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# **FCC Test Report**

YABER TECHNOLOGIES CO., LIMITED **Applicant** 

Room 406, 4 Floor, B Building, BanTian

International Center, HuanCheng South Road, Address

BanTian Street, LongGang District, Shenzhen,

China

**Product Name** : Projector

Apr. 08, 2024 **Report Date** 

Shenzhen Anbotek Compliance Laboratory Limited











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# **TEST REPORT**

Applicant : YABER TECHNOLOGIES CO., LIMITED

Manufacturer : YABER TECHNOLOGIES CO., LIMITED

Product Name : Projector

Test Model No. : V12

Reference Model No. : Please refer to page 8

Trade Mark : Yaber

Rating(s) : Input: 100-240V~, 50/60Hz,140W

47 CFR Part 15E

Test Standard(s)

ANSI C63.10-2020

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

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

Date of Receipt: Dec. 15, 2023
Date of Test: Feb. 15, 2024 to Mar. 05, 2024
ek Anbotek
Ella Liang
Prepared By:
Anborek Anborek Anborek Anborek Anborek Anborek Anborek Anborek
Anbotek
Approved & Authorized Signer
Approved & Authorized Signer:
otek Anbor Andrew (Edward Pan)







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## **Revision History**

	Report Version	Description	Issued Date
	Anbore R00 potek Ant	Original Issue.	Apr. 08, 2024
9,	Anbotek Anbotek	Anbotek Anbotek Anbotek	K Anbotek Anbotek Ant
10	or Ambotek Anbotek	Anbotek Anbotek Anbot	tek Anbotek Anboter





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### 1. General Information

### 1.1. Client Information

- A.V.		No. 1
Applicant	:	YABER TECHNOLOGIES CO., LIMITED
Address	:	Room 406, 4 Floor, B Building, BanTian International Center, HuanCheng South Road, BanTian Street, LongGang District, Shenzhen, China
Manufacturer	:	YABER TECHNOLOGIES CO., LIMITED
Address	:	Room 406, 4 Floor, B Building, BanTian International Center, HuanCheng South Road, BanTian Street, LongGang District, Shenzhen, China
Factory	:	YABER TECHNOLOGIES CO., LIMITED
Address	:	Room 406, 4 Floor, B Building, BanTian International Center, HuanCheng South Road, BanTian Street, LongGang District, Shenzhen, China

# 1.2. Description of Device (EUT)

Product Name	:	Projector Anborek Anborek Anborek
Test Model No.	:	EV12 Anbotek Anbotek Anbotek Anbotek Anbotek
Reference Model No.	:	Please refer to page 8 (Note: All samples are the same except the model number, so we prepare "V12" for test only.)
Trade Mark	:	Yaber Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek
Test Power Supply	:	AC 120V/60Hz
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A of Anti-botek Anbotek Anbotek Anbotek Anbotek
RF Specification		
Operation Frequency	:	802.11a/n(HT20)/ac(VHT20): U-NII Band 1: 5180MHz to 5240MHz; U-NII Band 3: 5745MHz to 5825MHz;  802.11n(HT40)/ac(VHT40): U-NII Band 1: 5190MHz to 5230MHz; U-NII Band 3: 5755MHz to 5795MHz
Number of Channel	:	802.11a/n(HT20)/ac(VHT20): U-NII Band 1: 4; U-NII Band 3: 5;  802.11n(HT40)/ac(VHT40): U-NII Band 1: 2; U-NII Band 3: 2
Modulation Type	:	802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Antenna Type	:	FPC Antenna







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0,			5.2G WiFi 0: 3.66dBi	anboic	Vu.	abotel	VUD	
	A ( O : (D I)		5.2G WiFi 1: 3.94dBi	hotek				"poter
	Antenna Gain(Peak)	ŀ	5.8G WiFi 0: 3.96dBi		abote			hotek
			5.8G WiFi 1: 3.75dBi					And
,	Directional antenna		5.2G WiFi: 6.81dBi	sk apor	VUP.	2/4	hotek	Vupo.
χe	gain	•	5.8G WiFi: 6.87dBi					4 30

- (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) & 802.11n(HT40)/ac(VHT40) support MIMO. 4) Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2/2]$  dBi





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potek Anbotek	Anbo	Refer	ence Model N	lo. Arra	Anbotek	Anbo
U	rek T2 Anb	T2 Max	T2 SE	T2 Pro	T2s	T2 Plus
Anbotek Anbo	T3	T3 Max	T3 SE	T3 Pro	T3s	T3 Plus
r. stek	<i></i> № Т4	T4 Max	of T4 SE Ant	T4 Pro	√e <sup>k</sup> T4s √	T4 Plus
T series	T5	T5 Max	T5 SE	T5 Pro	T5s	T5 Plus
Anborek	T6	T6 Max	T6 SE	T6 Pro	T6s	T6 Plus
Dr.	T10	T10 Max	T10 SE	T10 Pro	T10s	T10 Plus
Yupo.	T20	T20 Max	T20 SE	T20 Pro	T20s	T20 Plus
iek społek	V13	V13 Max	V13 SE	V13 Pro	V13s	V13 Plus
V series	√ V14	V14 Max	V14 SE	V14 Pro	V14s	V14 Plus
Potek Aupo	V15	V15 Max	V15 SE	V15 Pro	V15s	V15 Plus
W. C.	U13	U13 Max	U13 SE	U13 Pro	U13s	U13 Plus
U series	U14	U14 Max	U14 SE	U14 Pro	U14s	U14 Plus
MO SCHOS	U15	U15 Max	U15 SE	U15 Pro	U15s	U15 Plus
Pupo,	E2	E2 Max	E2 SE	E2 Pro	E2s	E2 Plus
Anbotek	E3	E3 Max	E3 SE	E3 Pro	E3s	E3 Plus
Al.	E4	E4 Max	E4 SE	E4 Pro	E4s	E4 Plus
E series	. Е5 "о	E5 Max	E5 SE	E5 Pro	E5s	E5 Plus
□ Selles	E6 PAGE 1		E6 SE	100		0.57
ipotek Aupot		E6 Max	-	E6 Pro E10 Pro	E6s	E6 Plus
cotek ant	500 E10	E10 Max	E10 SE		E10s	E10 Plus
Anb	E20	E20 Max	E20 SE	E20 Pro	E20s	E20 Plus
Anboiek	Mapo, F7	L2 Max	L2 SE	L2 Pro	L2s	L2 Plus
W. Otek	L3	L3 Max	L3 SE	L3 Pro	L3s	L3 Plus
Anbo	L4 LE OTOK	L4 Max	L4 SE	L4 Pro	L4s	L4 Plus
L series	L5°	L5 Max	L5 SE	L5 Pro	L5s	L5 Plus
Y.	L6	L6 Max	L6 SE	L6 Pro	L6s	L6 Plus
otek Anbor	L10.00	L10 Max	L10 SE	L10 Pro	L10s	L10 Plus
A	otel L20 And	L20 Max	L20 SE	L20 Pro	L20s	L20 Plus
Anbotek Anb	K3	K3 Max	K3 SE	K3 Pro	K3s M	K3 Plus
Anbotek A	₹K4	K4 Max	K4 SE	K4 Pro	K4s	K4 Plus
Anbo	K5	K5 Max	K5 SE	K5 Pro	K5s	K5 Plus
aboter	K6	K6 Max	K6 SE	K6 Pro	K6s	K6 Plus
K series	K100	K100 Max	K100 SE	K100 Pro	K100s	K100 Plus
k Aupore	K200	K200 Max	K200 SE	K200 Pro	K200s	K200 Plus
ek bojel	K300	K300 Max	K300 SE	K300 Pro	K300s	K300 Plus
ore Arra	K400	K400 Max	K400 SE	K400 Pro	K400s	K400 Plus
hotek Anbo	K1000	K1000 Max	K1000 SE	K1000 Pro	K1000s	K1000 Plu
Yun ok	yoteP1	P1 Max	P1 SE	P1 Pro	P1s	P1 Plus
Aporte. A	P2	P2 Max	P2 SE	P2 Pro	P2s	P2 Plus
D - niek	P3	P3 Max	P3 SE	P3 Pro	P3s	P3 Plus
P series	P4	P4 Max	P4 SE	P4 Pro	P4s	P4 Plus
k anbotek	P10	P10 Max	P10 SE	P10 Pro	P10s	P10 Plus
AI.	P20	P20 Max	P20 SE	P20 Pro	P20s	P20 Plus
112 02 04 05	O6 K11 K	500		D67 S20 S20	to be to be a second	100

U12,Q3, Q4, Q5, Q6,K11, K12, K13, K14, K15,P65, P66, P67,S28, S29, S30,B1, B2, B3, B4, ,TR26, TR27, TR28, TR29,X8, X9, X10, X11









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#### 1.3. Auxiliary Equipment Used During Test

Title Manufacturer		Model No.	Serial No.	
Anbotes / Anbotes	Anti-	Aupo, Ar Potek	Anboter / Ano	







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#### 1.4. Operation channel list

Operation Band: U-NII Band 1

Bandwidth:	20MHz	Bandwidth:	40MHz	Abotek	AUDIE
Channel	Frequency (MHz)	Channel	Frequency (MHz)	, hotek	Yupoter
36	5180 Mbore	38	5190	tek / vupo	lek \ Vupo,
40	5200	46	5230	Jek /	potek / Ar
hotek 44 Ando	5220	port / Am	Andriek	no otek	nbotel
Anborer 48 Anbo	5240	Aupore Au	lek Wpoles	Anbe Liek	anb hek

Operation Band: U-NII Band 3

Bandwidth:	20MHz	Bandwidth:	40MHz	ek / Anbot	sk / Vupo.
Channel	Frequency (MHz)	Channel	Frequency (MHz)	hotek / An	opek / Aup
149	5745	ntek 151 nbotek	5755	Yord	Anbotek
153 Am	5765	159 Moot	5795	Allaborek	Aupler
Anbort 157	5785	Anbo orek an	potek /Anbore	All boick	Avover
And 161	Aborek 5805 Anbores	K Notek	Anbotek / Anbot	sk I spoke	k / Aupote
165	5825 Androi	Y Vice	Aupotek / Aupo	ek / h	otek / Anbe

# 1.5. Description of Test Modes

Pretest Modes	Descriptions
Aupotek TM1 Aupotek Aupotek	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.
nootek Anbotek Anbotek Anbotek Anbotek	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.
Anbotek TM3 nbotek An	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.



Hotline



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#### 1.6. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.8dB Anboret Anboret Anboret
Conducted Output Power	0.76dB
Power Spectral Density	0.76dB
Occupied Bandwidth	925Hz
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.78dB; 6G-18GHz: 4.88dB 18G-40GHz: 5.68dB
Radiated emissions (Below 30MHz)	3.53dB
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.92dB; Vertical: 4.52dB

The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.





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### 1.7. Test Summary

Test Items	Test Modes	Status
Conducted Emission at AC power line	Mode1,2,3	And Potek
Duty Cycle	Mode1,2,3	P
Maximum conducted output power	Mode1,2,3	P PATT
Power spectral density	Mode1,2,3	P. P.
Emission bandwidth and occupied bandwidth	Mode1,2,3	No Pk
Band edge emissions (Radiated)	Mode1,2,3	Anb P rek
Band edge emissions (Conducted)	Mode1,2,3	P
Undesirable emission limits (below 1GHz)	Mode1,2,3	Pant
Undesirable emission limits (above 1GHz)	Mode1,2,3	P
Note: P: Pass	Aupotek Aupotek A	nbotek

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.
- The test report is invalid if there is any evidence and/or falsification.
- The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- 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.
- 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.
- 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				
Item	Equipment	Equipment Manufacturer		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
otek 2	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	tek /Anbotek	ek abotek

**Duty Cycle** 

Maximum conducted output power

Power spectral density

Emission bandwidth and occupied bandwidth

Band edge emissions (Conducted)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
And 1	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ- KHWS80B	N/A	2023-10-16	2024-10-15
2	DC Power Supply	IVYTECH	IV3605	1804D360 510	2023-10-20	2024-10-19
100 3	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101792	2023-05-26	2024-05-25
4 4	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY505318 23	2023-10-12	2024-10-11
5	Oscilloscope	Tektronix	MDO3012	C020298	2023-10-12	2024-10-11
* 6	MXG RF Vector Signal Generator	Agilent	N5182A	MY474206 47	2023-02-23	2024-10-22



Hotline



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	edge emissions (Ra		Anborok	Auporg	Aurotek	Aupotek Ar
Unde	sirable emission limi	ts (above 1GHz)	borek	Aupo.	h. Hek	Cupole.
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1 00	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2023-10-12	2024-10-11
2	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
7 <sup>10</sup> 4	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	Andotek	Aupolok
5	Horn Antenna	A-INFO	LB-180400- KF	J21106062 8	2023-10-12	2024-10-11
6	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101792	2023-05-26	2024-05-25
e <sup>k</sup> 7	Amplifier	Talent Microwave	TLLA18G40 G-50-30	23022802	2023-05-25	2024-05-24

Unde	Undesirable emission limits (below 1GHz)								
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	186860	2023-10-12	2024-10-11			
34	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-23	2025-10-22			
40tel	Loop Antenna (9K- 30M)	Schwarzbeck	FMZB1519 B	00053	2023-10-12	2024-10-11			
5,00	EMI Test Software EZ-EMC	SHURPLE	N/A nbor	N/A.cbott	Nupon pole	k Anbotek			





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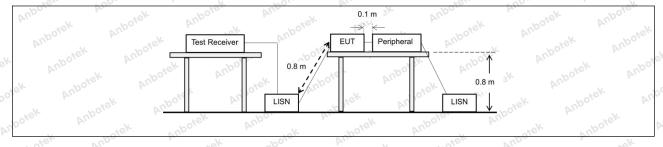
# 2. Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)	ek hotek Ant	Jose Aug Otek
Yun Volek	Frequency of emission (MHz)	Conducted limit (dBµV	) bojek Anbo
	And Andrew And	Quasi-peak	Average
K- Lotek Anbo	0.15-0.5	66 to 56*	56 to 46*
Test Limit:	0.5-5 And	56	46 20010
	5-30 And And	60 Potek Pupo,	50
otek Anbotek	*Decreases with the logarithm of the	ne frequency.	V Vupo.
Test Method:	ANSI C63.10-2020 section 6.2	Aug.	otek Anbote

# 2.1. EUT Operation

Operating Envi	ronment: Andrew Andrew Andrew Andrew Andrew
otek 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
Test mode:	rate @ MCS0 is the worst case. Only the data of worst case is recorded in the 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.

### 2.2. Test Setup





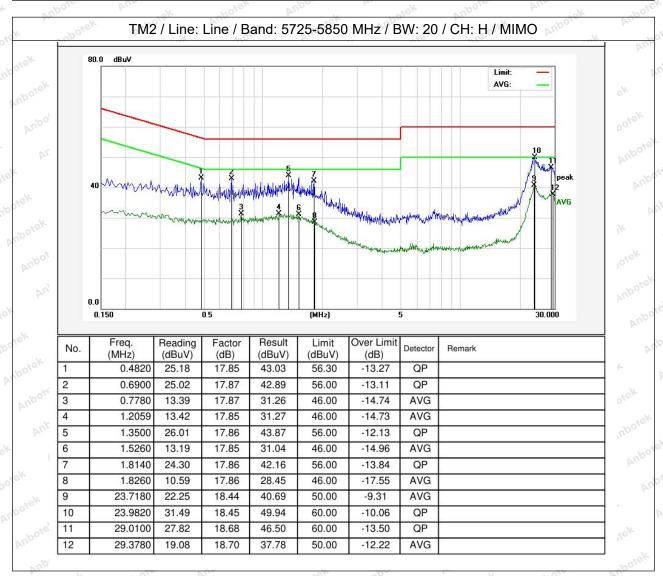




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#### 2.3. Test Data

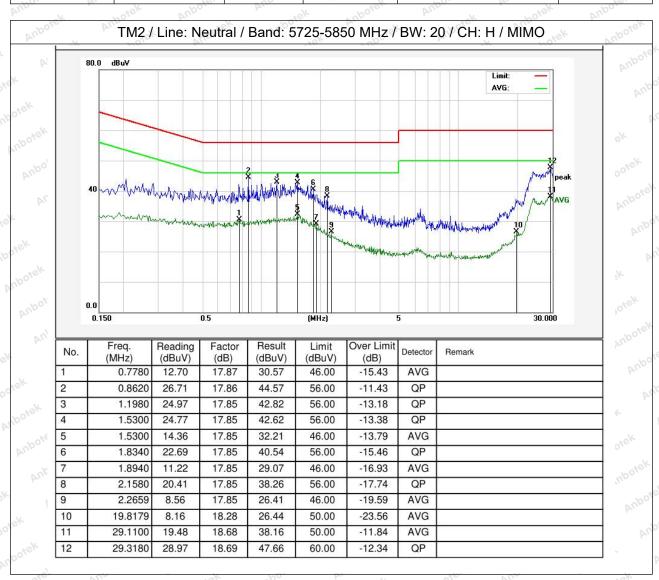
Temperature:	22.2 °C	-pote	Humidity:	55.8 %	n'el	Atmospheric Pressure: 101 kPa	
remperature.	22.20	VUL	ridifficity.	00.0 70	Upo.	Authosphiche i ressure.	





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Temperature: 22.2 °C Humidity: 55.8 % Atmospheric Pressure: 101 kPa



Note: Only record the worst data 802.11n(HT20) MIMO in the report.







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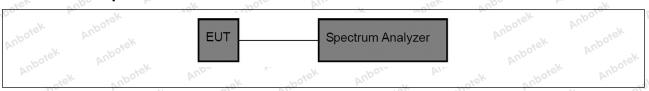
# 3. Duty Cycle

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 C63.10-2020 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 Envir	conment: And the Andores And the bores Andores Andores
tek 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
Test mode:	rate @ MCS0 is the worst case. Only the data of worst case is recorded in the 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.

### 3.2. Test Setup



### 3.3. Test Data

,	Temperature:	23.7 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa
	Tomporatare.	20.7 %	i idililaity.	10/70	/ turioopriorio i rossuro.	paro i Ki di

Please Refer to Appendix for Details.







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# 4. Maximum conducted output power

	omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is
	point operations exclude the use of point-to-multipoint systems,
	employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-
	the directional gain of the antenna exceeds 6 dBi.  However, fixed point-to-point U-NII devices operating in this band may
Test Limit:	maximum conducted output power shall be reduced by the amount in dB that
Anbotek Anbotek	For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.  If transmitting antennas of directional gain greater than 6 dBi are used, the
nbotek Anbotek	the directional gain of the antenna exceeds 6 dBi.
	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
k Anbotek Anbo	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

# 4.1. EUT Operation

Operating Env	vironment:
Pupotek Vot	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.
rboten Anb	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
Test mode:	rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.  3: 802.11ac mode: Keep the EUT in continuously transmitting mode with 802.11ac
Anbotek Anbotek	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.

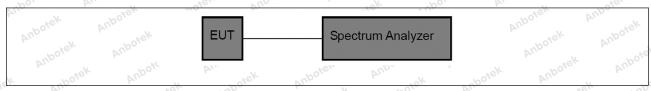






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#### 4.2. Test Setup



#### 4.3. Test Data

Temperature:	23.7 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa
. 2/1. 2 . 2 . 2 . 2 . 2 . 2			1.0 1/20	, m., 20 b., 21, 10 . V2, 22 2 2.	10.111

Please Refer to Appendix for Details.





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# 5. Power spectral density

Procedure:	Refer to ANSI C63.10-2020, section 12.6
Test Method:	ANSI C63.10-2020, section 12.6
otek Anbotek	point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.  Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test Limit:	For the band 5.725-5.850 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz 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. However, fixed point-to-point LLNIII devices apprehing in this hand may employ transmitting entenness.
Anbotek Anbotek Anbotek Anbotek	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 Requirement:	47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)

# 5.1. EUT Operation

Operating Envir	onment:
k 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.
Test mode:	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.  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

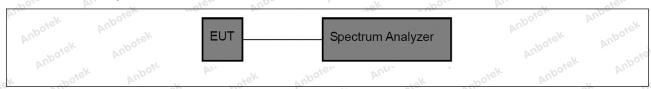






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#### 5.2. Test Setup



#### 5.3. Test Data

10		00.7.00	11	40.04007	All Dates	400 1.5
	Temperature:	23.7 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa

Please Refer to Appendix for Details.





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# 6. Emission bandwidth and occupied bandwidth

Tabotek Anbote	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Requirement:	U-NII 3, U-NII 4: 47 CFR Part 15.407(e)
Aupotek Aupo	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Limit:	U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.
Test Method:	ANSI C63.10-2020, section 6.9 & 12.5 KDB 789033 D02, Clause C.2
Anbotek Anbote	Emission bandwidth: a) Set RBW = approximately 1% of the emission bandwidth. b) Set the VBW > RBW. 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%.
	Occupied bandwidth: a) The instrument center frequency is set to the nominal EUT channel center 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,
Procedure:	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 from exceeding the maximum input mixer level for linear operation. In general, the peak of the
	spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
	<ul><li>d) Step a) through step c) might require iteration to adjust within the specified range.</li><li>e) Video averaging is not permitted. Where practical, a sample detection and</li></ul>
	single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be
	lused. 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









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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

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 dB emission bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) ≥ 3 >= RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### 6.1. EUT Operation

#### **Operating Environment:**

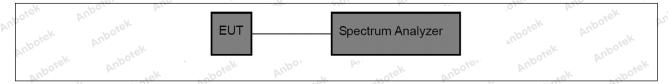
1: 802.11a mode: Keep the EUT in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.

Test mode:

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.

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.

### 6.2. Test Setup











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#### 6.3. Test Data

	100	100	V	VII.	200	
Temperature:	22 7 °C	Humidity:	2 1 O 0/	Atmospheric Pressure:	1011200	
remperature.	23.7 C	MHUIIIUILV.o`	1 40 %	Aumosphenic Pressure.	IUIKPA	

Please Refer to Appendix for Details.





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# 7. Band edge emissions (Radiated)

potek Aupor	47 CFR Part 15.407(b	)(1) And		
est Requirement:	47 CFR Part 15.407(b	W.)		
Aupote, Aug	47 CFR Part 15.407(b	)(10)	Anbote. A	un rek
potek Anbor	For transmitters opera	ting in the 5.15-5.25	GHz band: All er	nissions outsic
Vun Vak	of the 5.15-5.35 GHz b	oand shall not exceed	d an e.i.r.p. of −2	7 dBm/MHz.
Anbore Air	tek anboien	Anba k hote		
ok hotek	For transmitters opera			
Ve. Vue	All emissions shall be			
botek Anbore	above or below the ba			
ur potek	above or below the ba			
Anbore All	edge increasing linear			
hotek Anbor	below the band edge, increasing linearly to a			
And	VIA. VII.			
Anbore An	MHz	MHz	MHz	GHz
-k hotek	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
YUD SK	<sup>1</sup> 0.495-0.505	16.69475-	608-614	5.35-5.46
sofek Anbore	2.1735-2.1905	16.69525	960-1240	7.25-7.75
'pa notek	2.1733-2.1903	16.80425- 16.80475	900-1240	1.25-1.15
Aupore. Aur	4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
Soiek Anbore	4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
And	4.20725-4.20775	73-74.6	1645.5-	9.3-9.5
Anbore, And	Lotek Anbore.	Yun rek spotel	1646.5	A. Otek
ek Aupore A	6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
est Limit:	6.26775-6.26825	108-121.94	1718.8- 1722.2	13.25-13.4
SSI LIIIIII.	6.31175-6.31225	123-138	2200-2300	14.47-14.5
Anbore And	8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
Anbotek Anbote	8.362-8.366	156.52475- 156.52525	2483.5-2500	17.7-21.4
Andoren And	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
r rotek at	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
Ando	12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
otek Anbotei	12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
o, h, otek	12.57675-12.57725	322-335.4	3600-4400	(2) mbon
abotek Anbo	13.36-13.41	P.L.	" poten And	-V-
br. Jek Jupoter	Aug ok P	otek Anbo.	W. Jek	upote. Au
Aupo, W.	<sup>1</sup> Until February 1, 199	9, this restricted band	l shall be 0.490-0	0.510 MHz.
aboten Anbo	K Lotek D	"upo. VII.		
bu.	<sup>2</sup> Above 38.6			
Yupo. W.				
tek anbotek	The field strength of e			
o. bii.	not exceed the limits s			
spotek Aupo,	1000 MHz, compliance			
rek hotek	using measurement in			
Aupor Air	detector. Above 1000			
hotek Anboy	15.209shall be demon			
Au.	emissions. The provisi	ons in § 15.35apply t	o inese measure	ernents.
-40° -40°				6.117









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		nere in this subpart, the emise ot exceed the field strength le	
Anbotek Anbotek	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	atel 30 anboter
otek Anbor	30-88	100 **	3
ok hotek	88-216	150 **	abole 3 Aupo.
	216-960	200 **	3.ek abot
	Above 960	500	AT 3
	· 6 / 10 / 1	_ <sub> </sub> 300 aragraph (g), fundamental en	- Ver
	The emission limits showr employing a CISPR quasi 90 kHz, 110–490 kHz and these three bands are bas	§§ 15.231 and 15.241. The tighter limit applies at the tighter limit applies at the properties of the above table are based above 1000 MHz. Radiated end on measurements employed.	d on measurements frequency bands 9- emission limits in
	detector.	riek Anbo. A.	
			67/
Test Method:	ANSI C63.10-2020, section	n 12.7.4, 12.7.6, 12.7.7	tek Motek
Test Method:	Above 1GHz: a. For above 1GHz, the Elmeters above the ground rotated 360 degrees to deb. The EUT was set 3 met	UT was placed on the top of a at a 3 meter fully-anechoic ch termine the position of the hig ers away from the interference	namber. The table was ghest radiation. se-receiving antenna
Test Method:	Above 1GHz: a. For above 1GHz, the Elmeters above the ground rotated 360 degrees to deb. The EUT was set 3 met which was mounted on the	UT was placed on the top of a at a 3 meter fully-anechoic ch termine the position of the hig	namber. The table wante of table wante of table was radiation. Sereceiving antennational tower.
Test Method:	Above 1GHz: a. For above 1GHz, the Emeters above the ground rotated 360 degrees to deb. The EUT was set 3 metwhich was mounted on the c. The antenna height is v	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anter	namber. The table wanted by the stradiation. Sereceiving antennational tower. The table was above the series above the
Test Method:  ore Anborek  Anborek  Anborek  Anborek  Anborek  Anborek  Anborek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of	UT was placed on the top of a at a 3 meter fully-anechoic chatermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to make	namber. The table we object radiation. Sereceiving antennational tower. The meters above the ength. Both horizon the measurement
Test Method:  otek  Anbotek  Anbotek  Anbotek  Anbotek  Anbotek  Anbotek  Anbotek  Anbotek  Anbotek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected em	UT was placed on the top of a at a 3 meter fully-anechoic chatermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to making ission, the EUT was arranged	namber. The table wanted the state of the st
Test Method:  ore Anborek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field structure of the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter	namber. The table we ghest radiation. Se-receiving antennatennatower. The table we have the ength. Both horizonte the measurement do its worst case for the meters (for the meters (for the meters (for the meters).
Test Method:  orek  Anborek	Above 1GHz: a. For above 1GHz, the Elmeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter MHz, the antenna was tuned	namber. The table wanter radiation. Se-receiving antennaternaters above the ength. Both horizonte the measurement do its worst case for to 4 meters 1 meter)
otek Anbotek	Above 1GHz:  a. For above 1GHz, the Elmeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is v ground to determine the mand vertical polarizations of the control	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field structure of the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter	namber. The table wanter radiation. Se-receiving antennaternaters above the ength. Both horizonte the measurement do its worst case for to 4 meters 1 meter)
otek Anbotek	Above 1GHz: a. For above 1GHz, the Elmeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is v ground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading.	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter MHz, the antenna was tuned s turned from 0 degrees to 36 meters.	namber. The table we ghest radiation. be-receiving antennaternatower. meters above the ength. Both horizonice the measurement do its worst case for to 4 meters (for the look of the heights 1 meter) and degrees to find the second of the seco
otek Anbotek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading. e. The test-receiver system	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter bMHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur	namber. The table we ghest radiation. be-receiving antennaternatower. meters above the ength. Both horizonice the measurement do its worst case for to 4 meters (for the look of the heights 1 meter) and degrees to find the second of the seco
otek Anbotek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading. e. The test-receiver system Bandwidth with Maximum	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meters and the interior of the antenna was tuned to the sturned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.	namber. The table we ghest radiation. Se-receiving antennatennatower. In the meters above the ength. Both horizont e the measurement do its worst case for to 4 meters (for the to heights 1 meter) and degrees to find the metion and Specified
otek Anbotek	Above 1GHz:  a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading.  e. The test-receiver system Bandwidth with Maximum f. If the emission level of the state of	UT was placed on the top of a at a 3 meter fully-anechoic che termine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to make ission, the EUT was arranged tuned to heights from 1 meter bMHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 meters are set to peak mode was 10 meters.	namber. The table wanter that it is a phest radiation. The table wanter tower. The table wanter above the ength. Both horizont is to its worst case for to 4 meters (for the to heights 1 meter) and degrees to find the enction and Specified ad Blower than the
otek Anbotek	Above 1GHz:  a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading.  e. The test-receiver system Bandwidth with Maximum f. If the emission level of the limit specified, then testing	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to make ission, the EUT was arranged tuned to heights from 1 meter bMHz, the antenna was tuned as turned from 0 degrees to 30 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 grould be stopped and the peak are set to peak and the peak peak mode was 10 ground and the peak mode was 10 ground and the peak mode was 10 ground and the peak mode was 10 ground are set to peak mode was 10 ground and the peak mode was 10	namber. The table wanter that it is a please to a meter it is a please to a meter it is a please to a please to find the please to a please to a please to a please to find the please to a please to
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otek Anbotek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading. e. The test-receiver system Bandwidth with Maximum f. If the emission level of the limit specified, then testing would be re-tested one by	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to make ission, the EUT was arranged tuned to heights from 1 meter MHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 ground be stopped and the pervise the emissions that did no one using peak or average in	namber. The table wanter that it is a please to find the please to a please that it is a please to find the please that it is a please that i
otek Anbotek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading. e. The test-receiver system Bandwidth with Maximum f. If the emission level of the limit specified, then testing would be re-tested one by and then reported in a data.	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter bMHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 g could be stopped and the pervise the emissions that did not one using peak or average in a sheet.	namber. The table wanter that it is a precision of the measurement of
otek Anbotek	Above 1GHz: a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading. e. The test-receiver system Bandwidth with Maximum f. If the emission level of the limit specified, then testing would be re-tested one by and then reported in a datag. Test the EUT in the lower would see the store of the limit specified in a datag. Test the EUT in the lower would be reported in a datag. Test the EUT in the lower would be reserved.	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to make ission, the EUT was arranged tuned to heights from 1 meter MHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 ground be stopped and the pervise the emissions that did no one using peak or average in	namber. The table wanter that it is a precision of the measurement of
otek Anbotek	Above 1GHz:  a. For above 1GHz, the Elemeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is viground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading.  e. The test-receiver system Bandwidth with Maximum f. If the emission level of the limit specified, then testing would be reported. Otherwould be re-tested one by and then reported in a data g. Test the EUT in the low channel.	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteraied from one meter to four maximum value of the field stroof the antenna are set to make ission, the EUT was arranged tuned to heights from 1 meter bMHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 ground be stopped and the pervise the emissions that did not one using peak or average in a sheet.  The extremely the middle changes are to the emissions and the pervise the emissions that did not one using peak or average in a sheet.	namber. The table wanter that it is a place to the measurement of the
Test Method:  Test Method:  Anborek  Anborek	Above 1GHz:  a. For above 1GHz, the Elmeters above the ground rotated 360 degrees to de b. The EUT was set 3 met which was mounted on the c. The antenna height is v ground to determine the mand vertical polarizations of d. For each suspected emand then the antenna was test frequency of below 30 and the rotatable table was maximum reading.  e. The test-receiver system Bandwidth with Maximum f. If the emission level of the limit specified, then testing would be reported. Otherwould be re-tested one by and then reported in a data g. Test the EUT in the low channel.  h. The radiation measurer	UT was placed on the top of a at a 3 meter fully-anechoic chetermine the position of the highers away from the interference top of a variable-height anteried from one meter to four maximum value of the field stroof the antenna are set to mak ission, the EUT was arranged tuned to heights from 1 meter bMHz, the antenna was tuned as turned from 0 degrees to 36 m was set to Peak Detect Fur Hold Mode.  The EUT in peak mode was 10 g could be stopped and the pervise the emissions that did not one using peak or average in a sheet.	namber. The table wanter that it is a place to the measurement of the

#### **Shenzhen Anbotek Compliance Laboratory Limited**



Transmitting mode, and found the X axis positioning which it is the worst



case.



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- 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.

#### 7.1. EUT Operation

#### Operating Environment:

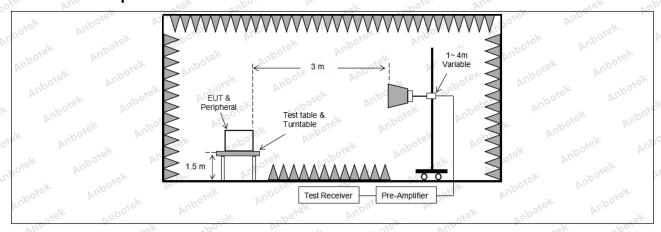
1: 802.11a mode: Keep the EUT in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.

Test mode:

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.

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.

#### 7.2. Test Setup









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#### 7.3. Test Data

Temperature: 23.7 °C	Humidity: 40 %	Atmospheric Pressure:	101 kPa
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		TM1 / E	Band: 5150-5	250 MHz / BV	W: 20 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	36.83	15.99	52.82	68.20	-15.38	workH as	Peak
5150.00	38.88	15.99	54.87	68.20	-13.33	, V	Peak
5150.00	26.81	15.99	42.80	54.00	-11.20	And Hick	AVG
5150.00	28.82	15.99	44.81	54.00	-9.19	Vub.	AVG
		TM1 / B	and: 5150-52	250 MHz / BV	V: 20 / H		,
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.32	16.43	53.75	68.20	-14.45	H	Peak
5250.00	40.18	16.43	56.61	68.20	-11.59	And Vick	Peak
5250.00	28.59	16.43	45.02	54.00	-8.98	Pull Hurd	AVG
5250.00	29.54	16.43	45.97	54.00	-8.03	Kpoyer	AVG

#### Remark:

- 1. Result=Reading + Factor
- 2. During the test, all antenna chains has been tested, and only worst case (ANT2) data is listed in the report.

торога.	201	VD.		~0, D	<u> </u>	_x&\_	- 00
		TM2 / B	and: 5150-52	250 MHz / BV	V: 20 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	35.83	15.99	51.82	68.20	-16.38	H Abote	Peak
5150.00	37.19	15.99	53.18	68.20	-15.02	V V	reak Peak
5150.00	26.55	15.99 AN	42.54 Anii	54.00	-11.46 M	H	AVG
5150.00	27.56	15.99	43.55	54.00	-10.45	Aupore A	AVG
		TM2 / B	and: 5150-52	250 MHz / BV	V: 20 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.63	16.43	54.06	68.20	-14.14	. Н	Peak no
5250.00	38.69	16.43	55.12	68.20	ote-13.08 Ant	V V	Peak
5250.00	27.65	16.43	44.08	54.00	-9.92	nbotel A	AVG
5250.00	29.06	16.43	45.49	54.00	-8.51	NooN <sub>K</sub>	AVG
NO.	K	740.	VUP	- 1	No		7.0.

- 1. Result=Reading + Factor
- 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.







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				Up			10.
		TM2 / B	and: 5150-52	250 MHz / BV	V: 40 / L		-
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	36.31	15.99	52.30	68.20	-15.90	k Hupote	Peak
5150.00	38.17 <sub>00</sub> 00	15.99	54.16	68.20 nbon	-14.04	otek V Anbo	Peak
5150.00	26.87	15.99 And	42.86	54.00	-11.14	Lotek H	AVG
5150.00	28.68	15.99	44.67	54.00	-9.33	V.	AVG
		TM2 / B	and: 5150-52	250 MHz / BV	V: 40 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.97 of	16.43	54.40	68.20	-13.80	tek H Anbo	Peak
5250.00	36.88	16.43 M	53.31	68.20 M	-14.89	V V	Peak
5250.00	28.12	16.43	44.55	54.00	-9.45	Vpo. H	AVG
5250.00	29.30	16.43	45.73	54.00	-8.27	Anbord	AVG

#### Remark:

- 1. Result=Reading + Factor
- 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.

	46. VUD		- V	20, 12,		7. VU	-
		TM3 / B	and: 5150-5	250 MHz / BV	V: 20 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	36.76	15.99	52.75	68.20	-15.45	Hotek	Peak
5150.00	38.49	15.99	54.48	68.20	-13.72	k V bote	Peak
5150.00	26.46	15.99	42.45	54.00	-11.55 <sup>nboo</sup>	H H	otel <sup>k</sup> AVG pribo
5150.00	28.60	15.99 <sub>M</sub>	44.59	54.00	-9.41 M	N WILL	AVG
		TM3 / B	and: 5150-52	250 MHz / BV	V: 20 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.78	16.43	54.21	68.20	-13.99	k H potel	Peak
5250.00	38.05	16.43	54.48	68.20	-13.72	V	Peak noo
5250.00	27.67	16.43	44.10 M	54.00	ore -9.90 Ant	Ofer H Pup	AVG
5250.00	28.18	16.43	44.61	54.00	-9.39	nbotek A	AVG

- 1. Result=Reading + Factor
- 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.









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		TM3 / B	and: 5150-52	250 MHz / BV	V: 40 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5150.00	35.72	15.99	51.71	68.20	-16.49	PHk	Peak
5150.00	36.22	15.99	52.21	68.20	-15.99	Nupor	Peak
5150.00	25.84 <sup>1000</sup>	15.99	41.83 A	54.00	-12.17 NO	otek H Anbo	AVG
5150.00	26.64 M	15.99	42.63	54.00	-11.37	nbotek V Ar	AVG
		TM3 / B	and: 5150-52	250 MHz / BV	V: 40 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5250.00	37.90	16.43	54.33	68.20	-13.87	H <sup>nb</sup>	Peak
5250.00	37.08	16.43	53.51 mod	68.20	-14.69	isk A Vupo	Peak
5250.00	27.39	16.43	43.82	54.00	-10.18	Lotek H An	AVG
5250.00	27.25	16.43	43.68	54.00	-10.32	V	AVG

- 1. Result=Reading + Factor
- 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.





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O, by		46. 101	<u> </u>		10, b.,		710.
		TM1 / B	and: 5725-58	350 MHz / BV	V: 20 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5725.00	38.02	16.37	54.39	68.20	-13.81	PHk	Peak
5725.00	39.35	16.37	55.72	68.20	-12.48	Nupo,	Peak
5725.00	28.92	16.70	45.62	54.00	otek-8.38 Mb	otek H Anbo	AVG
5725.00	30.02 M	16.70	46.72	54.00	-7.28	nbotek V A	AVG
		TM1 / B	and: 5725-58	350 MHz / BV	V: 20 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5850.00	38.94	17.21	56.15	68.20	-12.05	H <sup>nb</sup>	Peak
5850.00	39.28	17.21	56.49	68.20	-11.71	tek A Vupo	Peak
5850.00	28.95	17.21	46.16	54.00	-7.84	Lotek H An	AVG
5850.00	28.99	17.21	46.20	54.00	-7.80	V	AVG

#### Remark:

- 1. Result=Reading + Factor
- 2. During the test, all antenna chains has been tested, and only worst case (ANT1) data is listed in the report.

		TM2 / B	and: 5725-58	350 MHz / BV	V: 20 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5725.00	37.98	17.05	55.03	68.20	-13.17	Anb Air	Peak
5725.00	38.52	17.05	55.57	68.20	-12.63	Noose	Peak
5725.00	27.52	17.05	44.57	54.00	-9.43	sk H <sub>M</sub> hoote	AVG
5725.00	38.00 <sub>xx</sub> 100	17.05	45.05	54.00 mb°	-8.95	otek V Anb	AVG
		TM2 / B	and: 5725-58	350 MHz / BV	V: 20 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5850.00	37.18	17.21	54.39	68.20	-13.81	AH <sup>oro</sup>	Peak
5850.00	37.83	17.21	55.04	68.20	-13.16	k Nupote	Peak
5850.00	27.41	17.21	44.62	54.00	-9.38	ek H √o	AVG AVG
5850.00	28.29	ote*17.21 Anto	45.50	54.00	-8.50 M	V	AVG

- 1. Result=Reading + Factor
- 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.







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				Up			
		TM2 / B	and: 5725-58	350 MHz / BV	V: 40 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5725.00	37.56	17.05	54.61	68.20	-13.59	K Hinbotel	Peak
5725.00	38.40	17.05	55.45	68.20 (b <sup>0</sup> )	-12.75	otek V Anbo	Peak
5725.00	26.92	17.05 And	43.97	54.00 pm	-10.03	H-Vert	AVG
5725.00	28.32	17.05	45.37	54.00	-8.63	V.	AVG
		TM2 / B	and: 5725-58	350 MHz / BV	V: 40 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5850.00	37.92	17.21	55.13	68.20	-13.07	tek H anboi	Peak
5850.00	38.34	otek 17.21 Anbo	55.55	68.20 M	-12.65	V V	Peak M
5850.00	28.08	17.21	45.29	54.00	8.71 A	A H	AVG
5850.00	29.21	17.21	46.42	54.00	-7.58	Anbord	AVG

Remark: 1. Result=Reading + Factor

1000	5100	494	700	- r	v	VU	2-6
		TM3 / B	and: 5725-5	850 MHz / BV	W: 20 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5725.00	37.23	17.05	54.28	68.20	-13.92	Anbore H	Peak
5725.00	37.46	17.05	54.51	68.20	-13.69	No Nok	Peak
5725.00	28.19	17.05	45.24	54.00	-8.76	Horek	AVG
5725.00	28.93	17.05	45.98	54.00	-8.02	V Noote	AVG
		TM3 / B	and: 5725-58	350 MHz / BV	V: 20 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5850.00	37.97	17.21	55.18	68.20	-13.02	NO HE	Peak
5850.00	38.88	17.21	56.09	68.20	-12.11	Votek	Peak
5850.00	27.87	17.21	45.08	54.00	-8.92	H del	AVG
5850.00	28.89	17.21 of	46.10	54.00	-7.90 hote	Avupa	AVG No

- 1. Result=Reading + Factor
  - 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.







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		TM3 / B	and: 5725-58	350 MHz / BV	V: 40 / L		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5725.00	36.19	17.05	53.24	68.20	-14.96	AH LON	Peak
5725.00	37.76	17.05	54.81	68.20	-13.39	Nupor	Peak
5725.00	27.47	17.05	44.52	54.00	nek-9.48	otek H Anbo	AVG
5725.00	28.18 An	17.05	45.23	54.00	-8.77	nbotek V Ar	AVG
		TM3 / B	and: 5725-58	350 MHz / BV	V: 40 / H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
5850.00	37.55	17.21	54.76	68.20	-13.44	Hup	Peak
5850.00	38.33	17.21	55.54 NOO'	68.20	-12.66	isk A Vupo,	Peak
5850.00	27.54	17.21 And	44.75	54.00	-9.25	Lotek H An	AVG ANG
5850.00	27.12	17.21	44.33	54.00	-9.67	Y	AVG

- 1. Result=Reading + Factor
- 2. During the test, SISO and MIMO modes have been tested, and only worst case (MIMO) data is listed in the report.





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# 8. Band edge emissions (Conducted)

700 K	hote Au tek up
Test Requirement:	47 CFR Part 15.407(b)(1)
Toot requirement:	47 CFR Part 15.407(b)(2)
Anbo. Ak abot	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside
	of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
Test Limit:	oo' An Jotek Anbote And tek obotek Anbo' An
or - bu	For transmitters operating in the 5.25-5.35 GHz band: All emissions outside
abotek Anbo	of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
y, yek vipojer,	Aug Ak hotek Vupo, W. Hek Vupoter Vupo
	Peak emission levels are measured by setting the instrument as follows:
	RBW = 1 MHz.
Test Method:	VBW ≥ [3 × RBW]
rest weight.	Detector = peak.
	Sweep time = auto.
	Trace mode = max hold.

# 8.1. EUT Operation

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.
Test mode:	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.
	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.

# 8.2. Test Setup



### 8.3. Test Data

Temperature:	23.7 °C	Humidity:	40 %	Atmospheric Pressure: 101 kPa	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

Please Refer to Appendix for Details.







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# 9. Undesirable emission limits (below 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(9)	And Andrew Andrew	or Aliv
Aupotek Vupotek	Unwanted emissions below strength limits set forth in §	1 GHz must comply with the ge 15.209.	neral field
stek Anbotek An		ere in this subpart, the emissions t exceed the field strength levels	
	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490 0.490-1.705	2400/F(kHz) 24000/F(kHz)	300 30
ek Anbotek Ant	1.705-30.0 30-88	30 100 **	30
Test Limit:	88-216 216-960 Above 960	150 ** 200 ** 500	3 3
	** Except as provided in pa intentional radiators operat frequency bands 54-72 MH	ragraph (g), fundamental emissiing under this section shall not b lz, 76-88 MHz, 174-216 MHz or these frequency bands is permitt	ons from e located in the 470-806 MHz.
	The emission limits shown employing a CISPR quasi-p 90 kHz, 110–490 kHz and a	e, the tighter limit applies at the bin the above table are based on beak detector except for the frequency 1000 MHz. Radiated emised on measurements employing	measurements uency bands 9– sion limits in
Test Method:	ANSI C63.10-2020, section	12.7.4, 12.7.5	Aug tek
Anbotek Anbotek  Anbotek Anbotek  Anbotek  Anbotek  Anbotek  Anbotek	meters above the ground a was rotated 360 degrees to b. The EUT was set 3 or 10 antenna, which was mount c. The antenna height is va ground to determine the materials.	T was placed on the top of a rota t a 3 meter semi-anechoic cham determine the position of the hi meters away from the interference ed on the top of a variable-heigh ried from one meter to four meter aximum value of the field strength	ber. The table ghest radiation. nce-receiving t antenna tower. ers above the h. Both horizonta
Procedure:	d. For each suspected emis and then the antenna was test frequency of below 300	ssion, the EUT was arranged to tuned to heights from 1 meter to MHz, the antenna was tuned to he turned from 0 degrees to 360	its worst case 4 meters (for the neights 1 meter)
Anbotek Anbotek  Anbotek Anbotek  Anbotek Anbotek	Bandwidth with Maximum If. If the emission level of the limit specified, then testing	was set to Peak Detect Function Hold Mode.  Be EUT in peak mode was 10dB I could be stopped and the peak was the emissions that did not hat	ower than the values of the EU









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would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.

- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case
- i. Repeat above procedures until all frequencies measured was complete. Remark:
- 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- 2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

#### Above 1GHz:

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case
- i. Repeat above procedures until all frequencies measured was complete. Remark:
- 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- 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









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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.

#### 9.1. EUT Operation

#### Operating Environment:

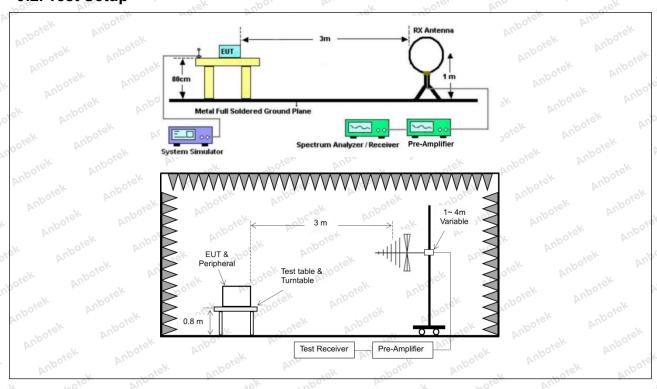
1: 802.11a mode: Keep the EUT in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.

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.

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.

#### 9.2. Test Setup

Test mode:









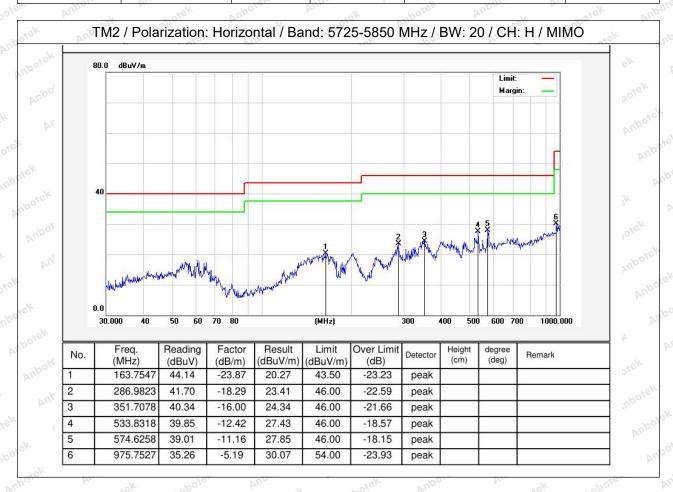


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#### 9.3. Test Data

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

TEHIDERALULE. TZJ.1600 POTENINININ, THOUSON NOT AUTOSDITETIC LIESSUIE. MOTOT KLAI	Temperature:	23.7 °C	Humidity:	40 %	Atmospheric Pressure:	101 kPa
---	--------------	---------	-----------	------	-----------------------	---------

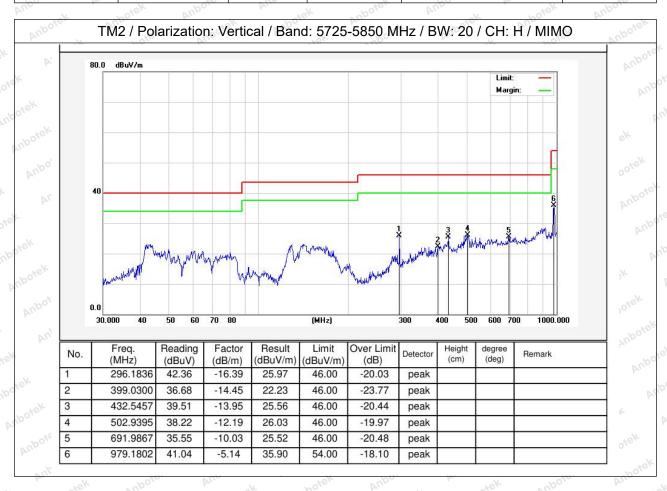






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Temperature: 23.7 °C Humidity: 40 % Atmospheric Pressure: 101 kPa



Note: Only record the worst data 802.11n(HT20) MIMO in the report.





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# 10. Undesirable emission limits (above 1GHz)

est Requirement:	47 CFR Part 15.407(b 47 CFR Part 15.407(b 47 CFR Part 15.407(b	)(4)	Anbotek Anbo	upotek Aupo
ik hotek Anbot	For transmitters opera of the 5.15-5.35 GHz t			
otek Anbotek Anbotek Anbotek	For transmitters opera All emissions shall be above or below the ba above or below the ba edge increasing linear	limited to a level of – nd edge increasing li nd edge, and from 25	27 dBm/MHz at nearly to 10 dBr 5 MHz above or	75 MHz or more n/MHz at 25 MH below the band
	below the band edge,			
	increasing linearly to a	level of 27 dBm/MH	z at the band ed	ge.
. abotek Ant	MHz	MHz	MHz	GHz
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
	<sup>1</sup> 0.495-0.505	16.69475- 16.69525	608-614	5.35-5.46
	2.1735-2.1905	16.80425- 16.80475	960-1240	7.25-7.75
Ando	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
otek Anbotek	6.26775-6.26825	108-121.94	1718.8- 1722.2	13.25-13.4
est Limit:	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
Anbotek Anbote	8.362-8.366	156.52475- 156.52525	2483.5-2500	17.7-21.4
	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
	12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
	12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
	12.57675-12.57725	322-335.4	3600-4400	(2) Mboto
	13.36-13.41	P.L.	aboven And	V
	And	otek Anbor	*6K	apoles Aug
	<sup>1</sup> Until February 1, 1999	9, this restricted band	l shall be 0.490-	0.510 MHz.
	<sup>2</sup> Above 38.6			
	The field strength of end exceed the limits so 1000 MHz, compliance using measurement in detector. Above 1000 limits and the strength of the s	shown in § 15.209. At with the limits in § 1 strumentation employ MHz, compliance with	frequencies equ 5.209shall be do ying a CISPR qu n the emission li	ual to or less that emonstrated uasi-peak mits in §
	15.209shall be demon emissions. The provisi			









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_	101V		
	Except as provided elsewh	nere in this subpart, the emis	ssions from an
	- K	ot exceed the field strength I	evels specified in the
	following table:	And botek	Anbor Ar
	Frequency (MHz)	Field strength	Measurement

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30 <sup>A</sup>
1.705-30.0	30 Anba	30 anbore
30-88	100 **	3 hotek
88-216	150 **	3 400
216-960	200 **	3,ek Anbore
Above 960	500 AT	3

<sup>\*\*</sup> Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

#### Test Method:

ANSI C63.10-2020, section 12.7.4, 12.7.6, 12.7.7

#### 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

### Procedure:

#### **Shenzhen Anbotek Compliance Laboratory Limited**





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- 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.

#### 10.1. EUT Operation

#### **Operating Environment:**

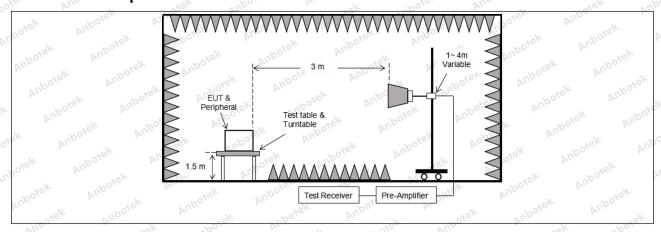
1: 802.11a mode: Keep the EUT in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.

Test mode:

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.

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.

#### 10.2. Test Setup









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### 10.3. Test Data

Temperature: 23.7 °C Humidity: 40 % Atmospheric Pressure: 101 kPa

-Po.		7,0	VU2	-40-	-100	- Par
	TM3 / Ban	d: 5150-525	0 MHz / BW:	20 / CH: L		
Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
29.53	23.81 Anh	53.34	68.20	-14.86	Ver	Peak
30.78	28.91	59.69	68.20	-8.51	Wpp. A	Peak
30.58	23.81	54.39	68.20	-13.81	AupoH	Peak
31.45	28.91	60.36	68.20	-7.84	W. Hoise	Peak
20.23	23.81	44.04	54.00	-9.96	V boick	AVG
20.69	28.91	49.60	54.00	-4.40	V	AVG NO
20.53	23.81	44.34	54.00	otel -9.66 partor	H Am	AVG
20.80	28.91	49.71	54.00	-4.29	upotek H Ar	AVG
	TM3 / Ban	d: 5150-5250	MHz / BW:	20 / CH: H		
Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
29.82	23.80	53.62	68.20	-14.58	Kupote	Peak
31.01	30.03	61.04	68.20	-7.16	tek V noot	Peak
30.41	23.80	54.21	68.20 m	-13.99	H	otel Peak Ant
31.62	30.03	61.65	68.20	-6.55	Pos. A	Peak
20.42	23.80	44.22	54.00	-9.78	Aupore	AVG
20.62	30.03	50.65	54.00	-3.35	No.	AVG
20.43	23.80	44.23	54.00	-9.77	Hotek	AVG
20.57	30.03	50.60	54.00	-3.40	H se	AVG
	(dBuV) 29.53 30.78 30.58 31.45 20.23 20.69 20.53 20.80  Reading (dBuV) 29.82 31.01 30.41 31.62 20.42 20.62 20.43	Reading (dBuV)         Factor (dB/m)           29.53         23.81           30.78         28.91           30.58         23.81           31.45         28.91           20.23         23.81           20.69         28.91           20.53         23.81           20.80         28.91           TM3 / Ban           Reading (dBuV)         Factor (dB/m)           29.82         23.80           31.01         30.03           30.41         23.80           31.62         30.03           20.42         23.80           20.62         30.03           20.43         23.80	Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)           29.53         23.81         53.34           30.78         28.91         59.69           30.58         23.81         54.39           31.45         28.91         60.36           20.23         23.81         44.04           20.69         28.91         49.60           20.53         23.81         44.34           20.80         28.91         49.71           TM3 / Band: 5150-5250           Reading (dBuV)         (dB/m)         (dBuV/m)           29.82         23.80         53.62           31.01         30.03         61.04           30.41         23.80         54.21           31.62         30.03         61.65           20.42         23.80         44.22           20.62         30.03         50.65           20.43         23.80         44.23	Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)         Limit (dBuV/m)           29.53         23.81         53.34         68.20           30.78         28.91         59.69         68.20           30.58         23.81         54.39         68.20           31.45         28.91         60.36         68.20           20.23         23.81         44.04         54.00           20.69         28.91         49.60         54.00           20.53         23.81         44.34         54.00           20.80         28.91         49.71         54.00           TM3 / Band: 5150-5250 MHz / BW:           Reading (dBuV)         Result (dBuV/m)         Limit (dBuV/m)           29.82         23.80         53.62         68.20           31.01         30.03         61.04         68.20           30.41         23.80         54.21         68.20           31.62         30.03         61.65         68.20           20.42         23.80         44.22         54.00           20.62         30.03         50.65         54.00           20.43         23.80         44.23         54.00	(dBuV)         (dB/m)         (dBuV/m)         (dBuV/m)         (dB)           29.53         23.81         53.34         68.20         -14.86           30.78         28.91         59.69         68.20         -8.51           30.58         23.81         54.39         68.20         -13.81           31.45         28.91         60.36         68.20         -7.84           20.23         23.81         44.04         54.00         -9.96           20.69         28.91         49.60         54.00         -4.40           20.53         23.81         44.34         54.00         -9.66           20.80         28.91         49.71         54.00         -9.66           20.80         28.91         49.71         54.00         -9.66           20.80         70.89         49.71         54.00         -9.66           20.80         28.91         49.71         54.00         -9.66           20.80         28.91         49.71         54.00         -9.66           20.80         28.91         49.71         54.00         -9.71           Reading (dBuV)         (dBuV/m)         (dBuV/m)         (dBuV/m)         (dBuV/m)         (d	Reading (dBuV)         Factor (dB/m)         Result (dBuV/m)         Limit (dBuV/m)         Over limit (dB)         Antenna Pol.           29.53         23.81         53.34         68.20         -14.86         V           30.78         28.91         59.69         68.20         -8.51         V           30.58         23.81         54.39         68.20         -13.81         H           31.45         28.91         60.36         68.20         -7.84         H           20.23         23.81         44.04         54.00         -9.96         V           20.69         28.91         49.60         54.00         -4.40         V           20.53         23.81         44.34         54.00         -9.66         H           20.80         28.91         49.71         54.00         -4.29         H           TM3 / Band: 5150-5250 MHz / BW: 20 / CH: H           Reading (dBuV)         (dB/m)         (dB/w)         (dBuV/m)         (dB)         Antenna Pol.           29.82         23.80         53.62         68.20         -14.58         V           31.01         30.03         61.04         68.20         -7.16         V           30.41

- 1. Result =Reading + Factor
- 2. Only the worst case 802.11ac(VHT40) MIMO is recorded in the report.





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ien Aug		TMO / Daw	-L F705 505	0 MILL / DVA/-	notes An	, , , , , , , , , , , , , , , , , , ,	Atek
	- I			0 MHz / BW:			
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
11490.000	28.51	23.36	51.87	68.20	-16.33	AV	Peak
17235.000	29.84	31.97	61.81	68.20	-6.39	k Nupore	Peak
11490.000	28.94	23.36	52.30	68.20	-15.90	nek H no	Peak
17235.000	30.07	ote <sup>k</sup> 31.97 pmb	62.04	68.20	-6.16 Ant	Н	Peak
11490.000	17.79	23.36	41.15	54.00	-12.85	Wpo, A	AVG
17235.000	18.54	31.97	50.51	54.00	-3.49	Aupor.	AVG
11490.000	17.97	23.36	41.33	54.00	-12.67	, Hotek	AVG
17235.000	18.04	31.97	50.01	54.00	-3.99	Hobotek	AVG
		TM2 / Ban	d: 5725-585	MHz / BW:	20 / CH: M		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
11570.000	29.09	23.42	52.51	68.20	-15.69	V	Peak
17355.000	29.72	32.18	61.90	68.20	-6.30	Aup Aup	Peak
11570.000	29.14	23.42	52.56	68.20	-15.64	An H	Peak
17355.000	30.16	32.18	62.34	68.20	-5.86	Hobotes	Peak
11570.000	19.060	23.42	42.48	54.00	-11.52	ek V nbot	AVG
17355.000	18.862	32.18	51.04	54.00	-2.96	V	AVG
11570.000	18.961	23.42	42.38	54.00	-11.62	H bu	AVG
17355.000	18.418	32.18	50.60	54.00	-3.40	Anborth	AVG
		TM2 / Ban	d: 5725-585	0 MHz / BW:	20 / CH: H		
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over limit (dB)	Antenna Pol.	Detector
11650.000	28.60	23.49	52.09	68.20	-16.11	Sk A Vupor	Peak
17475.000	29.96	32.39	62.35	68.20	-5.85	otek V Anh	Peak
11650.000	28.88	23.49	52.37	68.20	-15.83	H	Peak
17475.000	29.77	32.39	62.16	68.20	-6.04	Pupo, H	Peak
11650.000	18.13	23.49	41.62	54.00	-12.38	AUPS	AVG
17475.000	18.66	32.39	51.05	54.00	-2.95	Motek	AVG
11650.000	18.14	23.49	41.63	54.00	-12.37	H bote	AVG
17475.000	18.39	32.39	50.78	54.00	-3.22 <sup>nboo</sup>	Н	AVG

- 1. Result =Reading + Factor
- 2. Only record the worst data 802.11n(HT20) MIMO 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 -----

