



## iVSA120-2-15 (BR)

### Tuneable RF Driver (PRELIMINARY)



0425

The iVSA120 is a dual output tuneable RF driver comprising a high-speed ADC, DDS and pair of class-A power amplifiers. It is configured to drive *ISOMET* beam steered Acousto-Optic deflectors with ~40 Watts total RF power across a frequency band of 90 to 140MHz.

The design uniquely combines the simplicity of VCO control with the stability and functionality of a digital synthesiser. The user interface includes a 0 to +10V frequency tuning input and a 0 to +10V amplitude modulation input. The frequency range and scaling are configurable within the bandwidth of the power amplifiers. Additional optional control signals are provided via 26way D-type and SMB.

Each tuned frequency can be modified by a pre-programmed LUT compensation function. This function automatically applies AO device specific phase and amplitude calibration data to the outputs. Active phase control across the multiple RF outputs is ideal for driving Isomet (acoustic) beam steered AO deflectors. The LUT, maximum power and ancillary IO functions are download via USB or RS485 and stored in non-volatile EEPROM.

#### SPECIFICATIONS

Oscillator Type:	Voltage tuned DDS synthesizer
Power Out:	>15 Watts CW per output into 50Ω
Load VSWR:	< 3:1 for best results.
Output RF Power Variation vs. Freq':	≤ 1 dB (with no LUT applied)
Spurious Outputs:	Harmonics > 20dB below fundamental
Tuning Range:	100-140MHz typical
Tuning Voltage (Vt*):	0 to 10V for specified tuning range.
Tuning Linearity:	< +/- 0.1% over specified tuning range
Tuning Voltage Impedance:	1Kohm (nominal), DC coupled.
Tuning update rate	> 5MHz
Residual FM:	TBD peak-to-peak (static frequency)
Frequency Stability:	± TBD
Modulation Input	
Analogue, proportional*:	0-10V for 100% depth of modulation
Input Impedance:	1Kohm (nominal), DC coupled.
ON-OFF Ratio:	> 40dB
Amplitude rise/fall time	< 100/50ns at 15W
DC Power Input:	+24Vdc at 4A regulated to ±0.25% Filtered screw terminal.
Temperature Range:	0°C to 60°C ambient. Temperature at mounting face must not exceed 70°C. Water cooling available.

\*Options: multiple combinations possible:

- BR : Brass water cooled heatsink
- Y / - V : 0-1V / 0-5V analog inputs

Refer application note AN1906 regarding Coolant Specification

#### ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

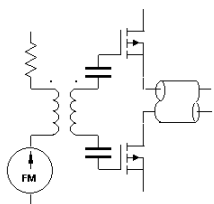
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#### Quality Assured.

In-house: RF & Digital design  
Software Development  
OEM manufacture



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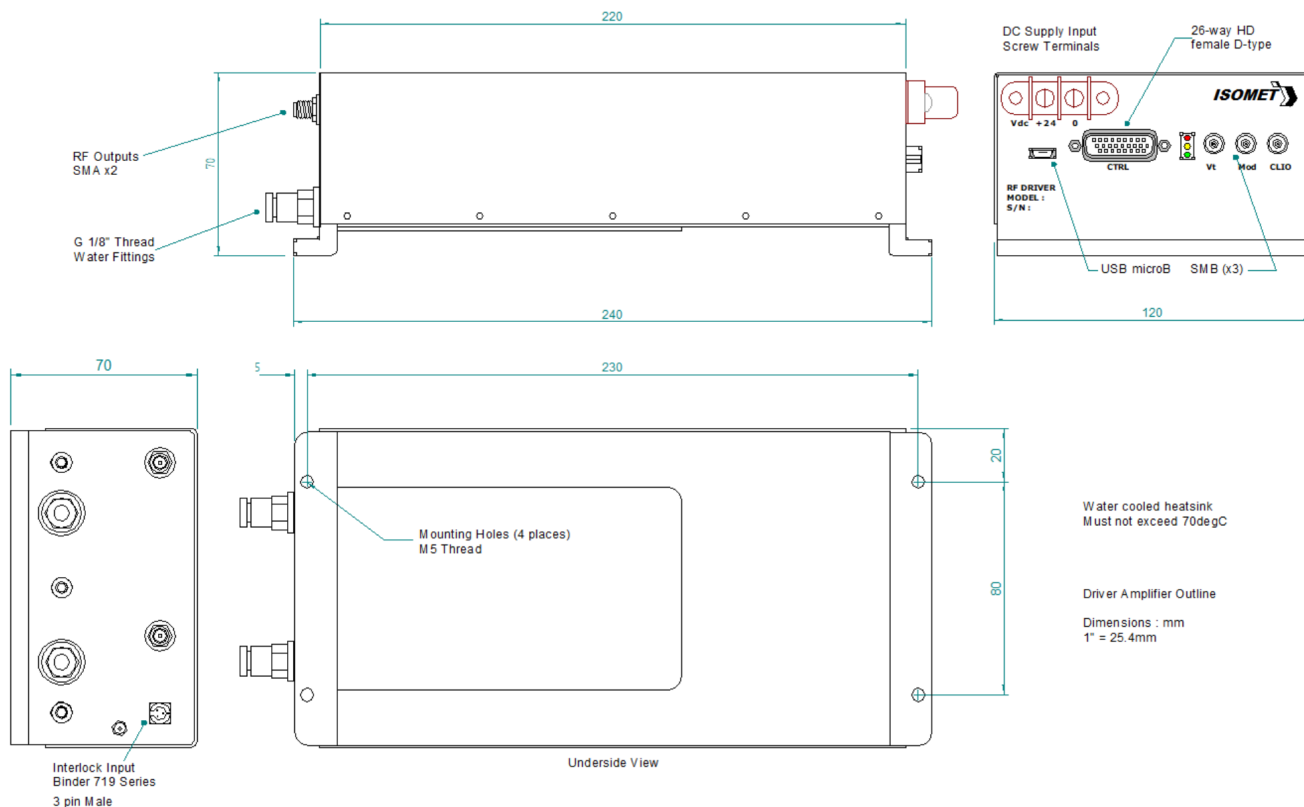
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### OUTLINE DRAWING

Water cooled.



#### CTRL

Control signals - : 26 way high density 'D' type  
External RF modulation 1 : pinouts TBD  
External RF modulation 2  
Reset  
DDS Profile registers  
GPIO  
Gate  
RS485

#### CLIO

Configurable multi-function IO : SMB (coax)  
As input - update clock  
hold frequency  
As output - sync output

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