

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                    |                                                            |                           |                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------|--------------------------------------------|
| <b>Test report no.:</b><br><i>Prüfbericht-Nr.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>CN2PS6G 002</b>                                                                                                                                                                                 | <b>Order No.:</b><br><i>Auftragsnr.:</i>                   | 168436838                 | <b>Page 1 of 9</b><br><i>Seite 1 von 9</i> |
| <b>Client reference no.:</b><br><i>Kunden-Referenz-Nr.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A                                                                                                                                                                                                | <b>Order date:</b><br><i>Auftragsdatum:</i>                | 2023-07-26                |                                            |
| <b>Client:</b><br><i>Auftraggeber:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Changsha Langyuan Electronics Technology Co., Ltd.</b><br>Building A20, Section II, Zhongdian Software Park, No. 18, Jianshan Road, High-tech Development District, Changsha, Hunan, P.R. China |                                                            |                           |                                            |
| <b>Test item:</b><br><i>Prüfgegenstand:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4K Wireless Conferencing System                                                                                                                                                                    |                                                            |                           |                                            |
| <b>Identification / Type no.:</b><br><i>Bezeichnung / Typ-Nr.:</i>                                                                                                                                                                                                                                                                                                                                                                                                              | M1S, ST100, TXX1XX(X is a variable, X = A to Z, 0 to 9 or blank)                                                                                                                                   |                                                            |                           |                                            |
| <b>Order content:</b><br><i>Auftrags-Inhalt:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                | Test Report                                                                                                                                                                                        |                                                            |                           |                                            |
| <b>Test specification</b><br><i>Prüfgrundlage:</i>                                                                                                                                                                                                                                                                                                                                                                                                                              | 47 CFR FCC Part 2.1091                                                                                                                                                                             |                                                            |                           |                                            |
| <b>Date of sample receipt:</b><br><i>Wareneingangsdatum:</i>                                                                                                                                                                                                                                                                                                                                                                                                                    | 2023-07-30                                                                                                                                                                                         | Please refer to Photo Document                             |                           |                                            |
| <b>Test sample no:</b><br><i>Prüfmuster-Nr.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                | A003521890-003,004<br>A003534880-001                                                                                                                                                               |                                                            |                           |                                            |
| <b>Testing period:</b><br><i>Prüfzeitraum:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2023-07-30 - 2023-10-08                                                                                                                                                                            |                                                            |                           |                                            |
| <b>Place of testing:</b><br><i>Ort der Prüfung:</i>                                                                                                                                                                                                                                                                                                                                                                                                                             | Refer to section 2.1                                                                                                                                                                               |                                                            |                           |                                            |
| <b>Testing laboratory:</b><br><i>Prüflaboratorium:</i>                                                                                                                                                                                                                                                                                                                                                                                                                          | TÜV Rheinland (Shenzhen) Co., Ltd.                                                                                                                                                                 |                                                            |                           |                                            |
| <b>Test result*:</b><br><i>Prüfergebnis*:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                   | Pass                                                                                                                                                                                               |                                                            |                           |                                            |
| <b>tested by:</b><br><i>geprüft von:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                        | <u>X Bell Hu</u>                                                                                                                                                                                   | <b>authorized by:</b><br><i>genehmigt von:</i>             | <u>X Jonathan Li</u>      |                                            |
| <b>Date:</b> 2023-11-21<br><i>Datum:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                        | Signed by: Bell Hu                                                                                                                                                                                 | <b>Issue date:</b> 2023-11-21<br><i>Ausstellungsdatum:</i> | Signed by: Jonathan Li    |                                            |
| <b>Position / Stellung:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Expert/Sachverständige(r)                                                                                                                                                                          | <b>Position / Stellung:</b>                                | Expert/Sachverständige(r) |                                            |
| <b>Other:</b><br><i>Sonstiges:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                              | FCC ID: 2BB9P00001                                                                                                                                                                                 |                                                            |                           |                                            |
| <b>Condition of the test item at delivery:</b><br><i>Zustand des Prüfgegenstandes bei Anlieferung:</i>                                                                                                                                                                                                                                                                                                                                                                          | Test item complete and undamaged<br>Prüfmuster vollständig und unbeschädigt                                                                                                                        |                                                            |                           |                                            |
| <p>* 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</p> <p>* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet</p>                                                                                                                                                                             |                                                                                                                                                                                                    |                                                            |                           |                                            |
| <p><b>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</b></p> <p><i>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</i></p> |                                                                                                                                                                                                    |                                                            |                           |                                            |

V05

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**Remarks**  
*Anmerkungen*

- |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b> | <p>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.</p> <p><i>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.</i></p> <p><i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>                                                                                                                                                       |
| <b>2</b> | <p>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</p> <p><i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i></p>                                                                                      |
| <b>3</b> | <p>Test clauses with remark of * are subcontracted to qualified subcontractors and described 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.</p> <p><i>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.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>4</b> | <p>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.</p> <p><i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen 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 bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i></p> |

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## TEST SUMMARY

### 3.1.1 RF EXPOSURE COMPLIANCE

RESULT: Pass

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## **1. TEST SITES**

### **1.1 TEST FACILITIES**

TÜV Rheinland (Shenzhen) Co., Ltd.

Address: 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

### **1.2 Traceability**

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

### **1.3 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 basis using in house standards or comparisons.

### **1.4 Location of Original Data**

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

### **1.5 Status of Facility Used for Testing**

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

## 2. GENERAL PRODUCT INFORMATION

### 2.1 GENERAL DESCRIPTION

The Product is 4K Wireless Conferencing System which supports 5GHz Wi-Fi functions.

There are multiple models included in this product, all of them are electrically identical, only named differently for market purpose.

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

### 2.2 RATING AND SYSTEM DETAILS

**Table 1: Technical Specification of EUT**

| General Information of EUT                                                                                                                                                                                                  | Value                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kind of Equipment:                                                                                                                                                                                                          | 4K Wireless Conferencing System                                                                                                                         |
| Type Designation:                                                                                                                                                                                                           | M1S, ST100, TXX1XX (X is a variable, X = A to Z, 0 to 9 or blank)                                                                                       |
| Operating Voltage:                                                                                                                                                                                                          | DC 5V                                                                                                                                                   |
| Testing Voltage:                                                                                                                                                                                                            | DC 5V                                                                                                                                                   |
| Operating Temperature Range:                                                                                                                                                                                                | 0 °C ~ +40 °C                                                                                                                                           |
| FCC ID:                                                                                                                                                                                                                     | 2BB9P00001                                                                                                                                              |
| <b>Technical Specification of Wi-Fi 802.11 a/n/ac</b>                                                                                                                                                                       |                                                                                                                                                         |
| Operating Frequency:                                                                                                                                                                                                        | 5180-5320MHz, 5500-5720MHz, 5745-5825MHz                                                                                                                |
| Type of Modulation:                                                                                                                                                                                                         | 802.11n/a: BPSK, QPSK, 16QAM, 64QAM<br>802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM                                                                       |
| Protocol:                                                                                                                                                                                                                   | 802.11 a/n20/n40/ac20/ac40/ac80                                                                                                                         |
| Data Rate:                                                                                                                                                                                                                  | 6/9/12/18/24/36/48/54 Mbps for 802.11a<br>MCS0~MCS7 for 802.11n<br>MCS0~MCS9 for 802.11ac<br>(All data rates considered, only the Worst-cases reported) |
| Channel Separation                                                                                                                                                                                                          | 5 MHz                                                                                                                                                   |
| Antenna Type:                                                                                                                                                                                                               | Integral Antenna                                                                                                                                        |
| Number of Antenna:                                                                                                                                                                                                          | 2                                                                                                                                                       |
| Antenna Gain:                                                                                                                                                                                                               | 5.3 dBi Max (As detailed in Antenna spec)                                                                                                               |
| Type of Device                                                                                                                                                                                                              | Slave Device without Radar Detection                                                                                                                    |
| Note:<br>WLAN 5GHz 802.11n/802.11ac.<br>For directional gain:<br>Array Gain = $10 \log(NANT/NSS)$ dB.<br>So the Directional gain = GANT + $10 \log(NANT)$ dBi<br>(The worst case directional gain will occur when NSS = 1). |                                                                                                                                                         |

## 3. Test Results

### 3.1 Transmitter Requirements & Test Suites

#### 3.1.1 RF Exposure Compliance

**RESULT:****Pass**

|                   |   |                                                                       |
|-------------------|---|-----------------------------------------------------------------------|
| Test standard     | : | FCC Part 1.1091<br>KDB 447498 D01 General RF Exposure Guidance<br>v06 |
| Limit             | : | Table 1 of 47 CFR FCC Part 1.1310                                     |
| Kind of test site | : | Shielded room                                                         |

This device is mobile device, and the applicant declares that the minimum separation distance is greater than 20cm. Therefore MPE measurement or computational modelling should be used to determine compliance.

MPE Calculation is based on the conducted power, and considering maximum power and Antenna gain. The following formula is used to MPE evaluation.

$$Pd = \frac{P_{out} * G}{4R^2\pi}$$

Where

$P_d$  = power density in mW/cm<sup>2</sup> or W/m<sup>2</sup>

$P_{out}$  = output power to antenna in mW or W

$G_{num}$  = Antenna gain in numeric

$\pi$  = 3.14159

R = Distance between observation point and the center of radiator in cm or m

### 3.1.1.1 FCC Part 1.1310, Part 2.1091

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1500                                                       |                               |                               | f/300                               | 6                        |
| 1500-100,000                                                   |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *(100)                              | 30                       |
| 1.34-30                                                        | 824/f                         | 2.19/f                        | *(180/f <sup>2</sup> )              | 30                       |
| 30-300                                                         | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1500                                                       |                               |                               | f/1500                              | 30                       |
| 1500-100,000                                                   |                               |                               | 1.0                                 | 30                       |

Table 2: Test Results of RF Exposure Calculations for FCC, stand-alone mode

| Operating Mode | Max. EIRP incl. tune-up (dBm) | Distance (cm) | MPE P <sub>d</sub> (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Verdict |
|----------------|-------------------------------|---------------|------------------------------------------|-----------------------------|---------|
| 5G Wi-Fi       | 26.5                          | 20            | 0.09                                     | 1.0                         | Pass    |

1. RF Output Power above: Refer to test report CN2PS6G 001.
2. EIRP= Average Conducted power +Directional Gain

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