

F	CC REPORT	
Applicant:	Quantum Creations LLC.	
Address of Applicant:	15705 NW 13th Ave, Miami Gardens, Miami Beach, Florida 33169, United States	
Manufacturer/Factory:	MeLE Technologies (Shenzhen) Co., Ltd	
Address of Manufacturer/Factory: Equipment Under Test (B	No.28 Cuijing Road,Pingshan District, Shenzhen(518118) P.R .China EUT)	
Product Name:	Access Plus	
Model No.: Trade Mark:	A-1063-AAP-1, A-1063-AAP-2, A-1063-AAP-3, A-1063-AAP- 4, A-1063-AAP-5, A-1063-AAP-6, A-1063-AAP-7, A-1063- AAP-8, A-1063-AAP-9, A-1063-AAP-10, A-1063-AAP-11, A- 1063-AAP-12, A-1063-AAP-13, A-1063-AAP-14, A-1063- AAP-15, A-1063-AAP AZULLE	
FCC ID:	2AFJI20161063	
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407	
Date of sample receipt:	December 19, 2019	
Date of Test:	December 19-27, 2019	
Date of report issued:	December 27, 2019	
Test Result :	PASS *	

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

18019

**Robinson Lo** Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



# 2 Version

Report No.	Version No.	Date	Description
GTS201608000121E05	00	September 07, 2016	Original
GTS201912000226F05	01	December 27, 2019	Change DDR, address of manufacturer/factory, product name and model number

Prepared By:

Date:

December 27, 2019

Project Engineer

Check By:

Date:

December 27, 2019

Reviewer



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# 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Spurious Emission	15.205/15.209/15.407(b)(4)	Pass

Pass: The EUT complies with the essential requirements in the standard.

Remark: Test according to ANSI C63.10:2013.

## 4.1 Measurement Uncertainty

Test Item	Test Item Frequency Range		Notes	
Radiated Emission	9kHz ~ 30MHz	$\pm$ 4.34dB	(1)	
Radiated Emission	30MHz ~ 1000MHz	$\pm$ 4.24dB	(1)	
Radiated Emission	1GHz ~ 40GHz	± 4.68dB	(1)	
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)	
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.				



# **5** General Information

# 5.1 General Description of EUT

Product Name:	Access Plus
Model No.:	A-1063-AAP-1, A-1063-AAP-2, A-1063-AAP-3, A-1063-AAP-4, A-1063- AAP-5, A-1063-AAP-6, A-1063-AAP-7, A-1063-AAP-8, A-1063-AAP-9, A- 1063-AAP-10, A-1063-AAP-11, A-1063-AAP-12, A-1063-AAP-13, A-1063- AAP-14, A-1063-AAP-15, A-1063-AAP
Serial No.:	N/A
Test sample(s) ID:	GTS201912000226-1
Sample(s) Status:	Engineer sample
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	802.11a/802.11n(HT20)/802.11ac(HT20) @5.8G Band: 5745MHz ~ 5825MHz
	802.11n(HT40)/ 802.11ac(HT40) @ 5.8G Band: 5755MHz ~ 5795MHz
	802.11ac(HT80): 5775MHz
Channel numbers:	802.11a/802.11n(HT20)/802.11ac(HT20) @5.8G Band: 6
	802.11n(HT40)/ 802.11ac(HT40) @ 5.8G Band: 2
	802.11ac(HT80): 1
Channel bandwidth:	802.11a/802.11n(HT20)/802.11ac(HT20) : 20MHz
	802.11n(HT40)/802.11ac(HT40) : 40MHz
	802.11ac(HT80): 80MHz
Modulation technology:	802.11a/802.11n(H20)/802.11n(H40)/802.11ac(HT20)/802.11ac(HT40) /802.11ac(HT80):
	Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	ANT 1: FPCB Antenna
	ANT 2: Integral Antenna
Antenna gain:	ANT 1: 0.5dBi
	ANT 2: 3.7dBi
Power supply:	SWITCHING ADAPTOR
	Model No.: FJ-SW0503000N
	Input: AC 100-240V, 50/60Hz, 0.6A Max
	Output: DC 5V, 3000mA

Remark:

802.11a: SISO mode only

802.11n(HT20)/802.11ac(HT20)/802.11n(HT40)/ 802.11ac(HT40)/802.11ac(HT80): MIMO MODE ONLY



Operation Frequency each of channel @ 5.8G Band							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	153	5765MHz	155	5775MHz
157	5785MHz	159	5795MHz	161	5805MHz	163	5815MHz
165	5825MHz						

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

	Frequency (MHz)			
Test channel	5.8G Band			
	802.11a 802.11n(HT20) 802.11ac(HT20)	802.11n(HT40) 802.11ac(HT40)	802.11ac(HT80)	
Lowest channel	5745	5755		
Middle channel	5785		5775	
Highest channel	5825	5795		



## 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
	EUT was test with max duty cycle at its maximum power control level.
mark: During the test, the te	est voltage was tuned from 85% to 115% of the nominal rated supply volta

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, the duty cycle >98%, and found that the worst case was under the nominal rated supply condition. So the report just shows that conditions data.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11a	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13Mbps
802.11ac(HT20)	6.5Mbps
802.11ac(HT40)	13.5Mbps
802.11ac(HT80)	29.3Mbps

## 5.3 Description of Support Units

### 5.4 Test Facility

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

#### • FCC — Registration No.: 381383

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 381383.

#### • IC — Registration No.: 9079A

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

### • NVLAP (LAB CODE:600179-0)

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

### 5.5 Test Location

All tests were performed at:
Global United Technology Services Co., Ltd.
No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone,
Xixiang Road, Baoan District, Shenzhen, Guangdong, China
Tel: 0755-27798480

Fax: 0755-27798960



# 6 Test Instruments list

Radiated Emission:								
ltem	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020		
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A		
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 26 2019	June. 25 2020		
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020		
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020		
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020		
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020		
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020		
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020		
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020		
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020		
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020		
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020		
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020		
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020		
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020		
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020		
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020		
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020		
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 19 2019	Oct. 18 2020		
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020		
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020		
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 26 2019	June. 25 2020		



Conducted Emission									
ltem	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)			
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022			
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020			
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 26 2019	June. 25 2020			
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 26 2019	June. 25 2020			
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A			
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			
7	Thermo meter	KTJ	TA328	GTS233	June. 26 2019	June. 25 2020			
8	Absorbing clamp	Elektronik- Feinmechanik	MDS21	GTS229	June. 26 2019	June. 25 2020			
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 26 2019	June. 25 2020			

RF Conducted Test:								
ltem	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 26 2019	June. 25 2020		
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020		
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 26 2019	June. 25 2020		
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 26 2019	June. 25 2020		
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 26 2019	June. 25 2020		
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 26 2019	June. 25 2020		
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 26 2019	June. 25 2020		
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 26 2019	June. 25 2020		

General used equipment:									
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)			
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 26 2019	June. 25 2020			
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020			



# 7 Test results and Measurement Data

## 7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement:	

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an

antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### E.U.T Antenna:

The antenna is integral antenna, the best case gain of the main antenna is 3.7dBi.Reference to the appendix II for details.

Directional Gain Calculations is below:

The same digital data are transmitted from the two antennas in a given symbol period, thus the antennas is categorization as correlated. Accroding to KDB 662911 D01 Multiple Transmitter Output v02r01 Section F)2)a)(i), the Directional Gain = GANT +  $10\log(2) \text{ dBi} = 3.7 + 3.01 \text{ dBi} = 6.71\text{ dBi}$ .



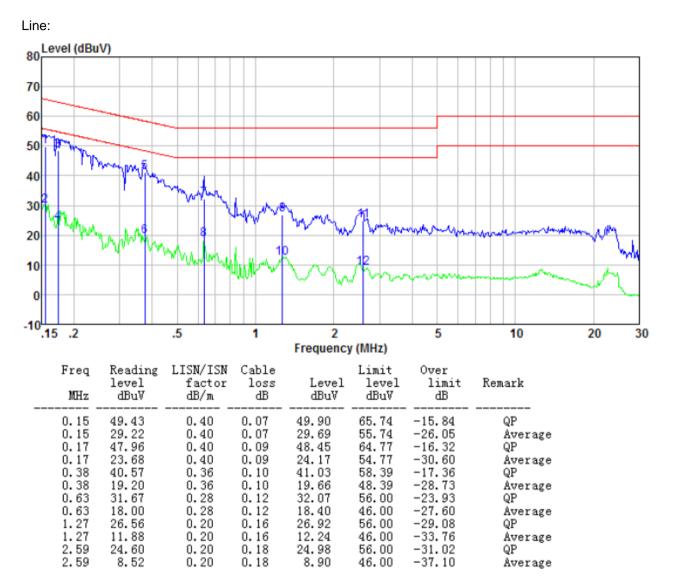
# 7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207								
Test Method:	ANSI C63.10:2013								
Test Frequency Range:	150KHz to 30MHz								
Class / Severity:	Class B								
Receiver setup:	RBW=9KHz	z, VBW=30KH	Iz, Sweep tin	ne=auto					
Limit:	Limit (dBu)/)								
	Frequency range (MHz) Quasi-peak Average								
	C	).15-0.5	6	6 to 56*		to 46*			
		0.5-5		56		46			
	* Deereeee	<u>5-30</u> s with the loga	arithm of the	60 froquency		50			
Test setup:	Decleases	Reference		nequency.					
Test procedure:	<ul> <li>LISN 40cm 80cm Filter AC power</li> <li>AUX Equipment E.U.T EMI Receiver</li> <li>Remark:</li> <li>E.U.T Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m</li> <li>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 500hm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm</li> </ul>								
Test environment:	<ul> <li>termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</li> <li>Temp.: 25 °C Humid.: 52% Press.: 1 012mbar</li> </ul>								
Test Instruments:	•	ction 6.0 for d			1	I			
Test mode:	Refer to section 5.2 for details								
		AC120V 60Hz							
Test voltage:	AC120V 60	Hz							



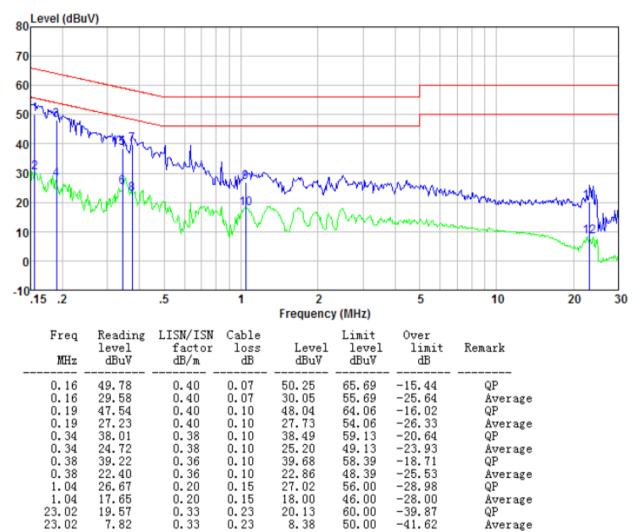
#### **Measurement data**

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#### Neutral:



Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss

4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both *limits and measurement with the average detector receiver is unnecessary.* 

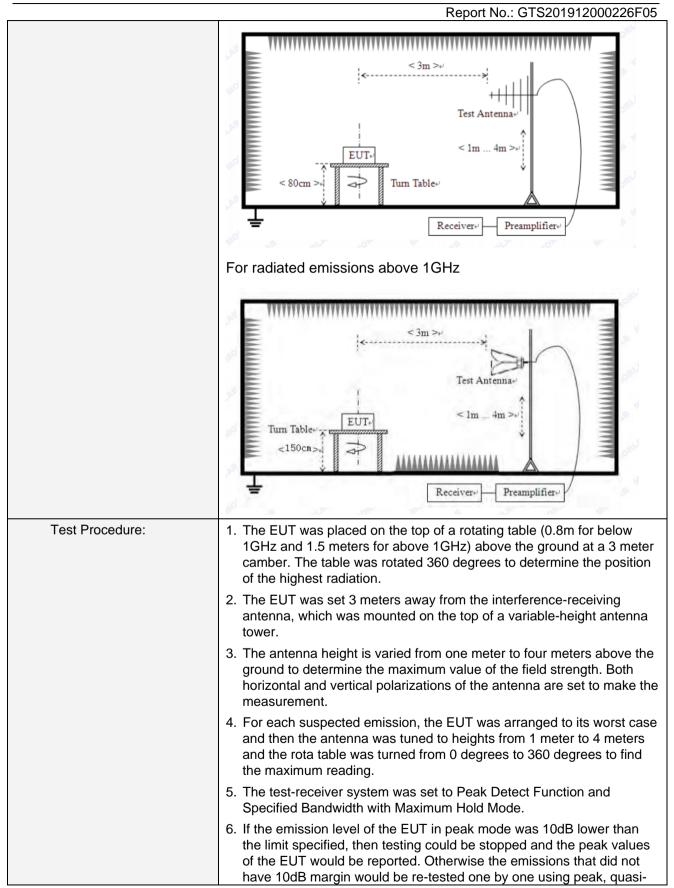


# 7.3 Spurious Emission

## 7.3.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)							
Test Method:	ANSI C63.10:2013							
Test Frequency Range:	9kHz to 40GHz							
Test site:	Measurement Distance: 3m							
Receiver setup:	Frequency Detector RBW VBW Valu							
	9kHz-150KHz	Quasi-peak		200Hz	1kHz	Quasi-peak Value		
	150kHz-30MHz	Quasi	-peak	9kHz	30kHz	Quasi-peak Value		
	30MHz-1GHz		-peak	120KHz	300KHz	Quasi-peak Value		
	Above 1GHz		ak	1MHz	3MHz	Peak Value		
11		RM	/15	1MHz	3MHz	Average Value		
Limit:	Frequency		Limit	(uV/m)	Value	Measurement Distance		
	0.009MHz-0.490	MHz	2400/	/F(KHz)	QP	300m		
	0.490MHz-1.705	ōMHz	24000	/F(KHz)	QP	30m		
	1.705MHz-30N	/IHz	30	QP	30m			
	30MHz-88MH	Ηz	100		QP			
	88MHz-216M	Hz	150		QP			
	216MHz-960M	1Hz	200		QP	- 3m		
	960MHz-1GH		500		QP			
	Frequency		Limit (dBm/MH		lz)	Remark		
	Above 1GH		-27.0		/	Peak Value		
Test setup:	For radiated emissions from 9kHz to 30MHz							
Test Antenna Receiver. Preamplifier. For radiated emissions from 30MHz to1GHz								





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Report No.: GTS201912000226F05								
	<ul><li>peak or average method as specified and then reported in a data sheet.</li><li>7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.</li></ul>							
Test environment:	Temp.:         25 °C         Humid.:         52%         Press.:         1 012mbar							
Test Instruments:	Refer to section 6.0 for details							
Test mode:	Refer to section 5.2 for details							
Test voltage:	AC120V 60Hz							
Test results:	Pass							

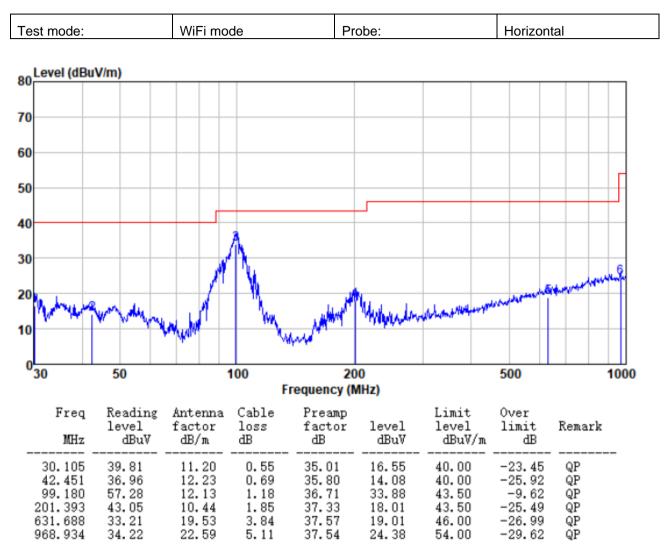
#### **Measurement Data:**

## 9 kHz ~ 30 MHz

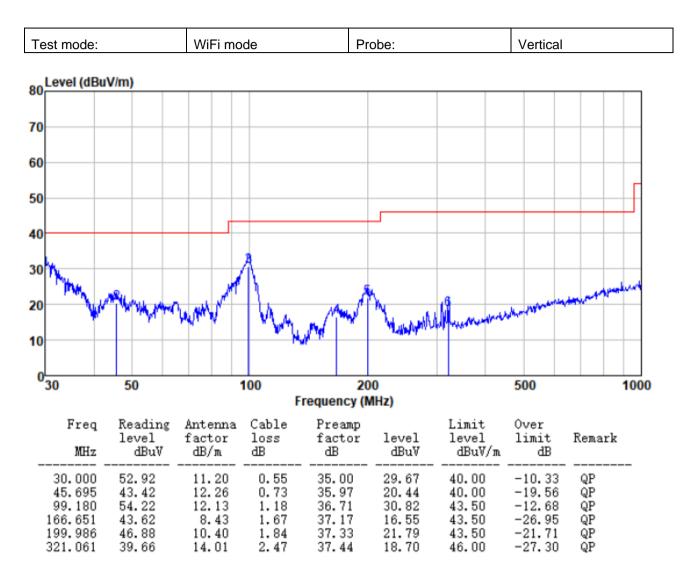
The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.



#### **Below 1GHz**









# 8 Test Setup Photo

Reference to the **appendix I** for details.

# 9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End------