

Delta Electronics Group





Delta India: An Overview

A world-class provider of power management solutions



Delta India Overview

In India since 2003

Delta in Gurgaon

(near New Delhi)

- Headquarter
- Factory: Video Wall



Delta in Rudrapur

(250km eastern from New Delhi)

- Factory: Power System

India's No. 1 in:

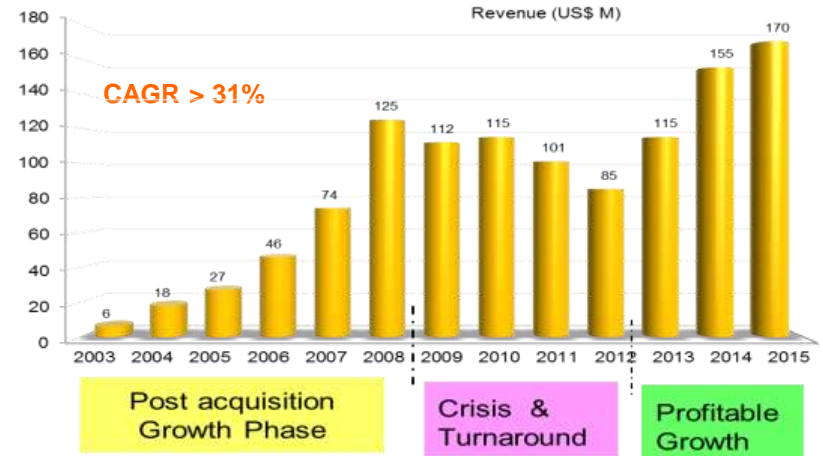
- Telecom Power Systems
- Video Wall Display
- Solar Inverter (String, Central)
- Energy Storage

Leading in:

- Industrial Automation
- Datacenter Infrastructure
- Magnetic Components
- Wind Power

- Strong operational presence & supply chain
- Well established R &D with local product design capability
- World Class Global Functional Alignment

Revenue growth from a **US\$ 6M** in 2003 to **US\$ 170M** by 2015





Delta India

Passions to take our mission forward...

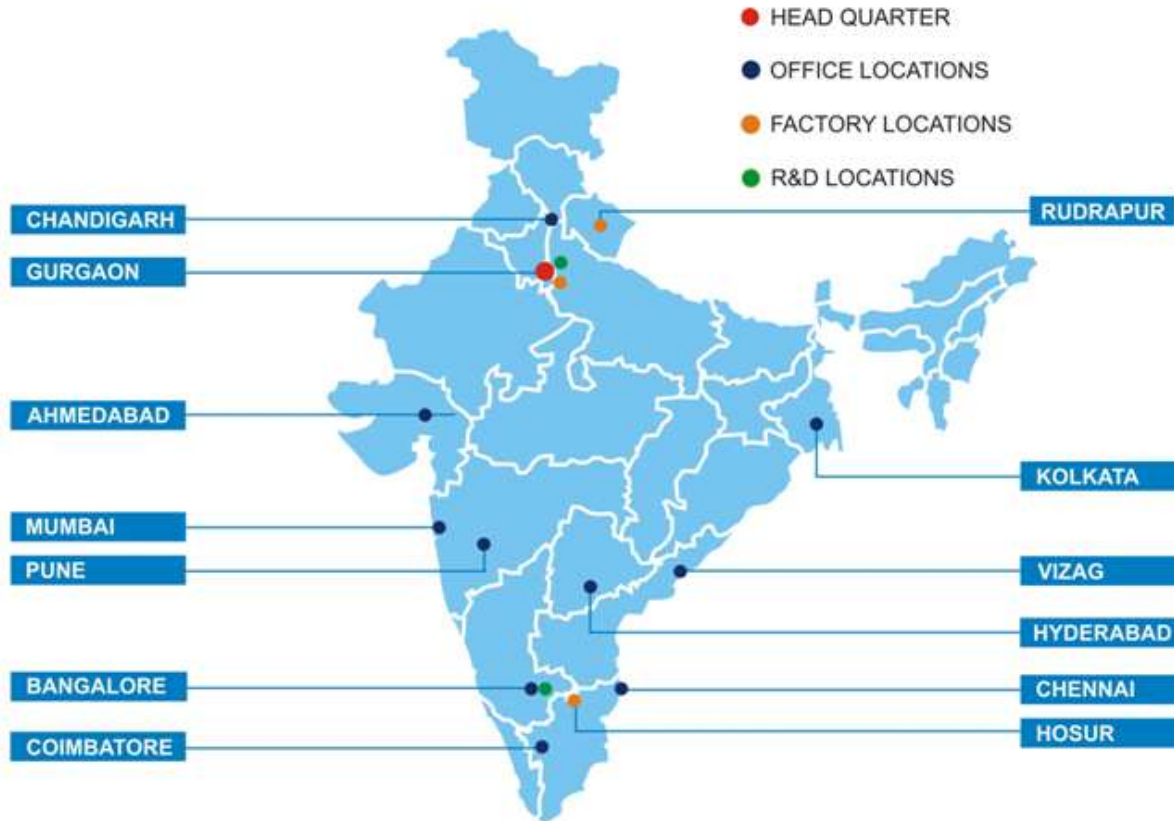
- **Locally Present in India over 20 years.**
- **Focused Strategy - Investing, Building and Leading**
- **Over 700 strong engineering local talent resource.**
- **Over 1,500 motivated employees pan India.**
- **High Service & Solution Mix.**
- **World class functional alignment.**
- **Very strong customer & partner community**





Delta India Region Operations

Pan-India coverage to serve our customers



- R&D 2
- Manufacturing 3
- Branch Offices 14
- Service 72+
- Warehouse Hub 20+

24 x 7 - Toll Free Customer Care:
18002663300
18001036333

18001036333
18002663300



Power Systems Factory – Rudrapur

Commercial Production started April 1, 2008

Gold Rated – LEEDS US Green Building

- Operated since 2008
- Located at Rudrapur, Uttarakhand.
- Total Land Area: 37,000 square meters.
Shop floor area: 13,500 square meters.
- About 500 workers.
- 10 cell lines. 1 UPS cell line and 1 wind power converter line.
- IGBC Certified Gold Rated Green Factory
- Certified ISO 9001; TL9000, ISO14001 & OHSAS 18001
- Calibration Lab NABL IS/ISO 17025
- In house Repair Center with expertise in circuit analysis and repairs





Display Products Factory – Gurgaon

Started Commercial Production April 1, 2010

Platinum Rated – LEEDS USA Green Building

- 2014 Energy Savings: 53%
- Applied technologies:
 - Natural Lighting
 - Energy-efficient HVAC Systems
 - Solar PV Systems
 - LED Street Lighting
- Zero waste water discharge
- Waste Water Recycling Systems (for toilet and gardening use)





Industrial Automation Factory – Hosur

Commercial Production started April 7, 2016

- Located at Hosur, Tamil Nadu.
- Facilities set up for full range of Drives, Solar Inverters and UPS systems
- Manufacturing includes advanced MES, Automation and Robot system.



Location Map



Site Front View



Entering reception



Assembly & Testing line



Thermal paste machine



SCARA CCD inspection system

Investment Announcement





Delta India to Join “Digital India”

Delta India Electronics is looking to invest about US\$500 Million over the next 10 years, helping to generate employment for India’s multi-skilled talents with the expected creation of over 20,000 new jobs.



Mr. Narendra Modi, Primer Minister of India, greets the audience at the launch ceremony of Digital India



Mr. Ping Cheng addressed the audience at the event which helps Delta’s awareness towards the Indian market.



Delta's presence @ Digital India Launch





Investment MoU - Government of Tamil Nadu Global Investor Summit – Chennai 2015



Delta Confidential





Factory Land Snapshot

128 Acres at Hosur



Bangalore R&D Lab Investment

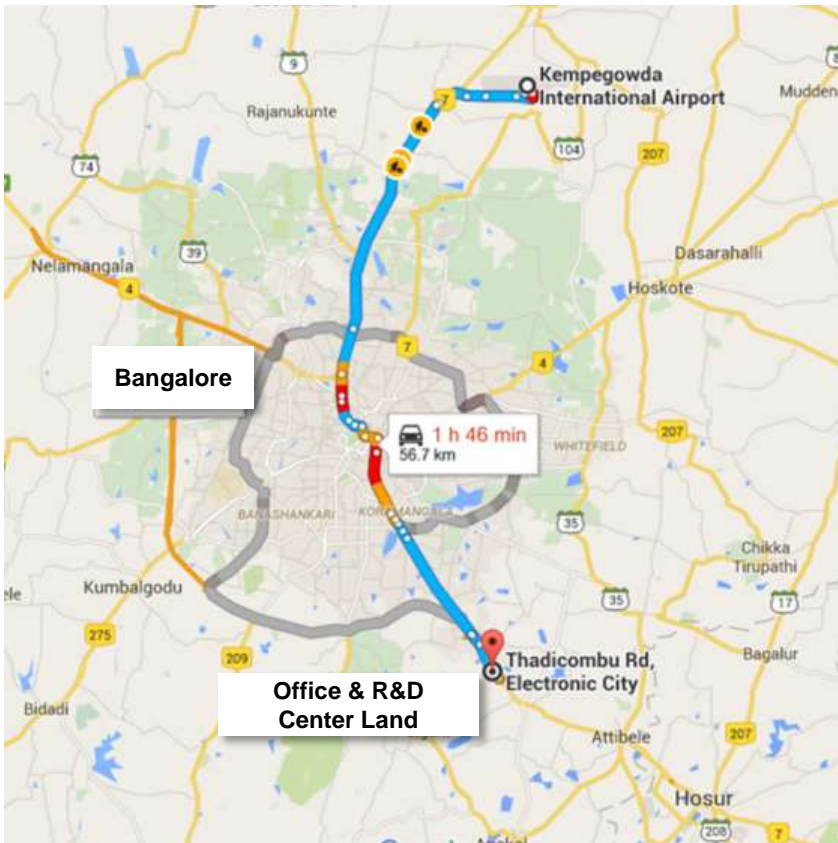


Render View (Bangalore High Power R&D Lab)



- High Power (Megawatt) R&D Lab is under con
- Estimated Investment USD 57 M
- To house over 2000 High Power, Software Engineers & PHD Doctors
- The state – of – the – art lab will have total area of 80K sq. mtrs
- Research area – Renewable Power, Power Storage, Power Quality & Traction

Snapshot of new R&D center and office land





Surat City Surveillance Control Room



2MW Project, premier Solar, Chhattisgarh



Fuel Cell Battery Solution



Site Monitoring & Control System Solution



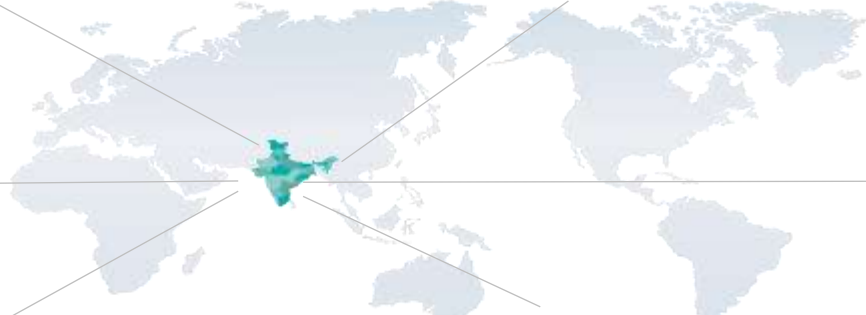
Varp Power 1MWp Solar PV



ATM Power and Surveillance Solution, Mphasis



Bangalore Traffic Management Center




Integrated Hybrid Solution with Solar and Battery



DG Battery Cranking System



DC Fan Cooling Unit Project



IA-Solar Pumping Solution



10M Solar Farm, Gujarat



Wind Power Farm, Karad



4G Reliance



Product Portfolio

Delta Offerings for SMART CITY

Power Supplies Solutions



Renewable Energy



Display Solutions



Delta Offerings for SMART CITY

Industrial Automation and SCADA Solutions



SCADA

Building Management System



Electric Vehicle Chargers



EV Chargers & Charging Network /
Site Management Systems

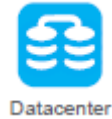


Power Supplies Solutions : UPS

Delta Offers **online double conversion (AC to AC) Uninterruptible Power Supply (UPS)** Solutions with industry leading **unitary Power factor & efficiency of 99%** and thereby reducing CAPEX and OPEX.



Applications



Datacenter



Telecom



POS



Server



Metro



Banking



Medical



Security



Industrial



Network

*Solutions Ranging from 1 kVA to 4000 kVA including both **Unitary** and **Modular UPS** with **remote monitoring functionality***

*End to end critical power solutions; including site engineering, solution, design, implementation and **24x7 after sales care.***



Power Supplies Solutions : Datacenter

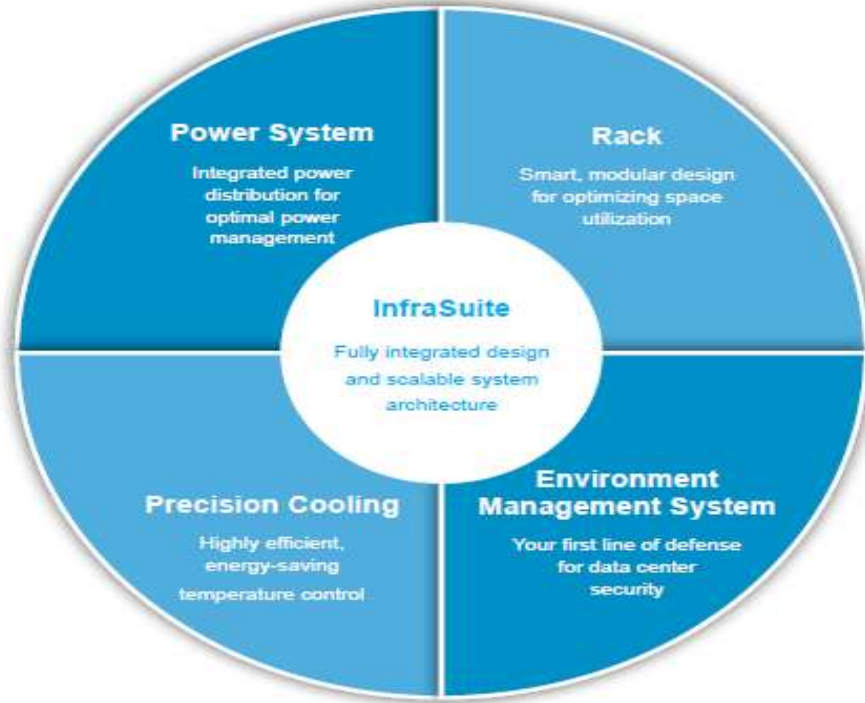
Complete Datacentre solutions ranging from **power systems, racks & accessories, precision cooling, and environment management systems**



UPS & Power Distributions



Cooling Solutions



Modular Rack



Monitoring Solutions



Power Supplies Solutions : Telecom

We offer one stop solution for entire range of **passive infrastructure for telecom ecosystem**.

Delta with a **market share of 55% in India** and few players offering a complete range of telecom power solutions from **24VDC, 12VDC, 48VDC, 220VAC supply**

Outdoor Solution for Wifi & Other Applications



Outdoor Power Supply/
Cooling solution



Outdoor Pole Mountable
Solutions

Power System for MSC



Shelf Power



Outdoor Cabinet



Renewable / Hybrid Solutions



Solar Energy



Wind Energy



AC Utility



Genset





Power Supplies Solutions : Smart Street Light

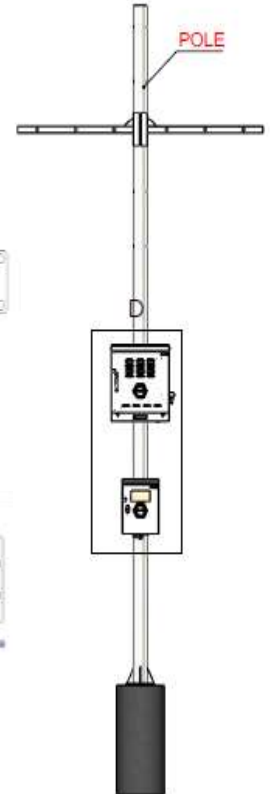
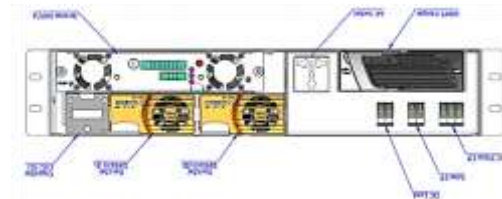
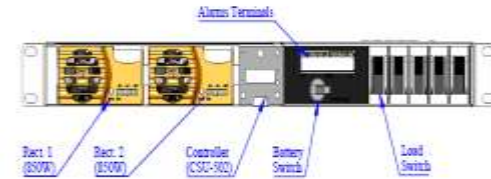
Delta has designed a Smart Pole solution which includes pole mounted power cube which can be integrated with solar panel to operate Street Light & camera & Telecom equipment.

Designed for smart city applications to monitor and control LED Street light, to power camera and to send data to remote command center.

Solution has a Power Back up by **Li-Ion battery**

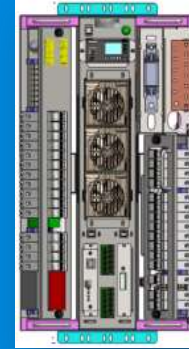
Remote communication can be done through Fiber or GPRS/ GSM.

Already Supplied to **L&T for Mumbai Surveillance project.**





Delta Displays, a pioneer in display solutions delivered an advanced video wall solution for Reliance 4G NOC, to monitor PAN India Network & operation management



Ground Based Mast
635 x 350 x 392

SLIMMEST SMPS

Delta Telecom Power Supply, a market leader in DC solutions delivered an advanced SMPS pole mount which are installed directly inside 4G Tower of Jio to power BTS, Till date supplied over 10,000 DC Power supplies.





Renewable Energy : Solar Inverter

Delta manufacture Photovoltaic inverter for **On grid applications** for *Residential , Commercial & Large-scale Solar Power Plants* .

Range Starting from 3 kW to 1.25 MW



String Inverter



Central Inverter

Total Installation Base

4 GW

Global Inverter Supply

245 MW

Inverters Supplied in India

8000

String Inverters sold in India

700

PV Plants across India





Delta India received the prestigious **National Excellence Award** from the Indian Ministry of New and Renewable Energy (**MNRE**) at the National Workshop on **Rooftop Solar** from **Mr. Piyush Goyal**, Minister of State with Independent Charge for Power, Coal, New and Renewable Energy, Government of India.

Display Solutions

Delta displays offers a wide array of **display Solutions : Video Wall, Outdoor Display and Projectors**



Rear projection DLP® video walls with Laser and Next-Gen LED technology, Xtra thin-bezel LCD video walls

Wide range of **Video Walls solutions** for :

- Surveillance Command Center
- Security & traffic Management
- command & control Centers
- Utilities & process control
- Telecom and broadcast applications



**Extreme Short Throw /
Education Projectors**



Home Theater Projectors



**Large Venue / Business
Projectors**

Vivitek, a brand of Delta, consists of **projectors** for

- Home
- Cinema
- Education
- Large venue & Meeting room projectors.

Display Solutions

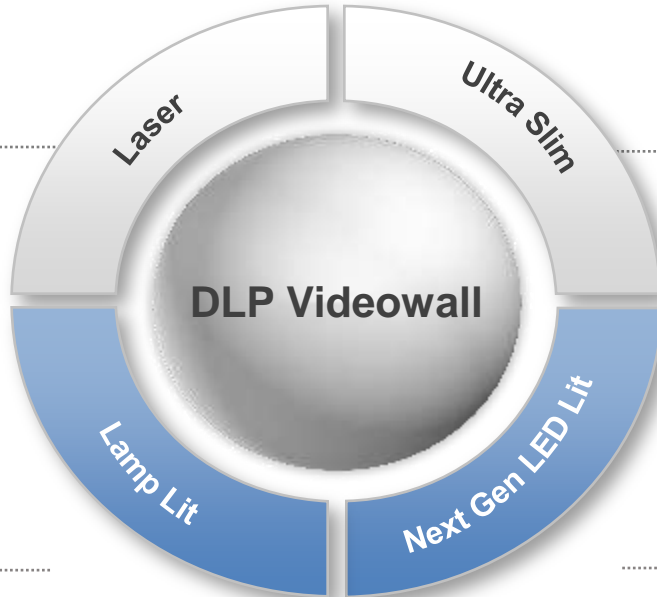
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Industry's 1st Laser DLP Videowalls .



Time Tested Videowalls



Industry's Slimest Videowall With Utmost Resolution .

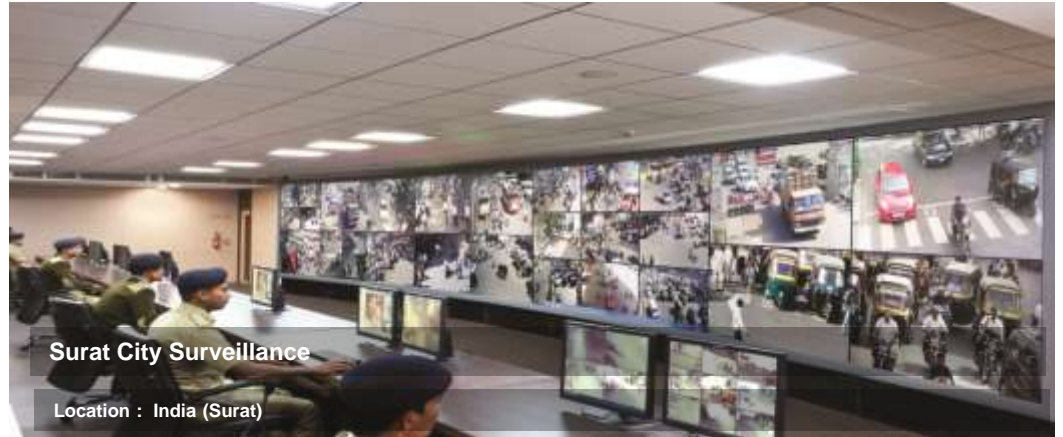


Powered By LED Arrays

Display Solutions

Some Surveillance Projects Executed:

- Surat
- Puri, Odisha
- Pune
- Madhya Pradesh
- Bangalore (Traffic)



Some Control Room Projects Executed:

- Delhi Airport Metro
- Reliance 4G NOC
- NTPC (*PAN India*)
- Airport Authority of India (*PAN India*)
- Aircel NOC
- Huawei NOC





Delta Displays, a pioneer in display solutions delivered an advanced video wall solution for India's 1st Smart City Centre in Surat, Gujarat, to monitor over 30 different operations for city management

Delta deployed its futuristic environment friendly LED Video wall to help Surat Police monitor the entire city of Surat, Gujarat.

Electric Vehicle Charging solution



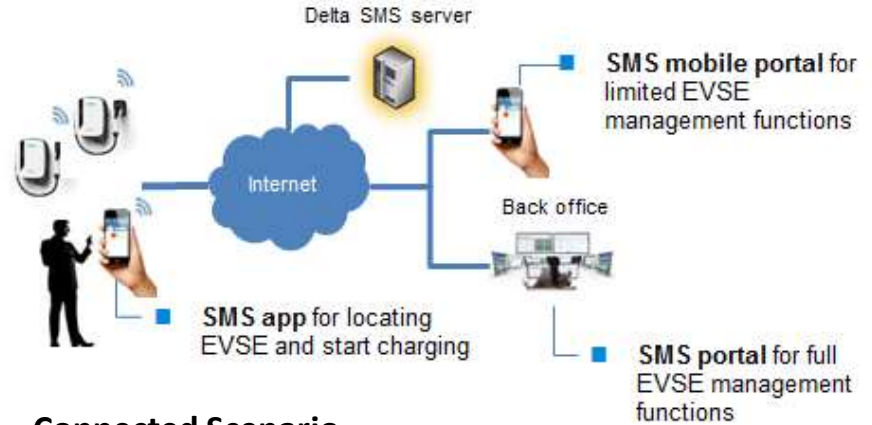
DC Quick Charger



AC Wall Mountable



AC Slim



Connected Scenario

- Delta EV Charging Solution line of business (EVCS LOB) established in 2011, global commercial shipment starting from 2013
- Universal charging standards applicable including CHAdeMO, GB, SAE, Combo 1, IEC Combo 2



Automotive Research & Testing Center (ARTC).
Taiwan

Building Management and Control System (BMCS)



Building Management System (L-WEB)

- User-friendly interface
- Innovative and comprehensive building management
- Logic programming and daily operation for facilities



Integrated Automation Servers (L-INX)

- Freely programmable
- Efficient I/O integration through L-I/OB modules
- Distributed alarming, scheduling, and trending



Room Automation (L-ROC)

- Scalable room layout as needed
- Easy to handle function set for every room segment
- IP communication down to room level



Lighting Control (L-DALI)

- Integration to LonMark systems or BACnet networks
- All luminaries are monitored for lamp or ballast failure
- Supports calculation of energy consumption and combustion duration



Touch Panel (L-VIS)

- Alarming, scheduling and trending
- Remote access for device and network management
- Available for LonMark systems and BACnet networks



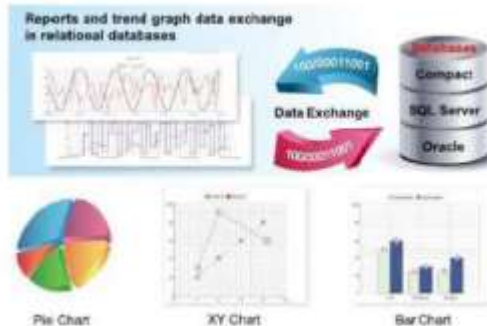
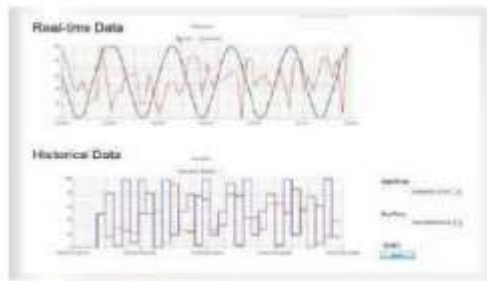
SCADA

- ▶ WPF technology, superb display
- ▶ Complex animation, lifelike images
- ▶ Rich animation, high-quality graphics
- ▶ Easy-to-use intelligent graphical symbol library



Microsoft®
DirectX

- ▶ Easy cross-platform development with .net control platform



Software Licensing (Single Version)



Licensing

- DIAView licensing is calculated based on the I/O points of a customer's connected devices, and the software itself is free of charge, making it one of the most cost-efficient SCADA systems available.
- When licensing is authorized, users can use a USB hardware key to enable and carry out all authorizations. If the licensing is not authorized, the trial can be performed for only 2 hours.



I/O Points

- Eight standard options: 64, 128, 256, 512, 1000, 1500, 3000 and unlimited.
- The point limit is the maximum number of a customer's connected I/O device addresses that can be read.



Cost of I/O Points

- Based on purchased I/O points (external + internal), users are allowed double that number of internal variables for external I/O points. This is an additional free service specified by the DIAView license.
- Example: When purchasing 512 I/O points, the authorized users specified by the DIAView license can use internal variables for 1,024 I/O points.

Connectivity Options Available

For SNMP Slot



SNMP Card



ModBus Card



SNMP IPv6 Card.



Relay I/O Card

For Smart Slots



Mini SNMP Card



Mini USB Card



Mini Relay I/O Card



Mini ModBus Card



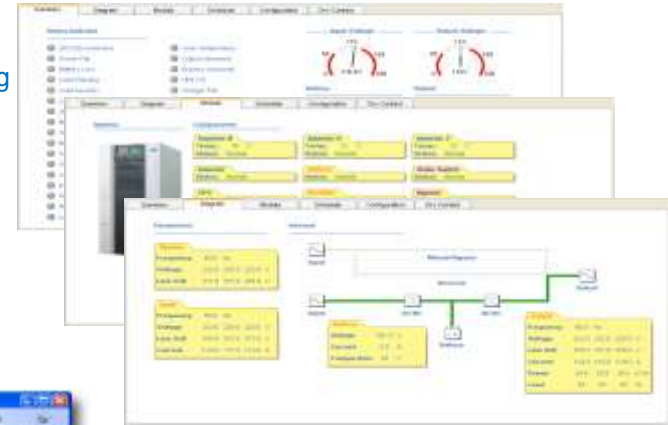
Mini TVSS Card



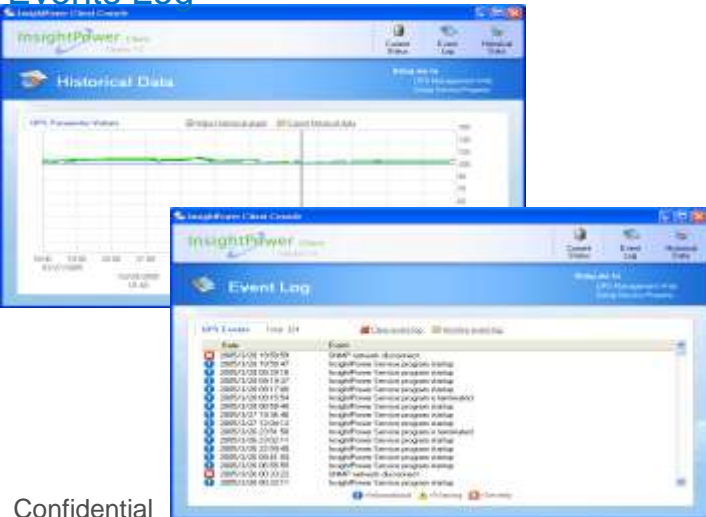
Application Software

All Solutions comes with Application software with the capability of remote monitoring and Management for all energy, alarm & run hour parameters.

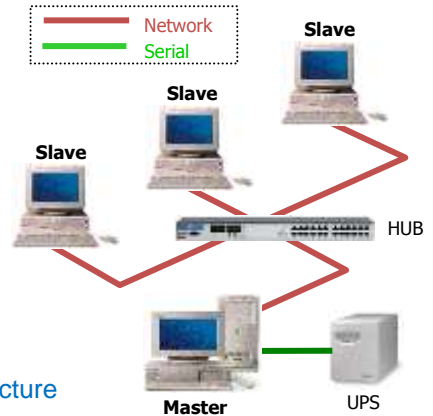
Real Time Tracking



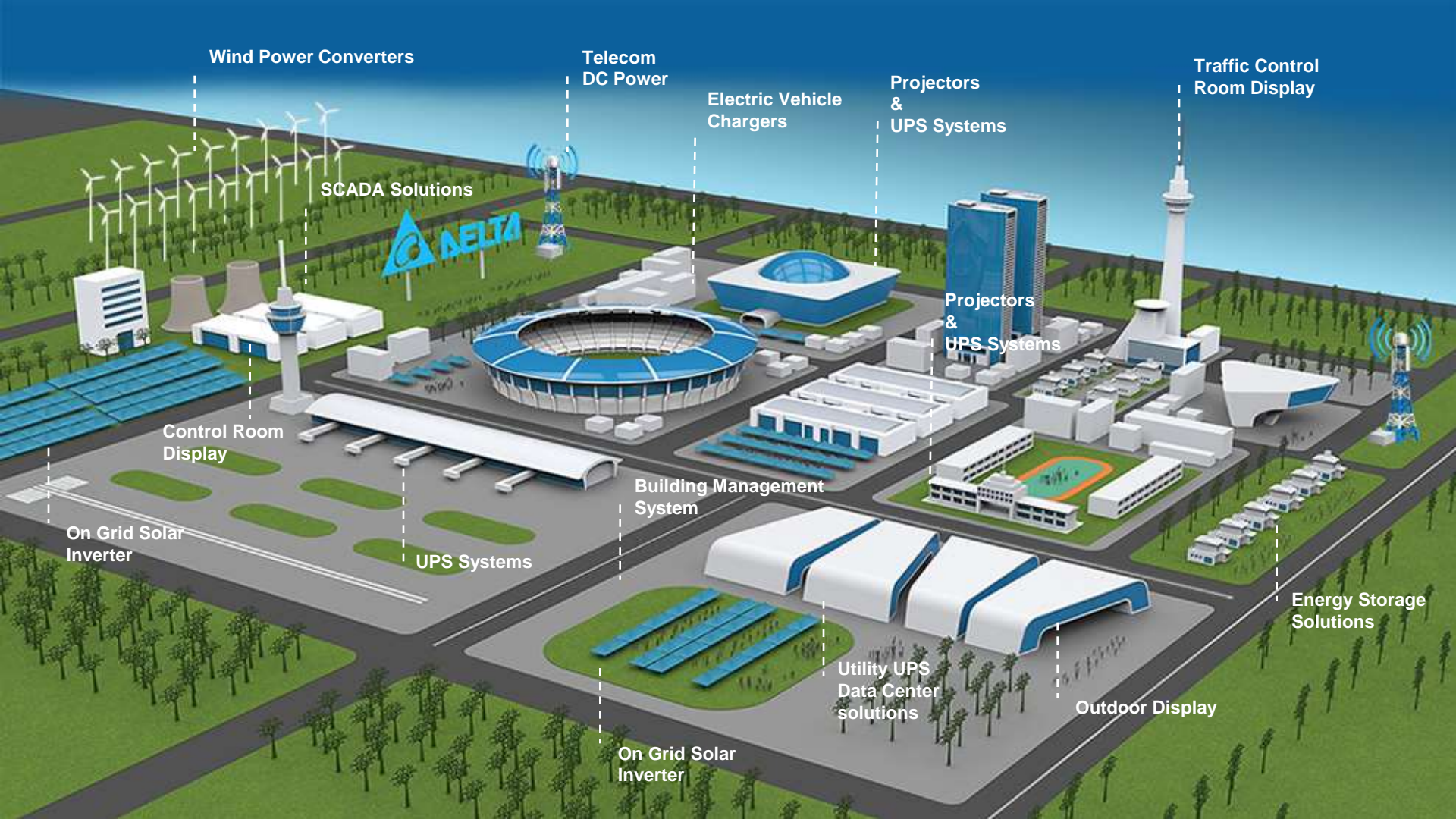
Events Log



Current Status



Network Architecture



Wind Power Converters

Telecom
DC Power

Electric Vehicle
Chargers

Projectors
&
UPS Systems

Traffic Control
Room Display

SCADA Solutions



Projectors
&
UPS Systems

Control Room
Display

Building Management
System

On Grid Solar
Inverter

UPS Systems

Utility UPS
Data Center
solutions

Energy Storage
Solutions

On Grid Solar
Inverter

Outdoor Display

Smarter. Greener. Together.

