## PULSE Reflex Telephone Test
## Test Suite for 3GPP2 C.S0056 Type 8772-X01



### Uses
- Voice testing of mobile phones according to 3GPP2 C.S0056-0 of 2005 and C.S0056-A of 2013
- Measurement of the full transmit and receive signal path using an air interface
- Research and development of mobile phones with focus on voice testing using advanced test signals
- Quality assurance and sample testing of mobile phones
- Inspection and validation of mobile phones

### Features
- Pre-programmed test suites according to 3GPP2 C.S0056-0 of 2005 and C.S0056-A of 2013
- Minimum interaction required when running complete test suites, or individual test cases
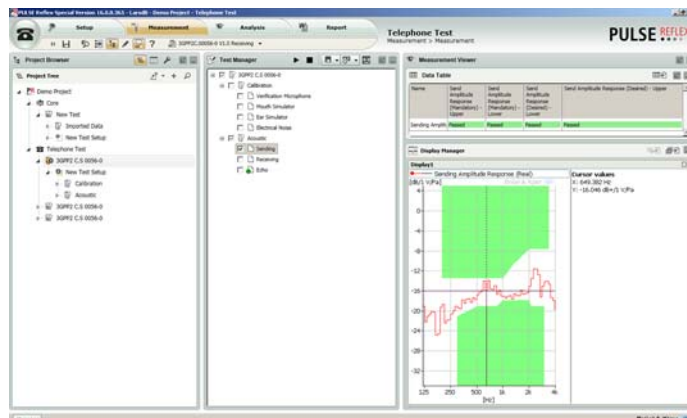- Supports the use of Type 1, Type 3.2 and Type 3.3 (HATS) ear simulators

### Introduction
Type 8772-X01[*] software provides a standardized approach to voice testing of mobile phones according to 3GPP2 C.S0056-0 of 2005 and C.S0056-A of 2013.

By using real speech, the codec can be included in the measurement path. This means that the antenna is used as the access point. Accordingly, the full transmit and receive signal paths are measured, giving realistic measurements of phone performance.

Type 8772-X01 utilises PULSE Reflex™ Telephone Test Software Type 8770 and Voice Testing System for Telephones Type 6712

for testing mobile phones according to 3GPP2 C.S0056-0 of 2005 and C.S0056-A of 2013.

### Testing of Handset Mobile Phones
Table 1 shows which test cases are supported by Type 8772-X01 with respect to 3GPP2 C.S0056-0 (version 1, July 2005), as well as 3GPP2 C.S0056-A (version 1 March 2013). The numbers in the table refer to the sections in the standard.

For specific information on software licenses, please see the ordering information. For specific information on hardware configurations, please see the Product Data for PULSE Reflex Telephone Test Software Type 8770 (BP 2428).

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\* X = license model either N for node-locked or F for floating

*Table 1* *Test cases supported and references*

| Test Case Title | 3GPP2 C.S0056-0 | 3GPP2 C.S0056-A[*] |
|---|---|---|
| SLR – Send Loudness Rating | 2.2.2.2 | 2.2.2 |
| Send Frequency Response | 2.2.1.2 | 2.2.1 |
| Send Delay | – | 2.6 |
| Send Noise | – | 2.2.4 |
| RLR – Receive Loudness Rating | 2.1.2.2 | 2.1.2 |
| RLR – Receive Loudness Rating @ MAX RVC | 2.1.2.2 | 2.1.2 |
| RLR – Receive Loudness Rating @ MIN RVC | 2.1.2.2 | 2.1.2 |
| Receive Frequency Response | 2.1.1.2 | 2.1.1 |
| Receive Response @DRP | 2.1.1.2 | – |
| Receive Delay | – | 2.6[†] |
| Receive Noise | – | 2.1.3[†] |
| Receive Noise @ MAX RVC | – | 2.1.3[†] |
| STMR – Sidetone Masking Rating | – | 2.5.1 |
| STMR – Sidetone Masking Rating @ MAX RVC | – | 2.5.1 |
| STMR – Sidetone Masking Rating @ MIN RVC | – | 2.5.1 |
| Sidetone Delay | – | 2.5.2 |
| Echo Delay (loopback) | – | 2.6 |
| Acoustic Echo Loss | 2.2.3.2 | – |
| TCLw | – | 2.2.3 |
| TCLw @ MAX RVC | – | 2.2.3 |
| Loudness Contrast – SLR | – | 2.4 |
| Loudness Contrast – RLR | – | 2.4 |
| Acoustic Shock | Annex B | Annex B |

\* Narrow-band and wideband
† Diffuse-field correction

## Ordering Information

**SOFTWARE FOR PULSE REFLEX TELEPHONE TEST**
Type 8770-X[*]     PULSE Reflex Telephone Test
Type 8770-A-XS[*]   PULSE Reflex Telephone Test Pack
                (see BP 2428 for details)

The following optional software packages are available for PULSE Reflex Telephone Test:
Type 8771-X01[*†] PULSE Reflex Telephone Test, ITU-T P.862 PESQ
Type 8771-X02[*†] PULSE Reflex Telephone Test, ITU-T P.863 POLQA

For testing according to 3GPP2 C.S0056-0 and 3GPP2 C.S0056-A, the following software package is available for use with PULSE Reflex Telephone Test Type 8770:

Type 8772-X01[*†] PULSE Reflex Telephone Test, 3GPP2 C.S0056

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\* X = license model either N for node-locked or F for floating
† Type 8770-X is required for this software package.

**REQUIRED STANDARD SYSTEM CONFIGURATIONS**
In order to conduct testing on telephones, the hardware included in one of the following systems must be available[‡]:
• System for Testing using Test Head, Type 6712-A-S01
• System for Testing using HATS, Type 6712-A-S02
An appropriate network simulator must also be available

### Support Products

**SOFTWARE MAINTENANCE AND SUPPORT AGREEMENTS**
M1-8770-X[*]     Software Maintenance and Support Agreement for PULSE Reflex Telephone Test
M1-8771-X01[*]    Software Maintenance and Support Agreement for PULSE Reflex Telephone Test, ITU-T P.862 PESQ
M1-8771-X02[*]    Software Maintenance and Support Agreement for PULSE Reflex Telephone Test, ITU-T P.863 POLQA
M1-8772-X01[*]    Software Maintenance and Support Agreement for PULSE Reflex Telephone Test, 3GPP2 C.S0056

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‡ For details see the Product Data for Type 6712 (BP 1683)

**Brüel & Kjær**