

## Lightning Protection Information

### Integra Series Radios with Rooftop Mounts

V1.1

#### Introduction

At this time of year, we often see a spike in lightning events.

Incorrect lightning protection for radios significantly increases the likelihood of lightning damage to radios and downstream equipment, such as routers or switches. This article identifies best practice for lightning protection for the installation of Integra radios on roof-top mounts which are typically 2-3 metres in height. For simplicity it is assumed the radios are powered using a single Cat6 cable.

Please note - the degree of protection should be customised to reflect the lightning frequency in the area and the consequences of damage.



#### Mast

The mast supporting the radio should be earthed to a separate lightning earth. The earth cable should be 10 square mm or above and run as directly as possible to the earth. Typically, the lightning earth will be a 1.4metre copper-coated steel rod located in an area that is exposed to rain. Maximum resistance to ground should be less than 5 Ohm. In some cases, extra lightning rods, mats etc may be required to achieve this figure.

The radio and antenna should be mounted below the top of the mast so that the mast (rather than the antenna) acts as the lightning rod for strikes.

#### Radio

An earth cable of 6 square mm and above should be connected between the radio's earth bolt and the mast. The cable should be as short as practical – allowing enough movement for antenna alignment.

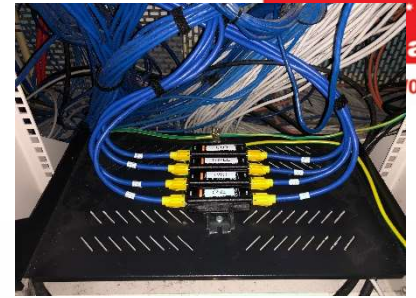


#### PoE Injector

The SAF PoE injector has built-in lightning protection. The lightning protection will only work if the earth screw on the PoE injector is connected to a proper lightning earth. This should be the same earth as the mast. Cable of more than 6 square mm should be used.

### Secondary Lightning Arrestor

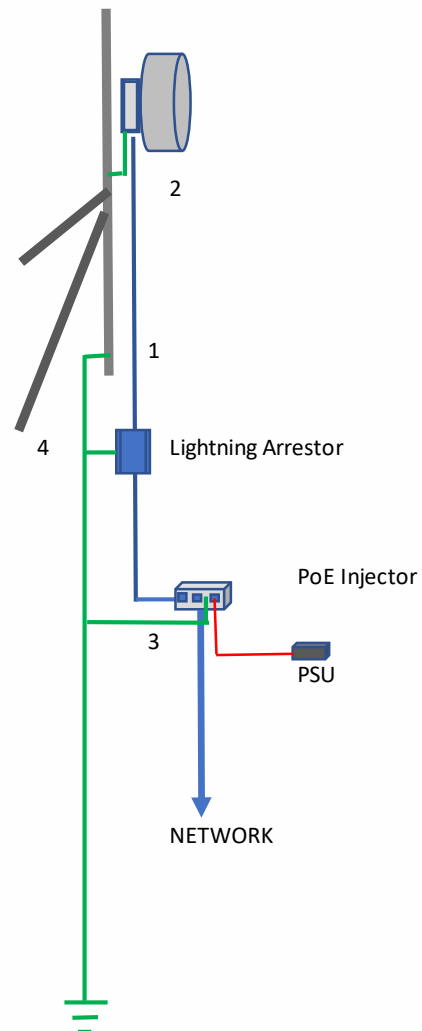
In areas with a moderate or high frequency of lightning strikes, or where the consequences of lightning damages are high, a second in-line lightning arrestor should be used. This is typically installed where the cabling enters the building. This lightning arrestor must also be connected to the lightning earth system. The lightning arrestor must support PoE (up to 55V DC).



All installations carried out by SAF Australia include secondary lightning arresters.

### Checklist

1. Mast earthed (> 10 sq mm cable)
2. Radio earthed to mast (> 6 sq mm cable)
3. PoE Injector earthed (> 6 sq mm cable )
4. Secondary lightning arrestor installed on entry to building (optional) and earthed (> 6 sq mm cable )



### Further Help

Please don't hesitate to talk to us if you need any further information or advice, including advice on scenarios other than rooftop mounts. Please contact us on **02 6040 1617** or [techsupport@safaustalia.com.au](mailto:techsupport@safaustalia.com.au)