ParaPod ©

Paranormal Investigation Pod

Part of the ParaPod© family of advanced paranormal investigation tools

About The ParaPod© Paranormal investigation Pod

The ParaPod© Paranormal Investigation Pod is an advanced, scientifically designed tool to aid the paranormal investigator with the collection of data from sites where paranormal activity may potentially occur.

Unlike many devices that are little more than flashy, fancy toys, the ParaPod© Paranormal Investigation Pod is a serious scientific tool designed to gather and present data.

For best results, please fully read this instruction manual before using the Pod.

The primary functions of the ParaPod Paranormal Investigation Pod are to record movement (both of physical objects and in air currents), and temperature. For example, the ParaPod Paranormal Investigation Pod is able to detect air currents from someone walking by, vibrations from footsteps, the opening or closing of a door, or someone (corporeal or otherwise) rocking in a rocking chair or on a rocking horse.

Movement in air currents and of objects, and temperature changes ("cold spots"), have both been associated with paranormal activity. By recording movement and temperature changes where they should not normally occur, the researcher is able to gather time based data that may indicate the presence of supernatural phenomena.

The Pod also has a touch sensor on the control box. The sensor is located below the LED and will log whenever it is touched.

Some of the features of the ParaPod© Paranormal Investigation Pod include:

- Data recording for up to 30 days.
- Highly sensitive motion sensor.
- High sampling frequency (10 samples/second).
- Touch sensor on the control box.
- Temperature, movement, and touch recording.
- Data output to SD card as both CSV files and HTML graphs.
- May be powered by internal AA batteries or an external USB power supply.
- "Set and forget" operation allows the researcher to leave the site.
- Flexible placement of the sensor module.
- Small and easily portable, only 12 cm * 10 cm * 5.5 cm.

Operation

The operation of the ParaPod$^©$ Paranormal Investigation Pod is summarized as follows. See the following pages for more detail.

1) The researcher sets up the Pod at the site and places the sensor in a suitable location.
2) The researcher powers on the Pod, checks the date and time (and corrects if necessary), enters the duration to record data for, and starts the data recording sequence. The researcher may now leave the investigation site.
3) The ParaPod$^©$ Paranormal Investigation Pod now begins recording data. The data is comprised of readings for movement, temperature, and touches. During data recording, the display is normally switched off, but this is configurable.
4) To ensure no motion or temperature changes are missed, readings are taken about ten times every second for a period of about one minute. At the end of this cycle, the maximum value for motion during the period is logged to a CSV file on the SD card. The minimum, maximum, and change in temperature are also logged, along with the number of touches on the control box. Any sensor data errors are also logged. All CSV log entries include the date and time.
5) The data is scaled and recorded to a graph in a HTML file. The file contains one graph for each four hour period; the graphs show the maximum movement and the temperature. Numerical values for touches and sensor errors are given below each graph. These graphs are intended to assist the researcher in locating the most interesting values in the CSV file and may be viewed using any modern web browser. More accurate graphs may be generated from the CSV file using spreadsheet software such as Excel or the free LibreOffice Calc.
6) The values are reset at the end of each minute, and the one minute data collection cycle begins again.
7) At the end of the run time set by the researcher, data collection stops, pending data is written, and the CSV and HTML files are closed. The display activates to inform the researcher that data collection is complete.
8) During the data collection process, the researcher may wish to end the run early. This may be done without data loss by pressing * on the keypad. This will write any pending data and finish the run. *WARNING: Switching the power off before the display indicates data collection is finished will result in data loss.*

NOTE: The researcher should note that the ParaPod$^©$ Paranormal Investigation Pod will detect <u>any</u> movement, not just movement attributable to paranormal activity. It is the responsibility of the researcher to investigate any detected movement to determine its cause.

# Getting To Know The ParaPod© Paranormal Investigation Pod

Please refer to the following diagrams of the ParaPod© Paranormal Investigation Pod:
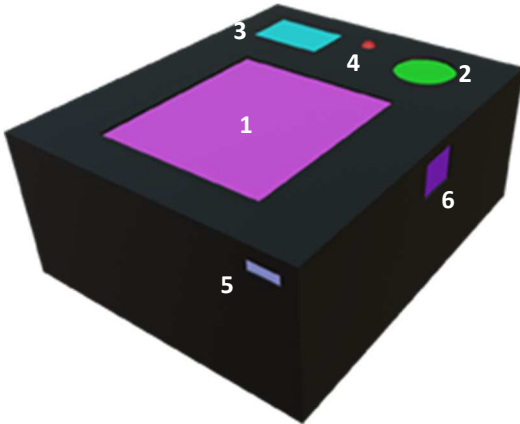
1) Numeric Keypad
2) Power Switch:
   I = External Power
   II = Internal Battery
3) OLED Display
4) Indicator LED &
   Touch Sensor
5) External Power Port
6) Sensor Port
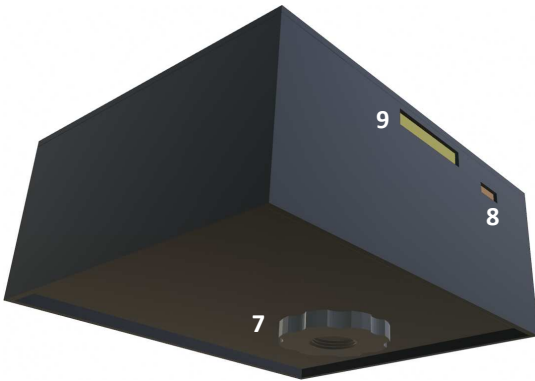
7) Access Panel For
   Batteries
8) Programming Port—For
   Factory Use Only
9) SD Card Slot
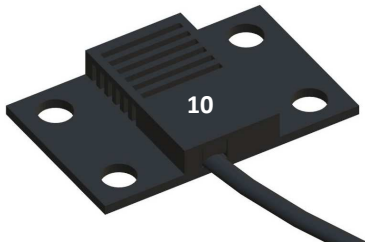
10) Sensor Module

[1] **Numeric keypad:** This allows the researcher to enter data such as the date and time, the duration, and the countdown delay. It also allows the researcher to end data collection and properly close the data files; press * while the Pod is running to do this.

[2] **Power switch:** This switch has three positions: External Power (I), Off (center), and Battery Power(II). To avoid data loss, do not power off the Pod during data collection.

[3] **Micro OLED display:** This shows information and diagnostics during the boot and setup process. Once the Pod starts collecting data, this display will switch off (if configured to do so) until the specified data collection period is complete.

[4] **Indicator LED:** This LED will be on during the boot and setup process, unless an error is encountered. If an error is encountered, it will blink. See the Troubleshooting section. When the pod is running, the LED will be off in dark mode, or will blink as readings are taken in visible mode. *NOTE: When running in Dark Mode, touching the Pod below the LED will briefly activate the display. These touches will be recorded.*

[5] **External Power Port:** The Pod may be powered by plugging a 5 volt USB power cable into this port. An adapter for this is included, but a portable USB battery pack may be used instead. *WARNING: Do not use a low quality wall powered USB plug. Many of these do not provide "clean" power and will interfere with the operation of the Pod, or damage it.* If you misplace the AC to USB power adapter included with the Pod, the adapter that was included with your phone or tablet will likely work.

[6] **Sensor module jack:** Plug the sensor module in here. The sensor module should be plugged in before powering on the Pod, or an error will be generated. *WARNING: Do not plug any device other than the sensor into the sensor port. Doing so will damage the Pod.*

[7] **Access to batteries:** This panel may be removed for access to the internal batteries. *NOTE: Inserting the batteries is easier if you insert the middle battery last.*

[8] **Programming Port:** The programming port is for factory use only, and is disabled before shipping. *WARNING: Any attempt at access the programming port may damage the Pod.*

[9] **SD Card Slot:** SD card must be formatted using FAT32 and inserted face down.

[10] **Sensor module:** The sensor module houses the main sensor. It may be suspended in air to measure air movement, or it may be placed on or attached to a physical object to track object movement. Do not cover the air holes when placing the sensor, they must remain uncovered to allow for fast and accurate temperature readings.

Placing And Using The ParaPod© Paranormal Investigation Pod

How the ParaPod© Paranormal Investigation Pod is set up depends on the site being investigated and the type of motion expected during the investigation.

If air currents caused by passing entities are expected, then the sensor module should be suspended from some object at the site.

If objects are expected to exhibit motion, then the sensor module may be placed on or attached to such objects. The sensor module may be placed on any object that is potentially associated with paranormal activity, such as a bed, rocking chair, table, desk, etc.

Duct tape (or similar) may be used to secure the sensor module to a door, window, toy, wall, or other object that it is suspected may move due to paranormal entities.

WARNING: Do not use tape on the raised part of the sensor module. Instead use the flat part with holes on either side. Take care to leave the air holes uncovered when placing the sensor module to allow the sensor to detect rapidly changing temperatures. The four holes may be used to suspend the sensor, or to secure it to an object.

Carefully select a location for the Pod and sensor module. When used at an inhabited location, any normal activity generated by people, pets, or appliances will generate motion that will be recorded by the Pod. Try to select a location away from normal activity, such as an attic, cellar, or room not in use. Of course, the Pod will need to be in a location where it is suspected paranormal activity may occur.

When investigating a deserted or uninhabited site, factors such as natural air currents, rodents, earth tremors, and other natural occurrences will all be recorded.

It is strongly recommended that before using the ParaPod© Paranormal Investigation Pod for the first investigation, it be used and tested locally. This will allow the researcher to subject the Pod's sensor to different types of motion and examine the resulting data.

Some suggested tests include:
* Taping the Pod to a door and slowly opening and closing it.
* Placing the sensor on a bed and then lying down next to it.
* Resting the sensor on a rocking chair or rocking horse, and then rocking the object.
* Measuring air movement caused by walking past the suspended sensor.
* Measuring vibration of a wall by attaching the sensor to it and then knocking on the wall.
* Attaching the sensor to a child's toy and then pulling the toy across the

floor using a string or thread.
- Securing the sensor on a perfectly stationary object such as a concrete floor and leaving it alone for a while.

The last suggested test above is to familiarize the researcher with the data that results when no activity is detected. There will always be some tiny amount of motion detected, due to the high sensitivity of the sensor and natural vibration in the earth. This tiny amount of motion (and temperature change) is expected and will in no way interfere with or mask data the researcher is searching for.

If planning to use battery power at investigation sites, it is also important to test battery life using the same type of batteries that will be used on-site. Run the Pod continuously using batteries until the LED stops pulsating, then examine the starting and ending date and time in the CSV file found on the SD card to determine how long the batteries lasted. Be sure to set the run time during an investigation to less than the expected battery life.
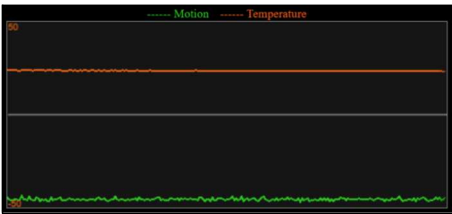
Data graph from sensor attached to a floor with no activity nearby.
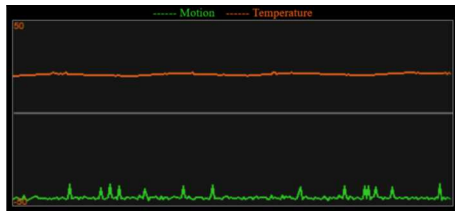
Data graph from sensor attached to a second story floor with normal activity nearby.
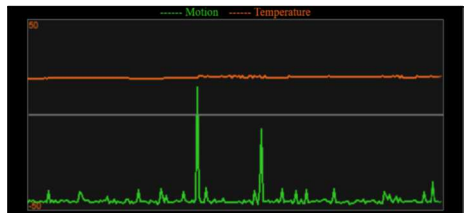
Data graph for sensor attached to an object showing moderate spikes caused by motion.

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Operating The ParaPod© Paranormal Investigation Pod

Once the researcher has specific location for the ParaPod© Paranormal Investigation Pod, setting it up and using it is a straightforward process.

- Place the Pod near the location to be monitored.
- Place the sensor on (or attach the sensor to) the object to be monitored, or suspend it from the sensor stand or other suitable object.
- If monitoring a large fixed object (such as a door, window, or wall), tape the sensor to the object by using good quality tape, or attach the sensor to the object using a screw or tack through one or more of the holes in the base of the sensor.
- If monitoring a stationary object such as a bed or chair, rest the sensor on the object.
- If monitoring a small movable object such as a child's toy, book, or lamp, tape or secure the sensor to the object.
- If monitoring air currents, suspend the sensor from an object using light string or thread through one of the holes on the sides. *HINT: In very still areas with no natural air currents, air motion may be amplified by attaching a balloon or sheet of paper to the sensor. The low mass and relatively large surface area of these will serve to amplify the effect of air movement.*
- Plug the power cord into a USB power pack and the adapter into a wall socket, or, ensure that the AA batteries are fresh. If using AA batteries, good quality alkaline batteries should last about 48 hours at room temperature (cooler temperatures may reduce battery life), but this should be tested in advance.
- Make sure the SD card is properly inserted face down in the SD slot. The SD card must be formatted with the FAT32 file system. *NOTE: Not all SD cards will be compatible with the Pod; it is recommended that the card included with the Pod be used.*
- Plug the sensor module into the sensor module jack.
- Turn the Pod on: select either external (I) or battery (II) power depending upon the power source that will be used.
- The ParaPod© Disturbance Detection Pod will now boot. During startup, it will check for firmware updates, and test the SD card and sensor. If either test fails, the display will show an error message, and the LED will blink. In this case, connect the indicated device within one minute, or turn off the pod.
- Next, check the date and time on the display. If they are correct, press * on the keypad, otherwise press # to change the date and time. *NOTE: When entering the date and time, the number of digits indicated must be entered, and 24 hour time must be used. For example, to enter July as the month enter 07 (not just 7), and to enter 8 pm, enter 20.* Press * once the date and time are correct.
- Next enter the number of days, hours, and minutes to record data for. Days must be between 00 and 29, hours between 00 and 23, and minutes between 00 and 59. The minimum allowed time is 00 days, 00 hours, and

15 minutes, but a duration this short will not be very useful. The maximum duration is 29 days, 23 hours, and 59 minutes. If you enter times greater than those allowed, they will be reduced to the maximum allowable values. *HINT: To quickly enter the maximum recording time, enter 99 99 99. The Pod will automatically reduce this to 29 23 59.*

- Press * once the recording duration is correct, or press # to change it and enter a new duration.
- Now enter a countdown delay, between 00 and 60 minutes. The countdown delay is intended to allow the researcher to move away from the Pod and to give the sensor time to settle (especially when monitoring air movement) before recording starts. Entering 00 will disable the delay.
- Press * if the delay is correct, or press # to change it.
- Finally, select DARK mode, VISIBLE mode, or RESET. Reset will reboot the Pod so you may start over. DARK will begin data collection with the display turned off (recommended), VISIBLE will begin data collection with the display on (recommended only for testing purposes).
- The display will show the time remaining in the countdown in seconds (if the countdown was set).
- At the end of the countdown, data recording will begin. The display will switch off if in DARK mode.
- In DARK mode, touching the Pod just below the LED will briefly activate the display. This will allow you to confirm that the Pod is still operating and that the batteries have not run down (if on battery power). Take care not to disturb the sensor when you do this, and record the date and time so you can eliminate paranormal activity as the cause of any motion being recorded by the researcher being near the Pod.
- At the end of the pre-set data recording time, the display will activate and show the date and time that data recording was finished, and instruct the researcher to power off the Pod.
- When the Pod is running, the researcher may leave the site and return at the end of the pre-set data recording time. If this time is relatively short and the researcher remains at the site, the researcher should be careful not to cause motion, vibrations, or air currents that may be detected by the Pod.
- If the Pod has been set to record data for a long period of time but the researcher wants to stop recording and recover the Pod early, **DO NOT switch the power off.** First, press the * key on the keypad; this will instruct the Pod to write any pending data to the SD card and properly close the files. Failure to do this will result in data loss and corrupt files. The display will indicate when it is safe to power off the Pod.
- Once off, the Pod may be recovered and removed from the site. The SD card may be removed from the Pod and inserted into a card reader attached to a computer, and the data files copied to that computer for analysis.

Examining The Data

The data file names on the SD card will be in the form:
- "ParaPod-YYYYMMDD-HHMM.csv" for the CSV file, and,
- "ParaPod-YYYYMMDD-HHMM.html" for the HTML graph file.

YYYHHMM indicates the date when recording was started, and HHMM indicates the time (in 24 hour format).

The CSV file may be imported into any modern spreadsheet software for analysis. The researcher may apply various formulae to the data sets, create detailed charts, etc. The analysis of data using spreadsheet or other software is beyond the scope of this instruction manual; the researcher should consult their software manual or help file for assistance.

The data columns in the CSV file are:
1) **Date:** The date the data was recorded.
2) **Time:** The time the data was recorded. The time is a one minute time period for which approximately 600 data samples were taken (ten every second) for each type of data.
3) **Motion:** The maximum motion detected by the sensor in the time period.
4) **Min Temp:** The minimum temperature detected in the time period.
5) **Max Temp:** The maximum temperature detected in the time period.
6) **Temp Change:** The maximum change in temperature detected in the time period.
7) **Touches:** The number of samples where the touch sensor recorded a touch during the time period.
8) **Sensor Errors:** A value other than 0 indicates the number of data errors with the sensor during the time period. This is included to account for the possibility of paranormal interference with the sensor module.
9) **Graph #:** This is the number of the graph in the corresponding HTML file, and is included to make it easier to locate sections of the CSV file that the HTML graphs indicate may be interesting.

The HTML file contains one graph for each four hour monitoring period. If the researcher monitors a site for 24 hours, there will be six graphs in the HTML file. The values on these graphs are scaled and truncated, and are intended to help the researcher determine which parts of the CSV file should be subject to further analysis. More accurate graphs may be produced from the raw data contained in the CSV files.

Data Recovery

If the batteries in the Pod fail during recording, or if external power fails or becomes disconnected, you may be able to recover most of the data in the files.

The CSV file should contain most of the data up to the time of power failure, and may be imported into a spreadsheet as usual.

To recover the data in the HTML file, open it in a plain text editor such as Notepad (DO NOT open it in a word processor such as Word). Add the following to the end of the file:

        </center></body></html>

Save the file and then open in a web browser as usual. It should contain much of the data, but data present at the end of the CSV file will be missing.

Sample CSV Files

Date	Time	Motion	Min Temp	Max Temp	Temp Chan	Touches	Sensor Err	Graph #
2023-11-05	21:31	9	20.2	20.5	0.29	0	0	7
2023-11-05	21:32	9	20.1	20.4	0.29	0	0	7
2023-11-05	21:33	8	20.1	20.4	0.29	0	0	7
2023-11-05	21:34	8	20.1	20.4	0.29	0	0	7
2023-11-05	21:35	17	20.1	20.4	0.29	21	0	7
2023-11-05	21:36	9	20.1	20.4	0.29	0	0	7
2023-11-05	21:37	7	20.1	20.4	0.29	0	0	7
2023-11-05	21:38	8	20	20.3	0.29	0	0	7
2023-11-05	21:39	9	20	20.3	0.29	0	0	7
2023-11-05	21:40	9	20	20.3	0.29	0	0	7
2023-11-05	21:42	9	20	20.3	0.29	0	0	7
2023-11-05	21:43	8	20	20.3	0.29	0	0	7
2023-11-05	21:44	11	20	20.2	0.2	0	0	7

This sample CSV file shows that there was a small amount of movement at 21:35, and that the control box was touched at the same time.

Date	Time	Motion	Min Temp	Max Temp	Temp Chan	Touches	Sensor Err	Graph #
2023-11-05	20:19	7	23.1	23.5	0.39	0	0	7
2023-11-05	20:20	102	22.9	23.7	0.8	0	0	7
2023-11-05	20:21	8	22.8	23.7	0.9	0	0	7
2023-11-05	20:22	8	22.6	23.7	1.1	0	0	7
2023-11-05	20:23	9	22.5	22.8	0.29	0	0	7

This sample CSV file shows that there was a large amount of movement at 20:20, followed by significant temperature changes..

Troubleshooting

LED blinks and display shows a sensor error:
- Check that the sensor is plugged in firmly, and that the cable between the Pod and the sensor module is not damaged.

LED blinks and display shows a SD card error:
- Check that the SD card is properly inserted, and is not write protected. Also verify that the card is formatted with the FAT32 file system.

Pod does not keep correct time when powered off:
- Install a fresh CR2032 button battery in the battery compartment.

Pod does not power on:
- If using batteries, ensure that the batteries are fresh and inserted correctly.
- If using USB power, check that the plug is inserted correctly in the pod and in the power supply.

AA batteries do not last very long:
- Use only fresh alkaline batteries. Do not use carbon batteries.
- Note that cold temperatures will reduce battery life. Consider using an external power supply.

Keypad is erratic or touch sensor does not activate display:
- This can happen if a poor quality power adapter is used. Please try a different power adapter or use batteries.

Abnormal data is recorded when testing the ParaPod before an investigation:
- This can happen if you are using a USB extension cable to move the sensor farther from the base. Use of an extension cable for the sensor is not recommended, but if you must use one, ensure that it is good quality and no more than 3 feet/1 meter in length.

For other issues or for general inquiries, please contact
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