AMP101800030-R

1 W Ultra-Wideband Linear Amplifier Device 10 ... 18000 MHz

Features

- output power +31 dBm typ.
- high OIP3 +40 dBm typ.
- high dynamic
- self test function
- temperature monitor
- compact 19”, 1 U device

Applications

- EMC pre-amplifier
- instrumentation and measurement
- broadband communications
- military and aerospace
- software defined radio (SDR)
- research and development
- remote sensing

At a Glance

AMP101800030-R from Becker Nachrichtentechnik is a compact ultra-wideband amplifier device in 50 ohms technology. It has a 19” 1U housing. The robust electric and mechanic design gives solid operations over a long time. The amplifier works stable over a wide frequency range with many octaves.
Internal filters and low noise voltage supplies guarantee high suppression of spurious. The RF connectors are located on the rear side as N female connectors. The presence of AC mains power is indicated by a LED on the front panel.

Special Features

Using modern semiconductor technologies give the amplifier module high dynamic properties over a wide operating bandwidth.

Due the ultra-wide operation bandwidth the amplifier is suitable in military and aerospace software radio applications.

An internal self-test function monitors current consumption and module temperature.

Rugged Design

The amplifier is housed in a milled aluminium case. This protects the circuits against mechanical damage and gives best shielding for avoiding EMI influences caused by radio signals coming from the environment.

High Dynamic

The low noise figure combined with the high output compression gives the amplifier device excellent dynamic range properties.

RF Specification

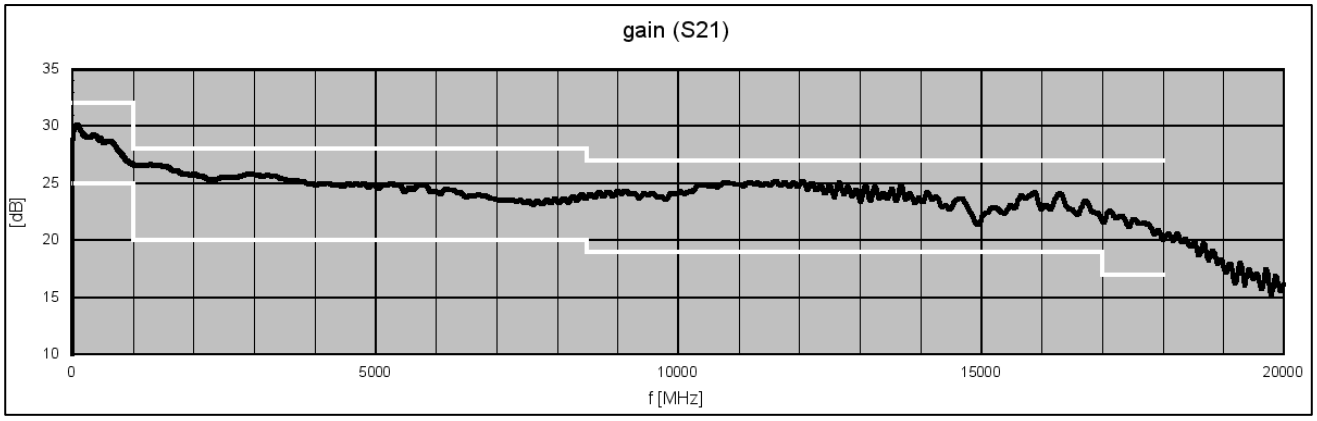
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ω	
frequency	f_{LOW}			10	MHz	
	f_{HIGH}	18000			MHz	
linear gain	S_{21}	25	28	32	dB	f ≤ 1 GHz
	S_{21}	20	25	28	dB	1 GHz < f ≤ 8.5 GHz
	S_{21}	19	24	27		8.5 GHz < f ≤ 17 GHz
	S_{21}	17	21	27	dB	f > 17GHz
input return loss	S_{11}		-15	-10	dB	f ≤ 8.5 GHz
	S_{11}		-11	-6	dB	8.5 GHz < f ≤ 13GHz
			-6			f > 13 GHz
reverse isolation	S_{12}		-70		dB	
3rd order intercept	OIP3[1)]	+35	+40		dBm	f ≤ 5 GHz
	OIP3[1)]	+31	+36		dBm	5 GHz < f ≤ 12 GHz
saturation power	P_{SAT}	+29	+32		dBm	f ≤ 5 GHz, P_{IN} = +15dBm
	P_{SAT}	+27	+29		dBm	5 GHz < f ≤ 17GHz, +15dBm
	P_{SAT}		+26		dBm	f = 18 GHz, P_{IN} = +15dBm
1 dB compression	P_{1dB}	+24	+28		dBm	f ≤ 12 GHz
	P_{1dB}		+28		dBm	f ≥ 12 GHz
noise figure	NF		5	8	dB	0.5 GHz ≤ f ≤ 17 GHz
input power	P_{IN}			+15	dBm	no damage
DC voltage	U_{DC}			15	V	
ESD discharge resistor	R_{ESD}		4.7		kΩ	RF ports
RF connectors	X_{RF}	N female				

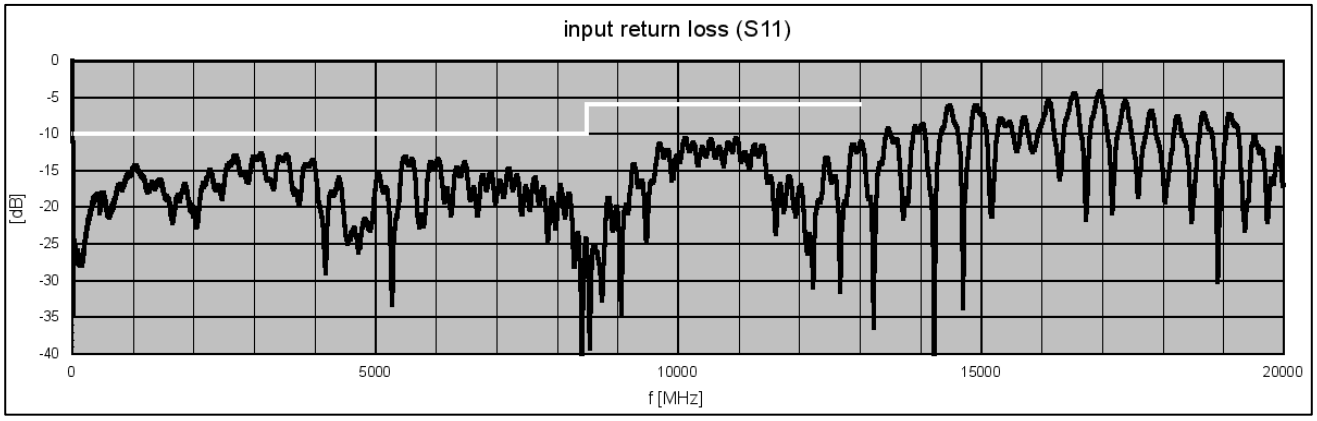
Note 1: Tested at 2x +17dBm, ∆f = 2 MHz

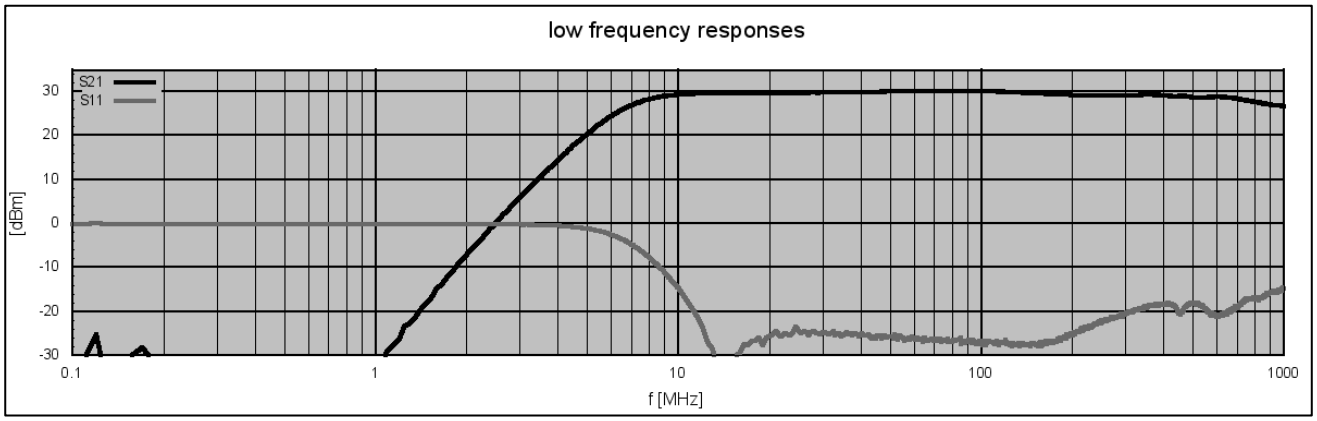
Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U_{AC}	90		260	V	AC, 50 … 400 Hz
power consumption	P_{AC}		15		W	
power socket	X_{AC}	IEC-60320 C14				country specific power cable
dimension	WxHxD	approx. 482 x 44 x 145			mm	without connectors
weight	m		2		kg	
operating temp. range	T_o	+5		+40	°C	housing surface
storage temp. range	T_s	-40		+70	°C	
ordering information	AMP101800030-R			2106.5002.1		

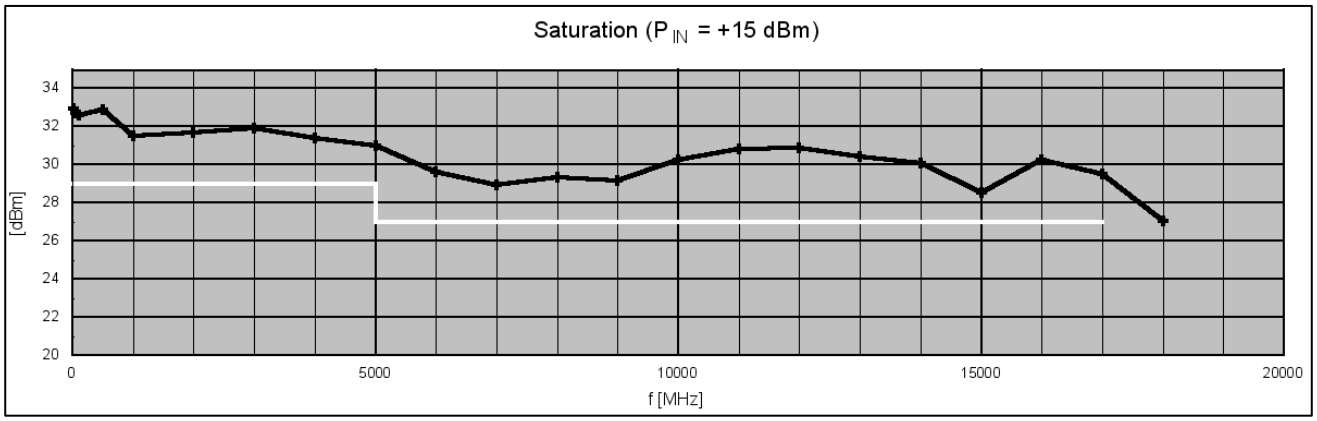
S-Parameters (typical responses)

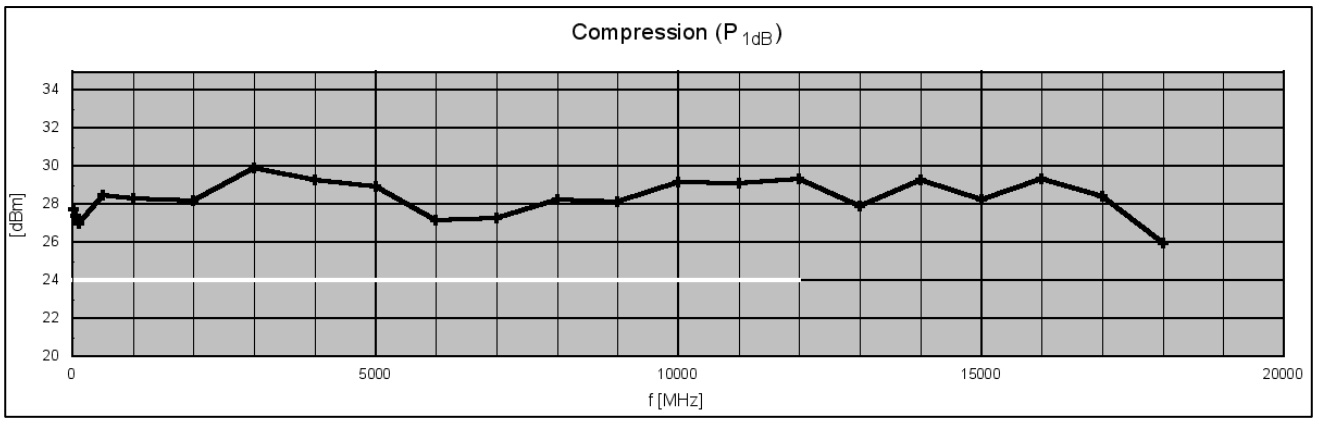


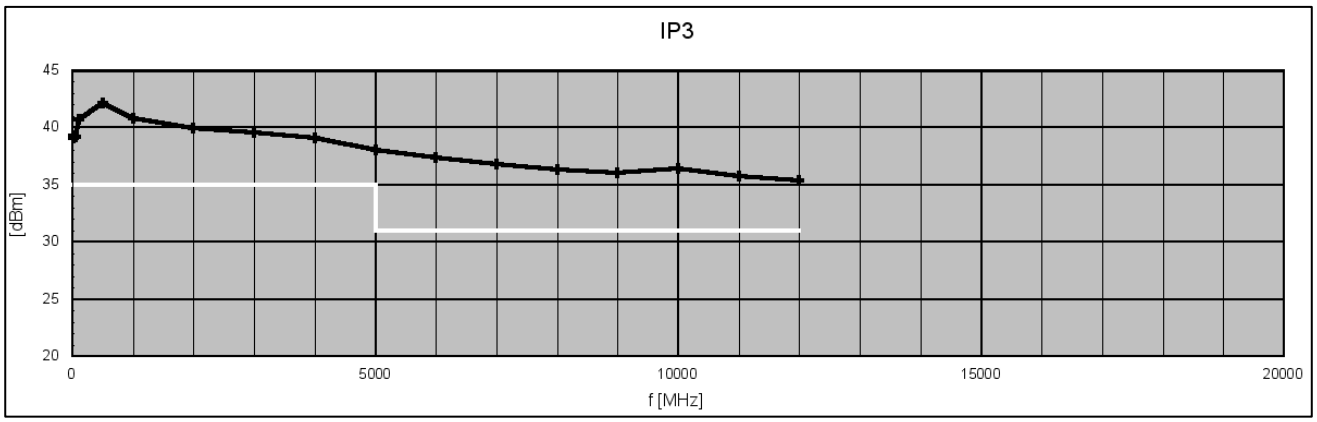


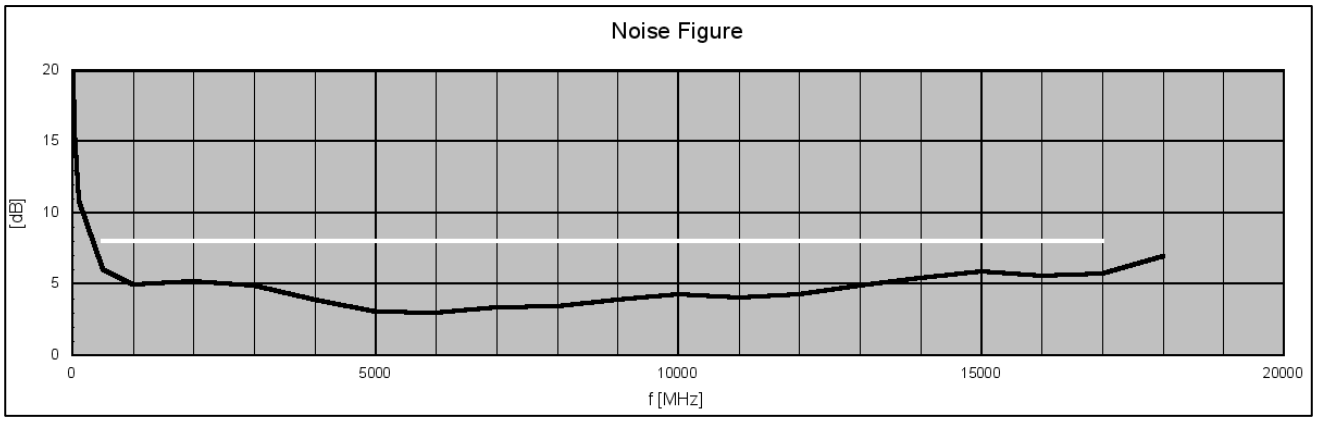


Dynamic Range (typical responses)



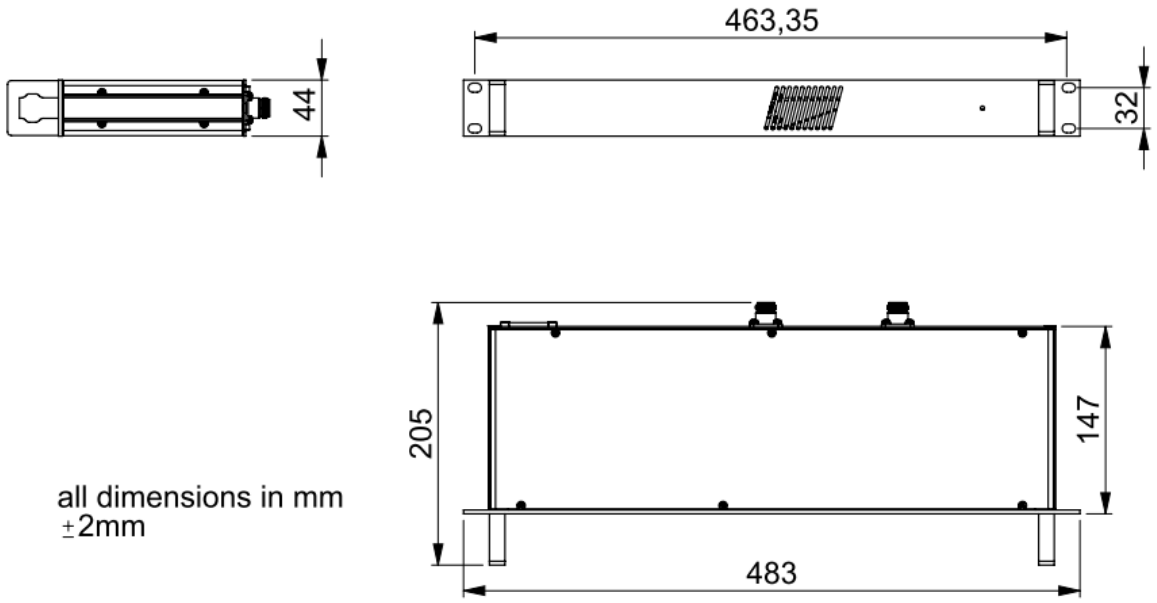

Compression (P 1dB)
34
32
30
28
26
24
22
20
[dBm]
0
5000
10000
15000
20000
f [MHz]


IP3
45
40
35
30
25
20
[dBm]
0
5000
10000
15000
20000
f [MHz]


Noise Figure
20
15
10
5
0
[dB]
0
5000
10000
15000
20000
f [MHz]

Appearances

Dimensions



all dimensions in mm
±2mm

Related Products

Product	Description	P/N
AMP40100034-R	4 W Wideband Amplifier Device 40 … 1000 MHz	1209.5002.1
AMP5220031-R	1 W High Dynamic TX Amplifier Device 5 … 2200 MHz	1404.5102