# System design

The encoder controller needs some prerequisites to be used.

- 5V power supply via microUSB socket
- Ethernet network for communication
- automatic IP-v4 address assignment via DHCP
- Controller software

These necessary conditions can be fulfilled by the following devices:

- USB plug-in power supply unit, USB hub with external power supply or USB connection of the PC
- Ethernet switch provides the node between the encoder controller and the PC
- DHCP server for automatic address assignment. A Router that provides an Internet connection has a DHCP server built in. This server assigns IP addresses to new devices in the network. Such a router does not need to have an Internet connection to use the DHCP function. Usually an Ethernet switch is integrated, which is sufficient for first tests.
- Alternatively, DHCP software can be installed on the Windows PC to implement such an IP address assignment.
- The SimConnect Client or the X-Plane Plugin can be used as controller software.
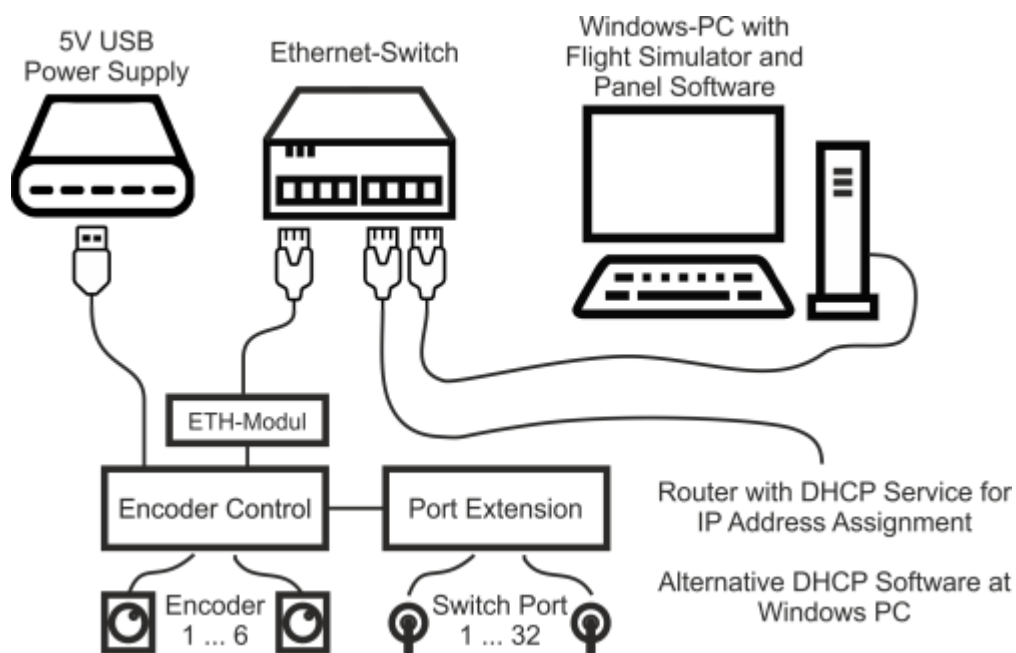
Principle representation of a network with the encoder controller

The controller is used in building a cockpit panel PC.