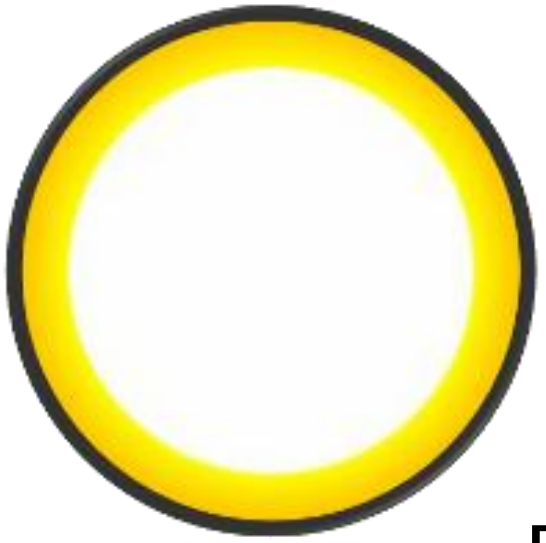


PVID™ System

Powered by

Coresonant

Overview

- Ministry for New & Renewable Energy (MNRE) has mandated that all solar modules should be identified with RFID tags.
- Jawaharlal National Solar Mission has set a target of 20,000MW and stipulates implementation and achievement of the target in 3 phases (first phase up to 2012-13, second phase from 2013 to 2017 and the third phase from 2017 to 2022) for various components, including grid connected solar power.
- RFID tag is made essential to keep the PV panel authenticity from grey market and increase the country manufacturing facility.

About PVID

- PVID System is a portable unit with standalone software to provide a user with ability to RFID tag, identify, & trace solar modules as per MNRE (Ministry of New and Renewable Energy) mandate.
- The system incorporates all the requirements and parameters as specified in the JNNSM (Jawaharlal Nehru National Solar Mission) guidelines.
- PVID System is a cost effective portable system for ready use anywhere in the field, warehouse, office, or at the manufacturing plant.
- PVID system is build on python with SQL data base which is very robust.

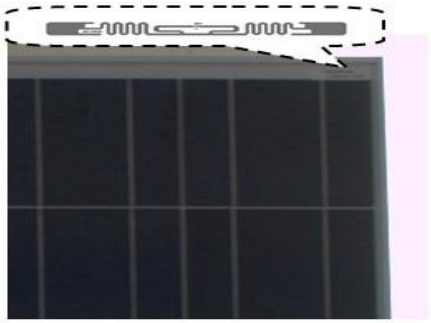
PVID System parts comprises of

- Terminal unit

- Software

- Database

- RFID reader



- Tags

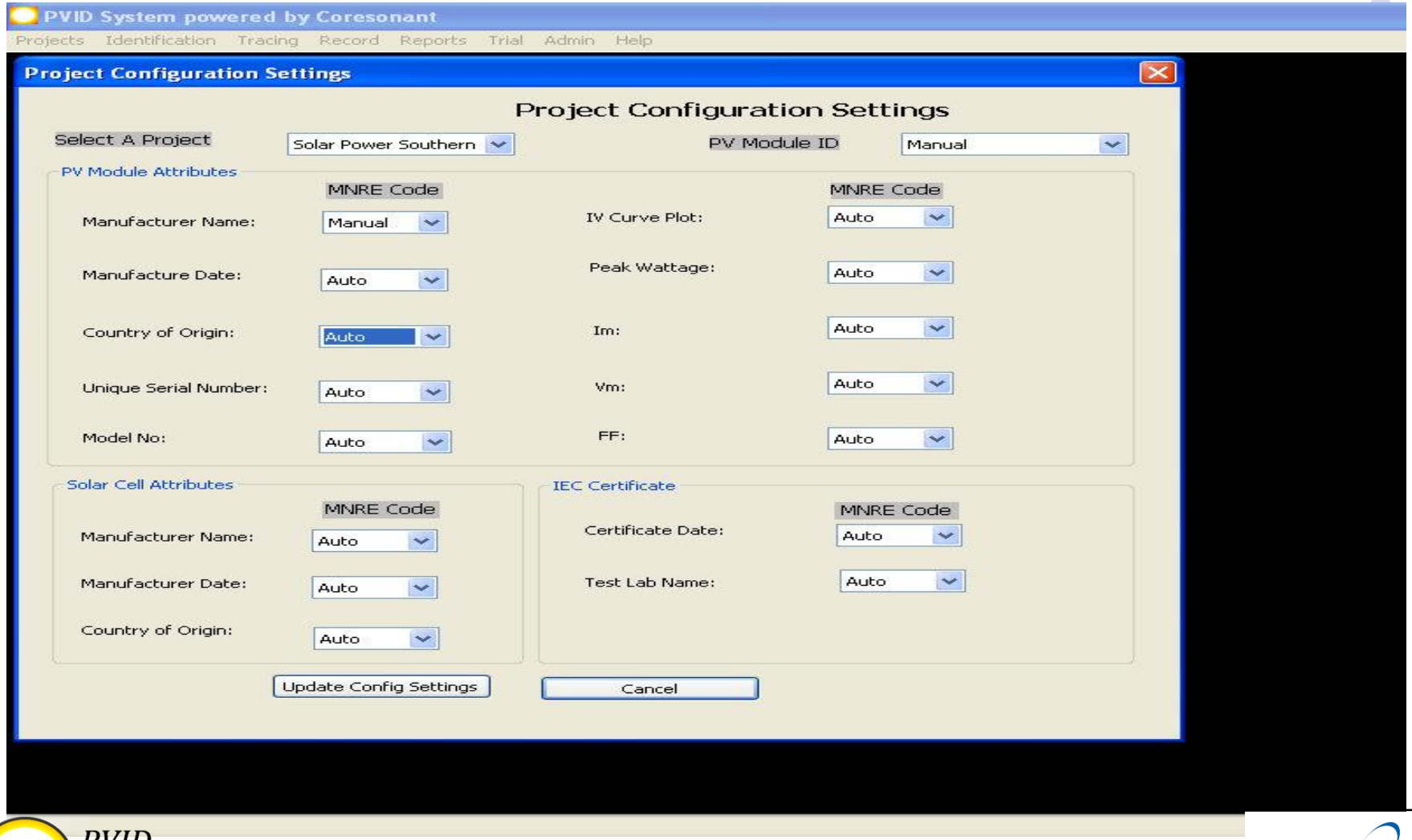
Features

- ✓ Robust system developed for use in multiple project over long term
- ✓ Supports multiple formats of data including Excel, CSV, XML or Text (with any custom delimiter)
- ✓ Meets complete requirements of MNRE
- ✓ Encode all MNRE required parameters without loss of data
- ✓ Generate simplified IV curve with best match to the original
- ✓ Graphical IV Curve Compare functionality for visual comparison of precision and accuracy of simplified IV curve against the original curve
- ✓ Backup every tag write onto a PVID database
- ✓ List & view data by project, manufacturer, date, or any other parameter
- ✓ Search or query on specific parameters of project, module or cell
- ✓ Browse through the PVID database by individual record

Data encoding in the tag

- The below MNRE data is encoded in to the tag
  - Name of the manufacturer of PV Module
  - Name of the Manufacturer of Solar cells
  - Month and year of the manufacture (separately for solar cells and module)
  - Country of origin (separately for solar cells and module)
  - I-V curve for the module
  - Wattage, Im,Vmand FF for the module
  - Unique Serial No and Model No of the module
  - Date and year of obtaining IEC PV module qualification certificate
  - Name of the test lab issuing IEC certificate
  - Other relevant information on traceability of solar cells and module as per ISO 9000

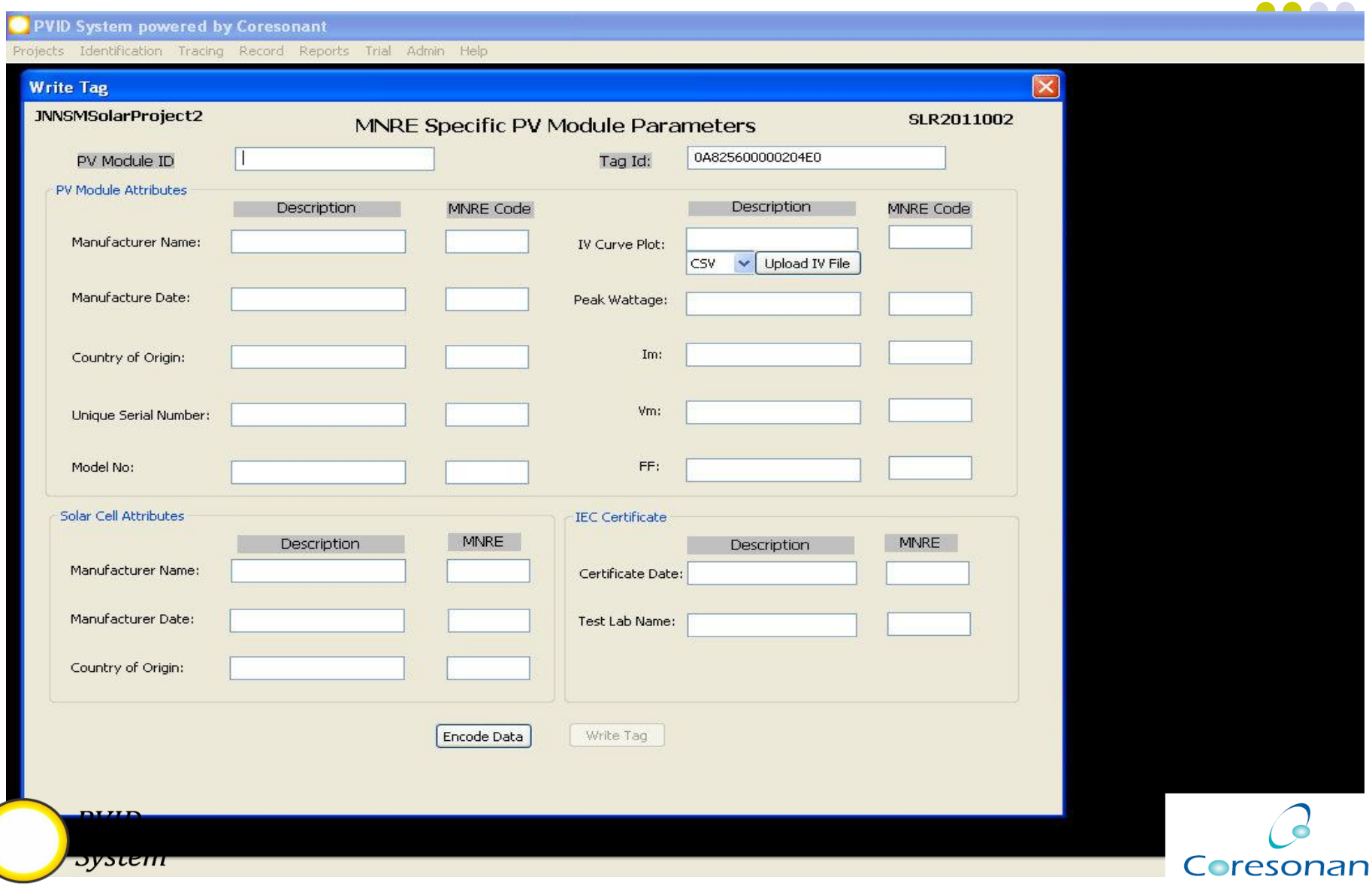
Project configuration



PVID™ System

Coresonant

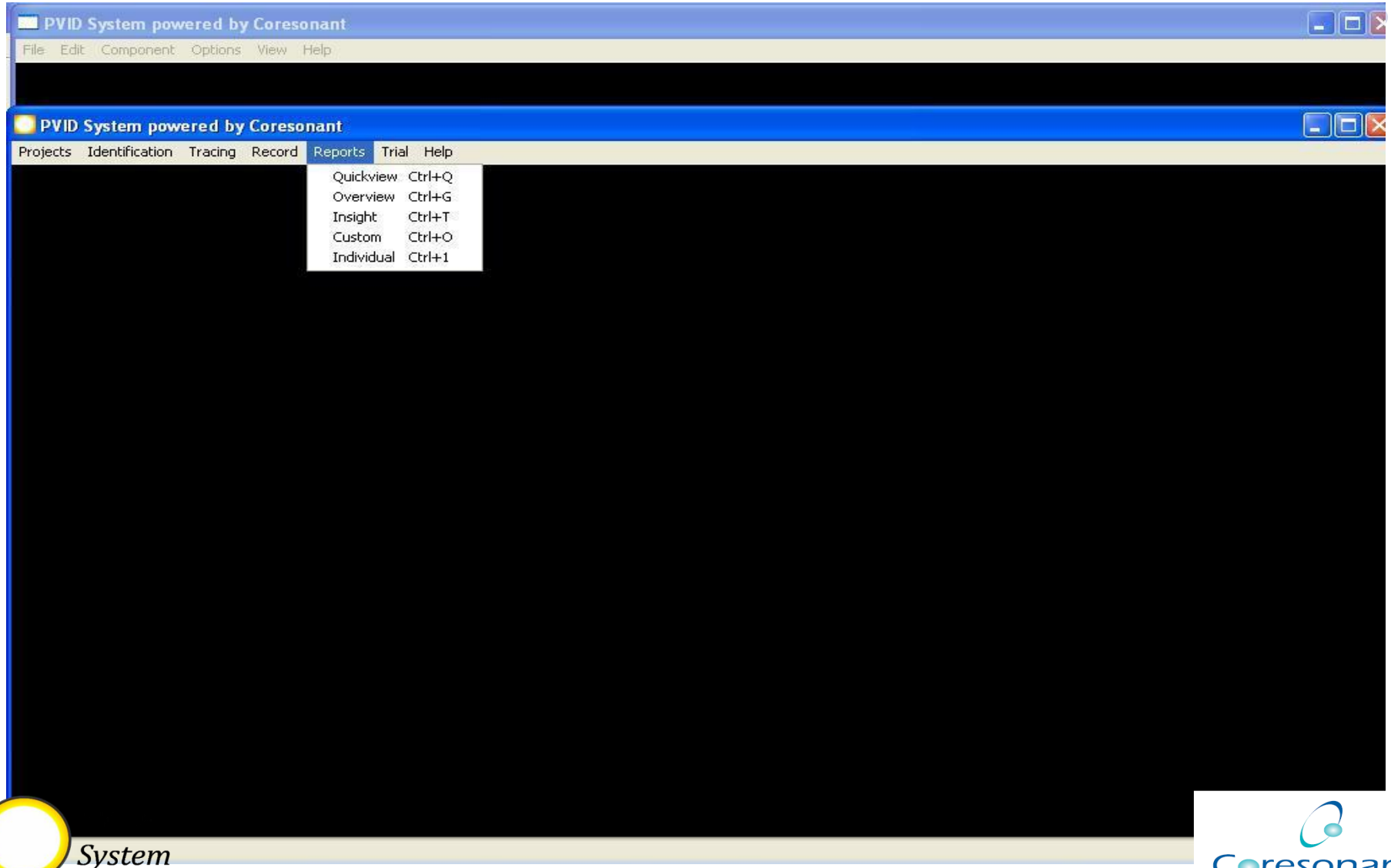
Tag Writing



PVID System

Coresonant

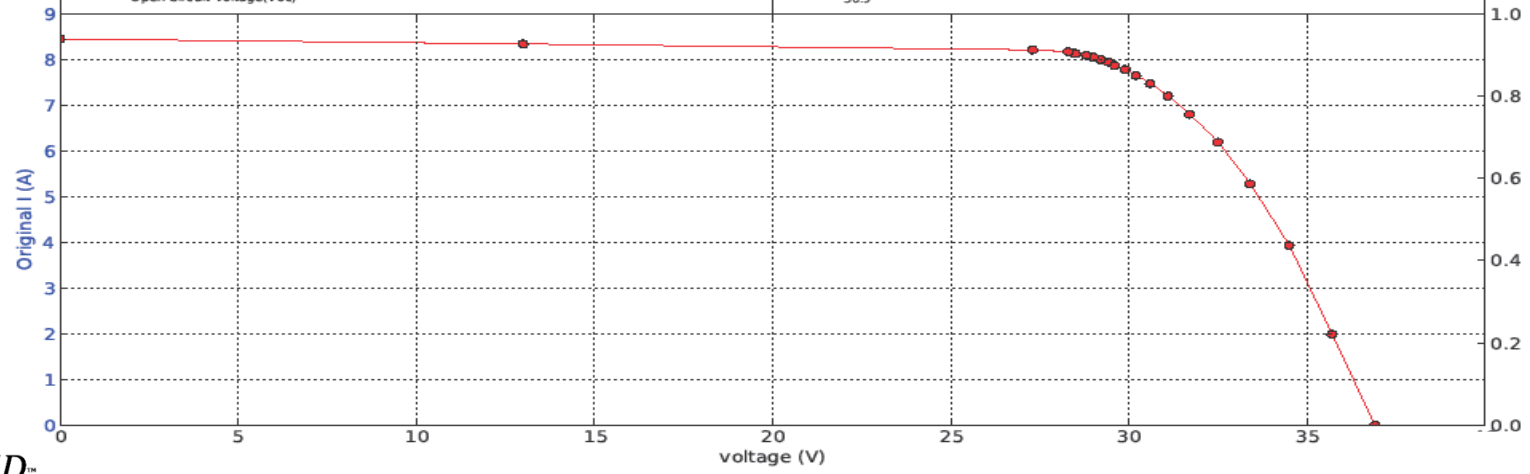
Project Reports



Coresonant

I-V curve

MODULE PARAMETERS	VALUES
Id of the PV Module	TESL1-11110009213
Manufacturer Name of PV Module	TES
Month & Year of PV Module Manufacture	1111
Country of Origin of PV Module	IN
Unique Serial Number of the Module	009213
Model Number of the Module	M60
Peak Wattage for the Module	233.5
Im of the Module	7.94
Vmax of the Module	29.4
FF of the Module	0.74
Name of the Manufacturer of the Solar Cells	MOTECH
Month and Year of Cell Manufacture	1011
Country of Origin of Cell	TW
Date & Year of IEC PV Module Qualification Certificate	0210
Name of the Test Lab Issuing IEC Certificate	TUV RLAND
Short Cicuit Current(Isc)	8.50
Open Circuit Voltage(Voc)	36.9



PVID™ System

Coresonant

Hardware spec's

- UHF Desktop Reader Specs

  - **RFID Protocol Support** : EPC global Gen 2 (ISO 18000-6C) with Anti-Collision and DRM
  - **Tag Read Rate** : Up to 190 tags/second
  - **Physical** : USB mini-B connector, with 2 foot (61 cm)cable terminated in A-type plug
- UHF Tag Spec's

  - **Chip Specifications** : NXP U Code G2 XM with memory size of 880 bits
  - **Protective Tape** : PET Material
  - **Data retention** : 50 years
  - **Frequency** : 865 – 867 MHz
  - **Read distance** : up to 1 meter (For desktop reader)
  - **Lamination Temp** : Up to 150°C for 1 hour
  - **Dimensions** : 98.2 x 12.3 x 0.3mm

Hardware spec's

- Hand Held Spec's
  - Operating System : Microsoft® Windows CE 5.0
  - Memory : 128MB RAM, 256MB ROM
  - Display : 3.5" QVGA with backlight, TFT-LCD, 256K colors, 240 W x 320 L (QVGA size)
  - UHF : 866MHz to 956MHz
    - Supported: Epc Global Class I Gen2
  - WLAN : 802.11b/g (Supports CCX Version 3)
  - WWAN : CDMA 2000 1X/EVDO, GSM/GPRS
  - Barcode reader: 1D / 2D
  - Rain & Dust protection: IP65

PVID™ System

Coresonant

Achievements

- Our PVID system software works with both HF & UHF technology
- The maximum time to write tag is not more than 15 sec's
- We can also integrate PVID system with all kind of sun simulators including
  - Spire
  - Pasan
  - Boost solar
  - Autosys
  - Endaus
- We have successfully completed the RFID tagging project worth 150MW under JNNSM & MNRE

Esteemed Clients

Zamil industrial

Sonali Solar

SOLAR SEMICONDUCTOR

TITAN

PREMIER SOLAR

Surana Group

Chemtrols Solar

LANCO Always Inspiring

WEBEL SOLAR

SOLARSIS

THRIVE ENERGY TECHNOLOGIES PVT. LTD.

L&T

JJ PV SOLAR

veddis solars

VEGA Solar Energy Pvt.Ltd

KSK Power from knowledge

Access Solar Limited An ISO 9001-2008 Certified Company

meil Megha Engineering & Infrastructures Ltd

Modern Solar Private Limited

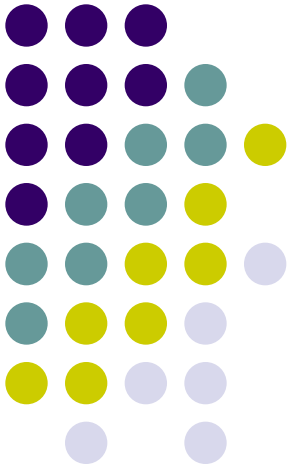
Krishna Solar Pvt. Ltd Manufacturers of PV Panels & Systems

PVID™ System

Coresonant

Esteemed Clients

Thank you



PVID™ System

Coresonant