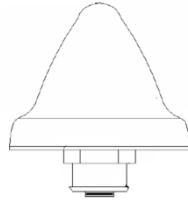


Safe GPS Rooftop and Patch Antenna Installation Guidelines & Specifications

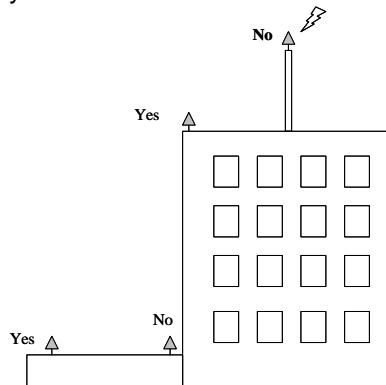
Introduction

This application note describes where and how to safely install a GPS Rooftop Antenna, the RA option of our related Spectratime products, and provides the specifications and supplier information of the RA and PA (Patch Antenna) options.



Recommended GPS rooftop antenna location & installation (RA option)

The antenna must be located on a place with a direct, constant and line-of-sight view of the satellites. Usually the best place is on the roof with no critical obstructions, such as other buildings surrounding the antenna location. However, to avoid lightning, it is critical that the antenna is not located at the highest point of its surrounding. See some recommended "yes-and-no" antenna location scenarios below.



RA Options Material list

RA Option includes :

Qty	Designation	Supplier	Model
1	Antenna	Tallysmann	TW3012
1	Lightning arrestor	Huber&Suhner	3406.19.0003 (page 56)

CA option includes :

Qty	Designation	Supplier
1	15m cable N-SMA	Huber&Suhner
1	5m cable SMA-SMA	Huber&Suhner

See cable specifications :

<http://literature.hubersuhner.com/Technologies/Radiofrequency/RFCablesEN/?page=8>

Rooftop GPS antenna mounting bracket (BRA option)

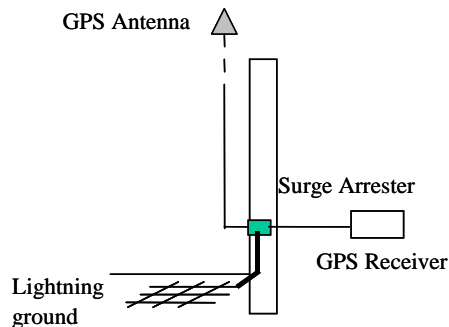
If the antenna mounting bracket (or the BRA option of our related products) is ordered, it allows the user to seamlessly mount the GPS antenna to the fix structure of the recommended location.

<http://www.tallysman.com/wp-content/uploads/23-0040-0-L-Bracket.pdf>



Lightning protection installation

A lightning surge arrester must be installed at the entrance of the building. It must be grounded to a lightning ground that is separated to the instrument ground. Please consult with your local regulation about this question. The surge arrester will not protect the GPS receiver against high voltage destruction from lightning, thus precautionary handling is strictly required for human safety during lightning conditions.



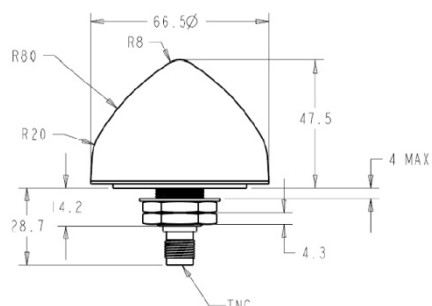
Patch antenna spec (PA option)

The spec of the standard Patch Antenna (PA option), type DLGPS-E2 from Dolin Electronics, delivered with the related Spectratime products is available at <http://www.dolinele.com/DetailP.aspx?id=257>



Rooftop antenna spec (RA1, RA2 option)

The spec of the optional Rooftop Antenna (RA option), type TW3012 from Tallysmann # 33-3012-14-01, delivered with the related Spectratime products is available at http://www.tallysman.com/wp-content/uploads/TW3010_TW3012_Datasheet_Rev6_3.pdf.



Fast Q&A support

For any Q&A support, please feel free to contact us at fastsupport@spectratime.com.