



FCC Radio Test Report

FCC ID: 2AXJ4C80V2

This report concerns: Class II Permissive Change

Project No. : 2505G008
Equipment : AC1900 MU-MIMO Wi-Fi Router
Brand Name : tp-link
Test Model : Archer C80
Series Model : N/A
Applicant : TP-Link Corporation Limited
Address : Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road,
Tsim Sha Tsui, Kowloon, Hong Kong
Manufacturer : TP-Link Corporation Limited
Address : Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road,
Tsim Sha Tsui, Kowloon, Hong Kong
Date of Receipt : May 14, 2025
Date of Test : May 19, 2025 ~ Jun. 04, 2025
Issued Date : Aug. 29, 2025
Test Sample : Engineering Sample No.: DG20250514107
Standard(s) : FCC CFR Title 47, Part 15, Subpart E

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.(Dongguan).

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** assumes no responsibility for the data provided by the customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by **BTL**.

The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the U.S. Government.

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BTL's laboratory quality assurance procedures are in compliance with the ISO/IEC 17025: 2017 requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective. Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2505G008	R00	This is a supplementary report to the original test report (BTL-FCCP-2-1907C038C) and due to below items: 1. Changed the information of applicant and manufacturer. 2. Changed the transformer: The LAN port plug-in transformer is changed to a surface mount capacitor separated transformer, and the WAN port 18-pin transformer is changed to a small 20-pin transformer. The radiated emissions 30MHz to 1GHz have been re-evaluated in this report. Others please refer to original report.	Jun. 16, 2025	Invalid
BTL-FCCP-2-2505G008	R01	It is a revision of the report BTL-FCCP-2-2505G008 R00, with the following revisions: 1. Correction: In the point 1 of the R00 version history description, there is no change in the applicant and manufacturer information compared to the original version. This is a newly released report, replacing the BTL-FCCP-2-2505G008 R00 report.	Aug. 29, 2025	Valid

Remark: For the original report (BTL-FCCP-2-1907C038C), the test data, data evaluation, and equipment configuration contained was accredited by the Authority of A2LA(TESTING CERT #5123.02) according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

1. APPLICABLE STANDARDS

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of A2LA:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart E				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.407(b) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX A	PASS	-----

Note:

(1) "N/A" denotes test is not applicable in this test report.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Dalang, Dongguan, Guangdong People's Republic of China.

BTL's Registration Number for FCC: 747969

BTL's Designation Number for FCC: CN1377

2.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	30MHz ~ 200MHz	V	4.40
		30MHz ~ 200MHz	H	3.62
		200MHz ~ 1,000MHz	V	4.58
		200MHz ~ 1,000MHz	H	3.98

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

2.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By	Test Date
Radiated Emissions -30MHz to 1000MHz	23°C	52%	AC 120V/60Hz	Jensen Zhou	May 24, 2025

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	AC1900 MU-MIMO Wi-Fi Router
Brand Name	tp-link
Test Model	Archer C80
Series Model	N/A
Model Difference(s)	N/A
Power Source	DC Voltage supplied from AC adapter. Model:T120150-2B1
Power Rating	I/P: 100-240V~, 50/60Hz, 0.6A O/P: 12V  1.5A
Operation Frequency Bands	UNII-1: 5150 MHz~5250 MHz UNII-3: 5725 MHz~5850 MHz
Modulation Type	OFDM
Bit Rate of Transmitter	Up to 1300 Mbps

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

IEEE 802.11a IEEE 802.11n(HT20) IEEE 802.11ac(VHT20) IEEE 802.11ax(HE20)		IEEE 802.11n(HT40) IEEE 802.11ac(VHT40) IEEE 802.11ax(HE40)		IEEE 802.11ac(VHT80) IEEE 802.11ax(HE80)	
UNII-1		UNII-1		UNII-1	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

IEEE 802.11a IEEE 802.11n(HT20) IEEE 802.11ac(VHT20) IEEE 802.11ax(HE20)		IEEE 802.11n(HT40) IEEE 802.11ac(VHT40) IEEE 802.11ax(HE40)		IEEE 802.11ac(VHT80) IEEE 802.11ax(HE80)	
UNII-3		UNII-3		UNII-3	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

3. Antenna Specification:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		3101502665	Dipole	Weld	3
2		3101502664	Dipole	Weld	3
3		3101502663	Dipole	Weld	3

Note:

This EUT supports CDD, and all antennas have the same gain, Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows:

(1) Non Beamforming Function: Array Gain = 0 dB ($N_{ANT} \leq 4$), so the Directional gain=3.

(2) Beamforming Function: Beamforming Gain is 4.77 dB. So Directional gain = 4.77+3=7.77.

4. The worst case for 3TX as follow:

Operating Mode TX Mode	3TX
IEEE 802.11a	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11n(HT20)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11n(HT40)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11ac(VHT20)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11ac(VHT40)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11ac(VHT80)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11ax(HE20)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11ax(HE40)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11ax(HE80)	V (Ant. 1+Ant. 2+Ant. 3)

3.2 TEST MODES

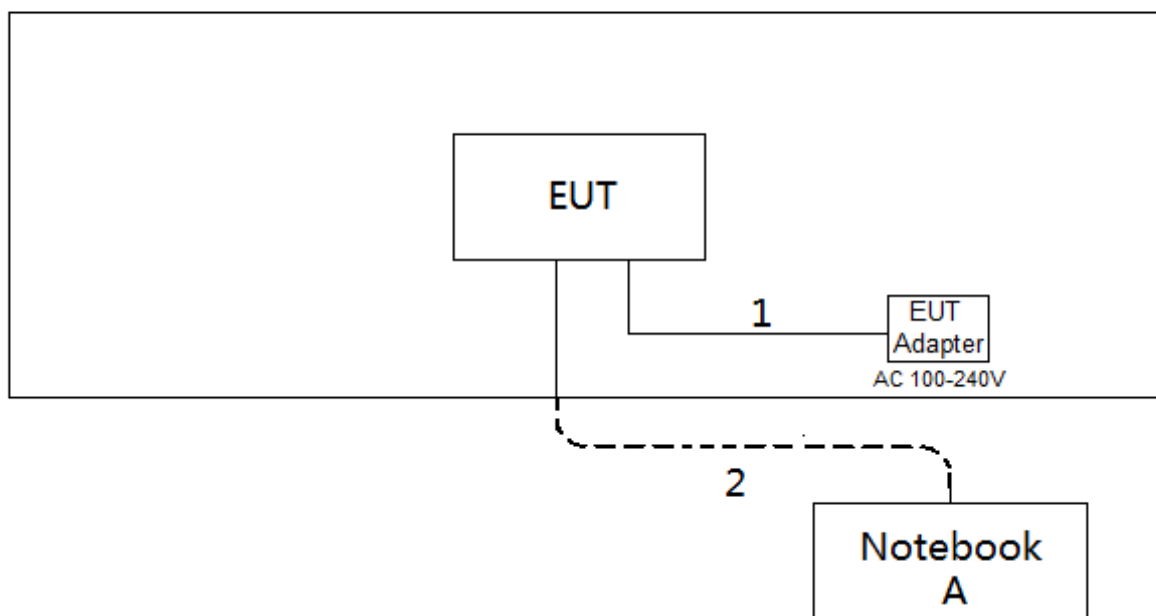
The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX AC(VHT40) Mode / CH159 (UNII-3)

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

Radiated Emissions Test - Below 1GHz	
Final Test Mode	Description
Mode 1	TX AC(VHT40) Mode / CH159 (UNII-3)

3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
A	Notebook	Dell	INSPIRON 5493	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m
2	RJ45 Cable	NO	NO	10m

3.5 CUSTOMER INFORMATION DESCRIPTION

- 1) The antenna gain and beamforming gain are provided by the manufacturer.

4. RADIATED EMISSIONS

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

- (1) The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

- (2) According to 15.407(b)(4)(i), all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (3)

$$FS_{\text{limit}} = FS_{\text{max}} - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

$20 \log (d_{\text{limit}}/d_{\text{measure}}) = 20 \log (3/1) = 9.5 \text{ dB}$.

FS_{limit} : Harmonic at 3m Peak and Average limit.

FS_{max} : Harmonic at 1m Peak and Average Maximum value.

d_{limit} : Harmonic at 3m test distance.

d_{measure} : Harmonic Actual test distance.

- (4) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

4.2 TEST PROCEDURE

- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
(below 1 GHz)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

The following table is the setting of the receiver:

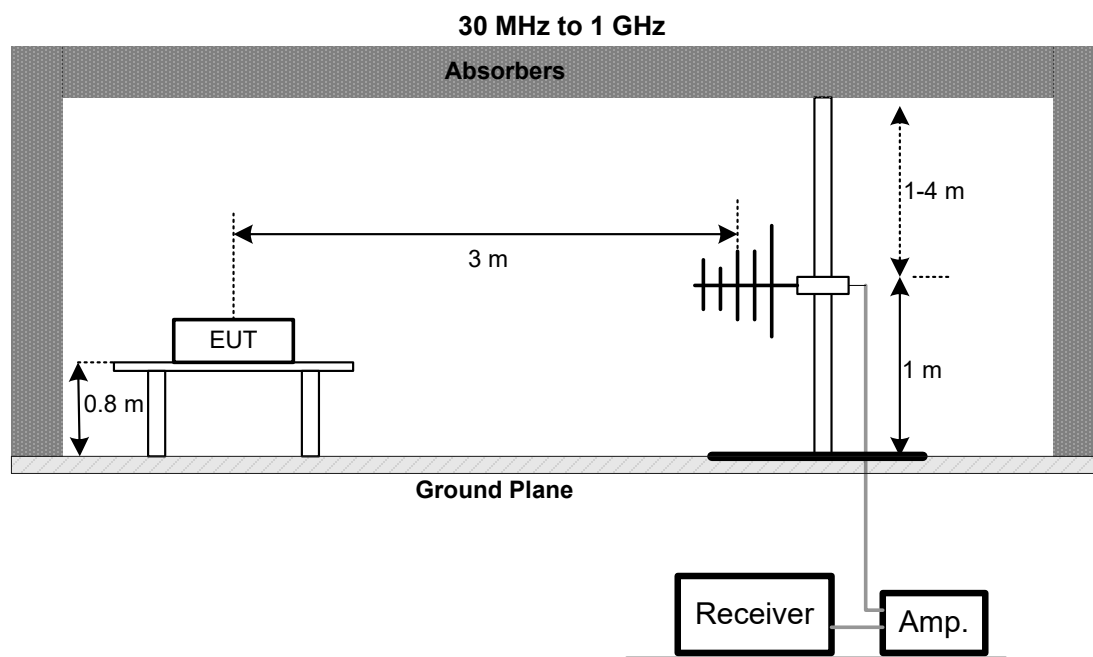
Spectrum Parameters	Setting
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Receiver Parameters	Setting
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX A.

5. MEASUREMENT INSTRUMENTS LIST

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01462	Dec. 14, 2025
2	Attenuator	EMC INSTRUMENT	EMCI-N-6-06	AT-06009	Dec. 14, 2025
3	Preamplifier	EMC INSTRUMENT	EMC001330	980998	May 31, 2025
4	Cable	RegalWay	LMR400-NMNM-12.5m	N/A	Jun. 06, 2025
5	Cable	RegalWay	LMR400-NMNM-3m	N/A	Jun. 06, 2025
6	Cable	RegalWay	LMR400-NMNM-0.5m	N/A	Jun. 06, 2025
7	Receiver	Agilent	N9038A	MY52130039	Jan. 10, 2026
8	Positioning Controller	MF	MF-7802	N/A	N/A
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
10	966 Chamber room	CM	9*6*6	N/A	May 15, 2026

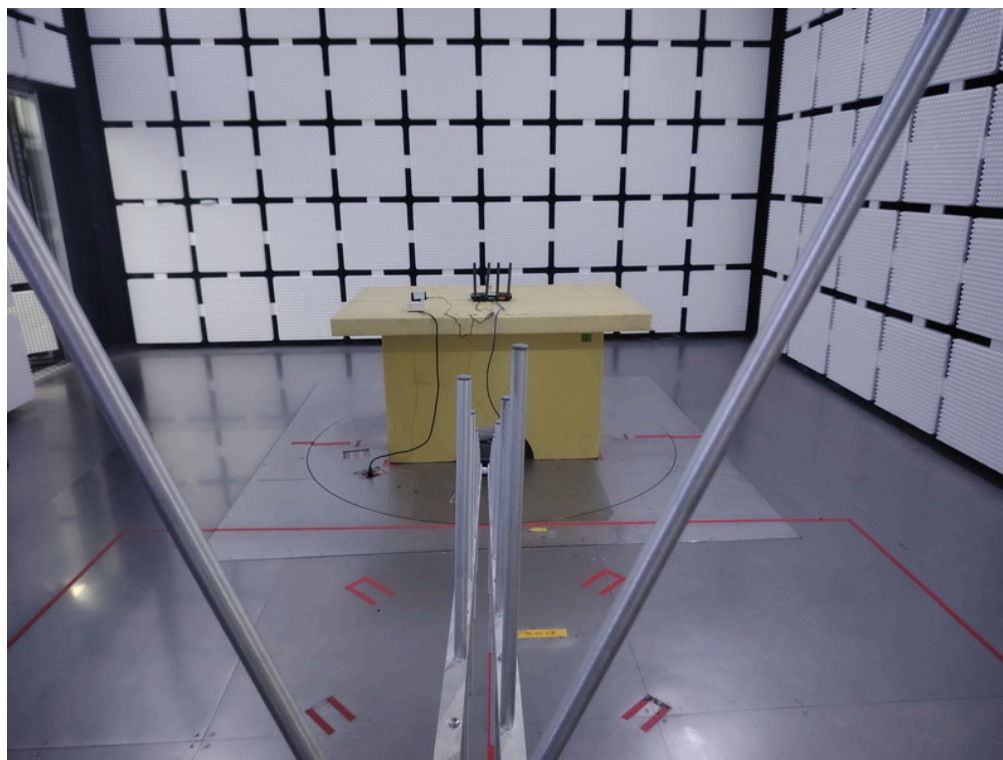
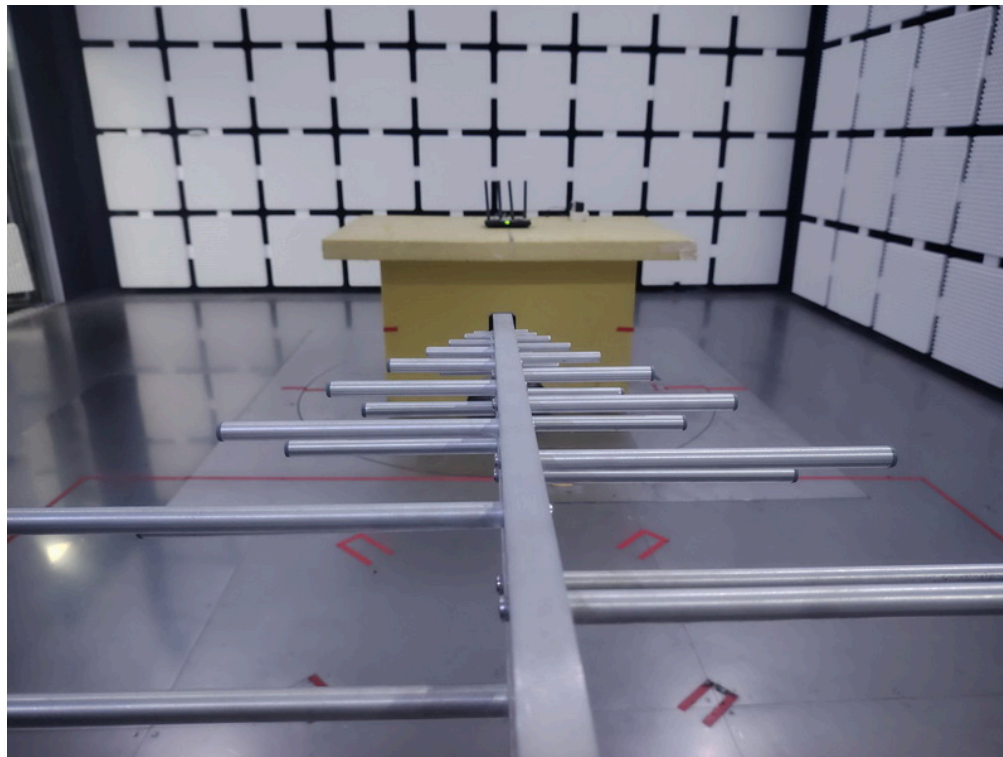
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

6. EUT TEST PHOTOS

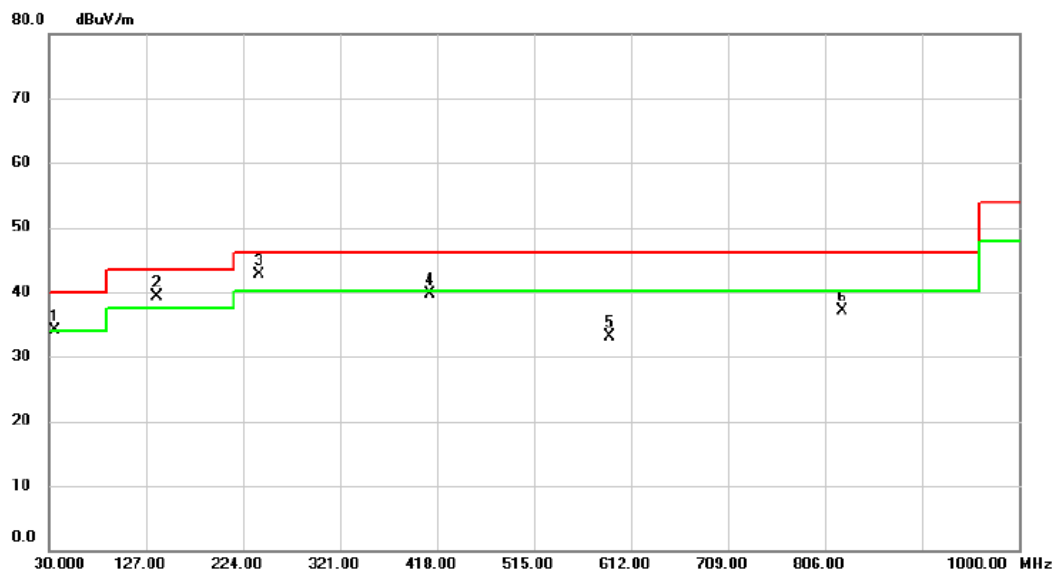
Radiated Emissions Test Photos

30 MHz to 1 GHz



APPENDIX A - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode:	TX AC40 Mode Channel 159	Polarization	Vertical
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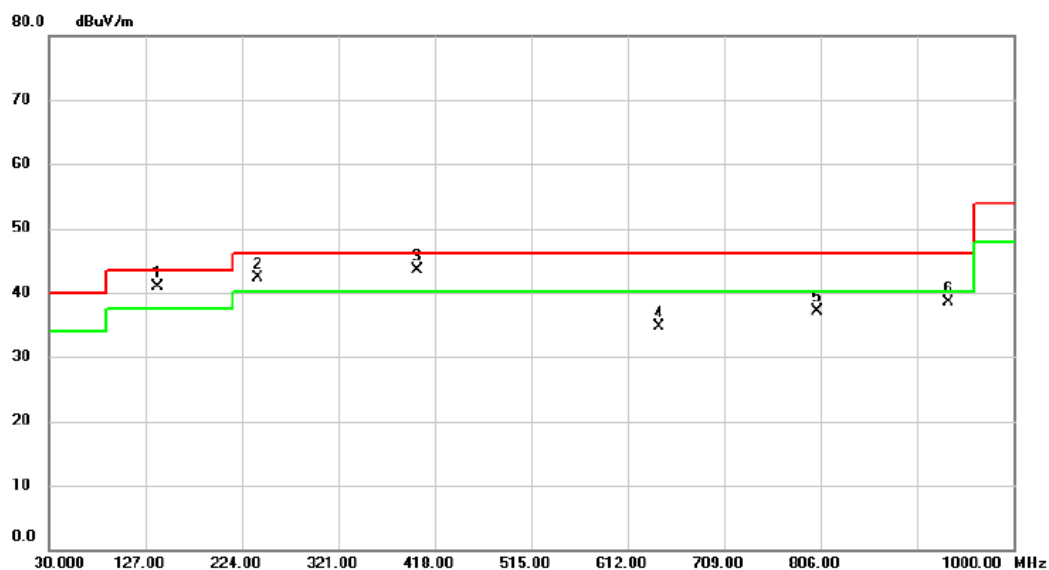


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	!	35.335	46.38	-12.36	34.02	40.00	-5.98	peak	
2	!	138.640	51.08	-11.78	39.30	43.52	-4.22	peak	
3	*	239.520	55.32	-12.69	42.63	46.02	-3.39	peak	
4		410.240	47.45	-7.76	39.69	46.02	-6.33	peak	
5		590.660	36.93	-3.90	33.03	46.02	-12.99	peak	
6		822.975	37.87	-0.69	37.18	46.02	-8.84	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode:	TX AC40 Mode Channel 159	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	139.125	52.70	-11.74	40.96	43.52	-2.56	peak	
2	!	240.005	55.00	-12.65	42.35	46.02	-3.67	peak	
3	!	400.055	51.48	-8.07	43.41	46.02	-2.61	peak	
4		643.040	37.33	-2.71	34.62	46.02	-11.40	peak	
5		803.090	37.90	-0.85	37.05	46.02	-8.97	peak	
6		935.010	37.85	0.72	38.57	46.02	-7.45	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

End of Test Report