

# iSPA241

## RF Synthesizer/Amplifier

(Preliminary)



0914

The iSPA241 is a programmable frequency synthesizer and power amplifier. It is ideally suited for driving Isomet Germanium and Quartz acousto-optic modulators where stable programmable frequency tuning is required. This driver includes a micro-controller and high speed synthesizer. Initial set-up and diagnostics are made via a USB interface. Once programmed, 1 of 16 output frequencies are selected from high speed dedicated external inputs. An analog modulation input signal provides control the output power level. A separate digital gate input provides On:Off control.

**Diagnostics include:**

- RF power level indication
- AOM and driver temperature (depends on AOM model)
- DC supply voltage and current

**Protection includes:**

- Over temperature shut down
- DC supply over-voltage clamp
- External thermal interlock.

The iSPA241 operates from a +24V or +28Vdc supply. LED's indicate the status of the thermal interlocks, DC supply and RF output activity. Heatsinking is by an integral water cooled base. Basic operating software with Windows GUI is provided.

### SPECIFICATION

Power Output (Total)	:	> 70 Watts Max CW (24V supply)
Load Impedance	:	50Ω
Harmonic Distortion	:	>20dB below fundamental
3dB Power Frequency range	:	Programmable 30-60 MHz
Frequency stability	:	± 25ppm
Frequency accuracy	:	± 25ppm
Frequency programming resolution	:	1Hz using Isomet GUI
Frequency step change settling time	:	< 100nsec
Power Level Control	:	0.0V OFF to 10.0V fully ON
On:Off Gate Control	:	TTL Compatible (> 2.7V = RF On)
RF ON to OFF Ratio	:	37dB below full power
Output Switching Speed	:	< 300/100ns Rise/Fall, 0 to 50 Watts
RF Output	:	BNC Connector
Interlock enable	:	Binder 719, 3-pin (connect to AO)
Power Supply	:	+24V to +28Vdc, 0.25% regulation, < 8A
Power Input	:	Feed through filter solder tag
Temperature Range	:	0° to 50°C, Thermal shutdown if exceeded Integral water-cooled heatsink is provided.

**ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**

ISOMET CORP, 5263 Port Royal Rd, Springfield, VA 22151, USA.

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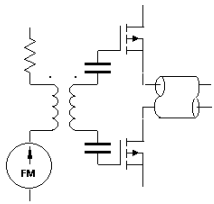
E-mail: [ISOMET@ISOMET.COM](mailto:ISOMET@ISOMET.COM) Web Page: [WWW.ISOMET.COM](http://WWW.ISOMET.COM)

**Quality Assured.**

**In-house: RF & Digital design**

**Software Development**

**OEM manufacture**



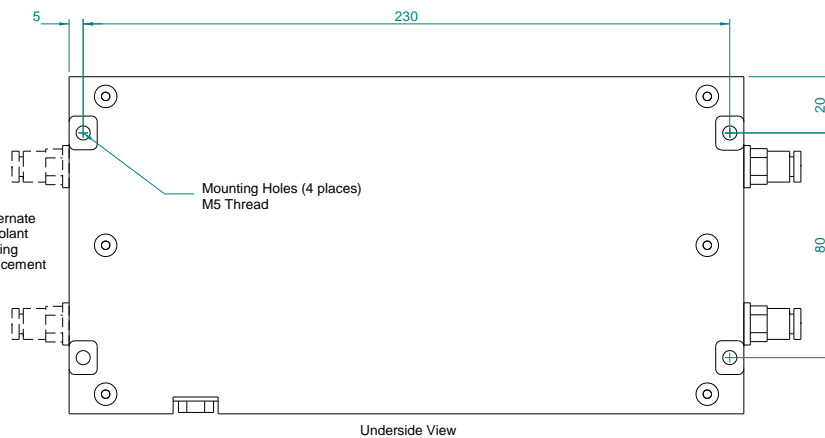
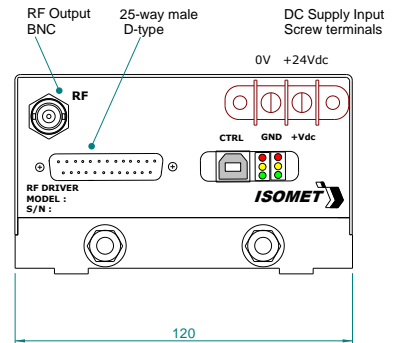
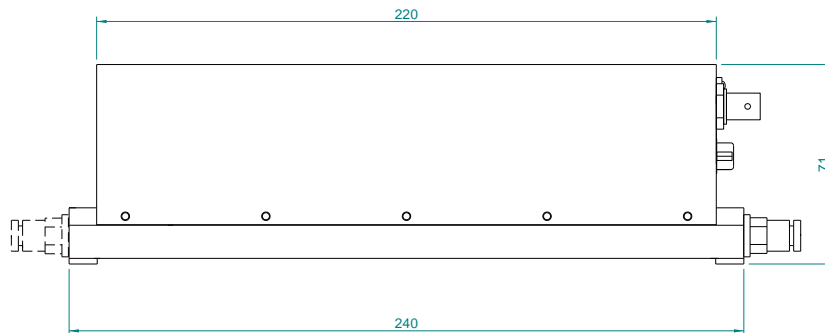
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### OUTLINE DRAWING



G 1/8" Thread Water Fittings  
Front placement : iSPA2X1  
Rear placements : iSPA2X1-R

Water cooled Heatsink must not exceed 50deg C

Driver Amplifier Outline  
Dimensions : mm  
1" = 25.4mm

Function		Sig Pin	Rtn Pin
Register address P3	In	1	14
Register address P2	In	2	15
Register address P1	In	3	16
Register address P0	In	4	17
Reserved	In	5	18
Mod'n level	In	6	19
-Gate On/Off (-OHL)	In	7	20
STATUS	Out	8	21
Reserved		9	22
Reserved		10	23
Reserved		11	24
UdClk	In	12	25
- RESET	In	13	25

Control signals 25 pin 'D' type Male

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