

RFA1170/4

RF Power Amplifier

(Preliminary data)



1014

The Model RFA1170/4 is a class AB amplifier designed to drive the LS700- series of Isomet High Power Germanium Acousto-Optic Deflectors with < 280Watts across a 50-90 MHz bandwidth. The RFA1170/4 allows progressive phase shifting to be applied across the four RF output channels. Phase shifting is the basis of the beam-steering technique used in Isomet wideband AO deflectors. The shift imparts a change in acoustic launch angle in the AO crystal. With appropriate control, it is possible to compensate for the reduction in efficiency resulting from Bragg angle errors.

Using an appropriate frequency source such as the Isomet iMS4, active phase control can be applied between the RF channels. The result is near exact acoustic beam-steering across the full scan range of the LS700. Active phase control provides a more uniform diffraction efficiency scan response at lower average RF power.

The RFA1170/4 with iMS4 includes a number of additional features to aid diagnostics and control:

- Data values representing the forward and reflected RF power for each output (Qualitative).
- Measurement of the DC current draw for each RF channel. (Qualitative).
- Thermal Interlock and real time temperature measurement for the Amplifier and associated AO deflector.
- Interlock and diagnostic connection to LS700 series AOD's

These features require a serial interface and suitable GUI

The RFA1170/4+iMS4 is supplied with a USB interface card and a Windows based GUI. (see iMS4 data sheet for further details)

SPECIFICATIONS

Power out:	90 Watts max. CW into 50 Ω per output
Frequency response:	45 - 95 MHz
Flatness:	+/- 1dB
Gain Input to Each Output:	50dB nominal
Input / Output impedance:	50Ω Nominal
Input VSWR:	< 2.0:1
2 nd Harmonic Distortion:	> 20 dB below fundamental at 60W output
3 rd Harmonic Distortion:	> 15 dB below fundamental at 60W output
RF rise/fall time	< 20nsec for 0 – 50W
RF gate	Software controlled
Thermal interlocks	Compatible with LS700 series
Power Supply Requirement:	24A (total) at +24Vdc
Water Cooling:	Maintain water flow at > 1litre/min / <25°C (Corrosion inhibitor recommended)

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

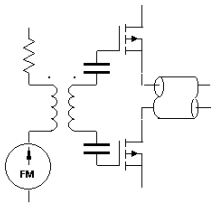
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Quality Assured.

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



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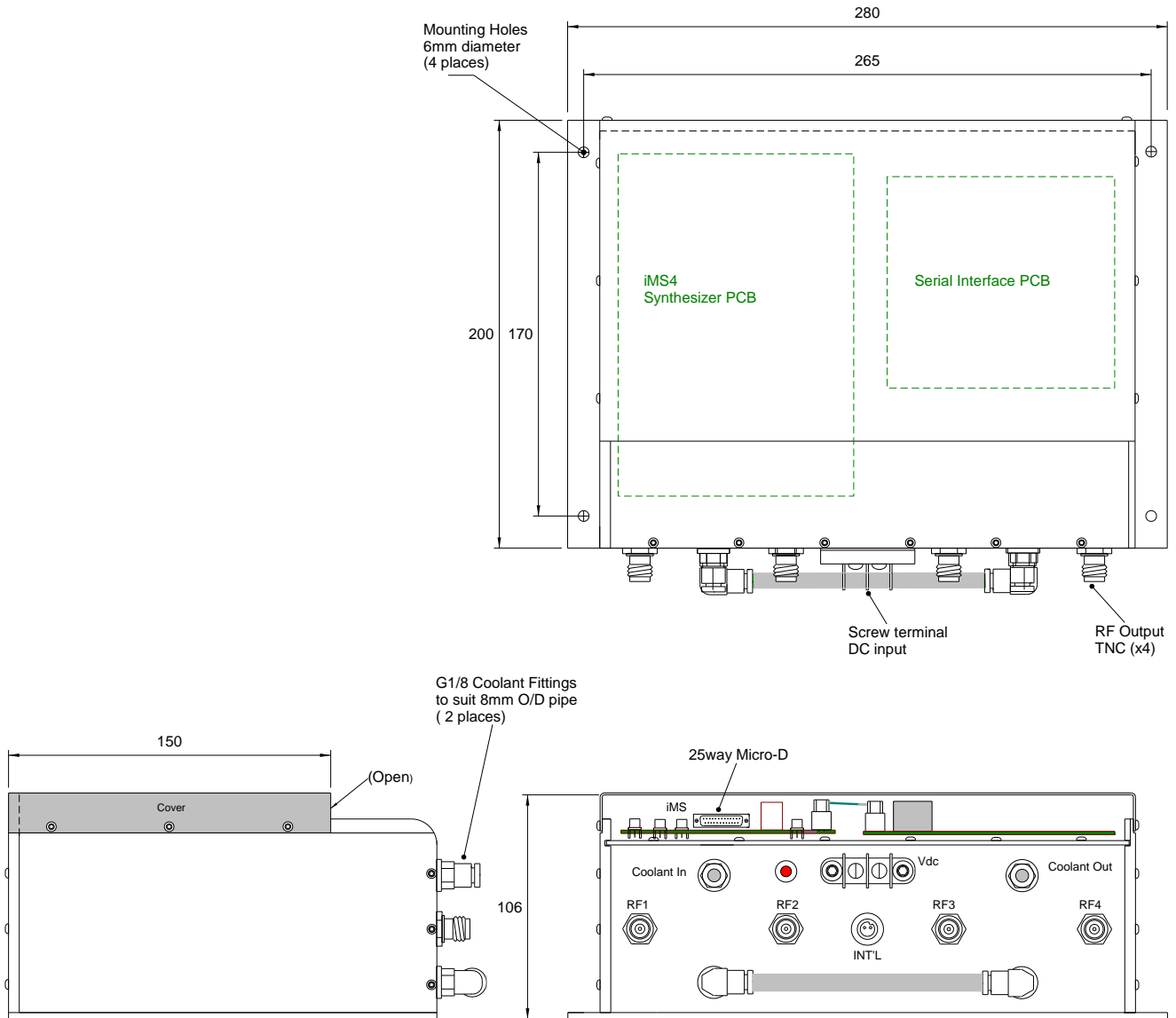
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OUTLINE DRAWING

(Shown with iMS4 synthesizer and serial interface)



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