

2 *

2389.520

38.59

3.90

42.49

54.00

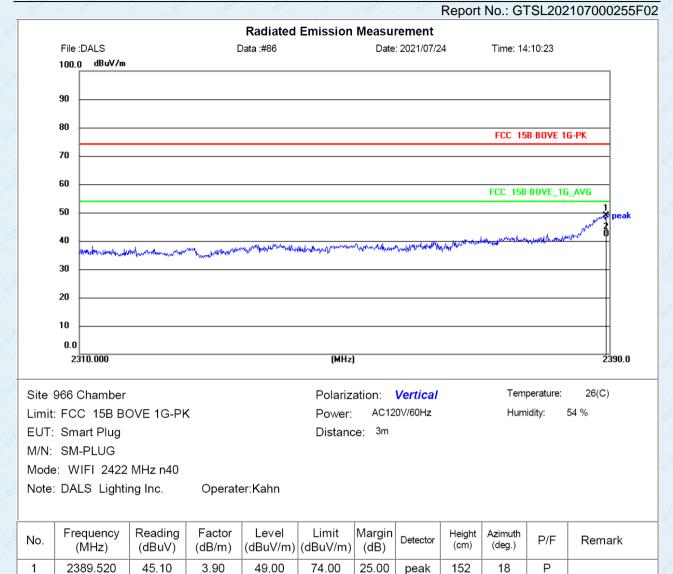
11.51

AVG

161

35

Ρ



2 *

2483.604

43.10

4.28

47.38

54.00

6.62

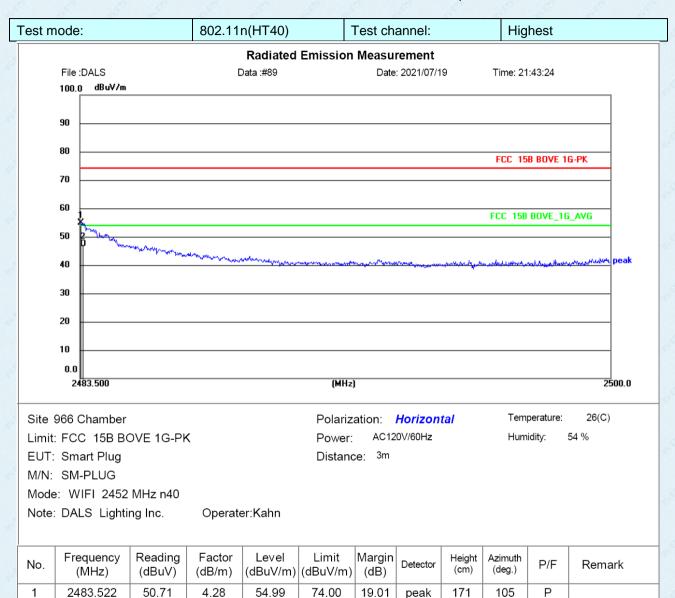
AVG

167

112

Ρ

Report No.: GTSL202107000255F02





Report No.: GTSL202107000255F02 Radiated Emission Measurement File :DALS Data :#88 Date: 2021/07/19 Time: 14:23:17 100.0 dBuV/m 90 80 FCC 15B BOVE 1G-PK 70 60 FCC 15B BOVE_1G_AVG 50 Aduduation Hund Deak 40 30 20 10 0.0 2483.500 (MHz) 2500.0 Site 966 Chamber Temperature: 26(C) Polarization: Vertical Limit: FCC 15B BOVE 1G-PK Power: AC120V/60Hz Humidity: 54 % EUT: Smart Plug Distance: 3m M/N: SM-PLUG Mode: WIFI 2452 MHz n40 Note: DALS Lighting Inc. Operater:Kahn

1	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark	
	1	2483.522	50.21	4.28	54.49	74.00	19.51	peak	131	58	Р		
	2 *	2483.522	42.34	4.28	46.62	54.00	7.38	AVG	142	104	Р		

- 1. The tests were performed on lowest and highest frequencies.
- 2. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 3. The emission levels of other frequencies are very lower than the limit and not show in test report.

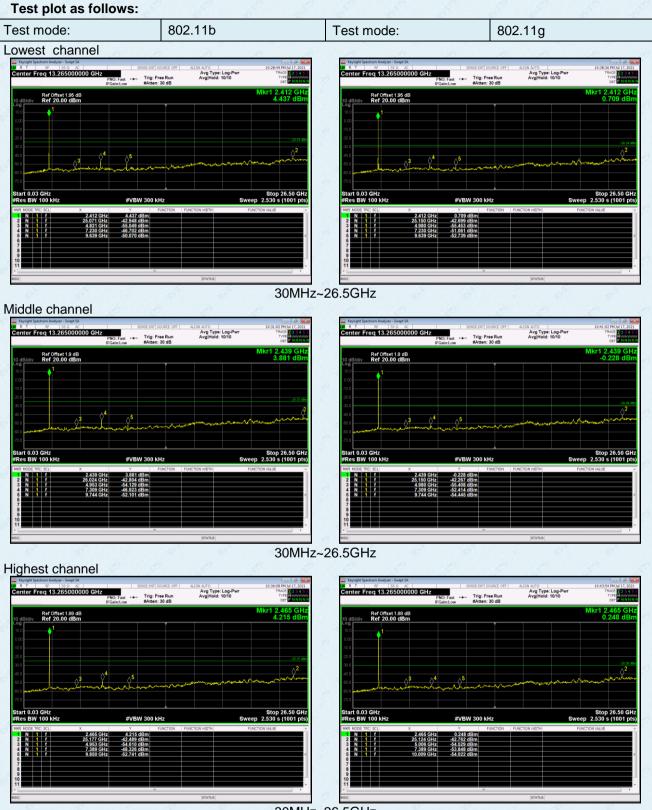


7.7 Spurious Emission

7.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)						
	RSS-247 Section 5.5						
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02						
	ANSI C63.10:2013 & RSS-Gen						
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.						
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane						
Test Instruments:	Refer to section 6.0 for details						
Test mode:	Refer to section 5.2 for details						
Test results:	Pass						

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30MHz~26.5GHz

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Test Requirement:	FCC Part15 C Section RSS-247 Section 3.3			ection 8	3.9	n der		E E
Test Method:	ANSI C63.10: 2013		6					
Test Frequency Range:	9kHz to 26.5GHz	-	S.	¢°	6	S.		e e
Test site:	Measurement Distar	nce: 3	3m	6			6°	8
Receiver setup:	Frequency	C	Detector	RB	N	VBW	/	Value
	9KHz-150KHz	Qu	lasi-peak	200	Hz	600H	z	Quasi-peak
	150KHz-30MHz	Qu	uasi-peak	9KH	Hz 💦	30KH	z	Quasi-peak
	30MHz-1GHz	Qu	lasi-peak	100k	Ήz	300KH	Ηz	Quasi-peak
	Above 1GHz	5	Peak	1Mł	Ηz	3MH:	z	Peak
	Above IGHZ		Peak	1Mł	Ηz	10Hz	z	Average
Limit:	Frequency	10 10	Limit (u\	//m)	V	alue	N	leasurement Distance
	0.009MHz-0.490M	Hz	2400/F(k	(Hz)		QP	2	300m
	0.490MHz-1.705M	24000/F(KHz)		QP		100	300m	
	1.705MHz-30MH	30		QP			30m	
	30MHz-88MHz	100			QP	C.	8	
	88MHz-216MHz	150	S.	and the second s	QP		8 8	
	216MHz-960MH	200		QP		100	3m	
	960MHz-1GHz	Ð	500		QP			JII
	Above 1GHz		500		Average		1	19 July 19
	Above ronz	\$	5000		Peak		47	6
Test setup:	For radiated emiss	sions	from 9kH	z to 30	OMH	z	Å	1 1 1 1
	Tum Table		2 Tum Table+	st Antenna Im Rece	iver+	z	TTTT	

GTS	
	Report No.: GTSL202107000255F02
	$4 = \frac{3m}{4}$ $4 = \frac{3m}{4}$ $4 = \frac{1}{4}$
	For radiated emissions above 1GHz
	<pre><3m> Test Antenna+ L Tum Table+ <150cm> L Tum Table+ Tum Table+ C Tum Table+ T</pre>
	Receiver+ Preamplifier+
Test Procedure:	 The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
	5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details

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	8 8	4	Report No.: GTSL202107000255F02							
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar				
Test voltage:	AC 120V,	60Hz	8 8	8	2 8	8 8				
Test results:	Pass	8 8	Ø	8 8	S.	8 8				
		and the second	100	10-11-11-11-11-11-11-11-11-11-11-11-11-1						

Remarks:

- 1. Only the worst case Main Antenna test data.
- 2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

Measurement data:

9kHz~30MHz

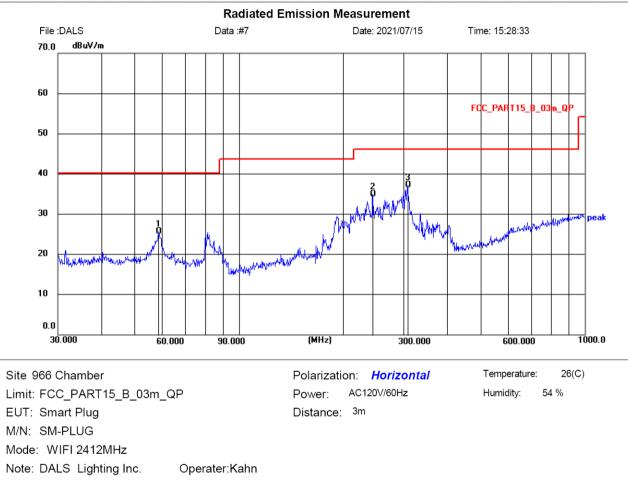
The emission from 9 kHz-30MHz and 18-26.5GHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Report No.: GTSL202107000255F02

Below 1GHz

Pre-scan all test modes, found worst case at 802.11b 2412MHz, and so only show the test result of 802.11b 2412MHz

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	58.6126	11.41	14.29	25.70	40.00	14.30	QP	146	138	Р	
2	243.3772	21.43	13.41	34.84	46.00	11.16	QP	219	27	Р	
3 *	307.8313	22.19	14.96	37.15	46.00	8.85	QP	104	156	Ρ	

Remark:

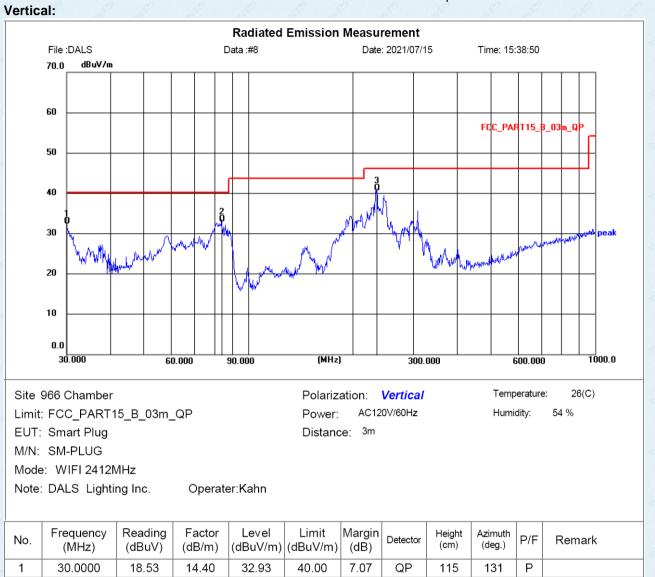
1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

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Report No.: GTSL202107000255F02



Remark:

*

2

3

83.8156

234.9909

22.55

28.10

11.01

13.15

1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

33.56

41.25

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

40.00

46.00

6.44

4.75

QP

QP

154

204

129

278

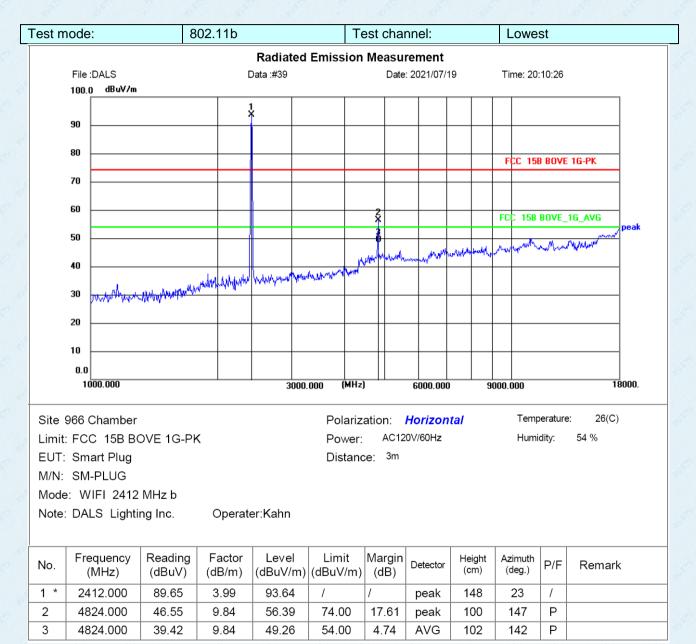
Ρ

Ρ

Report No.: GTSL202107000255F02

Above 1GHz

Pre-scan all test modes, found worst case at 802.11b, and so only show the test result of 802.11b.

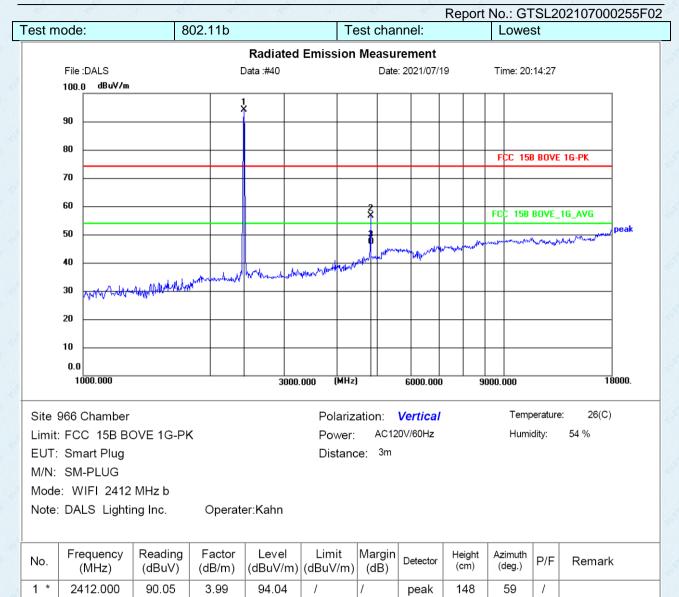


Remark:

1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

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Remark:

2

3

4824.000

4825.000

46.87

37.56

9.84

9.84

1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

56.71

47.40

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

74.00

54.00

17.29

6.60

peak

AVG

Ρ

Ρ

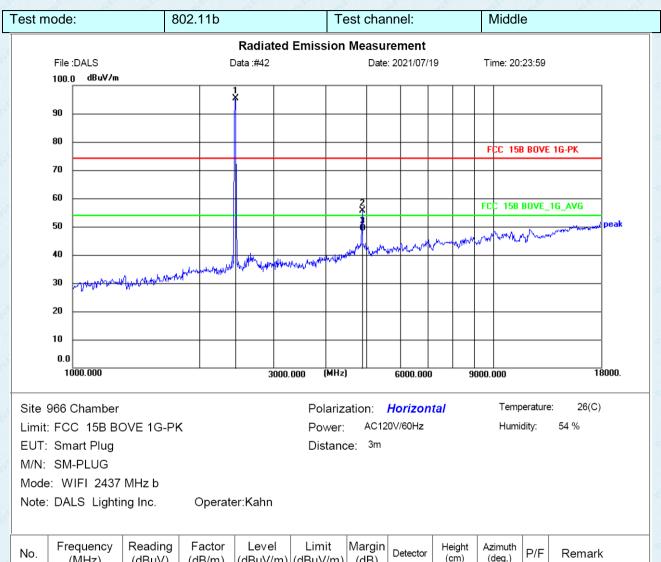
149

235

105

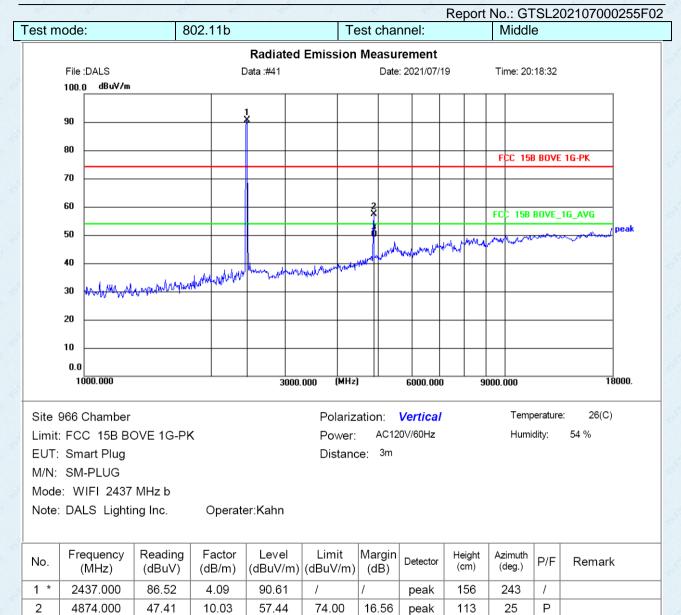
110

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100	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
	1 *	2437.000	91.28	4.09	95.37	1	/	peak	157	153	/	
	2	4874.000	45.72	10.03	55.75	74.00	18.25	peak	107	25	Ρ	
5	3	4874.000	39.38	10.03	49.41	54.00	4.59	AVG	121	55	Ρ	

- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.



Remark:

3

4876.000

40.05

10.05

1 Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

50.10

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

54.00

AVG

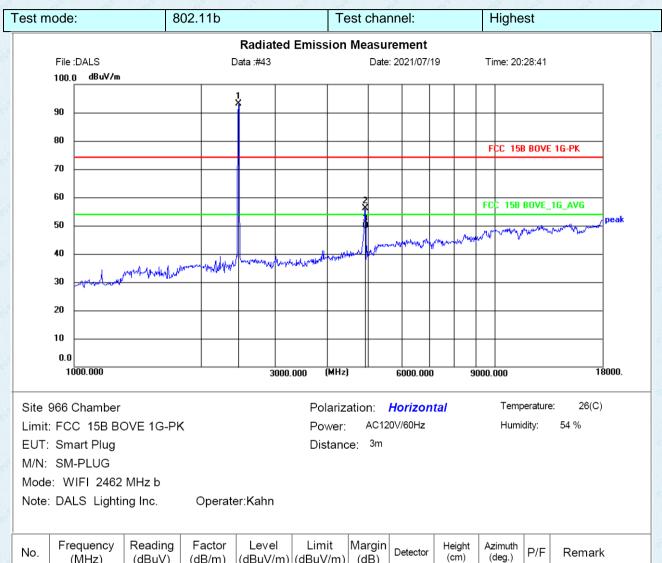
107

3.90

Ρ

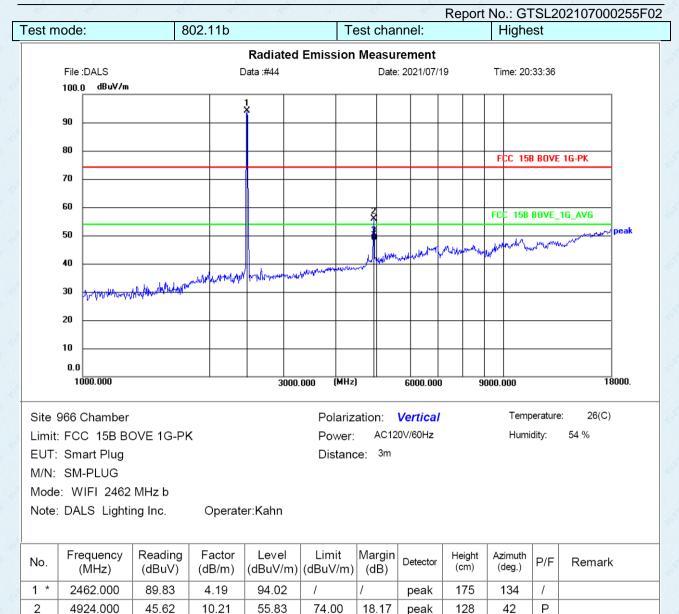
129

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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	2462.000	89.02	4.19	93.21	/	/	peak	145	81	/	
2	4924.000	46.03	10.21	56.24	74.00	17.76	peak	103	341	Ρ	
3	4924.000	39.56	10.21	49.77	54.00	4.23	AVG	112	26	Ρ	

- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.



Remark:

3

4924.000

38.95

10.21

Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor 1

49.16

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

54.00

peak

AVG

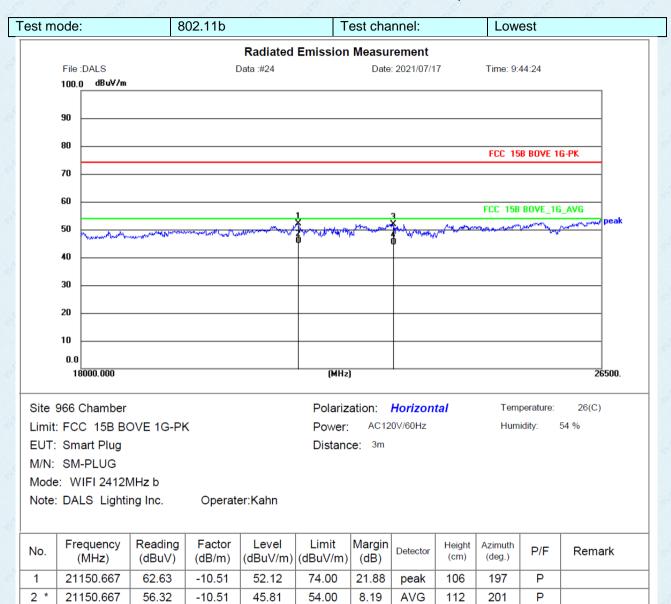
136

257

Ρ

4.84

Report No.: GTSL202107000255F02



Remark:

3

4

22697.667

22697.667

61.46

54.78

-9.47

-9.47

1 Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

51.99

45.31

2 The emission levels of other frequencies are very lower than the limit and not show in test report.

74.00

54.00

22.01

8.69

peak

AVG

143

136

108

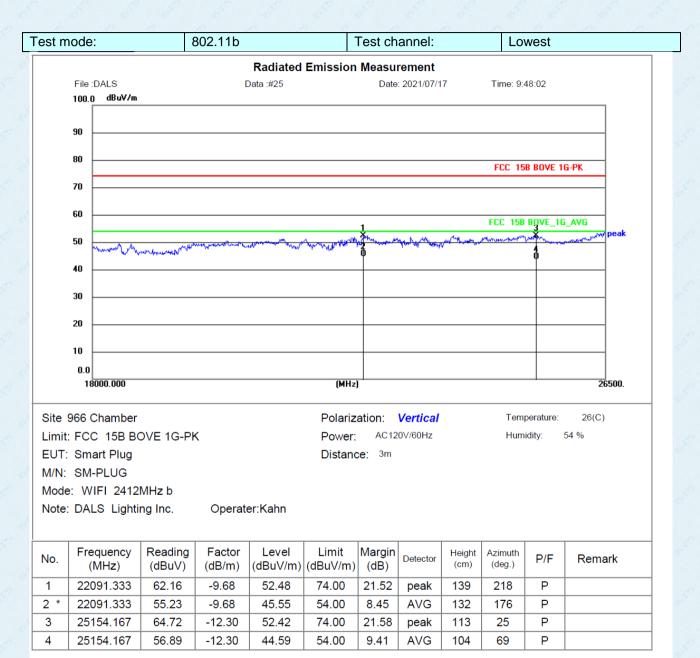
89

Ρ

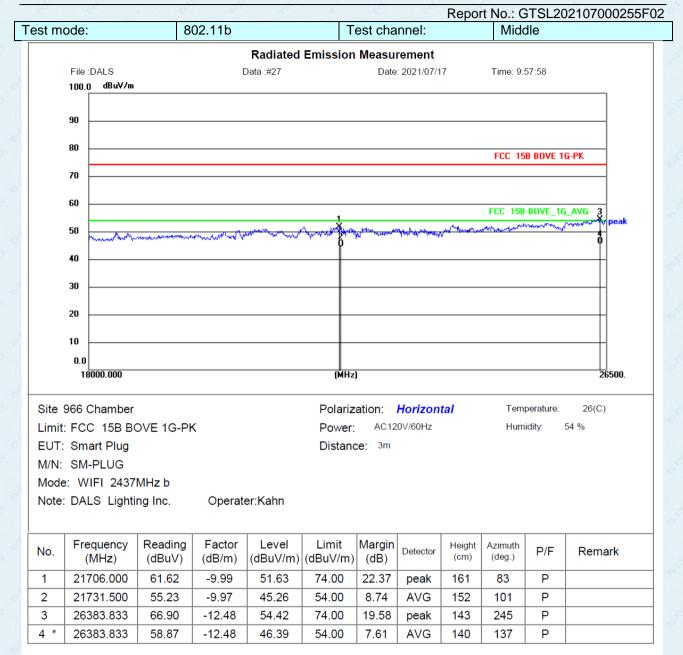
Ρ

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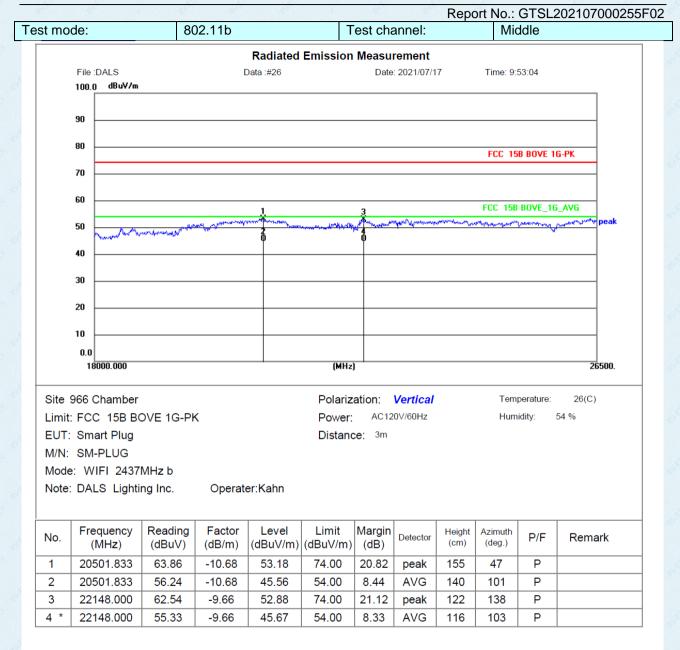




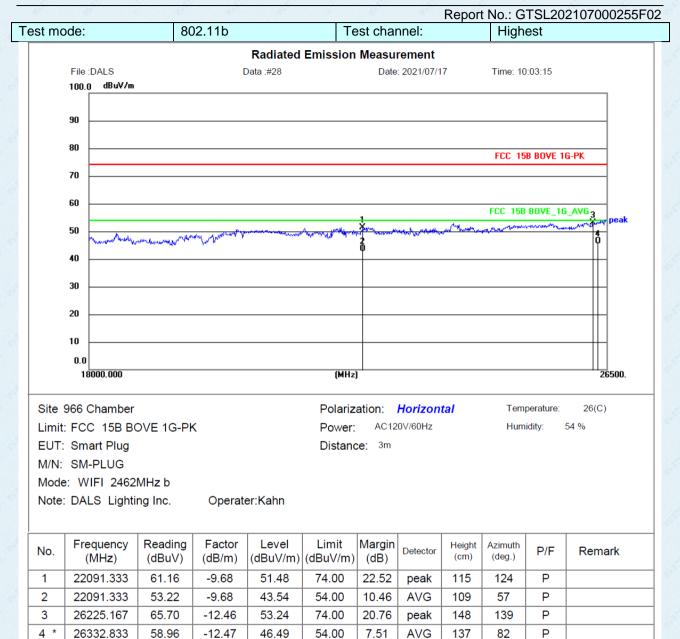
- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.



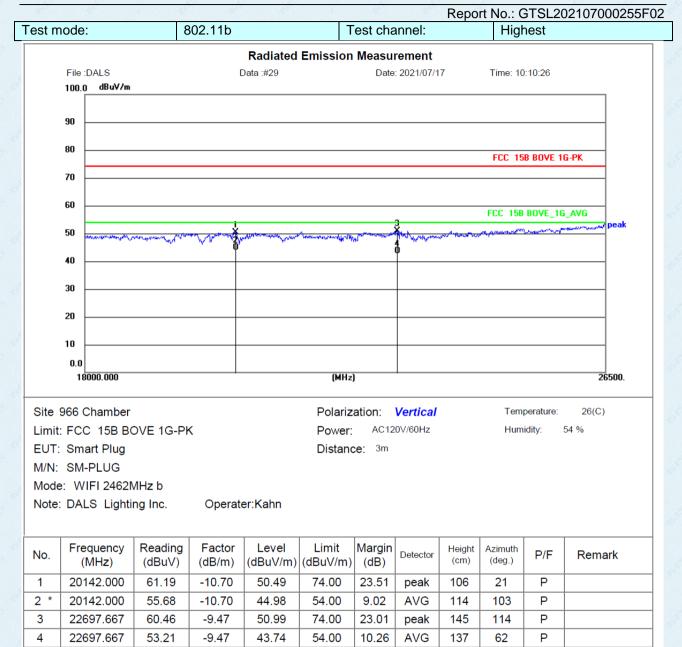
- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.



- 1 Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.



- 1 Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.



Remark:

- 1 Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2 The emission levels of other frequencies are very lower than the limit and not show in test report.

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7.8 Frequency stability

Test Requirement:	RSS-Gen Section 6.11& Section 8.11
Test Method:	ANSI C63.10: 2013 & RSS-Gen
Limit:	Manufactures of devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	The EUT was setup to ANSI C63.10, 2013; tested to 2.1055 for compliance to RSS-Gen requirements.
Test setup:	Spectrum analyzer EUT Att. U Variable Power Supply Note : Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.



Measurement data:

Report No.: GTSL202107000255F02

			y stability vers			
			Supply: AC 120			
6	Operating	0 minute	2 minute	5 minute	10 minute	6
Temp.	Frequency	Measured	Measured	Measured	Measured	Pass
(°C)	(MHz)	Frequency	Frequency	Frequency	Frequency	/Fail
197 - C		(MHz)	(MHz)	(MHz)	(MHz)	
10 10	2412	2411.999	2412.000	2412.000	2412.000	Pass
1 d .	2422	2422.001	2422.000	2422.000	2422.001	Pass
-30	2437	2436.997	2436.998	2436.999	2436.999	Pass
	2452	2452.000	2452.000	2452.000	2452.001	Pass
S S	2462	2462.000	2462.001	2462.000	2462.000	Pass
19	2412	2411.998	2412.001	2412.001	2412.000	Pass
S.	2422	2422.000	2422.001	2422.000	2422.000	Pass
-20	2437	2436.998	2436.999	2436.999	2436.999	Pass
	2452	2452.000	2452.000	2452.000	2452.001	Pass
S -	2462	2462.001	2462.001	2462.000	2462.000	Pass
0 0	2412	2412.000	2411.999	2412.000	2412.000	Pass
1 6	2422	2422.000	2422.001	2422.000	2422.000	Pass
-10	2437	2436.999	2436.998	2436.998	2437.000	Pass
	2452	2452.001	2452.000	2452.001	2452.001	Pass
S 68	2462	2462.000	2462.000	2462.001	2462.000	Pass
Ð	2412	2412.000	2411.999	2412.000	2412.000	Pass
\$	2400	2422.000	2422.001	2422.000	2422.000	Pass
0	2437	2436.999	2436.998	2436.998	2437.000	Pass
43	2452	2452.001	2452.000	2452.001	2452.001	Pass
	2462	2462.000	2462.000	2462.001	2462.000	Pass
0 0	2412	2412.000	2411.999	2412.000	2412.000	Pass
10	2422	2422.000	2422.001	2422.000	2422.000	Pass
	2437	2436.999	2436.998	2436.998	2437.000	Pass
10 10	2452	2452.001	2452.000	2452.001	2452.001	Pass
8	2462	2462.000	2462.000	2462.001	2462.000	Pass
S	2412	2411.999	2412.000	2412.000	2412.000	Pass
15 15	2400	2422.001	2422.000	2422.000	2422.001	Pass
20	2437	2436.997	2436.998	2436.999	2436.999	Pass
12	2452	2452.000	2452.000	2452.000	2452.001	Pass
	2462	2462.000	2462.001	2462.000	2462.000	Pass
5	2412	2412.000	2411.999	2412.000	2412.000	Pass
	2422	2422.000	2422.001	2422.000	2422.000	Pass
30	2437	2436.999	2436.998	2436.998	2437.000	Pass
0 0	2452	2452.001	2452.000	2452.001	2452.001	Pass
· · · ·	2462	2462.000	2462.000	2462.001	2462.000	Pass
5	2412	2411.998	2412.001	2412.001	2412.000	Pass
6 6	2422	2422.000	2422.001	2422.000	2422.000	Pass
40	2437	2436.998	2436.999	2436.999	2436.999	Pass
	2452	2452.000	2452.000	2452.000	2452.001	Pass
	2462	2462.001	2462.001	2462.000	2462.000	Pass
5	2412	2411.999	2412.000	2412.000	2412.000	Pass
2	2422	2422.001	2422.000	2422.000	2422.001	Pass
50	2437	2436.997	2436.998	2436.999	2436.999	Pass
00	2452	2452.000	2452.000	2452.000	2452.001	Pass
	2462	2462.000	2462.001	2462.000	2462.000	Pass

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		Frequency	y stability versu	us Voltage		
		Τe	emperature: 25	°C		
2	Operating	0 minute	2 minute	5 minute	10 minute	8 8
Power	Operating	Measured	Measured	Measured	Measured	Pass
Supply	Frequency	Frequency	Frequency	Frequency	Frequency	/Fail
	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)	
1	2412	2412.000	2411.999	2412.001	2412.000	Pass
10	2422	2422.000	2422.001	2422.000	2422.000	Pass
AC 120V/60Hz	2437	2437.000	2436.999	2436.998	2437.000	Pass
1201/0002	2452	2452.001	2452.000	2452.001	2452.001	Pass
0 0	2462	2462.001	2462.001	2462.000	2462.000	Pass

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8 Test Setup Photo

Reference to the appendix I for details.

9 EUT Constructional Details

Reference to the appendix II for details.

-----End-----