Wavetherm

Product summary

Real-time remote tracking of changes in temperature

Wavetherm is a wireless module that connects the market's leading electronic temperature sensors for today's demanding smart environments. Whether you have critical applications that relies on temperature regularity, or temperature control is part of your home comfort system, you can use Wavetherm wireless transceivers to monitor and control temperature sensors from any location.

Temperature data can be stored in Wavetherm's memory, and then transmitted wirelessly according to your needs using Wavenis ultra low-power, long-range technology in flexible network installations of any size. With Wavenis-enabled repeaters, gateways, and data concentrators you can easily integrate temperature monitoring features in both custom solutions and existing networks. You can also read individual or entire groups of sensors wirelessly with a single click from handheld terminals, smartphones, and servers.
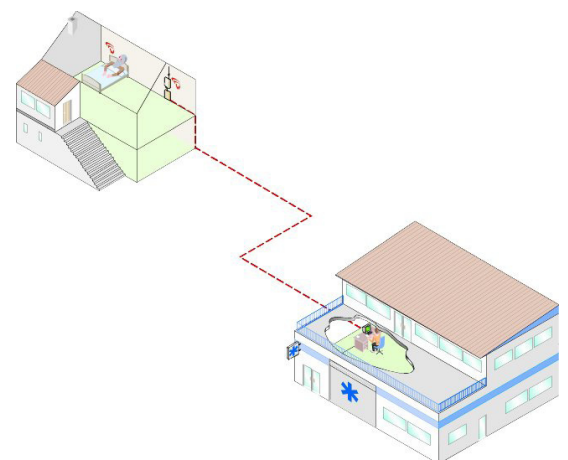

Wavetherm is also available as a ready-to-use OEM board

Wavetherm offers a reliable solution for critical applications involving temperature monitoring in industry, healthcare, food traceability, and many other types of climate control and personal convenience uses. Wavetherm automatically sends alerts via wireless or cellular networks when configured thresholds are reached. Above all, Wavetherm offers reliable wireless connections with ultra-long battery life of several years depending on use.

- Supports popular PT100, and Dallas DS18B20 digital temperature probes

- Ideal for traceability, industrial, healthcare, pharmaceutical refrigeration, storage, and agro-food applications

- Available with extended data logging

- Programmable alarm functions

- Wireless range up to several hundred meters indoors

- Unlimited number of sensors per network

- 433, 868, or 915MHz ISM bands

- Easy installation

Wireless temperature monitoring is very useful for many healthcare, transportation, and industrial applications

Product Specifications

- 2 versions: digital DALLAS probe or PT100 compatible
- Complex-Wakeup enabled (saves battery life in dense network and fast reading)
- Radio range up 200 meters indoors, 1km outdoors
- Datalogging up to 4,500 values

Wavenis Properties Overview

- Operates in license-free ISM 433, 866, 868, or 915MHz
- EN300-220 / FCC15.247 certified & compliant
- Typical rate:
  - 9.6kbps (433, 866 & 868MHz)
  - 19.2kbps (915MHz)
  - more on demand
- Frequency Hopping Spread Spectrum (FHSS)
- GFSK modulation
- Single channel operation for narrowband applications (alarms)
- Data interleaving, Forward Error Correction BCH (31,21)
- Automatic Frequency Control (AFC) for optimal performances over operating lifetime
- Quality of Service management (RSSI) and output power control
- Point-to-Point, Point-to-Multipoint (broadcast, polling) modes, and native repeater (up to 3 hops)
- Tree and star network topologies
- Designed for reliability, power savings, network coexistence
- Access hard-to-reach devices with link budget of 124dBm (25mW)
  - Line-of-sight range up to 1km (25mW/+14dBm and 10mW/+10dBm)
  - Line-of-sight range up to 4km (500mW / +27dBm)
  - Sensitivity: -110dBm @ 9.6kbps

General features

- Autonomous battery powered unit with wireless temperature sensor interface
- 25mW (868/915MHz) and 10mW (433MHz) versions
- Supports Dallas DS18B20 and PT100 probes (PT100 probes sold separately)
- Up to two sensors per Wavetherm (Dallas version only)
- Programmable internal data logging (up to 4,500 readings) and threshold alarms
- Data transmission upon request
- Date-time management with day/night mode
- Multi-year battery life depending on use
- Immediate alert transmission upon detection of low battery, broken cable, and threshold conditions
- Easy installation
- Advanced wake-up system

Physical description

- IP68 protection (for ready-to-use version)
- Operating Temperature range: -20° to +70°C
- Battery size (for finished product): 3.6V 3.6Ah
- Dimensions and weight:
  - OEM (without battery): 65 x 23 x 14mm ; 10g
  - Ready-to-connect: 98 x 47 x 35mm; 140g

	Wavetherm DALLAS	Wavetherm PT100 (calibrated)
Sensor	DALLAS 18B20	PT100 (2 or 4 wires)
Range	-55 / +125°C	-100°C to +160°C (59 to 162 Ω)
Accuracy	±0.5°C	±0.1°C
Resolution	±0.1°C	0.01°C (4 mΩ)

Product Codes*

	DALLAS		PT100	
	OEM	Finished Product	OEM	Finished Product
433MHz	WTH433-OEM-10-D-A	WTH433-FP-10-D		
868MHz	WTH868-OEM-25-D-A	WTH868-FP-25-D	WTH868-OEM-25-PT-A	WTH868-FP-25-PT
915MHz	WTH915-OEM-25-D-A	WTH915-FP-25-D	WTH915-OEM-25-PT-A	WTH915-FP-25-PT

* Contact your Elster sales representative for not listed versions

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