

# FCC RF Test Report

APPLICANT	:	OnePlus Technology (Shenzhen) Co., Ltd.
EQUIPMENT	:	Tablet
BRAND NAME	:	ONEPLUS
MODEL NAME	:	OPD2408
FCC ID	:	2ABZ2-OPD2408
STANDARD	:	FCC Part 15 Subpart C §15.209
CLASSIFICATION	:	(DCD) Part 15 Low Power Transmitter Below 1705 kHz
TEST DATE(S)	:	Sep. 11, 2024 ~ Sep. 20, 2024

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.

JasonJia

Approved by: Jason Jia



**Sporton International Inc. (ShenZhen)** 1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China



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# History of this test report

Report No.	Version	Description	Issued Date
FR480201D	01	Initial issue of report	Nov. 07, 2024



# **Summary of Test Result**

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	2.1049	20dB Bandwidth	20dB Bandwidth Reporting Only	
3.1	2.1049	99% Occupied Bandwidth Reporting Only		-
3.2	15.209	Radiated Emission	Pass	Under limit 15.56 dB at 947.620 MHz
3.3	15.207	AC Conducted Emission Pass 10		Under limit 10.62 dB at 0.180 MHz
3.4	15.203	Antenna Requirements	Pass	-

#### Conformity Assessment Condition:

 The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.

2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

#### Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



### **1** General Description

### 1.1 Applicant

#### OnePlus Technology (Shenzhen) Co., Ltd.

18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.

### 1.2 Manufacturer

#### LONGCHEER ELECTRONICS (HUIZHOU) CO., Ltd.

No.28, Hechang Six Road(West), Zhongkai High Technology Zone, 516006 Huizhou, Guangdong, P. R. China

### **1.3 Product Feature of Equipment Under Test**

Product Feature					
Equipment	Tablet				
Brand Name	ONEPLUS				
Model Name	OPD2408				
FCC ID	2ABZ2-OPD2408				
SN Code	Conducted: L621521000011E8D000F Conduction: L621521000011E8D00EN Radiation: L621521000011E8D00EQ				
HW Version	OPD2408_11				
SW Version	OPD2408_15.0.0.61				
WPT Frequency Range	110.1~141KHz				
WPT Type of Modulation	ASK				
WPT Antenna Type	Coil Antenna				
EUT Stage	Identical Prototype				

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

### **1.4 Modification of EUT**

No modifications are made to the EUT during all test items.



### 1.5 Test Location

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)						
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595						
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.				
	CO01-SZ TH01-SZ	CN1256	421272				
Test Firm	Sporton International Inc. (ShenZhen)						
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985						
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.				
	03CH05-SZ	CN1256	421272				

### 1.6 Test Software

ltem	Site Manufacture Name		Name	Version
1.	03CH05-SZ	AUDIX	E3	6.2009-8-24
2.	CO01-SZ	AUDIX	E3	6.120613b

### 1.7 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.209, §15.207
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- ANSI C63.10-2013

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.



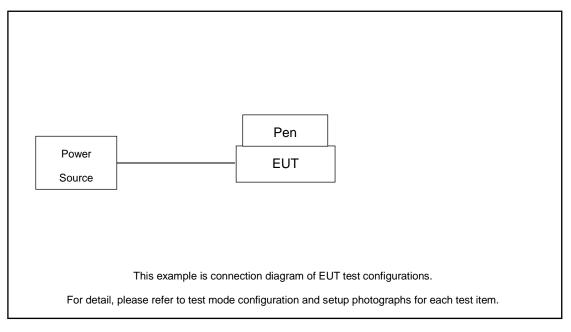
# 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 1000 MHz).
- b. AC power line Conducted Emission was tested under maximum output power.

Test Items	Function Type					
AC Conducted Emission	Mode 1: WPC + TX(For Pen Charging) + USB Cable (Charging from Adapter)					
Radiated Emission	Mode 1: WPC + TX(For Pen Charging) + USB Cable (Charging from Adapter)					
Remark: The test	Remark: The tests were performed with Adapter and USB Cable.					

### 2.2 Connection Diagram of Test System





### 3 Test Result

### 3.1 20dB and 99% Occupied Bandwidth Measurement

#### 3.1.1 Limit of 20dB and 99% Occupied Bandwidth

Reporting only, 99% OBW shall not located within 15.205 restricted bands.

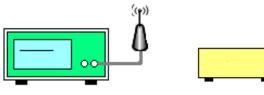
#### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.1.3 Test Procedures

- 1. The 20dB bandwidth is measured with a spectrum analyzer connected via a receiver antenna placed near the EUT while wirelessly charging a charging board.
- 2. Use the following spectrum analyzer settings for 99 % Bandwidth measurement.
- 3. Measure and record the results in the test report.

#### 3.1.4 Test Setup



Spectrum Analyzer

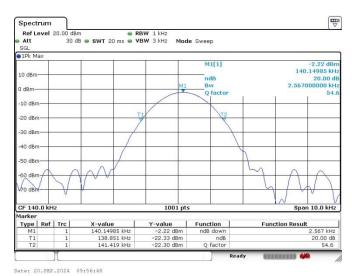
EUT



#### 3.1.5 Test Result of 20dB and 99% Bandwidth

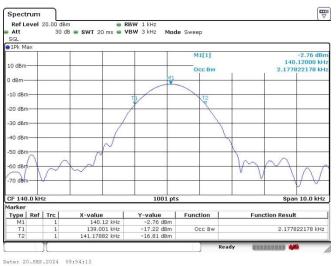
Test Engineer :	He Qingsheng			24~26°C	
Occupied Bandwidth (kHz)			Relative Humidity : 50~53%   Frequency (kHz)		
20dB Bandwidth(KHz)				2.57	
99% Bandwidth(KHz)				2.18	

Remark: Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW



#### 20 dB Bandwidth Plot

#### 99% Occupied Bandwidth Plot



Date: 20.SEP.2024 09:54:13

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### 3.2 Radiated Emission Measurement

#### 3.2.1 Limit of Radiated Emission

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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	30
30 - 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Receiver Parameter	Setting
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

**Note:** 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. Radiated emission limits in these two bands are based on measurements employing an average detector.

For radiated emissions from 9kHz to 1GHz test distance is 3m

For 9kHz ~ 30MHz

- 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
- 3. specific line  $(dB\mu V/m) = 20 \log Emission level (\mu V/m)$
- 4. Limit line = specific limits  $(dB\mu V/m)$  + distance extrapolation factor.

#### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

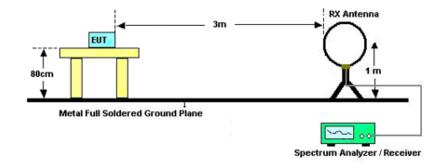
#### 3.2.3 Measuring Instrument Setting

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.



#### 3.2.4 Test Setup of Radiated Emission

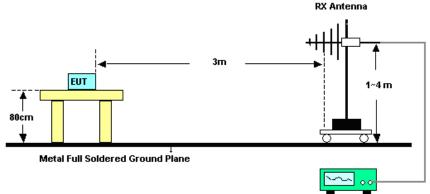
For radiated emissions below 30MHz



#### Note:

- 1. There is a comparison data of both open-field test site and alternative test site semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.
- Tested for radiated below 30 MHz using a loop antenna in accordance with C63.10, the antenna was positioned in three antenna orientations: horizontal, vertical, and ground-parallel three polarization's, the worst case is horizontal & vertical polarization, test data of two mode was reported.

#### For radiated emissions above 30MHz

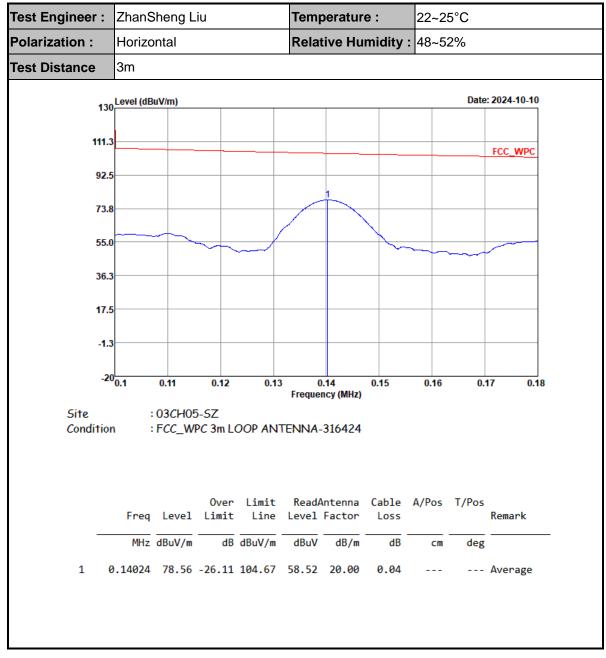


Spectrum Analyzer / Receiver

#### 3.2.5 Test Result of Fundamental Emission

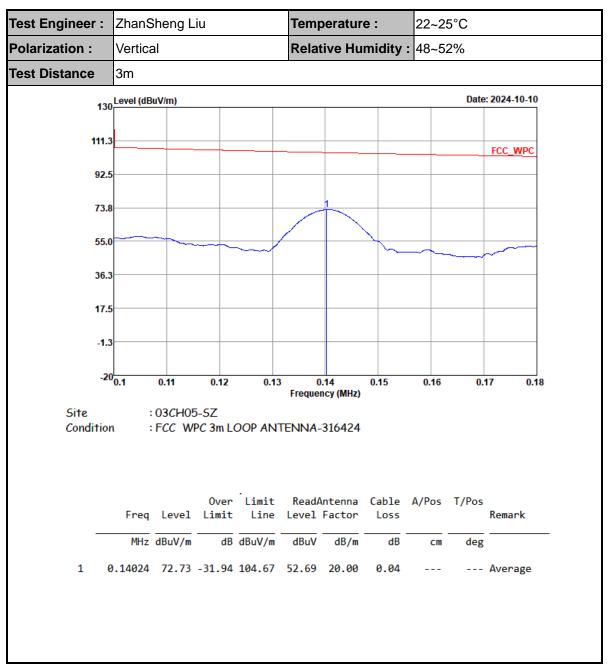
Frequency (MHz)	Level (dBuV/m) @3m	Distance	Corrected level @30m (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB/m)		Remark	Pol/Phase
0.14024	78.56	80	-1.44	-26.11	24.67	58.52	20	0.04	AVG	Horizontal
0.14024	72.73	80	-7.27	-31.94	24.67	52.69	20	0.04	AVG	Vertical

Note: The field strength is tested at 3m distance then convert to 30m by adding distance factor 40\*log(d1/d2)



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Note:

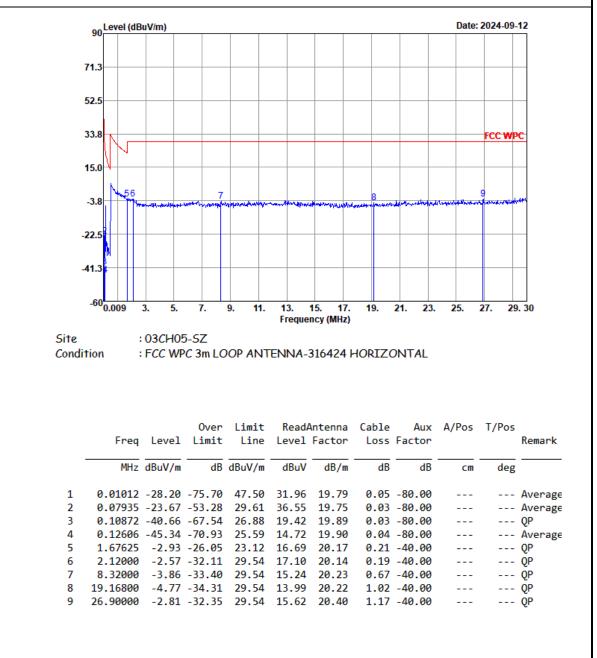
- 1. Level @3m (dBµV/m) = Read Level @3m (dBµV) + Antenna Factor(dB/m) + Cable Loss(dB).
- 2. Corrected Level @30m (dB $\mu$ V/m) = Level @3m (dB $\mu$ V/m) Distance extrapolation factor (dB).
- 3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
- 4. Over Limit(dB) = Level(dB $\mu$ V/m) Limit Line(dB $\mu$ V/m).



#### 3.2.6 Test Result of Radiated Emission (9kHz ~ 30MHz)

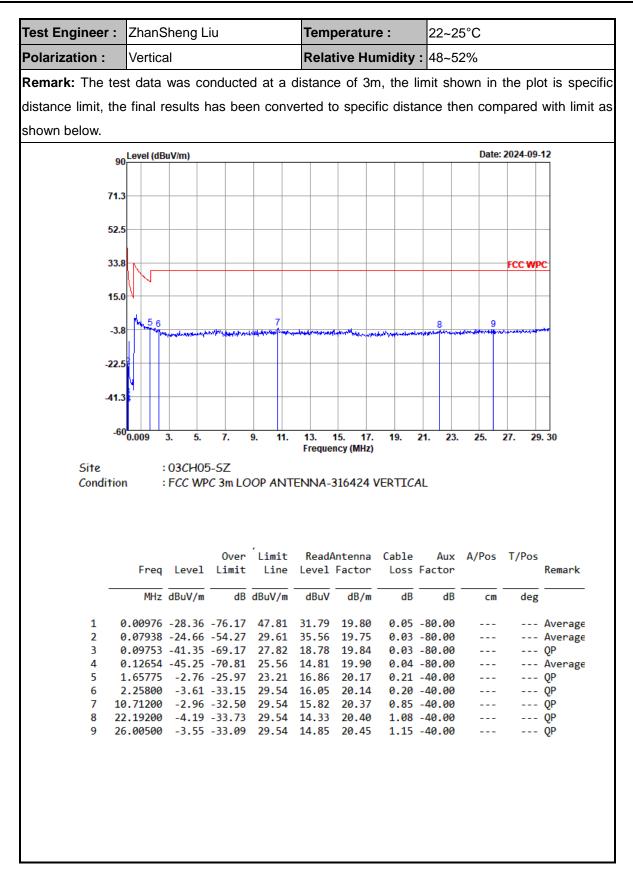
Test Engineer :	ZhanSheng Liu	Temperature :	22~25°C
Polarization :	Horizontal	Relative Humidity :	48~52%

**Remark:** The test data was conducted at a distance of 3m, the limit shown in the plot is specific distance limit, the final results has been converted to specific distance then compared with limit as shown below.



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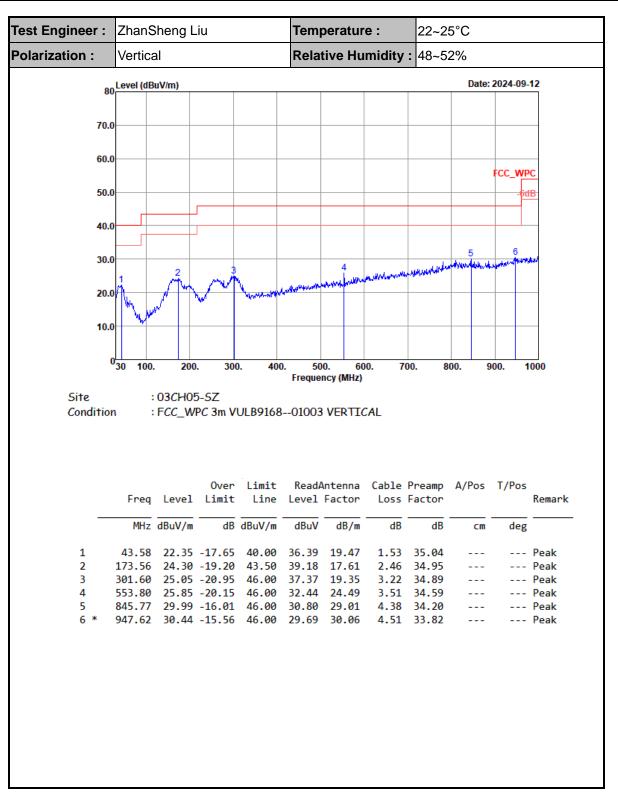
**Sporton International Inc. (ShenZhen)** TEL : +86-755-8637-9589 FAX : +86-755-8637-9595 FCC ID: 2ABZ2-OP23895



est Engineer :	ZhanS	ZhanSheng Liu Horizontal				emperature :		22~2	22~25°C		
olarization :	Horizo					ive Hu	midity	nidity : 48~52%			
	Level (dB	uV/m)							Date:	2024-09-	12
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70.0											_
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	:	03CH0	5-SZ	0. 400 ULB9168	Freque	ncy (MHz)			00. 9	900. 1	000
Site	:	03CH0	5-SZ		Freque	ncy (MHz)			00. 9	000. 1	 000
Site	:	03CH0	5-SZ		Freque	ncy (MHz)			00. 9	900. 1	 000
Site	:	03CH0	5-SZ PC 3m V		Freque:	ncy (MHz) HORIZ	ONTAL				
Site	: n :	03CH0 FCC_W	5-SZ PC 3m V	ULB9168 Limit	Freque:	ncy (MHz) HORIZ	ONTAL Cable	Preamp			 000 Remark
Site	: n : Freq	03CH0 FCC_W	5-SZ PC 3m V Over Limit	ULB9168 Limit Line	Freques 01003 ReadA Level	HORIZ HORIZ	ONTAL Cable Loss	Preamp Factor	A/Pos	T/Pos	
Site Condition	: n : Freq MHz	03CH0 FCC_W Level dBuV/m	5-SZ PC 3m V Over Limit dB	ULB9168 Limit Line dBuV/m	Freques 01003 ReadA Leve1 dBuV	HORIZ HORIZ Intenna Factor dB/m	ONTAL Cable Loss dB	Preamp Factor 	A/Pos cm	T/Pos deg	Remark
Site Condition 	: n : Freq MHz 44.55	03CH0 FCC_W Level dBuV/m 17.84	5-SZ PC 3m V Over Limit dB -22.16	ULB9168 Limit Line dBuV/m 40.00	Freques 01003 ReadA Leve1 dBuV 31.78	HORIZ HORIZ Intenna Factor dB/m 19.53	ONTAL Cable Loss dB 1.58	Preamp Factor 	A/Pos 	T/Pos deg	Remark Peak
Site Condition	: n : Freq MHz 44.55 146.40	03CH0 FCC_W Level dBuV/m 17.84 26.00	5-SZ PC 3m V Over Limit -22.16 -17.50	ULB9168 Limit Line dBuV/m	Freques 01003 ReadA Level dBuV 31.78 40.06	HORIZ HORIZ Intenna Factor dB/m 19.53 18.64	ONTAL Cable Loss dB 1.58 2.31	Preamp Factor 	A/Pos cm	T/Pos deg 	Remark
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00	Freques 01003 ReadA Level 	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25	Preamp Factor dB 35.05 35.01 34.90 34.86	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak Peak
Site Condition 	: n : Freq MHz 44.55 146.40 198.78 309.36 553.80	03CH0 FCC_W Level dBuV/m 17.84 26.00 25.47 28.76 29.13	5-SZ PC 3m V Over Limit -22.16 -17.50 -18.03 -17.24 -16.87	ULB9168 Limit Line dBuV/m 40.00 43.50 43.50 46.00 46.00	Freques 01003 ReadA Level dBuV 31.78 40.06 41.44 40.87 35.72	HORIZ HORIZ Intenna Factor 19.53 18.64 16.20 19.50 24.49	ONTAL Cable Loss dB 1.58 2.31 2.73 3.25 3.51	Preamp Factor dB 35.05 35.01 34.90 34.86 34.59	A/Pos 	T/Pos 	Remark Peak Peak Peak Peak Peak Peak

### 3.2.7 Test Result of Radiated Emission (30MHz ~ 1000MHz)







### 3.3 AC Conducted Emission Measurement

#### 3.3.1 Limits of AC Conducted Emission

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 within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission	Conducted	₋imit (dBμV)			
(MHz)	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.

#### 3.3.2 Measuring Instruments

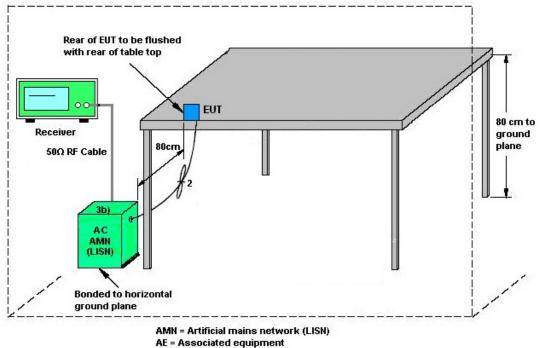
See list of measuring equipment of this test report.

#### 3.3.3 Test Procedure

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.



#### 3.3.4 Test Setup



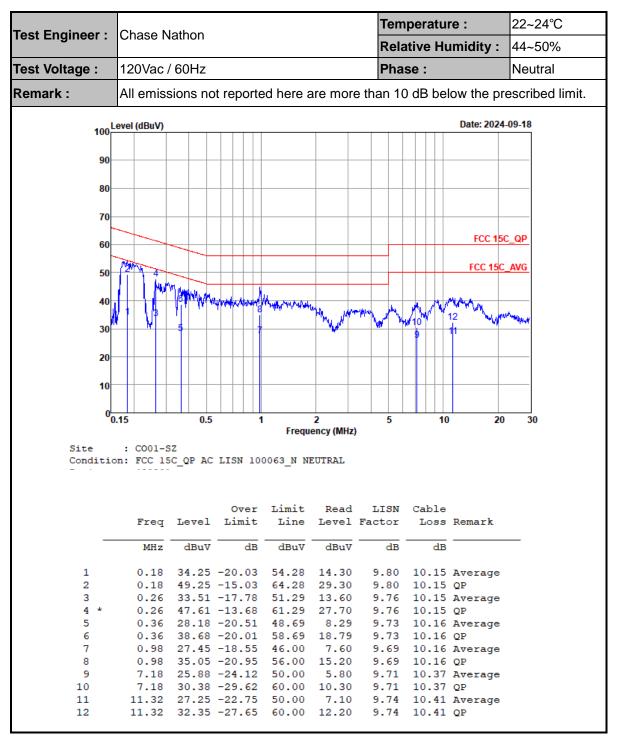
- EUT = Equipment under test
- ISN = Impedance stabilization network



	Chase N	lothon				Tem	peratu	re :	22~24°C
Test Engineer :	Chase N	autori				Rela	ative Hu	imidity :	44~50%
Test Voltage :	120Vac / 60Hz					Pha	Phase :		Line
Remark :	All emiss	sions no	ot reporte	ed here a	are more	e than 10	) dB be	ow the pre	escribed limit.
100	evel (dBuV)							Date: 2024-	09-18
90-									
80-									
70-									
60-								FCC 15C	_QP
	Anny							FCC 4FC	ANG
50-		Think						FCC 15C	AVG
40		P. I. ALMAN	When the many of	Market .				MARINA	
20		5	hunnun muns	TYNKHA	HAN WANT AN	10 M	NY	2	mariale
30-	- 3					9		1	
20-									
10									
0 <sup>L</sup>	).15	0.5	1		2 ency (MHz)	5	10	20	30
Site	: CO01-5	Z		Frequ	ency (MHz)	-	10	20	30
Site		Z		Frequ	ency (MHz)	-	10	20	30
Site	: CO01-5	Z		Frequ	ency (MHz)	-	10	20	30
Site	: CO01-5 on: FCC 15	SZ SC_QP AC	LISN 10 Over	Frequ 0063_L L Limit	ency (MHz) INE Read	LISN	Cable		30
Site	: COOl-S on: FCC 15 Freq	GZ GC_QP AC Level	LISN 10 Over Limit	Frequ 0063_L L Limit Line	Read Level	LISN Factor	Cable Loss		30
Site	: CO01-5 on: FCC 15	SZ SC_QP AC	LISN 10 Over	Frequ 0063_L L Limit	Read Level	LISN	Cable		30
Site Conditio — 1	: COO1-S on: FCC 15 Freq MHz 0.18	SZ GC_QP AC Level dBuV 38.26	LISN 10 Over Limit dB -16.42	Frequ 0063_L L Limit Line dBuV 54.68	Read Level dBuV 18.30	LISN Factor dB 9.82	Cable Loss dB 10.14	Remark  Average	30
Site Conditio 	: C001-5 pn: FCC 15 Freq MHz 0.18 0.18	5Z GC_QP AC Level dBuV 38.26 54.06	LISN 10 Over Limit 	Frequ 0063_L L Limit Line dBuV 54.68 64.68	Read Level dBuV 18.30 34.10	LISN Factor dB 9.82 9.82	Cable Loss dB 10.14 10.14	Remark Average QP	30
Site Conditio 1 2 * 3	: C001-5 on: FCC 15 Freq MHz 0.18 0.18 0.27	SZ GC_QP AC Level dBuV 38.26 54.06 27.31	LISN 10 Over Limit 	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98	Read Level dBuV 18.30 34.10 7.40	LISN Factor dB 9.82 9.82 9.76	Cable Loss dB 10.14 10.14 10.15	Remark  Average QP Average	30
Site Conditio 1 2 * 3 4	: C001-5 pn: FCC 15 Freq MHz 0.18 0.18	22 C_QP AC Level dBuV 38.26 54.06 27.31 42.41	LISN 10 Over Limit 	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98	Read Level dBuV 18.30 34.10	LISN Factor dB 9.82 9.82	Cable Loss dB 10.14 10.14 10.15 10.15	Remark Average QP Average QP	30
Site Conditio 1 2 * 3	: C001-5 on: FCC 15 Freq MHz 0.18 0.27 0.27 0.35	22 C_QP AC Level dBuV 38.26 54.06 27.31 42.41 29.73	LISN 10 Over Limit 	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98 48.96	Read Level dBuV 18.30 34.10 7.40 22.50 9.80	LISN Factor dB 9.82 9.82 9.82 9.76 9.76 9.77	Cable Loss dB 10.14 10.14 10.15 10.15 10.16	Remark Average QP Average QP Average	30
Site Conditio 1 2 * 3 4 5 6 7	: C001-5 on: FCC 15 Freq MHz 0.18 0.27 0.27 0.27 0.35 0.35 1.00	2 3 2 2 2 2 2 2 2 2 2 2 2 2 2	LISN 10 Over Limit dB -16.42 -10.62 -23.67 -18.57 -19.23 -15.83 -19.12	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98 48.96 58.96 46.00	Read Level dBuV 18.30 34.10 7.40 22.50 9.80 23.20 7.00	LISN Factor dB 9.82 9.82 9.76 9.76 9.77 9.77	Cable Loss dB 10.14 10.15 10.15 10.16 10.16	Remark Average QP Average QP Average	
Site Conditio 1 2 * 3 4 5 6 7 8	: C001-5 on: FCC 15 Freq MHz 0.18 0.27 0.27 0.27 0.35 0.35 1.00 1.00	2 3C_QP AC Level dBuV 38.26 54.06 27.31 42.41 29.73 43.13 26.88 35.48	LISN 10 Over Limit dB -16.42 -10.62 -23.67 -18.57 -19.23 -15.83 -19.12 -20.52	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98 48.96 58.96 46.00 56.00	Read Level dBuV 18.30 34.10 7.40 22.50 9.80 23.20 7.00 15.60	LISN Factor dB 9.82 9.82 9.76 9.76 9.76 9.77 9.77 9.72 9.72	Cable Loss dB 10.14 10.15 10.15 10.16 10.16 10.16 10.16	Average QP Average QP Average QP Average QP	
Site Conditio 1 2 * 3 4 5 6 7 8 9	: C001-5 on: FCC 15 Freq MHz 0.18 0.27 0.27 0.27 0.35 0.35 1.00 1.00 4.75	2 3 3 3 3 3 3 3 3 3 3 3 3 3	LISN 10 Over Limit dB -16.42 -10.62 -23.67 -18.57 -19.23 -15.83 -19.12 -20.52 -21.89	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98 48.96 58.96 46.00 56.00 46.00	Read Level dBuV 18.30 34.10 7.40 22.50 9.80 23.20 7.00 15.60 4.00	LISN Factor dB 9.82 9.82 9.76 9.77 9.77 9.77 9.72 9.72 9.77	Cable Loss dB 10.14 10.15 10.15 10.15 10.16 10.16 10.16 10.16 10.34	Remark Average QP Average QP Average QP Average QP Average	
Site Conditio 1 2 * 3 4 5 6 7 8 9 10	: C001-5 on: FCC 15 Freq MHz 0.18 0.18 0.27 0.27 0.35 0.35 1.00 1.00 4.75 4.75	Z C_QP AC Level dBuV 38.26 54.06 27.31 42.41 29.73 43.13 26.88 35.48 24.11 28.91	LISN 10 Over Limit dB -16.42 -10.62 -23.67 -19.23 -15.83 -19.12 -20.52 -21.89 -27.09	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98 48.96 58.96 46.00 56.00 46.00 56.00	Read Level dBuV 18.30 34.10 7.40 22.50 9.80 23.20 7.00 15.60 4.00 8.80	LISN Factor dB 9.82 9.76 9.76 9.77 9.77 9.77 9.72 9.72 9.77 9.77	Cable Loss dB 10.14 10.15 10.15 10.16 10.16 10.16 10.16 10.34 10.34	Remark Average QP Average QP Average QP Average QP Average QP	
Site Conditio 1 2 * 3 4 5 6 7 8 9	: C001-5 on: FCC 15 Freq MHz 0.18 0.18 0.27 0.27 0.35 0.35 1.00 1.00 4.75 4.75	22 32 32 32 32 32 32 33 32 33 32 32	LISN 10 Over Limit dB -16.42 -10.62 -23.67 -18.57 -19.23 -15.83 -19.12 -20.52 -21.89	Frequ 0063_L L Limit Line dBuV 54.68 64.68 50.98 60.98 48.96 58.96 46.00 56.00 56.00 56.00 50.00	Read Level dBuV 18.30 34.10 7.40 22.50 9.80 23.20 7.00 15.60 4.00	LISN Factor dB 9.82 9.76 9.76 9.77 9.77 9.77 9.72 9.72 9.77 9.77 9.77	Cable Loss dB 10.14 10.15 10.15 10.16 10.16 10.16 10.16 10.34 10.34 10.41	Remark Average QP Average QP Average QP Average QP Average QP Average	

### 3.3.5 Test Result of AC Conducted Emission





Note:

- 1. Level(dBµV) = Read Level(dBµV) + LISN Factor(dB) + Cable Loss(dB)
- 2. Over Limit(dB) = Level(dBµV) Limit Line(dBµV)



### 3.4 Antenna Requirements

#### 3.4.1 Standard Applicable

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

### 3.4.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



# 4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Sep. 20, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	102261	9kHz~7GHz	Apr. 09, 2024	Sep. 11, 2024~ Sep. 12, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 27, 2024	Sep. 11, 2024~ Sep. 12, 2024	Jul. 26, 2025	Radiation (03CH05-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Aug. 20, 2023	Sep. 11, 2024~ Sep. 12, 2024	Aug. 19, 2025	Radiation (03CH05-SZ)
Amplifier	EM Electronics	EM330	060756	0.01Hz ~3000MHz	Apr. 09, 2024	Sep. 11, 2024~ Sep. 12, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
AC Power Source	APC	AFV-S-600	F11905001 3	N/A	Oct. 18, 2023	Sep. 11, 2024~ Sep. 12, 2024	Oct. 17, 2024	Radiation (03CH05-SZ)
Turn Table	EMEC	T-200-S-1	060925-T	0~360 degree	NCR	Sep. 11, 2024~ Sep. 12, 2024	NCR	Radiation (03CH05-SZ)
Antenna Mast	EMEC	MBS-400-1	060927	1 m~4 m	NCR	Sep. 11, 2024~ Sep. 12, 2024	NCR	Radiation (03CH05-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Apr. 09, 2024	Sep. 18, 2024	Apr. 08, 2025	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Jul. 04, 2024	Sep. 18, 2024	Jul. 03, 2025	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 16, 2023	Sep. 18, 2024	Oct. 15, 2024	Conduction (CO01-SZ)
AC Power Source	CHROMA	61601	616010002 470	100Vac~250Vac	Dec.25, 2023	Sep. 18, 2024	Dec. 24, 2024	Conduction (CO01-SZ)

NCR: No Calibration Required



## 5 Measurement Uncertainty

**Uncertainty of Conducted Measurement** 

Test Item	Uncertainty
Occupied Channel Bandwidth	±0.012 MHz

Uncertainty of AC Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence	2.5dB
of 95% (U = 2Uc(y))	2.500

#### Uncertainty of Radiated Emission Measurement (9 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.5dB
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#### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence	4 2dP
of 95% (U = 2Uc(y))	4.2dB

----- THE END ------