

What do I need to know about Flash Drives for the PEM2 Loggers?

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1. Can I use any flash drive with a PEM2 data logger?

There are some specific requirements for the type of flash drive used to download data from the PEM2 loggers.

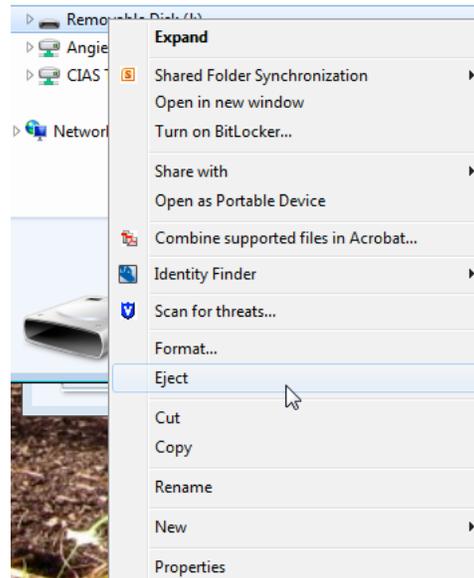
- a. USB 2.0
- b. Data is written as text file (accessible using a plain text editor such as NotePad. **DO NOT USE** WordPad, MS Word or Excel, WordPerfect, or any type of editor that features formatting, it will make the data file unreadable!)
- c. Storage size: 512 MB minimum, 2 GB recommended
- d. You may use a USB extension cable between the PEM2 and the flash drive, but you cannot use a USB Hub (device that allows multiple USB connections)
- e. Using IPI's PEM2 USB Flash Drives is not required, but as PEM2 Loggers have been extensively tested with them it is highly recommended. If you are interested in purchasing a PEM2 USB Flash Drive, please visit [our online store](#).

2. What do I need to know about using Flash Drives?

Here is some basic information you might need when using flash drives, or when running into some common problems with using the flash drives with the PEM2 loggers.

- a. Some basic rules of thumb
 - i. There are a few flash drives that are not compatible with the PEM2 Logger. They don't draw enough power for the logger to

- recognize it as “a flash drive that data can be written to.” It may produce the wrench error, or do nothing at all
- ii. Only use the flash drive for data uploads with PEM2 Data loggers. Having non-PEM2-related files on the drive (spreadsheets, documents, executable files, etc.) may interfere with logger/flash drive communication
 - iii. ALWAYS use the “Safe Eject” process to remove the flash drive from your computer. Just pulling the drive out the USB Port can corrupt the file writing/storage system because it doesn’t recognize that it is no longer connected to the computer and stays “open.” The next time the PEM2 tries to write to the flash drive, it may not recognize where the data is supposed to be written to.



- b. If you are having an issue with downloading data from the PEM2 to a flash drive, try this initial troubleshooting steps:
 - i. Save the data currently on your flash drive and reformat it. Sometimes the file writing/storage system on the flash drive can become “confused,” and the PEM2 logger will have trouble writing to it. Reformatting the drive effectively deletes all content (including fragments of files and “lost bits”) and resets the Write Table. Try your download again. (see [How Do I Format My Flash Drive...](#))

- ii. If the reformat doesn't work, try using a different flash drive. If you attempt another download with different flash drive and it still doesn't work, this indicates a problem with the logger. Contact IPI Tech Support at ipitechsupport@rit.edu

c. What does it mean to “run a CHKDSK” on my flash drive?

The CHKDSK is a tool used to identify and correct, when possible, corrupted files or fragments of files on a disk. There is an instructional article available to walk you through the process. You can get to it by clicking on this link → [How Do I Run A CHKDSK?](#)

d. How do I reformat a flash drive?

There is an instructional article available to walk you through the process. You can get to it by clicking on this link → [How Do I Format My Flash Drive?](#)

e. I'm getting a weird symbol on my logger when I insert my flash drive. What does it mean?

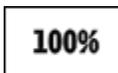
The symbols on the logger are indicators that there may be an issue with the logger, the flash drive, or the download process

i. The Wrench Symbol



1. The wrench symbol will generally appear during an attempt to download data via flash drive, however it may also appear because of an interruption in power (such as a low power issue, or changing the battery pack).
2. Generally speaking, the wrench symbol means “issue,” but there are some instances where simply reformatting the flash drive or trying a different flash drive will resolve the issue.
3. If you have tried both a [reformatted](#) flash drive and a different flash drive but you are still getting the wrench symbol, contact IPI Tech Support

ii. The “100%” Symbol



1. If the logger is displaying the 100% symbol when you insert the flash drive, this indicates that there is no more room to write data to the drive.
2. Remove the drive from the logger, insert into your computer and back up the data currently on the drive to another location (i.e. folder on your desktop or shared network drive, etc.). [Reformat](#) the drive, then try downloading the data from the logger again

iii. Persistent Hourglass Symbol



1. If you have a great deal of data on your logger and haven't performed a download in several months, the transfer may take several minutes and will display the hourglass for that long
2. If the hourglass does not seem to be going away but the indicator light on the flash drive (if there is one) isn't flashing anymore, there could be a problem with the drive and/or the logger
3. Try the [reformat](#)/different drive steps first. If neither of those clears the hourglass and/or resumes proper data download, contact IPI Tech Support

f. **I'm getting a weird number error on my logger when I insert my flash drive. What does it mean?**

On occasion if there is a problem that involves the flash drive the PEM2 will display a number or number + wrench. The following are some of the circumstances, which *may* trigger the number error. If the recommended solutions don't fix the problem, please contact IPI Tech Support

- i. **4 or 5** - *data read or write error*. Try first [reformatting](#) the flash drive. If this doesn't resolve the issue, try a different flash drive
- ii. **62** - *unsupported USB device*. Try a different flash drive
- iii. **90** - *media removed while locked for writing*. You must wait for the hourglass icon to clear before removing the flash drive. If the flash drive was removed while the PEM2 was still writing data to it; it may generate this error. Run a [CHKDSK](#) on the flash drive from your computer, then attempt the download again

- iv. **96 - overcurrent draw detected.** For some reason the USB is drawing more electrical current than necessary. Sometimes caused by corrupt data interfering with the PEM2 writing to the flash drive. Remove the flash drive and run a [CHKDSK](#) on the drive from your computer, then attempt the download again
 - v. **97 - mount timeout.** The PEM2 was not able to recognize and start writing to the flash drive in the expected amount of time. [Reformat](#) the flash drive. If still not able to download data try a different flash drive
3. **Are there any brands of flash drives that have been known to have problems with the PEM2 data loggers?**
IPI has begun documenting recurring issues with specific brands of USB Flash Drives ([found here](#)).