



## OVERVIEW

Iridium satphones were originally designed to operate with a passive antenna, either an element attached directly to the handset, or a remote aerial connected with a short length of coaxial cable. Unfortunately, a signal loss of more than 3dB in a remote antenna's connecting cable degrades performance due to attenuation of both the received and transmitted signals. A 3dB loss corresponds to approximately 20m of LMR600 or 6m of LMR240 coaxial cable, lengths that clearly restrict the mounting options for the antenna using standard down-leads.

The AA511 Active Iridium antenna is designed for use with specific lengths of coaxial cable terminated with type 'N' connectors, or a down-lead with an equivalent loss. Designed for harsh environments, the AA511 consists of two RHCP dipole antennae housed within a single 4mm thick GRP radome mounted on a common base. One antenna is for signal transmission and one for reception. A linear power amplifier within the base and connected to the transmitting antenna compensates for signal loss incurred mainly by the connecting cable. Similarly, a low noise amplifier is attached to the receiving antenna, via a low loss ceramic filter, to boost the signal sent to the telephone. The ceramic filter has a bandwidth of 50 MHz centred on the Iridium band to attenuate any out of band interference that may arise.



## AVAILABLE CONFIGURATIONS

ASE AA511	antenna only *
ASE AA511-40	40 meters, RG213
ASE AA511-70	70 meters, LMR400

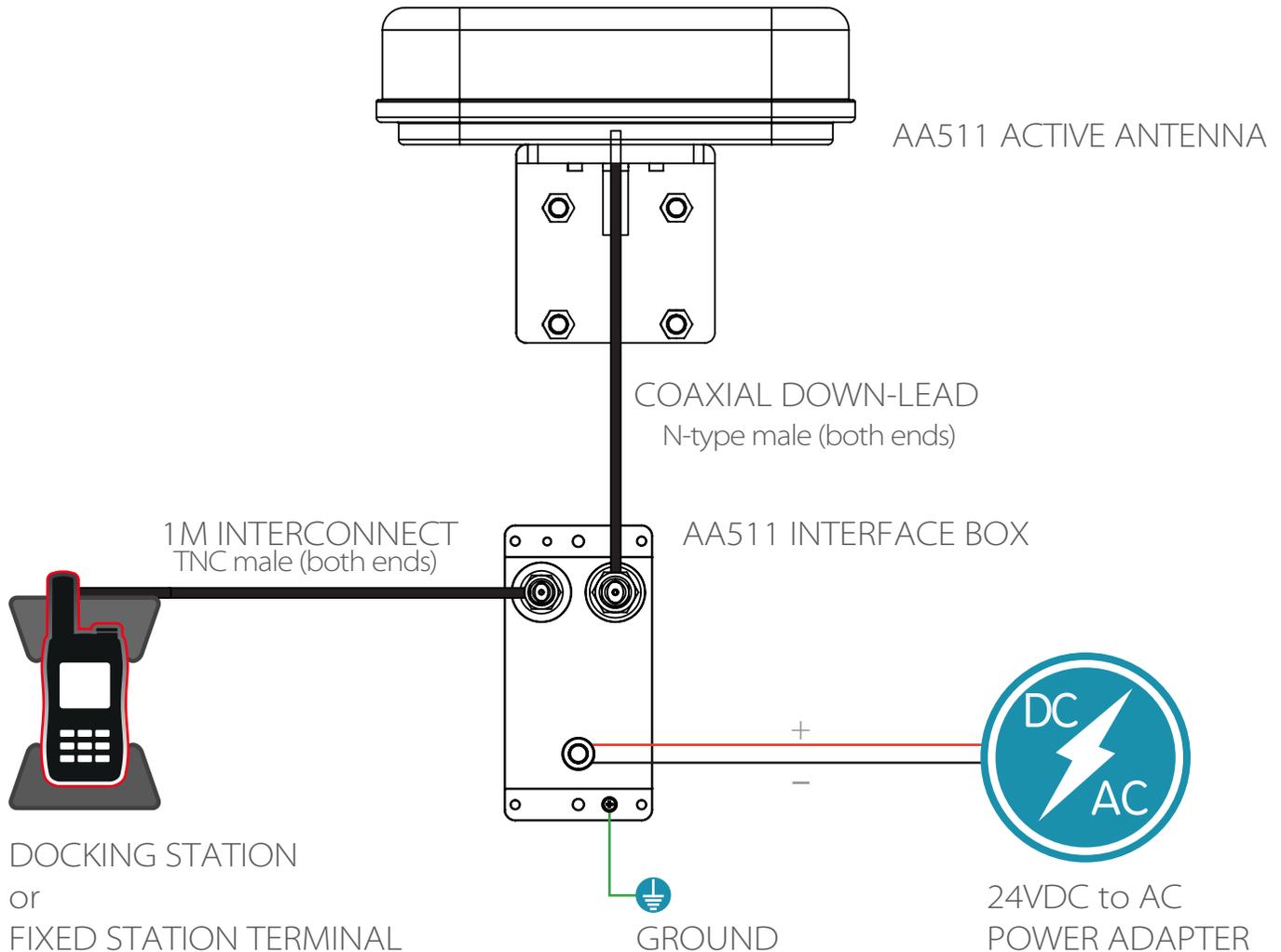
**\* NOTE:** Use of the incorrect cable at the specified length or shortening the supplied cable can damage the antenna and invalidate the warranty.

## SPECIFICATIONS

Dimensions (excl mounting bracket):	9.65x3.36x2.76in 245x85x70mm
Weight(excl mounting bracket):	0.8kg
Operating Temperature:	-40 to +85 degrees C
Antenna Head Connection:	N Type Pigtail to TNC
Frequency:	1610 – 1630Mhz
Polarization:	Right Hand Circular
Antenna Type:	RHCP Dipole
Ceramic Filter Bandwidth:	25Mhz (Rx)
Operating Voltage:	+18 to 36Vdc (nominal 24Vdc)
Current (max):	500mA

Transmit Power (W):	2 Watts
Antenna Gain (dBi):	8dBi
3dB Beamwidth (deg):	To be advised
EIRP(dBW):	41dBm
G/T (dB/K):	-20dB/K
rx/tx Frequency (MHz):	1615Mhz to 1630Mhz
Elevation Coverage Required:	5 degree above horizon
Cable Length Restrictions:	Subject to 12db Loss in Cable at 1650 Mhz
Roaming Capabilites:	NONE
Country of Origin:	United Kingdom

## SYSTEM CONNECTIONS

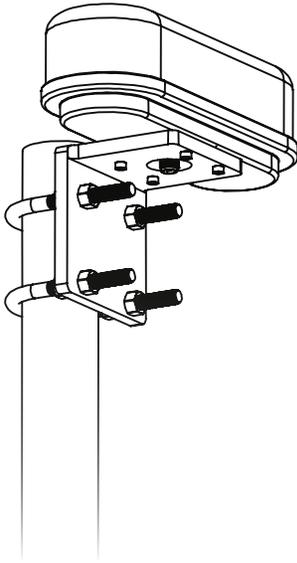


- (1) Mount AA511 active antenna with clear view of sky using bracket supplied.
- (2) Attach top end of the coaxial down-lead to N type connector on underside of antenna.
- (3) Attach bottom end of down-lead to N type connector on the AD511 Interface Box.

### THE DOWN LEAD MUST NOT BE SHORTENED BY THE USER

- (4) Attach interconnect between TNC on AA511 Interface Box and satphone (or base station) using the 1m coaxial cable provided.
- (5) Attach the 24VDC Power Adapter provided.
- (6) Turn on Iridium satphone and log-in.

## MOUNTING GUIDE



The AA511 should be mounted with an unobstructed view of the sky.

An aluminium bracket with V-bolts is provided to attach the antenna to vertical spars up to 60mm in diameter. The bracket is shipped inverted on the AA511 antenna. The bracket must be detached, turned over and repositioned to either the center or end of the antenna case as required using the mounting holes in the base of the antenna.

The coaxial down-lead is attached to the N-type connector on the underside of the antenna. Wrapping the connectors with self-amalgamating tape is recommended for permanent installation. The cable should be taped or strapped to the spar as appropriate.

### **THE DOWN LEAD MUST NOT BE SHORTENED BY THE USER**

The AA511 Interface Box should be positioned close to the satphone base-station or handset. The coaxial down-lead is then attached to the N-type connector on the AA511.

Connection between the satphone and the AA511 is made with a coaxial cable terminated with TNCs. The AA511 Interface Box has heavy duty, pre-drilled flanges to allow for permanent mounting.

A universal AC/DC power adapter is provided to power the AA511. This connection is made via the AA511 Interface Box.

Connect the green ground wire to an appropriate earth ground or system ground connection.

With all connections made, the satphone can be turned on and used as normal as it is transmitting into a load impedance equivalent to a matched passive antenna. The gains of the antenna transmitter and receiver are factory set to compensate for the total attenuation between the satphone and the antenna, determined by the coaxial down-lead.

The signal output level and frequency from the antenna is equivalent to that radiating from a passive antenna mounted directly on the handset, subject to the antenna transmitter being a linear device.

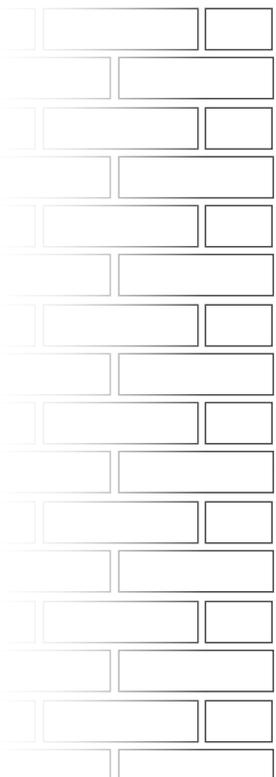
Transmitter linearity is verified using test protocols with a HP 8591 EMC analyser. This analyser can also ensure there are no spurious out of band emissions.

# MOUNTING GUIDE

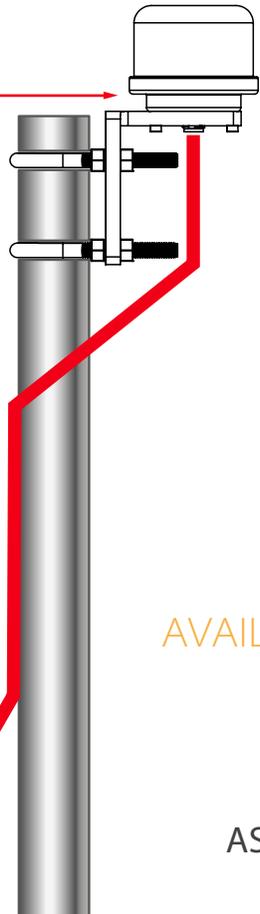


The bottom of the antenna must be at least 0.15m (.5ft) above building

8° clearance angle



Mounting distance must be at least 1m (3.2ft) surrounding structure

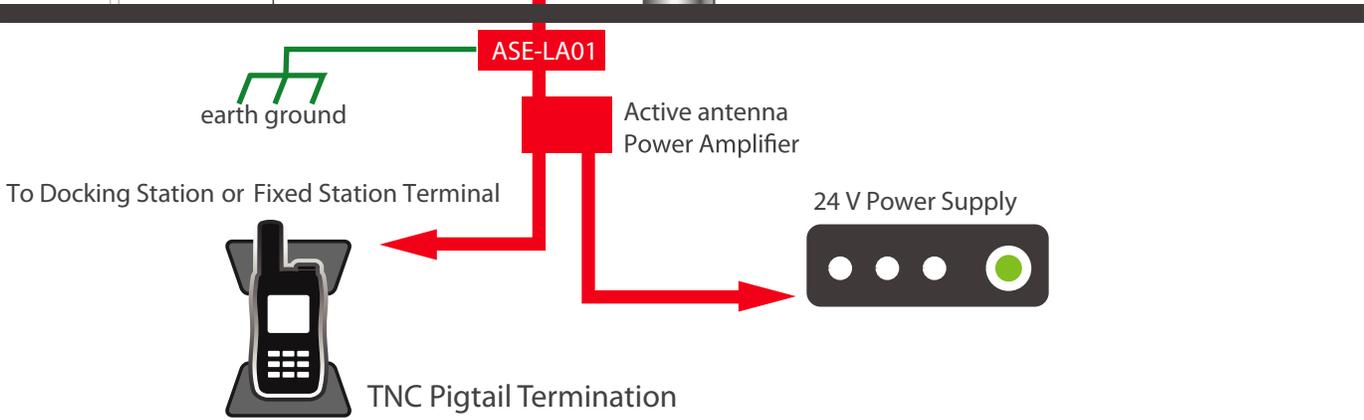


## AVAILABLE ACTIVE ANTENNAS

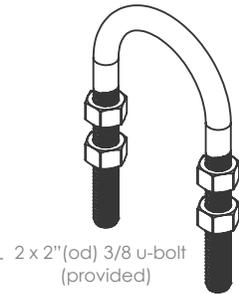
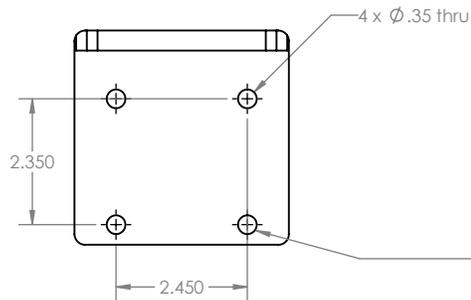
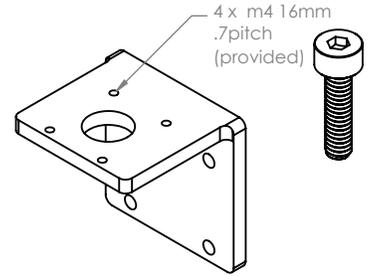
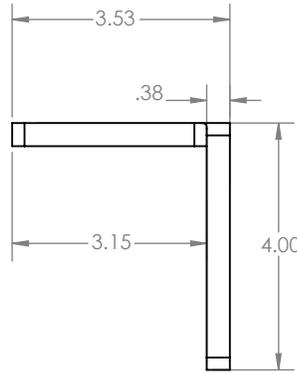
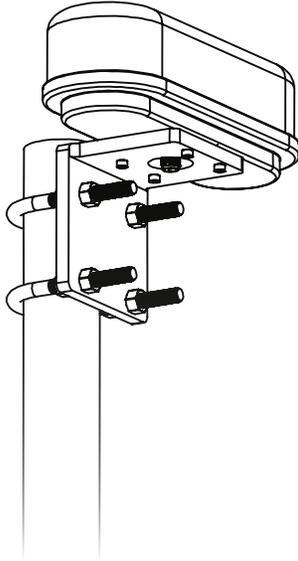
- ASE-AA511 40m (131 ft)
- ASE-AA511 70m (229 ft)

## AVAILABLE OPTIONS

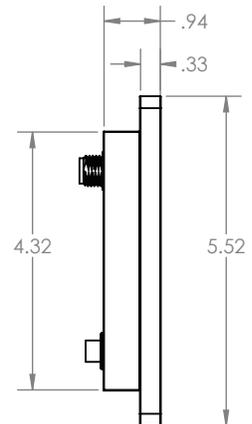
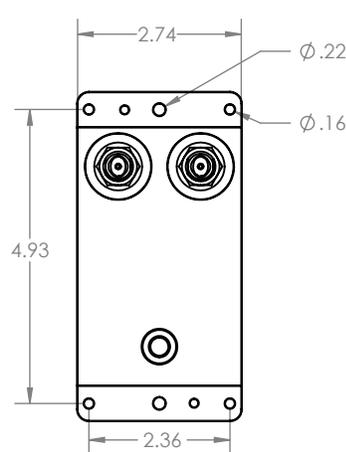
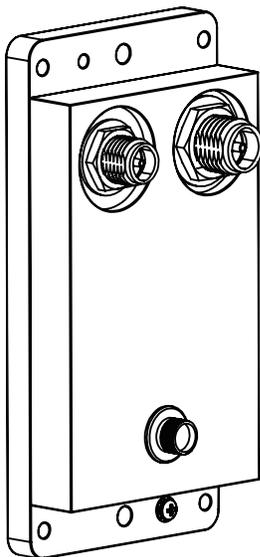
- ASE-LA01 LIGHTNING ARRESTER



# MOUNTING FOOTPRINT



## AA511 ANTENNA



## AA511 POWER AMPLIFIER