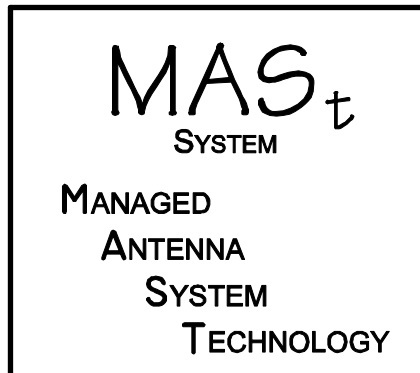






**Audio Specialties Group  
Products Division**

**MAS PA-1 MK-II  
RF Amplifying System**



REV-0

Precaution Explanations:

- 1  Identifies safety information
- 2  Identifies important limitations of performance
- 3 *Note* Identifies important operator actions

Audio Specialties Group and any of its vendors, dealers or representatives forbid the use of this product in any way that is contrary to FCC Regulations.

Utilizing this product in a manner which is contrary to FCC Regulations is expressly forbidden.

Maintaining power levels to within FCC regulations is the sole responsibility of the user.

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**Introduction/Features****1.1 Introduction**

The ASG Products PA-1 MK-II RF Amplifying System is a 3-RU (5.25”) high rack mount device that supports a variety of RF amplifier modules. The PA-1 includes DC power supplies, thermal management and control circuitry to integrate all components into a single, fully featured product.

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**Operation****2.1.1 Powering**

The PA-1 features dual/redundant 90-250V rated switching power supplies. Front panel AC Main power switches are provided which control two completely separate fused AC power inlets. This allows for each AC source to be completely independent.

The PA-1 is available with an integrated HTML server which streams data to any common web browser application. This includes Microsoft Internet Explorer. Additionally, by utilizing the ASG Products *Multi-Browser* software, up to six modules can be viewed and controlled simultaneously.

**2.1.2 RF Wiring**

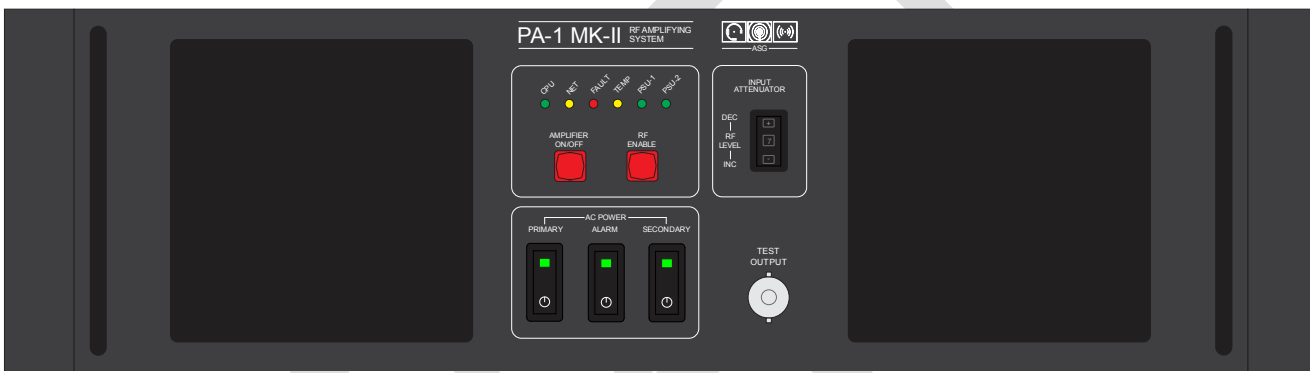
The PA-1 supports a variety of RF processing options including filters, attenuators, directional couplers and a 1x2 power splitter. The signal ports for each of these items are brought to the rear panel for user defined signal routing. This versatility is safely accessed without needing to make modifications to the interior of the chassis.

## Panel Layouts

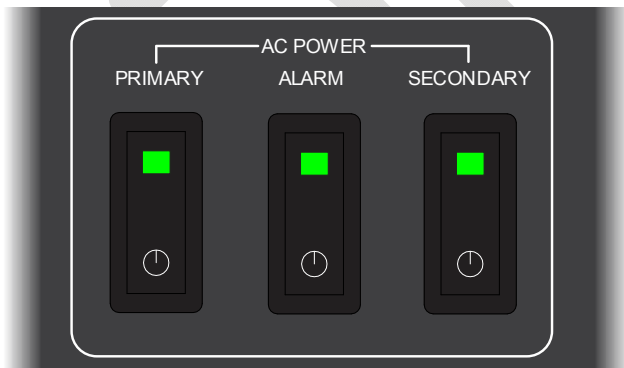
## 3.1 Front Panel

## 3.1.1 Front Panel Controls

The front panel is grouped into three zones; (1) AC POWER and Alarm, (2) RF Level Control and (3) Function Control and Status.

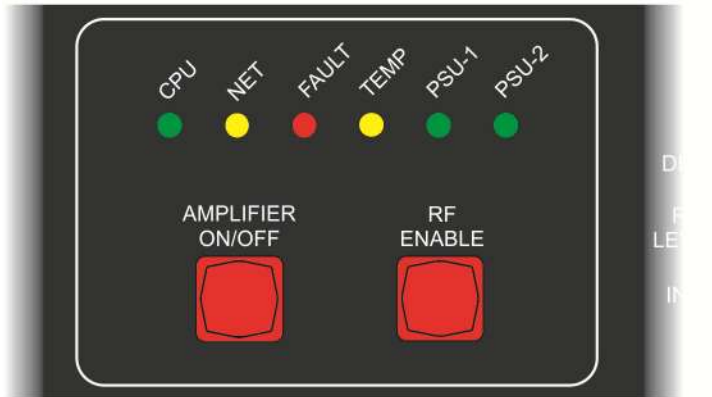


## 3.1.2 AC Power and Alarm



PRIMARY and SECONDARY AC Mains power supplies are each equipped with a front-panel AC disconnect switch which work independently of each other. A power-supply fault condition will exist if either power supply is not energized either by setting the power switch to the OFF position, or by removing the source of AC power from the rear-panel AC inlet. An internal Audible-Alarm will activate if a power-supply fault exists. To silence the audible alarm, set the ALARM switch to the OFF position. This condition will also change the state of the rear-panel ALARM connector.

### 3.1.4 Function Control and Status



There are two illuminated switches and six LED indicators.

The left switch labeled AMPLIFIER ON/OFF energizes the DC power applied to the amplifier module. A solid “ON” condition indicates that the amplifier is powered. A flashing condition indicates an internal fuse has opened due to excessive power draw by the amplifier module.

The right switch labeled RF ENABLE energizes the RF circuitry prior to the amplifier module. This effectively removes the RF signal from the input of the amplifier.

Indicators:

**CPU:** On power-up, it flashes the value of the two-part firmware version. For example, if the version is 2.3, the indicator will blink twice; pause then will blink three times. After power-up, the CPU indicator will blink a 50/50 state at approximately a 1-Hz rate.

**NET:** Indicates a connection to an Ethernet network. Non-functioning if the Ethernet control option is not installed.

**Fault:** Illuminates during a fault condition. Firmware version 1.1 senses Primary or Secondary power supply failure and over-temperature. The rear panel ALARM connection is also activated during a fault state.

**TEMP:** Illuminates during an a high temperature condition

**PSU1:** Indicates power from the Primary power supply is good.

**PSU2:** Indicates power from the Secondary power supply is good.

### 3.1.3 RF Attenuator

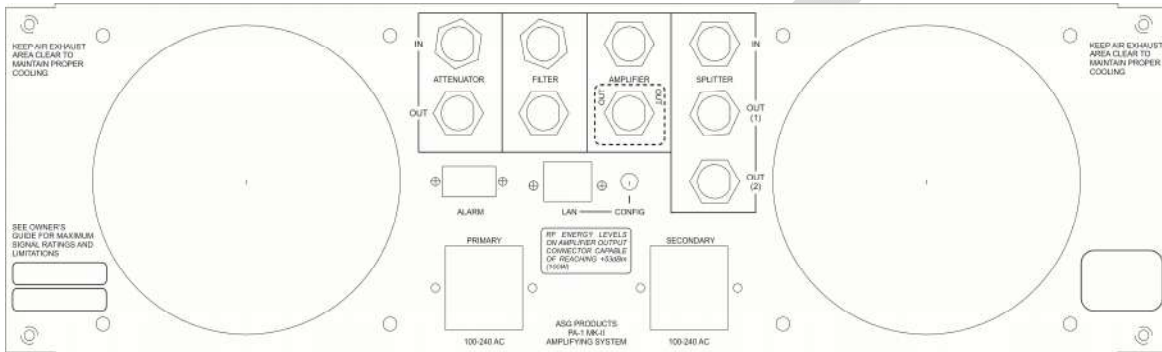


The PA-1 MK-II features an adjustable RF INPUT attenuator. The attenuator is used to set an optimum RF energy level feeding into the power amplifier module. Depending on the application, the PA-1 can be ordered with several attenuator range options. In any version, seven settings are available.

	1/2/4	3/6/10	4/8/16
Switch Position	Decibel Loss for each version		
1	1	3	4
2	2	6	8
3	3	9	12
4	4	10	16
5	5	13	20
6	6	16	24
7	7	19	28
8	na	na	na
9	na	na	na
0	na	na	na

## Signal Connections

## 4.2 Rear Panel Layout



**PRIMARY AC MAINS CONNECTION**  
Connect 90-240V AC to this power inlet

**SECONDARY AC MAINS CONNECTION**  
Connect 90-240V AC to this power inlet

**ATTENUATOR INPUT:** Connect an RF signal to this input  
**ATTENUATOR OUTPUT:** The inputted signal appears here post attenuation

**FILTER INPUT:** Connect an RF signal to this input  
**FILTER OUTPUT:** The inputted signal appears here post filtering

**AMPLIFIER INPUT**  
**AMPLIFIER OUTPUT**

**SPLITTER INPUT (Optional)**  
**SPLITTER OUTPUT (1)**  
**SPLITTER OUTPUT (2)**

**ALARM**  
Dry contact closure for general ALARM condition

**LAN**

**10/100 Ethernet Control (optional)**  
A rear-panel RJ-45 Ethernet connection allows control via the integrated HTML web-server. Setting the IP Address for the Ethernet interface uses an RS-232 configuration port on the rear panel.

**CONFIG**  
Allows for configuration of the IP/LAN connection



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**Specifications****5.1 Connector Pin Assignment**

## 5.1.1 10/100 Ethernet Connector (RJ-45)

1	Data
2	Data
3	Data
4	na
5	na
6	Data
7	na
8	na

## 5.1.2 FP D-SUB-9

Alarm Output is dry-contact closure on D-SUB-9 Female connector \  
PIN-1  
PIN-6

**5.2 Electrical Specifications**

RF Bandwidth:  
Noise Figure:  
Maximum output:  
Maximum RF Input level:  
Output Level:

Specifications subject to change without notice.

## 5.3 Operational Conditions

## 5.4 Mechanical Parameters

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**Measured Performance**

DRAFT

