

iVSA080-2-30 (BR)

Tuneable RF Driver

4226

The iVSA080 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 ~60 Watts total RF power across a frequency band of 60 to 100MHz.

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. Programmable functions, firmware updates, LUT, maximum power and ancillary IO functions are download via mico-USB or RS485 and stored in non-volatile EEPROM. Once programmed, the driver will start and operate without connection to a host PC.

SPECIFICATIONS

Oscillator Type:	Voltage controlled DDS synthesizer
Analog input sampling rate	~ 2.5MHz
Power Out:	>27 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
Amplifier 3dB power bandwidth:	55-110MHz
Tuning Range:	60-100MHz typical
Tuning Voltage, (J11) SMB connector:	0 to 10V for user programmed tuning range.
Tuning Voltage Impedance:	1Kohm (nominal), DC coupled.
Frequency Stability:	± 5KHz (analog input dependent)
Sweep response, large signal	> 300KHz
Modulation Input, (J10) SMB connector:	0-10V for 100% depth of modulation
Input Impedance:	1Kohm (nominal), DC coupled.
ON-OFF Ratio:	> 40dB
Amplitude rise/fall time	< 100/50ns at 30W
DC Power Input:	+24Vdc at 6A 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.

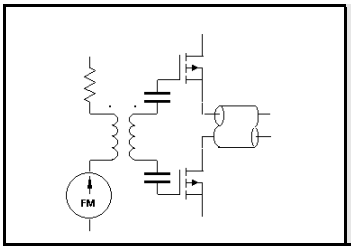
***Options:** multiple combinations possible:

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

Refer application note AN1906 regarding Coolant Specification

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
ISOMET CORP, 10342 Battleview Parkway, Manassas, VA 20109, USA
Tel: (703) 321 8301 Fax: (703) 321 8546
E-mail: ISOMET@ ISOMET.COM ***Web Page: WWW.ISOMET.COM***

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

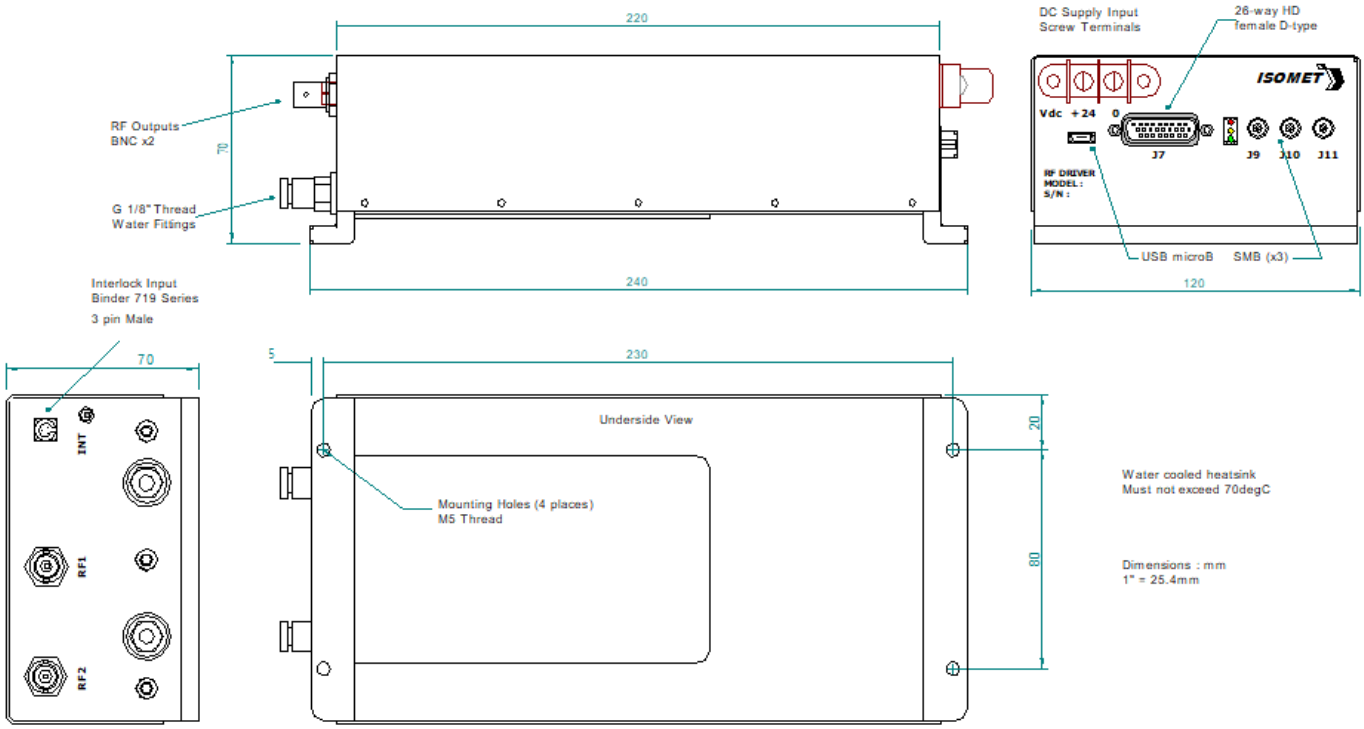


iVSA080-2-30 (BR)

Tuneable RF Driver

4226

OUTLINE DRAWING



Control signals: (J7) 26-pin high density 'D' type Male

		Connector pin
All signals optional except GATE		
Ext RF MOD1, (0-10V)		: +sig pn1, -rtn pn3 (Auxiliary control)
Ext RF MOD2, (0-10V)		: +sig pn2, -rtn pn3 (Auxiliary control)
Reset (TTL)		: +sig pn4, -rtn pn7 (Active high RESET)
Profile 0 (TTL)		: +sig pn5, -rtn pn7 (DDS register select)
Profile 1 (TTL)		: +sig pn6, -rtn pn7 (DDS register select)
Profile 2 (TTL)		: +sig pn8, -rtn pn7 (DDS register select)
Profile 3 (TTL)		: +sig pn9, -rtn pn7 (DDS register select)
GPIO 0 (TTL)		: +sig pn11, -rtn pn13 (user programmable IO)
GPIO 1 (TTL)		: +sig pn12, -rtn pn13 (user programmable IO)
GPIO 2 (TTL)		: +sig pn16, -rtn pn13 (user programmable IO)
GATE (TTL)	**MUST BE APPLIED**	**: +sig pn17, -rtn pn18 (Active high ENABLE)**
RS485		: +sig pn 22,23,25,26, -rtn pn 21,24

Connector: INT, Binder 719 3pin Male

Interlock enable, (connect to AO) : +sig pn1, -sig pn2 (Closed = on)

Control signal: (J9) SMB

J9, Configurable multi-function IO

As input - hold frequency
As output - sync output

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
ISOMET CORP, 10342 Battleview Parkway, Manassas, VA 20109, USA
Tel: (703) 321 8301 Fax: (703) 321 8546
E-mail: ISOMET@ ISOMET.COM ***Web Page: WWW.ISOMET.COM***

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