

# StealthWave™

Series: SHA211 VHF, SHA311 UHF and SHA411 700/800 MHz



## INSTALLATION GUIDE

Read the manual before you install or operate StealthWave™ Antenna Product Line

# MATERIAL CHECK LIST

## SUPPLIED

ITEM	PART NO.	DESCRIPTION	QTY. SINGLE	QTY. DUAL
1	TO SUIT	ANTENNA ASSEMBLY AND CONNECTOR	1	2
2	6009263	#8-32 x 1/2 SK HD, SS	4	8
3	6010210	#8 LOCK-WASHER, EXT-TOOTH	4	8
4	8003384	TIE WRAP	10	20
5	8016647	TUNNING TOOL	1	1
6	6001484	8-18 x 5/8" SQ. SK. PAN HD ZINC	6	12
7	TO SUIT	POWER DIVIDER	-	1

## NOT SUPPLIED

ITEM	DESCRIPTION
1	2" WIDE "Gorilla Tape®" OR RQUIVALENT
2	CORDLESS DRILL WITH NO. 2 SQUARE HEAD BIT
3	CONNECTOR CRIMPER AND TRIMMING TOOLS
4	VNA ANALYZER WITH APPROPRIATE CONNECTOR ADAPTER

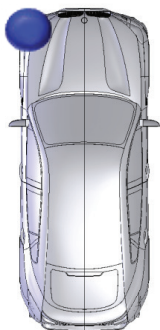
# STEP 1: ASSIGNING ANTENNA LOCATION

**NOTE: Every vehicle is different in style. The following guide is for installation in most common vehicles.**

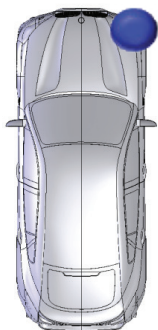
- The most important part of the installation is to determine the antenna location on a vehicle.
- An SUV will have more open areas as opposed to a low-profile sport vehicle.
- The most ideal locations for a single and dual antenna installation are shown below.

### SINGLE ANTENNA VERSIONS

OPTION 1

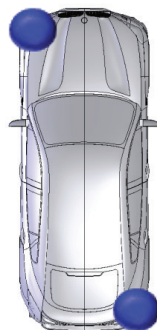


OPTION 2

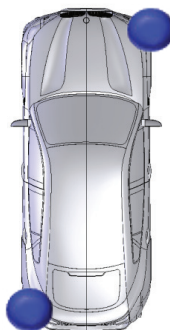


### DUAL ANTENNA VERSIONS

OPTION 3

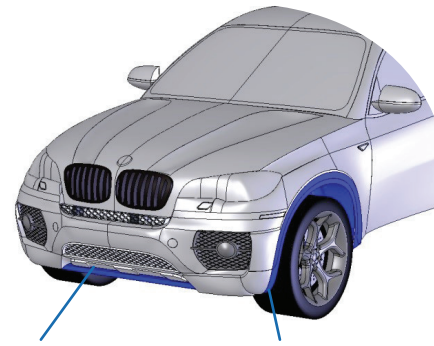


OPTION 4



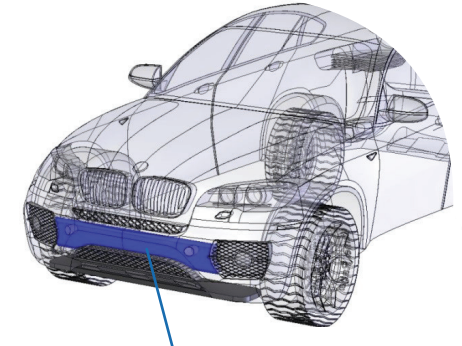
# STEP 2: VEHICLE PREPARATION

**NOTE: Using an automotive hoist is recommended for an easier access and safety.**



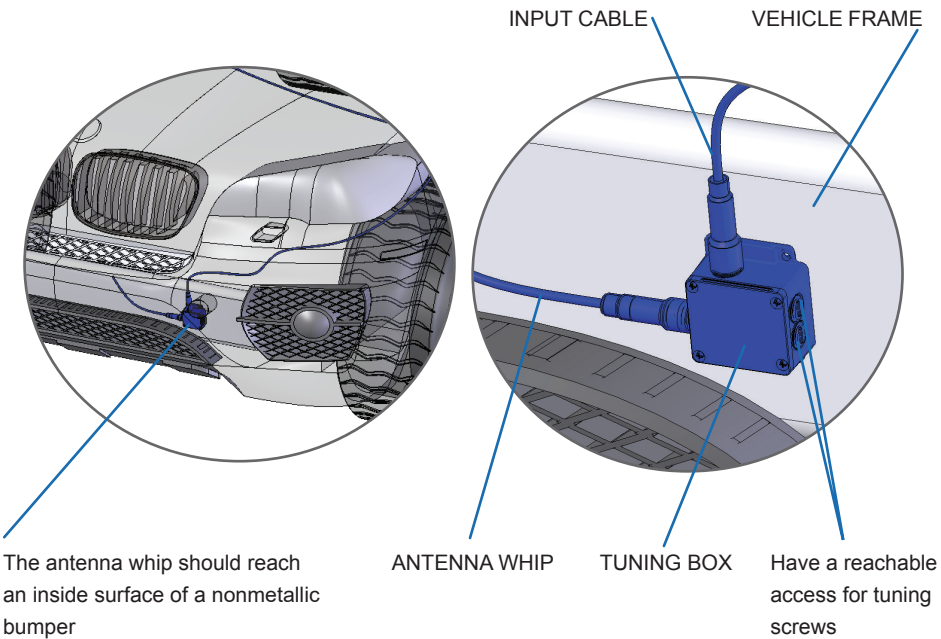
BOTTOM SHIELD

WHEEL WELL SHIELD



VEHICLE FRAME (INSTALLATION AREA)

- 2.1 Remove any obstructions if required to access the interior (eg: bottom shield, wheel well shield).
- 2.2 Locate the antenna on a vehicle frame that is connected to the main body to ground the antenna tuning box.



INPUT CABLE

VEHICLE FRAME

The antenna whip should reach an inside surface of a nonmetallic bumper

ANTENNA WHIP

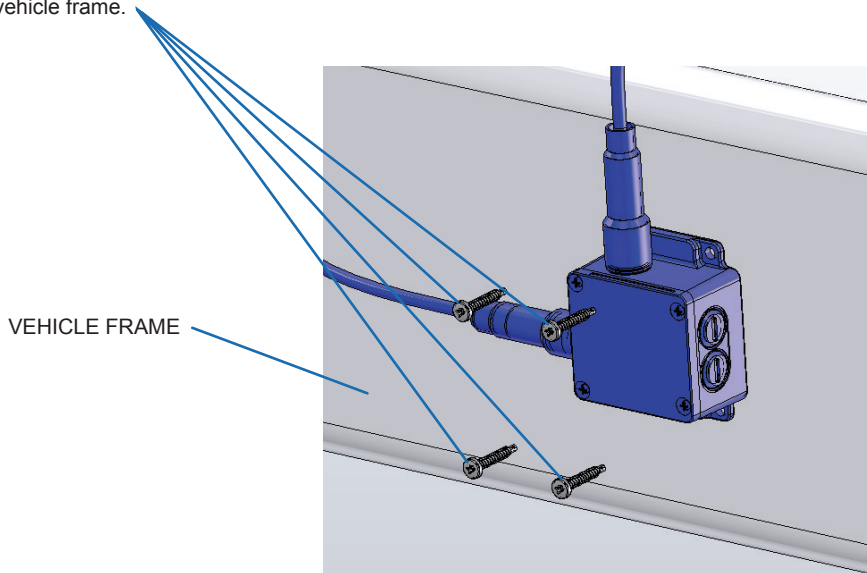
TUNING BOX

Have a reachable access for tuning screws

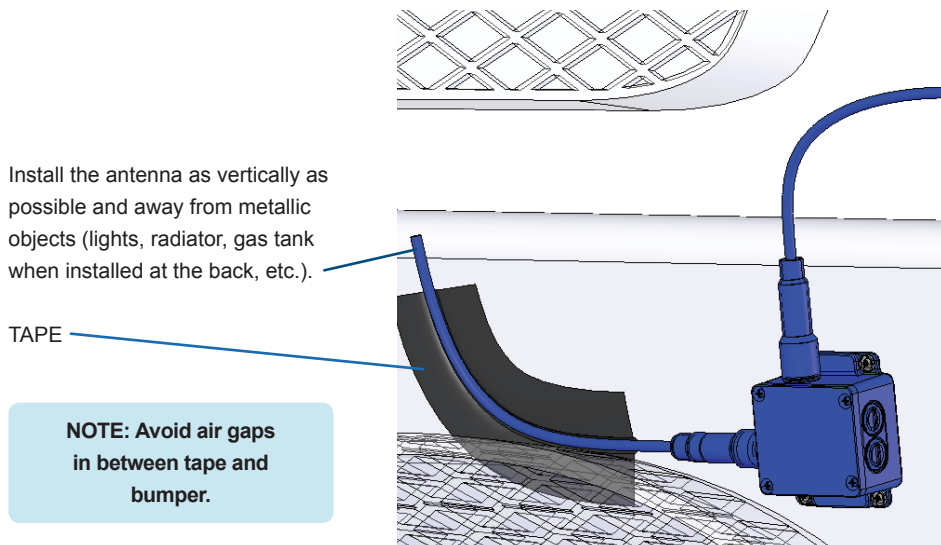
**NOTE: Install the antenna as high as possible from the ground**

## STEP 3: ANTENNA INSTALLATION

3.1 Once location has been determined fasten the antenna housing with the 4 self-tapping screws to the vehicle frame.



3.2 Clean the bumper area with a degreasing solvent or detergent before applying the tape against the antenna whip. Avoid bubbles under the tape to prevent moisture.



NOTE: The antenna performance depends on how vertical and how elevated the antenna whip is from the road surface.

## STEP 4: CABLE ROUTING

4.1 Route the input cable through the engine compartment and firewall into the vehicle where the radio is located.

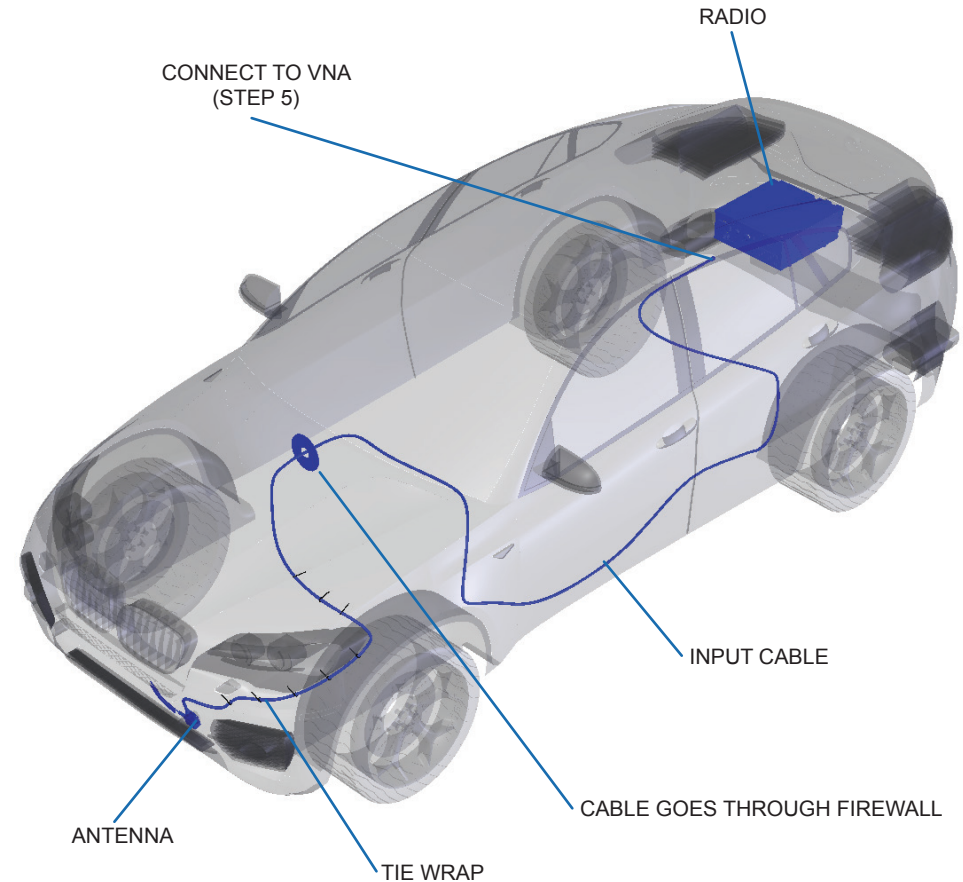
4.2 Keep cables away from any moving parts.

4.3 Secure all cables with tie wraps in the engine compartment.

### NOTE:

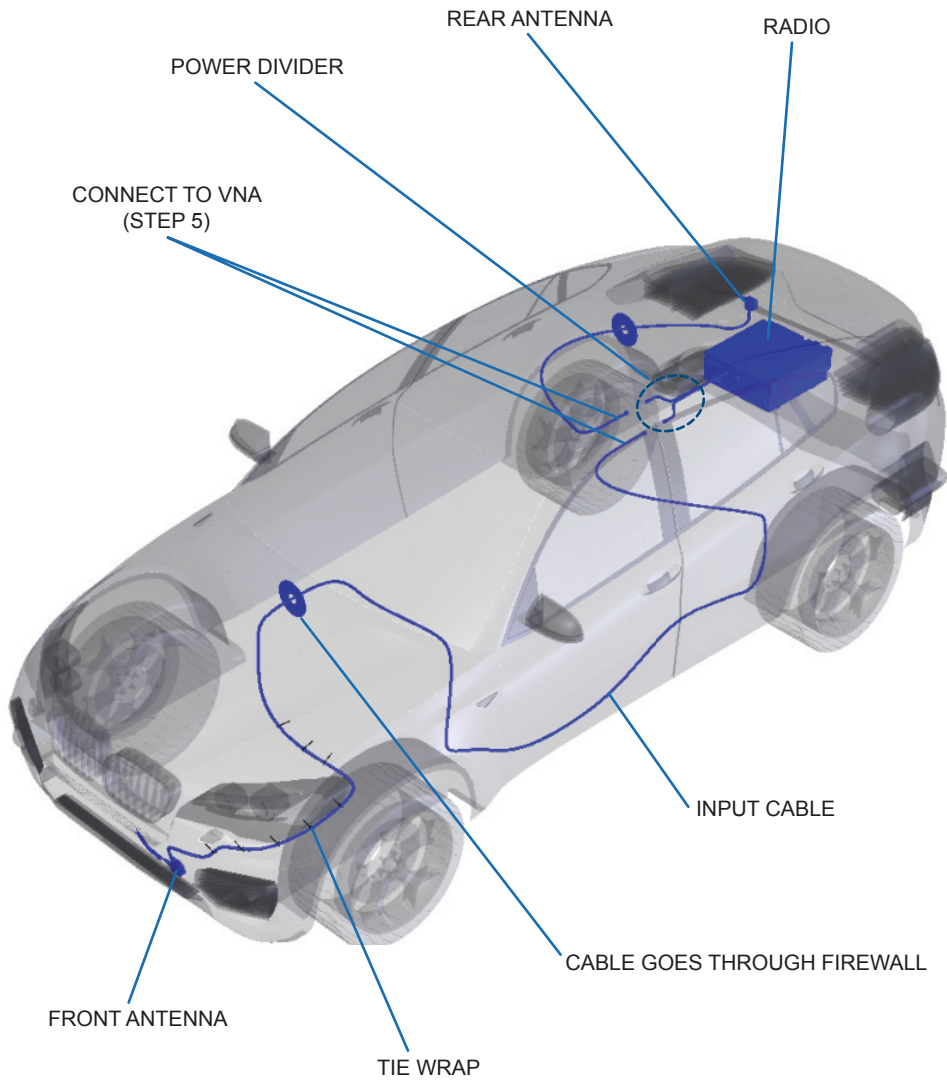
- Do not connect the input cable into the radio until the tuning procedure (STEP 5) is complete.
- After routing attach loose connector (supplied with the antenna).

## SINGLE ANTENNA CABLE ROUTING



# DUAL ANTENNA CABLE ROUTING

**NOTE: For the rear antenna installation refer to STEP 3**



# STEP 5: ANTENNA TUNING

5.1 Using a VNA follow the tuning procedure below and measure at the end of the input cable before connecting to the radio.

5.2 A VNA or Vector analyzer will give you performance results for specific frequency ranges bandwidth and is a best choice for tuning the antenna.

**NOTE: For dual antenna installation both antennas must be tuned independently and then connected with a power divider to the radio.**

Remove cap covers

1

TUNING TOOL

Adjust the Left screw to the frequency

2

Adjust the Right screw for curve depth and frequency

3

Alternate between both screws for optimization

**REMINDER: Put cap covers back on after antenna tuning is complete**



This user guide explains the system specifications and is specifically written for the StealthWave™ Antenna Product Line Series: SHA211 VHF, SHA311 UHF and SHA411 700/800 MHz

This is a quick installation guide. For a complete installation instructions, tuning procedure or tuning procedure using a power meter please contact Sinclair Technologies at:

**1-800-263-3275**