

FCC Test Report

Applicant : **Launch Tech Co., Ltd.**

Address : **Launch Industrial Park, North of Wuhe Rd.,
Banxuegang, Longgang, Shenzhen, 518129,
China**

Product Name : **Automotive Diagnostic Tool**

Report Date : **May 11, 2024**



Shenzhen Anbotek Compliance Laboratory Limited

Shenzhen Anbotek Compliance Laboratory Limited

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Report No.: 18220WC40058504

FCC ID: XUJOADDPD1302

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TEST REPORT

Applicant : Launch Tech Co., Ltd.
Manufacturer : Launch Tech Co., Ltd.
Product Name : Automotive Diagnostic Tool
Test Model No. : OADD-PD1302A
Reference Model No. : OADD-PD1302x (x=A~Z, indicating configuration difference)
Trade Mark : LAUNCH
Rating(s) : Input: 12V= 4A(with DC 7.6V, 9360mAh battery inside)
Test Standard(s) : 47 CFR Part 15E

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with above listed standard(s) requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt:

Mar. 26, 2024

Date of Test:

Mar. 26, 2024 to May 11, 2024

Prepared By:



(Ella Liang)

Approved & Authorized Signer:



(Edward Pan)

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Revision History

Report Version	Description	Issued Date
R00	Original Issue.	May 11, 2024

Note 1:

This is a Class II application which was based on the certified FCC ID: XUJOADDPD1302. The difference between the original device and current one described as following:

1. Change the model name to "OADD-PD1302x (x=A~Z, indicating configuration difference)".
2. Change the Product Name to "Automotive Diagnostic Tool".
3. Change the trade mark to "LAUNCH".
4. Add the adapter with PSY1204000.
5. Change the EUT appearance shape.
6. Remove the LTE part of the motherboard.

The changes are not related with the other RF parameters, only conducted emission and radiation spurious emission were retested with adapter PSY1204000.

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1. General Information

1.1. Client Information

Applicant	:	Launch Tech Co., Ltd.
Address	:	Launch Industrial Park, North of Wuhe Rd., Banxuegang, Longgang, Shenzhen, 518129, China
Manufacturer	:	Launch Tech Co., Ltd.
Address	:	Launch Industrial Park, North of Wuhe Rd., Banxuegang, Longgang, Shenzhen, 518129, China

1.2. Description of Device (EUT)

Product Name	:	Automotive Diagnostic Tool
Test Model No.	:	OADD-PD1302A
Reference Model No.	:	OADD-PD1302x (x=A~Z, indicating configuration difference) (Note: All samples are the same except the model number and appearance color, so we prepare "OADD-PD1302A" for test only.)
Trade Mark	:	LAUNCH
Test Power Supply	:	AC 120V/60Hz for adapter; DC 7.6V battery inside
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	Model: XDJ481D-120400 Input: 100-240V~50/60Hz 1.8A Output: 12.0V= 4.0A 48.0W
Add Adapter	:	Model: PSY1204000 Input: 100-240V~50/60Hz 1.3A Output: 12.0V= 4.0A 48.0W

RF Specification

Operation Frequency	:	802.11a/n(HT20)/ac(HT20)/ax(HE20): U-NII Band 1: 5180MHz to 5240MHz; U-NII Band 2A: 5260MHz to 5320MHz; U-NII Band 3: 5745MHz to 5825MHz; 802.11n(HT40)/ac(HT40)/ax(HE40): U-NII Band 1: 5190MHz to 5230MHz; U-NII Band 2A: 5270MHz to 5310MHz; U-NII Band 3: 5755MHz to 5795MHz; 802.11ac(HT80)/ax(HE80): U-NII Band 1: 5210MHz; U-NII Band 2A: 5290MHz; U-NII Band 3: 5775MHz Note: In Canada, 5600MHz to 5650MHz is not available.
Number of Channel	:	802.11a/n(HT20)/ac(HT20)/ax(HE20):

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	U-NII Band 1: 4; U-NII Band 2A: 4; U-NII Band 3: 5; 802.11n(HT40)/ac(HT40)/ax(HE40): U-NII Band 1: 2; U-NII Band 2A: 2; U-NII Band 3: 2; 802.11ac(HT80)/ax(HE80): U-NII Band 1: 1; U-NII Band 2A: 1; U-NII Band 3: 1
Modulation Type	: 802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM); 802.11ax: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Antenna Type	: FPC Antenna
Antenna Gain(Peak)	: ANT 1: Wi-Fi 5.2G: 3.38dBi Wi-Fi 5.3G: 3.62dBi Wi-Fi 5.8G: 1.64dBi ANT 2: Wi-Fi 5.2G: 3.37dBi Wi-Fi 5.3G: 3.08dBi Wi-Fi 5.8G: 2.42dBi
Remark: (1) All of the RF specification are provided by customer. (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. (3) ANT 1 and ANT 2 can not support MIMO.	

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1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
/	/	/	/

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1.4. Operation channel list

Operation Band: U-NII Band 1

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	/	/
44	5220	/	/	/	/
48	5240	/	/	/	/

Operation Band: U-NII Band 2A

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310	/	/
60	5300	/	/	/	/
64	5320	/	/	/	/

Operation Band: U-NII Band 3

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
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	/	/	/	/



1.5. Description of Test Modes

Pretest Modes	Descriptions
TM1	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.
TM2	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.
TM3	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ac modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.
TM4	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ax modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.
TM5	Keep the EUT works in normal operating mode and connect to companion device

1.6. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.4dB
Conducted Output Power	0.76dB
Occupied Bandwidth	925Hz
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.78dB; 6G-18GHz: 4.88dB 18G-40GHz: 5.68dB
Radiated emissions (Below 30MHz)	3.53dB
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.92dB; Vertical: 4.52dB
The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

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1.7. Test Summary

Test Items	Test Modes	Status
Conducted Emission at AC power line	Mode1,2,3,4	P
Maximum conducted output power	Mode1,2,3,4	P
Undesirable emission limits (below 1GHz)	Mode1,2,3,4	P
Undesirable emission limits (above 1GHz)	Mode1,2,3,4	P
Note: P: Pass N: N/A, not applicable		

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1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.:434132

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 434132.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

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1.9. Disclaimer

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek and all revisions are duly noted in the revisions section.
5. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
6. The authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

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1.10. Test Equipment List

Conducted Emission at AC power line						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	2024-01-18	2025-01-17
2	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040D T001	2024-01-17	2025-01-16
3	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	/	/
4	EMI Test Receiver	Rohde & Schwarz	ESPI3	100926	2023-10-12	2024-10-11

Emissions in frequency bands (above 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2024-01-23	2025-01-22
2	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	SKET-PA-002	2024-01-17	2025-01-16
3	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	2022-10-16	2025-10-15
4	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	/	/
5	Horn Antenna	A-INFO	LB-180400-KF	J211060628	2023-10-12	2024-10-11
6	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101792	2023-05-26	2024-05-25
7	Amplifier	Talent Microwave	TLLA18G40 G-50-30	23022802	2023-05-25	2024-05-24

Emissions in frequency bands (below 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2024-01-23	2025-01-22
2	Pre-amplifier	SONOMA	310N	186860	2024-01-17	2025-01-16
3	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-23	2025-10-22
4	Loop Antenna (9K-30M)	Schwarzbeck	FMZB1519 B	00053	2023-10-12	2024-10-11
5	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	/	/

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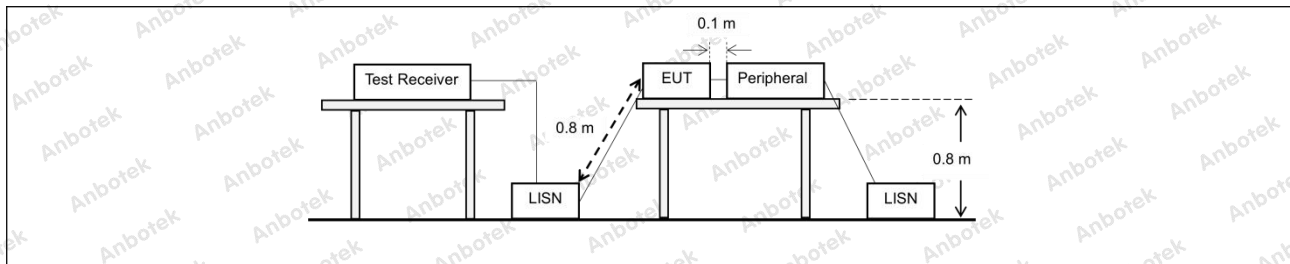
2. Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
*Decreases with the logarithm of the frequency.			
Test Method:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

2.1. EUT Operation

Operating Environment:	
Test mode:	<p>1: 802.11a mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.</p> <p>2: 802.11n mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p> <p>3: 802.11ac mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ac modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p> <p>4: 802.11ax mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ax modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p>

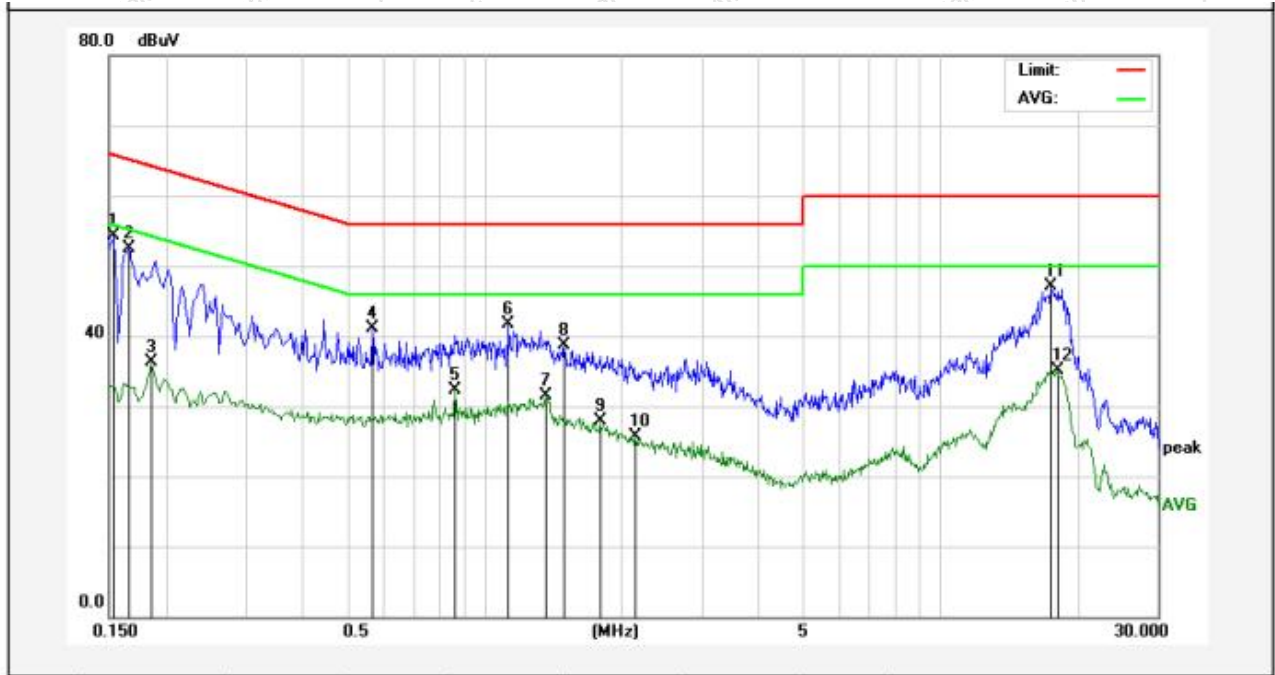
2.2. Test Setup



2.3. Test Data

Temperature:	22.5 °C	Humidity:	51.9 %	Atmospheric Pressure:	102 kPa
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TM4 / Line: Line / Band: 5150-5250 MHz / BW: 20 / CH:H / ANT1

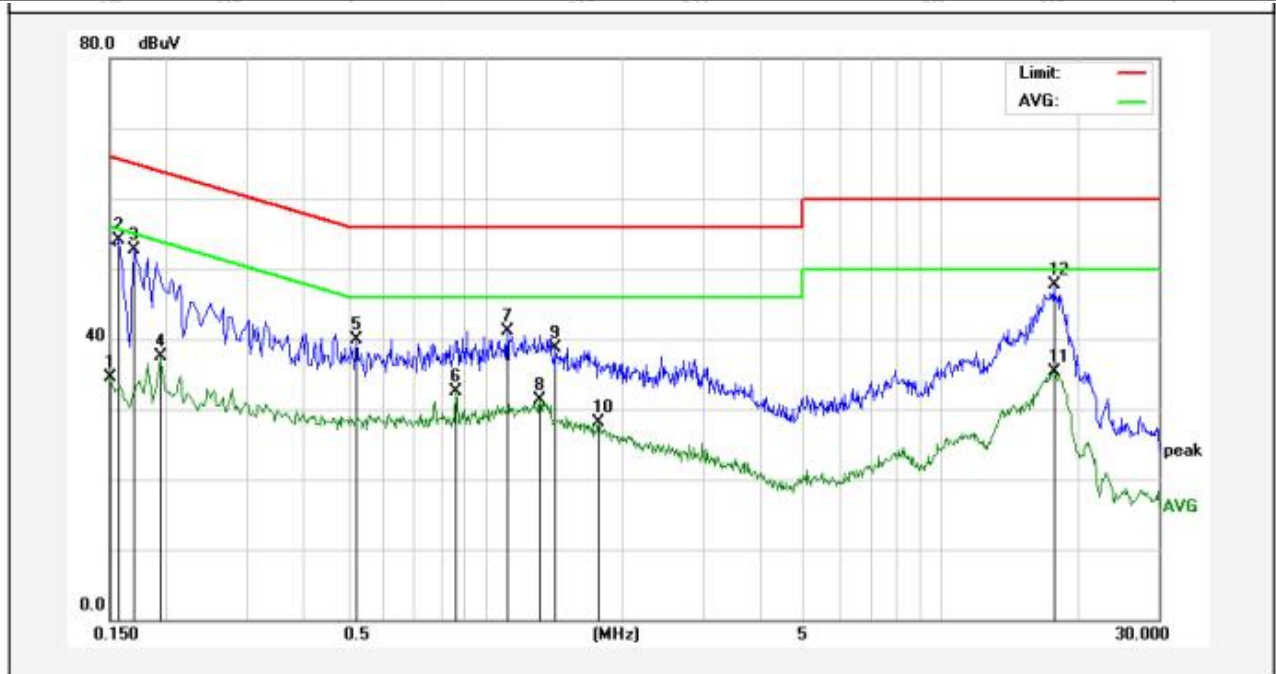


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1539	36.39	17.83	54.22	65.78	-11.56	QP	
2	0.1660	34.67	17.83	52.50	65.15	-12.65	QP	
3	0.1860	18.47	17.82	36.29	54.21	-17.92	AVG	
4	0.5700	23.21	17.86	41.07	56.00	-14.93	QP	
5	0.8660	14.38	17.86	32.24	46.00	-13.76	AVG	
6	1.1340	23.84	17.86	41.70	56.00	-14.30	QP	
7	1.3619	13.72	17.86	31.58	46.00	-14.42	AVG	
8	1.4980	20.79	17.85	38.64	56.00	-17.36	QP	
9	1.7980	10.09	17.86	27.95	46.00	-18.05	AVG	
10	2.1500	7.82	17.85	25.67	46.00	-20.33	AVG	
11	17.5059	28.91	18.22	47.13	60.00	-12.87	QP	
12	18.1299	16.96	18.23	35.19	50.00	-14.81	AVG	



Temperature:	22.5 °C	Humidity:	51.9 %	Atmospheric Pressure:	102 kPa
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TM4 / Line: Neutral / Band: 5150-5250 MHz / BW: 20 / CH: H / ANT1



No.	Freq. (MHz)	Reading (dBUV)	Factor (dB)	Result (dBUV)	Limit (dBUV)	Over Limit (dB)	Detector	Remark
1	0.1500	16.69	17.82	34.51	55.99	-21.48	AVG	
2	0.1580	36.19	17.83	54.02	65.56	-11.54	QP	
3	0.1700	34.88	17.83	52.71	64.96	-12.25	QP	
4	0.1940	19.67	17.82	37.49	53.86	-16.37	AVG	
5	0.5220	22.06	17.86	39.92	56.00	-16.08	QP	
6	0.8660	14.72	17.86	32.58	46.00	-13.42	AVG	
7	1.1220	23.28	17.86	41.14	56.00	-14.86	QP	
8	1.3220	13.52	17.86	31.38	46.00	-14.62	AVG	
9	1.4260	20.82	17.86	38.68	56.00	-17.32	QP	
10	1.7780	10.23	17.86	28.09	46.00	-17.91	AVG	
11	17.6259	17.18	18.22	35.40	50.00	-14.60	AVG	
12	17.7180	29.41	18.22	47.63	60.00	-12.37	QP	

Note: Only record the worst data in the report.

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3. Maximum conducted output power

<p>Test Requirement:</p>	<p>47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)</p>
<p>Test Limit:</p>	<p>For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p> <p>For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p> <p>For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.</p>
<p>Test Method:</p>	<p>ANSI C63.10-2013, section 12.3</p>
<p>Procedure:</p>	<p>Method SA-2</p> <ol style="list-style-type: none"> Measure the duty cycle D of the transmitter output signal. Set span to encompass the entire 26 dB EBW or 99% OBW of the signal. Set RBW = 1 MHz. Set VBW >= 3 MHz. Number of points in sweep >= [2 × span / RBW]. (This gives bin-to-bin spacing <= RBW / 2, so that narrowband signals are not lost between frequency bins.) Sweep time = auto. Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode. Do not use sweep triggering. Allow the sweep to “free run.” Trace average at least 100 traces in power averaging (rms) mode;

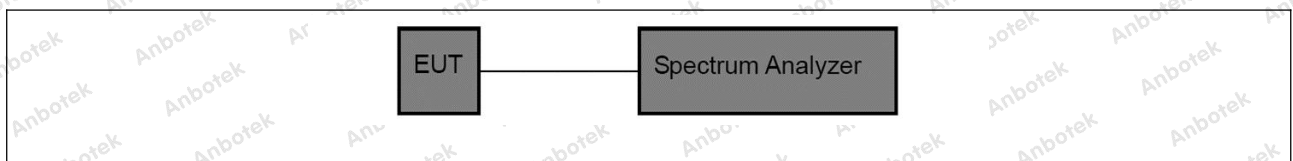


	<p>however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.</p> <p>j) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum</p> <p>k) Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.</p>
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3.1. EUT Operation

Operating Environment:	
Test mode:	<p>1: 802.11a mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.</p> <p>2: 802.11n mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p> <p>3: 802.11ac mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ac modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p> <p>4: 802.11ax mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ax modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p>

3.2. Test Setup



3.3. Test Data

Temperature:	25.6 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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Test Mode	Antenna	Frequency[MHz]	Set Power	Channel Power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]
11A	Ant1	5180	---	13.57	72.63	1.39	14.96	≤23.98
	Ant2	5180	---	13.08	79.43	1.00	14.08	≤23.98
	Ant1	5200	---	13.14	72.63	1.39	14.53	≤23.98
	Ant2	5200	---	13.31	72.77	1.38	14.69	≤23.98
	Ant1	5240	---	12.91	73.16	1.36	14.27	≤23.98
	Ant2	5240	---	13.63	72.63	1.39	15.02	≤23.98
	Ant1	5260	---	10.93	73.02	1.37	12.30	≤23.83
	Ant2	5260	---	9.78	73.02	1.37	11.15	≤23.78
	Ant1	5300	---	11.31	72.77	1.38	12.69	≤23.83
	Ant2	5300	---	10.18	72.25	1.41	11.59	≤23.92
	Ant1	5320	---	11.29	72.25	1.41	12.70	≤23.83
	Ant2	5320	---	10.20	72.63	1.39	11.59	≤23.96
	Ant1	5745	---	16.34	72.77	1.38	17.72	≤30.00
	Ant2	5745	---	17.89	71.65	1.45	19.34	≤30.00
	Ant1	5785	---	16.70	71.88	1.43	18.13	≤30.00
	Ant2	5785	---	18.15	72.02	1.43	19.58	≤30.00
Ant1	5825	---	16.79	72.63	1.39	18.18	≤30.00	
Ant2	5825	---	17.99	72.77	1.38	19.37	≤30.00	
11N20S ISO	Ant1	5180	---	13.26	71.27	1.47	14.73	≤23.98
	Ant2	5180	---	11.98	69.89	1.56	13.54	≤23.98
	Ant1	5200	---	13.95	71.04	1.48	15.43	≤23.98
	Ant2	5200	---	11.47	70.11	1.54	13.01	≤23.98
	Ant1	5240	---	13.98	70.65	1.51	15.49	≤23.98
	Ant2	5240	---	11.73	70.27	1.53	13.26	≤23.98
	Ant1	5260	---	10.83	70.11	1.54	12.37	≤23.92
	Ant2	5260	---	10.77	80.25	0.96	11.73	≤23.96
	Ant1	5300	---	11.26	70.11	1.54	12.80	≤23.98
	Ant2	5300	---	11.14	69.73	1.57	12.71	≤23.92
	Ant1	5320	---	11.30	59.45	2.26	13.56	≤23.94
	Ant2	5320	---	11.08	70.11	1.54	12.62	≤23.98
	Ant1	5745	---	17.01	70.49	1.52	18.53	≤30.00
	Ant2	5745	---	18.37	71.04	1.48	19.85	≤30.00
	Ant1	5785	---	17.52	70.11	1.54	19.06	≤30.00
	Ant2	5785	---	18.59	71.27	1.47	20.06	≤30.00
Ant1	5825	---	17.51	70.49	1.52	19.03	≤30.00	
Ant2	5825	---	18.37	71.27	1.47	19.84	≤30.00	
11N40S ISO	Ant1	5190	---	15.77	55.65	2.55	18.32	≤23.98
	Ant2	5190	---	14.01	62.75	2.02	16.03	≤23.98
	Ant1	5230	---	14.19	54.70	2.62	16.81	≤23.98
	Ant2	5230	---	14.16	62.14	2.07	16.23	≤23.98
	Ant1	5270	---	11.28	62.14	2.07	13.35	≤23.98
	Ant2	5270	---	11.17	62.14	2.07	13.24	≤23.98
	Ant1	5310	---	11.47	62.14	2.07	13.54	≤23.98
	Ant2	5310	---	11.42	62.14	2.07	13.49	≤23.98
	Ant1	5755	---	16.42	55.17	2.58	19.00	≤30.00
	Ant2	5755	---	17.46	47.06	3.27	20.73	≤30.00
	Ant1	5795	---	16.71	56.64	2.47	19.18	≤30.00
	Ant2	5795	---	17.60	53.78	2.69	20.29	≤30.00
11AC20 SISO	Ant1	5180	---	15.28	70.65	1.51	16.79	≤23.98
	Ant2	5180	---	12.52	70.27	1.53	14.05	≤23.98
	Ant1	5200	---	15.07	70.65	1.51	16.58	≤23.98
	Ant2	5200	---	12.73	69.89	1.56	14.29	≤23.98
	Ant1	5240	---	14.97	71.82	1.44	16.41	≤23.98
	Ant2	5240	---	12.65	59.09	2.28	14.93	≤23.98
Ant1	5260	---	10.84	70.65	1.51	12.35	≤23.89	

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	Ant2	5260	---	10.79	69.89	1.56	12.35	≤23.98
	Ant1	5300	---	11.12	70.27	1.53	12.65	≤23.98
	Ant2	5300	---	11.08	70.27	1.53	12.61	≤23.98
	Ant1	5320	---	11.16	69.89	1.56	12.72	≤23.93
	Ant2	5320	---	11.08	70.27	1.53	12.61	≤23.98
	Ant1	5745	---	17.08	70.65	1.51	18.59	≤30.00
	Ant2	5745	---	18.37	71.43	1.46	19.83	≤30.00
	Ant1	5785	---	17.65	70.65	1.51	19.16	≤30.00
	Ant2	5785	---	18.57	70.65	1.51	20.08	≤30.00
	Ant1	5825	---	17.55	71.43	1.46	19.01	≤30.00
11AC40 SISO	Ant2	5825	---	18.24	71.43	1.46	19.70	≤30.00
	Ant1	5190	---	16.73	5565	2.55	19.28	≤23.98
	Ant2	5190	---	1536	62.75	2.02	17.38	≤23.98
	Ant1	5230	---	1585	5508	2.59	18.44	≤23.98
	Ant2	5230	---	14.01	56.52	2.48	16.49	≤23.98
	Ant1	5270	---	12.73	62.14	2.07	14.80	≤23.98
	Ant2	5270	---	12.66	62.14	2.07	14.73	≤23.98
	Ant1	5310	---	11.56	63.11	2.00	13.56	≤23.98
	Ant2	5310	---	11.46	63.11	2.00	13.46	≤23.98
	Ant1	5755	---	17.20	5517	2.58	19.78	≤30.00
11AC80 SISO	Ant2	5755	---	17.35	47.06	3.27	20.62	≤30.00
	Ant1	5795	---	16.76	5508	2.59	19.35	≤30.00
	Ant2	5795	---	17.61	54.62	2.63	20.24	≤30.00
	Ant1	5210	---	14.65	44.00	3.57	18.22	≤23.98
	Ant2	5210	---	12.63	43.24	3.64	16.27	≤23.98
	Ant1	5290	---	9.71	43.84	3.58	13.29	≤23.98
11AX20 SISO	Ant2	5290	---	9.65	43.84	3.58	13.23	≤23.98
	Ant1	5775	---	14.59	43.24	3.64	18.23	≤30.00
	Ant2	5775	---	1542	44.44	3.52	18.94	≤30.00
	Ant1	5180	---	16.45	6579	1.82	18.27	≤23.98
	Ant2	5180	---	14.01	63.92	1.94	15.95	≤23.98
	Ant1	5200	---	16.28	64.94	1.87	18.15	≤23.98
	Ant2	5200	---	14.08	64.74	1.89	15.97	≤23.98
	Ant1	5240	---	16.28	64.10	1.93	18.21	≤23.98
	Ant2	5240	---	14.37	64.74	1.89	16.26	≤23.98
	Ant1	5260	---	10.76	6516	1.86	12.62	≤23.97
	Ant2	5260	---	9.83	63.92	1.94	11.77	≤23.97
	Ant1	5300	---	10.18	63.92	1.94	12.12	≤23.94
	Ant2	5300	---	10.25	64.74	1.89	12.14	≤23.98
	Ant1	5320	---	10.36	64.52	1.90	12.26	≤23.97
	Ant2	5320	---	10.28	63.29	1.99	12.27	≤23.98
	Ant1	5745	---	16.83	58.38	2.34	19.17	≤30.00
	Ant2	5745	---	18.21	66.01	1.80	20.01	≤30.00
	11AX40 SISO	Ant1	5785	---	17.20	66.01	1.80	19.00
Ant2		5785	---	18.39	6516	1.86	20.25	≤30.00
Ant1		5825	---	17.18	6579	1.82	19.00	≤30.00
Ant2		5825	---	18.35	64.52	1.90	20.25	≤30.00
Ant1		5190	---	18.62	5565	2.55	21.17	≤23.98
Ant2		5190	---	17.02	62.75	2.02	19.04	≤23.98
Ant1		5230	---	18.27	50.48	2.97	21.24	≤23.98
Ant2		5230	---	16.30	51.46	2.89	19.19	≤23.98
Ant1		5270	---	11.19	62.14	2.07	13.26	≤23.98
Ant2		5270	---	11.10	62.14	2.07	13.17	≤23.98
	Ant1	5310	---	10.06	51.46	2.89	12.95	≤23.98
	Ant2	5310	---	9.94	51.46	2.89	12.83	≤23.98
	Ant1	5755	---	16.18	5517	2.58	18.76	≤30.00
	Ant2	5755	---	16.83	47.06	3.27	20.10	≤30.00
	Ant1	5795	---	16.14	46.90	3.29	19.43	≤30.00

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11AX80 SISO	Ant2	5795	---	17.37	50.48	2.97	20.34	≤30.00
	Ant1	5210	---	1589	3580	4.46	20.35	≤23.98
	Ant2	5210	---	13.65	39.19	4.07	17.72	≤23.98
	Ant1	5290	---	8.60	39.19	4.07	12.67	≤23.98
	Ant2	5290	---	8.52	2589	587	14.39	≤23.98
	Ant1	5775	---	14.06	3537	4.51	18.57	≤30.00
	Ant2	5775	---	1509	3500	4.56	19.65	≤30.00

Note: For pre-scan, the result is equal to original, so the original data is referenced.

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4. Undesirable emission limits (below 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(9)																								
Test Limit:	<p>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.</p> <p>Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:</p> <table border="1" data-bbox="497 636 1433 965"> <thead> <tr> <th>Frequency (MHz)</th> <th>Field strength (microvolts/meter)</th> <th>Measurement distance (meters)</th> </tr> </thead> <tbody> <tr> <td>0.009-0.490</td> <td>2400/F(kHz)</td> <td>300</td> </tr> <tr> <td>0.490-1.705</td> <td>24000/F(kHz)</td> <td>30</td> </tr> <tr> <td>1.705-30.0</td> <td>30</td> <td>30</td> </tr> <tr> <td>30-88</td> <td>100 **</td> <td>3</td> </tr> <tr> <td>88-216</td> <td>150 **</td> <td>3</td> </tr> <tr> <td>216-960</td> <td>200 **</td> <td>3</td> </tr> <tr> <td>Above 960</td> <td>500</td> <td>3</td> </tr> </tbody> </table> <p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p>	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (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
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (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																							
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6																								
Procedure:	<p>Below 1GHz:</p> <ol style="list-style-type: none"> For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 or 10 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. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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 quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low.

The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

Above 1GHz:

a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. 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.

d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. 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 or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

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	<p>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.</p> <p>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.</p> <p>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.</p>
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4.1. EUT Operation

Operating Environment:	
Test mode:	<p>1: 802.11a mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.</p> <p>2: 802.11n mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p> <p>3: 802.11ac mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ac modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p> <p>4: 802.11ax mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ax modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.</p>

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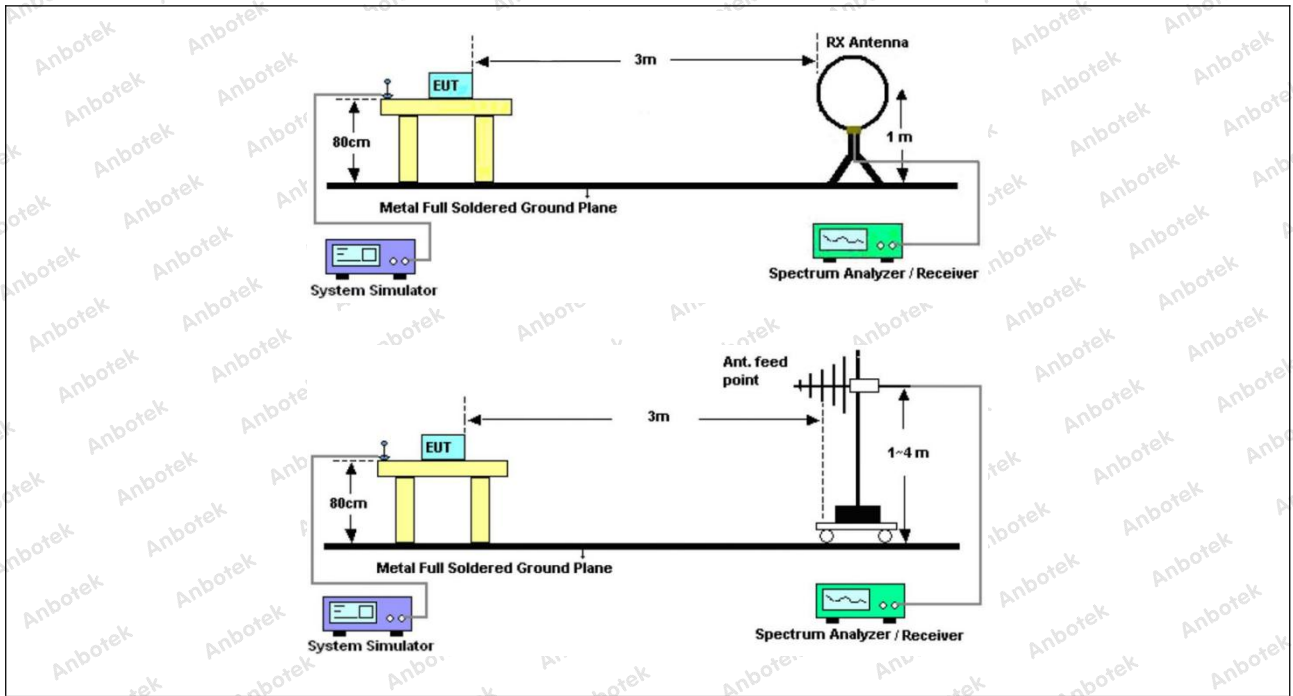
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4.2. Test Setup

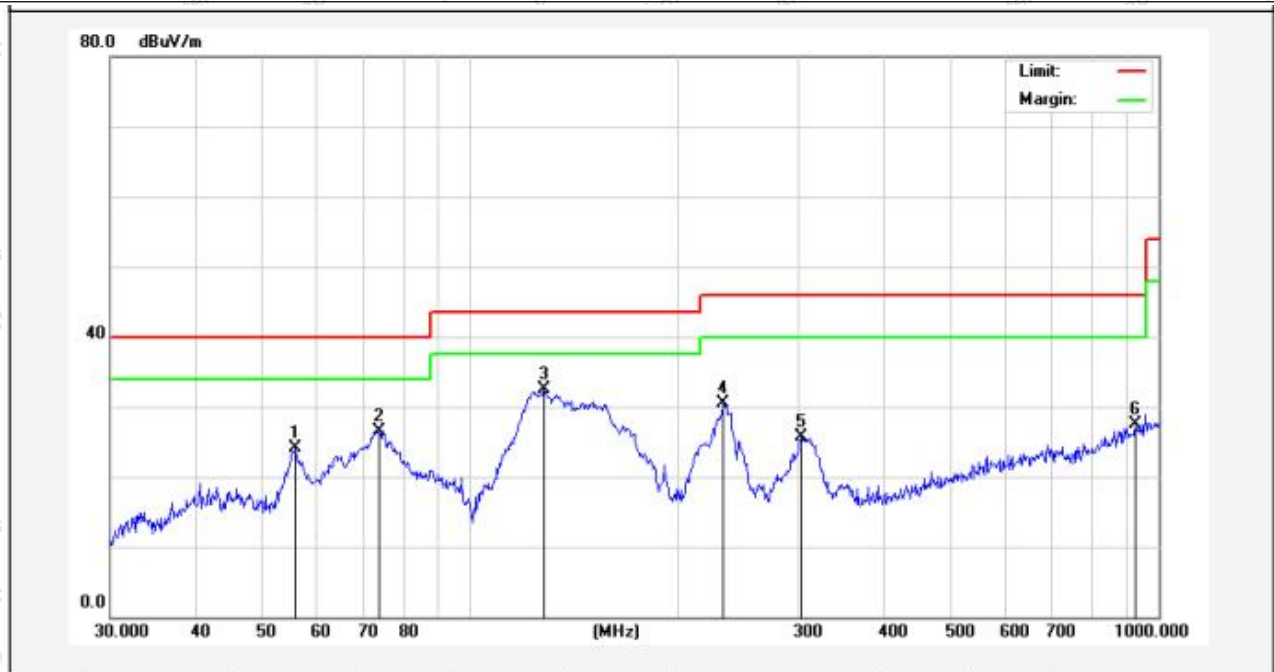


4.3. Test Data

Remark: The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Temperature:	25.6 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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TM4 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: H / ANT1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	55.8047	41.77	-17.60	24.17	40.00	-15.83	QP			
2	73.8756	48.58	-22.04	26.54	40.00	-13.46	QP			
3	128.1130	55.22	-22.77	32.45	43.50	-11.05	QP			
4	233.3487	52.26	-21.77	30.49	46.00	-15.51	QP			
5	302.4812	42.74	-17.11	25.63	46.00	-20.37	QP			
6	925.7563	33.48	-5.92	27.56	46.00	-18.44	QP			

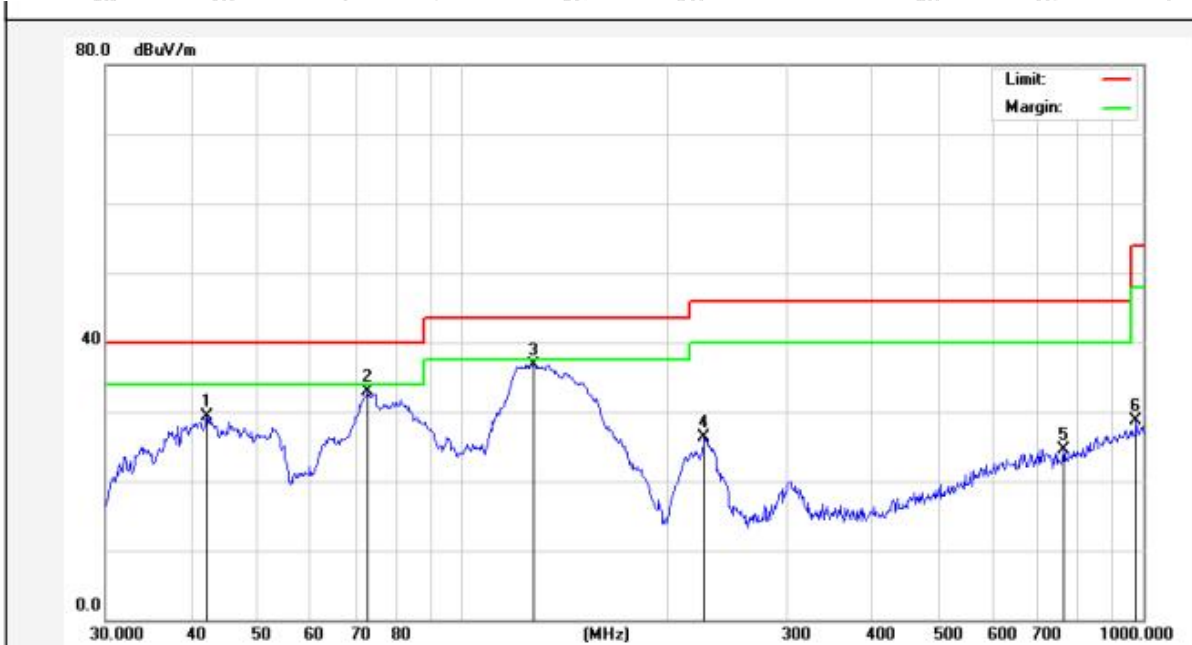


Temperature: 25.6 °C

Humidity: 49 %

Atmospheric Pressure: 101 kPa

TM4 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: H / ANT1



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	42.3022	44.11	-14.79	29.32	40.00	-10.68	QP			
2	72.8466	52.79	-19.92	32.87	40.00	-7.13	QP			
3	127.2176	57.81	-21.04	36.77	43.50	-6.73	QP			
4	226.8936	45.06	-18.73	26.33	46.00	-19.67	QP			
5	763.3757	33.48	-8.97	24.51	46.00	-21.49	QP			
6	975.7529	33.84	-5.19	28.65	54.00	-25.35	QP			

Note: Only record the worst data in the report.



5. Undesirable emission limits (above 1GHz)

<p>Test Requirement:</p>	<p>47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)</p>																																																																											
<p>Test Limit:</p>	<p>For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</p> <p>For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</p> <p>For transmitters operating solely in the 5.725-5.850 GHz band: 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.</p> <table border="1" data-bbox="491 981 1433 1747"> <thead> <tr> <th>MHz</th> <th>MHz</th> <th>MHz</th> <th>GHz</th> </tr> </thead> <tbody> <tr> <td>0.090-0.110</td> <td>16.42-16.423</td> <td>399.9-410</td> <td>4.5-5.15</td> </tr> <tr> <td>¹0.495-0.505</td> <td>16.69475-16.69525</td> <td>608-614</td> <td>5.35-5.46</td> </tr> <tr> <td>2.1735-2.1905</td> <td>16.80425-16.80475</td> <td>960-1240</td> <td>7.25-7.75</td> </tr> <tr> <td>4.125-4.128</td> <td>25.5-25.67</td> <td>1300-1427</td> <td>8.025-8.5</td> </tr> <tr> <td>4.17725-4.17775</td> <td>37.5-38.25</td> <td>1435-1626.5</td> <td>9.0-9.2</td> </tr> <tr> <td>4.20725-4.20775</td> <td>73-74.6</td> <td>1645.5-1646.5</td> <td>9.3-9.5</td> </tr> <tr> <td>6.215-6.218</td> <td>74.8-75.2</td> <td>1660-1710</td> <td>10.6-12.7</td> </tr> <tr> <td>6.26775-6.26825</td> <td>108-121.94</td> <td>1718.8-1722.2</td> <td>13.25-13.4</td> </tr> <tr> <td>6.31175-6.31225</td> <td>123-138</td> <td>2200-2300</td> <td>14.47-14.5</td> </tr> <tr> <td>8.291-8.294</td> <td>149.9-150.05</td> <td>2310-2390</td> <td>15.35-16.2</td> </tr> <tr> <td>8.362-8.366</td> <td>156.52475-156.52525</td> <td>2483.5-2500</td> <td>17.7-21.4</td> </tr> <tr> <td>8.37625-8.38675</td> <td>156.7-156.9</td> <td>2690-2900</td> <td>22.01-23.12</td> </tr> <tr> <td>8.41425-8.41475</td> <td>162.0125-167.17</td> <td>3260-3267</td> <td>23.6-24.0</td> </tr> <tr> <td>12.29-12.293</td> <td>167.72-173.2</td> <td>3332-3339</td> <td>31.2-31.8</td> </tr> <tr> <td>12.51975-12.52025</td> <td>240-285</td> <td>3345.8-3358</td> <td>36.43-36.5</td> </tr> <tr> <td>12.57675-12.57725</td> <td>322-335.4</td> <td>3600-4400</td> <td>(²)</td> </tr> <tr> <td>13.36-13.41</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.</p> <p>²Above 38.6</p> <p>The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than</p>				MHz	MHz	MHz	GHz	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15	¹ 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	(²)	13.36-13.41			
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	<p>1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.</p> <p>Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:</p> <table border="1" data-bbox="491 618 1433 952"> <thead> <tr> <th>Frequency (MHz)</th> <th>Field strength (microvolts/meter)</th> <th>Measurement distance (meters)</th> </tr> </thead> <tbody> <tr> <td>0.009-0.490</td> <td>2400/F(kHz)</td> <td>300</td> </tr> <tr> <td>0.490-1.705</td> <td>24000/F(kHz)</td> <td>30</td> </tr> <tr> <td>1.705-30.0</td> <td>30</td> <td>30</td> </tr> <tr> <td>30-88</td> <td>100 **</td> <td>3</td> </tr> <tr> <td>88-216</td> <td>150 **</td> <td>3</td> </tr> <tr> <td>216-960</td> <td>200 **</td> <td>3</td> </tr> <tr> <td>Above 960</td> <td>500</td> <td>3</td> </tr> </tbody> </table> <p>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.</p> <p>In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</p>	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (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
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88-216	150 **	3																							
216-960	200 **	3																							
Above 960	500	3																							
<p>Test Method:</p>	<p>ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6</p>																								
<p>Procedure:</p>	<p>Above 1GHz:</p> <ol style="list-style-type: none"> For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. 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. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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 																								



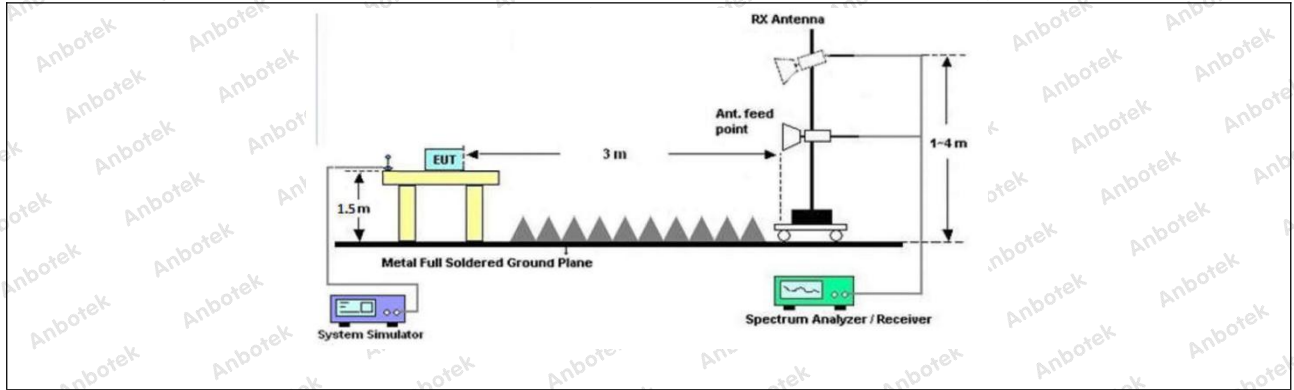
	<p>would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p> <p>Remark:</p> <ol style="list-style-type: none"> 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamplifier Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
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5.1. EUT Operation

Operating Environment:	
Test mode:	<ol style="list-style-type: none"> 1: 802.11a mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report. 2: 802.11n mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report. 3: 802.11ac mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ac modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report. 4: 802.11ax mode: Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ax modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.



5.2. Test Setup



5.3. Test Data

Temperature:	25.6 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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TM4 / CH: L / ANT1							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
10380.00	29.61	23.81	53.42	68.20	-14.78	V	Peak
15570.00	30.94	28.91	59.85	68.20	-8.35	V	Peak
10380.00	30.78	23.81	54.59	68.20	-13.61	H	Peak
15570.00	31.57	28.91	60.48	68.20	-7.72	H	Peak
10380.00	20.35	23.81	44.16	54.00	-9.84	V	AVG
15570.00	20.85	28.91	49.76	54.00	-4.24	V	AVG
10380.00	20.73	23.81	44.54	54.00	-9.46	H	AVG
15570.00	21.02	28.91	49.93	54.00	-4.07	H	AVG
TM4 / CH: H / ANT1							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
10460.00	29.98	23.80	53.78	68.20	-14.42	V	Peak
15690.00	31.15	30.03	61.18	68.20	-7.02	V	Peak
10460.00	30.47	23.80	54.27	68.20	-13.93	H	Peak
15690.00	31.70	30.03	61.73	68.20	-6.47	H	Peak
10460.00	20.62	23.80	44.42	54.00	-9.58	V	AVG
15690.00	20.76	30.03	50.79	54.00	-3.21	V	AVG
10460.00	20.51	23.80	44.31	54.00	-9.69	H	AVG
15690.00	20.67	30.03	50.70	54.00	-3.30	H	AVG

Remark:

1. Result = Reading + Factor
2. During the test, pre-scan the all modulation, only the worst case is recorded in the report.



APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_RF

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

----- End of Report -----

