

Nomad NRT302 Technical Brief

The Nomad NRT302 is a wireless data entry terminal specifically design for labour and crop monitoring in Horticulture. Information is entered by an operator either with the keypad or the built in RFID scanner. It incorporate a LCD display to guide the operator through the process.

Data is stored in non-volatile memory and then transferred to a PC wirelessly when polled by the parent network. Transmission is never initiated autonomously, it is always as a response to a wireless command being received. The wireless transceiver operates at low power in the 915MHz band.

The unit is powered by two AAA NiMH batteries which are charged when the unit is placed in a charging dock. There is sufficient capacity for a full day's work and it is expected the unit would be charged every day.

Power from the batteries is stepped up and regulated to 3 volts which supplies the process, EEPROM, RFID and the radio circuit.

The built in RFID scanner operate at 13.56MHz and each read of a tag is initiated by the operator.

The processor has flash program memory and on board RAM. Data storage is in a separate EEPROM. The processor EEPROM and RFID module communicate over an I2C bus.

The wireless transceiver uses a PLL and consists on one IC plus some passive components to match the antenna. The antenna is formed as part of the PCB. The transceiver IC utilises a 32MHz crystal.