



IEC 61850 Certificate Level A¹

No. 74102109-MOC/INC 12-01812

Issued to:
TOSHIBA Corporation
Power Systems Protection and Control
Fuchu Complex1, TOSHIBA-Cho
Fuchu-Shi, Tokyo, 183-8511
Japan

For the product:
GRL100 Line Differential Protection
Main software: GS2RLIM1-03-00
IEC 61850 firmware: G2M850-1-E

Issued by:



The product has not shown to be non-conforming to:
IEC 61850-6, 7-1, 7-2, 7-3, 7-4 and 8-1
Communication networks and systems in substations

The conformance test has been performed according to IEC 61850-10, the UCA International Users Group Device Test Procedures version 2.3 with TPCL² version 1.5, the product's protocol, model and technical issue implementation conformance statements: "IEC61850 ACSI Conformance Statement for G1 series IED, document 6F2S1884 version 0.0", "IEC61850 Model Implementation Conformance Statement (MICS) GRL100, document 6F2S1870 version 0.1", "IEC61850 Tissues conformance statement (TICS) of the IEC 61850 communication interface in G1 series IED, document 6F2S1886 version 0.0" and the extra information for testing: "Protocol implementation extra information for testing (PIXIT) of the IEC 61850 communication interface in G1 series IED, document 6F2S1885 version 0.0".

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 (18/24)	12a	Direct Control (7/12)
2	Data Sets (3/6)	12b	SBO Control (9/14)
4	Setting Group Selection (3/3)	12c	Enhanced Direct Control (7/13)
5	Unbuffered Reporting (17/19)	12d	Enhanced SBO Control (12/19)
6	Buffered Reporting (19/21)	13	Time Synchronization (4/5)
9a	GOOSE Publish (8/13)	14	File Transfer (4/7)
9b	GOOSE Subscribe (10/11)		

This certificate includes a summary of the test results as carried out at Toshiba in Japan with UniCA 61850 Client simulator 3.25.02 with test suite 3.24.02 and UniCA 61850 Analyzer 4.25.00. This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 74102109-MOC/INC 12-01811 will prevail.

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

Arnhem, October 3, 2012

M. Adriaansen
Director Intelligent Networks & Communication

R. Schimmel
Certification Manager

1 Level A - Independent test lab with certified ISO 9000 or ISO 17025 quality system
2 TPCL - Test procedures change list

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Applicable Test Procedures from the UCA International Users Group Device Test Procedures version 2.3 with TPCL version 1.5

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN3, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	Srv6, Srv7, SrvN1e, SrvN3
2: Data Sets	Dset1, Dset10a, DsetN1ae	
4: Setting Group Selection	Sg1, SgN1a	Sg3
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10, Rp12 RpN1, RpN2, RpN3, RpN4	Rp5, Rp6, Rp8, Rp9, RpN5, RpN6
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12, Br14 BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br6, Br10, Br11, BrN6
9a: GOOSE publish	Gop2, Gop3, Gop4, Gop7, Gop10a	Gop1, Gop6, GopN1
9b: GOOSE subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b
12a: Direct control	CtiN3, CtiN8 DOns1, DOns3	Cti2, Cti7, CtiN11
12b: SBO control	Cti3, CtiN1, CtiN2, CtiN3, CtiN4, SBOns2	Cti2, Cti7, CtiN11
12c: Enhanced Direct Control	CtiN3, CtiN8 DOes2, DOes5	Cti2, Cti7, CtiN11
12d: Enhanced SBO control	Cti3, CtiN1, CtiN2, CtiN3, CtiN4, CtiN9 SBOes1, SBOes2, SBOes3	Cti2, Cti7, CtiN11
13: Time sync	Tm1, Tm2, TmN1	Tm3
14: File transfer	Ft1, Ft2ab, Ft4, FtN1ab	

All configuration file and data model tests have been successfully performed for the product variants using the same hardware and software version: GRZ100.