

TELEPHONE TESTING

With the continual expansion of the world's cellular network telephone, conversations can take place almost anywhere – in quiet offices or in a noisy outdoor environment. Therefore, the acoustic perception of handsets is becoming increasingly important as users demand high voice quality in all situations.

Whether you are working with mobile phones or corded handset/headset telephones, high voice quality using advanced acoustic and electronic signal processing combined with superior design is essential.

For several decades Brüel & Kjær has played an active part in standardisation within the telecommunication industry, and are regarded as the industry reference, setting standards for telephone testing worldwide. Our experience in providing high-quality acoustic solutions provides us with a solid foundation when developing new products for emerging telephone technologies and markets.

Telephone Testing can be performed using three measurement methods:

1. With the telephone positioned in the LRGP using a test head
2. With the telephone positioned in the HATS position using a head and torso simulator
3. With the telephone positioned in the LRGP using a test head, and in a diffuse field using a test rig



4602B Test Head Mouth Simulator with 4227 Mouth Simulator

4185 Ear Simulator

4607 Digital Audio Interface

4938 Pressure-field 1/4-inch Microphone

2670 Falcon Range® 1/2-inch Microphone Preamplifier

UA1317 Microphone Holder

UA 0801 Lightweight Tripod

4195 Wide Band Ear Simulator

2716C Power Amplifier

4231 Sound Level Calibrator

4191 Free-field 1/2-inch Microphone

Test Rig

4128D Head and Torso Simulator

DP 0775 Calibration Adaptor for 1/4-inch Microphone 020230

ACCESSORIES FOR REMOTE CONTROL OF AIR INTERFACE
WQ 1270 IEEE 488 Interface Card
AO 0265 IEEE 488 Cable (2 m)
WL 1368 Antenna Cable
AO 0530 Cable for CMD-55 codec
WL 3162 Cable for CMU-200 codec
2 × AO 0087 Cable for HP-8922 codec

ACCESSORIES FOR TEST HEAD
4185 Ear Simulator
4191 Free-field 1/2-inch Microphone
4195 Wideband Ear Simulator
 Required for standard system configurations 6712 A-S1 and 6712 A-S3

ACCESSORIES FOR DAI MEASUREMENTS
4607 Digital Audio Interface
AO 0512 Cable for Analogue IO on DAI
AO 0446 IEEE 488 Cable (1 m)
4 × JJ 0076 Connector BNC – BNC F-F
 The accessories are available for standard system configurations.

ACCESSORIES FOR STABILITY, LSTR AND ANR MEASUREMENTS
2 × 4227 Mouth Simulator
3 × AO 0447 2 × Banana to 2 × Banana (15 m)
9640 Turntable System
AO 0446 IEEE 488 Cable (1 m)
EA 8002 Test Rig

TYPE 6712 A-S01

Telephone Testing using Test Head

3560 C-S24
2716 C-001
4231
AO 0389
BZ 5137

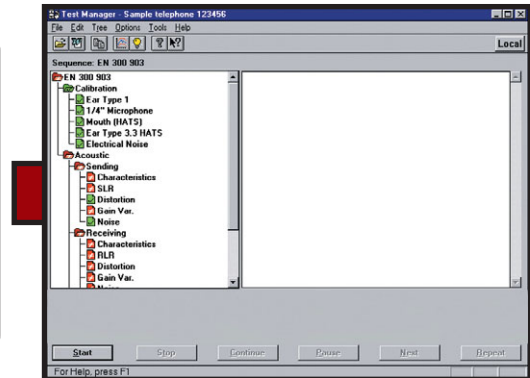
4602 B
4227

- Measurements of handset mobile phones in LRGP
- Automated calibration procedures
- Easy control of measurements
- Test Head for accurate and repeatable positioning
- Ear Simulators that conform to IEC 318, ITU-T P.51, IEEE 269 and IEEE 661 standards
- Mouth Simulator that conforms to ITU-T P. 51, IEEE 269 and IEEE 661

* One year SW maintenance



Test Manager window for controlling the calibration procedures and test cases



TYPE 6712 A-S02

Telephone Testing using HATS

3560 C-S24
2716 C-001
4231
AO 0389
BZ 5137

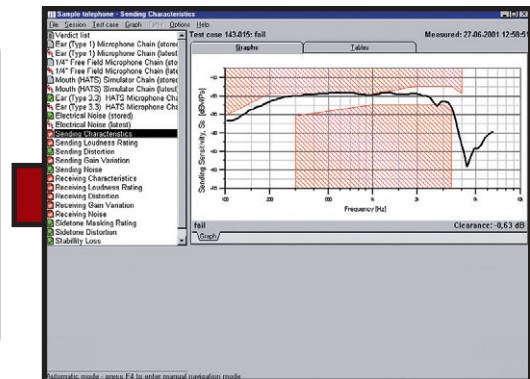
4128 D
4938 A-01
DP 0775

- Measurements of handset mobile phones in HATS position
- Measurements of hands-free function of mobile phones in HFTP
- Automated calibration procedures
- Easy control of measurements
- Imitates the use of mobile phones in everyday life
- Ear and Mouth Simulator conform to ITU-T P.51, P.57, P.64, IEEE 269 and IEEE 661 standards

* One year SW maintenance



Speed and versatility are the main features of the Data Browser. The Data Browser displays the measurement results in graphical or tabular format



TYPE 6712 A-S03

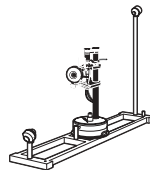
Telephone Testing using Test Rig

3560 C-S24
2716 C-001
4231
AO 0389
BZ 5137

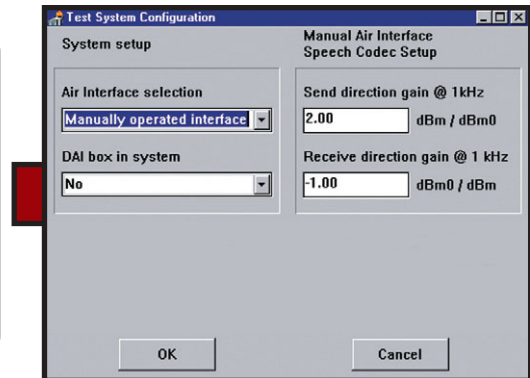
4602 B
3 x 4227
3 x AO 0447
9640
AO 0446
EA 8002
2 x AO 0028
BZ 5137-029

- Measurements of handset mobile phones in Loudness Rating Guarding Position – LRGP and in Diffuse Field Test Position – DFTP
- Automated calibration procedures
- Easy control of measurements and fast learning of measurement
- Test Head for accurate and repeatable positioning of handsets in standardised positions
- Ear Simulators that conforms to IEC 318, ITU-T P.51, IEEE 269 and IEEE 661 standards
- Mouth Simulator that conforms to ITU-T P. 51, IEEE 269 and IEEE 661 standards
- To determine the effect of background noise on mobile phones, the LSTR and ANR measurements are performed using a diffuse sound field that conforms to standardised specification

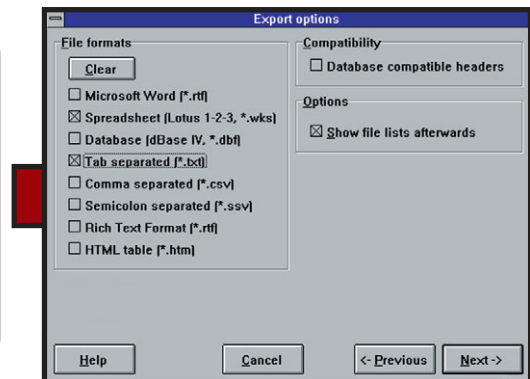
* One year SW maintenance



Test System Configuration tool. Air interface and DAI settings



The Data Export tool for export of measurement results in different file formats



LICENSES FOR STANDARDS
BZ 5137-017 EN 300 903 (GSM 03.50) for GSM phones
BZ 5137-020 3GPP TS 26.132 for GSM and UMTS phones
BZ 5137-027 3GPP TS. 51.010 (GSM 11.10) for GSM phones

BZ 5137-025 TIA and CTIA test plan for dual mode AMPS/CDMA phones
BZ 5137-023 Hands-free based on ITU.T Rec. 340. (for 6712 A-S02 only)
BZ 5137-029 LSTR and ANR based on GSM and 3GPP specifications (for 6712 A-S03 only)

PULSE LICENSES
7772 Steady State Response Analysis
7701 Data Recorder
7705 Time Capture
7698 Sound Quality Software
BZ 5265 Zwicker Loudness Option for Type 7698

BZ 5301 Psychoacoustic Test Bench Option for Type 7698
ACCESSORIES FOR ALERTING MODULE OR RINGER MEASUREMENTS
UA 0801 Lightweight Tripod
UA 1317 Microphone Preamp. Holder For standard system configurations: 6712 A-S1 and 6712 A-S2