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# **FCC Test Report**

Applicant : Revopoint 3D Technologies Inc.

Office 902, 9/F, Tinno Building, Tongfa South

Address : Rd, Xili Street, Nanshan District, Shenzhen,

518000, China.

Product Name : 3D Scanner

Report Date : Dec. 07, 2023

Shenzhen Anbotek Con Anbotek



ce Laboratory Limited









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# TEST REPORT

Applicant : Revopoint 3D Technologies Inc.

Manufacturer : Revopoint 3D Technologies Inc.

Product Name : 3D Scanner

Test Model No. : MINI 2

Date of Receipt

Reference Model No. : MINI PRO

Trade Mark : REVOPOINT

Rating(s) : Input: 5V--1A

Test Standard(s) : FCC Part15 Subpart C, Section 15.247

ANSI C63.10: 2020

Test Method(s) : KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

Oct 19 2023

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.

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Date of Test:	Oct. 19, 2023 to Nov. 02, 2023
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Prepared By:	Aug Okek Vilosiek Wypo, Mr. Wokek
	(Stella Zhu)
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Approved & Authorized Signer:	pored Anborek Any Anborek
	(Edward Pan)



# **Revision History**

	Report Version	Description	Issued Date
	Anbore R00 potek Ant	Original Issue.	Dec. 07, 2023
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#### 1. General Information

#### 1.1. Client Information

Applicant	: Re	vopoint 3D Technologies Inc.
Address		ice 902, 9/F, Tinno Building, Tongfa South Rd, Xili Street, Nanshan trict, Shenzhen, 518000, China.
Manufacturer	: Re	vopoint 3D Technologies Inc.
Address		ice 902, 9/F, Tinno Building, Tongfa South Rd, Xili Street, Nanshan trict, Shenzhen, 518000, China.
Factory	: Zhe	ejiang Revopoint Optoelectronics Technology Co., Ltd
Address		Building 7, No.1, Weizhong Road, Weitang Street, Jiashan County, xing city, Zhejiang Province

## 1.2. Description of Device (EUT)

740		
Product Name	1:	3D Scanner
Test Model No.	:	MINI 2
Reference Model No.	:	MINI PRO (Note: All samples are the same except the model number, so we prepare "MINI 2" for test only.)
Trade Mark	:	REVOPOINT
Test Power Supply	:	DC 5V from Adapter input AC 120V/60Hz, DC 5V
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A Andorek Anborek Anborek
RF Specification		
Operation Frequency	:	802.11a/n(HT20)/ac(VHT20)/ax(HE20): 5180MHz to 5240MHz; 802.11n(HT40)/ac(VHT40)/ax(HE40): 5190MHz to 5230MHz; 802.11ac(VHT80)/ax(HE80): 5210MHz
Number of Channel	:	802.11a/n(HT20)/ac(VHT20)/ax(HE20): 4; 802.11n(HT40)/ac(VHT40)/ax(HE40): 2; 802.11ac(VHT80)/ax(HE80): 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: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Antenna Type	:	FPC Antenna
Antenna Gain(Peak)	:	ANT1/ ANT2: 2.39dBi
Directional antenna gain	:	5.40dBi
Device Type	:	Client device
_ 16" . AV	_	V 100° Direction of the contract of the contra

#### 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) Only 802.11n(HT20)/ac(VHT20)/ax(HE20): 5180MHz to 5240MHz; 802.11n(HT40)/ac(VHT40)/ax(HE40) 802.11ac(VHT80)/ax(HE80) support MIMO.









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#### 1.3. Auxiliary Equipment Used During Test

Title Manufacturer		Model No.	Serial No.	
Xiaomi 33W adapter	Xiaomi	MDY-11-EX	SA62212LA04358J	





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#### 1.4. Operation channel list

Mode	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz bandwidth	36 <sub>Anb</sub> o	5180	40	5200	10°44	5220	48 orek	5240
40MHz bandwidth	38	5190	46	5230	Anbore Anbore	Anborek	/ Anbot	ootek / And
80MHz bandwidth	42	5210	Auporen	k Anbore	E / Anbe	Jek Tupo	potek/	Anbotek

#### 1.5. Description of Test Modes

Pretest Modes	Descriptions
otek Anbotek Anbotek Anbotek Anbotek	Keep the EUT 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.
Anborek TM2 orek Anb	Keep the EUT 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.
tek Anbotek TM3 Anbotek Anbotek	Keep the EUT 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.
Anbotek Anbote	Keep the EUT 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.

#### 1.6. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3,4dB Anbotek Anbotek
Conducted Output Power	0.76dB
Power Spectral Density	0.76dB
Occupied Bandwidth	925Hz, nortek Anborek Anborek
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
Duty Cycle	Mode1,2,3,4	b <sub>Vus</sub>
Maximum conducted output power	Mode1,2,3,4	P
Power spectral density	Mode1,2,3,4	upore B
Emission bandwidth and occupied bandwidth	Mode1,2,3,4	Anboth P
Band edge emissions (Radiated)	Mode1,2,3,4	P
Undesirable emission limits (below 1GHz)	Mode1,2,3,4	Panba
Undesirable emission limits (above 1GHz)	Mode1,2,3,4	P

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.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

#### 1.9. Disclaimer

- 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

Cond	ucted Emission at A	C power line	Aupo	k spotel	Anbore	An
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
. 1	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	2023-10-12	2024-10-11
2 2 50 tek	Three Phase V- type Artificial Power Network	CYBERTEK	EM5040DT	E215040D T001	2023-07-05	2024-07-04
3	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	2023-10-12	2024-10-11
4	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	rek /Anbotek	Anborotek

Duty Cycle
Maximum conducted output power
Power spectral density
Emission bandwidth and occupied bandwidth

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1 Anb	DC Power Supply	IVYTECH	IV3605	1804D360 510	2023-10-20	2024-10-19
2	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101792	2023-05-26	2024-05-25
3	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY505318 23	2023-02-23	2024-02-22
4	Oscilloscope	Tektronix	MDO3012	C020298	2023-10-12	2024-10-11
Anbore	MXG RF Vector Signal Generator	Agilent	N5182A	MY474206 47	2023-02-23	2024-10-22

	edge emissions (Ra sirable emission limi		or Au	otek Anh	orek Anb	otek Anbote
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2023-10-12	2024-10-11
<sup>100000</sup>	EMI Preamplifier	SKET Electronic	LNPA- 0118G-45	SKET-PA- 002	2023-10-12	2024-10-11
3	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	2022-10-16	2025-10-15
4	EMI Test Software EZ-EMC	SHURPLE	N/A And	N/A	inbotek / Anbo	Joseph Anna
×5	Horn Antenna	A-INFO	LB-180400- KF	J21106062 8	2023-10-12	2024-10-11
up6tek	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101792	2023-05-26	2024-05-25
P <b>7</b> (bo)	Amplifier	Talent Microwave	TLLA18G40 G-50-30	23022802	2023-05-25	2024-05-24





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Unde	sirable emission limi	ts (below 1GHz)	Anbore	Vun	Anborek	Aupo, Wek
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2023-10-12	2024-10-11
2	Pre-amplifier	SONOMA	310N N	186860	2023-10-12	2024-10-11
8/9/	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-23	2025-10-22
104°K	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	Anbote.	And
P.500%	Loop Antenna	Schwarzbeck	FMZB1519 B	00053	2023-10-12	2024-10-11





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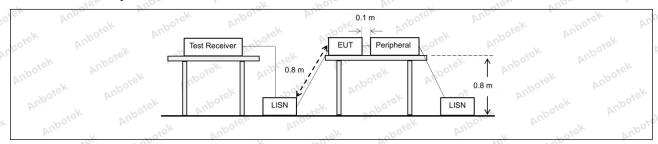
# 2. Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)	ok hotek Anbo	de. Viek
Aug Spotek	Frequency of emission (MHz)	Conducted limit (dBµV)	boles Aug
Aupor Air	anborer Anb	Quasi-peak	Average
K- Lotek Anbo	0.15-0.5	66 to 56*	56 to 46*
Test Limit:	0.5-5 And	56	46 botes
otek Anbors An	5-30 And	60 hotek Anbot	50
otek onbotek	*Decreases with the logarithm of the	ne frequency.	Aupo
Test Method:	Refer to ANSI C63.10-2013 section line conducted emissions from unli		od for ac power-

# 2.1. EUT Operation

Operating Envi	ronment: Anbote Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek
nbotek Anbotek Anbotek Anbotek Anbotek	1: 802.11a mode: Keep the EUT 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 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.
Test mode:	3: 802.11ac mode: Keep the EUT 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 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.

#### 2.2. Test Setup



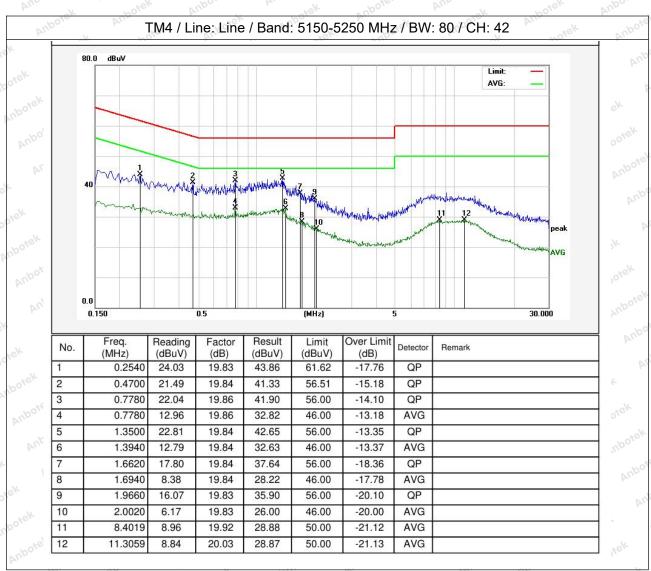




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#### 2.3. Test Data

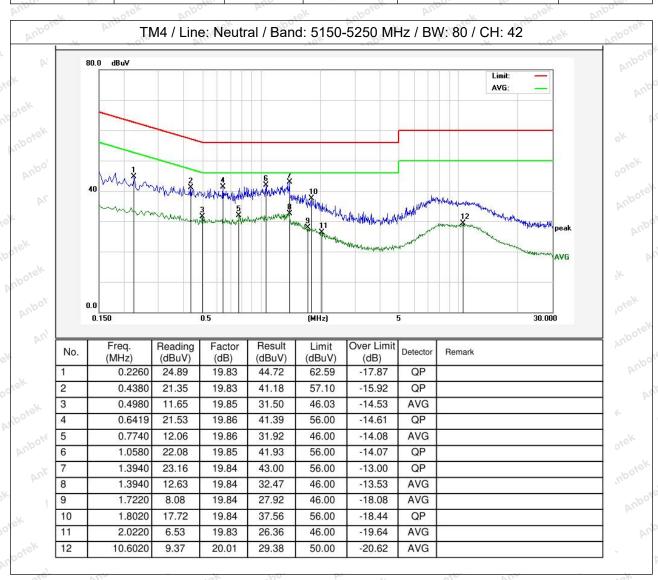
Temperature: 24.7 °C Humidity: 53.2 % Atmospheric Pressure: 101 kPa





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Temperature: 24.7 °C Humidity: 53.2 % Atmospheric Pressure: 101 kPa



Note: Only record the worst data (802.11ax(HE80) MIMO) in the report.







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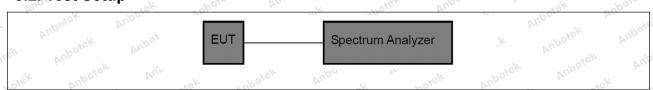
# 3. Duty Cycle

Test Requirement:	All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.
Test Limit:	No limits, only for report use.
Test Method:	ANSI C63.10-2013 section 12.2 (b)
Aupotek Aupotek	<ul> <li>i) Set the center frequency of the instrument to the center frequency of the transmission.</li> <li>ii) Set RBW &gt;= EBW if possible; otherwise, set RBW to the largest available value.</li> </ul>
Procedure:	iii) Set VBW >= RBW. iv) Set detector = peak.
Hek Anbotek Anb	v) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.

# 3.1. EUT Operation

Operating Envi	ronment: Andorek Andorek Andorek Andorek Andorek
Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek	1: 802.11a mode: Keep the EUT 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 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.
Test mode:	3: 802.11ac mode: Keep the EUT 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.
ek Anbotek ootek Anbotek	4: 802.11ax mode: Keep the EUT 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.

#### 3.2. Test Setup



#### 3.3. Test Data

Temperature:	26.3 °C	Humidity:	50 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.







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# 4. Maximum conducted output power

Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
Test Limit:	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.
Test Method:	ANSI C63.10-2013, section 12.3
Anbotek Anbotek Anbotek Anbotek	Method SA-2 a) Measure the duty cycle D of the transmitter output signal. b) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal. c) Set RBW = 1 MHz.
	d) Set VBW >= 3 MHz. e) 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.)
	f) Sweep time = auto. g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
Procedure:	h) Do not use sweep triggering. Allow the sweep to "free run." i) Trace average at least 100 traces in power averaging (rms) mode;
	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.
Anbotek Anbotek	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
Anbotek Anbotek	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
	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.

# 4.1. EUT Operation

Operating Envi	ronment: And tek nootek Andort Andortek Andortek Andortek
anbotek Anbotek	1: 802.11a mode: Keep the EUT 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 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
Test mode:	report. 3: 802.11ac mode: Keep the EUT 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.
k Anbotek	4: 802.11ax mode: Keep the EUT in continuously transmitting mode with 802.11ax modulation type. All bandwidth and data rates has been tested and found the data



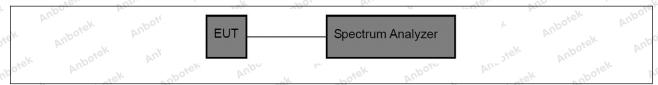




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rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.

#### 4.2. Test Setup



#### 4.3. Test Data

Temperature: 26.3 °C Humidity: 50 % Atmospheric Pressu	ure: 101 kPa
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Please Refer to Appendix for Details.





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# 5. Power spectral density

Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
Test Limit:	For client devices in the 5.15-5.25 GHz band, 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, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
Test Method:	ANSI C63.10-2013, section 12.5
Anbotek	a) Create an average power spectrum for the EUT operating mode being tested by following the instructions in 12.3.2 for measuring maximum conducted output power using a spectrum analyzer or EMI receiver; that is, select the appropriate test method (SA-1, SA-2, SA-3, or their respective alternatives) and apply it up to, but not including, the step labeled, "Compute power" (This procedure is required even if the maximum conducted output power measurement was performed using the power meter method PM.) b) Use the peak search function on the instrument to find the peak of the
	spectrum. c) Make the following adjustments to the peak value of the spectrum, if applicable: 1) If method SA-2 or SA-2A was used, then add [10 log (1 / D)], where D is the duty
Procedure:	cycle, to the peak of the spectrum. 2) If method SA-3A was used and the linear mode was used in step h) of 12.3.2.7, add
	1 dB to the final result to compensate for the difference between linear averaging and power averaging.
	d) The result is the PPSD. e) The procedure in item a) through item c) requires the use of 1 MHz resolution bandwidth to satisfy the 1 MHz measurement bandwidth specified by some regulatory
	authorities. This requirement also permits use of resolution bandwidths less than 1 MHz "provided that the measured power is integrated to show the total power over the measurement
	bandwidth" (i.e., 1 MHz). If measurements are performed using a reduced resolution bandwidth and integrated over 1 MHz bandwidth, the following adjustments to the procedures apply:
Anbotek Anbotek Anbotek	1) Set RBW >= 1 / T, where T is defined in 12.2 a). 2) Set VBW >= [3 × RBW]. 3) Care shall be taken such that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.







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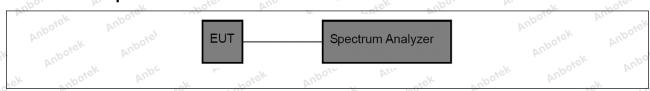
#### 5.1. EUT Operation

#### Operating Environment: 1: 802.11a mode: Keep the EUT 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 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. Test mode:

3: 802.11ac mode: Keep the EUT 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 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:	26.3 °C	Humidity:	50 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.





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## 6. Emission bandwidth and occupied bandwidth

Test Requirement:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Limit:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Method:	ANSI C63.10-2013, section 6.9.3 & 12.4
Anbo	Emission bandwidth:
	a) Set RBW = approximately 1% of the emission bandwidth.
	b) Set the VBW > RBW.
potek Anbo	c) Detector = peak.
	d) Trace mode = max hold.
	e) Measure the maximum width of the emission that is 26 dB down from the
	peak of the emission.
	Compare this with the RBW setting of the instrument. Readjust RBW and
	repeat measurement
	as needed until the RBW/EBW ratio is approximately 1%.
	Lotek Anbore An tek abotek Anot kingtek
	Occupied bandwidth:
	a) The instrument center frequency is set to the nominal EUT channel cente
	frequency. The
	frequency span for the spectrum analyzer shall be between 1.5 times and
	5.0 times the OBW.
	b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to
	5% of the OBW,
	and VBW shall be approximately three times the RBW, unless otherwise
	specified by the
	applicable requirement.
	c) Set the reference level of the instrument as required, keeping the signal
Procedure:	from exceeding the
Procedure.	maximum input mixer level for linear operation. In general, the peak of the
Anbo	spectral envelope
aboten Anb	shall be more than [10 log (OBW/RBW)] below the reference level. Specific
	guidance is given
	in 4.1.5.2. notes And
	d) Step a) through step c) might require iteration to adjust within the
	specified range.
	e) Video averaging is not permitted. Where practical, a sample detection an
up, k kolek	single sweep mode
	shall be used. Otherwise, peak detection and max hold mode (until the trace
Vi. Jek "Upoter	stabilizes) shall be
	used. nbore And k horek Anbor Ar tek
	f) Use the 99% power bandwidth function of the instrument (if available) and
	report the measured
	bandwidth.
	g) If the instrument does not have a 99% power bandwidth function, then the
	trace data points are
*ek abotek	recovered and directly summed in linear power terms. The recovered
	amplitude data points,
	beginning at the lowest frequency, are placed in a running sum until 0.5% of
	the total is reached;
	that frequency is recorded as the lower frequency. The process is repeated
	until 99.5% of the







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total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is

the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument

display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may

be reported in addition to the plot(s).

#### 6.1. EUT Operation

#### Operating Environment:

1: 802.11a mode: Keep the EUT 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.

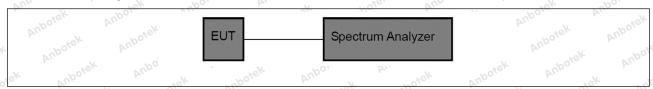
2: 802.11n mode: Keep the EUT in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.

Test mode:

3: 802.11ac mode: Keep the EUT 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 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.

#### 6.2. Test Setup



#### 6.3. Test Data

Temperature:   26.3 °C   Humidity:   50 %   Atmospheric Pressure:   101	101 kPa		
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Please Refer to Appendix for Details.





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# 7. Band edge emissions (Radiated)

est Requirement:	47 CFR Part 15.407(b) 47 CFR Part 15.407(b)				
Anbors Ant	For transmitters operate of the 5.15-5.35 GHz b				
	MHz	MHz	MHz	GHz	
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15	
otek Anbotek	10.495-0.505	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	
k Aupotek A	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	
est Limit:	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	And	niek ant	DO. DI.	
	<sup>1</sup> Until February 1, 1999 <sup>2</sup> Above 38.6	9, this restricted band	I shall be 0.490-	0.510 MHz.	
botek Anbotek Anbotek Anbotek Anbotek Anbot	The field strength of er not exceed the limits si 1000 MHz, compliance using measurement indetector. Above 1000 M 15.209shall be demonsterissions. The provision	hown in § 15.209. At with the limits in § 1 strumentation employ MHz, compliance with strated based on the	frequencies equ 5.209shall be do ying a CISPR qu the emission li average value o	ual to or less tha emonstrated uasi-peak mits in § of the measured	
	Except as provided els intentional radiator sha following table:	Ill not exceed the field	d strength levels		
	Frequency (MHz)		(microvolts/meter)		
	Aupo, Waller Walo	h hotek	Aupore P	distance (meters)	
	0.009-0.490 0.490-1.705	(microvolts/meto 2400/F(kHz) 24000/F(kHz)	Anborek A		









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hotek Anbore				inpose Wer
u sk spotek	1	1.705-30.0	30 ATT	30 And
Anbore Ans	1/6	30-88	100 **	3 ek
hotek Anbors		88-216	150 **	AT 3
And	otek	216-960	200 **	3 orek Anto
Anbore And	. 6	Above 960	500 otek Anbore	3
Test Method:	Aupo,	ANSI C63.10-2013, section	n 12.7.4, 12.7.5, 12.7.6	tek Pupo, by
k hotek	0.00	Above 1GHz:	oter And	Potek Auport Am
ipoter Aug		a. For above 1GHz, the EU	JT was placed on the top	of a rotating table 1.5
otek Anbore	P	meters above the ground a	at a 3 meter fully-anechoid	chamber. The table was
And K hotel	4	rotated 360 degrees to det		
anbotel Anb	No.	b. The EUT was set 3 meters		
w. Olek Pupe	oko.	which was mounted on the		
Anbo	is o're!	c. The antenna height is va		
ek aboven A	Upo	ground to determine the m		
A. Stek	000	and vertical polarizations o		
optek Anbo	h.,	d. For each suspected emi		
tek abotek	67	and then the antenna was		
Dupor Will	-	test frequency of below 30l		
boyek Anbo.		and the rotatable table was	s turned from 0 degrees to	3 360 degrees to find the
Arra abo	Here	maximum reading. e. The test-receiver system	was set to Book Detect	Function and Specified
Aupore Air	495	Bandwidth with Maximum I		Function and Specified
y hotek Ar	Upo,	f. If the emission level of th		10dB lower than the
And	, oo	limit specified, then testing		
atek Anbore	VIII	would be reported. Otherw		
ok hotek	PC	would be re-tested one by		
Moore, And		and then reported in a data		An all and the specification
Procedure:		g. Test the EUT in the lowe		annel, the Highest
Aug VK Pot	iek	channel.	anboten Anbo	Potek Pupor
Anbore. And	40.	h. The radiation measurem	ents are performed in X,	Y, Z axis positioning for
k hotek An	10010	Transmitting mode, and for	und the X axis positioning	which it is the worst
AUD	~ot	case.		K potek Anbo
olek vupoter	VUD.	i. Repeat above procedure	s until all frequencies me	asured was complete.
o kek	0.71	Remark:		otek Anbore An
aborek Anbe		1. Level= Read Level+ Cal		. V.
" stek amboter		2. Scan from 18GHz to 400	DAY 1	
Vupo.	ek	The points marked on above		
abotek Anbe	V.	when testing, so only abov		
W. Jek July	oole,	spurious emissions from the		nuated more than 200B
Aupo.	016	below the limit need not be		CHz, the field strength
ek abojek	AUPO	3. As shown in this section limits are based on average		
V. Viek	200	emission shall not exceed		
potek Anbo.	ly,	above by more than 20 dB		
rek abotek	1	emissions whose peak leve		
Anbotek Anbote	JK.	measurement is shown in t		,,,,
spotek Aupo.		4. The disturbance above		the harmonics were the
All All	OYEN	highest point could be foun		
PO. 1		Ye. VUD.	, ok o	57.





Hotline

been displayed.



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#### 7.1. EUT Operation

#### **Operating Environment:**

1: 802.11a mode: Keep the EUT 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.

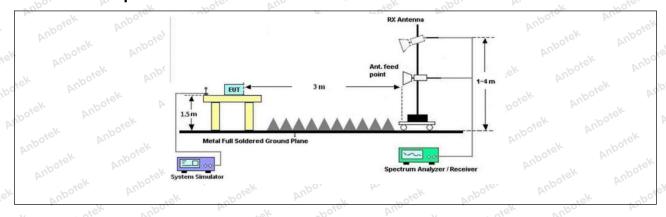
2: 802.11n mode: Keep the EUT in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.

Test mode:

3: 802.11ac mode: Keep the EUT 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 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.

#### 7.2. Test Setup









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#### 7.3. Test Data

Temperature: 26.3 °	C Humidity:	50 % Atm	ospheric Pressure:	101 kPa	
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N. N.					. K		
			TM1 / L	_ (Ant1)			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	37.18	15.99	53.17	68.20	-15.03	Lotek H	Peak
5150.00	39.28	15.99	55.27	68.20	-12.93	No.	Peak
5150.00	27.06	15.99	43.05	54.00	-10.95	Hick	AVG
5150.00	29.17	15.99	45.16	54.00	-8.84	NO WEK	AVG
			TM1 / F	l (Ant1)			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.57	16.43	54.00	68.20	-14.20	H	Peak
5250.00	40.64	16.43	57.07	68.20	-11.13	AUD NOK	Peak
5250.00	28.96	16.43	45.39	54.00	-8.61	Ank H	AVG
5250.00	29.79	16.43	46.22	54.00	-7.78	N/poles	AVG

Remark: 1. Result=Reading + Factor

			TM2 / L	(MIMO)			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	36.05	15.99	52.04	68.20	-16.16	H <sub>po</sub> ,	Peak
5150.00	37.50	15.99	53.49	68.20	× -14.71	Sk Avpour	Peak
5150.00	26.77 nbo	15.99	ote 42.76 M	54.00	-11.24	orek H Anb	AVG
5150.00	27.74	15.99	43.73	54.00	-10.27	nboteV i	AVG
			TM2 / H	(MIMO)			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.91	16.43	54.34	68.20	-13.86	H <sub>N</sub> upo.	Peak
5250.00	38.91,000	16.43	55.34 No	68.20	-12.86	otek V Anbe	Peak
5250.00	27.96	16.43 M	44.39	54.00	-9.61	HYStor	Note AVG
5250.00	29.46	16.43	45.89	54.00	Anto-8.11	Nupp NK	AVG
	1-0'	DV.	14057	A 0	- V	1-0,	1307

Remark: 1. Result=Reading + Factor





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		TM3 / L	(MIMO)			
Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
36.68	15.99	52.67	68.20	-15.53	PH	Peak
38.52	15.99	54.51	68.20	-13.69	Nupp.	Peak
27.27	15.99	43.26 A	54.00	-10.74	otek H Anbo	AVG
28.83 An	15.99	44.82	54.00	-9.18	nbotek V A	AVG
		TM3 / H	(MIMO)			
Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
38.22	16.43	54.65	68.20	-13.55	H <sup>nb</sup>	Peak
37.03	16.43	53.46	68.20	-14.74	tek A Vupo,	Peak
28.52 And	16.43	44.95	54.00	-9.05	hotek H An	AVG
29.76	16.43	46.19	54.00	-7.81	V	AVG
	(dBuV) 36.68 38.52 27.27 28.83  Reading (dBuV) 38.22 37.03 28.52	(dBuV)     (dB/m)       36.68     15.99       38.52     15.99       27.27     15.99       28.83     15.99       Reading (dBuV)     Factor (dB/m)       38.22     16.43       37.03     16.43       28.52     16.43	Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)           36.68         15.99         52.67           38.52         15.99         54.51           27.27         15.99         43.26           28.83         15.99         44.82           TM3 / H           Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)           38.22         16.43         54.65           37.03         16.43         53.46           28.52         16.43         44.95	(dBuV)         (dB/m)         (dBuV/m)         (dBuV/m)           36.68         15.99         52.67         68.20           38.52         15.99         54.51         68.20           27.27         15.99         43.26         54.00           TM3 / H (MIMO)           Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)         Limit (dBuV/m)           38.22         16.43         54.65         68.20           37.03         16.43         53.46         68.20           28.52         16.43         44.95         54.00	Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)         Limit (dBuV/m)         Over limit (dB)           36.68         15.99         52.67         68.20         -15.53           38.52         15.99         54.51         68.20         -13.69           27.27         15.99         43.26         54.00         -10.74           28.83         15.99         44.82         54.00         -9.18           TM3 / H (MIMO)           Reading (dBuV) (dB/m) (dB/m) (dBuV/m) (dBuV/m) (dB)         0ver limit (dBuV/m) (dB)           38.22         16.43         54.65         68.20         -13.55           37.03         16.43         53.46         68.20         -14.74           28.52         16.43         44.95         54.00         -9.05	Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)         Limit (dBuV/m)         Over limit (dB)         Antenna Pol.           36.68         15.99         52.67         68.20         -15.53         H           38.52         15.99         54.51         68.20         -13.69         V           27.27         15.99         43.26         54.00         -10.74         H           28.83         15.99         44.82         54.00         -9.18         V           TM3 / H (MIMO)           Reading (dBuV) (dB/m) (dB/m) (dB/m) (dBuV/m) (dBuV/m) (dBuV/m) (dB)         Over limit (dBuV/m) Antenna Pol.         Antenna Pol.           38.22         16.43         54.65         68.20         -13.55         H           37.03         16.43         53.46         68.20         -14.74         V           28.52         16.43         44.95         54.00         -9.05         H

Remark: 1. Result=Reading + Factor

	- V						
			TM4 / L	(MIMO)			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	37.16 And	15.99	53.15	68.20	-15.05	poter H Ant	Peak
5150.00	38.95	15.99	54.94	68.20	-13.26	Aupotek	Peak
5150.00	26.68	15.99	42.67	54.00	-11.33	AnbHek	AVG
5150.00	28.95	15.99	44.94	54.00	-9.06	Notek	AVG
			TM4 / H	(MIMO)			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	38.00	16.43	54.43	68.20	-13.77	Aupore H	Peak
5250.00	38.23	16.43	54.66	68.20	-13.54	NO ASK	Peak
5250.00	27.95	16.43	44.38	54.00	-9.62	Hotek	AVG
5250.00	28.58	16.43	45.01	54.00	-8.99	V	AVG

Remark: 1. Result=Reading + Factor





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## 8. Undesirable emission limits (below 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(9)	) And botek	Anbore Ante
Anbotek Anbote	Unwanted emissions belo	ow 1 GHz must comply with t § 15.209.	he general field
	Event as provided alsow	where in this subpart, the emi	acione from an
		not exceed the field strength	
aborek Anbo	Frequency (MHz)	Field strength	Measurement
Test Limit:	Ambotek Ambotek	(microvolts/meter)	distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30/poils And
	1.705-30.0	30 Shore And	30 morek
ek abotek A	30-88	100 **	3 And
	88-216	150 **	atel 3 ambores
	216-960	200 **	3 rek
	Above 960	500	3 Anb
Test Method:	ANSI C63.10-2013, section	- N NO3	Anbotes Anbotes
Auporen Aupo	Below 1GHz:	All Anborek	Aupo Pho
		EUT was placed on the top of	a rotating table 0.8
Ambo		at a 3 meter semi-anechoic	
sk apolen A		to determine the position of t	
		10 meters away from the inte	
		nted on the top of a variable-	
		varied from one meter to four	
		maximum value of the field st	
		of the antenna are set to ma	
	- W	nission, the EUT was arrange	
		s tuned to heights from 1 me	
k hotek an		0MHz, the antenna was tune	
And		as turned from 0 degrees to 3	
	maximum reading.	700, by	360 degrees to find the
			360 degrees to find the
		em was set to Peak Detect Fu	Jose - Aug
Procedure:		em was set to Peak Detect Fu n Hold Mode.	John Aur
Procedure:	e. The test-receiver syste Bandwidth with Maximum		inction and Specified
Procedure:	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of	n Hold Mode.	unction and Specified  OdB lower than the
Procedure:	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of limit specified, then testin	n Hold Mode. the EUT in peak mode was 1	unction and Specified  OdB lower than the  peak values of the EU
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Procedure: Anborek	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of limit specified, then testin would be reported. Other would be re-tested one by then reported in a data structure g. Test the EUT in the low channel.  h. The radiation measure	n Hold Mode.  the EUT in peak mode was 1  ng could be stopped and the p  wise the emissions that did n  y one using quasi-peak meth  neet.  west channel, the middle char  ments are performed in X, Y,	onction and Specified  OdB lower than the beak values of the EU ot have 10dB margin od as specified and and onel, the Highest  Z axis positioning for
Procedure: Anborek	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of limit specified, then testin would be reported. Other would be re-tested one by then reported in a data sh g. Test the EUT in the low channel. h. The radiation measure Transmitting mode, and for	n Hold Mode.  the EUT in peak mode was 1  ng could be stopped and the p  wise the emissions that did n  y one using quasi-peak meth  neet.  west channel, the middle char  ments are performed in X, Y,	onction and Specified  OdB lower than the beak values of the EU ot have 10dB margin od as specified and annel, the Highest  Z axis positioning for which it is the worst
Procedure: Anborek	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of limit specified, then testin would be reported. Other would be re-tested one by then reported in a data sh g. Test the EUT in the low channel. h. The radiation measure Transmitting mode, and for	n Hold Mode.  the EUT in peak mode was 1  ng could be stopped and the p  wise the emissions that did n  y one using quasi-peak meth  neet.  vest channel, the middle char  ments are performed in X, Y,  ound the X axis positioning w	onction and Specified  OdB lower than the beak values of the EU ot have 10dB margin od as specified and annel, the Highest  Z axis positioning for which it is the worst
Procedure: Anborek	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of limit specified, then testin would be reported. Other would be re-tested one by then reported in a data sh g. Test the EUT in the low channel. h. The radiation measure Transmitting mode, and for case. i. Repeat above procedur Remark:	n Hold Mode.  the EUT in peak mode was 1 ag could be stopped and the p wise the emissions that did n y one using quasi-peak meth neet.  vest channel, the middle char  ments are performed in X, Y, ound the X axis positioning w  res until all frequencies meas	onction and Specified  OdB lower than the beak values of the EU ot have 10dB margin od as specified and onel, the Highest  Z axis positioning for which it is the worst or which was complete.
Procedure: Anborek	e. The test-receiver syste Bandwidth with Maximum f. If the emission level of limit specified, then testin would be reported. Other would be re-tested one by then reported in a data sh g. Test the EUT in the low channel. h. The radiation measure Transmitting mode, and for case. i. Repeat above procedur Remark: 1. Level= Read Level+ Ca	n Hold Mode.  the EUT in peak mode was 1  ng could be stopped and the p  wise the emissions that did n  y one using quasi-peak meth  neet.  vest channel, the middle char  ments are performed in X, Y,  ound the X axis positioning w	onction and Specified  OdB lower than the beak values of the EU ot have 10dB margin od as specified and annel, the Highest  Z axis positioning for which it is the worst ured was complete.







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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
- 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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#### 8.1. EUT Operation

#### Operating Environment:

1: 802.11a mode: Keep the EUT 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.

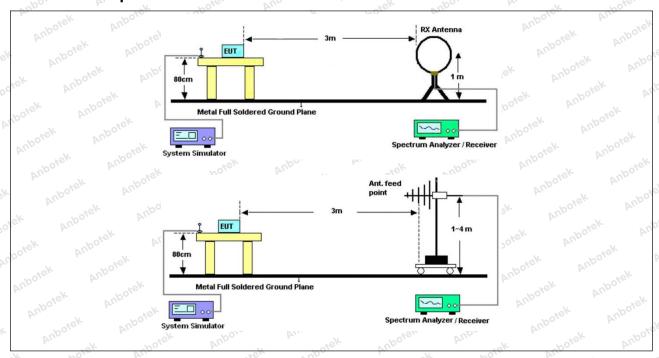
2: 802.11n mode: Keep the EUT in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.

Test mode:

3: 802.11ac mode: Keep the EUT 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 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

#### 8.2. Test Setup







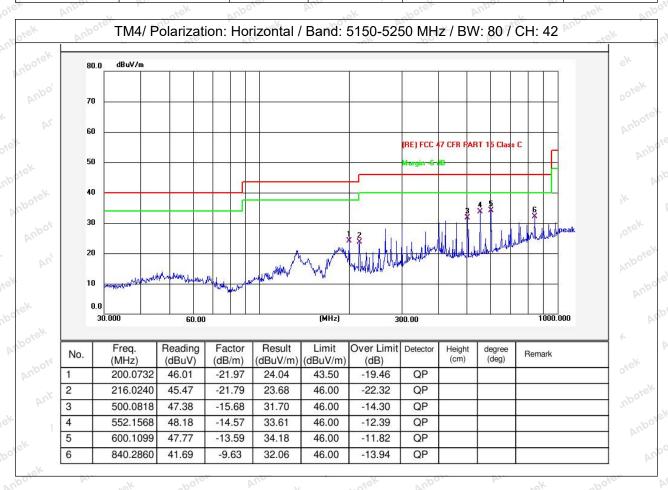


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#### 8.3. Test Data

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

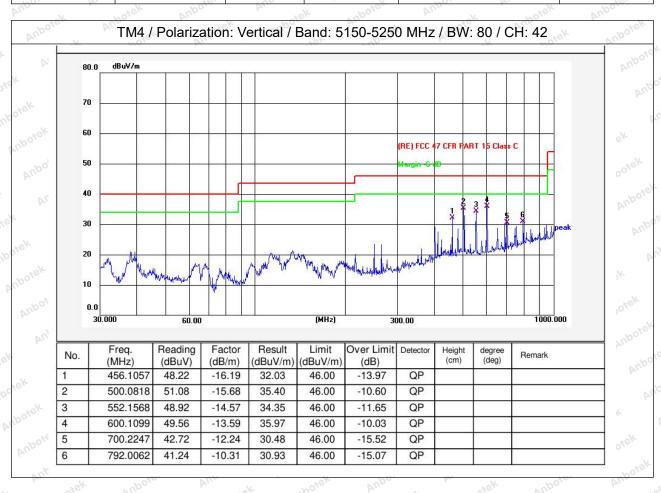
Temperature:	26.3 °C	VUP	Humidity:	50%	Atmospheric Pressure:	101 kPa
				(2.07)	W	y





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Temperature: 26.3 °C Humidity: 50 % Atmospheric Pressure: 101 kPa



Note: Only record the worst data (802.11ax(HE80) MIMO) in the report.







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# 9. Undesirable emission limits (above 1GHz)

est Requirement:	47 CFR Part 15.407(b) 47 CFR Part 15.407(b)		Anborek Anbo	spotek Aupot			
Aupore Aug	For transmitters operat	ting in the 5.15-5.25	GHz band: All er	nissions outside			
Anbotek Anb	of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.						
	MHz	MHz k	MHz	GHz			
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15			
otek Anbotek	10.495-0.505	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			
est Limit:	12.51975-12.52025	240-285	3345.8-3358	36.43-36.5			
por And	12.57675-12.57725	322-335.4	3600-4400	(2)			
	13.36-13.41	Ando	Lotek Ant	DI.			
	<sup>1</sup> Until February 1, 1999	), this restricted band	d shall be 0.490-	0.510 MHz.			
	<sup>2</sup> Above 38.6						
	The field strength of er not exceed the limits sl						
Anbotek Anbotek Anbotek Anbote	1000 MHz, compliance using measurement indetector. Above 1000 M 15.209shall be demons emissions. The provision	e with the limits in § 1 strumentation emplo MHz, compliance with strated based on the	5.209shall be de ying a CISPR qu h the emission lin average value c	emonstrated asi-peak mits in § of the measured			
Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek	1000 MHz, compliance using measurement insidetector. Above 1000 M 15.209shall be demons emissions. The provision Except as provided elsintentional radiator shall.	e with the limits in § 1 strumentation emplo MHz, compliance with strated based on the ons in § 15.35apply to ewhere in this subpa	5.209shall be de ying a CISPR qu h the emission lin average value of to these measure art, the emissions	emonstrated asi-peak mits in § if the measured ements. s from an			
Anbotek	1000 MHz, compliance using measurement ins detector. Above 1000 M 15.209shall be demons emissions. The provision Except as provided els	e with the limits in § 1 strumentation emplo MHz, compliance with strated based on the ons in § 15.35apply to ewhere in this subpa	to the emissions described by the emission line average value of the emissions described by the emission of the emi	emonstrated asi-peak mits in § if the measured ements. s from an			
Anbotek	1000 MHz, compliance using measurement insidetector. Above 1000 M 15.209shall be demons emissions. The provision Except as provided elsintentional radiator shafollowing table:	e with the limits in § 1 strumentation employ MHz, compliance with strated based on the ons in § 15.35apply to ewhere in this subpartill not exceed the field	15.209shall be de ying a CISPR que he the emission line average value of the these measure art, the emissions destrength levels the these measure destrength levels the these measure destrength levels the the these measures destrength levels the the these measures destrength levels destrength lev	emonstrated asi-peak mits in § of the measured ements. s from an specified in the Measurement distance			









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u potek	1.705-30.0	30	30 And				
Anbore And	30-88	100 **	3.ek 000101				
bolek Anbor	88-216	150 **	3				
And	216-960	200 **	3 orek Anbo				
Anbore And	Above 960	500 Anbore	3 , or ore				
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6						
isotek an	Above 1GHz:						
Posen Vup	a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5						
otek Anbore	meters above the ground at a 3 meter fully-anechoic chamber. The table was						
Mupo K Motek	rotated 360 degrees to determine the position of the highest radiation.						
Auporen Aup	b. The EUT was set 3 meters away from the interference-receiving antenna,						
Anbores Anbores		top of a variable-height antenr					
Aupo	c. The antenna height is varied from one meter to four meters above the						
ek abotek Anbe	ground to determine the maximum value of the field strength. Both horizontal						
Ar. Stek ont	and vertical polarizations of the antenna are set to make the measurement.						
potek Anbo	d. For each suspected emission, the EUT was arranged to its worst case						
ek abotek	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)						
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shotek Anbo		s turned from 0 degrees to 360	degrees to find the				
All potek	maximum reading.	n was set to Peak Detect Funct	ion and Specified				
Anbore All			ion and Specified				
botek Anbo	Bandwidth with Maximum Hold Mode.						
And	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						
Clek Aupore All	would be reported. Otherwise the emissions that did not have 10dB margin						
ok hotek A	would be re-tested one by one using peak or average method as specified						
Mode. And	and then reported in a data sheet.						
Procedure:		est channel, the middle channel	. the Highest				
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Ant Ant	h. The radiation measurem	nents are performed in X, Y, Z a	xis positioning for				
k Anbore	Transmitting mode, and for	und the X axis positioning whic	h it is the worst				
Augo K 20	case.		potek Anbo				
Jek Moter And		s until all frequencies measure	d was complete.				
o Arek Ar	Remark:		Anbore An				
poter Anbo	150	ole Loss+ Antenna Factor- Prea	V				
otek vupoter	1 V 1-01	GHz, the disturbance above 18					
Anbo		ve plots are the highest emissic					
abotek Anbo		e points had been displayed. T					
Ar. Jek "Upoter		e radiator which are attenuated	more than 200B				
Anbo	below the limit need not be		the field strength				
ek abotek Anbo		, for frequencies above 1GHz, e limits. However, the peak fiel					
b. Stek		the maximum permitted averag					
spotek Aupo, by		under any condition of modula					
rek abotek		el is lower than the average lim					
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botek Anbor		18GHz were very low and the h	armonics were the				
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been displayed.



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#### 9.1. EUT Operation

#### **Operating Environment:**

1: 802.11a mode: Keep the EUT 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.

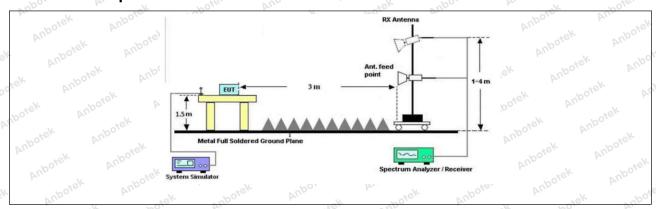
2: 802.11n mode: Keep the EUT in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.

Test mode:

3: 802.11ac mode: Keep the EUT 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 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.

#### 9.2. Test Setup





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#### 9.3. Test Data

Temperature: 26.3 °C Humidity: 50 % Atmospheric Pressure: 101 kPa

TM4 / CH: 42									
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector		
10420.00	30.06	ote <sup>k</sup> 23.81 kn <sup>b</sup>	53.87	68.20	-14.33 Ann	V	Peak		
15630.00	30.76	29.36	60.12	68.20	-8.08	upo, A	Peak		
10420.00	31.00	23.81	54.81	68.20	-13.39	Anbore	Peak		
15630.00	32.25	29.36	61.61	68.20	-6.59	"Ho, ey	Peak		
10420.00	20.56	23.81	44.37	54.00	-9.63	Votek	AVG		
15630.00	21.50	29.36	50.86	54.00	-3.14	V	AVG.		
10420.00	20.68	23.81	44.49	54.00	otel -9.51 pm	H Amb	AVG		
15630.00	21.67	29.36	51.03	54.00	-2.97	Upotek H Ar	AVG		

#### Remark:

- 1. Result =Reading + Factor
- 2. During the test, pre-scan the all modulation, only the worst case(802.11ax(HE80) MIMO) is recorded in the report.



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#### 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 -----

