

No. 10096707-INC 18-2529

Issued to:

EKRA (ЭКРА)
Research and Production Enterprise, Ltd
Office premises 541
3 Yakovlev prospect
428020 Cheboksary
Russian Federation

For the server product:

BE2502A0103 (БЭ2502А0103)
Feeder protection, automation and control IED
Firmware version: 2502V601 300
S/N: 14057

The server product has not been shown to be non-conforming to:

IEC 61850 Edition 2 Parts 6, 7-1, 7-2, 7-3, 7-4 and 8-1

Communication networks and systems for power utility automation

The conformance test has been performed according to IEC 61850-10 Edition 2, the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL² 1.2.4 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in BE2502, version 1.0", "Model Implementation Conformance Statement for the IEC 61850 interface in BE2502, version 1.0" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in BE2502, version 1.0" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in BE2502, version 1.0".


The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases):

| | |
|-------------------------------------|----------------------------------|
| 1 Basic Exchange (21/26) | 9a GOOSE Publish (9/13) |
| 2 Data Sets (4/7) | 9b GOOSE Subscribe (12/14) |
| 4 Setting Group Selection (4/4) | 12a Direct Control (5/18) |
| 4+ Setting Group Definition (12/13) | 12d Enhanced SBO Control (13/28) |
| 5 Unbuffered Reporting (15/21) | 13 Time Synchronization (4/7) |
| 6 Buffered Reporting (22/30) | 14 File Transfer (5/8) |

This certificate includes a summary of the test results as carried out at NTC FSK UES in Russian Federation with UniGrid SA Simulator 1.4.397 with test suite 1.0.72 and UniCA 61850 Analyzer 5.34.01. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 10096707-INC 18-2528 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by EKRA. The manufacturer's production process has not been assessed. This certificate does not imply that DNV GL has approved any product other than the specimen tested.

Arnhem, May 18, 2018



S.J.T. Mulder
Business leader
Interoperability of smart power systems

Issued by:



DNV-GL
DNV KEMA is now DNV GL



R. Schimmel
Verification Manager

¹ Level A - Independent test lab with certified ISO 9001 Quality System

² TPCL - Test procedures change list

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Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL 1.2.4

| Conformance Block | Mandatory | Conditional |
|------------------------------|---|--|
| 1: Basic Exchange | sAss1, sAss2, sAss3, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4 | sAssN6, sSrv6, sSrv8, sSrv9, sSrv10, sSrv12, sSrvN1f |
| 2: Data Sets | sDs1, sDs10a, sDsN1ae | sDs15 |
| 4: Setting Group Selection | sSg1, sSg3, sSgN1 | sSg11 |
| 4+: Setting Group Definition | sSg2, sSg4, sSg7, sSg8, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5 | sSg6, sSg9 |
| 5: Unbuffered Reporting | sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8 | sRp10, sRpN5 |
| 6: Buffered Reporting | sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr15, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8 | sBr10 |
| 9a: GOOSE publish | sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11 | sGop1, sGop5, sGop7 |
| 9b: GOOSE subscribe | sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6 | |
| 12a: Direct control | sCtl5, sCtl10, sDOns1, sDOns2 | sCtl6 |
| 12d: Enhanced SBO Control | sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8 | sCtl4, sCtl16, sCtl26 |
| 13: Time sync | sTm1, sTm2, sTmN1 | sTm3 |
| 14: File transfer | sFt1, sFt2ab, sFt4, sFt5, sFtN1ab | |