



IDT Technology Limited

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FACSIMILE COMMUNICATION

Digital Wireless Thermometer

IDT model no. THN198

Technical Description

Introduction

The unit is a transmitter equipped with temperature sensing ability and transmits temperature data through RF carrier in the frequency of 433.92MHz. It is designed for outdoor usage and it is powered by 2 x AA battery cells.

MCU

IC U1 is the MCU of the unit. It detects temperature data from the thermistor and transmits those data by AM modulation through the 433.92MHz RF carrier.

Thermistor

SEN1 is the thermistor for temperature detection purpose. Its resistance reduces with the increase of temperature. The MCU detects its resistance and converts to temperature data.

RF Oscillator

The RF transistor Q101 oscillates in the frequency of the SAW resonator, X102 which is 433.92MHz.

Low Pass Filter

The RF output from the oscillator would pass through a low pass filter before radiating out from the antenna. The purpose of the low pass filter is to get rid of the second (867.84MHz) and higher order harmonics of the RF carrier.

Tx Data Driver

Q4 and Q5 is controlled by the MCU in order to AM modulate the temperature data into the RF carrier.

LED & Driver

When the data is being transmitted the LED would be turned on for indication.

Low Battery Detection

The MCU detects low battery signal with the switching circuitry Q2. The low battery signal would also be transmitted through RF, 433.92MHz carrier.