# P/N: AMT-SPA-2834-20000P

# S Band 20KW Power Amplifier

## Functionality

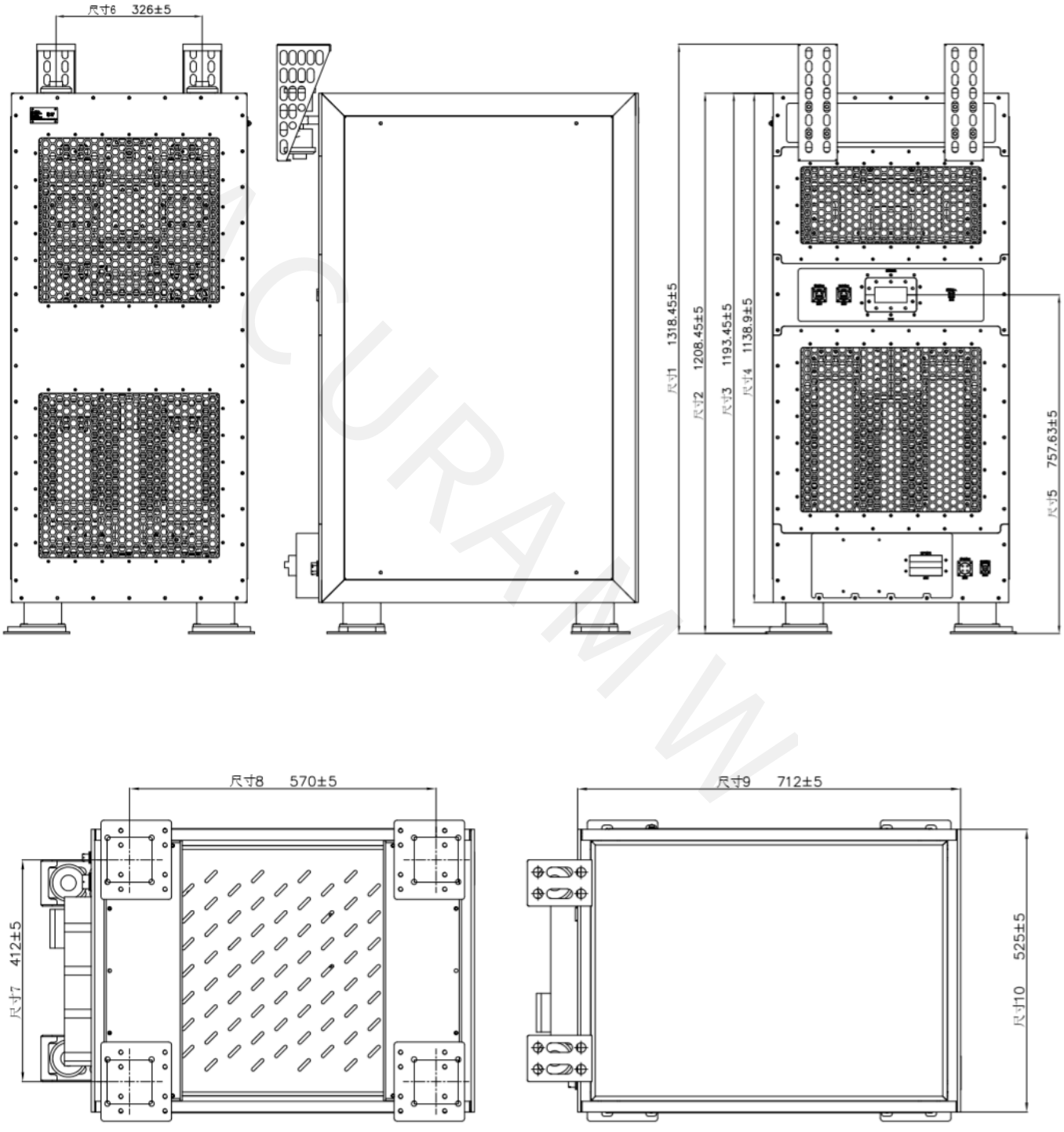
- Function to adjust out power under different frequency;
- Functionality for amplifying power of low-power RF excitation pulse signals;
- Power amplifier output power adjustment function;
- Controlled by signal source controller and local control function;
- Self-protection function;
- Independent heat dissipation capability;
- External and internal reference clock switching function;
- Self-diagnosis and status information reporting function.

## Technical Specification

| | |
|---|---|
| Operating Frequency | 2.8GHz-3.4GHz |
| Power Output | ≥18.6KW（20KW typ.） |
| Pulse Width @ Duty Cycle 10% | ≤300us |
| Duty Cycle | ≤10% |
| Pulse Repetition Rate Frequency | ≤20KHz |
| Pulse Droop @ 300μSec Pulse Width | ≤1dB |
| Pulse Rise/Fall Time (10% to 90%) | ≤100ns |
| Power Gain @ Rated Peak Pout | ≥70dB |
| Harmonics @ POUT = 15kW PK | ≤-25dBc |
| Spurious Signals | ≤-60dBc |
| Input SWR | ≤1.8 |
| Power Consumption@ POUT = 20kWPK | ≤8KW |
| Operating Ambient Temperature | -20~+50℃ |
| Storage temperature | -35~+80℃ |
| Operating Voltage @ 3-phase (Line-to-Line) | 196~305VAC |
| Weight | ≤250KG |
| Dimension L x W x H | 712×525×1208 mm<br>(excludes connectors, handles and brackets) |
| Connector | RF Connectors Input：N-K<br>RF Connectors Output：WR-284 Communication Interfaces: RJ45 |
| Function | Built-in Control, Monitoring and Protection function<br>With power amplifier output power adjustment function<br>High reliability and ruggedness |

**Outline(mm):**

S-band amplifier height ≤ 1144mm, width ≤ 535mm, depth ≤ 717mm (excluding shock absorbers).




**Schematic Diagram of Power Amplifier Rack Cabinet**

**Interfaces：**

The sockets on the device and the aviation plugs (including tail clips) inserted into these sockets use standard connectors and aviation plugs produced by Military Institute.

1 Amplifier

1.1 RF Signal Input Interface

a) Interface Type: N-Female

b) Number of Interfaces: 1;

c) Connector Model: N-KFK-1G;

d) Interface definitions are listed in Table 1.

**Table 1: Definition of RF Signal Input Interfaces**

| No. | Code | Definition | Remark |
|---|---|---|---|
| 1 | Core | RF-SIG | — |
| 2 | Rack | GND | — |

1.2 Sync Signal Input Interface

a) Interface Type: RJ45;

b) Number of Interfaces: 1;

c) Connector Model: YW122E01;

d) Interface definitions are listed in Table 2.

**Table 2: Definition of Sync Signal Input Interfaces**

| No. | Code | Definition | Remark |
|---|---|---|---|
| 1 | 1 | Sync + | — |
| 2 | 2 | Sync - | — |
| 3 | 3 | NA | — |
| 4 | 4 | NA | — |
| 5 | 5 | NA | — |

| No. | Code | Definition | Remark |
|---|---|---|---|
| 6 | 6 | NA | — |
| 7 | 7 | NA | — |
| 8 | 8 | NA | — |

1.3. RF Signal Output

a) Interface Type: Rectangular waveguide;

b) Number of Interfaces: 1;

c) Flange Model: FDP32.

1.4.Communication Interface

a) Interface Type: RJ45;

b) Number of Interfaces: 1;

c) Connector Model: YW122E01;

d) Interface definitions are listed in Table 3.

**Table 3: Communication Interface Definitions**

| No. | Code | Definition | Remark |
|---|---|---|---|
| 1 | 1 | TX_D1+ | — |
| 2 | 2 | TX_D1- | — |
| 3 | 3 | RX_D2+ | — |
| 4 | 4 | BI_D3+ | — |
| 5 | 5 | BI_D3- | — |
| 6 | 6 | RX_D2- | — |
| 7 | 7 | BI_D4+ | — |
| 8 | 8 | BI_D4- | — |

1.5 Power Interface

a) Voltage: AC 380V±10%;

b) Frequency: 50Hz±5%;

c) Number of Interfaces: 1;

d) Connector Model: Y50DP40-1604ZJ10;

e) Interface definitions are listed in Table 4.

**Table 4: Definition of Power Interface**

| No. | Code | Definition | Remark |
|---|---|---|---|
| 1 | 1 | U | — |
| 2 | 2 | V | — |
| 3 | 3 | W | — |
| 4 | 4 | N | — |

# Typical Performance Curves