Photovoltaic System Technology & Standard Testing Research Unit
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Certificate of Compliance

Device under Test (DUT):	Grid Tie Photovoltaic Inverter
Company:	Schneider (Thailand) Ltd.
Brand/Model	Schneider Electric Model XC 630
Test report number:	SERT-Type Test-INV 003/13
Date of certification:	January 22, 2013

Scopes of validation:

1. *Visual inspection*
   All three phases grid-connected inverter under test are in complete and perfect condition. No crack, distortion, or any visual defect around the inverter under test.

2. *Compatible operation in accordance to IEC 61727, IEC 62116, IEC 61000-3-4 and IEC 61000-3-5 incorporating with PEA recommendation*

   2.1 Safety and protection function of inverter are tested under simulated operating condition as follows; islanding protection, over/under voltage, over/under frequency, fault ride through, and response to utility recovery.

   2.2 Power quality under grid connected condition of the tested three phases grid-connected inverter is evaluated as follows; normal voltage and frequency operating condition, flicker, direct current injection, harmonics and waveform distortion, reactive power control, and active power control.

3. *Manufacture data for The Device under Test (DUT)*

DC Operating Voltage Range	510 – 850 V	**AC Nominal Operating Voltage**	350 V
DC Max. Operating Voltage	1000 V	**AC Nominal Operating Frequency**	50/60 Hz
DC Operating Voltage, MPPT	510 - 800 V	**AC Nominal Output Power**	630 kW
DC Max. Input Current	1280 A	**AC Max. Output Current**	1040 A

4. *Summary of validated results for the DUT*

Safety and protection function and Power quality under grid connected condition		
Test condition	PEA Regulation 2013	PEA Regulation 2008
1. Over/Under Voltage When the interface voltage deviates outside the conditions specified with PEA Regulation, the photovoltaic system shall cease to energize the utility distribution system.	Passed	Passed
2. Over/Under Frequency When the utility frequency deviates outside the conditions specified with PEA Regulation, the photovoltaic system shall cease to energize the utility distribution system.	Passed	Passed
3. Islanding Protection PV system must cease to energize the utility line with in 2 second of loss utility	Passed	Passed
4. Response to Utility Recovery Following an out-of-range utility condition that has caused the photovoltaic system to cease energizing, the PV system shall not energize the utility distribution line for 20 second after the service voltage and frequency of utility system have recovered to within the specified ranges	Passed	Passed
5. Dynamic Network Support (Fault Ride Through)	Passed	NA
6. Voltage and Frequency	Passed	Passed
7. Flicker Short-term severity value not exceed 1.0 Long-term severity value not exceed 0.8	Passed (0.25@85°) (0.25@85°)	Passed (0.25@85°) (0.25@85°)
8. DC Injection PV system shall not inject DC current greater than 0.5% of the rated inverter output current	Passed	Passed
9. Reactive Power Control - A fixed displacement factor cos ϕ - A variable reactive power depending on the voltage Q(U)	Passed	NA

Safety and protection function and Power quality under grid connected condition		
Test condition	PEA Regulation 2013	PEA Regulation 2008
10. Active Power Control The PV system must be capable of reducing their active power at steps the active connection power as follows; 100%, 60%, 30%, respectively	Passed	NA
11. Harmonic and Waveform Distortion The PV system output should have low current-distortion levels to ensure that no adverse effects are caused to other equipment connected to the utility system. Total harmonic current distortion shall be less than 5 % at rated inverter output. Each individual harmonic shall be limited to the percentages	Passed	Passed

Note: 1) It should be noted that the results illustrated in this report is applicable only for the Device under Test (DUT)
2) The report should not be reproduced without the written approval from SERT.

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