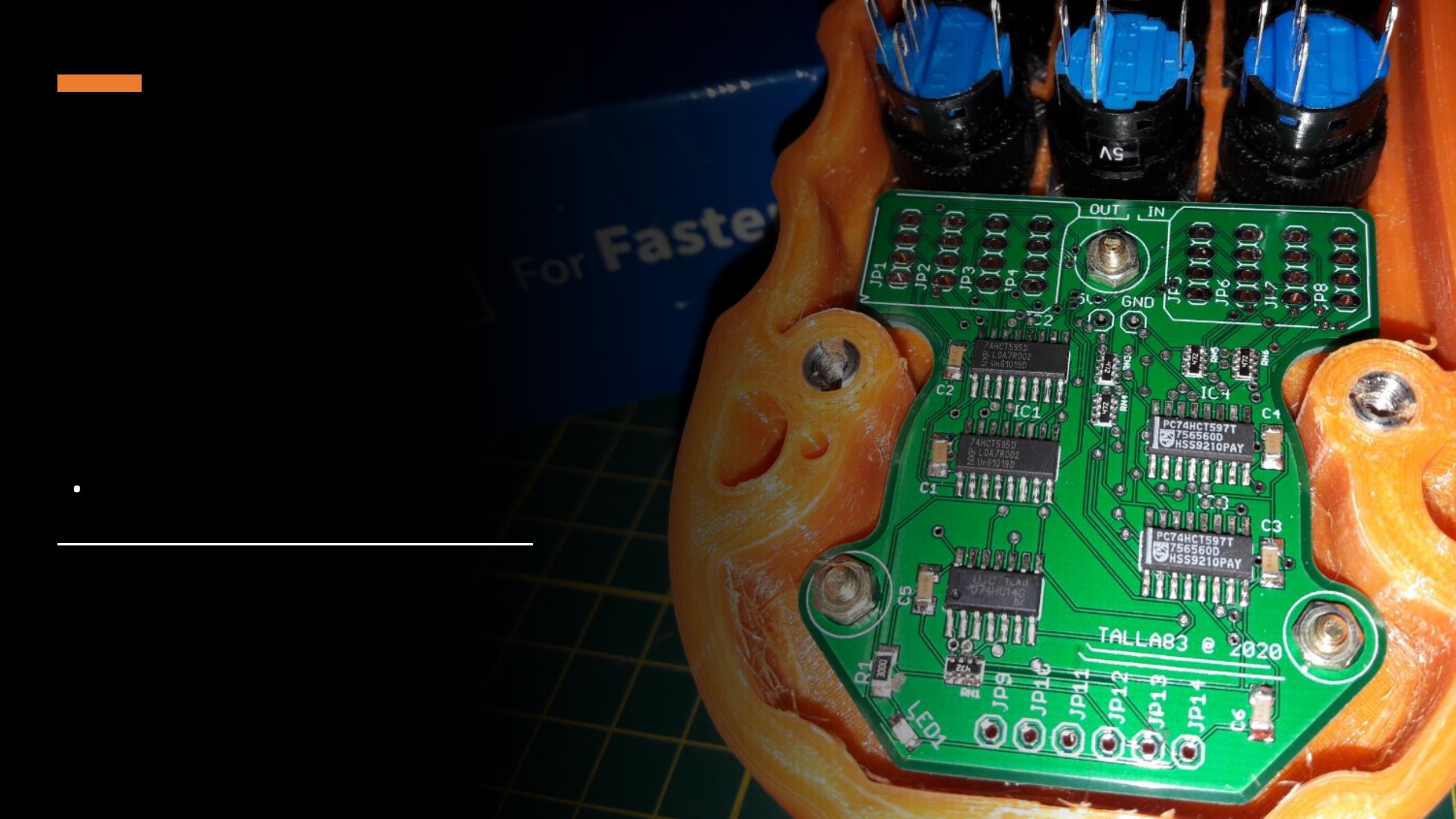
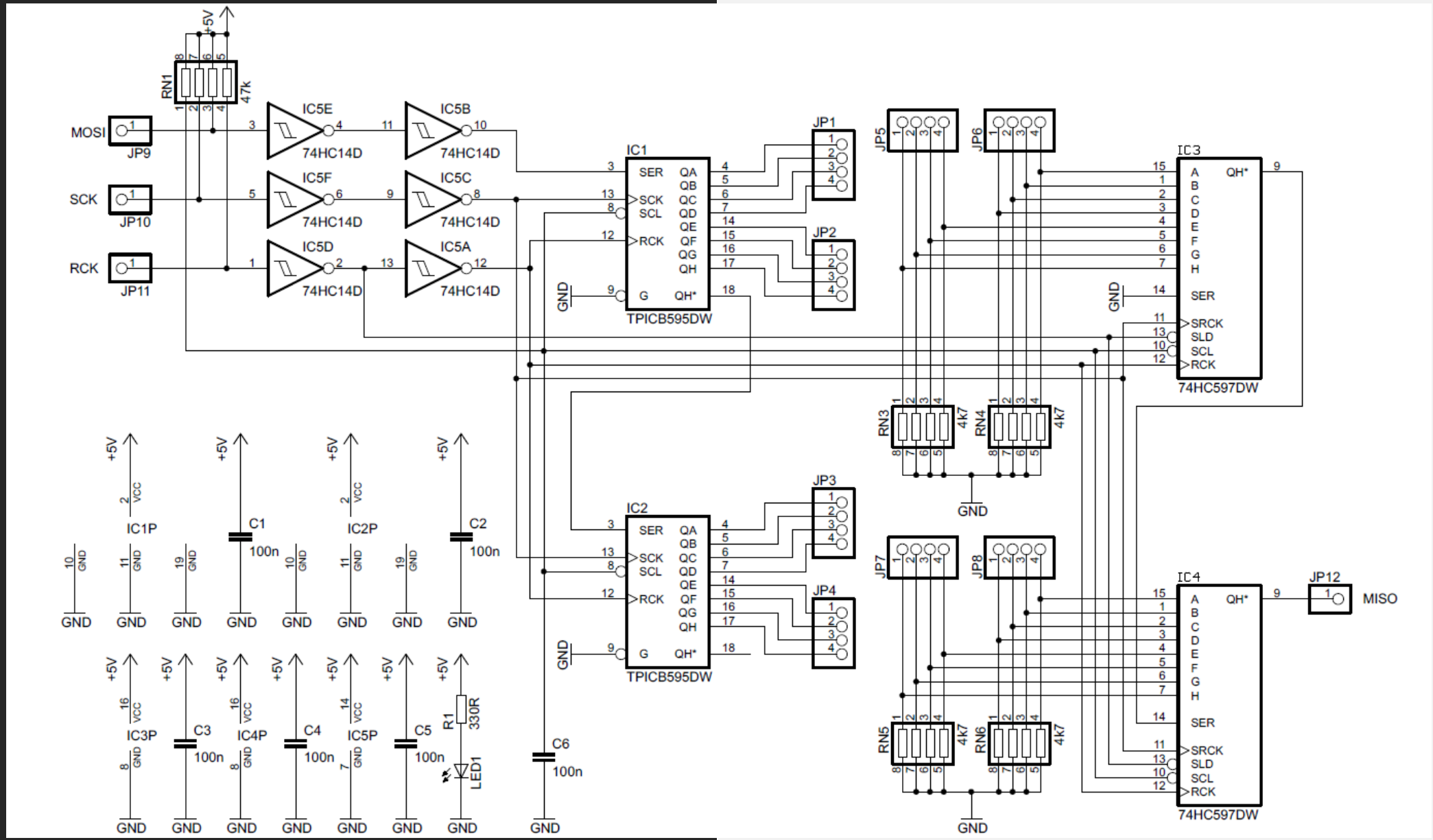
Tom simple Handwheel

parallel port

Lötlackls "Poor-Man's" Modifikation

Verwendung an Parallel Port


OUT
IN
5V
GND
JP1
JP2
JP3
JP4
JP5
JP6
JP7
JP8
C1
C2
C3
C4
C5
C6
IC1
IC4
74HCT595D
LDA7R002
PC74HCT597T
756560D
HSS9210PAY
74HC14G
TALLA83 @ 2020
R1
LED1
JP9
JP10
JP11
JP12
JP13
JP14


+5V
RN1
47k
MOSI
SCK
RCK
JP9
JP10
JP11
IC5E
IC5F
IC5D
IC5B
IC5C
IC5A
74HC14D
IC1
SER
SCK
SCL
RCK
G
QA
QB
QC
QD
QE
QF
QG
QH
QH*
GND
TPICB595DW
JP1
JP2
JP5
JP6
IC3
A
B
C
D
E
F
G
H
SRCK
SLD
RCK
74HC597DW
RN3
RN4
4k7
IC2
JP3
JP4
JP7
JP8
IC4
JP12
MISO
RN5
RN6
IC1P
IC2P
IC3P
IC4P
IC5P
VCC
C1
C2
C3
C4
C5
C6
100n
R1
330R
LED1

Schaltplan

Shift Register Port Expander

Introduction

Enthusiastic machine builders are often frustrated by a lack of available I/O lines. Fortunately, a simple trick popular with micro-controller enthusiasts work

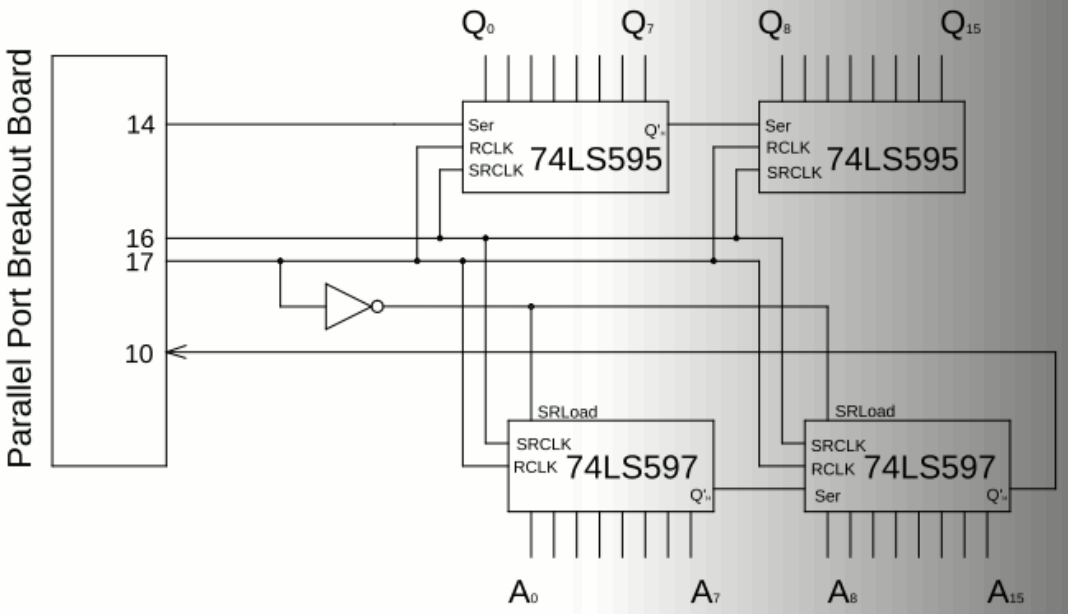
There are several types of shift registers. Some take data in serially, one bit at a time, and present the data in parallel, all bits simultaneously. These are ca
Regardless of the the type, a 'clock' signal directs the device to move each bit to the next position.

Two more notes about shift registers. Generally the serial output of one shift register can be used as the input to another shift register. In this fashion, shift

Also, the simple shift registers described above would not be very safe to use. An 'on' bit destined for the last output line would be presented on each of th
fully shifted, and should be 'latched' onto the outputs (or inputs, in the case of parallel-in serial-out shift registers).

The Hardware

The circuit used in this application includes two SIPO and two PISO shift registers, giving us a total of 16 output and 16 input lines. To control these will rec
set of chips, such as the 74HCT595 and 74HCT597 or equivalent.



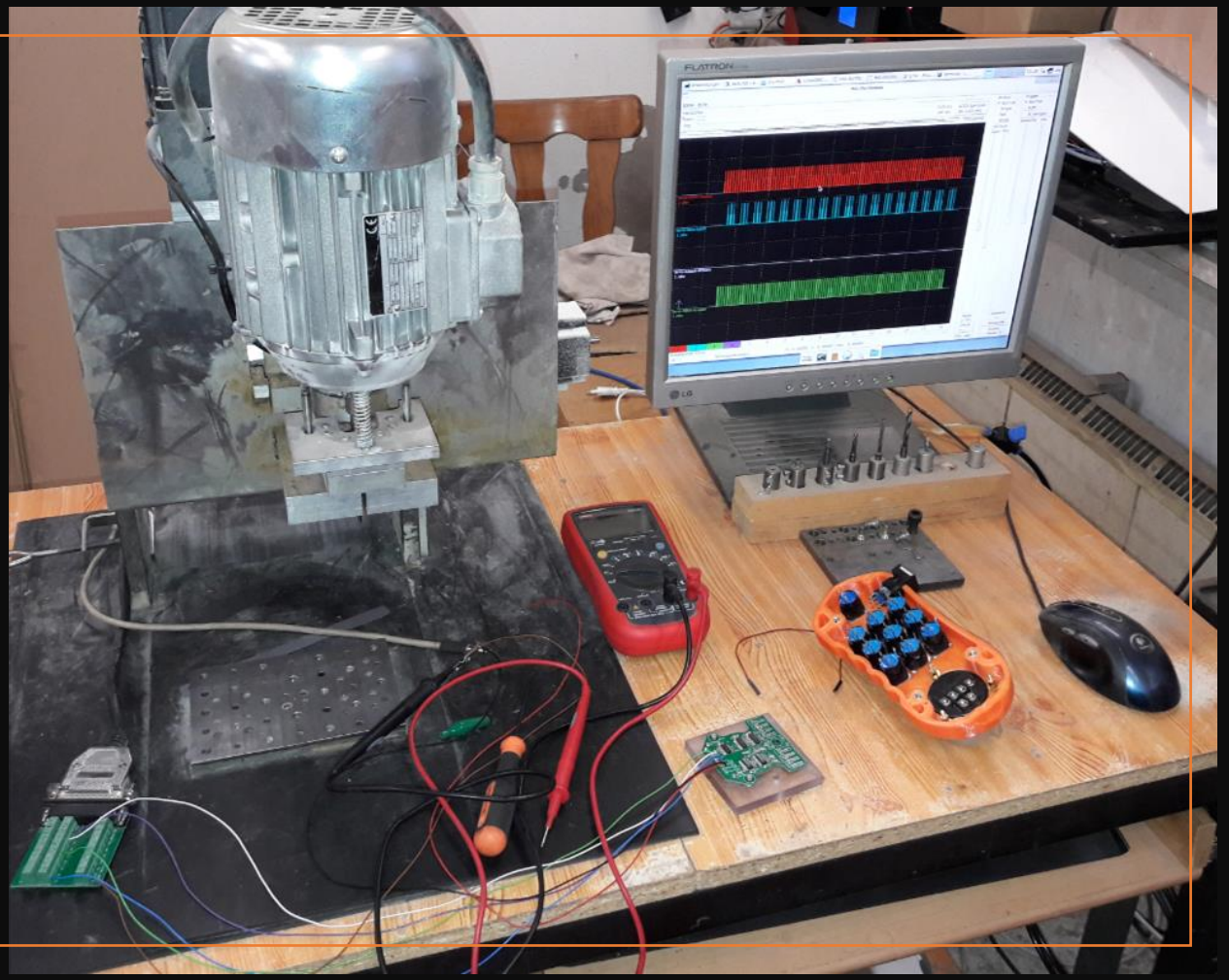
The 74LS597 shift registers require an additional control line to load the data onto the shift registers. This additional line does not require an additional I/O

Pin names on the chips may be different than as shown. On a current datasheet I see the following names:

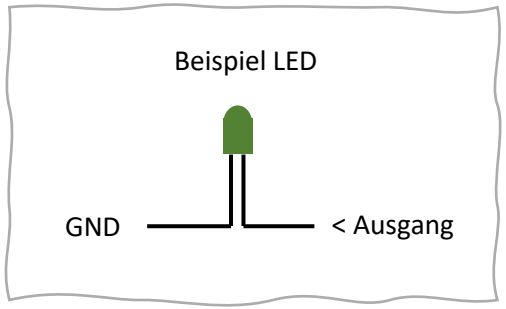
Die Funktionsbeschreibung gibt es hier…

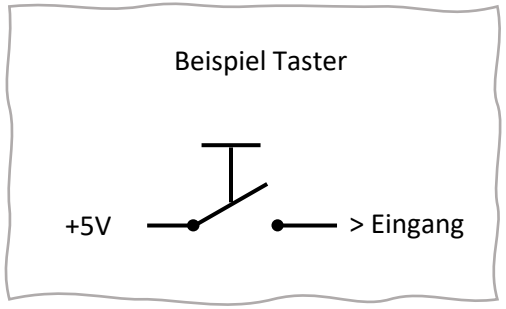
http://wiki.linuxcnc.org/cgi-bin/wiki.pl?Shift_Register_Port_Expander

Testaufbau



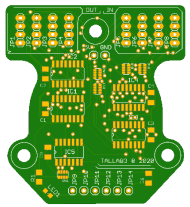
Übersicht Verdrahtung





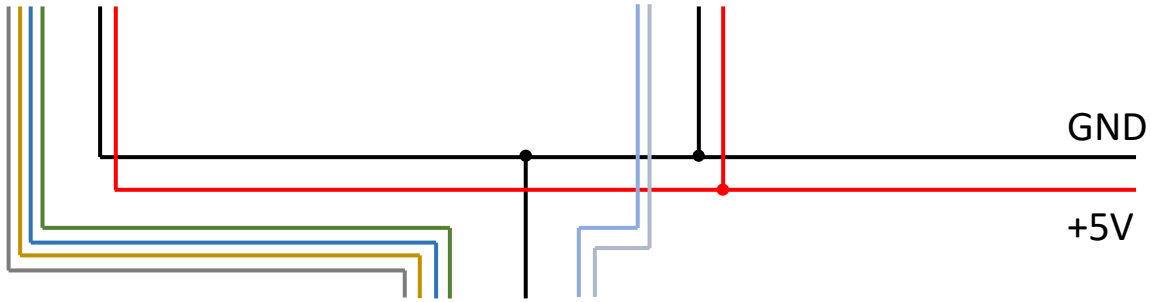
16 Eingänge
16 Ausgänge

Platine



Handrad Encoder

A
B



5V Netzteil

Parallel Port

Es werden hier insgesamt 6 PINS benötigt.
3 Eingänge
3 Ausgänge

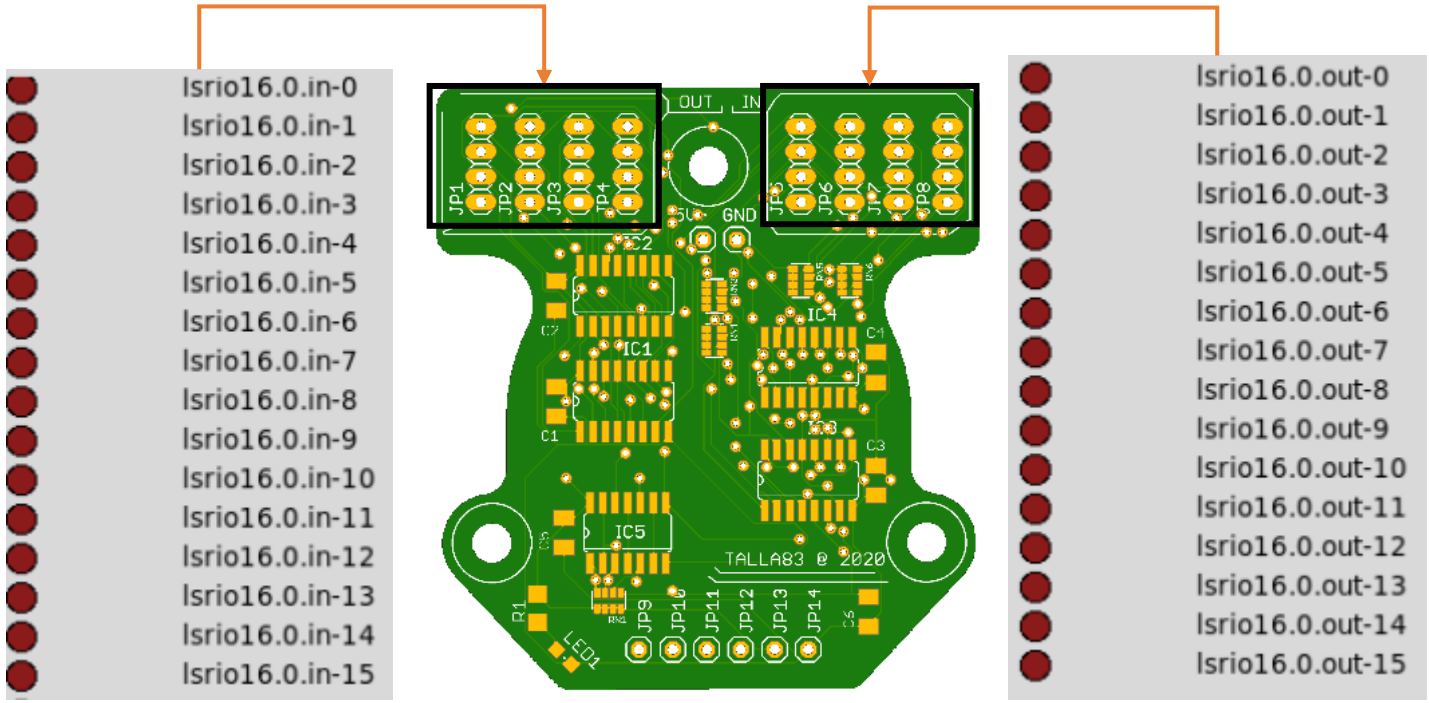
http://wiki.linuxcnc.org/cgi-bin/wiki.pl?Shift_Register_Port_Expander

.. lsrio16

Achtung die IN OUT Benennung ist aus Sicht der lsr16io Komponente.
Wenn ein Ausgang auf dem Board seinen Zustand ändern soll dann muss man das entsprechende lsrio16.0.in-x Bit setzen.
Die Eingänge vom Board kommen auf den entsprechenden lsrio16.0.out-x an.

Board > lsrio16				
JP1	0	1	2	3
JP2	4	5	6	7
JP3	8	9	10	11
JP4	12	13	14	15
JP5	7	6	5	4
JP6	3	2	1	0
JP7	15	14	13	12
JP8	11	10	9	8

Kleines Mapping damit wir wissen wo der wirkliche Pin im LinuxCNC ankommt



JP9 = output-stream (14)
JP10 = clock (16)
JP11 = data-latch (17)
JP12 = input-stream (10)

JP13 = +5V
JP14 = GND

.. lsrio16

GND der Spannungsversorgung muss auch mit dem GND des Parallel Port verbunden werden!