

## iVSA-xxxT-1-1 / iVSA-xxxT-2-1



### Tuneable RF Driver

(Specify frequency ident xxx. See below)

0526

#### 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 micro-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-1-1<br>iVSA-xxxT-2-1                                                  |
|                                        | Single outputs, phase continuous<br>Dual independent outputs, phase continuous  |
| Output Power:                          | > 1 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 bandwidth:         | iVSA-80T- 60-100MHz<br>iVSA-100T- 70-130MHz<br>iVSA-150T- 125-175MHz            |
| Tuning Range:                          | User Programmable                                                               |
| 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 @ <1A, Range +12V to +24Vdc<br>(Max RF power reduced at lower Vdc) |
| Communications:                        | USB II, RS485 (option).                                                         |

\*Higher powers planned. Please contact Isomet.

#### ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

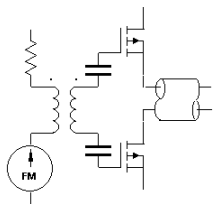
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#### Quality Assured.

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



## iVSA-xxxT-1-1 / iVSA-xxxT-2-1

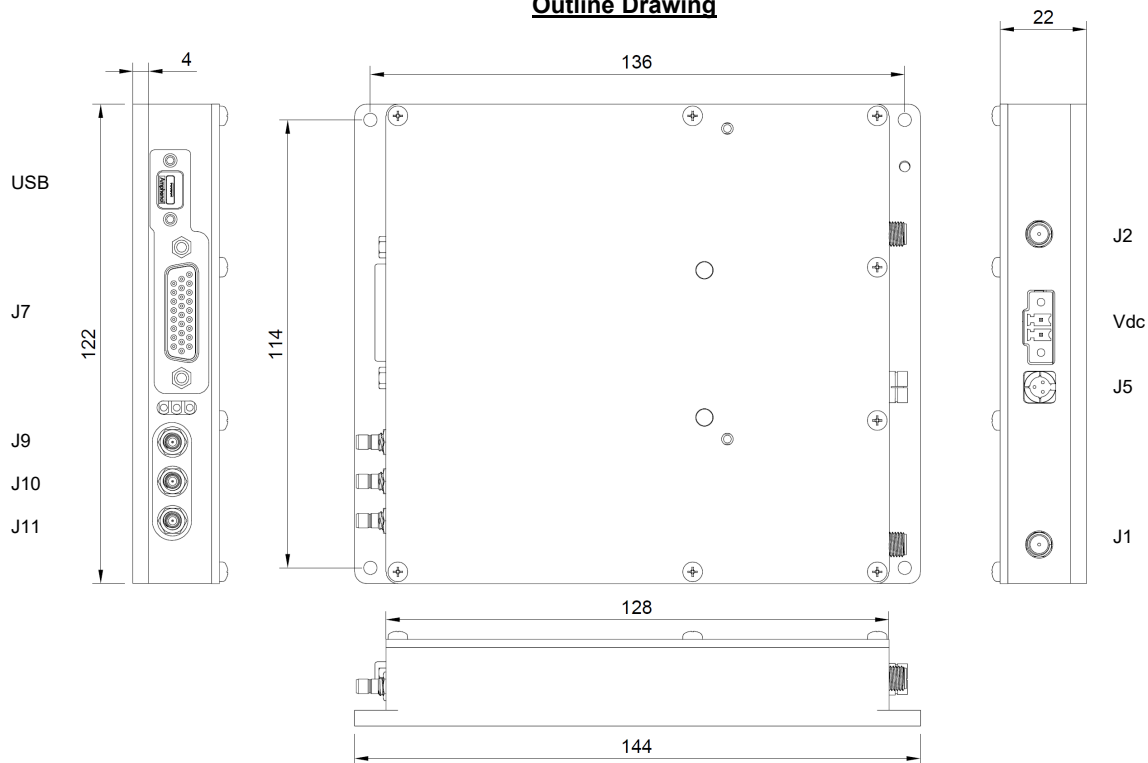
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#### Outline Drawing



#### 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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