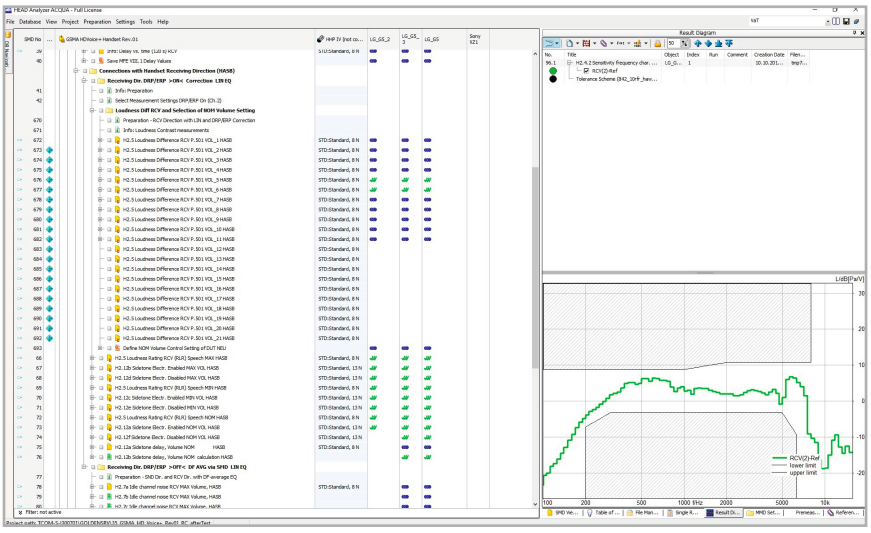
HEAD acoustics GmbH
Ebertstraße 30a
52134 Herzogenrath, Germany
Tel: +49 (0)2407 577-0
Fax: +49 (0)2407 577-99
E-mail: telecom@head-acoustics.de
WEB: www.head-acoustics.de

DATA SHEET

GSMA HD Voice+ (Code 60046)

GSMA HD Voice+ Logo Minimum Requirements for Mobile Devices



Measurement tree and result diagram for GSMA HD Voice+ in communication analysis system ACQUA

OVERVIEW

GSMA has specified test methods to assess the minimum performance requirements for allowing manufacturers of super-wideband and fullband mobile devices to make use of the HD Voice+ Logo registered as trademark by GSMA.

HEAD acoustics has implemented all speech quality measurements required by the GSMA HD+ Voice specifications (cf. below: "Applications") into the automated test suite "GSMA HD Voice+" for the communication quality analysis system ACQUA.

"GSMA HD Voice+" thus allows manufacturers to ensure that their mobile devices meet the specifications required for using the HD Voice+ logo with LTE.

DESCRIPTION

The tests implemented in GSMA HD Voice+ cover all relevant **acoustic performance** aspects concerning mobile devices, both for super-wideband and fullband such as

- frequency response,
- loudness ratings,
- echo tests,
- behavior with network impairments.

The tests cover requirements for handset, wired headset and handheld hands-free modes. The test suite supports the automated variation of position, application force and volume settings of the device under test via the motorized handset positioner HHP IV. Moreover, MFE VIII.1 with MFE VIII.1-IMP is supported, thus allowing impairments with DTX (Discontinuous Transmission).

In conjunction with the advanced communication quality analysis system ACQUA, the measurement front end MFE VI.1 as well as other components (cf. System Requirements), the GSMA HD Voice+ test suite with its predefined measurement descriptors and automated measurement sequences allows fast and easy acquisition, analysis and documentation of measurement data.

Note: acoustic performance test results are automatically added to the Excel report template during the measurement (as recommended in the specification)

APPLICATIONS

- **Automated quality analysis** of super-wideband and fullband mobile terminals
- **Compliance testing** of super-wideband and fullband mobile terminals according to GSMA HD Voice+ specification (Annex H: Minimum Requirements for the usage of the HD Voice+ logo with LTE)
- **Experimental development and optimization** of super-wideband and fullband mobile terminals with objective evaluation of speech quality

Database Revision	Based on Specification Version	Min. ACQUA Version
1	GSMA Internal Masterdocument - HD Voice Logo Technical Annexes, Annex H, Version 7.0, 23 March 2017. 3GPP TS 26.131-132 Release 13	3.5.200

Overview of database revision and specification version

SYSTEM REQUIREMENTS

GSMA HD Voice+ (Code 60046) requires the following system components:

- **UG TS 26 SW/FB (Code 60028)**, Extension Super-wideband/Fullband for Code 6777
- **GSMA HD Voice (Code 60018)**, HD Voice Logo Minimum Requirements for Mobile Devices and Headsets
- **ACQUA (Code 6810 etc.)**, Advanced Communication Quality Analysis System.
- **ACOPT 30 (Code 6857),** Option POLQA
- **ACOPT 32 (Code 6859),** Option Speech-based Double Talk
- **HMS II.3-33 (Code 1230.1)**, artificial HEAD Measurement System with pinna simulator type 3.3 **and HIS L (Code 1231)**, HEAD Impedance Simulator, Left
- **HHP IV (Code 1406)**, handset positioner *MotoMount* (Hexapod); alternatively: **HHP III.1 (Code 1403)**, handset positioner *VariMount*
- **MFE VI.1 (Code 6462)**, analog USB measurement front end with option **MFE VI-BEQ (Code 6461)**, optional binaural equalization for MFE VI.1
- **MFE VIII.1 (Code 6484)**, VoIP reference gateway with ethernet interfaces and SIP-VoIP client; also required: Options **Cod-EVS (Code 6495)** and **MFE VIII.1-IMP (Code)**
- **Radio Simulator** compatible with MFE VIII.1 (not delivered by HEAD acoustics)

The following components are recommended:

- **ACOPT 09 (Code 6819)**, Option SLVM P.56
- **ACOPT 35 (Code 6866)**, Option 3QUEST Super-wideband/Fullband according to ETSI TS 103 281, Model A
- **HAE-BGN (Code 6971)**, Background Noise Simulation, including necessary system components, cf. separate data sheet for Code 6971

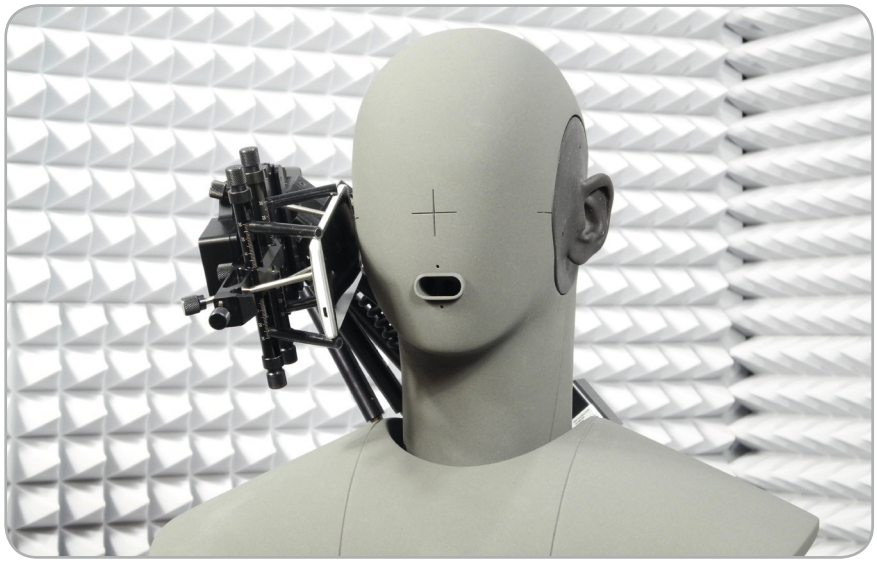
OPTIONS

- **BT-Vol HHP IV (Code 1415)**, Option Bluetooth Volume Control of Device under Test for HHP IV

DELIVERY ITEMS

- **GSMA HD Voice+ (Code 60046)**, as ACQUA database
- **V2C File**
- **Documentation** as PDF

TYPICAL USE CASE



Testing super-wideband and fullband mobile terminals with the artificial HEAD measurement system HMS II.3 and the motorized handset positioner HHP IV *MotoMount*

MEASUREMENTS

The following list gives an overview of the measurements included in GSMA HD Voice+ test suite:

	SWB			FB		
Title	**Handset Mode**	**Wired Headset mode**	**Handheld hands-free mode**	**Handset Mode**	**Wired Headset mode**	**Handheld hands-free mode**
Frequency Response SND	●	●	●	●	●	●
Frequency Response RCV	●	●	●	●	●	●
Loudness	●	●	●	●	●	●
Loudness RCV MAX	●	n/a	n/a	●	n/a	n/a
Echo Loss	●	n/a	●	●	n/a	●
Distortion RCV	●	n/a	n/a	●	n/a	n/a
Distortion SND	●	n/a	n/a	●	n/a	n/a
Idle Noise RCV	●	●	n/a	●	●	n/a
Idle Noise SND	●	●	n/a	●	●	n/a
Speech path Delay of mobile HD Voice+ devices	●	●	n/a	●	●	n/a
UE delay in jitter and error free conditions	●	n/a	n/a	●	n/a	n/a
UE delay and speech quality in conditions with packet arrival time variations and packet loss	●	n/a	n/a	●	n/a	n/a
Noise Reduction - Objective evaluation	●	n/a	n/a	●	n/a	n/a
Sidetone characteristics	●	●	n/a	●	●	n/a

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