



T&C
Power Conversion

AIT-600 Automatic Impedance Tuner

Shown with Option 02, Front Panel Meter and position switches



Front Panel View



Rear Panel View

T&C POWER CONVERSION

FEATURING:

- 13.56 MHz - Automatic or Manual Tuning Control
- Displays Exact Capacitor Locations for Repeatability Positioning
- Meter Displays switch selectable, DC Probe Voltage, Tune Position, Load Position
- Field testable and set-up friendly controls
- DC Probe Output
- Series LC network allows wide range impedance tuning
- Can be retrofitted to most Plasma Systems
- Mini Case of the same size as T&C RF Generators; 5.25"H x 8.25"W x 15.0"D
- Light Weight
- Accepts 100-240 VAC without tap changes
- 19" rack mount brackets available

Frequency Of Operation

13.56 MHz

RF Power Rating

AIT-600-03 up to 300 W
AIT-600-06 up to 600 W
AIT-600-10 up to 1200 W

Tuning Capacitor

300W: Air, 15-150 pF/3.5 kV (03)
600W: Vacuum 5-500 pF/5 kV
1200W: Vacuum 5-500 pF/5 kV

Load Capacitor

300W: Air, 20 to 1720 pF/1.1 kV
600W: Air 20 to 1020 pF/1.5 kV
1000W: Air 20 to 1020 pF/1.5 kV

Impedance Rating, RF IN:

50 Ohms

Front Panel Options

Option 01, No Meter
Option 02, With Meter, Manual Position Adjustment Switches

Input Connector

"N" type Female

Output Connector Options

"N" type Female, "HN Female, DIN716 or Ceramic Stud

AC Power

110 - 240 VAC, 35VA

Cooling

Air

Dimensions

5.25"H x 8.25"W x 15.0"D

GENERAL

The AIT-600 Automatic Impedance Tuner (AIT) is designed to match the impedance of the plasma reactive load while maintaining 50 Ohms of its input for impedance to the RF Generator. The mini case AIT-600 is available in three power levels and does not require additional external controllers.

Each AIT-600 Tuner is made up of two variable capacitors and fixed inductors making a "L" type circuit.

The AIT-600's primary function is to deliver maximum RF power transfer to the reactive load. To accomplish this function the AIT-600 is designed to operate in the broad range of Inductive and Capacitive loads of the Smith Chart.

Operating in the Automatic position, the internal controller monitors the Phase and Magnitude readings and directs the servomotors to automatically adjust to the best match plasma impedance. In the manual mode of operation, the AIT-600 features "Capacitor Position" switches on the front panel that can be used to adjust the position of the internal Tune and Load capacitors to MIN/MAX positions. This gives the operator complete control of the system matching requirements by controlling one device (the AIT-600 Automatic Tuner).

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