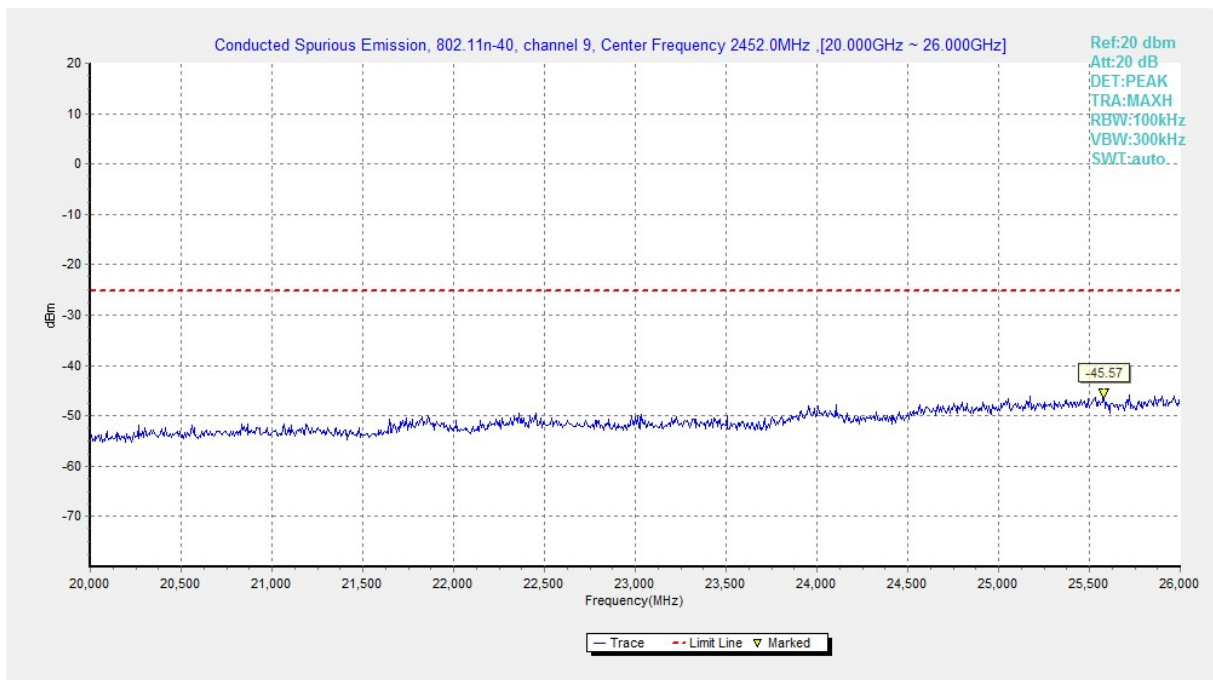


**Fig.A.6.1.95 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 15 GHz-20 GHz)**



**Fig.A.6.1.96 Transmitter Spurious Emission - Conducted (802.11n-HT40, Ch9, 20 GHz-26 GHz)**

## A.6.2 Transmitter Spurious Emission - Radiated

**Method of Measurement:** See ANSI C63.10-2013-clause 6.4 & 6.5 & 6.6

**Measurement Limit:**

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

**Limit in restricted band:**

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Frequency (MHz)	Field strength(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

### Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

**EUT ID: UT05a**

**Measurement Results:**
**802.11b mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.31GHz~2.43GHz---L	Fig.A.6.2.1	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.2	<b>P</b>

**802.11g mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11g	1	2.31GHz~2.43GHz---L	Fig.A.6.2.3	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.4	<b>P</b>

**802.11n-HT20 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	1	2.31GHz~2.43GHz---L	Fig.A.6.2.5	<b>P</b>
	11	2.45GHz~2.50GHz---H	Fig.A.6.2.6	<b>P</b>

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	3	2.31GHz~2.43GHz---L	Fig.A.6.2.7	<b>P</b>
	9	2.45GHz~2.50GHz---H	Fig.A.6.2.8	<b>P</b>

**Conclusion: Pass**
**Note:**

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

$P_{Mea}$  is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

**Peak**  
**802.11b**  
 Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2385.278	60.09	2.9	32.0	25.21	74.0	13.9	H	155	22
2388.442	60.37	2.9	32.0	25.49	74.0	13.6	V	155	44
4824.000	40.88	-33.2	34.1	39.99	74.0	33.1	H	155	0
7236.000	42.99	-30.9	35.7	38.12	74.0	31.0	H	155	0
9648.000	43.88	-30.5	36.8	37.56	74.0	30.1	H	155	22
12060.000	47.38	-28.7	38.9	37.17	74.0	26.6	H	155	176

Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2360.800	44.51	-35.3	32.0	47.87	74.0	29.5	H	155	0
2505.400	44.23	-35.0	32.2	47.02	74.0	29.8	H	155	0
4874.000	43.40	-33.3	34.2	42.55	74.0	30.6	V	155	22
7311.000	42.97	-30.8	35.8	38.02	74.0	31.0	V	155	352
9748.000	44.09	-30.3	36.9	37.52	74.0	29.9	V	155	88
12185.000	46.23	-28.1	38.9	35.40	74.0	27.8	V	155	88

Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.605	60.21	2.9	32.2	25.11	74.0	13.8	H	155	22
2484.325	60.10	2.9	32.2	24.99	74.0	13.9	H	155	44
4924.000	42.78	-33.5	34.2	42.13	74.0	31.2	H	155	242
7386.000	42.04	-31.5	35.8	37.72	74.0	32.0	H	155	176
9848.000	43.34	-30.2	37.0	36.50	74.0	30.7	H	155	88
12310.000	46.17	-27.8	39.0	34.96	74.0	27.8	V	155	22

**802.11g**

## Ch1

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2384.774	60.65	2.9	32.0	25.78	74.0	13.3	H	155	176
2387.742	59.88	2.9	32.0	25.00	74.0	14.1	H	155	0
4824.000	41.62	-33.2	34.1	40.73	74.0	32.4	V	155	22
7236.000	42.44	-30.9	35.7	37.57	74.0	31.6	V	155	352
9648.000	44.46	-30.5	36.8	38.14	74.0	29.5	V	155	0
12060.000	46.49	-28.7	38.9	36.28	74.0	27.5	V	155	0

## Ch6

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2365.800	43.62	-35.3	32.0	46.98	74.0	30.4	H	155	22
2507.200	43.66	-35.0	32.2	46.43	74.0	30.3	H	155	242
4874.000	41.40	-33.3	34.2	40.55	74.0	32.6	V	155	44
7311.000	42.72	-30.8	35.8	37.77	74.0	31.3	H	155	330
9748.000	44.76	-30.3	36.9	38.19	74.0	29.2	H	155	176
12185.000	46.15	-28.1	38.9	35.32	74.0	27.9	H	155	0

## Ch11

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.655	62.75	2.9	32.2	27.64	74.0	11.3	H	155	132
2484.095	61.44	2.9	32.2	26.33	74.0	12.6	H	155	154
4924.000	41.52	-33.5	34.2	40.88	74.0	32.5	V	155	88
7386.000	41.86	-31.5	35.8	37.54	74.0	32.1	H	155	110
9848.000	44.57	-30.2	37.0	37.72	74.0	29.4	V	155	110
12310.000	45.45	-27.8	39.0	34.24	74.0	28.5	V	155	88

**802.11n-HT20**

## Ch1

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2384.032	60.06	2.9	32.0	25.19	74.0	13.9	H	155	0
2389.884	60.15	2.9	32.0	25.27	74.0	13.8	H	155	22
4824.000	42.21	-33.2	34.1	41.32	74.0	31.8	H	155	352
7236.000	42.88	-30.9	35.7	38.02	74.0	31.1	V	155	352
9648.000	44.07	-30.5	36.8	37.75	74.0	29.9	V	155	176
12060.000	46.13	-28.7	38.9	35.92	74.0	27.9	V	155	176

## Ch6

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2369.600	43.77	-35.3	32.0	43.77	74.0	30.2	V	155	88
2510.000	45.75	-34.9	32.2	45.75	74.0	28.2	H	155	110
4874.000	40.01	-33.3	34.2	39.15	74.0	34.0	V	155	132
7311.000	42.26	-30.8	35.8	37.31	74.0	31.7	H	155	154
9748.000	43.82	-30.3	36.9	37.25	74.0	30.2	V	155	176
12185.000	45.70	-28.1	38.9	34.86	74.0	28.3	V	155	198

## Ch11

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.725	60.85	2.9	32.2	25.74	74.0	13.2	V	155	176
2487.675	61.04	2.9	32.2	25.93	74.0	13.0	H	155	198
4924.000	40.67	-33.5	34.2	40.03	74.0	33.3	V	155	220
7386.000	42.44	-31.5	35.8	38.11	74.0	31.6	H	155	198
9848.000	42.94	-30.2	37.0	36.10	74.0	31.1	H	155	242
12310.000	45.40	-27.8	39.0	34.19	74.0	28.6	V	155	264

**802.11n-HT40**

## Ch3

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2355.270	60.31	2.8	32.0	25.51	74.0	13.7	V	155	44
2359.070	60.36	2.8	32.0	25.55	74.0	13.6	H	155	66
4844.000	41.38	-33.2	34.1	40.47	74.0	32.6	H	155	88
7266.000	42.74	-30.6	35.8	37.58	74.0	31.3	V	155	110
9688.000	42.84	-30.4	36.8	36.38	74.0	31.2	V	155	132
12110.000	46.97	-28.5	38.9	36.52	74.0	27.0	H	155	154

## Ch6

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2364.000	43.79	-35.3	32.0	47.15	74.0	30.2	H	155	0
2512.200	44.57	-34.9	32.2	47.25	74.0	29.4	H	155	44
4874.000	40.70	-33.3	34.2	39.85	74.0	33.3	V	155	88
7311.000	40.73	-30.8	35.8	35.79	74.0	33.3	V	155	44
9748.000	42.74	-30.3	36.9	36.17	74.0	31.3	V	155	66
12185.000	45.15	-28.1	38.9	34.32	74.0	28.8	H	155	88

## Ch9

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2487.225	60.39	2.9	32.2	25.27	74.0	13.6	H	155	22
2491.085	60.93	2.9	32.2	25.81	74.0	13.1	H	155	330
4904.000	40.73	-33.4	34.2	40.00	74.0	33.3	H	155	242
7356.000	41.75	-31.2	35.8	37.15	74.0	32.2	V	155	264
9808.000	44.15	-30.3	37.0	37.50	74.0	29.8	V	155	286
12260.000	45.54	-27.9	39.0	34.46	74.0	28.5	V	155	308

**Average**
**802.11b**

## Ch1

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2383.300	46.44	2.9	32.0	11.57	54.0	7.6	H	155	25
2386.200	46.49	2.9	32.0	11.61	54.0	7.5	H	155	49
4824.000	30.70	-33.2	34.1	29.80	54.0	23.3	H	155	4
7236.000	32.72	-30.9	35.7	27.85	54.0	21.3	H	155	6
9648.000	33.59	-30.5	36.8	27.27	54.0	20.4	H	155	25
12060.000	36.69	-28.7	38.9	26.48	54.0	17.3	H	155	186

## Ch6

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2406.600	46.62	2.9	32.0	11.69	54.0	7.4	H	155	4
2461.000	46.60	2.9	32.1	11.54	54.0	7.4	H	155	2
4873.500	36.01	-33.3	34.2	35.15	54.0	18.0	H	155	25
7311.000	32.50	-30.8	35.8	27.56	54.0	21.5	H	155	350
9748.500	33.76	-30.3	36.9	27.19	54.0	20.2	H	155	92
12184.500	37.25	-28.1	38.9	26.42	54.0	16.7	H	155	85

## Ch11

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	46.63	2.9	32.2	11.52	54.0	7.4	H	155	20
2486.000	46.66	2.9	32.2	11.55	54.0	7.3	H	155	45
4923.000	31.00	-33.5	34.2	30.35	54.0	23.0	H	155	240
7386.000	31.93	-31.5	35.8	27.61	54.0	22.1	H	155	180
9847.500	33.81	-30.2	37.0	26.97	54.0	20.2	H	155	85
12310.500	37.31	-27.8	39.0	26.10	54.0	16.7	H	155	25



**802.11g**

## Ch1

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.300	46.62	2.9	32.0	11.74	54.0	7.4	H	155	175
2390.000	46.67	2.9	32.0	11.78	54.0	7.3	H	155	5
4824.000	30.25	-33.2	34.1	29.36	54.0	23.7	H	155	26
7236.000	32.64	-30.9	35.7	27.77	54.0	21.4	H	155	355
9648.000	33.60	-30.5	36.8	27.28	54.0	20.4	H	155	6
12060.000	36.73	-28.7	38.9	26.52	54.0	17.3	H	155	12

## Ch6

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2408.100	46.68	2.9	32.0	11.75	54.0	7.3	H	155	20
2454.100	47.30	2.9	32.1	12.26	54.0	6.7	H	155	248
4873.500	30.20	-33.3	34.2	29.35	54.0	23.8	H	155	49
7311.000	32.43	-30.8	35.8	27.48	54.0	21.6	H	155	335
9748.500	33.66	-30.3	36.9	27.09	54.0	20.3	H	155	180
12184.500	37.18	-28.1	38.9	26.36	54.0	16.8	H	155	8

## Ch11

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	47.07	2.9	32.2	11.96	54.0	6.9	H	155	135
2484.100	46.98	2.9	32.2	11.88	54.0	7.0	H	155	160
4924.500	30.19	-33.5	34.2	29.55	54.0	23.8	H	155	92
7386.000	31.80	-31.5	35.8	27.47	54.0	22.2	H	155	115
9847.500	33.72	-30.2	37.0	26.88	54.0	20.3	H	155	112
12310.500	37.29	-27.8	39.0	26.08	54.0	16.7	H	155	85

**802.11n-HT20**

## Ch1

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2389.200	46.67	2.9	32.0	11.79	54.0	7.3	H	155	5
2390.000	46.71	2.9	32.0	11.83	54.0	7.3	H	155	25
4824.000	30.23	-33.2	34.1	29.34	54.0	23.8	H	155	356
7236.000	32.56	-30.9	35.7	27.70	54.0	21.4	H	155	350
9648.000	33.53	-30.5	36.8	27.21	54.0	20.5	H	155	185
12060.000	36.65	-28.7	38.9	26.44	54.0	17.4	H	155	187

## Ch6

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2405.300	46.68	2.9	32.0	11.76	54.0	7.3	H	155	86
2463.400	46.86	2.9	32.1	11.80	54.0	7.1	H	155	107
4873.500	30.18	-33.3	34.2	29.33	54.0	23.8	H	155	130
7311.000	32.42	-30.8	35.8	27.47	54.0	21.6	H	155	152
9748.500	33.63	-30.3	36.9	27.06	54.0	20.4	H	155	174
12184.500	37.16	-28.1	38.9	26.33	54.0	16.8	H	155	195

## Ch11

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	46.97	2.9	32.2	11.86	54.0	7.0	H	155	175
2484.400	46.93	2.9	32.2	11.83	54.0	7.1	H	155	194
4924.500	30.25	-33.5	34.2	29.61	54.0	23.8	H	155	215
7386.000	31.82	-31.5	35.8	27.50	54.0	22.2	H	155	196
9847.500	33.86	-30.2	37.0	27.02	54.0	20.1	H	155	241
12310.500	37.31	-27.8	39.0	26.10	54.0	16.7	H	155	259

**802.11n-HT40**
**Ch3**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2388.600	46.51	2.9	32.0	11.62	54.0	7.5	H	155	40
2390.000	46.58	2.9	32.0	11.70	54.0	7.4	H	155	65
4843.500	30.13	-33.2	34.1	29.22	54.0	23.9	H	155	84
7266.000	32.79	-30.6	35.8	27.63	54.0	21.2	H	155	107
9688.500	33.49	-30.4	36.8	27.03	54.0	20.5	H	155	135
12109.500	36.84	-28.5	38.9	26.39	54.0	17.2	H	155	151

**Ch6**

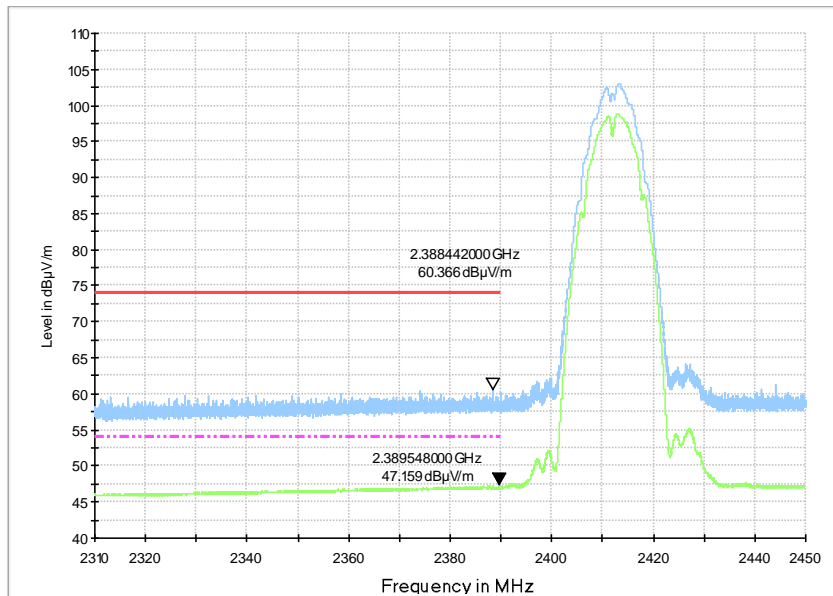
Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2401.700	46.63	2.9	32.0	11.72	54.0	7.4	H	155	6
2469.600	46.72	2.9	32.2	11.64	54.0	7.3	H	155	48
4873.500	29.96	-33.3	34.2	29.10	54.0	24.0	H	155	92
7311.000	32.40	-30.8	35.8	27.45	54.0	21.6	H	155	48
9748.500	33.64	-30.3	36.9	27.07	54.0	20.4	H	155	68
12184.500	37.18	-28.1	38.9	26.36	54.0	16.8	H	155	92

**Ch9**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.500	46.70	2.9	32.2	11.60	54.0	7.3	H	155	24
2484.600	46.75	2.9	32.2	11.64	54.0	7.2	H	155	336
4903.500	30.51	-33.4	34.2	29.77	54.0	23.5	H	155	248
7356.000	32.32	-31.2	35.8	27.72	54.0	21.7	H	155	268
9808.500	33.50	-30.3	37.0	26.85	54.0	20.5	H	155	290
12259.500	37.18	-27.9	39.0	26.11	54.0	16.8	H	155	300

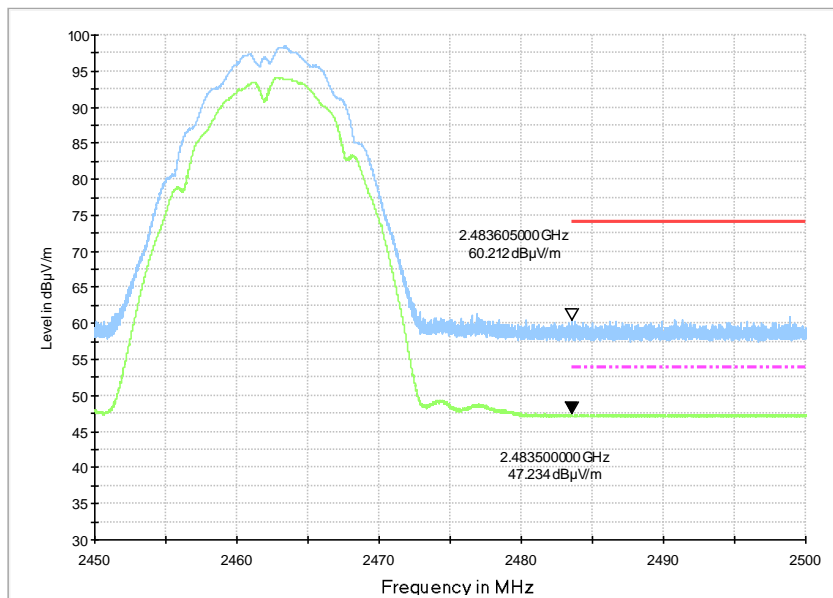
Test graphs as below:

RE - Power-2.31GHz-2.45GHz



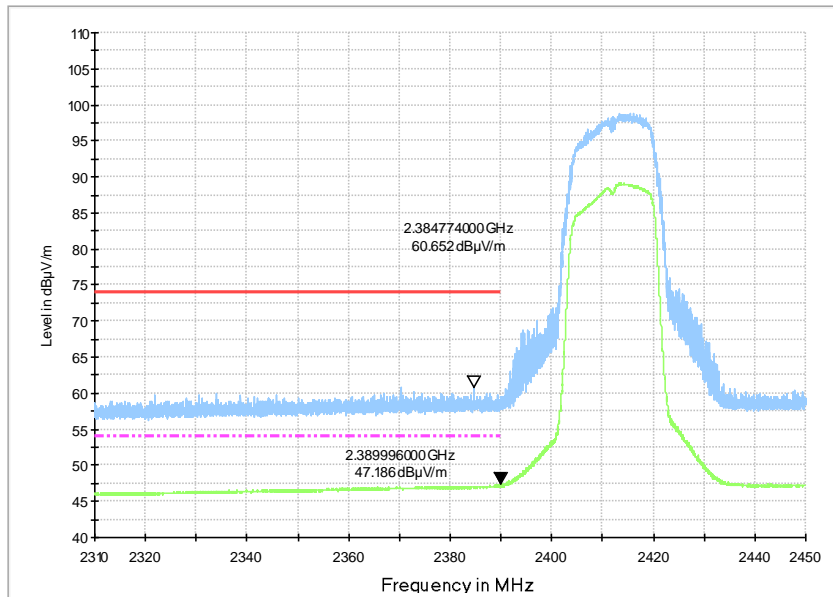
**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.45GHz**

RE - Power-2.45GHz-2.5GHz



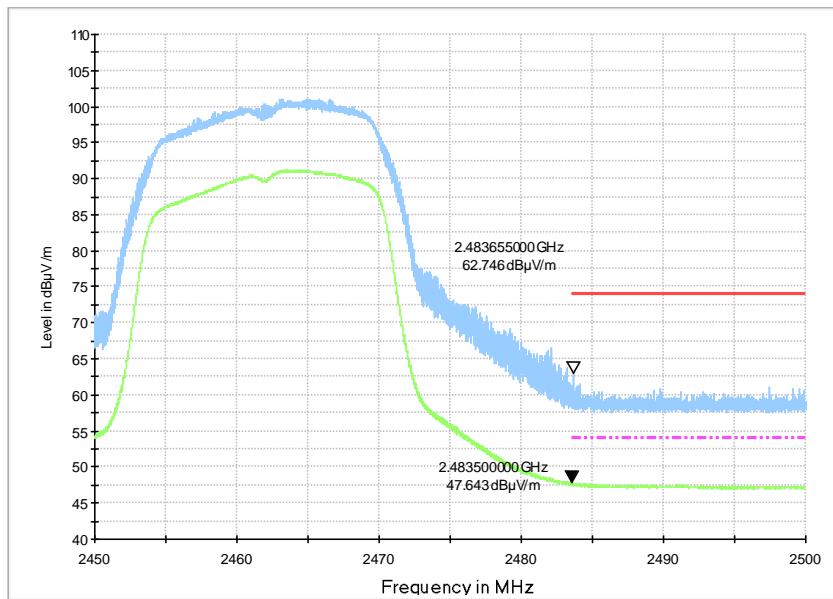
**Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**

RE - Power-2.31GHz-2.45GHz



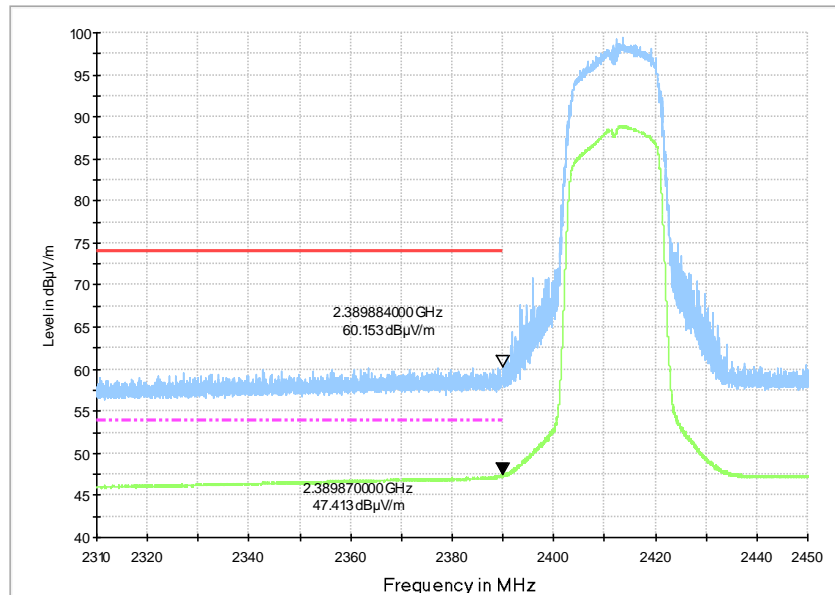
**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.45GHz**

RE - Power-2.45GHz-2.5GHz



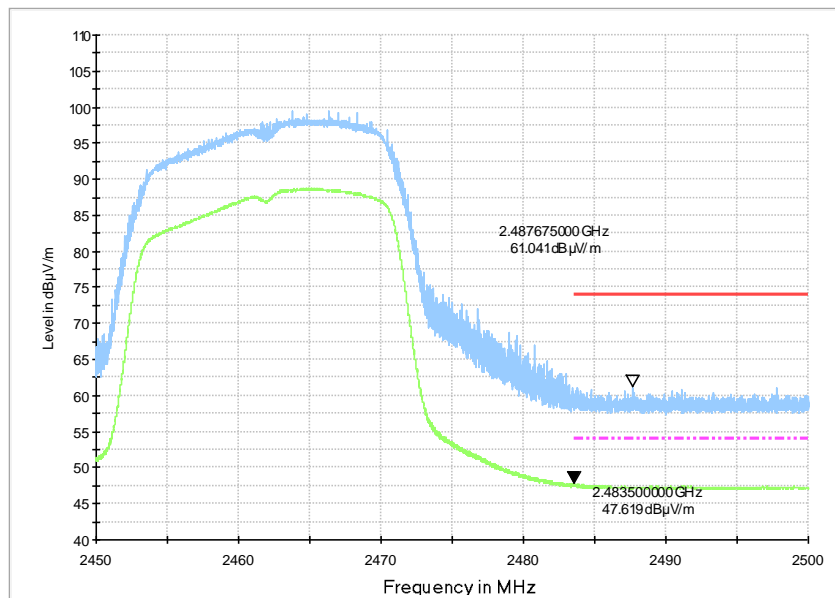
**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**

RE - Power-2.31GHz-2.45GHz



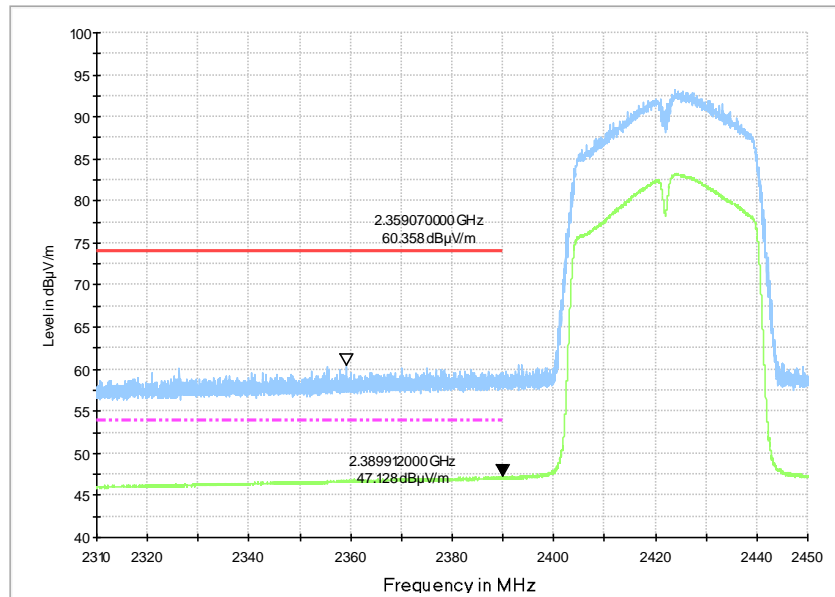
**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.45GHz**

RE - Power-2.45GHz-2.5GHz



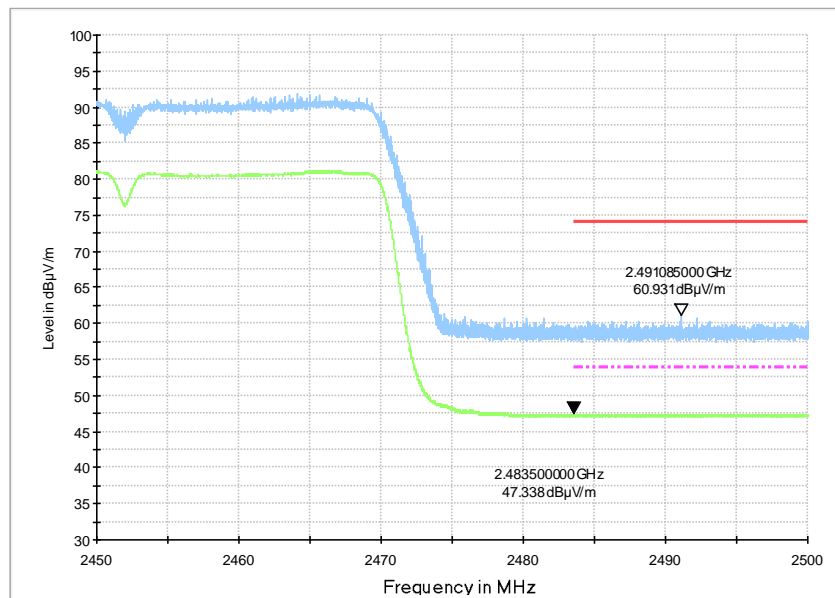
**Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**

RE - Power-2.31GHz-2.45GHz



**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch3, 2.31 GHz - 2.45GHz**

RE - Power-2.45GHz-2.5GHz



**Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT40, ch9, 2.45 GHz - 2.50GHz**

## **A.7. AC Power-line Conducted Emission**

**Method of Measurement: See ANSI C63.10-2013-clause 6.2**

- 1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
- 2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
- 3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
- 4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.
- 5 If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.<sup>36</sup> Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

**Test Condition:**

<b>Voltage (V)</b>	<b>Frequency (Hz)</b>
120	60



EUT ID: UT05a

**Measurement Result and limit:**

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

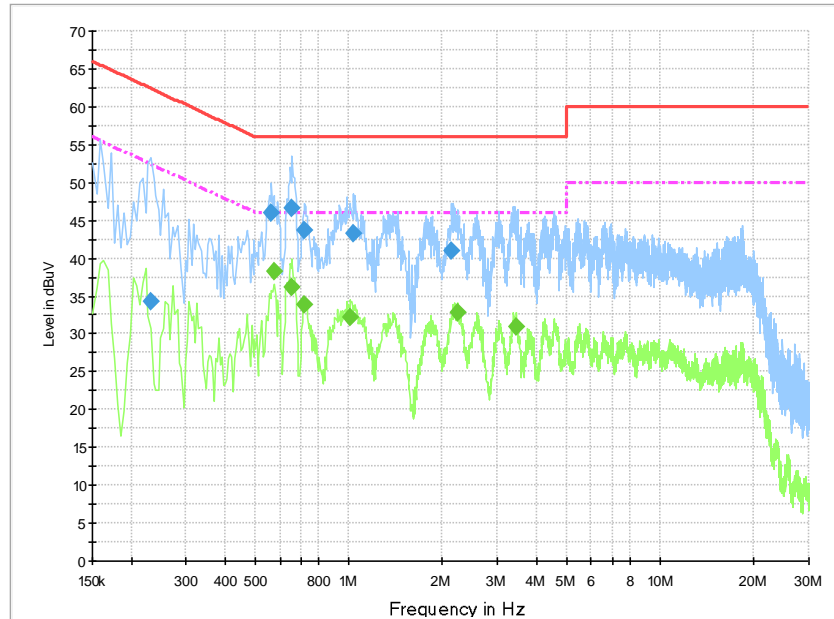
Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1	Fig.A.7.2	<b>P</b>
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

**Conclusion: Pass**

Test graphs as below:

### Result for Traffic:



**Fig.A.7.1 AC Powerline Conducted Emission-802.11b**

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

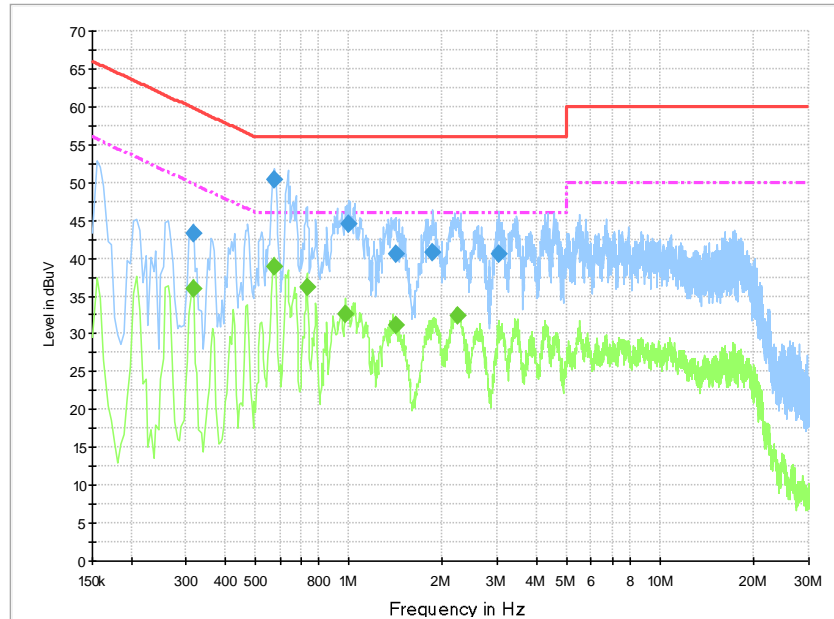
### Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.231000	34.2	10000.0	9.000	On	L1	19.9	28.2	62.4	
0.564000	46.0	10000.0	9.000	On	L1	20.0	10.0	56.0	
0.658500	46.6	10000.0	9.000	On	L1	19.9	9.4	56.0	
0.721500	43.6	10000.0	9.000	On	L1	19.9	12.4	56.0	
1.032000	43.2	10000.0	9.000	On	L1	19.8	12.8	56.0	
2.139000	41.1	10000.0	9.000	On	L1	19.8	14.9	56.0	

### Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.573000	38.2	10000.0	9.000	On	N	20.0	7.8	46.0	
0.658500	36.2	10000.0	9.000	On	L1	19.9	9.8	46.0	
0.721500	33.9	10000.0	9.000	On	L1	19.9	12.1	46.0	
1.009500	32.3	10000.0	9.000	On	L1	19.8	13.7	46.0	
2.233500	32.7	10000.0	9.000	On	L1	19.8	13.3	46.0	
3.444000	31.0	10000.0	9.000	On	L1	19.8	15.0	46.0	

**Result for Idle:**



**Fig.A.7.2 AC Powerline Conducted Emission-Idle**

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.316500	43.3	10000.0	9.000	On	L1	19.9	16.5	59.8	
0.577500	50.4	10000.0	9.000	On	L1	20.0	5.6	56.0	
1.000500	44.6	10000.0	9.000	On	L1	19.8	11.4	56.0	
1.419000	40.5	10000.0	9.000	On	L1	19.8	15.5	56.0	
1.864500	40.8	10000.0	9.000	On	L1	19.8	15.2	56.0	
3.030000	40.5	10000.0	9.000	On	L1	19.8	15.5	56.0	

**Final Result 2**

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.316500	35.9	10000.0	9.000	On	L1	19.9	13.9	49.8	
0.573000	38.8	10000.0	9.000	On	L1	20.0	7.2	46.0	
0.735000	36.2	10000.0	9.000	On	L1	19.9	9.8	46.0	
0.973500	32.6	10000.0	9.000	On	L1	19.8	13.4	46.0	
1.410000	31.1	10000.0	9.000	On	L1	19.8	14.9	46.0	
2.238000	32.5	10000.0	9.000	On	L1	19.8	13.5	46.0	

## ANNEX B: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p> 	
<hr/> <p><b>Certificate of Accreditation to ISO/IEC 17025:2005</b></p> <hr/>	
<p>NVLAP LAB CODE: 600118-0</p>	
<p><b>Telecommunication Technology Labs, CAICT</b> Beijing China</p>	
<p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p>	
<p><b>Electromagnetic Compatibility &amp; Telecommunications</b></p>	
<p><i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i></p>	
<hr/> <p>2019-09-26 through 2020-09-30 <i>Effective Dates</i></p>	 <hr/> <p><i>[Signature]</i> For the National Voluntary Laboratory Accreditation Program</p>

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