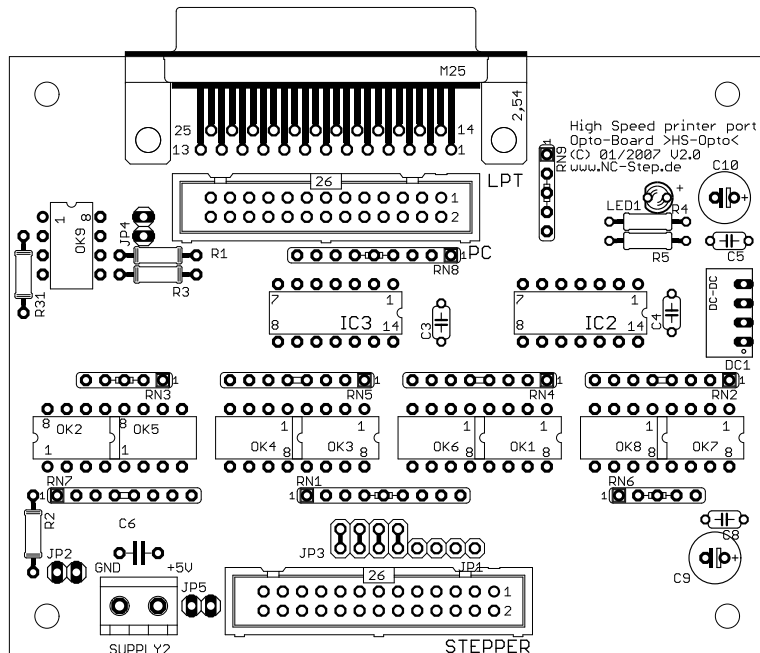


## Initial operation

Before the initial operation do a visual test of all the soldering joints and the components. Make sure all ICs have been inserted in the proper orientation. Check for short cuts on the parallel port connector (LPT). On Interface-Relay board, change transistor base resistors from 4k7 to 1k, if used.

## Part list

No.	Value	Part	Name
4	330R	SIL 8-4	RN2, RN4, RN5, RN7
2	4K7	SIL 5-4	RN3, RN6
1	4K7	SIL 9-8	RN1
1	47K	SIL 5-4	RN9
1	47K	SIL 9-8	RN8
2	330R	Resistor	R2, R31
4	4K7	Resistor	R1, R3, R4, R5
1	2mA gruen	LED3MM low current	LED1
2	47µ/25V	Electrolytic cap RM2.5d7	C9, C10
5	100nF	Cap RM5.08	C3, C4, C5, C6, C8
2	74HCT14	7414	IC2, IC3
9	HCPL2630	HCPL2630 OK1..OK9	
1	SW-505S	DC-DC	DC1
1	DIL8	Socket	
2	DIL14	Socket	
4	DIL16	Socket	
1	JUMPER		
3	PINH-1X2	PINH-1X2 JP2, JP4, JP5	
2	PINH-2X13	Pfostenstecker 26	PC, STEPPER
2	Pfostenbuchse 26pol.	quetsch	
1	KLEMM2	cage clamp RM5.08	SUPPLY2
1	M25H	D-SUB connector 25m	LPT



## Assembly Information

# Highspeed Optocoupler board for PC printer port

Rev. 2.0 (last updated 24.02.2007)

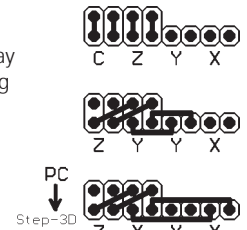
### Exclusion of Liability, EMC (electromagnetic compatibility)

Although all parts of the circuitry have been thoroughly tested NC-Step does not give any warranty or other assurance as to the operation or functionality of the circuitry or the documentation. NC-Step especially takes no responsibility for any damages caused by reproduction, reverse engineering or initial operation of the here described circuits.

The optocoupler board is an OEM product made for use in industry, electronic trade and other EMC experienced sectors. According to EMVG §5, section 5 this product does not require CE qualification. Cabling, used amplifiers, power supply and the surrounding environment are factors that influence the EMC properties of a device. A device using one or more optocoupler boards must of course be evaluated according to corresponding directives, when CE conformity must be documented. During development all possible means were used to conform to EMC regulations.

### Hints for trouble shooting, support

Please read the documentation carefully at first and check the circuitry. You may also the NC-Step homepage [www.nc-step.de](http://www.nc-step.de) in order to look for hints and bug fixes. If these hints and the additional help in the forum on [www.NC-Step.de](http://www.NC-Step.de) don't answer all your questions, contact me for further help, by email. Please provide a detailed description of the problem and your configuration. (Power supply, used Software a.s.o.) -> E-Mail: [Ostermann@NC-Step.de](mailto:Ostermann@NC-Step.de)



### Fitting with components

When fitting the board with components, make sure to follow the general rules:

- Start with the small components (resistors, diodes, capacitors,...)
- Be careful to assemble with correct polarity (electrolytic caps, resistor arrays, DC-DC converter,...)
- J1 and J3 are a connector field to distribute clock and direction signals for different axes configurations. See picture above for details. First one is standard 3/4 axes config. The 2nd one is for gantry on Y-axis, 3rd for gantry on X-axis, both requiring additional 4th axis board. Use isolated wires to make the connections as shown above.

### External connections

- Use a standard 1:1 wired 25 pin D-SUB cable for connection to the printer port.
- Pinhead „Stepper“ is used to connect the 3D-Step or the interface board.
- The power for the PC side of the board is supplied by the on board DC-DC converter
- The board needs regulated 5V supply at „Supply2“. As an alternative, the 5V can be supplied over the ribbon cable by closing JP5. Especially with long cables voltage drops may lead to decreased speed of the optocouplers. In this case use the cage clamps Supply2 for the power supply.
- JP2 and JP4 can be used to access the unused 16th optocoupler.

