

# SUB6G-100W Power Amplifier Modules



Sub-6GHz 100W (SUB6G-100W) Power Amplifier Modules are solid-state power amplifiers (SSPA) designed for 5G wireless communication infrastructure, EMC testing, electronic warfare jamming, and RF measurements. Utilizing advanced **Gallium Nitride (GaN) high-frequency chip technology**, these modules deliver a **saturated output power of up to 100W (50 dBm)** within the **0.4GHz to 6GHz** Sub-6GHz frequency range, offering high efficiency, excellent linearity, and superior thermal management.



## Architectural Classification of Sub-6GHz 100W PA Modules

Based on frequency coverage requirements, 100W Sub-6GHz power amplifiers are categorized into three main types:

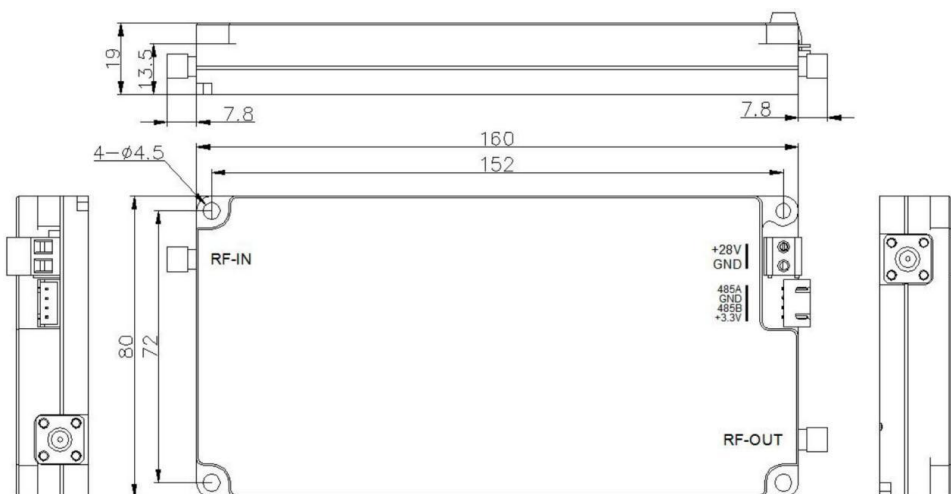
- **Ultra-Wideband Modules (400MHz - 6000MHz)**
  - **Key Features:** Utilize distributed amplifier topologies to achieve a gain flatness of  $\pm 2.5\text{dB}$ . Integrate D-Sub interfaces for real-time monitoring of temperature and current, alongside advanced thermal and over-temperature protection.
  - **Applications:** 5G base station measurements, LTE/Wi-Fi signal enhancement, defensive jamming.
- **5G Mainstream High-Band Modules (1GHz - 6GHz / 2GHz - 6GHz)**
  - **Key Features:** Provide a high gain of approximately 50dB. RF interfaces typically use standard SMA-Female inputs and N-Type Female outputs to ensure stable signal transmission across high frequency bands.
- **Custom Narrowband / High-Frequency Modules (4GHz - 6GHz)**
  - **Key Features:** Operate on standard +28VDC or 32VDC power supplies. Feature highly compact designs with enhanced thermal heat sinks on the bottom base for deployment in harsh environments.

## Key features

- ✧ Customizable for any frequency band below 6000MHz
- ✧ High linear power amplifier tube and reliable performance
- ✧ With no-load, overload, and over temperature protection functions
- ✧ Through the RS485 interface, the protocol can be customized
- ✧ Temperature compensation function to maintain long-term stable output

## Specifications

| 100W-HPA-SUB6G-50A         | Specification                                                          |           | Remark                             |
|----------------------------|------------------------------------------------------------------------|-----------|------------------------------------|
| Frequency Range (MHz)      | 1                                                                      | 420-470   | Model No : PA-420-470M-50dBm-32V   |
|                            | 2                                                                      | 869-930   | Model No : PA-860-930M-50dBm-32V   |
|                            | 3                                                                      | 1170-1280 | Model No : PA-1170-1280M-50dBm-32V |
|                            | 4                                                                      | 1560-1620 | Model No : PA-1560-1620M-50dBm-32V |
|                            | 5                                                                      | 2400-2500 | Model No : PA-2400-2500M-50dBm-32V |
|                            | 6                                                                      | 5100-5300 | Model No : PA-5100-5300M-50dBm-32V |
|                            | 7                                                                      | 5700-5900 | Model No : PA-5700-5900M-50dBm-32V |
| Max.Gain (dB)              | $\geq 50 \pm 2\text{dB}$                                               |           | Customizable                       |
| Max.Output Power (dBm)     | $50 \pm 0.5\text{dBm}$                                                 |           | 100W                               |
| Max.Input Power (dBm)      | $+10\text{dBm}$                                                        |           |                                    |
| ALC Control Range (dB)     | $\geq 15\text{dB}$                                                     |           |                                    |
| In-Band Ripple (dB)        | $\leq 1.5\text{dB}$                                                    |           |                                    |
| Input/Output VSWR          | $\leq 2.0/\leq 1.5$                                                    |           |                                    |
| Enable(EN)                 | High Voltage ON; Low Voltage OFF                                       |           | Default Set                        |
| Power Supply (V)           | DC 28V~32V                                                             |           | Customizable                       |
| Efficiency                 | $\geq 35\%$                                                            |           | 100W                               |
| Operating Temperature (°C) | $-40 \sim +65\text{ }^{\circ}\text{C}$                                 |           |                                    |
| Over Temperature (°C)      | Turn off at $\geq 90\text{ }^{\circ}\text{C}$ and automatically resume |           | Over Temp Protect                  |
| Type of Connector          | Input: SMA-F; Output: N-Female or SMA-F                                |           | Customizable                       |
| Monitoring Port            | RS485                                                                  |           | Used to read and write             |
| Monitoring Function        | Temp,O/P,VSWR,Over Temp, ON/FF;Gain ATT etc...                         |           | Includes query and setting items   |
| Dimension (L*W*H) mm       | 170*90*27mm                                                            |           | Customizable                       |
| Color                      | Aluminum                                                               |           |                                    |



## Applications

Application to Anti UAV, Intercom system, Jammer system, etc

