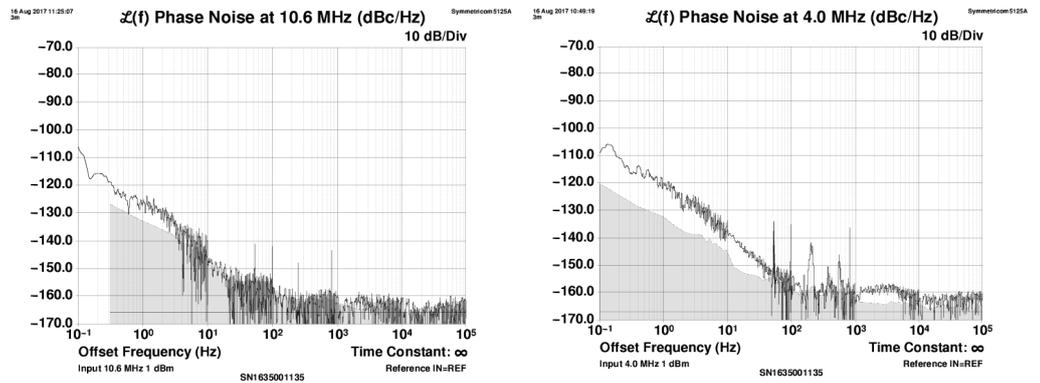
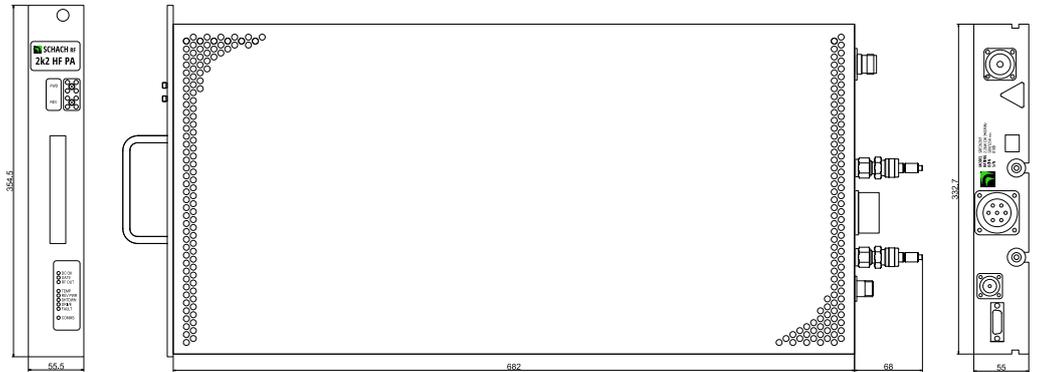


1.1kW CW Very Low Phase Noise HF Amplifier

HIGHLIGHTS

- Rated to 1.1kW into 50 ohms 3MHz to 32MHz. Operates from 2MHz to 45MHz with relaxed specifications.
- Compact water cooled design.
- Rated to 800W into a 2:1 mismatch. In-built protection against excessive mismatch.
- Extensive low level monitoring and protection incorporated.
- Easily accessible components for simple servicing.
- Graceful degradation. Continued operation at slightly reduced maximum power for any single channel failure.
- Very low phase noise and hum. Unique noise reduction circuitry.
- Cooling water connections via no-leak on disconnect valves.
- Latest generation ultra-rugged MOSFETs operated at conservative junction temperatures.
- 7-16 Output, N-type Input.



ITEM	SPECIFICATION	NOTES
Model	SRF1K1HFPA	
Operating Class	Class AB linear	Linear amplifier, faithfully reproduces all forms of modulation
Output Devices	4x MRFE6VP5600H 600W rated devices operated at <300W to produce 1.1kW into 50 ohms.	Devices are extremely rugged. The amplifier can withstand full mismatch during protection circuit activation delay.
Operating Frequency	3.0MHz -> 32MHz	Operation possible from 2-3MHz and 30-45MHz, linearly derating to half power.
Noise	Offset Hz: Noise Density: dBc/Hz 0.1 <-95, -100 typical 1.0 <-105, -115 typical 10.0 <-125, -135 typical 100.0 <-145, -150 typical >1K <50K <-155, -160 typical	Broadband noise contributed by PA/PSU. TDK-LAMBDA PSU.
Hum Sideband	All spurs <-110dBc, <-115dBc typical	Hum spurious contributed by PA/PSU.

† Specifications may change as product evolves. Confirm with factory before order for any critical specifications.

‡ Phase noise plots at 1kW out. Equipment: Agilent low noise signal generator, TDK Lambda PSUs, Microsemi 5125A Phase Noise Test Set, Bird Tenuline 2kW 8329-300.



ITEM	SPECIFICATION	NOTES
Noise Blanked	<10dB above thermal noise floor	Noise measured with amplifier de-activated
Input Attenuator	0-31.5dB in 0.5dB steps 0-1dB in 0.1dB steps	
Gain Variation	Nominal gain = 60dB +/- 1dB +2/- 4dB	Input attenuator set at 0dB 3-32MHz, 2-45MHz
Rated Power	1.1kW CW continuously into 50Ohms 0.8kW CW continuously into VSWR 2:1 0.5kW CW continuously	3MHz to 32MHz 2MHz and 45 MHz
Input Power for Rated Output	10dBm PEP max Handles up to 24dBm without damage.	
Efficiency Mains to RF	50% typical efficiency up to 55% possible by driving amplifier into saturation	At 1.1kW CW output power, into a 50 ohm load. Includes PSU efficiency of ~92%.
Harmonics	Odd < -14dBc Even < -20dBc	At rated output power, without filters
Front Panel LED Indicators	DC OK, Gate, RF out, Over temp, Reverse Power error, Shutdown asserted, Drive Error, Fault, Comms.	
DC Power	Accepts variable 32V-52V variable supply, 60A maximum.	DC power input: metal circular connector.
Protection	Over-temp. Over-drive Out-of-band inputs Reverse power	
Maximum Load Mismatch	Operates with up to 2:1 load VSWR at full rated power continuously, without folding back or shutting down, and without damage.	Amplifier can operate at higher than 2:1 mismatch with reduced output power.
Parallel Interface	The parallel interface provides basic amplifier functionality and may be bussed in parallel between units. 1. Gate input (TTL level) 2. PTT input (TTL level) 3. Fault output (open collector)	15-pin female D connector.
Monitor Interface	The I ² C monitor interface enables extensive monitoring of channel temperatures, channel voltages and channel DC current, forward and reverse power, input power, and latched faults.	This interface also enables the non-volatile setting of the input attenuators, but otherwise is not needed for normal amplifier function.
Cooling	Requires > 1lpm clean potable water, up to 40°C.	Amplifier can operate safely with up to 50°C water for short periods.

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