90 kHz–67 GHz Optical Modulator Driver

Gain 18 dB, P1dB 13 dBm

DATASHEET

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This broadband amplifier operates from 90 kHz to 67 GHz, delivering an output power of +15 dBm with a noise figure of 6 dB. It can be used as either a power amplifier or a low-noise amplifier. The DC power requirement is +8 V at 220 mA. The module features a 1.85 mm female input port and a 1.85 mm male output port. It offers high gain, high linearity, low input and output return loss, and a flat gain response. The input and output are AC coupled. This version is specially designed for driving optical modulator with enhanced output power.

Features

- Frequency: 90 kHz–67 GHz
- Psat: +15 dBm
- Small Signal Gain: 18 dB
- Single Power Supply

Applications

- Optical Modulator Driver
- 5G Communication
- Test Equipment
- ROF (RF Over Fiber)

Specifications

Parameter		Min	Typical	Max	Unit
Lower Frequency			90		kHz
Upper Frequency		65	67		GHz
Small Signal Gain		16	18		dB
P1dB	10 MHz–50 GHz 50 GHz–67 GHz		+13 (2.83 Vpp) +10 (2.0 Vpp)		dBm
Psat	10 MHz–50 GHz 50 GHz–67 GHz		+15 (3.56 Vpp) +13 (2.83 Vpp)		dBm
Drain Supply		+7	+8	+9	V
Current			250		mA
NF	1–50 GHz		6		dB
AGC Function			NO		
Input Return Loss			-10		dB
Output Return Loss			-15		dB
Spec Temp			25		°C
Input Port			1.85 mm Female		
Output Port			1.85 mm Male		
Drain Supply			+13		V
RF Input Power			+4		dBm
Input Voltage			1		Vpp
Operating Temperature		-45		+85	°C
Storage Temperature		-55		+125	°C

Note: Please pay attention to the case temperature. If case temperature exceed higher than +100 °C, heat sink and fan are required, or the amplifier may be damaged.

RoHS COMPLIANT

Rev 09/09/26

P +1 781-935-1200 E sales@agiltron.com W www.agiltron.com

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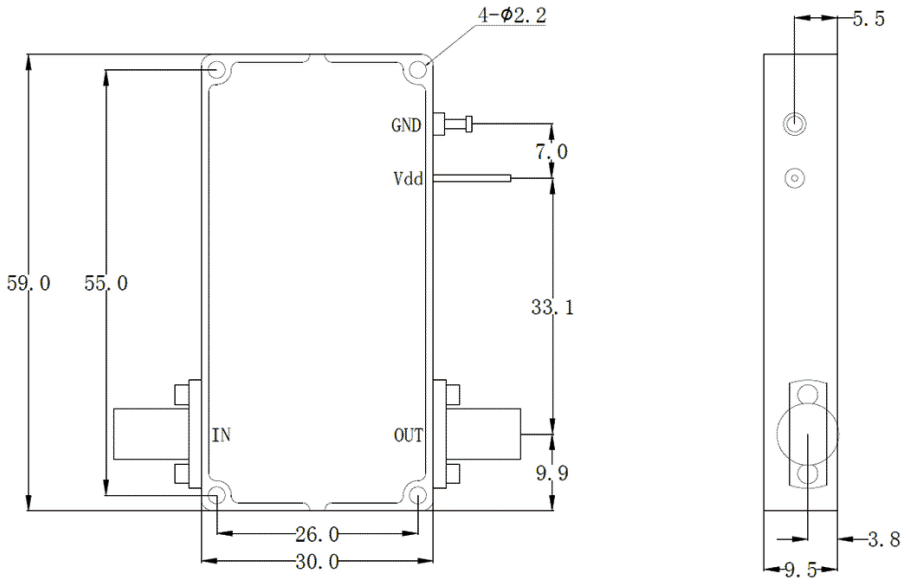
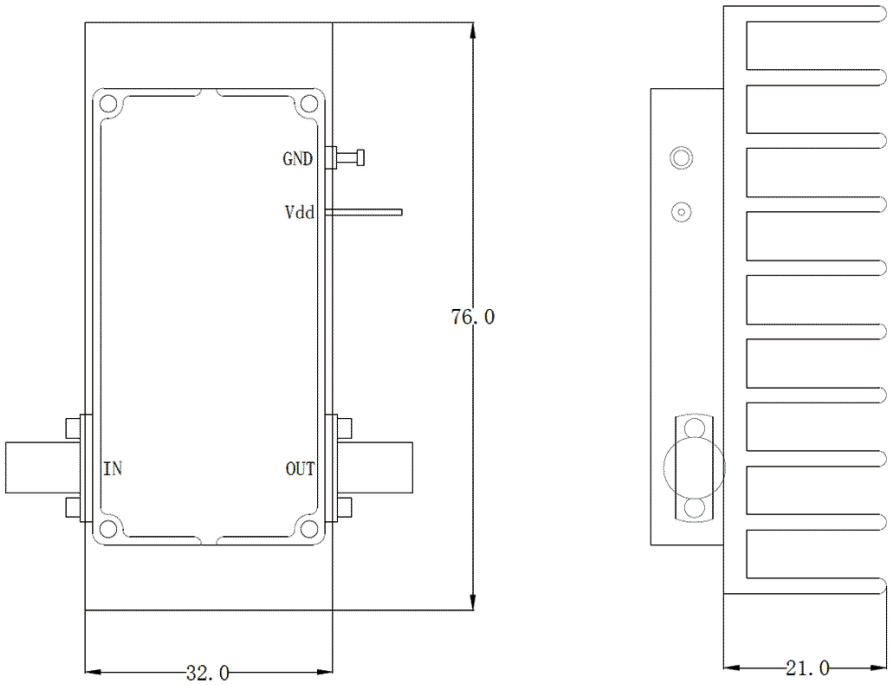
Mechanical Dimensions (mm)



	<26.5GHz	<40GHz	<50GHz	<67GHz
Connector	SMA	2.92mm	2.4mm	1.85mm
Lenth of a	9.4mm	9.5mm	10.8mm	11.3mm

Note: Female Default. Contact with us for other types.



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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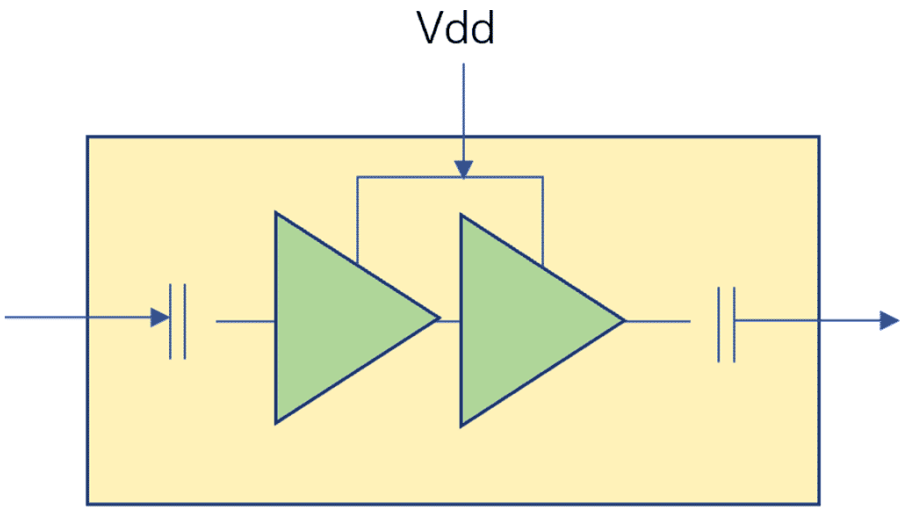
Diagram Block (SISO: Single-End Input, Single-End Output)



Ordering Information (Part Number)

	90	067	13	2	☐
Prefix	**Low Frequency**	**High Frequency**	**P1dB**	**RF Connector**	**Module**
BRFA-	90 kHz = 90	67 GHz = 067	13 dBm = 13	1.85 mm = 2	Non = 1 Box [1] = 2

[1]. This is a box that integrates a power supply with 110-240V AC power.

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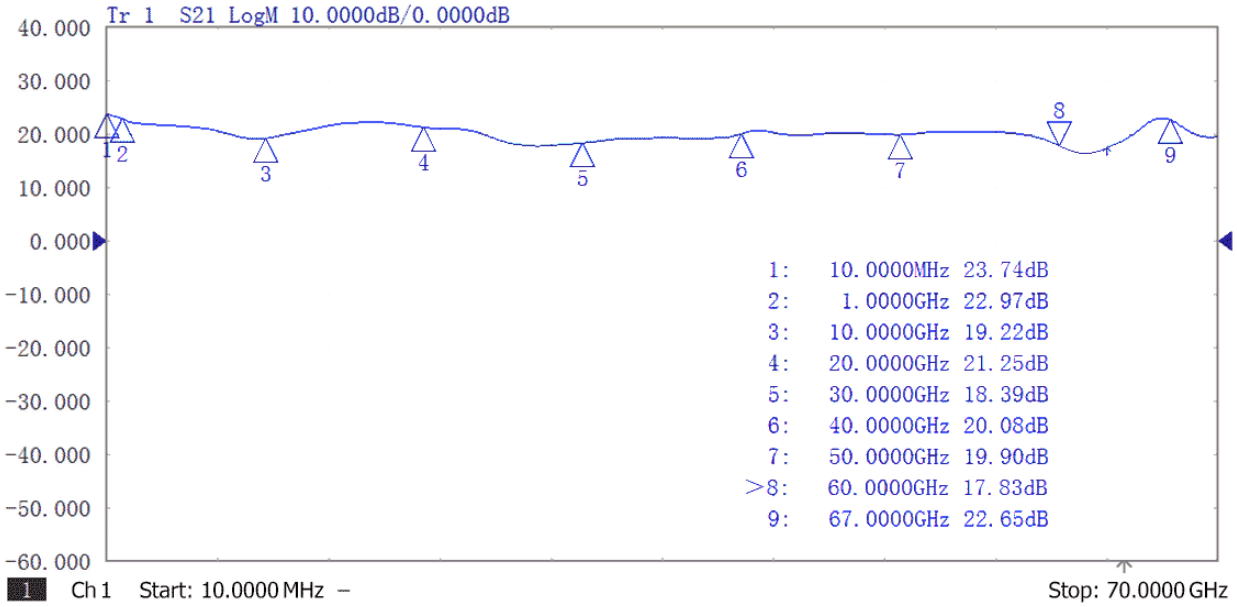
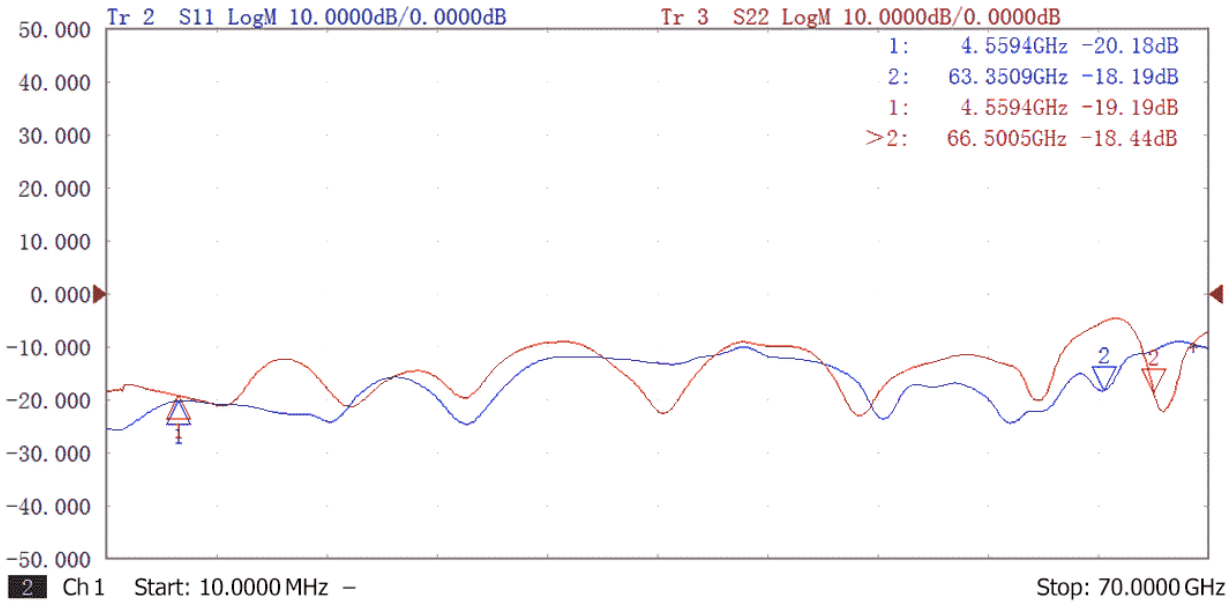
Typical Responses

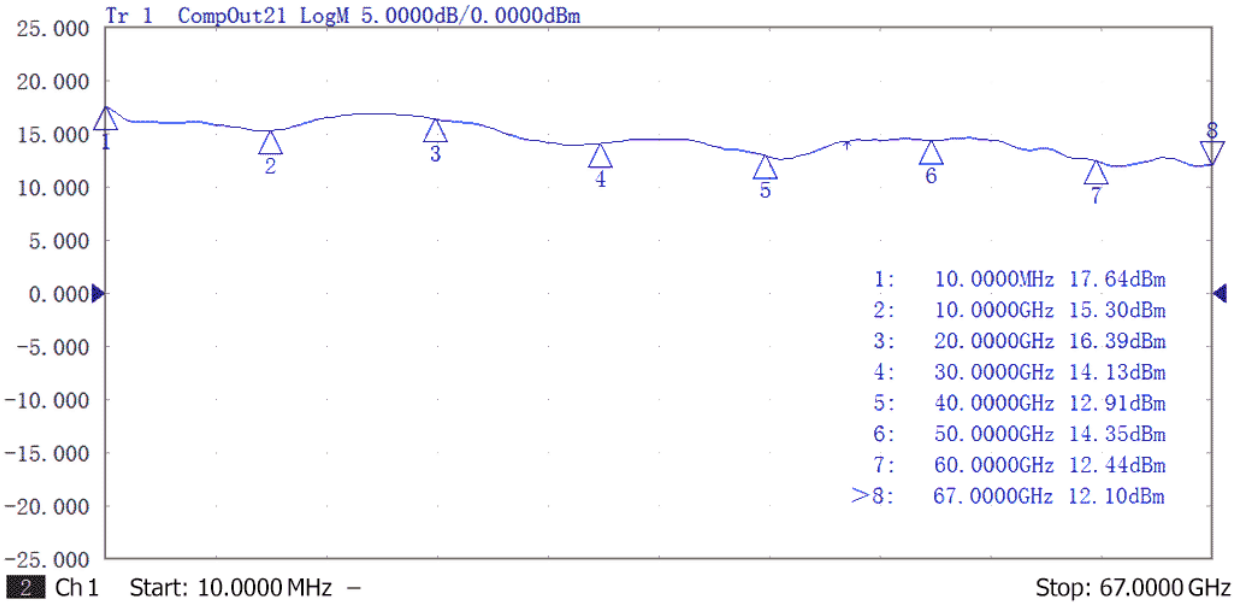


Gain vs Frequency 10 MHz–67 GHz

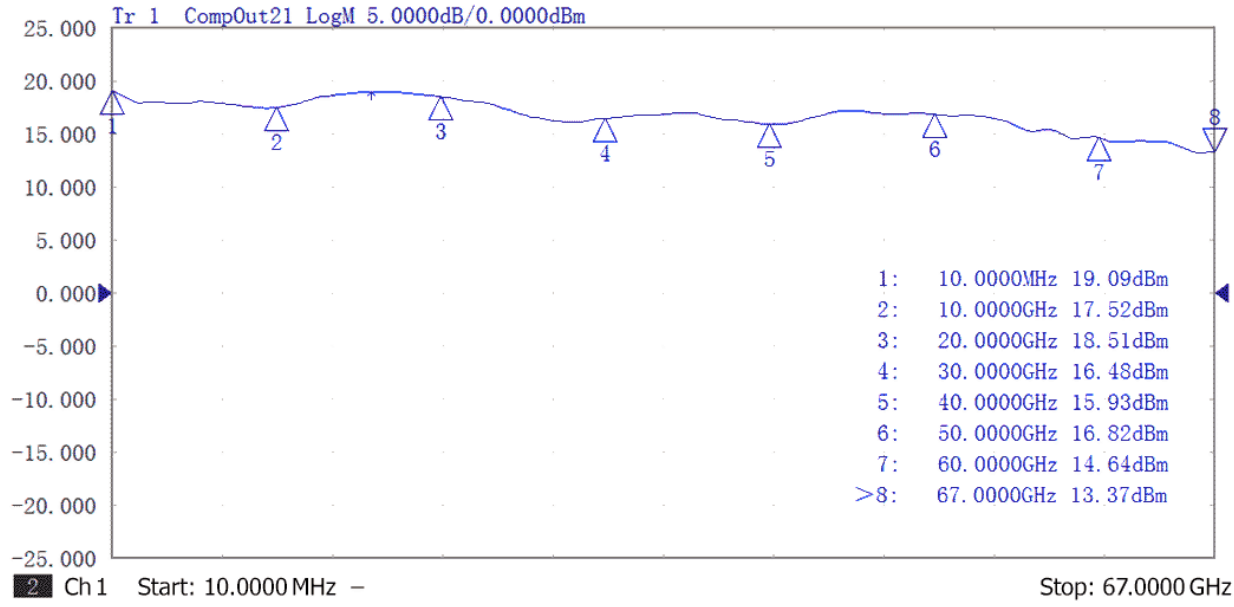


S11/S22 Return Loss vs Frequency 10 MHz–67 GHz

Typical Responses

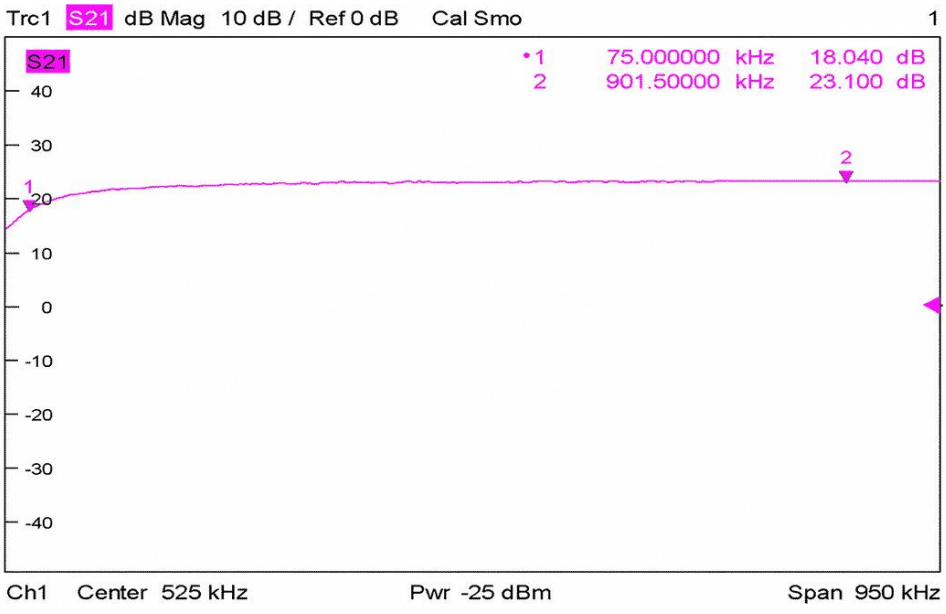


P1dB Test 10 MHz–67 GHz

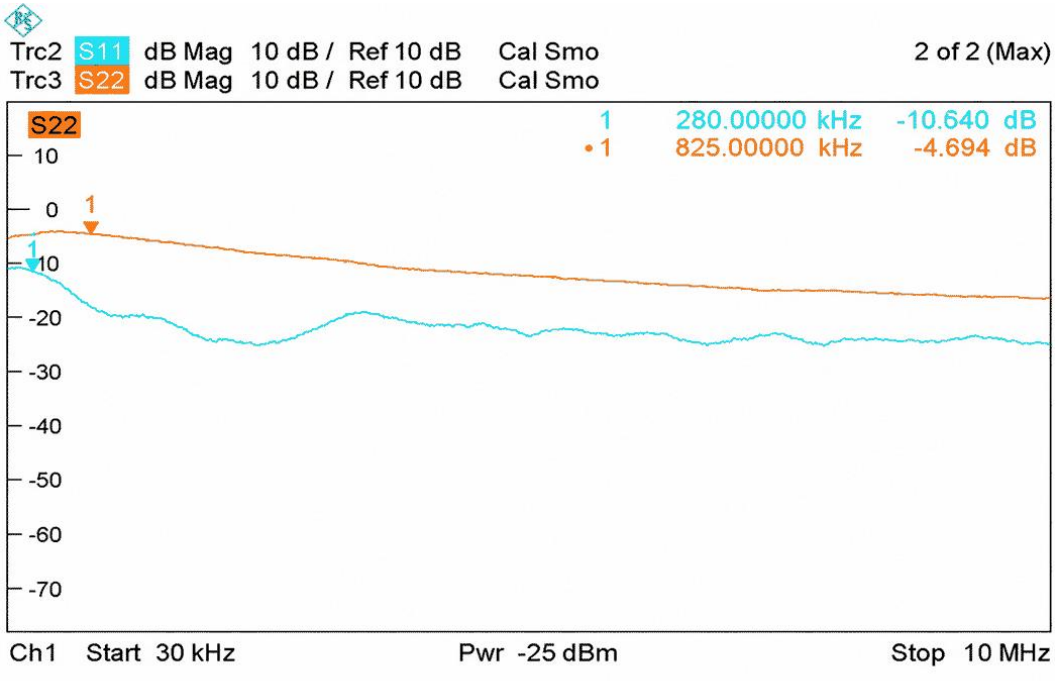


P3dB test 10 MHz–67 GHz

Typical Responses



Gain vs Frequency 90 kHz–1 MHz



S11/S22 Return Loss vs Frequency 50 kHz–10 MHz

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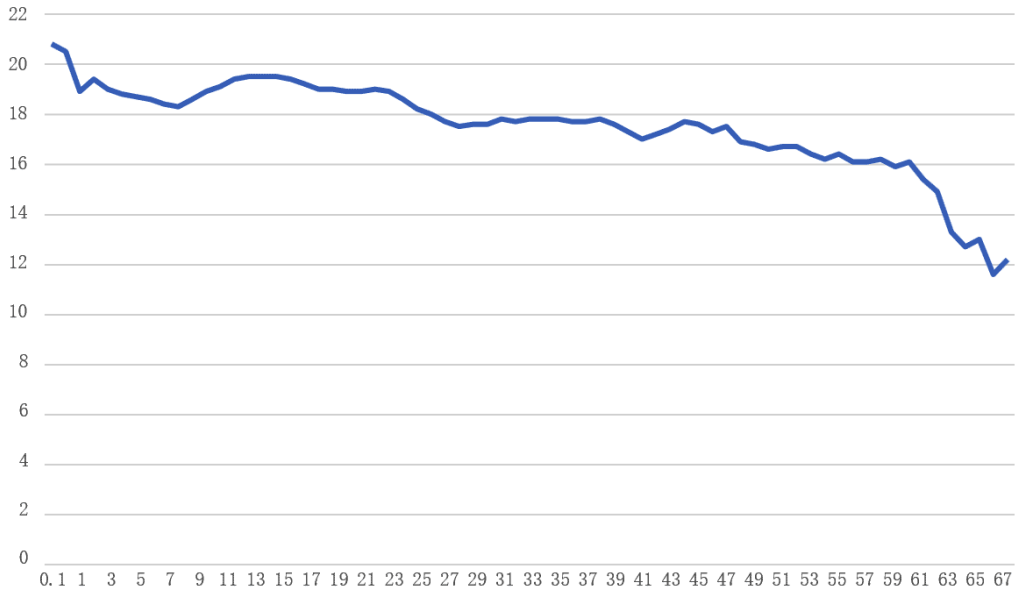
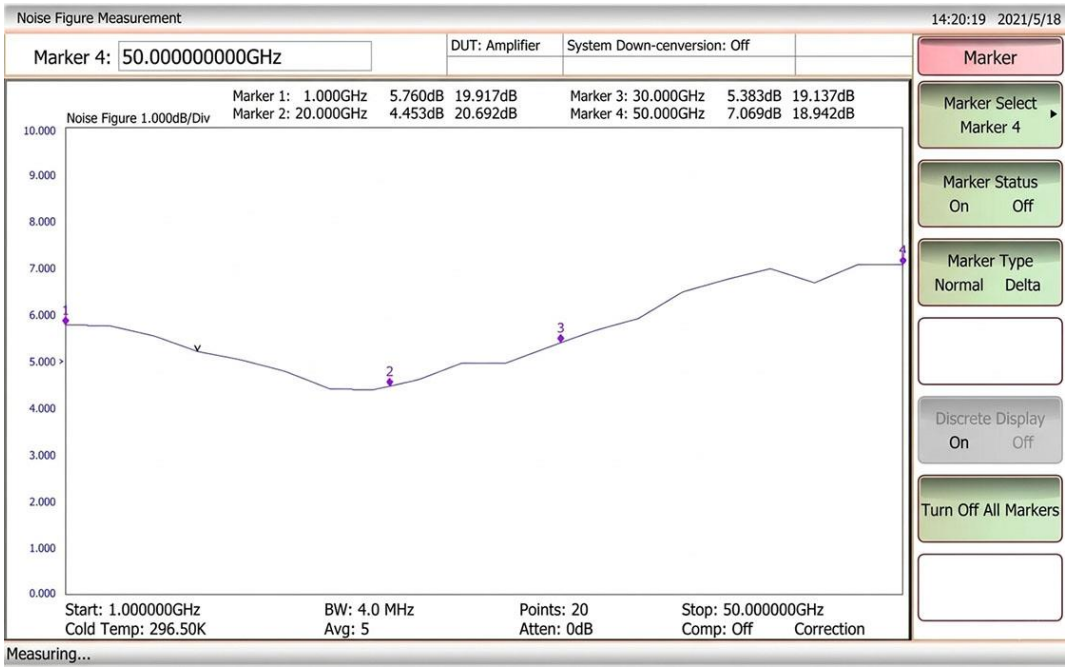
Typical Responses



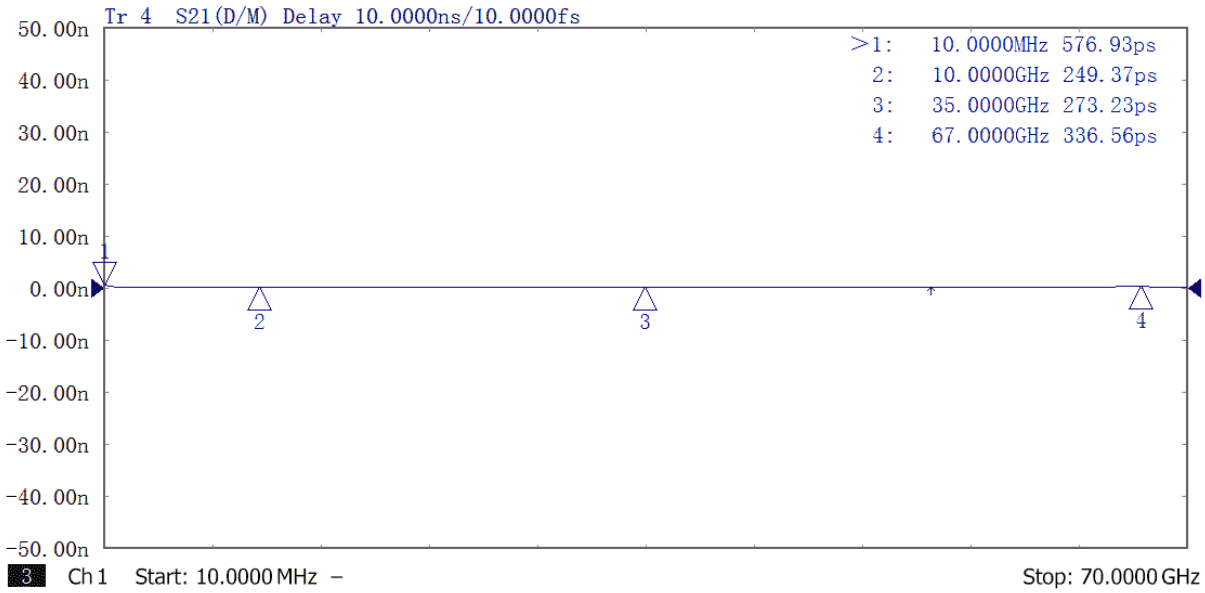
Psat vs Frequency 10 MHz–67 GHz

NF test from 10 MHz–1 GHz

Typical Responses



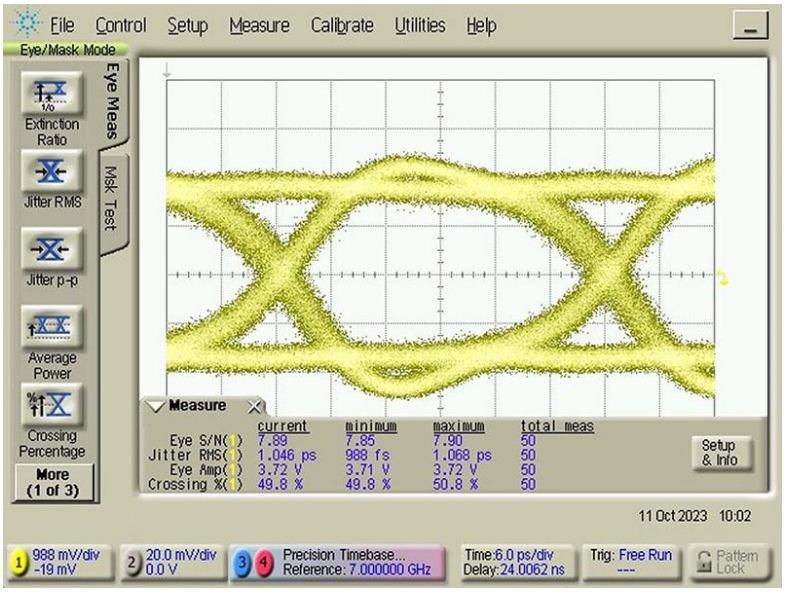
NF test From 1–50 GHz



Group delay vs Frequency

Eye Diagram Test

Output = 3.7 Vpp at 28 Gbps, Input = 0.5 Vpp



Please note that eye diagram will be better if input eye diagram is improved.

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Vpp vs dBm at 50 Ohms System

dBm	Vpp	Vrms	Power（W）	dBm	Vpp	Vrms	Power（W）
50	200.00	70.71	100.00	14	3.17	1.12	2.51E-02
49	178.27	63.02	79.43	13	2.83	1.00	2.00E-02
48	158.87	56.17	63.10	12	2.52	0.89	1.58E-02
47	141.59	50.06	50.12	11	2.24	0.79	1.26E-02
46	126.19	44.62	39.81	10	2.00	0.71	1.00E-02
45	112.47	39.76	31.62	9	1.78	0.63	7.94E-03
44	100.24	35.44	27.12	8	1.59	0.56	6.31E-03
43	89.34	31.59	19.95	7	1.42	0.50	5.01E-03
42	79.62	28.15	15.85	6	1.26	0.45	3.98E-03
41	70.96	27.09	12.59	5	1.12	0.40	3.16E-03
40	63.27	22.36	10.00	4	1.00	0.35	2.51E-03
39	56.37	19.93	7.94	3	0.89	0.32	2.00E-03
38	50.24	17.76	6.31	2	0.80	0.28	1.58E-03
37	44.77	15.83	5.01	1	0.71	0.27	1.26E-03
36	39.91	14.11	3.98	0	0.63	0.22	1.00E-03
35	35.57	12.57	3.16	-1	0.56	0.20	7.94E-04
34	31.70	11.21	2.51	-2	0.50	0.27	6.31E-04
33	28.27	9.99	2.00	-3	0.45	0.16	5.01E-04
32	27.27	8.90	1.58	-4	0.40	0.14	3.98E-04
31	22.44	7.93	1.26	-5	0.36	0.13	3.16E-04
30	20.00	7.07	1.00	-6	0.32	0.11	2.51E-04
29	17.83	6.30	0.79	-7	0.28	9.99E-02	2.00E-04
28	15.89	5.62	0.63	-8	0.27	8.90E-02	1.58E-04
27	14.16	5.01	0.50	-9	0.22	7.93E-02	1.26E-04
26	12.62	4.46	0.40	-10	0.20	7.07E-02	1.00E-04
27	11.27	3.98	0.32	-11	0.27	6.30E-02	7.94E-05
24	10.02	3.54	0.27	-12	0.16	5.62E-02	6.31E-05
23	8.93	3.16	0.20	-13	0.14	5.01E-02	5.01E-05
22	7.96	2.82	0.16	-14	0.13	4.46E-02	3.98E-05
21	7.10	2.51	0.13	-15	0.11	3.98E-02	3.16E-05
20	6.32	2.24	0.10	-16	0.10	3.54E-02	2.51E-05
19	5.64	1.99	7.94E-02	-17	8.93E-02	3.16E-02	2.00E-05
27	5.02	1.78	6.31E-02	-27	7.96E-02	2.82E-02	1.58E-05
17	4.48	1.58	5.01E-02	-19	7.10E-02	2.51E-02	1.26E-05
16	3.99	1.41	3.98E-02	-20	6.32E-02	2.24E-02	1.00E-05
15	3.56	1.26	3.16E-02	-21	5.64E-02	1.99E-02	7.94E-06