

# AMP300600043-R

## 20 W Power Amplifier 300 ... 6000 MHz

### Features

- compact 19", 2 U rack device
- output power +45 dBm typ.
- high OIP3 +49 dBm typ.
- high dynamic
- self test function
- optical power indication
- status signaling contact (floating)

### Applications

- EMC compliance testing
- GSM, UMTS, LTE, 5G, Wifi
- UHF, SHF



### At a Glance

AMP300600043-R from Becker Nachrichtentechnik is a compact amplifier in 50 ohms technology designed for the use in professional applications. 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 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

The high output power and the ultra-wide operation frequency range makes the medium power amplifier suitable in EMC compliance testing and in systems for cellular and Wifi applications including 5G (FR1).

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

### Tolerant to Mismatches

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

### Rugged Design

The aluminium housing of the AMP300600043-R protects the device against mechanical impacts and gives a good shielding. The internal amplifier modules have milled aluminium housings. These shielding properties makes the AMP300600043-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                   | $f_{LOW}$           |      |      | 300  | MHz        |                                 |
| high frequency                  | $f_{HIGH}$          | 6.0  |      |      | GHz        |                                 |
| linear gain                     | $S_{21}$            | 46   | 51   | 56   | dB         | $f < 0.7$ GHz                   |
|                                 | $S_{21}$            | 46   | 48   | 52   | dB         | $0.7$ GHz $\leq f \leq 5.0$ GHz |
|                                 | $S_{21}$            | 43   | 47   | 52   | dB         | $f > 5.0$ GHz                   |
| input return loss               | $S_{11}$            |      | -15  | -8   | dB         |                                 |
| saturation power                | $P_{SAT}^{1)}$      | +42  | +45  |      | dBm        | $f \leq 5.0$ GHz                |
|                                 | $P_{SAT}^{1)}$      | +40  | +42  |      | dBm        | $f > 5.0$ GHz                   |
| 1 dB compression                | $P_{1dB}$           |      | +41  |      | dBm        |                                 |
| harmonics                       | D                   |      | -27  |      | dBc        | $P = +40$ dBm                   |
| 3 <sup>rd</sup> order intercept | OPIP3 <sup>2)</sup> | +46  | +49  |      | dBm        | $f \leq 5.0$ GHz                |
|                                 | OPIP3 <sup>2)</sup> | +44  | +47  |      | dBm        | $f > 5.0$ GHz                   |
| noise figure                    | NF                  |      | 7    | 10   | dB         |                                 |
| input power                     | $P_{in}$            |      |      | +10  | dBm        | no damage                       |
| DC voltage                      | $U_{DCI}$           |      |      | 20   | V          | RF input                        |
|                                 | $U_{DCO}$           |      |      | 0    | V          | RF output                       |
| ESD discharge resistor          | $R_{ESD}$           |      | 4.7  |      | k $\Omega$ | RF ports                        |

Note 1: Tested at  $P_{IN} = +5$  dBm

Note 2: Tested at  $P_{out} = 2 \times +25$  dBm; 400M / 500M, 750M / 850M, 950M / 1050M, 1750M / 1850M, 1950M / 2050M, 2950M / 3050M, 3950M / 4050M, 4950M / 5050M, 5450M / 5550M, 5800M / 5900M

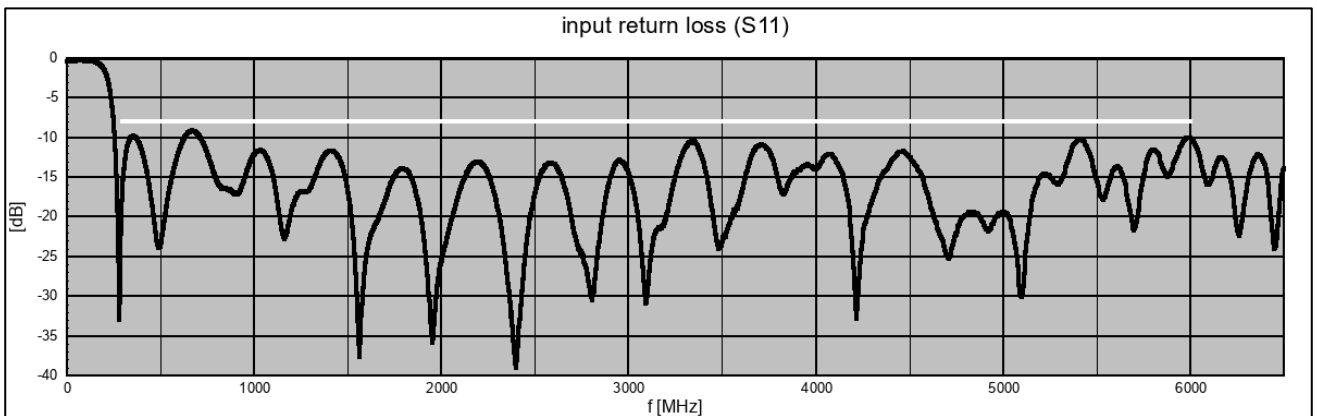
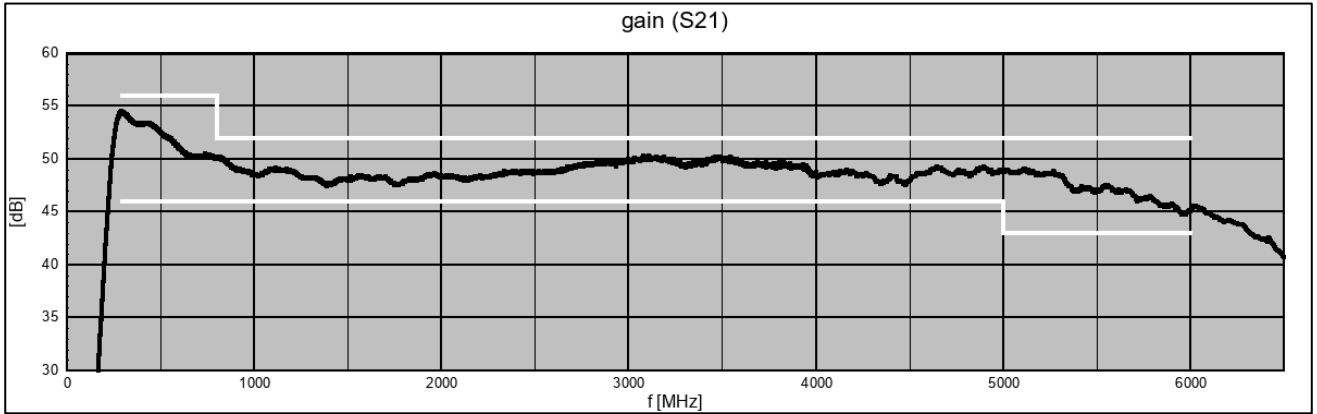
## Common Specification

| Parameter             | Symbol           | Min.                   | Typ. | Max.        | Unit        | Condition                    |
|-----------------------|------------------|------------------------|------|-------------|-------------|------------------------------|
| RF connector type     | $X_{RF}$         | N female               |      |             |             |                              |
| impedance             | $Z_{IN}/Z_{OUT}$ |                        | 50   |             | $\Omega$    |                              |
| power supply          | $U_{AC}$         | 90                     |      | 260         | V           | AC, 50 ... 400 Hz            |
| power consumption     | $P_{AC}$         |                        | 220  |             | 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         | $X_{STAT}$       |                        |      |             |             | rear side                    |
| dimensions            | W x H x D        | approx. 483 x 89 x 265 |      |             | mm          | without connectors, 19", 2 U |
| weight                | m                |                        | 6.15 |             | kg          |                              |
| operating temp. range | $T_o$            | +5                     |      | +40         | $^{\circ}C$ |                              |
| storage temp. range   | $T_s$            | -40                    |      | +70         | $^{\circ}C$ |                              |
| ordering information  | AMP300600043-R   |                        |      | 2200.5522.1 |             |                              |



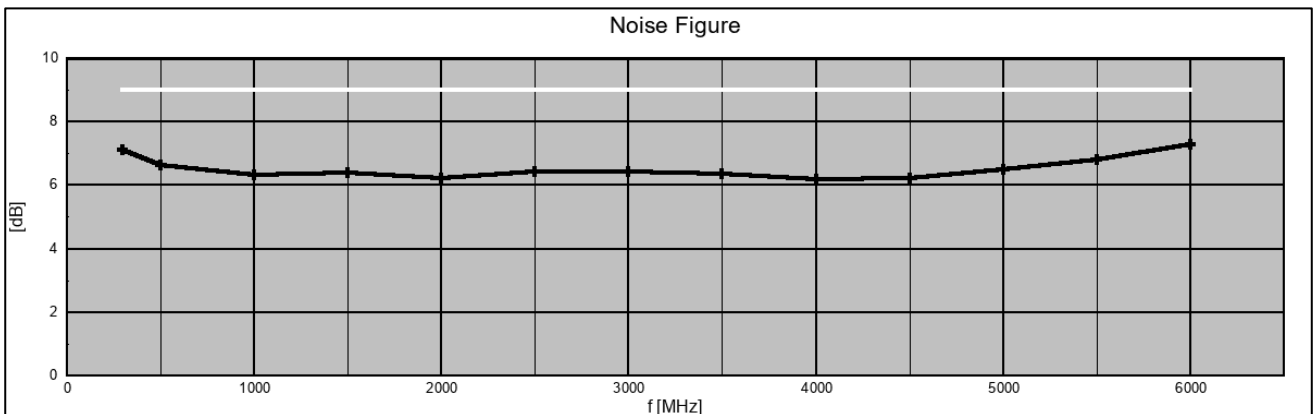
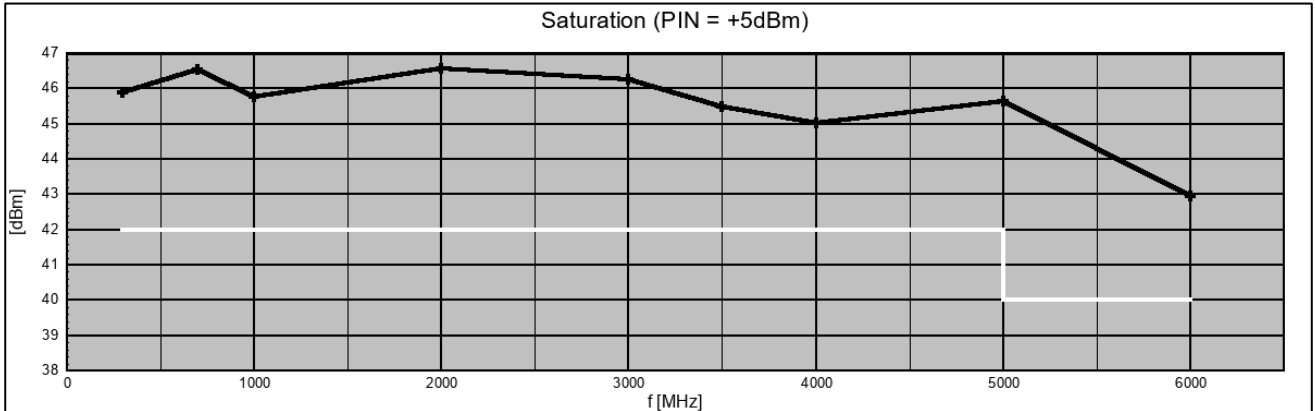
## S-Parameters

typical responses



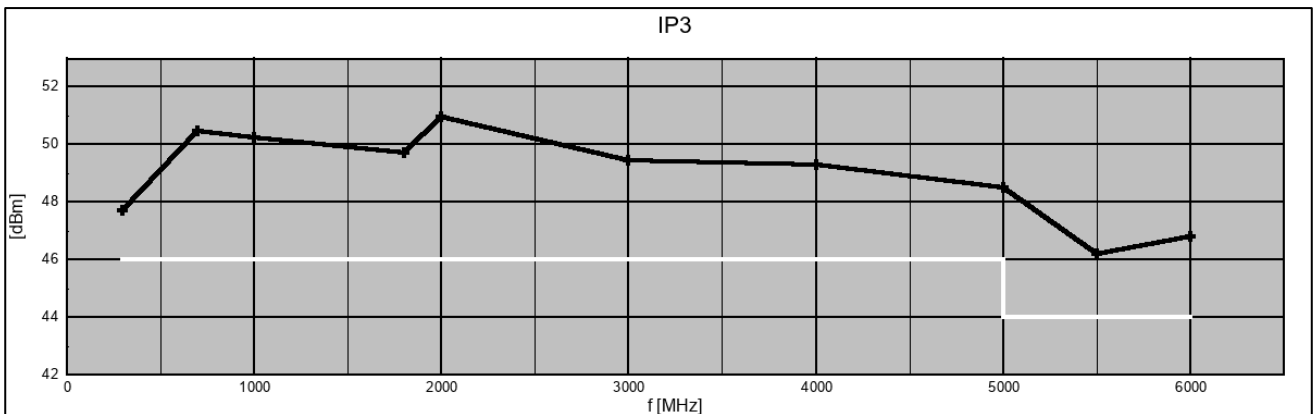
## Dynamic Range

typical responses



## Linearity

typical responses



## Appearances

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

### Front View

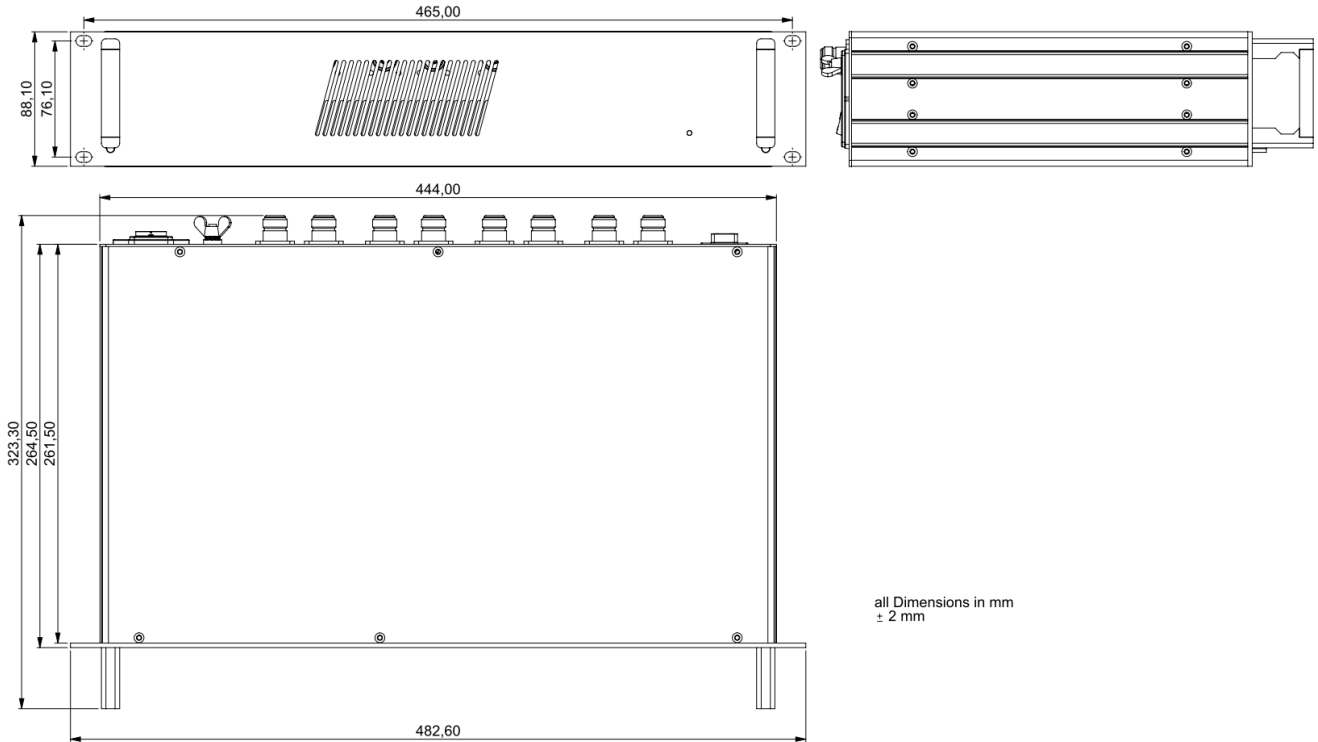


### Rear View



## Dimensions

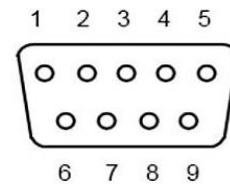
number of N-connectors on the back depends on product variant



## PIN Assignment STATUS

floating contacts

| PIN   | Designation | Remark                      |
|-------|-------------|-----------------------------|
| 3     | REL_COM_A   | relay common (AMP A)        |
| 4     | REL_OK_A    | OK when closed (AMP A)      |
| 5     | REL_FAIL_A  | failure when closed (AMP A) |
| 7     | REL_COM_B   | relay common (AMP B)        |
| 8     | REL_OK_B    | OK when closed (AMP B)      |
| 9     | REL_FAIL_B  | failure when closed (AMP B) |
| 1,2,6 | n.c.        | Not connected               |



**Related Products**

| Product          | Description  | P/N         |
|------------------|--|-------------|
| AMP3060036L      | 4 W Ultra High Linearity Wideband Amplifier Module<br>30...600 MHz | 1602.5001.2 |
| AMP3060036       | 4 W Ultra High Linearity Wideband Amplifier Module<br>30...600 MHz | 1602.5001.1 |
| AMP20280035B     | 4.5 W Wideband Amplifier Module<br>20...2800 MHz                   | 1209.5201.X |
| AMP300600040L    | 10 W Power Amplifier Module<br>300 ... 6000 MHz                    | 1801.5001.1 |
| AMP300600040-R   | 10 W Power Amplifier<br>300 ... 6000 MHz                           | 2200.5512.1 |
| AMP300600043-R   | 20 W Power Amplifier<br>300 ... 6000 MHz                           | 2200.5522.1 |
| AMP17001300038L  | 6 W Power Amplifier Module<br>1700...13000 MHz                     | 2004.5011.1 |
| AMP17001300038-R | 6 W Power Amplifier<br>1700...13000 MHz                            | 2200.5702.1 |
| AMP20002000042L  | 10 W Power Amplifier Module<br>2000 MHz ... 20 GHz                 | 2301.5101.1 |
| AMP20002000042-R | 10 W Power Amplifier<br>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.

