

## Solar Giant pilots RF BASED SOLAR PANEL TRACKING for its manufacturing facility in India



**Reliance**  
Industries Limited  
Solar Group

Thousands of solar PV module panel units are being manufactured out of this unit that are sold to customers across the country. Due to a huge subsidization programme by the government, it becomes imperative to track the identity of the manufacturer onto the solar panel so that only the legitimate customer can seek subsidies from the government post-inspection, which calls for aid through RFID systems.

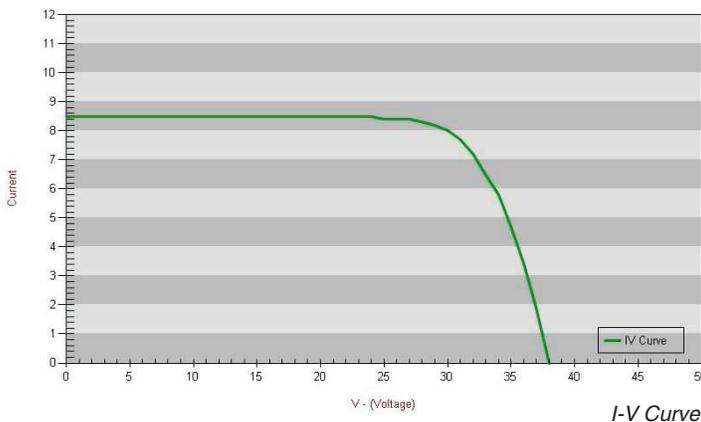
### Company:

RIL Solar, Maharashtra, India

**Facility:** Manufacturing plant

### Challenge:

- Tracking of solar panel modules on an end to end basis (upto the customer level).
- Ability to write/re-write and store data on UHF tag.
- Tackle duplication of solar panels flooding the marketplace.



### Proposed Solution:

- Essen RFID mounted highly specialized tags Solanna™ onto the solar panel. Xtenna™ (Reader 1) reads tag id, identifies tag id and sends information to the controller.
- When the solar module undergoes QA process, the Controller sends "Write" info to Xtenna™ (Reader 2) where all tag related info is stored. Data stored includes: (i) Name of the manufacturer of PV Module; (ii) Name of the Manufacturer of Solar cells; (iii) Month and year of the manufacture (separately for solar cells and module); (iv) Country of origin (separately for solar cells and module); (v) I-V curve for the module; (vi) Wattage, Im, Vm and FF for the module; (vii) Unique Serial No and Model No of the module; (viii) Date and year of obtaining IEC PV module qualification certificate; (ix) Name of the test lab issuing IEC certificate; (x) Other relevant information on traceability of solar cells and module as per ISO 9000.
- Xtenna™ (Reader 3) re-reads the tag info, compares data and authenticates the entire process.

### Realised Benefits:

- Enhanced visibility and greater transparency across the entire delivery value chain
- Ability to read all manufacturing related data at source/end point thereby avoiding duplication

### TECHNOLOGY

#### Solution:

EPC Gen2 compliant solar panel tracking system

#### Tag Type:

Solanna™ UHF Passive

#### Reader/Antenna:

Xtenna™

#### Read Range:

7.5 metres (24 feet)

#### Method:

Multiple Tracking via Integrated Reader/Antenna modules

**Number of modules: 3**

#### Integration Platform:

**RFID Middleware:** Xtenna™ Studio

**Application:** Essen RFID's Panel Tracking System

**Database:** SQL Server 2005 Exp. ed.

#### Tag Manufacturer/Supplier:

Essen RFID

#### Reader/Antenna Manufacturer:

Essen RFID

#### Systems Integrator:

Essen RFID

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