



## DNT900 APP FACTS

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Crop irrigation is a mission critical function for farmers and agri-businesses. Substantial investments are made in pumps, wells, flow meters, soil moisture probes and sophisticated irrigation equipment. Farmers and large agri-businesses continuously search for ways to reduce labor and energy costs while at the same time attempting to adhere to ever-changing government water conservation regulation.

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### Agriculture: *Irrigation Monitoring and Control System*

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INNOVATOR IN ELECTRONICS

Enter Murata's ultra reliable, highly configurable, long-range DNT900 RF modules. The DNT900 is ideally suited to meet the rigorous demands of irrigation monitoring systems.



## OTHER TOP DNT900 APPLICATIONS

Irrigation control

SCADA for monitoring and control

Scoreboards and electronic signs

Industrial remote control

Energy management

## APPLICATION OVERVIEW

Checking on the health of unmanned irrigation systems is essential to prevent regular trips to the field to determine if the system is still operating correctly or to immediately shutdown the system in event of a failure or breakdown of the system.

Various sensors measuring water flow, pressure, voltages and other variables are connected to a DNT900 radio module which then transmits these readings periodically to another DNT900 radio module embedded in a central master controller at the farm offices.

The host application then monitored these parameters and took appropriate action if the ranges were outside of accepted norms. In event of a failure the irrigation system and other equipment like the water pump can be switched off or restarted as necessary without having to physically go to the site.

## APPLICABLE PRODUCT FEATURES

The DNT900 radio module's multiple input/output ports, auto-reporting and ability to transmit data over large distances were some of the key features for the choice of this module.

900 MHz FHSS  
ensures reliable  
long-distance  
transmission  
that is essential  
for agricultural  
applications

## HOW IT WORKS



Very small footprint, the DNT900 module is slightly larger than a quarter



## SPECIFICATIONS

The DNT2400 has the same form factor and pin-out as the DNT900 and can be used for this application in the 2.4 GHz band

Radio Characteristics:	FHSS (Frequency Hopping Spread Spectrum)
Frequency:	902.75 - 927.25 MHz
Transmit Power:	Up to 1 W selectable
RF Data Rates:	38.4, 115.2, 200, 500 kb/s
Receiver Sensitivity:	-108 dBm 10-5 BER at 500 kb/s -94 dBm 10-5 BER at 500 kb/s
Data Encryptions:	AES-128
Network:	Point-to-Point, Point-to-Multipoint, Peer-to-Peer, Tree Routing
Environmental:	-40 °C to +85 °C 10 - 90% humidity, non-condensing
Power Supply:	3.3 to 5 VDC
Dimensions:	2.01 X 1.26 inches (51.07 X 32.00 mm) for DNT900C 2.05 X 1.36 inches (52.07 X 34.54 mm) for DNT900P
Mounting Option:	Pinned and Surface Mount Versions
RF Connection:	U.FL Coaxial
Input / Outputs:	6 GPIO, 3 ADC and 2 DAC outputs
Interface:	UART, SPI
Certification:	FCC, Canadian IC certified

## PART NUMBERS

Part Number	Description
DNT900P	DNT900 FHSS Module - Pinned Version
DNT900C	DNT900 - Surface Mount Version
DNT900DK	DNT900P FHSS Module Developer Kit

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