# iSPA-SF2

## Frequency Synthesizer & RF Driver

**ISOMET**

*0115*

## SPECIFICATIONS

The iSPA-SF2 dual output driver is designed to operate with AO modulator pairs, deflectors, tuneable filters and frequency shifters. The driver includes a direct digital synthesizer (DDS), a 32-bit ARM processor (featuring internal FLASH, RAM, ADC and USBII interface) and dual RF amplifiers. The driver can be directly controlled in real time via USB or may be pre-programmed for autonomous operation. External controls are applied through a 25way D-type connector. (External inputs are not necessary to operate the driver). Windows based operating software is supplied.

On power-up, the uC configures the DDS and loads a user defined frequency / phase / amplitude "MAP" previously stored in FLASH memory. The internal memory may store up to 8 unique MAP's. Each MAP may contain up to 16 independent frequency values. These are selected by the profile address inputs using PC control or external inputs to the 25way D-connector.

The driver can be easily programmed to output sweeps or step changes in frequency or phase or amplitude.

Both driver outputs are derived from a common reference frequency. The differential frequency shift is therefore highly stable making this unit ideally suited to heterodyne applications.

Windows based GUI software supplied

Output frequency range:

| Model | Variant | Frequency range | RF power per output |
|---|---|---|---|
| iSPA-SF2- | - | 20-200 MHz | 1.2W  (1.5W typical) |
| | | | |
| | | | |

Frequency resolution (full range):      32 bit inherent,
1Hz using Isomet GUI Software.

Frequency stability:      < +/- 25ppm (common mode)
< +/- 1ppm (differential mode)

Maximum Power per output:      see table
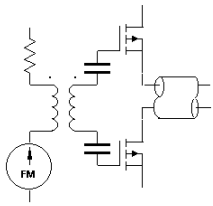
Output power flatness:      < +/- 1dB / octave

Harmonics:      < 25dBc

Ch-Ch crosstalk:      > 40dB at 80MHz, 1W

RF power adjustment:      > 30dB range via external analog modulation input.
> 60dB  range via digital control

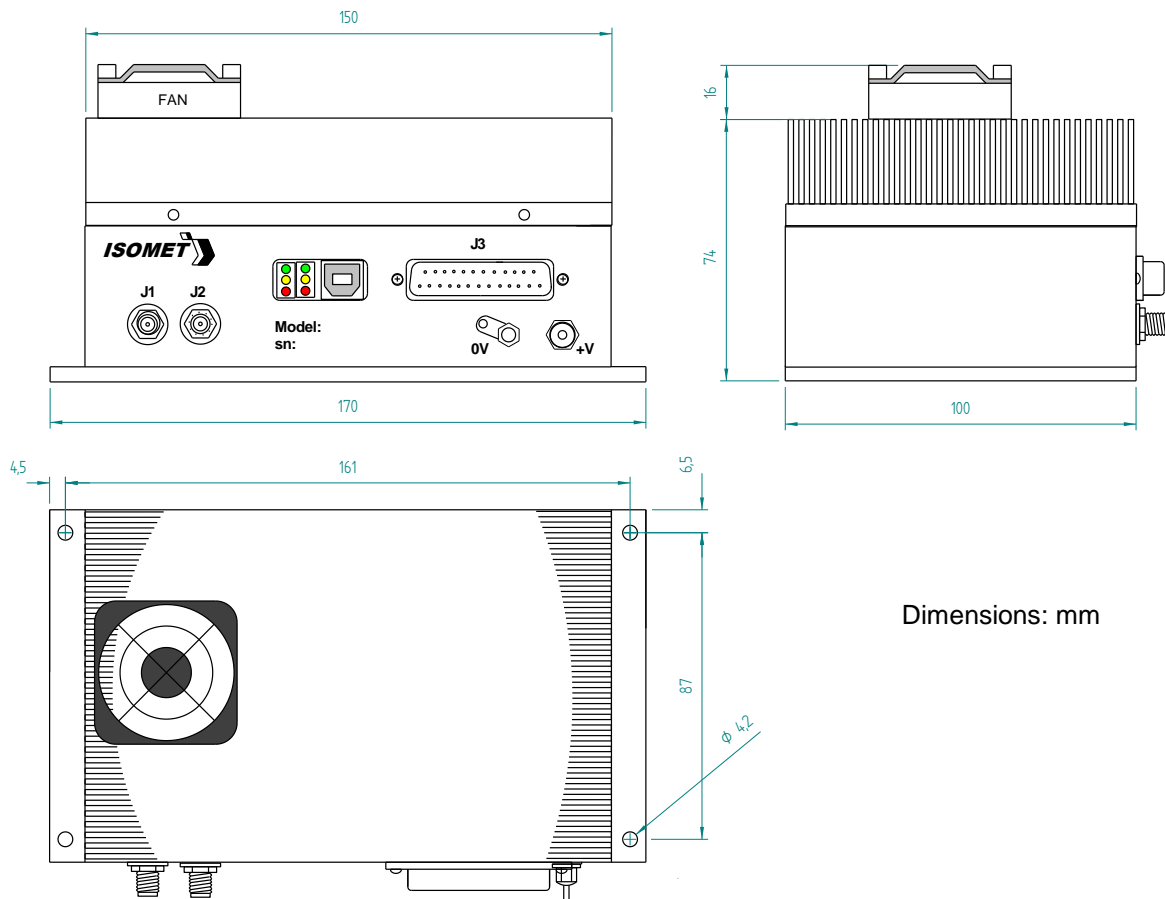# iSPA-SF2

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### Interface

Output (x2):  Signal:  J1: RF, 50ohm, SMA connector
J2: RF, 50ohm, SMA connector

Inputs:  Control Inputs:  External:  25way male D-type
Logic signals:  LVTTL, 3V3 compatible
Analog Modulation/Level:  0 – 5V

Host PC:  USB II

DC power:  24V at < 1.2A, solder feed through

### OUTLINE DRAWING



Dimensions: mm