Test & Measurement
Instrument Amplifiers

DATA SHEET / 4T-101

MODELS:
MPA-0G6-6G-20
MPA-0G6-6G-60
MPA-0G6-6G-100
MPA-2G-6G-20
MPA-2G-6G-80
MPA-2G-6G-100
MPA-2G-18G-20

MPA-2G-18G-30
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MPA-6G-18G-20
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MPA-18G-26G5-10
MPA-18G-26G5-25
MPA-18G-26G5-40
MPA-26G5-40G-5
MPA-26G5-40G-10
MPA-26G5-40G-25
MPA-26G5-40G-40
MPA-37G-43G-5
Applications Expertise, Reliability and Support

Not all amplifiers are created equal, so how can you be certain that an amplifier will work for your needs? You deserve to be confident that the amplifiers used with your test-and-measurement lab benches will meet the requirements of your specific applications, are reliable, and are equally well-supported pre-and post-sale. When it comes to application expertise, reliability and support, there is no company that does it better than Maury Microwave.

With more than 60 years of experience, we are the application experts, having designed, manufactured, trained and supported turnkey measurement and modeling device characterization solutions. Our expertise includes specialization in 4G and 5G base station and handset transistor model extraction and validation, RADAR transistor model extraction and validation, 4G, 5G, WiFi and WLAN PA and FEM design and design-validation test (DVT), as well as general 50Ω and non-50Ω characterization.

We are uniquely positioned to combine our measurement and load pull expertise with modern solid-state power amplifier design practices to deliver best-in-class instrument amplifiers. Our amplifiers satisfy a wide range of application-specific requirements including simultaneous high-power, wide bandwidth, low harmonic power and high linearity.

We make use of our extensive test facilities to ensure our amplifiers meet your reliability expectations, testing each shipped unit according to our high standards. Burn-in and ageing tests include prolonged storage under extreme temperature conditions, extended amplifier operation over the entire rated temperature range, and elongated usage at maximum power under CW and pulsed-CW conditions.

After burn-in and ageing, each instrument amplifier is tested using a state-of-the-art vector-receiver measurement system. This system allows us to independently measure power at the fundamental, harmonic and intermodulation frequencies using single-tone and two-tone input signals, as well as true ACPR using wideband modulated signals. Not only are MPA-series amplifiers best-in-class, but so are our test methodologies.

Maury Microwave, the best choice for applications expertise, reliability and support.

Our application team is here to support you through your evaluation, integration and support process.
# Amplifier Frequency Map

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### Available Models

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<th>Min. Psat (W)</th>
<th>Min. Small Signal Gain (dB)</th>
<th>Gain Adj. (dB) Max.</th>
<th>Typ. 2nd Harmonic Power @ Psat (dBc)</th>
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</table>
Specifications

- Frequency Range: 0.6-6 GHz
- Psat: Typical 20 W, Minimum 20 W
- Input Power: Maximum 0 dBm
- Small Signal Gain: Minimum 46 dB
- Gain Flatness: Typical ±4 dB
- Gain Adjustment: 20 dB
- VSWR (Input): Maximum 2:1
- 2nd Harmonic Power @ Psat: Typical -15 dBc
- Spur @ Psat: Typical -65 dBc
- IM3 @ 13 dB back off: Typical -39 dBc
- IM3 @ 3 dB back off: Typical -27 dBc
- Unconditionally Stable
- VSWR Load @Psat: 3:1
- ECCN: EAR99
- Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

- Enclosure Type: B
- Weight: 26 lbs
- RF Input/Output: SMA Female

Environmental Specifications

- Operating Temp: -50ºC to 50ºC
- Storage Temp: -25ºC to 65ºC
Specifications

- Frequency Range: 0.6-6 GHz
- Psat: Typical 60 W, Minimum 60 W
- Input Power: Maximum 0 dBm
- Small Signal Gain: Minimum 50 dB
- Gain Flatness: Typical ±4 dB
- Gain Adjustment: Maximum 20 dB
- VSWR (Input): Maximum 2:1
- 2nd Harmonic Power @ Psat: Typical -15 dBc
- Spur @ Psat: Typical -65 dBc
- IM3 @ 13 dB back off: Typical -39 dBc
- IM3 @ 3 dB back off: Typical -25 dBc
- Unconditionally Stable
- VSWR Load @Psat: 3:1
- ECCN: EAR99
- Warranty: 24 months

Mechanical Specifications

- Enclosure Type: A
- Weight: 42.3 lbs
- RF Input/Output: Type N Female

Environmental Specifications

- Operating Temp.: -25°C to 65°C
- Storage Temp.: -25°C to 65°C

* 10 MHz Tone spacing
Specifications

Frequency Range: 0.6-6 GHz
Psat: Typical 100 W, Minimum 100 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 50 dB
Gain Flatness: Typical ±4 dB
Gain Adjustment: 20 dB
VSWR (Input): Maximum 2:1
2nd Harmonic Power @ Psat: Typical -15 dBc
Spur @ Psat: Typical -65 dBc
IM3 @ 13 dB back off: Typical -39 dBc
IM3 @ 3 dB back off: Typical -25 dBc
Unconditionally Stable
VSWR Load @ Psat: 3.1
ECCN: EAR99
Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

Enclosure Type: C
Weight: 84 lbs
RF Input/Output: Type N Female

Environmental Specifications

Operating Temp: 0ºC to 50ºC
Storage Temp: -25ºC to 65ºC
Specifications

Frequency Range: 2-6 GHz
Psat: Typical 20 W, Minimum 20 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 45 dB
Gain Flatness: Typical ±2 dB
Gain Adjustment: 20 dB
VSWR (Input): Maximum 2:1
2nd Harmonic Power @ Psat: Typical -15 dBc
Spur @ Psat: Typical -65 dBc
IM3 @ 13 dB back off: Typical -44 dBc
IM3 @ 3 dB back off: Typical -29 dBc
Unconditionally Stable
VSWR Load @ Psat: 3:1
ECCN: EAR99
Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

Enclosure Type: A
Weight: 19 lbs
RF Input/Output: SMA Female

Environmental Specifications

Operating Temp.: 0°C to 50°C
Storage Temp.: -25°C to 65°C
MPA-2G-6G-80
2-6 GHz, 80W

Specifications

Frequency Range:..........................2-6 GHz
Psat:........................................Typical 80 W, Minimum 80 W
Input Power:............................Maximum 3 dBm
Small Signal Gain:.......................Minimum 49 dB
Gain Flatness:............................Typical ±2.5 dB
Gain Adjustment..........................20 dB
VSWR (Input)............................Maximum 2:1
2nd Harmonic Power @ Psat:.........Typical -15 dBc
Spur @ Psat..............................Typical -65 dBc
IM3 @ 13 dB back off...............Typical -44 dBc
IM3 @ 3 dB back off...............Typical -29 dBc
Unconditionally Stable
VSWR Load @Psat:..........................3.1
ECCN.......................................EAR99
Warranty:........................................24 months

Mechanical Specifications

Enclosure Type:...... A
Weight:......................42.3 lbs
RF Input/Output:..... Type N Female

Environmental Specifications

Operating Temp:........0°C to 50°C
Storage Temp:..........-25°C to 65°C

* 10 MHz Tone spacing
MPA-2G-6G-100

2-6 GHz, 100W

Specifications

Frequency Range: 2-6 GHz
Psat: Typical 100 W, Minimum 100 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 50 dB
Gain Flatness: Typical ±2 dB
Gain Adjustment: 20 dB
VSWR (Input): Maximum 2:1
2nd Harmonic Power @ Psat: Typical -15 dBc
Spur @ Psat: Typical -65 dBc
IM3 @ 13 dB back off: Typical -44 dBc
IM3 @ 3 dB back off: Typical -29 dBc
Unconditionally Stable
VSWR Load @ Psat: 3.1
ECCN: EAR99
Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

Enclosure Type: A
Weight: 48 lbs
RF Input/Output: Type N Female

Environmental Specifications

Operating Temp.: 0°C to 50°C
Storage Temp.: -25°C to 65°C
**Specifications**

- **Frequency Range:** 2-18 GHz
- **Psat:** Typical 20 W, Minimum 20 W
- **Input Power:** Maximum 5 dBm
- **Small Signal Gain:** Minimum 41 dB
- **Gain Flatness:** Typical ±4 dB
- **Gain Adjustment:** 20 dB
- **VSWR (Input):** Maximum 2:1
- **2nd Harmonic Power @ Psat:** Typical -15 dBc
- **Spur @ Psat:** Typical -65 dBc
- **IM3 @ 13 dB back off:** Typical -38 dBc
- **IM3 @ 3 dB back off:** Typical -20 dBc
- **Unconditionally Stable
- **VSWR Load @ Psat:** 3:1
- **ECCN:** EAR99
- **Warranty:** 24 months

* 10 MHz Tone spacing

**Mechanical Specifications**

- **Enclosure Type:** B
- **Weight:** 17.6 lbs
- **RF Input/Output:** SMA Female

**Environmental Specifications**

- **Operating Temp.:** -25°C to 50°C
- **Storage Temp.:** -25°C to 65°C
**Specifications**

Frequency Range: 2-18 GHz
Psat: Minimum 30 W
Input Power: Maximum 5 dBm
Small Signal Gain: Minimum 39 dB
Gain Flatness: Typical ±4 dB
Gain Adjustment: 20 dB
VSWR (Input): Maximum 2.1:1
2nd Harmonic Power @ Psat: Typical -15 dBc
Spur @ Psat: Typical -65 dBc
IM3 @ 13 dB back off: Typical -38 dBc
IM3 @ 3 dB back off: Typical -20 dBc
Unconditionally Stable
VSWR Load @ Psat: 3.1
ECCN: 3A001.b4
Warranty: 24 months

* 10 MHz Tone spacing

**Mechanical Specifications**

Enclosure Type: A
Weight: 42.3 lbs
RF Input/Output: SMA Female

**Environmental Specifications**

Operating Temp.: 0°C to 50°C
Storage Temp.: -25°C to 65°C
MPA-2G-18G-50

2-18 GHz, 50W

Specifications

- Frequency Range: 2-18 GHz
- Psat: Typical 50 W, Minimum 50 W
- Input Power: Maximum 0 dBm
- Small Signal Gain: Minimum 49 dB
- Gain Flatness: Typical ±4 dB
- Gain Adjustment: 20 dB
- VSWR (Input): Maximum 2.11
- 2nd Harmonic Power @ Psat: Typical -15 dBc
- Spur @ Psat: Typical -65 dBc
- IM3 @ 13 dB back off: Typical -38 dBc
- IM3 @ 3 dB back off: Typical -20 dBc
- Unconditionally Stable
- VSWR Load @Psat: 3.1
- ECCN: 3A001.b4
- Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

- Enclosure Type: A
- Weight: 48 lbs
- RF Input/Output: Type N Female

Environmental Specifications

- Operating Temp: 0°C to 50°C
- Storage Temp: -25°C to 65°C
Specifications

- Frequency Range: 6-18 GHz
- Psat: Typical 10 W, Minimum 10 W
- Input Power: Maximum 0 dBm
- Small Signal Gain: Minimum 38 dB
- Gain Flatness: Typical ±3 dB
- Gain Adjustment: 20 dB
- VSWR (Input): Maximum 2:1
- 2nd Harmonic Power @ Psat: Typical -15 dBc
- Spur @ Psat: Typical -65 dBc
- IM3 @ 13 dB back off: Typical -35 dBc
- IM3 @ 3 dB back off: Typical -20 dBc
- Unconditionally Stable
- VSWR Load @Psat: 3.1
- ECCN: EAR99
- Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

- Enclosure Type: B
- Weight: 20 lbs
- RF Input/Output: SMA Female

Environmental Specifications

- Operating Temp.: 0°C to 50°C
- Storage Temp.: -25°C to 65°C
Specifications

Frequency Range: 6-18 GHz
Psat: Minimum 20 W
Input Power: Maximum 5 dBm
Small Signal Gain: Minimum 45 dB
Gain Flatness: Typical ±3 dB
Gain Adjustment: 20 dB
VSWR (Input): Maximum 2:1
2nd Harmonic Power @ Psat: Typical -15 dBc
Spur @ Psat: Typical -65 dBc
IM3 @ 13 dB back off: Typical -35 dBc
IM3 @ 3 dB back off: Typical -20 dBc
Unconditionally Stable
VSWR Load @ Psat: 3.1
ECCN: 3A001.b4
Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

Enclosure Type: B
Weight: 16.9 lbs
RF Input/Output: SMA Female

Environmental Specifications

Operating Temp.: 0°C to 50°C
Storage Temp.: -25°C to 65°C
**Specifications**

- **Frequency Range:** 6-18 GHz
- **Psat:** Typical 30 W, Minimum 30 W
- **Input Power:** Maximum 0 dBm
- **Small Signal Gain:** Minimum 48 dB
- **Gain Flatness:** Typical ±3 dB
- **Gain Adjustment:** 20 dB
- **VSWR (Input):** Maximum 2:1
- **2nd Harmonic Power @ Psat:** Typical -15 dBc
- **Spur @ Psat:** Typical -65 dBc
- **IM3 @ 13 dB back off:** Typical -35 dBc
- **IM3 @ 3 dB back off:** Typical -20 dBc
- **Unconditionally Stable**
- **VSWR Load @Psat:** 3:1
- **ECCN:** 3A001.b4
- **Warranty:** 24 months

* 10 MHz Tone spacing

**Mechanical Specifications**

- **Enclosure Type:** A
- **Weight:** 42 lbs
- **RF Input/Output:** SMA Female

**Environmental Specifications**

- **Operating Temp.:** 0°C to 50°C
- **Storage Temp.:** -25°C to 65°C
### Specifications

- **Frequency Range:** 6-18 GHz
- **Psat:** Minimum 50 W
- **Input Power:** Maximum 3 dBm
- **Small Signal Gain:** Minimum 50 dB
- **Gain Flatness:** Typical ±3 dB
- **Gain Adjustment:** 20 dB
- **VSWR (Input):** Maximum 2:1
- **2nd Harmonic Power @ Psat:** Typical -15 dBc
- **Spur @ Psat:** Typical -65 dBc
- **IM3 @ 13 dB back off:** Typical -37 dBc
- **IM3 @ 3 dB back off:** Typical -20 dBc
- **Unconditionally Stable**
- **VSWR Load @ Psat:** 3.1
- **ECCN:** 3A001.b4
- **Warranty:** 24 months

* * 10 MHz Tone spacing

### Mechanical Specifications

- **Enclosure Type:** A
- **Weight:** 42.3 lbs
- **RF Input/Output:** Type N Female

### Environmental Specifications

- **Operating Temp.:** 0°C to 50°C
- **Storage Temp.:** -25°C to 65°C
Specifications

Frequency Range: .................. 8-12 GHz
Psat: .................................. Typical 30 W, Minimum 30 W
Input Power: .................................. Maximum 0 dBm
Small Signal Gain: .................. Minimum 47 dB
Gain Flatness: .................. Typical ±3 dB
Gain Adjustment: .................. 20 dB
VSWR (Input): .................. Maximum 2:1
2nd Harmonic Power @ Psat: .... Typical -35 dBc
Spur @ Psat: .................. Typical -65 dBc
IM3 @ 13 dB back off: ........ Typical -33 dBc
IM3 @ 3 dB back off: ........ Typical -23 dBc
Unconditionally Stable
VSWR Load @ Psat: .................. 3:1
ECCN: .................................. EAR99
Warranty: .................. 24 months

Mechanical Specifications

Enclosure Type: B
Weight: 22 lbs
RF Input/Output: SMA Female

Environmental Specifications

Operating Temp: 0°C to 50°C
Storage Temp: -25°C to 65°C

* 10 MHz Tone spacing
MPA-8G-12G-50

8-12 GHz, 50W

Specifications

Frequency Range: 8-12 GHz
Psat: Typical 50 W, Minimum 50 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 49 dB
Gain Flatness: Typical ±3 dB
Gain Adjustment: 20 dB
VSWR (Input): Maximum 2:1
2nd Harmonic Power @ Psat: Typical -35 dBC
Spur @ Psat: Typical -65 dBC
IM3 @ 3 dB back off: Typical -33 dBC
IM3 @ 3 dB back off: Typical -23 dBC
Unconditionally Stable
VSWR Load @ Psat: 3:1
ECCN: 3A001.b4
Warranty: 24 months

Mechanical Specifications

Enclosure Type: A
Weight: 42.3 lbs
RF Input/Output: Type N Female

Environmental Specifications

Operating Temp.: 0ºC to 50ºC
Storage Temp.: -25ºC to 65ºC

* 10 MHz Tone spacing
Specifications

Frequency Range: 18-26.5 GHz
Psat: Typical 10 W, Minimum 10 W
Input Power: Maximum 5 dBm
Small Signal Gain: Minimum 40 dB
Gain Flatness: Typical ±2 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2:1
Spur @ Psat: Typical -65 dBC
Unconditionally Stable
VSWR Load @Psat: 3.1
ECCN: EAR99
Warranty: 24 months

Mechanical Specifications

Enclosure Type: B
Weight: 15.2 lbs
RF Input/Output: SMA Female

Environmental Specifications

Operating Temp.: -25°C to 65°C
Storage Temp.: -25°C to 65°C

* 10 MHz Tone spacing
MPA-18G-26G5-25
18-26.5 GHz, 25W

Specifications

Frequency Range: 18-26.5 GHz
Psat: Typical 25 W, Minimum 20 W
Input Power: Maximum 3 dBm
Small Signal Gain: Minimum 46 dB
Gain Flatness: Typical ±4 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2:1
Spur @ Psat: Typical -65 dBC
Unconditionally Stable
VSWR Load @Psat: 3.1
ECCN: 3A001.b4
Warranty: 24 months

* 10 MHz Tone spacing

Mechanical Specifications

Enclosure Type: A
Weight: 26 lbs
RF Input/Output: SMA Female/WR42

Environmental Specifications

Operating Temp.: 0ºC to 50ºC
Storage Temp.: -25ºC to 65ºC
Specifications

Frequency Range: 18-26.5 GHz
Psat: Typical 40 W, Minimum 40 W
Input Power: Maximum 5 dBm
Small Signal Gain: Minimum 49 dB
Gain Flatness: Typical ±4 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2:1
Spur @ Psat: Typical -65 dBC
Unconditionally Stable
VSWR Load @Psat: 3:1
ECCN: 3A001.b4
Warranty: 24 months

Mechanical Specifications

Enclosure Type: A
Weight: 48 lbs
RF Input/Output: SMA Female/WR42

Environmental Specifications

Operating Temp: 0°C to 50°C
Storage Temp: -25°C to 65°C
Specifications

Frequency Range: 26.5-40 GHz
Psat: Typical 5 W, Minimum 5 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 40 dB
Gain Flatness: Typical ±5 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2:1
Spur @ Psat: Typical -65 dBc
Unconditionally Stable
VSWR Load @Psat: 3:1
ECCN: 3A001.b4
Warranty: 24 months

Mechanical Specifications

Enclosure Type: B
Weight: 16.9 lbs
RF Input/Output: 2.92mm Female

Environmental Specifications

Operating Temp.: 0°C to 50°C
Storage Temp.: -25°C to 65°C
Specifications

Frequency Range: 26.5-40 GHz
Psat: Typical 10 W, Minimum 10 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 40 dB
Gain Flatness: Typical ±5 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2:1
Spur @ Psat: Typical -65 dBc
Unconditionally Stable
VSWR Load @ Psat: 3.1
ECCN: 3A001.b4
Warranty: 24 months

Mechanical Specifications

Enclosure Type: B
Weight: 29 lbs
RF Input/Output: 2.92mm Female

Environmental Specifications

Operating Temp: 0°C to 50°C
Storage Temp: -25°C to 65°C
Specifications

Frequency Range: 26.5-40 GHz
Psat: Typical 25 W, Minimum 20 W
Input Power: Maximum 0 dBm
Small Signal Gain: Minimum 43 dB
Gain Flatness: Typical ±5 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2.1
Spur @ Psat: Typical -65 dBc
Unconditionally Stable
VSWR Load @Psat: 3.1
ECCN: 3A001.b4
Warranty: 24 months

Mechanical Specifications

Enclosure Type: A
Weight: 42.3 lbs
RF Input: 2.92mm Female
RF Output: WR28 flange

Environmental Specifications

Operating Temp: 0°C to 50°C
Storage Temp: -25°C to 65°C
MPA-26G5-40G-40

26.5-40 GHz, 40W

Specifications

Frequency Range: .............. 26.5-40 GHz
Psat: .................................. Typical 40 W, Minimum 40 W
Input Power: ....................... Maximum 0 dBm
Small Signal Gain: ............. Minimum 43 dB
Gain Flatness: ................. Typical ±5 dB
Gain Adjustment: ............. ±15 dB
VSWR (Input): .................. Maximum 2:1
Spur @ Psat: ....................... Typical -65 dBc
Unconditionally Stable
VSWR Load @Psat: .......... 3.1
ECCN: .............................. 3A001.b4
Warranty: ......................... 24 months

Mechanical Specifications

Enclosure Type: .......... C
Weight: ...................... 59 lbs
RF Input: ................. 2.92mm Female
RF Output: .............. WR28 flange

Environmental Specifications

Operating Temp.: ....0°C to 50°C
Storage Temp.: ....... -25°C to 65°C
MPA-37G-43G-5
37-43 GHz, 5W

Specifications

Frequency Range: 37-43 GHz
Psat: Minimum 5 W
Input Power: Maximum 2 dBm
Small Signal Gain: Minimum 33 dB
Gain Flatness: Typical ±4 dB
Gain Adjustment: 15 dB
VSWR (Input): Maximum 2:1
Spur @ Psat: Typical -65 dBC
Unconditionally Stable
VSWR Load @ Psat: 3.1
ECCN: 3A001.b4
Warranty: 24 months

Mechanical Specifications

Enclosure Type: B
Weight: 14.33 lbs
RF Input/Output: 2.4mm Female

Environmental Specifications

Operating Temp: 0°C to 50°C
Storage Temp: -25°C to 65°C
Maximizing Up-Time

All MPA-series amplifiers go through an extensive burn-in and ageing process to ensure high reliability and maximize up-time. We do recognize that, however unlikely, problems tend to arise at the most inconvenient moments, often when measurement systems are in the highest demand.

As a courtesy to our customers, Maury retains a pool of common amplifiers which can be used during the repair process. The frequencies and powers of the amplifiers offered as part of the courtesy pool may vary from time to time and are subject to availability.

Beyond our courtesy pool, we offer service level agreements (SLA) that include dedicated backup amplifiers to ensure availability during the warranty period and are shipped within two business days of notice. With an SLA, we can maximize up-time and ensure systems are available for use.

*Please inquire with your Maury Sales contact for details.*
Semi-Custom and Custom Amplifiers

Not finding what you need in our standard offering? Maury offers semi-custom and custom amplifiers to meet your application requirements.

Semi-Custom Amplifiers

Looking for something not-quite “off-the-shelf”? Do you need a little more power? A slightly different frequency band? A bit more gain? Maury’s semi-custom amplifiers may be just what you need. We will modify our standard amplifiers to meet your application needs while maintaining all the benefits of our standard offering. Contact Maury Sales and we’ll work on delivering a solution that upgrades your test bench to “State-of-the-Art”.

Custom Amplifiers

Looking for something even more specialized? Maury can go beyond modifying our standard “off-the-shelf” amplifiers and customize a solution for your unique application, including:

- Electrical: frequency range, output power, gain, harmonic power, spurious signals levels, intermodulation levels, noise floor...
- Protection and indications: LCD display, over-current protection, over-heat protection...
- Mechanical and environmental: connectors and positioning, cooling, temperature range, dimensions....

Please complete a Custom Amplifier Questionnaire; we will compare your requirements with our capabilities and determine whether we can assist with your custom requirements.

Note: all custom amplifiers requests are evaluated on a case-by-case basis; completing a questionnaire does not ensure Maury will be able to offer an amplifier to meet your requirements; all custom amplifiers will include comprehensive Terms and Conditions (T&C) and will be accompanied by a set of Acceptance Test criteria (ATP).
## Specifications Definitions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Extended Parameter (if required)</th>
<th>Description and/or Usefulness of Parameter</th>
<th>Notes</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psat</td>
<td>Saturated Output Power</td>
<td>Defines the maximum output power that can be sustained without any damage or long term reliability issues.</td>
<td>Psat is achieved once an increment of 1dB input power results in an increased output power less than 0.2dB</td>
<td>dBm</td>
</tr>
<tr>
<td>Input Power</td>
<td></td>
<td>Defines the maximum input power that can be injected into the amplifier without any damage or long term reliability issues.</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td></td>
<td>Defines the difference between the output power and input power under small signal conditions. Specification allows a user to budget the required input power in order to reach the desired output power.</td>
<td>Power Gain measured under 50ohm conditions with a -30dBm input signal</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>Gain Flatness as a Function of Frequency</td>
<td>Defines the maximum deviation of Gain over the frequency range of the amplifier. May be an important consideration for wideband power measurements.</td>
<td>Small Signal Gain variation vs frequency at -30dBm input power</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Adjustment</td>
<td></td>
<td>Defines the range of gain achievable by varying the position of the gain knob. May be an important consideration for measurements which require less gain than maximum, or require a level of gain variability during the measurement.</td>
<td>The lowest achievable Gain is equal to the average Small Signal Gain minus Gain adjustment.</td>
<td>dB</td>
</tr>
<tr>
<td>VSWR (input)</td>
<td>Input Voltage Standing Wave Ratio</td>
<td>Defines maximum Input VSWR; a low VSWR ensures sufficient signal transmission between signal generator and amplifier.</td>
<td>VSWR measured with a VNA under small signal conditions (-30dBm input power)</td>
<td></td>
</tr>
</tbody>
</table>
| Harmonic Power   |                                  | Defines relative power at harmonic frequencies compared with the power at the fundamental frequency. May be important for applications where injecting harmonic powers created by the amplifier may alter DUT performance or invalidate measurement results. | Power at the harmonic frequencies are measured while the power at the fundamental frequency is set to typical Psat. \[ P_{2f_0} = P_{2f_0} + P_{2f_0} \]
\[ P_{3f_0} = P_{3f_0} + P_{3f_0} \] | dBc   |
Spur

Spurious Signals

Defines relative power at non-harmonic frequencies compared with the power at the fundamental frequency. May be important when measuring the stability of a DUT and oscillations.

Power at non-harmonic frequencies are measured while the power at the fundamental frequency is set to typical Psat.

dBc

IM3 @13dB back-off and IM3 @3dB back-off

Third-Order Intermodulation Product

Defines the relative power at intermodulation frequencies for a multi-tone source signal. May be an important consideration for the accurate measurement of DUT linearity performance.

Power at the high and low-third order intermodulation product frequencies are measured while the power at the carrier frequencies with 10 MHz offset are set to 13dB and 3dB back-off from typical Psat.

IM3\_L = P\_2f1-f2 - P\_f1
IM3\_H = P\_2f2-f1 - P\_f2

dBc

Unconditionally Stable

Unconditionally Stable with K>1

An unconditionally stable amplifier will not oscillate regardless of the impedance presented to it.

K-factor is calculated using S-parameters with a -30dBm input signal

VSWR Load @Psat

Load Voltage Standing Wave Ratio Tolerance at Output Port

Defines maximum Output VSWR which can be presented to the amplifier on RF output port without reflecting a large power which could potentially damage the amplifier. This parameter is specified at typical Psat.

Placing an isolator/circulator on the output port is a best-practice and increases the protection of the amplifier significantly

Parameters

Parameters may be rated as typical, minimum or maximum based on the following definitions:

> **Typical (typ):** the actual value will be greater than or equal to the typical specification over 80% of the frequency range.

> **Minimum (min):** the actual value will be greater than or equal to the minimum specification over 100% of the frequency range.

> **Maximum (max):** the actual value will be less than or equal to the maximum specification for 100% of the frequency range.
VISIT OUR WEB STORE TO LEARN MORE ABOUT OUR PRODUCTS

www.maurymw.com