



DataNet Solution – Wireless Monitoring Network in an Electronics Production Plant

Application: LCD TV production plant
Organization: Sharp Manufacturing Poland (SMPL)

Background:

Modern electronics manufacturing plants require climate monitoring of the production halls to ensure compliance with industry regulations regarding product quality control and employee safety.

About the Customer:

Sharp Manufacturing Poland is Sharp's production base in Poland, and was established as a new company in 2007 near the city of Torun.

The company produces parts and assembles modern TV sets (LCD), which are sold across all European countries.



Key Customer Challenges:

- Due to the linear thermal expansion of metal parts used in production it is very important to control ambient temperature in different parts of the plant's four production lines (60 meters long each). Therefore, all the halls are air-conditioned to ensure the right temperature and humidity levels.
- Compact, accurate, battery-powered and wireless transmission data loggers were needed.
- Due to many metal parts in the production plant it was necessary to ensure reliable wireless transmission.
- Cable transmission was rejected due to high installation costs. The hall is of steel construction (100 m x 60 m) with PU foam as part of the metal walls to limit the impact of the metal on transmission distance.

DataNet Implementation:

- After measuring the radio signal, 6 units of DNR800 repeaters were applied in order to construct a transmission-backbone across the entire hall.
- The obtained network was very stable and allowed the customer to freely move 12 units of DNL810-BXT (measuring temperature and humidity) loggers to control different parts of the hall, while some of the loggers are stationary the other are movable.



- The daily, weekly and monthly automatically generated PDF reports are emailed to around twenty quality control staff and managers in the company.

Measurable Results:

- **Cost effective solution** eliminating high installation costs of cable transmission, providing maximum results with minimal resources.
- **Scalable and reliable monitoring** - ZigBee technology overcomes transmission obstacles, automatically finding the most cost effective, efficient and secured data path to the PC. As units are constantly relocated, or Repeaters introduced to increase the network range, the intelligent system remains flexible, robust and trustworthy.
- **User-friendly software** – In this complicated and large-scale environment, the DataSuite software provides a clear visual map of the data network path, deployed units, alarms indications, and data strength and flow throughout the facility.
- **Report delivery** – Data is transferred into a PDF report delivered at regular intervals to the selected distribution list.

