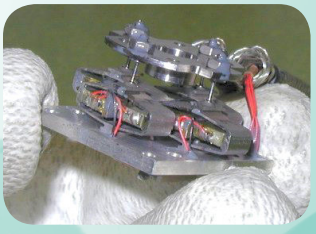
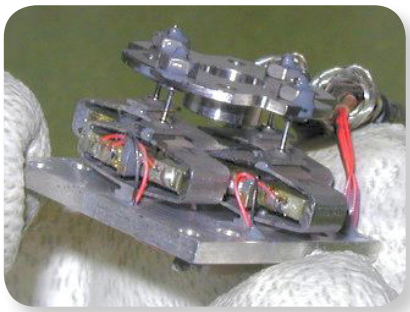


Double Tip Tilt DTT35XS

Description

The Double Tip Tilt mechanism DTT35XS-space is a very light piezoelectric mechanism (25 grams) designed according to space rules. The mechanism uses Strain Gauges (SG) as positioning sensor and allows to reach a 1:4000 stability (1 µrad rms). The mechanism is ideal for pointing mechanisms or laser beam steering.

References	Unit	DTT35XS
Notes		space product
Sensors option		SG
Active axis		RX, RY, TZ
Max. No-load displacement	µm	35,0
Max. Angular displacement	mrad (+/-)	2,00
Out of plane Y displacement	µm	10,0
Voltage range	V	-20 ... 150
Stiffness	N/µm	2,0
Heigth	mm	22,0
Diameter	mm	30,0
Vertical Resolution	nm	0,4
Angular resolution	µrad	0,0
Mass	g	25
Unloaded resonance frequency (in the tilt direction)	Hz	3200
Response time	ms	0,16
Capacitance (per electrical	µF	0,50
Mechanical interfaces		Flat surface Ø 10mm
Mechanical interfaces (frame)		Cylinder Ø 38.1mm
Electrical interfaces		PTFE insulated AWG36 wires 100 mm long and shield with sub D15 connector



DTT35XS mechanism.

Space evaluation program

The DTT35XS-space has followed a space qualification program according to ECSS standards (European Space Agency standards).

- Thermal – vacuum: -20 / 75 °C,
- Random vibration: 41 grms,
- Palyoad 1 gr (mirror),
- Lifetime: 2e8 cycles full stroke.

Radiations	ESCC n° 22900
Outgassing	PSS 01-702
ESD	ESCC n° 23800
Micro-section examination	ESCC n° 23400

Space heritage

The technology will flow on ROSETTA in 2004. The DTT35XS is scheduled for flight on the ISS/ ACES/PHARAO instrument in 2006.

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www.cedrat.com

For more information, please contact:

CEDRAT TECHNOLOGIES
15 Chemin de Malacher - Inovallée
38246 Meylan Cedex - France
actuator@cedrat.com
Phone: +33 (0)4 76 90 50 45 - Fax: +33 (0)4 56 38 08 30