



0113

RF POWER SUPPLY



*Power Supply
Front Panel view*



*Power Supply
Back Panel view*

120 Watts RF Power at 13.56 MHz for Industrial and Laboratory Applications.

FEATURING:

- **13.56 MHz up to 120 Watts in peak power**
- **Low harmonic level at 100W $h2 \leq -55$ dBc, $h3$ and higher < -60 dBc**
- **Measuring forward, reflected and power VSWR simultaneously**
- **Back Panel Control & Monitoring of all RF power Supply functions. Data acquisition: Status Monitoring & Power Measurement via Analog Port**
- **AGC Power Leveling: Output Power Control to better than $\pm 1.5W$ of set value.**
- **Pulse operation in MGC/ Burst mode**

RF Power Supply Model 0113 is a robust source of RF power for laser modulation, plasma generation, general laboratory and general industrial applications.

Featuring leading edge solid state design for all generator stages and a built-in DDS signal source, it provides everything for a complete and reliable, controlled RF power delivery system. It reflects the T&C ongoing commitment to provide RF power products of the highest quality, incorporating the current requirements for complete remote control and data acquisition features

OPERATION

The 0113 produces 120W of RF power at a frequency of 13.56 MHz, with low harmonic distortion.

Power meters are calibrated into a 50 Ohm Load and they are accurate when unit operates into matched load. Outside of matched condition, the model

0113's power measurement system provides an accurate reading of VSWR. High level VSWR is also monitored for protection of output stage and is set for 25W limit.

When used as an amplifier, the 0113 is compatible with most signal and function generators, computer synthesizer cards and it accurately reproduces all waveforms within its control loop bandwidth limits.

The Forced-air cooling system and the internal power supply are designed to permit operation over a wide range of temperature and global AC line conditions.

The 0113 is built to withstand a +3 dBm Input signal. The unit amplifies the inputs of AM, and pulse modulations.

OUTPUT PROTECTION

0113 is protected by its internal monitoring system for 120 Watts of total Forward Power and 25W of Reflected Power. This will protect the RF power supply output stage from extreme mismatch at the Output.

GENERAL

T&C generators are designed to be reliable, compact and light in weight. The use of conservatively rated components ensures high reliability and eliminates the need for periodic retuning.



0113 RF Power Supply Specifications



Class Of Operation

Class B

Frequency Of Operation

13.56 MHz

Frequency Stability

0.005% or better

RF Power Output

120 Watts into 50 Ohm nominal

Operation with external signal:

Output as amplifier in MGC/Burst Mode

0 dBm IN, (required !)

1VDC CTL IN pin 5 = 100W +/-2W

Note: Scale for MGC is not linear

Output as amplifier in AGC Mode

Typical range 0 dBm +/- 1 dB

1VDC CTL IN pin 5 = 100W scale

Input Drive Source(amplifier)

Signal or function generator, analog computer input capable of up to 0dBm @ 50 Ohm

Internal RF Source

Crystal oscillator at 13.56 MHz

Input and Output Impedance

50 Ohm

IN / OUT VSWR

1.2:1 max - input

3:1 max - output

Output VSWR Protection

25 Watts max reflected power limit. Automatic, limits typically within 0.5 ms after reverse power reaches 25 Watts or power amplifier current preset limit.

Harmonic Level @ 100W

Better than - 55 dBc for 2-nd harmonic, any other > -60 dBc

Spurious Output

- 55 dBc noise level generated by internal circuits

Output Blanking

For specific applications, T&C amplifiers and generators offer blanking of the output signal for minimum noise RF spectrum

Dynamic Power Range

0 to 120W, settings within +/- 2W

Output Settings & Control (Communications)

SubD 25 Analog and Digital I/O . Port power scale 1V=100W. Rear Panel

Pulse Specifications

MGC/Burst operation: pulse width from 2 μ s to continues, user defined.

RF Power Margin

(Open Loop Max Power/Rated Power)-1)*100
20 %

RF Connectors

INPUT BNC Female
OUTPUT N Female
BLANKING BNC Female
Rear Panel

AC Power Source

100 to 120 VAC, 200 to 240 VAC, +/- 10%, 47 - 63 Hz broad input voltage, with no adjustment required

AC Power Connection

IEC Standard Power Entry followed by RFI filter.
Filter range 0.1 to 30 MHz min.

AC Circuit Protection

Internally fused on the main DC Power Supply, 6.5A.

AC Input Current (RMS)

RF Out 100W:

$I \leq 4.5A @ 115V / I \leq 2A @ 220V$

Maximum: 9A

Cooling

Forced air, temperature controlled, heatsink temperature monitored for equipment safety at 70C limit.

Dimensions

H135mm x W211mm x L356mm
(5.25" x 8.3" x 14")

Weight

7 kg, 15.4 lbs.

Mounting

Half Rack, 3U high. Optional: Rack Mount Kit, Adapter Kit, Coupling Screws.

Environmental conditions

Temp.: 10° to 35° C ambient

Humidity: 80%

Equipment intended for ISM applications in laboratory and light industrial environment.