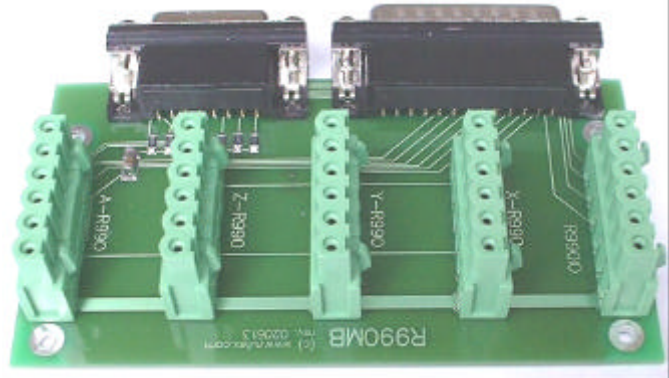


## R990mb Mother Board.

### Features:

- Mother Board for one R990io Input/Output board and up to four R990 servo drivers.
- One DB25 for LPT (parallel) port.
- One DB15 for limit switches.
- Size 140 x 89 x 26 mm (5.5 x 3.5 x 1.0 inch)
- low cost.

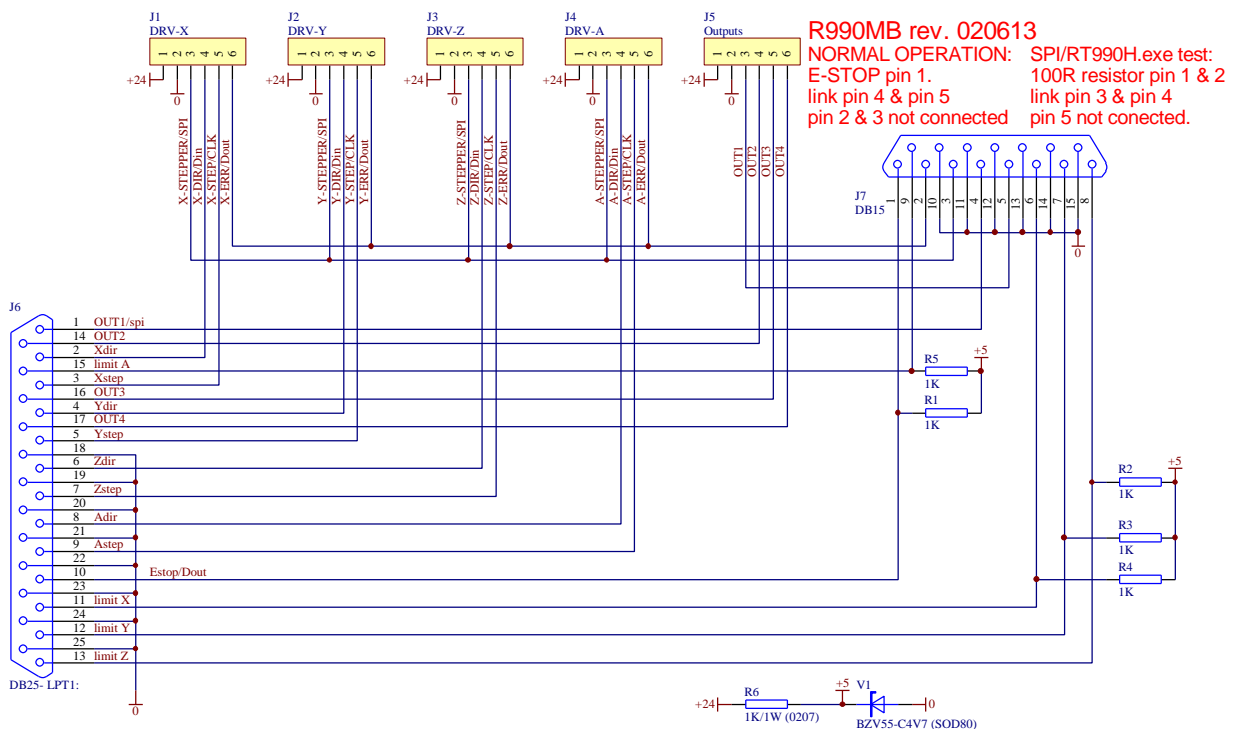


### Description:

The R990mb is an interface, which simplifies interconnection between PC running Step&Direction CNC software via LPT (printer) port and the physical CNC hardware such as motor drivers, cooling pump etc. It can be used with up to four R990/R990H/R90H/R991H/R992H servo drivers and R990io relay board.

The R990mb has direct interface to PC printer port (DB25 - LPT port) and DB15 for connecting the limit switches.

### Circuit diagram:



### Pin-out:

#### J6 - DB25: LPT interface

DB25 Pin#	Port Name	Signal name
1	Port C./0	Relay 1 Output (Coolant pump)

2	Port A.0	X Dir
3	Port A.1	X Step
4	Port A.2	Y Dir
5	Port A.3	Y Step
6	Port A.4	Z Dir
7	Port A.5	Z Step
8	Port A.6	A Dir
9	Port A.7	A Step
10	Port B.6	E Stop – connected to J4, pin-1
11	Port B./7	X Limit
12	Port B.5	Y Limit
13	Port B.4	Z Limit
14	Port C./1	Relay 2 Output (CCW spindle)
15	Port B.3	A Limit
16	Port C./2	Relay 3 Output (CW spindle)
17	Port C./3	Relay 4 Output (Drive enable)
18	0V	Signal ground
19	0V	Signal ground
20	0V	Signal ground
21	0V	Signal ground
22	0V	Signal ground
23	0V	Signal ground
24	0V	Signal ground
25	0V	Signal ground

LPT1: Port A = 378(hex), Port B = 379(hex), Port C = 37A(hex)

LPT2: Port A = 278(hex), Port B = 279(hex), Port C = 27A(hex)

NOTE: "/" indicates, that signal is inverted inside PC. For example, Port C./0 = Port C, bit 0 inverted.

### J3 – DB15: Limit switches & E-stop input

Pin#	Signal name
1	Port B.6 – E-stop

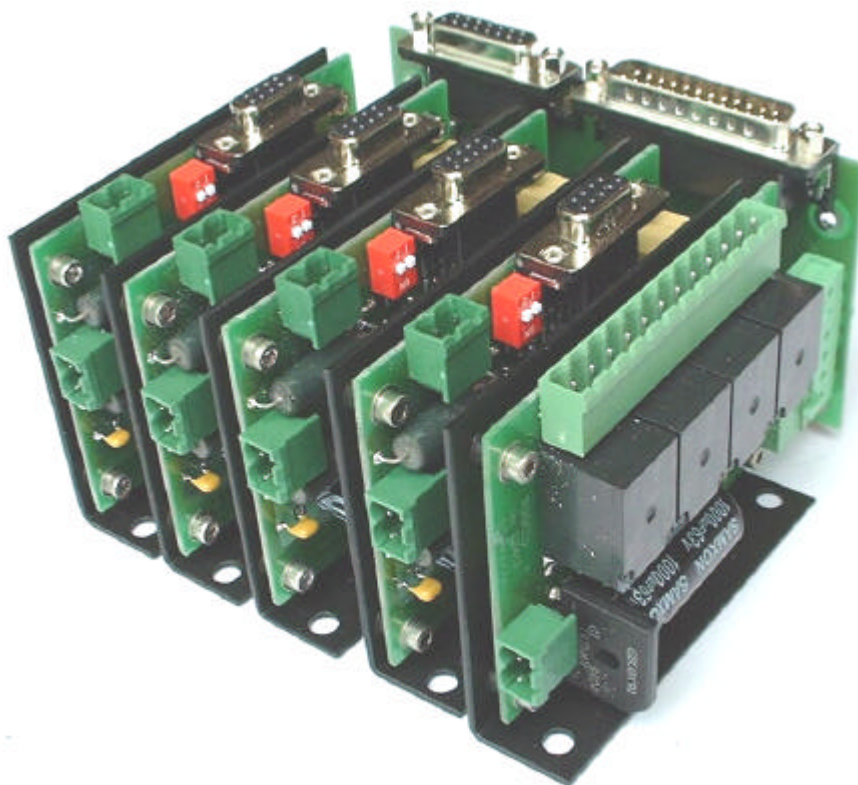
2	EN/Din – not used
3	Dout/Err – not used
4	Link to 5
5	Link to 4
6	X limit
7	Y limit
8	Z limit
9	A limit
10-15	0V – Signal ground

**Note 1:**

All switches are normally open type and they are connected between “\* limit \* “ and signal ground. Total 4 limit switches plus one E-stop switch.

**Note 2:**

During normal operation, link pin 4&5. Pins 2 & 3 are not connected. While running test software such as RT990H.exe or R90.exe connect 100 ohms resistor between pins 1&2 and link pins 3&4. Pin 5 is not connected and E-stop is not used.



4 x R990 servo drivers, 1 x R990mb and 1 x R990io.