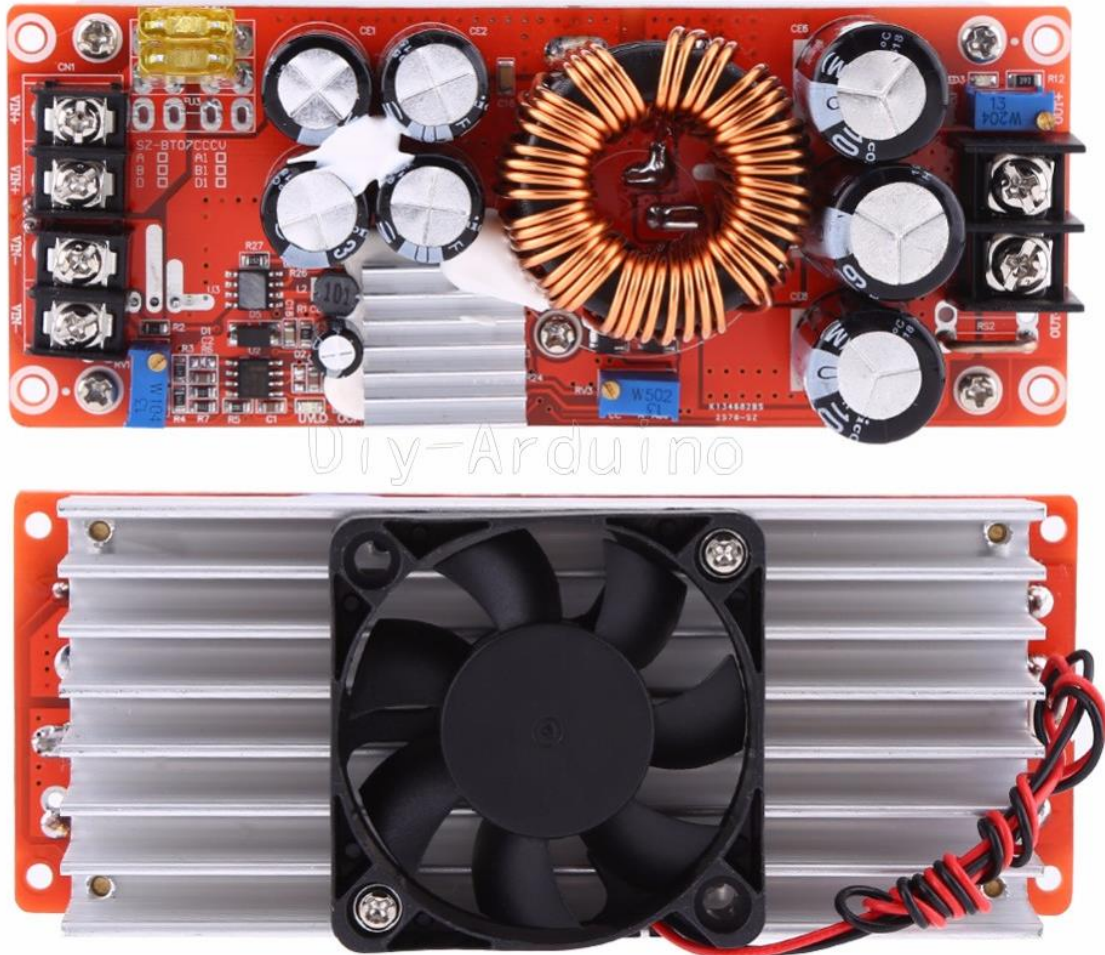


A 12 V - 28 V DC-DC-Converter for portable operations

Matthias, DD1US, June 19th 2025, rev 1.0

I am presently working on a portable EME station and needed a supply of 28 V for my power amplifier. Thus, I decided to build a DC-DC-Converter to be able to use my available 12 V battery.

The DC-DC-Upconverters are from China and look like this:



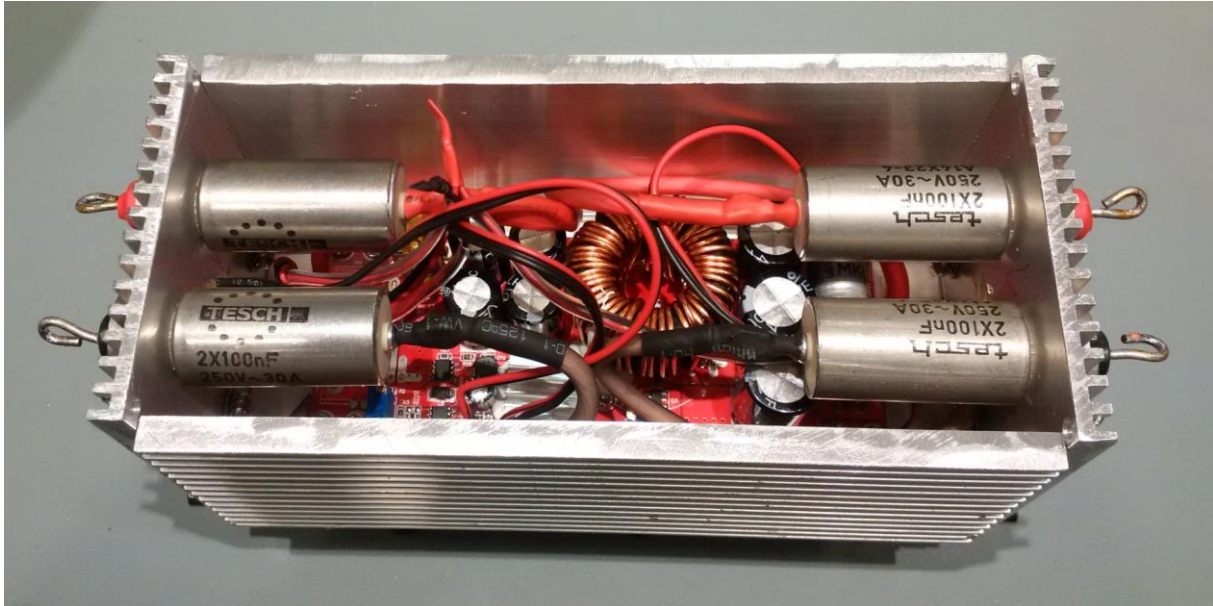
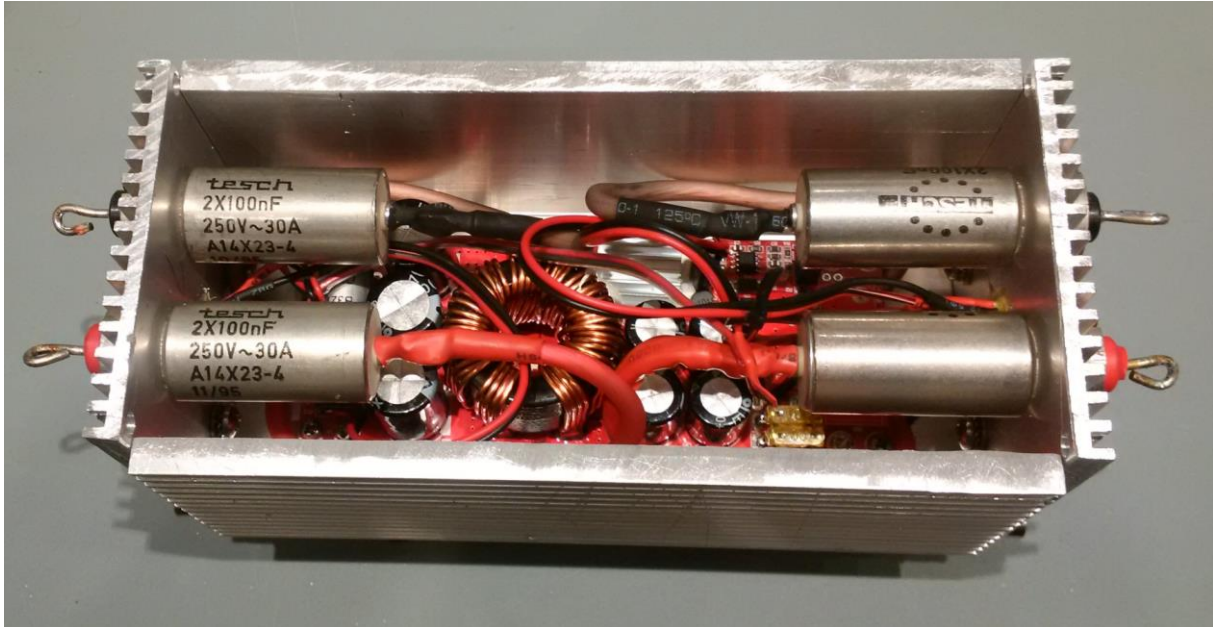
This is the specification of the 1500 W DC-DC Converter module:

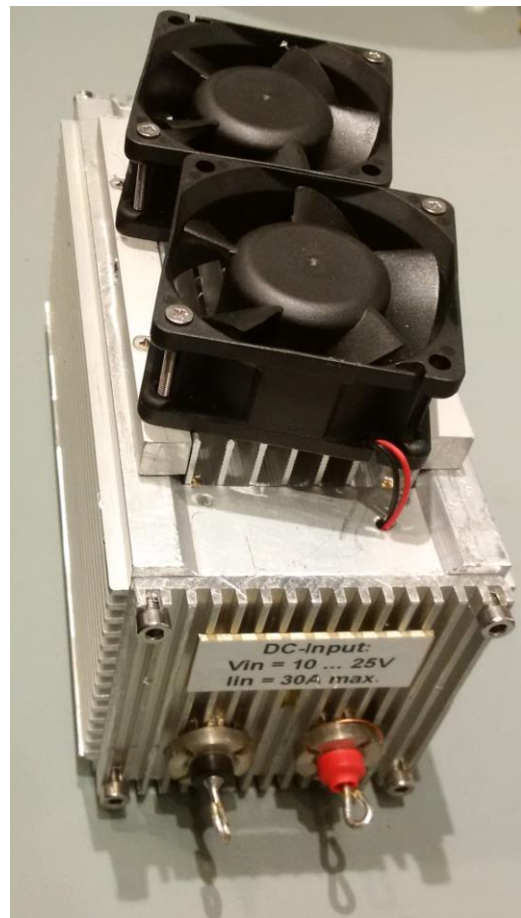
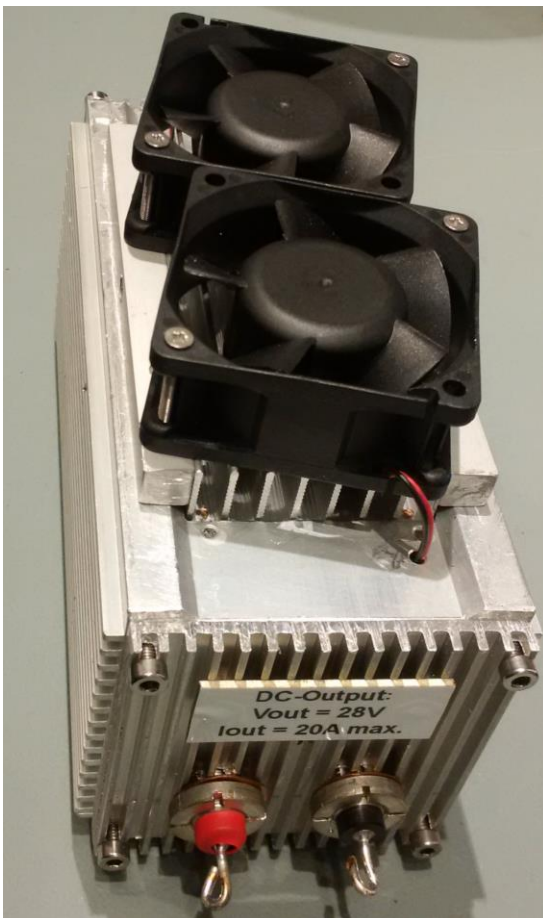
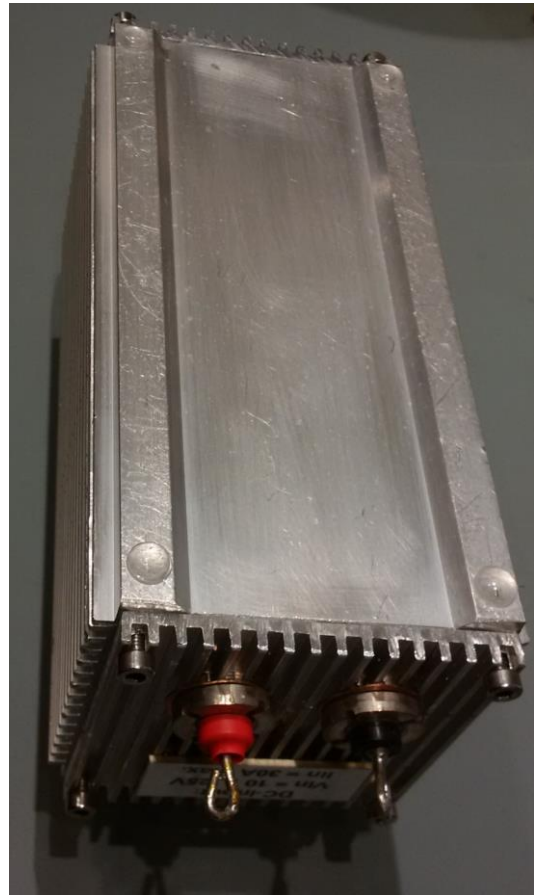
Input voltage:	10 – 60 V
Input current:	30 A (10 – 30 V input) 25 A (31 – 60 V input)
Static operating current:	15 mA
Output voltage:	12 – 90 V continuous adjustable
Output current:	max 20 A, over 15 A please strengthen the cooling
Constant current range:	0.8 – 20 A (+/- 0.3 A)
Max. output power:	input voltage x 30 A
Operating temperature:	-40 - +85 degrees
Switching frequency:	150 KHz
Conversion efficiency:	92 % - 97 %
Size:	130 mm x 52 mm x 84 mm (L x W x H)

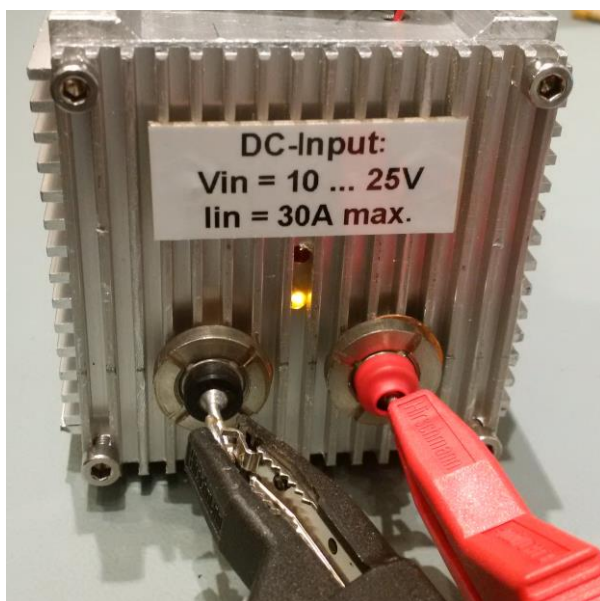
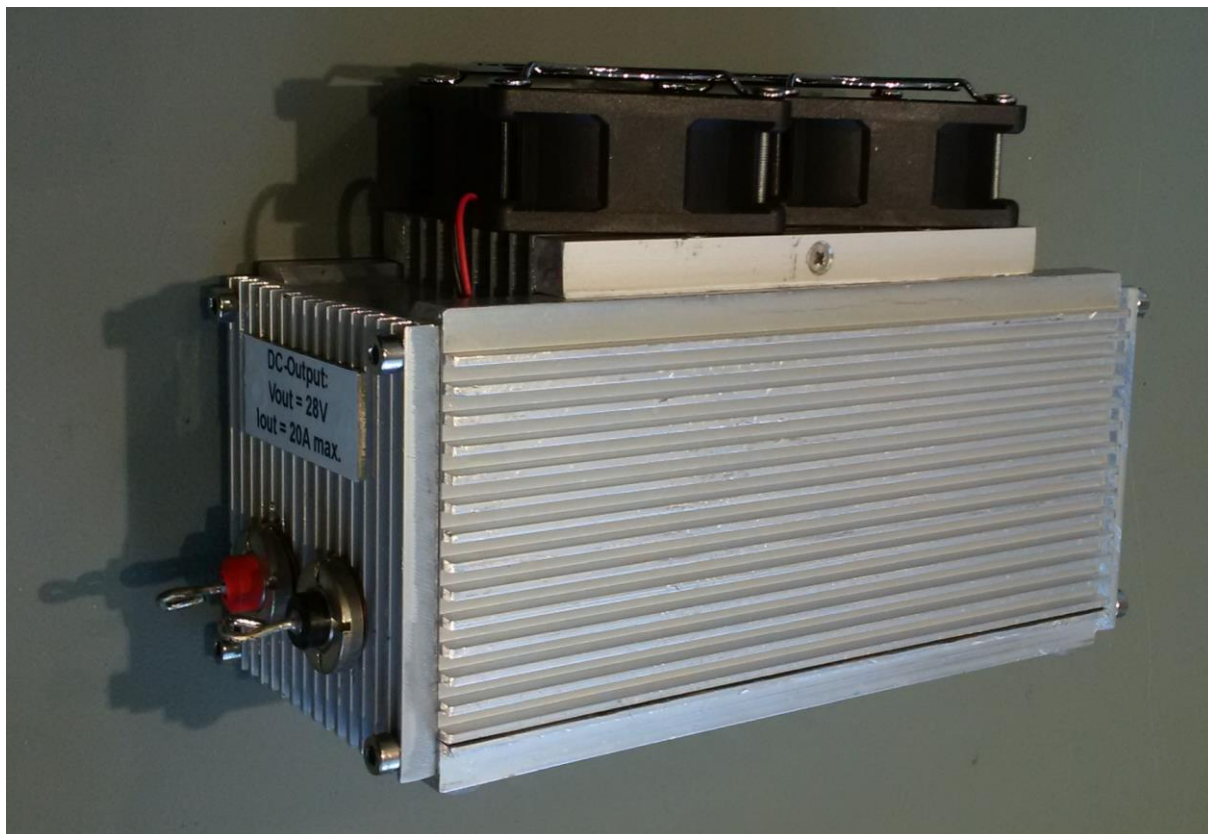
To provide optimum cooling and at the same time proper shielding of the module I integrated it into a surplus aluminium encasing I had at hands. The existing heatsink attached to the module when I got it was reused but if was clamped and screwed to the encasing which effectively increased the size of the effective heatsink. In addition, a second fan was mounted on the heatsink.

For proper decoupling of the input and output special high current filters were inserted.

Here are some pictures of the integration of the module into the aluminium encasing:







I am always grateful to get feedback and will be happy to answer questions.

Please direct them to my Email address, which you find on my website.

Best regards

Matthias DD1US

Homepage: <http://www.dd1us.de>