CNC Remote Pendant

There are many pendants for remote control of CNC machines. However, these are extremely overpriced, several 100.-€ for a box with a rotary wheel and a few buttons, that's a lot.

A good reason to build a nice device ourselves. Thereby we have the possibility to bring in our own ideas and to optimize the usability and the design. Since most of us also have a 3D printer, we can also build sleek and shapely cases. It's good if you have a friend at Drechseltechnik-Straubing who has a laser, so even the front panels look professional.

Thanks to LinuxCNC, the variety of functions is almost unlimited.

The new pendant should have the following:

- optical encoder for fine adjustment of the axes X,Y,Z and A.
- switch: axis selection
- switch: travel speed 1/100mm to 1mm
- 8 keys for several, often needed, functions
- Color TFT display for coordinates and system status
- Connection of the display via WLAN, compatible to traffic lights

This development shall of course be freely available for all Makers, including all documentation and software with source code.

The work was done in two steps

first we built a simple handheld device with all needed functions and created the matching LinuxCNC HAL files.

In a second step, the device was extended with a TFT color display.

an approximate cost estimate:

Case from 3D printer: 8.-
Front panel: 4.-
keys: 7.-
handwheel: 8.-
Rotary switch with buttons: 6.-
cable, plug, cable gland: 5.-
TFT display 2.8“: 16.-
ESP8266 controller NodeMCU: 9.-

Total: 63.- €

even if you don't buy optimal and have a 3D misprint, the costs always stayed under 100.- for me.