R&S®ESSENTIALS

R&S®NGT3600 DC POWER SUPPLY SERIES

Power up your testing

Data Sheet
Version 03.00

ROHDE&SCHWARZ
Make ideas real

AT A GLANCE

Designed for demanding applications, the R&S®NGT3600 series sets a benchmark in high-performance DC power supplies, delivering one or two fully independent 1800 W outputs in a single compact instrument. This is a true breakthrough for labs and test systems that demand versatility, space efficiency and uncompromised precision.

Each channel delivers up to **80 V or 50 A**, with flexible output combinations thanks to the advanced **Autoranging architecture**, allowing engineers to test a wide range of devices from high-current motor drives to avionics systems.

An intuitive **4.3" high-resolution touchscreen** puts full control at your fingertips. With clear status indicators, virtual keyboard input and fast navigation, configuring complex tests becomes faster, more intuitive and less error-prone – even in multi-user lab environments.

The **integrated measurement and logging capabilities** eliminate the need for external instruments. With high-resolution voltage and current monitoring, real-time statistics and built-in data logging across all channels, users can easily track long-term behaviors and export timestamped .CSV files for documentation and analysis.

The **Arbitrary function** allows you to simulate real-world voltage and current profiles – from startup surges to fault conditions – using custom sequences with millisecond resolution. This enables early validation of DUT behavior under realistic and stress-test scenarios.

With the **Ramp function**, you can softly ramp up the output voltage over a defined time interval, avoiding sudden inrush currents and protecting components during power-up. This is especially important in systems with high capacitance or sensitive circuitry.

Remote sensing ensures that the voltage your DUT receives is exactly what you set, compensating for voltage drops along cables. This is particularly crucial in high-current or precision-critical setups.

Channel fusion lets you combine the outputs of a single R&S®NGT3622 in series or parallel to achieve higher voltage or current, providing flexible power for demanding applications. **Multi-Device mode** extends this capability across up to six R&S®NGT3600 channels, synchronizing all outputs under centralized control for high-voltage or high-current operation. Together, these features deliver exceptional versatility and performance for dynamic testing setups.

Whether on the bench or in automated environments, these features streamline daily lab work, increase repeatability and ensure safe, accurate and efficient testing – from initial prototyping to final validation.

Key specifications		
	R&S®NGT3621	**R&S®NGT3622**
Number of outputs	1	2
Total output power	1800 W	3600 W
Maximum power per output	1800 W	
Maximum voltage per output	80 V	
Maximum current per output	50 A	

DIFFERENT POWER SUPPLY CLASSES

R&S®NGC103 and R&S®NGE103B
three-channel power supplies

Basic power supplies

- Affordable, quiet and stable
- For manual operation and simple computer-controlled operation
- Used in education, on the bench and in system racks

R&S®HMP4040 and R&S®NGP804
four-channel power supplies

Performance power supplies

- When speed, accuracy and advanced programming features are vital to test performance
- Features such as DUT protection, fast programming times and downloadable V and I sequences
- Used in labs and ATE applications

R&S®NGU401 single-channel SMU and
R&S®NGM202 two-channel power supply

High precision power supplies

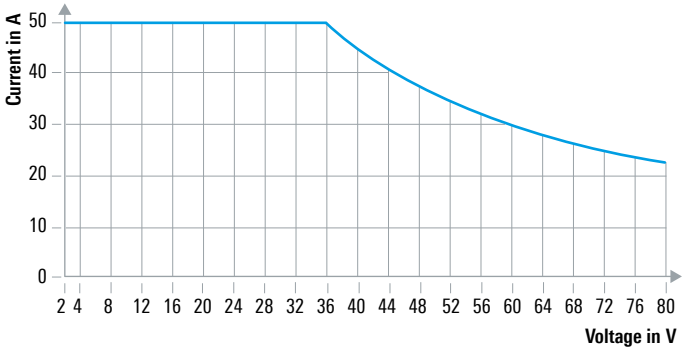
- Tailored to specific applications
- Unique features such as:
  - Emulation of unique battery characteristics
  - Electronic loads to accurately sink current and controlled power dissipation
- For labs and ATE environments

TURN UP THE POWER

Autoranging: full power, flexible output

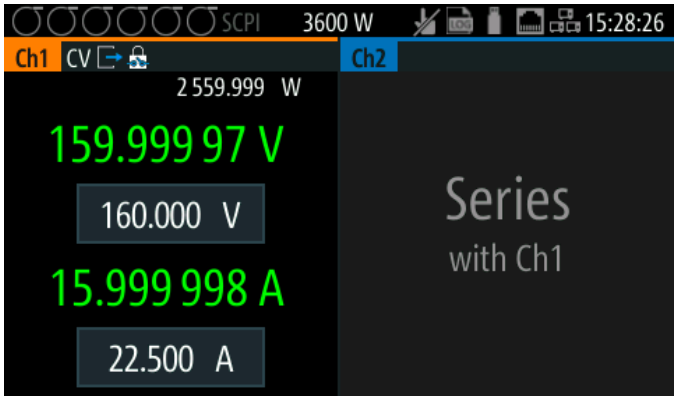
Autoranging lets you get the most out of each channel by delivering up to 1800 W across a wide range of voltage and current combinations. Unlike traditional single-range supplies, Autoranging adapts to your load requirements, providing high current at low voltage or high voltage at low current, always maximizing available power.

Maximum power 1800 W (source mode)



Channel fusion: double the power, double the possibilities

Channel fusion lets you combine both outputs of the R&S®NGT3622 in series for higher voltage or in parallel for increased current. Ideal for applications that demand more than a single channel can deliver, this feature gives you the flexibility to scale your power supply to your project's needs – without compromising precision or control.



R&S®NGT3622 in serial mode

Multi-Device mode: scalable power, synchronized performance

Multi-Device mode allows you to combine up to six outputs across multiple R&S®NGT3600 power supplies in series or parallel. Any channel can be designated as the host, while the remaining channels act as clients, all operating in sync under centralized control. Ideal for demanding applications, this mode extends your power capabilities whether you are building high-voltage stacks or driving high-current loads.

TURN UP THE POSSIBILITIES

4.3" high-resolution touch display: intuitive control at your fingertips

The large high-resolution touch display makes operation fast and easy. Navigate through menus, adjust settings and enter values quickly using the virtual keyboard. The home screen gives you a clear overview of all channels, while selecting a channel brings up detailed status information, including statistics, protection states and active special functions.

Ramp function: controlled voltage ramping

The Ramp function allows you to apply output voltage gradually, ideal for avoiding inrush currents in sensitive test setups. Ramp up the voltage continuously over a configurable time from 10 ms to 10 s, ensuring controlled power delivery.

Output delay: power-up sequencing made simple

Use output delay to turn on each channel individually with a defined time offset. This is essential for powering DUTs with multiple supply rails that require specific start-up sequences. Configure precise delays to ensure safe and reliable operation of complex systems.

Arbitrary: emulate real-world power conditions

The Arbitrary function lets you create time-varying voltage and current sequences with dwell times as short as 1 ms. Simulate real-world power conditions and system behavior early in the design phase, or stress-test your DUT by injecting controlled power variations to verify robustness and response.

Remote sensing: compensate lead losses

Remote sensing improves voltage regulation by measuring directly at the load terminals instead of the power supply outputs. The four-wire configuration compensates for voltage drops across the supply leads, especially important in high-current applications. Each output of the R&S®NGT3600 includes dedicated remote sensing connections for precise, reliable power delivery where it matters most.

Built-in measurements: high-resolution monitoring

Integrated voltage and current meters on each output provide high-resolution readings down to 1 mV and 100 µA across the full output range of 80 V and 50 A. Built-in statistics display minimum, maximum and average values for power, voltage, current and energy consumption – simplifying your test setup by eliminating the need for external instruments.

Built-in measurement: statistics

Data logging: track and analyze power performance

Data logging is essential for long-term monitoring, reviewing test setups and reproducing test conditions. The R&S®NGT3600 power supplies record voltage and current measurements simultaneously across all outputs, capturing detailed power behavior over time. Timestamped data can be easily exported as a .CSV file for thorough analysis, reporting and documentation.

High impedance mode: real-world testing made easy

Simulate real-world source conditions by adjusting output impedance to accurately emulate non-ideal power sources. Ideal for stability analysis and device protection, high impedance mode helps ensure your designs perform reliably under realistic operating conditions.

Relay Lock: maximum flexibility and safety

Relay Lock lets you activate a continuous output connection whenever uninterrupted power or rapid cycling is essential. This feature ensures seamless operation and allows you to customize the supply's behavior to match your specific testing requirements.

By default, Relay Lock is disabled to safeguard your devices. When the supply is switched off, the output is physically disconnected, preventing accidental power application or unwanted transients. This built-in safety measure gives you complete control and confidence during setup, testing and troubleshooting.

TURN UP THE FLEXIBILITY

Directly rackmountable: seamless integration

Designed for seamless integration, the R&S®NGT3600 power supply series features direct rackmountability, allowing it to be installed effortlessly into any standard 19" rack without the need for additional brackets or adapters. This streamlined design not only saves time during setup but also ensures a clean, professional installation – ideal for both standalone and multi-unit configurations.

Connectivity: made easy

Equipped with both USB and LAN interfaces, the R&S®NGT3600 power supplies offer flexible remote control and easy integration into automated test systems. Whether you are working from a local PC or managing devices across a network, reliable communications is built in. Streamline your workflow with fast setup and full SCPI command support.

Digital I/O: configurable inputs and outputs for intelligent system integration

The configurable digital I/O interface lets you define each pin as an input or output to enable precise trigger control and system feedback. As outputs, the pins can signal events like protection states, operating modes or specific voltage, current and power thresholds. The digital trigger system also supports coordinated output delays and fuse linking across multiple instruments – ideal for synchronized, multichannel setups.

On-site adjustment: minimize downtime

Greatly reduce your downtime by adjusting your R&S®NGT3600 power supply in-house. The intuitive setup wizard guides you through every step, ensuring a smooth and efficient process.

User button: shortcut to efficiency

Customize the user button with your most frequently used function for quick, one-touch access. Whether it's capturing a screenshot, toggling data logging, resetting statistics or activating TouchLock, this convenient shortcut puts your preferred action right at your fingertips.

Save and recall device settings: smart setup for shared workspaces

Pick up right where you left off – every time. The save function lets you store frequently used configurations, making it easy to resume work without reconfiguring. With the recall function, you can quickly load settings onto any R&S®NGT3600 power supply, ensuring consistent setups across multiple users and instruments.

TURN UP THE SAFETY

Protection functions: comprehensive DUT safety

Protecting your device under test is essential during limit testing. The R&S®NGT3600 power supplies offer multiple protection features, including overcurrent protection (OCP), overvoltage protection (OVP), overpower protection (OPP) and overtemperature protection (OTP) to safeguard both your DUT and the instrument.

When a protection function trips, the power supply alerts you with an audible beep and a flashing icon on the status bar for immediate awareness.

Overcurrent protection (OCP)

The electronic fuse's sensitivity and response can be tailored to your application. The fuse delay at output-on defines how long the fuse remains inactive after channel activation. Fuse sensitivity is controlled by the fuse delay time.

Overvoltage protection (OVP)

The channel automatically switches off if the output voltage exceeds the set maximum.

Overpower protection (OPP)

Alternatively, you can set a maximum power limit, triggering the output to switch off if this threshold is surpassed.

Overtemperature protection (OTP)

If a thermal overload is detected, the affected channel is turned off to prevent damage.

Protection linking

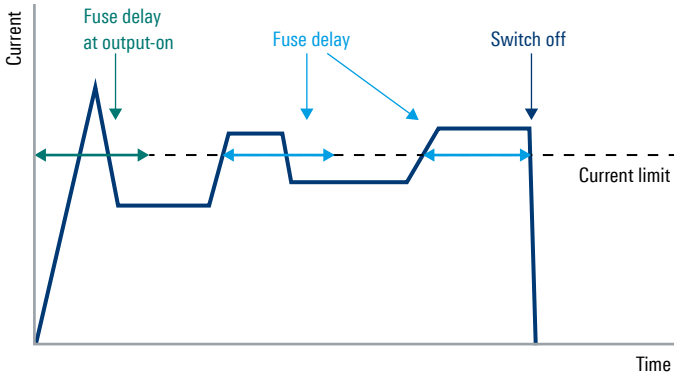
With the protection linking function, you can link protections across channels: If one channel hits its limit, all linked channels switch off simultaneously.

Safety limits

Set customizable safety limits on voltage, current and power to ensure the power supply operates within safe parameters only, helping prevent damage to your device under test. This feature also supports compliance with regulations such as the Low Voltage Directive and promotes a safer work environment where needed.

Fuse delay times

The fuse delay at output-on specifies how long the fuse remains inactive after the channel is switched on. The sensitivity of the fuse is specified by the fuse delay time.



DEFINITIONS

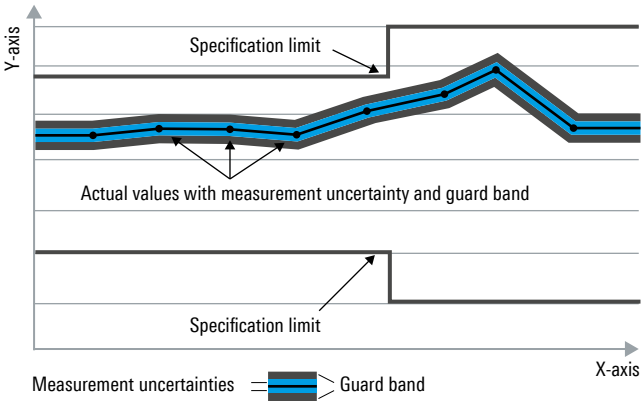
General

Product data applies under the following conditions:

- ▶ Three hours of storage at ambient temperature followed by 30 minutes of warm-up operation
- ▶ Specified environmental conditions
- ▶ Recommended calibration interval
- ▶ All internal automatic adjustments performed, if applicable

Specifications with limits

Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as <, ≤, >, ≥, ± or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Non-traceable specifications with limits (n. trc.)

Represent product performance that is specified and tested as described under "Specifications with limits" above. However, product performance in this case cannot be warranted due to the lack of measuring equipment traceable to national metrology standards. In this case, measurements are referenced to standards used in the Rohde&Schwarz laboratories.

Specifications without limits

Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value, e.g. dimensions or resolution of a setting parameter. Compliance is ensured by design.

Typical data (typ.)

Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80% of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)

Characterize product performance by means of a representative value for the given parameter, e.g. nominal impedance. In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)

Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties

Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are designated with the format "parameter: value".

Non-traceable specifications with limits, typical data as well as nominal and measured values are not warranted by Rohde&Schwarz.

In line with the 3GPP standard, chip rates are specified in million chips per second (Mcps), whereas bit rates and symbol rates are specified in billion bit per second (Gbps), million bit per second (Mbps), thousand bit per second (kbps), million symbols per second (Msps) or thousand symbols per second (ksps), and sample rates are specified in million samples per second (Msample/s). Gbps, Mcps, Mbps, Msps, kbps, ksps and Msample/s are not SI units.

SPECIFICATIONS

All data is valid at +23 °C (–3 °C/+7 °C) after 30 minutes warm-up time.

Electrical specifications		
Outputs	The channel outputs are galvanically isolated and not connected to ground.	
Number of output channels	R&S®NGT3621	1
	R&S®NGT3622	2
Maximum total output power	R&S®NGT3621	1800 W
	R&S®NGT3622	3600 W
Maximum output power per channel		1800 W
Output voltage per channel	R&S®NGT3621, R&S®NGT3622	2 V to 80 V
Maximum output current per channel	R&S®NGT3621, R&S®NGT3622	50 A
Maximum voltage in serial operation	R&S®NGT3622	160 V
Maximum current in parallel operation	R&S®NGT3622	100 A
Voltage ripple and noise	20 Hz to 20 MHz at 30 V/25 A	< 5 mV (RMS) (meas.), < 10 mV (peak-to-peak) (meas.)
	20 Hz to 20 MHz at half load	< 8 mV (RMS), < 85 mV (peak-to-peak)
	20 Hz to 20 MHz at full load	< 14 mV (RMS) (meas.), < 105 mV (peak-to-peak) (meas.)
Current ripple and noise	20 Hz to 20 MHz	< 10 mA (RMS) (meas.)
Adjustable output impedance		0 Ω to 3.6 Ω (1 mΩ increments)
Electronic load		
Sink voltage		0 V to 80 V
Maximum sink power	R&S®NGT3621	90 W
	R&S®NGT3622	180 W (90 W per channel)
Maximum sink current per channel		2.5 A
Sink mode		constant current
Load regulation	load change: 10% to 90%	
Voltage		< 0.01% + 1 mV
Current (source mode)		< 0.01% + 6 mA
Current (sink mode)		< 0.01% + 0.5 mA
Load recovery time	regulation to within ±200 mV of rated voltage	< 1.5 ms (meas.)
Rise time	10% to 90% of rated voltage, resistive load	full load: < 5 ms (meas.), no load: < 5 ms (meas.)
Fall time	10% to 90% of rated voltage, resistive load	full load: < 5 ms (meas.), no load: < 5 ms (meas.)
Programming resolution		
Voltage		1 mV
Current		1 mA
Programming accuracy		
Voltage	±(% of output + offset)	< 0.03% + 12 mV
Current (source mode)	±(% of output + offset)	< 0.05% + 15 mA
Current (sink mode)	±(% of output + offset)	< 0.05% + 1 mA
Output measurements		
Measurement functions		voltage, current, power
Readback resolution		
Voltage		1 mV
Current		100 µA
Low-current measurement range	≤ 2.5 A output current	5 µA

Electrical specifications

Readback accuracy		
Voltage	±(% of output + offset)	0.03% + 6 mV
Current	±(% of output + offset)	0.05% + 8 mA
Low-current measurement range	±(% of output + offset)	0.05% + 500 µA
Temperature coefficient (per °C)	+5°C to +20°C and +30°C to +40°C	
Voltage	±(% of output + offset)	0.15 × specification/°C
Current	±(% of output + offset)	0.15 × specification/°C
Remote sensing		
Maximum sense compensation		1.0 V
Ratings		
Maximum voltage to ground		600 V DC
Maximum counter voltage	voltage with the same polarity connected to the outputs	88 V DC
Maximum reverse voltage	voltage with opposite polarity connected to the outputs	0.4 V
Maximum reverse current	for 5 min (max.)	50 A

Remote control

Command processing time	output related commands	< 1 ms (meas.)
Multi-Device control	host/client mode	up to 6 channels/6 devices

Protection functions

Overvoltage protection		adjustable for each channel
Programming resolution		1 mV
Response time		< 1 ms
Overpower protection		adjustable for each channel
Programming resolution		0.2 W
Response time		< 10 ms
Overcurrent protection (electronic fuse)		adjustable for each channel
Programming resolution		1 mA
Response time	($I_{load} > I_{resp} \times 2$) at $I_{load} \geq 2$ A	< 1 ms
Fuse delay time	adjustable for each channel	1 ms to 10 s (1 ms increments)
Fuse delay at output-on	adjustable for each channel	1 ms to 10 s (1 ms increments)
Protection linking	R&S®NGT3622	yes
Overtemperature protection	independent for each channel	yes

Special functions

Output ramp function		
Ramp time		10 ms to 10 s (1 ms increments)
Output delay		
Synchronicity		< 25 µs (meas.)
Delay per channel		1 ms to 10 s (1 ms increments)
Arbitrary function		
Parameters		voltage, current, time
Maximum number of points		3200
Dwell time		1 ms to 4.66 h (1 ms increments)
Repetition		continuous or burst mode with 1 to 65 535 repetitions
Digital trigger and control interfaces		8-pin digital I/O port
Maximum voltage (IN/OUT)		0 V to 24 V
Pull-up resistors (IN/OUT)	connected to 3.3 V	20 kΩ
Input level	low	< 0.8 V (nom.)
	high	> 2.4 V (nom.)
Maximum drain current (OUT)		500 mA

Special functions		
Data logging		
Maximum acquisition rate		100 sample/s
Memory depth		external USB drive
Voltage resolution		see voltage resolution
Voltage accuracy		see voltage accuracy
Current resolution		see current resolution
Current accuracy		see current accuracy
Display and interfaces		
Display		4.3" TFT, 480 × 272 pixel, WQVGA touch
Rear panel connections		
Output		2-pin Tblock 10.16 mm
Remote sensing		2-pin Tblock 7.62 mm
Share bus		4-pin Tblock 5.08 mm
Multi-Device		2 × RJ-45
Digital I/O		8-pin Tblock 2.5 mm
Remote control interfaces		USB-TMC, USB-CDC, LAN
General data		
Environmental conditions		
Temperature	operating temperature range	+5 °C to +40 °C
	storage temperature range	–20 °C to +70 °C
Humidity	noncondensing	5 % to 95 %
Power rating		
Mains nominal voltage		100 to 240 V AC (automatic power limiting)
Maximum output power	100 V to 120 V (AC)	1800 W for R&S®NGT3621, 1800 W for R&S®NGT3622
	200 V to 240 V (AC)	1800 W for R&S®NGT3621, 3600 W for R&S®NGT3622
Mains frequency		50 Hz to 60 Hz
Maximum power consumption	R&S®NGT3621	2200 W
	R&S®NGT3622	4400 W
Main fuse	internal (not user accessible)	30 A/500 V, fast-acting fuse
Product conformity		
Electromagnetic compatibility	EU: in line with EU RE Directive 2014/30/EU	applied standards: ▶ EN 61326-1 ▶ EN 61326-2-1 ▶ EN 55011 (Class A)
	Korea	KC mark
	USA, Canada	FCC47 CFR Part 15B, ICES-001 Issue 5
Electrical safety	EU: in line with Low Voltage Directive 2014/35/EU	EN 61010-1
	USA, Canada	UL61010-1, CSA C22.2 No. 61010-1
RoHS	in line with EU Directive 2011/65/EU	EN IEC 63000
EU legislation	EU: in line with Data Act – Regulation (EU) 2023/2854	for details, see user documentation
Mechanical resistance		
Vibration	sinusoidal	5 Hz to 55 Hz, 0.3 mm (peak-to-peak), 55 Hz to 150 Hz, 0.5 g const., in line with EN 60068-2-6
	random	8 Hz to 500 Hz, acceleration: 1.2 g (RMS), in line with EN 60068-2-64
Shock		40 g shock spectrum, in line with MIL-STD-810G, method 516.6, procedure I

General data		
Mechanical data		
Dimensions	W x H x D	481 mm × 88 mm × 565 mm (18.93 in × 3.46 in × 22.24 in)
Weight	R&S®NGT3621	13.5 kg (29.7 lb)
	R&S®NGT3622	18.5 kg (40.7 lb)
Recommended calibration interval	operation 40 h/week over entire range of specified environmental conditions	1 year

ORDERING INFORMATION

Designation	Type	Order No.
Base unit		
One-channel power supply, 1800 W, 80 V/50 A	R&S®NGT3621	5602.4000.02
Two-channel power supply, 3600 W, 80 V/50 A	R&S®NGT3622	5602.4000.03
Accessories supplied		
Terminal blocks, quick start guide, safety instructions		

北京海洋兴业科技股份有限公司

北京市西三旗东黄平路19号龙旗广场4号楼（E座）906室　邮编：100096

电话：010-62176775　62178811　62176785　传真：010-62176619

企业QQ：800057747　维修QQ：508005118　邮箱：market@oitek.com.cn

企业官网：www.hyxyyq.com　购线网：www.gooxian.com

公司官网　微信公众号　微信视频号