

MODEL 8003 15 GHz LOW NOISE AMPLIFIER LABWARE MODULE

PRODUCT SPECIFICATION

- Broadband linear gain amplifier (15 dB gain)
- 15 GHz bandwidth with excellent gain flatness (± 0.3 dB)
- 1 dB compression point of 13 dBm
- Lower 3 dB frequency of 10 kHz
- Low deviation from linear phase (± 3 degrees)



- Self-contained module includes AC power supply

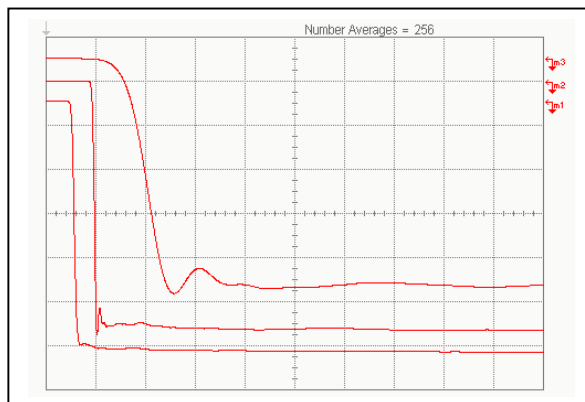
Picosecond Pulse Lab's Model 8003 15GHz Low Noise Amplifier LABware Module is designed for bench-top lab use. This LABware module may simply be plugged in with a line cord (either 110V or 220V) and the amplifier is ready for use. The Model 8003 is a broadband linear amplifier intended for use amplifying signals with a minimum amount of distortion. The 8003 provides exceptional gain flatness and low deviation from linear phase while providing a bandwidth of 10 kHz to 15 GHz. This amplifier is ideal for use as a linear gain block.

8003 Electrical Specifications measured at 23C

PARAMETER	UNITS	MIN	TYPICAL	MAX	COMMENTS
Gain	dB	13	15	16	Average at 1 GHz and 2 GHz
Polarity					Inverting
Upper 3 dB Frequency	GHz	14	15		3dB roll-off point
Lower 3 dB Frequency	kHz		10	20	3dB roll-off point
Gain Flatness	dB		± 0.3	± 0.5	50 MHz < f < 10 GHz
Group Delay Flatness	ps		± 3	± 5	50 MHz < f < 10 GHz
Characteristic RF Impedance	Ohms		50		
Input Return Loss	dB			-10	50 MHz < f < 20 GHz
Output Return Loss 50 MHz < f < 14 GHz 14 GHz < f < 16 GHz	dB			-10 -9.5	
Noise Figure	dB		5.0	7.0	f > 50 MHz
Output Power at 1 dB Gain Compression	dBm	10	13		

The plot at the right shows the response of the 8003 to a 100mV 20ps risetime step. The 8003 is an inverting amplifier, so the output has negative polarity. From top to bottom the time scales are 50ps/div, 500ps/div, and 2ns/div.

Step Response



Ordering Information

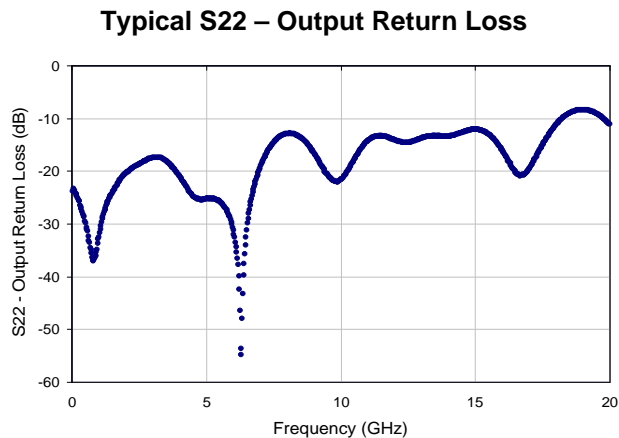
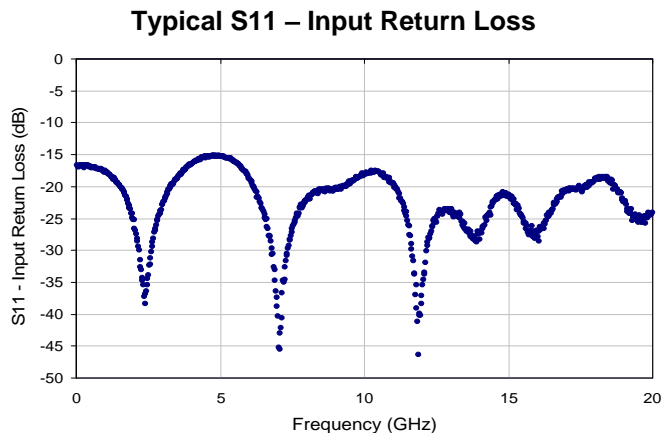
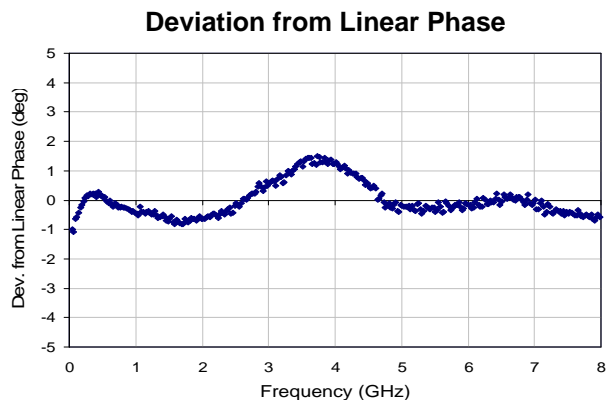
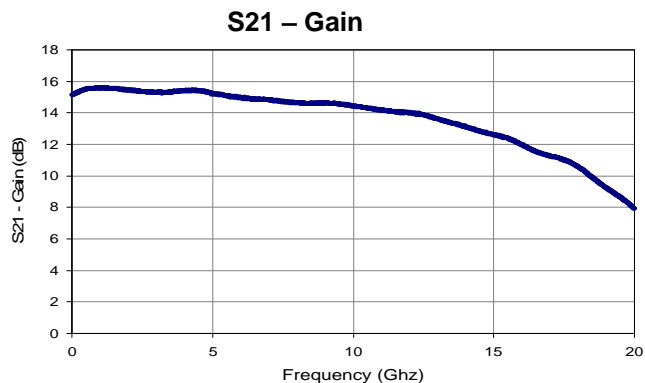
Part Number	Description
8003	15 GHz Low Noise Linear Amplifier Module

8003 Operating Specifications

PARAMETER	UNITS	MIN	MAX	COMMENTS
Maximum allowed Input	dBm		15	Damage threshold (± 1.78 V)
Input DC Bias Range	V _{DC}	-10	+9	Input is AC coupled
Output DC Bias Range	V _{DC}	-5	+13	Output is AC coupled
Environment Operating Storage	°C	20 0	30 50	Indoors, 80% relative humidity
Connectors				SMA Jack, Input and Output
AC Power				100, 117, 200, or 230VAC, 50/60Hz, 15VA (60Hz)
Safety Certifications				Conforms to EN-061010-1 (CE mark), UL-1244 and IEC-348. Safety class I. For lab use by qualified personnel.
Dimensions				9.6 x 7.5 x 1.7 in. (244 x 190 x 33 mm)
Weight				2.9 lbs. (1.3 kg)
Accessories				USA power cord
Warranty				1 Year for workmanship and defects. ¹

¹ The 8003 is static-sensitive. Warranty does not apply to failures caused by customer misuse or mishandling.

Typical Measurements



Caution: The 8003 contains a static sensitive amplifier. Always short the terminals of a device before connecting it to the input or output of the 8003. Even coax cables must be shorted.