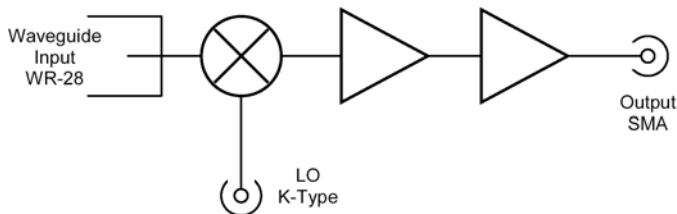


Ka-Band Integrated Mixer and Pre-Amplifier

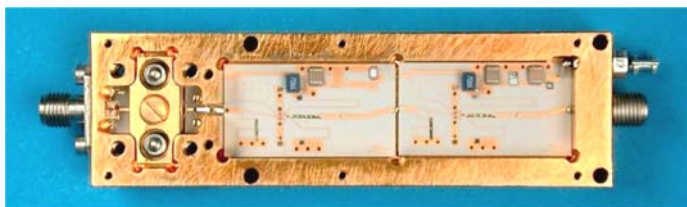
Product Overview

e2v technologies have developed a Ka-band Mixer, with integrated Pre-Amplifier.

The unit combines two L-band gain stages (forming a Pre-Amplifier) with an innovative planar mixer structure, realised on a substrate across the waveguide input to the unit.



Ka-band Mixer / Pre-Amplifier Schematic

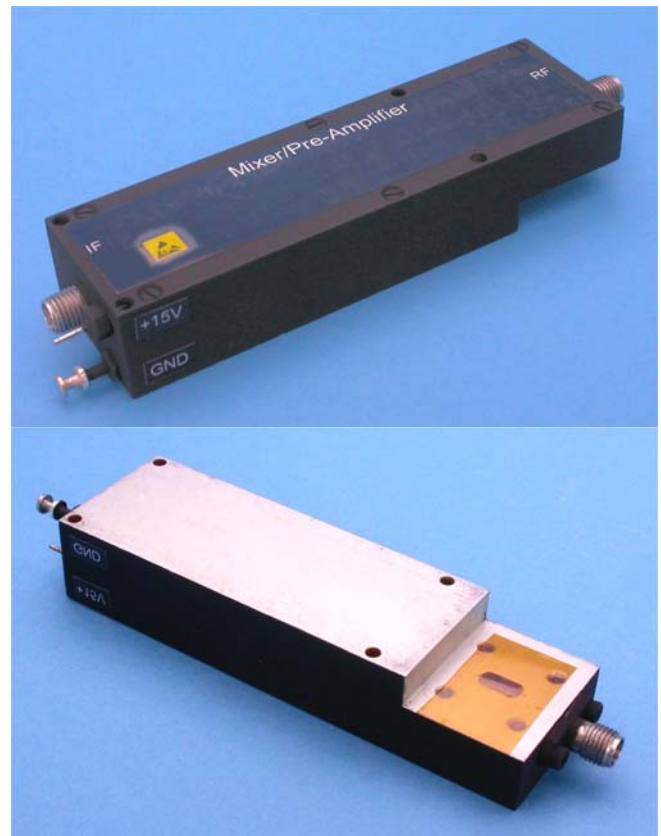


Internal arrangement of Ka-band Mixer / Pre-Amplifier

The unit operates from a +15V DC power supply, drawing a maximum current of 100mA. The unit is designed to operate (and is factory tested) over **-40°C to +85°C**.

Summary of Design Benefits

- Ka-band integrated Mixer and Pre- Amplifier
- Low noise figure (**<7.5dB at +85°C**)
- Low mass (**<200g**)
- **-40°C to +85°C** operation
- Military airborne environment compatibility



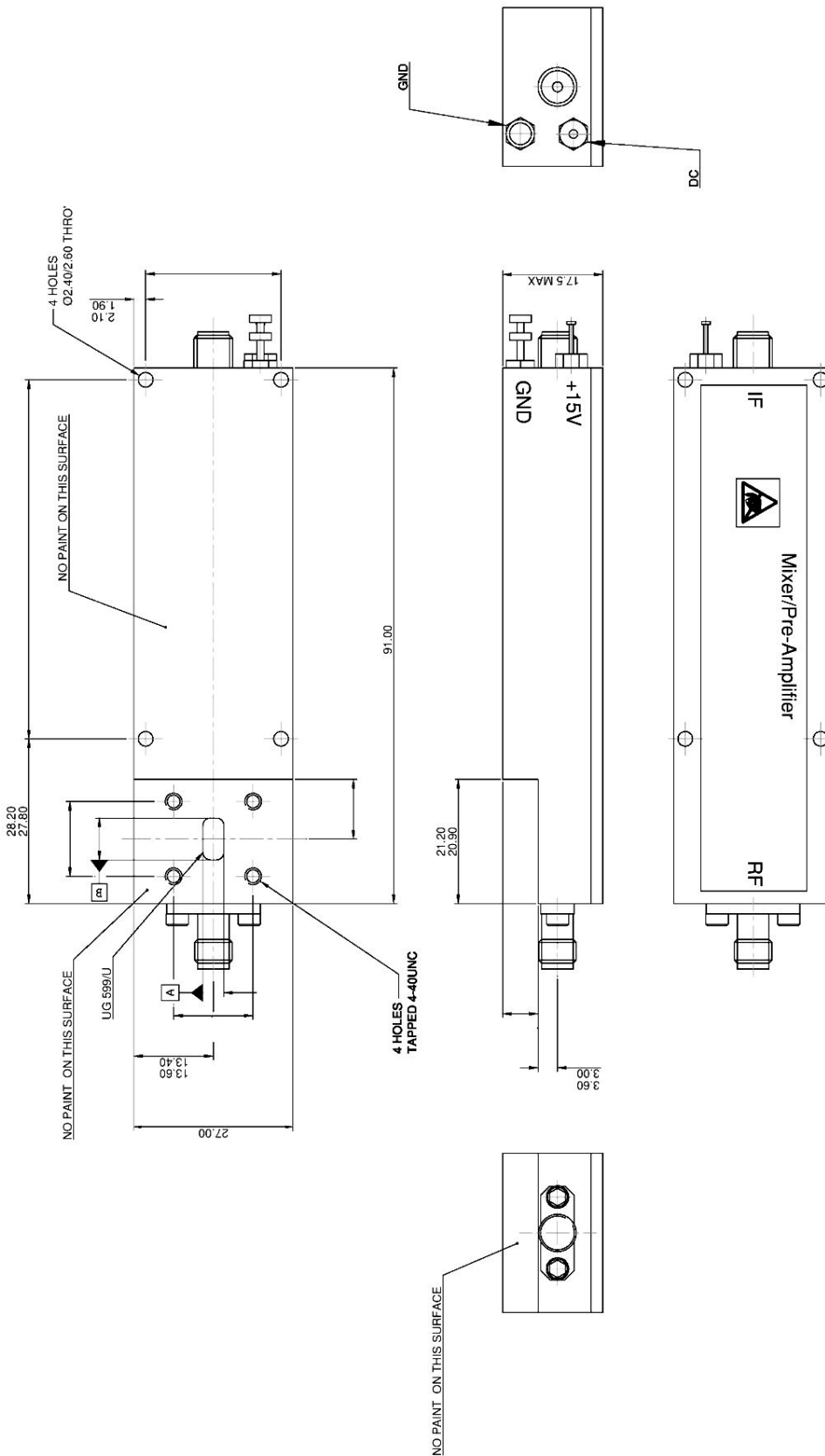
Ka-band Mixer / Pre-Amplifier

The module package has a 95mm (3.75") x 30mm (1.2") footprint (excluding connectors), 18mm (0.75") height.

RF Performance and characteristics

RF Frequency	Ku-Band	
	Bandwidth	1,000 MHz
LO Frequency	L-Band	
	Bandwidth	1,000 MHz
VSWR (RF, LO)	2:1 max.	
VSWR (IF) (50Ω)	1.5:1 max.	
Noise Figure	7.5dB max.	
IF Frequency Range	1680MHz ± 40MHz	
LO Drive Level	10dBm min.	13dBm max.
Conversion Gain	20dB min.	24dB max.
Isolation, LO to IF	20dB min.	
Isolation, IF to LO	15dB min.	
Isolation, RF to LO	20dB min.	
Output, 1dB point	10dBm min.	

Ka-Band Integrated Mixer and Pre-Amplifier



General Arrangement of Ka-band Mixer / Pre-Amplifier