

khs

instruments

analog::blocks

***USB to ± 30 V Power Modules
and Boards***

User Manual

Rev. 1.0

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1) General Description

The analog::blocks USB Power Board uses a configurable pre-routed DC/DC converter circuit that can be populated for different power supply applications. The same PCB is used for the unpopulated Prototype Board and the ready-to-use Function Modules.

Configurable resistor positions allow the DC/DC converter to be powered either from the USB connector or from the +12 V rail.

The converter outputs are connected to the +PWR and -PWR auxiliary power rails.

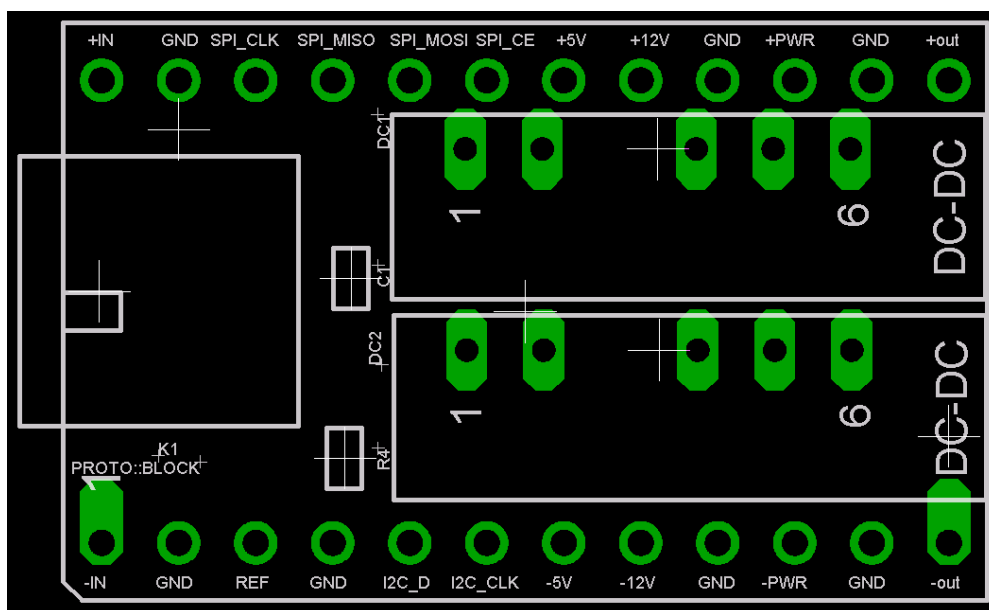


Figure 1. Common Power Module Board layout

2) Common Circuit

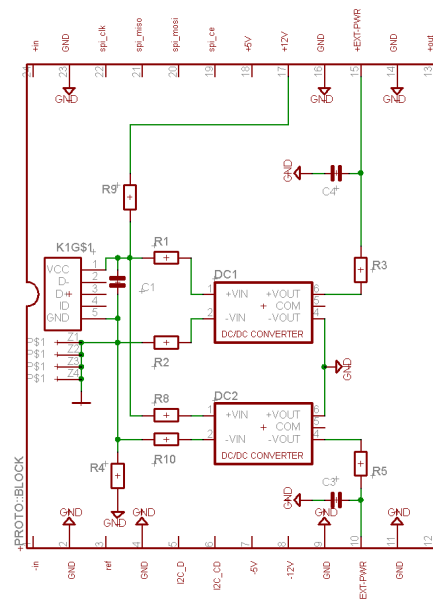


Figure 2. Common Power Module circuit.

Components / pads	Function
R1 / R2 / R8 / R10 K1 / C1	Isolated USB powered: requires DC/DC converters with 5 V input.
R1 / R2 / R8 / R10 R4 / R9	+12 V powered: The DC/DC converters are powered from the +12 V rail

3) Configuration Notes

The PCB supports Isolated USB powered and +12 V powered.

Isolated USB powered:

The DC/DC converters are powered from the USB connector. Two converters with a 5 V input voltage are required. Their outputs are connected to the $\pm$ PWR supply rails.

+12 V powered: The DC/DC converters are powered from the +12 V rail. Two converters with 12 V input voltage are required. Their outputs are connected to the $\pm$ PWR supply rails.

4) Prototype Board

Ordering Information: ABL-PPI-11-U21

5) Populated Function Modules

The populated Function Modules use the same configurable circuit as the Prototype Boards. Their factory configuration can therefore be modified by changing the DC/DC converters and the corresponding resistor and capacitor positions.

5.1) Isolated USB to ± 30 V Power Module

Configuration:	Isolated USB powered dual DC/DC converter
Input:	5 V USB
Output:	± 30 V
Maximum Output Current:	40 mA per output
Ordering Information:	ABL-MPI-11-U21-30

6) Module Interface and Pin Assignment

The module interface consists of 24 contacts. The four corner contacts are the principal analog signal connections. The signal names IN and OUT describe their usual purpose; an individual module may use these analog contacts in the opposite direction.

Pinout

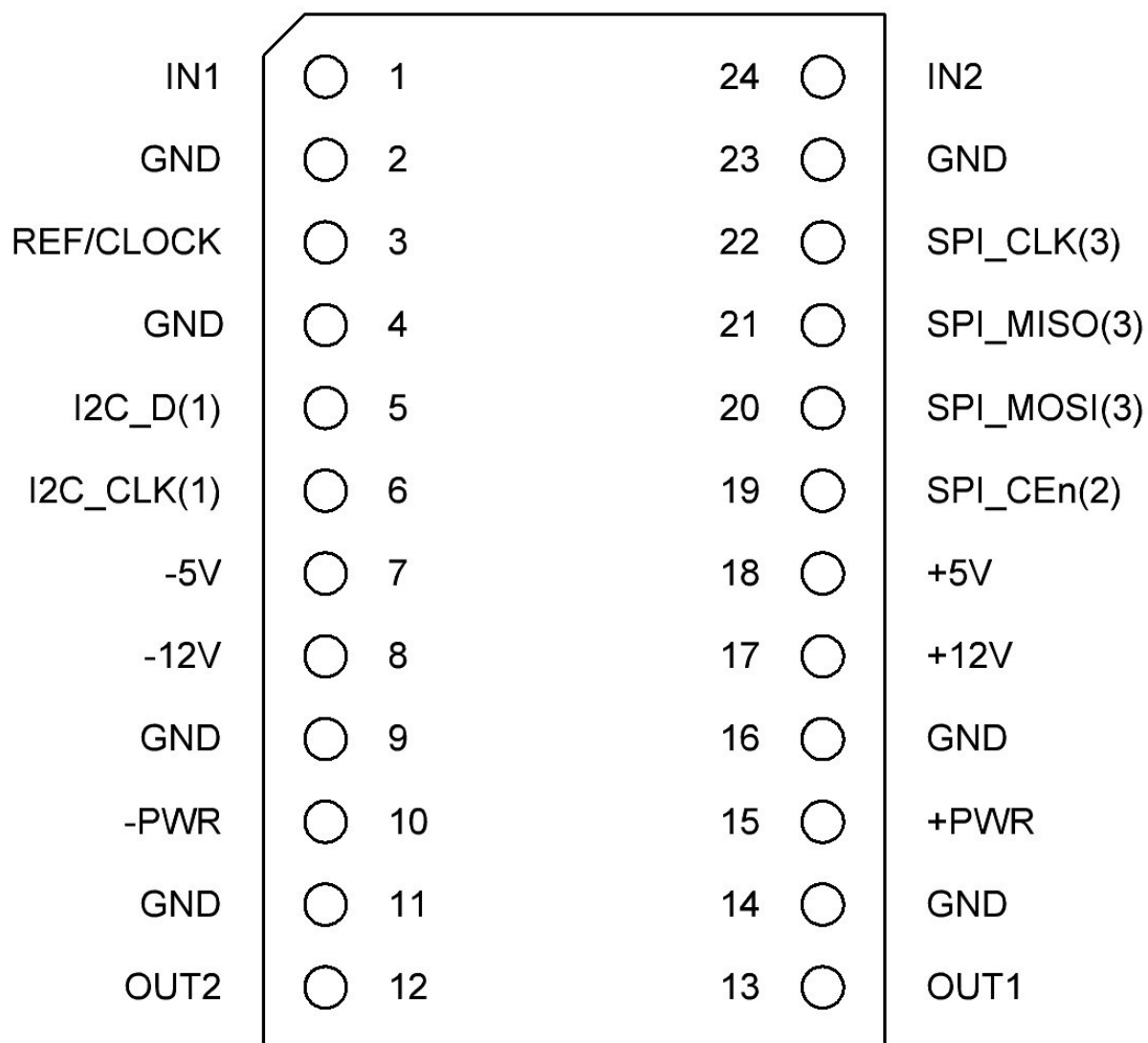


Figure 3: 24-pin analog::blocks module interface, top view.

History:

Revision	date yy/mm/dd	Changes
1.0	26/09/21	Initial.