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C.C.		Pages	1 (including this page)
Fax	2756 4480 (Tel: 2305 2570)	Date	July 10, 2001
Subject	OPERATIONAL DESCRIPTION FOR RT-01		

In the event of poor transmission, please contact the sender immediately.

A. Main Unit: CIRCUIT DESCRIPTION

1. LOGICAL UNIT
2. RECEIVER

(1) Logical unit

CPU: It contains MCU U1 (NT6613) and others. Main functions are driving LCD display, Low battery detection, Temperature detection, Power supply for the receiver, Key functions, Timing and Alarm setting.

NT6613, R7, S1 and C2 construct Temperature detection part. NT6613 and Q1 control power supply for the receiver, NT6613 and Q3 is used for battery voltage detection, Q4 and others build circuit control. When changing battery, Q4 break the circuit so as to prevent data storage.

(2) Receiver

Transistor Q1 and relative components construct Receiver, U1A, U1B and Q2 is the data demodulation circuit.

B. Sensor: CIRCUIT DESCRIPTION

1. Logical unit
2. Transmitter
3. Antenna

(1) Logical unit

It contains U1, U2, Q1, X1 and others. U1, Q1and D2 is the LED circuit. When signal transmit, U1 is set high voltage to drive Q1 and Q1 light up the LED. U1, C2, R7 and S1 is temperature detection circuit. U1 and U2 is low battery detector.

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(2) Transmitter

The circuit consists of SMD (X1), Transistor Q1 and others. X1, Q1 and others set up 433.920MHz OSC. L1 and C4 is the select loop, which filtrate noise.

(3) Antenna

It has an inductor connect between the Internal antenna and board circuit.

C. PRINCIPLE

Main Unit

1. When the receiver receive RF signal from transmitter, it will amplify, demodulate and finally become Low frequency signal and output of C9.

   U1, TL062 and Transistor Q2 demodulate digit data and export from Q2.

2. Converted digit signal will be sent to NT6613 via the 10th Pin. NT6613 process the data and then display the temperature on LCD. In case the transmitter's battery voltage level is low, low battery signal will send with temperature to the Main unit and show on LCD.

   Main unit has temperature detector function. Pin 14 and 15 of NT6613 and other components build up the detector. It collects temperature sample once per minute and the result display on LCD.

   MCU NT6613 PIN 11 and Q1 is power saving controller. NT6613 lets the receiver on only when transmitter send signal. Without signal the receiver and Q1 keep "off" status.

Sensor

1. transmitter circuit create RF, via Resistor R4, Inductor L2 then to the antenna. Signal is emitted to the main unit once per minute.
2. Logical unit detects temperature and battery power, then converts to digital data. The data is pass to transmitter.