



Ground-Coupled Horn Mount Assembly Instructions

MN34-597 Rev C

Geophysical Survey Systems, Inc.

40 Simon Street • Nashua, NH 03060-3075 USA • www.geophysical.com



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1.0 Description and Part Identification

Thank you for purchasing GSSI's Ground-Coupled Antenna Mount (GCAM). The GCAM is designed to easily attach to a Class III (2 inch square) trailer hitch receiver. The GCAM is compatible with the following GSSI antenna models:

- **Model 3101D/3101A:** 900 MHz
- **Model 5103A/50400:** 400 MHz
- **Model 5104/5104A:** 270 MHz

Included Items:

- (1) Metal hitch mount assembly
- (1) Gray plastic antenna mount assembly
- (1) Cable restraint
- (1) Bag of hardware for attaching the 400 MHz or the 270 MHz antenna. Bag consists of (12) M6x35 Phillips head screws and (12) M6 flat washers. Six sets are used per antenna. The other six sets are intended as spares.
- (1) Bag of hardware for attaching the 900 MHz antenna. Bag consists of (12) M5x30 hex bolts and (12) flat washers. Six sets are used per antenna. The other six sets are intended as spares.
- (1) Bag of hardware for attaching the ground-coupled antenna support hitch to the vehicle hitch. Bag consists of (2) M12x20 hex bolts, (2) M12 flat washers, and (2) M12 split washers.

Required tools (not included):

- Large adjustable wrench or 1 1/8 inch socket wrench.
- 4mm hex (Allen) wrench.
- Phillips head screwdriver.
- Velcro cable ties or zip ties.

2.0 Attaching the 400 MHz and the 270 MHz Antenna

1 Prepare antenna and antenna mount.

- a)** Remove the black metal “shark’s fin” bracket on top of the antenna housing and identify the 6 attachment points on the top of the antenna (Figure 1).

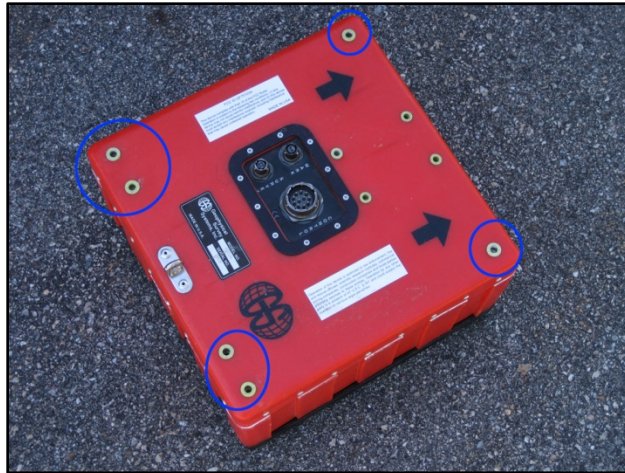


Figure 1: Antenna attachment points in blue circles

- b)** Remove the 900 MHz antenna ribs from the antenna mount. These are only used with the 900 MHz antenna. They are shown in Figure 2 with blue arrows.

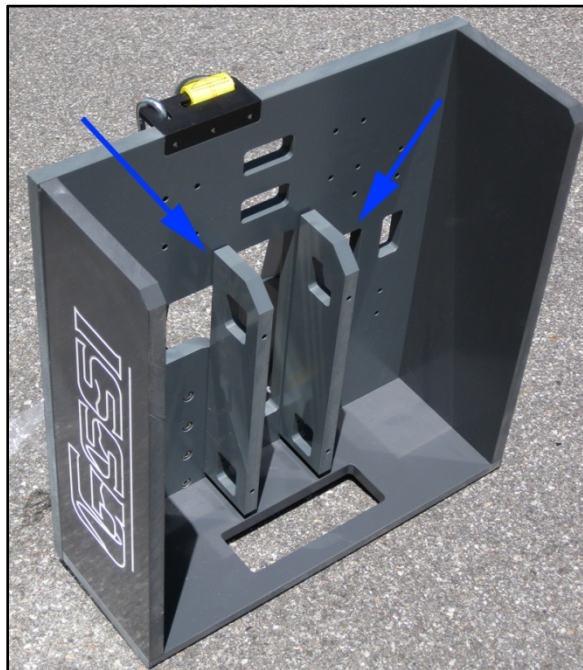


Figure 2: Antenna mount showing 900 MHz ribs.

- c)** Attach cable restraint to the arm of the gray plastic antenna mount assembly (Figure 3).

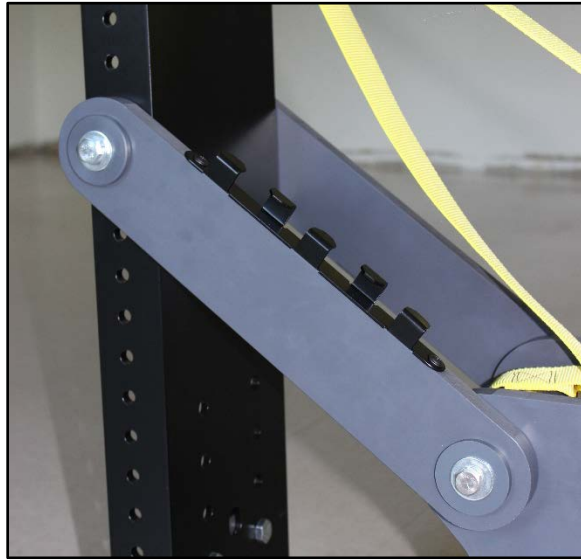


Figure 3: Attach cable restraint to antenna mount assembly.

2 Attach the antenna to the gray antenna mount.

- a)** Disassemble antenna mount from the metal hitch mount assembly (Figure 4).



Figure 4: Attach antenna mount to hitch mount

- b)** Place the antenna in the mount so that the black arrows on the antenna face forward. Line up the 6 attachment points on the antenna top with the correct set of holes on the antenna mount. Attach the antenna using the M6x35 Phillips screws and M6 flat washers (Figure 5).

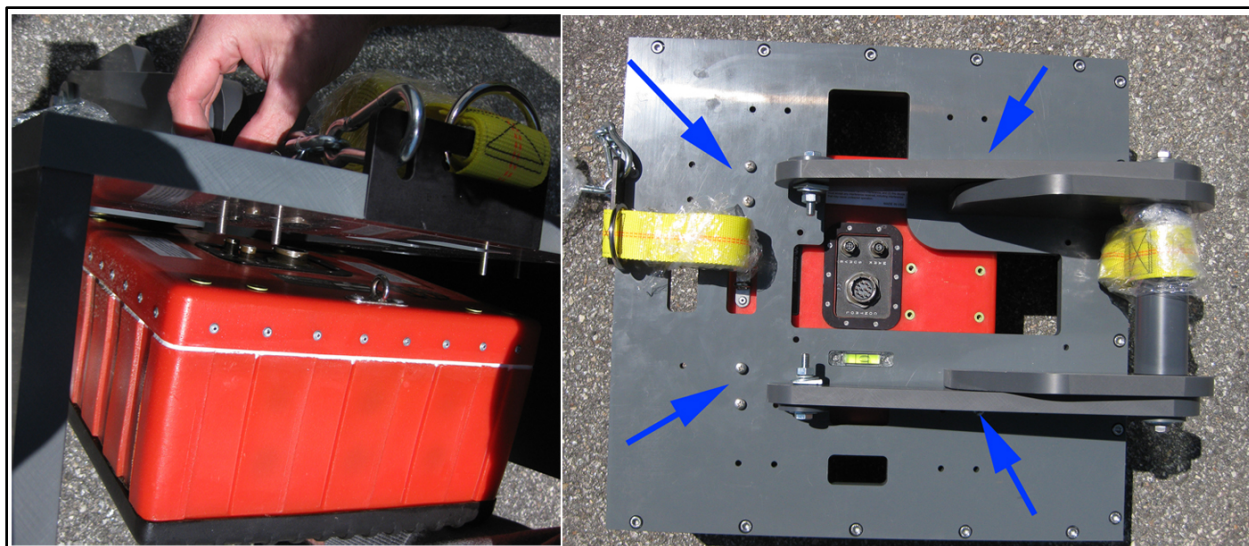


Figure 5: Attaching the 400 MHz antenna with the provided hardware.

- 3 Attach antenna mount assembly to metal hitch mount assembly** (Figure 6). Make sure that the square wedge washers are positioned so as to counter the angle on the black metal hitch mount assembly. Select the holes that will result in the bottom of the mount being no more than three (3) inches above the road surface. Leave these bolts loose because you may need to make a final adjust for height.



Figure 6: Attach antenna mount assembly to the metal hitch assembly.

- 4 Attach antenna trailer hitch mount to the vehicle.** The hitch mount is designed to fit into a Class 3 trailer hitch. Insert the draw bar into the hitch. Notice holes on the sides of the split mount bar (Figure 7). Line up these holes with the two holes on the side of the hitch receiver. Tighten the 1 1/8" nut on the front of the mount. This will pull in the draw bar and secure the mount to the receiver.

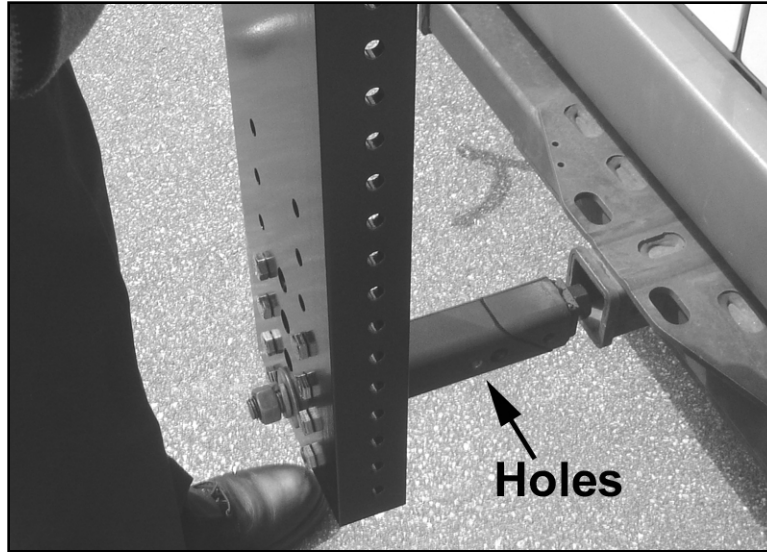


Figure 7: Insert mount into hitch receiver.

- 5 Secure safety bolts.** Take the M12X20 hex bolt and put the flat washer on the bolt and then the split washer. Insert the bolt into the holes on the side of the hitch receiver and tighten securely (Figure 8). This is a safety precaution and will prevent the hitch mount from loosening and falling out of the receiver. Do the same on the other side of the receiver.

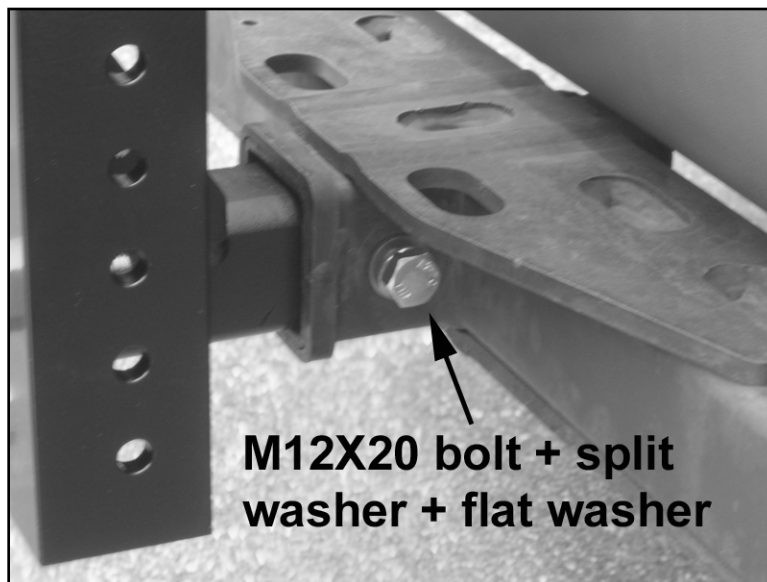


Figure 8: Safety bolt assembly.

- 6 Adjust ratchet straps.** Use an adjustable wrench or a 1 1/8 inch socket to take up the slack in the ratchet strap and to tighten (Figure 9).

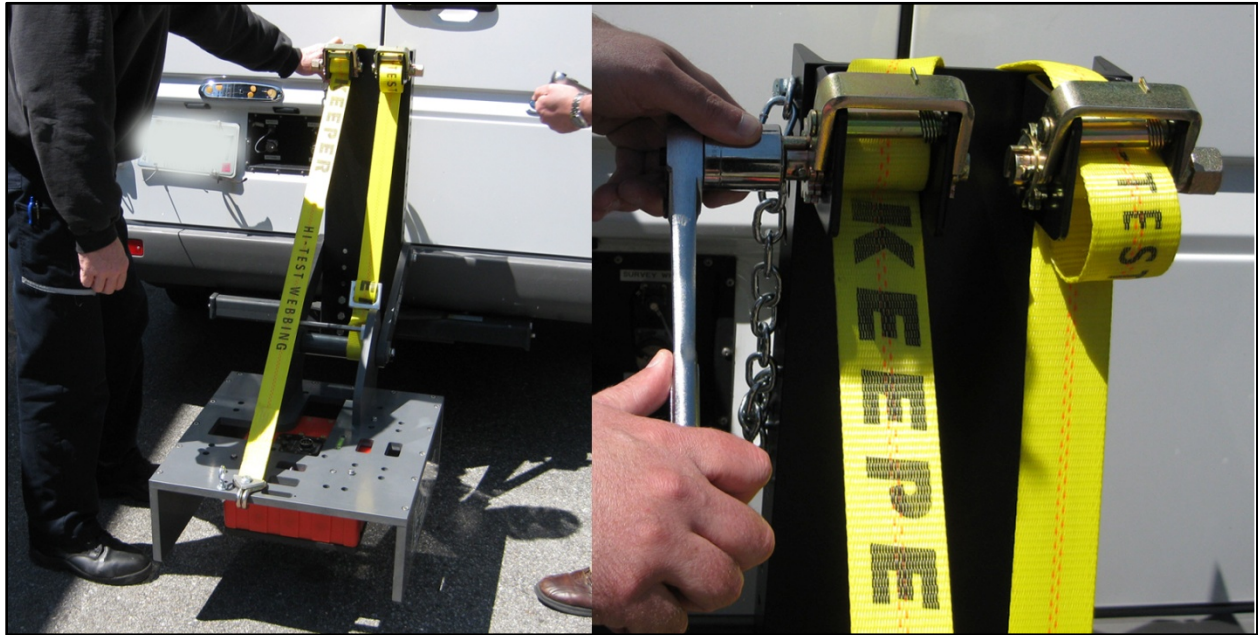


Figure 9: Adjust ratchet straps.

- 7 Level and tighten.** Manipulate the ratchet straps to level the mount so that the bottom is at approximately three (3) inches from the surface. This may require you to change the position of the bolts attaching the gray mount to the black metal hitch. Once leveled and at the appropriate height, snug all bolts. Attach the control cable to the “Control” port on the antenna and secure any loose cable in the cable restraint.



Figure 10: Final survey configuration.

3.0 Stowing the Mount

To stow the mount when not surveying, flip it into a vertical position and clip the stay chain to the antenna mount assembly (Figure 11).

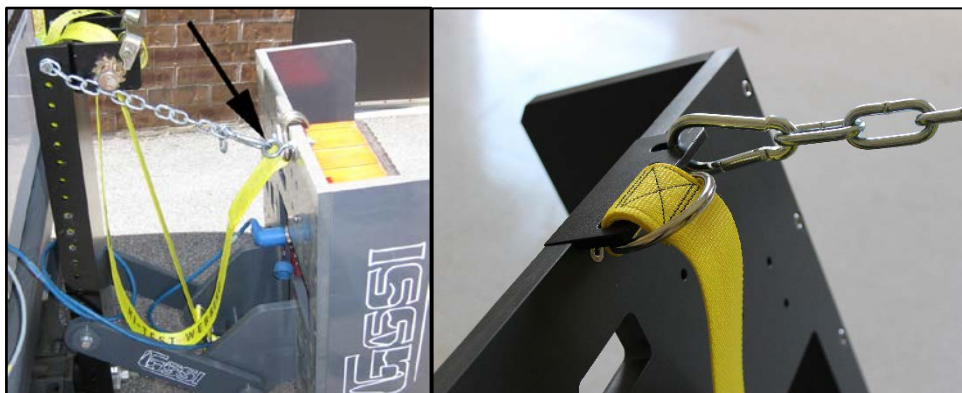


Figure 11: Mount in the travel position.

4.0 Optional Use of the Mount with the 900 MHz (Model 3101D) Antenna

The mount includes components to allow you to use it with the 900 MHz antenna. Note that the 900 MHz antenna will need to be positioned closer to the road surface due to its shorter wavelength.

- 1** Attach the extension brackets. Using (4) M5x30 hex (Allen) bolts and washers attach the 900 MHz brackets to the antenna (Figure 12).



Figure 12: Attach brackets to the 900 MHz antenna.

- 2** Attach the antenna to the mount. Position the antenna so that the antenna connectors face forward and line up with the cable pass through (Figure 13). Identify the correct set of holes on the mount and secure the antenna to the mount with (4) M5x30 hex (Allen) bolts and washers. Run the control cable through the cable pass through and attach to the antenna. Be sure to secure any loose control cabling in the cable restraint to prevent it from catching on obstructions.

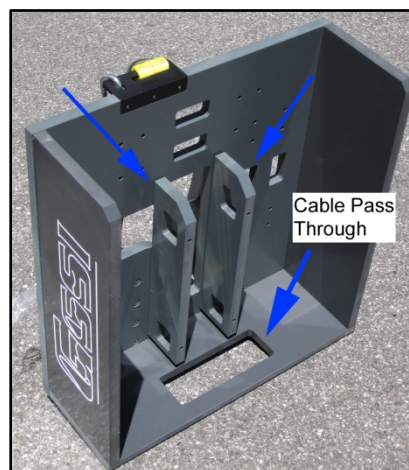


Figure 13: Mount with 900 MHz brackets (Antenna not shown).