

# PIS-11 Embedded IEC 61850-9-2 LE Sampled Value Publisher



910-0019 Rev. 1.00

## Overview

Publishing of Sampled Values (SV) in IEC 61850 are defined in the sub-section “9-2 LE Implementation Guide - Digital Interface for Instrument Transformers”.

The **PIS-11 IEC 61850-9-2 LE Sampled Value Publisher** is a hardware platform specific sampled value publisher application for the **Smart Grid IoT Platform** from Novtech using the Altera (now part of Intel) dual core ARM/FPGA Cyclone V SoC.

This Smart Grid IoT Platform provides eight high precision analogue inputs. The A/D converter is directly controlled by the FPGA producing the sampling rate required for the SV publisher, which is implemented in one ARM core.

The Sampled Values are published at a rate of 4000 frames per second for a grid frequency of 50Hz and 4800 frames per second for 60 Hz.

An eight channel VT/CT interface module is also available from SystemCORP Embedded Technology allowing a direct connection of the Smart Grid IoT Platform to 110 V VTs and 5 A CTs.

## Integration

SystemCORP Embedded Technology offers system implementation engineering services for software and hardware development projects using the Smart Grid IoT Platform with various real-time operating systems and hardware interface requirements.

Our services include design consulting, partial and turn-key product design. Please contact us for more information regarding these services.

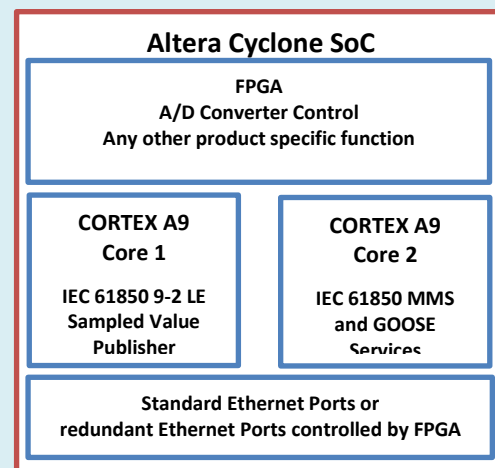
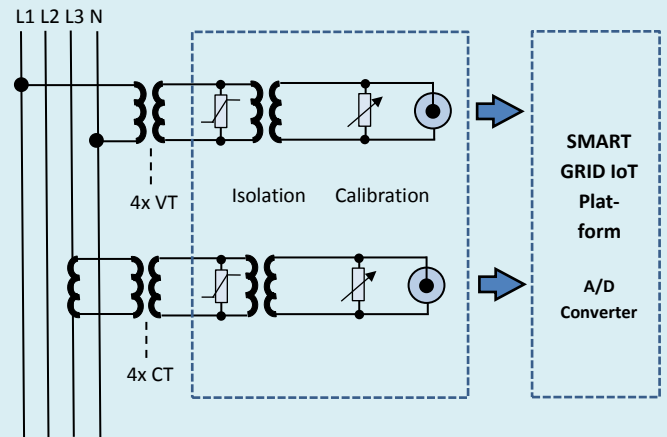
## PIS-11 Key Features

- ✓ Support for IEC61850 9-2 LE fixed model with 4 CTs and 4 VTs values per sample transmitted
- ✓ 80 samples per cycle for 50Hz and 60 Hz power systems
- ✓ SV control block according to IEC 61850 7-2 (16.2)
- ✓ Configurable grid frequency of 50Hz or 60 Hz
- ✓ Default scale factors 0.001 for current and 0.01 for voltage as per IEC 61850-9-2 LE (7.1.4) – however configurable
- ✓ Integer sampled values on accuracy steps of 10mV and 1mA
- ✓ Configurable Multicast Address for standard SV range as per IEC 61850-9-2 Annex C
- ✓ Configurable VLAN Tagging
- ✓ Board Configuration via XML file
- ✓ No software development for IEC 61850 SV publisher required

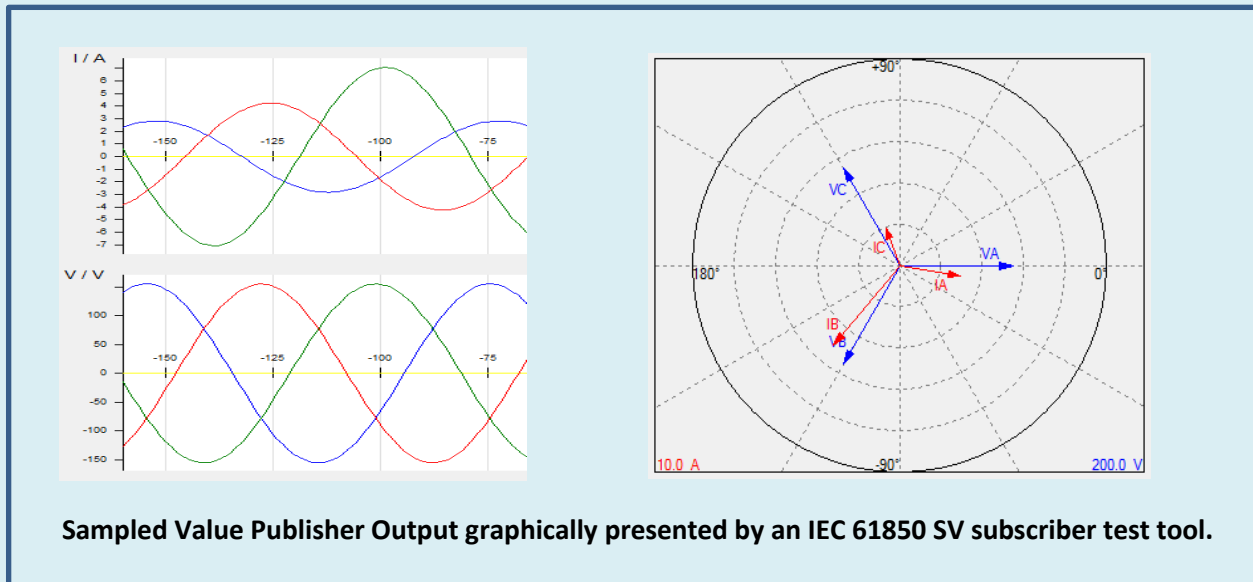
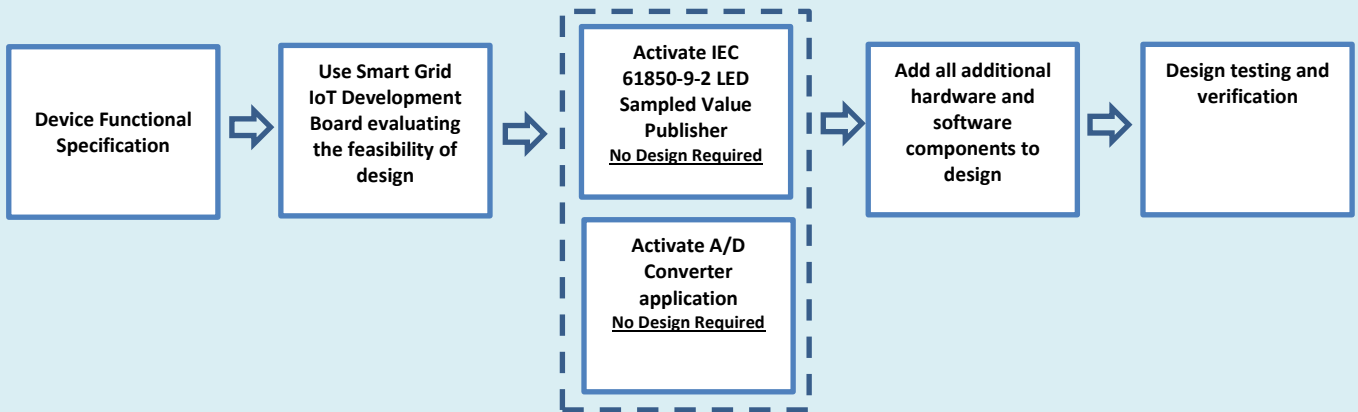


## Application

Interface the Altera SMART GRID IoT Platform to primary VT/CT circuit in a substation or to any protection relay test system for merging unit or any other design.



## Development Strategy



## Online Help and Links

<http://www.systemcorp.com.au>

<http://www.flexibilis.com>

<https://www.altera.com/products/soc/portfolio/cyclone-v-soc/overview.html>

<http://www.novtech.com>

## Contact

SystemCORP Embedded Technology Pty Ltd  
15/50 William Street, Beckenham WA 6107

Tel: +61 8 9258 4683

Fax: +61 9 9258 4673

Email: [info@systemcorp.com.au](mailto:info@systemcorp.com.au)

[www.systemcorp.com.au](http://www.systemcorp.com.au)

