

## DESCRIPTION

The A350 series of medium power microprocessor based instrumentation and subsystem amplifiers provide the user with proven reliable instrumentation for a wide variety of test and system applications.

The operating modes are selectable via front panel push button controls and the operating mode is displayed on a one line, 16 character, LED digital display. Additionally, salient power supply voltages, currents, and fault indicators can be displayed.

Each amplifier can be remote controlled via the standard IEEE-48 GPIB.

Each amplifier features complete regulation of the helix, filament and grid power supplies, thus providing stable operation and long life for the TWTs. The TWT is fully protected against power supply malfunctions such as helix overcurrent.

Optionally, the TWTAs can be supplied with complete input and output VSWR protection.

These medium power TWTAs are compact and lightweight making them ideal for bench operation or rack mounting.

## FEATURES

- **Monitor-Digital Display**
  - Standby
  - Faults
  - Helix Voltage/Current
  - Collector Voltage
- **Mode-Digital Display**
  - Power On/Off
  - RF On
- **Controls**
  - Power On
  - Power Off
  - RF On
  - RF Off
  - Local Select
- **Ease of Maintenance**
- **Designed to meet the safety requirements of IEC-348 and UL1419**
- **Broadband Frequency**
- **C.E. Certified**

## APPLICATIONS

- EMC Susceptibility Testing
- Communications
- General Laboratory Instrumentation
- System Preamplifiers
- Threat Simulation
- Antenna Patterns Testing
- Component Testing

## RF SPECIFICATIONS

| Model Number       | Frequency Range (GHz) | Min Pwr Out* (Watts) | Min Small Signal Gain (dB) | Max NF (dB) |
|--------------------|-----------------------|----------------------|----------------------------|-------------|
| <b>A350 SERIES</b> |                       |                      |                            |             |
| A350/S             | 2.0 - 4.0             | 50                   | 34                         | 35          |
| A350/EH            | 2.0 - 8.0             | 50                   | 30                         | 35          |
| A350/C             | 4.0 - 8.0             | 50                   | 40                         | 35          |
| A350/IJ            | 8.0 - 18.0            | 50                   | 35                         | 35          |
| A350/IJX           | 6.0 - 18.0            | 40                   | 35                         | 35          |

**Spurious:** -40 dBc (-50 dBc available)

**In/Out Impedance:** 50 Ohms

**In/Out VSWR:** 2.5:1 Maximum

**Residual AM/FM:** 1% Maximum (-40 dBc) (3)

**RF Connectors :**

| Frequency          | Input       | Output      |
|--------------------|-------------|-------------|
| 2.0 GHz - 18.0 GHz | Type N      | Type N      |
| <b>Location:</b>   | Front Panel | Front Panel |

## ENVIRONMENTAL

|                        |                                |
|------------------------|--------------------------------|
| Operating Temperature: | 0 to 50°C (40°C @ 10,000 feet) |
| Relative Humidity:     | 95% (noncondensing)            |
| Operating Altitude:    | 10,000 feet Maximum            |
| NonOperating Temp.:    | -20 to 70°C                    |
| NonOperating Altitude: | 50,000 feet Maximum            |

## PRIME POWER

Switchable 115 or 230 VAC,  $\pm 10\%$ , Single Phase, 50-60 Hz, 750 VA maximum.

## MECHANICAL

### Dimensions:

|                                                                        |                 |                                                                |
|------------------------------------------------------------------------|-----------------|----------------------------------------------------------------|
| A350/C: 5.25" (133mm) H x 16.5" (419mm) W x 22.5" (571mm) D Rack Mount | S, EH, IJ, IJX: | 5.25" (133mm) H x 16.5" (419mm) W x 20.5" (521mm) D Rack Mount |
|------------------------------------------------------------------------|-----------------|----------------------------------------------------------------|

Weight: 38 pounds (17.3 kg)

Cooling: Internal Forced Air  
Air Intake: Rear Panel  
Air Exhaust: Rear Panel

### **REMOTE OPERATION**

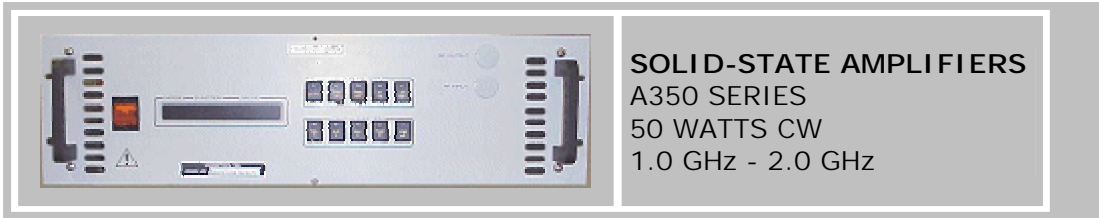
Standard: Operating mode control and status monitoring via IEEE-488 GPIB.

### **OPTIONS AVAILABLE**

Option 03: Reflected Power Cutoff VSWR Protection (1)  
Option 04-XX: Alternate Prime Power (2)  
Option 07: Input Pin diode Pulse Modulator with 40dB Isolation;  
15ns rise/fall times (1)  
Option 09: Integral Input Isolator (1)  
Option 12: RF Sample of the output (30 dBc) (1)  
Option 13: Chassis Slides for Standard 19" Rack Mounting  
Option 14: Internal Preamplifier for rated power @ less than 0  
input.  
Option 15: Input Attenuator; 20dB range (2)  
Option 18: RF Input/Output Connectors on the Rear Panel (1)  
Option 30: RF Output Power displayed on Digital Front Panel Display  
(1)  
Panel Display (1)  
Option 30R: Reflected Power Metering  
Other options available (2)

### **NOTES:**

(1) Option may affect rated output power and gain  
(2) Consult factory for features and other functions  
(3) Typically -46 dBc AM; -55 dBc FM



## DESCRIPTION

The A350 series of medium power microprocessor based instrumentation and subsystem amplifiers provide the user with proven reliable instrumentation for a wide variety of test and system applications.

The operating modes are selectable via front panel push button controls and the operating mode is displayed on a one line, 16 character, LED digital display. Additionally, salient power supply voltages, currents, and fault indicators can be displayed.

Each amplifier can be remote controlled via the standard IEEE-48 GPIB.

This amplifier utilizes class A linear power devices that provide excellent linearity, high gain, and wide dynamic range. High efficiency operation is achieved by employing a unique broadband microstrip RF network and advanced GaAs FET devices.

These solid-state amplifiers are compact and lightweight making them ideal for bench operation or rack mounting.

The amplifier is protected for load VSWRs from open to short (at all phases) with an internal isolator. Input/output VSWR is specified at 2:1 max.

## FEATURES

- **Monitor-Digital Display**
  - Standby
  - Faults
- **Mode-Digital Display**
  - Power On/Off
  - RF On
- **Controls**
  - Power On
  - Power Off
  - RF On
  - RF Off
  - Local Select
- **Ease of Maintenance**
- **Designed to meet the safety requirements of IEC-348 and UL1419**
- **Broadband Frequency**
- **C.E. Certified**

## APPLICATIONS

- EMC Susceptibility Testing
- Communications
- General Laboratory Instrumentation
- System Preamplifiers
- Threat Simulation
- Antenna Patterns Testing
- Component Testing

## RF SPECIFICATIONS

| Model Number                                   | Frequency Range (GHz) | Min Pwr Out* (Watts)         | Min Small Signal Gain (dB) | Max NF (dB) |
|------------------------------------------------|-----------------------|------------------------------|----------------------------|-------------|
| A350 SOLID-STATE SERIES - FULL RACK 5.25" HIGH |                       |                              |                            |             |
| A350/L                                         | 1.0 - 2.0             | 50                           | 50                         | 10          |
| Harmonics:                                     |                       | -20 dBc typical @ 1 dB comp. |                            |             |
| Spurious:                                      |                       | >-60 dBc                     |                            |             |
| In/Out Impedance:                              |                       | 50 Ohms                      |                            |             |
| In/Out VSWR:                                   |                       | 2.0:1 Maximum                |                            |             |
| RF Connectors :                                |                       |                              |                            |             |
| Frequency                                      | Input                 | Output                       |                            |             |
| 1.0 GHz - 2.0 GHz                              | Type N                | Type N                       |                            |             |
| Location:                                      | Front Panel           | Front Panel                  |                            |             |

## ENVIRONMENTAL

|                        |                                |
|------------------------|--------------------------------|
| Operating Temperature: | 0 to 50°C (40°C @ 10,000 feet) |
| Relative Humidity:     | 95% (noncondensing)            |
| Operating Altitude:    | 10,000 feet Maximum            |
| NonOperating Temp.:    | -20 to 70°C                    |
| NonOperating Altitude: | 50,000 feet Maximum            |

## PRIME POWER

Switchable 115 or 230 VAC,  $\pm 10\%$ , Single Phase, 50-400 Hz, 350 VA maximum.

## MECHANICAL

### Dimensions:

|            |                                                                |
|------------|----------------------------------------------------------------|
| A350/L-SS: | 5.25" (133mm) H x 16.5" (419mm) W x 20.5" (521mm) D Rack Mount |
| Weight:    | 38 pounds (17.3 kg)                                            |
| Cooling:   | Internal Forced Air                                            |
|            | Air Intake: Rear Panel                                         |
|            | Air Exhaust: Rear Panel                                        |

## REMOTE OPERATION

Standard: Operating mode control and status monitoring via IEEE-488 GPIB.

## ***OPTIONS AVAILABLE***

- Option 04-XX: Alternate Prime Power (2)
- Option 07: Input Pin diode Pulse Modulator with 40dB Isolation;  
15ns rise/fall times (1)
- Option 12: RF Sample of the output (30 dBc) (1)
- Option 13: Chassis Slides for Standard 19" Rack Mounting
- Option 15: Input Attenuator; 20dB range (2)
- Option 18: RF Input/Output Connectors on the Rear Panel
- Option 22: Internal System Diagnosis
- Option 30: RF Output Power displayed on Digital Front Panel Display  
(1)  
Panel Display (1)
- Other options available (2)

### **NOTES:**

- (1) Option may affect rated output power and gain
- (2) Consult factory for features and other functions