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EKOSync 1588 Series
GNSS Antenna Setup Guide

Introduction

Welcome to the Antenna Installation Guide for the Ekosync 1588 Series PTP Time Server. This guide is designed to help you install your antenna quickly and correctly, ensuring that your Ekosync 1588 Series works at its best.

We created this guide to make sure that you can set up your time server with ease and confidence. It's important for making sure your timekeeping is accurate and reliable, which is essential for many businesses and technical operations.

This guide is for everyone who needs to set up an Ekosync 1588 Series antenna - whether you're an IT professional, a network administrator, or someone setting it up for the first time. We've made the instructions clear and easy to follow, so you'll have everything you need to get started.
Let's get your Ekosync 1588 Series PTP Time Server up and running, so you can enjoy precise and dependable time synchronization in your work.

The connected EKOSync 1588 receiver processes the data received to enable the position of the antenna to be determined (requiring at least four satellites to be found) and the exact time to be determined, which in turn allows your clock to be synchronized.

Unpack the GNSS antenna and all accessories carefully and check the contents of the delivery against the enclosed packing list to ensure that no parts are missing. If any of the listed items are missing, please contact us at info@arftechnologies.com.

Check that the product has not been damaged in transit. If the product is damaged or fails to operate upon installation, please contact ARF Technologies ™ immediately. Only the recipient (the person or company receiving the system) may file claims or complaints against the forwarder for damage caused in transit.

Configuration

Note that the delivered products may vary depending on your order.

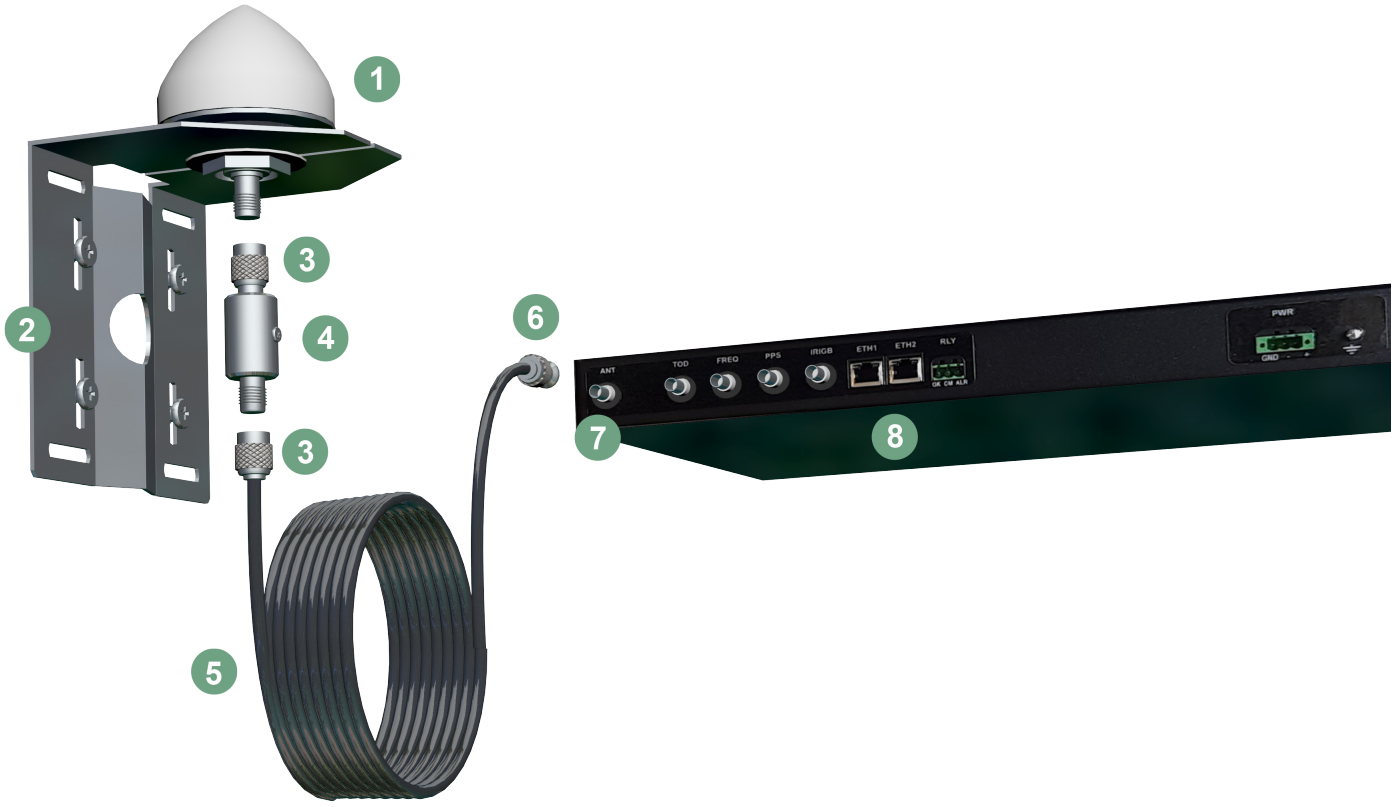


Figure 1: Indicative visual for antenna setup configuration

EKOSync 1588 Series PTP/NTP Time Server product is deal with following antenna accessories:

1- GPS/GLONASS Conical radome timing GNSS Antenna (Figure 1, No:1) :
Note: Must be fitted in open sky view area in vertical position!

2- 3 kV insulated, stainless steel Antenna mounting apparatus (Figure 1, No:2).

3- 30m RWC200PE 50 Ω coaxial cable (Figure 1, No: 5) with BNC (Server Side: Figure 1, No: 6) and TNC (antenna side) connectors (Figure 1, No: 3).
Note: Other antenna and cable options may be available depending on the desired configuration.

4- GT-TFF-AL Surge Protector Gas Discharge Tube (Optional, Figure 1, No: 4).
Note: Surge protection and lightning protection systems should only be installed by persons with suitable electrical installation expertise.

No	Parts (Figure 1)
1	GPS/GLONASS Conical radome timing GNSS Antenna
2	3 kV insulated, stainless steel antenna mounting apparatus
3	TNC Connectors
4	GT-TFF-AL Surge Protector with connection cable (optional)
5	30m RWC200PE 50 Ω coaxial cable
6	BNC Connector
7	Device' BNC Antenna port
8	EKOSync 1588 Series Device

Points to Consider

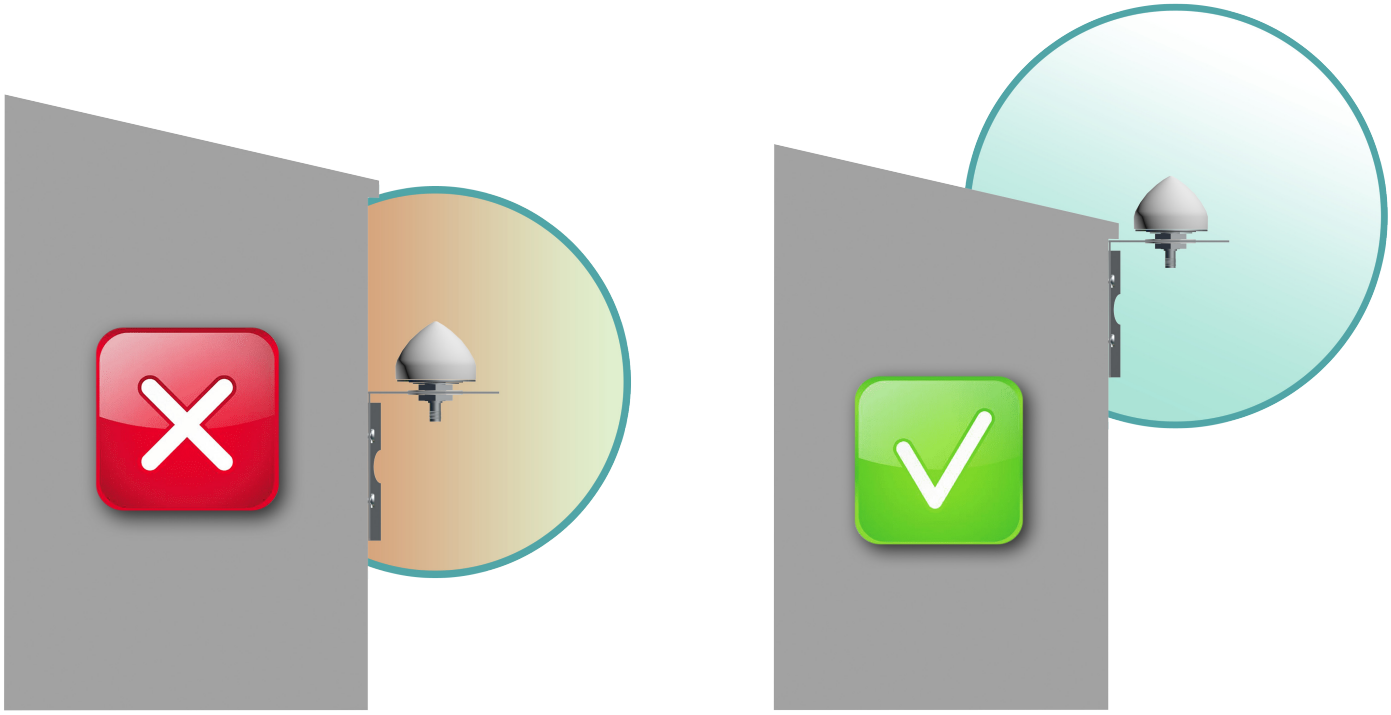
GNSS satellites are located about 19,312 kilometers away in space. Therefore, it's important to mount GNSS antennas in a place where they have a clear view of the sky in all directions (360°) and are spaced well apart from each other. This simple rule is often overlooked, which can lead to poor performance.

GA clear 360° view is crucial. Additionally, it's important not to install antennas too close to each other. Since these antennas are outside, they face various harsh weather conditions, from extreme heat to heavy rain and snow. Proper placement is key for their effective operation and durability.

Busy Roof Space: Roof spaces that are already crowded can cause issues. This includes interference from systems like line-of-sight radio links and electrical setups, such as air conditioning units that emit strong or broadband interference. Shown at the below Figure 2.

Figure 2: Busy Roof Space

Pole Sharing: It's important to regularly monitor antenna installations for unauthorized additions. Even if you've installed your antenna with a clear 360° view on a new pole, someone might add their radio equipment later. For instance, a 2.4GHz point-to-point link without lightning protection could be a concern.



Incorrect Asembly

Correct Asembly

Figure 3 : Correct and Incorrect Asembly apllications.

Antenna Cable Runs: The antenna usually transmits at GPS L1 frequency (1.575GHz). Therefore, use suitable low-loss cables like LMR400, avoiding tight bends or crushing the cable. Keep these cables away from high voltage or 3-phase cables.

Lightning Protection: Lightning protection is crucial for safety and to reduce equipment damage. Antennas should be mounted below the building's lightning conductor and connected to an approved ground. Install lightning arrestors at points where cables enter or exit the building. Use external boxes and enclosures rated at least IP66.

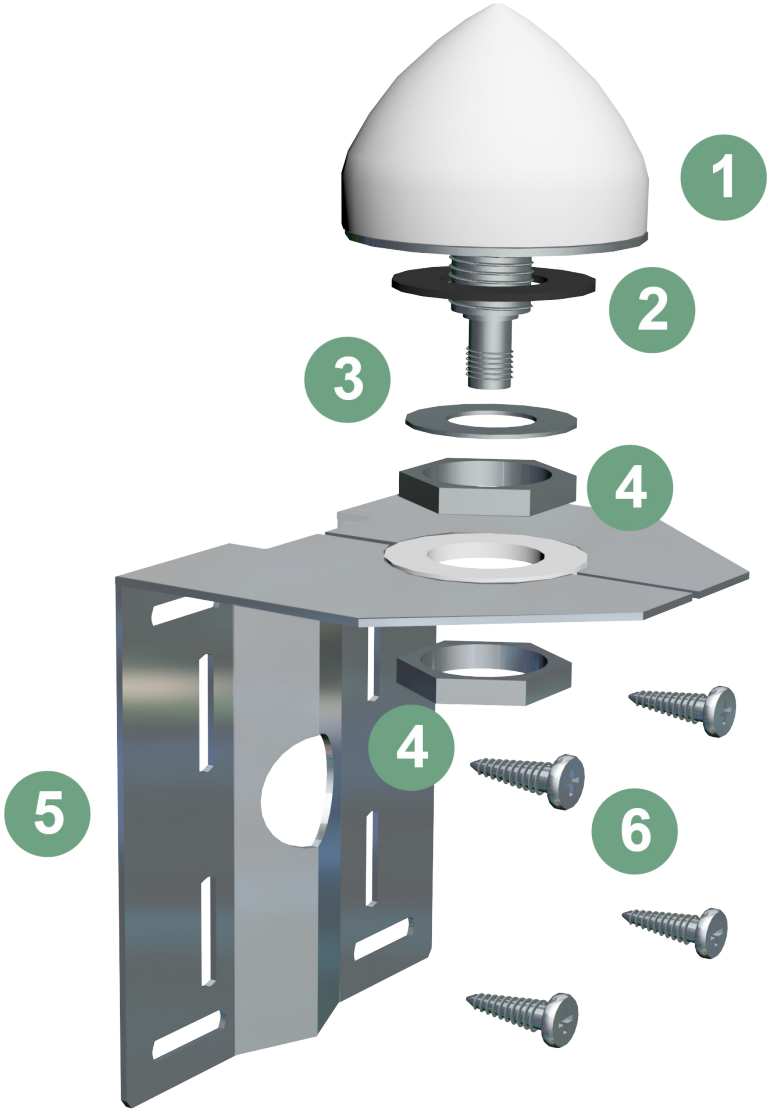


Figure 4: Antenna Parts & Asembly

No	Parts (Figure 4)
1	GPS/GLONASS Conical radome timing GNSS Antenna with TNC Male Connector
2	Black rubber seal
3	Steel Washer
4	Antenna mounting nuts
5	3 kV insulated, stainless steel antenna mounting apparatus
6	4x10 mm wall mounting screws

Figure 5: GPS/GLONAS Conical radome timing GNSS Antenna Dimensions

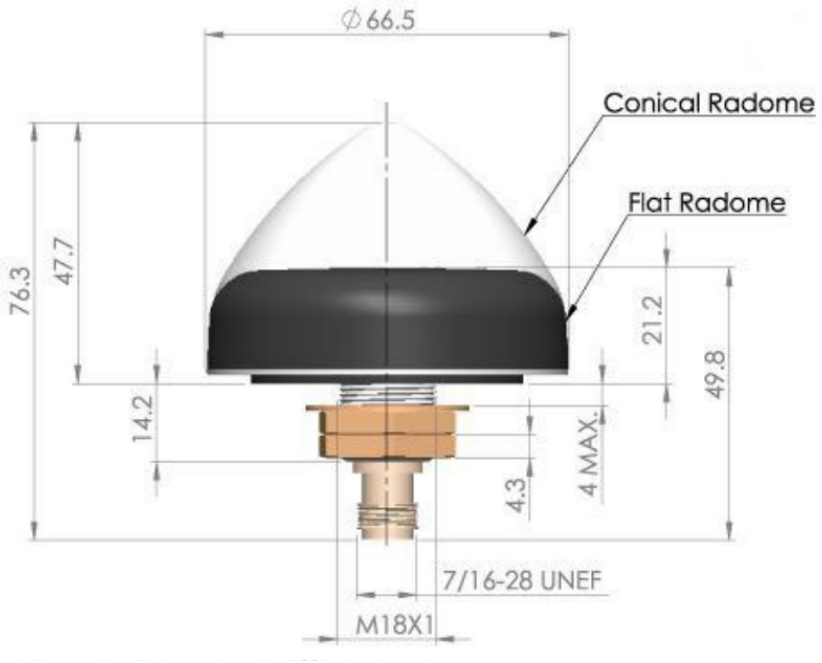


Figure 6: Stainless steel Antenna mounting apparatus dimensions

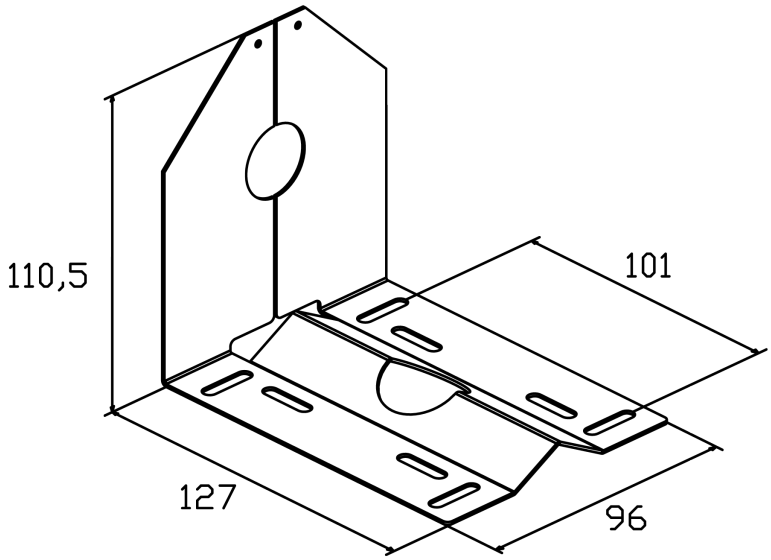
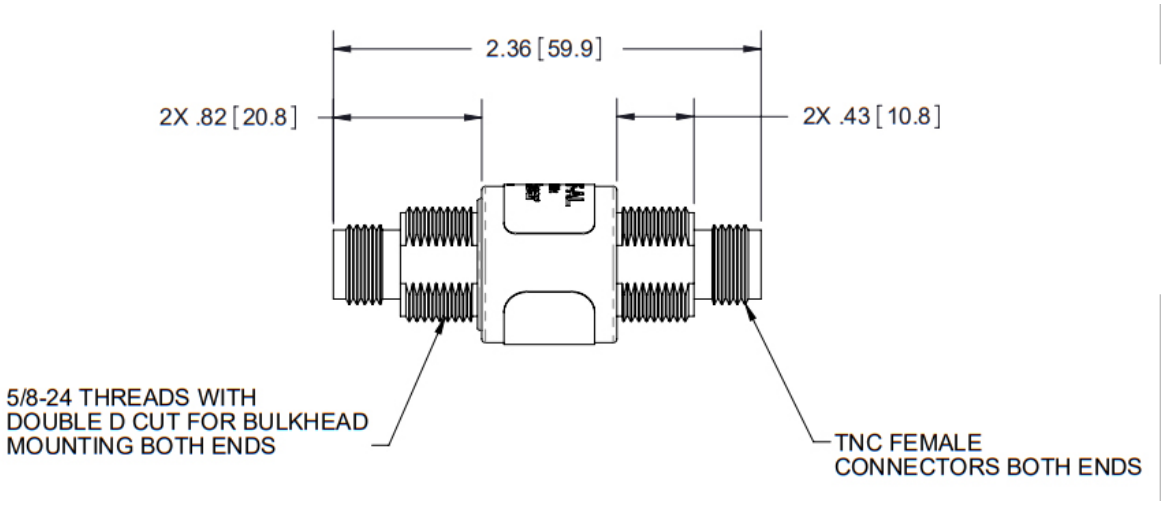


Figure 7: GT-TFF-AL Surge Protector dimensions



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