FCC Test Report

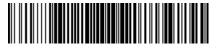
Report No.: AGC02009160602FE08

FCC ID	:	XRQCH1
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Efergy / Tendr CareHub
BRAND NAME	:	efergy
MODEL NAME	:	CH1
CLIENT	:	Efergy Technologies Limited
DATE OF ISSUE	:	July 20, 2016
STANDARD(S)	:	FCC Part 15 Rules KDB 558074 v03r04
REPORT VERSION	:	V1.0



CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



Report Revise Record

Report Version	Report Version Revise Time		Valid Version	Notes	
V1.0	1	July 20, 2016	Valid	Original Report	

TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE	5
2.GENERAL INFORMATION	6
2.1PRODUCT DESCRIPTION	6
2.2. TABLE OF CARRIER FREQUENCYS	6
2.3 RELATED SUBMITTAL(S)/GRANT(S)	7
2.4TEST METHODOLOGY	7
2.5 SPECIAL ACCESSORIES	7
2.6 EQUIPMENT MODIFICATIONS	7
3. MEASUREMENT UNCERTAINTY	8
4. DESCRIPTION OF TEST MODES	8
5. SYSTEM TEST CONFIGURATION	9
5.1 CONFIGURATION OF TESTED SYSTEM	9
5.2 EQUIPMENT USED IN TESTED SYSTEM	9
5.3. SUMMARY OF TEST RESULTS	9
6. TEST FACILITY	
7. PEAK OUTPUT POWER	11
7.1. MEASUREMENT PROCEDURE	11
7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	11
7.3. LIMITS AND MEASUREMENT RESULT	
8. 6 DB BANDWIDTH	14
8.1. MEASUREMENT PROCEDURE	
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
8.3. LIMITS AND MEASUREMENT RESULTS	
9. CONDUCTED SPURIOUS EMISSION	
9.1. MEASUREMENT PROCEDURE	
9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
9.3. MEASUREMENT EQUIPMENT USED	
9.4. LIMITS AND MEASUREMENT RESULT	
10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY	
10.1 MEASUREMENT PROCEDURE	
10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
10.3 MEASUREMENT EQUIPMENT USED	
10.4 LIMITS AND MEASUREMENT RESULT	
11. RADIATED EMISSION	24

Report No.: AGC02009160602FE08 Page 4 of 50

11.1. MEASUREMENT PROCEDURE	24
11.2. TEST SETUP	
11.3. LIMITS AND MEASUREMENT RESULT	26
11.4. TEST RESULT	26
12. BAND EDGE EMISSION	32
12.1. MEASUREMENT PROCEDURE	32
12.2. TEST SET-UP	32
12.3. TEST RESULT	
13. FCC LINE CONDUCTED EMISSION TEST	37
13.1. LIMITS OF LINE CONDUCTED EMISSION TEST	37
13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST	37
13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST	38
13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST	
13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST	39
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	41
APPENDIX B: PHOTOGRAPHS OF EUT	43

Applicant	Efergy Technologies Limited				
Address	Suite 1108-1109, Junction Building, 3820 Nanhuan Road, Binjia District, Hangzhou, Zhejiang, 310053 China				
Manufacturer	ShenZhen Gospell Smarthome Electronic Co., Ltd.				
Address	East of 01st-04st Floor, Block A, No.1 Industrial park, Fenghuanggang, South No.1 Baotian Road, Xixiang street, Bao'an District, Shenzhen City, Guangdo Province 518126, P.R.China				
Product Designation	Efergy / Tendr CareHub				
Brand Name	efergy				
Test Model	CH1				
Date of test	July 04, 2016 to July 20, 2016				
Deviation	None				
Condition of Test Sample	Normal				
Test Result	Pass				
Report Template	AGCRT-US-BLE/RF (2013-03-01)				

1. VERIFICATION OF COMPLIANCE

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Nov 2ha Tested by Max Zhang(Zhang Yi) July 20, 2016 Hump Reviewed by Rock Huang(Huang Dinglue) July 20, 2016 Approved by Solger Zhang(Zhang Hongyi) July 20, 2016 Authorized Officer

2.GENERAL INFORMATION

2.1PRODUCT DESCRIPTION

The EUT is "Efergy / Tendr CareHub" designed as a "Communication Device". It is designed by way of utilizing the GFSK technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz	
RF Output Power	5.835dBm(Max)	
Bluetooth Version	BT 4.0 incl. EDR/LE	
Modulation GFSK		
Number of channels	40 Channel(37 Hopping Channel,3 advertising Channel)	
Antenna Designation	Integrated Antenna	
Antenna Gain	2dBi	
Hardware Version	GD2852Y_M03	
Software Version	N/A	
Power Supply DC 5V by adapter		

Note: The USB port is only for charging.

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
	0	2402MHZ
	1	2404MHZ
2400~2483.5MHZ	:	:
	38	2478 MHZ
	39	2480 MHZ

2.3 RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: XRQCH1** filing to comply with Section 15.247of the FCC Part 15, Subpart C Rules.

2.4TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules KDB 558074 D01 DTS Meas Guidance v03r04.

2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 3.18dB Radiated measurement: +/- 3.91dB

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION		
1	Low channel TX		
2	Middle channel TX		
3	High channel TX		
4	Normal Operating (BT)		

Note:

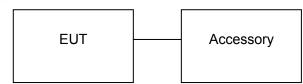
1. Only the result of the worst case was recorded in the report, if no other cases.

2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

5. SYSTEM TEST CONFIGURATION

5.1 CONFIGURATION OF TESTED SYSTEM

Configuration:



5.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	Remark
1	Efergy / Tendr CareHub	CH1	XRQCH1	EUT
2 Adapter		SK21G-0500200Z	DC5V/2A	Marketed

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	§15.247 Conducted Spurious Emission	
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209Radiated Emission§15.247Band Edges§15.207Line Conduction Emission		Compliant
		Compliant
		Compliant

6. TEST FACILITY

	Site	Dongguan Precise Testing Service Co., Ltd.		
	Location	Building D, Baoding Technology Park, Guangming Road2, Dongcheng District, Dongguan, Guangdong, China.		
	FCC Registration No.	371540		
Description		The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2014.		

ALL TEST EQUIPMENT LIST

Radiated Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 3, 2016	July 2, 2017
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 3, 2016	July 2, 2017
RF Cable	SCHWARZBECK	AK9515E	96221	July 3, 2016	July 2, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 3, 2016	June 2, 2017
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 3, 2016	June 2, 2017
Spectrum analyzer	Agilent	E4407B	MY46185649	June 3, 2016	June 2, 2017
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	June 3, 2016	June 2, 2017
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 3, 2016	June 2, 2017

Conducted Emission Test Site										
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration					
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017					
Artificial Mains Network	Narda	L2-16B	000WX31025	July 3, 2016	July 2, 2017					
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	July 3, 2016	July 2, 2017					
RF Cable	SCHWARZBECK	AK9515E	96222	July 3, 2016	July 2, 2017					
Shielded Room	CHENGYU	843	PTS-002	June 3, 2016	June 2, 2017					

7. PEAK OUTPUT POWER

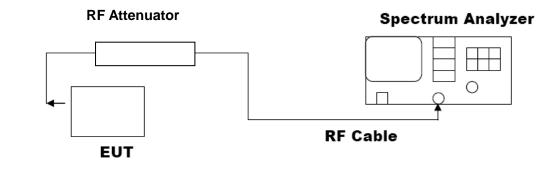
7.1. MEASUREMENT PROCEDURE

For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. RBW≥DTS bandwidth
- 3. VBW≥3*RBW.
- 4. SPAN≥VBW.
- 5. Sweep: Auto.
- 6. Detector function: Peak.
- 7. Trace: Max hold.

Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) PEAK POWER TEST SETUP

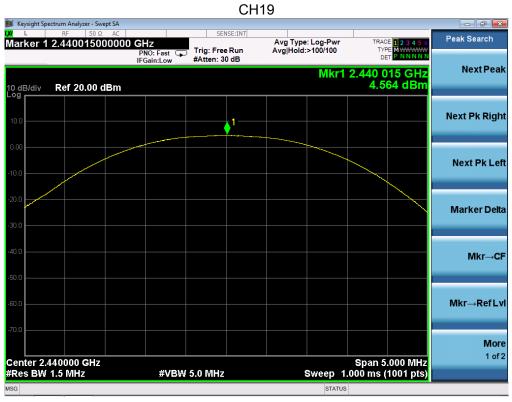


7.3. LIMITS AND MEASUREMENT RESULT

	PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION							
Frequency (GHz)	Frequency Peak Power Applicable Limits Pass or Fail							
2.402	5.835	30	Pass					
2.441	4.564	30	Pass					
2.480	2.612	30	Pass					

CH0





CH39

Keysight Spectrum Analyzer - Swept SA L RF 50 Ω AC	SENSE:INT			
arker 1 2.47999000000		Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 123456 TYPE M WWWW DET P NNNNN	Peak Search
dB/div Ref 20.00 dBm		Mkr1 2	.479 990 GHz 2.612 dBm	Next Pea
0.0				Next Pk Righ
.00				Next Pk Le
1.0				
				Marker Del
D.0				Mkr→C
0.0				Mkr→RefL
0.0				Moi
enter 2.480000 GHz Res BW 1.5 MHz	#VBW 5.0 MHz	Sweep 1.0	Span 5.000 MHz 00 ms (1001 pts)	1 of

8.6 DB BANDWIDTH

8.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW \ge 3×RBW.
- 4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

8.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT							
Applicable Limite		Applicable Limits					
Applicable Limits	Test Da	Criteria					
	Low Channel	688.6	PASS				
>500KHZ	Middle Channel	690.7	PASS				
	High Channel 687.2						

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

🗾 Keysight Spectrum Analyzer - Occupied BW					
Center Freq 2.402000000 C	Center	SENSE:INT	Radio St	d: None	Frequency
#		FreeRun Avg Ho n:30 dB	ld:>10/10 Radio De	vice: BTS	
15 dB/div Ref 20.00 dBm			Mkr1 2.401 4.96	985 GHz 325 dBm	
5.00					Center Freq
-10.0					2.402000000 GHz
-40.0					
-55.0					
-70.0					
-100					
-115					
Center 2.402 GHz #Res BW 100 kHz	#	VBW 300 kHz		oan 3 MHz eep 1 ms	CF Step 300.000 kHz
Occupied Bandwidth		Total Power	11.8 dBm		<u>Auto</u> Man
	860 MHz				Freq Offset
Transmit Freq Error	9.065 kHz	OBW Power	99.00 %		0 Hz
x dB Bandwidth	688.6 kHz	x dB	-6.00 dB		
MSG			STATUS		



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

MSG

STATUS



9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT							
Annia chia Limita	Measurement Result						
Applicable Limits	Test Data	Criteria					
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the reference level	PASS PASS					

🎉 Keysight Spectru		pt SA						
Marker 1 9	RF 50 Ω		SENSE:I		ype: Log-Pwr	TRAC	E 123456	Peak Search
Marker 150	00.002100	PNO: Fast C	Trig: Free Ru #Atten: 30 dB	n Avg Ho	old:>100/100	TYP	E MWWWWW T P N N N N N	
		IFGain:Low	#Atten: 30 dB	•				Next Peak
					IVIE	(r1 903.)	90 MHZ 16 dBm	
10 dB/div	Ref 20.00 d	BM				-00.74		
10.0								Next Dis Disable
0.00								Next Pk Right
-10.0							-15.04 dBm	
-20.0							-13.04 abii	
-30.0								Next Pk Left
-40.0								
-50.0								
-60.0							<u>'</u>	Marker Delta
-70.0	in the second		e de Dreite de Blêche de stat				dhai bitan a	Marker Dela
-70.0								
Start 30.0 №							000 GHz	
#Res BW 10	00 kHz	#VB	W 300 kHz		Sweep 94.	.00 ms (3	0000 pts)	Mkr→CF
MKR MODE TRC		Х	Y	FUNCTION	FUNCTION WIDTH	FUNCTIO	N VALUE	
1 N 1 2	f	903.90 MHz	-60.746 dBm					
3								Mkr→RefLvl
4 5							E	
6								
8								More
9								1 of 2
11								
MSG					STATUS			
Mod								
M K	A							
Keysight Spectru	um Analyzer - Swep RF 50 Ω		SENSE:I	NT	UNITED STATES			
Keysight Spectru Marker 1 2.	RF 50 Ω	AC 00000 GHz	Trim Free De	Avg T	ype: Log-Pwr	TRAC	E 1 2 3 4 5 6	Peak Search
L <mark>XI</mark> L	RF 50 Ω	AC	Trim Free De	Avg T n Avg Ho		TRAC	E 1 2 3 4 5 6 E M WWWW T P N N N N N	Peak Search
L <mark>XI</mark> L	RF 50 Ω	AC 00000 GHz PNO: Fast	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400		
Marker 1 2.	RF 50 Ω	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400		Peak Search
Marker 1 2.	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400		Peak Search
Marker 1 2.	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400		Peak Search
Marker 1 2.	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400		Peak Search Next Peak
Marker 1 2.	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400		Peak Search Next Peak
Marker 1 2.	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400	00 GHz 53 dBm	Peak Search Next Peak Next Pk Right
Marker 1 2.	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400	00 GHz 53 dBm	Peak Search Next Peak
IO dB/div F 10 dB/div F - - 10.0 - - - -10.0 - - - -20.0 - - - -30.0 - - - -40.0 - - -	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400	00 GHz 53 dBm	Peak Search Next Peak Next Pk Right
IO dB/div F 10 dB/div F 10.0 - - 10.0 - - -10.0 - - -20.0 - - -30.0 - - -40.0 - -	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400	00 GHz 53 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
IO dB/div F 10 dB/div F - - 10.0 - - - -10.0 - - - -20.0 - - - -30.0 - - - -40.0 - - -	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400	00 GHz 53 dBm	Peak Search Next Peak Next Pk Right
IO dB/div F 10 dB/div F 10.0 - - 10.0 - - -10.0 - - -20.0 - - -30.0 - - -40.0 - -	RF 50 Ω .40000000	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400	00 GHz 53 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Marker 1 2. Marker 1 2. 10 dB/div F 10.0 10.	Ref 20.00 d	AC DOOOO GHz PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 12.400 -51.65	00 GHz 53 dBm -15.04 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
IO dB/div F 10 dB/div F 10.0	Ref 20.00 d	AC DOUDO GHZ PNO: Fast C IFGain:Low	Trig: Free Ru	Avg T n Avg Ho	ype: Log-Pwr old:>100/100	TRAC TYP DE 12.400 -51.65	00 GHz 53 dBm -15.04 dBm 1.	Peak Search Next Peak Next Pk Right Next Pk Left
Marker 1 2. Marker 1 2. 10 dB/div 10.0	RE 50 Ω 40000000 000 Ref 20.00 d 0 0 GHz 000 GHz 00 KHz 000 KHz	AC PRO-FAST	W 300 kHz	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	00 GHz -15.04 dBm 1 000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Marker 1 2. Marker 1 2. Marker 1 2. 10 dB/div F 10.0 -000 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 -70.0 Start 1.0000 #Res BW 10 MKR MODE TRCI 1 1	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast C IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	00 GHz 53 dBm -15.04 dBm 1.	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Marker 1 2. Marker 1 2. Marker 1 2. 10 dB/div 10 0 10 0 10 0 10 0 -10 0 -20 0 -30 0 -40 0 -50 0 -50 0 -70 0 Start 1.0000 #Res BW 10 MKR MODE TRC	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	00 GHz -15.04 dBm 1 000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Marker 1 2. Marker 1 2. 10 dB/div -00 -10.0 -20.0 -30 0 -20.0 -30 0 -40.0 -50.0 -70.0 Start 1.00000 #Res BW 100 MKR MODE TRC 2 3 4	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	-15.04 dBm -15.04 dBm 1 0000 GHz 0000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Marker 1 2. Marker 1 2. Marker 1 2. Marker 1 2. 10 dB/div Io dB/div	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	00 GHz -15.04 dBm 1 000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Marker 1 Parker 1	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	-15.04 dBm -15.04 dBm 1 0000 GHz 0000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
Marker 1 Parker 1	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	-15.04 dBm -15.04 dBm 1 0000 GHz 0000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More
Marker 1 2. Marker 1 2. Marker 1 2. Marker 1 2. 10 dB/div 10.0 -0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -50.0 -50.0 -60.0 WARCHING Start 1.0000 #Res BW 10 MRR MODE TRC 1 2 3 4 5 6 7 9 10 11	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TRAC TYP DE 1 2.400 -51.65 -51.55 -51.65 -51.65 -51.65 -51.65 -51.55 -51	-15.04 dBm -15.04 dBm 1 0000 GHz 0000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
Marker 1 Parker 1	Ref 50 Ω .40000000	AC DOUDO GHZ PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg T n Avg H	ype: Log-Pwr old:>100/100	TTRAC TYP DE 1 2.400 -51.65 	-15.04 dBm -15.04 dBm 1 0000 GHz 0000 GHz 0000 GHz	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More

GFSK MODULATION IN LOW CHANNEL

Report No.: AGC02009160602FE08 Page 18 of 50

🊺 Keysig	ht Spectr		alyzer - Sw												ð x
Marke	er 1 24	RF 4.34		AC 70819) GHz		ENSE:INT	A	vg Type	e: Log-Pw	r i	TRACE 123	4 5 6	Peak Sea	rch
					PNO: Fast IFGain:Lov		ee Run 30 dB	A	g Hold	:>100/100					
										Mk	(r1 24.)	341 7 G	Hz	Next	Peak
10 dB/	div	Ref	20.00 (dBm							-38	.214 dl	Зm		
0.00														Next Pk	Right
-10.0												-15.0	4 dBm		
-20.0												-13.0			
-30.0													<mark>⊿</mark> 1	Next P	k Left
-40.0									العادة لياد محدد	-		and the second second	ales de		
-50.0	an in the second		<u>piniti jek</u>		and the state	in a state of the strength							_		
-60.0														Marke	r Delta
-70.0															
Start :	2.48 G	Hz									Sto	p 25.00 (€Hz		
#Res	BW 1.	0 M	Hz		#\	/BW 3.0 MF	z		S	weep 5	i8.00 ms	(30000	pts)	Mk	r→CF
	DE TRC			X	41 7 GHz	Y -38.214	-	FUNCTION	FUN	ICTION WIDT	H FUN	ICTION VALUE	•		
2		·		24.3	41 / GHZ	-38.214	aBm								
3 4														Mkr→F	RefLvl
5 6													E		
7															More
9															1 of 2
11													-		
MSG										STAT	US		,		

GFSK MODULATION IN MIDDLE CHANNEL

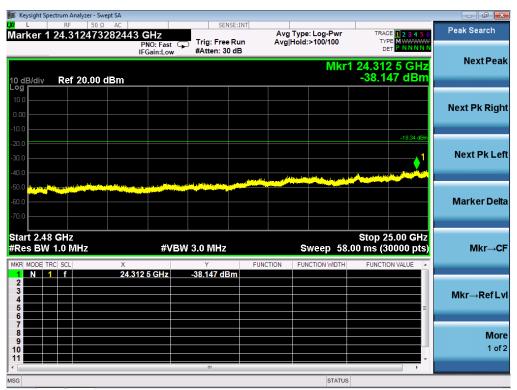
🍺 Keysight Spectrum Analyzer - Swept SA			- ē 🔀
Marker 1 854.980166006	PNO: Fast 😱 Trig: Free Rur	Avg Type: Log-Pwr TRACE 1234	~~~
10 dB/div Ref 20.00 dBm	IFGain:Low #Atten: 30 dB	Mkr1 854.98 MH -60.025 dB	Next Peak
Log 10.0 0.00			Next Pk Right
-10.0		-16.34 d	Bm Next Pk Left
-50.0			Marker Delta
Start 30.0 MHz #Res BW 100 kHz	#VBW 300 kHz	Stop 1.0000 GF Sweep 94.00 ms (30000 pf FUNCTION FUNCTION WIDTH FUNCTION VALUE	lz s) Mkr→CF
1 N 1 f 8 2 -	-54.98 MHz -60.025 dBm		Mkr→RefLvl
7 8 9 10 11			More 1 of 2
MSG		STATUS	

Report No.: AGC02009160602FE08 Page 19 of 50

Keysight Spectrum Analyzer - Swept SA		SENSE:INT			
arker 1 1.9523584119			Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 6	Peak Search
	PNO: Fast G	#Atten: 30 dB		TYPE MWWWWW DET PNNNNN	
			Mkr1	1.952 36 GHz	NextPea
0 dB/div Ref 20.00 dBn	n			-56.999 dBm	
10.0					
0.00					Next Pk Rig
10.0				-16.34 dBm	
20.0					
30.0					Next Pk Le
40.0					
50.0					
60.0 Anno 1994 Anno 1					Marker Del
70.0					
tart 1.0000 GHz				Stop 2.4000 GHz	
Res BW 100 kHz	#VBV	V 300 kHz	Sweep 134	.0 ms (30000 pts)	Mkr→C
	× 1.952 36 GHz	Y FI -56.999 dBm	JNCTION FUNCTION WIDTH	FUNCTION VALUE	
2	1.952 36 GHZ	-50.999 UBIII			
3 4					Mkr→RefL
5				E	
7 8					Мо
9					1 of
11				-	
sg		m	STATUS	4	
Keysight Spectrum Analyzer - Swept SA	4				
U L RF 50 Ω A0	C C	SENSE:INT	Aur Turne Leve Durn	TOACE PLANE	Peak Search
Aarker 1 23.599427014	PNO: Fast 🔾	Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	
	IFGain:Low	#Atten: 30 dB			Next Pea
0 dB/div Ref 20.00 dBr	2		IVIKE	23.599 4 GHz -38.200 dBm	
.og					
10.0					Next Pk Rig
0.00					J
10.0				-16.34 dBm	
20.0				1	Next Pk Le
30.0				1	noxer n z e
40.0		a sector a state of the sector	and a second different of the second s		
القاب الروافة المحمد ومرزا المراجع والأربيان المراجع					Marker Del
Contraction of the second s					
Contraction of the second s					Marker Der
60.0 70.0					Marker Der
60.0 70.0 Start 2.48 GHz	#\/B\/	(3 0 MHz	Sween 58	Stop 25.00 GHz	_
60.0 70.0 Start 2.48 GHz Res BW 1.0 MHz		V 3.0 MHz	-	00 ms (30000 pts)	_
60.0 70.0 Start 2.48 GHz Res BW 1.0 MHz MKR MODE TRC SCL 1 N 1 f	#VBV X 23.599 4 GHz		Sweep 58.		_
60.0 70.0 Start 2.48 GHz Res BW 1.0 MHz MKRI MODE TRCI SCLI	X	Y F	-	00 ms (30000 pts)	Mkr→C
60.0 70.0 Start 2.48 GHz Res BW 1.0 MHz MRR MODE TRC SCL 1 N 1 f 2	X	Y F	-	00 ms (30000 pts)	Mkr→C
60.0 70.0 Start 2.48 GHz fRes BW 1.0 MHz MKR MODE TRC SCL 1 N 1 f 2 3 4 5 6	X	Y F	-	00 ms (30000 pts) FUNCTION VALUE	Mkr→C
60.0 70.0 Start 2.48 GHz #Res BW 1.0 MHz WKR MODE TRC SCL 1 N 1 f 2 3 4 5 5 5 6 7 8	X	Y F	-	00 ms (30000 pts) FUNCTION VALUE	Mkr→C Mkr→RefL
I I F 2 1 F 3 1 F 4 1 F 5 1 F 6 1 F 7 1 F 8 1 F 9 1 F	X	Y F	-	00 ms (30000 pts) FUNCTION VALUE	Marker Der Mkr→C Mkr→RefL Moi 1 of
60.0	X	Y F	-	00 ms (30000 pts) FUNCTION VALUE	Mkr→C Mkr→RefL Mo

鱦 Keysight Sp	oectrum Analyzer - Swept	SA	1	Т	1	
Marker 1	RF 50 Ω 909.7869929		SENSE:INT	Avg Type: Log-Pw	Vr TRACE 12345	Peak Search
		PNO: Fast 🕞 IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>100/100	D TYPE MWWWW DET P N N N N	¥
		IFGain:Low	writen. oo ub		Mkr1 909.79 MHz	Novt Dook
10 dB/div	Ref 20.00 dB	m			-60.052 dBm	
Log	1101 20.00 UB					
10.0						Next Pk Right
0.00						J
-10.0					-18.34 dBm	
-20.0						Next Pk Left
-30.0						
-40.0						
-50.0					1	
-60.0		na in 1910 a fairs an sin a la bailte airs				Marker Delta
-70.0						
Start 30.0	0 MHz				Stop 1.0000 GHz	
	100 kHz	#VBW	300 kHz	Sweep	94.00 ms (30000 pts)	
MKR MODE T	RC SCL	X	Y F	UNCTION FUNCTION WID	TH FUNCTION VALUE	
1 N 2	1 f	909.79 MHz	-60.052 dBm			
3						Mkr→RefLvl
4 5					=	
6						
8						More
10						1 of 2
11						
MSG				STA	TUS	
				0111		
🎉 Keysight Sp	pectrum Analyzer - Swept S	SA				
L <mark>XI</mark> L	RF 50 Ω	AC	SENSE:INT			
L <mark>XI</mark> L		AC 121 GHz PNO: Fast	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	Vr TRACE 12345	Peak Search
L <mark>XI</mark> L	RF 50 Ω	AC 121 GHz		Avg Type: Log-Pw Avg Hold:>100/100	VI TRACE 12345 TYPE M	Peak Search
Marker 1	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	vr TRACE 12345 TYPE MWWWW DET PNNNN Kr1 2.308 90 GHz	Peak Search Next Peak
L <mark>XI</mark> L	RF 50 Ω	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	VI TRACE 12345 TYPE M	Peak Search Next Peak
Marker 1	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	vr TRACE 12345 TYPE MWWWW DET PNNNN Kr1 2.308 90 GHz	Peak Search NextPeak
Marker 1	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	vr TRACE 12345 TYPE MWWWW DET PNNNN Kr1 2.308 90 GHz	Peak Search Next Peak
Marker 1	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search NextPeak
Marker 1 10 dB/div Log	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	vr TRACE 12345 TYPE MWWWW DET PNNNN Kr1 2.308 90 GHz	Peak Search Next Peak Next Pk Right
10 dB/div Log 10.00	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search NextPeak
10 dB/div 10 dB/div 10 0 10 0 -10.0 -20.0	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search Next Peak Next Pk Right
10 dB/div 10 dB/div 10.0 10.0 -10.0 -20.0 -30.0	RF 50 Ω 50	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search Next Peak Next Pk Right
10 dB/div 10 dB/div 10 0 10 0 10 0 -20 0 -40 0 -50 0 -70 0	RF 50 Ω 1 2.308903630 Ref 20.00 dB	AC 121 GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search Next Peak Next Pk Right
10 dB/div 10 dB/div 10 0 10 0 10 0 -20 0 -40 0 -50 0 -70 0	RF 50 Ω 1 2.308903630 Ref 20.00 dB	AC 121 GHz PNO: Fast IFGain:Low Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Marker 10 dB/div 10 0.00 10.0 0.00 -20.0	RF 50 Ω 1 2.308903630 Ref 20.00 dB	AC 121 GHz PNO: Fast IFGain:Low Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	r TRACE 2 3 4 5 TYPE MUMMUN DET NNNN Kr1 2.308 90 GHz -58.065 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Marker 1 10 dB/div	RF 50 Ω 1 2.308903630 Ref 20.00 dB	AC 121 GHz PNO: Fast IFGain:Low Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	kr1 2.308 90 GHz -58.065 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
10 dB/div 10 dB/div <td< th=""><th>RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]</th><th>AC 121 GHz PNO: Fast IFGain:Low Sm Sm</th><th>Trig: Free Run #Atten: 30 dB</th><th>Avg Type: Log-Pw Avg Hold:>100/100</th><th>r TRACE 2 3 4 5 TYPE MUNITURE DET NNNN Kr1 2.308 90 GHz -58.065 dBm -18.34 dBm</th><th>Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF</th></td<>	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	r TRACE 2 3 4 5 TYPE MUNITURE DET NNNN Kr1 2.308 90 GHz -58.065 dBm -18.34 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Marker 1 10 dB/div 10.0	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	r TRACE 2 3 4 5 TYPE MUNITURE DET NNNN Kr1 2.308 90 GHz -58.065 dBm -18.34 dBm -18.34 dBm -18.34 dBm -18.34 dBm -18.34 dBm -13.34 dB	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10 dB/div 10.0 10.0 -10.0 -20.0 -30.0 -40.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -70.0 Start 1.00 #Res BW MKR MODE T 1 2 3	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	r TRACE 2 3 4 5 TYPE MUNITURE DET NNNN Kr1 2.308 90 GHz -58.065 dBm -18.34 dBm -18.34 dBm -18.34 dBm -18.34 dBm -18.34 dBm -13.34 dB	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10 dB/div 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 -10 0 -20 0 -30 0 -40.0 0 -50.0 0 -50.0 0 -60.0 0 -70.0 0 Start 1.00 0 #Res BW 0 MKR MODE T 1 1 N 2 3 3 4 5 0	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	r TRACE 2 3 4 5 TYPE MUNITURE DET NNNN Kr1 2.308 90 GHz -58.065 dBm -18.34 dBm -18.34 dBm -18.34 dBm -18.34 dBm -18.34 dBm -13.34 dB	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Marker 1 10 dB/div -20 0 -30 0 -40.0 -50.0 <t< th=""><td>RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]</td><td>AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm</td><td>Trig: Free Run #Atten: 30 dB</td><td>Avg Type: Log-Pw Avg Hold:>100/100</td><td>rr TRACE 2 3 4 5 TYPE MUMANY DET NNNN Kr1 2.308 90 GHz -58.065 dBm -1934 d</td><td>Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF</td></t<>	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	rr TRACE 2 3 4 5 TYPE MUMANY DET NNNN Kr1 2.308 90 GHz -58.065 dBm -1934 d	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10 dB/div 10.0 .000 .10.0 .10.0 .10.0 .10.0 .10.0 .10.0 .10.0 .10.0 .20.0 .30.0 .40.0 .50.0 .	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	rr TRACE 2 3 4 5 TYPE MUMANY DET NNNN Kr1 2.308 90 GHz -58.065 dBm -1934 d	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
10 dB/div 10 dB/div 10 g 10.0 g 10.0 g 10.0 g 10.0 g 10.0 g -20.0 g -30.0 g -40.0 g -50.0 g -50.0 g -50.0 g -50.0 g -60.0 g -70.0 g Start 1.00 g #Res BW MKR MODE T 1 N 2 g 3 g 9 g 10 g	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	rr TRACE 2 3 4 5 TYPE MUMANY DET NNNN Kr1 2.308 90 GHz -58.065 dBm -1934 d	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
Marker 1 10 dB/div -10 dB/div -20 0 -30 0 -30 0 -60 0 -70 0 Start 1.00 #Res BW MKR MODE T 2 3 4 5 6 7 8	RF 50 Ω 1 2.308903630 Ref 20.00 dB 0 0 GHz 1 00 kHz RC[SCL]	AC 121 GHz PNO: Fast IFGain:Low Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	rr TRACE 2 3 4 5 TYPE MUMANY DET NNNN Kr1 2.308 90 GHz -58.065 dBm -1934 d	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More

GFSK MODULATION IN HIGH CHANNEL



Note: The 100kHz RBW used in the conducted spurious test from 2.4835GHz to 25GHz may result in long measuring times, To avoid such long measuring times, the 1MHz RBW can be used for pre-test. If the emission level exceeded the limit at one or more frequencies, the 100kHz RBW would be used for final test at the special frequency.

10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

10.1 MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 10.2 was used in this testing.

10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 7.2.

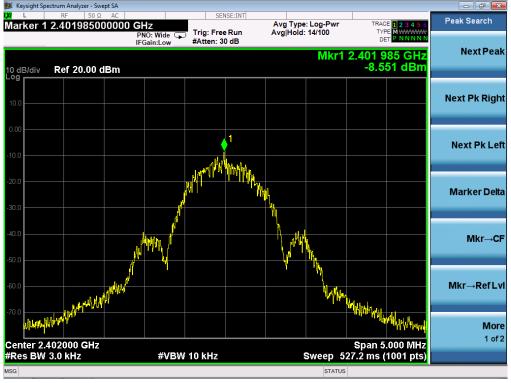
10.3 MEASUREMENT EQUIPMENT USED

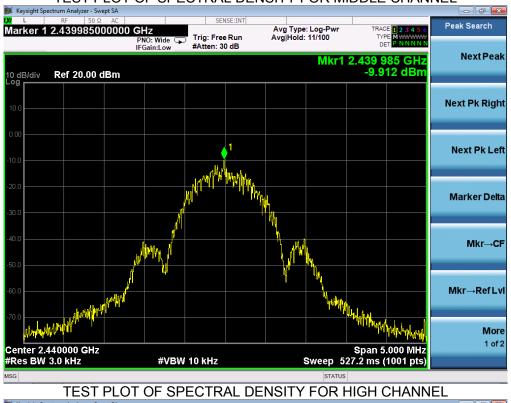
Refer To Section 6.

10.4 LIMITS AND MEASUREMENT RESULT

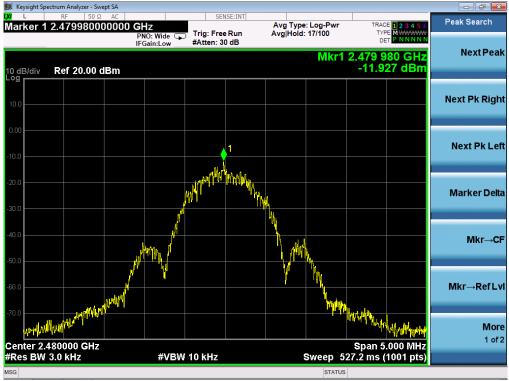
Channel No.	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-8.551	8	Pass
Middle Channel	-9.912	8	Pass
High Channel	-11.927	8	Pass

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL





TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

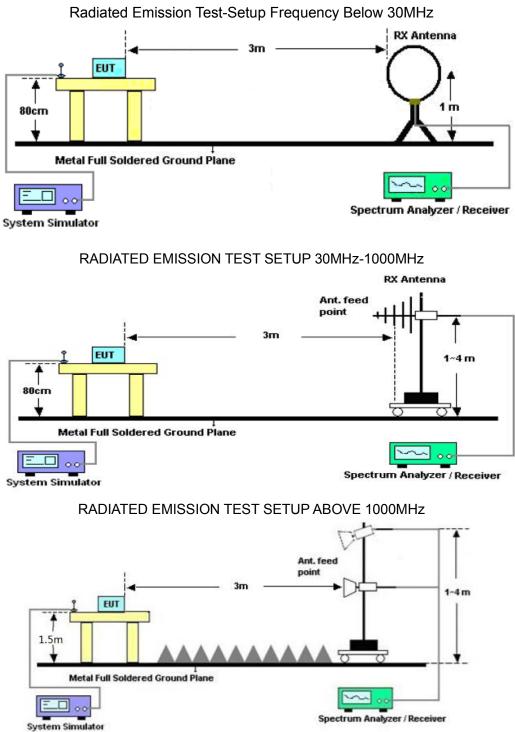


11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.





11.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (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	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,

the test records reported below are the worst result compared to other modes.

11.4. TEST RESULT

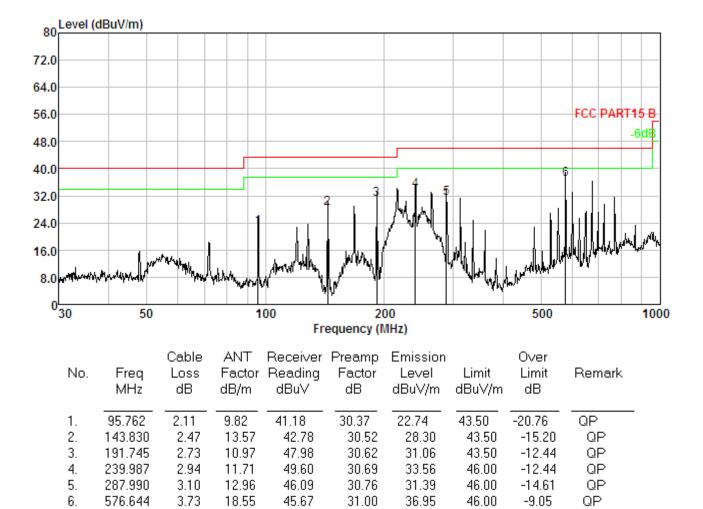
RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

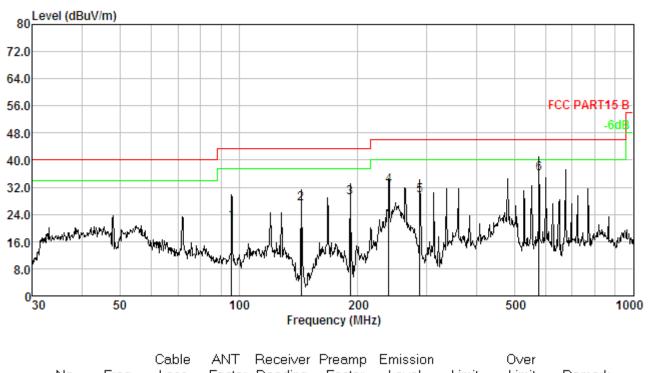
Report No.: AGC02009160602FE08 Page 27 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 4	Antenna	Horizontal

RADIATED EMISSION BELOW 1GHZ



EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 4	Antenna	Vertical



No.	Freq MHz	Loss dB	Factor dB/m	Reading dBuV	Factor dB	Le∨el dBuV/m	Limit dBuV/m	Limit dB	Remark
1.	95.762	2.11	9.82	40.18	30.37	21.74	43.50	-21.76	QP
2.	143.830	2.47	13.57	41.78	30.52	27.30	43.50	-16.20	QP
3.	191.745	2.73	10.97	45.98	30.62	29.06	43.50	-14.44	QP
4.	239.987	2.94	11.71	48.60	30.69	32.56	46.00	-13.44	QP
5.	287.990	3.10	12.96	44.09	30.76	29.39	46.00	-16.61	QP
6.	576.644	3.73	18.55	44.67	31.00	35.95	46.00	-10.05	QP

RESULT: PASS

Note:

- 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.
- 2. The "Factor" value can be calculated automatically by software of measurement system.
- 3. All test modes had been pre-tested. The mode 4 is the worst case and recorded in the report.

Report No.: AGC02009160602FE08 Page 29 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type	
4804.026	48.54	3.74	52.28	74	-21.72	peak	
4804.026	42.13	3.74	45.87	54	-8.13	AVG	
7206.026	42.17	8.14	50.31	74	-23.69	peak	
7206.026	36.34	8.14	44.48	54	-9.52	AVG	
Remark:							
Factor = Ante	enna Factor + Ca	able Loss – P	re-amplifier.				

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type	
4804.026	45.76	3.74	49.5	74	-24.5	peak	
4804.026	41.25	3.74	44.99	54	-9.01	AVG	
7206.026	40.84	8.14	48.98	74	-25.02	peak	
7206.026	34.85	8.14	42.99	54	-11.01	AVG	
Pemark:							
Remark: Factor = Ante	enna Factor + Ca	able Loss – I	Pre-amplifier.				

Report No.: AGC02009160602FE08 Page 30 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
4880.026	47.85	3.76	51.61	74	-22.39	peak		
4880.026	42.13	3.76	45.89	54	-8.11	AVG		
7320.039	41.56	8.17	49.73	74	-24.27	peak		
7320.039	34.82	8.17	42.99	54	-11.01	AVG		
Remark:								
Factor = Ante	Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
4880.026	44.85	3.76	48.61	74	-25.39	peak		
4880.026	37.84	3.76	41.6	54	-12.4	AVG		
7320.039	40.54	8.17	48.71	74	-25.29	peak		
7320.039	34.86	8.17	43.03	54	-10.97	AVG		
Remark:								
-actor = Antenna Factor + Cable Loss – Pre-amplifier.								

Report No.: AGC02009160602FE08 Page 31 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type	
4960.026	46.27	3.83	50.1	74	-23.9	peak	
4960.026	42.74	3.83	46.57	54	-7.43	AVG	
7440.039	43.17	8.21	51.38	74	-22.62	peak	
7440.039 38.33 8.21 46.54 54 -7.46 AVG							
Remark:							
Factor = Ante	enna Factor + Ca	able Loss – F	Pre-amplifier.				

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
4960.026	43.85	3.83	47.68	74	-26.32	peak
4960.026	38.97	3.83	42.8	54	-11.2	AVG
7440.039	40.54	8.21	48.75	74	-25.25	peak
7440.039	34.66	8.21	42.87	54	-11.13	AVG
Remark:						
actor = Ante	enna Factor + Ca	able Loss – F	Pre-amplifier.			

Factor = Antenna Factor + Cable Loss

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The GFSK modulation is the worst case and recorded in the report.

12. BAND EDGE EMISSION

12.1. MEASUREMENT PROCEDURE

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

12.2. TEST SET-UP

same as 11.2

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level

2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.

Report No.: AGC02009160602FE08 Page 33 of 50

12.3. TEST RESULT

EUT	Efergy / Tendr CareHub	Model Name	CH1
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal
	PK		

		PI	۸		
Keysight Spectrum Analyzer - Sweg RF 50 Ω Marker 1 2.39000000	AC 0000 GHz PNO: Fast	SENSE:INT Trig: Free Run #Atten: 10 dB	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 123456 TYPE MWWWW DET PNNNNN	Peak Search
10 dB/div Ref 106.99	IFGain:Low	#Atten: 10 dB	Mkr1	2.390 000 GHz 37.052 dBµV	Next Pea
-og 97.0 87.0 77.0					Next Pk Righ
67.0 57.0 47.0			1		Next Pk Le
37.0		17770 min cabino energio esperando esperando			Marker Delt
tart 2.37000 GHz Res BW 1.0 MHz	X		Sweep 1	Stop 2.40500 GHz .000 ms (1001 pts)	Mkr→C
1 N 1 f 2 N 1 f 3 - - - 4 - - - 5 - - - 6 - - - -	2.390 000 GHz 2.401 990 GHz	37.052 dBµV 99.636 dBµV		=	Mkr→RefL
7 8 8 9 9 10 11 11 11 11 11 11 11 11 11 11 11 11				-	Moi 1 of
SG			STATU	S	

Report No.: AGC02009160602FE08 Page 34 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1		
Temperature	25° C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	Mode 1	Antenna	Vertical		
PK					

		PK			
Keysight Spectrum Analyzer - Swept RF 50 Ω	SA AC	SENSE:INT			
arker 1 2.39000000	0000 GHz PNO: Fast Trig:	Avg	Type: Log-Pwr Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	Peak Search
) dB/div Ref 106.99 d	BμV		Mkr1 2.	390 000 GHz 36.603 dBµV	NextPea
og 17.0 17.0				2	Next Pk Rig
7.0		1			Next Pk Le
7.0	ณฐาน		errelle articles and harden articles lawer		Marker De
art 2.37000 GHz Res BW 1.0 MHz	#VBW 3.0 N		Sweep 1.00	op 2.40500 GHz 10 ms (1001 pts)	Mkr→C
2 N 1 F 3 4 5 6	X Y 2.390 000 GHz 36.603 2.401 990 GHz 97.602	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Mkr→RefL
7 8 9					Мо 1 о
			· · · · ·		
3			STATUS		

Report No.: AGC02009160602FE08 Page 35 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1		
Temperature	25° C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	Mode 3	Antenna	Horizontal		
PK					

		FN		
Keysight Spectrum Analyzer - Swept SA				
RF 50 Ω AC Iarker 2 2.483500000000	SENSE:IN PNO: Fast IFGain:Low SENSE:IN Trig: Free Run #Atten: 10 dB	Avg Type: Log-Pwr	TRACE 123456 TYPE MWWWWW DET PNNNN	Peak Search
0 dB/div Ref 106.99 dBµV		Mkr2	2.483 500 GHz 44.758 dBµV	NextPea
•g				Next Pk Rigl
57.0	2 mytriken			Next Pk Le
27.0 27.0 17.0	and the second	la Methoda ya ana ka		Marker Del
tart 2.47800 GHz Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 1.	Stop 2.50000 GHz 000 ms (1001 pts)	Mkr→C
2 N 1 f 2.483 3 4 5 5 6	9 980 GHz 97.296 dBµV 3 500 GHz 44.758 dBµV		=	Mkr→RefL
7 8 9 0				Mo 1 of
11				

Report No.: AGC02009160602FE08 Page 36 of 50

EUT	Efergy / Tendr CareHub	Model Name	CH1		
Temperature	25° C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	Mode 3	Antenna	Vertical		
PK					

		PN			
Keysight Spectrum Analyzer - Swept SA					
RF 50 Ω AC arker 1 2.480046000000	0 GHz	ree Run Avg H	Гуре: Log-Pwr Iold:>100/100	TRACE 123456 TYPE MWWWW DET PNNNN	Peak Search
dB/div Ref 106.99 dBµ\	V		Mkr1 2	.480 046 GHz 95.272 dBµV	NextPea
1 7.0 7.0 7.0					Next Pk Rig
	2				Next Pk Le
7.0 7.0		hay and point of the second	¹⁸ 10-1916 Annald Channell (admanna da anna	Marker De
art 2.47800 GHz Res BW 1.0 MHz	#VBW 3.0 MH		Sweep 1.0	top 2.50000 GHz 00 ms (1001 pts)	Mkr→C
R MODE TRC SCL X 1 N 1 f 2.48 2 N 1 f 2.48 3	30 046 GHz 95.272 9 33 500 GHz 44.366	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Mkr→RefL
7 8 					Mo 1 o
9 0 0 1	III			• •	

RESULT: PASS

Note: The PK values of the emission were less than AV limits, so the AV values were deemed to comply with the requirement without test.

13. FCC LINE CONDUCTED EMISSION TEST

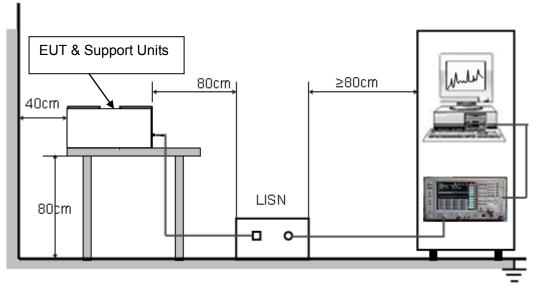
13.1. LIMITS OF LINE CONDUCTED EMISSION TEST

F	Maximum RF Line Voltage			
Frequency	Q.P.(dBuV)	Average(dBuV)		
150kHz~500kHz	66-56	56-46		
500kHz~5MHz	56	46		
5MHz~30MHz	60	50		

Note:

- 1. The lower limit shall apply at the transition frequency.
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



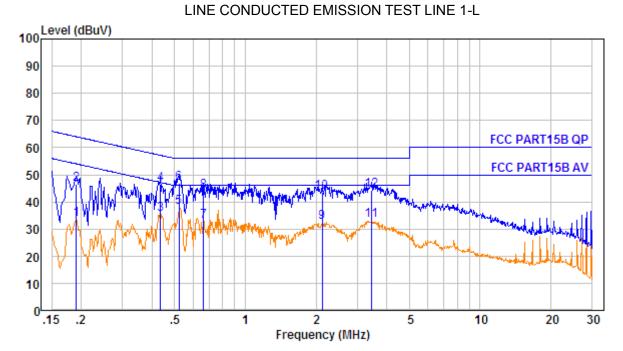
13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipments received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN.
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

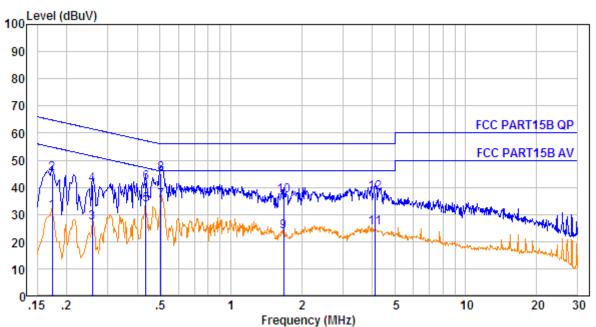
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.



13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Le∨el dBuV	Limit dBuV	O∨er Limit dB	Remark
1.	0.190	10.61	0.60	22.20	33.41	54.02	-20.61	Average
2.	0.190	10.61	0.60	35.20	46.41	64.02	-17.61	QP -
3.	0.435	10.64	0.60	24.10	35.34	47.15	-11.81	Average
4.	0.435	10.64	0.60	35.10	46.34	57.15	-10.81	QP -
5.	0.521	10.65	0.60	26.79	38.04	46.00	-7.96	Average
6.	0.521	10.65	0.60	35.79	47.04	56.00	-8.96	QP -
7.	0.665	10.66	0.60	21.72	32.98	46.00	-13.02	Average
8.	0.665	10.66	0.60	32.72	43.98	56.00	-12.02	QP -
9.	2.121	10.70	0.60	21.29	32.59	46.00	-13.41	Average
10.	2.121	10.70	0.60	32.29	43.59	56.00	-12.41	QP -
11.	3.454	10.72	0.60	21.96	33.28	46.00	-12.72	Average
12.	3.454	10.72	0.60	32.96	44.28	56.00	-11.72	QP -

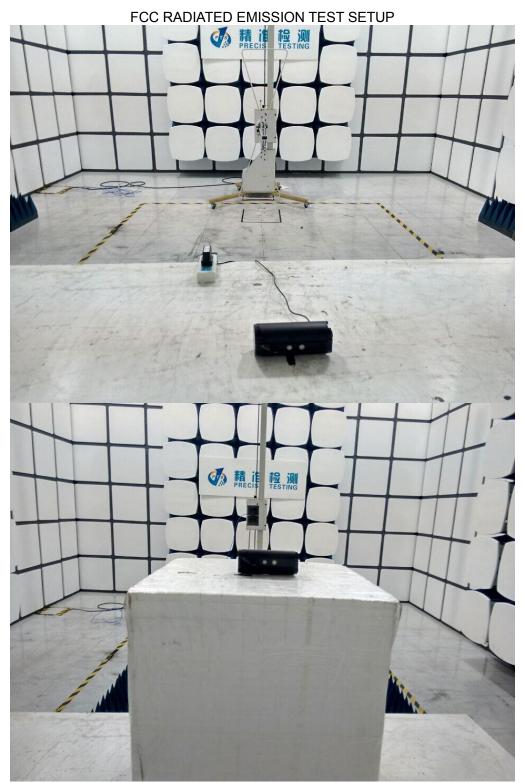
RESULT: PASS



Line Conducted Emission Test Line 2-N

No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBu∨	O∨er Limit dB	Remark
1.	0.174	10.60	0.60	19.84	31.04	54.77	-23.73	Average
2.	0.174	10.60	0.60	33.84	45.04	64.77	-19.73	QP -
3.	0.258	10.62	0.60	15.58	26.80	51.51	-24.71	Average
4.	0.258	10.62	0.60	29.58	40.80	61.51	-20.71	QP -
5.	0.435	10.64	0.60	22.29	33.53	47.15	-13.62	Average
6.	0.435	10.64	0.60	30.29	41.53	57.15	-15.62	QP
7.	0.505	10.65	0.60	23.77	35.02	46.00	-10.98	Average
8.	0.505	10.65	0.60	33.77	45.02	56.00	-10.98	QP -
9.	1.680	10.69	0.60	12.49	23.78	46.00	-22.22	Average
10.	1.680	10.69	0.60	25.49	36.78	56.00	-19.22	QP
11.	4.114	10.72	0.60	13.83	25.15	46.00	-20.85	Average
12.	4.114	10.72	0.60	26.83	38.15	56.00	-17.85	QP -

RESULT: PASS



APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Report No.: AGC02009160602FE08 Page 42 of 50

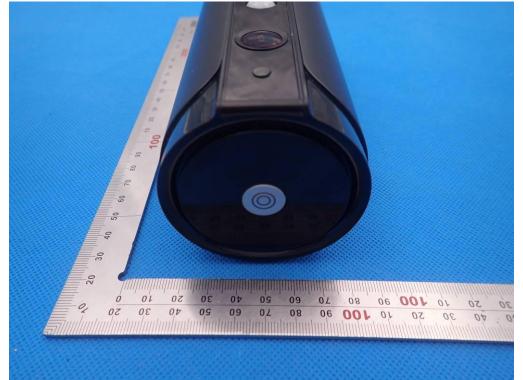


FCC LINE CONDUCTED EMISSION TEST SETUP



APPENDIX B: PHOTOGRAPHS OF EUT

TOP VIEW OF EUT



Report No.: AGC02009160602FE08 Page 44 of 50



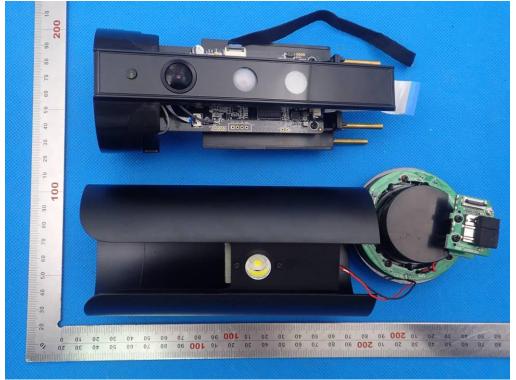
BOTTOM VIEW OF EUT

Report No.: AGC02009160602FE08 Page 45 of 50

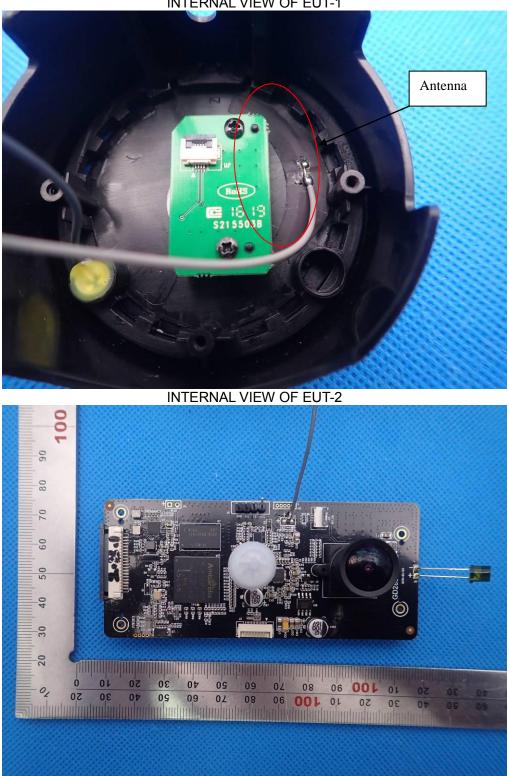




OPEN VIEW OF EUT

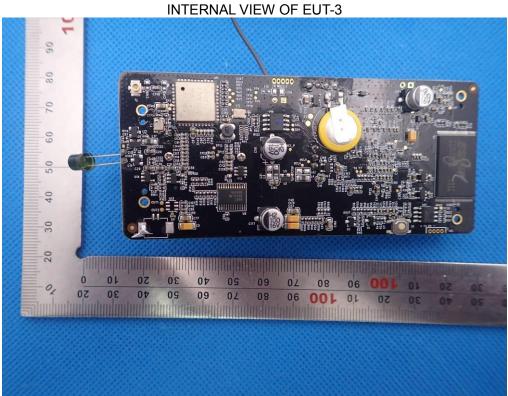


Report No.: AGC02009160602FE08 Page 47 of 50

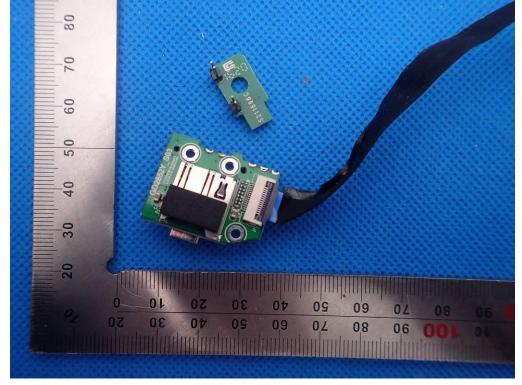


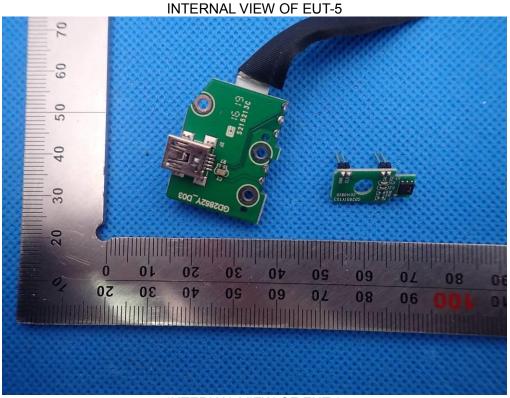
INTERNAL VIEW OF EUT-1

Report No.: AGC02009160602FE08 Page 48 of 50

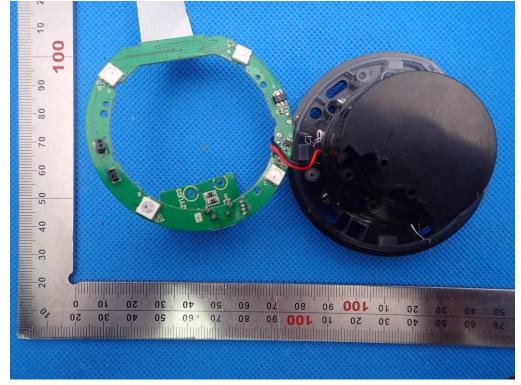


INTERNAL VIEW OF EUT-4

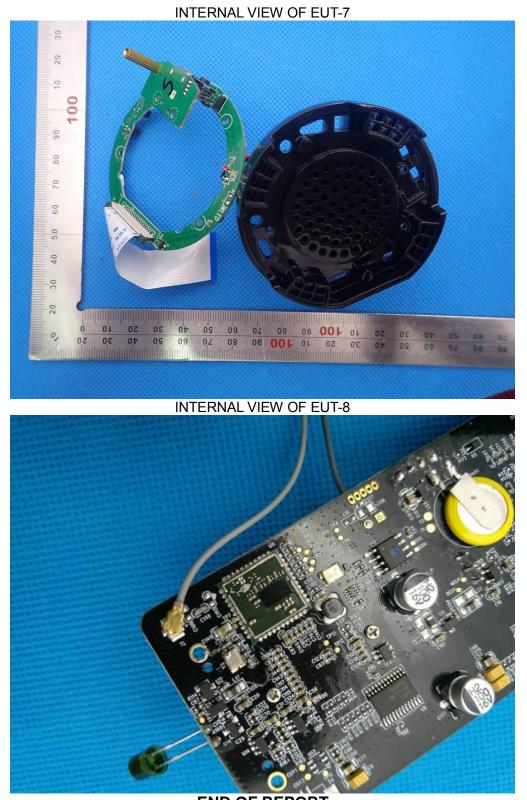




INTERNAL VIEW OF EUT-6



Report No.: AGC02009160602FE08 Page 50 of 50



----END OF REPORT----