

Average
802.11b
Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17600.500	42.41	-25.70	46.00	22.21	54.00	11.59	V
13815.000	39.21	-29.10	40.90	27.41	54.00	14.79	V
12845.000	37.47	-30.70	39.10	28.97	54.00	16.53	H
9198.500	35.02	-33.70	38.00	30.72	54.00	18.98	H
7893.500	33.96	-34.90	37.10	31.76	54.00	20.04	H
2363.600	42.81	-20.10	28.00	34.81	54.00	11.19	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17405.500	42.57	-26.90	45.20	24.17	54.00	11.43	H
13688.000	39.55	-29.50	40.40	28.65	54.00	14.45	V
12847.000	37.52	-30.70	39.10	29.02	54.00	16.48	H
8987.500	34.93	-33.30	38.20	30.03	54.00	19.07	H
7981.500	34.14	-34.80	37.10	31.84	54.00	19.86	V
4782.000	29.47	-37.30	33.00	33.67	54.00	24.53	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17979.000	42.59	-25.50	46.70	21.39	54.00	11.41	H
14172.000	39.30	-29.00	42.00	26.30	54.00	14.70	H
12859.500	37.82	-30.70	39.10	29.32	54.00	16.18	H
9727.000	35.28	-33.00	38.00	30.28	54.00	18.72	H
7988.000	34.50	-34.80	37.10	32.20	54.00	19.50	H
2487.100	43.07	-20.00	28.30	34.77	54.00	10.93	H

802.11g

Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17594.500	42.57	-25.70	46.00	22.37	54.00	11.43	V
13580.500	39.47	-29.50	40.40	28.57	54.00	14.53	V
12865.500	37.87	-30.70	39.10	29.37	54.00	16.13	H
9721.000	35.04	-33.00	38.00	30.04	54.00	18.96	V
7982.000	33.99	-34.80	37.10	31.69	54.00	20.01	V
2369.900	42.76	-20.10	28.00	34.76	54.00	11.24	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17985.000	42.67	-25.50	46.70	21.47	54.00	11.33	H
14201.000	39.33	-29.00	42.00	26.33	54.00	14.67	H
12855.500	37.30	-30.70	39.10	28.80	54.00	16.70	H
9724.000	34.91	-33.00	38.00	29.91	54.00	19.09	H
7903.000	34.32	-34.90	37.10	32.12	54.00	19.68	V
4952.500	29.74	-37.10	33.30	33.54	54.00	24.26	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17599.000	42.53	-25.70	46.00	22.33	54.00	11.47	V
14167.000	39.18	-29.00	42.00	26.18	54.00	14.82	V
12856.500	37.67	-30.70	39.10	29.17	54.00	16.33	H
9113.000	35.27	-33.80	38.10	31.07	54.00	18.73	V
7911.000	34.01	-34.90	37.10	31.81	54.00	19.99	V
2485.100	43.73	-20.00	28.30	35.43	54.00	10.27	H

802.11n-HT20
Ch1

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17611.500	42.60	-25.70	46.00	22.40	54.00	11.40	H
14160.000	39.19	-29.00	42.00	26.19	54.00	14.81	H
12868.500	37.70	-30.70	39.10	29.20	54.00	16.30	H
9890.000	35.10	-33.50	38.10	30.50	54.00	18.90	H
7795.000	34.07	-35.10	37.00	32.17	54.00	19.93	H
2359.900	42.70	-20.10	28.00	34.70	54.00	11.30	V

Ch6

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17607.000	42.64	-25.70	46.00	22.44	54.00	11.36	V
13687.000	39.25	-29.50	40.40	28.35	54.00	14.75	V
12864.500	37.64	-30.70	39.10	29.14	54.00	16.36	V
9963.500	35.12	-33.60	38.10	30.62	54.00	18.88	H
7432.000	34.00	-35.20	36.70	32.40	54.00	20.00	H
4845.500	29.42	-37.50	33.10	33.72	54.00	24.58	V

Ch11

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17970.500	42.65	-25.50	46.70	21.45	54.00	11.35	H
13735.500	39.26	-29.10	40.90	27.46	54.00	14.74	V
12858.000	37.65	-30.70	39.10	29.15	54.00	16.35	H
8641.500	35.11	-34.40	37.90	31.51	54.00	18.89	V
7414.500	34.09	-35.20	36.70	32.49	54.00	19.91	V
2485.000	43.53	-20.00	28.30	35.23	54.00	10.47	H

Test graphs as below:

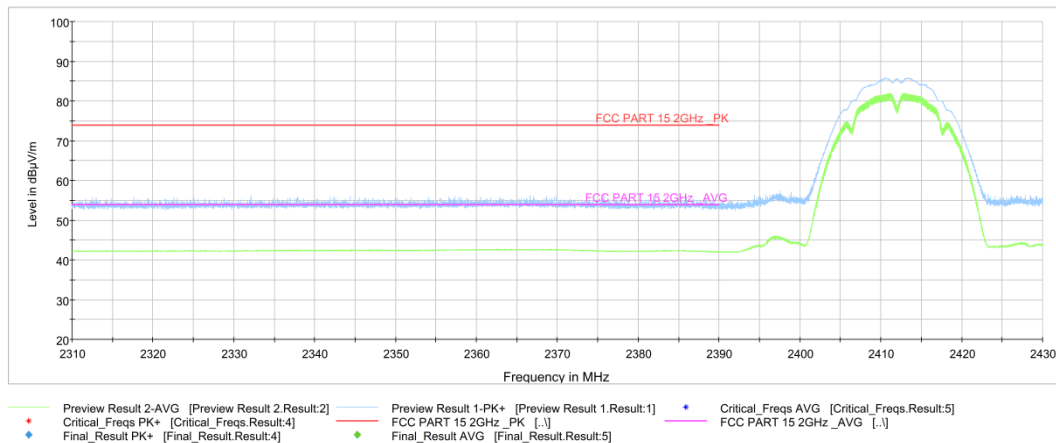


Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.43GHz

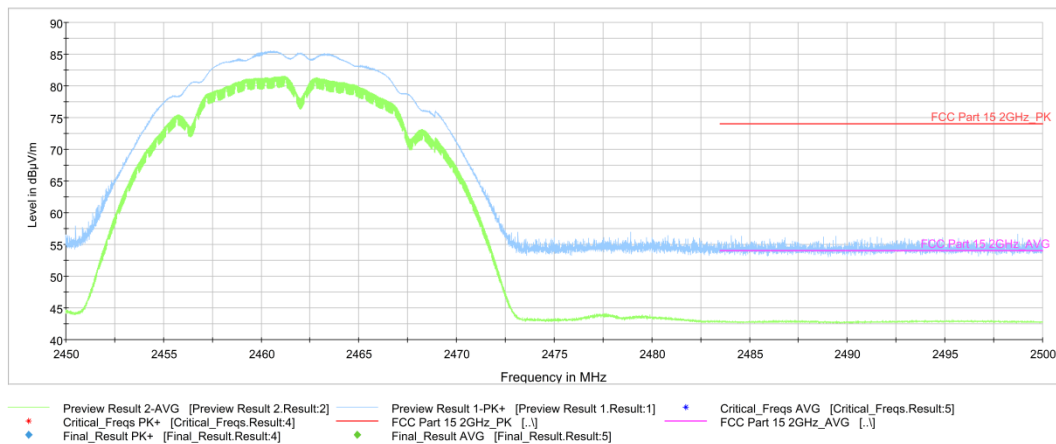


Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

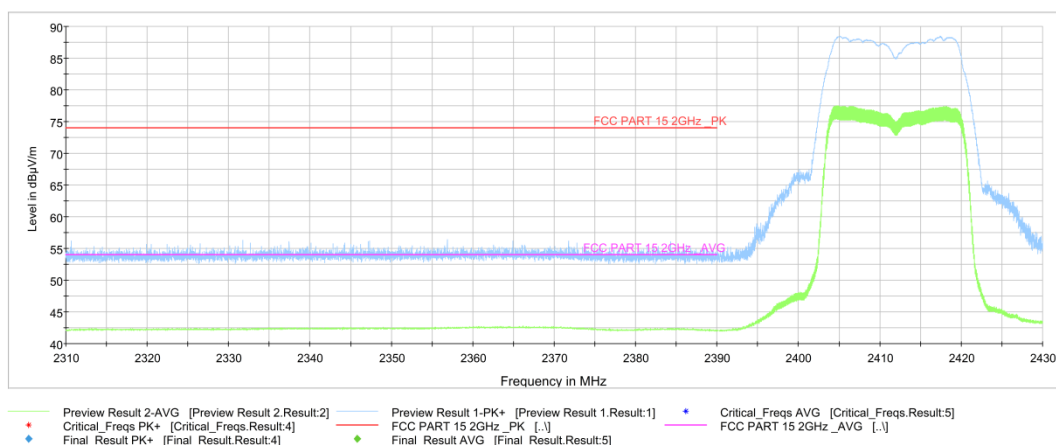


Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.43GHz

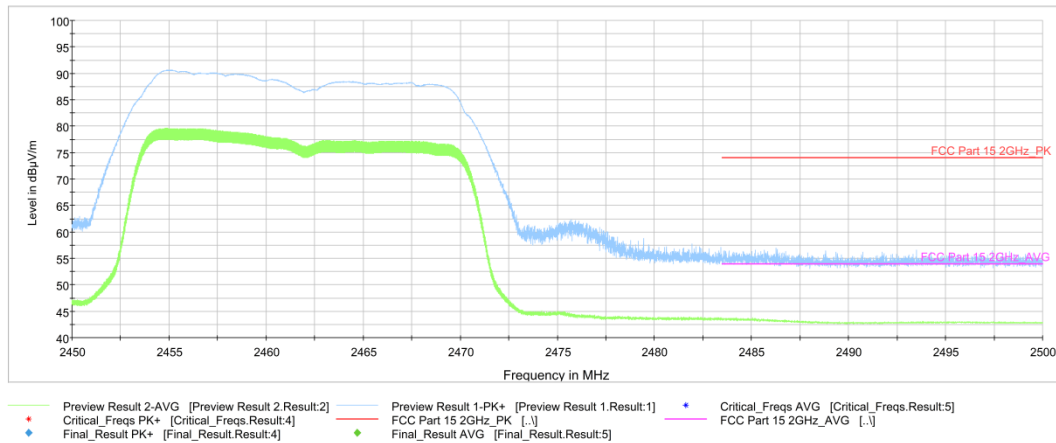


Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.43GHz

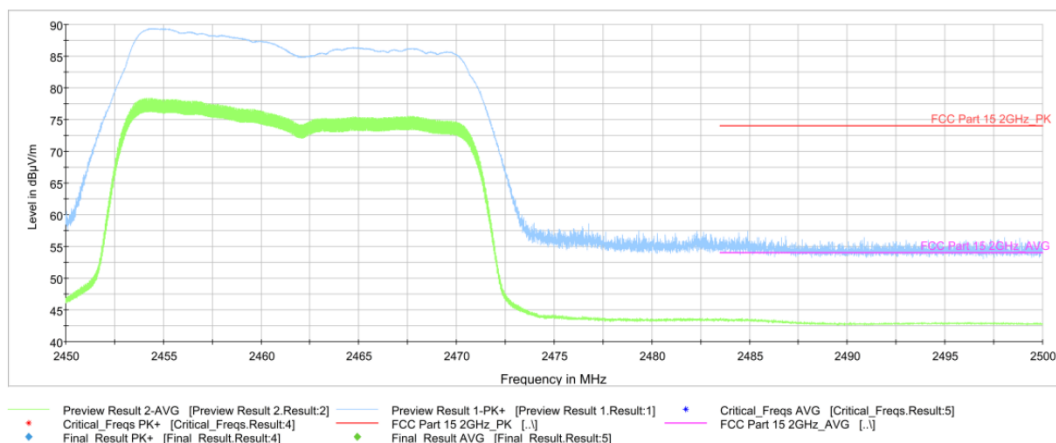


Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz

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.³⁶ 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:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:
WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	66 to 56	Fig.A.7.1	Fig.A.7.2	P
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 (dBμV)	Result (dBμV)		Conclusion
		With charger		
		802.11b	Idle	
0.15 to 0.5	56 to 46	Fig.A.7.1	Fig.A.7.2	P
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:

Measurement results for Set.1:

Result for Traffic:

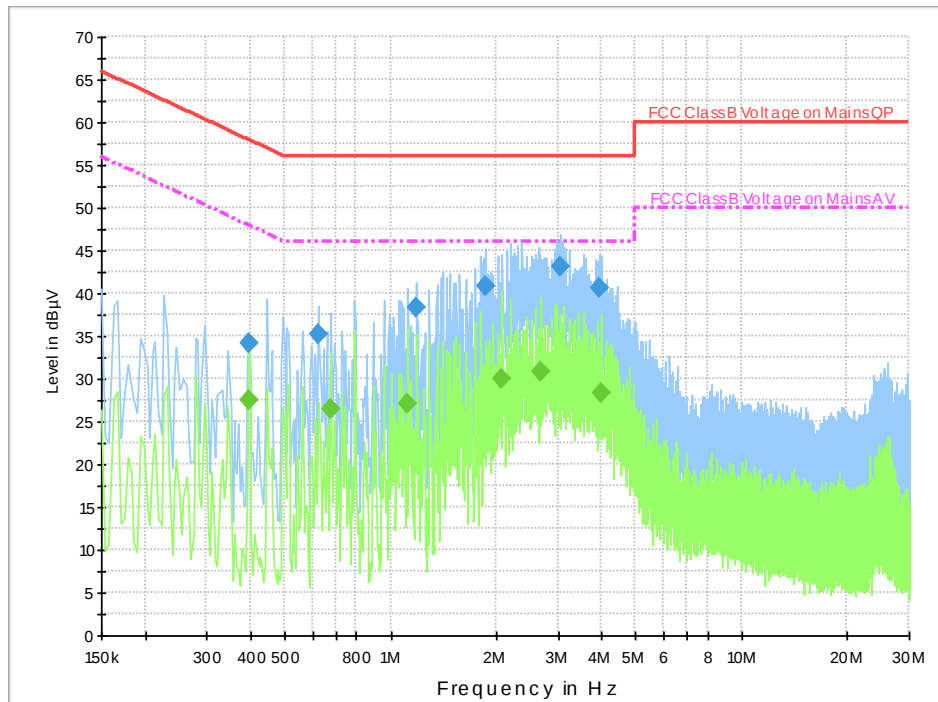


Fig.A.7.1 AC Powerline Conducted Emission-802.11b

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
0.394000	34.2	5000.0	9.000	On	L1	19.9	23.8	58.0	
0.622000	35.1	5000.0	9.000	On	L1	19.7	20.9	56.0	
1.186000	38.3	5000.0	9.000	On	L1	19.5	17.7	56.0	
1.862000	40.9	5000.0	9.000	On	L1	19.5	15.1	56.0	
3.042000	43.0	5000.0	9.000	On	L1	19.5	13.0	56.0	
3.942000	40.6	5000.0	9.000	On	L1	19.6	15.4	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.394000	27.5	5000.0	9.000	On	L1	19.9	20.4	48.0	
0.674000	26.4	5000.0	9.000	On	L1	19.7	19.6	46.0	
1.122000	27.0	5000.0	9.000	On	L1	19.5	19.0	46.0	
2.082000	29.9	5000.0	9.000	On	L1	19.5	16.1	46.0	
2.694000	30.8	5000.0	9.000	On	L1	19.5	15.2	46.0	
3.998000	28.3	5000.0	9.000	On	L1	19.6	17.7	46.0	

Measurement results for Set.1:

Result for Idle:

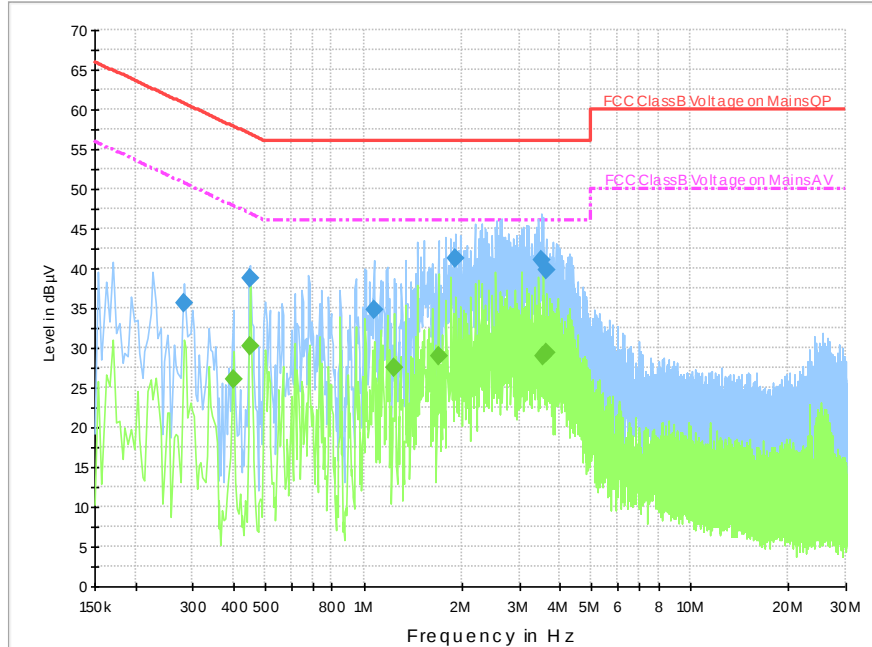


Fig.A.7.2 AC Powerline Conducted Emission-Idle

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
0.282000	35.6	5000.0	9.000	On	L1	20.0	25.1	60.8	
0.450000	38.8	5000.0	9.000	On	L1	19.9	18.1	56.9	
1.078000	34.8	5000.0	9.000	On	L1	19.5	21.2	56.0	
1.918000	41.2	5000.0	9.000	On	L1	19.4	14.8	56.0	
3.498000	41.0	5000.0	9.000	On	L1	19.5	15.0	56.0	
3.610000	39.9	5000.0	9.000	On	L1	19.5	16.1	56.0	

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)	Comment
0.398000	26.0	5000.0	9.000	On	L1	19.9	21.9	47.9	
0.450000	30.2	5000.0	9.000	On	L1	19.9	16.7	46.9	
1.242000	27.5	5000.0	9.000	On	L1	19.5	18.5	46.0	
1.690000	29.0	5000.0	9.000	On	L1	19.5	17.0	46.0	
3.558000	28.9	5000.0	9.000	On	L1	19.5	17.1	46.0	
3.610000	29.4	5000.0	9.000	On	L1	19.5	16.6	46.0	

ANNEX B: EUT parameters

Disclaimer: The antenna gain provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX C: Accreditation Certificate

United States Department of Commerce National Institute of Standards and Technology	
	
Certificate of Accreditation to ISO/IEC 17025:2017	
NVLAP LAB CODE: 600118-0	
Telecommunication Technology Labs, CAICT Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
Electromagnetic Compatibility & Telecommunications	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. 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>	
2021-09-29 through 2022-09-30 <i>Effective Dates</i>	  <i>For the National Voluntary Laboratory Accreditation Program</i>

END OF REPORT