TEST REPORT

REPORT NUMBER: I21W00012-EMC_Rev1

ON

Type of Equipment: Tracker

Type of Designation: AT NG

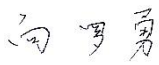
Manufacturer: Micron Electronics LLC.

ACCORDING TO
Subpart B, PART 15, RADIO FREQUENCY DEVICES

Chongqing Academy of Information and Communication Technology

Month date, year
Jun 22, 2021

Signature



Xiang Luoyong
Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communication Technology.

Revision Version

Report Number	Revision	Date	Memo
I21W00012-EMC	00	2021-06-22	Initial creation of test report
I21W00012-EMC_Rev1	01	2021-07-14	Initial creation of test report

Chongqing Academy of Information and Communication Technology
Address：No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336
Tel: 0086-23-88069965 FAX:0086-23-88608777

FCC ID:	ZKQ-ATNG
Report Date:	2021-06-22
Test Firm Name:	Chongqing Academy of Information and Communication Technology
FCC Registration Number:	CN1239

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 15B. The sample tested was found to comply with the requirements defined in the applied rules.

CONTENTS

1 General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part15B.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex C.

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1.2 Testers

Name:	Chen Xin
Position:	Engineer
Department:	Department of EMC test
Date:	2021-06-22
Signature:	

Editor of this test report:

Name:	Xiao Yu
Position:	Engineer
Department:	Department of EMC test
Date:	2021-06-22
Signature:	

Technical responsibility for area of testing:

Name:	Xiang Luoyong
Position:	Manager
Department:	Department of EMC test
Date:	2021-06-22
Signature:	

1.3 Testing Laboratory information

1.3.1 Location

Name:	Chongqing Academy of Information and Communcations
Address:	Building B, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China, 401336
Tel:	+86 23 88069965
Fax:	+86 23 88608777
Email:	liqiao@caict.ac.cn

1.3.2 Details of accreditation status

Accredited by:	--
Registration number:	--
Standard:	--

1.3.3 Test location, where different from section 1.3.1

Name:	--
Address:	--

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name:	Micron Electronics LLC.
Address:	1001 Yamato Road, Suite 400, Boca Raton, FL 33431, USA
Country:	USA
Telephone:	1 888 538 3489
Fax:	--
Contact:	Ping Cheng
Email:	pcheng@micron-electronics.com

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name:	Micron Electronics LLC.
Address:	1001 Yamato Road, Suite 400, Boca Raton, FL 33431, USA
Country:	USA

2 Test Item

2.1 General Information

Manufacturer:	Micron Electronics LLC.
Name:	Tracker
Model Number:	AT NG
Serial Number:	P4L41704010432
IMEI:	866884045647955
Production Status:	Product
Receipt date of test item:	2021-06-01

2.2 Outline of EUT

The EUT AT NG is a Product supporting WLAN 2.4G,CAT M1 Band 2/4/5/12/13、NB-IOT Band 2/4/5/12/13 and PCS1900.

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Product	Micron Electronics LLC.	AT NG	P4L41704010432	None

2.5 Other Information

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3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

Configuration1		
Specification Clause	Name of Test	Result
15.107	Conducted limits	P
15.109	Radiated Emission limits	P

4.Test equipment and Test software

Test equipment Used:							
Number	**Description**	**Manufacturer**	**Model Number**	**Serial Number**	**Cal. Date**	**Cal Due**	**State**
1	Test Receiver	R&S	ESU 40	100350	2021-05-12	2022-06-11	Normal
2	Trilog Antenna	Schwarzbeck	VULB9163	9163-586	2020-10-12	2022-11-11	Normal
3	Double Ridged Guide Antenna	Schwarzbeck	BBHA 9120D	9120D-1083	2021-05-12	2022-06-11	Normal
4	Fully-Anechoic Chamber	TDK	FAC	--	2020-05-31	2021-06-30	Normal
5	AMN	R&S	ENV216	102368	2021-05-12	2022-06-11	Normal
6	EMI Test Receiver	R&S	ESR 3	102477	2021-05-12	2022-06-11	Normal

Test software Used:				
Number	Test item	Test software name	Manufacturer	Version:
1	Radiated Emission	EMC32	R&S	V9.01.00
2	Conducted Emission	EMC32	R&S	V10.40.10

5 Test Results

5.1 Radiated Emission

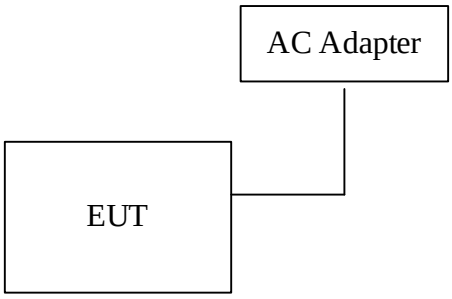
Specifications:	15.109
Date of Tests	2021-06-02
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Operation Mode	Normal
Test Results:	Pass

Limit Level Construction(Except for Class A digital devices):

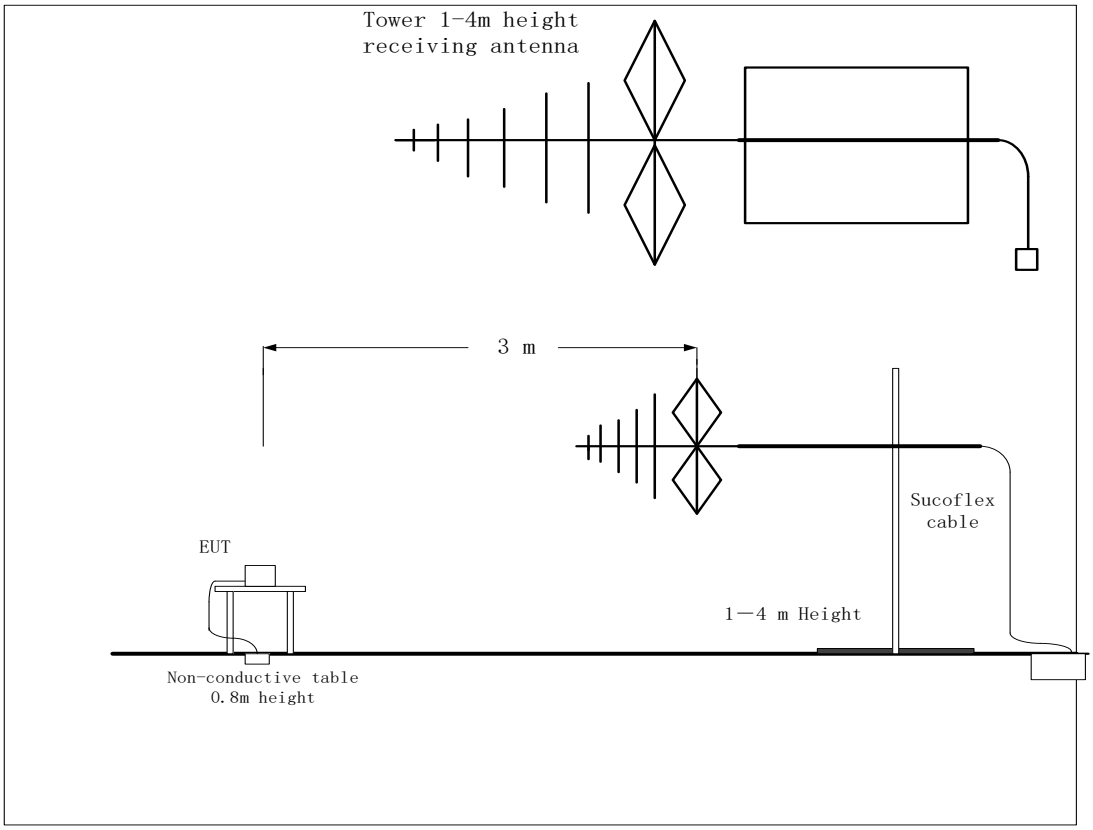
Frequency Range (MHz)	Quasi-Peak (dBuV/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Frequency Range (MHz)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

EUT Setup:



Test Setup:



Test Method:

For 30-1000MHz, the EUT was placed on the top of a rotating 0.8m table above the ground at a semi-anechoic chamber. The distance between the EUT and the received antenna was 3 meters. The table was rotated 360 degree and the received antenna mounted on a variable-height antenna tower was varied from 1m to 4m to find the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement. Tested in accordance with the procedures of ANSI C63.4-2014, section 8.3.

For 1000-18000MHz, the maximal emission value was acquired by adjusting the antenna height, and the table was rotated 360 degree to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement.

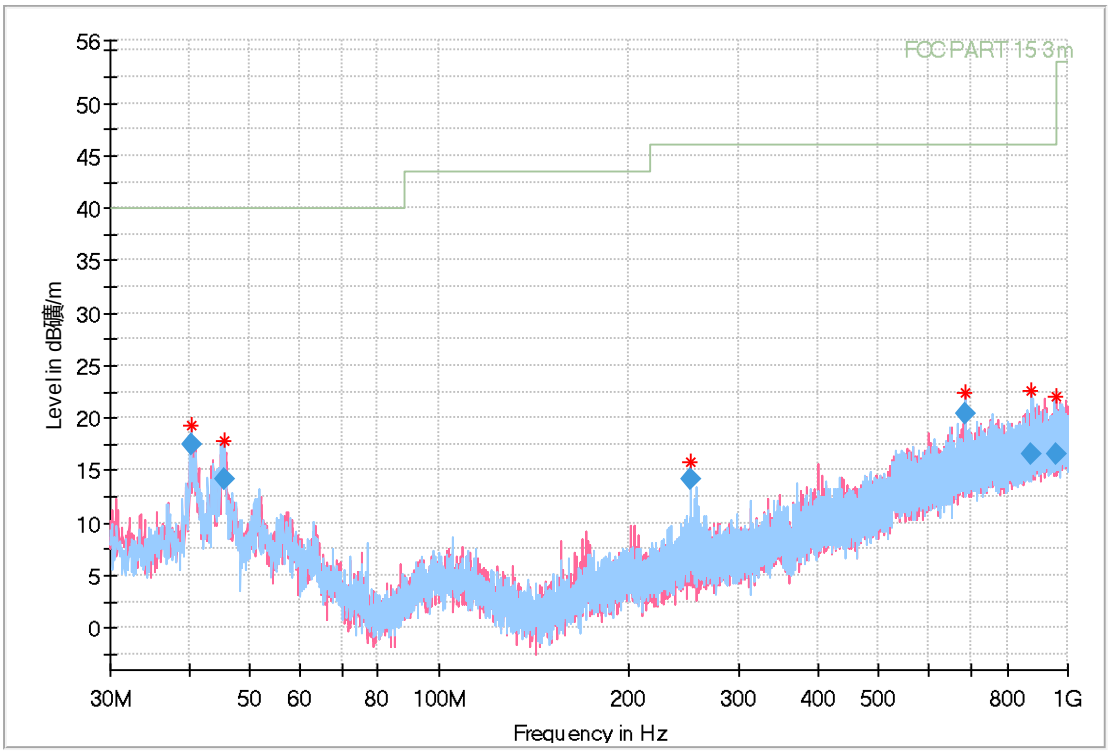
Uncertainty Measurement:

The measurement uncertainty (30MHz-1000MHz) is 3.97 dB (k=2).

The measurement uncertainty (1000MHz-6000MHz) is 3.29 dB (k=2).

The measurement uncertainty (6000MHz-18000MHz) is 3.91 dB (k=2).

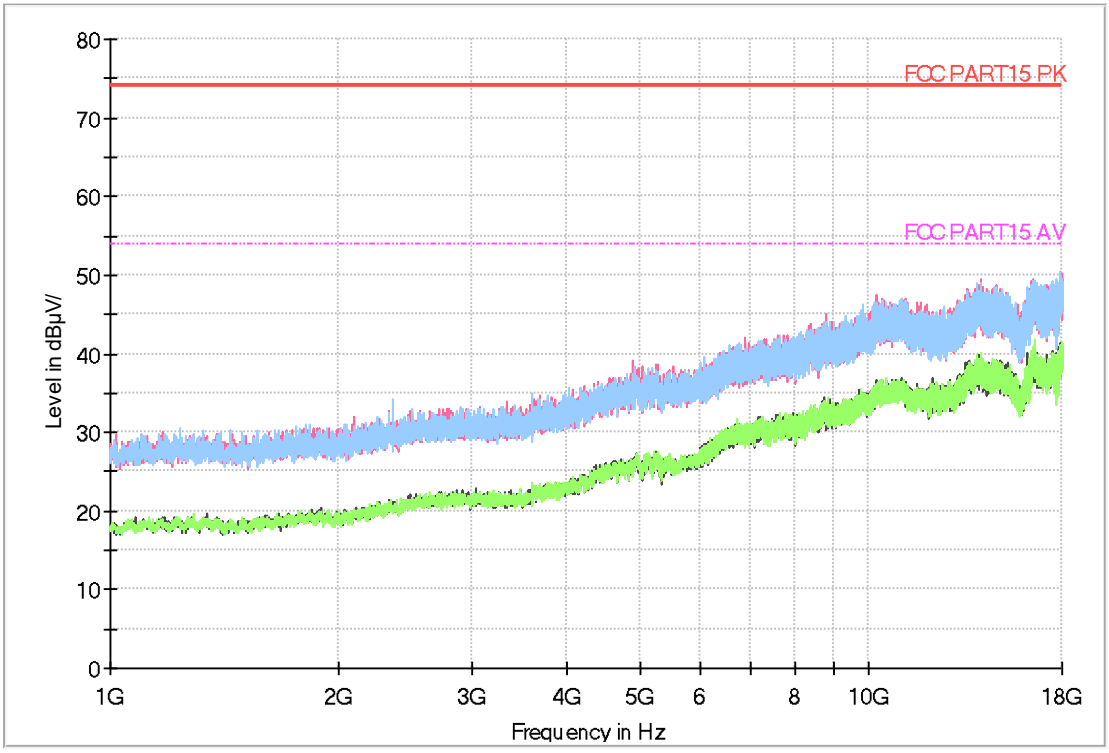
Test Data



RE 30M-1G

Frequency (MHz)	QuasiPeak (dB µV/m)	Limit (dB µV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
40.370500	17.48	40.00	22.52	1000.0	120.000	120.0	H	169.0	-19.4
45.671500	14.22	40.00	25.78	1000.0	120.000	326.0	H	183.0	-18.3
251.142000	14.08	46.00	31.92	1000.0	120.000	117.0	H	206.0	-19.1
687.563000	20.36	46.00	25.64	1000.0	120.000	117.0	V	237.0	-8.7
873.530000	16.57	46.00	29.43	1000.0	120.000	386.0	H	218.0	-7.2
956.093000	16.48	46.00	29.52	1000.0	120.000	309.0	V	304.0	-6.4

Note: The red curve represents V polarization, the blue curve represents V polarization.


FCC PART15 PK
FCC PART15 AV
Level in dBµV/
Frequency in Hz
80
70
60
50
40
30
20
10
0
1G
2G
3G
4G
5G
6
8
10G
18G

RE 1-18G

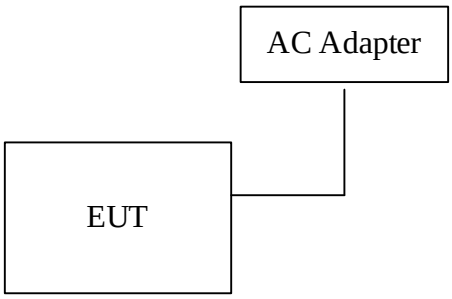
5.2 Conducted Emission

Specifications:	15.107
Date of Tests	2021-06-16
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Operation Mode	Normal
Test Results:	Pass

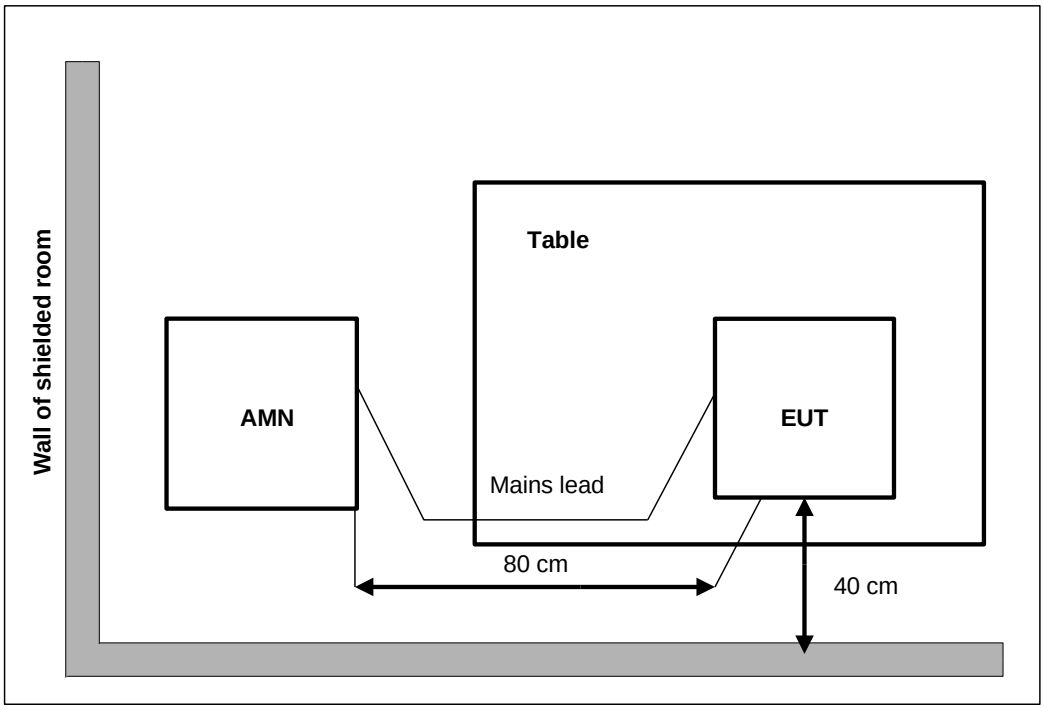
Limit Level Construction:

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

EUT Setup:



Test Setup:



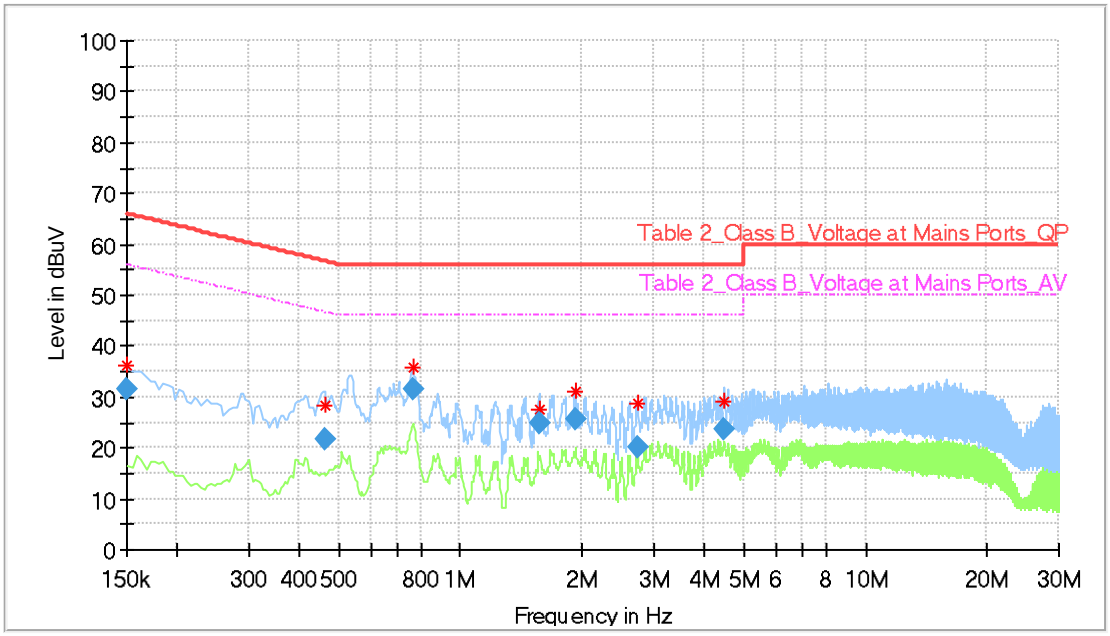
Test Method:

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies with the band 150 kHz to 30MHz shall not exceed the limits. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. Tested in accordance with the procedures of ANSI C63.4-2014, section 7.3

Uncertainty Measurement:

The measurement uncertainty is 1.91 dB (k=2).

Test Data



L&N 150KHz-30MHz

Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Line	Filter	Corr. (dB)
0.150000	31.52	---	66.00	34.48	1000.0	L1	ON	10.9
0.464404	21.77	---	56.61	34.84	1000.0	L1	ON	10.0
0.764669	31.32	---	56.00	24.68	1000.0	L1	ON	9.9
1.567985	24.81	---	56.00	31.19	1000.0	L1	ON	9.8
1.914662	25.61	---	56.00	30.39	1000.0	L1	ON	9.8
2.751000	20.03	---	56.00	35.97	1000.0	L1	ON	9.8
4.469581	23.47	---	56.00	32.53	1000.0	L1	ON	9.8

Test photo

See the Pic1~3 in document" I21W00012_EMC Test Setup Photos".

Annex A External Photos

See the document" I21W00012 -External Photos".

Annex B Internal Photos

See the document" I21W00012 -Internal Photos".

ANNEX C Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

The End of this Report