

Prüfstelle
DB Systemtechnik



Test Report

Certification of handheld radios GPH-610R and OPH-810R of the firm Shenzhen SED Wireless Communication Technology Co.Ltd.: Application Tests SW V3.00.000 (Phases 1b and 2a)

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Amendment index

Version	Date	Volumes
1	09.12.2011	First edition
2	16.03.2012	Editorial changes
3	13.04.2012	Change Document title in PR-3007.1 (Only Appl.-tests for GPH and OPH)

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Appendices

Appendix 1:	List of results
Appendix 2:	Test Configuration

List of abbreviations used

- [1] UIC Project EIRENE, Functional Requirements Specification
Version: 7/7.1
- [2] UIC Project EIRENE, System Requirements Specification,
Version: 15/15.1
- [3] UIC: GPH / OPH Functional Tests & Validation
UIC Reference O-2647 | Datum: Januar 2007
- [4] SED: GPH / OPH / OPS Handset Test Plan for EIRENE Compliance, Version 1.3 vom
11.11.2011
- [5] SED: GPH-610R User Manual, 2008
- [6] SED: OPH-810R User Manual, 2007

1 Project details

Project description:

Pursuant to the European Specifications for Interoperability, the GSM-R terminal devices submitted by the Client for approval by DB AG are to be subjected to conformance testing within the framework of prototype tests as prescribed. Base of the tests is the offer from DB Systemtechnik 11-I-16238-T.TVI 34(1) Funk-AN 3039-V2 dated 10.10.2011.

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2 Test object description

The handheld radios GPH-610R and OPH-810R are intended for use both in the digital trainmode and possibly in the operation and maintenance mode.

The following devices with the specified hardware and software version as test objects were available:

- (1) GPH-610R (General Purpose Handheld)
- (2) OPH-810R (Operational Purpose Handheld without shunting mode)

Typ	IMEI	LOT / Version	Software-Version	MSISDN
GPH-610R	358412-02-010790-5	SB813410 Ver. 1.0	V3.00.000	8005390
OPH-810R	351849-02-020166-6	SB7L3710 Ver. 1.0	V3.00.000	8005393

3 Test procedure

3.1 Background information

The application tests should provide the evidence of the functionality of handheld radios in accordance with the EIRENE-specifications SRS V 15/15.1 and FRS V 7/7.1.

The application tests have been performed by static tests (phase 1b) and dynamic tests (phase 2a).

Basis for the test procedure were the documents referred in [3] and [4].

In the phase 1b all tests were performed in one radio cell (CI 1358, Unterbrunnenreuth). In the phase 2a were performed dynamic tests (exit and reentry into a Group Call Area (GCA) for existing Group Call (VGC, and VBC REC). As a test environment was used a shadow configuration which is superimposed the actual real network configuration. This configuration allows to build the following calls without affecting the operational process (see appendix 2):

- GCA 77912, GID 490 (calls with priority 0)
- GCA 77921, GID 492 und 494 (calls with priority 2 and 4)

As a Dispatcher-Mobile was used a mobile (GPH 940) with the phone number: 8461977.

The calls (LDA) to the participants 1200, 1300 and 1400 were conducted with the existing operational users:

- 1200 (BZ München)
- 1300 (Fdl Ingolstadt)
- 1400 (ZES München)

It have been used SIM cards that meet the requirements of the EIRENE specification.

3.2 Operation

The tests were performed in the real GSM-R network of DB AG in Ingolstadt (DB Schenker) from 14.11. until 18.11.2011. The site is located on the line München - Ingolstadt - Nürnberg (lines 5501 und 5934). The tests were carried out within a configuration in accordance with Appendix 2.

The testing phase 2a (exit and reentry into existing group calls) were carried out with a car. The cell (CI 1358) was left in existing calls or it was retracted into the cell in existing calls.

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- Herr Bo TÜV Rheinland Intertraffic GmbH
- Herr Kong SED Wireless
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The tests were performed in accordance with [3] and [4] to prove the EIRENE requirements.

3.3 Error prioritization

The classification of errors occurred was done in 4 stages according to the following table:

Priority	Stae of the terminal	Description
1	Significant functional restrictions	Proper operation of relevant functions of the terminal is not possible.
2	More than minimal functional restrictions	The terminal can be operated, but its functionality is more than marginally limited or only partially available.
3	Marginal or no restriction of functionality	The error does not affect significantly the operation nor the functionality of the terminal. The error should be corrected within an agreed period.
4	Minimal error (glitches) No restriction of the functionality	The error should be corrected in next product release

4 Results

The results of the tests are shown in Appendix 1.

As defined priorities, the following errors (priority 4) are occurred:

General:

- (1) ATPG9 - Language selection: only two possible languages (English, Chinese), (Priority 4).

There are no operational error disabling of priorities 1, 2 and 3 as defined by the error occurred priorities.

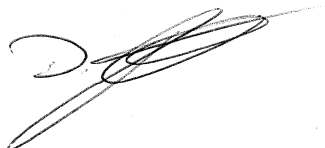
5 Appraisal of Results

The handheld radios GPH-610R and OPH-810R with the soft- and hardware configuration mentioned in Chapter 2 were tested within a shadow configuration in accordance with Appendix 2. The configuration is transparent and based on the GSM-R active network of DB AG. The used test equipment and test procedures described in [3] and [4] are sufficient to prove the requirements of the EIRENE specification. The static and dynamic tests confirm the correct functionality of the portable radios in the GSM-R network of DB AG and compliance with the requirements of [1] and [2]. The errors represent no restriction of functionality. When using SIM cards that meet the requirements of the EIRENE specification, the handheld radios are used.

Recommendation:


The operating concept is partially different from the previously in use GPH / OPH. Therefore the operational concept should be matched with potential users.

6 Signatures



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