



**Audio Specialties Group  
Products Division**

**MAS-514  
Receive Pre-Amplifier  
Technical Specifications**



Rev-B

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## **SECTION 1 INTRODUCTION**

The MAS-514 Receive Pre-Amplifier is a 1-HP (horizontal pitch) module that is compatible with the ASG MAS-Rack Series 500 system. It is available in several electrical configurations: Two-channel, 20dB Gain wide-band or a single channel 30dB wide band. Additionally, user specified narrow-band versions with a variety of gain values can be accommodated.

## **SECTION 2 FEATURES**

Power and control data for the MAS-514 are provided by an MAS-502 Master Controller Module. Internally, the power to each of the amplifier channels is relay controlled to allow a shutdown if so desired. This allows the MAS-514 to act as an "ON/OFF" switch for remote antennas. The DC power is routed to the power amplifiers such that a loss of RS-485 data or some other data failure allows the amplifiers to remain powered.

## **SECTION 3 OPERATION**

### **3.1.1 Connections**

Each Channel, identified as A and B, have an Input and Output BNC connector. The interior circuits are DC protected. The outputs of an energized amplifier channel should be terminated with a 50 ohm terminator. Though no damage should occur, excessive heat may be generated even with no RF signal on the input.

DC power and data are via a 5-Pin 3mm spaced connector at the top edge of the rear panel. A supplied MAS-Bus Cable is used to connect the MAS-514 to the MAS\_502 Master Module.

The MAS-514 is designed to amplify receive level RF energy. It is not intended to amplify the output signal of transmitters. (See specification Section-4 for maximum ratings)

### **3.1.2 Status Reporting**

Each amplifier channel is energized with an individual power supply circuit. The voltage of each supply is adjustable but is set at the factory for compatibility with the amplifier installed for that channel. A DC power relay is used to connect the amplifier load to the supply circuitry. The power supply regulator has short circuit and thermal protection. Front panel indicators are provided to give a local visual indication of the supply status.

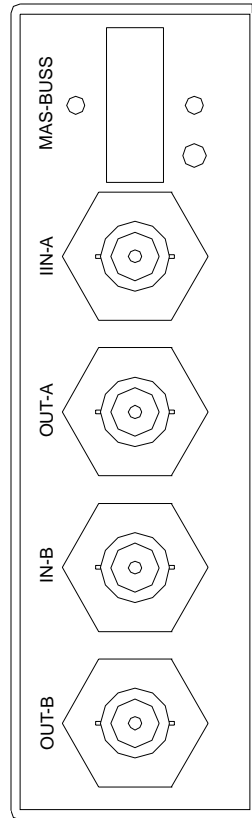
Additionally, an internal microcontroller detects the presence of the supply voltage for each amplifier. The microcontroller reports the status of the voltage presence to the RS-485 MAS-Bus data circuit. IF equipped with remote monitoring capabilities, the MAS-502 master module can route this information to a WEB based status reporting program.

## 3.2 PANEL LAYOUTS

### 3.2.1 Front Panel Layout

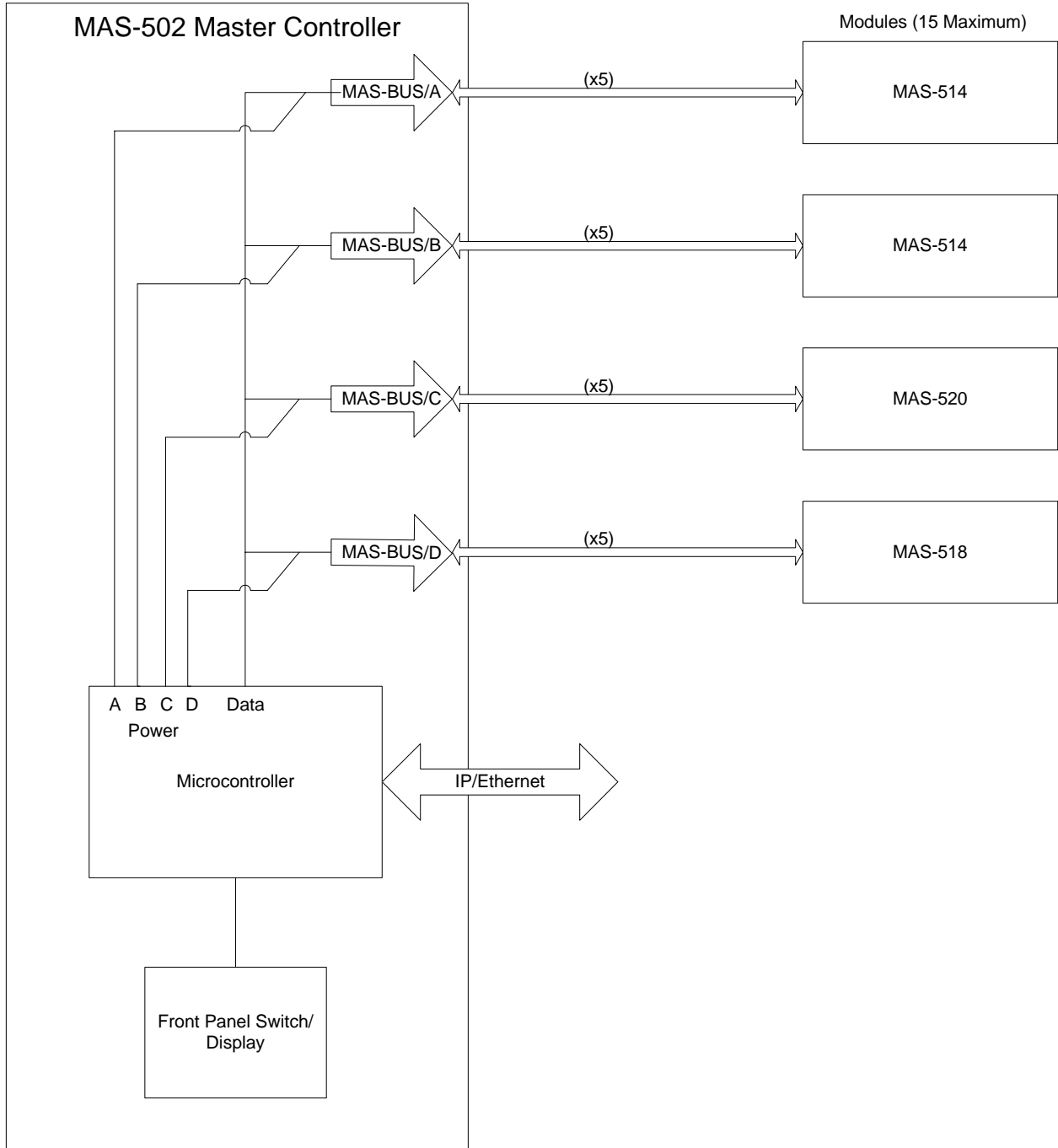


### 3.2.2 Rear Panel Layout



### 3.3 CONNECTING TO MODULES

#### System Block Diagram



## SECTION 4 SPECIFICATIONS

### 4.1 Connector Pin Assignment

#### 4.1.1 MAS-BUS Connector Pin Assignment

Pin #	Function
1	Power Ground
2	RS-485 Data -
3	RS-485 Data +
4	+20-24V DC, current limited.
5	Power Ground

### 4.2 Electrical Specifications

#### 4.2.1 Dual Channel, 20dBm Gain Version

RF Bandwidth:	10MHz to 1GHz.
Noise Figure:	2.9dB
Maximum output:	+3Bm
Maximum Input level:	+5dBm with no damage
#3rd Intercept Point (IP3):	+14dB

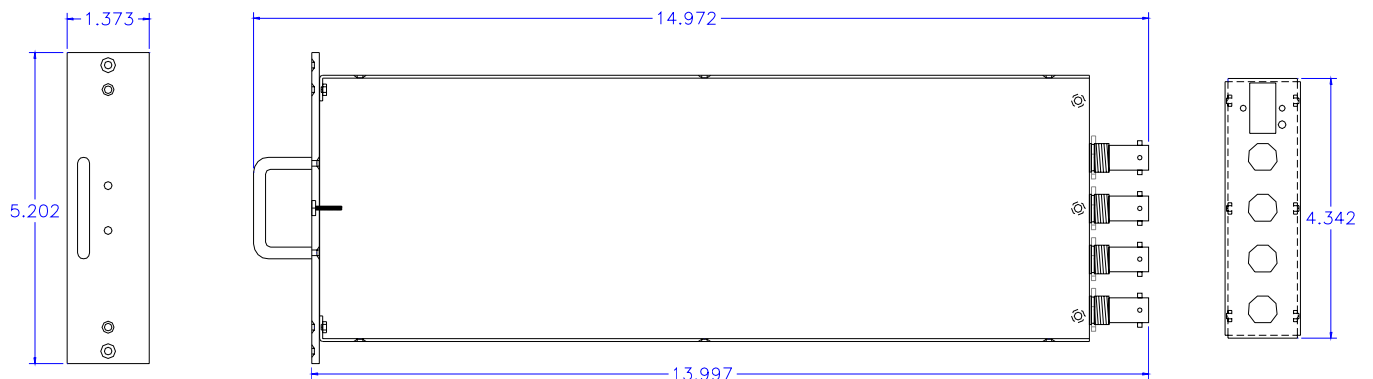
#### 4.2.2 Single Channel, 30dBm Gain Version

RF Bandwidth:	685MHz to 1.4GHz.
Noise Figure:	1.2dB
Maximum output:	+24Bm
Maximum Input level:	+10dBm with no damage
#3rd Intercept Point (IP3):	+40dB

### 4.3 Operational Conditions

Temperature 20 Degrees Celsius to 60 Degrees Celsius

### 4.4 Mechanical Parameters



Specifications subject to change without notice.