R&S®NGU201
versus Keysight N6785A / N6786A

What sets this source measure unit apart?

▶ Minimum residual ripple and noise to supply interference free voltage to sensitive DUTs
▶ Fast regulation of output voltage with minimum overshoot and very fast load recovery time
▶ Adjustable output impedance
▶ Constant resistance mode for sink operation
▶ Acquisition rate of up to 500 ksample/s to capture extremely fast variations in voltage or current
▶ Voltage priority and current priority mode
▶ High-capacitance mode
▶ Battery simulation

Your benefit	Features
Minimal overshoot from abrupt load changes	▶ Optimized load recovery time of < 30 µs ▶ Handles abrupt load changes from a few nA to the ampere range without creating voltage drops or overshoots
Capture fast variations in voltage/current	▶ Acquisition rate of up to 500 ksample/s ▶ Voltage and current results available every 2 µs
Realistic battery simulation	▶ Simulate the actual battery output performance ▶ Testing can be based on a selected battery model ▶ Battery capacity, SoC and V_{oc} can be set to any state to test the device under specific circumstances

| Parameter	R&S®NGU201	Keysight N6785A	Keysight N6786A
Max. voltage/current/power	20 V / 8 A / 60 W	20 V / 8 A / 80 W	
Adjustable output impedance	−50 mΩ to 100 Ω	yes	no
Voltage ripple and noise (RMS)	< 500 µV (meas.)	< 1.5 mV	
Current ripple and noise (RMS)	< 1 mA (meas.)	noise < 1 mA, ripple not specified	
Load recovery time	< 30 µs (meas.)	< 35 µs	
Rise time/fall time	< 100 µs / < 100 µs	10 µs / not specified	
Measured voltage/current ranges	2 / 6	1 / 3	
Max. readback resolution	1 µV / 100 pA	200 µV / 10 nA	
Max. voltage readback accuracy	< 0.02 % + 500 µV	< 0.025 % + 1.8 mV	
Max. current readback accuracy	< 0.025 % + 15 nA	< 0.025 % + 100 nA	
Max. acquisition rate (min. step)	500 ksample/s (2 µs)	200 ksample/s (5 µs)	
High-capacitance mode	yes	no	
Current priority mode	yes	yes	
Digital voltmeter input	optional	yes	no
Modulation input	no	no	yes
Battery simulation	optional	no	
Standalone instrument	yes	modules for Keysight N6700C/N6705C base units	

Standalone instrument versus modular system

The R&S®NGU201 is a small standalone instrument in the half 19" format.

Keysight offers the N6700C and N6705C modular systems in 19" format to hold up to 4 SMU units.

Optimized load recovery time
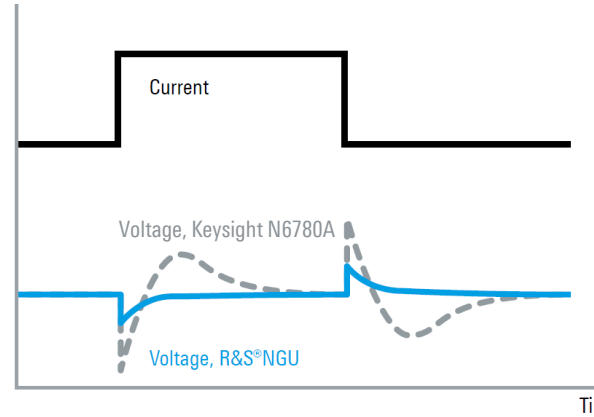
Keysight N6780A modular units are slower compared to the R&S®NGU source measure units

Under challenging load conditions, most power supplies respond with slow recovery times and overshoot. Specially developed circuits in the R&S®NGU source measure units achieve a load recovery time of < 30 µs with minimal overshoot, making them perfect for supplying sensitive components with power.

Battery simulation
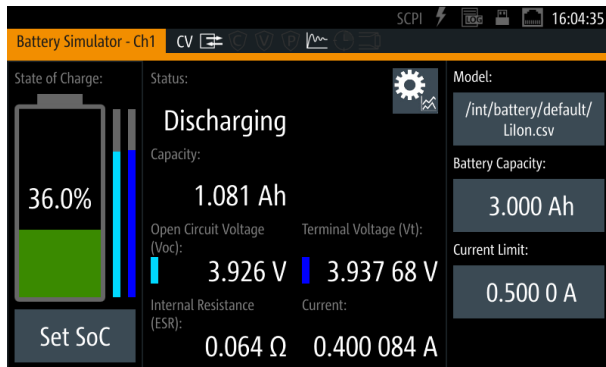
Keysight N6780A modular units do not provide a battery simulation function
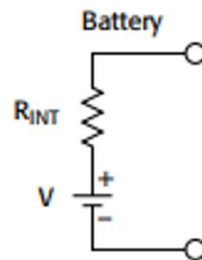
► Capacity, open circuit voltage (V_{oc}) and equivalent series resistance (ESR) are important battery characteristics that depend on the battery's state of charge (SoC)
► The R&S®NGU-K106 battery simulator option allows users to simulate battery behavior with the parameters listed above

Power envelope of the R&S®NGU201 versus Keysight N6785A / N6786A

R&S®NGU201

Keysight N6785A / Keysight N6786A

Voltage

+20 V, −1 A   +20 V, +1 A
+20 V, −3 A   +20 V, +3 A
+15 V, −4 A   +15 V, +4 A
+10 V, −6.7 A   +10 V, +6.7 A
+6 V, −8 A   +6 V, +8 A
+6 V, −8 A   +6 V, +8 A

Current