Tech2000 GNSS Antenna Mast

202 Freddy Blume February 28, 2020 Tech 2000 7989

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Back to comparison table	Mount Commonly Used	Stability	Cost	Install Time	Labor	Substrate	
	Included in mast	low	$600	1-2 hr	1	BR	

The Tech2000 mast (Tech2K) is a portable, fixed height antenna monument for campaign GPS surveys. It was designed to be used in place of a tripod/tribrach and offers several significant advantages over a tripod/tribrach system. Most importantly, the Tech2K features fixed antenna heights. The basic design consists of an aluminum mast composed of 1-3 sections, an arrow tip at the base of the mast, a 5/8" antenna thread at the top of the mast, and three chains under tension that connect the upper part of the mast to anchor points in the ground. The arrow tip is inserted directly into a benchmark's central point and the mast is secured and leveled by adjusting the tension of the chains.

Three mast heights are possible depending on the number of mast segments installed during setup: 0.6574 m, 1.1574 m or 1.6574 m. For the vast majority of surveys, two segments are used and 1.1574 m is referred to as the mast's "standard" height. The mast is leveled in the same way a rotating optics tribrach is leveled, the only difference being that turnbuckles on the chains are adjusted instead of knobs on the tribrach. The Tech2K has been used successfully in a variety of climates and environments, from the tropics to Antarctica. The most recent version of the mast has a metallic green finish and incorporates features and specifications based on nearly ten years of field deployments.



Ste VELA in the Soloman Islands.



Tech 2000 kit.

Pros

- Fixed antenna height
- More stable and robust than a tripod/tribrach

- Very compact and lightweight
- Consistent setup - the mast is always centered as it is in physical contact with the benchmark
- Level assembly features four bubbles for redundancy to ensure more accurate leveling
- Typically less than half the cost of a traditional tribrach

Cons

- Anchor points for mast stabilization can be troublesome to install
- Requires hammer drill for installation
- Many parts

Design and Construction

- Tech 2000 setup instructions (.pdf)
- Tech 2000 mast drawing (.pdf)
- Geodetic GPS Antenna Mast (Tech 2000 prototype) mast drawing (.gif)

Approximate Cost

$700 for 1m mast

$1,150 for 2m mast

Materials (Mast Kit)

- 3 mast segments
- level assembly
- antenna shaft
- collet
- chain coupling ring

- 3 chains
- 9 open chain links
- 3 closed chain links
- arrow tip
- anchor hardware (lag bolts, eye bolts, stakes or threaded rod--for monument installation/adaptation only)

Tools (for Monument Installation/Adaptation Only)

- adjustable wrench
- hammer drill
- sledge hammer (if using eye bolts or stakes for anchor points in loose substrate)

Mount Commonly Used

The ability to level the antenna and align it to north is included in the design of the Tech 2000 mast.

Purchasing Information

Contact Eddie Wheeler <wheelertec2000@gmail.com>, phone: +1(512)869-2450 for purchasing, parts and repairs.

Send questions or comments about this page to Support (support@unavco.org).

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