

# Glossary G

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## Gerber

A Gerber is a 2D binary vector image that describes every single layer of the PCB design. For instance, one Gerber describes the silk screen while the other describes the top, copper layer.

## GIT repository

Git is a popular version control system primarily used for managing software source code, but is also used for managing firmware, documentation... Versioning keeps track of changes to files and lets one follow those changes, revert to previous versions, create branches so that varieties of the code can be made, and also merge branches together again.

Git works using repositories, which can be entirely local on your computer, **or** linked to remote repositories on sites such as [GitHub](#), Gitlab, [SourceForge](#), and many others. [MERC](#) and [JMRI](#) both use GitHub. Linking to remote repositories allows changes to be shared.

Wiki entry: [w Git Software](#)

[Comparison between SourceForge and GitHub](#)

To help understand how Git may be helpful to MERC here is a beginners article on GitHub:

<http://readwrite.com/2013/09/30/understanding-github-a-journey-for-beginners-part-1>

## GPIO

General-purpose input/output is a generic pin on an integrated circuit or computer board whose behavior, including whether it is an input or output pin, is controllable by a program or script being run.

GPIO pins (generally) have no predefined purpose, and go unused by default. Normally these are Tri-State pins.

## GPP software

This is a company that has written a Microsoft Basic program to control a model railway from a computer.

<http://www.gppsoftware.com>

# Ground

Electrical circuits (normally) have a common point from which voltages are measured.

Historically this was the Ground (aka Earth), and could also have been the return path for electric current.

In modern 'mains' AC power supplies, the 'Earth' line has a safety purpose and the 'Neutral' line is the 'Live' current return. NB: The Neutral is connected to Earth, somewhere further back in the supply system.

Most modern low voltage and low power electronic circuits are NOT referenced to the Earth, but that name or Ground (aka GND) persists as the reference point, but more correctly its name is '0V'. The power supply modules for these circuits are said to be 'floating'. Floating power supply modules can sometimes be identified by the use of a 2 wire connection to the mains. No harm will happen if the 0V line is connected to Ground.

However, above a certain threshold of Voltage or Power or where a metal case/chassis is used, modern regulations mean that an Earth connection is required and those power supply modules will use a 3 wire connection to the mains. An example of this is the MERG DCC power block.

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