DNT90 APP FACTS

A wide-range of temperature monitoring applications are being manufactured for the commercial, industrial, biomedical, and government markets. These systems not only monitor and provide alarms for temperature, but often also monitor air flow, air pressure and humidity and a variety monitoring for unique processing applications.

Commercial / Industrial:

Remote Temperature Monitoring and Alarm System

With its multiple inputs and outputs plus its frequency hopping spread spectrum (FHSS) technology, the DNT90 is an ultra reliable certified radio module that meets the varied and often complex demands of today's sophisticated remote temperature monitoring and alarm systems.

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OTHER TOP DNT90 APPLICATIONS

Monitor and control applications

Industrial automation and control applications

Applications requiring reporting of sensor data

APPLICATION OVERVIEW

Remote temperature monitoring for predictive maintenance can be used in almost any situation. Medical refrigerators, blood banks and food storage facilities are some example where remote wireless monitoring of temperature is essential.

The key requirements of avoiding wired or cellular connections, reliable operation in a multipath environment, ease of installation and the ability to analyze and resolve an analog signal (temperature) at high granularity and average it were met by DNT90 radio modules.

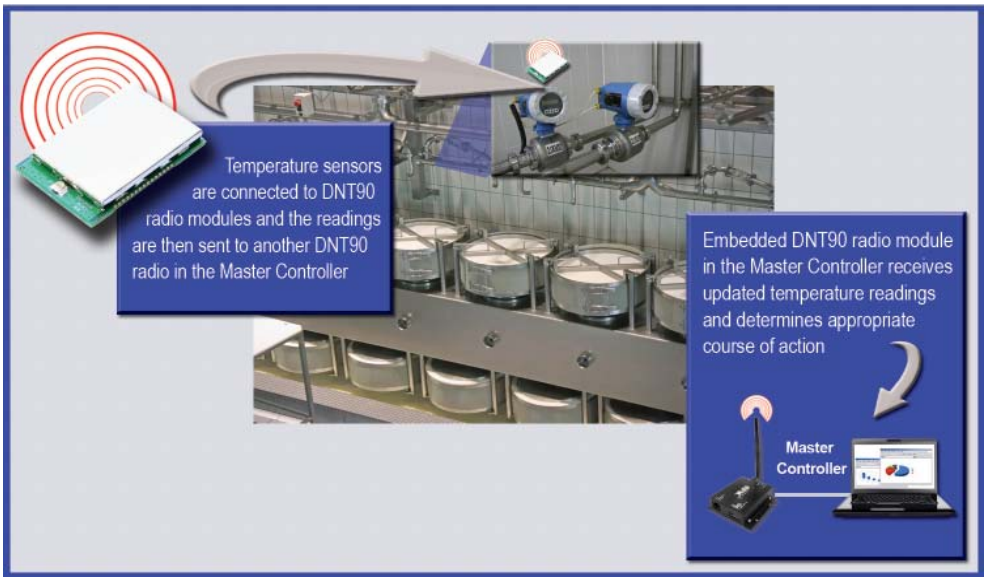
Temperature sensors were connected to multiple DNT90 radios across the facility and this information was sent wirelessly to another DNT90 radio module embedded in a master control circuit. The application then monitored the acceptable temperature ranges and raised the appropriate alarms as necessary.

APPLICABLE PRODUCT FEATURES

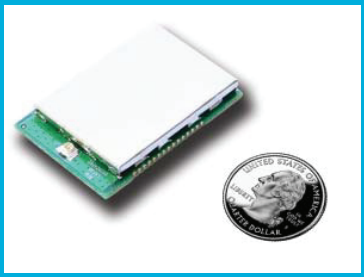
The DNT90's ability to operate reliably in a multipath environment, multiple analog and digital inputs, intelligence to provide high granularity and averaging for analog input signals, ability to auto-report on analog values for alarms and a relatively high output power were some of the key factors in the choice of this radio module. The low cost allows systems to be economically priced.

Ability to auto-report on analog values for alarms is crucial for temperature monitoring applications

HOW IT WORKS



Very small footprint, the DNT90 module is slightly larger than a quarter



SPECIFICATIONS

The DNT24 has the same form factor and pin out as the DNT90, and can be used for this application in the 2.4 GHz band

Radio Characteristics:	FHSS (Frequency Hopping spread Spectrum)
Frequency:	902.76 – 927.24 MHz
Transmit Power:	40 or 158 mW
RF Data Rates:	100 kb/s
Receiver Sensitivity:	-100 dBm 10-5 BER
Data Encryptions:	AES-128
Network:	Point to Point, Point to Multipoint, Peer-to-Peer and Store & Forward Repeating
Environmental:	-40 °C to + 85 °C 10 - 90% humidity, non-condensing
Power Supply:	3.3 to 5.5 VDC
Dimensions:	1.45 x 0.98 inches (36.8 x 27.9mm) for DNT90C 1.45 x 1.04 inches (36.8 x 27.9 mm) for DNT90P
Mounting Option:	Pinned and Surface Mount Versions
RF Connection:	U.FL Coaxial (Chip Antenna version available in 2H 2012)
Input / Outputs:	4 GPIO, 3 ADC and 2 DAC outputs
Interface:	UART, SPI
Certification:	FCC and Canadian IC certified

PART NUMBERS

Part Number	Description
DNT90P	DNT90 FHSS Module - Pinned Version
DNT90C	DNT90 FHSS Module - Pinned Version
DNT90DK	DNT90P FHSS Developer's Kit

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