

Quad Antenna



User Guide

Document Version: v5.0

HAIVISION

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Copyright and Trademarks

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Compliance

Before using the unit, please inform yourself about laws and regulations in force in the country in which you use it.

Please refer to the sticker pasted on the unit to know its version.

The declaration of conformity is available upon request. Should you need it, please contact Haivision.

The Quad Antenna Array complies with **XP ISO/PAS 11154 (2007)**: "Road vehicles - Roof load carriers".

It is classified as a type D roof load carrier, which is the same type as taxi and advertising magnetic signs.

Safety and Health Precautions

Handling the Unit

- To avoid any injury during the installation, observe local health and safety requirements and guidelines for manual material handling.
- The unit must be handled carefully and thoughtfully to prevent safety hazards and damage.
- Due to the presence of strong magnets:
 - be careful of pinch hazards due to the attractive force of the magnets to any object containing iron
 - keep the device as far as possible from any object containing iron during transport
 - do not face magnets together for storage of multiple devices

Electronic and Radio Interference

- To avoid interferences with electronic devices contained in vehicles, keep the unit away from the vehicle's dashboard.
- When connected to wireless networks (3G/4G), the unit emits microwaves that can interfere with other electronic devices.
- The operation of this equipment in a residential environment could cause radio interference.

Safety Precautions

- Do not use the unit in any place where the use of mobile phones is usually banned: airplanes, hospitals, and areas with potentially explosive atmosphere (e.g. gas stations, repair shops, fuel or chemical storage areas).
- Before use, check that the device is properly mounted in accordance with the mounting instructions in Mounting Instructions.
- Regularly inspect the magnetic pads for damage. If one of the pads is damaged, replace it prior to driving.
- Be aware of the total height of your vehicle since low clearance branches, bridges and parking garages can collide with the antenna.
- The handling characteristics of light vehicles (in particular crosswind sensitivity, handling on bends and braking) may change when the device is fitted.
- Modify your driving habits when the device is fastened to the vehicle: reduce your speed, especially on bends, and consider longer braking distances.
- Remove the device from the vehicle when it is not used anymore in order to reduce fuel consumption.
- Remove the device before entering automatic car washes.
- Do not use the device for any other purpose than those for which it is designed.
- Do not use the device to fasten load on the vehicle roof.

Health Precautions

Operating the unit is not recommended for:

- People with electronic implants (e.g. pacemakers, insulin pumps, implanted pulse generators, hearing aids).
- Pregnant women, old people, children, teenagers and people suffering from epilepsy.

- If you use a medical device, please contact your physician and the device manufacturer to determine a safe distance from the magnet.
- When using the Quad Antenna with a Pro340 or Pro380, please keep a 20cm-distance (8") between the radome and human beings.

Servicing the Unit

- Only trained and approved service engineers are permitted to service this unit.
- Unauthorized maintenance or the use of non-approved replacements may affect the unit specifications and invalidate any warranties.

Presence of Strong Magnets

Due to the presence of strong magnets on the bottom of the device, follow the below guidelines:

- Check that the material of the mounting surface (like the car roof top) has magnetic properties.
- Only place the magnetic pads of the antenna on a magnetic surface.
- Do not interpose any object of any type between the magnetic pads and the roof of the car.
- When the device is placed on a steel sunroof, keep the sunroof in the closed position and do not operate it.
- Do not use the device on vehicles whose roofs have been repaired by means of tin, plaster layers or through varnishing of same.
- Be aware that following accidental damage (e.g. fall down of the device), the magnetic properties of the device could be affected.

Product Presentation

Overview

The Quad Antenna Array combines four wideband antennas. Each antenna operates from 650MHz to 3GHz, which makes it ideal for transmission over cellular networks.

The Quad Antenna Array's rugged and anti-UV design makes it suitable for outdoor or indoor applications. Its four internal antennas have semi omnidirectional radiation patterns and high gain across all bands for constant uplink and downlink communications.

The ground plane is located inside the plastic body so the array does not require any external conductive surface. By means of its permanent magnetic pads and silentbloks, the Quad Antenna Array can be easily mounted on vehicles (cars, trucks or motorbikes).

Mounting Instructions

For proper operation, make sure that the antenna is mounted following one of the methods mentioned below.



Caution:

Never use straps to secure the unit.

Place the unit as far as possible from metallic objects that could block radio waves.

Using the Magnetic Pads

To mount the unit on a rooftop using its magnetic pads, follow the steps below:

1. Thoroughly clean and dry the mounting surface to remove dust, water, condensation or viscous liquid such as oil.
2. Make sure that the magnetic pads are clean, dry and undamaged.
3. Place the antenna horizontally on the dry and clean surface.



Caution:

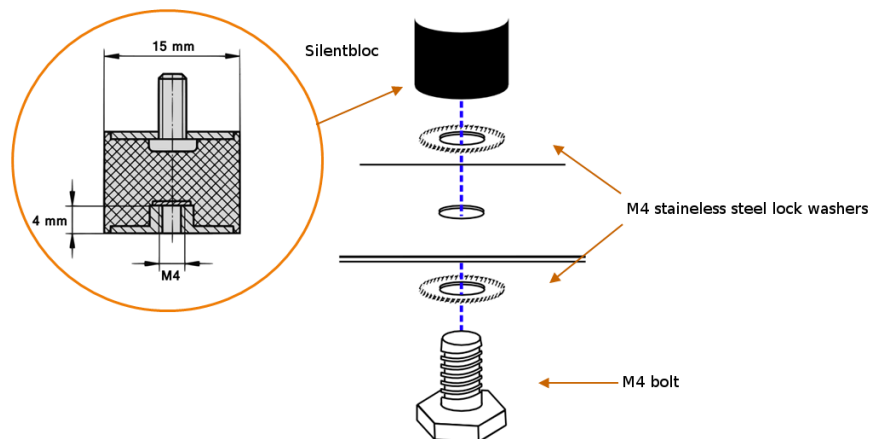
If one of the pads is damaged, you must replace it prior to driving so that the antenna can be properly secured to the roof.

Using the 1/4-20 Threaded Mount

In order to mount the Quad Antenna on a standard tripod, a mast or a magic arm, screw a 1/4-20 threaded post into the anti-rotation 1/4-20 threaded mount.

Using the four M4-threaded Silentblocs

To mount the Quad Antenna on a plate or chassis, you need eight M4 stainless steel lock washers and four M4 threaded bolts.



**Important:**

Do not use flat washers.







Multiple Quad Antenna

You can place several Quad Antennas on a vehicle roof. To avoid coupling, place each Quad Antenna at least 20 cm (8") away from the other antenna.

Mounting Locations

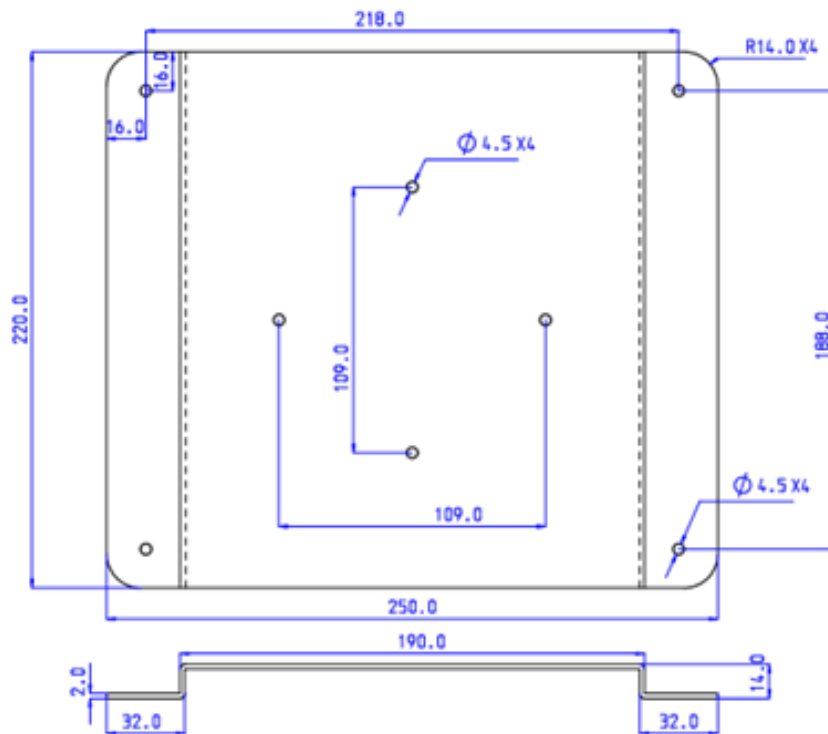
**Important:**

Whatever the mounting location, you must place the Quad Antenna horizontally.

Vehicle	Mounting Location	Magnets	M4-threaded silentblocs with plate	1/4-20-threaded mount
Motorbike 	Top case		X	
	Mast		X	
Car 	Horizontal flat roof top	X	X	
	Horizontal flat roof top	X	X	
Van 	Horizontal flat roof top	X	X	
Truck / lorry 	Horizontal flat roof top	X	X	
Boat 	Conductive flat desk	X	X	
	mast		X	
Tripod 	Mounting head or magic arm		X	X

Adaptation Plate

This plate is required to mount the Quad Antenna on a mechanical assembly or a roof top permanently and without the magnetic pads. The following plan can be used as a reference for a special adaptation.



(values are in mm)

Maintenance

Carefully clean and maintain the Quad Antenna and its cable, especially in winter.

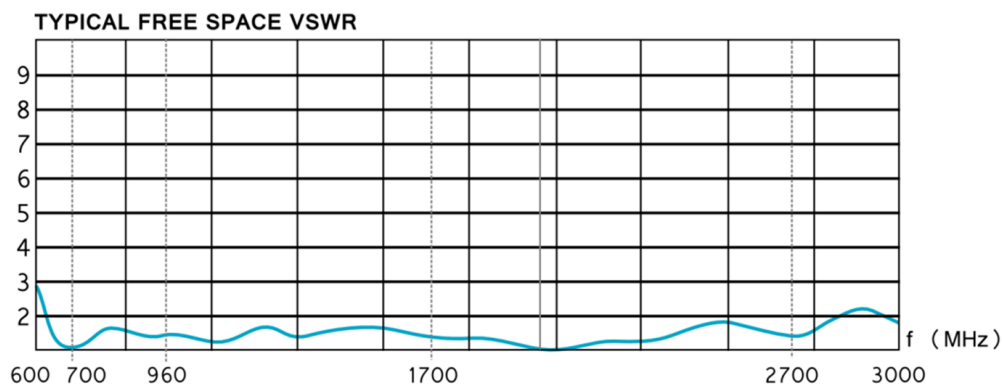
For cleaning, only use water with a mild additive-free car detergent. Cleaning the cabinet with a detergent that contains additives such as alcohol, chlorine or ammonia could damage the surface of the device and pads.

Protect the device from exposure to the elements during prolonged periods of storage.

Specifications

Electrical Specifications

Nominal Impedance	50 ohms
Free Space VSWR	<2:1



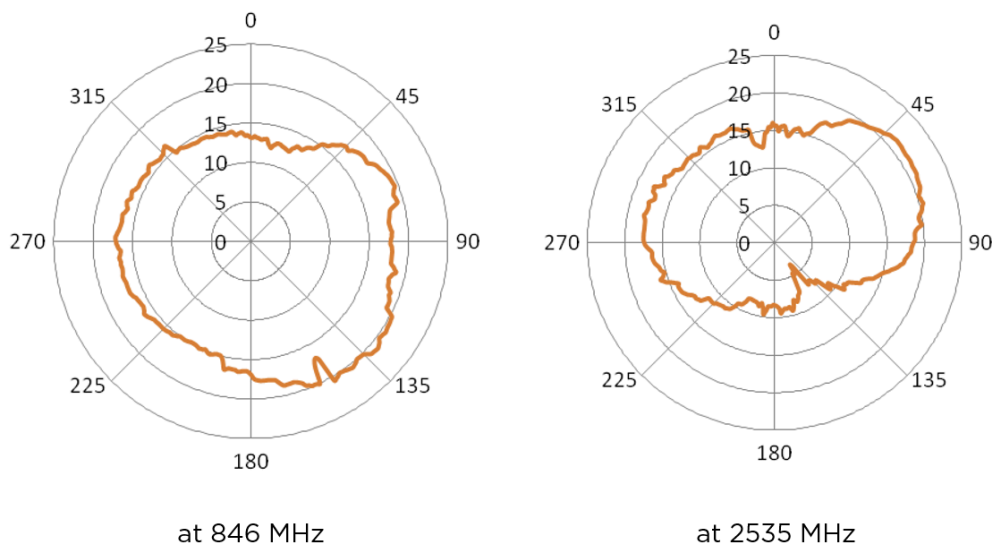
Free space antenna gain with a standard coaxial cable:

Frequency (MHz)	700	750	824	880	960	1710	1990	2170	2500	2700
Peak gain (dBi)	-3	-3.1	-3.2	-3.4	-3.3	-2.7	-3	-4	-3.6	-3

Free space antenna gain with a premium coaxial cable:

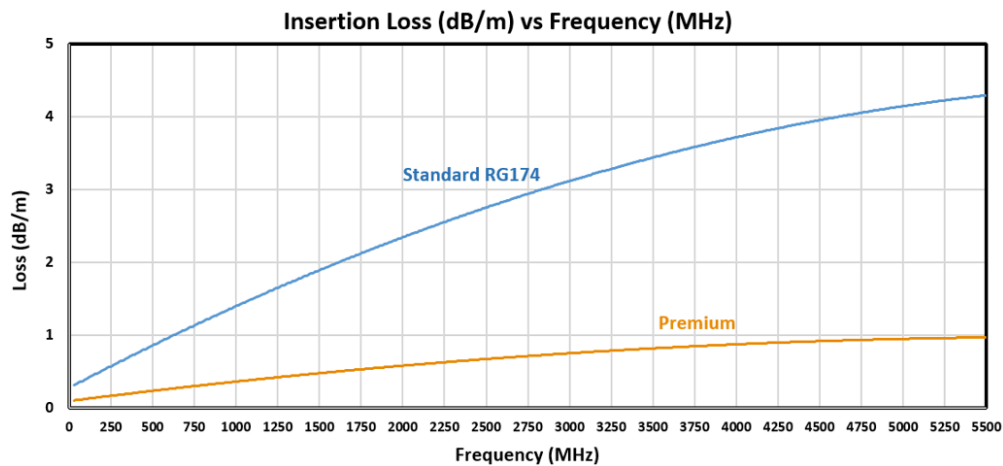
Frequency (MHz)	700	750	824	880	960	1710	1990	2170	2500	2700
Peak gain (dBi)	-0.5	-0.4	-0.3	-0.3	-0.3	1.8	1.9	1.7	2.2	3

Radiation Patterns: E1 pattern, total power (V+H)



Cable Specifications

Electrical Specifications	Premium LMR195	Standard RG174
Impedance	50 ± 2 Ohms	50 ± 5 Ohms
Operating Frequency	DC to 6GHz	DC to 6GHz
Insertion loss	See chart below	See chart below
Construction Specifications		
Inner Conductor	Solid Ø = 0.94mm	Solid Ø = 1.52mm
Dielectric	Foam PE	KLPE
Shield	Tinned Copper	Tinned Copper
Jacket	Black PVC Ø = 4.95mm	Black PVC Ø = 2.79mm Polyester monofilament expandable sleeving
Mechanical Specifications		
Static Bend Radius	12.70mm	25.4mm
Environmental Specifications		
Operating Temperature Range	-40°C to +135°C	-20°C to +80°C



Mechanical Specifications

Dimensions	222x222x79mm
Weight	1400g
Operation Temperature	-20°C to 80°C
Permanent Mountings	<ul style="list-style-type: none"> • Four anti-slip magnetic pads with high performance neodymium magnets covered with synthetic polymer • One permanent anti-rotation 1/4-20 threaded mount • Four permanent M4 threaded Silentblocs
Coaxial Cables	Four cables (one cable per antenna) MCX male (for Pro340 & Pro380) <ul style="list-style-type: none"> • Standard model <ul style="list-style-type: none"> ◦ Type: RG174 ◦ Length: 3 meters • Premium model <ul style="list-style-type: none"> ◦ Type: LMR195 ◦ Length: 3 or 9 meters
Available Colors	Shiny White (default) or Matt Black (on request)

Device disposal



Dispose of this product in a separate waste collection facility according to the requirements in force in your country. Please check the regulation in force in your country. In the European Union, please refer to the WEEE Directive.

Contact Us

General Support	North America (Toll-Free) 1 (877) 224-5445 International 1 (514) 334-5445 <i>and choose from the following:</i> Sales - 1, Cloud Services - 3, Support - 4
Managed Services	U.S. and International 1 (512) 220-3463
Fax	1 (514) 334-0088
Support Portal	https://support.haivision.com
Product Information	info@haivision.com