

RF TEST REPORT

Product Name: Wi-Fi camera

Model Name: W09

FCC ID: 2BC6D-W09

Issued For : Shenzhen Shangjian Technology Co., LTD

Building C,Building B 1510,Lingshang Times, No.66 Baguasi Road,Hualin Community, Yuanling Street Futian District,

Shenzhen, China

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177,

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Shenzhen, Guangdong, China

Report Number: LGT25G219RF03

Sample Received Date: Jul. 24, 2025

Date of Test: Jul. 24, 2025 ~ Aug. 07, 2025

Date of Issue: Aug. 07, 2025

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TEST REPORT CERTIFICATION

Applicant: Shenzhen Shangjian Technology Co., LTD

Building C, Building B 1510, Lingshang Times, No.66 Baguasi

Address: Road, Hualin Community, Yuanling Street Futian District,

Shenzhen, China

Manufacturer: Shenzhen Shangjian Technology Co., LTD

Building C, Building B 1510, Lingshang Times, No.66 Baguasi

Address: Road, Hualin Community, Yuanling Street Futian District,

Shenzhen, China

Product Name: Wi-Fi camera

Trademark: N/A

Model Name: W09

Series Model: N/A

Sample Status: Normal

APPLICABLE STANDARDS		
STANDARD	TEST RESULTS	
FCC Part 15.247, Subpart C ANSI C63.10-2013	PASS	

Prepared by:

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Engineer

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Technical Director

Report No.: LGT25G219RF03 Page 2 of 53



Table of Contents	Pag
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	9
2.3 TEST SOFTWARE AND POWER LEVEL	9
2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	10
2.5 EQUIPMENTS LIST	11
3. EMC EMISSION TEST	13
3.1 CONDUCTED EMISSION MEASUREMENT	13
3.2 TEST PROCEDURE	14
3.3 TEST SETUP	14
3.4 EUT OPERATING CONDITIONS	14
3.5 TEST RESULTS	15
4. RADIATED EMISSION MEASUREMENT	17
4.1 RADIATED EMISSION LIMITS	17
4.2 TEST PROCEDURE	19
4.3 TEST SETUP	19
4.4 EUT OPERATING CONDITIONS	20
4.5 FIELD STRENGTH CALCULATION	20
4.6 TEST RESULTS (BAND EDGE REQUIREMENTS)	25
5. CONDUCTED SPURIOUS & BAND EDGE EMISSION	26
5.1 LIMIT	26
5.2 TEST PROCEDURE	26
5.3 TEST SETUP	26
5.4 EUT OPERATION CONDITIONS	26
5.5 TEST RESULTS	26
6. POWER SPECTRAL DENSITY TEST	27
6.1 LIMIT	27
6.2 TEST PROCEDURE	27
6.3 TEST SETUP	27
6.4 EUT OPERATION CONDITIONS	27

Report No.: LGT25G219RF03 Page 3 of 53



6.5 TEST RESULTS	27
7. BANDWIDTH TEST	28
7.1 LIMIT	28
7.2 TEST PROCEDURE	28
7.3 TEST SETUP	28
7.4 EUT OPERATION CONDITIONS	28
7.5 TEST RESULTS	28
8. PEAK OUTPUT POWER TEST	29
8.1 LIMIT	29
8.2 TEST PROCEDURE	29
8.3 TEST SETUP	29
8.4 EUT OPERATION CONDITIONS	30
8.5 TEST RESULTS	30
9. ANTENNA REQUIREMENT	31
9.1 STANDARD REQUIREMENT	31
9.2 EUT ANTENNA	31
APPENDIX I - TEST RESULTS	32
1. DUTY CYCLE	32
2. BANDWIDTH	35
3. MAXIMUM CONDUCTED OUTPUT POWER	40
4. MAXIMUM POWER SPECTRAL DENSITY	43
5. UNWANTED EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	46
APPENDIX II - MEASUREMENT PHOTOS	53

Report No.: LGT25G219RF03 Page 4 of 53



Revision History

Rev.	Issue Date	Revisions
00	Aug. 07, 2025	Initial Issue

Report No.: LGT25G219RF03 Page 5 of 53



1. SUMMARY OF TEST RESULTS

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

FCC Part 15.247, Subpart C			
Standard Section	last Itam		
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)(3)	Output Power	PASS	
15.209	Radiated Spurious Emission	PASS	
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	
15.247 (e)	Power Spectral Density	PASS	
15.205	Restricted Band Edge Emission	PASS	
Part 15.247(d)/ Part 15.209(a)	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

Report No.: LGT25G219RF03 Page 6 of 53



1.1 TEST FACTORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate:	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

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 $\mathbf{k=2}$, providing a level of confidence of approximately $\mathbf{95}$ %.

No.	Item	Uncertainty
1	Occupied Channel Bandwidth	\pm 0.46%
2	RF Output Power, Conducted	±0.71dB
3	Power Spectral Density, Conducted	±1.57dB
4	Unwanted Emission, Conducted	\pm 0.63dB
5	Conducted emission	$\pm 2.80 \mathrm{dB}$
6	All Emissions, Radiated (0.009-30MHz)	$\pm 2.16 \mathrm{dB}$
7	All Emissions, Radiated (30MHz-1GHz)	\pm 4.61dB
8	All Emissions, Radiated (1GHz-18GHz)	\pm 5.49dB
9	Temperature	\pm 0.5°C
10	Humidity	±2%
11	Duty Cycle	±2.3%

Note: The measurement uncertainty is not included in the test result.

Report No.: LGT25G219RF03 Page 7 of 53



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	Wi-Fi camera	
Trademark:	N/A	
Test Model Name:	W09	
Series Model:	N/A	
Model Difference:	N/A	
Product Description:	Operation Frequency: Modulation Type: Radio Technology: Bluetooth Configuration: Number Of Channel: Antenna Designation: Antenna Gain (dBi)	2402~2480 MHz GFSK BLE BLE (1M PHY, 2M PHY) 40 Chip 2.95
Channel List:	Please refer to the Note 3.	
Adapter:	Input: 5V 1A	
Battery:	Capacity: 600mAh Rated Voltage: 3.7V	
Hardware Version:	VEEPAI_MA5_CODE_V13	
Software Version:	N/A	
Connecting I/O Port(s):	Please refer to the Note 1.	

Note:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
- 2. The antenna information refers to 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.

3.

			Chan	nel List			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (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

Report No.: LGT25G219RF03 Page 8 of 53



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
Mode 1	TX CH00(2402MHz)	1 MHz/GFSK
Mode 2	TX CH19(2440MHz)	1 MHz/GFSK
Mode 3	TX CH39(2480MHz)	1 MHz/GFSK

Worst Mode	Description	Data/Modulation
Mode 4	TX CH00(2402MHz)	2 MHz/GFSK
Mode 5	TX CH19(2440MHz)	2 MHz/GFSK
Mode 6	TX CH39(2480MHz)	2 MHz/GFSK

Note:

- (1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
- (2) We have be tested for all avaiable U.S. voltage and frequency (For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/60Hz is shown in the report.
- (3) The battery is fully-charged during the radited and RF conducted test.

For AC Conducted Emission

	Test Case
AC Conducted Emission	Mode 7: Keeping BLE 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.

Test software Version	Test program: BLE			
	Mode Or Modulation type	Power setting		
SecureCRT_6.5.0.380	1M	Default		
	2M	Default		

Report No.: LGT25G219RF03 Page 9 of 53



2.4 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.

Accessories Equipment

tooosooneo Equipment							
Description	Manufacturer	Model	S/N	Rating			

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	HKF-16	N/A	N/A
Adapter	Tenpao	S005CAU0500100	N/A	Input: 100-240V ~ 50/60Hz 0.2A Output: 5V, 1A
USB-A to USB-C Cable	N/A	N/A	N/A	0.5m

Note:

- (1) For detachable type I/O cable should be specified the length in cm in <code>[Length]</code> column.
- (2) "YES" is means "with core"; "NO" is means "without core".

Report No.: LGT25G219RF03 Page 10 of 53



2.5 EQUIPMENTS LIST

Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2025.03.06	2026.03.05
LISN	COM-POWER	LI-115	02032	2025.03.05	2026.03.04
LISN	SCHWARZBECK	NNLK 8122	00160	2025.03.05	2026.03.04
Transient Limiter	Limiter CYBERTEK		E225010004 9	2025.03.05	2026.03.04
Coaxial cables (9kHz-30MHz)	Juncoax	JMR600-N MNM-2M	N.A	2025.03.06	2026.03.05
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2025.03.10	2026.03.09
Testing Software	EMC-I_V1.4.0.3_SKET				

Radiated Test equipment					
Equipment	Manufacturer	anufacturer Model No. S		Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2025.03.06	2026.03.05
Active loop Antenna	ive loop Antenna ETS		00049544	2025.03.11	2028.03.10
Spectrum Analyzer	Keysight	N9010B	MY60242508	2025.03.05	2026.03.04
Trilog Broadband Antenna (30M-1G)	SCHWARZBECK	VULB 9168	2705	2024.05.17	2027.05.16
Horn Antenna(1-18G)	SCHWARZBECK	3115	10SL0060	2025.03.10	2028.03.09
Horn Antenna(18-40G)	SCHWARZBECK	BBHA 9170	685	2023.10.23	2026.10.22
Pre-amplifier(30M-1G)	EMtrace	RP01A	02019	2025.03.06	2026.03.05
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2025.03.06	2026.03.05
Pre-amplifier(18-40G)	SCHWARZBECK	BBV 9721	9721-019	2024.10.21	2025.10.20
Coaxial cables (9kHz-1GHz)	Juncoax	JMR600-N MNM-8M	N.A	2025.03.06	2026.03.05
Coaxial cables (1GHz-18GHz)	xial cables TaiHe		N.A	2025.03.06	2026.03.05
Coaxial cables (18GHz-40GHz)	lunkosha inc		N.A	2025.03.08	2026.03.07
Antenna Tower	SAEMC	BK-4AT-BS -D	SK20210930 08	N.A	N.A
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2025.03.10	2026.03.09
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Conducted Test equipment								
Equipment	Manufacturer	er Model No. Serial No. Cal. Date		Cal. Date	Cal. Until			
Signal Analyzer	Keysight	N9010B	MY60242508	2025.03.05	2026.03.04			
Signal Analyzer	Keysight	N9020A	MY50530994	2025.03.05	2026.03.04			
Signal Analyzer	R&S	FSV40-N	102245	2025.02.17	2026.02.16			
Power Sensor	R&S	NRP8S	149.0006K02 -104963-Ae	2025.03.06	2026.03.05			
RF Automatic Test system	MW	MW100 -RFCB	MW220324L G-33	2025.03.06	2026.03.05			
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2025.03.05	2026.03.04			
Attenuator	eastsheep	90db	N.A	2025.03.06	2026.03.05			
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2025.03.10	2026.03.09			

Report No.: LGT25G219RF03 Page 11 of 53

Digital multimeter	MASTECH	MS8261	MBGBC8305	2025.03.05	2026.03.04
DC source	Jiuyuan	QJ6010E	N.A	2025.03.09	2026.03.08
Testing Software	MTS8310_V2.0.0.0_MW				

Report No.: LGT25G219RF03 Page 12 of 53



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.

EDECLIENCY (MH-)	Conducted Emission limit (dBuV)				
FREQUENCY (MHz)	Quasi-peak	Average			
0.15 -0.5	66 - 56 *	56 - 46 *			
0.50 -5.0	56.00	46.00			
5.0 -30.0	60.00	50.00			

Note:

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

The following table is the setting of the receiver

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

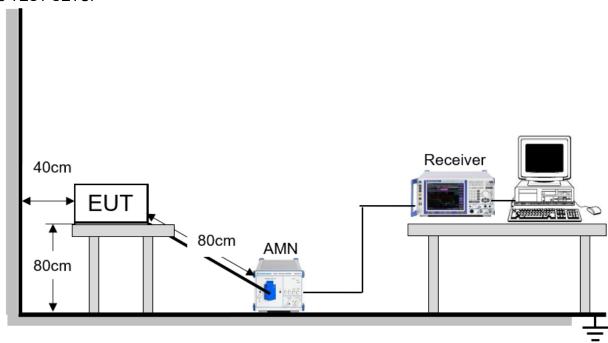
Report No.: LGT25G219RF03 Page 13 of 53



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



3.4 EUT OPERATING CONDITIONS

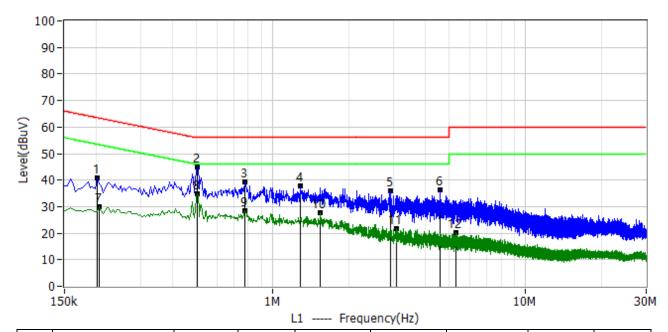
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

Report No.: LGT25G219RF03 Page 14 of 53



3.5 TEST RESULTS

Project: LGT25G219	Test Engineer: LiuH
EUT: Wi-Fi camera	Temperature: 26.8°C
M/N: W09	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-07-25
Test Mode: TX BLE 2402	
Note:	

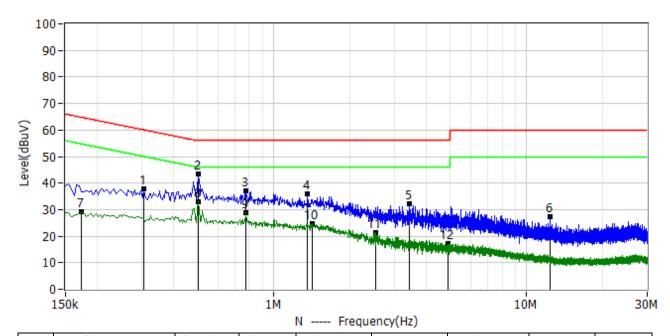


No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	Polar
INO.	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Folai
1*	0.202	29.97	10.73	40.70	63.53	-22.83	QP	L1
2*	0.502	33.88	10.93	44.81	56.00	-11.19	QP	L1
3*	0.774	28.37	10.87	39.24	56.00	-16.76	QP	L1
4*	1.286	26.95	11.05	38.00	56.00	-18.00	QP	L1
5*	2.926	24.58	11.31	35.89	56.00	-20.11	QP	L1
6*	4.610	25.03	11.29	36.32	56.00	-19.68	QP	L1
7*	0.206	19.06	10.73	29.79	53.37	-23.57	AV	L1
8*	0.502	23.77	10.93	34.70	46.00	-11.30	AV	L1
9*	0.774	17.46	10.87	28.33	46.00	-17.67	AV	L1
10*	1.538	16.67	11.15	27.82	46.00	-18.18	AV	L1
11*	3.082	10.42	11.33	21.75	46.00	-24.25	AV	L1
12*	5.302	8.80	11.35	20.15	50.00	-29.85	AV	L1

Report No.: LGT25G219RF03 Page 15 of 53



Project: LGT25G219	Test Engineer: LiuH
EUT: Wi-Fi camera	Temperature: 26.8°C
M/N: W09	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-07-25
Test Mode: TX BLE 2402	
Note:	



No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	Polar
NO.	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Pulai
1*	0.306	27.20	10.77	37.97	60.08	-22.11	QP	N
2*	0.502	32.43	10.84	43.27	56.00	-12.73	QP	N
3*	0.778	26.17	10.83	37.00	56.00	-19.00	QP	N
4*	1.358	25.10	11.02	36.12	56.00	-19.88	QP	N
5*	3.450	21.14	11.25	32.39	56.00	-23.61	QP	Ν
6*	12.442	15.72	11.57	27.29	60.00	-32.71	QP	N
7*	0.174	18.69	10.63	29.32	54.77	-25.45	AV	N
8*	0.502	22.12	10.84	32.96	46.00	-13.04	AV	N
9*	0.778	18.02	10.83	28.85	46.00	-17.15	AV	N
10*	1.418	13.85	11.05	24.90	46.00	-21.10	AV	N
11*	2.526	10.04	11.19	21.23	46.00	-24.77	AV	N
12*	4.886	5.76	11.31	17.07	46.00	-28.93	AV	N



4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMITS

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 (0.009MHz - 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	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (1GHz-25 GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)			
	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.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
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
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Report No.: LGT25G219RF03 Page 17 of 53



For 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)		
	200Hz (From 9kHz to 0.15MHz)/		
DB (\/B (amission in restricted hand)	9KHz (From 0.15MHz to 30MHz);		
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/		
	9KHz (From 0.15MHz to 30MHz)		

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

Spectrum Parameter	Setting		
Attenuation	Auto		
Detector	Peak		
Start Frequency	1000 MHz (Peak/AV)		
Stop Frequency	10th carrier hamonic (Peak/AV)		
RB / VB (emission in restricted band)	1 MHz / 3 MHz(Peak)		
	1 MHz/1/T MHz(AVG)		

For Restricted band

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

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

Report No.: LGT25G219RF03 Page 18 of 53



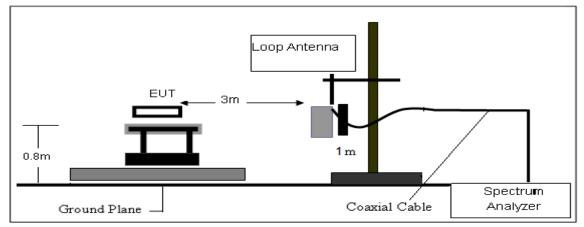
4.2 TEST PROCEDURE

- 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.

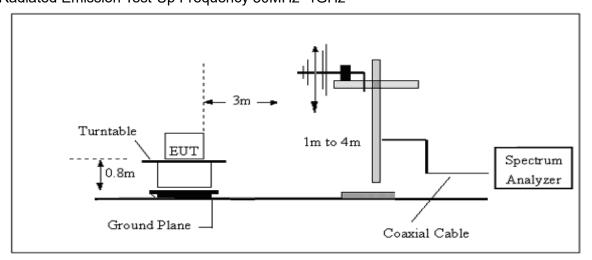
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

4.3 TEST SETUP

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



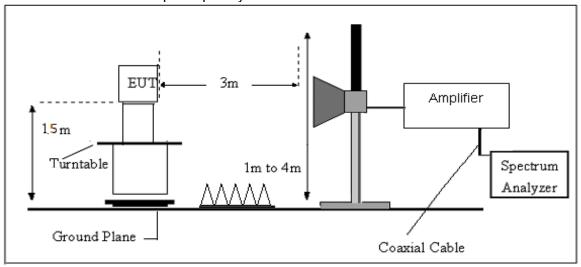
(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



Report No.: LGT25G219RF03 Page 19 of 53



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



4.4 EUT OPERATING CONDITIONS

Please refer to section 3.4 of this report.

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 equation with a sample calculation is as follows:

 $F\dot{S} = RA + AF + CL - AG$

Where

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

Report No.: LGT25G219RF03 Page 20 of 53



4.6 TEST RESULTS

Results of Radiated Emissions (9 KHz~30MHz)

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Remark
1*	-	-	-	-	_	-	-	See Note

Note:

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and 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.

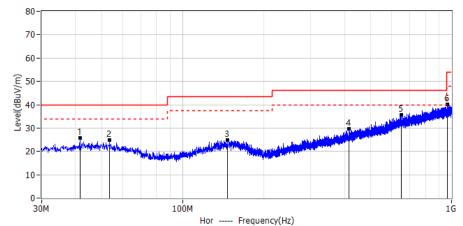
Report No.: LGT25G219RF03 Page 21 of 53



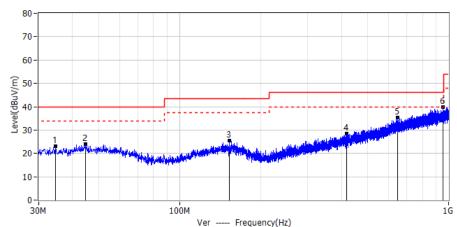
Results of Radiated Emissions (30MHz~1000MHz)

Note:All mode has been tested, only shown the worst case data.

Project: LGT25G219	Test Engineer: LiuH
EUT: Wi-Fi camera	Temperature: 24.9°C
M/N: W09	Humidity: 52%RH
Test Voltage: Battery	Test Data: 2025-07-29
Test Mode: TX BLE 2402	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	41.640	4.97	20.72	25.69	40.00	-14.31	QP	Hor
2*	53.644	4.01	20.72	24.73	40.00	-15.27	QP	Hor
3*	146.764	3.05	21.93	24.98	43.50	-18.52	QP	Hor
4*	415.696	4.15	25.63	29.78	46.00	-16.22	QP	Hor
5*	651.285	5.23	30.28	35.51	46.00	-10.49	QP	Hor
6*	967.384	5.20	34.81	40.01	54.00	-13.99	QP	Hor



No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	Polar
NO.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	rulai
1*	34.608	3.45	19.68	23.13	40.00	-16.87	QP	Ver
2*	44.793	3.30	20.75	24.05	40.00	-15.95	QP	Ver
3*	153.190	3.33	22.10	25.43	43.50	-18.07	QP	Ver
4*	417.151	2.78	25.58	28.36	46.00	-17.64	QP	Ver
5*	646.314	4.79	30.46	35.25	46.00	-10.75	QP	Ver
6*	951.258	4.84	34.96	39.80	46.00	-6.20	QP	Ver

Report No.: LGT25G219RF03 Page 22 of 53



Results of Radiated Emissions (Above 1000MHz)

Note:All mode has been tested, only shown the worst case data.

Above 1000	MHz								
Frequency	Reading	Orrected Factor	Reslut	Limits	Margin	D	D 1 ''		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector	Polarity		
Low Channel (2M PHY-2402 MHz)									
3264.61	55.22	-8.45	46.77	74.00	-27.23	PK	Vertical		
3264.61	45.59	-8.45	37.14	54.00	-16.86	AV	Vertical		
3264.64	55.61	-8.45	47.16	74.00	-26.84	PK	Horizontal		
3264.64	45.77	-8.45	37.32	54.00	-16.68	AV	Horizontal		
4804.47	54.75	-6.09	48.66	74.00	-25.34	PK	Vertical		
4804.47	44.53	-6.09	38.44	54.00	-15.56	AV	Vertical		
4804.44	55.21	-6.09	49.12	74.00	-24.88	PK	Horizontal		
4804.44	44.35	-6.09	38.26	54.00	-15.74	AV	Horizontal		
5359.77	57.92	-6.68	51.24	74.00	-22.76	PK	Vertical		
5359.77	47.11	-6.68	40.43	54.00	-13.57	AV	Vertical		
5359.86	57.90	-6.68	51.22	74.00	-22.78	PK	Horizontal		
5359.86	47.50	-6.68	40.82	54.00	-13.18	AV	Horizontal		
7205.94	59.77	-8.13	51.64	74.00	-22.36	PK	Vertical		
7205.94	50.74	-8.13	42.61	54.00	-11.39	AV	Vertical		
7205.86	59.54	-8.13	51.41	74.00	-22.59	PK	Horizontal		
7205.86	50.70	-8.13	42.57	54.00	-11.43	AV	Horizontal		
		Middle Ch	nannel (2M F	PHY-2440 MH	z)				
3264.88	55.62	-8.45	47.17	74.00	-26.83	PK	Vertical		
3264.88	46.12	-8.45	37.67	54.00	-16.33	AV	Vertical		
3264.60	55.29	-8.45	46.84	74.00	-27.16	PK	Horizontal		
3264.60	46.35	-8.45	37.90	54.00	-16.10	AV	Horizontal		
4880.55	55.42	-6.09	49.33	74.00	-24.67	PK	Vertical		
4880.55	44.50	-6.09	38.41	54.00	-15.59	AV	Vertical		
4880.46	55.41	-6.09	49.32	74.00	-24.68	PK	Horizontal		
4880.46	44.21	-6.09	38.12	54.00	-15.88	AV	Horizontal		
5359.66	57.42	-6.68	50.74	74.00	-23.26	PK	Vertical		
5359.66	48.27	-6.68	41.59	54.00	-12.41	AV	Vertical		
5359.81	57.88	-6.68	51.20	74.00	-22.80	PK	Horizontal		
5359.81	47.22	-6.68	40.54	54.00	-13.46	AV	Horizontal		
7310.85	59.84	-8.13	51.71	74.00	-22.29	PK	Vertical		
7310.85	50.75	-8.13	42.62	54.00	-11.38	AV	Vertical		
7310.82	60.21	-8.13	52.08	74.00	-21.92	PK	Horizontal		
7310.82	50.76	-8.13	42.63	54.00	-11.37	AV	Horizontal		

Report No.: LGT25G219RF03 Page 23 of 53



	High Channel (2M PHY-2480 MHz)									
3264.80	55.22	-8.45	46.77	74.00	-27.23	PK	Vertical			
3264.80	45.38	-8.45	36.93	54.00	-17.07	AV	Vertical			
3264.79	55.61	-8.45	47.16	74.00	-26.84	PK	Horizontal			
3264.79	45.05	-8.45	36.60	54.00	-17.40	AV	Horizontal			
4960.44	55.21	-6.09	49.12	74.00	-24.88	PK	Vertical			
4960.44	44.94	-6.09	38.85	54.00	-15.15	AV	Vertical			
4960.48	55.20	-6.09	49.11	74.00	-24.89	PK	Horizontal			
4960.48	44.30	-6.09	38.21	54.00	-15.79	AV	Horizontal			
5359.59	56.71	-6.68	50.03	74.00	-23.97	PK	Vertical			
5359.59	47.19	-6.68	40.51	54.00	-13.49	AV	Vertical			
5359.59	57.97	-6.68	51.29	74.00	-22.71	PK	Horizontal			
5359.59	47.03	-6.68	40.35	54.00	-13.65	AV	Horizontal			
7439.77	59.86	-8.13	51.73	74.00	-22.27	PK	Vertical			
7439.77	49.54	-8.13	41.41	54.00	-12.59	AV	Vertical			
7439.89	60.00	-8.13	51.87	74.00	-22.13	PK	Horizontal			
7439.89	50.03	-8.13	41.90	54.00	-12.10	AV	Horizontal			

Remark:

In frequency ranges 18~25GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.

Report No.: LGT25G219RF03 Page 24 of 53



4.6 TEST RESULTS (BAND EDGE REQUIREMENTS)

Note:All mode has been tested, only shown the worst case data.

Frequency (MHz)	Reading (dBµV)	Orrected Factor (dB)	Reslut (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector	Polarity			
	GFSK-2M PHY									
2390.00	12.66	34.10	46.76	74.00	-27.24	PK	Vertical			
2390.00	1.64	34.10	35.74	54.00	-18.26	AV	Vertical			
2400.00	13.60	34.11	47.71	74.00	-26.29	PK	Horizontal			
2400.00	1.95	34.11	36.06	54.00	-17.94	AV	Horizontal			
2390.00	12.18	34.10	46.28	74.00	-27.72	PK	Vertical			
2390.00	2.08	34.10	36.18	54.00	-17.82	AV	Vertical			
2400.00	13.45	34.11	47.56	74.00	-26.44	PK	Horizontal			
2400.00	1.00	34.11	35.11	54.00	-18.89	AV	Horizontal			
2483.50	13.34	34.44	47.78	74.00	-26.22	PK	Vertical			
2483.50	2.18	34.44	36.62	54.00	-17.38	AV	Vertical			
2500.00	13.59	34.46	48.05	74.00	-25.95	PK	Vertical			
2500.00	1.71	34.46	36.17	54.00	-17.83	AV	Vertical			
2483.50	12.62	34.44	47.06	74.00	-26.94	PK	Horizontal			
2483.50	1.01	34.44	35.45	54.00	-18.55	AV	Horizontal			
2500.00	13.63	34.46	48.09	74.00	-25.91	PK	Horizontal			
2500.00	1.00	34.46	35.46	54.00	-18.54	AV	Horizontal			

Low measurement frequencies is range from 2310 to 2404 MHz, high measurement frequencies is range from 2478 to 2500 MHz.

Report No.: LGT25G219RF03 Page 25 of 53



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 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.

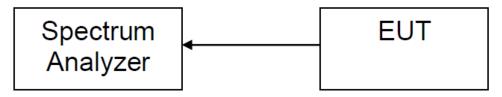
5.2 TEST PROCEDURE

Spectrum Parameter	Setting		
Detector	Peak		
Start/Stop Frequency	30 MHz to 10th carrier harmonic		
RB / VB (emission in restricted band)	100 KHz/300 KHz		
Trace-Mode:	Max hold		

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Ctart/Ctan Fraguency	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



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal 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

For the measurement records, refer to the appendix I.

Note: Not recorded emission from 9 KHz to 30 MHz as emission level at least 20dBc lower than emission limit.

Report No.: LGT25G219RF03 Page 26 of 53



6. POWER SPECTRAL DENSITY TEST

6.1 LIMIT

FCC Part 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					

6.2 TEST PROCEDURE

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS channel bandwidth.
- 3. Set the RBW to: $100 \text{ kHz} \ge \text{RBW} \ge 3 \text{ kHz}$.
- 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

For the measurement records, refer to the appendix I.

Report No.: LGT25G219RF03 Page 27 of 53



7. BANDWIDTH TEST

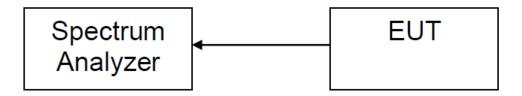
7.1 LIMIT

FCC Part 15.247, Subpart C								
Section	Test Item	Limit	Frequency Range (MHz)	Result				
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS				

7.2 TEST PROCEDURE

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.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS

Please refer to section 3.4 of this report.

7.5 TEST RESULTS

For the measurement records, refer to the appendix I.

Report No.: LGT25G219RF03 Page 28 of 53



8. PEAK OUTPUT POWER TEST

8.1 LIMIT

FCC Part 15.247, Subpart 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 ≥ 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 ≥ DTS bandwidth.
- b) Set VBW ≥ [3 × RBW]. c) Set span ≥ [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

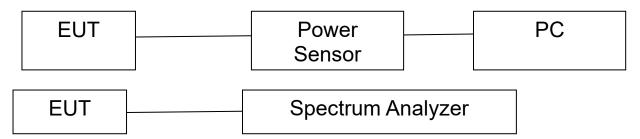
DTS bandwidth:

- a) Set the RBW = 1 MHz.
- b) Set the VBW \geq [3 × RBW].
- c) Set the span ≥ [1.5 × 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 sensor method:

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

8.3 TEST SETUP



Report No.: LGT25G219RF03 Page 29 of 53



8.4 EUT OPERATION CONDITIONS

Please refer to section 3.4 of this report.

8.5 TEST RESULTS

For the measurement records, refer to the appendix I.

Report No.: LGT25G219RF03 Page 30 of 53



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 PCB Antenna. It comply with the standard requirement.

Report No.: LGT25G219RF03 Page 31 of 53



APPENDIX I - TEST RESULTS

1. DUTY CYCLE

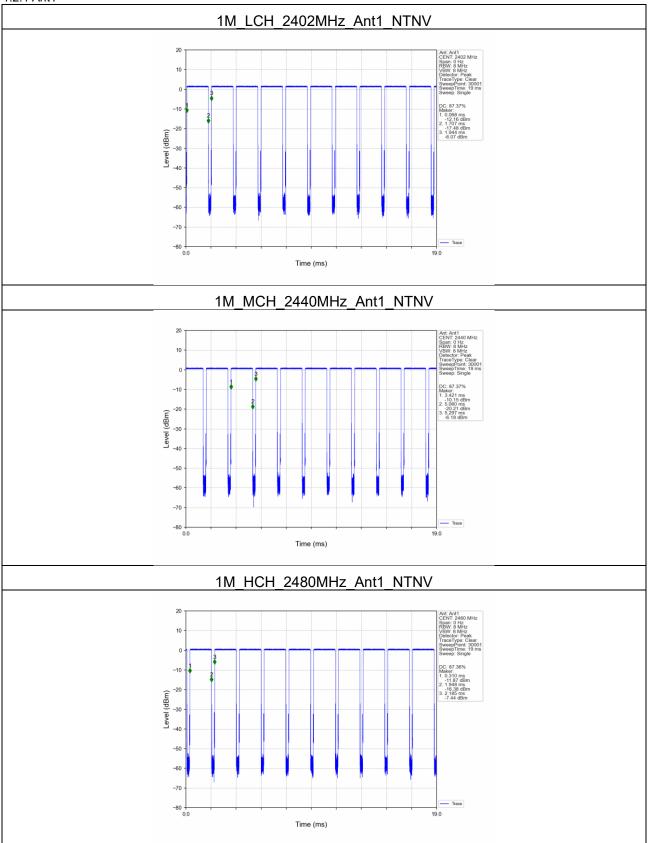
1.1 Test Result 1.1.1 Ant1

	Ant1										
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)				
		2402	1.639	1.876	87.37	0.59	0.03				
1M	SISO	2440	1.639	1.876	87.37	0.59	0.03				
		2480	1.638	1.875	87.36	0.59	0.03				
		2402	0.824	1.250	65.92	1.81	0.03				
2M	SISO	2440	0.824	1.250	65.92	1.81	0.03				
		2480	0.866	1.251	69.22	1.60	0.03				

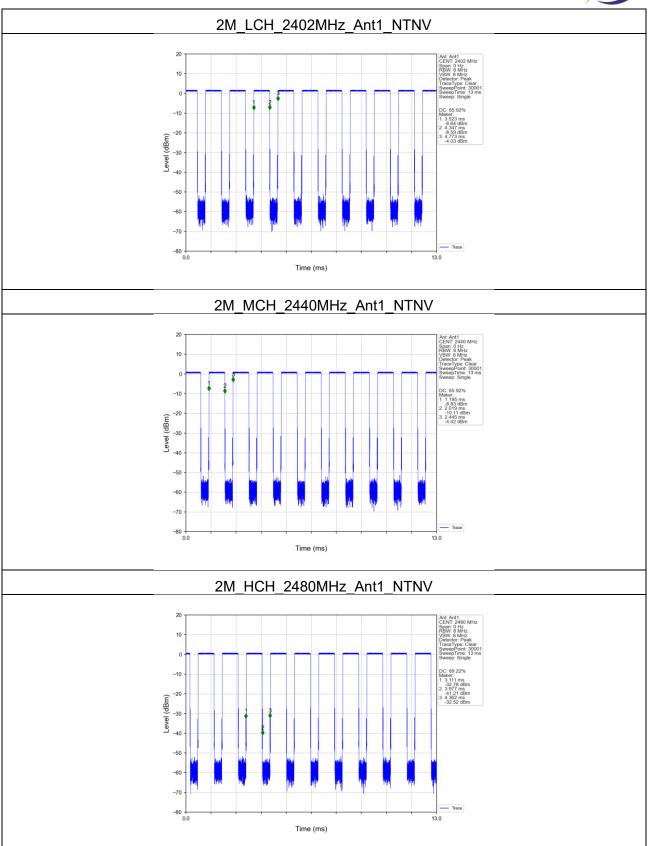
Report No.: LGT25G219RF03 Page 32 of 53



1.2 Test Graph 1.2.1 Ant1









2. BANDWIDTH

2.1 Test Result 2.1.1 OBW

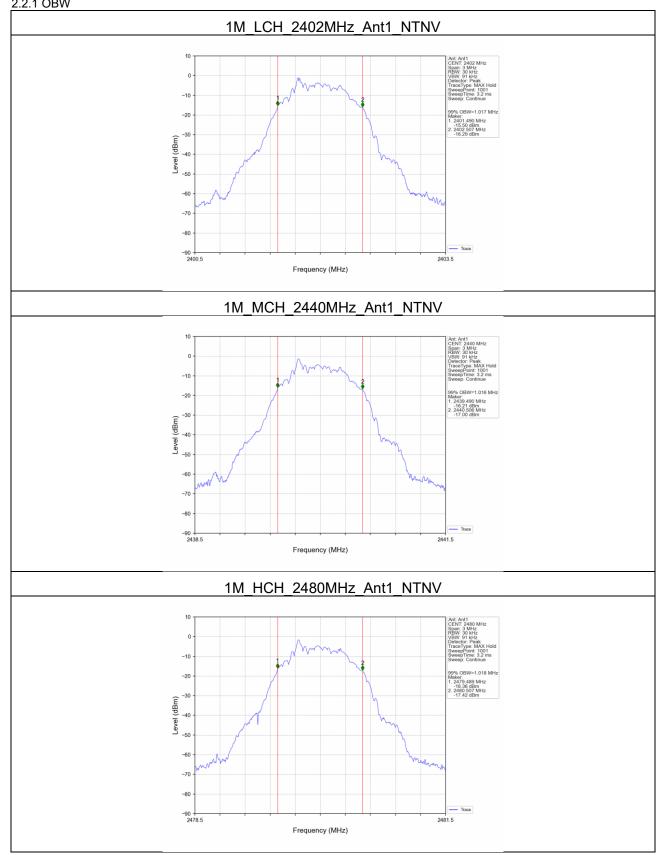
Mode	TX	Frequency	A N.I.T.	99% Occupied Bandwidth (MHz)		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	Туре	(MHz)	ANT	Result	Limit	Verdict
1M	SISO	2402	1	1.017	1	Pass
		2440	1	1.016	1	Pass
		2480	1	1.018	1	Pass
2M	SISO	2402	1	2.034	1	Pass
		2440	1	2.031	1	Pass
		2480	1	2.037	/	Pass

2.1.2 6dB BW

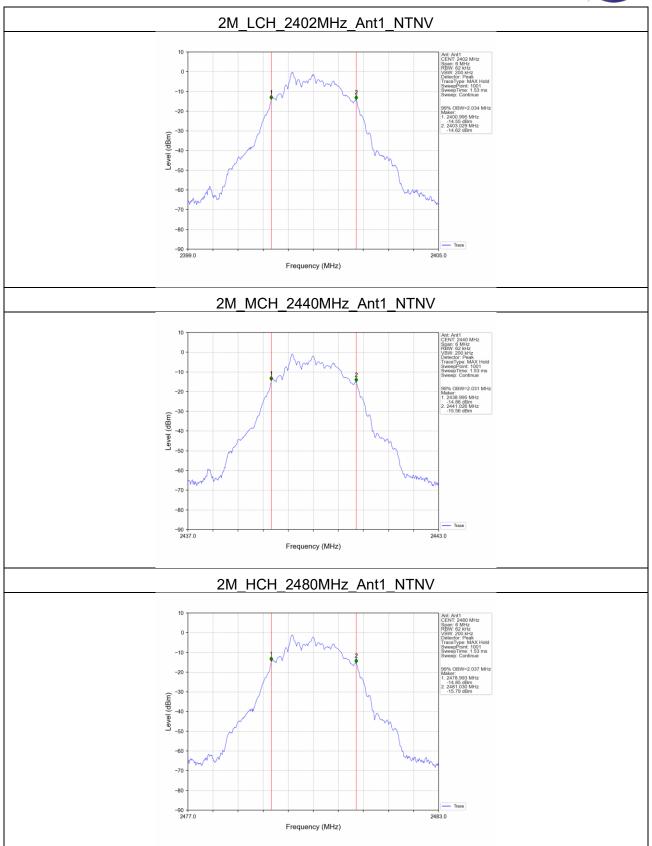
2.1.2 0db bvv	TX	Frequency		6dB Bandwidth (MHz)		
Mode	Туре	(MHz)	ANT	Result	Limit	Verdict
1M	SISO	2402	1	0.670	>=0.5	Pass
		2440	1	0.668	>=0.5	Pass
		2480	1	0.670	>=0.5	Pass
2M	SISO	2402	1	1.182	>=0.5	Pass
		2440	1	1.178	>=0.5	Pass
		2480	1	1.181	>=0.5	Pass

Report No.: LGT25G219RF03 Page 35 of 53

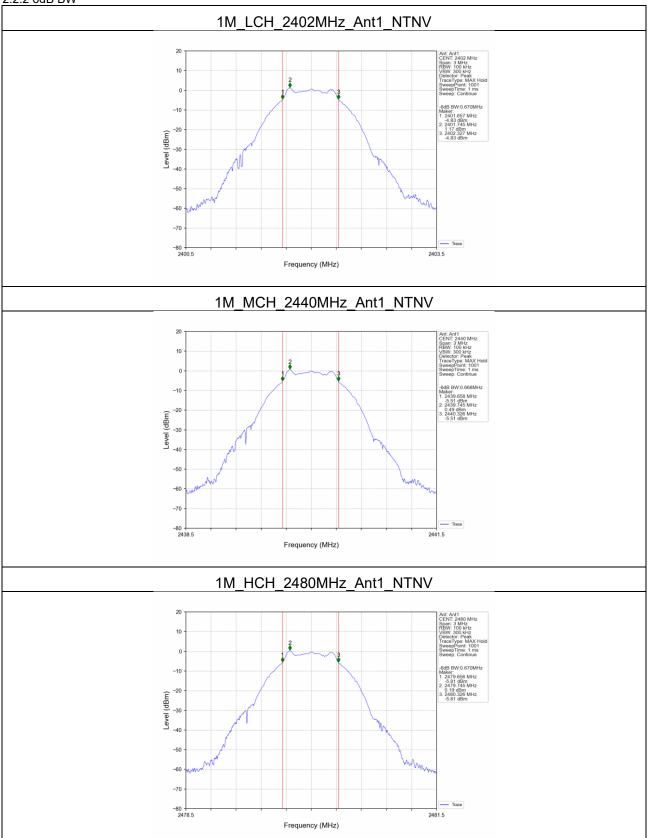
2.2 Test Graph 2.2.1 OBW



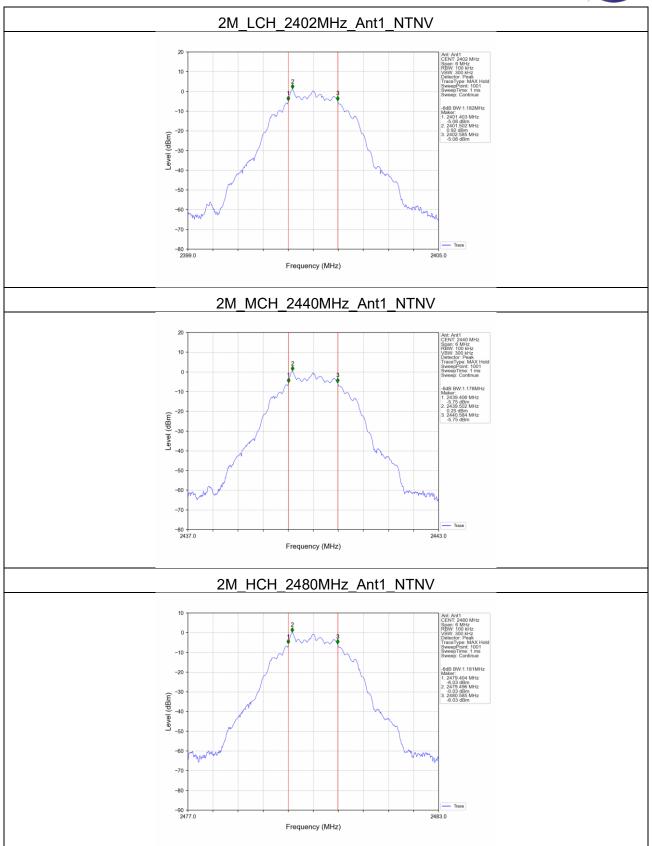














3. MAXIMUM CONDUCTED OUTPUT POWER

3.1 Test Result 3.1.1 Power

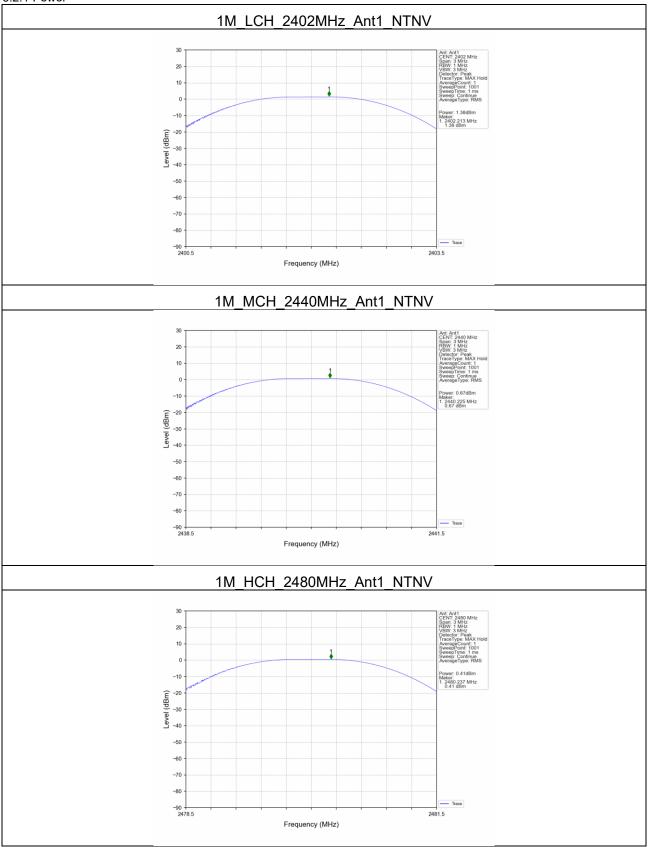
Mode	TX Type	Frequency (MHz)	Maximum Peak Cond	Verdict	
			ANT1	Limit	
1M	SISO	2402	1.38	<=30	Pass
		2440	0.67	<=30	Pass
		2480	0.41	<=30	Pass
2M	SISO	2402	1.40	<=30	Pass
		2440	0.71	<=30	Pass
		2480	0.44	<=30	Pass
Note1: Ante	enna Gain: A	.nt1: 2.95dBi;			

Report No.: LGT25G219RF03 Page 40 of 53

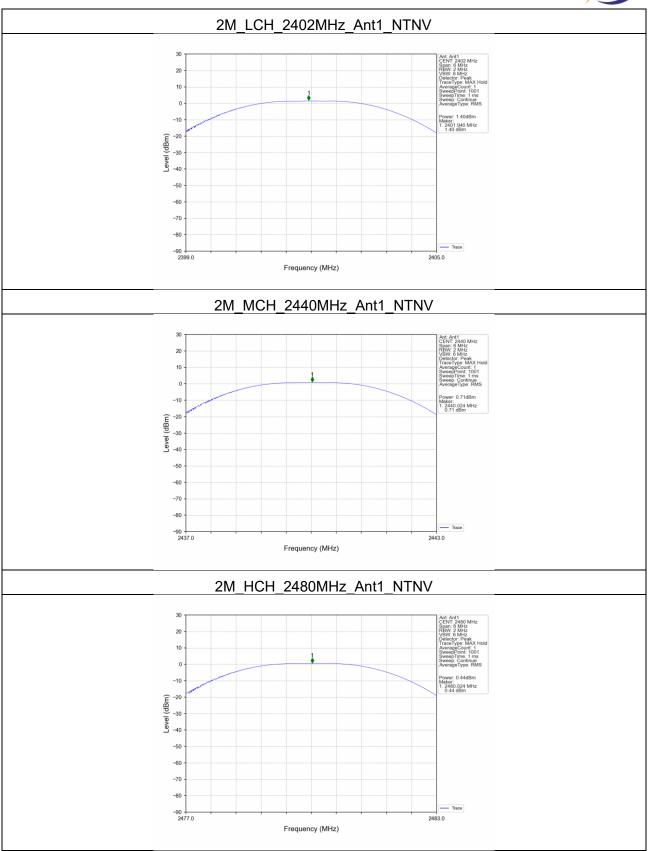


Page 41 of 53

3.2 Test Graph 3.2.1 Power









4. MAXIMUM POWER SPECTRAL DENSITY

4.1 Test Result 4.1.1 PSD

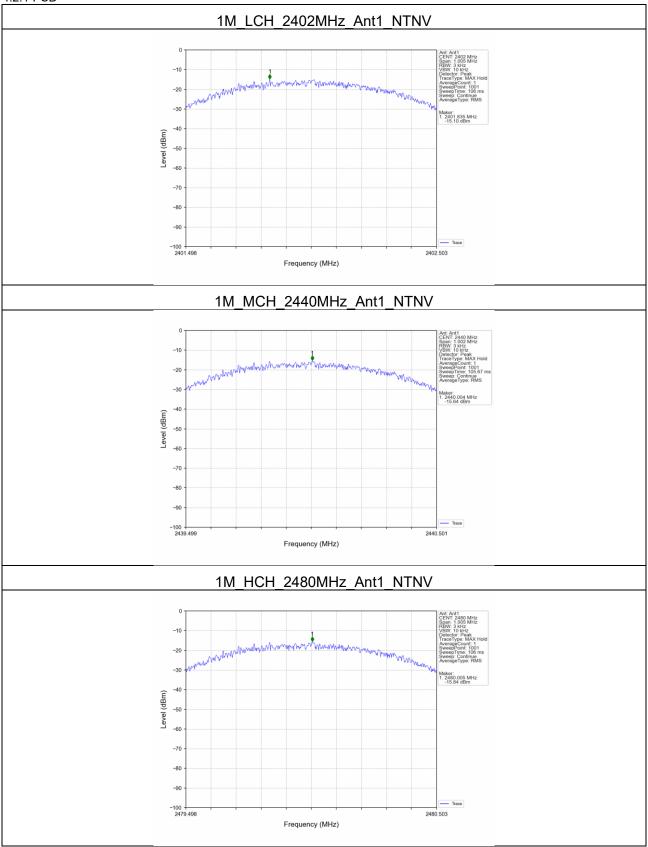
Mode	TX	Frequency	Maximum PSD (dBm/3kHz)		Manaliat	
	Туре	(MHz)	ANT1	Limit	Verdict	
1M	SISO	2402	-15.10	<=8	Pass	
		2440	-15.64	<=8	Pass	
		2480	-15.84	<=8	Pass	
2M	SISO	2402	-18.36	<=8	Pass	
		2440	-18.92	<=8	Pass	
		2480	-19.35	<=8	Pass	
Note1: Antenna Gain: Ant1: 2.95dBi;						

Report No.: LGT25G219RF03 Page 43 of 53

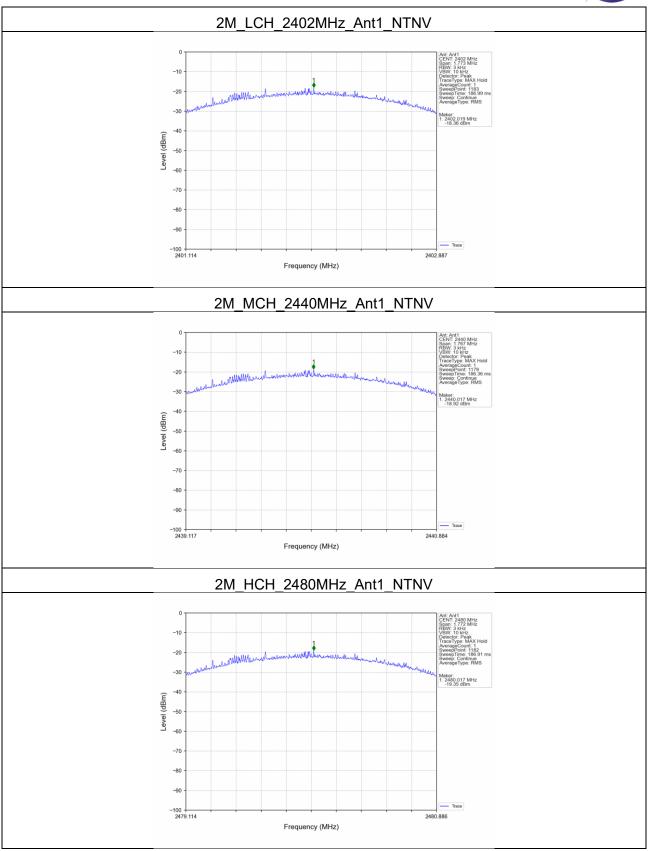


4.2 Test Graph

4.2.1 PSD









5. UNWANTED EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	1.17
		2440	1	0.49
		2480	1	0.21
	SISO	2402	1	0.87
2M		2440	1	0.21
		2480	1	-0.09

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

5.1.2 CSE

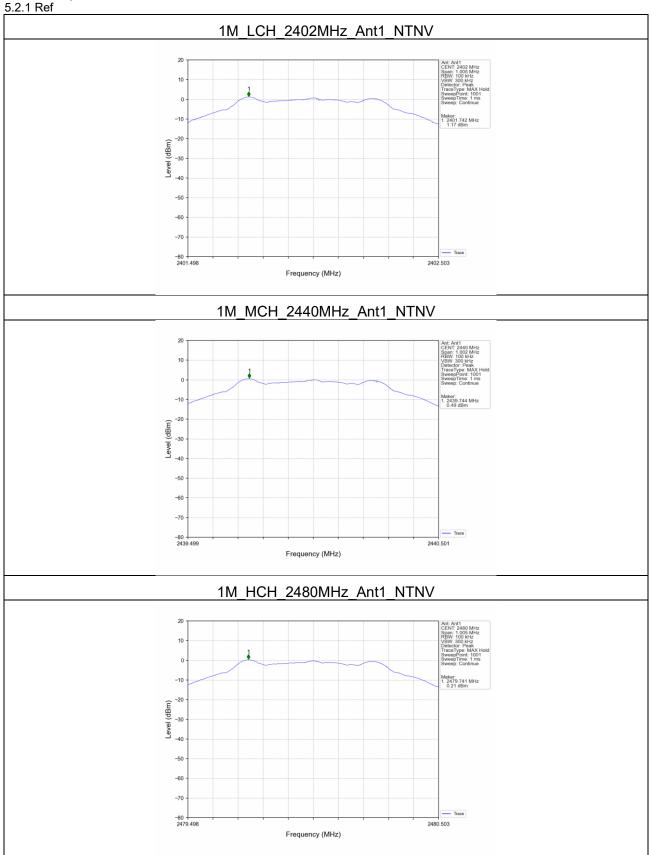
	TX	Fraguenay		Level of Reference	Limit	
Mode	1.	Frequency	ANT	Level of Reference	LIIIII	Verdict
	Туре	(MHz)		(dBm)	(dBm)	
1M	SISO	2402	1	1.17	-18.83	Pass
		2440	1	0.49	-19.51	Pass
		2480	1	0.21	-19.79	Pass
2M	SISO	2402	1	0.87	-19.13	Pass
		2440	1	0.21	-19.79	Pass
		2480	1	-0.09	-20.09	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

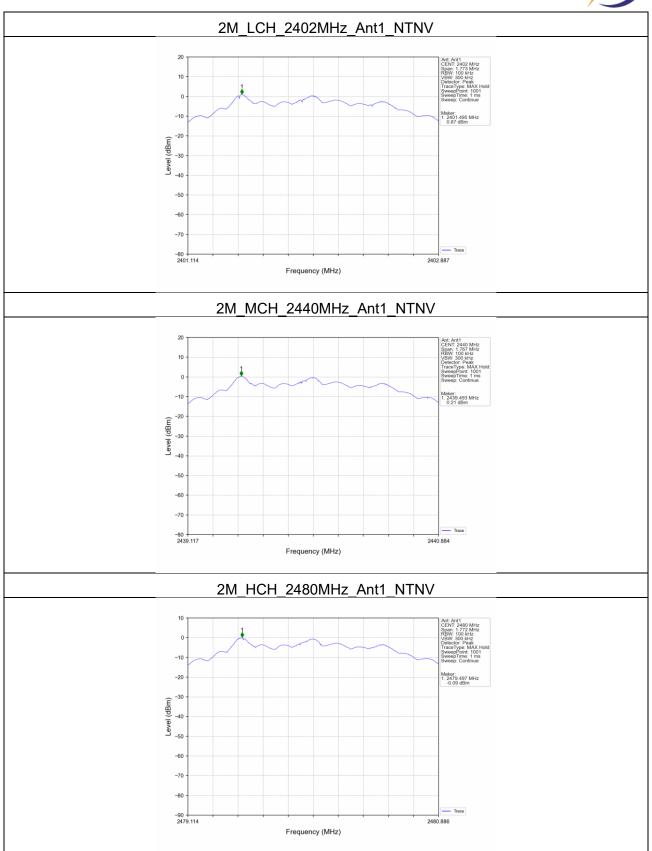
Report No.: LGT25G219RF03 Page 46 of 53



5.2 Test Graph

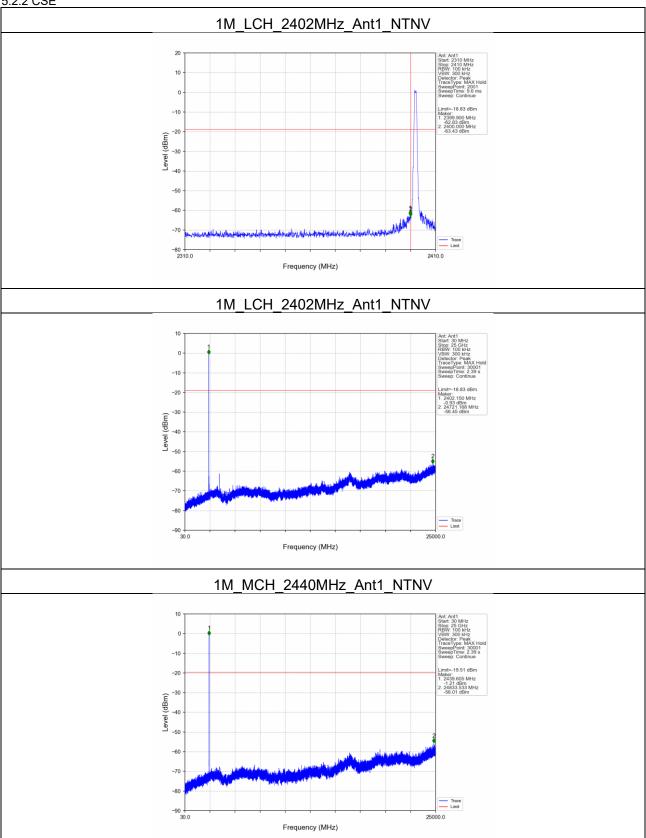




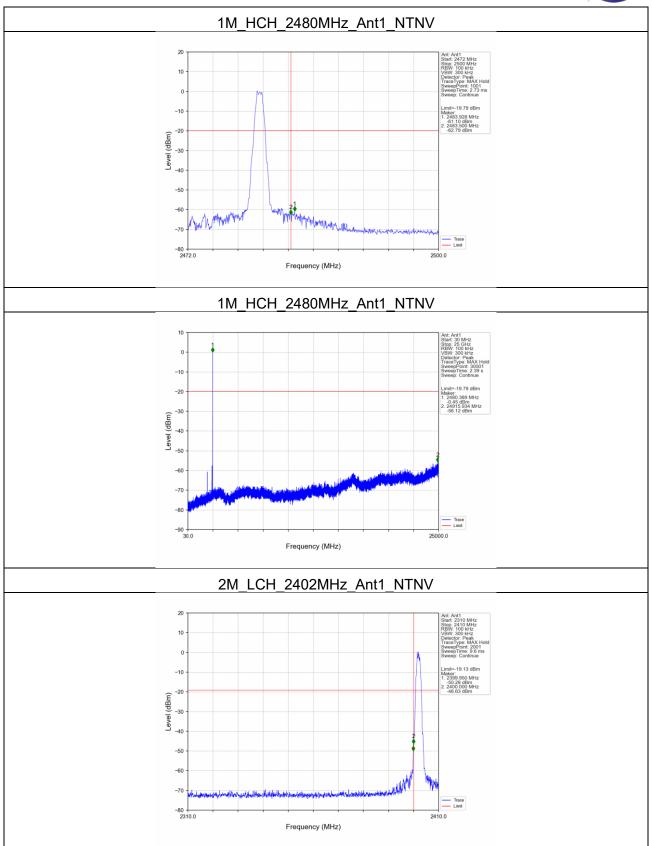




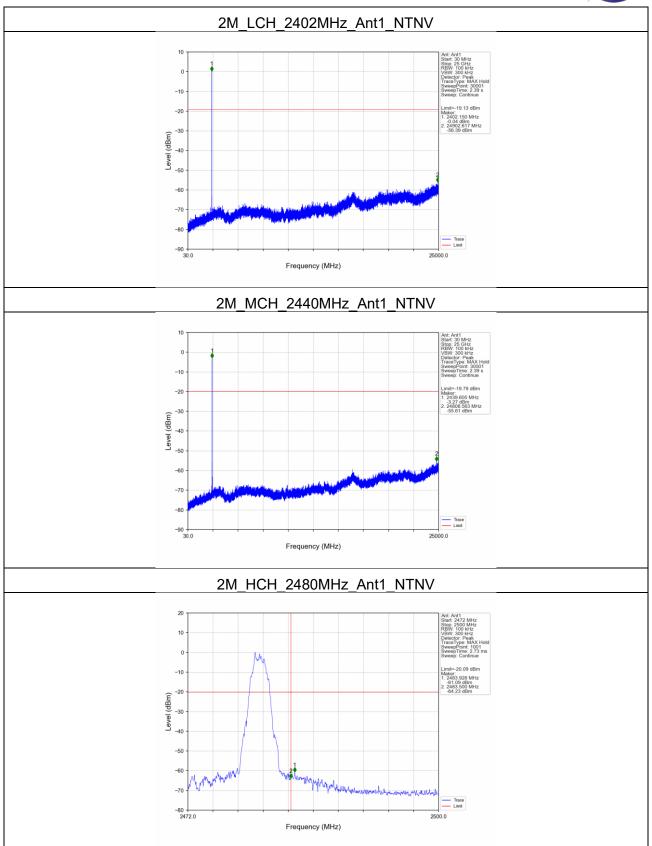




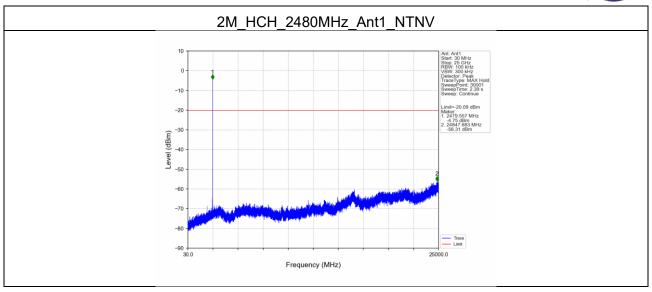














APPENDIX II - MEASUREMENT PHOTOS

Note: Please see the attached RF_Test Setup photos for FCC ID & IC.

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

Report No.: LGT25G219RF03 Page 53 of 53