

LoopControl

Edi Bosshard, HB9MTN

Was passiert heute Abend?

- Magnet-Loop Antennen
- Berechnungsprogramm
- Schrittmotor-Steuerung
- Diskussion jederzeit!

HB9BGG 20m Magnet-Loop

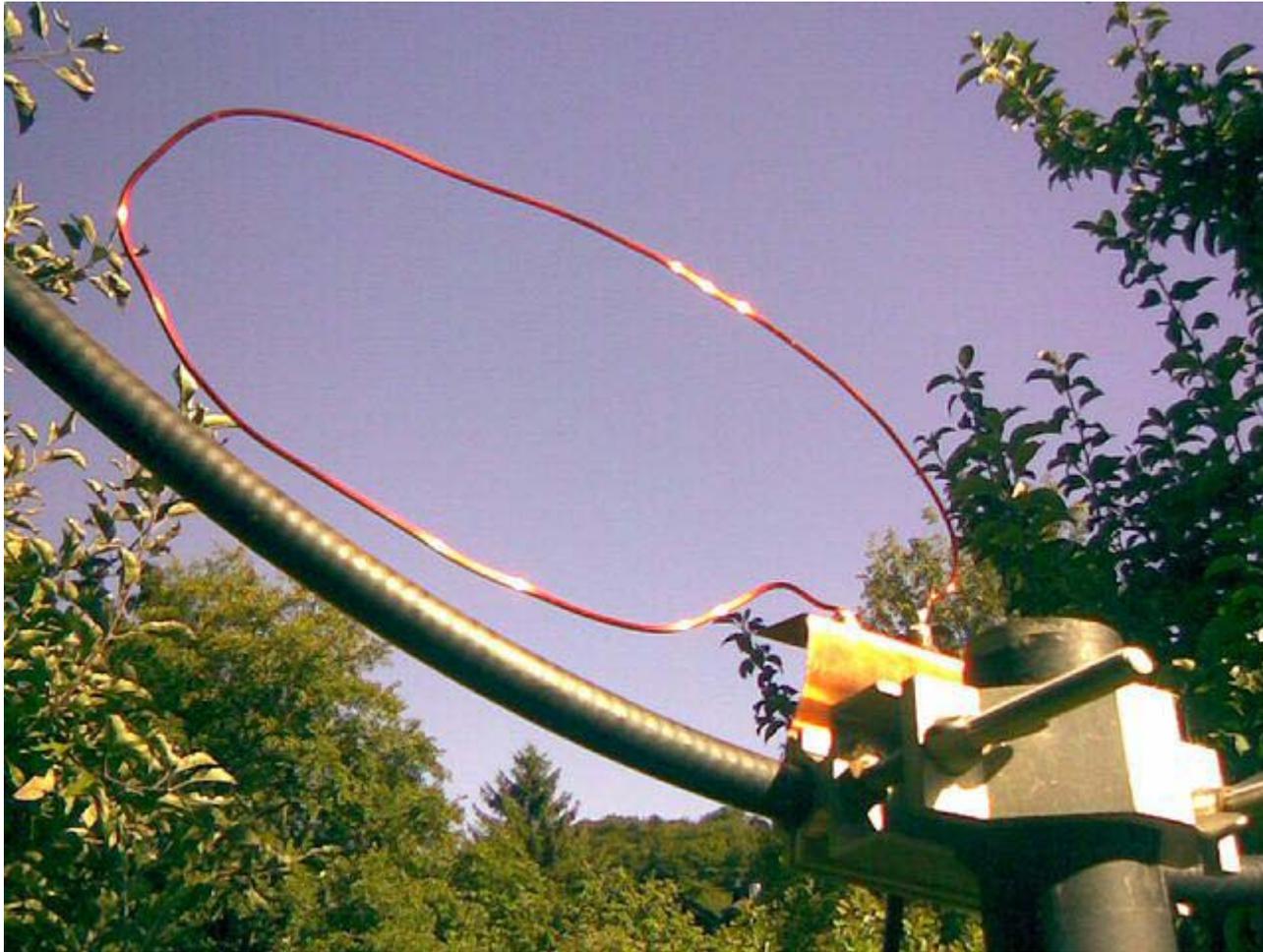


16.08.07

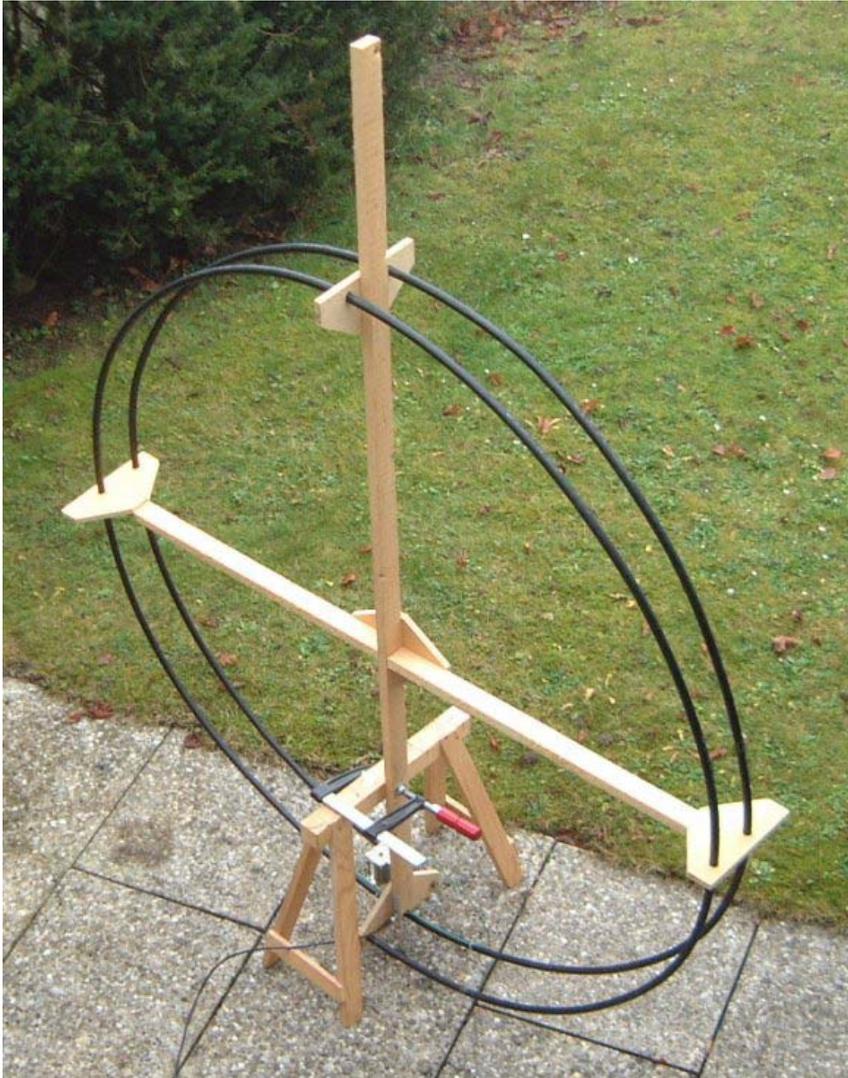
HB9BGG 20m Magnet-Loop



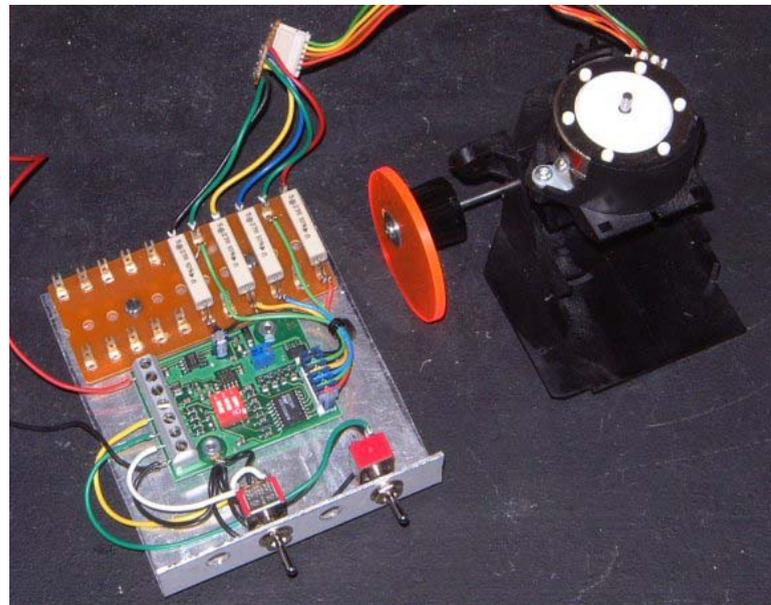
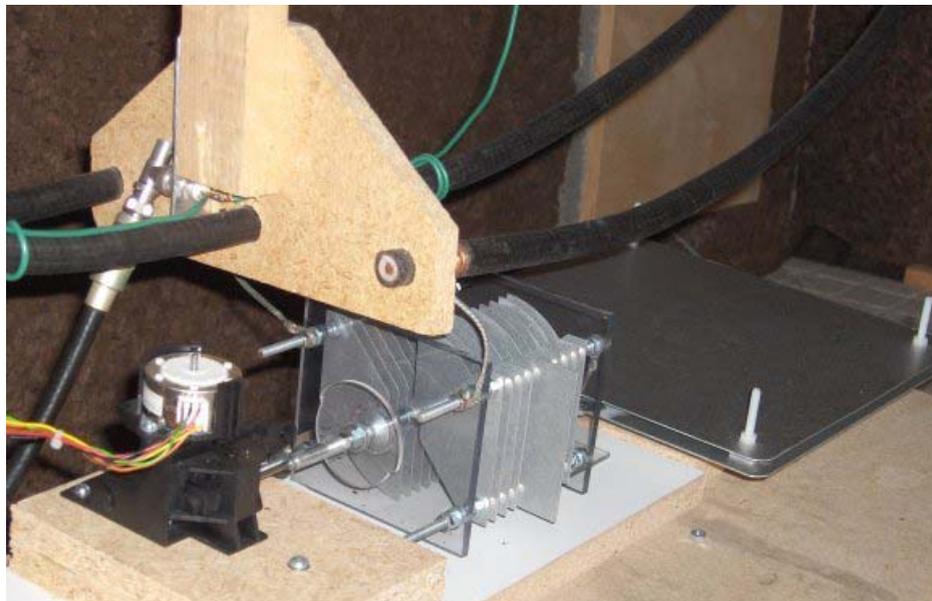
HB9BGG 20m Magnet-Loop



80m Magnet-Loop

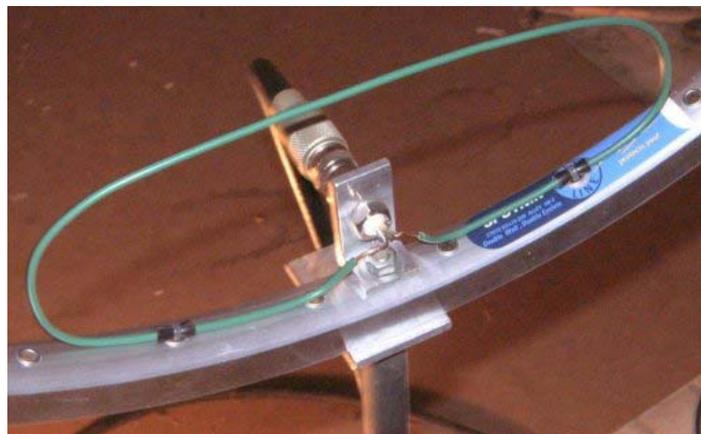


80m Magnet-Loop Steuerung



Polarisation?

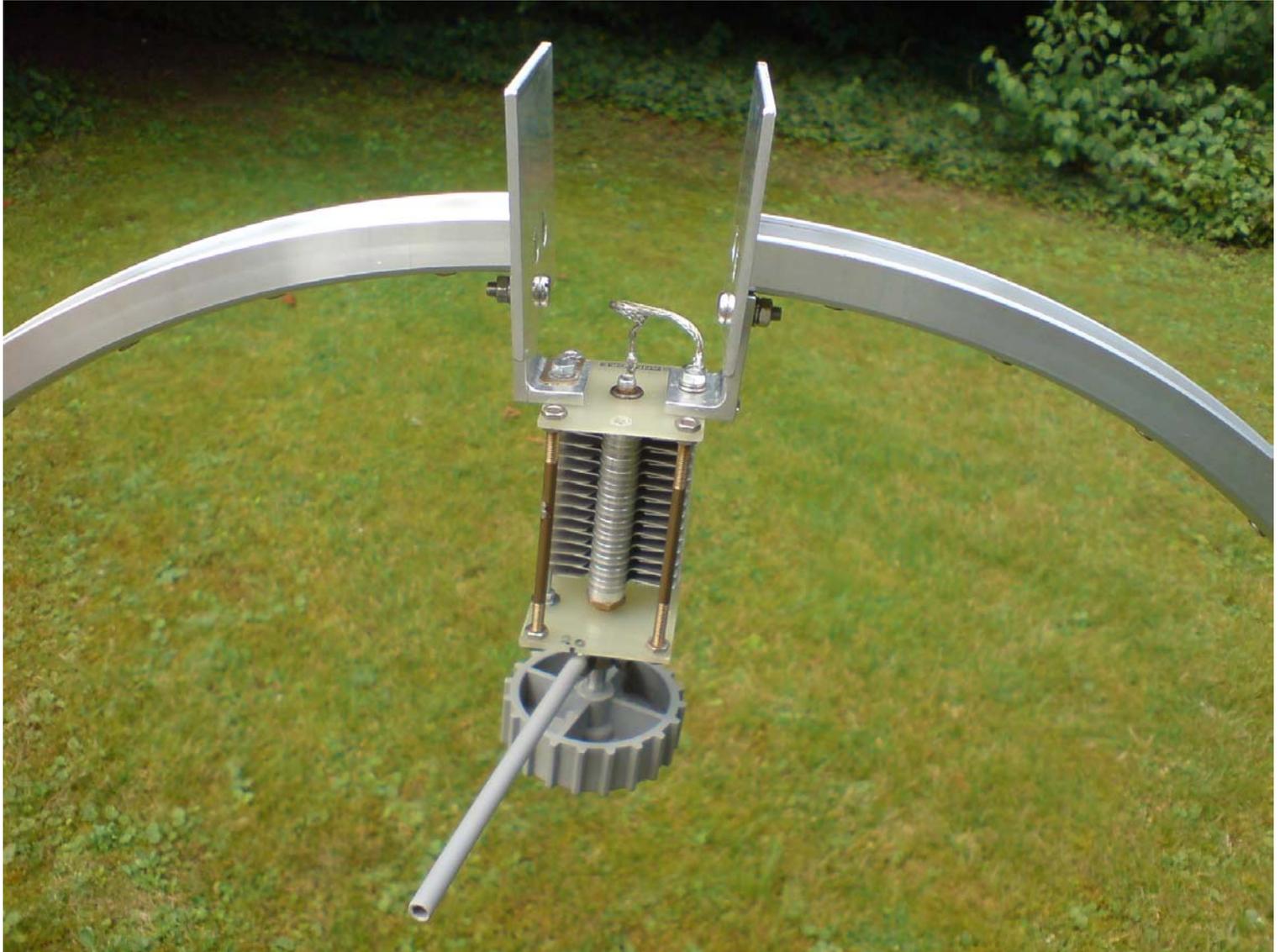
6m Magnet-Loop



20m - 10m Magnet-Loop



20m - 10m Magnet-Loop



20m - 10m Magnet-Loop



HB9MTN/“MM“



09.07.07, 07.05 UT, 20m, V5/HB9PHJ, IC740, 80W, 51/41

15.07.07, 16.07 UT, 20m, DH3RB/P (Sylt), FT817, 4W, 59/54

0.66/22

Magnet Loop Rechner

DGDKW Magnet - Loopantennen - Rechner

Aktion: 2

Loop - Parameter

Durchmesser: 2,25 m Form: Kreis
Umfang: 7,069 m Material: Cu
Leiterdurchmesser: 12 mm Wdg: 1 Länge: 12 mm

Frequenz: 3,5 MHz
Tx-Output: 100 W

Ergebnisse:

Induktivität: 7,511 μ H
ges. C: 275,3 pF
eigen C. Loop: 6,3 pF
Spannung am Kondensator: 3,885 KV
Strahlungs-R: 0,009 Ohm
Wirkungsgrad: 5,05 %

Berechnen: Loop

Ankopplung

Aufstellort der Loop: Zimmer, Dachboden, geschlossener Balkon 4,05 : 1

Diagramm: Ankopplungsschleife, Loop-Schleife, Ein-speisung, Lka

Ergebnisse:

Umfang: 175 cm Lka: 31 cm

<http://www.user.fh-stralsund.de/~dl0hst/magnetlooprechner.htm>

Magnet-Loop mit Schrittmotor-Steuerung



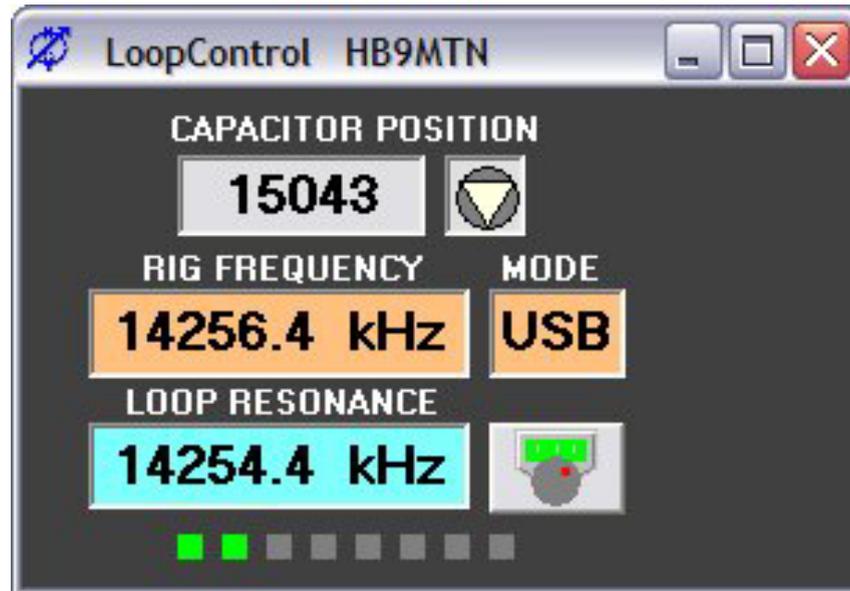
LoopControl Software Anforderungen

- Loop über PC steuerbar
- Loop durch TRX steuerbar
- Anschlüsse: LPT / RS232 / USB
- Eichung für beliebige Loops
- Eichung für beliebige Schrittmotoren
- Abstimmgeschwindigkeit wählbar
- Rückwärtsschleife wählbar

Software im manuellen Modus



Software im automatischen Modus



Software im Setup-Modus

The screenshot shows the LoopControl HB9MTN software interface. The window title is "LoopControl HB9MTN". The interface is divided into several sections:

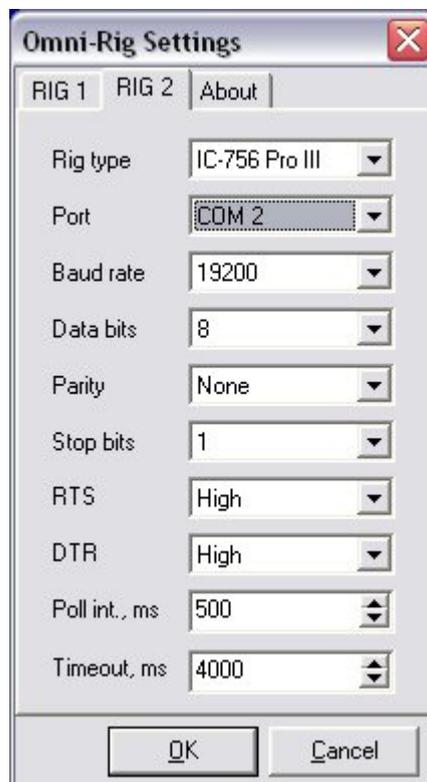
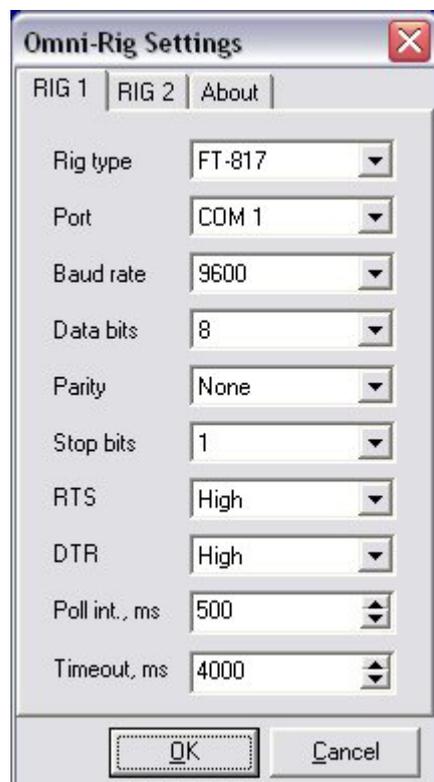
- CAPACITOR POSITION:** A large display shows "15861" with a triangle icon to its right. Below it are navigation buttons: <<, <, >, >>.
- LOOP RESONANCE:** A large display shows "21240.0 kHz" with a small icon to its right. Below it is a progress bar with a red segment and the text "DN = 2310 UP = 1320".
- Frequency Selection Table:** A table with columns for frequency (10 m, 12 m, 15 m, 17 m, 20 m, 30 m, 40 m), navigation buttons (|<, SAVE, >|), and a column for step size and range.
- Control Parameters:** A row of buttons: CORR (red), SPEED (400), BACKLOOP (40), PORT (LPT1), and OFF (red).
- Transceiver:** A section with three input fields: "21243.95" (with a USB button), "0" (with two radio buttons), and "On-line" (with a TRX button).
- TRX-15m-Simulation:** A section with an "Offset: 0 / TargetPos: 15861" display, a "21240.0 kHz" display, and a scroll bar.
- Parallel Port:** A section with "BINARY" and "DECIMAL" options, a row of checkboxes (with the second checked), a "255" display, and an "Enter Byte" button.

Frequency	Navigation	Step Size / Range
10 m	< SAVE >	33.92857 kHz/Step, 28225 - 28700
12 m	< SAVE >	20 kHz/Step, 24890 - 24990
15 m	< SAVE >	14.51613 kHz/Step, 21000 - 21450
17 m	< SAVE >	11.11111 kHz/Step, 18068 - 18168
20 m	< SAVE >	2.39726 kHz/Step, 14000 - 14350
30 m		
40 m		

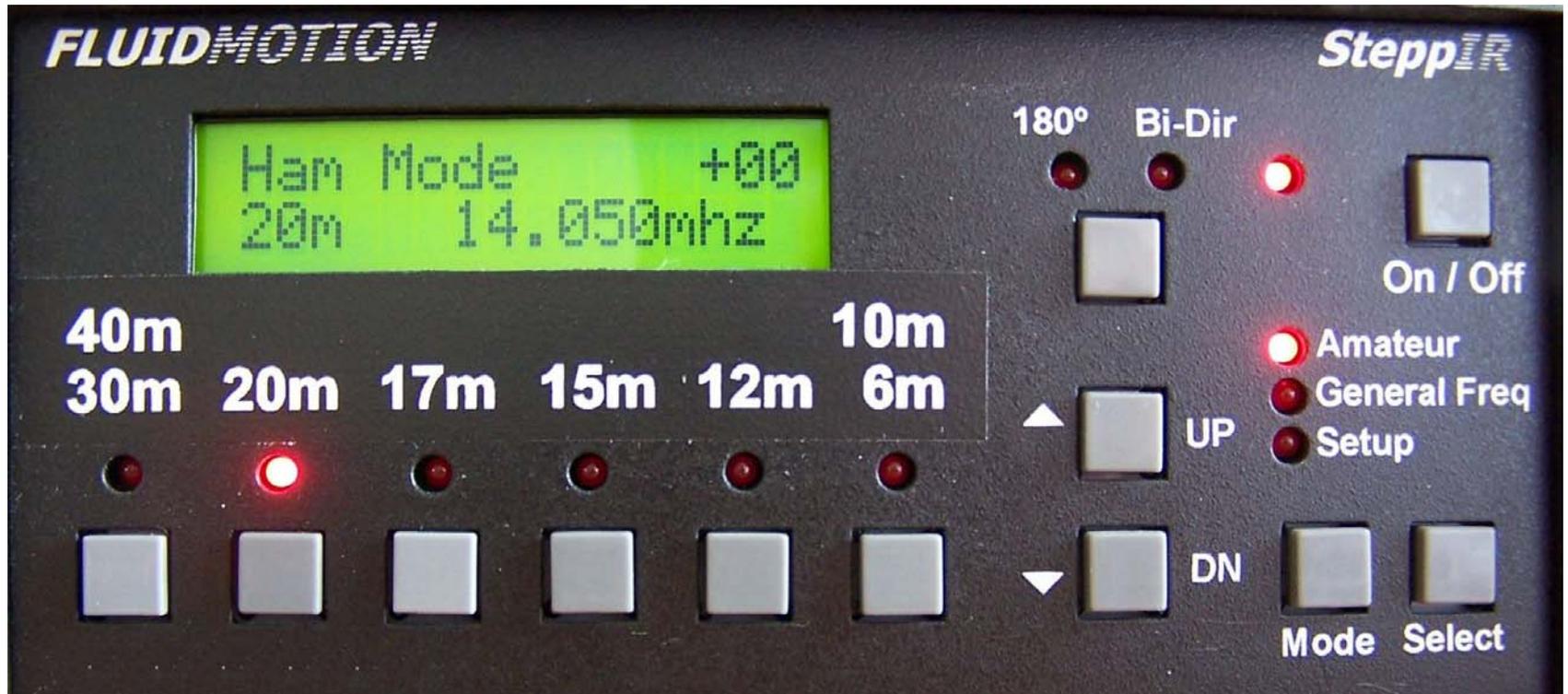
Omni-Rig Engine



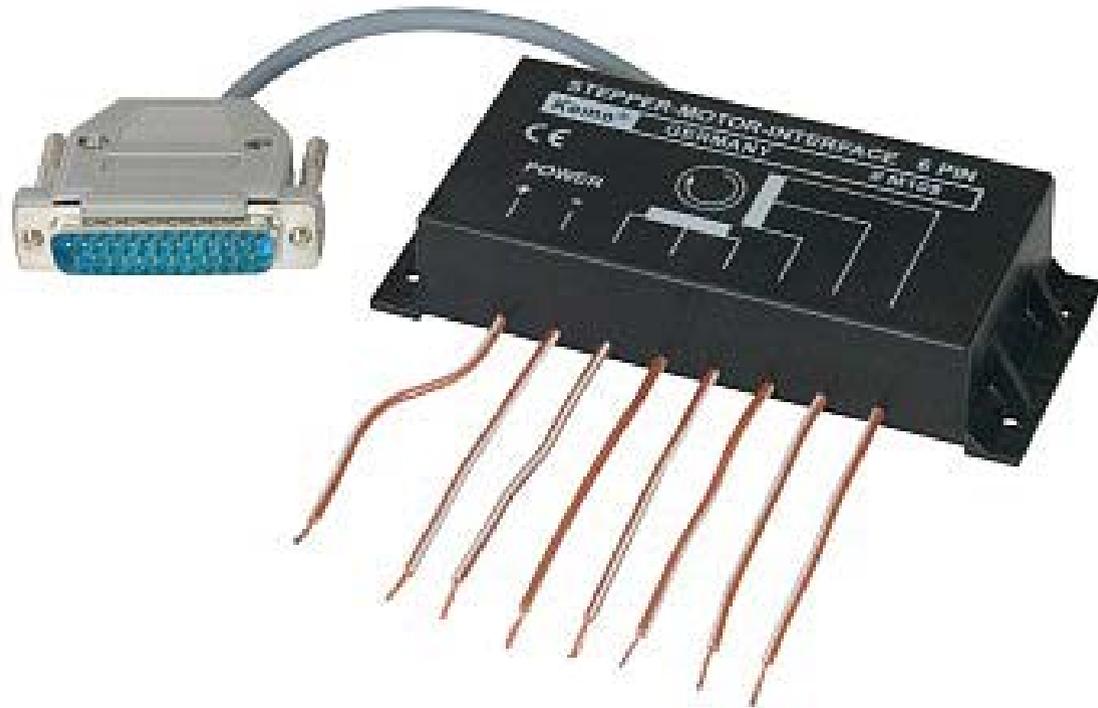
Omni-Rig Engine



SteppIR Contoller, gleiche Funktionen!



Schrittmotor Interface



Kemo M109 Schrittmotor-Interface 6 Pin

<http://www.kemo-electronic.de/de/module/m109/index.htm>

Centronics / RS232

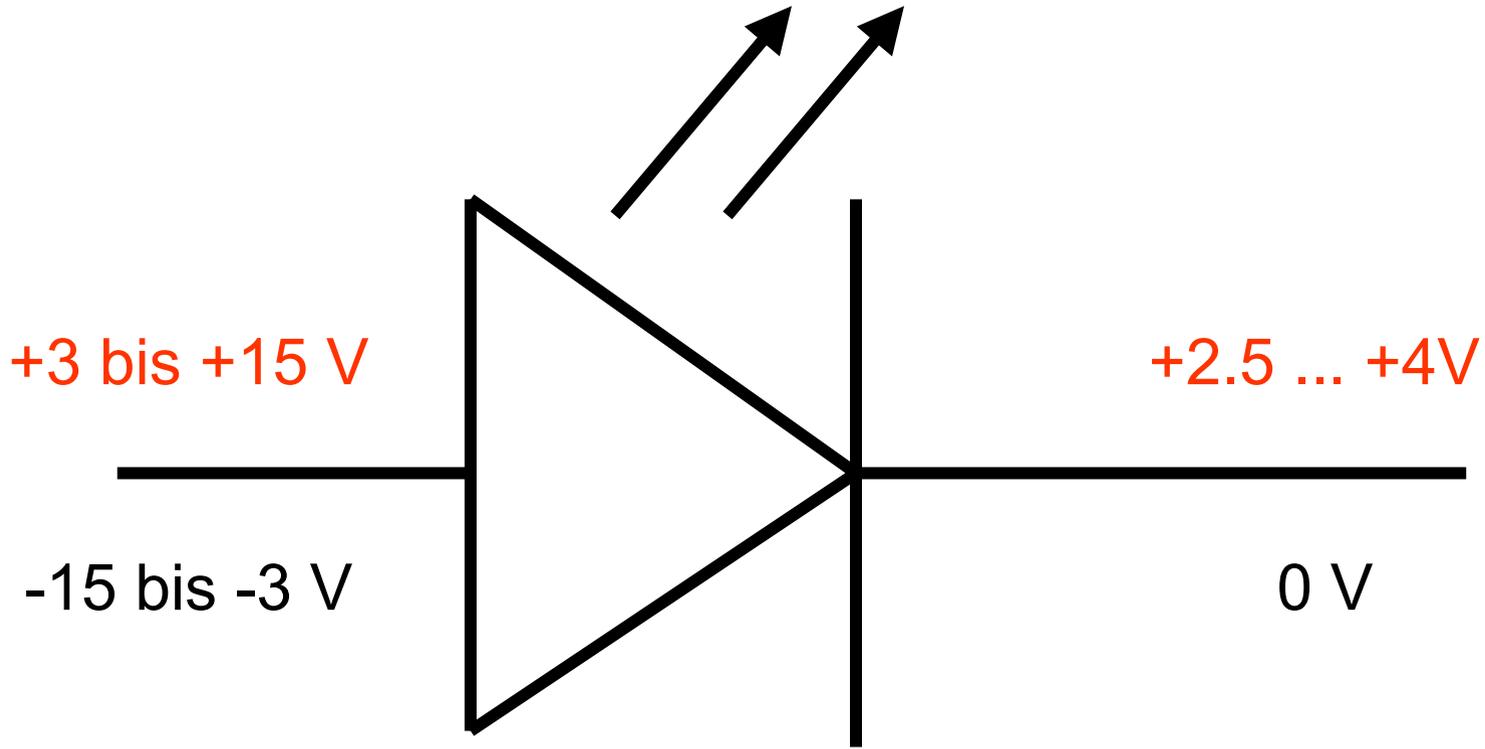
Centronics Pegel

Logisch 0	+0 V bis +0.8 V
Logisch 1	+2 V bis +5 V

RS232 Pegel (Leerlauf)

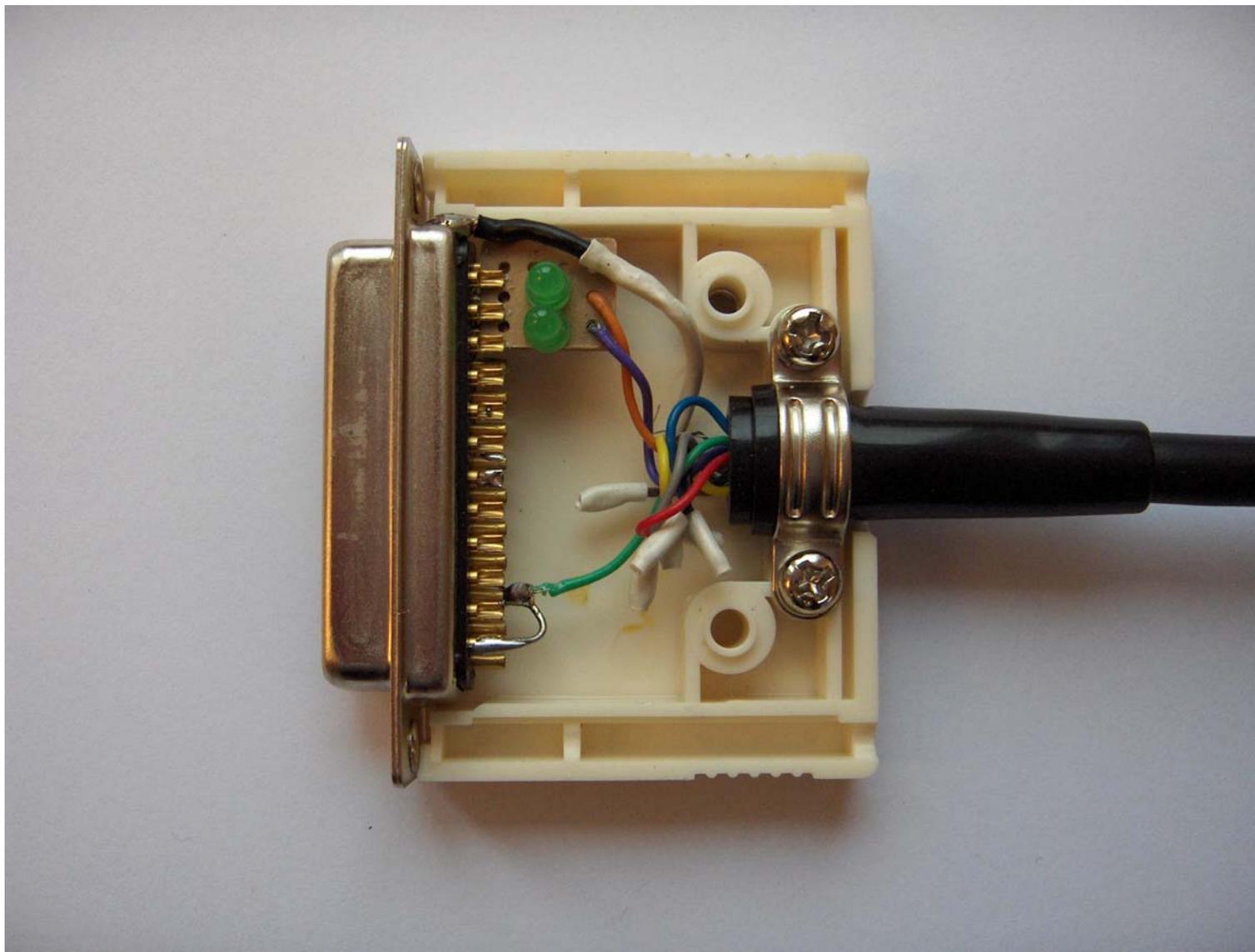
Zustand 1	-15 V bis -3 V
Zustand 2	+3 V bis +15 V

LED zur Pegelanpassung

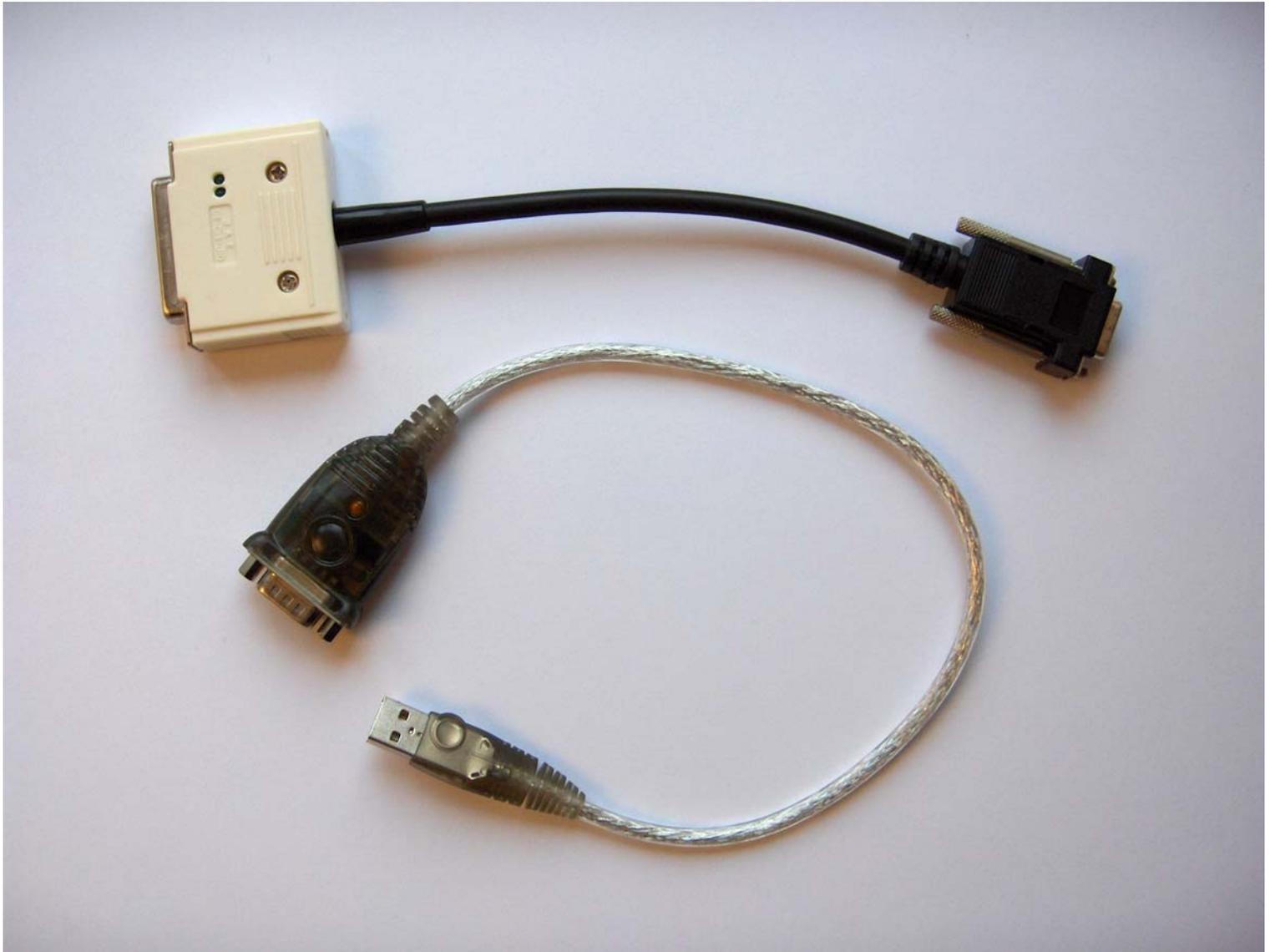


LED V_F +2.5 ... +4 V

Centronics – RS232 Interface

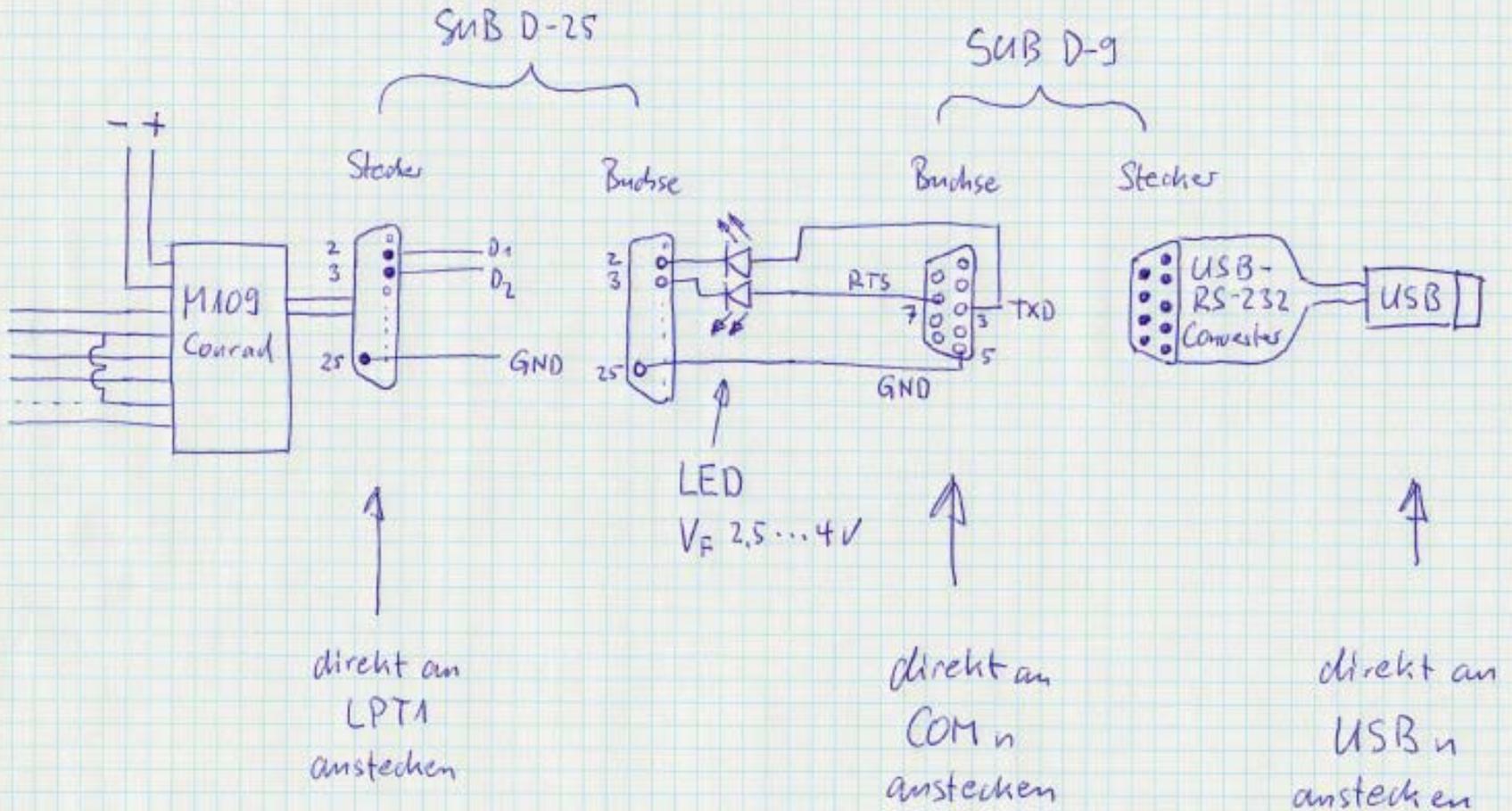


Centronics – RS232 - USB



Schema

Loop Control HB9MTN



Software live demonstrieren

Tandem-Drehko

