

# AMP20002000042-R

15 W Power Amplifier, 2000 ... 20000 MHz

## Features

- output power:  
+42 dBm  $f \leq 8\text{GHz}$   
+39 dBm @ 18 GHz
- high OIP3 +44 dBm typ. (8 GHz)
- high dynamic
- self test function
- optical power and status indication
- status signaling contact (floating)

## Applications

- research & development
- cellular, Wi-Fi
- military
- intelligence service
- jamming



## At a Glance

AMP20002000042-R from Becker Nachrichtentechnik is a compact amplifier device in 50 ohms technology designed for the use in professional applications. The robust electric and mechanic design guarantees 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 presence of power is indicated by a LED at the front panel. The amplifier is designed for mounting in 19-inch cabinets or as table top unit. The integrated mains ac converter with its wide input voltage range and integrated cooling makes the device easy to use.

## Special Features

Using modern semiconductor technologies gives the amplifier module high dynamic properties over a wide operating bandwidth. Due to the ultra-wide operation frequency range the amplifier is suitable in many cellular, Wi-Fi, research and military applications.

An internal self-test function monitors current consumption and module temperature. In the case of exceeding the limits a floating contact is opened.

## Tolerant against Mismatches

Using power transistors with enough head room to maximum ratings make the amplifier device robust against reverse power and therefore robust against loads at the output which are not matched.

## Rugged Design

The aluminium housing of the AMP20002000042-R protects the device against mechanical impacts and gives a good shielding. The internal amplifier module has a milled aluminium housing. These shielding properties makes the AMP20002000042-R amplifier suitable for professional applications with high demands in RF dynamic properties also in EMC requirements.

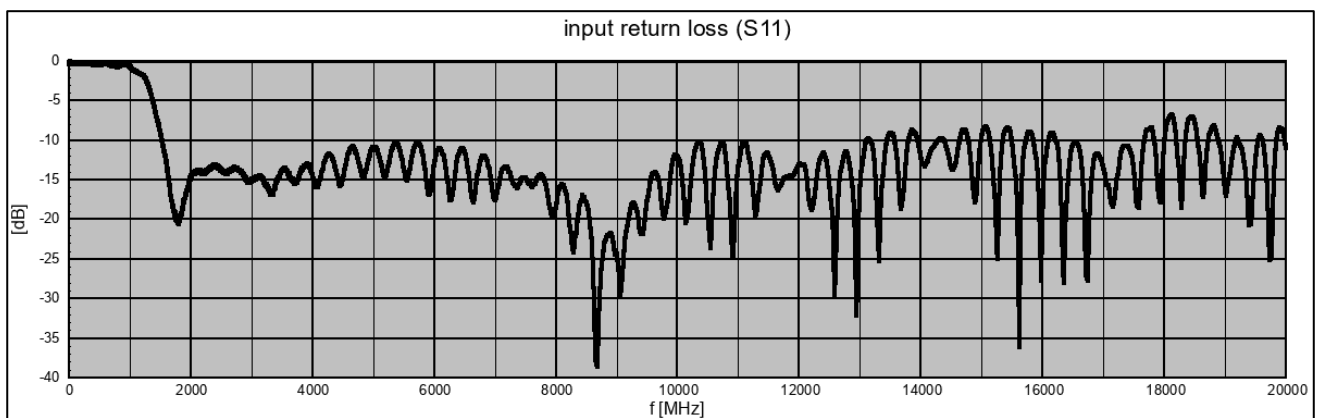
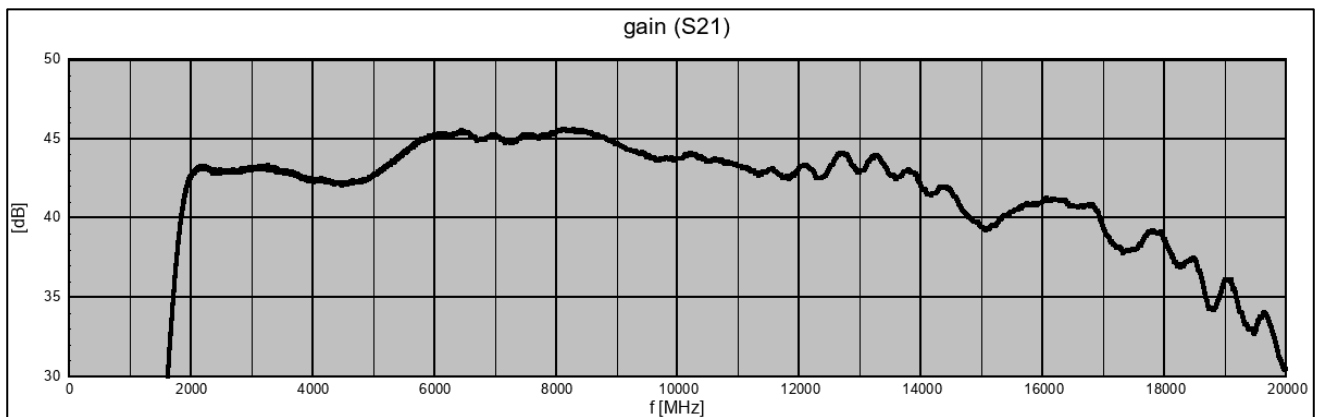
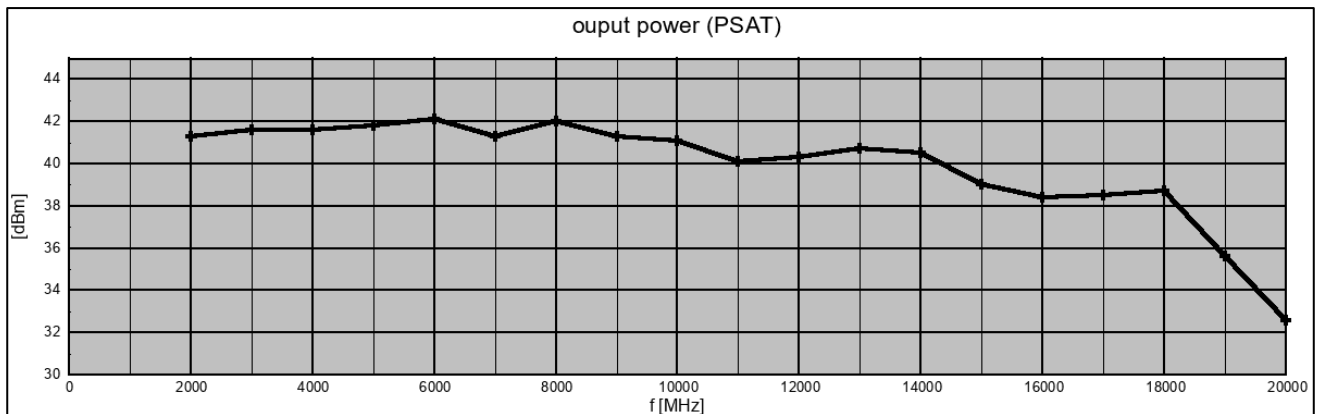
**RF Specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	$Z_{in} / Z_{out}$		50		$\Omega$	
low frequency	$f_{LOW}$			2	GHz	
high frequency	$f_{HIGH}$	18	20		GHz	
linear gain	$S_{21}$		44		dB	$f \leq 14$ GHz
	$S_{21}$		40			$f > 14$ GHz
input return loss	$S_{11}$		-13		dB	
saturation power	$P_{SAT}^{(1)}$		+42		dBm	$f \leq 8$ GHz
	$P_{SAT}^{(1)}$		+41		dBm	$8$ GHz $< f \leq 14$ GHz
	$P_{SAT}^{(1)}$		+39		dBm	$14$ GHz $< f \leq 18$ GHz
	$P_{SAT}^{(1)}$		+34		dBm	$f > 18$ GHz
3 dB compression	$P_{3dB}$		+39		dBm	$f \leq 10$ GHz
1 dB compression	$P_{1dB}$		+37		dBm	$f \leq 10$ GHz
harmonics	d		-20		dBc	$P_{OUT} = +40$ dBm, $f \leq 10$ GHz
3 <sup>rd</sup> order intercept	$OIP3^{(2)}$		+44		dBm	$f \leq 12$ GHz
noise figure	NF		3		dB	
input power	$P_{INRF}$			+10	dBm	no damage
DC voltage	$U_{DC}$			20	V	
ESD discharge resistor	$R_{ESD}$		4.7		k $\Omega$	RF ports

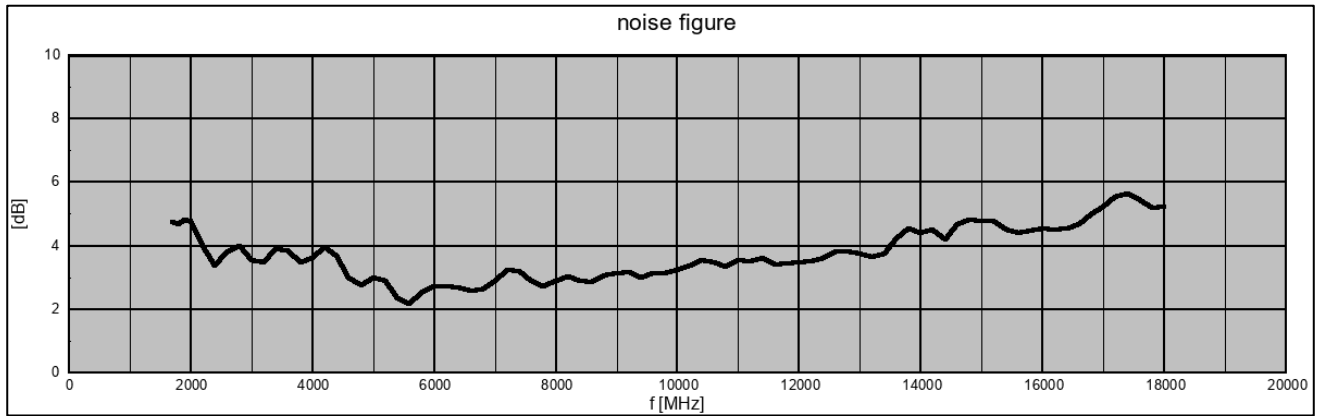
Note 1:  $P_{IN} = +10$ dBmNote 2: Tested at  $P_{OUT} = 2x +27$  dBm;  $\Delta f = 100$ MHz**Common Specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
RF connector type	$X_{RF}$	N female				
power supply	$U_{AC}$	90		260	V	AC, 50 ... 400 Hz
power consumption	$P_{AC}$		130		W	
power socket	$X_{AC}$	IEC-60320 C14				country specific power cable
status signaling		floating relay contact				
relay current	$I_{STAT}$			1	A	
relay voltage	$U_{STAT}$			42	V	
status socket	$X_{84}$	D-sub, 9 pole, female				rear side
dimensions	W x H x D	approx. 483 x 89 x 265			mm	without connectors, 19", 2 U
weight	m		5.5		kg	
operating temp. range	$T_o$	+5		+40	$^{\circ}$ C	
storage temp. range	$T_s$	-40		+70	$^{\circ}$ C	
ordering information	AMP20002000042-R			2200.5752.1		



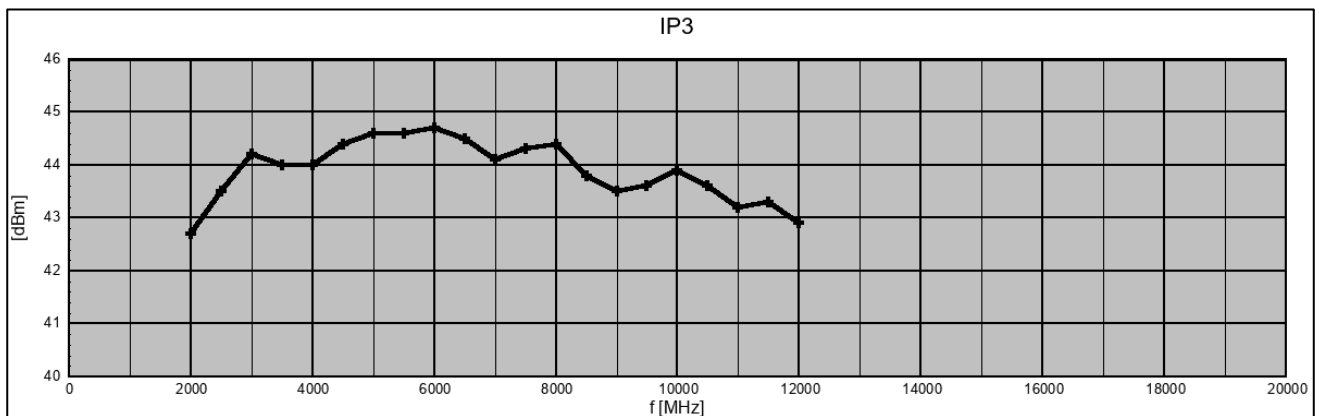
**S-Parameters***typical responses***Output Power**

## Noise Figure



## Linearity

typical responses



## Appearances

number of N-connectors on the back depends on product variant

### Front View

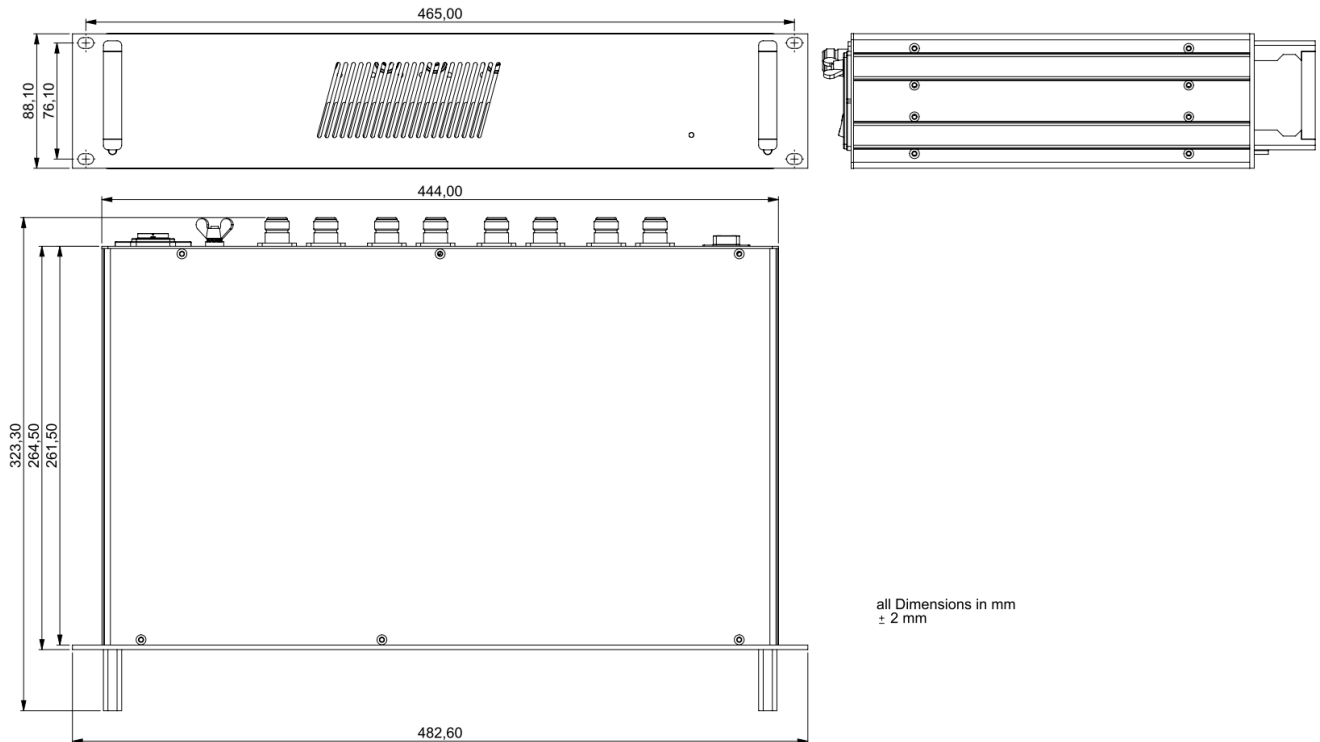


### Rear View



## Dimensions

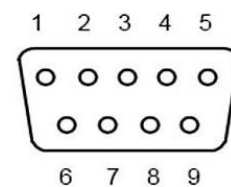
number of N-connectors on the back depends on product variant



## PIN Assignment STATUS

floating contacts

PIN	Designation	Remark
3	REL_COM	relay common
4	REL_OK	OK when closed
5	REL_FAIL	failure when closed
1,2, 6-9	n.c.	Not connected



**Related Products**

Product	Description	P/N
AMP3060036L	4 W Ultra High Linearity Wideband Amplifier Module 30...600 MHz	1602.5001.2
AMP3060036	4 W Ultra High Linearity Wideband Amplifier Module 30...600 MHz	1602.5001.1
AMP45090036-R	4 W High Linearity Amplifier for Event Radio 450 ... 900 MHz	2200.5602.1
AMP20280035B	4.5 W Wideband Amplifier Module 20...2800 MHz	1209.5201.X
AMP300600040L	10 W Power Amplifier Module 300 ... 6000 MHz	1801.5001.1
AMP300600040-R	10 W Power Amplifier 300 ... 6000 MHz	2200.5512.1
AMP300600043-R	20 W Power Amplifier 300 ... 6000 MHz	2200.5522.1
AMP17001300038L	6 W Power Amplifier Module 1700...13000 MHz	2004.5011.1
AMP17001300038-R	6 W Power Amplifier 1700...13000 MHz	2200.5702.1
AMP20002000042L	15 W Power Amplifier Module 2000 MHz ... 20 GHz	2301.5101.1
AMP20002000042-R	15 W Power Amplifier 2000 MHz ... 20 GHz	2200.5752.1

Remark: All modules with P/N extension with ".x" are available with horizontal or vertical orientated DC power connector.

