DNT24 APP FACTS

Commercial poultry farmers constantly monitor their chickens' environment. The importance of maintaining a comfortable and stress-free environment for their birds is essential for optimal production in either egg or broiler production in poultry farming. Equipment must be working properly to control the temperature, humidity, light and ventilation at optimum levels for their birds.

Agriculture:

Environmental Monitoring and Control in Poultry Farming

Low-cost, highly reliable RF technology provided by Murata's DNT24 RF modules is a key component to modern poultry farming.

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OTHER TOP DNT24 APPLICATIONS

Applications requiring direct connections and reporting of sensor data

SCADA for monitoring and control

Scoreboards and electronic signs

Industrial remote control

Energy management

APPLICATION OVERVIEW

Measurement, control and maintenance of ambient conditions such as incubator temperature, humidity, egg storage room facilities and water levels on a poultry farm is crucial to minimize loss of livestock in event of equipment failure or changes in weather conditions.

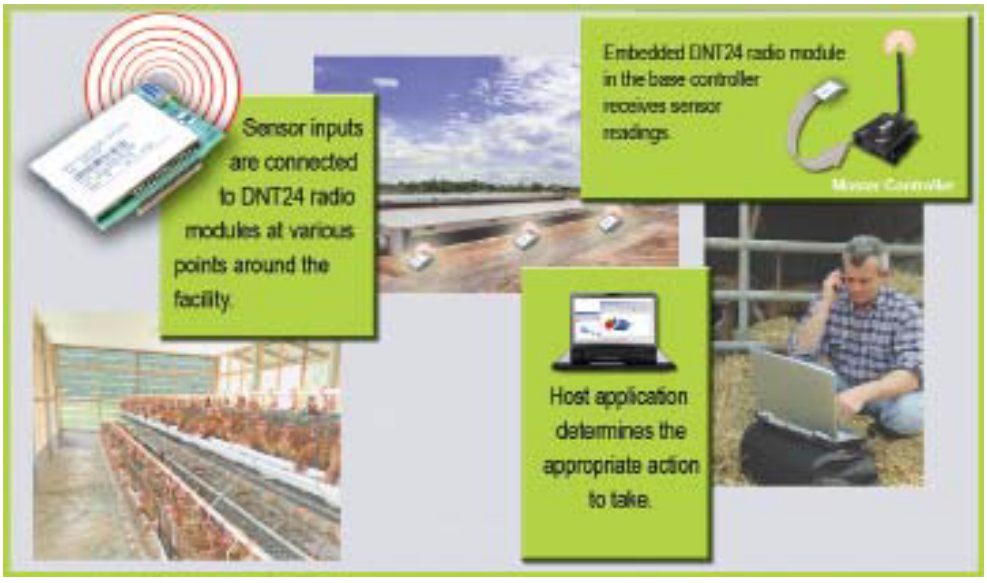
A variety of sensor inputs are connected to the battery powered DNT24 radio modules at various location in the poultry farm facility. The DNT24 radio modules are normally in a sleep mode and then periodically transmit the sensor readings to a host application – after which they go back to sleep to conserve power. The host application then determines what course of action to take based on these readings, such as triggering alarms when the temperature range is exceeded or by turning the HVAC units on or off.

APPLICABLE PRODUCT FEATURES

The DNT24's Frequency Hopping Spread Spectrum technology (FHSS) provides reliable RF communication over long distances on the poultry farms. The DNT24 Module with multiple I/O, sleep mode and auto-reporting on analog values for alarms capability, API for easy integration was an ideal choice for such an application. The low cost allows systems to be economically priced and finally the 2.4 GHz allows world-wide deployment.

FHSS ensures reliable RF communications over long distances in poultry farms.

HOW IT WORKS



Very small footprint, the DNT24 module is slightly larger than a quarter

SPECIFICATIONS

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

Radio Characteristics:	FHSS (Frequency Hopping Spread Spectrum)
Frequency:	2.406 - 2.475 GHz
Transmit Power:	10 or 100 mW
RF Data Rates:	250 kb/s
Receiver Sensitivity:	-100 dBm 10-5 BER
Data Encryptions:	AES-128
Network:	Point-to-Point, Point-to-Multipoint, Peer-to-Peer, Store-&-Forward Repeating
Environmental:	-40 °C to + 85 °C 10 - 90% humidity, non-condensing
Power Supply:	3.3 to 5 VDC
Dimensions:	1.45 X 0.98 inches (36.8 X 24.9 mm) for DNT24C 1.45 X 1.10 inches (36.8 X 27.9 mm) for DNT24P
Mounting Option:	Pinned and Surface Mount Versions
RF Connection:	U.FL Coaxial, Chip Antenna
Input / Outputs:	6 GPIO, 3 ADC and 2 DAC outputs
Interface:	UART, SPI
Certification:	FCC, Canadian IC and ETSI certified

PART NUMBERS

Part Number	Description
DNT24P	DNT24 FHSS Module - Pinned Version
DNT24PA	DNT24 FHSS Module - Pinned Version, Chip Antenna
DNT24C	DNT24 FHSS Module - Surface Mount Version
DNT24CA	DNT24 FHSS Module - Surface Mount Version, Chip Antenna
DNT24DK	DNT24 FHSS Module Developer Kit
DNT24ADK	DNT24 FHSS Module Developer Kit with DNT24PA

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