



Volume Control TEST REPORT

No.23T04Z80397-010

for

TCL Communication Ltd.

GSM/UMTS/LTE Mobile Phone

T435D,T435SP,T435S,T435V,T435WS

FCC ID: 2ACCJH178

with

Hardware Version: 03

Software Version: 9JS6

Issued Date: 2024-02-06

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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REPORT HISTORY

| Report Number | Revision | Description | Issue Date |
|----------------------|-----------------|--|-------------------|
| 23T04Z80397-010 | Rev.0 | 1st edition | 2024-01-18 |
| 23T04Z80397-010 | Rev.1 | Deleted the test results of WCDMA Band 1 in chapter 6.3.1. Updated the test results of WCDMA Band 5 in chapter 6.3.1. Updated the test results of LTE Band 25/26/66/71 in chapter 6.3.1. Updated the test results of WLAN 802.11n in chapter 6.3.1. | 2024-02-05 |
| 23T04Z80397-010 | Rev.2 | Deleted the EUT's pictures in ANNEX A and ANNEX C. | 2024-02-06 |

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China 100191

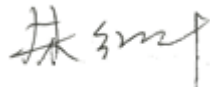
1.3. Testing Environment

Normal Temperature: 15-35°C
Extreme Temperature: -10/+55°C
Relative Humidity: 20-75%
Ambient noise of 14dB(A) and is compliance with requirement of standards
acoustic chamber (SEE ANNEX H)

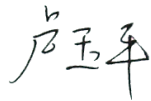
1.4. Project data

Testing Start Date: 2023-12-20
Testing End Date: 2024-02-05

1.5. Signature



Zhu Hongye
(Prepared this test report)



Lu Yuping
(Reviewed this test report)



Zhao Xinglong
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: TCL Communication Ltd.
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Country: P.R. China
Telephone: +86 755 3661 1621
Fax: +86 755 3661 2000-81722

2.2. Manufacturer Information

Company Name: TCL Communication Ltd.
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park,
Shatin, NT, Hong Kong
Postal Code: /
Country: P.R. China
Telephone: +86 755 3661 1621
Fax: +86 755 3661 2000-81722

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

General Information:

| | |
|----------------------|---------------------------------|
| Description | GSM/UMTS/LTE Mobile Phone |
| Model name/HVIN | T435D,T435SP,T435S,T435V,T435WS |
| Marketing Name/PMN | / |
| Brand name | TCL |
| FCC ID | 2ACCJH178 |
| Extreme Temperature | -10~55°C |
| Nominal Voltage | 3.8V |
| Extreme High Voltage | 4.35V |
| Extreme Low Voltage | 3.6V |

Supported Bands:

| | |
|--------------------------|------------------------------------|
| UMTS Frequency Band(s) | Band 1/2/4/5/8 |
| GSM Frequency Band(s) | GSM850/900/1800/1900 |
| E-UTRA Frequency Band(s) | Band 02/04/05/12/13/25/26/41/66/71 |
| WLAN Frequency Band(s) | 2.4GHz |

Supported Codecs:

| | |
|-----------------------|-----------------------------|
| UMTS Audio Codec(s) | AMR NB/AMR WB |
| GSM Audio Codec (s) | EFR/AMR NB/AMR WB |
| E-UTRA Audio Codec(s) | AMR NB/AMR WB/EVS NB/EVS WB |
| WLAN Audio Codec(s) | AMR NB/AMR WB/EVS NB/EVS WB |

Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT

| EUT ID* | SN or IMEI | HW Version | SW Version | Date of receipt |
|---------|-----------------------|------------|------------|-----------------|
| UT36a | IMEI1:016495000011548 | 03 | 9JS6 | 2023-12-18 |

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

| AE ID* | Description | SN |
|--------|-------------|----|
| / | / | / |

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters, referring to Annex B for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

| Reference | Title | Version |
|-------------------------------------|---|--------------|
| ANSI C63.19 | American National Standard Methods of Measurement of Compatibility Between Wireless Communications Devices and Hearing Aids | 2019 |
| TIA 5050 | Telecommunications Communications Products Receive Volume Control Requirements for Wireless (Mobile) Devices | 2018 Edition |
| 285076 D04 Volume Control v02 | GUIDANCE FOR PERFORMING VOLUME CONTROL MEASUREMENTS ON MOBILE HANDSETS | 2023.09.29 |
| 285076 D05 HAC Waiver DA 23-914 v01 | HAC COMPLIANCE UNDER WAIVER DA 23-914 | 2023.09.29 |

5. Air Interfaces / Bands used for testing

The codec bit rates of the applicant's choosing are EVS-NB 24.4kbps and EVS-WB 24.4kbps.

| Air-interface | Band | Tested Codec | Tested Rate(kbps) |
|-----------------|--|--------------|-------------------|
| GSM | 850/1900 | EFR | / |
| WCDMA (UMTS) | Band 2/4/5 | AMR-NB | 4.75/12.2 |
| | | AMR-WB | 6.6/23.85 |
| VoLTE | Band 2/4/5/12/13/25/26/41/ 66/71 | AMR-NB | 4.75/12.2 |
| | | AMR-WB | 6.6/23.85 |
| | | EVS-NB | 24.4 |
| | | EVS-WB | 24.4 |
| VoWiFi | 802.11b/g/n | AMR-NB | 4.75 |
| | | AMR-WB | 6.6 |
| | | EVS-NB | 24.4 |
| | | EVS-WB | 24.4 |

6. Test Results

6.1. Test summary and Conclusions

The volume control measurement method is in accordance with the TIA 5050-2018.

The EUT was tested in CTTL acoustics laboratory. All the detail results are showed in section 6.3.

I: Under the waiver, only CMRS narrowband and CMRS wideband voice codecs are required to comply with the volume control requirements of the TIA 5050-2018 Volume Control Standard as amended as follows:

- a. For the 2N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a conversational gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which it operates using one codec bit rate of the applicant's choosing.
- b. For the 8N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a conversational gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which they operate but is not required to meet or exceed the full 18 dB of conversational gain specified in section 5.1.1 of the TIA 5050 Volume Control Standard using one codec bit rate of the applicant's choosing.

II: For all other narrowband and wideband codecs not evaluated in I.a. above, TIA 5050-2018 Receive Distortion and Noise Performance and Receive Acoustic Frequency Response Performance evaluations are not required; however, these codecs shall be assessed for conversational gain and documented in the test report at the 2N and 8N levels with a gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which they operate. The handset

volume setting used to comply with I.a. shall be used for these other CMRS codec evaluations.

III. Any other codec for voice services embedded in the handset, not identified in I and II above, is not required to comply or demonstrate in the test reports for conversational gain.

Table 6.1-1: the worst-case test results of the chosen codec of telephony call

| Air- interfac e & Band | Chann el | Band width | Modula tion | RB Size | RB Offset | Vol ume Lev el | Codec | NB/ WB | Bit Rate | 2N/ 8N | Conv. Gain <u>(ANN EX D)</u> | RFR <u>(AN NEX D)</u> | Minimum Distortion <u>(ANNEX D)</u> | | Verdic t |
|---------------------------------|-------------|---------------|----------------|------------|--------------|-------------------------|-------|-----------|-------------|-----------|--|----------------------------------|---|-------|-------------|
| | | [MH z] | | | | | | | [kbp s] | [N] | [dB] | [Hz] | [dB] | | |
| LTE Band12 | 23095 | 10 | 16QA M | 1 | 0 | max | EVS | NB | 24.4 | 2N | 19.17 | PASS | 630 | 28.40 | PASS |
| LTE Band12 | 23095 | 10 | 16QA M | 1 | 0 | max | EVS | NB | 24.4 | 8N | 24.11 | PASS | 630 | 25.41 | PASS |
| LTE Band12 | 23095 | 10 | 16QA M | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.52 | PASS | 1250 | 24.59 | PASS |
| LTE Band12 | 23095 | 10 | 16QA M | 1 | 0 | max | EVS | WB | 24.4 | 8N | 23.75 | PASS | 250 | 27.55 | PASS |

Table 6.1-2: the worst-case test results of other codecs of telephony call

| Air- interfac e & Band | Mode | C h a n n e l | Modula tion | Data Rate | Vol ume Lev el | Codec | NB/ WB | Bit Rate | 2N/ 8N | Conv. Gain <u>(ANN EX E)</u> | RFR <u>(AN NEX E)</u> | Minimum Distortion <u>(ANNEX E)</u> | | Verdic t |
|---------------------------------|---------|---------------------------------|----------------|--------------|-------------------------|-------|-----------|-------------|-----------|--|----------------------------------|---|---|-------------|
| | | | | [Mbp s] | | | | [kbp s] | [N] | [dB] | [Hz] | [dB] | | |
| WLAN | 802.11g | 6 | 64- QAM | 54 | max | AMR | NB | 4.75 | 2N | 17.78 | / | / | / | PASS |
| WLAN | 802.11g | 6 | 64- QAM | 54 | max | AMR | NB | 4.75 | 8N | 23.11 | / | / | / | PASS |
| WLAN | 802.11g | 6 | 64- QAM | 54 | max | AMR | WB | 6.6 | 2N | 18.04 | / | / | / | PASS |
| WLAN | 802.11g | 6 | 64- QAM | 54 | max | AMR | WB | 6.6 | 8N | 23.45 | / | / | / | PASS |
| GSM 1900 | 600 | / | / | / | max | EFR | NB | / | 2N | 19.05 | / | / | / | PASS |
| GSM 850 | 162 | / | / | / | max | EFR | NB | / | 8N | 23.60 | / | / | / | PASS |

6.2. Description of Test Setup

In order to provide the complete information about the measurement environment within this report the setup is described in this chapter. Figure 6.2.1 shows a block diagram of the test arrangement.

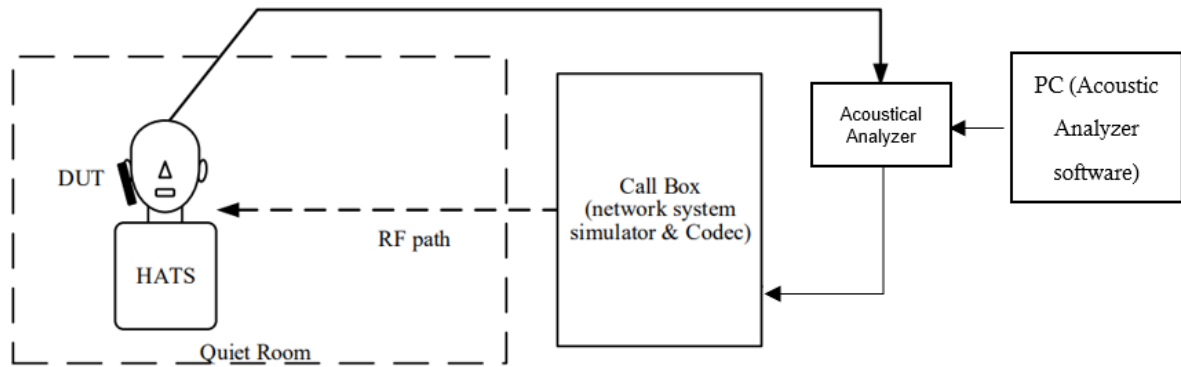


Fig. 6.2.1: Block diagram of the test setup

An artificial head measurement system according to ITU-T Recommendation P.58 equipped with artificial ears (Type3.3 acc. ITU-T Rec. P.57) are used. The artificial head is placed in the center of an anechoic test room. The measurements are implemented in the HEAD acoustics software ACQUA and can be carried out automatically. They allow signal recording at the artificial ears and feeding at the network simulator.

The network simulators (e.g. Rohde & Schwarz CMW500, CMX500) establish the call to the mobile phone via an antenna connection. The EUT was tested using EFR/AMR-NB/AMR-WB/EVS-NB/EVS-WB codecs.

ANNEX C shows the handheld Positioner with mounted EUT. The application force between the phone and the artificial ear is adjusted. A mounting force of 2N or 8 N is adjusted.

6.3. Test Detail Results

6.3.1 VoLTE IMS call investigation

Table 6.3.1-1: the **Codec** and **Bandwidth** investigating results of **VoLTE** IMS call

| Band | Channel | Bandwidth [MHz] | Modulation | RB Size | RB Offset | Volume Level | Codec | NB/WB | Bit Rate [kbps] | 2N/8N [N] | Conv. Gain [dB] | FR | Min PN-SDNR | |
|--------|---------|--------------------|------------|---------|-----------|--------------|-------|-------|--------------------|--------------|--------------------|------|-------------|-------|
| | | | | | | | | | | | | | [Hz] | [dB] |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | EVS | NB | 24.4 | 2N | 19.03 | PASS | 630 | 30.95 |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | EVS | NB | 24.4 | 8N | 24.24 | PASS | 500 | 26.92 |

| | | | | | | | | | | | | | | |
|--------|-------|----|------|----|---|-----|-----|----|-------|----|-------|------|------|-------|
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | EVS | WB | 24.4 | 2N | 18.94 | PASS | 2000 | 26.87 |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | EVS | WB | 24.4 | 8N | 24.00 | PASS | 1250 | 27.38 |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.33 | / | / | / |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | AMR | NB | 12.2 | 2N | 19.26 | / | / | / |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | AMR | NB | 4.75 | 8N | 23.63 | / | / | / |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | AMR | WB | 6.6 | 2N | 18.62 | / | / | / |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | AMR | WB | 23.85 | 2N | 19.04 | / | / | / |
| Band 2 | 18900 | 10 | QPSK | 50 | 0 | max | AMR | WB | 6.6 | 8N | 23.86 | / | / | / |

 Table 6.3.1-2: the **Radio Configuration** investigating results of **VoLTE** IMS call

| Band | Channel | Bandwidth [M Hz] | Modulation | RB Size | RB Offset | Volume Level | Code c | NB/WB | Bit Rate | 2N/8 N | Conv. Gain | FR | Min PN-SDNR | |
|--------|---------|---------------------|------------|---------|-----------|--------------|--------|-------|----------|--------|------------|------|-------------|-------|
| | | | | | | | | | [kbps] | [N] | [dB] | | [Hz] | [dB] |
| Band 2 | 18900 | 10 | QPSK | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.71 | PASS | 250 | 26.69 |
| Band 2 | 18900 | 10 | QPSK | 1 | 49 | max | EVS | WB | 24.4 | 2N | 18.71 | PASS | 500 | 26.42 |
| Band 2 | 18900 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.63 | PASS | 1600 | 25.45 |
| Band 2 | 18900 | 10 | 16QAM | 1 | 49 | max | EVS | WB | 24.4 | 2N | 18.77 | PASS | 4000 | 26.87 |
| Band 2 | 18900 | 10 | 16QAM | 50 | 0 | max | EVS | WB | 24.4 | 2N | 18.71 | PASS | 250 | 27.47 |
| Band 2 | 18900 | 20 | QPSK | 100 | 0 | max | EVS | WB | 24.4 | 2N | 18.79 | PASS | 250 | 27.28 |
| Band 2 | 18900 | 20 | QPSK | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.74 | PASS | 250 | 27.24 |
| Band 2 | 18900 | 20 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.62 | PASS | 250 | 27.14 |
| Band 2 | 18900 | 15 | QPSK | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.55 | PASS | 250 | 27.11 |
| Band 2 | 18900 | 15 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.71 | PASS | 250 | 26.31 |
| Band 2 | 18900 | 5 | QPSK | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.55 | PASS | 250 | 26.87 |
| Band 2 | 18900 | 5 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.73 | PASS | 5000 | 26.28 |
| Band 2 | 18900 | 10 | QPSK | 1 | 0 | max | AMR | NB | 4.75 | 2N | 18.53 | / | / | / |
| Band 2 | 18900 | 10 | QPSK | 1 | 49 | max | AMR | NB | 4.75 | 2N | 18.19 | / | / | / |
| Band 2 | 18900 | 10 | 16QAM | 1 | 0 | max | AMR | NB | 4.75 | 2N | 18.22 | / | / | / |
| Band 2 | 18900 | 10 | 16QAM | 1 | 49 | max | AMR | NB | 4.75 | 2N | 18.17 | / | / | / |
| Band 2 | 18900 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.05 | / | / | / |

| | | | | | | | | | | | | | | |
|--------|-------|----|-------|-----|----|-----|-----|----|------|----|-------|---|---|---|
| Band 2 | 18900 | 20 | QPSK | 100 | 0 | max | AMR | NB | 4.75 | 2N | 18.34 | / | / | / |
| Band 2 | 18900 | 20 | QPSK | 1 | 99 | max | AMR | NB | 4.75 | 2N | 18.36 | / | / | / |
| Band 2 | 18900 | 20 | 16QAM | 1 | 99 | max | AMR | NB | 4.75 | 2N | 18.46 | / | / | / |
| Band 2 | 18900 | 20 | 16QAM | 100 | 0 | max | AMR | NB | 4.75 | 2N | 18.35 | / | / | / |
| Band 2 | 18900 | 15 | QPSK | 75 | 0 | max | AMR | NB | 4.75 | 2N | 18.13 | / | / | / |
| Band 2 | 18900 | 15 | 16QAM | 75 | 0 | max | AMR | NB | 4.75 | 2N | 18.27 | / | / | / |
| Band 2 | 18900 | 5 | QPSK | 25 | 0 | max | AMR | NB | 4.75 | 2N | 18.43 | / | / | / |
| Band 2 | 18900 | 5 | 16QAM | 25 | 0 | max | AMR | NB | 4.75 | 2N | 18.47 | / | / | / |

 Table 6.3.1-3: the **LTE Band** investigating results of **VoLTE** IMS call

| Band | Channel | Bandwidth [MHz] | Modulation | RB Size | RB Offset | Volume Level | Code | NB / WB | Bit Rate | 2N/8N | Conv. Gain | FR | Min PN-SDNR | |
|----------|---------|--------------------|------------|---------|-----------|--------------|------|---------|----------|-------|------------|------|-------------|-------|
| | | | | | | | | | [kbps] | [N] | [dB] | | [Hz] | [dB] |
| Band B4 | 20175 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.58 | PASS | 250 | 27.41 |
| Band B5 | 20525 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.65 | PASS | 250 | 27.42 |
| Band B12 | 23095 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.52 | PASS | 1250 | 24.59 |
| Band B13 | 23230 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.51 | PASS | 250 | 26.75 |
| Band 25 | 26365 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.48 | PASS | 250 | 26.38 |
| Band 26 | 26865 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.53 | PASS | 250 | 26.91 |
| Band B41 | 40620 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.84 | PASS | 800 | 26.59 |
| Band B66 | 132322 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.50 | PASS | 250 | 26.78 |
| Band B71 | 133297 | 10 | 16QAM | 1 | 0 | max | EVS | WB | 24.4 | 2N | 18.44 | PASS | 250 | 27.83 |
| Band B4 | 20175 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.53 | / | / | / |
| Band B5 | 20525 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.49 | / | / | / |

| | | | | | | | | | | | | | | |
|----------|--------|----|-------|----|---|-----|-----|----|------|----|-------|---|---|---|
| Band B12 | 23095 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.41 | / | / | / |
| Band B13 | 23230 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.05 | / | / | / |
| Band 25 | 26365 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.06 | / | / | / |
| Band 26 | 26865 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 17.99 | / | / | / |
| Band B41 | 40620 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 18.33 | / | / | / |
| Band B66 | 132322 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 17.99 | / | / | / |
| Band B71 | 133297 | 10 | 16QAM | 50 | 0 | max | AMR | NB | 4.75 | 2N | 17.91 | / | / | / |

6.3.2 VoWiFi IMS call investigation

Table 6.3.2: the investigating results of **VoWiFi** IMS call

| Mode | Channel | Modulation | Data Rate | Volume Level | Code | NB/WB | Bit Rate | 2N/8N | Conv. Gain | FR | Min PN-SDNR | |
|---------|---------|------------|-----------|--------------|------|-------|----------|-------|------------|------|-------------|-------|
| | | | [Mbps] | | | | [kbps] | | | | [N] | [dB] |
| 802.11b | 6 | DSSS | 1 | max | EVS | WB | 24.4 | 2N | 18.74 | PASS | 250 | 26.93 |
| 802.11b | 6 | DSSS | 2 | max | EVS | WB | 24.4 | 2N | 18.84 | PASS | 1250 | 24.94 |
| 802.11b | 6 | CCK | 5.5 | max | EVS | WB | 24.4 | 2N | 18.59 | PASS | 250 | 27.39 |
| 802.11b | 6 | CCK | 11 | max | EVS | WB | 24.4 | 2N | 18.56 | PASS | 1600 | 26.02 |
| 802.11g | 6 | BPSK | 6 | max | EVS | WB | 24.4 | 2N | 18.84 | PASS | 250 | 27.79 |
| 802.11g | 6 | BPSK | 9 | max | EVS | WB | 24.4 | 2N | 19.00 | PASS | 2000 | 25.70 |
| 802.11g | 6 | QPSK | 12 | max | EVS | WB | 24.4 | 2N | 18.71 | PASS | 1600 | 26.33 |
| 802.11g | 6 | QPSK | 18 | max | EVS | WB | 24.4 | 2N | 18.83 | PASS | 250 | 26.75 |
| 802.11g | 6 | 16-QAM | 24 | max | EVS | WB | 24.4 | 2N | 18.54 | PASS | 1250 | 27.22 |
| 802.11g | 6 | 16-QAM | 36 | max | EVS | WB | 24.4 | 2N | 18.83 | PASS | 1250 | 27.02 |
| 802.11g | 6 | 64-QAM | 48 | max | EVS | WB | 24.4 | 2N | 18.61 | PASS | 1600 | 27.35 |
| 802.11g | 6 | 64-QAM | 54 | max | EVS | WB | 24.4 | 2N | 18.73 | PASS | 250 | 27.22 |
| 802.11n | 1 | BPSK | 6 | max | EVS | WB | 24.4 | 2N | 18.59 | PASS | 1600 | 26.81 |
| 802.11n | 1 | BPSK | 9 | max | EVS | WB | 24.4 | 2N | 18.64 | PASS | 250 | 26.82 |
| 802.11n | 1 | QPSK | 12 | max | EVS | WB | 24.4 | 2N | 18.58 | PASS | 2000 | 24.89 |
| 802.11n | 1 | QPSK | 18 | max | EVS | WB | 24.4 | 2N | 18.39 | PASS | 1250 | 26.37 |

| | | | | | | | | | | | | |
|---------|---|--------|-----|-----|-----|----|------|----|-------|------|------|-------|
| 802.11n | 1 | 16-QAM | 24 | max | EVS | WB | 24.4 | 2N | 18.66 | PASS | 250 | 26.36 |
| 802.11n | 1 | 16-QAM | 36 | max | EVS | WB | 24.4 | 2N | 18.61 | PASS | 250 | 26.79 |
| 802.11n | 1 | 64-QAM | 48 | max | EVS | WB | 24.4 | 2N | 18.54 | PASS | 250 | 26.54 |
| 802.11n | 1 | 64-QAM | 54 | max | AMR | NB | 4.75 | 2N | 18.57 | PASS | 1250 | 26.34 |
| 802.11b | 6 | DSSS | 1 | max | AMR | NB | 4.75 | 2N | 17.81 | / | / | / |
| 802.11b | 6 | DSSS | 2 | max | AMR | NB | 4.75 | 2N | 18.03 | / | / | / |
| 802.11b | 6 | CCK | 5.5 | max | AMR | NB | 4.75 | 2N | 18.17 | / | / | / |
| 802.11b | 6 | CCK | 11 | max | AMR | NB | 4.75 | 2N | 17.95 | / | / | / |
| 802.11g | 6 | BPSK | 6 | max | AMR | NB | 4.75 | 2N | 18.11 | / | / | / |
| 802.11g | 6 | BPSK | 9 | max | AMR | NB | 4.75 | 2N | 17.96 | / | / | / |
| 802.11g | 6 | QPSK | 12 | max | AMR | NB | 4.75 | 2N | 17.95 | / | / | / |
| 802.11g | 6 | QPSK | 18 | max | AMR | NB | 4.75 | 2N | 18.08 | / | / | / |
| 802.11g | 6 | 16-QAM | 24 | max | AMR | NB | 4.75 | 2N | 17.78 | / | / | / |
| 802.11g | 6 | 16-QAM | 36 | max | AMR | NB | 4.75 | 2N | 18.02 | / | / | / |
| 802.11g | 6 | 64-QAM | 48 | max | AMR | NB | 4.75 | 2N | 17.82 | / | / | / |
| 802.11g | 6 | 64-QAM | 54 | max | AMR | NB | 4.75 | 2N | 17.78 | / | / | / |
| 802.11n | 1 | BPSK | 6 | max | AMR | NB | 4.75 | 2N | 18.12 | / | / | / |
| 802.11n | 1 | BPSK | 9 | max | AMR | NB | 4.75 | 2N | 18.18 | / | / | / |
| 802.11n | 1 | QPSK | 12 | max | AMR | NB | 4.75 | 2N | 18.15 | / | / | / |
| 802.11n | 1 | QPSK | 18 | max | AMR | NB | 4.75 | 2N | 18.06 | / | / | / |
| 802.11n | 1 | 16-QAM | 24 | max | AMR | NB | 4.75 | 2N | 18.25 | / | / | / |
| 802.11n | 1 | 16-QAM | 36 | max | AMR | NB | 4.75 | 2N | 18.24 | / | / | / |
| 802.11n | 1 | 64-QAM | 48 | max | AMR | NB | 4.75 | 2N | 18.13 | / | / | / |
| 802.11n | 1 | 64-QAM | 54 | max | AMR | NB | 4.75 | 2N | 18.32 | / | / | / |

6.3.3 GSM call investigation

Table 6.3.3: the investigating results of **GSM** call

| Band | Channel | Volume Level | Codec | Voice bandwidth | Bit Rate | 2N/8N | Conv. Gain | FR | Min PN-SDNR | |
|---------|---------|--------------|-------|-----------------|----------|-------|------------|----|-------------|------|
| | | | | | [kbps] | [N] | [dB] | | [Hz] | [dB] |
| GSM850 | 162 | max | EFR | NB | / | 2N | 19.09 | / | / | / |
| GSM850 | 162 | max | EFR | NB | / | 8N | 23.60 | / | / | / |
| GSM1900 | 600 | max | EFR | NB | / | 2N | 19.05 | / | / | / |
| GSM1900 | 600 | max | EFR | NB | / | 8N | 24.02 | / | / | / |

6.3.4 WCDMA call investigation

Table6.3.4: the investigating results of **WCDMA** call

| air interface | Band | Channel | Volume Level | Code | Voice bandwidth | Bit Rate | 2N/8N | Conv. Gain | FR | Min PN-SDNR | |
|---------------|-------|---------|--------------|------|-----------------|----------|-------|------------|----|-------------|------|
| | | | | | | [kbps] | [N] | [dB] | | [Hz] | [dB] |
| WCDMA | Band2 | 9262 | max | AMR | NB | 4.75 | 2N | 17.86 | / | / | / |
| WCDMA | Band2 | 9262 | max | AMR | NB | 12.2 | 2N | 18.78 | / | / | / |
| WCDMA | Band2 | 9262 | max | AMR | NB | 4.75 | 8N | 23.13 | / | / | / |
| WCDMA | Band2 | 9262 | max | AMR | WB | 6.6 | 2N | 17.88 | / | / | / |
| WCDMA | Band2 | 9262 | max | AMR | WB | 23.85 | 2N | 18.57 | / | / | / |
| WCDMA | Band2 | 9262 | max | AMR | WB | 6.6 | 8N | 23.01 | / | / | / |
| WCDMA | Band4 | 1312 | max | AMR | NB | 4.75 | 2N | 18.37 | / | / | / |
| WCDMA | Band5 | 4132 | max | AMR | NB | 4.75 | 2N | 17.96 | / | / | / |

7. Test Facilities Utilized

| No | Name | Type | SN | Manufacturer | Cal.Due Date |
|-----------------|--------------------------------|----------------------|---------------------------|---------------------|--------------|
| 1 | Measurement Frontend | Labcore | 77000136 | HEAD acoustics GmbH | 2025-11-29 |
| 2 | HEAD measurement system | HMS II.3 | 12306194 (torso137 40182) | HEAD acoustics GmbH | 2024-10-25 |
| 3 | Universal communication tester | CMW500 | 170430 | Rohde&Schwarz | 2024-08-03 |
| 4 | Acoustic chamber | 4.70 m×4.30 m×2.10 m | None | Ruisen | 2026-10-26 |
| Software | | | | | |
| Name | | Version | | | |
| ACQUA | | V 5.1.200 | | | |

END OF REPORT BODY



ANNEX A: EUT photograph

No phone's photos for Confidentiality requirements.

ANNEX B: EUT parameters

Disclaimer: The bands and codecs of EUT provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

General Information:

| | |
|----------------------|---------------------------------|
| Description | GSM/UMTS/LTE Mobile Phone |
| Model name/HVIN | T435D,T435SP,T435S,T435V,T435WS |
| Marketing Name/PMN | / |
| Brand name | TCL |
| FCC ID | 2ACCJH178 |
| Extreme Temperature | -10~55°C |
| Nominal Voltage | 3.8V |
| Extreme High Voltage | 4.35V |
| Extreme Low Voltage | 3.6V |

Supported Bands:

| | |
|--------------------------|------------------------------------|
| UMTS Frequency Band(s) | Band 1/2/4/5/8 |
| GSM Frequency Band(s) | GSM850/900/1800/1900 |
| E-UTRA Frequency Band(s) | Band 02/04/05/12/13/25/26/41/66/71 |
| WLAN Frequency Band(s) | 2.4GHz |

Supported Codecs:

| | |
|-----------------------|-----------------------------|
| UMTS Audio Codec(s) | AMR NB/AMR WB |
| GSM Audio Codec (s) | EFR/AMR NB/AMR WB |
| E-UTRA Audio Codec(s) | AMR NB/AMR WB/EVS NB/EVS WB |
| WLAN Audio Codec(s) | AMR NB/AMR WB/EVS NB/EVS WB |

ANNEX C: Test Layout

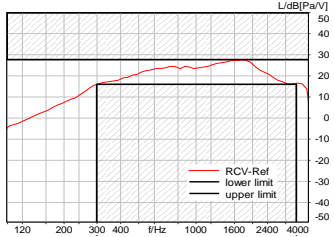
| | | |
|------------------------|----------------|-------|
| Artificial Ear Type | 3.3 | |
| Mounting Force [N] | 2 and 8 | |
| Center Fork Offset [°] | 0 | |
| Volume Level | 130%(10%-130%) | |
| Angle settings | | |
| Xe [°] | Ye [°] | Ze[°] |
| 0 | 0 | 5 |

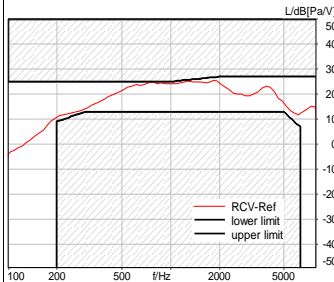
NOTE: The handset shall be placed in either the standard test position as specified in IEEE Std 269 or a recommended test position specified by the manufacturer that complies with the recommended test position requirements in IEEE Std 269.

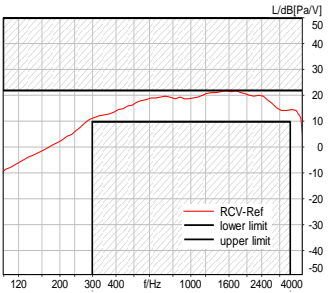
No phone's photos for Confidentiality requirements.

ANNEX D: The Worst-case Measurement Data of The Chosen Codec of Telephony Call

| SMD | Status | Single Value Description | Single Value | Object |
|---|--------|---------------------------------|--------------|--------------------------|
| 5.1 Receive Volume Control Performance 8N Table-7 | Done | Speech Level [dB[SPL]] | 94.11 | 23T04Z80397 VoLTE EVS |
| 5.1.1 -1 Conversation Gain 8N Table-7 | Ok | Calculated Value [dB] | 24.11 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 400Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 27.64 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 500Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 27.89 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 630Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 25.41 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 800Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 29.19 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1000Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 37.33 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1250Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.83 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1600Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 35.43 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2000Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 43.17 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2500Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 39.30 | 23T04Z80397 VoLTE EVS |

| | | | | |
|--|------|--|---|--------------------------|
| Receive path - distortion and noise 3150Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 40.32 | 23T04Z80397 VoLTE EVS |
| 5.2 Receive path – distortion and noise Table-7 | Ok | | | 23T04Z80397 VoLTE EVS |
| 5.3 Receive Acoustic Frequency response Performance Table-7 | Ok | Min. dist. to tolerance scheme [dB], 3245.6 Hz |  <p>0.33 dB at 3245.6 Hz Ok</p> | 23T04Z80397 VoLTE EVS |
| 5.1 Receive Volume Control Performance 8N Table-7 | Done | Speech Level [dB[SPL]] | 93.75 | 23T04Z80397 VoLTE EVS |
| 5.1.1 -1 Conversation Gain 8N Table-7 | Ok | Calculated Value [dB] | 23.75 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 250 WBonly Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 27.55 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 315Hz WBonly Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.00 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 400Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.12 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 500Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 27.87 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 630Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.68 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 800Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 34.11 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1000Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 38.45 | 23T04Z80397 VoLTE EVS |

| | | | | |
|--|------|---|--|--------------------------|
| Receive path - distortion and noise 1250Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 32.98 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1600Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 43.48 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2000Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 45.94 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2500Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 39.56 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 3150Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 39.59 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 4000Hz WOnly Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 43.82 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 5000Hz WOnly Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 36.23 | 23T04Z80397 VoLTE EVS |
| 5.2 Receive path – distortion and noise Table-7 | Ok | | | 23T04Z80397 VoLTE EVS |
| 5.3 Receive Acoustic Frequency response Performance Table-7 | Ok | Min. dist. to tolerance scheme [dB], 272.2 Hz |  <p>1.32 dB at 272.2 Hz Ok</p> | 23T04Z80397 VoLTE EVS |
| 5.1 Receive Volume Control Performance 2N Table-7 | Done | Speech Level [dB[SPL]] | 89.17 | 23T04Z80397 VoLTE EVS |
| 5.1.1 -1 Conversation Gain 2N Table-7 | Ok | Calculated Value [dB] | 19.17 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 400Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.48 | 23T04Z80397 VoLTE EVS |

| | | | | |
|--|------|---|--|--------------------------|
| Receive path - distortion and noise 500Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.96 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 630Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.40 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 800Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 32.65 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1000Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 36.96 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1250Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 29.57 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1600Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 35.26 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2000Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 43.55 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2500Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 42.54 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 3150Hz WB&NB Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 36.01 | 23T04Z80397 VoLTE EVS |
| 5.2 Receive path – distortion and noise Table-7 | Ok | | | 23T04Z80397 VoLTE EVS |
| 5.3 Receive Acoustic Frequency response Performance Table-7 | Ok | Min. dist. to tolerance scheme [dB], 305.9 Hz |  | 23T04Z80397 VoLTE EVS |
| | | | 1.75 dB at 305.9 Hz Ok | |

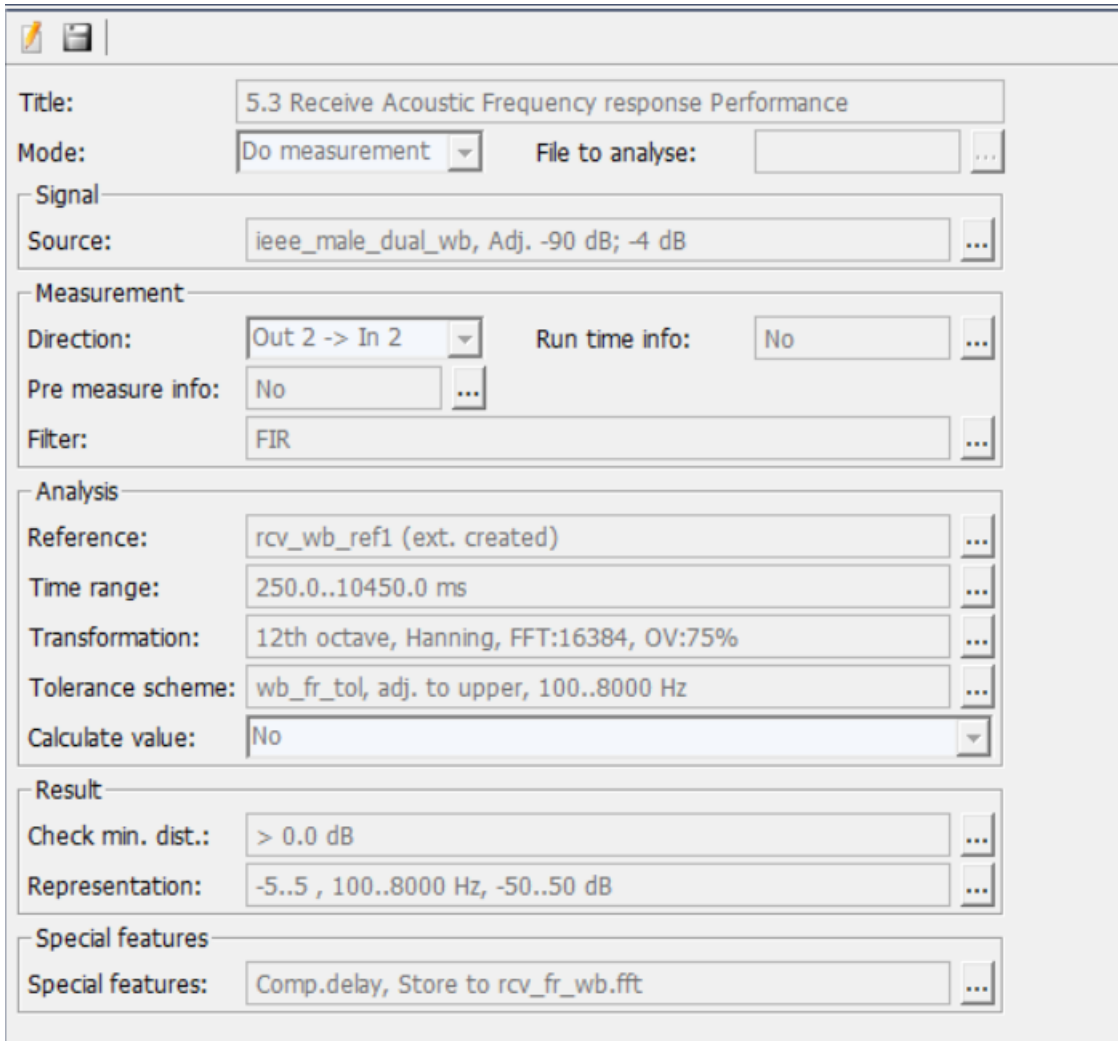
| | | | | |
|---|------|---------------------------------|-------|--------------------------|
| 5.1 Receive Volume Control Performance 2N Band 12, Table-3; Table-7 | Done | Speech Level [dB[SPL]] | 88.52 | 23T04Z80397 VoLTE EVS |
| 5.1.1 -1 Conversation Gain 2N Band 12, Table-3; Table-7 | Ok | Calculated Value [dB] | 18.52 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 250 WOnly Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 27.15 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 315Hz WOnly Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.62 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 4000Hz WOnly Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.79 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 400Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.64 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 500Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.88 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 630Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 29.81 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 800Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 32.49 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1000Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 28.76 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1250Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 24.59 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 1600Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 26.62 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 2000Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 43.81 | 23T04Z80397 VoLTE EVS |

| | | | | |
|--|------|---|-------------------------------|--------------------------|
| Receive path - distortion and noise 2500Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 33.24 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 3150Hz WB&NB Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 32.41 | 23T04Z80397 VoLTE EVS |
| Receive path - distortion and noise 5000Hz WOnly Band 12, Table-3; Table-7 | Done | Distortion (Noise) [dB], 0.0 dB | 36.10 | 23T04Z80397 VoLTE EVS |
| 5.2 Receive path – distortion and noise Band 12, Table-3; Table-7 | Ok | | | 23T04Z80397 VoLTE EVS |
| 5.3 Receive Acoustic Frequency response Performance Band 12, Table-3; Table-7 | Ok | Min. dist. to tolerance scheme [dB], 243.2 Hz | <p>1.40 dB at 243.2 Hz Ok</p> | 23T04Z80397 VoLTE EVS |

ANNEX E: The Worst-case Measurement Data of Other Codecs of Telephony Call

| SMD | Status | Single Value Description | Single Value | Object |
|--|--------|--------------------------|--------------|------------------------|
| 5.1 Receive Volume Control Performance 8N Table-8 | Done | Speech Level [dB[SPL]] | 93.11 | 23T04Z80397 VoWifi AMR |
| 5.1.1 -1 Conversation Gain 8N Table-8 | Ok | Calculated Value [dB] | 23.11 | 23T04Z80397 VoWifi AMR |
| 5.1 Receive Volume Control Performance 8N Table-8 | Done | Speech Level [dB[SPL]] | 93.45 | 23T04Z80397 VoWifi AMR |
| 5.1.1 -1 Conversation Gain 8N Table-8 | Ok | Calculated Value [dB] | 23.45 | 23T04Z80397 VoWifi AMR |
| 5.1 Receive Volume Control Performance 2N 64QAM;54Mbps; Table-8 | Done | Speech Level [dB[SPL]] | 87.78 | 23T04Z80397 VoWifi AMR |
| 5.1.1 -1 Conversation Gain 2N 64QAM;54Mbps; Table-8 | Ok | Calculated Value [dB] | 17.78 | 23T04Z80397 VoWifi AMR |
| 5.1 Receive Volume Control Performance 2N Table-8 | Done | Speech Level [dB[SPL]] | 88.04 | 23T04Z80397 VoWifi AMR |
| 5.1.1 -1 Conversation Gain 2N Table-8 | Ok | Calculated Value [dB] | 18.04 | 23T04Z80397 VoWifi AMR |
| 5.1 Receive Volume Control Performance 8N GSM 850 | Done | Speech Level [dB[SPL]] | 93.60 | 23T04Z80397 GSM |
| 5.1.1 -1 Conversation Gain 8N GSM 850 | Ok | Calculated Value [dB] | 23.60 | 23T04Z80397 GSM |
| 5.1 Receive Volume Control Performance 2N GSM 1900 | Done | Speech Level [dB[SPL]] | 89.05 | 23T04Z80397 GSM |
| 5.1.1 -1 Conversation Gain 2N GSM 1900 | Ok | Calculated Value [dB] | 19.05 | 23T04Z80397 GSM |

ANNEX F: FREQUENCY RESPONSE USED DF and 1/12 OCTAVE



The screenshot shows a software configuration window for acoustic frequency response measurement. The window is titled "5.3 Receive Acoustic Frequency response Performance". It is divided into several sections: "Signal", "Measurement", "Analysis", "Result", and "Special features".

Signal

Title: 5.3 Receive Acoustic Frequency response Performance

Mode: Do measurement (dropdown) File to analyse: [empty] (...)

Source: ieee_male_dual_wb, Adj. -90 dB; -4 dB (...)

Measurement

Direction: Out 2 -> In 2 (dropdown) Run time info: No (...)

Pre measure info: No (...)

Filter: FIR (...)

Analysis

Reference: rcv_wb_ref1 (ext. created) (...)

Time range: 250.0..10450.0 ms (...)

Transformation: 12th octave, Hanning, FFT:16384, OV:75% (...)

Tolerance scheme: wb_fr_tol, adj. to upper, 100..8000 Hz (...)

Calculate value: No (dropdown)

Result

Check min. dist.: > 0.0 dB (...)

Representation: -5..5 , 100..8000 Hz, -50..50 dB (...)

Special features

Special features: Comp.delay, Store to rcv_fr_wb.fft (...)

Filter

FF/DF Average

Channel 1: Channel 2:

Filter measured signal

Use IIR filter 1: Mid./edge frequency: Hz

Kind: Quality:

Order: Amplification: dB

Type:

Filter 2

Use IIR filter 2: Mid./edge frequency: Hz

Kind: Quality:

Order: Amplification: dB

Type:

Filter 3

Use IIR filter 3: Mid./edge frequency: Hz

Kind: Quality:

Order: Amplification: dB

Type:

Filter 4

Use IIR filter 4: Mid./edge frequency: Hz

Kind: Quality:

Order: Amplification: dB

Type:

IIR Filter combination

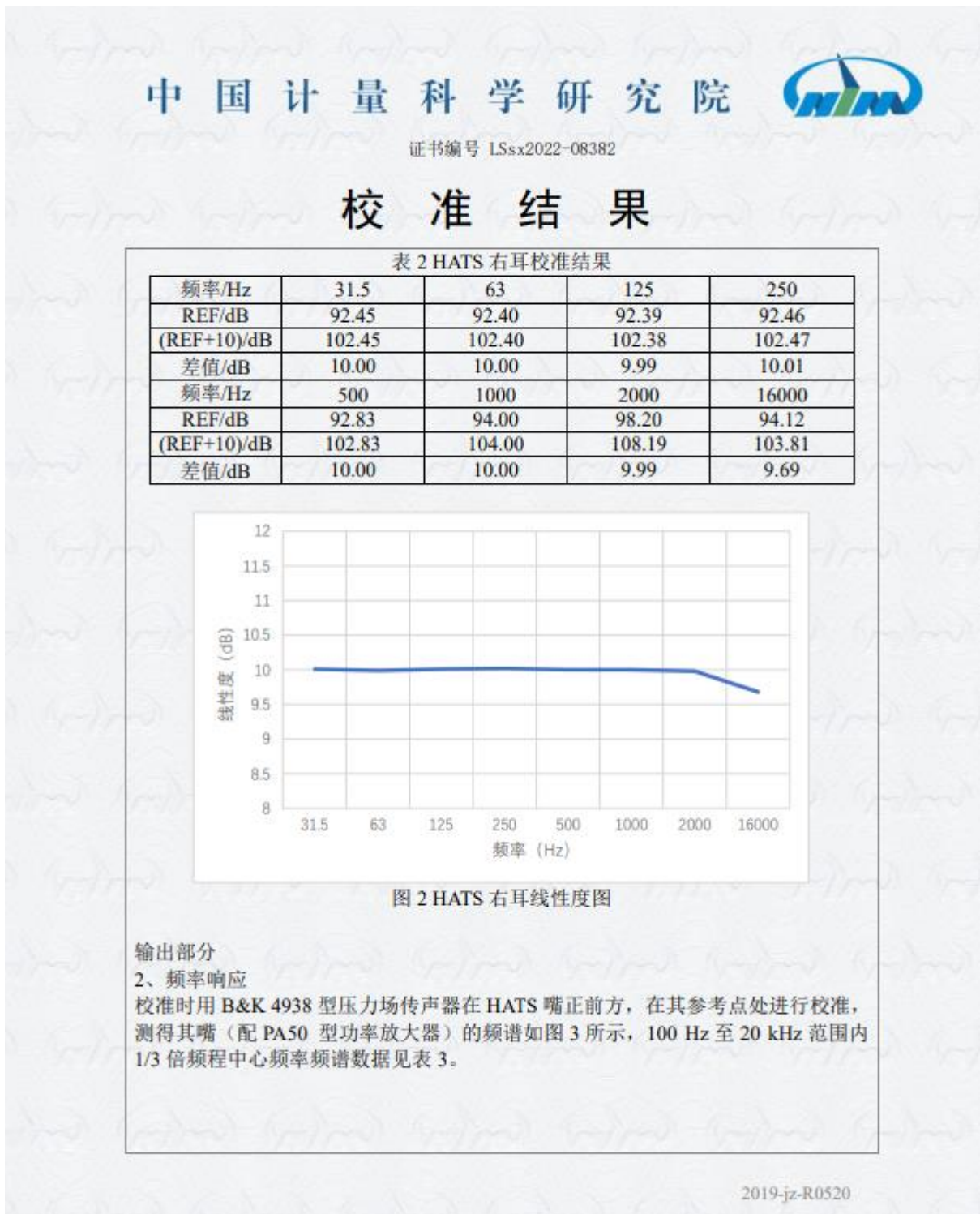
Filter combination:

FIR Filter

Use FIR Filter: FIR filter: ...

OK

ANNEX G: HATS CERTIFICATE



ANNEX H: ACOUSTIC CHAMBER CERTIFICATE

中国计量科学研究院

证书编号 LSsx2021-19386

校准结果

二、背景噪声校准结果

正常情况下，消声室的 A 计权背景噪声为 14 dB，其 1/3 倍频频谱见图 2。

Autospectrum(zb) - Input
Working : Input ; Input : CPB Analyzer

图 2 背景噪声频谱图

声压级校准结果不确定度： $U=0.6 \text{ dB} (k=2)$

-----以下空白-----

说明：
根据校准规范 JJF 1147-2006 的规定，通常情况下 60 个月校准一次。

声明：

1. 我院仅对加盖“中国计量科学研究院校准专用章”的完整证书负责。
2. 本证书的校准结果仅对本次所校准的计量器具有效。

校准员： 郑云山

核验员： 牛萍

2019-jz-R0520

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ANNEX I: Accreditation Certificate



Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 26th day of June 2023.



Mr. Trace McInturf, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2024

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

END OF REPORT