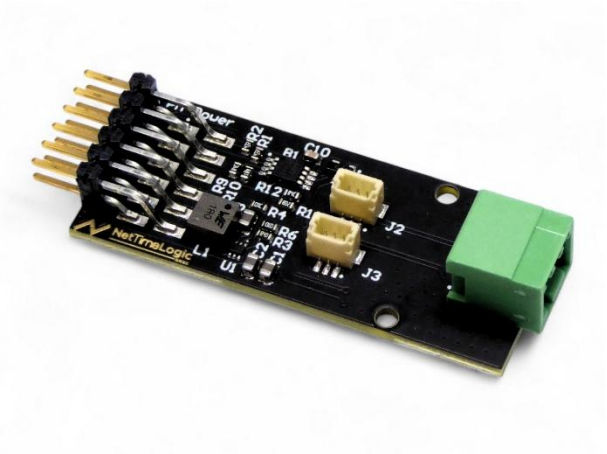
PmPower

The Pmod™ Power module provides an easy-to-control dual-rail power supply solution with independently adjustable positive and negative voltages. Both rails are configured via an I²C interface using an onboard adjustable source DAC, enabling voltage control without manual trimming. The positive rail is generated by a boost converter, while the negative rail is created with an inverting buck-boost converter, making it possible to deliver symmetric or asymmetric supplies. This module supports output voltages ranging from ±5 V to ±25 V, ideal for powering operational amplifiers, sensor interfaces, and mixed-signal circuits.

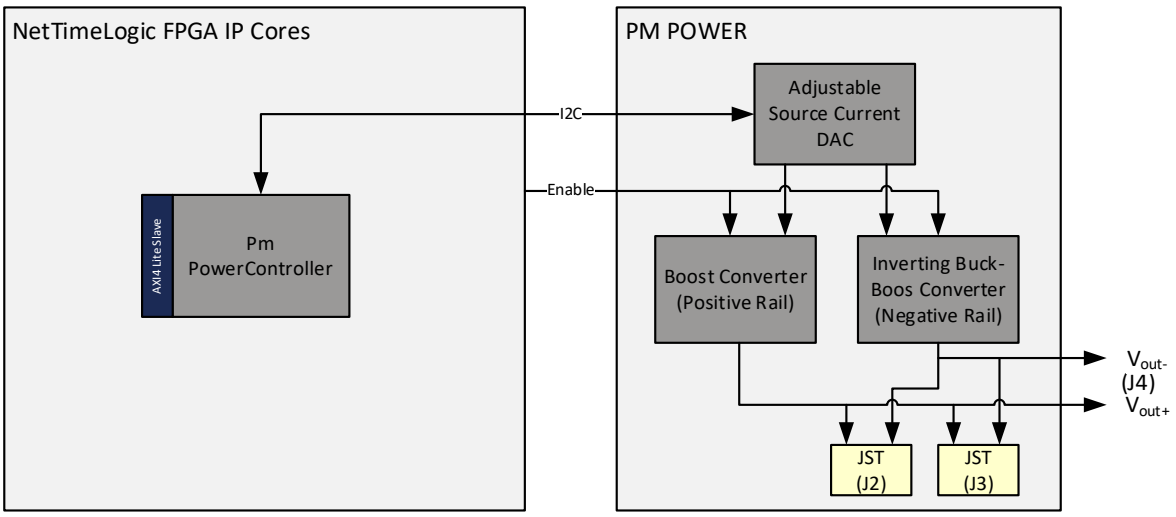
Key Features:

- Independently adjustable positive and negative output rails via I²C
- Positive Rail: Boost converter, adjustable from +5V to +25 V
- Negative Rail: Inverting Buck-Boost converter, adjustable from -5V to -25 V
- Onboard precision adjustable source DAC for voltage control

Module:



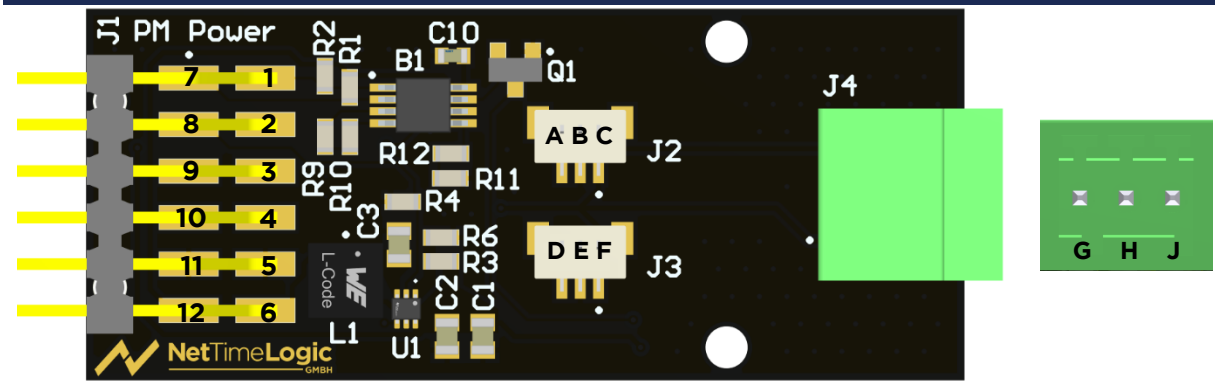
Block Diagram:



Specification:

Positive Voltage	Adjustable +5V @ 240 mA to +25V @ 45 mA
Negative Voltage	Adjustable -5V @ 240 mA to -25V @ 45 mA
Control Interface	I²C (3.3 V logic, pull-up onboard) with ±200 mV resolution (Sink/Source Current DAC DS4432 Address: 0x48)
Input	max. 720mA @ 3.3V
Positive Output	Adjustable +5V @ 240 mA max. to +25V @ 45 mA max.
Negative Output	Adjustable -5V @ 240 mA max. to -25V @ 45 mA max.

Pmod™ Pins and Module Overview:



Pin	Signal	Direction	Description
			Header J1 (Pmod™)
1	SDA	In/Out	I²C SDA signal
2	NC	-	Not connected
3	NC	-	Not connected
4	NC	-	Not connected
5	GND		GND connection to the carrier board
6	VCC		3.3V supply from the carrier board
7	SCL	In	I²C SCL signal
8	EN	In	
9	NC	-	Not connected
10	NC	-	Not connected
11	GND		GND connection to the carrier board
12	VCC		3.3V supply from the carrier board
			JST J2
A	VOUT_NEG	Out	Negative Rail Output
B	GND		GND connection to the carrier board
C	VOUT_POS	Out	Positive Rail Output
			JST J3
D	VOUT_NEG	Out	Negative Rail Output
E	GND		GND connection to the carrier board
F	VOUT_POS	Out	Positive Rail Output
			Terminal J4
G	VOUT_NEG	Out	Negative Rail Output
H	GND		GND connection to the carrier board
J	VOUT_POS	Out	VOUT_POS

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