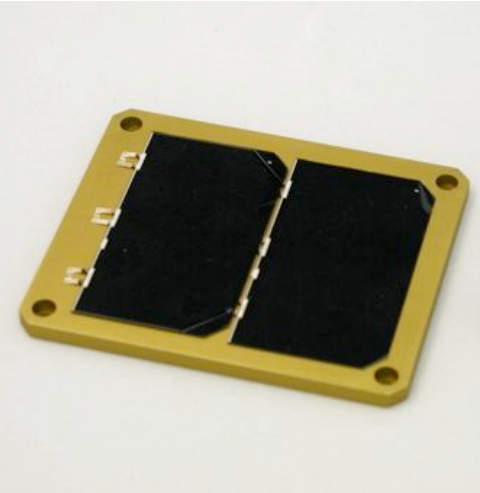
nanoTerminator™

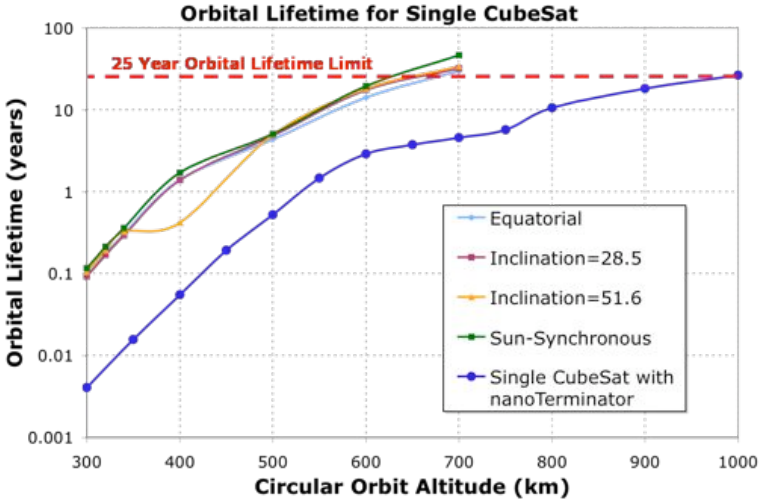
End-of-Mission Deorbit Module for Nanosatellites

The nanoTerminator™ is a compact, device that utilizes passive electrodynamic tether drag to rapidly deorbit a small spacecraft at the end of its mission. It enables nanosatellites to comply with orbital debris mitigation guidelines with minimal mass and volume impacts and at a low cost.

Concept of Operations:

- The nanoTerminator™ contains a 30-meter long space-survivable conducting tape tether and a simple spring-based deployment system.
- The nanoTerminator™ can be integrated to your CubeSat within the 6.5mm envelope available beyond the rails on any external face.
- At the conclusion of the nanosat's mission, utilize a release mechanism to deploy the spring-loaded nanoTerminator™. TUI can supply an optional Nanosat Release Mechanism suitable for this actuation.
- After release, the nanoTerminator™ will then deploy the tether. Gravity gradient forces will orient the tether along the local vertical.
- The conducting tether will drag against the geomagnetic field, rapidly lowering the orbit of the nanosatellite until it burns up in the upper atmosphere.





Other Affordable Nanosatellite Products from TUI:

- **Nanosat Release Mechanism**: low-cost, low-mass device for activating spring-based separation of nanosatellites or ejection of the nanoTerminator™
- **Nanosat IMU**: low-cost MEMS-based inertial measurement with integral 3-axis magnetometer unit for nanospacecraft

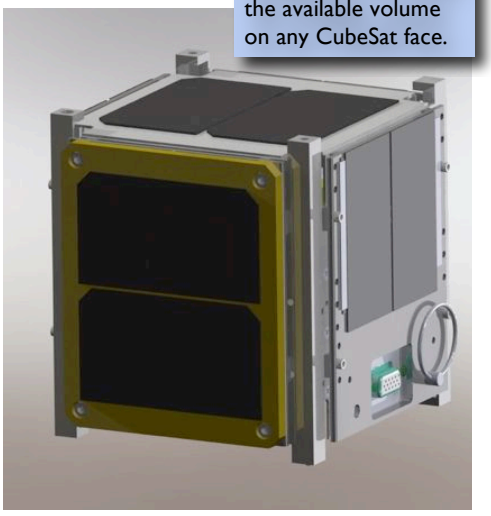
Specifications

- Complete nanoTerminator™ Module includes tape tether, spring–activated deployer, burn wire release mechanism, break-away solar panel connections, and protective housing
- 30-m x 8mm of conductive tape tether
- Module can be mounted onto any CubeSat face using four thru-hole M3 screws at corners
- External connection to burn-wire release mechanism via pigtails
- Pigtails available for solar array break-away passthru connections

Physical Characteristics

Mass: <80 grams

Dimensions:
Length: 100mm
Width: 83mm
Height: 5mm



Designed to fit within the available volume on any CubeSat face.

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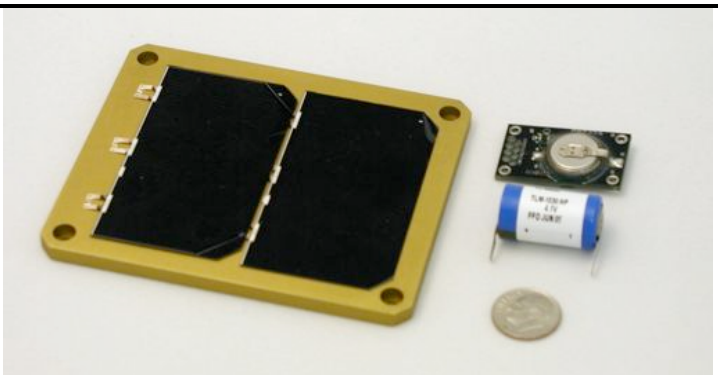
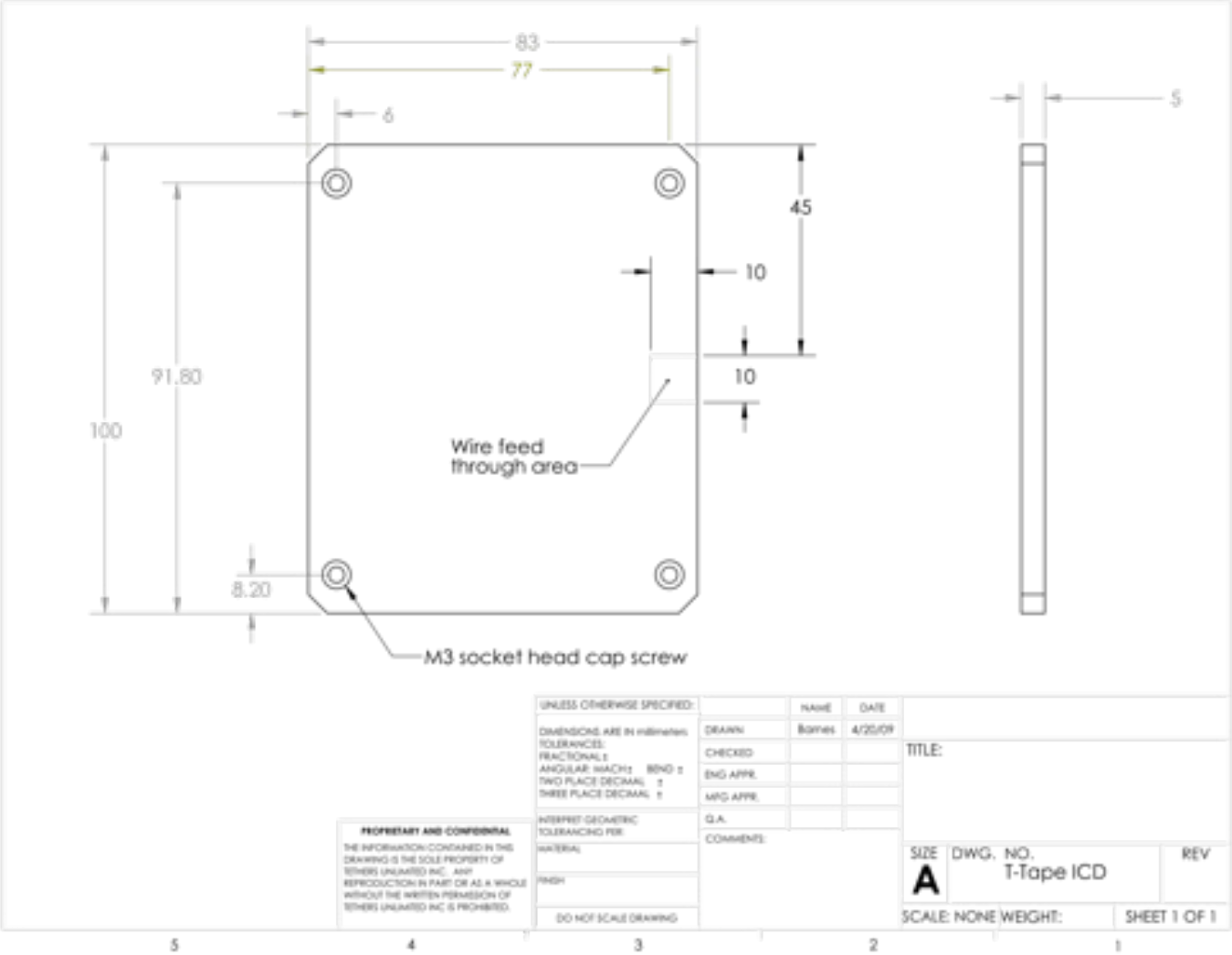
The nanoTerminator™ has been designed for simple integration into any CubeSat by simply connecting the pigtails and bolting it onto the desired satellite face. A nominal xx amperes for xx msec is needed to deploy the nanoTerminator, which can be supplied by the end user or TUI's Nanosat Release . Similarly, solar panels can be affixed (by end user or TUI) to the outside surface of the nanoTerminator for additional solar power capabilties.





Preliminary Release: 090421.01