

# WS0342 Professional Wireless Weather Station User Manual

## 1. Introduction

Thank you for your purchase of the WS-0342 Professional Wireless Weather station. The following user guide provides step by step instructions for installation, operation and troubleshooting.

## 2. Warnings

**! Warning:** Any metal object may attract a lightning strike, including your weather station mounting pole. Never install the weather station in a storm.

**! Warning:** Installing your weather station in an elevated location may result in injury or death. Safety goes first. Make sure your setup and preparation is secure, and take no risks.

## 3. Getting Started

The WS-0342 weather station consists of a display console (receiver), a sensor array with Integrated Outdoor Transmitter and mounting hardware

### 3.1 Parts List

The WS-0342 weather station consists of the following parts (as referenced in Figure 1 ).

| QTY | Item   | Image   |
|-----|--|---|
| 1   | Display Console(WS0342)<br>Frame Dimensions: 7.7x5.9x0.98inch<br>(19.5x15x2.5cm)<br>LCD Dimensions: 5.6x4.7inch<br>(15.0x12.0cm) |  |
| 1   | Manual   |  |
| 1   | Power Adapter  |  |

Figure 1

## 3.4 Display Console

### 3.4.1 Display Console Layout

The display console layout is shown in Figure 7

 **Note:** The following illustration shows the full segment LCD display for description purposes only and will not appear like this during normal operation.

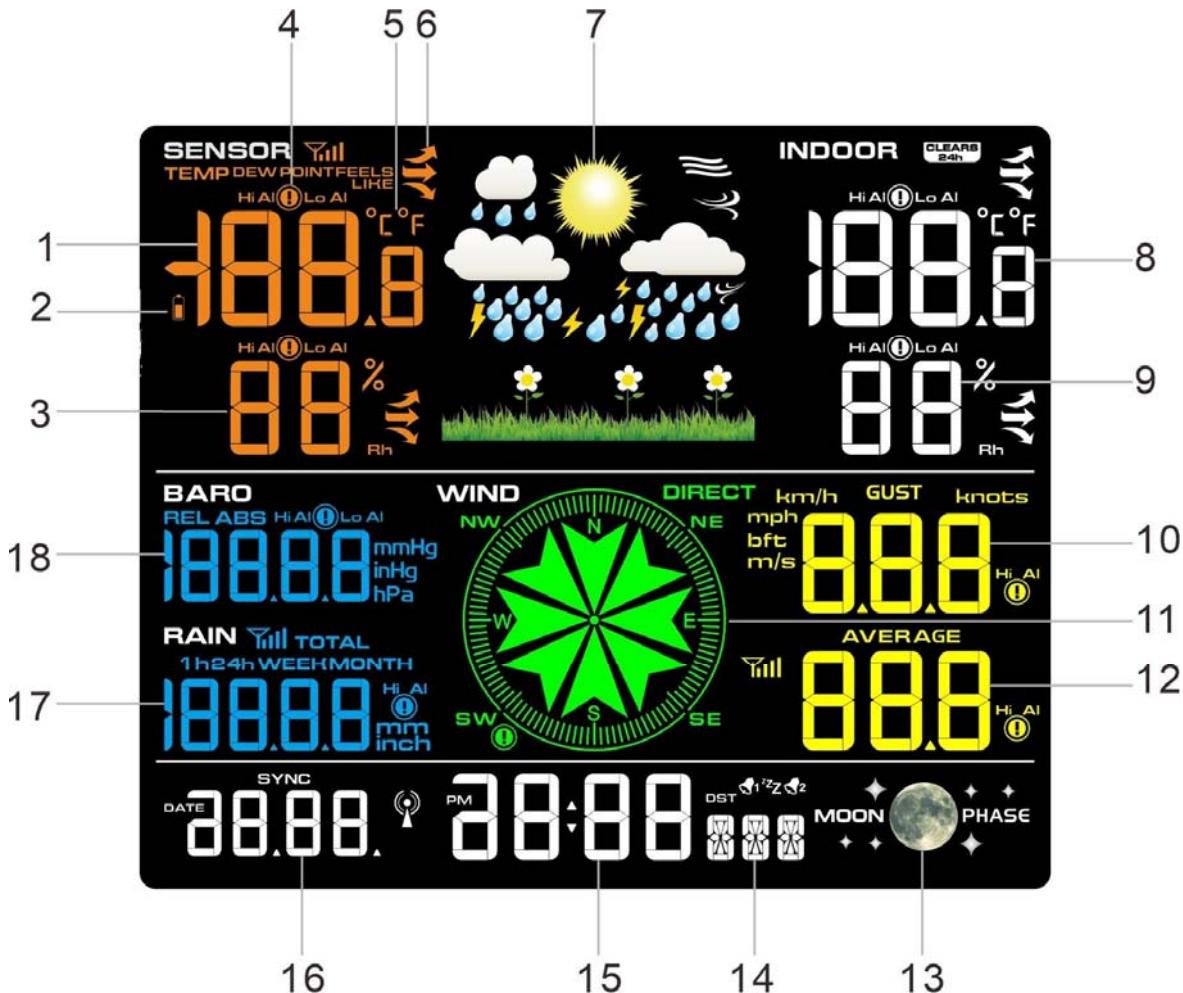


Figure 7

- 1. Outdoor temperature mode
- 2. Outdoor Battery low voltage prompt
- 3. Outdoor humidity display
- 4. Outdoor humidity HI/LO alarm icon
- 5. Temperature units (°F or °C)
- 6. Outdoor temperature change indication
- 7. Weather tendency indicator
- 8. Indoor temperature display
- 9. Indoor humidity display
- 10. Wind speed Gust display
- 11. Wind direction
- 12. Wind speed average display
- 13. Moon phase
- 14. Week or Second display
- 15. Time
- 16. DATE
- 17. Rainfall display (1h, 24h, week, month, total)
- 18. Pressure (REL and ABS) display

### 3.4.2 Display Console Set Up

**It is recommended to plug in the power supply to reduce the battery consumption and extend the service life.**



**Note:** The sensor array must be powered and updating before powering up the console, or the console will time out searching for the sensors. Power the console last.

Make certain the weather station sensor array is at least 10' away from the console and within 100' of the console. If the weather station is too close or too far away, it may not receive a proper signal.

Remove the battery door on the back of the display, as shown in Figure 11. Insert three AAA (alkaline or lithium) batteries in the back of the display console. The display will beep once and all of the LCD segments will light up for a few seconds to verify all segments are operating properly.



**Note:** The character contrast is best from a slightly elevated viewing angle.



**Figure 8**

**Note:** The transmitter of Wifi 2.4G & other wireless functions can not work when using the battery.

Replace the battery door, and fold out the desk stand and place the console in the upright position.

The unit will instantly display indoor temperature, humidity, pressure, tendency, moon phase, and time. The wind speed, wind gust, wind direction, rain, outdoor temperature and humidity will update on the display within a few minutes. Do not Press any menu buttons until the outside transmitter report in, otherwise the outdoor sensor search mode will be terminated. When the outdoor transmitter data has been received, the console will automatically switch to the normal mode from which all further settings can be performed.

While in the search mode, the remote search icon  will be constantly displayed.



**Note:** The power adapter is intended to be correctly oriented in a vertical or floor mounted position. The prongs are not designed to hold the plug in place if it is plugged into a ceiling, under-the-table or cabinet outlet.



**Figure 9**

 **Note:** If the power adapter is plugged in, **BL ON** will display in the time area for three seconds when powered up. Conversely, if the power adapter is not plugged in, **BL OFF** will be displayed.

### 3.4.2 Sensor Operation Verification

The following steps verify proper operation of the sensors prior to installing the sensor array.

1. Verify proper operation of the rain gauge. Tip the sensor array back and forth several times. You should hear a “clicking” sound within the rain gauge. Verify the rain reading on the display console is not reading 0.00. Each “click” represents 0.01in of rainfall.
2. Verify proper operating of the wind speed. Rotate the wind cups manually or with a constant speed fan. Verify the wind speed is not reading 0.0.
3. Verify proper operation of the indoor and outdoor temperature. Verify the indoor and outdoor temperature match closely with the console and sensor array in the same location (about 9.8 ft apart). The sensors should be within 4°F (the accuracy is  $\pm 2^{\circ}\text{F}$ ). Allow about 30 minutes for both sensors to stabilize.
4. Verify proper operation of the indoor and outdoor humidity. Verify the indoor and outdoor humidity match closely with the console and sensor array in the same location (about 9.8 ft apart). The sensors should be within 10% (the accuracy is  $\pm 5\%$ ). Allow about 30 minutes for both sensors to stabilize.

## 4. Console Operation

 **Note:** The console has five keys for easy operation: **SET** key and **ALARM** key on the right side, **MIN/MAX/-key**, **SNOOZE/LIGHT** and **CHANNEL/+ key** on the top.

### 7.1 Quick Display Mode

 **Note:** To exit the Quick Display Mode at any time, press the **SNOOZE** button of the display console.

While in Normal Mode, press (do not hold) the **SET** key to enter the Quick Display Mode as follows:

- once for time/second/date, time/week/date and time/week/year
- twice for rainfall.
- three for pressure
- four for outdoor dew point temperature

1. **Time, Time/Week and Date.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between time/second/date, time/week/date and time/week/year.
2. **Rainfall.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between 1h, 24h, week, month and total.  
**To clear the total rain**, press the **CHANNEL/+ or MIN/MAX/-** button until total rain is displayed. The total rain will flash. Press and hold the **SET** button for three seconds until total rain reads 0.0.
3. **Absolute Pressure and Relative Pressure.** Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between absolute pressure and relative pressure.
4. **Outdoor dew point** .Press the **CHANNEL/+ or MIN/MAX/-** key to toggle between temperature, dew point and feels like

## 7.2 Set (Program) Mode

While in Normal Mode, Press **and hold** the **SET** key for at least three seconds to enter the Set Mode. The first setting will begin flashing. You can press the **SET** key again to skip any step, as defined below.

 **Note:** In the Set mode, press the **[+]** key or **[-]** key to change or scroll the value. Hold the **[+]** key or **[-]** key for three seconds to increase/decrease rapidly.

 **Note:** To exit the Set mode at any time, press the **SNOOZE** button of the display console.

1. **12/24 Hour Format (default: 12h):** Press the **SET** key again to adjust the 12/24 hour format setting (FMT). Press the **[+]** key or **[-]** key to change between 12 hour and 24 hour format.
2. **Change Hour.** press the **SET** key again to set the hour. Press the **[+]** key or **[-]** key to adjust the hour up or down. Note the PM icon is present during afternoon hours.
3. **Change Minute.** Press the **SET** key again to set the minute. Press the **[+]** key or **[-]** key to adjust the minute up or down.
4. **Date Format (default: MM-DD):** Press the **SET** key again to enter the day/month format mode. Press the **[+]** key to switch between **M-D, D-M**.
5. **Change Month.** Press the **SET** key again to set the calendar month. Press the **[+]** key or **[-]** key to adjust the calendar month.
6. **Change Day.** Press the **SET** key again to set the calendar day. Press the **[+]** key or **[-]** key to adjust the calendar day.
7. **Change Year.** Press the **SET** key again to set the calendar year. Press the **[+]** key or **[-]** key to adjust the calendar year.
8. **Max/Min Clearing (default: ON).** Press the **SET** key again to set the max/min clearing mode (CLR). The Max/Min can be programmed to clear daily (at midnight) or manually. Press the **[+]** key or **[-]** key to switch between “Clears 24h” and Clears Manually.
9. **Temperature Units of Measure (default: °F):** Press the **SET** key again to change the temperature units of measure (the **UNITSET** icon will be displayed). Press the **[+]** key or **[-]** key to switch between °F and °C units of measure.

10. **Wind Speed Units of Measure (default: MPH)**. Touch the **SET** key again to change the wind speed units of measure . Touch the **[+]** key or **[-]** key to toggle the wind speed units between m/s,bft,knots,mph or bft.
11. **Rainfall Units of Measure (default: IN)**. Touch the **SET** key again to change the Rainfall units of measure. Touch **[+]** key or **[-]** key to toggle the rainfall units between mm and inch.
12. **Barometric Pressure Display Units(default: inHg)**. Press the **SET** key again to change the pressure units of measure. Press the **[+]** key or **[-]** key to toggle the pressure units between mmHg, inHg or hPa.
13. **Pressure Threshold Setting (default level 2)**. Press the **SET** key again adjust the Pressure threshold setting. Press **[+]** key or **[-]** key to adjust the pressure threshold setting up or down.
14. **Weather Forecast Icon Setting (default: partly cloudy)**. Press the **SET** key again to set the weather forecast icon initial conditions (based on the current weather conditions). Press the **[+]** key or **[-]** key to toggle weather icons between sunny, partly cloudy, cloudy, or rainy.
15. **Location division.(default: Northern Hemisphere)** Press the **SET** key again to change the location division. Press the **[+]** key or **[-]** key to toggle the sunlight units Northern Hemisphere (NOR)or Southern Hemisphere(SOU).(refer to 5.0 Final Installation of Integrated outdoor transmitter)

## 7.3 Sensor Search Mode

If outdoor sensor loses communication, dashes (---) will be displayed.  
To reacquire the lost signal, press and hold the **CH/+** button for 3 seconds to enter the sensor search mode.

## 7.4 Reset Min/Max record



**Note:** The minimum and maximum value of all data will be cleared in the reset mode.

In normal mode, Press (do not hold) the **MIN/MAX/-** key, and the **MAX** icon will be displayed. Press the **SET** key to view rainfall (1h, 24h, week or month) , pressure (ABS or REL) max value ,outdoor temperature (temperature, dew point or feels like).

Next, press and hold the **MIN/MAX/-** key for three seconds(and the **CLR** character is flashing in time area) to clear the rainfall, wind speed, wind gust, pressure, temperature and humidity maximum values. The maximum values will now display the current values.

Press the **MIN/MAX/-** key again (do not hold), and the **MIN** icon will be displayed. Press the **SET** key to view pressure (ABS or REL) min value, pressure (ABS or REL) min value ,outdoor temperature (temperature, dew point or feels like).

Next, Press and hold the **MIN/MAX/-** key for three seconds(and the **CLR** character is flashing in time area) to clear the pressure, temperature and humidity minimum values. The minimum values will now display the current values.

Press the **SNOOZE** key to exit the min/max checking and cleaning mode, return to normal display mode.

## 7.5 Snooze Mode

If the alarm sounds, and you wish to silence the alarm, press the **SNOOZE** key, the backlight will turn on. The alarm icon will continue to flash and the alarm will silence for five minute. press any key (**MIN/MAX/+ ,SET, ALARM,CHANNEL/+**) to permanently exit the **Snooze** mode.

## 7.6 Back light Mode

If the LED is off, Press the **SNOOZE** button once. The backlight will turn on for five seconds, and if no operation is performed for three seconds, the backlight will turn off.

The backlight operation is different when operating on batteries to save power.

### ADJUSTABLE BACKLIGHT BRIGHTNESS

There are 3 levels of brightness of backlight. When the backlight is on press **SNOOZE** key to switch between the 3 levels.

Press and hold the **LIGHT** key for two seconds, and the backlight will turn on permanently, and display **BL ON** icon will be displayed for three seconds in the time field. To turn off the backlight at any time, Press and hold the **SNOOZE/LIGHT** key for two seconds, and **BL OFF** icon will be displayed for three seconds in the date field.

 **Note:** If plugged into AC power, the backlight will remain on. It is not recommended leaving the backlight on for a long period of time when operating on batteries only, or the batteries will run down quickly.

## 8. Alarm Mode

The WS-0342 includes the following alarms:

- Time(Alarm1 and Alarm2)
- Wind Gust
- Wind Average
- Outdoor Temperature
- Outdoor Humidity
- Outdoor Feels Like Temperature
- Outdoor Dew Point
- Hourly Rainfall
- 24 Hour Rainfall
- Absolute Pressure
- Relative Pressure
- Indoor Temperature
- Indoor Humidity

### 8.1 Alarm Operation

When an alarm condition is exceeded, the alarm icon will flash  (visual) and the alarm beeper will sound (audible). To silence the beeper, press any key.

### 8.2 Viewing the High and Low Alarms

To view the current alarm settings, press the **ALARM** key to enter the alarm mode. HI will be displayed in the time area. At the same time Alarm time parameters of out/indoor temperature/humidity, rain, feels like, wind gust, wind average, and dew point are displayed.

Press **ALARM** key again to view the LOW alarms along with the alarm clock time the same way HI alarms.

Press the **SNOOZE** key at any time to return to the normal mode.

### **8.3 Setting the Alarms**

Press **ALARM** key to enter the alarm mode.

Next, Press and hold the **SET** key for three seconds. The first alarm parameter will begin flashing (alarm hour).

To save the alarm setting and proceed to the next alarm parameter, press(do not hold) the **SET** key.

To adjust the alarm parameter, Touch the **[+]** or **[ - ]** key to increase or decrease the alarm settings, or Touch and hold the **[+]** or **[ - ]** key for three seconds to increase or decrease the alarm settings rapidly.

Press the **ALARM** key to turn on (the alarm icon will appear ) and off the alarm.

Press the **SNOOZE** key once at any time to return to the normal mode. After 30 seconds of inactivity, the alarm mode will time out and return to normal mode.

The following is a list of the individual alarm parameters that are set (in order):

1. Alarm hour(alarm 1)
2. Alarm minute(alarm 1)
3. Alarm hour(alarm 2)
4. Alarm minute(alarm 2)
5. Wind Gust high alarm
6. Wind Average high alarm
7. Outdoor temperature high alarm
8. Outdoor temperature low alarm
9. Outdoor humidity high alarm
10. Outdoor humidity low alarm
11. Outdoor feels like high alarm
12. Outdoor feels like low alarm
13. Outdoor dew point high alarm
14. Outdoor dew point low alarm
15. Rainfall (1h) high alarm
16. Rainfall (24h) high alarm
17. Absolute pressure high alarm(ABS)
18. Absolute pressure low alarm(ABS)
19. Absolute pressure high alarm(REL)
20. Absolute pressure low alarm(REL)
21. Indoor temperature high alarm
22. Indoor temperature low alarm
23. Indoor humidity high alarm
24. Indoor humidity low alarm

 **Note:** To prevent repetitive alarming of humidity, there is a 4% tolerance band. For example, if you set the high alarm to 60% and silence the alarm, the alarm icon will continue to flash until the humidity falls below 56%, at which point, the alarm will reset and must increase above 60% to activate again.

## 8.4 Alarm and Command Key Beeper ON/OFF Mode

The beeper can be silenced for both alarms and key strokes.

In normal mode, press and hold the **ALARM** key for three seconds to toggle the beeper on or off (depending on the current setting).

The **BZ ON** (beeper on) or **BZ OFF** (beeper off) icon will appear in the time area for three seconds. Press and hold the **ALARM** key again for three seconds to toggle the **BZ ON** or **BZ OFF** command.

## 9. Other Console Features

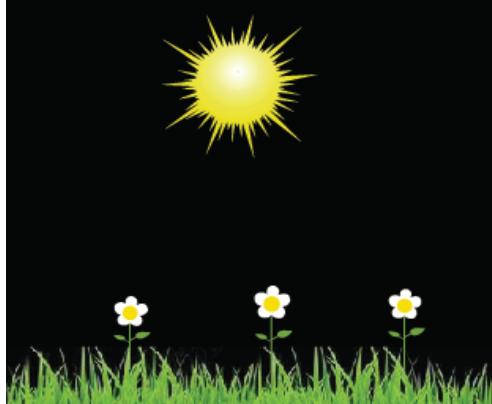
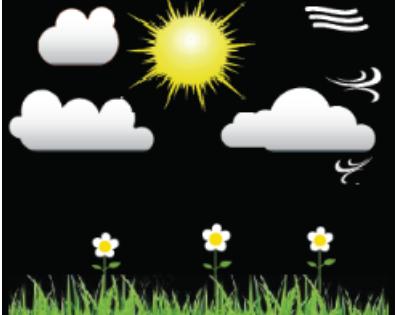
The following section describes additional features and display icons.

### 9.1 Weather Forecasting

 **Note:** The weather forecast or pressure tendency is based on the rate of change of barometric pressure. In general, when the pressure increases, the weather improves (sunny to partly cloudy) and when the pressure decreases, the weather degrades (cloudy to rain).

The weather forecast is an estimation or generalization of weather changes in the next 24 to 48 hours, and varies from location to location. The tendency is simply a tool for projecting weather conditions and is never to be relied upon as an accurate method to predict the weather.

### 9.2 Weather Icons

| Condition     | Icon  | Description  |
|---------------|---|--|
| Sunny         |  | Pressure is rising and the previous condition is partly cloudy.  |
| Partly Cloudy |  | Pressure is falling and the previous condition is sunny or<br>Pressure is rising and the previous condition is cloudy. |

|        |   |  |
|--------|---|--|
| Cloudy |  | Pressure is falling and the previous condition is partly cloudy or Pressure is rising and the previous condition is rainy. |
| Rainy  |  | Pressure is falling and the previous condition is cloudy.  |

### 9.3 Moon Phase

The following moon phases are displayed based on the calendar date.

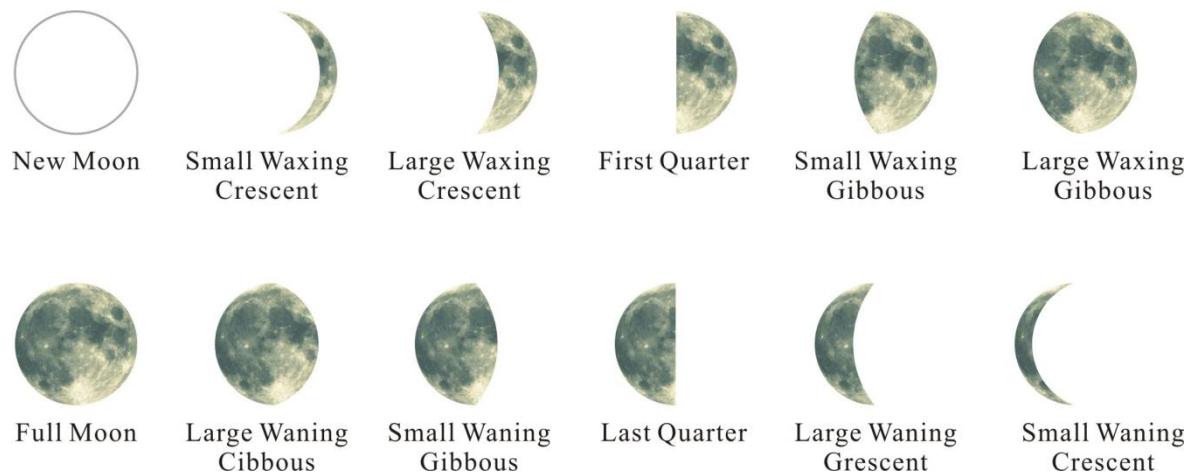


Figure 52

### 9.4 Pressure Threshold Setting

The pressure threshold (the negative or positive rate of change of pressure signifying a change in the weather) can be adjusted from 2 mbar/hour to 4 mbar/hour (default level 2 mbar/hour).

The lower the level pressure threshold setting, the higher sensitivity for weather forecast changes. Locations that experience frequent changes in air pressure require a higher setting compared to locations where the air pressure is typically stagnant.

## 10. Specifications

### 10.1 Wireless Specifications

- Line of sight wireless transmission (in open air): 100m.
- Frequency: 433 MHz
- Integrated Outdoor transmitter interval: 16 seconds

## 10.2 Measurement Specifications

The following table provides specifications for the measured parameters.

| Measurement         | Range         | Accuracy                                 | Resolution |
|---------------------|---------------|--|------------|
| Indoor Temperature  | 32 to 140 °F  | ± 2 °F                                   | 0.1 °F     |
| Outdoor Temperature | -40 to 140 °F | ± 2°F                                    | 0.1 °F     |
| Indoor Humidity     | 10 to 99 %    | ± 5% (only guaranteed between 20 to 90%) | 1 %        |
| Outdoor Humidity    | 10 to 99%     | ± 5% (only guaranteed between 20 to 90%) | 1 %        |

## 10.3 Power Consumption

- Base station (display console) : 3 x AAA 1.5V Alkaline or Lithium batteries (not included)
- Adaptor: 5.9V~ 500mA (included)
- Integrated Outdoor Transmitter: 3xAA alkaline batteries or Lithium batteries (not included)
- Battery life: Minimum 12 months for base station with excellent reception. Intermittent reception may reduce the battery life.  
Minimum 12 months for Integrated Outdoor Transmitter (use lithium batteries in cold weather climates less than -4 °F), The primary power source is the solar panel.

# FCC Statement

## **Statement according to FCC part 15.19:**

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

## **Statement according to FCC part 15.21:**

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

## **Statement according to FCC part 15.105:**

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.



**Warning:** The user should be 20CM away from the product when it is used.