

NEWSPACE MARKET · COMPANY PROFILE



Technology Applications Inc (TAI)

United States · founded 1994 · techapps.com

5

PRODUCTS

2

SERVICES

3

WITH DATASHEETS

newspacemarket.com/companies/technology-applications-inc-tai/

as of 20 August 2026



Technology Applications Inc (TAI)

Technology Applications, Inc. (TAI) is an American thermal management company founded in 1994 in Boulder, Colorado, and recognized as the world's largest manufacturer of flexible thermal links (Thermal Straps) for aerospace and scientific applications. The company designs and manufactures Copper Cable Thermal Straps (CuTS), Graphite Fiber Thermal Straps (GFTS), and Pyrolytic Graphite Sheet and Graphene Thermal Straps (PyroFlex / X-Series) that passively transport heat between spacecraft components without mechanical pumps or electrical power. TAI products have flight heritage on dozens of satellites, CubeSats, and nanosatellites, and have flown on NASA's Orion spacecraft, NASA's OSIRIS-REx asteroid sample return mission, ESA's Solar Orbiter, Boeing's CST-100 Starliner crew vehicle, NASA's Europa Clipper, ESA's Proba-3, and Blue Origin's New Glenn. All products are assembled in-house at the company's Boulder facility, including custom and standard-model copper, graphite fiber, and pyrolytic graphite/graphene straps, cryocooler-specific strap lines, and a thermally conductive vibration isolation system (TCVIS) co-developed with CSA Engineering. Customers include NASA, NASA JPL, the US Department of Defense, ESA, JAXA, DLR, Lockheed Martin, Boeing, Raytheon, Northrop Grumman, Airbus, BAE Systems, Honeywell, General Atomics, Blue Origin, and national laboratories including SLAC, Fermilab, Argonne, Brookhaven, and Lawrence Berkeley. TAI's in-house manufacturing, exclusive OFHC UltraFlex copper cabling, and proprietary GraFlex graphite fiber and PyroFlex pyrolytic-graphite processes give it NASA TRL 9 heritage across copper, graphite, and graphene-based thermal strap product lines.

This profile is generated from the live NewSpace Market catalogue. Specifications are as published by the manufacturer; every product links to a page where a request for quotation reaches the company directly.

SERVICES

Services

front-end design consultation and assessment services TAI offers free initial design consultation and assessment to all customers to ensure program success and product understanding.	Thermal Conductance Testing TAI offers thermal conductance testing for thermal straps, with some tests included in orders and others available for a fee.
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Product catalogue



TECHNOLOGY APPLICATIONS INC (TAI)

Copper Cable Thermal Straps (CuTS)

OFHC copper-cable flexible thermal links used to passively conduct heat between spacecraft and cryogenic components, offered in 127 standard models plus fully custom designs.

Material	99.99 - 99.998% pure OFHC copper (Cu-101)
Cabling	TAI exclusive OFHC UltraFlex I (0.10 in / 2.5 mm) and UltraFlex II (0.20 in / 5 mm) copper
Standard models	127 standard models, plus Cryocooler Series (72 sub-models)
Thermal conductivity	397 - 2,500 W/(m-K) depending on temperature (4K - 300K)
Residual Resistivity Ratio (RRR)	30 - 100 (typical 50-75, measured by Fermi, Argonne, and Brookhaven National Labs)
Vacuum-annealed conductivity	Up to 2,300 W/(m-K) at 4K after vacuum annealing (per Brookhaven Nat'l Lab testing)
Flex axis flexibility (X, compression)	>65% flexibility vs. commercially available braided straps

flight proven • TRL 9

price on request

datasheet



TECHNOLOGY APPLICATIONS INC (TAI)

Cryocooler Series Thermal Straps (CS-CuTS)

Standard copper thermal strap line sized to common Sumitomo (SHI) and Cryomech cryocooler cold-tip diameters, with 72 sub-models and free bolt-pattern/length customization.

Material	99.99 - 99.998% pure OFHC copper (Cu-101)
Cabling	TAI exclusive OFHC UltraFlex I (2.5mm) copper cabling
Cold head diameters	9 (2nd stage) cold head diameters available
Sub-models	72 sub-models to choose from
Assembly method	Solder-free, never brazed or welded
Plating options	Nickel and gold plating available
Customization (free)	Bolt pattern customization, cable length customization, material certs & CoCs, front-end d

price on request

datasheet



TECHNOLOGY APPLICATIONS INC (TAI)

Graphite Fiber Thermal Straps (GFTS)

TAI provides the world's only Graphite Fiber Thermal Links/Straps (GFTS), and the only carbon-based standard strap product line. GFTS assemblies are the space industry'

Fiber material	GraFlex I / II carbon-fiber bundles; GraFlex III woven graphite fiber sheet
Fiber thermal conductivity	800 - 1,000 W/(m-K) (GraFlex III); 2.75x copper's conductivity at room temperature
Density vs. copper	1/4 the density of copper; 12x more thermal-conductivity/mass efficient than copper, 6x mo
Fabrication efficiency	Realizes up to 95% of material thermal conductivity
Mass	Most custom/standard straps weigh 10 - 30 g (1/5 - 1/10 the mass of an equivalent metallic
Standard models	6 standard models, 2 end-fitting options; 3 fixed widths, single or double row
Custom options	Customizable width, single/double/triple row, GraFlex I/II/III, multiple geometries

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TECHNOLOGY APPLICATIONS INC (TAI)

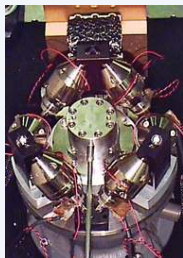
PyroFlex PGS & Graphene Thermal Straps (X-Series)

TAI's PyroFlex PGS (Pyrolytic Graphite Sheet) product line, also known as the X-Series, is the world's highest thermal-performance, "ultra-low stiffness" th

Material	Pyrolytic Graphite Film/Sheet (PGF/PGS), optional Graphene Layered Foil
Thermal conductivity	1,350 - 2,500 W/(m-K), depending on material, temperature, and sheet thickness
Performance vs. metals	6x the performance of aluminum and 4x the performance of copper at room temperature
Mass vs. metals	28% lighter than aluminum; 77% lighter than copper
Stiffness	mN/mm range on all 3 axes when installed in curved/S-configurations (many measurements <=3
Standard models	4 standard X-Series models, 3 fixed widths, 2 thicknesses, 2 semi-customizable end-fitting
HCCF end fittings	High Conductivity Carbon Fiber fittings: 200 W/(m-K) at 300K (X/Y axis), 129 W/(m-K) cross

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TECHNOLOGY APPLICATIONS INC (TAI)

Thermally Conductive Vibration Isolation System (TCVIS)

Combined thermal-transport and 6-axis vibration-cancellation assembly for cryocooler-to-detector-dewar interfaces, co-developed with CSA Engineering and tested at NIST.

Function	Combined thermal transport (via GFTS graphite fiber strap) and 6-axis active vibration can
Vibration reduction (axial, drive frequency)	> 40 dB (100:1 reduction)
Vibration reduction (radial, drive frequency)	31 - 37 dB (37:1 to 70:1 reduction)
Harmonic reduction (next 4 harmonics)	Average 22 dB reduction
Isolation components	Compact electromagnetic actuators, force sensors, passive isolators
Thermal link	Flexible Graphite Fiber Thermal Strap (GFTS) from aluminum cryocooler mounting flange to h
Qualification testing	Tested at NIST (National Institute of Standards and Technology); exceeded all requirements

price on request

[datasheet](#)

Contact Technology Applications Inc (TAI)

Open the company profile on NewSpace Market to see full specifications and datasheets, and to send a request for quotation that reaches the manufacturer directly.

<https://newspacemarket.com/companies/technology-applications-inc-tai/>

<https://www.techapps.com>

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