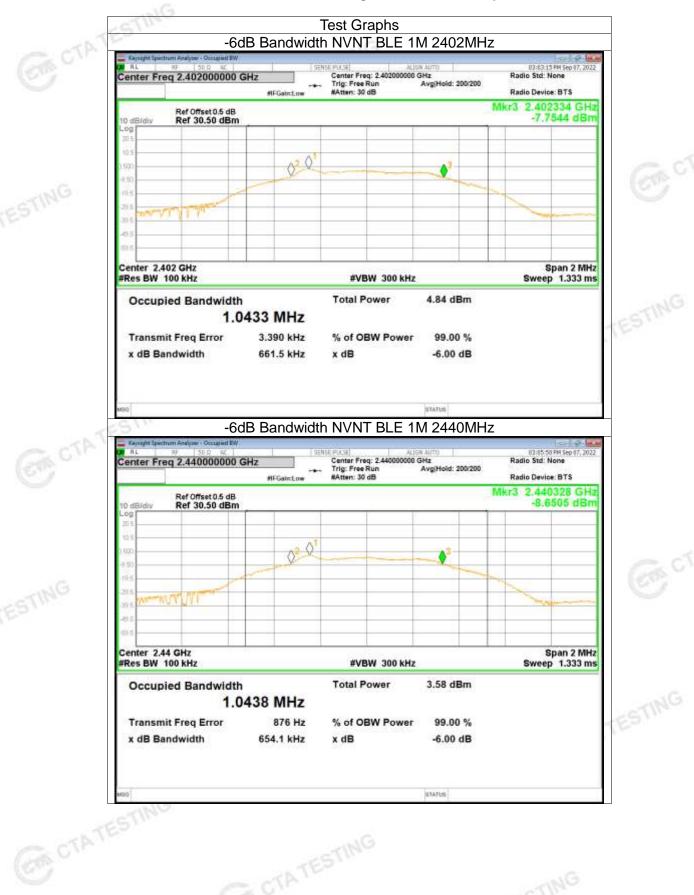


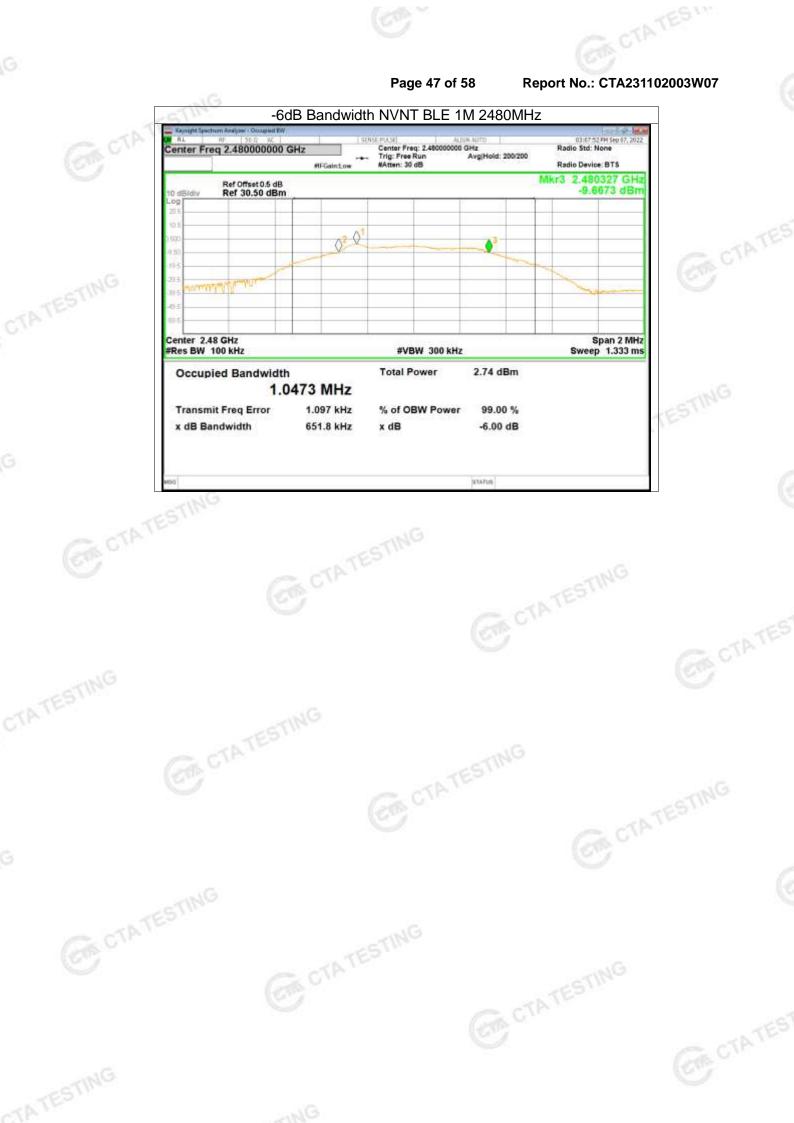


Page 45 of 58

ondition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verd
NVNT	BLE 1M	2402	0.66	>=0.5	Pas
NVNT	BLE 1M	2440	0.65	>=0.5	Pas
NVNT	BLE 1M	2480	0.65	>=0.5	Pas
				9011 910.0	
		CTATESTING			
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Page 46 of 58





Report No.: CTA231102003W07

Condition	Mode	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	-16.42	<=8	Pass
NVNT	BLE 1M	2440	-17.59	<=8	Pass
NVNT	BLE 1M	2480	-18.44	<=8	Pass

6. Maximum Power Spectral Density Level







Page 49 of 58

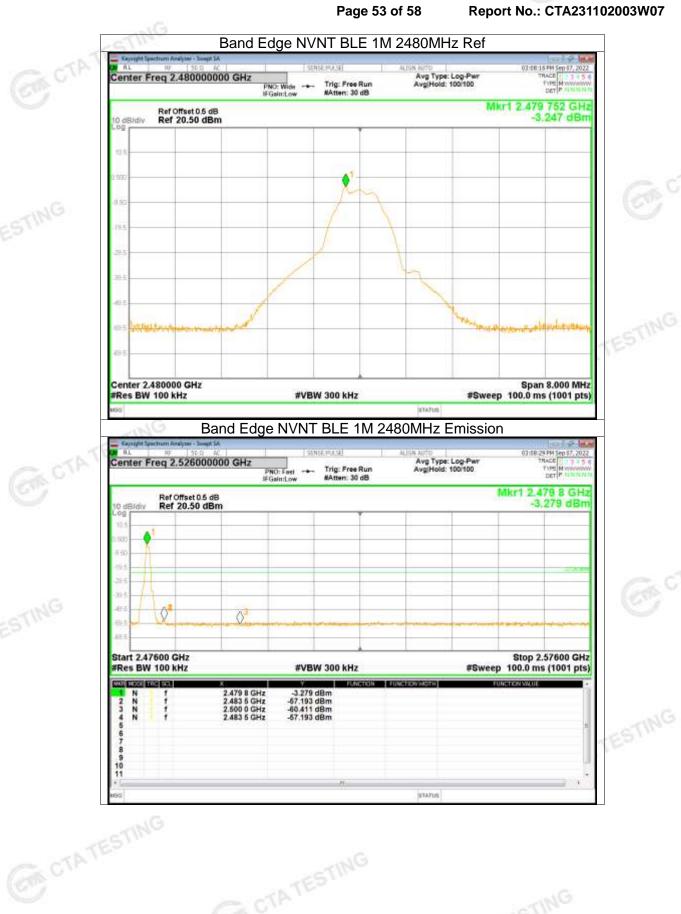




Page 51 of 58 Report No.: CTA231102003W07

Condition	d Edge Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdic
NVNT	BLE 1M	2402	-53.82	<=-20	Pass
NVNT	BLE 1M	2480	-53.94	<=-20	Pass
			-53.94		
Ge CTA	TEST				
TESTING					
100					

Page 52 of 58 Test Graphs CTA T Band Edge NVNT BLE 1M 2402MHz Ref 8. 03:63:38 PM Sep 07, 2022 Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg Hold: 100/100 TYPE MIN Trig: Free Run #Atten: 30 dB PNC: Wide IFGain:Low Mkr1 2.401 752 GHz Ref Offset 0.5 dB Ref 20.50 dBm -1.286 dB Center 2.402000 GHz #Res BW 100 kHz Span 8.000 MHz #Sweep 100.0 ms (1001 pts) #VBW 300 kHz STATUS Band Edge NVNT BLE 1M 2402MHz Emission COR CTAT 03:83:52 PH Sep 87, 2022 TRACE 1 3 5 6 Type M reserved RI Center Freq 2.356000000 GHz Avg Type: Log-Pw Avg[Hold: 100/100 PNO: Fast --- Trig: Free Run EGain:Low MAtten: 30 dB Mkr1 2.401 7 GHz Ref Offset 0.5 dB Ref 20.50 dBm -1.360 dBn 8 Start 2.30600 GHz Stop 2.40600 GHz #Sweep 100.0 ms (1001 pts) #Res BW 100 kHz #VBW 300 kHz CONTRACTOR DESCRIPTION ELANCTION EUNISTICATION MODITAL ESTING 2.401 7 GHz 2.400 0 GHz 2.400 0 GHz 2.399 5 GHz -1.360 dBm -60.029 dBm -60.029 dBm -65.114 dBm 2222 23456789011 CTA TESTING STATUS



-32.69

Report No.: CTA231102003W07

Limit (dBc)

<=-20

Verdict

Pass

NVNT BL			-42.78 -30.33	Pass
STING	CTA T	ESTING		E CTI
CTING				
	ring			
GON CTATES				
211		-ING		

8. Conducted RF Spurious Emission Condition Mode Frequency (MHz) Max Value (dBc)

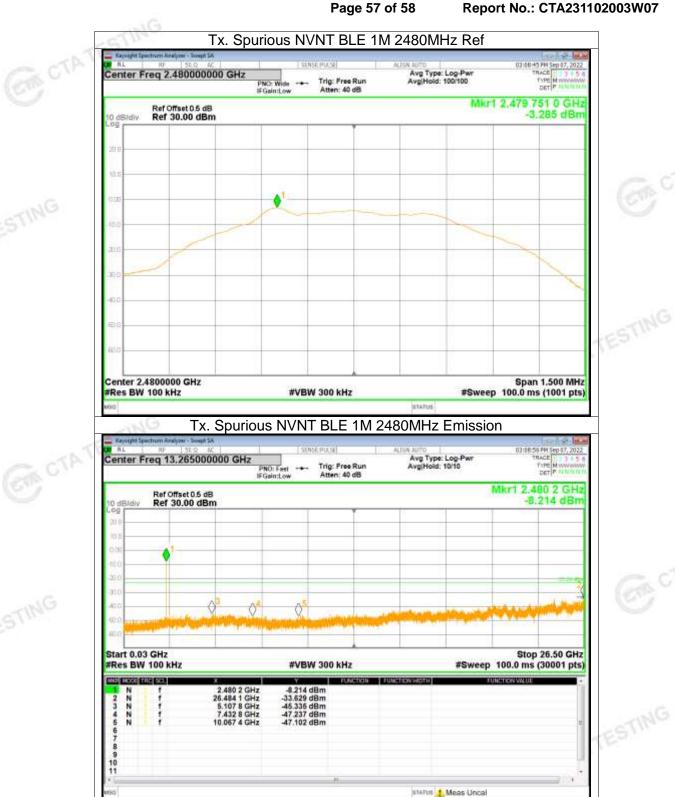
2402

BLE 1M

NVNT

Page 55 of 58 Report No.: CTA231102003W07 Test Graphs CTA T Tx. Spurious NVNT BLE 1M 2402MHz Ref 8. 03:64-09 PM Sep 07, 2022 Center Freq 2.402000000 GHz Avg Type: Log-Pw Avg[Hold: 100/100 TYPE MIN Trig: Free Run Atten: 40 dB PNC: Wide IFGain:Low Mkr1 2.401 748 0 GHz -1.259 dBm Ref Offset 0.5 dB Ref 30.00 dBm ¢1 ESTING Center 2,4020000 GHz #Res BW 100 kHz Span 1.500 MHz #Sweep 100.0 ms (1001 pts) #VBW 300 kHz STATUS Tx. Spurious NVNT BLE 1M 2402MHz Emission COR CTAT 03:64 19 PM Sep 67, 2022 TRACE 1 3 5 6 THE M WWWWWWW DET P RI Center Freg 13.265000000 GHz Avg Type: Log-Pw Avg[Hold: 10/10 PNO: Fast --- Trig: Free Run IFGain:Low Atten: 40 dB Mkr1 2,401 7 GHz Ref Offset 0.5 dB Ref 30.00 dBm -7,660 dBn 0 0 05 Stop 26.50 GHz #Sweep 100.0 ms (30001 pts) Start 0.03 GHz #Res BW 100 kHz #VBW 300 kHz ENCTON FUNCTION MOTH CONTRACTOR DESCRIPTION ESTING 2.401 7 GHz 26.419 7 GHz 4.616 5 GHz 7.279 3 GHz 9.725 1 GHz -7.660 dBm -33.953 dBm -47.000 dBm -48.041 dBm -48.383 dBm 234567 8 9 10 CTA TESTING ITATUE 1 Meas Uncal





CTA TESTING

Page 58 of 58

APPENDIX 2- EUT TEST PHOTO

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

* * * * END OF THE REPORT * * * * *