



FCC Radio Test Report

FCC ID: 2APRGRE12

This report concerns: Original Grant

Project No.	:	2403G074
Equipment	:	AC1200 Dual Band Wi-Fi Range Extender
Brand Name	:	Cudy
Test Model	:	RE1200
Series Model	:	N/A
Applicant	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	Room A606, Gaoxinqi Industrial Park, Liuxianyi Road, Baoan District,
		Shenzhen, China
Manufacturer	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	Room A606, Gaoxinqi Industrial Park, Liuxianyi Road, Baoan District,
		Shenzhen, China
Factory	:	Shenzhen Cudy Technology Co., Ltd.
Address	:	Room A606, Gaoxinqi Industrial Park, Liuxianyi Road, Baoan District,
		Shenzhen, China
Date of Receipt	:	Mar. 14, 2024
Date of Test	:	Mar. 18, 2024 ~ May 16, 2024
Issued Date	:	May 27, 2024
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SSL2024031416 for radiated & AC Power Line
		Conducted Emissions, SSL2024031417 for conducted.
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.

Prepared by

Antony Liang

Approved by

Chay Cai

Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China

Tel: +86-769-8318-3000 Web: www.newbtl.com Service mail: btl_qa@newbtl.com



Declaration

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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.



Table of Contents	Page
REPORT ISSUED HISTORY	6
1 . APPLICABLE STANDARDS	7
2 . SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
2.3 TEST ENVIRONMENT CONDITIONS	9
3 . GENERAL INFORMATION	10
3.1 GENERAL DESCRIPTION OF EUT	10
3.2 TEST MODES	13
3.3 PARAMETERS OF TEST SOFTWARE	17
3.4 DUTY CYCLE	21
3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	23
3.6 SUPPORT UNITS	23
3.7 CUSTOMER INFORMATION DESCRIPTION	23
4 . AC POWER LINE CONDUCTED EMISSIONS	24
4.1 LIMIT	24
4.2 TEST PROCEDURE	24
4.3 DEVIATION FROM TEST STANDARD	24
4.4 TEST SETUP	25
4.5 EUT OPERATION CONDITIONS	25
4.6 TEST RESULTS	25
5 . RADIATED EMISSIONS	26
5.1 LIMIT	26
5.2 TEST PROCEDURE	27
5.3 DEVIATION FROM TEST STANDARD	28
5.4 TEST SETUP	28
5.5 EUT OPERATION CONDITIONS	30
5.6 TEST RESULTS - 9 KHZ TO 30 MHZ	30
5.7 TEST RESULTS - 30 MHZ TO 1000 MHZ	30
5.8 TEST RESULTS - ABOVE 1000 MHZ	30
6 . BANDWIDTH	31
6.1 LIMIT	31
6.2 TEST PROCEDURE	31



6.3 DEVIATION FROM STANDARD316.4 TEST SETUP326.5 EUT OPERATION CONDITIONS326.6 TEST RESULTS327. MAXIMUM OUTPUT POWER337.1 LIMIT337.2 TEST PROCEDURE337.3 DEVIATION FROM STANDARD337.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT369.2 TEST PROCEDURE36	
6.5 EUT OPERATION CONDITIONS326.6 TEST RESULTS327. MAXIMUM OUTPUT POWER337.1 LIMIT337.2 TEST PROCEDURE337.3 DEVIATION FROM STANDARD337.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	31
6.6 TEST RESULTS327. MAXIMUM OUTPUT POWER337.1 LIMIT337.2 TEST PROCEDURE337.3 DEVIATION FROM STANDARD337.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	32
7. MAXIMUM OUTPUT POWER337.1 LIMIT337.2 TEST PROCEDURE337.3 DEVIATION FROM STANDARD337.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	32
7.1 LIMIT 33 7.2 TEST PROCEDURE 33 7.3 DEVIATION FROM STANDARD 33 7.4 TEST SETUP 33 7.5 EUT OPERATION CONDITIONS 33 7.6 TEST RESULTS 33 8. POWER SPECTRAL DENSITY 34 8.1 LIMIT 34 8.2 TEST PROCEDURE 34 8.3 DEVIATION FROM STANDARD 34 8.4 TEST SETUP 35 8.5 EUT OPERATION CONDITIONS 35 8.6 TEST RESULTS 35 9. FREQUENCY STABILITY 36 9.1 LIMIT 36	32
7.2 TEST PROCEDURE337.3 DEVIATION FROM STANDARD337.4 TEST SETUP337.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	33
7.3 DEVIATION FROM STANDARD337.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	33
7.4 TEST SETUP337.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	33
7.5 EUT OPERATION CONDITIONS337.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	33
7.6 TEST RESULTS338. POWER SPECTRAL DENSITY348.1 LIMIT348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	33
8. POWER SPECTRAL DENSITY348.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	
8.1 LIMIT348.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	33
8.2 TEST PROCEDURE348.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	34
8.3 DEVIATION FROM STANDARD348.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	
8.4 TEST SETUP358.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359. FREQUENCY STABILITY369.1 LIMIT36	
8.5 EUT OPERATION CONDITIONS358.6 TEST RESULTS359 . FREQUENCY STABILITY369.1 LIMIT36	
8.6 TEST RESULTS359 . FREQUENCY STABILITY369.1 LIMIT36	
9 . FREQUENCY STABILITY 36 9.1 LIMIT 36	
9.1 LIMIT 36	
9.2 TEST PROCEDURE 36 9.3 DEVIATION FROM STANDARD 36	36
9.4 TEST SETUP 36	
9.5 EUT OPERATION CONDITIONS 36	
9.6 TEST RESULTS 36	
10 . MEASUREMENT INSTRUMENTS LIST 37	37
11. EUT TEST PHOTOS 40	40
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS 46	SSIONS 46
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ 49	0 MHZ 49
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ 54	1000 MHZ 54
APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ 57	0 MHZ 57
APPENDIX E - BANDWIDTH 125	125
APPENDIX F - MAXIMUM OUTPUT POWER 142	142



Table of Contents	Page
APPENDIX G - POWER SPECTRAL DENSITY	187
APPENDIX H - FREQUENCY STABILITY	204



	REP	PORT ISSUED HISTORY		
Report No.	Version	Description	Issued Date	Note
BTL-FCCP-2-2403G074	R00	Original Report.	May 27, 2024	Valid



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	
15.207 15.407(b)	AC Power Line Conducted Emissions	APPENDIX A	PASS		
15.407(b) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS		
15.407(a) 15.407(e)	Bandwidth	APPENDIX E	PASS		
15.407(a)	Maximum Output Power	APPENDIX F	PASS		
15.407(a)	Power Spectral Density	APPENDIX G	PASS		
15.407(g)	Frequency Stability	APPENDIX H	PASS		
15.203	Antenna Requirements		PASS	NOTE (2)	
15.407(c)	Automatically Discontinue Transmission		PASS	NOTE (3)	

Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.
- (3) During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. the EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.
- (4) For UNII-1 this device was functioned as a
 - Outdoor access point device
 - \boxtimes Indoor access point device
 - ☐ Fixed point-to-point access points device
 - Client device



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 City, 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. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	<i>U</i> ,(dB)
DG-C02	CISPR	150kHz ~ 30MHz	2.88

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	<i>U</i> ,(dB)
DG-CB02	CISPR	9kHz ~ 30MHz	2.36

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

Test Site	Method	Measurement Frequency Range	<i>U</i> ,(dB)
DG-CB03 (3m)	CISPR	1GHz ~ 6GHz	4.08
		6GHz ~ 18GHz	4.62

Test Site	Method	Measurement Frequency Range	<i>U</i> ,(dB)
DG-CB03 (1m)		18 ~ 26.5 GHz	3.36
	CISPR	26.5 ~ 40 GHz	3.58

C. Other Measurement test:

Test Item	Uncertainty
Bandwidth	0.90 %
Maximum Output Power	1.3 dB
Power Spectral Density	1.4 dB
Frequency Stability	2.7 ppm
Temperature	0.8 °C
Humidity	2.2 %

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	Teste Date
AC Power Line Conducted Emissions	23°C	62%	AC 120V/60Hz	Hayden Chen	Mar. 25, 2024
Radiated Emissions-9kHz to 30MHz	23°C	59%	AC 120V/60Hz	Hayden Chen	Apr. 29, 2024
Radiated Emissions-30MHz to 1000MHz	23°C	51%	AC 120V/60Hz	Jensen Zhou	Apr. 11, 2024
Radiated Emissions-Above 1000 MHz	23-24°C	51-56%	AC 120V/60Hz	Jensen Zhou	Apr. 11, 2024~ Apr. 12, 2024
Bandwidth	23-24°C	51-56%	AC 120V/60Hz	Jensen Zhou Steve Zhou	Apr. 19, 2024 Apr. 23, 2024
Maximum Output Power	22-23°C	53-54%	AC 120V/60Hz	Oliver Wang	Apr. 01, 2024~ Apr. 25, 2024
Power Spectral Density	24°C	56%	AC 120V/60Hz	Jensen Zhou	Apr. 19, 2024 Apr. 23, 2024
Frequency Stability	Normal & Extreme	51%	Normal & Extreme	Steve Zhou	Apr. 23, 2024



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	AC1200 Dual Band Wi-Fi Range Extender
Brand Name	Cudy
Test Model	RE1200
Series Model	N/A
Model Difference(s)	N/A
Hardware Version	V1
Software Version	FW1.15.33
Power Source	AC Mains.
Power Rating	100-240V~50/60Hz, 0.3A
Operation Frequency Band(s)	UNII-1: 5150 MHz ~ 5250 MHz UNII-2A: 5250 MHz ~ 5350 MHz UNII-2C: 5470 MHz ~ 5600 MHz & 5650 MHz ~ 5725 MHz UNII-3: 5725 MHz ~ 5850 MHz
Modulation Type	IEEE 802.11a/n/ac: OFDM
Bit Rate of Transmitter	IEEE 802.11a: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps IEEE 802.11ac: up to 866.7 Mbps
Maximum Output Power _UNII-1 Non Beamforming	IEEE 802.11ac(VHT40): 20.72 dBm (0.1180 W)
Maximum Output Power _UNII-2A Non Beamforming	IEEE 802.11ac(VHT40): 19.69 dBm (0.0931 W)
Maximum Output Power _UNII-2C Non Beamforming	IEEE 802.11ac(VHT80): 20.65 dBm (0.1161 W)
Maximum Output Power _UNII-3 Non Beamforming	IEEE 802.11ac(VHT20): 24.83 dBm (0.3041 W)
Maximum Output Power _UNII-1 Beamforming	IEEE 802.11ac(VHT40): 20.51 dBm (0.1125 W)
Maximum Output Power _UNII-2A Beamforming	IEEE 802.11ac(VHT40): 19.33 dBm (0.0857 W)
Maximum Output Power _UNII-2C Beamforming	IEEE 802.11ac(VHT80): 20.16 dBm (0.1038 W)
Maximum Output Power _UNII-3 Beamforming	IEEE 802.11ac(VHT20): 24.58 dBm (0.2871 W)

Note:

1. 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 802.11n(HT40) IEEE 802.11ac(VHT40)		IEEE 802.11ac(VHT80)	
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 802.11n(HT40) IEEE 802.11ac(VHT40)		IEEE 802.11ac(VHT80)	
UNII-2A		UNII-2A		UNII-2A	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310		
60	5300				
64	5320				

IEEE 802.11a IEEE 802.11n(HT20) IEEE 802.11ac(VHT20)		IEEE 802.11n(HT40) IEEE 802.11ac(VHT40)		IEEE 802.11ac(VHT80)	
UNII	-2C	UNII-2C		UNII-2C	
Channel	Frequency (MHz)	Channel	Channel	Frequency (MHz)	Channel
100	5500	102	5510	106	5530
104	5520	110	5550		
108	5540	134	5670		
112	5560				
116	5580				
132	5660				
136	5680				
140	5700				

IEEE 802.11a IEEE 802.11n(HT20) IEEE 802.11ac(VHT20)		IEEE 802.11n(HT40) IEEE 802.11ac(VHT40)		IEEE 802.11ac(VHT80)	
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	RF link	U00T01S126N00635	Dipole	IPEX	6.24
2	RF link	U00T01S126N00635	Dipole	IPEX	6.24

Note:

- This EUT supports MIMO, any transmit signals are correlated with each other, so Directional gain=G_{ANT}+10log(N)dBi, that is Directional gain=6.24+10log(2)dBi=9.25. So, the UNII-1, UNII-3 output power limit is 30-(9.25-6)=26.75, the UNII-2A, UNII-2C output power limit is 23.98-(9.25-6)=20.73. The UNII-1 power spectral density limit is 17-(9.25-6)=13.75, the UNII-2A, UNII-2C power spectral density limit is 11-(9.25-6)=7.75, the UNII-3 power spectral density limit is 30-(9.25-6)=26.75.
- 2) Beamforming Gain is 3 dBi, that Directional gain=3+6.24=9.24. So, the UNII-1, UNII-3 output power limit is 30-(9.24-6)=26.76, the UNII-2A, UNII-2C output power limit is 23.98-(9.24-6)=20.74.

4. Table for Antenna Configuration:

For Non Beamforming:

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

For Beamforming:

Operating Mode	2TX
TX Mode	217
IEEE 802.11n(HT20)	V (Ant. 1 + Ant. 2)
IEEE 802.11n(HT40)	V (Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT20)	V (Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT40)	V (Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT80)	V (Ant. 1 + Ant. 2)

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 A Mode Channel 36/40/48 (UNII-1)	
Mode 2	TX N(HT20) Mode Channel 36/40/48 (UNII-1)	
Mode 3	TX N(HT40) Mode Channel 38/46 (UNII-1)	
Mode 4	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)	
Mode 5	TX AC(VHT40) Mode Channel 38/46 (UNII-1)	
Mode 6	TX AC(VHT80) Mode Channel 42 (UNII-1)	
Mode 7	TX A Mode Channel 52/60/64 (UNII-2A)	
Mode 8	TX N(HT20) Mode Channel 52/60/64 (UNII-2A)	
Mode 9	TX N(HT40) Mode Channel 54/62 (UNII-2A)	
Mode 10	TX AC(VHT20) Mode Channel 52/60/64 (UNII-2A)	
Mode 11	TX AC(VHT40) Mode Channel 54/62 (UNII-2A)	
Mode 12	TX AC(VHT80) Mode Channel 58 (UNII-2A)	
Mode 13	TX A Mode Channel 100/116/140 (UNII-2C)	
Mode 14	TX N(HT20) Mode Channel 100/116/140 (UNII-2C)	
Mode 15	TX N(HT40) Mode Channel 102/110/134 (UNII-2C)	
Mode 16	TX AC(VHT20) Mode Channel 100/116/140 (UNII-2C)	
Mode 17	TX AC(VHT40) Mode Channel 102/110/134 (UNII-2C)	
Mode 18	TX AC(VHT80) Mode Channel 106 (UNII-2C)	
Mode 19	TX A Mode Channel 149/157/165 (UNII-3)	
Mode 20	TX N(HT20) Mode Channel 149/157/165 (UNII-3)	
Mode 21	TX N(HT40) Mode Channel 151/159 (UNII-3)	
Mode 22	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)	
Mode 23	TX AC(VHT40) Mode Channel 151/159 (UNII-3)	
Mode 24	TX AC(VHT80) Mode Channel 155 (UNII-3)	
Mode 25	TX AC(VHT20) Mode Channel 165 (UNII-3)	

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

AC power line conducted emissions test			
Final Test Mode Description			
Mode 25 TX AC(VHT20) Mode Channel 165 (UNII-3)			

Radiated Emissions Test - Below 1GHz			
Final Test Mode Description			
Mode 25 TX AC(VHT20) Mode Channel 165 (UNII-3)			



Radiated Emissions Test - Above 1GHz_Non Beamforming		
Final Test Mode	Description	
Mode 1	TX A Mode Channel 36/40/48 (UNII-1)	
Mode 4	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)	
Mode 5	TX AC(VHT40) Mode Channel 38/46 (UNII-1)	
Mode 6	TX AC(VHT80) Mode Channel 42 (UNII-1)	
Mode 7	TX A Mode Channel 52/60/64 (UNII-2A)	
Mode 10	TX AC(VHT20) Mode Channel 52/60/64 (UNII-2A)	
Mode 11	TX AC(VHT40) Mode Channel 54/62 (UNII-2A)	
Mode 12	TX AC(VHT80) Mode Channel 58 (UNII-2A)	
Mode 13	TX A Mode Channel 100/116/140 (UNII-2C)	
Mode 16	TX AC(VHT20) Mode Channel 100/116/140 (UNII-2C)	
Mode 17	TX AC(VHT40) Mode Channel 102/110/134 (UNII-2C)	
Mode 18	TX AC(VHT80) Mode Channel 106 (UNII-2C)	
Mode 19	TX A Mode Channel 149/157/165 (UNII-3)	
Mode 22	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)	
Mode 23	TX AC(VHT40) Mode Channel 151/159 (UNII-3)	
Mode 24	TX AC(VHT80) Mode Channel 155 (UNII-3)	



	Maximum Output Power test _Non Beamforming				
Mode 1	TX A Mode Channel 36/40/48 (UNII-1)				
Mode 2	TX N(HT20) Mode Channel 36/40/48 (UNII-1)				
Mode 3	TX N(HT40) Mode Channel 38/46 (UNII-1)				
Mode 4	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)				
Mode 5	TX AC(VHT40) Mode Channel 38/46 (UNII-1)				
Mode 6	TX AC(VHT80) Mode Channel 42 (UNII-1)				
Mode 7	TX A Mode Channel 52/60/64 (UNII-2A)				
Mode 8	TX N(HT20) Mode Channel 52/60/64 (UNII-2A)				
Mode 9	TX N(HT40) Mode Channel 54/62 (UNII-2A)				
Mode 10	TX AC(VHT20) Mode Channel 52/60/64 (UNII-2A)				
Mode 11	TX AC(VHT40) Mode Channel 54/62 (UNII-2A)				
Mode 12	TX AC(VHT80) Mode Channel 58 (UNII-2A)				
Mode 13	TX A Mode Channel 100/116/140 (UNII-2C)				
Mode 14	TX N(HT20) Mode Channel 100/116/140 (UNII-2C)				
Mode 15	TX N(HT40) Mode Channel 102/110/134 (UNII-2C)				
Mode 16	TX AC(VHT20) Mode Channel 100/116/140 (UNII-2C)				
Mode 17	TX AC(VHT40) Mode Channel 102/110/134 (UNII-2C)				
Mode 18	TX AC(VHT80) Mode Channel 106 (UNII-2C)				
Mode 19	TX A Mode Channel 149/157/165 (UNII-3)				
Mode 20	TX N(HT20) Mode Channel 149/157/165 (UNII-3)				
Mode 21	TX N(HT40) Mode Channel 151/159 (UNII-3)				
Mode 22	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)				
Mode 23	TX AC(VHT40) Mode Channel 151/159 (UNII-3)				
Mode 24	TX AC(VHT80) Mode Channel 155 (UNII-3)				

	Maximum Output Power test _ Beamforming				
Final Test Mode	Description				
Mode 4	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)				
Mode 5	TX AC(VHT40) Mode Channel 38/46 (UNII-1)				
Mode 6	TX AC(VHT80) Mode Channel 42 (UNII-1)				
Mode 10	TX AC(VHT20) Mode Channel 52/60/64 (UNII-2A)				
Mode 11	TX AC(VHT40) Mode Channel 54/62 (UNII-2A)				
Mode 12	TX AC(VHT80) Mode Channel 58 (UNII-2A)				
Mode 16	TX AC(VHT20) Mode Channel 100/116/140 (UNII-2C)				
Mode 17	TX AC(VHT40) Mode Channel 102/110/134 (UNII-2C)				
Mode 18	TX AC(VHT80) Mode Channel 106 (UNII-2C)				
Mode 22	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)				
Mode 23	TX AC(VHT40) Mode Channel 151/159 (UNII-3)				
Mode 24	TX AC(VHT80) Mode Channel 155 (UNII-3)				



	Other Conducted Test				
Final Test Mode	Description				
Mode 1	TX A Mode Channel 36/40/48 (UNII-1)				
Mode 4	TX AC(VHT20) Mode Channel 36/40/48 (UNII-1)				
Mode 5	TX AC(VHT40) Mode Channel 38/46 (UNII-1)				
Mode 6	TX AC(VHT80) Mode Channel 42 (UNII-1)				
Mode 7	TX A Mode Channel 52/60/64 (UNII-2A)				
Mode 10	TX AC(VHT20) Mode Channel 52/60/64 (UNII-2A)				
Mode 11	TX AC(VHT40) Mode Channel 54/62 (UNII-2A)				
Mode 12	TX AC(VHT80) Mode Channel 58 (UNII-2A)				
Mode 13	TX A Mode Channel 100/116/140 (UNII-2C)				
Mode 16	TX AC(VHT20) Mode Channel 100/116/140 (UNII-2C)				
Mode 17	TX AC(VHT40) Mode Channel 102/110/134 (UNII-2C)				
Mode 18	TX AC(VHT80) Mode Channel 106 (UNII-2C)				
Mode 19	TX A Mode Channel 149/157/165 (UNII-3)				
Mode 22	TX AC(VHT20) Mode Channel 149/157/165 (UNII-3)				
Mode 23	TX AC(VHT40) Mode Channel 151/159 (UNII-3)				
Mode 24	TX AC(VHT80) Mode Channel 155 (UNII-3)				

Note:

(1) For AC power line conducted emissions and radiated emission below 1 GHz test, the TX AC(VHT20) Mode Channel 165 (UNII-3) is found to be the worst case and recorded.

- (2) For radiated emission above 1 GHz test, the spurious points of 1GHz~26.5GHz and 26.5GHz~40GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.
- (3) For radiated emission Harmonic 18-40GHz test, only tested the worst case and recorded.
- (4) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
- (5) The measurements for Output Power are tested, the worst case are IEEE 802.11a mode, IEEE 802.11ac(VHT20) mode, IEEE 802.11ac(VHT40) mode and IEEE 802.11ac(VHT80) mode, only the worst cases are documented for other test items.

(6) The measurements for Output Power are tested, the Non Beamforming and Beamforming are recorded in the report. The worst case is Non Beamforming and only the worst case is documented for other test items.

(7) For radiated emission above 1 GHz test, the polarization of Vertical and Horizontal are evaluated, the worst case is Vertical and recorded.

3.3 PARAMETERS OF TEST SOFTWARE

Non Beamforming				
UNII-1				
Test Software Version		QATool_Dbg 0.0.2.6		
Frequency (MHz)	5180	5200	5240	
IEEE 802.11a	1B	1B	19	
IEEE 802.11n(HT20)	1B	1A	18	
IEEE 802.11ac(VHT20)	1C	1C	1B	
Frequency (MHz)	5190	5230		
IEEE 802.11n(HT40)	17	1D		
IEEE 802.11ac(VHT40)	17	1F		
Frequency (MHz)	5210			
IEEE 802.11ac(VHT80)	0D			

UNII-2A				
Test Software Version	QATool_Dbg 0.0.2.6			
Frequency (MHz)	5260	5300	5320	
IEEE 802.11a	15	15	14	
IEEE 802.11n(HT20)	15	15	15	
IEEE 802.11ac(VHT20)	16	16	16	
Frequency (MHz)	5270	5310		
IEEE 802.11n(HT40)	1B	1A		
IEEE 802.11ac(VHT40)	1C	1B		
Frequency (MHz)	5290			
IEEE 802.11ac(VHT80)	12			

UNII-2C			
Test Software Version	QATool_Dbg 0.0.2.6		
Frequency (MHz)	5500	5580	5700
IEEE 802.11a	16	17	17
IEEE 802.11n(HT20)	15	16	16
IEEE 802.11ac(VHT20)	16	17	17
Frequency (MHz)	5510	5550	5670
IEEE 802.11n(HT40)	1B	1C	1C
IEEE 802.11ac(VHT40)	1C	1D	1D
Frequency (MHz)	5530		
IEEE 802.11ac(VHT80)	11		



UNII-3				
Test Software Version	QATool_Dbg 0.0.2.6			
Frequency (MHz)	5745	5785	5825	
IEEE 802.11a	20	1F	26	
IEEE 802.11n(HT20)	21	21	25	
IEEE 802.11ac(VHT20)	22	22	26	
Frequency (MHz)	5755	5795		
IEEE 802.11n(HT40)	21	21		
IEEE 802.11ac(VHT40)	23	23		
Frequency (MHz)	5775			
IEEE 802.11ac(VHT80)	22			

Beamforming

UNII-1				
Test Software Version	QATool_Dbg 0.0.2.6			
Frequency (MHz)	5180	5200	5240	
IEEE 802.11n(HT20)	1A	19	17	
IEEE 802.11ac(VHT20)	1B	1B	1A	
Frequency (MHz)	5190	5230		
IEEE 802.11n(HT40)	16	1C		
IEEE 802.11ac(VHT40)	16	1E		
Frequency (MHz)	5210			
IEEE 802.11ac(VHT80)	0C			

UNII-2A				
Test Software Version	QATool_Dbg 0.0.2.6			
Frequency (MHz)	5260	5300	5320	
IEEE 802.11n(HT20)	14	14	14	
IEEE 802.11ac(VHT20)	15	15	15	
Frequency (MHz)	5270	5310		
IEEE 802.11n(HT40)	1A	19		
IEEE 802.11ac(VHT40)	1B	1A		
Frequency (MHz)	5290			
IEEE 802.11ac(VHT80)	11			

UNII-2C				
Test Software Version	QATool_Dbg 0.0.2.6			
Frequency (MHz)	5500	5580	5700	
IEEE 802.11n(HT20)	14	15	15	
IEEE 802.11ac(VHT20)	15	16	16	
Frequency (MHz)	5510	5550	5670	
IEEE 802.11n(HT40)	1A	1B	1B	
IEEE 802.11ac(VHT40)	1B	1C	1C	
Frequency (MHz)	5530			
IEEE 802.11ac(VHT80)	10			

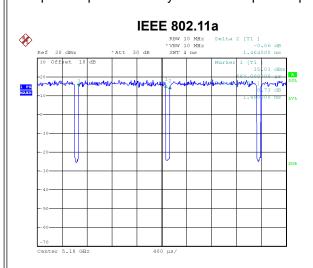


UNII-3				
Test Software Version	QATool_Dbg 0.0.2.6			
Frequency (MHz)	5745	5785	5825	
IEEE 802.11n(HT20)	20	20	24	
IEEE 802.11ac(VHT20)	21	21	25	
Frequency (MHz)	5755	5795		
IEEE 802.11n(HT40)	20	20		
IEEE 802.11ac(VHT40)	22	22		
Frequency (MHz)	5775			
IEEE 802.11ac(VHT80)	21			



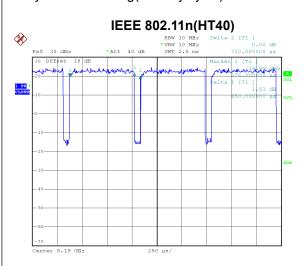
3.4 DUTY CYCLE

If duty cycle is \geq 98 %, duty factor is not required. If duty cycle is < 98 %, duty factor shall be considered. The output power = measured power + duty factor. The power spectral density = measured power spectral density + duty factor.



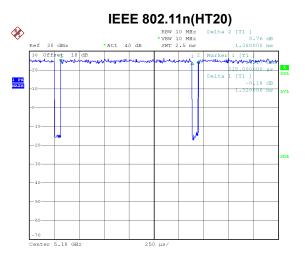
Date: 23.APR.2024 00:42:59

Duty cycle = 1.400 ms / 1.464 ms = 95.63% Duty Factor = 10 log(1 / Duty cycle) = 0.19



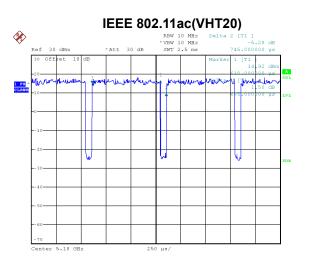
Date: 24.APR.2024 09:55:41

Duty cycle = 0.650 ms / 0.710 ms = 91.55% Duty Factor = 10 log(1 / Duty cycle) = 0.38



Date: 24.APR.2024 09:54:12

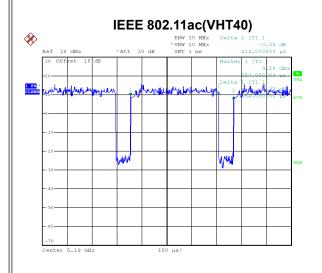
Duty cycle = 1.320 ms / 1.380 ms = 95.65% Duty Factor = 10 log(1 / Duty cycle) = 0.19

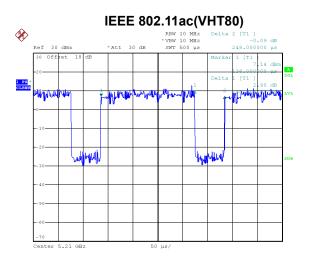


Date: 23.APR.2024 00:43:18

Duty cycle = 0.685 ms / 0.745 ms = 91.95% Duty Factor = 10 log(1 / Duty cycle) = 0.36

<u>3TL</u>





Date: 23.APR.2024 00:44:02

Duty cycle = 0.354 ms / 0.414 ms = 85.51% Duty Factor = 10 log(1 / Duty cycle) = 0.68 Date: 23.APR.2024 00:44:17

Duty cycle = 0.188 ms / 0.248 ms = 75.81% Duty Factor = 10 log(1 / Duty cycle) = 1.20

NOTE:

For IEEE 802.11a:

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 714 Hz (Duty cycle < 98%).

For IEEE 802.11n(HT20):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 758 Hz (Duty cycle < 98%).

For IEEE 802.11n(HT40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1538 Hz (Duty cycle < 98%).

For IEEE 802.11ac(VHT20):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1460 Hz (Duty cycle < 98%).

For IEEE 802.11ac(VHT40):

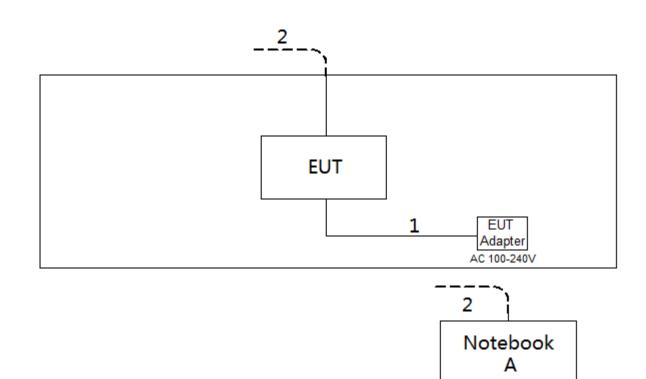
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2825 Hz (Duty cycle < 98%).

For IEEE 802.11ac(VHT80):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 5319 Hz (Duty cycle < 98%).



3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.6 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
А	Notebook	Honor	14SER5 3500	N/A

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

3.7 CUSTOMER INFORMATION DESCRIPTION

- The antenna gain and beamforming gain are provided by the manufacturer.
 Except for AC power line conducted emissions and radiated emissions, the results of all test items include cable losses. All cable losses are provided by the testing laboratory.



4. AC POWER LINE CONDUCTED EMISSIONS

4.1 LIMIT

Frequency	Limit (dBµV)	
(MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

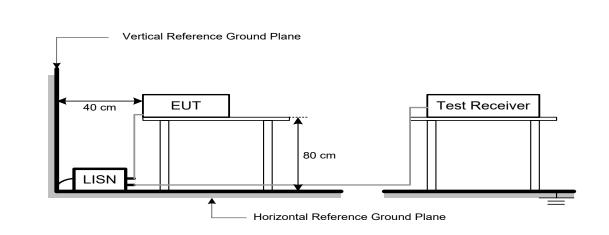
Receiver Parameter	Setting	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

4.3 DEVIATION FROM TEST STANDARD

No deviation



4.4 TEST SETUP



4.5 EUT OPERATION CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

The EUT was programmed to be in continuously transmitting/TX mode.

4.6 TEST RESULTS

Please refer to the APPENDIX A.



5. RADIATED EMISSIONS

5.1 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	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS (Above 1000 MHz)

Frequency	EIRP Limit	Band edge	Harmonic
(MHz)	(dBm/MHz)	at 3m (dBµV/m)	at 1m (dBµV/m)
5150-5250	-27	68.2	77.7 (Note 3)
5250-5350	-27	68.2	77.7 (Note 3)
5470-5725	-27	68.2	77.7 (Note 3)
	-27	68.2	77.7 (Note 3)
5725-5850	10	105.2	114.7 (Note 3)
NOTE (2)	15.6	110.8	120.3 (Note 3)
	27	122.2	131.7 (Note 3)

NOTE:

(1) The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength: 1000000√30P E =

$$=$$
 μ 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)

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

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



5.2 TEST PROCEDURE

- a. 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)
- b. The measuring distance of 3 m or 1m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 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.(above 1GHz)
- c. 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.
- d. 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).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. 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.
- g. 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)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. 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	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic or 40 GHz, whichever is lower
RBW / VBW	1 MHz / 3 MHz for PK value
(Emission in restricted band)	1 MHz / 1/T Hz for AVG value

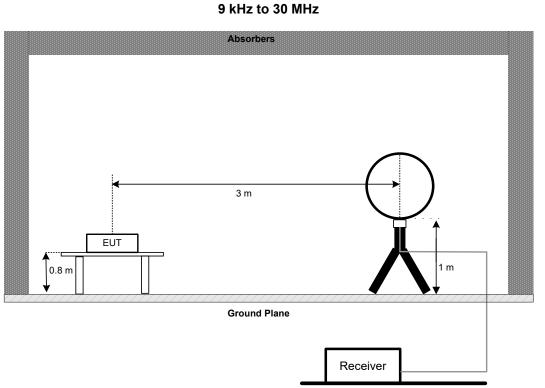
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~40 GHz for PK/AVG detector



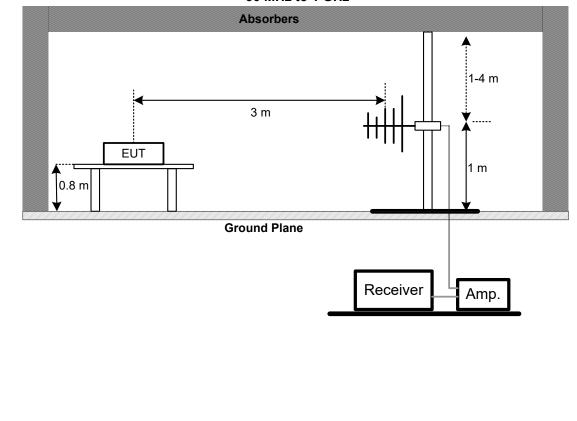
5.3 DEVIATION FROM TEST STANDARD

No deviation.

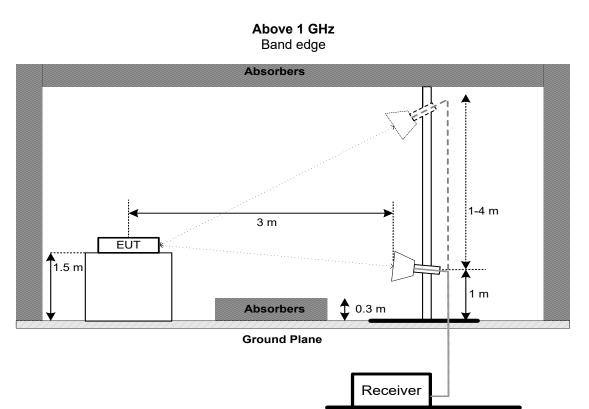
5.4 TEST SETUP



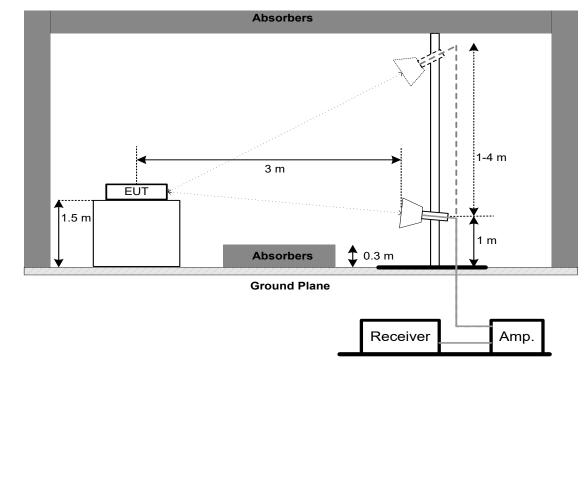
30 MHz to 1 GHz





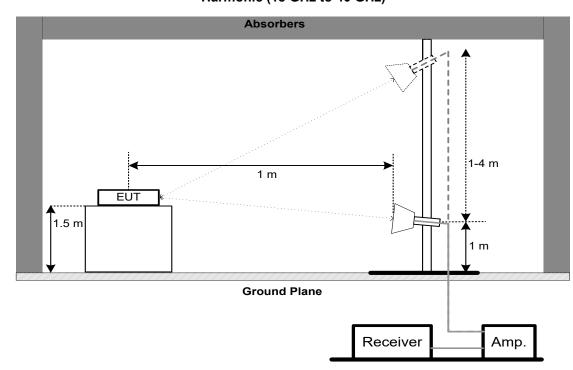


Harmonic (1 GHz to 18 GHz)





Harmonic (18 GHz to 40 GHz)



5.5 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.

5.6 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

5.8 TEST RESULTS - ABOVE 1000 MHZ

Please refer to the APPENDIX D.

Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.



6. BANDWIDTH

6.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a) FCC 15.407(e)	26 dB Bandwidth	-	5150-5250
	26 dB Bandwidth	-	5250-5350
	26 dB Bandwidth	-	5470-5725
	6 dB Bandwidth	Minimum 500 kHz	5725-5850

6.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below

b. Spectrum Setting:

For UNII-1, UNII-2A, UNII-2C:

Spectrum Parameter	Setting
Span Frequency	> 26 dB Bandwidth
RBW	Appromiximately 1% of the emission bandwidth
VBW	> RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For UNII-3:

Spectrum Parameter	Setting
Span Frequency	> 6 dB Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For 99% Occupied Bandwidth:

Spectrum Parameter	Setting
Span Frequency	1.5 times to 5 times the OBW
RBW	1% to 5% of the OBW
VBW	≥3*RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

c. Measured the spectrum width with power higher than 26 dB / 6 dB below carrier.

6.3 DEVIATION FROM STANDARD

No deviation.



6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX E.



7. MAXIMUM OUTPUT POWER

7.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a) Maximum Output Power	AP device: 1 Watt (30 dBm) Client device: 250 mW (23.98 dBm)	5150-5250	
	Maximum Output Power	250 mW (23.98 dBm)	5250-5350
		250 mW (23.98 dBm)	5470-5725
		1 Watt (30dBm)	5725-5850

Note:

- a. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- b. 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. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- c. 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 + 10log B, where B is the 26dB Bandwidth in megahertz.

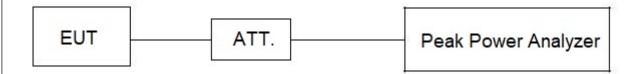
7.2 TEST PROCEDURE

- a. The EUT was directly connected to the peak power analyzer and antenna output port as show in the block diagram below.
- b. The test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX F.



8. POWER SPECTRAL DENSITY

8.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a) Power Spectral Density	AP device: 17 dBm/MHz Client device: 11 dBm/MHz	5150-5250	
	Power Spectral Density	11 dBm/MHz	5250-5350
		11 dBm/MHz	5470-5725
		30 dBm/500 kHz	5725-5850

8.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting:
 - For UNII-1, UNII-2A, UNII-2C:

Spectrum Parameter	Setting
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz.
VBW	3 MHz.
Detector	RMS
Trace average	100 trace
Sweep Time	Auto

For UNII-3:

Spectrum Parameter	Setting	
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal	
RBW	100 kHz.	
VBW	300 kHz.	
Detector	RMS	
Trace average	100 trace	
Sweep Time	Auto	

Note:

 For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 100kHz and VBW at 300kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add 10 log (500 kHz/100 kHz) to the measured result, i.e. 7 dB.

 During the test of U-NII 3 PSD, the measurement result with RBW=100kHz has been added 7 dB by compensating offset. For example, the cable loss is 18 dB, and the final offset is 18 + 7 = 25 dB when RBW=100kHz is used.

8.3 DEVIATION FROM STANDARD

No deviation.



8.4 TEST SETUP

EUT		SPECTRUM
	ATT.	ANALYZER

8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX G.



9. FREQUENCY STABILITY

9.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(g)	Frequency Stability	An emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.	5250-5350
		operation de opeenied in the deere mandali	5725-5850

9.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting:

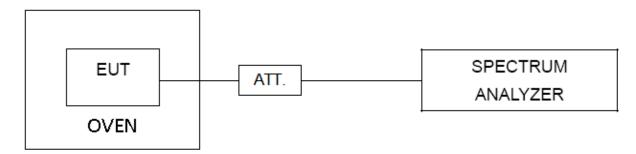
Spectrum Parameter	Setting
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

- c. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
- d. User manual temperature is 0°C~40°C.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULTS

Please refer to the APPENDIX H.



10. MEASUREMENT INSTRUMENTS LIST

	AC Power Line Conducted Emissions										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until						
1	EMI Test Receiver	R&S	ESR3	103027	Jun. 16, 2024						
2	TWO-LINE V-NETWORK	R&S	ENV216	101447	Dec. 22, 2024						
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A						
4	Cable	N/A	SFT205-NMNM-9 M-001	9M	Nov. 27, 2024						
5	643 Shield Room	ETS	6*4*3	N/A	N/A						

	Radiated Emissions - 9 kHz to 30 MHz										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until						
1	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60 B-034	Mar. 30, 2025						
2	EMI Test Receiver	Keysight	N9038A	MY56400060	Dec. 22, 2024						
3	Cable	RW	LMR-400(30MHz-1 GHz)(10m+2.5m+0. 8M)	N/A	Jul. 04, 2024						
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A						
5	1266 Chamber room	ETS	12*6*6	N/A	May 01, 2024						

		Radiated Er	missions - 30 MHz to	o 1 GHz	
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	1462	Dec. 13, 2024
2	Attenuator	EMC INSTRUMENT	EMCI-N-6-06	AT-06009	Dec. 13, 2024
3	Preamplifier	EMC INSTRUMENT	EMC001330	980998	Nov. 17, 2024
4	Cable	RegalWay	LMR400-NMNM-12 .5m	N/A	Jul. 04, 2024
5	Cable	RegalWay	LMR400-NMNM-3 m	N/A	Jul. 04, 2024
6	Cable	RegalWay	LMR400-NMNM-0. 5m	N/A	Jul. 04, 2024
7	Receiver	Agilent	N9038A	MY52130039	Dec. 22, 2024
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	СМ	9*6*6	N/A	May 17, 2024



	Radiated Emissions - Above 1 GHz										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until						
1	Receiver	Agilent	N9038A	MY52130039	Dec. 22, 2024						
2	Preamplifier	EMC INSTRUMENT	EMC118A45SE	980888	Nov. 17, 2024						
3	MXA Signal Analyzer	KEYSIGHT	N9020B	MY63380204	Nov. 17, 2024						
4	Double Ridged Guide Antenna	ETS	3115	75789	May 31, 2024						
5	Cable	RegalWay	RWLP50-4.0A-SMS M-12.5M	N/A	Feb. 19, 2025						
6	Cable	RegalWay	RWLP50-4.0A-NM RASM-2.5M	N/A	Aug. 08, 2024						
7	Cable	RegalWay	RWLP50-4.0A-NM RASMRA-0.8M	N/A	Aug. 08, 2024						
8	966 Chamber room	СМ	9*6*6	N/A	May 17, 2024						
9	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A						
10	Filter	STI	STI15-9969	N/A	Jun. 16, 2024						
11	Positioning Controller	MF	MF-7802	N/A	N/A						
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A						
13	Low Noise Amplifier	CONNPHY	CLN-18G40G-4330 -K	619413	Jul. 06, 2024						
14	Cable	RegalWay	RWLP50-2.6A-2.92 M2.92M-1.1M	N/A	Jul. 26, 2024						
15	Cable	Tonscend	HF160-KMKM-3M	N/A	Jul. 26, 2024						
16	Broad-Band Horn Antenna	Schwarzbeck	BBHA9170(3m)	9170-319	Jun. 20, 2024						

	Bandwidth &										
	Power Spectral Density										
Item	Item Kind of Equipment Manufacturer Type No. Serial No. Calibrated unti										
1	Spectrum Analyzer	R&S	FSP38	100852	Jun. 16, 2024						
2	Attenuator	Talent Microwave	TA10A0-S-26.5	N/A	N/A						
3	DC Block	N/A	N/A	N/A	N/A						
4	Measurement Software	BTL	BTL Conducted Test	N/A	N/A						
5	Attenuator	Talent Microwave	TA10A0-S-26.5	N/A	N/A						
6	Spectrum Analyzer	R&S	FSP40	100185	Jun. 16, 2024						

	Maximum Output Power										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until						
1	Peak Power Analyzer	Keysight	8990B	MY51000506	Jun. 17, 2024						
2	Wideband power sensor	Keysight	N1923A	MY58310004	Jun. 17, 2024						
3	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A						



	Frequency Stability										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until						
1	Table top type high and low temperature test chamber	CEPREI	CEEC-M64T-40	15-008	Dec. 22, 2024						
2	Cable	Woke	S02-181212-064	N/A	N/A						
3	Contact type voltage regulator	SAKO	TDGC2	N/A	Jul. 07, 2024						
4	Spectrum Analyzer	nalyzer R&S FSP38		100852	Jun. 16, 2024						
5	Attenuator	Talent Microwave	TA10A0-S-26.5	N/A	N/A						
6	DC Block	N/A	N/A	N/A	N/A						
7	Measurement Software	BTL	BTL Conducted Test	N/A	N/A						
8	Attenuator	Talent Microwave	TA10A0-S-26.5	N/A	N/A						

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

All calibration period of equipment list is one year.



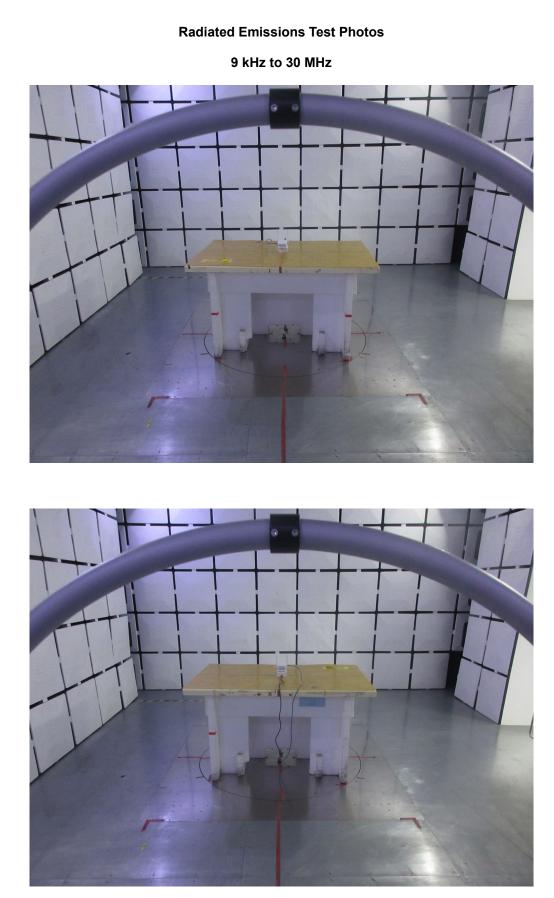
11. EUT TEST PHOTOS



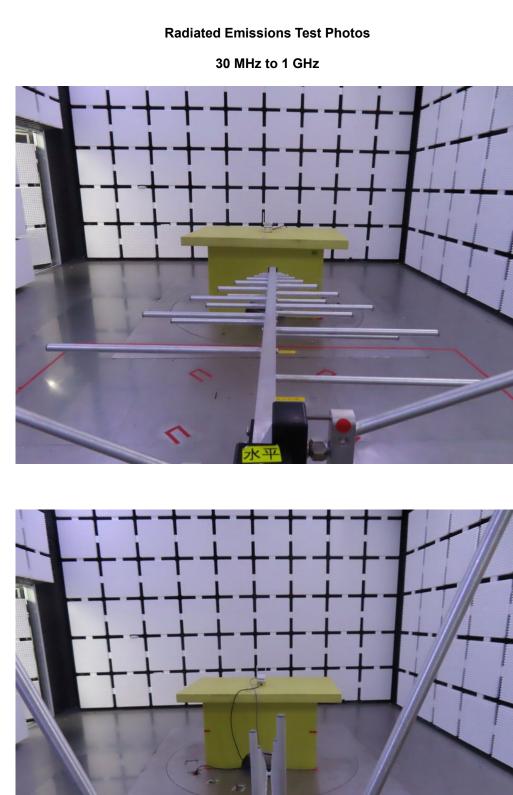




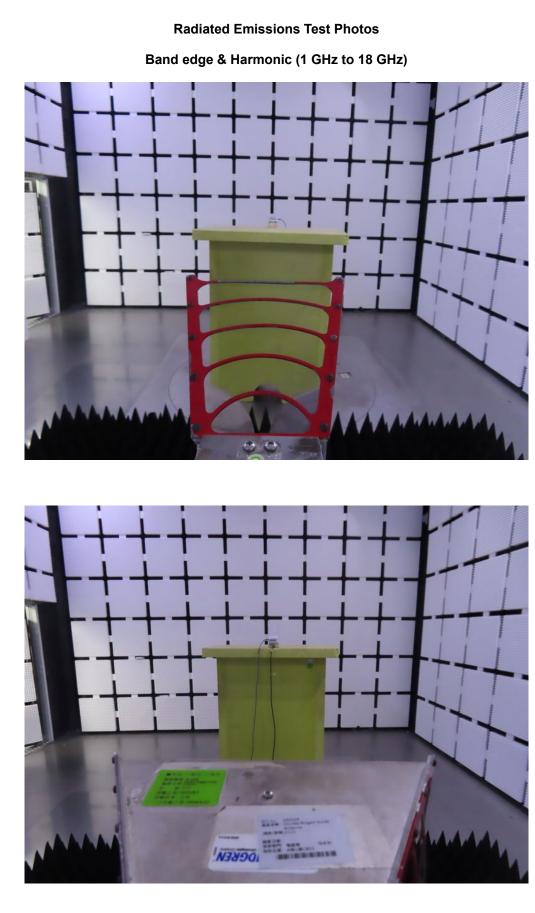




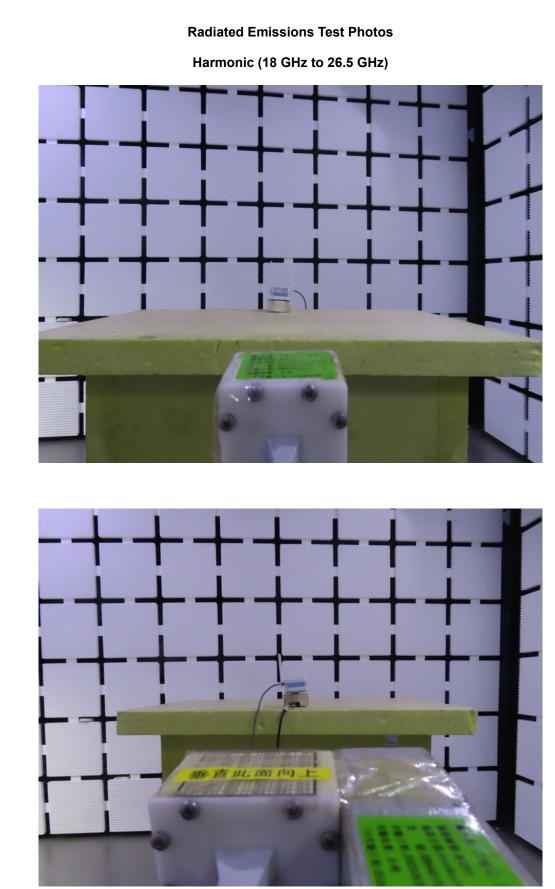






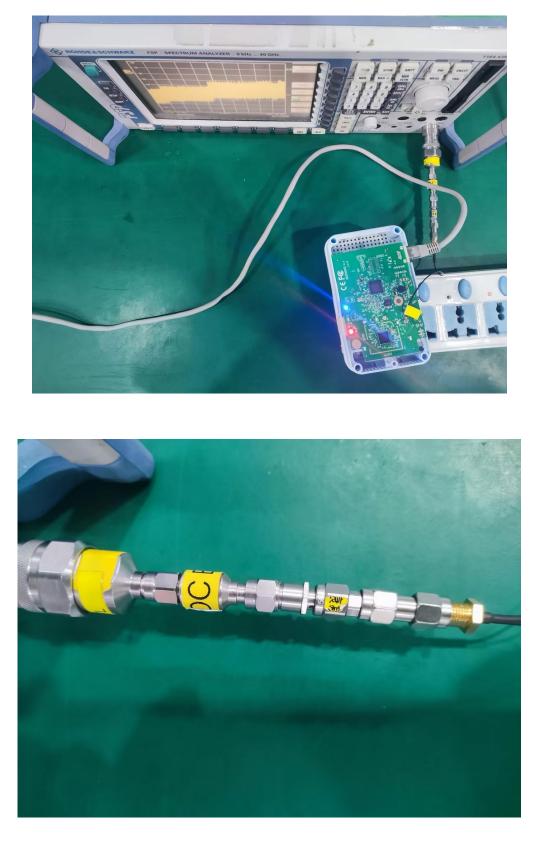








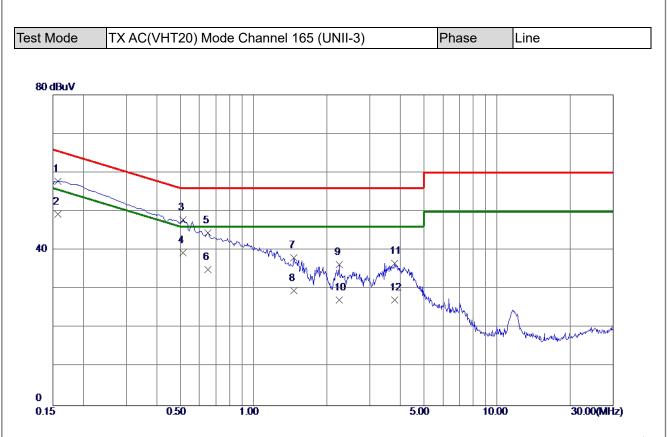
Conducted Test Photos





APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

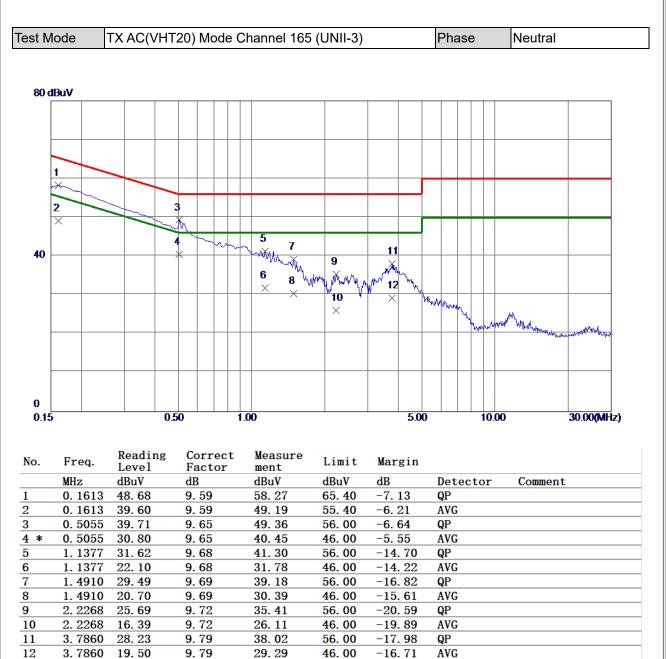




No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1568	48.00	9.74	57.74	65.63	-7.89	QP	
2 *	0.1568	39.60	9.74	49.34	55.63	-6.29	AVG	
3	0.5144	38.13	9.79	47.9 2	56. 00	-8.08	QP	
4	0.5144	29.50	9.79	39.29	46.00	-6.71	AVG	
5	0.6495	34.72	9.79	44. 5 1	56.00	-11. 49	QP	
6	0.6495	25.30	9.79	35. 0 9	46.00	-10. 91	AVG	
7	1.4640	28.25	9.83	38. 0 8	56.00	-17. 92	QP	
8	1.4640	19.70	9.83	29. 53	46.00	-16. 47	AVG	
9	2.2448	26.42	9.87	36.29	56. 00	-19.71	QP	
10	2.2448	17.39	9.87	27.26	46.00	-18. 74	AVG	
11	3.8063	26.76	9.94	36.70	56.00	-19. 30	QP	
12	3.8063	17.20	9.94	27.14	46.00	-18.86	AVG	

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



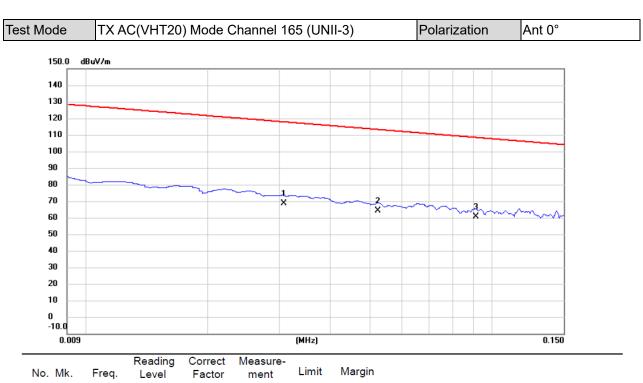


- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

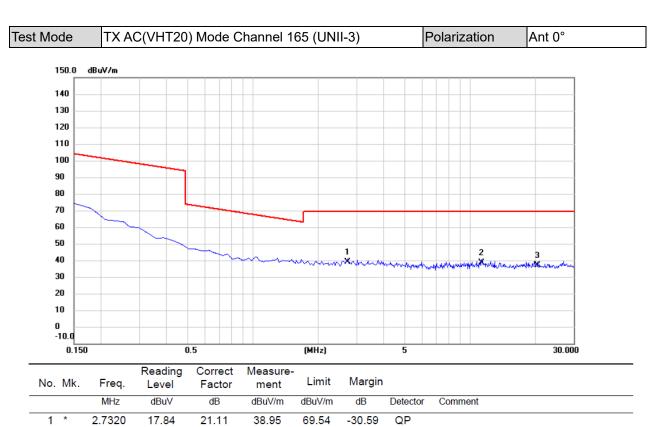




	No. Mk.	Freq.	Level	Factor	ment	Limit	Margin		
-		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	0.0307	47.56	21.10	68.66	117.86	-49.20	AVG	
-	2	0.0523	43.03	21.21	64.24	113.23	-48.99	AVG	
	3 *	0.0912	39.09	21.33	60.42	108.41	-47.99	QP	

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





2

3

11.2691

20.4780

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

17.44

15.62

21.16

21.36

38.60

36.98

69.54

69.54

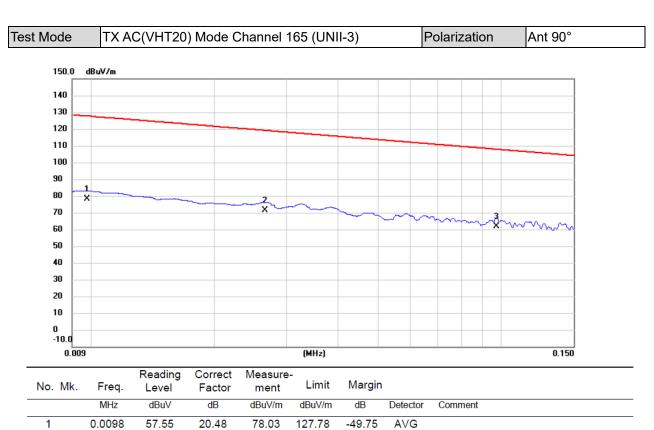
-30.94

-32.56

QP

QP





2

3 *

0.0266

0.0974

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

50.40

40.61

21.00

21.33

71.40

61.94

119.11

107.83

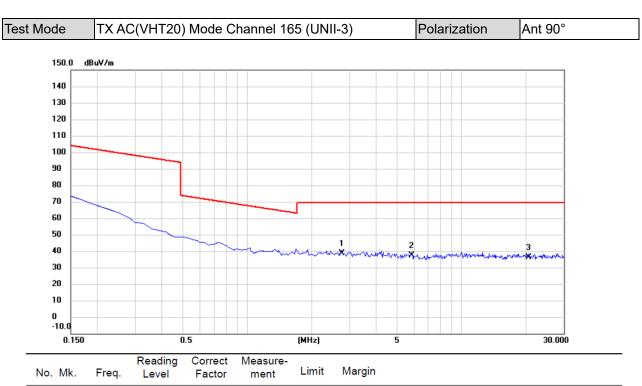
-47.71

-45.89

AVG

QP





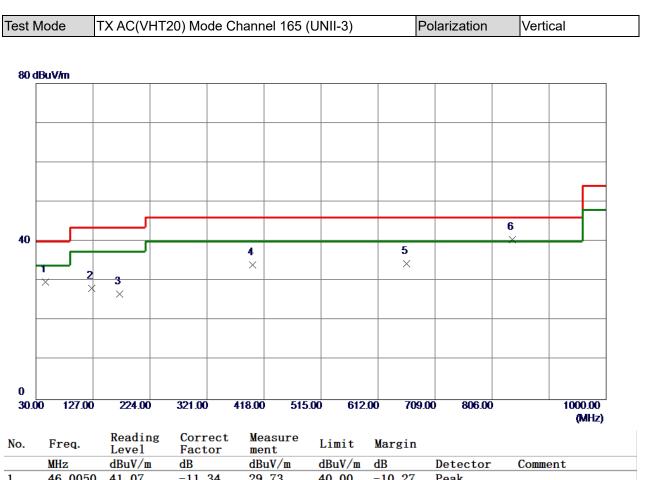
	INO. IVIK	. ⊢req.	Level	Factor	ment	LIIIII	Margin		
-		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1 *	2.7618	17.33	21.11	38.44	69.54	-31.10	QP	
	2	5.8662	16.15	21.16	37.31	69.54	-32.23	QP	
-	3	20.6121	14.76	21.38	36.14	69.54	-33.40	QP	

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



APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

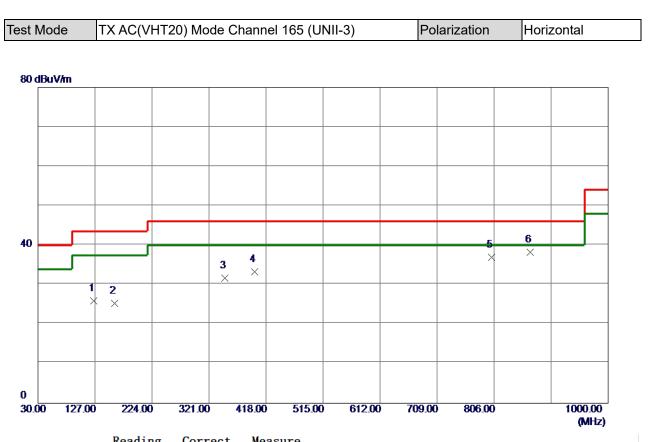




1	46.0050 41.07	-11.34	29.73	40.00	-10.27	Peak	
2	125.0600 41.00	-12.84	28.16	43. 50	-15. 34	Peak	
3	172. 1050 38. 23	-11. 52	26.71	43. 50	-16. 79	Peak	
4	398. 6000 42. 28	-8.17	34.11	46.00	-11.89	Peak	
5	660.0150 37.29	-2.88	34.41	46.00	-11. 59	Peak	
6 *	840. 4350 41. 20	-0.73	40.47	46.00	-5. 53	Peak	

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





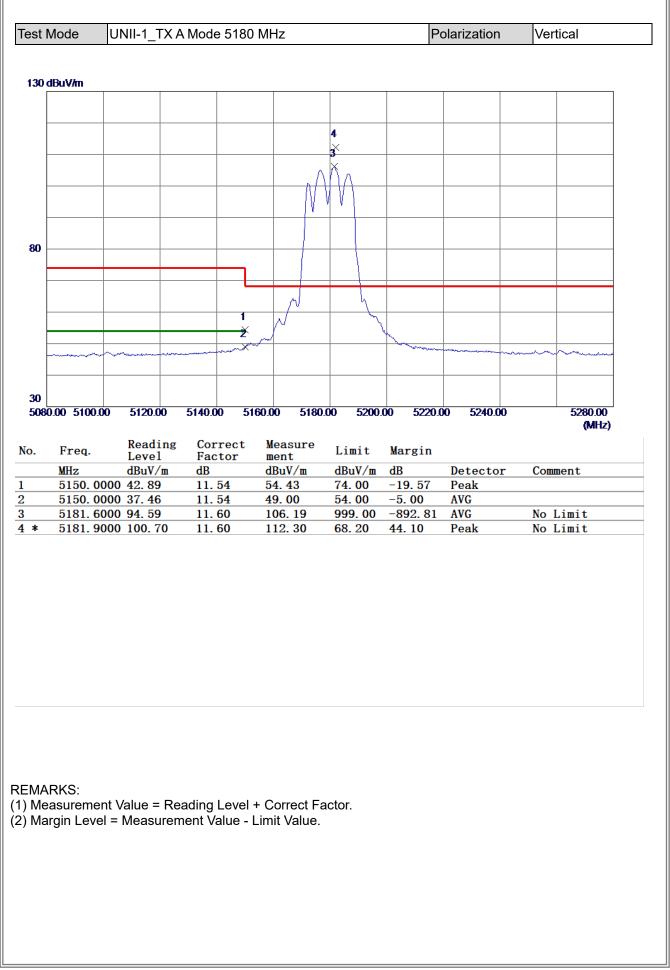
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	125. 0600	38.71	-12.84	25.87	43. 50	-17.63	Peak	
2	160. 4650	36.18	-10. 92	25.26	43. 50	-18.24	Peak	
3	347.6750	41.19	-9. 56	31.63	46.00	-14. 37	Peak	
4	398. 6000	41.48	-8.17	33. 31	46.00	-12.69	Peak	
5	801.6350	38.34	-1. 40	36.94	46.00	-9.06	Peak	
6 *	867.1100	38. 58	-0. 33	38.25	46.00	-7.75	Peak	

- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.

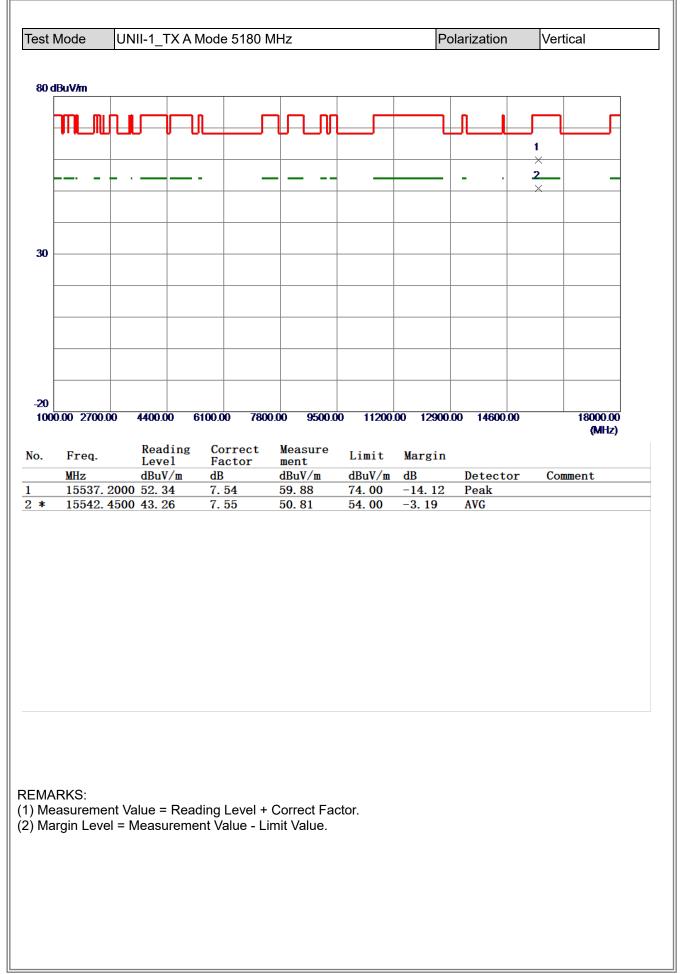


APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

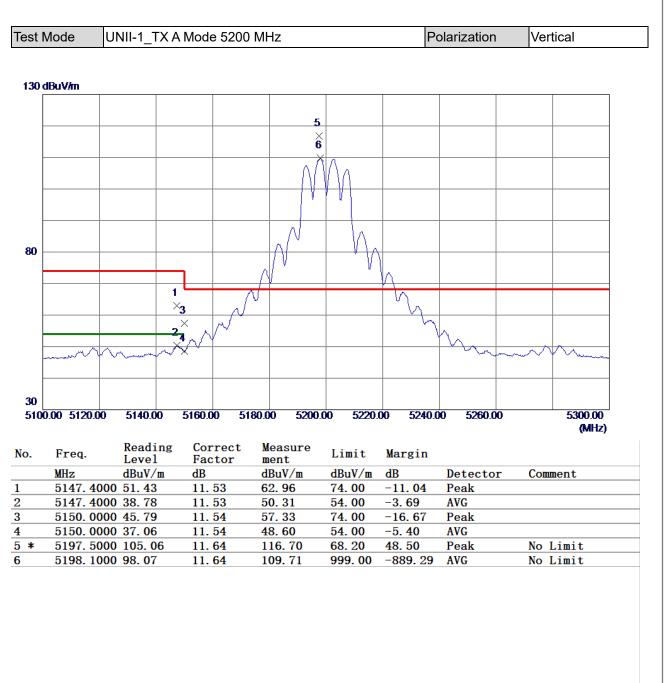






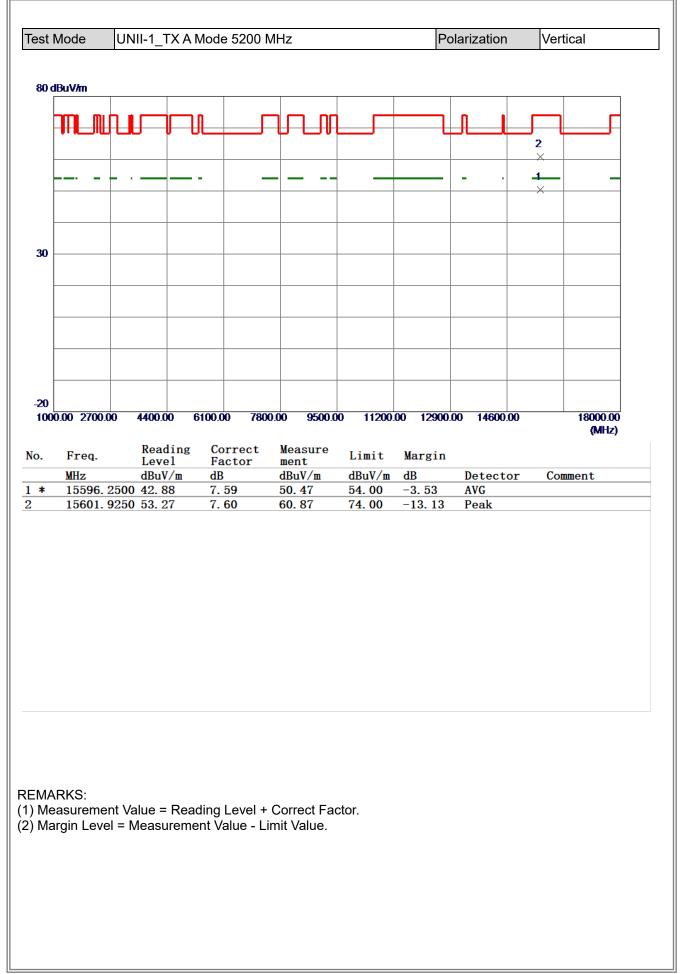




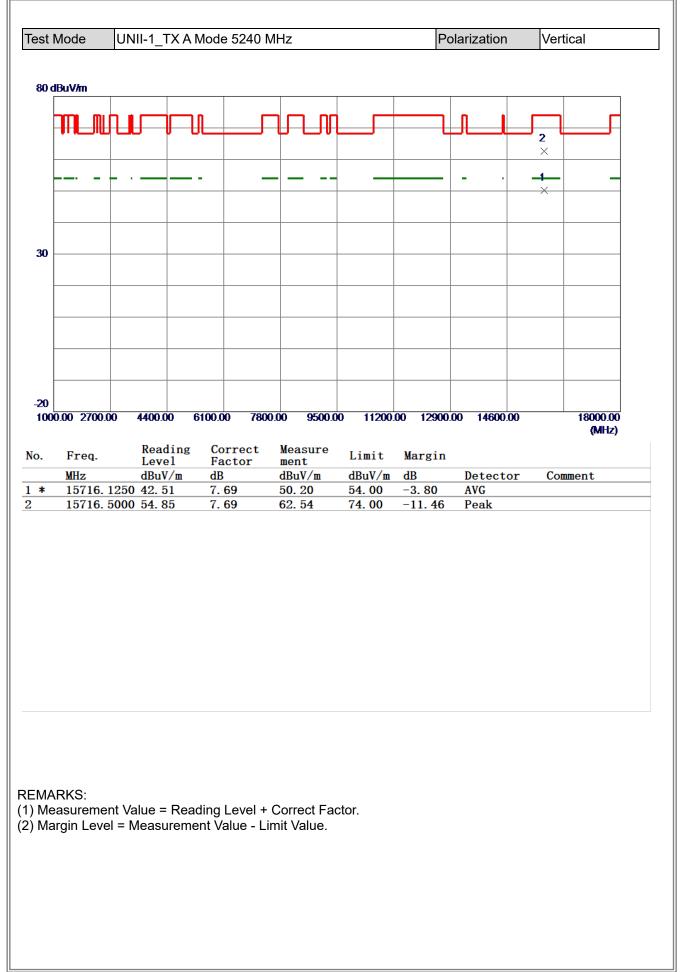


- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

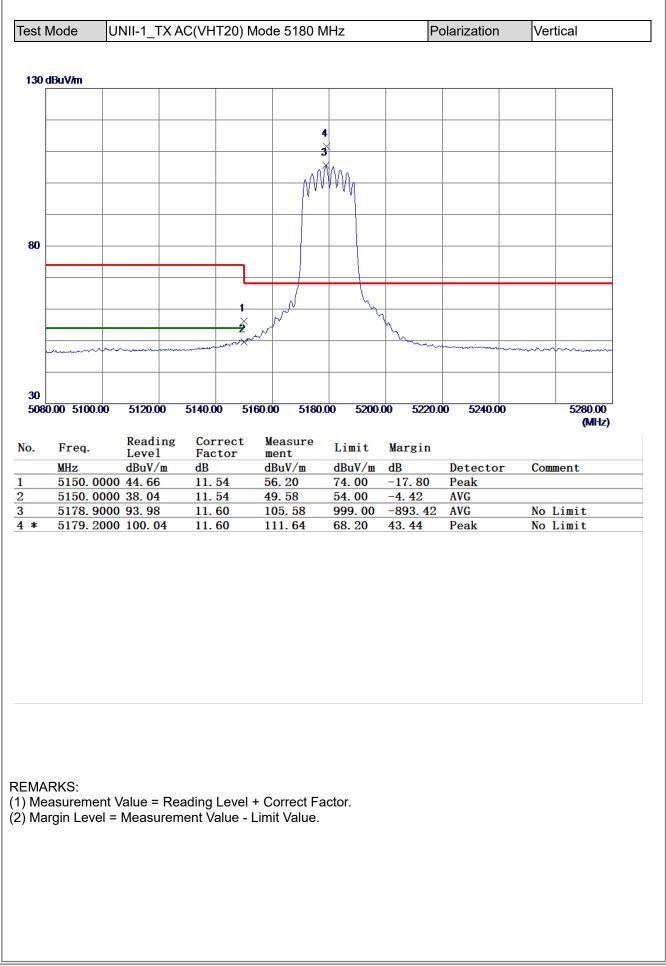




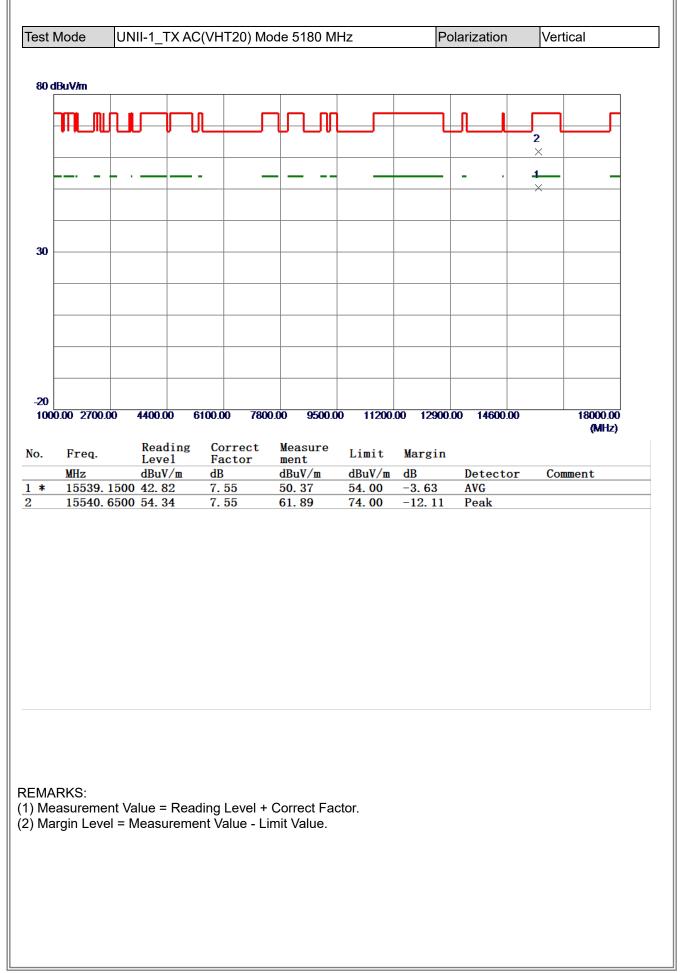




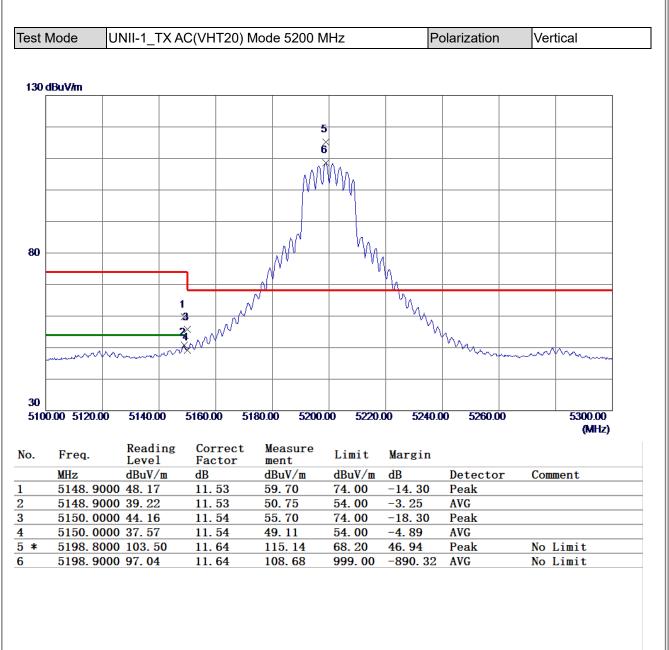






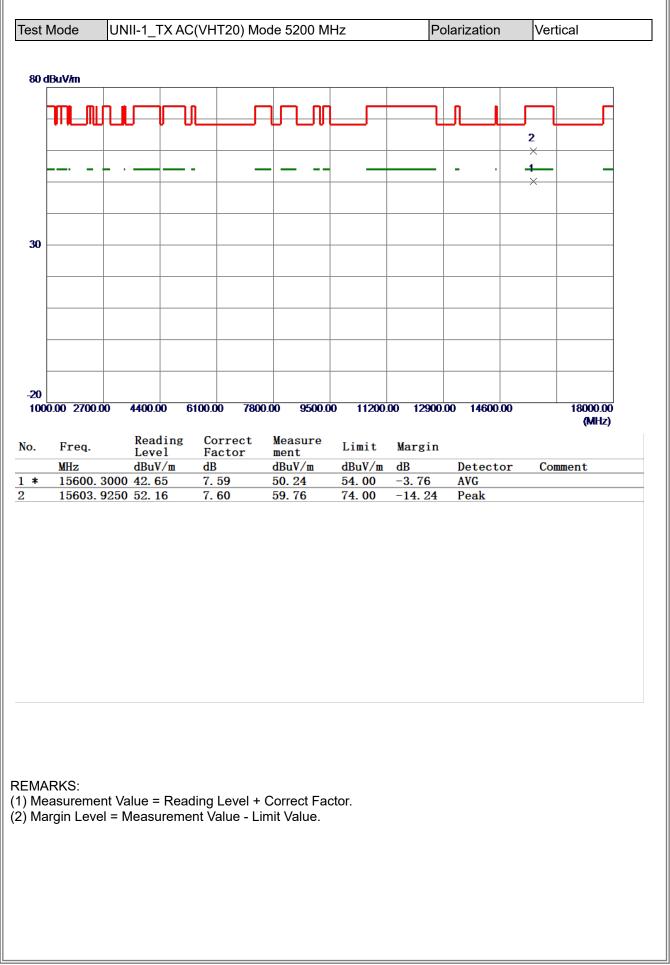




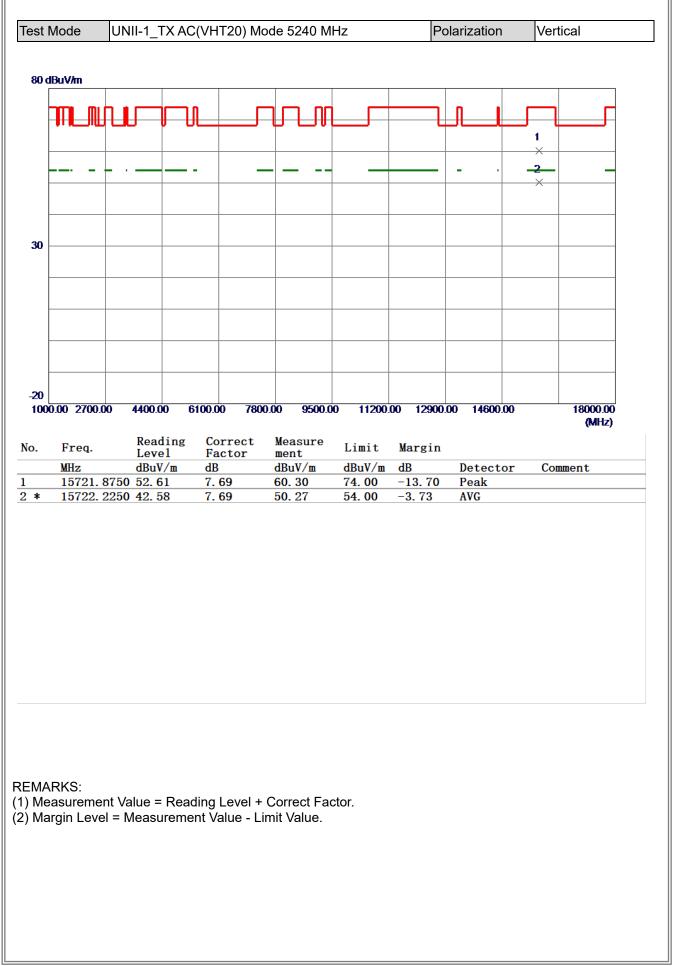


- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

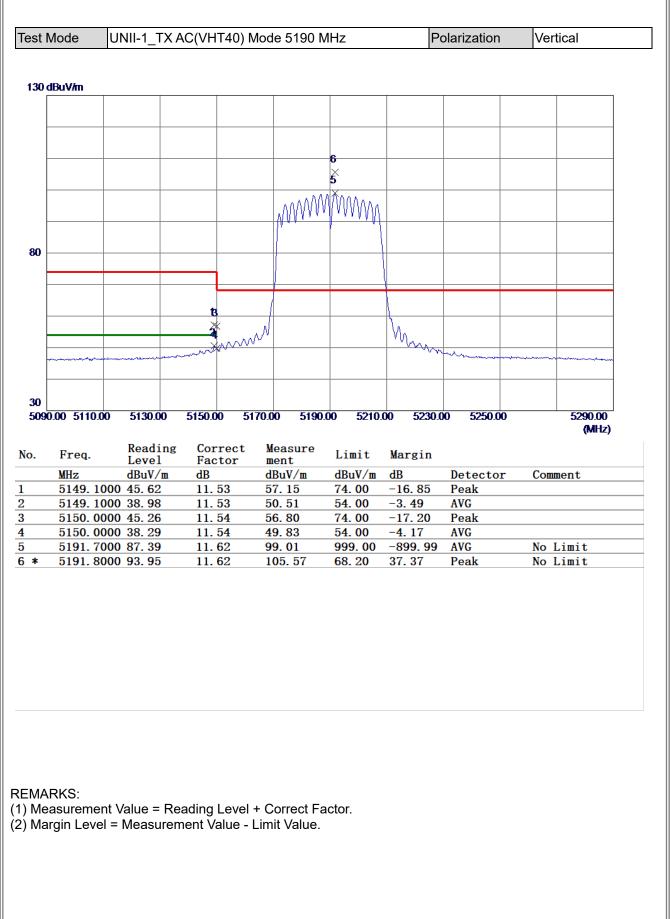




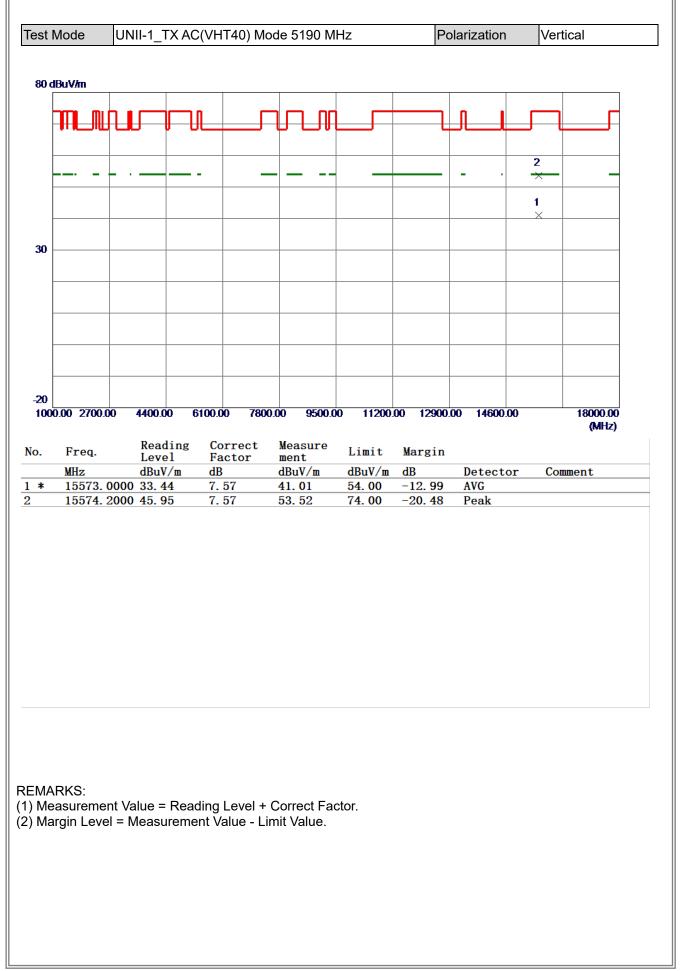




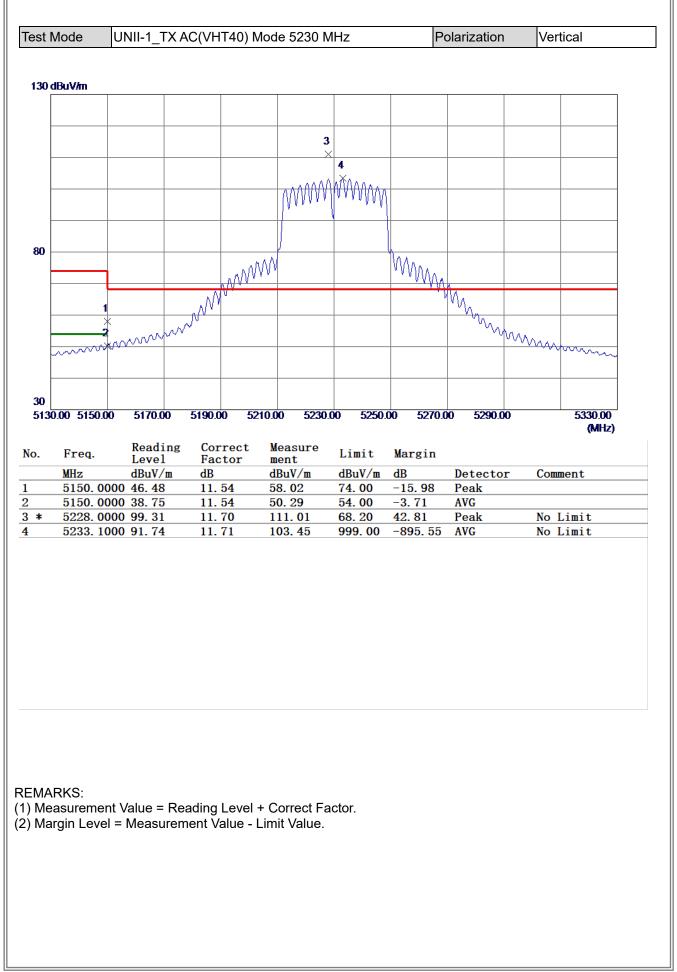




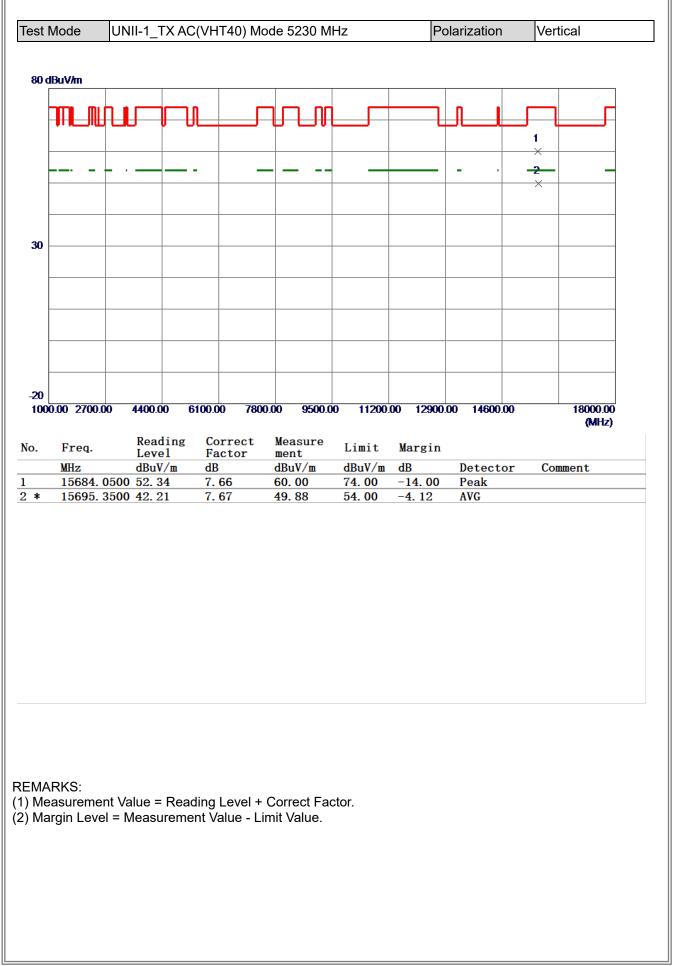




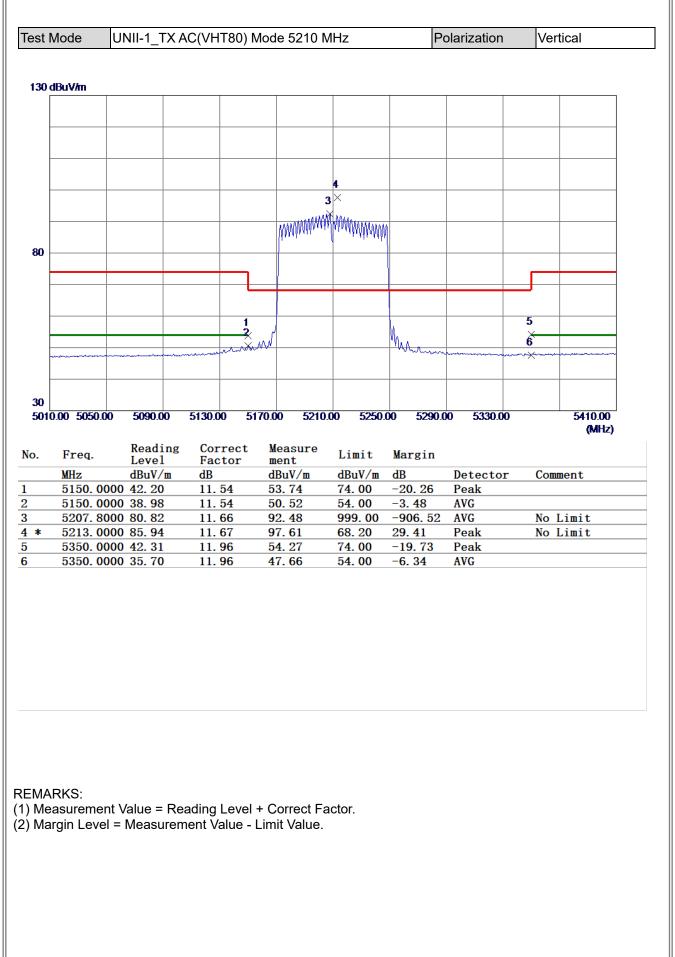




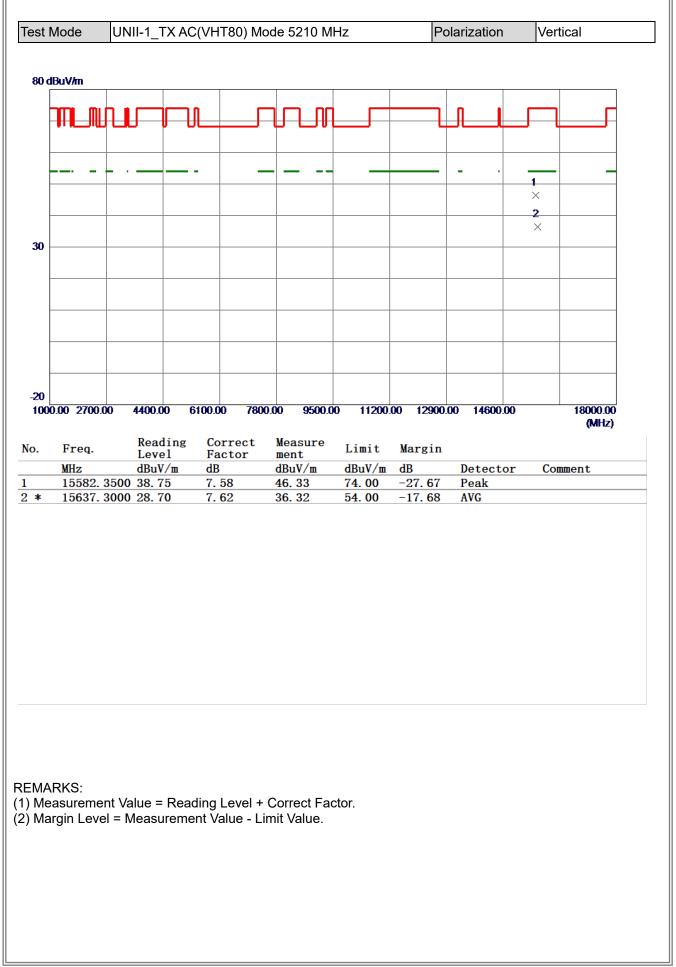




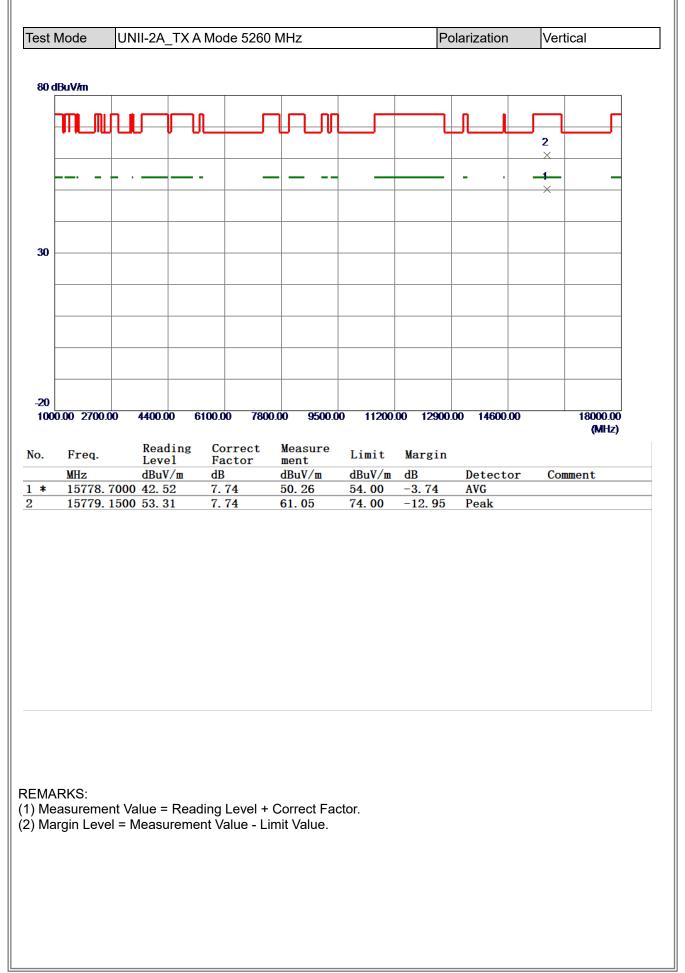




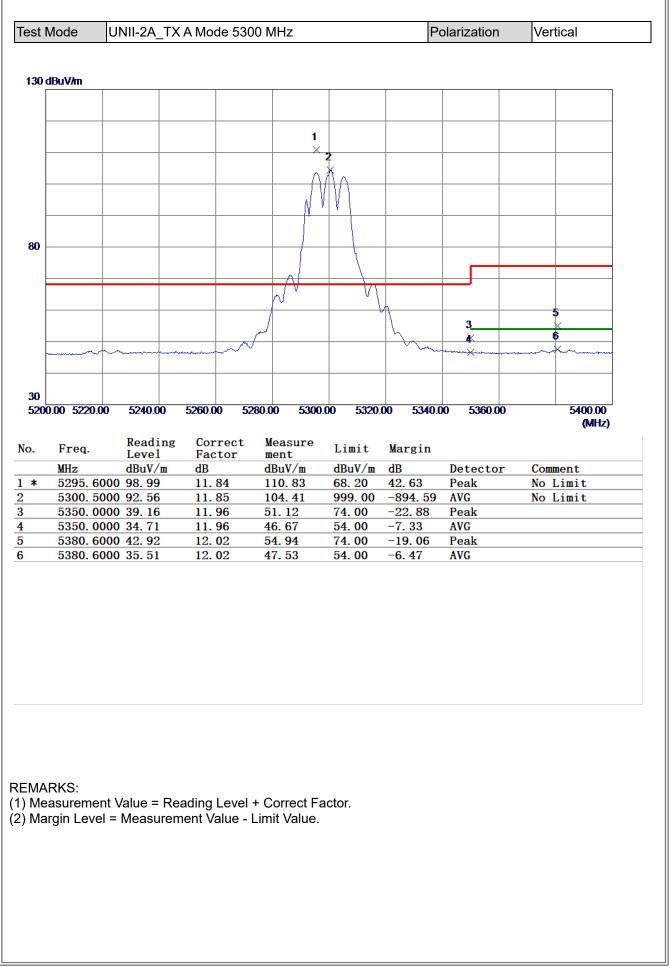




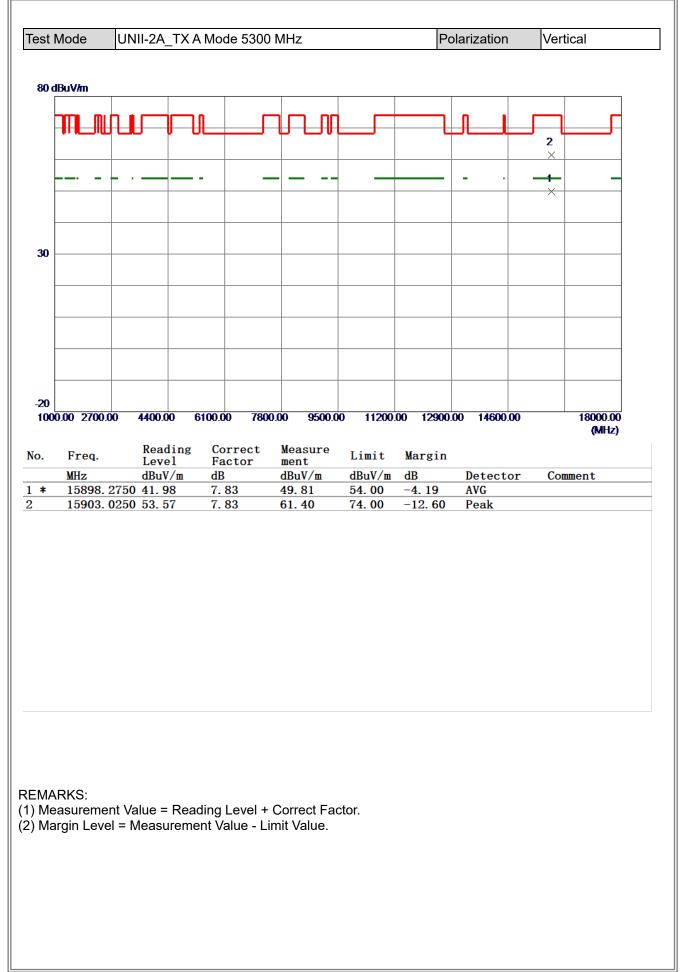




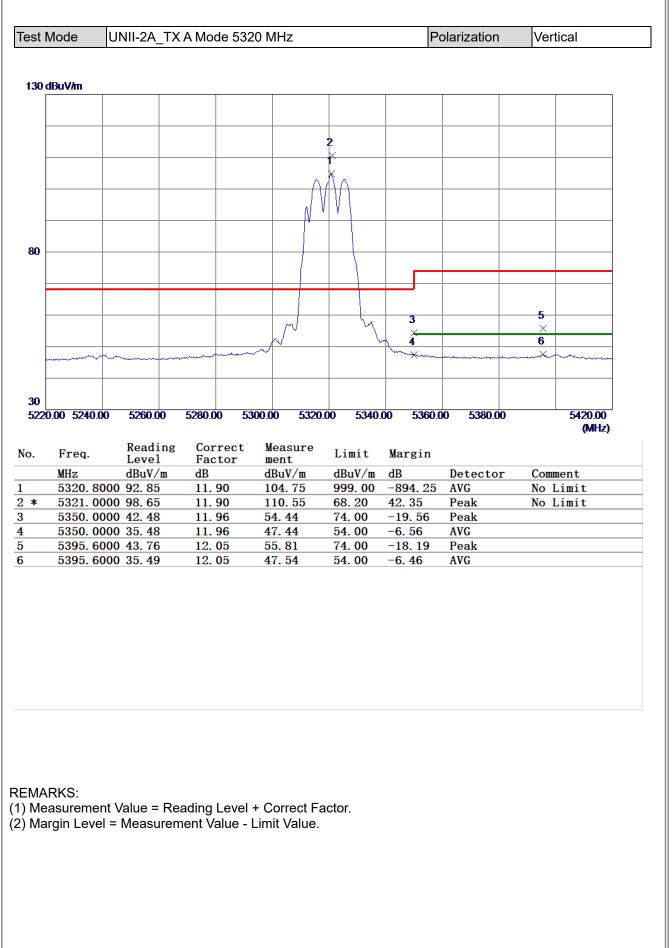




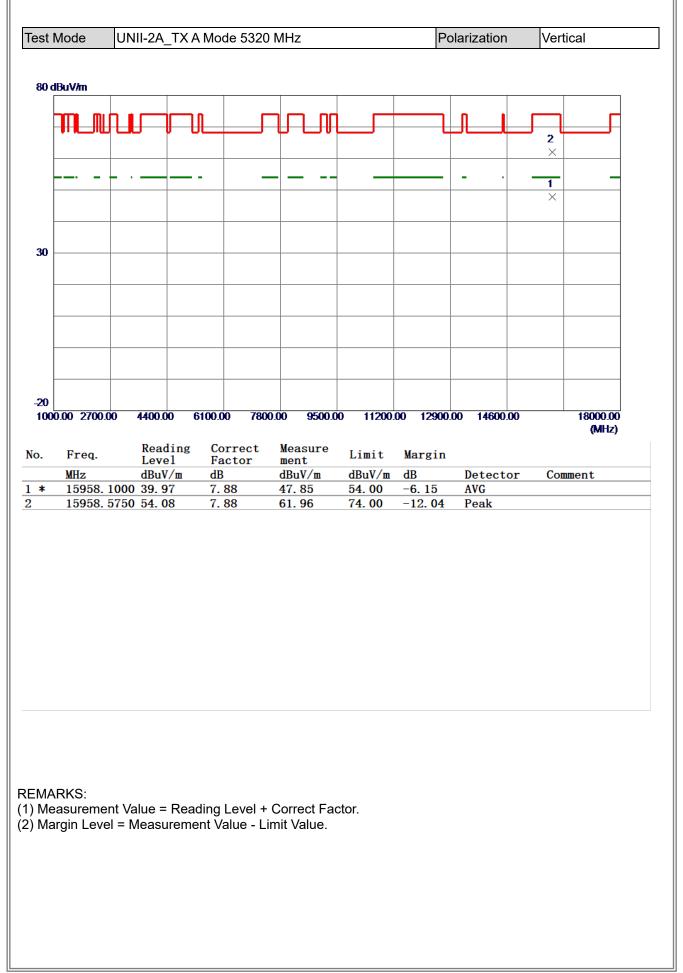




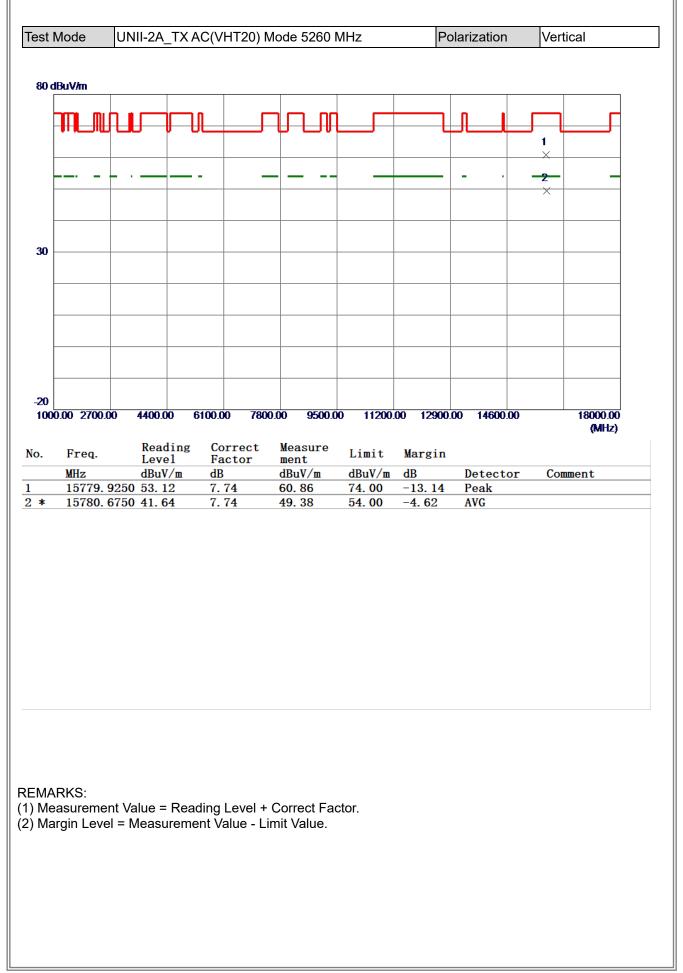




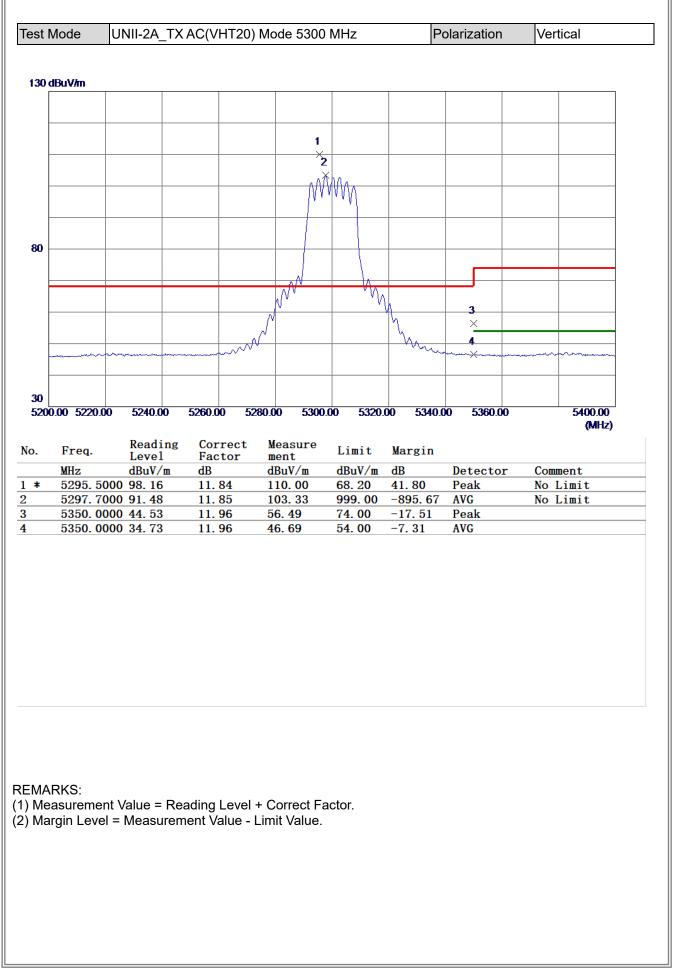




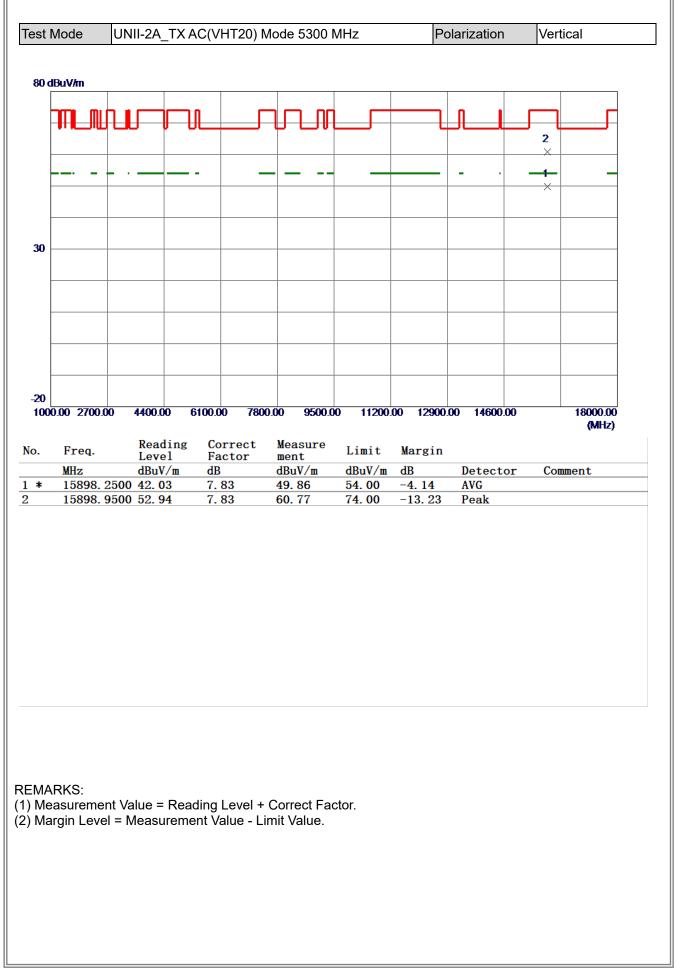




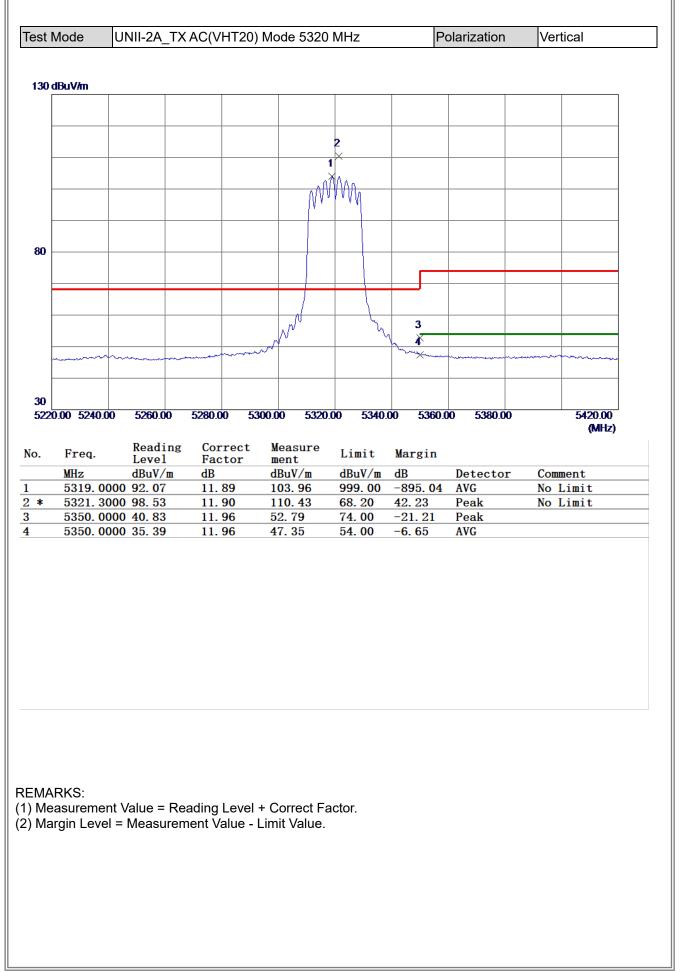




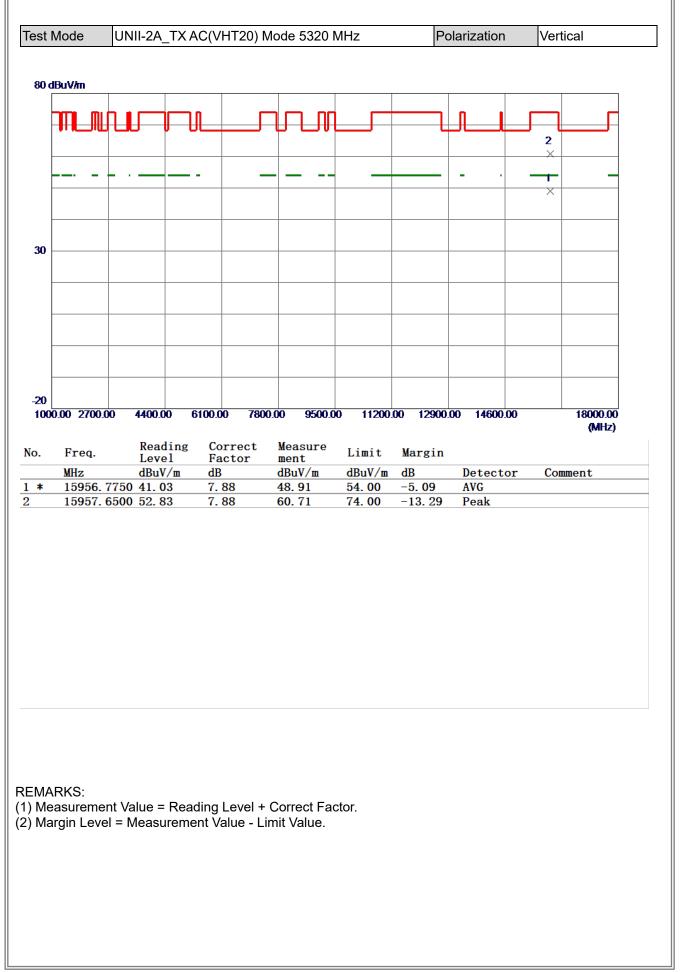




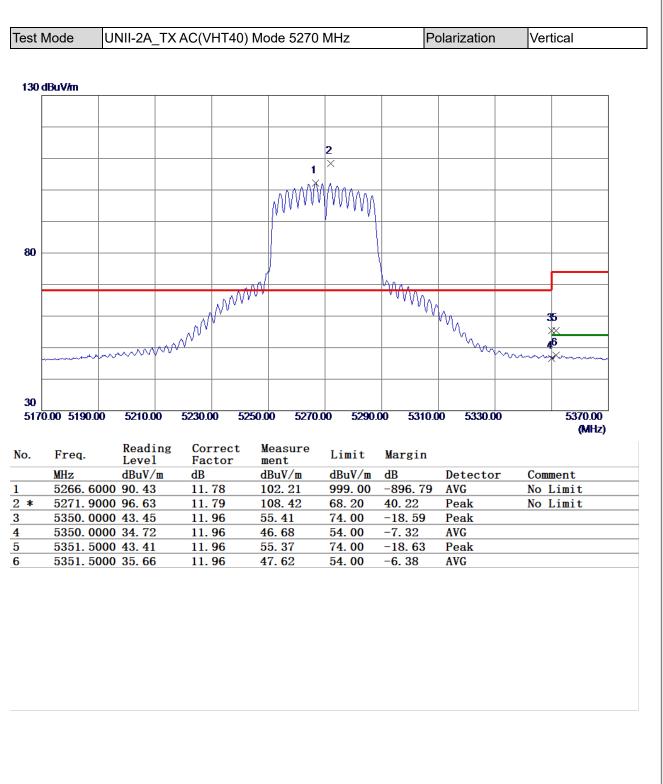








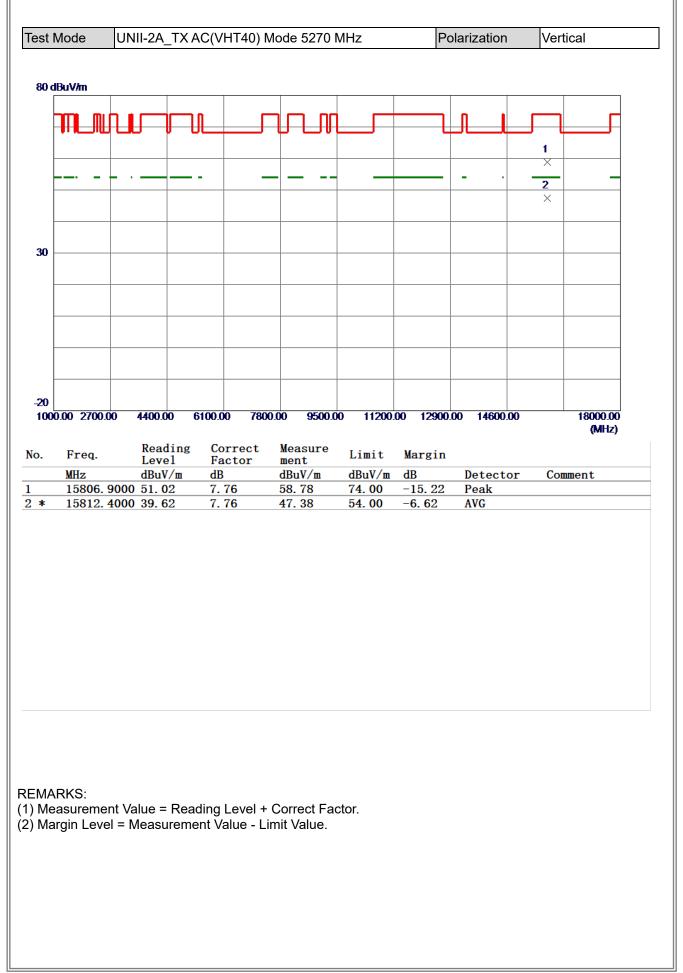




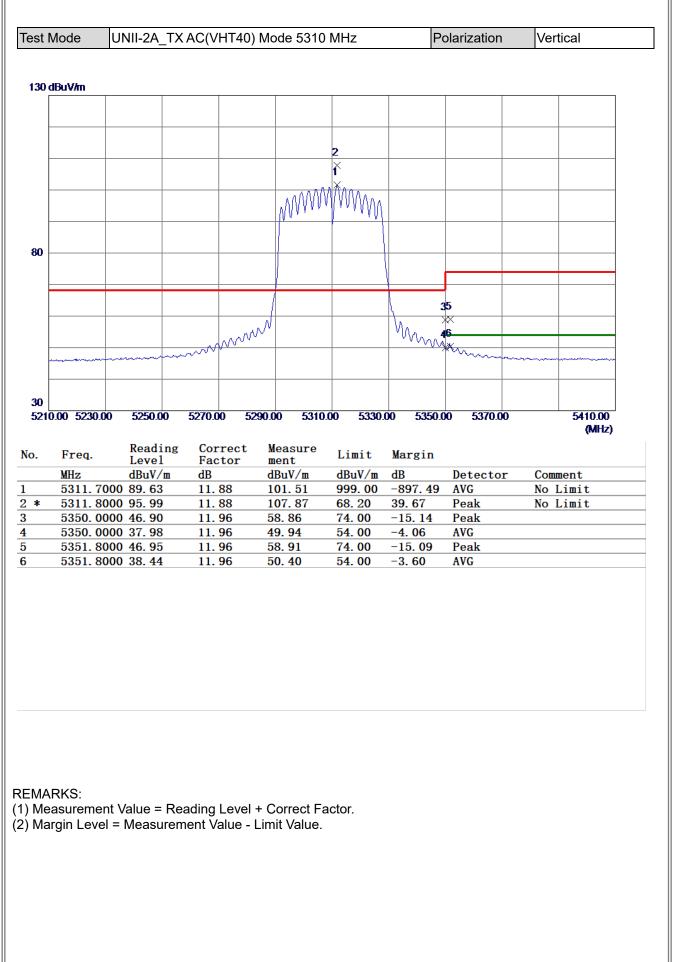
REMARKS:

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

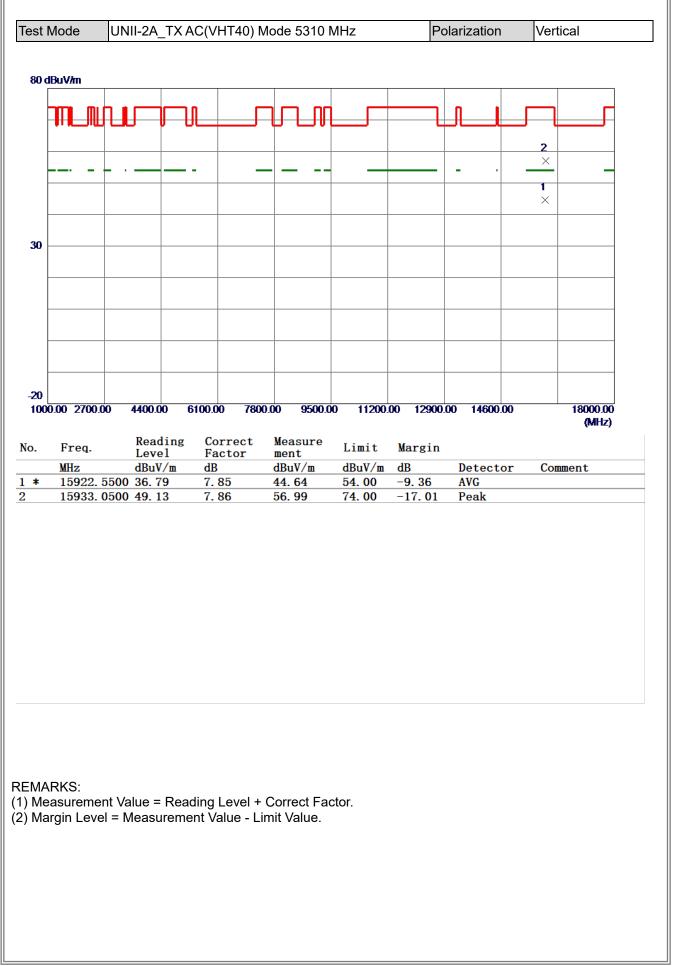




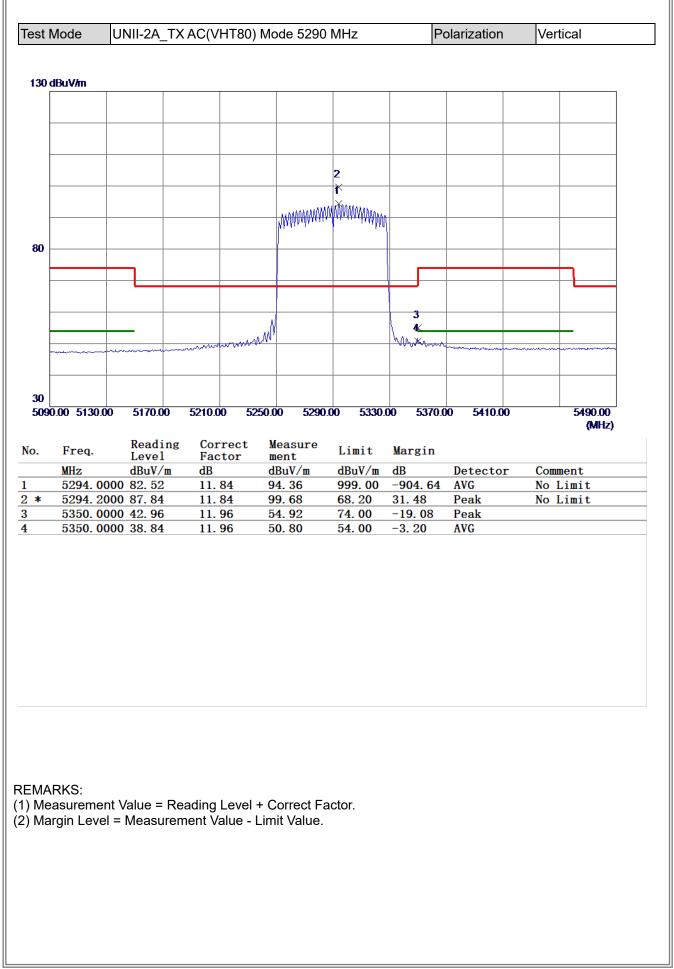




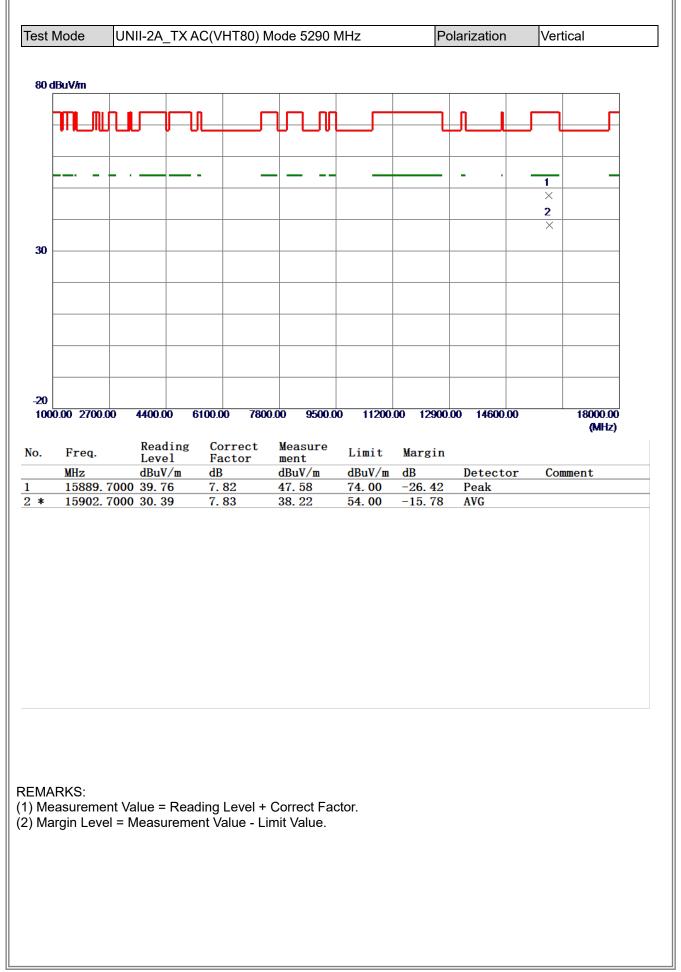




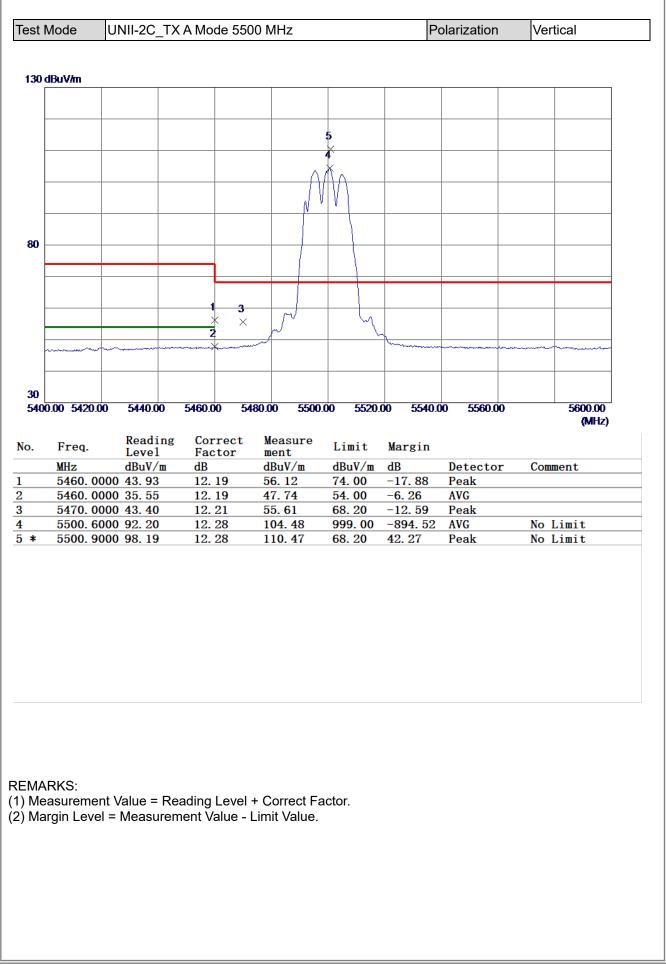




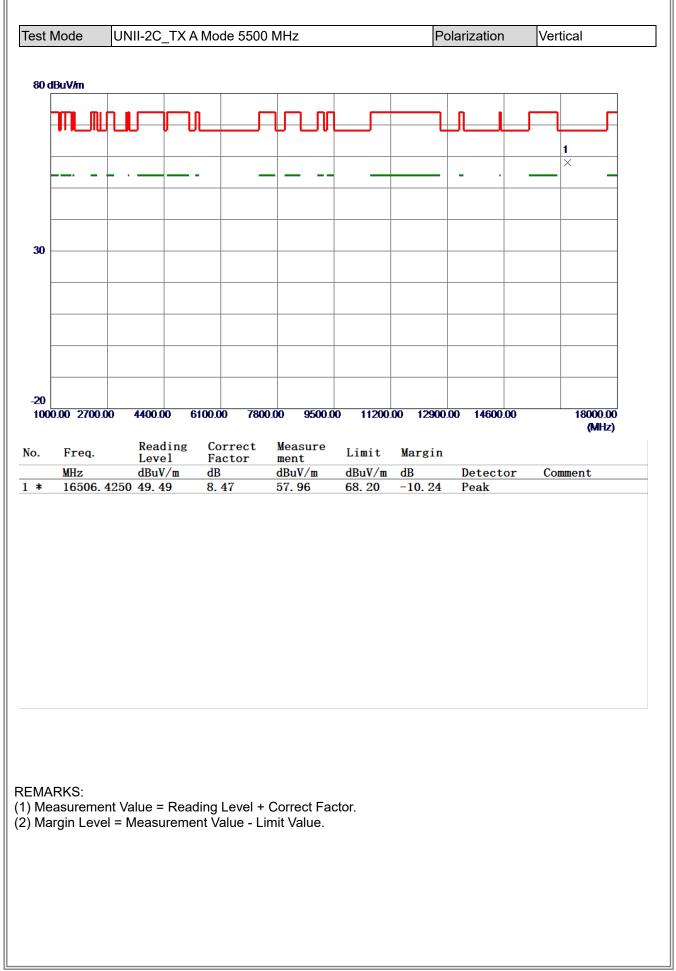




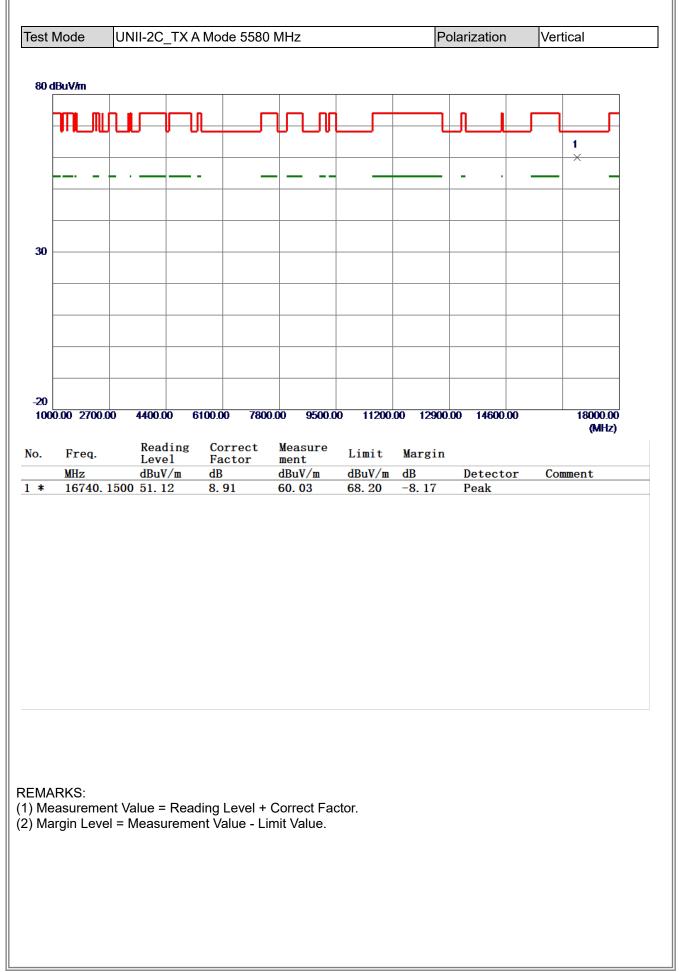




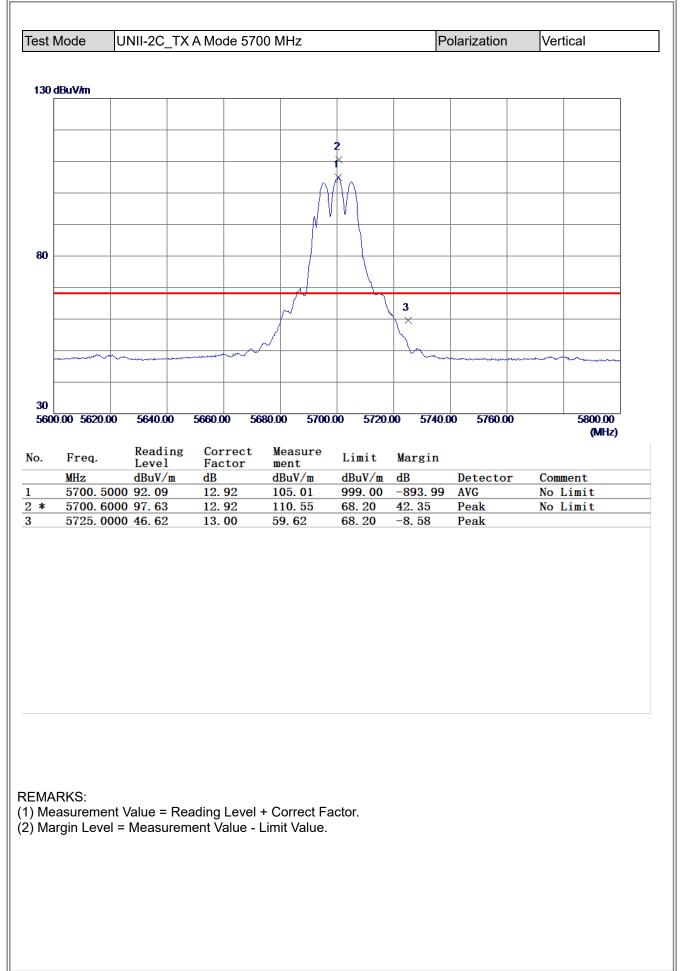




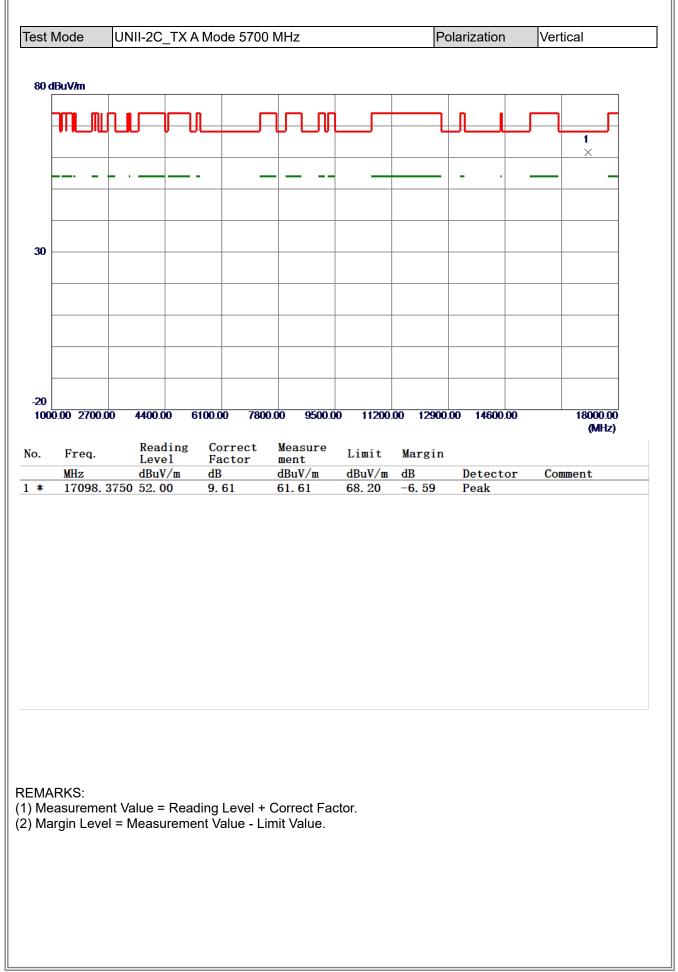




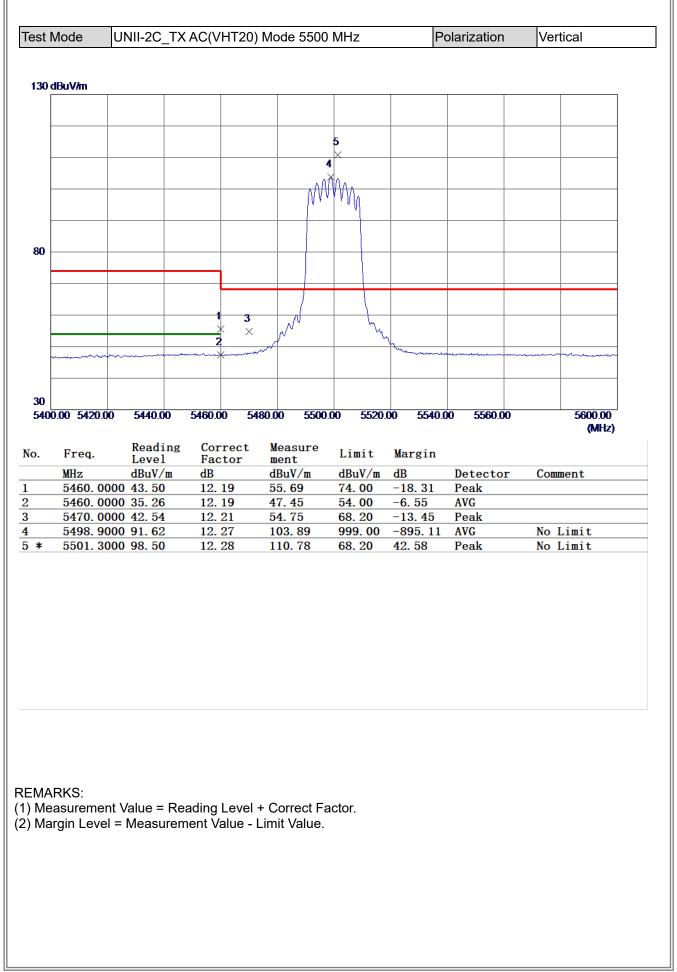
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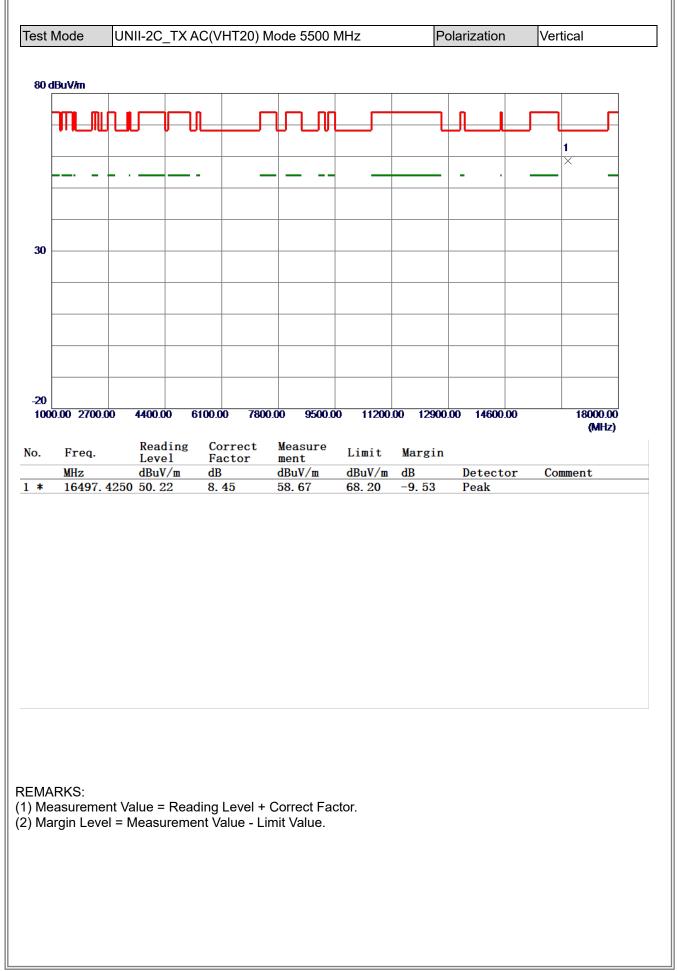




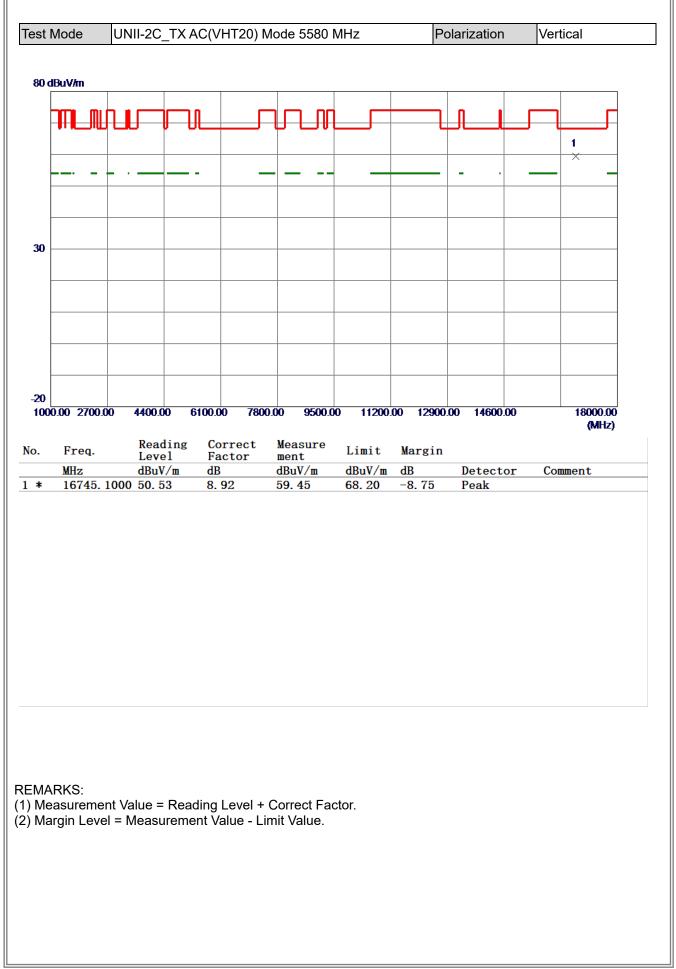




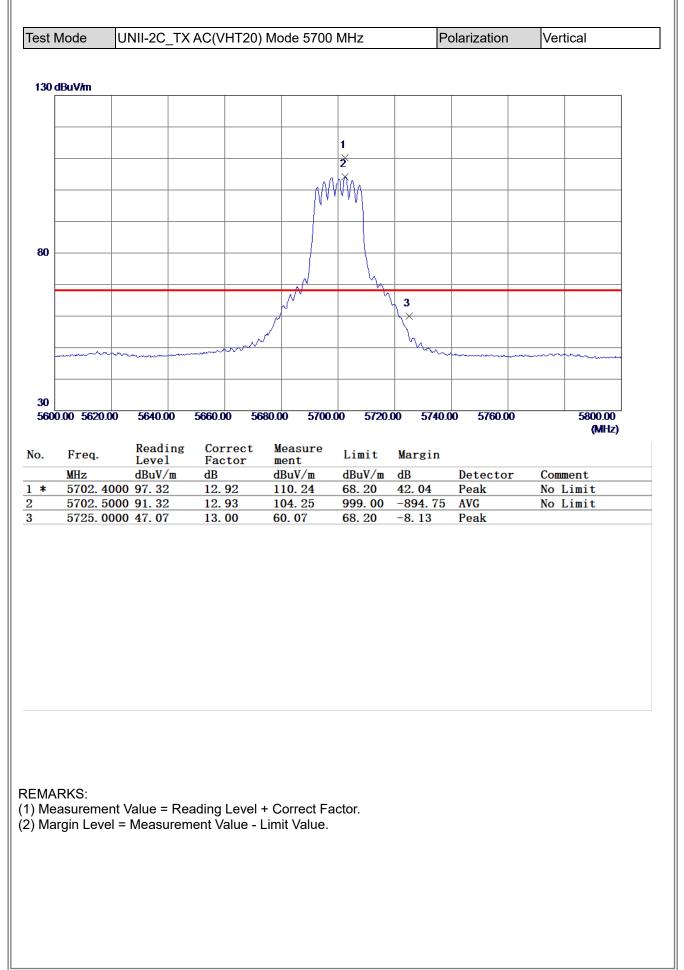




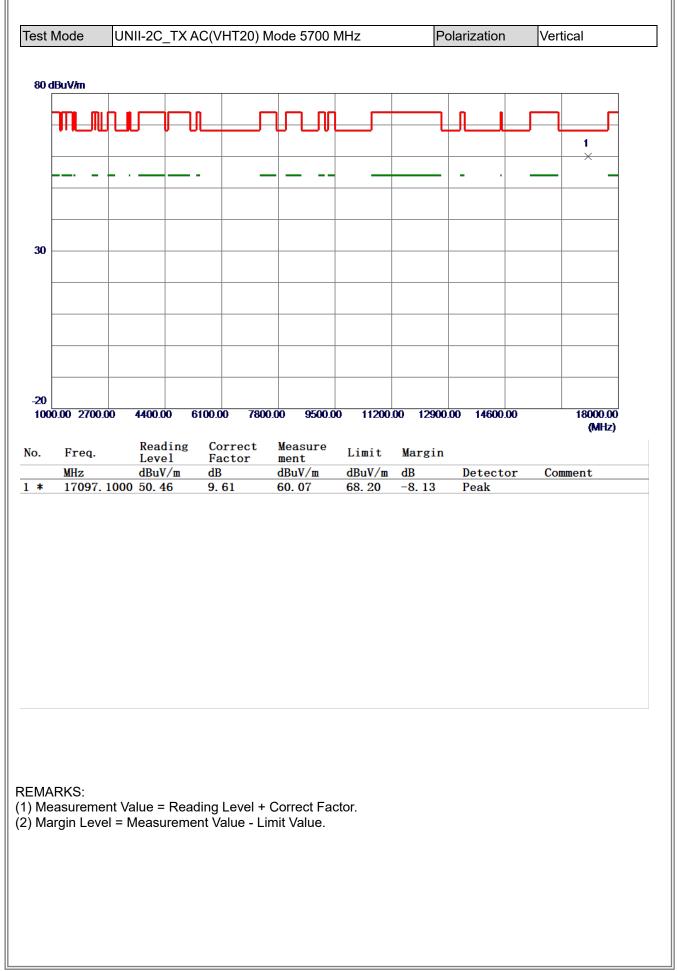




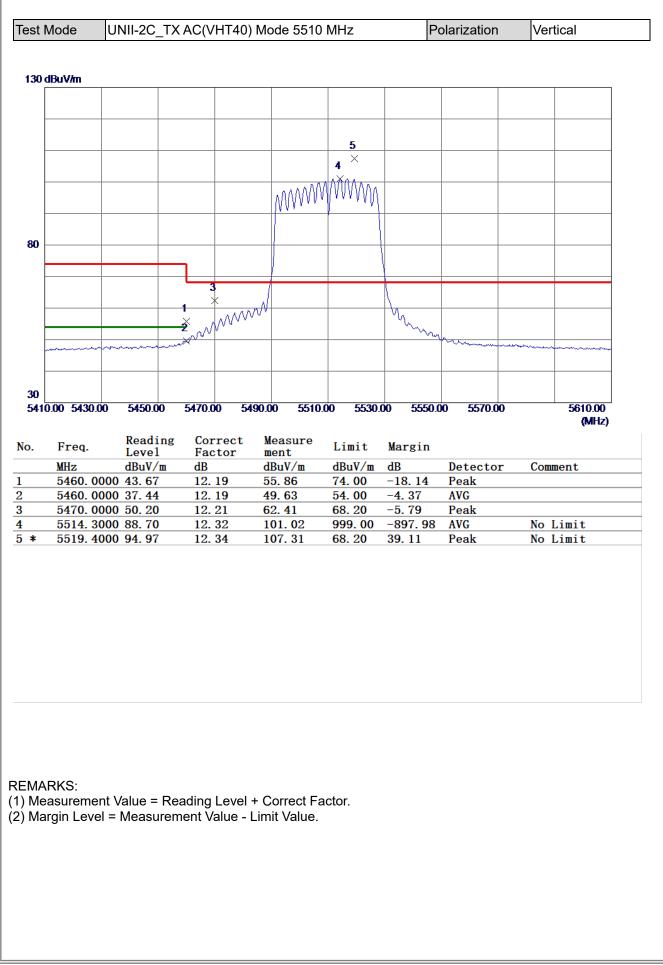




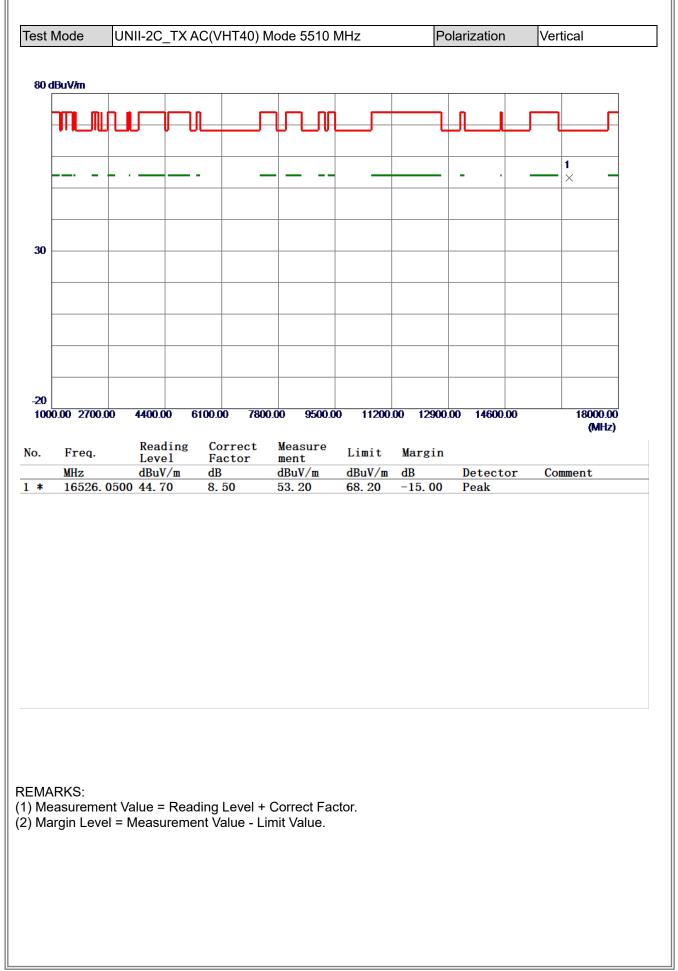




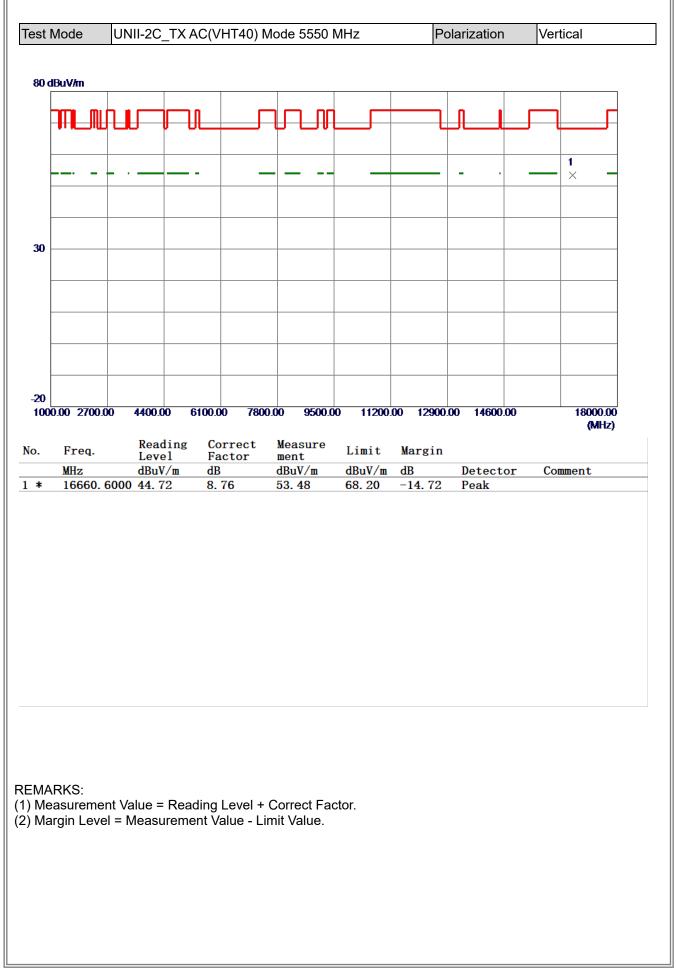




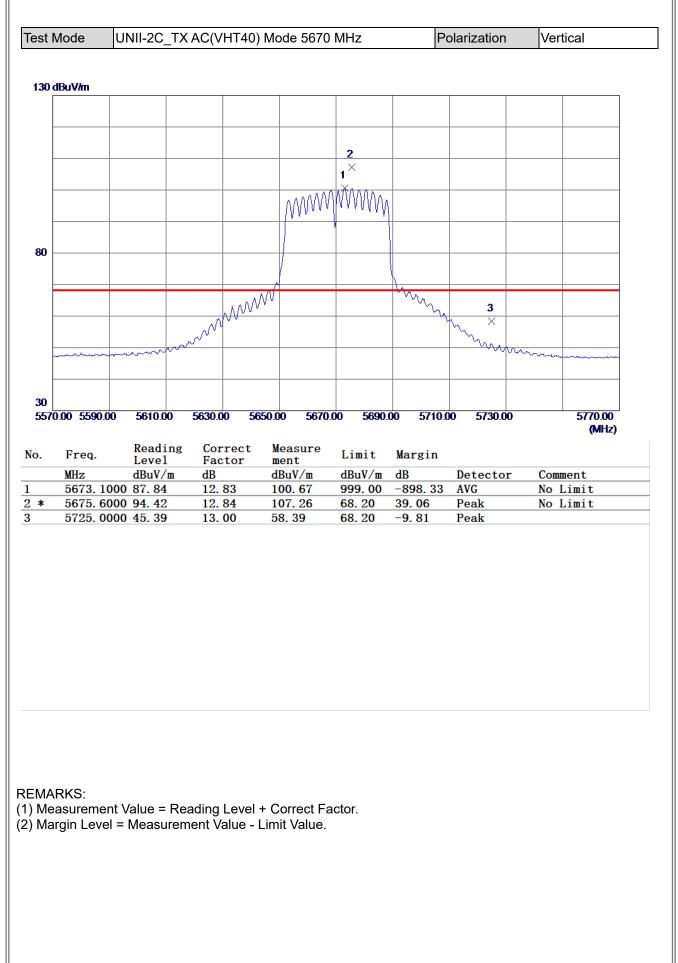




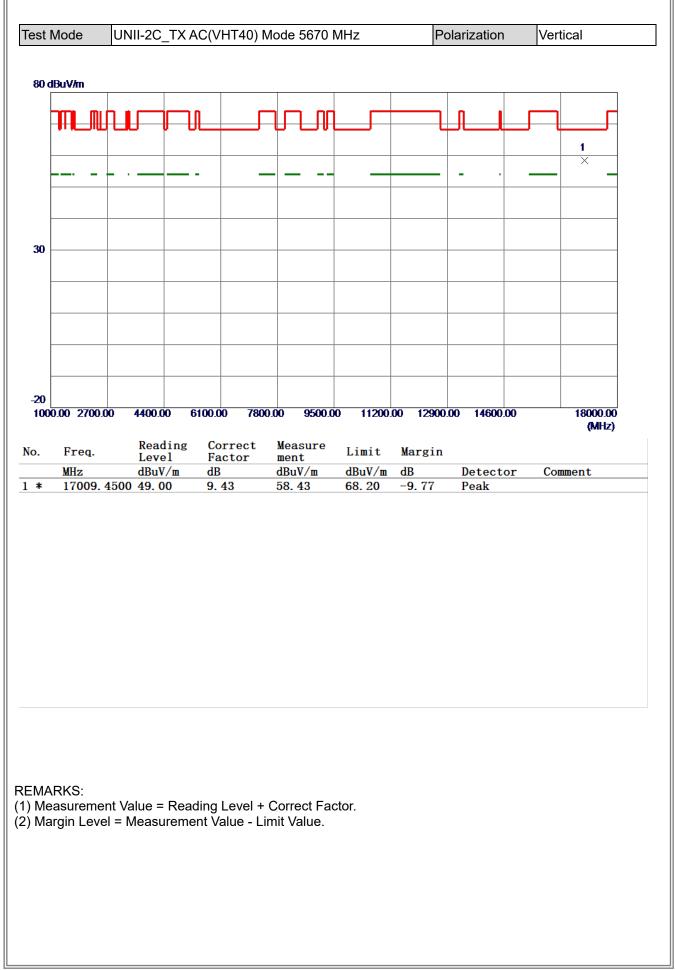




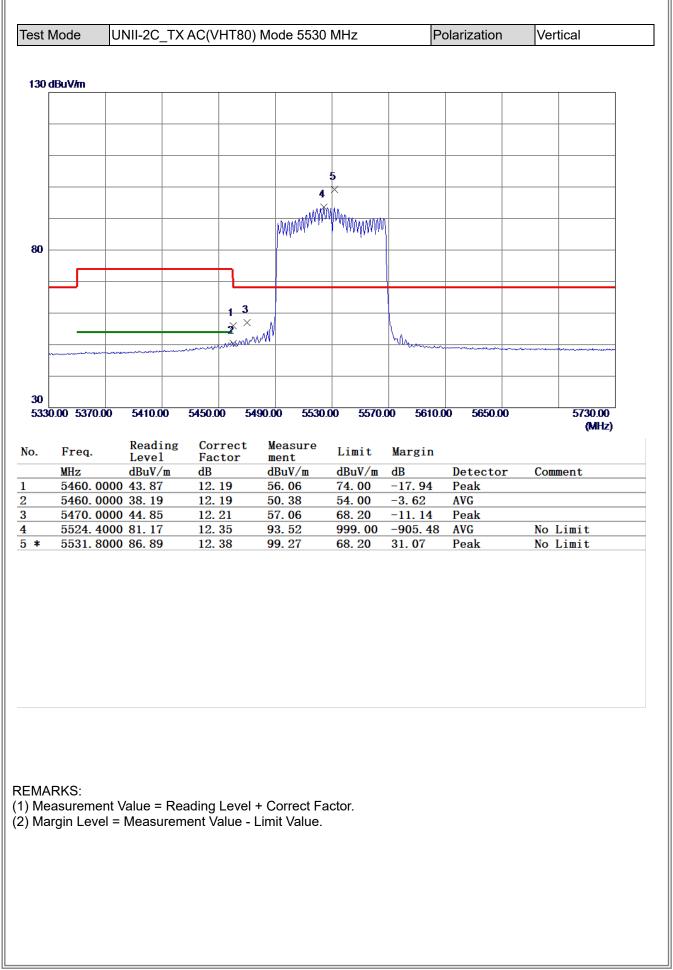




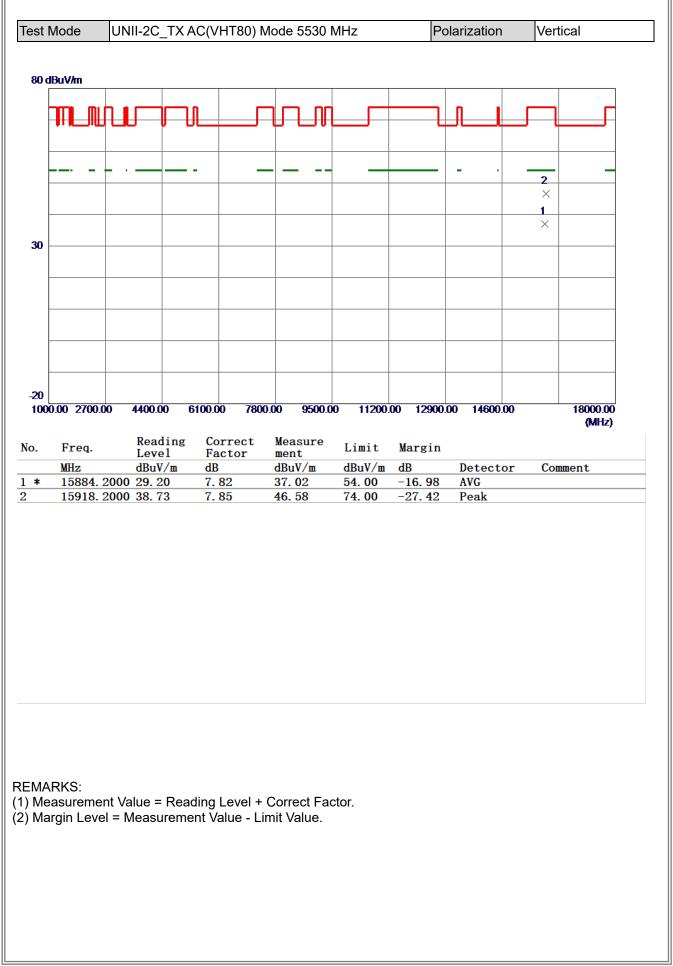




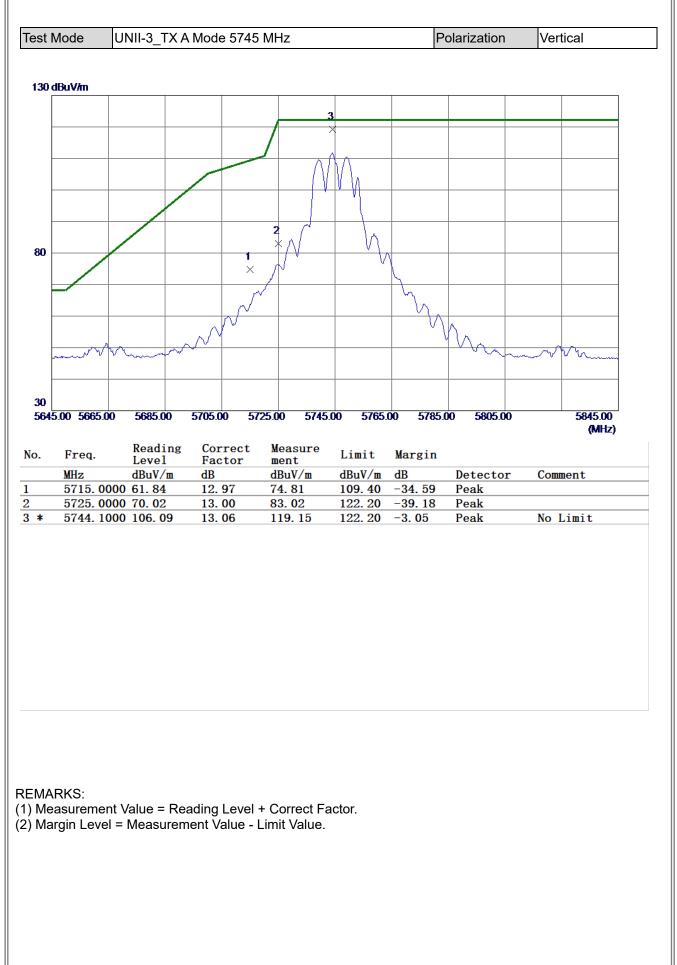




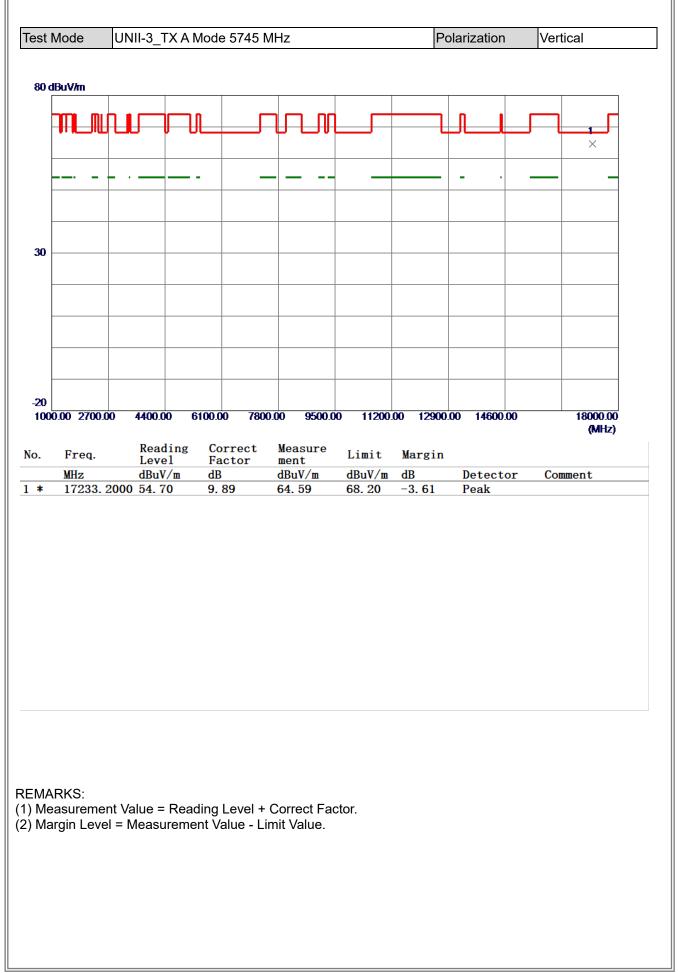




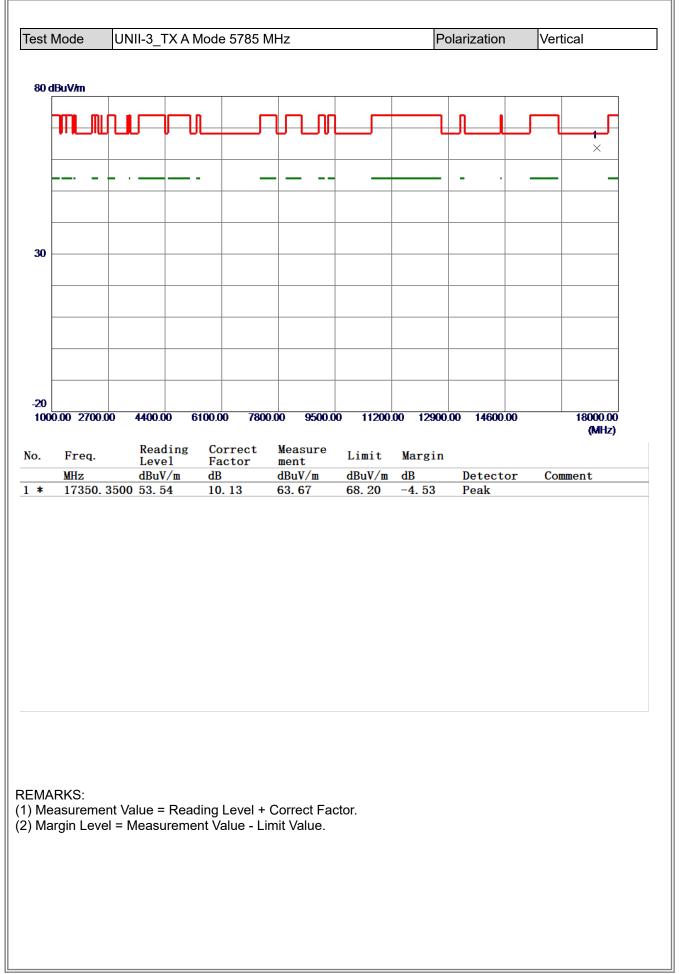




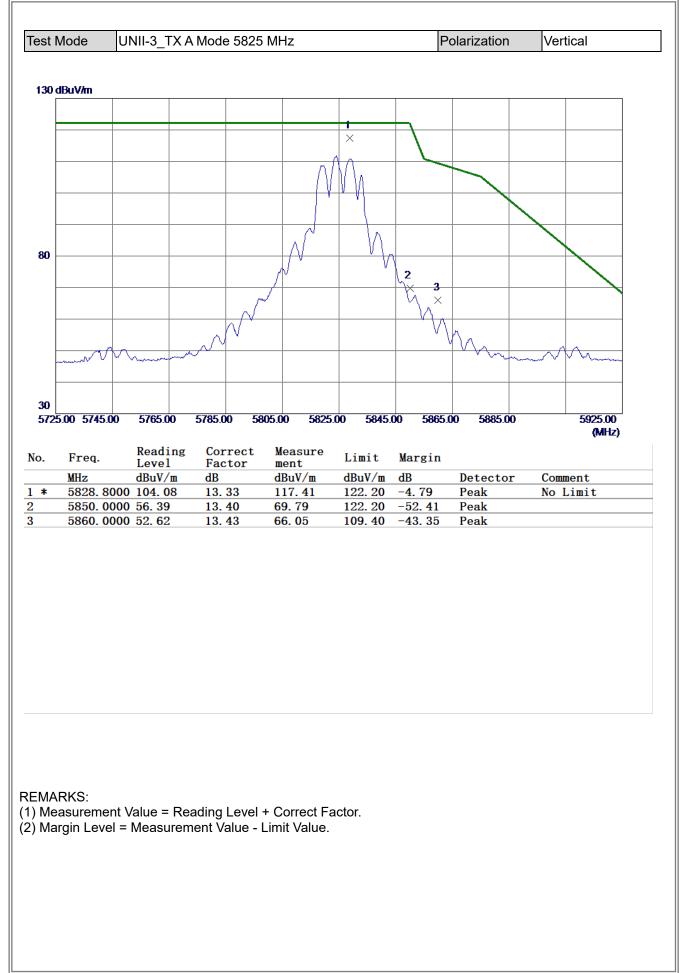




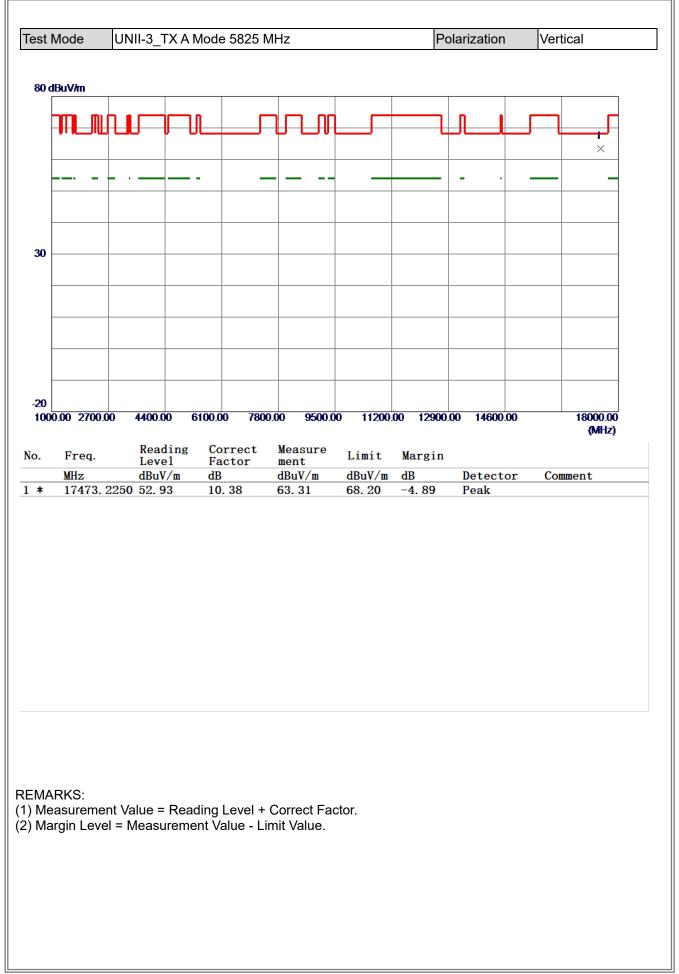




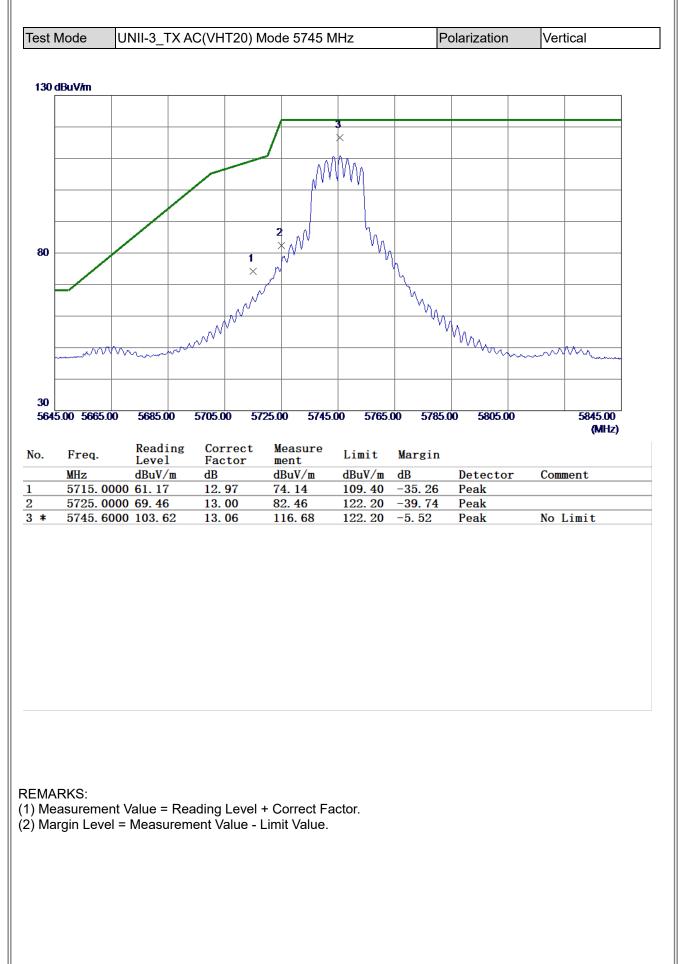
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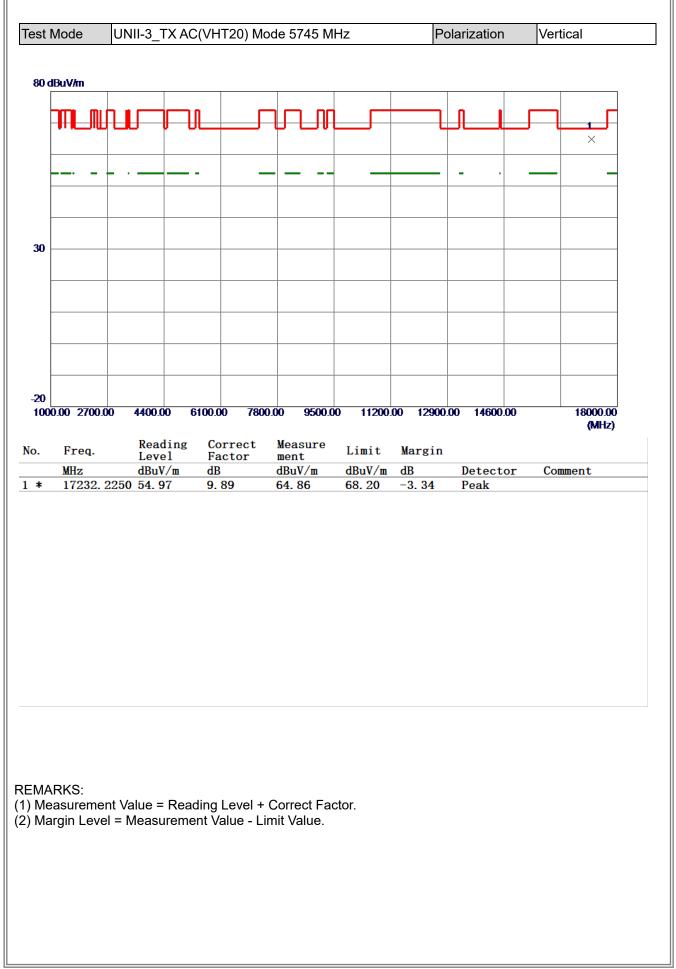




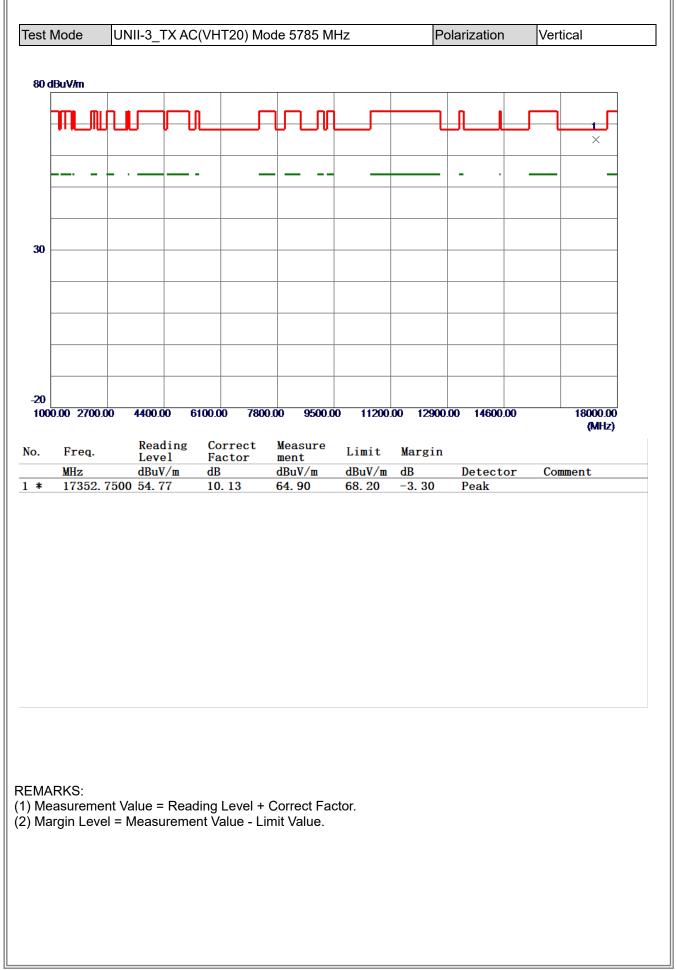




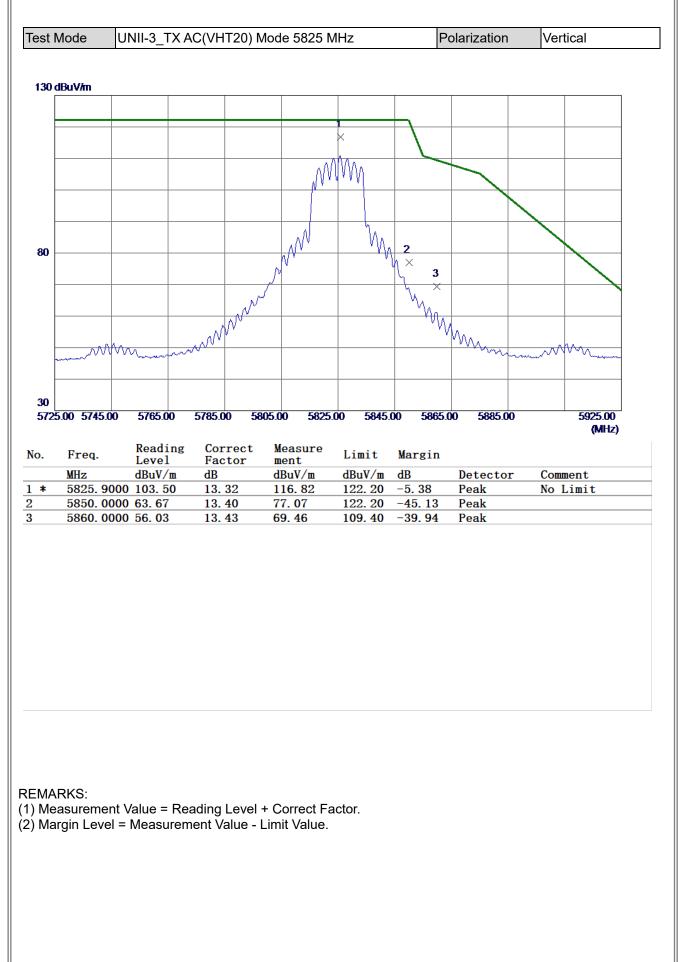




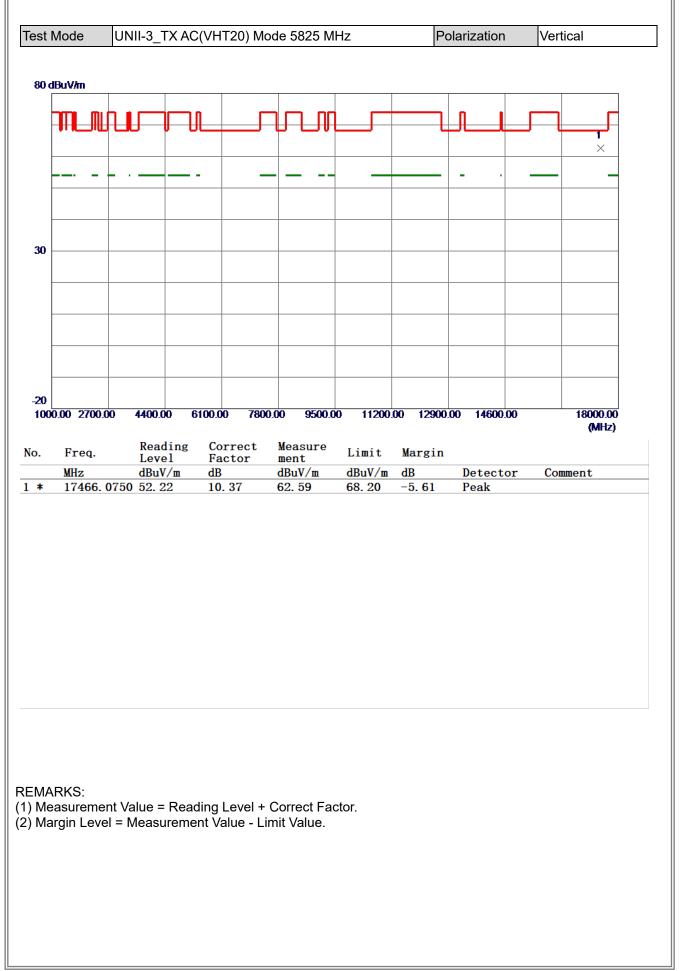




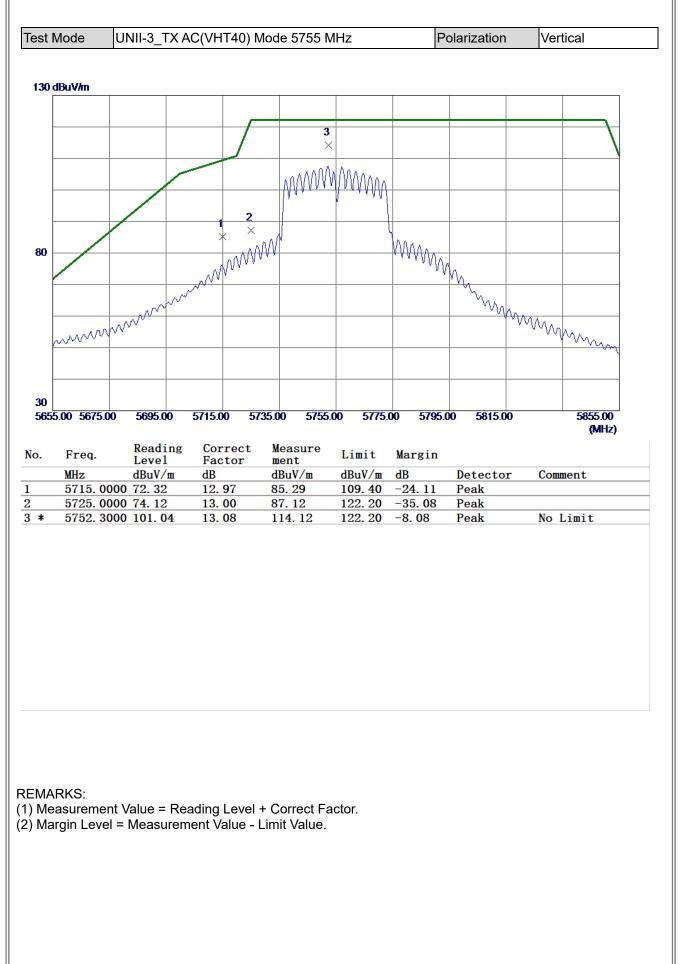




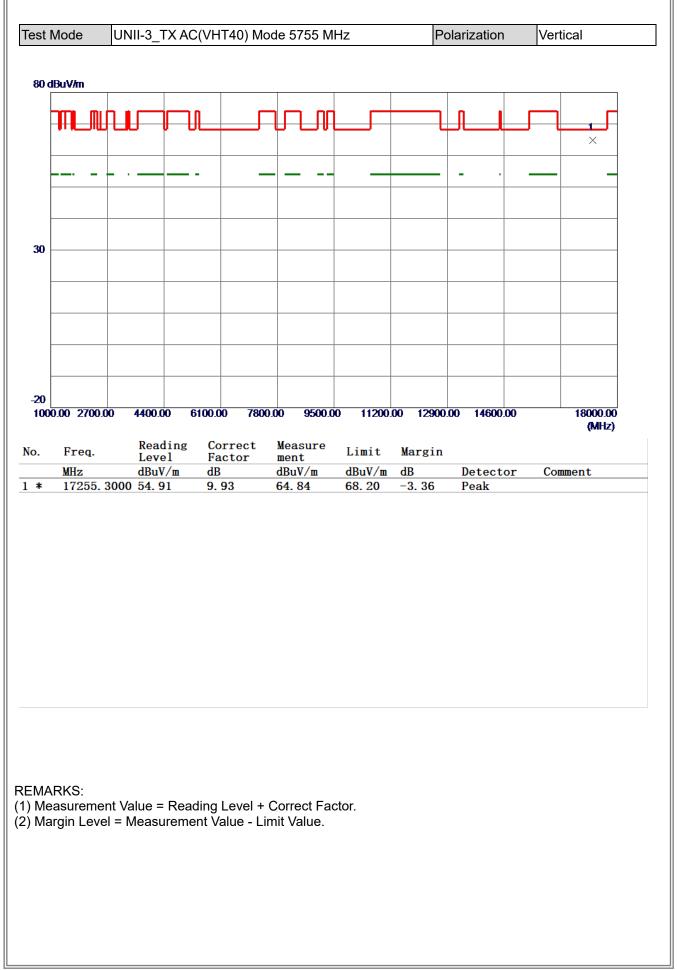




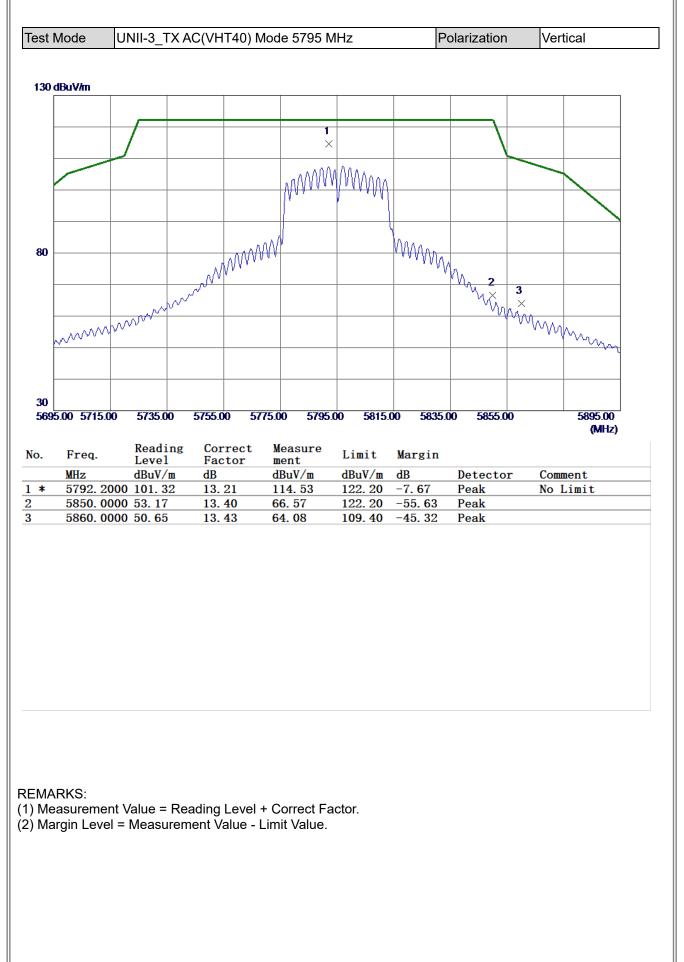




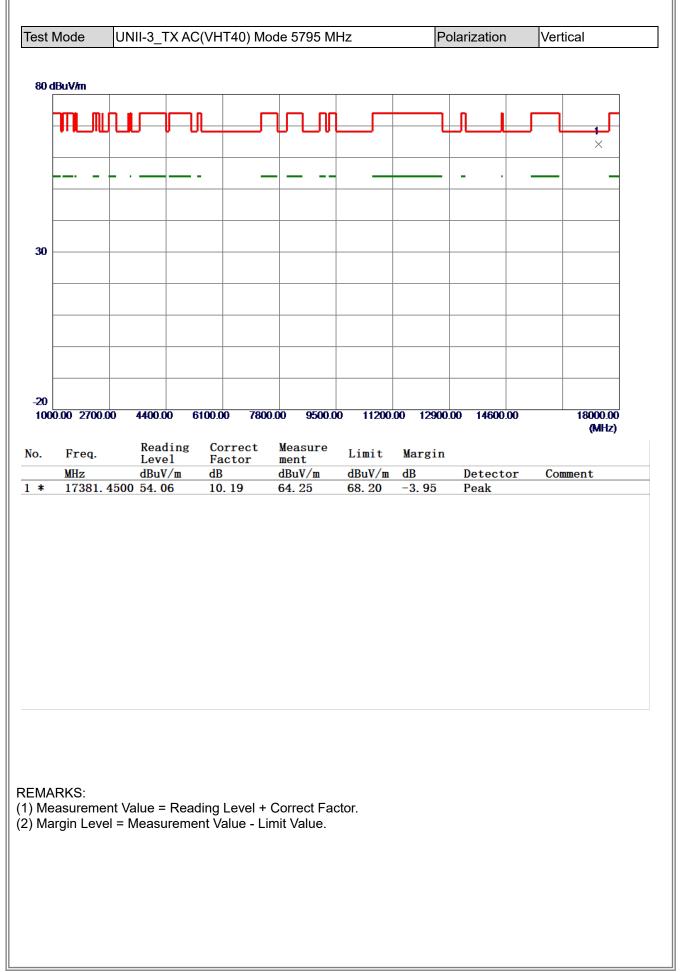




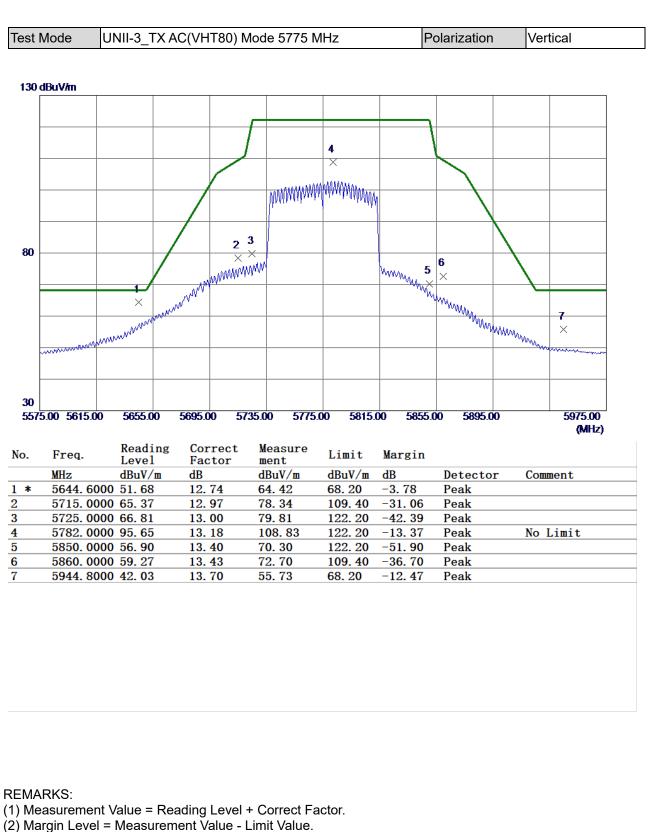




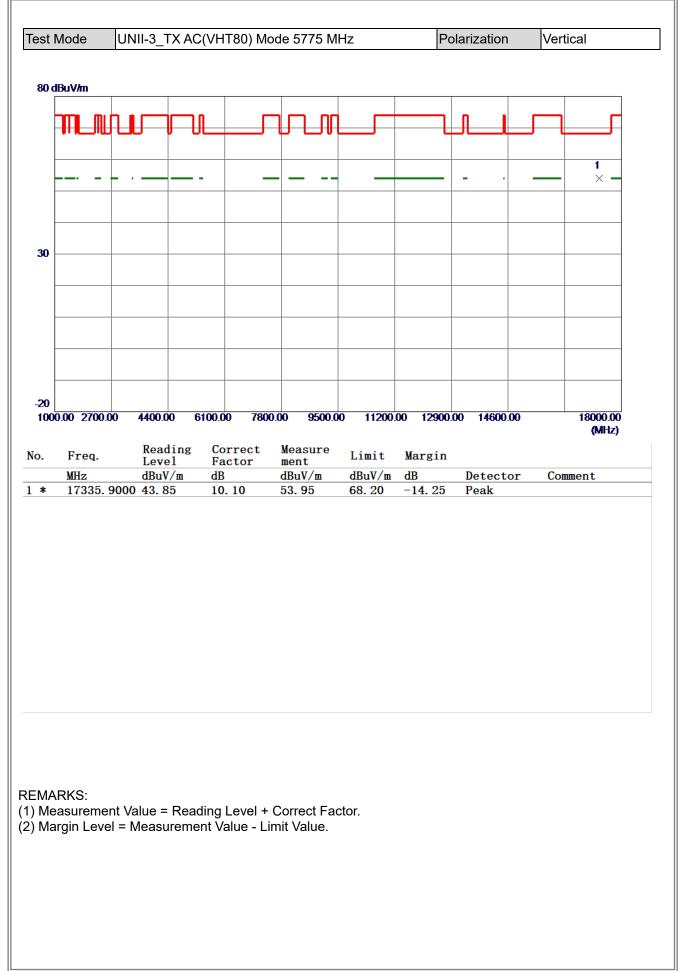




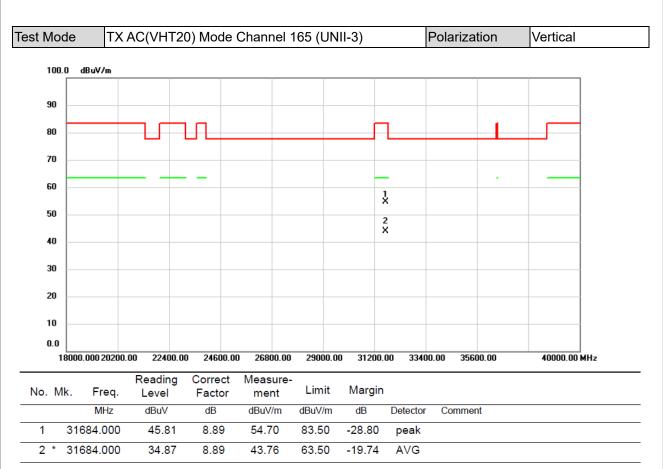








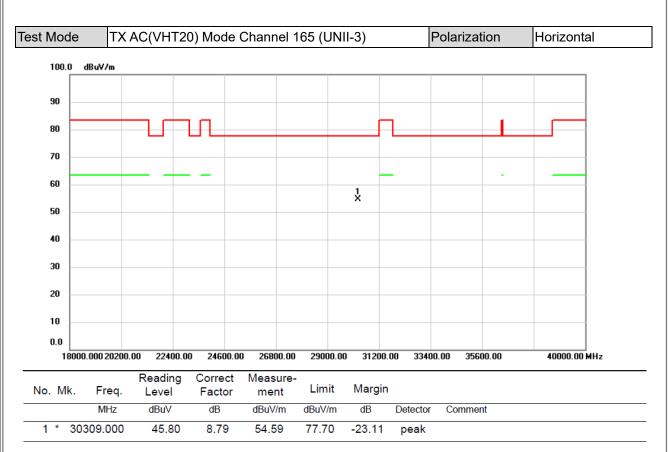




REMARKS:

- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.





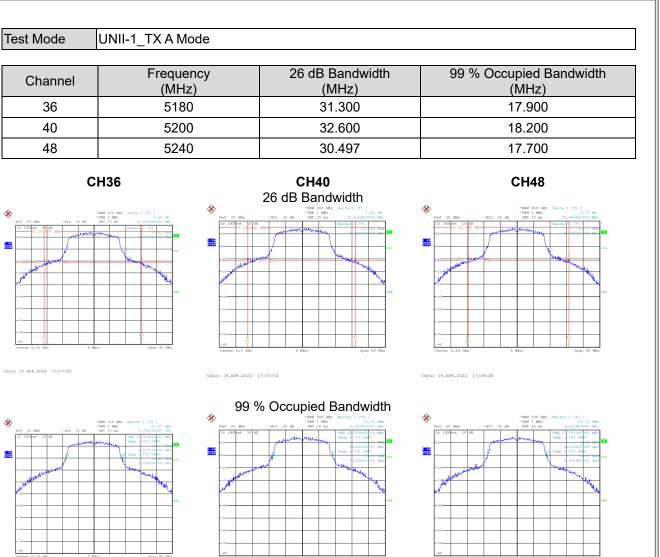
REMARKS:

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



APPENDIX E - BANDWIDTH





Date: 19.APR.2024 17:06:47

Date: 19.APR.2024 17:07:33

Date: 19.APR.2024 17:08:07