SECTION 1 INTRODUCTION

Congratulations on purchasing the WMR968 Cable Free™ Weather Station. An all-purpose easy-to-use system, the WMR968 lets you monitor the following weather elements:

- Air temperature
- Relative humidity
- Barometric pressure
- Wind speed and direction
- Rainfall

The WMR968 is also equipped with:

- Calendar clock with daily alarm
- Weather forecast within 20- to 30-mile (32 to 48 km) radius
- Weather alarms
- Memory for maximum and minimum readings
- Simple, touch-screen operation
- RS232 PC connection jack
- High™ backlight

STANDARD PACKAGE

The original WMR968 comes complete with the following:

- Main unit (WMR968)
- Anemometer (WGR968)
- Thermo-hygrometer (THGR968)
- Rain gauge (RGR968)
- Baro-thermo-hygrometer (BTHR968)
- 12V AC adapter

The thermo-hygrometer and rain gauge are powered by solar transmitters STR928N while the anemometer is powered by solar transmitter STR938.

The WMR968 can support up to seven different remote instruments. You can also connect up to three optional thermo or thermo-hygro sensors to the system.

Optional items include:

- Thermo-hygro sensor (THGR238)
- Thermo sensor (THR238)

Contact an authorized dealer for optional items.

SECTION 2 INSTALLATION

The WMR968 operates at 433MHz. No wire installation is required among units.

The WMR968 has an effective range of 328 ft (100 m) in an open area. Position the units within range and be sure the transmission path is clear of interference and obstacles.

NOTE: The anemometer, thermo-hygrometer and rain gauge should be installed outdoors and in locations that best measure the weather elements the instruments are designed for. As for the baro-thermo-hygrometer, it must be installed indoors. If you have any optional thermo or thermo-hygro sensors, they can be installed outdoors or indoors.

THE ANEMOMETER

The anemometer measures wind speed and direction.

To install it,
1. Place the wind cup over the thinnest shaft on the anemometer’s T-bar.

2. Tighten the screw on the base of the wind cup.
3. Align the red markings on the wind vane’s shaft.

4. With the aid of a compass, face the red marking south before mounting the anemometer.

5. Mount the anemometer and its solar transmitter safely in place.

The wind speed and direction window on the main unit should read 180˚ if the main unit is installed.

THE THERMO-HYGROMETER
The thermo-hygrometer measures outdoor temperature and humidity.

To install it:
Mount the thermo-hygrometer and its solar transmitter safely in place.

THE RAIN GAUGE
The rain gauge measures the total amount and rate of rainfall.

To install it:
1. Open the cover of the rain collector.
2. Remove the fiber tape from around the bucket assemblies.
3. Mount the rain gauge and its solar transmitter safely in place.
4. Put drops of water on the cross at the base on the rain collector to check the leveling.

5. Use metal ring to adjust the leveling of the rain collector if necessary.

6. Close the cover of the rain collector.

THE SOLAR TRANSMITTERS
The solar transmitters make use of solar energy to power the instruments they are connected to.

NOTE: It is recommended to insert two UM3 or “AA”-sized super lithium batteries for weather condition under 0˚C (32˚F).
Standard Alkaline batteries contain significant amounts of water. Because of this they will freeze in low temperatures of approximately 10˚F (-12˚C). Disposable Lithium batteries have a much lower threshold for temperature with an estimated freezing range of below -40˚F (-40˚C). The Liquid Crystal Display in outdoor thermometers will remain operational to -20˚F (-28˚C) with adequate power.

Wireless ranges can be impacted by a variety of factors such as extremely cold temperatures. Extreme cold may temporarily reduce the effective range between the sensor and the base station. If the unit’s performance fails due to low temperature, the unit will resume proper functioning as the temperature rises to within the normal temperature range (i.e no permanent damage will occur to the unit due to low temperatures).

For the solar transmitters to function properly, make sure the solar receptors on the transmitters are exposed to sunlight and the connectors of the connection cable are securely plugged in.

THE BARO-THERMO-HYGROMETER
The baro-thermo-hygrometer measures the atmospheric pressure, temperature and humidity.
The sensor uses four UM4 or “AAA”-sized batteries.

To install it,
1. Insert alkaline batteries accordingly.
2. Mount the unit where you want to monitor the readings. Or you can make use of its table stand to place it on a flat surface.

THE MAIN UNIT
The main unit gives you all the readings and controls. It should be placed indoors. The main unit is powered up by the 12V AC adapter.

To install it,
1. Position the main unit and other units within effective range 328 ft (100 m).
2. Insert four UM3 or "AA"-sized alkaline batteries for backup purposes.
3. Mount the main unit safely in place. Or use its table stand to place it on a flat surface.
4. Connect the AC power adapter to the main unit and a wall socket.
5. Press the [RESET] button on the main unit to initiate operation.

The main unit will start searching for signals for about four minutes. Upon successful reception, the readings will be displayed. The main unit will update the readings at regular intervals.

NOTE
If the main unit is operating solely on battery power, the EL backlight and RS232 connection will be disabled.

LOW-BATTERY WARNING
There are low-battery indicators ■ for the main unit, rain gauge, baro-thermo-hygrometer, thermo-hygrometer and optional remote thermo and thermo-hygro sensors. Replace the batteries when the respective indicators light up.

NOTE
The readings collected from the thermo-hygrometer and any optional remote thermo and thermo-hygro sensors share the same display window. The "OUT" and remote channel will share the same low-battery indicator. When the battery level of the thermo-hygrometer is low, the low-battery indicator will turn on. If it is one of the optional remote sensors, the low-battery indicator will blink. To locate the channel in question, press the window to scan through all available devices. The low-battery indicator will stop blinking if the battery level is low for that one.

SECTION 3 OPERATION
The main unit, when connected to the AC power, is equipped with an automatic backlight. Every time you press a window on the main unit, the backlight will come on for a few seconds. This function will be disabled for sole battery operation. The backlight will also come on for a few seconds when the alarm is triggered.

**CALENDAR CLOCK**

To set the calendar clock,
1. Press the calendar clock and alarm window.
2. Press and hold [V] to disable the radio reception function.
3. Press and hold [SET] until the digit flashes.
4. Use [^] and [v] to change to the desired setting.
5. Press [SET] for the next item setting.
6. Repeat from Step 4 to finish all the settings for:
   - Clock display formats (12hr or 24hr)
   - Display language of the day-of-the-week
   - Clock
   - Calendar display formats (Month-Day, Day-Month)
   - Calendar

   For the display language, you can choose:
   - English (E)
   - German (D)
   - French (F)
   - Italian (I)
   - Spanish (S)

7. Press [SET] to confirm.

The calendar clock and alarm window has three displays: clock with seconds, clock with day-of-the-week and calendar. To change from one display to another, press the window once.

The calendar clock also supports the following time zones:
- Pacific time (P)
- Mountain time (M)
- Central time (C)
- Eastern time (E)

To select a time zone,
1. Press and hold the calendar clock and alarm window.
2. Press [^[] and [v] to change.
3. Press the window again to confirm.

**THE DAILY ALARM**

To set the daily alarm,
1. Press the calendar clock and alarm window.
2. Press [ALARM] and the (1) indicator will display to indicate you are the alarm mode.
3. Press and hold [SET] until the hour digit flashes.
4. Use [^] and [v] to change to the desired setting.
5. Press [SET] for minutes setting.

6. Use [^[] and [v] to change to the desired setting.
7. Press [SET] to confirm.

**WEATHER FORECAST**

The weather forecast is displayed in the weather forecast and barometric reading window.

There are four readings for the forecast: sunny, slightly cloudy, cloudy and rainy.

**INDOOR BAROMETRIC READING**

The atmospheric pressure reading is displayed in the weather forecast and barometric reading window.

The pressure reading can be displayed in mb (millibars), hPa (Hecto-Pascal), inHg (inch mercury) or mmHg (millimeter mercury).

To select the display unit,
1. Press the weather forecast and barometric reading window repeatedly until the “sea-level” icon is displayed.
2. Press [^[] and [v] for the current (0 Hr) pressure.
3. Press and hold [SET].
4. Press [^[] and [v] to change to the desired setting.
5. Press [SET] to confirm.

**INDOOR AND DEW POINT TEMPERATURES**

The current indoor and dew point temperatures, taken by the indoor baro-thermo-hygrometer, are displayed on the indoor temperature window. They can be displayed in degrees Centigrade (˚C) or Fahrenheit (˚F).
To select the display unit,
1. Press the indoor temperature window.
2. Press [UNIT] repeatedly for the desired setting. The selected unit will apply to all temperature displays in this window.

**NOTE** The unit of all temperature related display will be changed simultaneously.

To display the maximum, minimum and current humidity,
1. Press the indoor humidity window.
To clear the memory,
1. Press the indoor humidity window or repeatedly until the "DEW" icon appears.
2. Press [MEMORY] repeatedly for the desired record.
The time and date of the record will also be displayed alternatively with the "STAMP" icon in the clock window.
The display will automatically return to the current temperature or dew temperature whatever is previously displayed if the unit is left untouched for about one minute.

**INDOOR HUMIDITY**
The current indoor relative humidity, taken by the indoor baro-thermo-hygrometer, is displayed on the indoor hygrometer window.

**OUTDOOR AND CHANNEL TEMPERATURES**
The temperature readings taken by the outdoor thermo-hygrometer and separate thermo-hygro sensors are displayed on the outdoor and channel temperature window.

As this window can display up to four different sets of data, specify the instrument or channel you want to read.

**To do so,**
1. Press the outdoor/channel temperature window.
2. Press [CHANNEL] to go from the outdoor reading taken by the outdoor thermo-hygrometer to those taken by individual sensors (Channel 1, 2 or 3).
The outdoor thermo-hygrometer is also capable of detecting the dew point temperature as well as the wind chill reading. To display such information, press the window repeatedly.

The temperatures can be displayed in degrees Centigrade (°C) or Fahrenheit (°F).

**To select the display unit,**
1. Press the outdoor/channel temperature window.
2. Press [UNIT] repeatedly for the desired setting. The selected unit will apply to all temperature displays in this window.

**NOTE** The unit of all temperature related displays will change simultaneously.

**OUTDOOR AND CHANNEL HUMIDITY**
The relative humidity readings taken by the outdoor thermo-hygrometer and separate thermo-hygro sensors are displayed on the outdoor/channel humidity window.

As this window can display up to four different sets of data, specify the instrument or channel you want to read.

**To do so,**
1. Press the outdoor/channel humidity window.
2. Press [CHANNEL] to go from the outdoor reading taken by the thermo-hygrometer to those taken by individual sensors (Channel 1, 2 or 3).

**To display the maximum, minimum and current humidity,**
1. Press the outdoor/channel humidity window.
2. Press [CHANNEL] for the outdoor thermo-hygrometer or the desired channel.
3. Press [MEMORY] repeatedly for the desired record.
The time and date of the record will also be displayed alternatively with the "STAMP" icon in the clock window.

**To clear the memory,**
1. Press the outdoor/channel humidity window.
2. Press [CHANNEL] for the outdoor thermo-hygrometer or the desired channel.
3. Press and hold [MEMORY] until the key tone is heard.
4. Press [MEMORY] to check the memory is clear.
To clear the record,
1. Press the wind speed and direction window.
2. Press and hold [MEMORY].
As for the wind direction, it is displayed in a digital compass with bearing readouts.

WEATHER ALARMS
Weather alarms are used to alert you to certain weather conditions. Once activated, the alarm will go off when a certain set of criterion is met.

You can set alarms for:
- Indoor, outdoor and channel high temperatures
- Indoor, outdoor and channel low temperatures
- Indoor, outdoor and channel dew point approaching
- Indoor, outdoor and channel high humidity
- Indoor, outdoor and channel low humidity
- High rainfall rate
- Pressure drop
- High gust wind
- Low wind chill

To set a weather alarm,
1. Press the window containing the weather element you want to set.
2. Press [ALARM]. The current alarm setting will be displayed.
3. Press and hold [SET].
4. Press [ ] and [ ] for the desired setting.
5. Press [SET].
For temperatures and humidity, the high and low alarms can be set in sequence. After entering the value for one alarm, you will be prompted to enter the value for the other.
A weather alarm is activated once set. When the set criteria is met, an alarm will go off and the current reading will flash together with the corresponding indicator.
If that happens in the outdoor/channel temperature or humidity window, the "OUT" indicator will flash to show that the criteria set for the outdoor thermo-hygrometer has been met. If it is one of the separate sensors, the [CHANNEL] indicator will flash. Press the window repeatedly to locate the channel in question.

To clear the total rainfall,
1. Press the rainfall window.
2. Press and hold [MEMORY] until the key tone is heard.
Yesterday’s rainfall record will not be affected when you clear the total rainfall.

To turn on the function again, simply follow the same procedure and press [ALARM ON/OFF].
**DISCONNECTED SIGNALS**

If without obvious reason the display for the main unit goes blank or “- - -” is displayed, press and hold [CHANNEL] to enforce an immediate search.

If that fails, check:
- All weather instruments are still in place.
- The batteries of the main unit and individual weather instruments are still good. Replace them if necessary.
- The transmission is within range and path is cleared of obstacles and interference. Shorten the distance if necessary.

Then press and hold [CHANNEL] again. The main unit will start searching for all previously locked weather instruments.

If you want to add a new sensor, press the [RESET] button on the new sensor and then press [CHANNEL] to enforce the main unit to search.

**NOTE**
1. Do not reset the sensors after the main unit has locked those sensors, otherwise the main unit will no longer receive the signal from those sensors.
2. If you have disconnected signals, you cannot clear the memory.

**THE RESET BUTTON**

This button is only used when the system is operating in an unfavorable way or malfunctioning. Use a blunt stylus to hold down the button. The main unit will return to all default settings and start searching for signals again.

Before resetting the main unit, you should do the same for all weather instruments to ensure correct transmission and reception of signals. Then press [RESET] on the main unit.

**MAINTENANCE**

When handled properly, this unit is engineered to give you years of satisfactory service. Here are a few product care instructions:

1. Do not immerse the unit in water. If the unit comes in contact with water, dry it immediately with a soft lint-free cloth.
2. Do not clean the unit with abrasive or corrosive materials. Abrasive cleaning agents may scratch the plastic parts and corrode the electronic circuit.
3. Do not subject the unit to excessive force, shock, dust, temperature, or humidity. Such treatment may result in malfunction, a shorter electronic life span, damaged batteries, or distorted parts.
4. Do not tamper with the unit’s internal components. Doing so will terminate the unit’s warranty and may cause damage. The unit contains no user-serviceable parts.
5. Only use new batteries as specified in this instruction manual. Do not mix new and old batteries as the old batteries may leak.
6. Read this instruction manual thoroughly before operating the unit.

**SPECIFICATIONS**

**Temperature**

Proposed Operating Range:
- Indoor ..... 23˚F to 122˚F (-5˚C to 50˚C)
- Outdoor ..... -4˚F to 140˚F (-20˚C to 60˚C)

Resolution (indoor and outdoor): 0.2˚F (0.1˚C)

**Relative Humidity**

Measuring Range (indoor and outdoor): 2 to 98% RH

Resolution (indoor and outdoor): 1% RH

**Dew Point Temperature**

Measuring Range:
- Indoor ..... 32˚F to 120.2˚F (0˚C to 49˚C)
- Outdoor ..... 14˚F to 140˚F (-10˚C to 60˚C)

Resolution (indoor and outdoor): 2˚F (1˚C)

**Barometric Pressure / Trend**

Measuring Range: 795 to 1050 mb (23.48 to 31.01 inHg)

Resolution: 1 mb (0.03 inHg)

**Wind Speed**

Measuring Range: 0 to 125.3 mph (0 to 56 m/s)

Resolution: 0.4 mph (0.2 m/s) (typical)

**Wind Direction**

Measuring Range: 0˚ to 359˚ (Degrees)

Digital Resolution: 1˚ (typical)

Graphical Resolution: 10˚

**Wind Chill Temperature**

Measuring Range: -61.6˚F to 140˚F (-52˚C to 60˚C)

Resolution: 2˚F (1˚C)

**Rainfall**

Daily and Cumulative:
- Measuring Range: 0 to 393.7 in (0 to 9999 mm)

Rainfall Rate:
- Measuring Range: 0 to 39.37 in/hr (0 to 999 mm/hr)

Daily and Cumulative:
- Resolution: 0.04 in (1 mm)

Rainfall Rate Resolution: 1 mm/hr (0.04 m/h) typical

**WMR968**

- Weight: 18 oz (505 g)
- Dimension: 8 (L) x 5.5 (W) x 1.5 (H) in (204 x 139 x 39 mm)
- Power: 12V AC / DV adapter
- Power backup: 4 x UM3 - "AA" size alkaline batteries

**WMR968_EN_output 12/17/2004, 15:057**
ABOUT OREGON SCIENTIFIC

Visit our website (www.oregonscientific.com) to learn more about Oregon Scientific products such as digital cameras; MP3 players; children’s electronic learning products and games; projection clocks; health and fitness gear; weather stations; and digital and conference phones. The website also includes contact information for our customer care department in case you need to reach us, as well as frequently asked questions and customer downloads.

We hope you will find all the information you need on our website, however if you’d like to contact the Oregon Scientific Customer Care department directly, please visit: www2.oregonscientific.com/service/support

OR

Call 949-608-2848 in the US.

For international enquiries, please visit: http://www2.oregonscientific.com/about/international/default.asp

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

NOTE This equipment has been tested and found to comply with the limits for a Class B digital 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 or more of the following measures:

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

CAUTION

— The contents of this manual is subject to change without further notice.
— Due to printing limitations, the displays shown in this manual may differ from the actual display.
— The contents of this manual may not be reproduced without the permission of the manufacturer.

WGR968:
Weight: 15 oz (430 g)
Dimension: 11.6 (L) x 4.6 (W) x 2.2 (H) in (295 x 116.5 x 550 mm)
Power: solar cell (STR938)

THGR968:
Weight: 4 oz (111.5 g)
Dimension: 4.5 (L) x 1.7 (W) x 4.2 (H) in (113.5 x 42.5 x 107.5 mm)
Power: Main: solar cell (STR928N)

RGR968:
Weight: 10 oz (276 g)
Dimension: 4.5 (L) x 5.7 (H) in (113.5 x 145 mm)
Power: Main: solar cell (STR928N)

BTHR968:
Weight: 2.8 oz (78.4 g)
Dimension: 7.1 (L) x 2.8 (W) x 0.75 (H) in (180 x 70 x 19 mm)
Power: 4 x UM4 - “AAA” size alkaline batteries

STR928N:
Weight: 9.4 oz (266 g)
Dimension: 115 (L) x 81 (W) x 138 (H) in (4.5 x 3.2 x 5.4 mm)
Power back up: 2 x UM3- “AA” size alkaline batteries (recommend super lithium batteries for weather condition under 32˚F)

STR938:
Weight: 10.2 oz (290 g)
Dimension: 115 (L) x 81 (W) x 138 (H) in (4.5 x 3.2 x 5.4 mm)
Power back up: 2 x UM3- “AA” size alkaline batteries (recommend super lithium batteries for weather condition under 32˚F)
DECLARATION OF CONFORMITY

The following information is not to be used as contact for support or sales. Please call our customer service number (listed on our website at www.oregonscientific.com, or on the warranty card for this product) for all inquiries instead.

We
Name: Oregon Scientific, Inc.
Address: 19861 SW 95th Place,
Tualatin, Oregon 97062 USA
Telephone No.: 1-800-853-8883
Fax No.: 1-503-684-8883

declare that the product

Product No.: WMR968
Product Name: Cable Free™ Weather Station
Manufacturer: IDT Technology Limited
Address: Block C, 9/F, Kaiser Estate,
Phase 1, 41 Man Yue St.,
Hung Hom, Kowloon,
Hong Kong

is in conformity with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1) This device may not cause harmful interference.
2) This device must accept any interference received, including interference that may cause undesired operation.