

# *miniHomer*<sup>TM</sup>

## User's Guide



NAVIN *miniHomer* is the world's easiest to use personal GPS navigation device that helps you find your way back to previously marked locations. Never again worry about where you've parked your car at a shopping mall or stadium, finding way back to a hotel traveling in a foreign city, getting back to a camp site while hiking in the woods, or returning a favorite fishing spot...

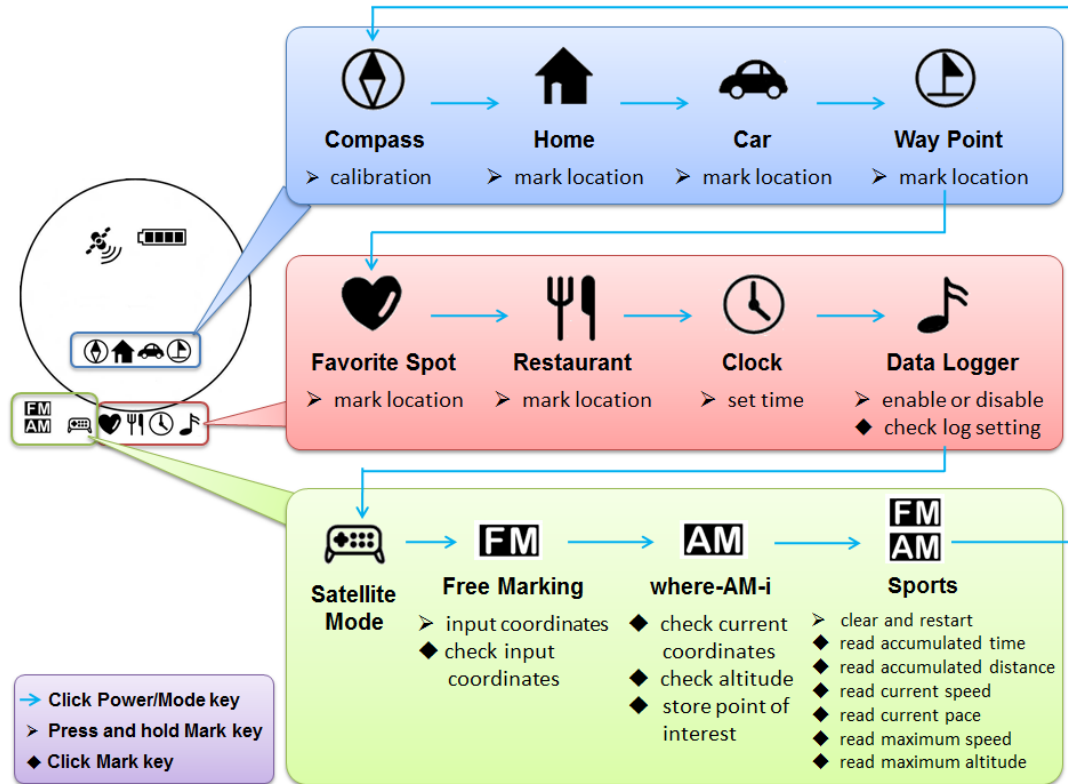
*miniHomer* is a keychain-sized reverse navigation device that is accurate, easy to use, and gives peace of mind for outdoor activities.

*Never getting lost again outdoors!  
Finding your way back with 100% confidence!*

## DISPLAY & KEY



# QUICK GUIDE



# BEFORE USE

## Checking Items

The *miniHomer* package contains following items:


- miniHomer* device
- User's guide
- USB cable for charging

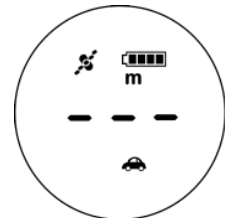
## Charging Battery


It takes about 3 hours to fully charge the internal battery. First connect the USB cable mini-USB connector to the USB port of the *miniHomer*. Then connect the other USB cable connector to USB port of a PC or laptop to provide charge power. While charging, the charging status indicator will light up. After the *miniHomer* is fully charged, the charging status indicator will turn dark. The USB cable can then be removed.

## Powering On

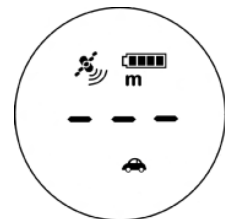
The *miniHomer* is to be used outdoors; it will not work inside buildings.

Press and hold Power/Mode key for 2~3 seconds. The backlight will turn on and full LCD screen will be displayed. Momentarily, direction arrow formed circle will blink twice, and then satellite icon  will start blinking, with distance showing blank. At this stage the *miniHomer* is trying to acquire satellite signal.




After the satellite signal is acquired and your current position has been determined, the *miniHomer* shows non-blinking satellite icon with arcs ; more arcs meaning better signal quality with more satellites used for an accurate position fix. The *miniHomer* is now ready to be used.

The time it takes to reach position fix from powering on, after several hours of unused period, may vary from 30 seconds to couple minutes, depending on the surrounding environment. Places with unobstructed sky view will result in faster position fix. If the *miniHomer* had been previously used within the 2 hour period before powering on, the time to reach position fix will be very short.



## Calibrating Digital Compass

The internal digital compass requires calibration for first time use, or when the *miniHomer* has been moved 100miles (160km) from the place of last calibration.

1. Lay the *miniHomer* on a flat surface with LCD facing up and no metal object nearby.
2. Click Power/Mode key to select the compass mode with compass icon  showing.
3. Press and hold Mark key for 2~3 seconds, the LCD will display a 20 second count down.
4. Within the 20 seconds, slowly rotate the *miniHomer* 360 degrees twice, either clockwise or counterclockwise.
5. After the countdown is finished, the LCD will display the direction triangle and heading number once again.



## Setting Distance Unit


The distance unit for the distance measured by the *miniHomer* can be changed between metric (meter/kilometer) and English (feet/mile).

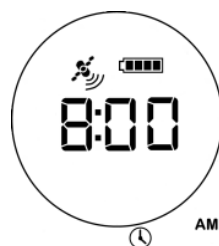
Press and hold both Mark and Power/Mode keys simultaneously for 2~3 seconds and the distance unit will toggle.



## Setting Clock

The *miniHomer* is able to generate satellite time with accurate minute reading. However, depending on your time zone, the hour reading may need to be adjusted.

1. Click Power/Mode key to select the clock mode with clock icon  showing.
2. Press and hold Mark key to advance the hour digit for adjustment, and release the key when correct hour is reached.

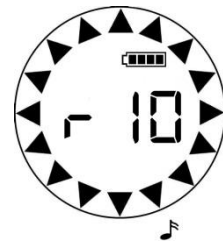
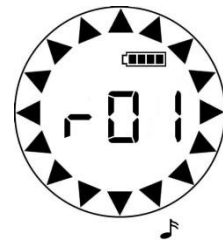


## Powering Off

Press and hold Power/Mode key for 2~3 seconds while the *miniHomer* is on.









## Setting Log Interval

1. Click Power/Mode key to select Log icon 🎵.
2. Click Mark key to check current Log setting.
3. Press and hold Mark key, wait until an adequate digit showing (off/1Hz/10Hz) then release Mark key and *miniHomer* will memorize your choice.




## USING *miniHOMER*

After powering on the *miniHomer*, you can select one of the four different operating modes by clicking the Power/Mode key and the corresponding icons will show up on the display one after another.


1. Homing mode  : Use the *miniHomer* to mark 5 locations of your choice and later get back to the locations easily. Five different icons (Home, Car, Waypoint, Favorite Spot, and Restaurant) are used to help identify the locations.
2. Compass mode  : Use the *miniHomer* as a compass.
3. Clock mode  : Use the *miniHomer* as a timepiece.
4. Satellite mode  : Use the *miniHomer* to check the satellites.
5. Free Marking mode  : Manually enter destination coordinates.
6. Where-AM-i Mode  : Use the *miniHomer* to check current location coordinates.
7. Sports mode  : Use the *miniHomer* to check speed, pace, traveled time, distance.
8. Projection mode  : Manually enter heading and distance to check the projection of current location coordinates.

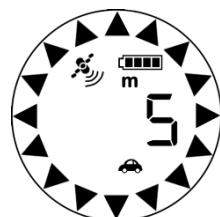
### Marking a Location

1. Click Power/Mode key to select one of the location icons (Home, Car, Way Point, Favorite Spot, Restaurant) for storing the current location.
2. Make sure satellite icon  is not blinking.
3. Press and hold Mark key, wait until the circle of direction arrows shows up and then release Mark key.
4. The current location coordinate is stored with the selected location icon.



### Getting Back to a Location

1. Click Power/Mode key to select one of the location icons to return to a previously stored location.
2. Make sure satellite icon  is not blinking.
3. The displayed number shows distance to the return point, and the direction arrow shows the direction to follow.
4. After reaching the destination, within a 5 meter (or 20 feet) radius, the circle of direction arrows will show up.



Note that the internal digital compass for showing direction

works best when the *miniHomer* is held horizontally.

## Using as a Compass

1. Click Power/Mode key to select compass icon📍.
2. An arrow will point to the direction of the magnetic north.
3. The displayed number indicates the clockwise angle from the magnetic north to the forward direction of the *miniHomer*.



Note that you can calibrate the compass in this mode.

## Using as a Clock

1. Click Power/Mode key to select clock icon🕒.
2. The current time will be displayed.



Note that you can set the local time in this mode.

## Checking Satellites (for the technically curious users)

1. Click Power/Mode key to select satellite mode icon📶.
2. Satellite number (such as P28) and the satellite signal strength (such as C36) of each tracked satellite will be displayed.
3. After your current position is determined, direction triangles will be shown. Each triangle represents a used satellite and its quadrant orientation. When the triangles are spread across the circle, GPS positioning result will be more accurate.

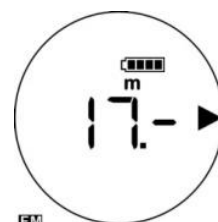
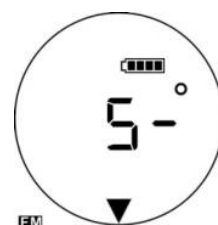
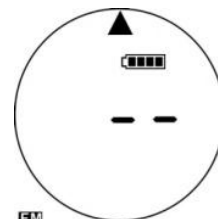


For those satellites used in determining your location, their number and signal strength will be shown with a colon, e.g. P:28 and C:36.




## Manual Input Of Coordinates (Free Marking)

1. Click Power/Mode key to select Free Marking icon **FM** to input longitude and latitude manually.
2. Press and hold Mark key, wait until the triangle pointing forward shows up, then release Mark key and miniHomer is now ready for entering the latitude. Clicking Mark key toggles between selection of northern hemisphere ▲ and southern hemisphere ▼. When the correct hemisphere shows, do nothing wait for 3 seconds and the hemisphere is selected.
3. Next the first digit of latitude starts blinking, you can click Mark key repeatedly to advance the digit for adjustment, when the correct digit shows wait for 3 seconds and the first digit of latitude is entered. Latitude in ddmm.mmmm format is entered one-by-one in sequence.
4. After latitude is entered, the longitude is to be entered using the same method. Clicking Mark key first toggles between selection of western hemisphere ◀ and eastern hemisphere ▶ Longitude in dddmm.mmmm format is entered in sequence. After the longitude is entered, circle of direction arrows shows, blinking twice, and the manually input coordinates is stored.
5. It then shows distance and direction to the manually input and stored location under the **FM** icon.

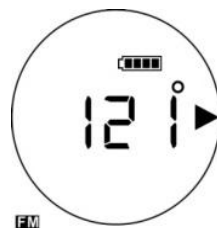
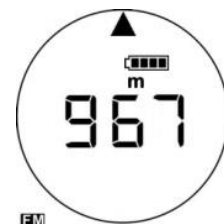


To make correction to the input coordinate, above steps need to be repeated.



## Checking Free Marking Coordinates

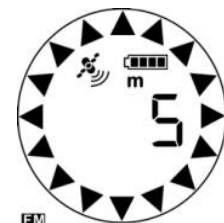
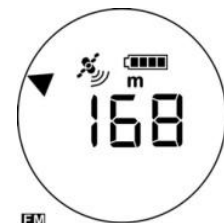
1. Click Power/Mode key to select Free Marking icon .
2. The manually entered latitude (ddmm.mmmm) and longitude (dddmm.mmmm) coordinate can be checked by clicking Mark key. You will see latitude degrees shown first, then latitude minutes and first decimal digits shown, then the lower three decimal digits shown lastly; with ▲ denoting northern hemisphere and ▼ denoting southern hemisphere.
3. Next longitude degrees is shown first, then longitude minutes and first decimal digits shown, then the lower three decimal digits shown lastly; with ◀ denoting western hemisphere and ▶ denoting eastern hemisphere.

Note that the unit of latitude and longitude coordinates used in miniHomer is degrees and decimal minutes. The latitude has 8 digits and the longitude has 9 digits, for example, the latitude may be N24°47.0967' and the longitude may be E121°40.5236'.





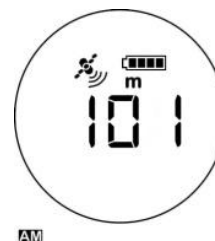
## Go to a Free Marked Location

1. Click Power/Mode key to select Free Marking icon .
2. Make sure satellite icon  is not blinking and showing arcs.
3. The displayed number shows distance to the stored location, and the direction arrow shows the direction to follow.
4. After reaching the destination, within a 5 meter (or 20 feet) radius, the circle of direction arrows will show up.





## Checking Current Location Coordinates (where-AM-i)

1. Click Power/Mode key to select where-AM-i icon .
2. Make sure satellite icon  is not blinking.
3. The current latitude and longitude coordinates will be displayed in the same manner as described in Checking Free Marking Coordinates section.
4. Clicking Mark key toggles between displays of latitude/longitude coordinates and mean sea level altitude.
5. The maximum displayed altitude number is 19.99, with unit in kilometer or mile.



*Note: GPS altitude is much less accurate than horizontal position accuracy. GPS receivers with more accurate altitude reading usually employ barometric pressure sensor for altitude measurement. miniHomer does not have such sensor inside and shows GPS derived altitude directly; thus altitude reading should be used as coarse estimate only.*

## Storing Point of Interest


1. Click Power/Mode key to select  icon.
2. Make sure satellite icon  is not blinking.
3. Press and hold Mark key, wait until the circle of direction arrows shows up and then release Mark key.
4. The current location coordinate is stored as a Point of Interest (POI), and the POI number is displayed.



Note that you can store many POI until the memory is full.

## SPORTS MODE


The Sports mode enables one to use miniHomer to track accumulated time, accumulated distance, and current speed.

The sports mode is entered by clicking Power/Mode key to select Sports mode icon . Upon entering Sports mode, it shows accumulated time by default. Short clicking Mark key selects accumulated distance, current speed, current pace and back to accumulated time in sequence.

The accumulated time and accumulated distance can be cleared and restarted by pressing and holding Mark key, wait until the circle of direction arrows shows up and then release Mark key.


Upon powering on miniHomer, the accumulated time only advance count after it has GPS position fix, i.e. having satellite icon not blinking with arcs. Afterwards the count will continue even if GPS position fix is lost. The accumulated distance will only accumulate when there is GPS position fix.

## Reading Accumulated Time

1. Upon selecting Sports icon  the accumulated time is displayed.
2. If the accumulated time is less than 19 minutes and 59 seconds, it is displayed in <minute/second> format.
3. If the accumulated time is more than 19 minutes and 59 seconds, <hour/minute> is displayed first, then <second> is displayed.
4. If the accumulated time is more than 19 hours 59 minutes and 59 seconds, it will only show 19:59:59.
5. You can restart the accumulated time by pressing and holding Mark key, wait until the circle of direction arrows shows up and then release Mark key.




## Reading Accumulated Distance

1. Click Power/Mode key to select Sports icon .
2. Click Mark key until **m** or **km** shows without flashing under metric unit mode, or **ft** or **mi** shows without flashing under English unit mode; the accumulated distance is displayed.
3. The accumulated distance can be cleared and restarted by pressing and holding Mark key, wait until the circle of direction arrows shows up and then release Mark key.




*Note: The accumulated distance is formed by summing distance between current measured position and the position measured 1 second ago. As each position has inherent measurement error, the errors add up in the accumulated distance. Thus the accumulated distance should be used as a rough estimate only.*

## Reading Current Speed

4. Click Power/Mode key to select Sports icon .
5. Click Mark key until **km** shows and flashing under metric unit mode, or **mi** shows and flashing under English unit mode. The current speed is displayed in unit of km/hr or mi/hr.





## Reading Current Pace

1. Click Power/Mode key to select Sports icon .
2. Click Mark key until no unit shows and the current pace is displayed.
3. Unit of pace is minutes/Km or minutes/mile depending on whether metric unit or English unit is currently used.
4. If the pace is more than 19 minutes 59 seconds, it will only show 19:59.





## Reading Maximum Speed

6. Click Power/Mode key to select Sports icon .
7. Click Mark key until  shows and **km** flashing under metric unit mode, or **mi** flashing under English unit mode. The maximum speed is displayed in unit of km/hr or mi/hr.
8. The maximum speed can be cleared by pressing and holding Mark key, wait until the circle of direction arrows shows up and then release Mark key; maximum altitude is cleared altogether.



## Reading Maximum Altitude

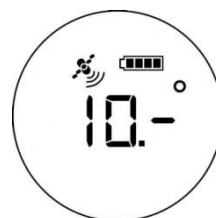
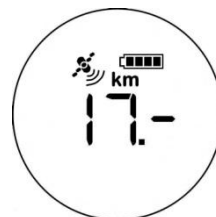
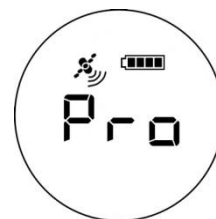
1. Click Power/Mode key to select Sports icon .
2. Click Mark key until  shows and **m** displayed under metric unit mode, or **ft** displayed under English unit mode.
3. The maximum displayed altitude number is 19.99, with unit in kilometer or mile.
4. The maximum altitude can be cleared by pressing and holding Mark key, wait until the circle of direction arrows shows up and then release Mark key; maximum speed is cleared altogether.



*Note: GPS altitude is much less accurate than horizontal position accuracy. GPS receivers with more accurate altitude reading usually employ barometric pressure sensor for altitude measurement. miniHomer does not have such sensor inside and shows GPS derived altitude directly; thus altitude reading should be used as coarse estimate only.*

## Manual Input for Projection

1. Click Power/Mode key to select Projection mode  $P_{\square}$  to check the projection of current location coordinates.
2. Press and hold Mark key, wait until the first digit of distance blinking then release Mark key and miniHomer is now ready for entering the distance between current location and your target.
3. You can click Mark key repeatedly to advance the digit for adjustment, when the correct digit shows wait for 3 seconds and the first digit of distance is entered. Distance in kkk.kkk format is entered one-by-one in sequence.
4. After distance is entered, the heading in ddd.d° format is to be entered using the same method. After the heading is entered, circle of direction arrows shows, blinking twice, and the projection coordinates are stored.
5. It then shows distance and direction to the projection coordinates and stored location under the  $P_{\square}$  mode.



To make correction to the input digits, above steps need to be repeated.

Note that the unit of distance and heading used in miniHomer are km and degrees respectively. The distance has 6 digits and the heading has 4 digits, for example, the distance may be 117.888km and the heading may be 110.1°.

*Note: This function is not default and requires activation from ntrip.*

# POWER SAVING FEATURES

## Smart Backlighting

Clicking either the Power/Mode key or the Mark key will turn on a bright backlight for 15 seconds. Afterwards, the backlight will be turned off automatically. If the current time is between 5PM to 6AM, a dim backlight will be turned on, allowing reading of the LCD display in the dark while keeping the power consumption low.

Clicking Mark key while not in the clock mode will toggle the PM indicator on and off. When the PM indicator is on, a bright backlight will be kept constantly on. This is useful whenever a bright backlight is needed, at the expense of higher power consumption.

## Auto Shutdown

The *miniHomer* will automatically power itself off under either one of the following conditions:

1. No moving of the device for 2 minutes.
2. No satellite signal acquired for 2 minutes, and no key pressed.
3. No position fix for 5 minutes and no key pressed.

When charging, the auto shutdown function will be disabled.

## BATTERY WARNING

If the following guidelines are not followed, the internal rechargeable battery may be damaged and may present risk of leak, fire, chemical burn, or injury.

- Do not operate the device outside temperature range of -4°F ~ 140°F (-20°C ~ 60°C) for discharging, and 32°F ~ 113°F (0°C ~ 45°C) for charging.
- Do not store the device outside temperature range of -4°F ~ 113°F (-20°C ~ 45°C) for an extended period of time..
- Do not remove the battery.

## CHARGING REQUIREMENTS

Use only the following power sources to charge the device:

- Standard desk-top or laptop computer USB port
- Car USB charger adapter: Input 12V, output 5.0V
- Wall USB charger adapter: Input 110/220V, output 5.0V



## FAQ

**Q1:** Why can't my *miniHomer* get a position fix?

**A1:** Make sure the *miniHomer* is operated outdoors with the LCD display facing upward and there is a good sky view with less obstruction.

**Q2:** Why does the time to determine my location vary?

**A2:** In an open sky environment, it will be very fast to get a position fix if the *miniHomer* has recently been used (within 2 hours); otherwise it will take about 30 to 40 seconds. Under tree foliage or beside tall buildings where satellite signal is attenuated, it may take up to several minutes before the location can be determined.

**Q3:** Why can't my *miniHomer* accurately point to the north in the compass mode?

**A3:** Make sure the *miniHomer* has been calibrated and there is no large metal object in the vicinity. The digital compass inside a *miniHomer* includes a magnetic sensor, whose accuracy will be affected by nearby metallic objects.

**Q4:** Why doesn't the direction arrow of my *miniHomer* work properly when used inside a slow moving car?

**A4:** At speed below 10km/hr, the *miniHomer* uses the internal digital compass to calculate direction to the return point; if you are inside a car, the metallic structure of the car will affect the accuracy of the digital compass so the direction may be wrong. When the speed is over 10km/hr, the *miniHomer* will automatically switch to GPS to calculate direction; as long as you hold the *miniHomer* in normal forward direction, the direction triangle will correctly point to the return point.

**Q5:** What do those arcs of the satellite icon represent?

**A5:** The arcs of the satellite icon indicate the quality of position fix. More arcs mean more satellite signals and better position accuracy. In a weak signal environment, you can try to wait a while longer to see if more arcs will show up before marking the location so the accuracy of the marking can be increased

**Q6:** Will my *miniHomer* remember the stored locations after powering off?

**A6:** You can turn off your *miniHomer* to save power and all the settings will be saved. Next time when it's turned on, you will be in the last operating mode with all marked locations restored. The memory won't be lost even if the battery is fully drained.

## ONE YEAR LIMITED WARRANTY

The *miniHomer* product is warranted to be free of defects in materials and workmanship for one year after the date of purchase. In the event of a defect under this warranty, we will, at our option, repair or replace the product, provided that the returned product is postage prepaid. This warranty does not cover damages caused by misuse, improper handling, installation, or maintenance provided by someone other than a NAVIN authorized service center.

To obtain this limited warranty service, obtain a Return Materials Authorization (RMA) number prior to shipping by submitting a repair request through NAVIN's web site at [www.navin.com.tw](http://www.navin.com.tw). Pack the product securely in a shipping container with the RMA number clearly written on the outside of the package. Send the product shipping-charge-prepaid to the authorized NAVIN service center address provided with the RMA number. Any return made under this warranty must be accompanied by the items listed below:

1. A check/money order in the amount of \$20 to cover the cost of shipping and handling
2. Name and address for product return
3. An explanation of the defect
4. Receipt with the date of purchase or a dated bill of sale
5. Product should be well packed in a sturdy outside shipping carton, to prevent damage in transit, with return postage prepaid to the address below:

NAVIN Corporation (Hsinchu Branch)  
Attn: Repair Service  
3F, No.26, Minsiang Street, Hsinchu City, Taiwan

If the sale receipt is not provided, is illegible, or incomplete, or if the product serial number is altered or removed, NAVIN reserves the right to charge for service. NAVIN is not responsible for any loss or damage to the product while it is in transit. The replacement or repaired product is warranted for 30 days from the date of the return shipment, or for the warranty day's balance from the original date of purchase, whichever is longer. This limited warranty does not apply to damages caused by misuse, abuse, negligence, improper handling, accident, alteration or repair not authorized by NAVIN.

Your exclusive remedy under this written limited warranty shall be limited to the repair or replacement, at NAVIN's option, of any defective part covered by this limited warranty. In no event shall NAVIN be liable for any incidental, special, indirect or consequential damages, whether resulting from the use, misuse, or inability to use this product, or from defects in the product. In no event shall NAVIN's responsibility exceed replacement of the product.

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The product is not intended for use in medical, life-support devices, or applications involving potential risk of death, personal injury, or severe property damage in case of failure of the product.

**miniHomer™**

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