

# GPS ANTENNA KIT COMPONENTS FOR GPS-REFERENCED TCA SERIES TIMING APPLIANCES

## Comprehensive GPS Antenna Components and Installation Services for Juniper GPS-Referenced TCA Series

### Challenge

The TCA8000, TCA8500, and TCA6500 timing appliances require a comprehensive and complete GPS antenna kit solution to meet performance and deployment requirements.

### Solution

By providing a comprehensive and complete GPS antenna solution specifically designed and engineered for the TCA8000, TCA8500, and TCA6500 products, NetAccurate ensures that the correct components are always available for a successful implementation.

### Benefits

- Pre-engineered and specified components are ready for installation, eliminating any deficiencies in design and sourcing.
- Comprehensive solution enables ordering and installation efficiency.
- Predefined approach allows for consistent best practices and lowers overall costs.

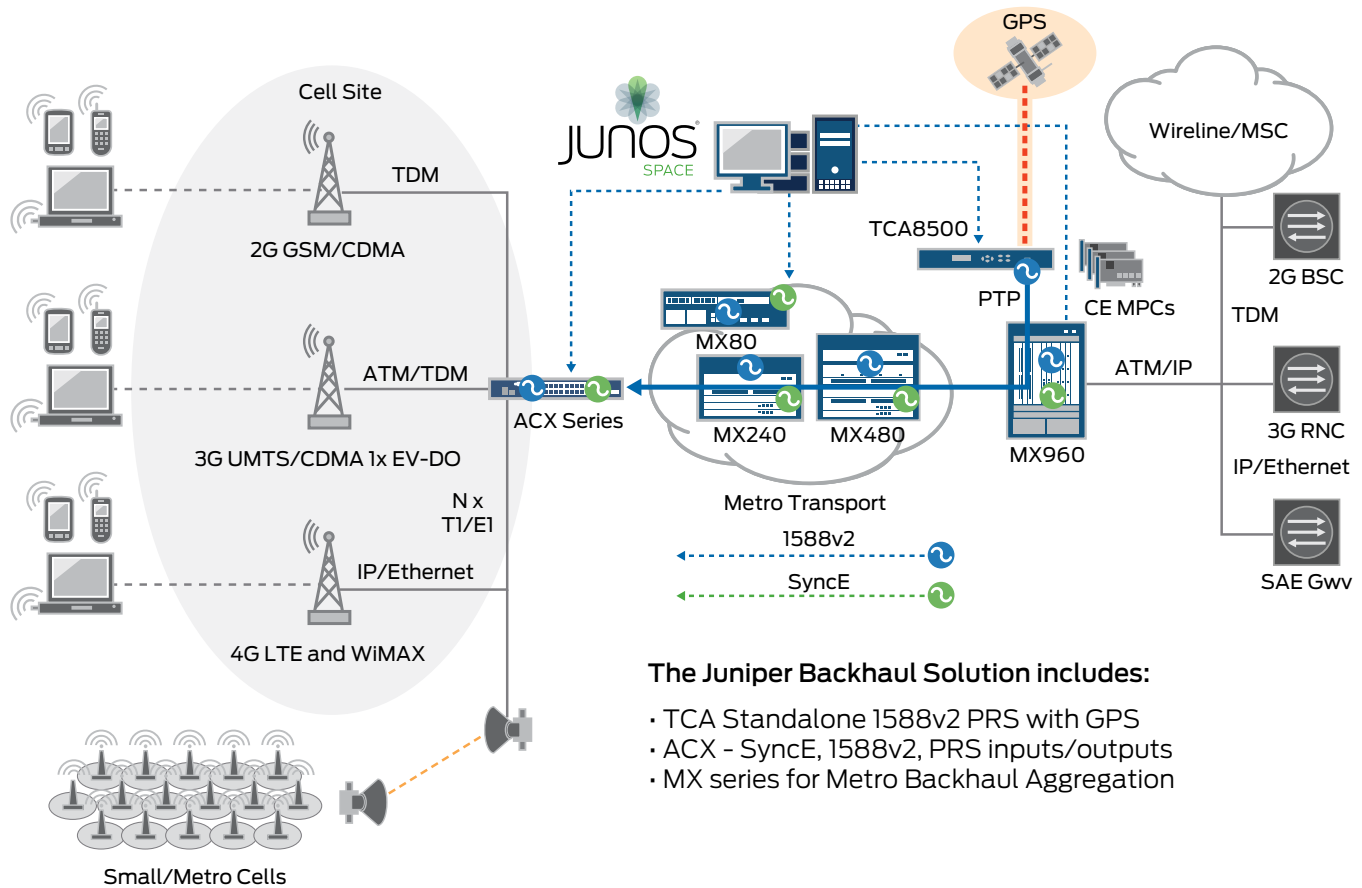
Juniper Networks® TCA Series Timing Appliances, the TCA8000 Timing Server and TCA8500 Timing Server, are both GPS and building-integrated timing supply (BITS) referenced systems. They provide IEEE1588-2008 sync over packet Precision Time Protocol (PTP) and traditional time-division multiplexing (TDM) outputs for fixed and mobile networks. The design and implementation of these master reference systems require the use of extremely accurate and stable reference inputs, primarily the use of GPS, to provide the frequency and phase accuracy required by these networks. Because of the reliance on GPS for accuracy and stability, it is critical that components and kits be engineered and available at the time of ordering, as these TCA Series systems rely upon this reference. In addition to the TCA8000 and TCA8500 Timing Servers, the Juniper Networks TCA6500 Timing Client with built-in GPS will also rely on the GPS components/kits but at a much lesser interval.

NetAccurate provides industry-leading specific GPS antenna components for implementation and installation in multiple RF spectrum environments, primarily heavily RF congested cellular radio sites that can impact the operations of lower quality, non industry specific components. While there are a number of GPS antenna types on the market today, the NetAccurate GPS antenna and antenna kit components have been specifically tested and referenced to alleviate impacts caused by harsh RF and environmental conditions. NetAccurate's antenna components have been deployed in many straightforward and diverse environments all over the world. By providing a complete solution that covers every aspect of the GPS antenna kit into a single package, NetAccurate ensures cost-effective ease of ordering and installation for customers, integrators, and professional service entities alike.

### The Challenge

While the TCA Series Timing Appliances are a standalone timing solution, a GPS antenna system is required. And, while the GPS antenna system providing reference to the TCA Series is quite straightforward in operation, the design, engineering, and installation efforts need to be highly precise. The ability to provide a comprehensively engineered and contained kit helps to ensure on-schedule delivery and error-free implementation.

## The Juniper Networks NetAccurate GPS Antenna Solution for TCA8000, TCA8500, and TCA6500 Timing Appliances



### The Juniper Backhaul Solution includes:

- TCA Standalone 1588v2 PRS with GPS
- ACX - SyncE, 1588v2, PRS inputs/outputs
- MX series for Metro Backhaul Aggregation

Figure 1. Juniper Networks-NetAccurate joint solution

NetAccurate's solution provides a comprehensive GPS antenna kit that enables the TCA Series to use a primary reference source to ensure precise timing delivery for Juniper's mobile backhaul solution. Providing a complete and comprehensive GPS antenna enables the customer to focus on other aspects of the network implementation and alleviates any bottlenecks in the timing solution deployment.

### Features and Benefits

**One-stop shopping**—TCA Series service providers do not need to spend the time and effort required to purchase and coordinate the delivery of all of the different parts from different vendors and then package them into kits for delivery to their worldwide integration teams. NetAccurate engineers and delivers the exact kit necessary to install the GPS timing reference for any type of environment, anywhere in the world.

**Plug-and-play installation**—NetAccurate takes the guesswork out of the GPS timing reference installation by providing the complete GPS antenna kit. This is accomplished by providing all of the required parts for several different environments (rooftop, tower, or wall) as well as spares for any inevitable failure events.

**Value**—By providing a complete and comprehensive GPS timing reference antenna installation kit, NetAccurate reduces the overall cost to Juniper and to the service provider/integrator by reducing

the time and effort to engineer, source, hire, and train personnel to procure, package, and deliver these kits to various end customers around the world.

### Solution Components

The NetAccurate GPS timing reference installation kit contents include:

- GPS antenna (GPS L1 frequency band, 50 db gain, 5 V input)
- GPS antenna mounts (Wall, Tower and Pole)
- Lightning surge suppressor
- GPS antenna signal splitter—active or passive (if needed)
- GPS-specific coaxial cable—LMR-240 or LMR-400 (with ties)
- Grounding hardware (for LMR 400 cable)
- Weatherproofing kit
- Cable connectors (with spares)

Juniper Networks solution components include:

- TCA8000 Timing Server
- TCA8500 Timing Server
- TCA6500 Timing Client

## Summary—Comprehensive Install Solution for TCA Series with NetAccurate GPS Kit

With deep-rooted experience in IP technologies, Juniper Networks TCA Series Timing Appliances have been specifically designed to address the complex timing and synchronization requirements of today's fast-paced networking environments. NetAccurate complements the installation and operation of the TCA Series with a comprehensive, pre-engineered, GPS timing reference installation kit. This joint solution enables ordering and installation efficiency, allows for consistent best practices and ease of training, and lowers overall costs.

### Next Steps

For more information about NetAccurate, please visit our website at [www.netaccurate.com](http://www.netaccurate.com) or call 512-917-4923 to speak to a representative.

For more information about TCA Series Timing Appliances, please visit [www.juniper.net/us/en/products-services/time-synchronization/](http://www.juniper.net/us/en/products-services/time-synchronization/) or contact your authorized Juniper Networks representative.

## About NetAccurate

NetAccurate provides standard and custom GPS antenna installation kits for any synchronization appliances. This includes complete installation kits for Juniper Networks TCA Series Timing Appliances that require GPS timing reference sources. NetAccurate is located in Austin, Texas, and ships GPS installation kits everywhere in the world.

## About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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