



REPORT No.: SZ24060253E01

# TEST REPORT

**APPLICANT** : Ascom (Sweden) AB

**PRODUCT NAME** : Myco 4 DECT Wi-Fi, Myco 4 DECT Wi-Fi EEA

**MODEL NAME** : SH4-AADE, SH4-AADB

**BRAND NAME** : ascom

**FCC ID** : BXZSH4D

**STANDARD(S)** : 47 CFR Part 15 Subpart B

**RECEIPT DATE** : 2024-09-23

**TEST DATE** : 2024-09-25 to 2024-10-10

**ISSUE DATE** : 2024-11-21



Edited by:

*Chen Bilian*

Chen Bilian(Rapporteur)

*Xiao Xiong*

Approved by:

Xiao Xiong(Supervisor)

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**MORLAB**

Shenzhen Morlab Communications Technology Co., Ltd.  
FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

Tel: 86-755-36698555  
Http://www.morlab.cn

Fax: 86-755-36698525  
E-mail: service@morlab.cn





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Change History		
Version	Date	Reason for change
1.0	2024-11-21	First edition



# 1. Technical Information

**Note:** Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	Ascom (Sweden) AB
<b>Applicant Address:</b>	Grimbodalen 2, SE-417 49 Gothenburg, Sweden
<b>Manufacturer:</b>	Ascom (Sweden) AB
<b>Manufacturer Address:</b>	Grimbodalen 2, SE-417 49 Gothenburg, Sweden

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	Myco 4 DECT Wi-Fi, Myco 4 DECT Wi-Fi EEA	
<b>EUT No.:</b>	1#	
<b>Hardware Version:</b>	V0.40	
<b>Software Version:</b>	SH4_ASCOM_A14_025.00	
<b>Frequency Range:</b>	DECT: 1920 MHz ~ 1930 MHz Bluetooth: 2402 MHz ~ 2480 MHz 802.11b/g/n/ac/ax: 2412 MHz ~ 2462 MHz 802.11a/ac/n/ax: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz 802.11ax: 5925 MHz ~ 6425 MHz; 6425 MHz ~ 6525 MHz; 6525 MHz ~ 6875 MHz; 6875 MHz ~ 7125 MHz NFC: 13.56 MHz	
<b>Accessory:</b>	<b>Battery 1</b>	
	Brand Name:	N/A
	Model No.:	685261
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	3950mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	Manufacturer:	Zhejiang Liwinon Energy Technology Co., Ltd.
	<b>Battery 2</b>	
	Brand Name:	N/A
	Model No.:	291342
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	150mAh



	Rated Voltage:	3.8V
	Charge Limit:	4.35V
	Manufacturer:	Zhejiang Liwinon Energy Technology Co., Ltd.

**Note:**

1. According to the certificate holder, they declared that the product name: Myco 4 DECT Wi-Fi, Myco 4 DECT Wi-Fi EEA, with model name: SH4-AADE, SH4-AADB. There are different only model names, sales markets, and software versions between SH4-AADE and SH4-AADB. Software version for European Economic Area (EEA) variants SH4-xxxB compared to the other variants SH4-xxxE has an additional choice screen in the setup wizard for general search providers as alternative for the pre-installed Google Search app. This special version is a result of European Commission's July 2018 decision. The main test model name is SH4-AADB, only the result for SH4-AADB was recorded in this report.
2. Battery 1 and Battery 2 are installed in the EUT at the same time.
3. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.



## 2. Test Results

### 2.1. Applied Reference Documents

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination Remark
1	15.107	Conducted Emission	2024.09.25 to 2024.10.10	Fan Shengquan	PASS	No deviation
2	15.109	Radiated Emission	2024.09.29 to 2024.10.09	Wang Deyong	PASS	No deviation

**Note 1:** The tests were performed according to the method of measurements prescribed in ANSI C63.4-2014.

**Note 2:** Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

**Note 3:** When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.



## 2.2. EUT Setup and Operating Conditions

Test Item	
Radiated Emission	
Mode 1	<b>EUT + Bluetooth Idle + 2.4G WLAN Idle + USB Cable + PC + Data Transmission Mode</b>
Mode 2	EUT + Bluetooth Idle + 5G WLAN Idle + USB Cable + Adapter + Play 1kHz Color Bar Video Mode
Mode 3	EUT + Bluetooth Idle + 6G WLAN Idle + USB Cable + Adapter + Rear Camera Mode
Mode 4	EUT + Bluetooth Idle + 2.4G WLAN Idle + USB Cable + Adapter + Front Camera Mode
Mode 5	EUT + Bluetooth Idle + 5G WLAN Idle + Charging Base Adapter + Charging Base + Rear Camera Mode
Mode 6	EUT + USB Cable + Adapter + NFC Card + NFC Mode
Conducted Emission	
Mode 3	EUT + Bluetooth Idle + 6G WLAN Idle + USB Cable + Adapter + Rear Camera Mode
Mode 5	<b>EUT + Bluetooth Idle + 5G WLAN Idle + Charging Base Adapter + Charging Base + Rear Camera Mode</b>
Mode 6	EUT + USB Cable + Adapter + NFC Card + NFC Mode
Mode 7	EUT + Bluetooth Idle + 2.4G WLAN Idle + Adapter + USB Cable + PC + PC Adapter + Indirect Power Supply Mode
Mode 8	EUT + Bluetooth Idle + 5G WLAN Idle + USB Cable + Adapter + Working Mode
Mode 9	EUT + DECT Idle + USB Cable + Adapter + Working Mode
<b>Remark:</b> The above test mode in boldface (Mode 5) was the worst case of conducted emission test, only the test data of this mode was reported. The above test mode in boldface (Mode 1) was the worst case of radiated emission test, only the test data of this mode was reported.	

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

## 3. 47 CFR Part 15B Requirements

### 3.1. Conducted Emission

#### 3.1.1. Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

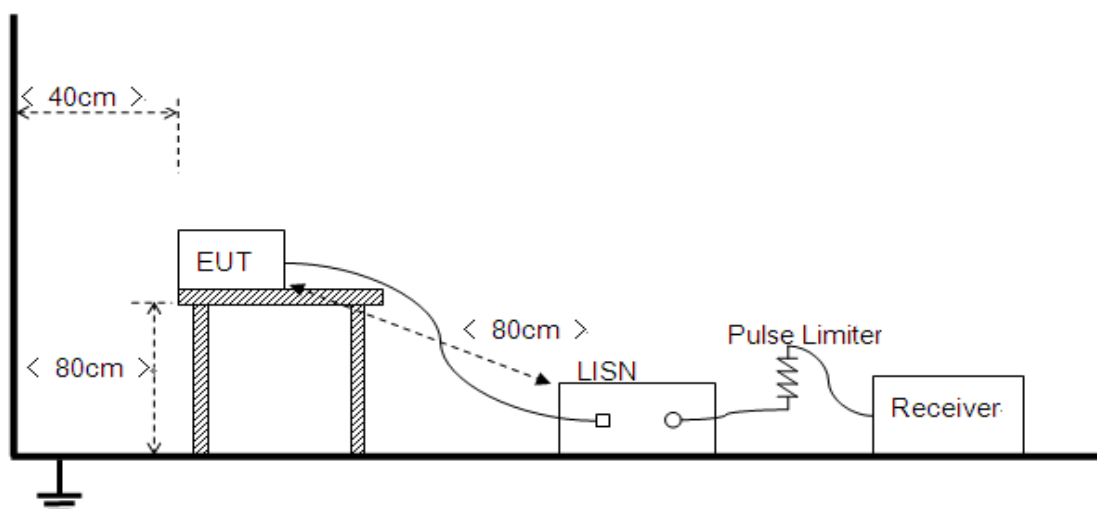
Frequency Range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

- The limit subjects to the Class B digital device.
- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

#### 3.1.2. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.





The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument. A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

The power strip or extension cord has been investigated to make sure that the LISN integrity is maintained with respect to the impedance characteristics as prescribed in ANSI C63.4-2014 at Clause 4.3.

### 3.1.3. Test Result

Set RBW=9 kHz, VBW=30 kHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V}] = U_R [\text{dB}\mu\text{V}] + L_{\text{Cable loss}} [\text{dB}] + A_{\text{Factor}} [\text{dB}]$$

$U_R$ : Receiver Reading

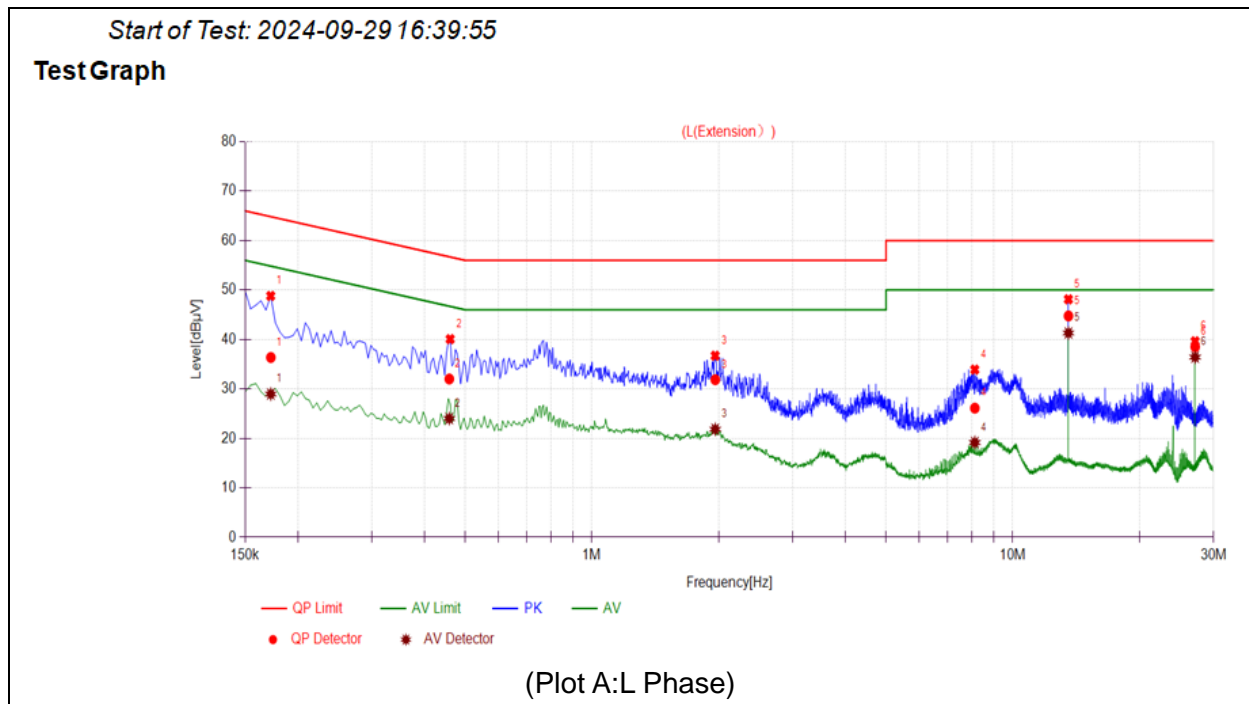
$A_{\text{Factor}}$ : Voltage Division Factor of LISN

$L_{\text{Cable loss}}$ : Correction Factor Contains Pulse Limiter and Cable

During the test, the total correction Factor  $L_{\text{Cable loss}}$  and  $A_{\text{Factor}}$  were built in test software.



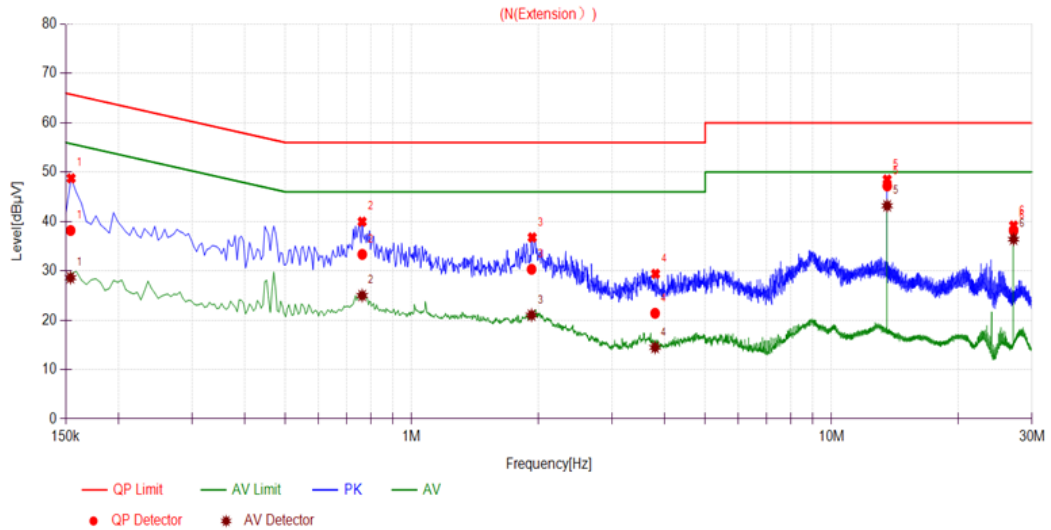
## A. Test Plot and Suspicious Points:



No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1726	36.36	28.97	64.83	54.83	Line	PASS
2	0.4582	32.01	24.01	56.73	46.73		PASS
3	1.9637	31.87	21.85	56.00	46.00		PASS
4	8.1245	26.12	19.17	60.00	50.00		PASS
5	13.5608	44.76	41.32	60.00	50.00		PASS
6	27.1203	38.52	36.43	60.00	50.00		PASS

Start of Test: 2024-09-29 16:50:35

### Test Graph



No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1540	38.18	28.61	65.78	55.78	Neutral	PASS
2	0.7623	33.33	25.00	56.00	46.00		PASS
3	1.9295	30.32	21.03	56.00	46.00		PASS
4	3.7983	21.40	14.48	56.00	46.00		PASS
5	13.5611	47.21	43.19	60.00	50.00		PASS
6	27.1214	38.16	36.41	60.00	50.00		PASS



## 3.2. Radiated Emission

### 3.2.1. Requirement

According to FCC section 15.109 (a), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency Range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	( $\mu\text{V/m}$ )	(dB $\mu\text{V/m}$ )
30.0 - 88.0	100	20log 100
88.0 - 216.0	150	20log 150
216.0 - 960.0	200	20log 200
Above 960.0	500	20log 500

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Note:

- 1) The tighter limit shall apply at the boundary between two frequency range.
- 2) Limitation expressed in dB $\mu\text{V/m}$  is calculated by 20log Emission Level( $\mu\text{V/m}$ ).

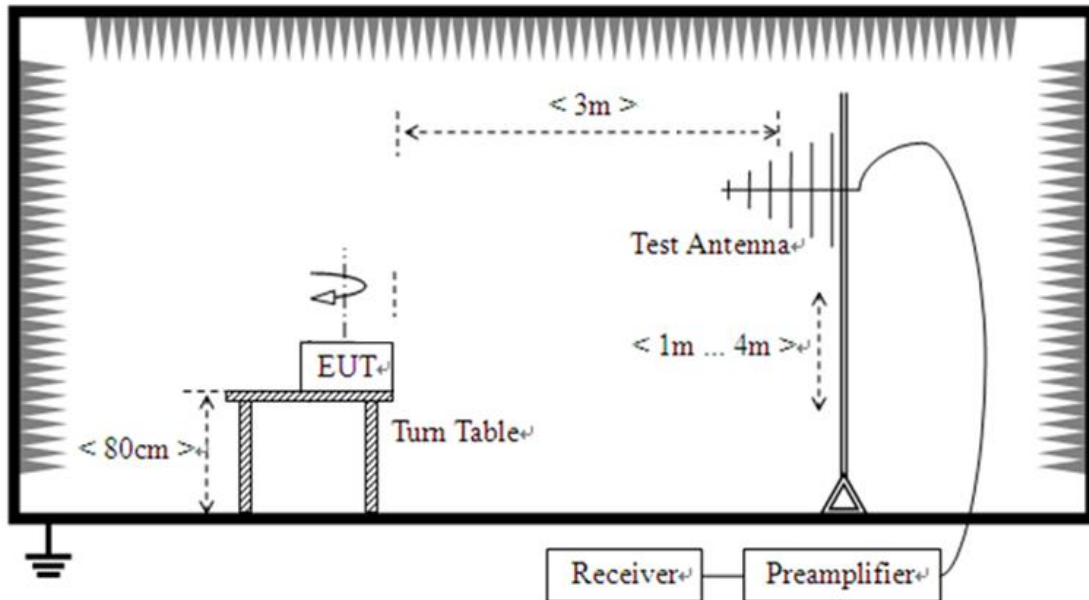
### 3.2.2. Frequency Range of Measurement

According to 15.33(b)(1), the frequency range of radiated measurement for the EUT is listed in the following table:

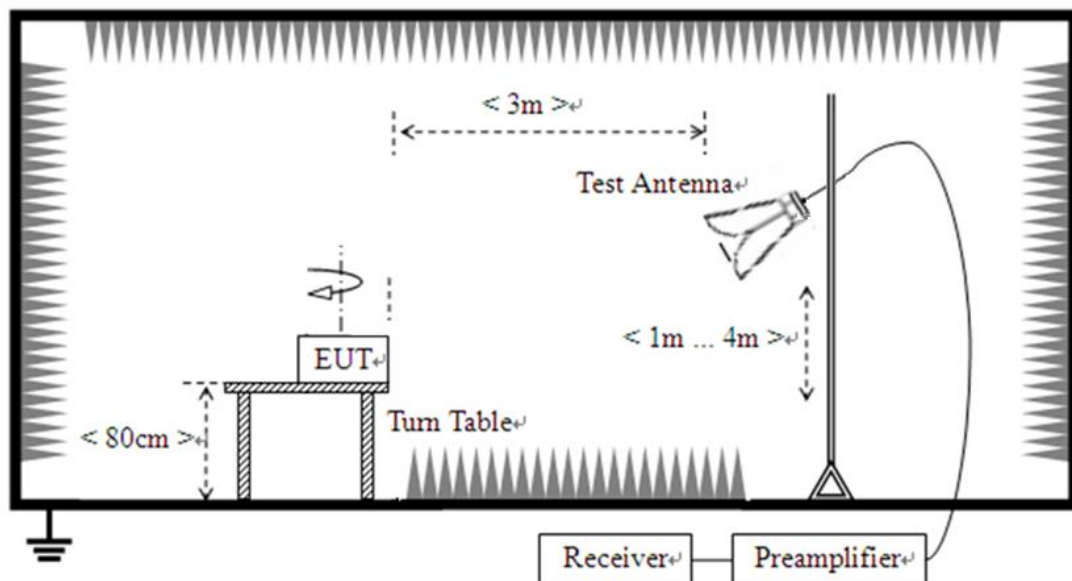
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705 .....	30.
1.705–108 .....	1000.
108–500 .....	2000.
500–1000 .....	5000.
Above 1000 .....	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

### 3.2.3. Test Setup

- 1) For radiated emissions from 30MHz to 1GHz



- 2) For radiated emissions above 1GHz





The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.

For the test Antenna:

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested. For measurements above 1 GHz, keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.

For measurements below 1GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video bandwidth is set to 3MHz for peak measurements and as applicable for average measurements.

### 3.2.4. Test Result

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of emissions (6GHz-40GHz) which are attenuated more than 20 dB below the permissible value need not be reported.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R \text{ [dB}\mu\text{V]} + A_T \text{ [dB]} + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

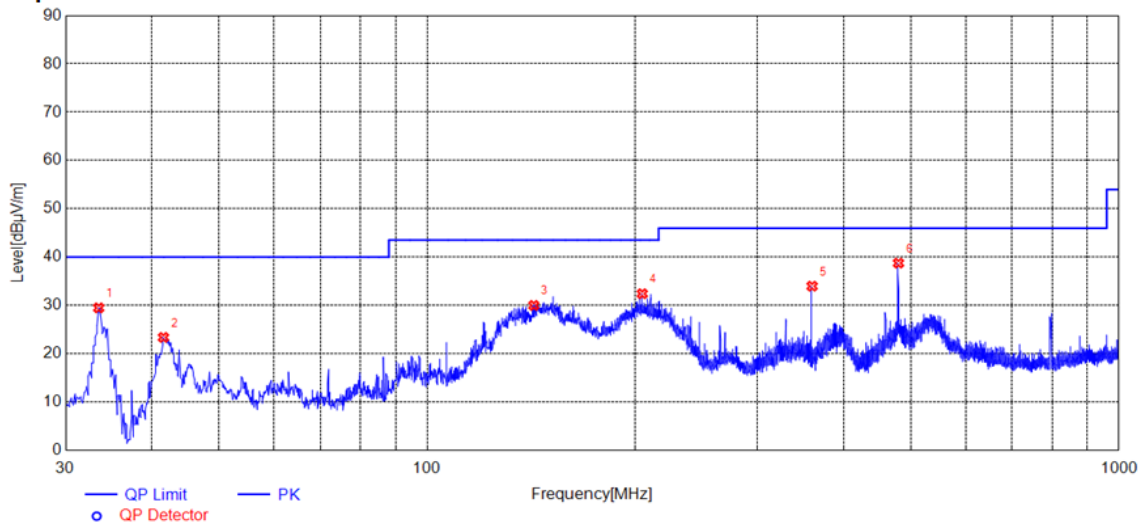
During the test, the total correction Factor  $A_T$  and  $A_{\text{Factor}}$  were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.



Start of Test: 2024-10-08 20:33:13

## Test Graph



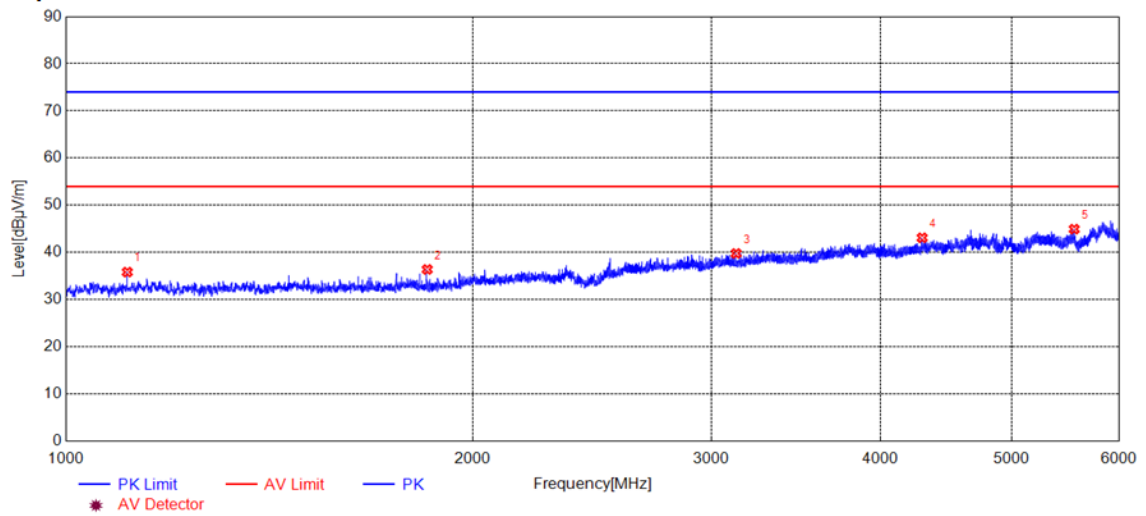
(Plot A: ANT-Vertical, 30MHz - 1GHz)

No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	33.4923	29.50	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
2	41.5442	23.38	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
3	142.5313	30.00	N.A.	N.A.	N.A.	43.50	N.A.	V	PASS
4	204.5205	32.42	N.A.	N.A.	N.A.	43.50	N.A.	V	PASS
5	360.0270	33.98	N.A.	N.A.	N.A.	46.00	N.A.	V	PASS
6	479.9310	38.76	N.A.	N.A.	N.A.	46.00	N.A.	V	PASS



Start of Test: 2024-10-08 20:43:46

## Test Graph



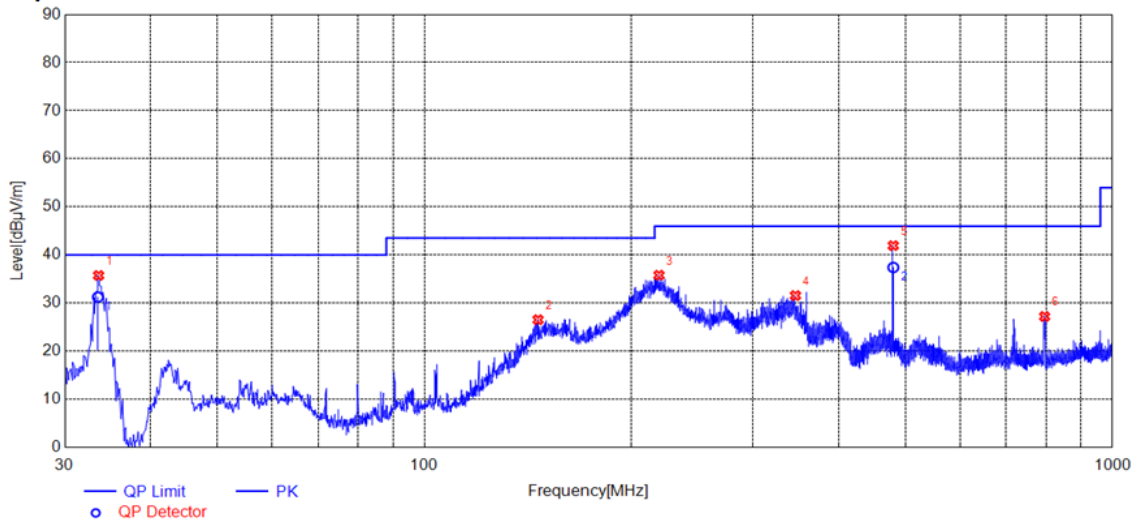
(Plot B: ANT-Vertical, 1GHz - 6GHz)

No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	1110.5000	35.84	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
2	1850.0000	36.40	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
3	3129.5000	39.80	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
4	4295.0000	43.11	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
5	5563.0000	44.95	N.A.	N.A.	74.00	N.A.	54.00	V	PASS



Start of Test: 2024-10-08 20:25:32

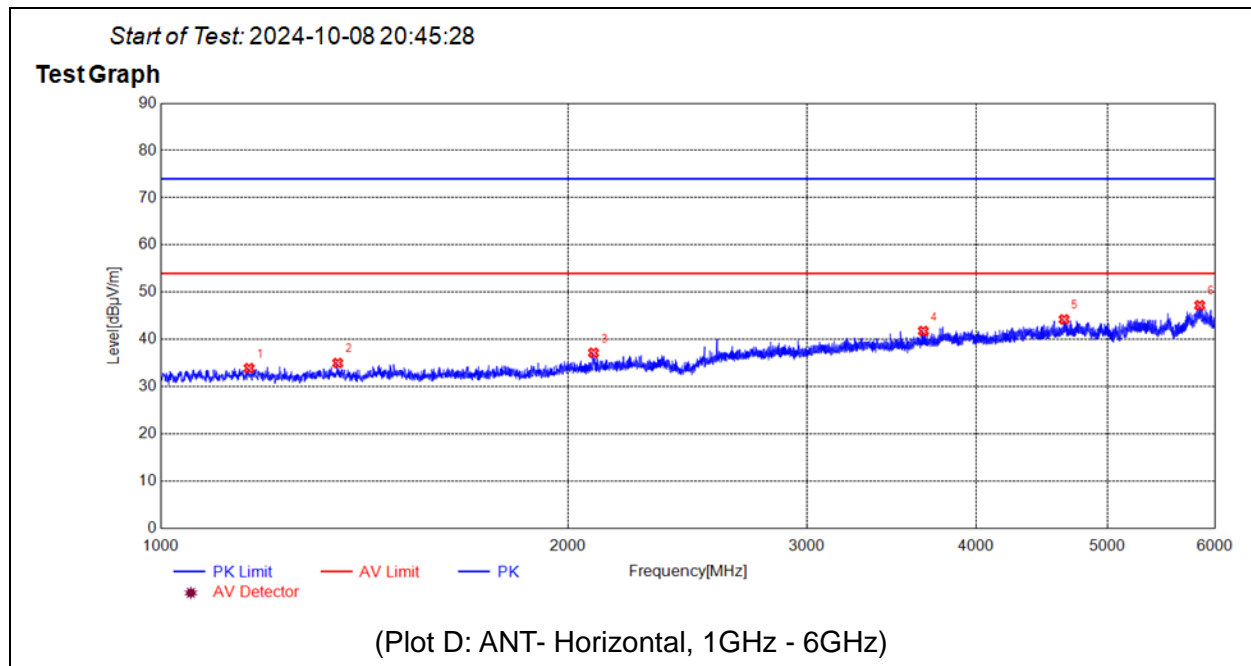
## Test Graph



(Plot C: ANT- Horizontal, 30MHz - 1GHz)

No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	33.5894	35.75	31.25	N.A.	N.A.	40.00	N.A.	H	PASS
2	146.2176	26.54	N.A.	N.A.	N.A.	43.50	N.A.	H	PASS
3	219.1689	35.80	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
4	346.0576	31.56	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
5	480.0280	41.94	37.41	N.A.	N.A.	46.00	N.A.	H	PASS
6	796.6677	27.21	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS





No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	1162.5000	33.93	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
2	1351.5000	35.02	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
3	2087.5000	37.19	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
4	3657.0000	41.80	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
5	4646.0000	44.25	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
6	5850.5000	47.23	N.A.	N.A.	74.00	N.A.	54.00	H	PASS



## Annex A Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

### Uncertainty of Conducted Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	9kHz-150kHz	±3.3dB
	150kHz-30MHz	±2.8dB

### Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	±5.06dB
	200MHz-1000MHz	±5.04dB
	1GHz-6GHz	±5.18dB
	6GHz-18GHz	±5.48dB



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

<b>Laboratory Name:</b>	Shenzhen Morlab Communications Technology Co., Ltd.
<b>Laboratory Address:</b>	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
<b>Telephone:</b>	+86 755 36698555
<b>Facsimile:</b>	+86 755 36698525

### 2. Identification of the Responsible Testing Location

<b>Name:</b>	Shenzhen Morlab Communications Technology Co., Ltd.
<b>Address:</b>	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

### 3. Accreditation Certificate

<b>Accredited Testing Laboratory:</b>	The FCC designation number is CN1192. Test firm registration number is 226174. (Shenzhen Morlab Communications Technology Co., Ltd.)
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### 4. Test Software Utilized

Model	Version Number	Producer
TS+ -[JS32-RE]	Version 2.5.0.6	Tonscend
TS+ -[JS32-CE]	Version 2.5.0.0	Tonscend

**5. Test Equipments Utilized**

Description	Model	Serial No.	Manufacturer	Cal. Date	Due. Date
Bi-Log Antenna	VULB 9163	9163-519	SCHWARZBECK	2024/6/22	2025/6/21
Horn Antenna	BBHA 9120D	01774	SCHWARZBECK	2024/6/22	2025/6/21
Horn Antenna	BBHA9170	BBHA9170 #773	SCHWARZBECK	2024/6/22	2025/6/21
Receiver	N9038A	MY564000 93	KEYSIGHT	2024/1/25	2025/1/24
6db Attenuator	BW-N6W5+	E191001	Mini-circuits	2024/9/11	2025/9/10
Preamplifier	S020180L3203	61171/611 72	LUCIX CORP.	2024/5/30	2025/5/29
Preamplifier	S10M100L3802	46732	LUCIX CORP.	2024/5/30	2025/5/29
Preamplifier	DCLNA0118-40 C-S	DS77209	Decentest	2024/5/30	2025/5/29
RF Coaxial Cable	PE330	MRE001	Pasternack	N/A	N/A
RF Coaxial Cable	CLU18	MRE002	Pasternack	N/A	N/A
RF Coaxial Cable	CLU18	MRE003	Pasternack	N/A	N/A
RF Coaxial Cable	BNC	MRE04	Qualwave	N/A	N/A
Receiver	ESPI	101052	R&S	2024/6/3	2025/6/2
LISN	NSLK 8127	8127449	Schwarzbeck	2024/2/2	2025/2/1
10dB Pulse Limiter	VTSD 9561-F	VTSD 9561 F-B #206	SCHWARZBECK	2024/5/30	2025/5/29
System Simulator	MT8000A	62621482 49	anritsu	2024/6/30	2025/6/29
System Simulator	MT8821C	62618305 72	anritsu	2024/1/25	2025/1/24
System Simulator	CMW500	152038	R&S	2024/9/11	2025/9/10

**6. Ancillary Equipment Utilized**

Description	Model	Serial No.	Manufacturer
NFC card	N/A	N/A	N/A
Adapter	UF73PD20A	N/A	Guangdong Beicom



REPORT No.: SZ24060253E01

Charging base Adapter	UBX310-0520	N05-0593660	Youyuan
Charging base	N/A	T26107VR6T	N/A
Charging base	N/A	N/A	N/A
USB Cable	N/A	N/A	N/A
PC	A1370	N/A	APPLE

\_\_\_\_\_ END OF REPORT \_\_\_\_\_