

AFFORDABLE. RELIABLE. PROVEN.

iADCS-100

Intelligent Attitude Control for Cubesats.

Motivation

Attitude determination and control is one of the cornerstones for sophisticated Cubesat missions. Yet it is also one of the most complex subsystems. The iADCS allows the designer to concentrate on the most important part – the mission.

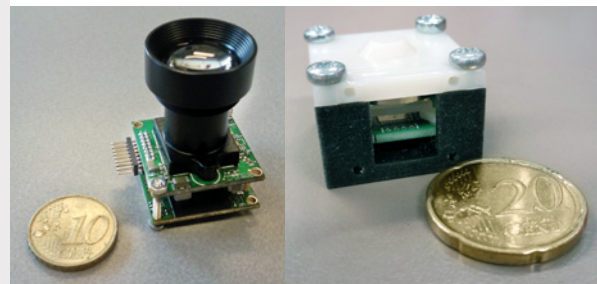
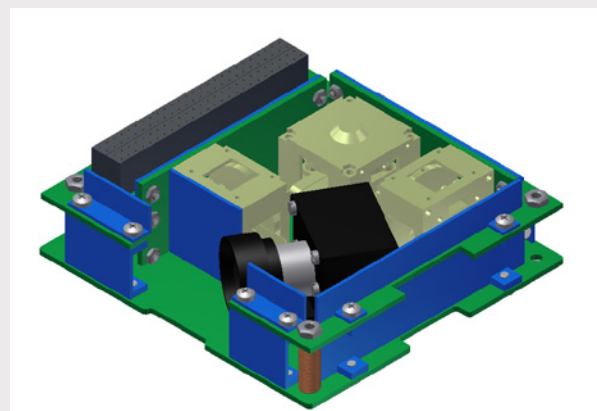
Specification

The iADCS-100 is an integrated system with star tracker, reaction wheels and a full set of attitude control algorithms. Unlike any other similar performing Cubesat ADCS, the iADCS is only 2 PC/104 stacks high.

The iADCS-100 is a carefree solution. It equips its host spacecraft with full attitude control. Automatic target pointing via latitude and longitude as well as nadir pointing is implemented using the ADCS algorithms from the LEOS micro satellite platform.

iADCS is a joint development of BST and Syspa B.V.

Currently, the first iADCS is under production for the Aalto-1 mission.



iADCS-100

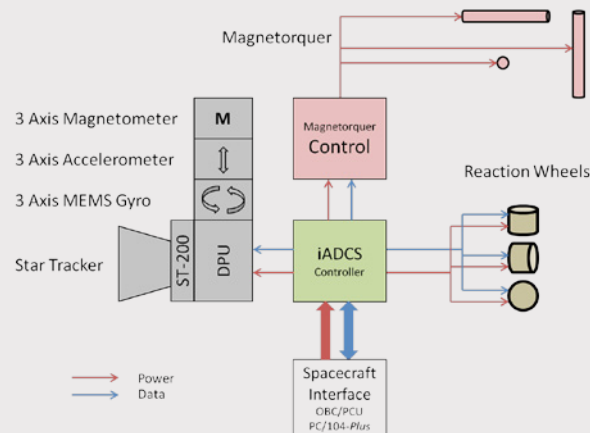
iADCS is

- **an integrated ADCS solution for 1–3U Cubesats – all you need for your mission**
- **one of the World's smallest and lightest ADCS with star tracker and reaction wheels**
- **based on the proven ADCS algorithms of the famous TUBSAT™ platform**
- **fully compliant to Cubesat standard, not export restricted and ITAR free**

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CHARACTERISTICS:	iADCS-100	COMMENTS
Size	95 x 90 x 32mm ³	two PC/104 stacks
Mass	250g	including baffle and 2mm AL shielding
Power	0.5W nominal 1.8W peak	depending on operation mode
Interface	RS485, I ² C	
Attitude Knowledge	30 arcsec	ST-200 star tracker
Pointing Accuracy	<< 1°	depending on intersubsystem alignment
Slew Rate	>1.5°/s	for 3U cubesat all axes using reaction wheels
Attitude Modes	Target Pointing	using longitude/latitude target coordinates
	Nadir Pointing	
	Sun Pointing	
	Spin-Mode	max 200°/s rotation rate using magnetorquers
	De-Tumble	all modes are safe mode recoverable
Actuators & Sensors	3 Reaction Wheels	torque 0.087mNm, angular momentum 1.5mNms
	3 Magnetorquers	0.2Am ²
	1 Star Tracker	30 arcsec accuray, 5Hz update rate
	MEMS Sensors	gyro, accelerometer, magnetometer
	additional Sensors	plug in capability for GPS and sun sensors