

## *EXHIBIT 5*

*User's Manual*

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## Instruction Manual

## Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for the type of the device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different form that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

# **User Manual of Weather Station with RF Thermometer**

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## **Introduction**

Thank you for purchasing this Weather Station with RF Thermometer. The operation of this product is simple and straightforward but please read this instruction manual to ensure that you have the full benefit of all its features.

## **Features of the Weather Station**

- Weather forecast (Four display: SUNNY, SUNNY AND CLOUDY, CLOUDY, RAINY).
- Clock (12 or 24 hours format).
- Hygrometer (Measuring range from 20% to 99%).
- Radio-Controlled Thermometer.
- Indoor thermometer (Temperature display with minimum and maximum temperatures memory) Indoor temperature measure range from -10° C to +50 ° C with 0.1° C resolution.
- 2 Channel remote Outdoor temperature display with minimum and maximum temperatures memory and time received display. Outdoor temperature measure range from -50° C to +70° C with 0.1° C resolution.
- Built-in low battery indication for Weather Station.
- Wall mounting or table stand.

## Main Functions

- Weather forecast display.
- Clock display.
- 12 or 24 hour format selectable.
- Humidity display.
- Indoor temperature display.
- Indoor temperature alert function (use programmable).
- Outdoor temperature display by RF remote sensor, maximum 2 channels.
- Outdoor temperature alert systems.
- ° C or ° F reading selectable.
- Indoor programmable alert.
- Outdoor temperature alert, freezing alarm, LOWER and HIGHER alarm.
- 9 keys operation MODE, ADV, SET, INDOOR TEMPERATURE ALERT, OUTDOOR TEMPERATURE ALERT, BACKLIGHT, MEMORY, MAX/MIN, CHANNEL.
- Key tone.
- Low battery detect function.
- Backlight function 3 seconds auto off.
- RF transmission distances 25 meters minimum at free space condition.
- RF remote temperature sensor operating at 433.92MHz, temperature measurement range from -50° C to +70° C.
- Operating of RF remote sensor unit from -10° C to +50° C.

## **Getting Started**

### **Operation of Main Unit (Power Start Up)**

Insert battery into main battery compartment, then the Unit execute self test for LCD full segment and output 3 seconds of alarm tone.

The main unit LCD display shows the following information:

Weather station	Display, SUNNY and blanking.
Clock	Tendency display STEADY
Indoor temperature display	Start from 0:00:00 in 24 hour format
Outdoor temperature display	Shows 0.0° C in Celsius format

### **Function of buttons**

#### Advance (adv) key

In any setting mode, short press this key adjusts the digit, icon or selecting functions. If user holds this key longer than 3 seconds, the corresponding adjust parameter will increase by 6 steps per seconds.

#### Set key

In any setting mode, after adjust the digits, icon or selecting functions by “adv” key, press “set” key enter and go to next step.

#### Auto Exit and Abort Setting

In any setting mode, if no key is pressed longer than 10 seconds or the setting procedure is not completed, the unit will abort the setting and auto exit to normal display mode.

#### Weather setting

Press and hold the “adv” key for 3 seconds to enter weather-setting mode. The weather indication on the uppermost part of the LCD displays SUNNY icon flashing, that implies waiting for new setting, press “ADV” key in turn to set the weather icon

in sequence of SUNNY, SUNNY AND CLOUDY, CLOUDY, RAINY until the display shows the actual weather condition, then press “set” key to complete the setting.

#### 12/24 Hour format and C/F reading setting

In clock display mode, press and hold the “mode” key for 3 seconds to enter 12/24 hour format setting mode, LCD displays current format 12 HR or 24 HR flashing, press “adv” key to select desired clock format and then press “set” key. AM or PM segment will displays when user selects 12 hour clock format. After 12/24 hour format setting is completed,  $^{\circ}$  C /  $^{\circ}$  F digit flashes. Press “adv” to change  $^{\circ}$  C /  $^{\circ}$  F reading, then press “set” key to confirm setting.

#### Clock setting

In CLOCK mode, hold and press the “set” key for 3 seconds to enter the clock setting mode. Press “adv” key to adjust the hour, minute and confirm by pressing “set” key. Second shows “00” after new clock has been adjusted.

#### Indoor Temperature Alert

There are 3 different temperature alarm systems, INDOOR FREEZING ALERT, LOW TEMPERATURE ALERT and HIGH TEMPERATURE ALERT. In Indoor Freezing Alert, alarm activates when indoor temperature is lower than 5 $^{\circ}$  C detected by indoor sensor. In Low Temperature Alert, alarm activates when indoor temperature is lower than user setting temperature. In High Temperature Alert, alarm activates when indoor temperature is higher than user setting temperature.

#### Indoor Temperature Alert Setting

Short press “indoor temperature alert” key switch ON/OFF temperature alert function, the corresponding icon will display according to alarm setting.

Press and hold the “indoor temperature alert” key for 3 seconds to enter alert setting mode, press “adv” key to select Indoor Freezing, Low Temperature and High Temperature alert function, confirm by “set” key. After temperature alert mode has been selected, indoor temperature digit displays previous alert programmed temperature value and flashes waiting for new input. Press “adv” and “set” key to set new alert temperature. The setting range is from -10 $^{\circ}$  C to +70 $^{\circ}$  C in 1 $^{\circ}$  C

step.

#### Outdoor Temperature Alert

There are 3 different temperature alarm systems, OUTDOOR FREEZING ALERT, LOW TEMPERATURE ALERT and HIGH TEMPERATURE ALERT. In Outdoor Freezing Alert, alarm activates when outdoor temperature falls within -3° C to +3° C detected by RF remote sensor. In Low Temperature Alert, alarm activates when outdoor temperature is lower than user setting temperature. In High Temperature Alert, alarm activates when outdoor temperature is higher than user setting temperature.

#### Outdoor Temperature Alert Setting

Short press “outdoor temperature alert” key switch ON/OFF temperature alert function, the corresponding icon will display according to alarm setting.

Press and hold the “outdoor temperature alert” key for 3 seconds to enter alert setting mode, press “adv” key to select Freezing, Low Temperature and High Temperature alert function, confirm by “set” key. After temperature alert mode has been selected, outdoor temperature digit displays previous alert programmed temperature value and flashes waiting for new input. Press “adv” and “set” key to set new alert temperature. The setting range is from -50° C to +70° C in 1° C step.

#### Memory key

Press the “memory” key to switch ON or OFF the temperature memory function, the minimum and maximum temperature reading will automatically record when MEMORY is ON. When user switches the MEMORY function, the content inside the memory will be automatically cleared.

#### Max/Min key

When the MEMORY function is switched ON, press this key to select MINIMUM or MAXIMUM temperature reading.

#### Channel and Auto Scroll

Short press the “channel” key to display desired RF remote channel. Press and hold

the key for 3 seconds to enter AUTO SCROLL” function, ie, channel 1 and 2 will display in turn by 5 seconds interval.

#### Backlight key

Press this key to switch on the backlight and auto off after 3 seconds.

#### Key tone and beep tone

Main unit output short KEY tone when any key is pressed. A BEEP generates by main unit when the unit receives a new ID code and registers.

#### RF Antenna Signal Indicator

The ANTENNA segment flashes when receiver detects RF signal from remote sensor.

#### Delete Registered RF Channel

In normal RF outdoor temperature display mode, press “channel” key to select display channel and hold “channel” and “set” key together to delete that channel from memory.

## **Operation of RF Remote Temperature Sensor**

Insert battery into RF remote sensor, the Main Unit executes self-test mode for full LCD segment display for 3 seconds, then measure the temperature. Temperature sampling cycle varies from 12 to 15 seconds. When new temperature is measured, the unit will compare the new reading with previous reading. If new temperature reading is greater than the previous reading by  $\pm 0.3^\circ$  C, the temperature reading will be sent to the receiver, otherwise, the measured temperature reading will not be transmitted.

The advantage of this transmission method can save power and extend the battery life when ambient temperature around the transmitter is steady.

### **RF Reading Select in RF Remote Sensor**

There is a  ${}^\circ$  C/ ${}^\circ$  F slide switch (bonding option, short pad) key located in RF remote sensor, switch this key to select LCD reading in  ${}^\circ$  C/ ${}^\circ$  F.

The Default setting is  ${}^\circ$  C reading.

### **RESET key**

This key is let user to reset the whole RF remote sensor unit in case the transmitter uses duplicate ID code with other.

### **Low Battery Detect**

The MCU provides an input port for low battery detect circuit.

### **Low Temperature Output Pin**

The MCU output a high level signal when a temperature equal or lower than  $-10^\circ$  C is detected.

### **Test Signal**

The RF remote sensor has a test signal, press the key to continuously update temperature and transmit the signal.

## **Important notes**

### How to install and repalce the batteries in the Weather Station

The Weather Station uses 3 x AA, R6, UM3 1.5V batteries. Should the battery symbol show on the Weather Station then the batteries would need replacing. To install and replace batteries please follow the steps outlined below:

1. Remove the battery compartment cover on the back of the main unit.
2. Insert batteries observing correct polarization.
3. Replace battery cover on unit firmly.

It is recommended to replace the batteries in both units on an annual basis to ensure optimum accuracy of these units – even if the battery symbol for either unit is not displayed.

## **Electrical Specification for Main Unit (Receiver)**

Operating voltage	:	4.5V by UM3 x 3pcs
Clock accuracy	:	Less than $\pm 2.5$ seconds per day
Indoor temperature	:	-10° C to +50° C (14° F to +122° F)
Temperature resolution		0.1° C or 0.1° F
Indoor accuracy	:	Less than $\pm 1.0$ ° C ( $\pm 1.8$ ° F)
Temperature sampling cycle	:	Every 10 seconds
Alarm sound level	:	70dBA at 30cm distance
Humidity range		RH 20% to 99%
Humidity sampling cycle	:	Every 10 seconds
Humidity accuracy	:	Less than $\pm 3$ RH for 20% to 80% Less than $\pm 3$ RH for 81% to 99%
Backlight function	:	3 seconds auto off
Temperature alarm pattern	:	5 seconds alarm and 55 seconds off, 60 seconds 1 cycle

## **Electrical Specification for RF Transmitter (Temperature Remote Sensor)**

Operating voltage	:	3V by UM4 x 2 pcs
Low battery detect	:	LCD display low battery icon<2.7V
Operating temperature range	:	-10° C to +50° C
Temperature measure range		-50° C to +70° C
Temperature resolution		0.1° C
Tolerance	:	Less than $\pm 1.0$ ° C for temperature from -10° C to +50° C Less than $\pm 1.5$ ° C for temperature from -50° C to -10° C and +50° C to +70° C
Temperature sampling cycle	:	Every 10 seconds
Sensor wire		0.5 Meter

## **Liability Disclaimer**

The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.

This unit is not to be used for medical purposes or for public information. This unit is only designed to be used in the home as indication of the indoor and outdoor temperatures.

The specification of this unit may change without further notice. No part of this Manual may be reproduced without the written consent of the manufacturer.