

How It Works

The energy produced by severe weather can be detected and analyzed by monitoring radio frequency transmissions from the storm itself. Tornado Alert™ performs monitoring and analysis and activates both an audible siren and visual alarm based upon the intensity of electrical energy associated with a storm. The patent pending technology used by Tornado Alert™ was field tested across the United States for 7 years, including the deadly tornado outbreak of 2011. Unlike other devices on the market, Tornado Alert™ distinguishes between single dangerous lightning strikes, non-severe storms, severe thunderstorms and tornadoes. Tornado Alert™ issues alerts in real-time based directly upon storm activity in your specific location. The alerts are completely independent of any other alert systems. Specifically, Tornado Alert™ does not depend or rely upon the National Weather Service Emergency Alert System (EAS). This direct and immediate detection of storm activity gives the user an additional powerful tool to enhance their safety.

CAUTION: IF AT ANY TIME YOU FEEL UNSAFE DUE TO THE WEATHER IN YOUR AREA IMMEDIATELY TAKE STEPS TO ENSURE YOUR SAFETY.

The Tornado Alert™ features are:

- Battery backup in the event of power outage.
- Approximate range of detection of 30 miles providing a warning time of up to 30 minutes.
- Alerts specific to your location based on actual storm activity.
- Distinguishes between lightning, non-severe storms, severe storms and tornado activity.
- Displays the relative distance of the storm to your location.
- Audible and visual alert indicators selectable by the user.
- Provides for the external attachment of devices such as those for the hearing impaired or home alert systems using a 1/8" external jack.
- User controlled severe thunderstorm alerts.
- No programming required (no Specific Area Message Encoding (SAME))

Device Setup

Installing Battery

Tornado Alert™ requires an Industrial Grade or Lithium 9-volt battery to insure continuous operation during power outages. Since power outages increase during times of severe weather, battery backup is essential, especially at night. To install a battery, first remove the battery cover plate of the back of the unit. The battery compartment is designed such that the battery will only install if the positive (+) and negative (-) posts are properly aligned. If the battery does not easily fit into the compartment, change the orientation of the battery posts and try again. Once the battery is installed, replace the battery compartment cover.

IMPORTANT! Improper installation of the battery will cause the Tornado Alert™ not to function or function improperly.

IMPORTANT! The Tornado Alert™ system contains no user serviceable parts and is not intended to be opened, except for battery installation. Opening the main case or attempting to service the unit will void all warranties.

Selecting a Location

The most critical time to be aware of Tornado Alert™ warnings is during sleeping hours. During this time, the user is not receiving weather information from other sources such as television, radio or internet. Many users may find placing Tornado Alert™ in their bedroom an ideal location. For people who are hearing impaired, attachment to a bed or pillow shaker device is possible using the 1/8" external jack.

Since the technology depends upon the detection of radio frequencies, the placement location needs to be carefully selected. On power up, the device evaluates the radio interference at its location. If radio interference is detected, it will indicate this condition to the user so corrective action can be taken. The user can either remove the source of the interference or relocate the Tornado Alert™. Once Tornado Alert™ has passed these tests and is actively monitoring weather conditions, the device is able to ignore extraneous man-made interference. Follow the rules below to insure proper device operation:

- The device should be positioned close to an external wall within three (3) feet of a window.
- Avoid shielded locations such as internal rooms/hallways or below ground rooms.
- Keep other objects at least a few inches away from the device. Shielding of Tornado Alert™ antenna (located at the top of the enclosure) may affect its sensitivity to severe weather events. Never place objects directly on the device.
- Avoid placement within three(3) feet of devices that can cause interference such as:
 - Electrical motors (vacuum cleaners, dishwashers, electrical tools, etc.)
 - Fluorescent lights.
 - Electronic equipment (computers, printers, fax machines, televisions)
 - Air purifiers

Connecting the Power

Tornado Alert™ comes with a 12-volt A/C power supply for use. Plug this power supply into the Power Adapter slot (see picture below). Route power cord thru the slot at the back of the case if desired. A surge protector is highly recommended. Only the provided power supply should be used. Other power supplies may damage the unit or cause other issues with proper operation. If a replacement power supply is required, use only power supplies that meet the specification provided in this manual.



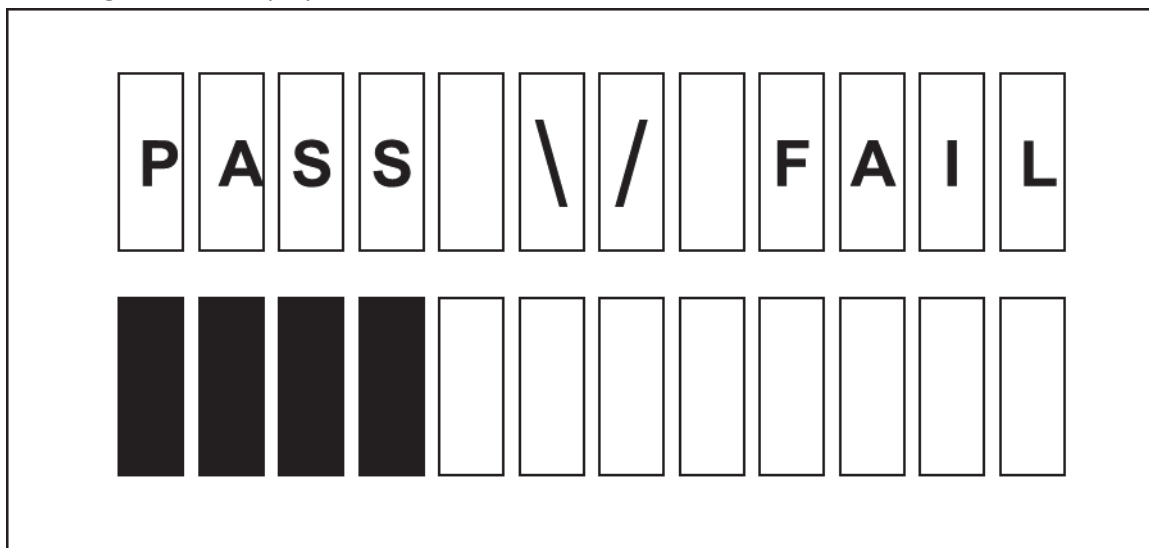
IMPORTANT! Use of a non-specified power supply will cause inaccurate or improper operation of the Tornado Alert™ system and will damage the system. Use of a non-specified power supply will void all warranties.

Power up Sequence

Turn on Tornado Alert™ using the slider power switch on the side of the unit. Tornado Alert™ begins performing a functional self-test. These tests will last approximately 10 seconds. During this time, several messages will be displayed on the LCD screen. You will also hear the audible siren and see the visual strobe alert.

Verifying Location

The last test verifies that Tornado Alert™ is not being affected by interference. During this test, the following screen is displayed:



In order to pass this test, no activity should be detected for 20 seconds. If excessive activity is detected, more bars will be darkened to the right, the LED light will turn red and the test will restart. Find a

location where the number of bars darkened remains to the left of the “√” indicator on the status LCD. Once the test completes successfully, the LCD will display “NO THREATS”. The NO THREATS indicates that Tornado Alert™ passed all internal tests and is now operational. If the “PASS √ FAIL” screen continues to be displayed, this indicates Tornado Alert™ has detected activity. This activity may be due to nearby storms. NOTE – Tornado Alert™ cannot be activated while active weather events are occurring. Another reason that can cause this condition is man-made interference described above in “Selecting a Location”. The user should determine if storms are nearby and if so, wait until the storms are gone and try activating again. If no storms are nearby, try a different location.

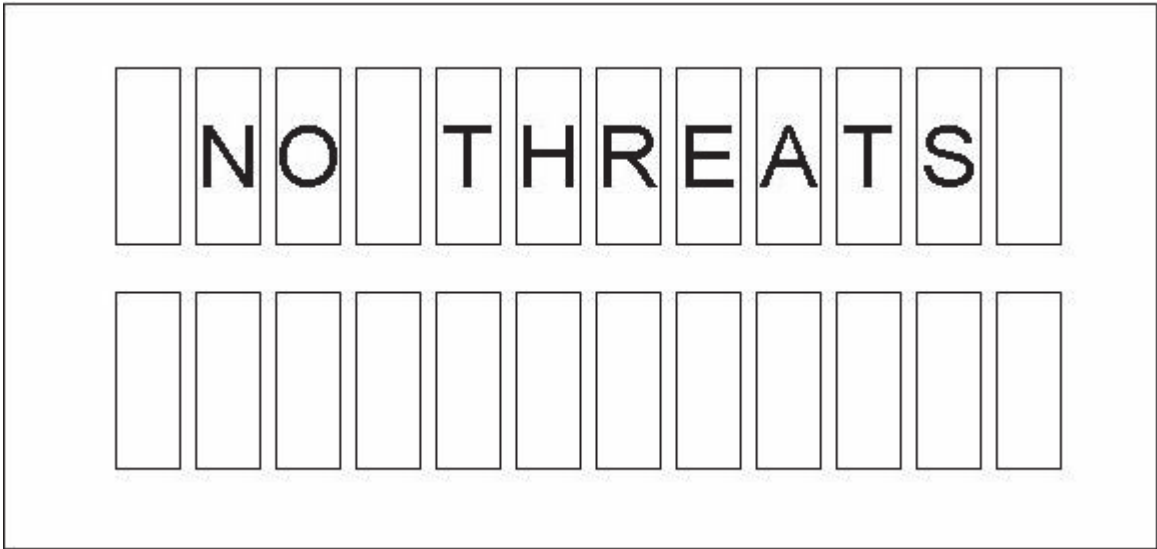
NOTE – Since Tornado Alert™ cannot be successful activated while storms are occurring in your area, the device should be left on continuously. Powering off the device when you leave your home or business is not recommended. If the device is moved, this procedure should be performed again in the new location on a clear day to insure no interference is present.

IMPORTANT! Tornado Alert™ cannot be successful activated while storms are occurring in your area. Activation during a storm will produce errors and inaccurate operation of the Tornado Alert™ system. If possible, check with other weather sources in your area to see if a storm is nearby before running this test. If they are nearby, wait for them to pass before running this test.

NOTE: The Tornado Alert™ system should be left on continuously. Powering off the device when you leave your home or business is not recommended.

Device Operation

The standard message displayed is shown below:



This message indicates that Tornado Alert™ is functioning normally and no severe weather conditions exist. If activity is detected, one of the following messages, ranked from least to most significant, will be displayed:

- NOISE
- LIGHTNING
- NOT SEVERE
- SEVERE STORM
- TORNADO RISK
- TORNADO

The first and least significant condition detected by Tornado Alert™ is the NOISE condition. This indicates that radio interference, probably of man-made origins, is affecting the operation of the device. If this message is displayed, attempt to locate the source (i.e. vacuum cleaner) and either remove the offending source of noise or relocate the device.

Activity of categories LIGHTNING or NOT SEVERE may not require immediate action, particular if the user is indoors. However, these events do indicate that more severe conditions may rapidly develop. The bottom line of the LCD display will show one or more darkened bars from left to right. These bars indicate the relative distance from the detected activity. The more bars darkened, the closer the activity is to your location. Tornado Alert™ will update the status of conditions once every 60 seconds.

CAUTION: IF AT ANY TIME YOU FEEL UNSAFE DUE TO THE WEATHER IN YOUR AREA IMMEDIATELY TAKE STEPS TO ENSURE YOUR SAFETY REGARDLESS OF THE WARNING PROVIDED BY THE TORNADO ALERT™ SYSTEM

The category of SEVERE STORM corresponds to the National Weather Service definition of a severe thunderstorm. These conditions include either large hail or high winds and can cause severe damage or can be potentially life threatening. THEREFORE, THE SEVERE STORM ALERT SHOULD BE TAKEN SERIOUSLY AND YOU SHOULD TAKE IMMEDIATE STEPS TO ENSURE YOUR SAFETY. In addition to the message, Tornado Alert™ will sound the audible alarm, activate the flashing strobe light and change the LED light to yellow. The bottom line of the LCD display will show one or more darkened bars from left to right. These bars indicate the relative distance from the detected activity. The more bars darkened, the closer the activity is to your location. Tornado Alert™ will update the status of conditions once every minute.

TORNADO RISK indicates formation of a Tornado is imminent and the user should be on the alert for imminent formation of a Tornado. The Tornado alarm is the most severe. This alert is given for conditions of extreme violent weather associated with a tornado. Like for severe storms, the audible alarm is sounded and the flashing strobe light is activated. THE LED LIGHT IS CHANGED TO RED. THE USER SHOULD TAKE IMMEDIATE ACTION TO ENSURE THEIR SAFETY. The bottom line of the LCD display

will show one or more darkened bars from left to right. These bars indicate the relative distance from the detected activity. The more bars darkened, the closer the activity is to your location. Tornado Alert™ will update the status of conditions once every minute.

Button Functions

Tornado Alert™ has two buttons on the front panel. These buttons control the light strobe and audible alarms of the unit. The buttons have the following actions:

- When no alarms are active, pressing only the left button toggles the light strobe alarm on or off. Pressing only the right button toggles the audible alarm on or off. After a button is pressed, the LCD will display the status (on or off) of both alarm types. For example, if you wish to disable the strobe light, press the left button once. If the display indicates that the strobe is on, press the button again to turn it off. Pressing and holding both buttons at the same time for 5 seconds will disable both the strobe light and siren. The disabling of the strobe light and siren only apply to alarms for SEVERE STORM. TORNADO alarms will always activate both strobe light and siren. To re-enable the alarms, simply press the left button to re-enable the strobe, press the right button to re-enable the siren.
- When an alert alarm is active (strobe light is on or siren is on), the user can reset (temporarily turn off) both alarms by pressing either button. This reset of the alarms is only temporary. New events will reactivate the alarms as required.
- Button functions are disabled during the “Noise” state.
- Press and hold the button until the desired action occurs. Do not “TAP” the buttons.

Battery

When A/C power is lost, Tornado Alert™ continues operation with the user supplied 9-volt battery. Using either Industrial Grade or Lithium batteries will provide sufficient power during extended periods of A/C power loss. Battery life will be reduced by detecting and responding to weather conditions. When running on battery power, the LCD will display a battery icon on the far left of the bottom row. The size of the icon will reflect the approximate remaining battery power available. When nearing the end of the batteries useful life, the unit will sound short beeps of the audible alarm every 5 seconds to notify the user of a low battery condition.

When operating on battery, ensure that the A/C power has not accidentally become unplugged so that fresh batteries are not drained unintentionally!

When operating from the battery, Tornado Alert™ will make minimum use of the LCD backlight. When battery power is critically low, Tornado Alert™ will display the message “Shut Down” on the LCD and stop monitoring. Once A/C power is restored or the battery is replaced Tornado Alert™ will power back up and starts the Power up Sequence again.

Early Alert Technologies recommends battery replacement every 6 months or after extended battery use. Always insert new, fully charged Industrial Grade or Lithium 9-volt batteries.

IMPORTANT! The Tornado Alert™ system contains no user serviceable parts and is not intended to be opened, except for battery installation. Opening the main case or attempting to service the unit will void all warranties.

Notices and Disclaimers

FCC Compliance

NOTE: This equipment has been tested and found to comply with the limit 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.

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

Specifications

Power Supply	120VAC 60 Hz 12VDC +-5% 200mA
Battery 9Volt (recommended)	Industrial Grade 560mAh or more Lithium 750mAh or more
Expected Battery Life	Industrial Grade – up to10 hours Lithium (750mAh) – up to 14 hours Lithium (1250mAh) – up to 21 hours
Status Indicator	Backlit 12 character LCD
Alarms	>90dB siren, Strobe, Multicolor LED
Ambient Operating Temperature Range	0°C to 38°C