Prüfbericht-Nr.: *Test report no.*:	**CN23FT9R 001**	**Auftrags-Nr.:** *Order no.*:	**168427727**	Seite 1 von 13 *Page 1 of 13*
Kunden-Referenz-Nr.: *Client reference no.*:	N/A	**Auftragsdatum:** *Order date:*	2023-05-22	
Auftraggeber: *Client*:	**Nice North America LLC** 5919 Sea Otter Place, Suite 100, Carlsbad, CA 92010, United States			
Prüfgegenstand: *Test item*:	Wall Station			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	HAE00080 (Trademark: LINEAR)			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification*:	FCC CFR Title 47, Part 15, Subpart B ICES-003 Issue 7 October 2020			

Wareneingangsdatum: *Date of sample receipt*:	2023-05-29	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	A003483602-001	
Prüfzeitraum: *Testing period*:	2023-06-12	
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result**:	Pass	

geprüft von: tested by:	Lin Lin	**genehmigt von:** *authorized by*:	Hardy Suo
Datum: *Date:* 2023-06-15		**Ausstellungsdatum:** *Issue date:* 2023-06-15	
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other*: FCC ID: EF400231

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery*: Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.

Test Summary

5.1.1 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

5.1.2 RADIATED EMISSIONS
RESULT: Pass

Table of Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of FCC 15B & ICES-003

Appendix B: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, China

FCC Registration No.: 694916

ISED Wireless Device Testing Laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Conducted Emission				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
EMI Test Receiver	R&S	ESR3	102680	2024-02-23
Artificial Mains Network	R&S	ENV216	101445	2024-02-23
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A
Radiated Emission (3m chamber)				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
3m SAC	ETS-Lindgren	SAC3	CT001632-Q1362	2024-04-26
EMI Test Receiver	R&S	ESR7	102111	2023-11-20
Horn Antenna	R&S	HF907	102706	2023-08-08
Preamplifier (1-18GHz)	FIT	SCU-18F	180077	2023-08-01
Trilog-Broadband antenna	SCHWARZBECK	VULB9168	0945	2023-08-03
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (3m SAC), 30MHz to 1000MHz	± 4.52 dB
Radiated Emission (3m SAC), above 1000MHz	± 4.37 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, Chinais listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Wall Station which supports Bluetooth and 2.4GHz Wi-Fi functions.
This product contains the single wireless module “ESP32-WROVER-E” which the FCC ID is “2AC7Z-ESP32WROVERE” and IC ID is “21098-ESPWROVERE”

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	Wall Station
Type Designation:	HAE00080
Trade Mark:	LINEAR
FCC ID:	EF400231
Operating Voltage:	9Vdc or 12Vdc as from Smart Garage Door Operator
Testing Voltage:	AC 120V, 60Hz
Operating Temperature Range:	0°C ~ 45 °C

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Normal operation (WIFI and BT attached+ Light+ Up and Down)
B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Operation Description
- PCB Layout
- User Manual
- Block Diagram
- ID Label and Location Info

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.4: 2014.

According to clause 3.1, all tests were performed on model HAE00080 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 4: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Remark
Portable Laptop	Lenovo	ThinkPad T480	10Q67059	Provided by Test Lab
Smart garage door operator	Nice North America LLC	Smart garage door	--	Provided by Client

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

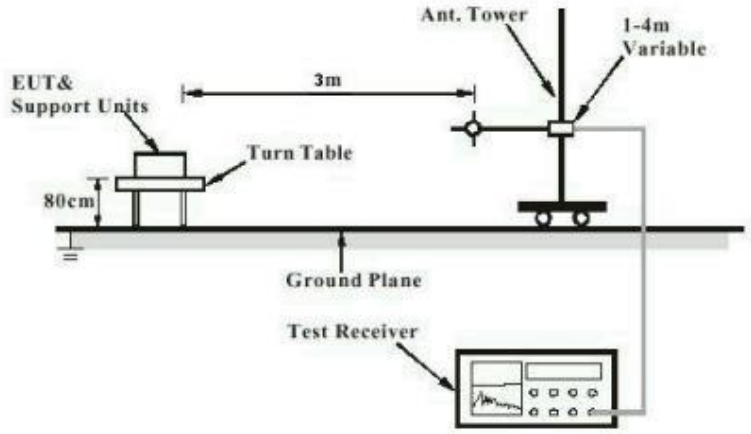


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

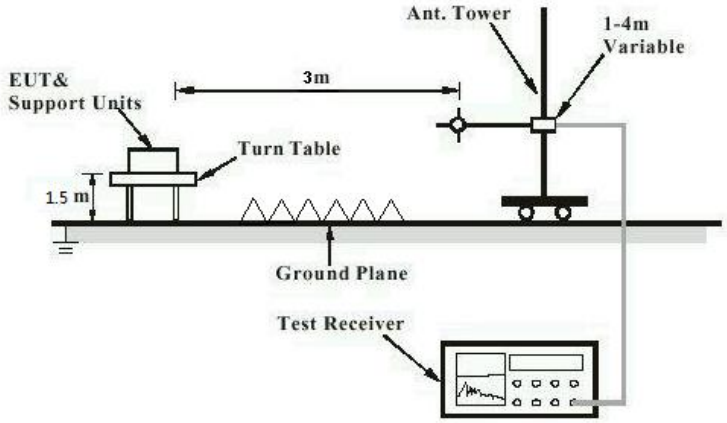
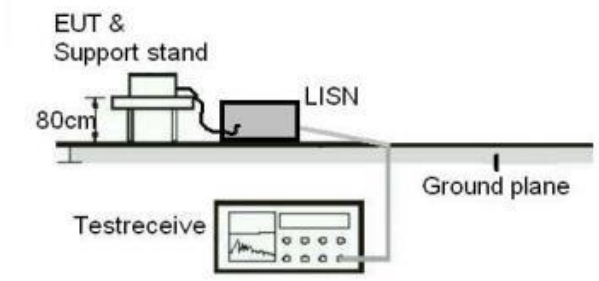


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1.1 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.107(a) ICES-003 Section 3.2.1
Basic standard	:	ANSI C63.4:2014
Frequency range	:	0.15 - 30MHz
Classification	:	Class B
Limits	:	FCC Part 15.107(a) ICES-003 Table 1
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-06-12
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Ambient temperature	:	23.2 ℃
Relative humidity	:	50.6 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.2 Radiated Emissions

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.109(a) ICES-003 Section 3.2.2
Basic standard	:	ANSI C63.4:2014
Frequency range	:	30MHz to 5th harmonic of the highest frequency
Classification	:	Class B
Limits	:	FCC Part 15.109(a) ICES-003 Table 2 & 4
Kind of test site	:	3m Semi-Anechoic Chamber

Test Setup

Date of testing	:	2023-06-12
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Ambient temperature	:	23.2 ℃
Relative humidity	:	50.6 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

7 List of Tables