

iVSA-xxx-1-4 / iVSA-xxx-2-4

Tuneable RF Driver

(Specify frequency ident xxx. See below)

4226

Description

The iVSA driver range are voltage tuneable RF drivers comprising a high-speed ADC, DDS and class-A power amplifier output stage(s). 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.

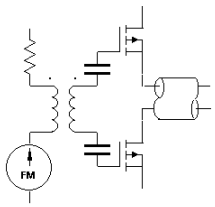
Specification

Oscillator Type:		Voltage Controlled DDS synthesiser
Analogue input sampling rate:		~2.5MHz
Outputs:	iVSA-xxxT-1-4	Single outputs, phase continuous
	iVSA-xxxT-2-4	Dual independent outputs, phase continuous
Output Power:		> 4 Watt CW per output into 50Ω
Load VSWR:		< 3:1 for best result
Output RF Power Variation vs. Freq':		< +/- 1dB per octave (with no LUT applied)
Spurious Outputs (Harmonics):		> 25 dBc below fundamental
Synthesizer maximum frequency range:		11-210 MHz
Amplifier 1dB power	iVSA-80T-	60-100MHz
bandwidth*:	iVSA-100T-	70-130MHz
	iVSA-150T-	125-175MHz
Tuning Range:		User Programable
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		> 300 kHz
Modulation Input, (J10) SMB connector:		0-10V for 100% depth of modulation
Modulation Input Impedance:		1Kohm (nominal), DC coupled.
ON-OFF Ratio:		> 40dB
Amplitude rise/fall time:		< 100/50ns at 15W
DC Power Input:		+24V nominal @ <2A, Range +12V to +24Vdc (Max RF power reduced at lower Vdc)
Communications:		USB II, RS485 (option).

*Custom ranges available. Please contact Isomet.

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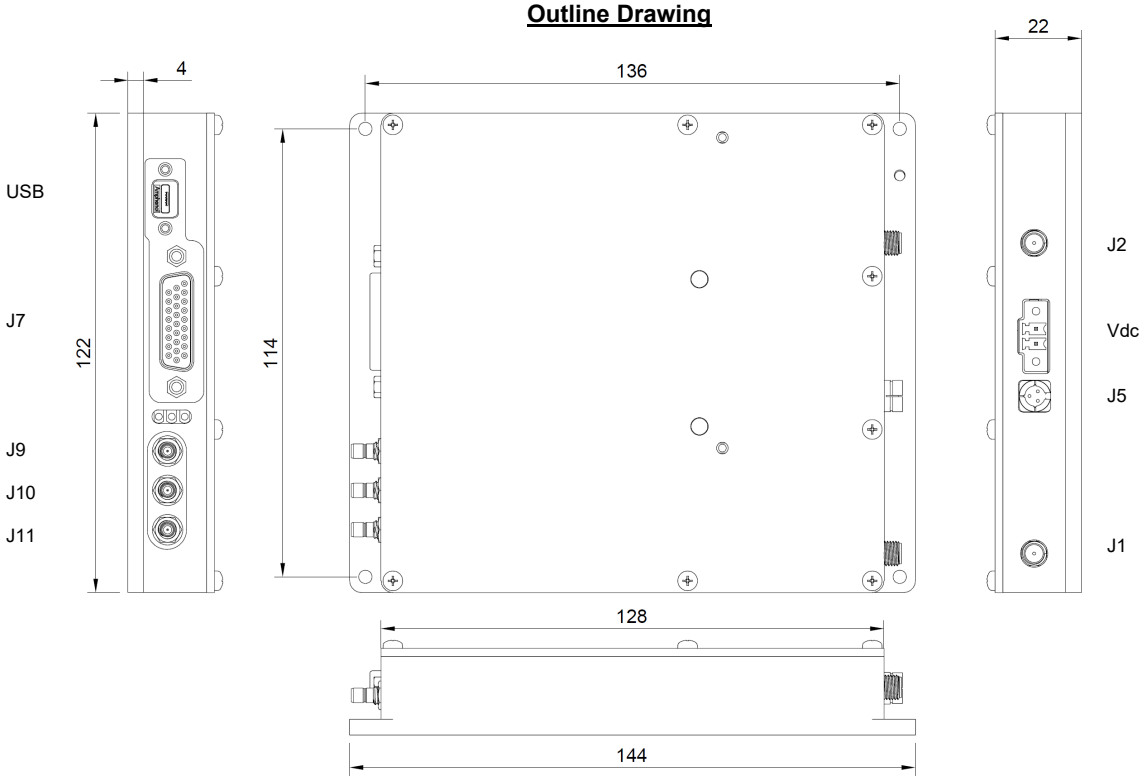
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Outline Drawing



Connector Summary

All digital I/O signals are ESD protected to IEC6100-4-2 and include EMI suppression.

Ident	Type	Description
J1, J2	SMA	RF outputs
J5	3-way Binder 719 series	Interlock
J7	26-way High density female D-type	Control
J9	SMB	Configurable multi-function IO
J10	SMB	Amplitude modulation (configurable)
J11	SMB	Frequency Tuning Voltage (configurable)
USB	mini-B	USB II/III
Vdc	3.81mm Pheonix	12-24Vdc voltage input

NOTES:

- **J10 & J11 can be software configured as either amplitude or frequency tuning inputs for either one or both RF Outputs.**
- **J9 can be configured either as an input to apply a hold to the output frequency or as a sync output.**

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