



Code 60065

UG TS 26 EL ITF Tests

3GPP TS 26.131/132, Extension for Mobile Terminal Electrical Interface Tests

OVERVIEW

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3GPP TS 26.131/132, Extension for Mobile Terminal Electrical Interface Tests

3GPP TS 26.131 and 3GPP TS 26.132 specify test methods to assess performance requirements for the electro-acoustic characteristics of narrowband (NB), wideband (WB), super-wideband (SWB), and fullband (FB) 2G/3G/4G/5G/WLAN terminals.

UG TS 26 EL ITF Tests (Code 60065) is an upgrade for the automated test suite TS 26 131-32 (Code 6777). It includes all relevant measurements from 3GPP TS 26.131 and 3GPP TS 26.132 for assessing digital electrical interfaces or analog electrical interfaces. The definition of an electrical interface is specified in chapter 3.1 of 3GPP TS 26.131 and 3GPP TS 26.132. The signal path of the measurements is solely electrical. Specific measurement equipment simulates a headset and connects to the electrical interface of a mobile terminal. Thus, the measurements from the test suite assess signal processing of the mobile terminal without the influence from a connected headset or an acoustic interface. HEAD acoustics provides hardware and software solutions to perform the measurements from the test suite.

KEY FEATURES

Measurements and requirements for digital electrical interfaces or analog electrical interfaces from 3GPP TS 26.131 and 3GPP TS 26.132

Electrical signal path

Measurements for all frequency bands in one database

Background noise files included

No specific room environment required

Quick establishment of measurement configuration

APPLICATIONS

Conformance testing of 2G/3G/4G/5G/WLAN mobile terminals according to 3GPP TS 26.131 Version 19.0.0 (2025-10) and 3GPP TS 26.132 Version 19.0.0 (2025-10)

Experimental development and optimization of 2G/3G/4G/5G/WLAN mobile terminals with instrumental evaluation of speech quality

DETAILS

UG TS 26 EL ITF Tests provides measurements for assessment of mobile terminals according to the requirements from 3GPP TS 26.131 and 3GPP TS 26.132. Included measurements are electrical and require no special measurement environment such as an anechoic room. Simulating third-party headsets via the electrical interface provides the opportunity to ensure the audio quality of mobile terminals. The supported electrical interfaces may be digital or analog.

DESCRIPTION

General

The test suite provides measurements according to 3GPP TS 26 131-132 via electrical interfaces. These measurements are solely electrical. The mobile terminal may connect in three different ways. Connection type and frequency band depend on the mobile terminal and its available interface.

If desired, measurements of the test suite can be modified or extended for additional tests as well as combined to create individual test sequences. However, testing for standard conformity requires unaltered measurements.

Supported interfaces are either analog (3.5 mm jack) or digital (USB or Bluetooth®). The *labCORE* hardware platform and its extensions provide the necessary interfaces for each digital connection. The analog connection additionally requires the Headset Interface Box (HIB I) which simulates an analog interface (according to Recommendation ITU-T P.381) to the applied mobile terminal.

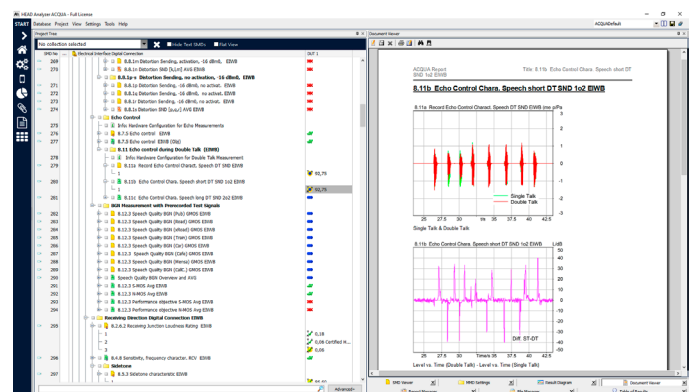
Further, the test suite provides all measurements for the narrowband (NB), wideband (WB), super-wideband (SWB), and fullband (FB) bandwidths. Devices under test may operate within 2G/3G/4G/5G/WLAN networks. The bandwidth of measurements depends on the electrical interface of the mobile terminal and its available audio codecs.

With its predefined measurement descriptors and automated measurement sequences, the test suite UG TS 26 EL ITF Tests allows fast and easy acquisition, analysis and documentation of standard-compliant measurement data.

ACQUA Projects and Standard Projects

There are two kinds of projects available for each terminal type. Common ACQUA projects which are editable and standard projects which are read-only for ensuring compliant testing to the technical specification. The projects are divided according to electrical interface of the device under test:

- › Digital electrical interface
- › Analog electrical interface



Measurements and Analyses

- › Delay
- › Frequency response
- › Loudness rating and sidetone masking rating
- › Distortion
- › Delay and speech quality in conditions with packet arrival time variations and packet loss
- › Jitter buffer management behavior
- › Echo control
- › Speech quality with background noise

OPTIONS

Hardware

Volume Control via Bluetooth HID

- CBA IV-V1 (Code 6599-V1)
- › Bluetooth transceiver for *labCORE* module *coreBT2* (USB-based, includes antenna)

Software

Volume Control via Bluetooth HID

- coreBT2HID* (Code 7786)
- › *labCORE* Bluetooth human interface device (requires CBA IV-V1)

Bluetooth Classic Codec Option

- coreBT2-LC3-HFP* (Code 7785)
- › *labCORE* Bluetooth LC3 option for HFP

RELEASE NOTES

Database revision and specification version		
Database revision	Based on specification	ACQUA version
Revision 02 SP1	3GPP TS 26.131 V19.0.0 (2025-10) and 3GPP TS 26.132 V19.0.0 (2025-10)	at least 6.1.100

SCOPE OF DELIVERY

- UG TS 26 EL ITF Tests (Code 60065)
- › delivered as ACQUA database backup
- V2C file
- › License file for ACQUA dongle
- Revision history
- › PDF file

GENERAL REQUIREMENTS

Hardware

Hardware Platform

- labCORE* (Code 7700)
- › Modular multi-channel hardware platform

Connection to the Device under Test

One of the following interfaces:

- USB connection
- › *coreUSB-DR* (Code 7705)
 - » I/O module, USB Device Reference
- Bluetooth Classic connection
- › *coreBT2* (Code 7782)
 - » I/O module, Bluetooth reference access point
- Analog connection
- › HIB I (Code 6002)
 - » Headset Interface Box

Packet-Switched Network Measurements

- coreIP* (Code 7770)
- › I/O module, Voice over IP reference gateway

For narrowband/wideband measurements:

- coreIP-AMR* (Code 7772)
- › *labCORE* AMR codec option

For super-wideband/fullband measurements:

- coreIP-EVS* (Code 7773)
- › *labCORE* EVS codec option

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GENERAL REQUIREMENTS

Network Simulation

Radio communication tester (third-party device)

Software

General

TS 26 131-32 (Code 6777)

- › 3GPP TS 26.131/132, 2G/3G/4G/5G/WLAN terminals

One of the following software applications:

ACQUA (Code 6810)

- › Advanced Communication Quality Analysis Software, Full-license version

ACQUA Compact (Code 6860)

- › Compact test system

Ambient Noise Measurements for Narrowband/ Wideband

ACOPT 21 (Code 6844)

- › Option 3QUEST - 3fold Quality Evaluation of Speech in Telecommunication (narrowband/wideband)

Ambient Noise Measurements for Super-Wideband/Fullband

ACOPT 09 (Code 6819)

- › Option SLVM P.56

ACOPT 35 (Code 6866)

- › Option 3QUEST super-wideband/fullband

Packet Loss/Variation Measurements

ACOPT 30 (Code 6857)

- › Option POLQA

coreIP-IMP (Code 7771)

- › labCORE VoIP impairment option

Echo Control Measurements

ACOPT 32 (Code 6859)

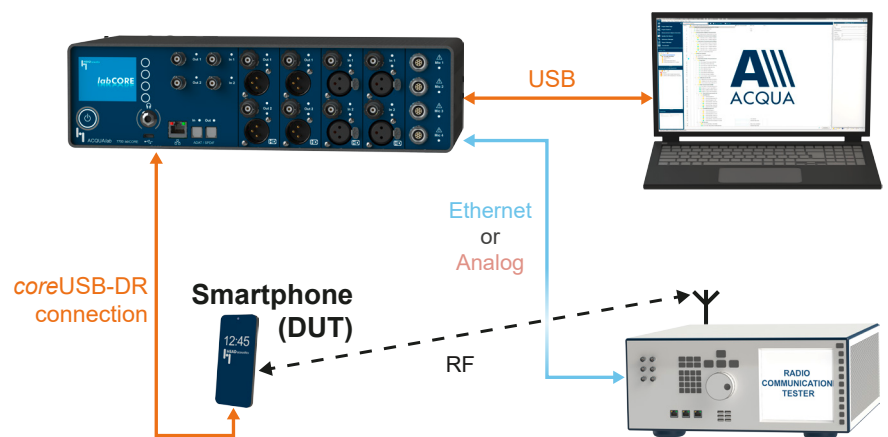
- › Option Speech-based Double Talk analysis

IN PRACTICE

APPLICATION EXAMPLES

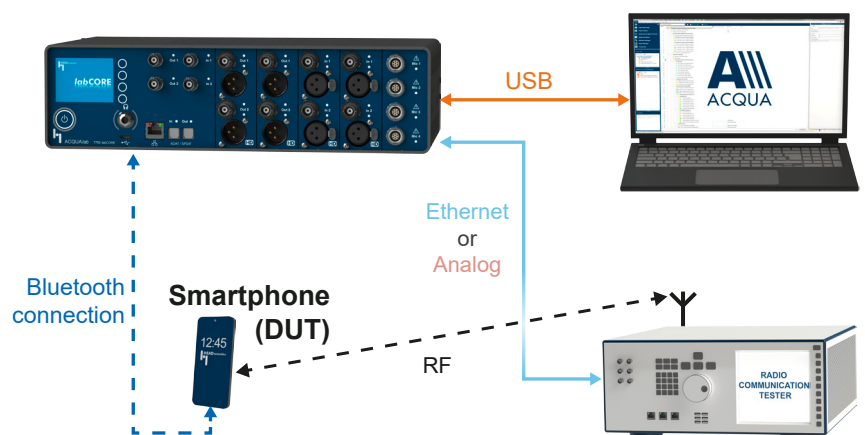
USB Connection via coreUSB-DR

Measurement configuration for a digital connection via USB. The mobile terminal connects via USB cable to the USB socket of *labCORE*. *labCORE* contains the extension board *coreUSB-DR*. *coreUSB-DR* enables *labCORE* to simulate a USB headset. A radio communication tester provides the desired network for the measurements. It connects either via Ethernet or analog connection to *labCORE*, depending on the type of network. ACQUA controls measurements and signal path from the test suite UG TS 26 EL ITF Tests. Measurement results are analyzed, saved, and assessed in the test suite according to the requirements of 3GPP TS 26.131 and 3GPP TS 26.132.



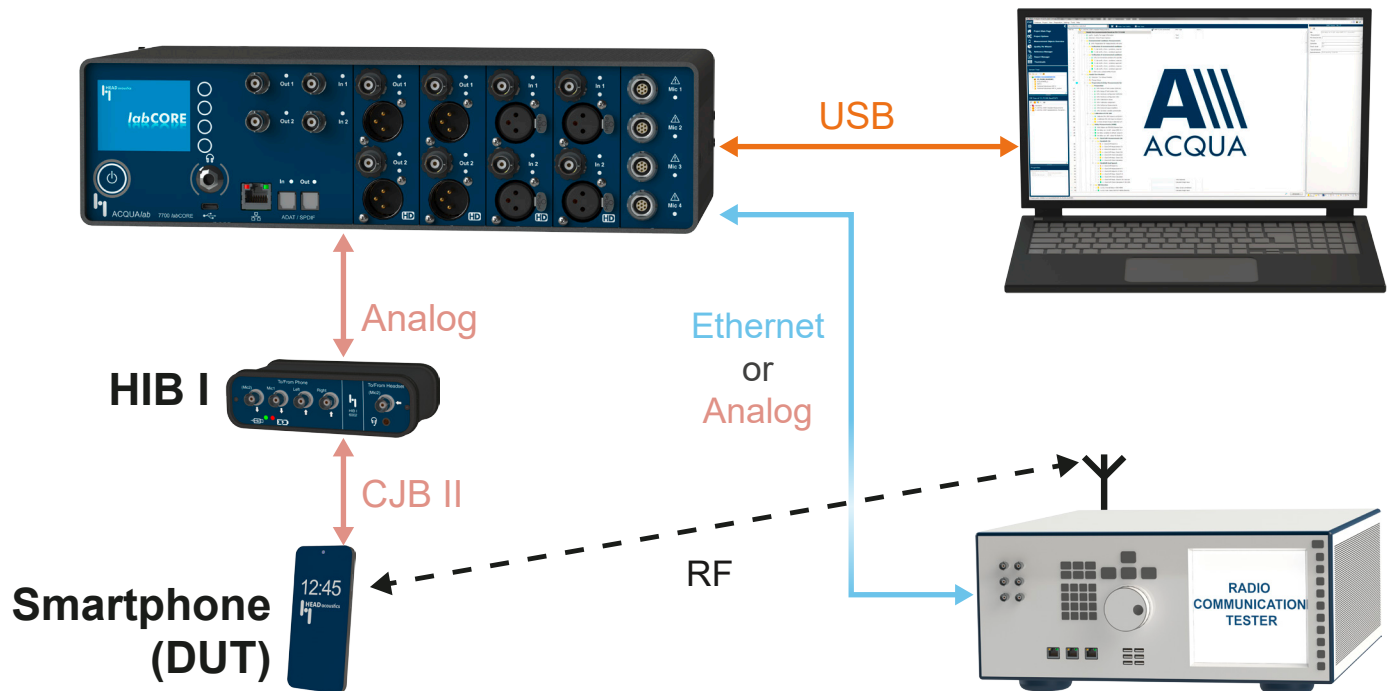
Bluetooth Connection via coreBT2

Measurement configuration for a digital connection via Bluetooth. The device under test connects via Bluetooth to the Bluetooth transceiver of *labCORE*. *labCORE* is equipped with the extension module *coreBT2*. *labCORE* simulates a Bluetooth terminal. A radio communication tester provides the desired network for the measurements. It connects either via Ethernet or analog connection to *labCORE*, depending on the type of network. ACQUA controls measurements and signal path from the test suite UG TS 26 EL ITF Tests. Measurement results are analyzed, saved, and assessed in the test suite according to the requirements of 3GPP TS 26.131 and 3GPP TS 26.132.



Analog Connection via *labCORE* and HIB I

Measurement configuration for an analog connection. The mobile terminal connects via HIB I to *labCORE*. HIB I simulates an analog headset to the mobile terminal. A radio communication tester provides the desired network for the measurements. It connects either via Ethernet or analog connection to *labCORE*, depending on the type of network. ACQUA controls measurements and signal path from the test suite UG TS 26 EL ITF Tests. Measurement results are analyzed, saved and assessed in the test suite according to the requirements of 3GPP TS 26.131 and 3GPP TS 26.132.



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