



This version (27 Jul 2021 09:26) was **approved** by Pop Andreea.
 The [Previously approved version](#) (23 Jul 2021 15:19) is available.

ADALM2000 Power Booster Board

The AD-M2KPWR-EBZ is an ADALM2000 add-on board which increases the output current capability up to 700mA. This board can be also used as a standalone benchtop power supply with positive and negative outputs.

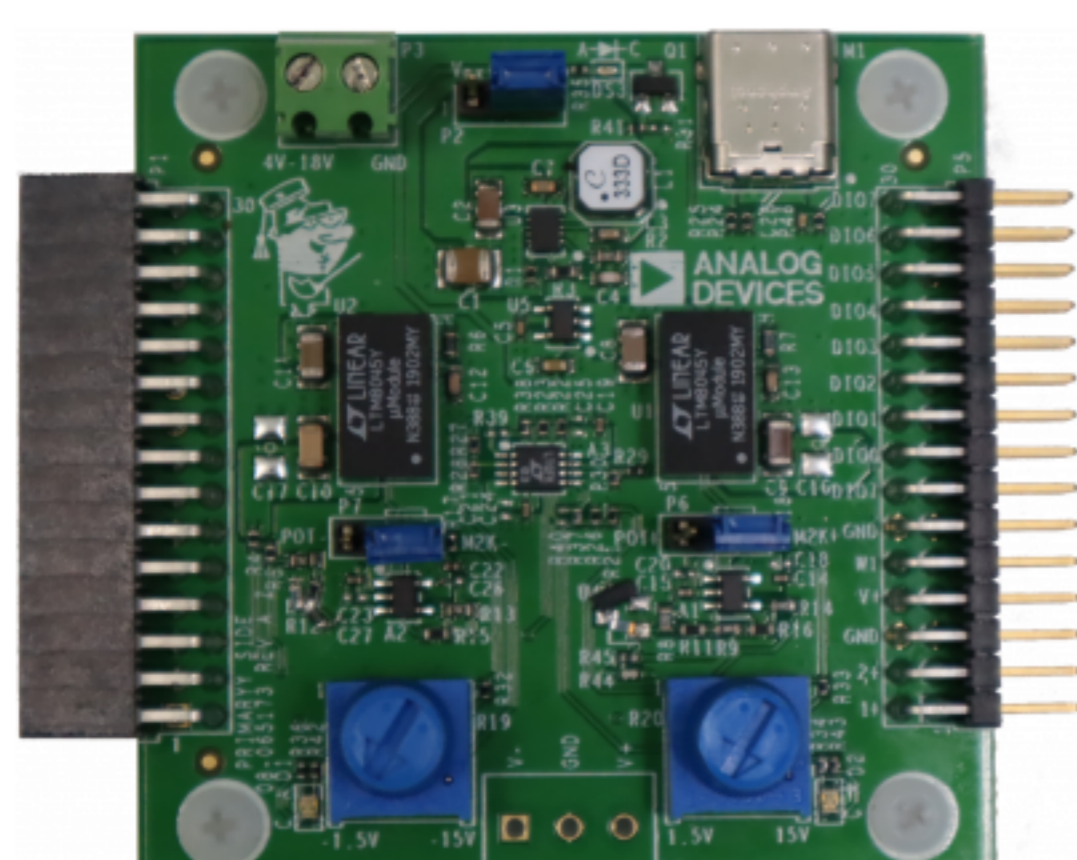


Figure 1. AD-M2KPWR-EBZ Top view

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Features

- ADALM2000 compatible
- [USB](#) Type-C powered (no Power Delivery included)
- Provides two outputs with increased current sourcing capabilities

Description

The AD-M2KPWR-EBZ is a [USB](#) Type C powered board capable to increase the output current of ADALM2000's power supplies.

Inputs:

- [USB](#) type C : 4 – 18 V_{DC} (validated with RPI [USB-C](#) power supply - not provided in the kit), 15W (power supply permitting)
- External (screw terminal connector): 4–18V; 20W (power supply permitting)

Outputs: (2 control modes)

1. Two variable power supplies that track M2K user supplies:
 - 0V to 5V (400mA in [USB](#) power mode)
 - -5V to 0V (400mA in [USB](#) power mode)
1. Two independent variable power supplies, adjusted by potentiometers
 - 1.5V to 15V (up to 700mA if powered with 18V)
 - -15V to -1.5V (up to 700mA if powered with 18V)

Applications

- General-purpose electronic systems
- Educational applications
- Automated test equipment

Package contents

- AD-M2KPWR-EBZ
- Standoffs and screws

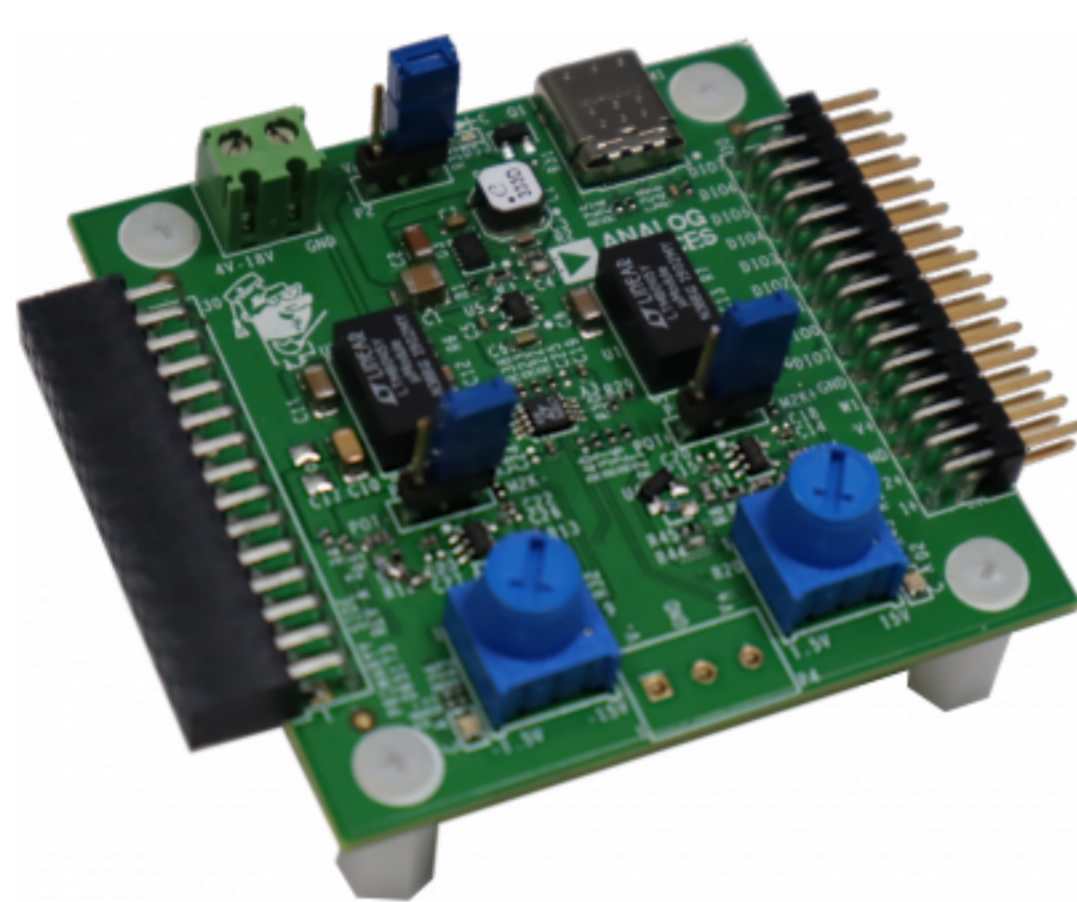


Figure 2. AD-M2KPWR-EBZ Isometric view - Package contents

Getting started

AD-M2KPWR-EBZ must be supplied either from a 5.1V 3A [USB](#) Type C power adapter or from a lab supply using the screw terminal connector. Make sure that the jumper on the P2 connector is on the position corresponding to the chosen supply:

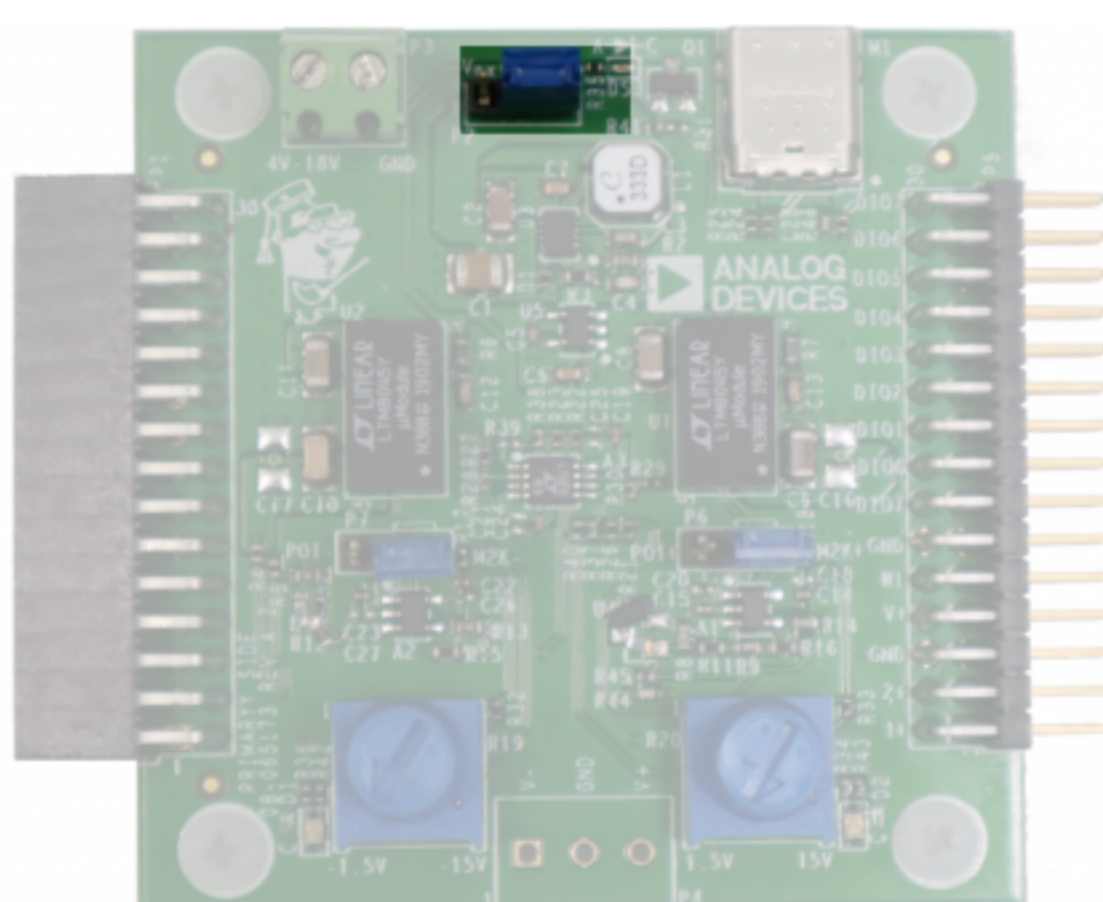


Figure 3. AD-M2KPWR-EBZ supply select jumper

P2

Jumper 1-2 shorted
 Jumper 2-3 shorted

Selected supply method

Vext - for external lab supply
 Vusb - for [USB](#) Type C power adapter



Figure 4. AD-M2KPWR-EBZ connected to ADALM2000 and [USB](#) Type C supply

M2K and POT modes

In M2K mode the board is plugged into ADALM2000. After that, the programmable user supplies of ADALM2000 can be used as usual, but they will source more current. The jumper on the connector P7 must be in M2K- position and the jumper on the connector P6 must be in M2K+ position.

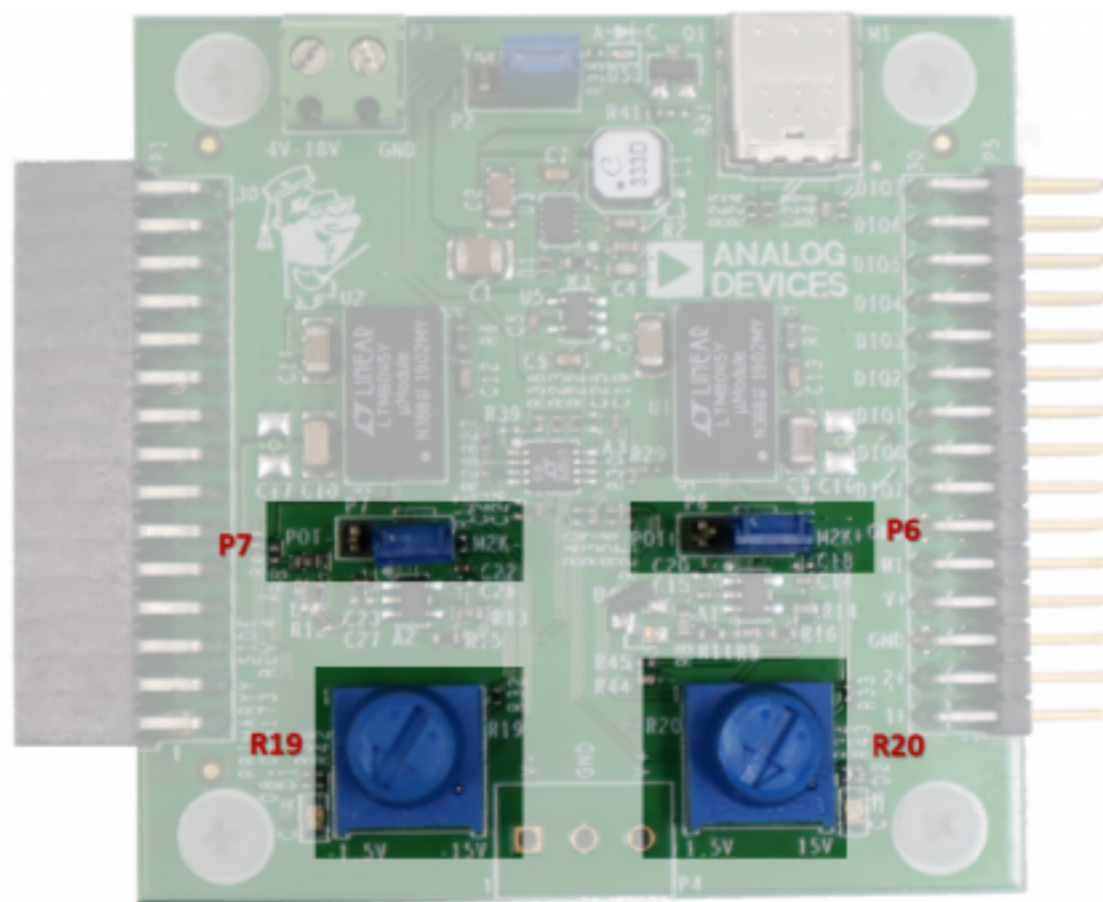


Figure 5. AD-M2KPWR-EBZ POT/M2K mode setup jumpers

P6

Jumper 1-2 shorted Output voltage (1.5 → 15V)
 Jumper 2-3 shorted Positive supply of M2K (0V → 5V)

P7

Jumper 1-2 shorted Output voltage (-15V → -1.5V)
 Jumper 2-3 shorted Negative supply of M2K (-5V → 0V)

In POT mode the board can be used as a standalone benchtop power supply. The output voltage is adjusted with potentiometers R19 and R20. The output voltage will be available at the same pins: V_+ and V_- .

Schematics and CAD Files



- [Rev B Schematics](#)
- [Rev B Gerbers](#)
- [Rev B Cadence Project](#)