iSPA-SF1-x

Frequency Synthesizer & RF Driver

ISOMET

0814

SPECIFICATIONS

The iSPA-SF1 single output driver series are designed to operate with Isomet AO modulators, deflectors, tuneable filters and frequency shifters. The driver includes a direct digital synthesizer (DDS) a 32-bit ARM processor (the uC, featuring internal FLASH, RAM, ADC and USBII interface) and single RF amplifier. 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).

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 also be configured to output frequency sweeps.

Windows based GUI software supplied

Output frequency range:

Model	Variant	Frequency range	RF output power
iSPA-SF1-	w	20-200 MHz	1.2 W
	y	24-48 MHz	4 W
	a	30-60 MHz	4 W
	b	60-100 MHz	4 W
	c	80-130 MHz	4 W
	d	125-175 MHz	2 W
	e	150-250 MHz	2 W

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

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

Maximum Power,   RFoutput: see table
                    Ref Out: > 100mWpp, 50ohm

Output power flatness: < +/- 1dB / octave

Harmonics: < 25dBc

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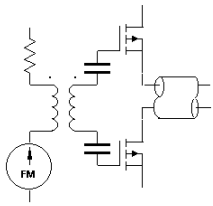> 60dB range via digital control
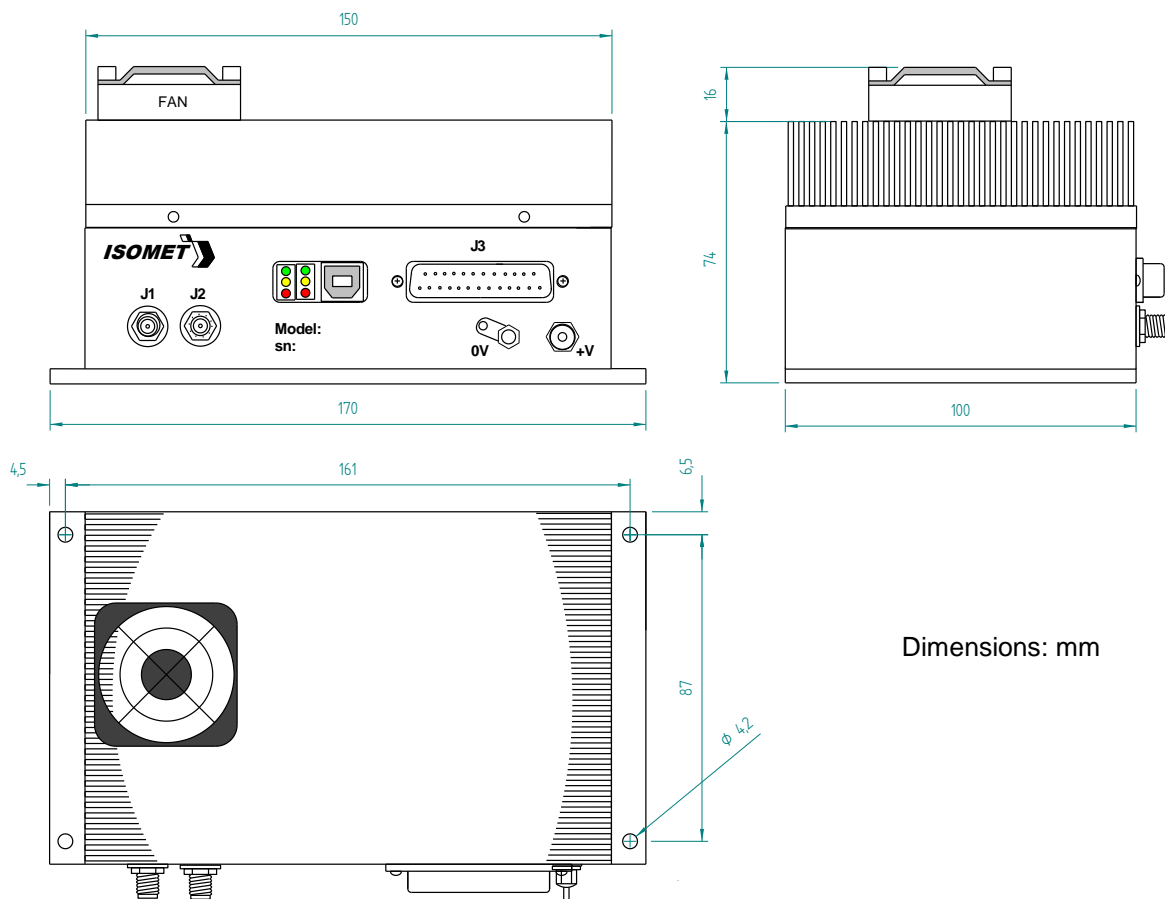
Interface

Output (x2):   Signal: J1: Main RF output, 50ohm, SMA connector
                                   J2: Low level reference output, 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 < 0.6A, solder feed through

OUTLINE DRAWING

Dimensions: mm