Grid Vision T&D Sdn.Bhd.

Factory Acceptance Test Record
DF1725IED RTU

Project Name	
Contract No.	

Approval				
	Name	**Company**	**Date**	**Signature**
Prepared by:	Muhammad Nor Farhan	Grid Vision T&D	17th December 2024	
Reviewed by:	Lim Yee Chin	Grid Vision T&D	17th December 2024	
Verified by:	Ir. Ts. Ramlah Binti Awang	Tenaga Nasional Berhad		

FORM REF	1725IED-FAT-TR		
FORM DESCRIPTION	RTU FAT RECORD	FORM VERSION	02
PROJECT DETAILS	RTU SERIAL NO:	PRODUCT DETAILS	DF1725IED RTU
	CONTRACT NO:	TEST RECORD SHEET	1 of 39
FAT – TEST RECORD REF:	TABLE OF CONTENT	RECORD SHEET NO.	1 of 1

Change Log

No.	Date	Rev No.	Remark
1	22/12/2022	00	• Initial Release
2	24/2/2024	00	• Revise parameter setting for AI, IEC101.
3	16/5/2024	01	• Separate Test Procedure and Test Record
4	10/9/2024	01	• Update firmware version and date for MCU-1-A and MCU-4-A. • Change Force to 0 setting under AI Card Module.
5	17/12/2024	02	• Add Ecolink LED in accessories list. • Add another firmware check under Processor Functional Test. • Update IEC104 Channel Redundancy Test Procedure. • Combine Physical and Functional result in 1 page. • Add checkbox and signature box in FAT flowchart. • Add tester's competency verification. • Update IOA for I/O Fail. • Add COM-6-A Module. • Add Appendix for I/O Test Setup.

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1.0 Overall Pre-FAT/FAT Result

RTU Serial No.	

PASS ☐
FAIL ☐

REMARKS:

Tested By:
(Signature/Official Stamp)

Witnessed By:
(Signature/Official Stamp)

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Tester's
Name:
Date:

TNB QAI's
Name:
Date:

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2.0 Factory Acceptance Test Summary

No.	Form Description	No. of Record	Result
1	Pre-Requisites		Pass/Fail
2	Declaration		Pass/Fail
3	Accessories		Pass/Fail
4	Physical Inspection		Pass/Fail
5	Parameter Setting		Pass/Fail
6	Functional Test		Pass/Fail
7	Channel Redundancy Test		Pass/Fail

3.0 FAT Log

Day	Time		Test Activity
	Start	End	
1			
2			
3			

4.0 FAT Attendance

Date	Name	Company	Designation	Signature
		Grid Vision T&D	Tester	
		Grid Vision T&D	Tester	
		TNBR/TNBLabs	QAI	

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FORM REF	1725IED-FAT-TR-PR		
FORM DESCRIPTION	RTU FAT RECORD – PRE-REQUISITES	FORM VERSION	02
PROJECT DETAILS	RTU SERIAL NO:	PRODUCT DETAILS	DF1725IED RTU
	CONTRACT NO:	TEST RECORD SHEET	7 of 39
FAT – TEST RECORD REF:	FAT PRE-REQUISITE	RECORD SHEET NO.	1 of 1

1.0 Approved Drawings

Drawing Title	Drawing No.	Revision	Approved Date	OK
Telecontrol Overview Drawing	GV TNBD 0614 B02 TOD			☐
RTU Configuration Drawing	GV TNBD 0614 B01 RCF			☐
RTU Cubicle Internal Wiring Drawing	GV TNBD 0614 V01 RIW			☐
RTU Cubicle Drawing	GV TNBD 0614 U01 CDW			☐
RTU Parameter List	GV TNBD 0614 T01 PM			☐
RTU Cable Drawing	GV TNBD 0614 T11 RCS			☐

2.0 Bill of Quantity

No.	Module Name	Part Number	Quantity	Firmware Version
1	RTU Subrack	1725IED_SUBRACK 19"		N/A
2	RTU Subrack	1725IED_SUBRACK 2/3 19"		N/A
3	RTU Subrack	1725IED_SUBRACK 1/2 19"		N/A
4	RTU Processor Board	1725IED_MCU-1-A		4.11.024 24 Aug 2024
5	RTU Processor Board	1725IED_MCU-4-A		4.02.008 24 Nov 2023
6	RTU Digital Input Module	1725IED_DI-32-24V		N/A
7	RTU Digital Input Module	1725IED_DI-16-24V-A		N/A
8	RTU Digital Input Module	1725IED_DI-16-110V		N/A
9	RTU Digital Output Module	1725IED_CO-8-A		N/A
10	RTU Digital Output Module	1725IED_CO-16-A		N/A
11	RTU Analog Input Module	1725IED_DCAI-8-A		N/A
12	110/220V Power Supply Board	1725IED_POWER-110/220V		N/A
13	24V Power Supply Board	1725IED_POWER-24V-A		N/A
14	Communication Module	1725IED_COM-6-A		N/A

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3.0 SGP Certificate

Item	Serial Number
DF1725IED RTU SGP Certificate	D2023–0510:0014

4.0 Panel IP Certificate

No.	RTU Panel Type	IP Rating	Certificate Number	Applicable
1	Floor Standing – Indoor	IP51	2017EEA0204	☐
2	Floor Standing – Outdoor	IP54	2021EA1541	☐
3	Wall Mounted – Indoor	IP51	2015EEA0091	☐
4	Wall Mounted – Outdoor	IP54	2021EA1540	☐

5.0 Test Equipment Record

No.	Item	Brand	Model	Serial Number
1	Laptop			
2				
3				

6.0 Measuring Equipment Record

No.	Item	Brand	Model	Serial Number	Calibration Date	Calibration Due Date
1	Process Meter	Fluke	787			
2	Measuring Tape					
3	Digimatic Caliper					
4						

7.0 Software Record

No.	Item	Brand	Software Name	Version	OK
1	Diagnostic/Configuration Tool	Dong Fang	DFE Engineering Tool Software	3.02.009	☐
2	IEC101/IEC104/DNP3.0 Master Simulator	ASE	ASE2000 Version 1	1.56	☐

8.0 Pre-FAT Record

Pre-FAT Date	
Pre-FAT Result	Pass/Fail
Remarks/Notes	

9.0 Tester's Competency

No.	Tester's Name	Years of Experience
1		
2		

Tested By:
(Signature/Official Stamp)

Witnessed By:
(Signature/Official Stamp)

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Tester's
Name:
Date:

TNB QAI's
Name:
Date:

1.0 Product Declaration

Item	Description	Remarks
1	RTU Model	DF1725IED
2	Communication Protocol	IEC101 ☐Single ☐Redundancy IEC104 ☐Single ☐Redundancy DNP3 ☐Single ☐Redundancy
3	Type	☐Centralized ☐Decentralized
4	Power Supply Input	☐110VDC ☐30VDC ☐24VDC Others:

Tested By:
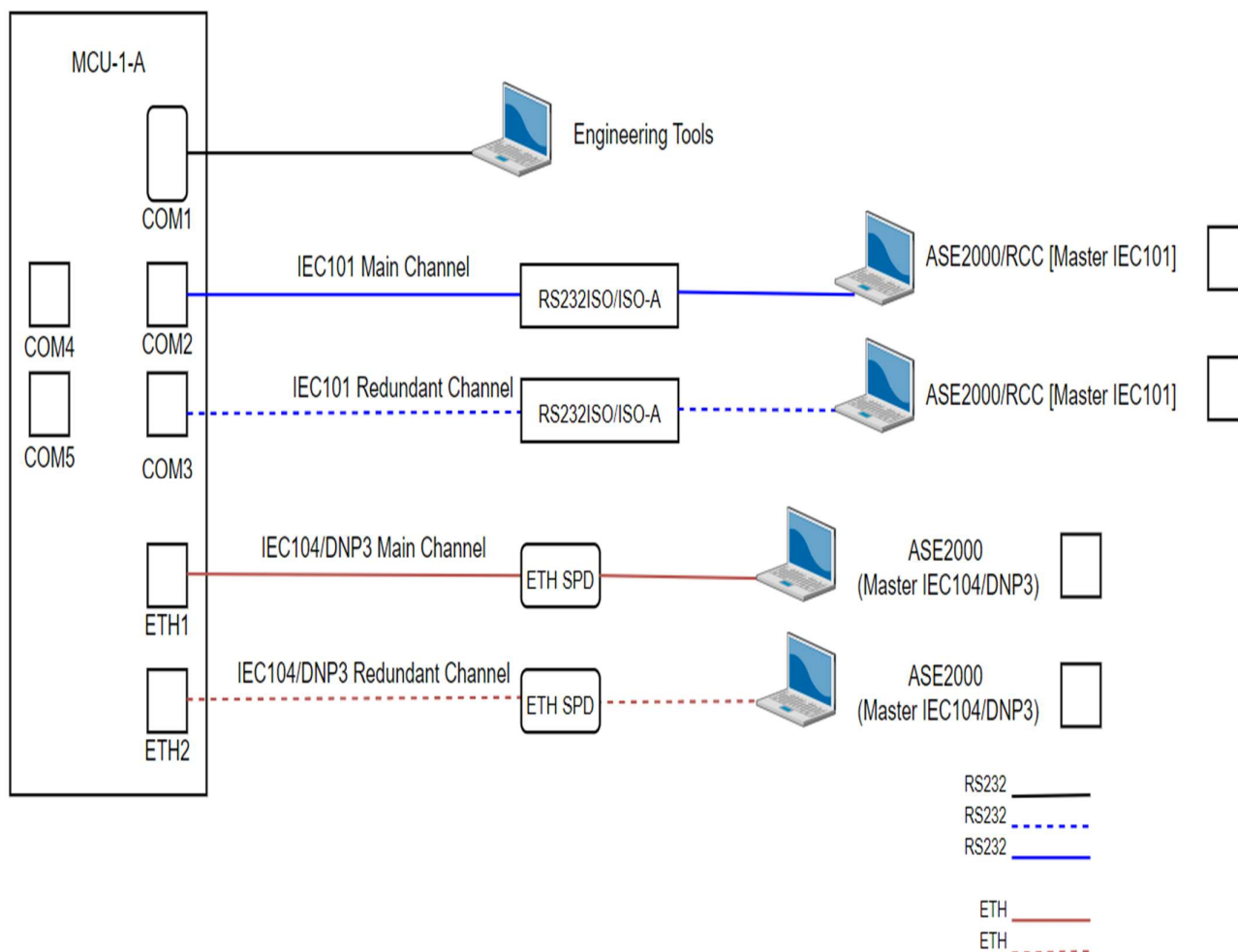(Signature/Official Stamp)

Witnessed By:
(Signature/Official Stamp)

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Tester's
Name:
Date:

TNB QAI's
Name:
Date:

2.0 Test Setup

Notes: For I/O Test Setup, please refer Appendix: I/O Test Setup (i) to (iv).

Tested By:
(Signature/Official Stamp)

Witnessed By:
(Signature/Official Stamp)

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Tester's
Name:
Date:

TNB QAI's
Name:
Date:

Rev 02 / Eff. Date: 17/12/2024

QA05-F06

1.0 Electronic Accessories

Item	Accessories	Brand	Model	Quantity	Datasheet	OK
1	Dummy Breaker					☐
2	Fault Alarm Relay [K2]					☐
3	Fault Alarm Relay [K3]					☐
4	110VDC Power Supply Unit Surge Protector					☐
5	30VDC Power Supply Unit Surge Protector					☐
6	UTP Cable Surge Protector					☐
7	Modem Splitter					☐
8	Communication Surge Arrestor					☐
9	Lease Line Modem					☐
10	Communication Surge Protector					☐
11	Fiber Modem					☐
12	Router Switch					☐

2.0 RTU Panel Accessories

Item	Accessories	Brand	Model	Quantity	Datasheet	OK
1	MCB DC					☐
2	MCB DC (Converter)					☐
3	MCB DI					☐
4	MCB CES					☐
5	MCB Modem					☐
6	MCB AC (F6)					☐
7	MCB AC (F6A)					☐
8	MCB Auxiliary Contact					☐
9	Control Enable Switch					☐
10	DC/DC 110/24VDC Converter					☐
11	Door Switch					☐
12	Buzzer Switch					☐
13	Panel Light					☐
14	Switch Socket Outlet					☐
15	Lamp Indicator DC Supply					☐
16	Lamp Indicator RTU Fault					☐
17	Lamp Indicator Dummy CB Open					☐

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Item	Accessories	Brand	Model	Quantity	Datasheet	OK
18	Lamp Indicator Dummy CB Close					☐
19	Terminal Block (DC Wetting/DO System)					☐
20	Terminal Block (I/O Plant)					☐
21	Terminal Block (DC Plant/Input/Comm)					☐
22	Terminal Block (AC Circuit)					☐
23	Terminal Block (External Local Alarm – XE)					☐
24	Earthing Bar					☐
25	Buzzer					☐

Tested By:
(Signature/Official Stamp)

Witnessed By:
(Signature/Official Stamp)

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Tester's
Name:
Date:

TNB QAI's
Name:
Date:

1.0 Physical and Quality Inspection

No.	Inspection	Measurement (mm)	Manufacturer Tolerance	OK	NO
1	Panel Height		±5%	☐	☐
2	Panel Width		±5%	☐	☐
3	Panel Depth		±5%	☐	☐

No	Inspection	OK	NO
1	The panel is free from defect e.g. scratches, deformities, corrosion, broken.	☐	☐
2	The wirings are neat, tidy, proper, and accessible.	☐	☐
3	The wire marker and ferrules are available, proper, and correct.	☐	☐
4	The wire marker has source and destination stated.	☐	☐
5	The terminal block arrangement is proper and tidy.	☐	☐
6	All LED indicators are correct as per approved drawing.	☐	☐

Tested By:
(Signature/Official Stamp)

Witnessed By:
(Signature/Official Stamp)

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Tester's
Name:
Date:

TNB QAI's
Name:
Date: