

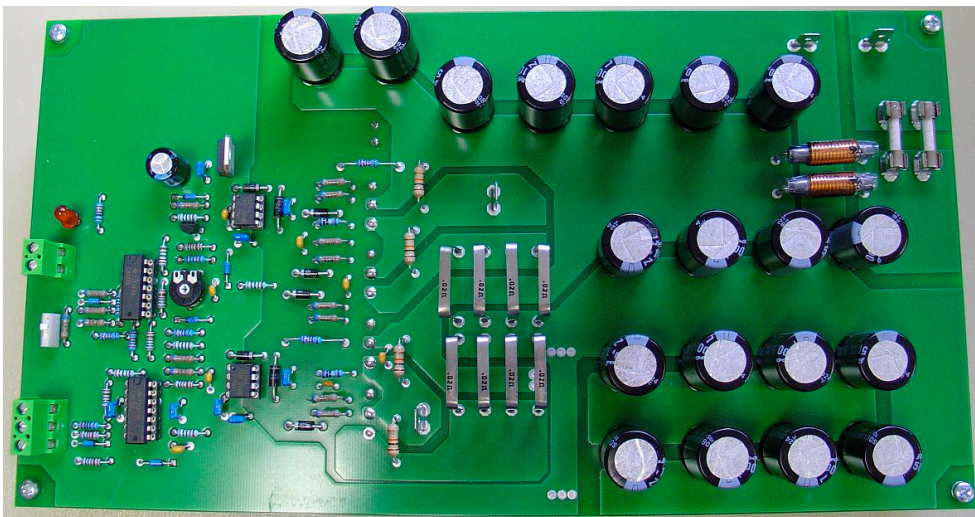
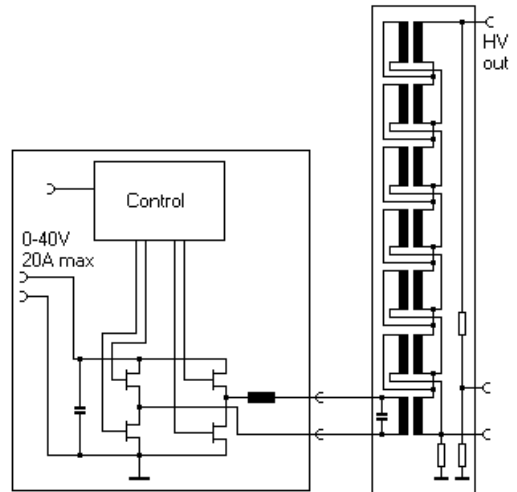
# Minipuls 6

kit for efficiently generating high frequency high voltage

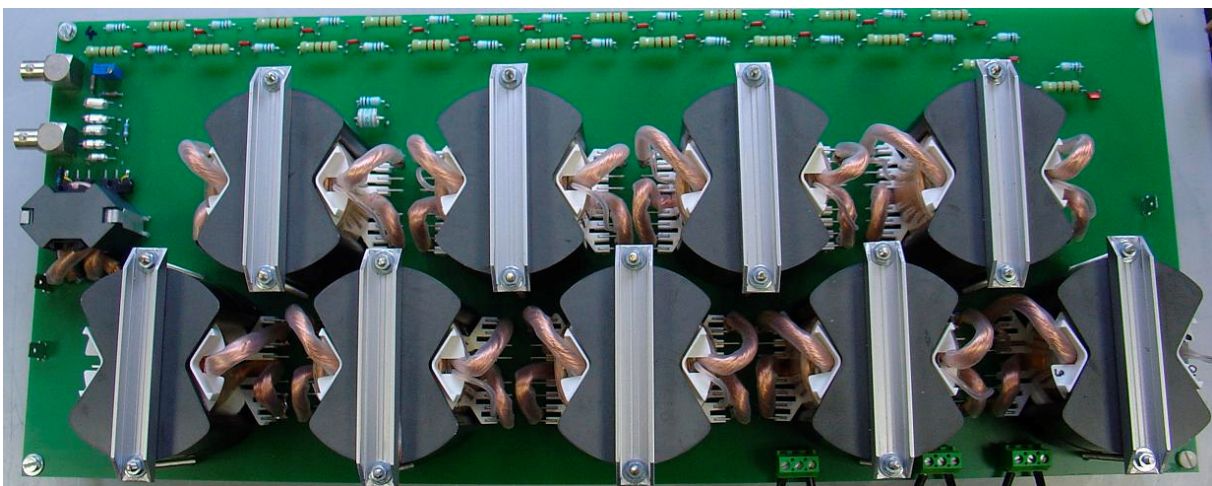
The assembly Minipuls 6 is developed to generate high AC voltages up to 30 kV peak (=60 kVpp or 21 kV RMS). The operation frequency range is 5-20 kHz. The device consists of a full bridge converter and a transformer cascade.

Input voltages can be supplied by a standard laboratory power supply.

Control is by an external control signal.



Minipuls 6 full bridge converter



Minipuls 6 transformer cascade

## Technical data

The setup consists of the converter bridge and the transformer cascade. The converter delivers a powerful low voltage square wave, and the cascade transforms this up and filters out a sine-like waveform.

### Full bridge converter

- supply voltage 17-35 V, 0.1A
- power supply bridge 0-45V, 20A max., 6.3mm plug
- maximum input power <720W, maximum average output power 700W, peak power temporary higher.
- pulse current limit 80A
- over temperature switch off
- power supply protected with a 20A fuse
- pulse frequency nominal 10 kHz, recommended frequency range is 5-20 kHz; possible frequencies range from 0-50 kHz.
- external control logic; control logic adjustable

### control input:

	logic: +/- 5V	logic: TTL
T1 on	5V>U>3.2V	5V>U>3.2V
off	2V>U>-2V	2V>U>1.2V
T2 on	-3V>U>-5V	1V>U>0V

voltage control input, input open:1.4V

### Inhibit-Input

enabled	Input open or U<1.4V
disabled	U>1.4V

Current into signal inputs <0.5mA.

- wave form: The full bridge generates positive and negative pulses, depending on control signal.
- board size 280\*150mm, weight 1.2kg

### Transformer cascade

- cascade consists of 8 PM 74 cores
- maximum output voltage 30kV peak at 10kHz an a nominal load of 100pF.
- Maximum peak output current 250mA.
- With different loads, other possible peak frequencies and peak voltages may result
- The last 3 transformers can be disabled and shorted, which reduces the nominal transformer ratio from 1:321 to 1:281, 1:241, 1:201. This results in maximum output voltage reduced to 19 kV peak, but nominal load increased to 250 pF.
- monitor output 1:3000 for output voltage
- monitor current 10V/A for output current
- protected against overvoltages by a spark gap (triggers around 36kV peak)
- board size 485\*200mm, weight 7.5kg

### Environmental

- environmental temperature 0-35 °C
- humidity 0-80%, the assembly is intended for the use in dry rooms
- protection class III, IP 00

### Safety

- The high voltage output connector is not protected against touching! The user has to ensure that they can't be touched during operation. Outputs of high frequency transformers have very little stored energy. But the current may exceed allowed limits, touching may cause severe burns.
- The most common application (barrier discharge in an open setup) is a possible source of high frequency noise emissions, which may influence nearby electronics devices. This has to be considered by the user and appropriate measures taken.

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