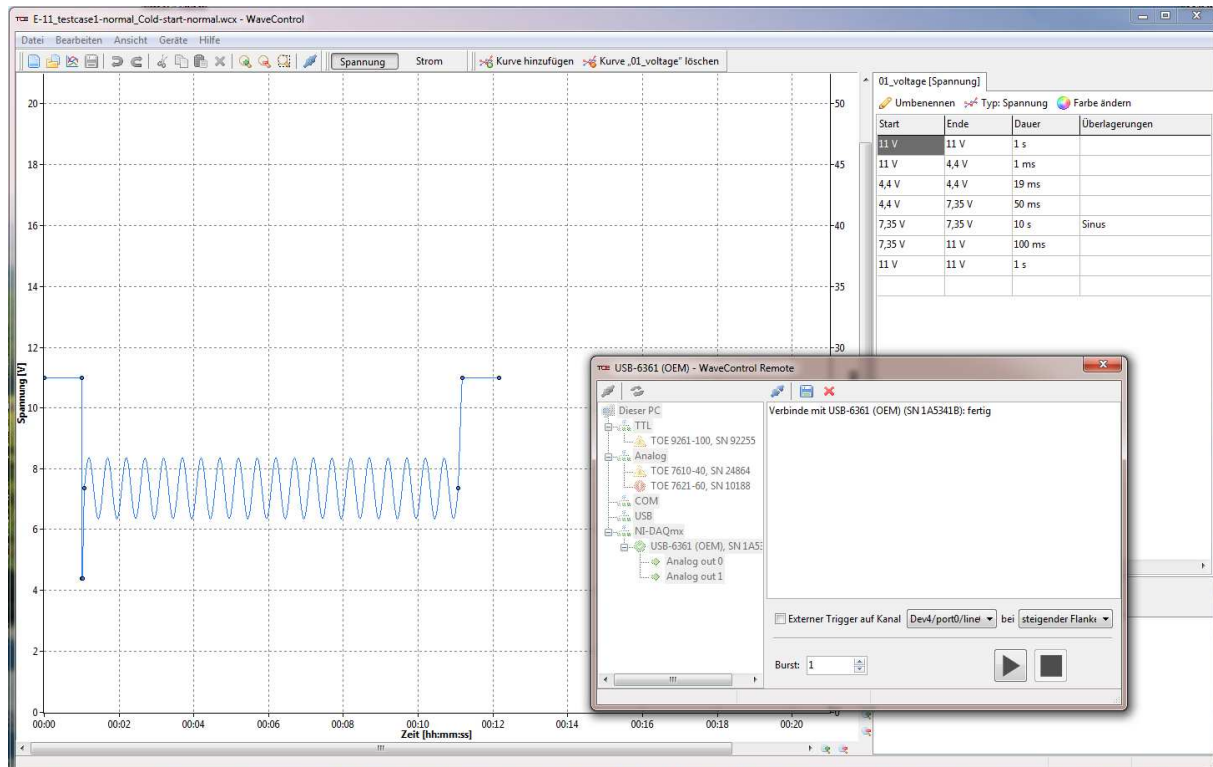


## TOELLNER solutions for automotive testing

### Software TOELLNER-WaveControl

provides libraries for standards LV 124, LV 148, GMW 3271, ISO 16750. Other waveforms can be created easily with the waveform viewer/editor.



Actually provided libraries:

GMW3172-2012  
 GMW3172-2015  
 ISO16750-2-2006  
 ISO16750-2-2010  
 ISO16750-2-2012  
 LV124-2009  
 LV124-2013  
 LV124-2017  
 LV148-2011  
 VW80000-2009  
 VW80000-2013  
 VW80000-2017  
 VW80148

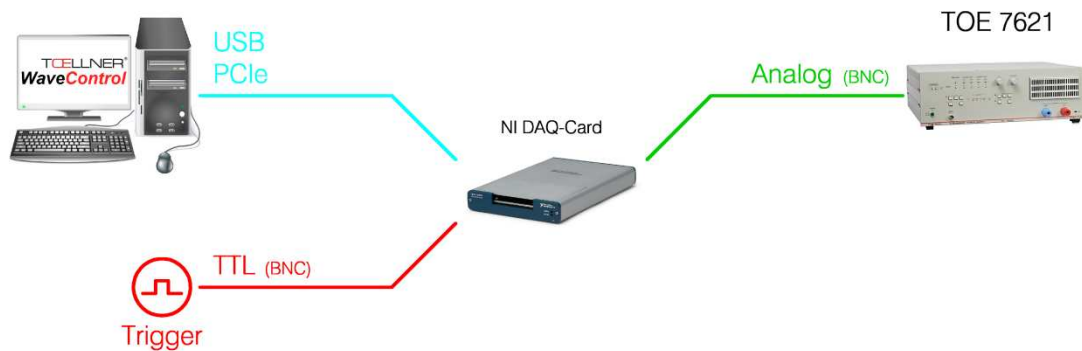
IF a NI DAQ card with analog output is used to control a 4 quadrant supply TOE 7621 / TOE 7610 or an Arbitrary Power Generator TOE 8815 – TOE 88165 waveforms can have random length with very high resolution. The sample rate is up to 2.8 MS, shortest step width is < 400 ns.

**TOELLNER 4 quadrant amplifier/power supplies TOE 7621 / TOE 7610**

**+ NI DAQ card with analog output**

**+ PC with TOELLNER-WaveControl software**

- *Well suited for most automotive test requirements.*



**4 quadrant** supply with positive or negative output voltage and source and sink capability.

**Continuous power** 320 W per TOE 7621, **up to 3.2 kW** with ten units in parallel, expandable in field. Continuous power 150 W with TOE 7610.

**Peak current** up to 3 times of continuous current to charge/discharge capacitors quickly.

**High DC stability**

**AC Bandwidth** fullscale > 100 kHz, AC superimposition up to 200 kHz, limited by DAQ card actually. AC bandwidth of TOE 7621 > 400kHz.

**Rise/Fall Time** from 0 V to 90% of max. output voltage < 1.5  $\mu$ s. Slew rate up to 25 V/ $\mu$ s depending on the maximum output voltage of the TOE 7621.

**Random waveform length** with shortest step width of approx. 360 ns.



Rack with 4x TOE 7621  
in parallel



TOE 7621



TOE 7610

## Arbitrary Power Generator TOE 8815 – TOE 88165 controlled with NI DAQ card

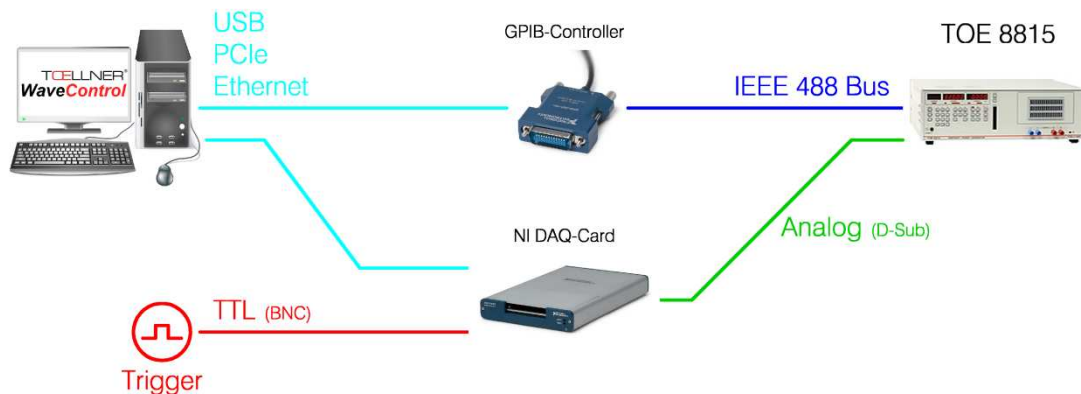
### TOELLNER Arbitrary Power Generator TOE 8815 – TOE 88165 with option TOE 8810/107

+ NI DAQ card with analog output

+ PC with **TOELLNER-WaveControl** software

- *Well suited for many automotive test requirements.*

Some polarity inversion tests and new test cases with frequencies above 50 kHz cannot be performed.



**2 quadrant** supply with positive output voltage and source and sink capability.

**Continuous power** 320 W **up to 5.1 kW** with up to 15 booster units in parallel, preconfigured in factory.

**Peak current** up to 3 times of continuous current to charge/discharge capacitors quickly.

**High DC stability**

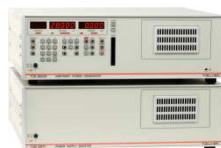
**AC superimposition** > 50 kHz, > 70 kHz up to 640 W.

**Rise/Fall Time** from 0 V to 90% of max. output voltage < 1.5  $\mu$ s. Slew rate up to 1.7 V/ $\mu$ s depending on the maximum output voltage of the arbitrary power supply.

**Random waveform length** with shortest step width of approx. 360 ns.



TOE 88165  
16 units in parallel



TOE 8825



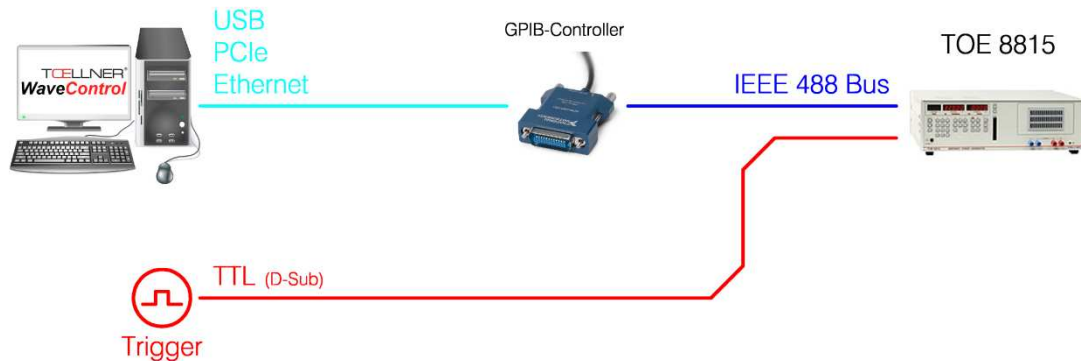
TOE 8815

## TOE 8815 – TOE 88165 controlled with internal arbitrary machine

### TOELLNER Arbitrary Power Generator TOE 8815 – TOE 88165 with option TOE 8810/107 + PC with TOELLNER-WaveControl software

#### • Recommended for special test scenarios only.

Some polarity inversion tests cannot be performed. AC superimposition not possible with the internal arbitrary machine. Max. frequency with external analog control is 70kHz / 50 kHz.



**2 quadrant** supply with positive output voltage and source and sink capability.

**Continuous power** 320 W **up to 5.1 kW** with up to 15 booster units in parallel, preconfigured in factory.

**Peak current** up to 3 times of continuous current to charge/discharge capacitors quickly.

#### High DC stability

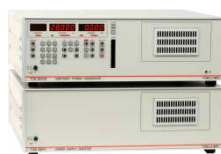
**AC superimposition** > 50 kHz, > 70 kHz up to 640 W with additional AC source only, e.g. a function generator.

**Rise/Fall Time** from 0 V to 90% of max. output voltage < 1.5  $\mu$ s. Slew rate up to 1.7 V/ $\mu$ s depending on the maximum output voltage of the arbitrary power supply.

**Waveform length** limited to 1000 steps with variable step width. Step width range from 200 $\mu$ s to 100 s. Maximum frequency with internal arbitrary machine is 2.5kHz square wave or 100 Hz sine wave.



TOE 88165  
16 units in parallel



TOE 8825



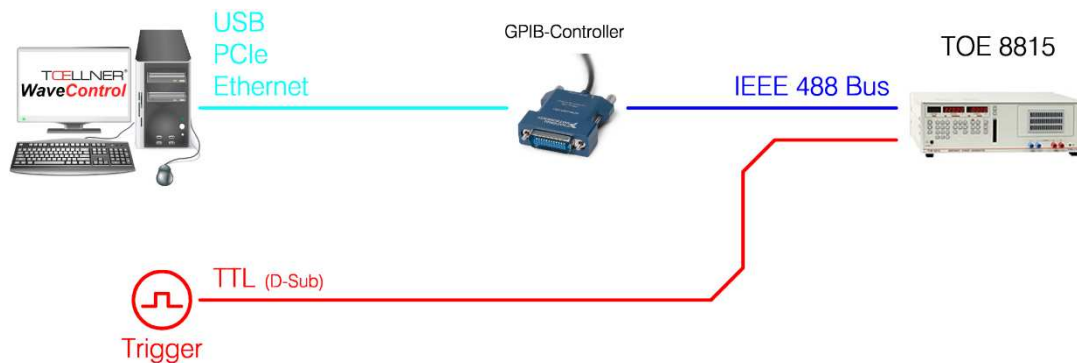
TOE 8815

## TOE 8805 – TOE 88165 without option TOE 8810/107

### TOELLNER Arbitrary Power Generator TOE 8815 – TOE 88165 / TOE 8805 + PC with TOELLNER-WaveControl software

#### ● *Not recommended for automotive testing.*

Some polarity inversion tests cannot be performed. Fall time with capacitive load depends on load current as there is no active sink included.



**Single quadrant** arbitrary DC power supply with fast rise/fall time.

**Continuous power** 320 W **up to 5.1 kW** with up to 15 booster units in parallel (TOE 8815 – TOE 88165), preconfigured in factory.  
Continuous power of 150 W with TOE 8805.

**Peak current** up to 3 times of continuous current to charge capacitors quickly. Capacitors must be discharged by the load current as there is no sink included (single quadrant unit)

**High DC stability**

**AC superimposition** up to 3 kHz with external analog control.

**Rise/Fall Time** from 0 V to 90% of max. output voltage is 200  $\mu$ s, 100  $\mu$ s with TOE 8815 up to 40 V.

**Waveform length** limited to 1000 steps with variable step width. Step width range from 200  $\mu$ s to 100 s. Maximum frequency with internal arbitrary machine is 2.5kHz square wave or 100 Hz sine wave.



TOE 8815



TOE 8805