

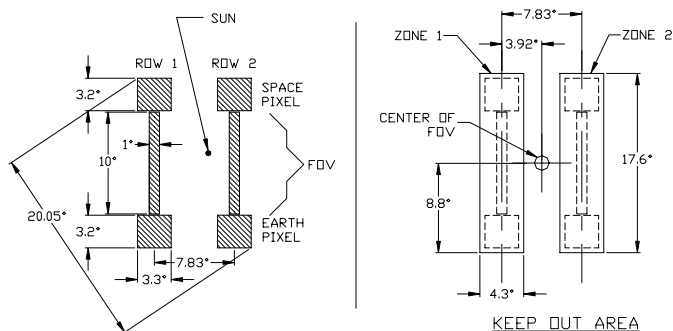
# Dual Array Single Head Earth Sensor Assembly



**DASH CONFIGURATION**

## Description:

The Dual Array Single Head (DASH) Earth Sensor Assembly is used, as part of an Attitude Control System (ACS), to sense the angle of a spacecraft relative to the Infrared Horizon. The unit measures relative radiant intensity in the CO<sub>2</sub> (15u) frequency band. It produces DC voltages from redundant IR detector arrays that view the Earth, the horizon and Space. The voltages are then used to determine the angle to the horizon. The voltage from each of the detector elements is delivered to the ACS where it is processed by a simple supplied software algorithm to produce an angle to the IR horizon. Earth and space pixels are used to normalize the horizon data and to reduce errors caused by seasonal and orbital radiance variations.



## Contact Information

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## Specifications

- FOV: +/- 5° Operational
- Accuracy:<0.2° (3σ)
- NEA: 0.08°
- Power: < 1 W
- Output: Analog 0-5VDC  
From 6 Pixels Thru MUX
- Detector: Proprietary LTO
- Optical Pass Band: 14.6-15.8μ
- Output Sens: ~80 mV/° Linear
- Data Acquisition rate: 20 Hz
- Operates from +/-12VDC

## Environmental

- Random Vibration: 25 Grms
- Temperature: -30 to + 55°C
- Lifetime: 7 yr. at 1000Km

## Physical

- Mass: 350 grams
- Size: 2.4"W X 3.75"L X 2.4" H  
Plus Optics & Mounting Feet

## Features

- Built in partial redundancy
- Patented Sun-Moon rejection scheme
- Requires no temperature control, heater or compensation

## Status

- Production order for DASH sensors for LEO constellation
- Used on Surrey Satellite Ltd. TOPSAT LEO program