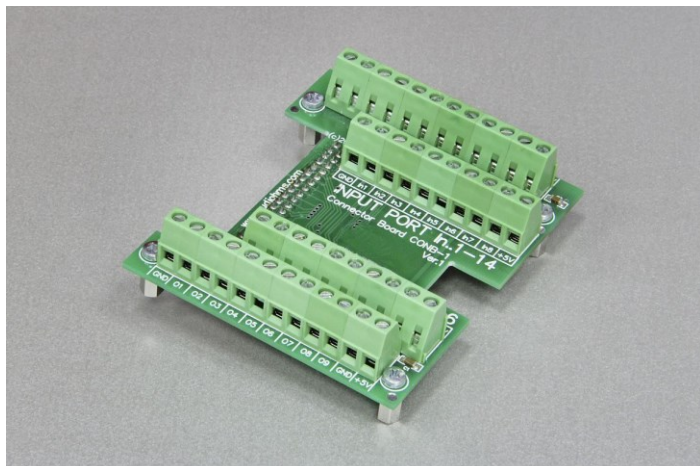# USB-CONB
Connector board for USB-MC motion controller

Connector add-on board USB-CONB is designed to be used with USB-MC motion controller.

This board has terminal blocks connectors that allow easy connection of all 16 digital outputs, 14 digital inputs and one analog input which are available on USB-MC motion controller.

In that way it is possible to fully utilize all available resources from USB-MC motion controller.

Technical specifications

Function	Description
Number of digital outputs	16 TTL outputs - For STEP/DIR/ENABLE outputs for axes control - For PWM output - For digital outputs of general type Note: All outputs are of TTL type
Number of digital inputs	14 TTL inputs, +5V pull-up resistor 4.7 kΩ
Number of analog inputs	1
Analog input voltage range	0 – 5 V
Power supply on board	+ 5VDC / 150 mA max
Weight	100 g

NOTE: Specifications are subject to change without prior notice

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ATTACHING CONNECTOR BOARD USB-CONB

Connector add-on board USB-CONB is delivered with fitted 10 mm long spacers (Figure 1 – detail 1) which should be disassembled. **Error! Reference source not found.** – detail 2 shows 4 spacers and 4 screws after disassembly.

Spacers should be installed onto threaded part of spacers that are located on USB-MC motion controller (**Error! Reference source not found.** – detail 3).

It is important to note that nuts that fasten spacers to USB-MC controller should be left in place (**Error! Reference source not found.** – enlarged detail 3).

Figure 3 – detail 4 shows properly installed spacer. Repeat procedure for 3 remaining spacers like it is shown on positions 6 (Figure 3).

Add-on board USB-CONB should be now placed on USB-MC motion controller (path 7 – Figure 3).

Using 4 screws (position 8 – Figure 4) fasten connector board USB-CONB (position 9 – Figure 4).

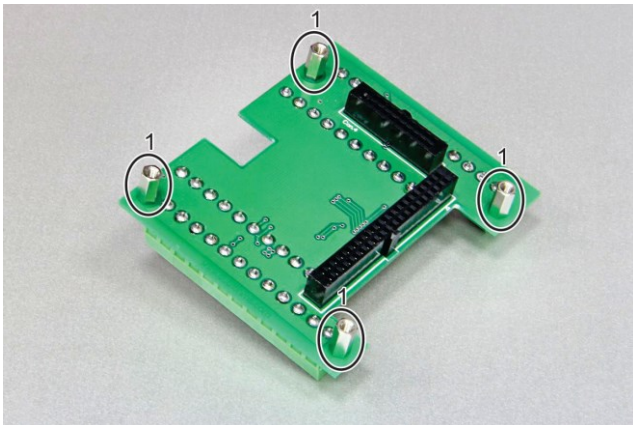Figure 5 presents connector board USB-CONB installed onto USB-MC motion controller.
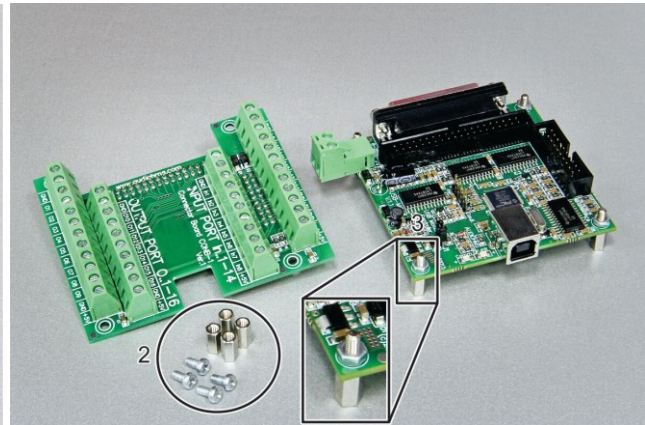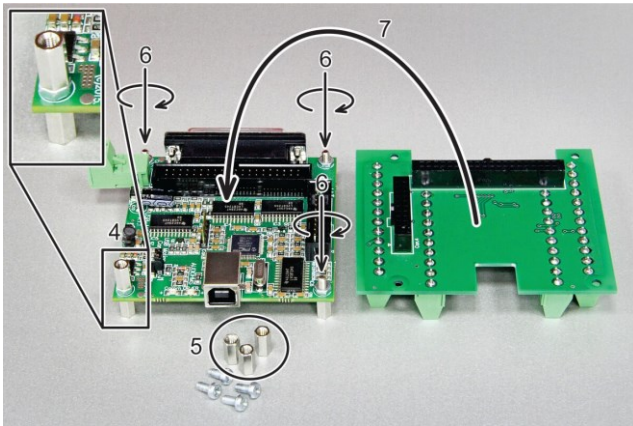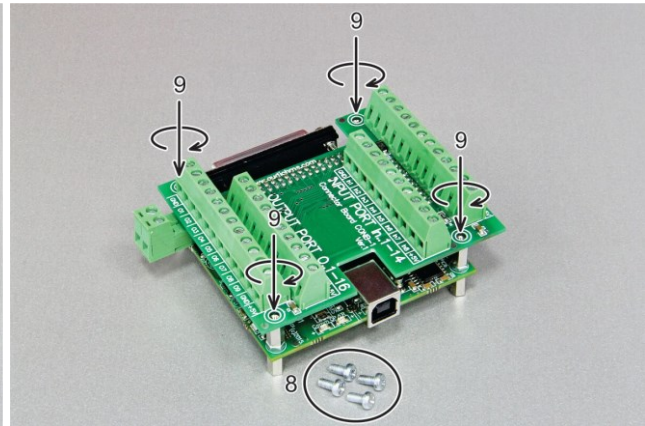

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

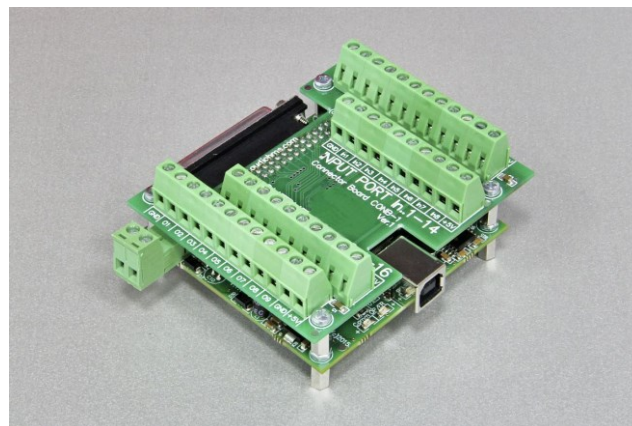| AUDIOMS AUTOMATIKA | Audioms Automatika doo | web: www.audiohms.com | Page 2 of 5 |
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INPUT AND OUTPUT CONNECTORS LAYOUT

Table 1 and Table 2 present layout of input and output lines on connector board USB-CONB.

Table 1 Output lines description – Port 1

Description	Mach3 pin (Pin#)	Output type
O1	1	
O2	2	
O3	3	
O4	4	
O5	5	
O6	6	
O7	7	
O8	8	
O9	9	TTL
O10	10	
O11	11	
O12	12	
O13	13	
O14	14	
O15	15	
O16	16	

Table 2 Input lines description – Port 1

Description	Mach3 pin (Pin#)	Input type
In1	1	
In2	2	
In3	3	
In4	4	
In5	5	
In6	6	
In7	7	TTL, +5V pull-up resistor 4.7 kΩ
In8	8	
In9	9	
In10	10	
In11	11	
In12	12	
In13	13	
In14	14	

State of input and output lines can be monitored from Mach3 software via window that is opened by selecting option from menu **PlugInControl\USB-MC status**…

CONNECTION DIAGRAMS FOR CONNECTOR BOARD USB-CONB

Figure 6 shows USB-MC motion controller with fitted connector add-on board USB-CONB. Also, this diagram shows how to connect system with computer (using USB cable), possible wiring of digital inputs with limit switches and utilizing analog input using potentiometer.
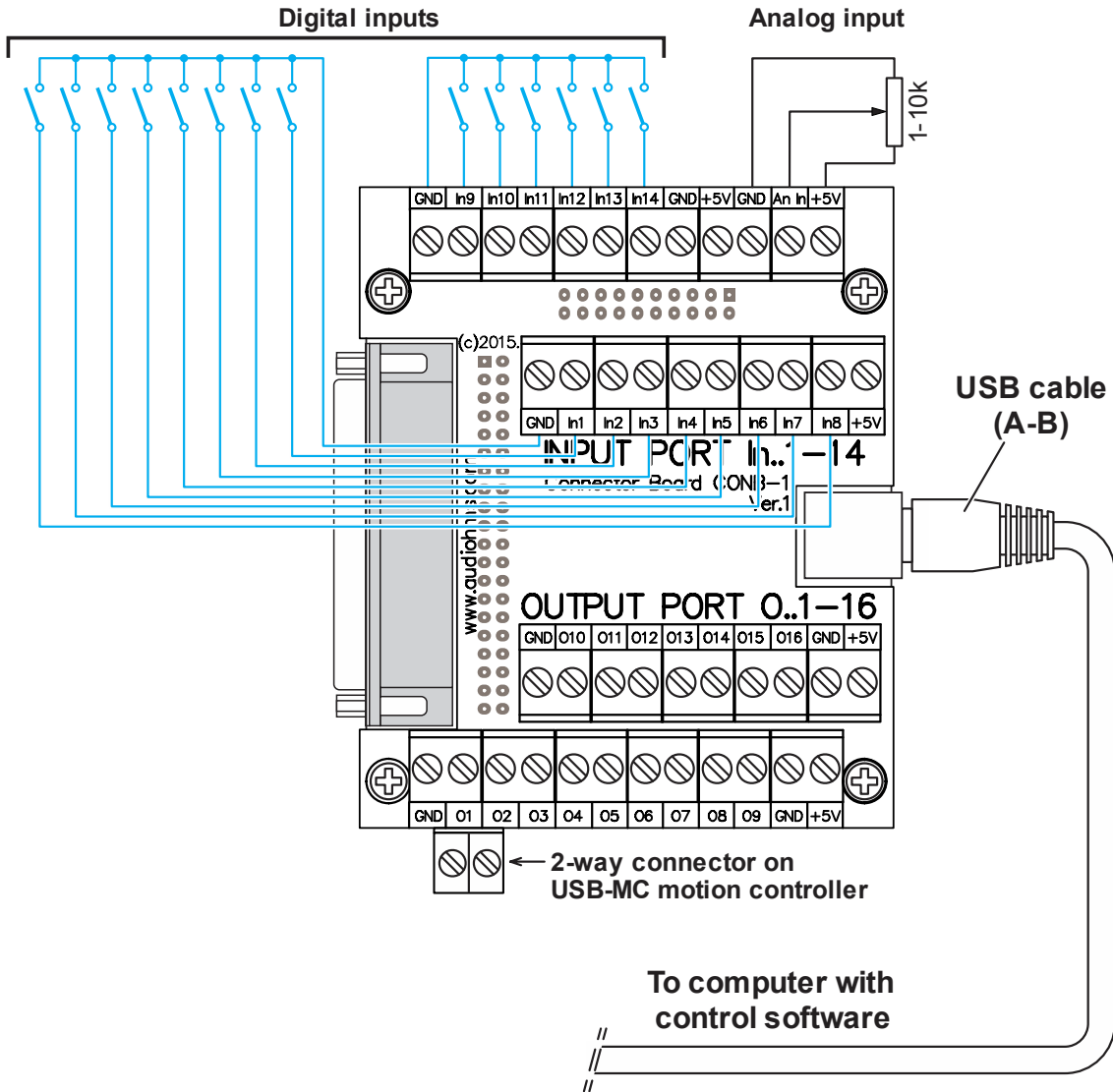

Figure 6

Figure 7 shows connection of digital outputs that can be referenced to ground (GND) or to +5V. Connector board USB-CONB enables use of power source +5V / 150 mA from USB-MC motion controller.

Figure 6 and Figure 7 present only one of possible ways of using digital inputs and outputs in a CNC control system.

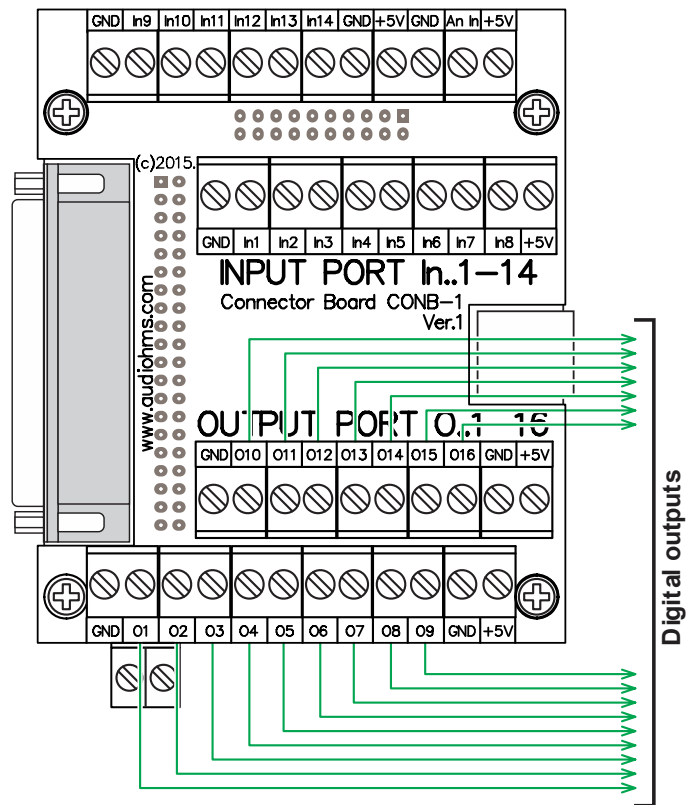| Audioms Automatika doo | web: www.audiohms.com | Page 4 of 5 |
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Figure 7

Functions of input and output pins are not fixed, thus they can be changed according to needs of specific application. For example, every digital input can be configured to have any of listed functions:

- STEP, DIR or ENABLE fast output,
- PWM output or
- general purpose digital output (for relay activation etc.).

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- Ver. 1.0, September 2016, Initial version
- Ver. 1.1, November 2020, Minor revision
- Ver. 1.11, June 2021. Minor revision

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