



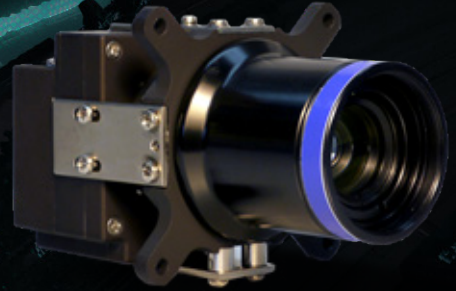
AAC
CLYDE
SPACE



Attitude Determination

ST400 STAR TRACKER

HIGH PRECISION HIGH PERFORMANCE



The ST400 is a standalone, low mass, low power star tracker, which renders attitude determination capability to small satellites. It has been jointly developed by AAC Clyde Space and Berlin Space Technologies. The ST400 is an improved version of the smaller ST200 star tracker, which is aimed at applications in pico- and nano-satellite platforms. It features increased attitude determination accuracy and increased radiation tolerance. The ST400 has been qualified for man-rated missions since October 2013 and has flight heritage since 2016. Optionally AAC Clyde Space offers standard size and mission-specific baffles.

KEY HIGHLIGHTS:

- 5 Hz update rate
- RS422/RS485 bidirectional interface
- All components passed radiation qualification at 9 krad (Si)¹
- Plug-and-play ready design
- Various baffle options available on demand
- Low mass: 280g
- Low power: <700 mW
nominal power consumption when running at 5Hz update rate
- Outer dimensions: 53.8 x 53.8 x 90.5 mm
(excluding baffle)



ACCURACY

The ST400 has an attitude determination accuracy of (3 σ): < 10 arcseconds pitch and yaw of < 120 arcseconds roll. This high accuracy is very good for demanding missions, larger platforms such as SmallSats.



PERFORMANCE

The ST400 is prepared to accept very narrow sun-exclusion angle baffles, which AAC Clyde Space can supply on demand. The dedicated RS422/RS485 interface allows networking multiple ST400's, which combined with narrow sun-exclusion angle baffles means that even for the more complex satellite and orbit geometries, there will always be a configuration that works.



RELIABILITY

The ST400 comes with a RS422 interface as default. Both our Engineering and Flight model undergo workmanship testing at different levels to make sure we can deliver with our high reliability standards.

TECHNICAL SPECIFICATIONS

Performance		
Attitude determination accuracy (pitch, yaw)	10	arcseconds (3-sigma)
Attitude determination accuracy (roll)	120	arcseconds (3-sigma)
Update rate	5	Hz
Maximum slew rate (tip/tilt)	> 0.5	°/s
Maximum slew rate (roll)	>1	°/s

Dimensions		
Outer dimensions	53.8 x 53.8 x 90.5	mm
Mass	280	g
Optional baffle sun exclusion half angle ²	40	°

Enviromental		
Operating temperature	-20 - +40.	°C
Radiation tolerance	9	krad (Si)
Equivalent shielding thickness	≥ 3	°

Electrical				
	Min.	Typ.	Max.	
Supply voltage	3.6	-	34.0	V
Power consumption	370	700 ³	1000	mW

1. Final radiation tolerance of the product can be tailored to mission requirements. Please contact AAC Hyperion.

2. Standard size. Custom baffles available on request.

3. At 5V, at 5Hz update rate.

To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact:

enquiries@aac-clydespace.com



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