

S-Series

SPA High Power Amplifier



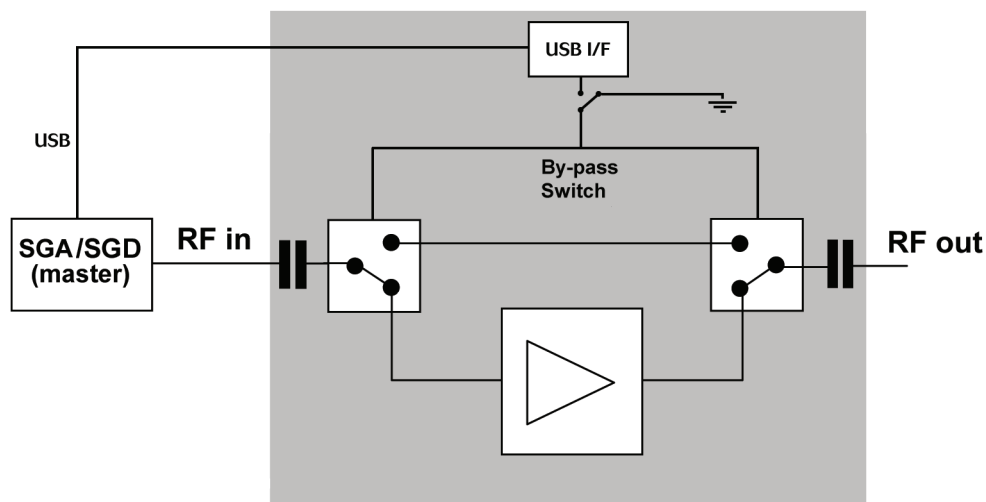
Broadband High Power Amplifier to complement the SGA and SGD signal generator

Features

- Up to 1 Watt from 10 MHz to 6 GHz
- Seamless operation under the control of an S-Series signal generator
- Bypass switch
- Aerolock™ interlocking mechanism for test system creation
- Can be used stand-alone

The SPA is a 1U high, half rack width, broadband PA which may be controlled by an S-Series SGA or SGD Signal Generator via a USB plug & play interface. By accepting up to +20 dBm from an SGA/SGD, a gain of at least 10 dB will provide an output from the SPA of up to +30 dBm. A high quality, low-loss, switch may be enabled to by-pass the PA when high RF levels are not required so that the excellent noise performance of the SGA or SGD is not compromised.

When the SPA is connected to an SGA/SGD via a USB port, the SPA's presence is recognized by the SGA/SGD and the configuration menu for the SPA is available in the SGA/SGD. A rear panel BNC by-pass enable control allows the SPA to be used as a stand-alone PA.



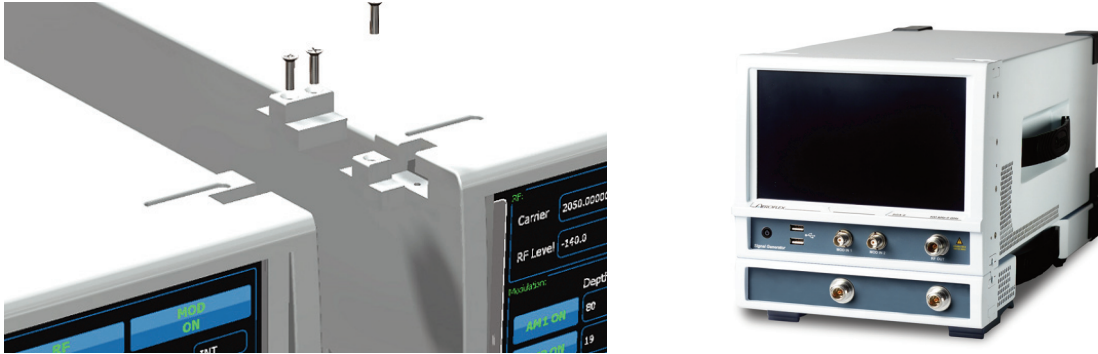
SPA Configuration

SPA Gain Correction

By using the RF level offset feature in the SGA/SGD, the SPA gain values may be entered into the SGA/SGD at various frequencies across the band so that the gain is compensated for when setting the output level on the signal generator. Multiple RF level offset tables may be saved and readily recalled so that, for example, one 'gain' table may be saved for the amplifier path, and another 'loss' table saved for the bypass path.

Modular Instrument Concept Employing Aerolock™ Interlocking Mechanism

Aerolock™ is an ingenious, simple and strong interlocking mechanism allowing the SPA to be joined underneath an SGA/SGD signal generator.



Aerolock™ interlocking mechanism

Remote Operation

The SPA is controlled from the SGA/SGD. USB, LAN and GPIB interfaces are all supported by the SGA/SGD using SCPI format commands where possible. Remote desktop and VNC are also supported allowing off-site remote control.

Non-Volatile Memory

The SGA/SGDs memory stores will also store SPA configurations.

Low Cost of Ownership

The SPA comes with a standard 2-year warranty and recommended 2-year calibration periodicity. Options to extend the warranty to five years are available.

All specifications apply after a warm-up period of 20 minutes.

Frequency Range	10 MHz to 6 GHz, useable to 1 MHz
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AMPLIFIER MODE

Gain, Noise and Distortion			
Gain (nominal)	10 MHz to ≤ 50 MHz	> 50 MHz to ≤ 2 GHz	> 2 GHz to 6 GHz
	14 dB	13 dB	> 10 dB
Temperature Coefficient	0.0044 dB/°C		
Noise Figure (nominal)	15 dB		
Saturated Output Power (nominal)	+29.5 dBm		
Third Order Intercept	10 MHz to ≤ 3 GHz	> 3 GHz to 6 GHz	
	$> +40$ dBm	$> +34$ dBm	

Return Loss		
	10 MHz to ≤ 3 GHz	> 3 GHz to 6 GHz
Input Return Loss (typical)	< 20 dB	< 15 dB
Output Return Loss (typical)	< 12 dB	< 12 dB

BY-PASS MODE

	10 MHz to ≤ 3 GHz	> 3 GHz to ≤ 5 GHz	> 5 GHz to 6 GHz
Input / Output Return Loss (typical)	< 20 dB	< 15 dB	< 11 dB
Insertion Loss (nominal)	0.7 dB	0.9 dB	1.1 dB

CONNECTORS

RF Input	50 Ω , N-type
Maximum Applied Power	+12 dBm
RF Output	50 Ω , N-type
2 x USB 2.0	Rear panel - 1 x USB Type B for plug & play connection with SGA/SGD
PA Enable	Rear panel BNC, enabled by low impedance

ENVIRONMENTAL

Rated Range of Use	
Temperature	0 to 50°C
Humidity	Up to 93% at 40°C
Altitude	Up to 3050 m
Conditions of Storage and Transport	
Temperature	-40 to +71°C
Humidity	Up to 95% at 40°C
Altitude	Up to 4600 m
EMC	EN 61326-1, Emissions Class B, Immunity Table 1 – Performance Criteria B
Safety	EN 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use-Part 1, General requirements.
Mechanical	MIL-PRF-28800F Class 3

POWER REQUIREMENTS

AC Supply	100-240 V ~ (Limit 90 – 264 V) 40 – 60 Hz 50 VA max.
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GENERAL

Recommended Calibration Cycle	24 months
Weight	2.5 kg
Dimensions - H x W x D	45 mm (1U) x 222 mm x 490 mm

Includes side strap handle and front tilt feet.

Includes AeroLock™ interlocking mechanism.

ORDERING INFORMATION

SPA-6 10 MHz to 6 GHz PA

Extended Warranty Options

Option 203 3 year warranty

Option 204 4 year warranty

Option 205 5 year warranty

Supplied Accessories

Instruction manual

CD-ROM containing factory test results

Aerolock™ locking keys – set of 2

Optional Accessories

43139/849 185 mm N-type cable with calibration data (for short connection between SGA/SGD and SPA)

43139/876 500 mm N-type cable with calibration data (for long connection between SGA/SGD and SPA)

46885/602 Aerolock™ locking keys - set of 2 with fixings for stacking additional unit

For the very latest specifications visit www.aeroflex.com

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.