



**SERVICE  
CENTER  
INFORMATION**

**SCI18-46**

DATE :	December 2018	SECTION :	23 ACCESSORIES
SUBJECT :	<b>Prevost Ultimate Entertainment System- Icomera X-CUBE Installation- Prevost Vehicles</b>		

First Release

12-21-2018

**APPLICATION**

Model	VIN	
H3-45 coaches Model Year : ALL	All Vehicles	
X3-45 coaches Model Year : Up to <b>2019</b> incl.	All Vehicles up to 2019*	

\* Up to OPP2 / Vehicle K-6495 (Canada built veh.) & K-7663 (US built veh.)

**DESCRIPTION**

The intent of this procedure is to guide you through the steps required to install the Prevost Ultimate Entertainment System components in Prevost coaches.

The procedure describes the steps required to proceed to a *typical installation* in the vehicle second parcel rack. *Custom installations are possible*; refer to the general guidelines table at the end of the procedure for important requirements when installing the system other locations.

**SPECIAL TOOLS & MATERIAL**

Part No.	Description	Qty
682989	Silicone remover 5 liters	1
684685	Black sealant - Simson ISR 70-03	1
7770447	Snap-on FC48A crow foot 1-1/2" x 3/8" drive	1
7775182	Prevost antenna tool	1

## MATERIAL

Order kit #SCI18-46 which includes the following parts:

Part No.	Description	Qty
900240	Module, Icomera X-CUBE Advanced (1tb)	1
900268	Harness Power Module Icomera X-CUBE	1
900274	Antenna dual LTE,WIFI, GPS M-band, 6' (2m)	1
900275	Antenna dual LTE, multiband, 15'	1
900388	Antenna WIFI cable RFC cat2, port 1	1
900396	Antenna WIFI cable RFC cat2, port 2	1
900397	Antenna WIFI cable RFC cat2, port 3	1
900223	Antenna WIFI MIMO, 2.4-5ghz	1
400648	Icomera WIFI antenna bracket	1
504013	Cable tie mount, black 1/4"	8
500613	Scr tp pan ph Z050 #10x1/2	8
504637	Cable tie, nylon blk (std)	30
5001299	Scr ma pan ph SS 10-32x3/4	2
500519	Nut well 10-32x.518	2
500638	Scr tp bdg ph z050 #8x1/2	5
500865	Scr tp bdg ph z050 #12x1 1/2	4
285478	Bushing/spacer	4
061515	Ground cable	1
562547	Pin terminal 02-09-2103	2
562558	Molex connector 6C	1
560784	Shrink tubing double wall 0.25"-0.08"	1 ft
560669	Wire, 16 AWG, GXL, Red	6 ft
560673	Wire, 16 AWG, GXL, Black	6 ft
562387	Plas. conv .25ID Black slt	6 ft
561681	Plas. conv Nyl .35ID Black SlT	1 ft
562228	Butt splice 16-14	2
504398	Grommet 1.375x.062x.437x1.75	1
504356	Grommet .875X.062X.312X1.125	1
500825	Washer, Flat – 1.0625x2.50x.175	2

**NOTE**

Material can be obtained through regular channels.

## PROCEDURE



### DANGER

Park vehicle safely, apply parking brake, stop engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button.

## H3 SERIES VEHICLES - ANTENNAS INSTALLATION

1. Inside the H3 Series vehicle, open both driver's & entrance door overhead compartment (remove covers & disconnect lamps).

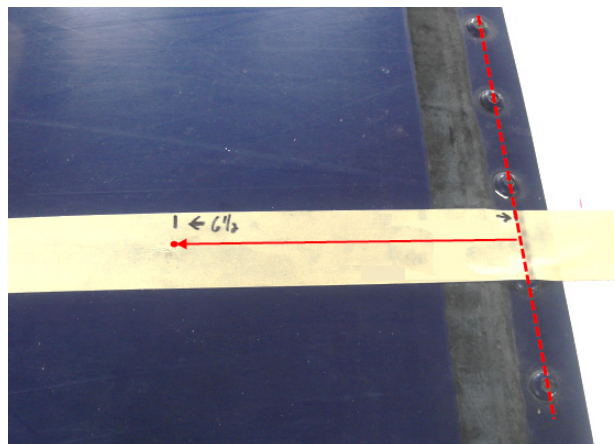


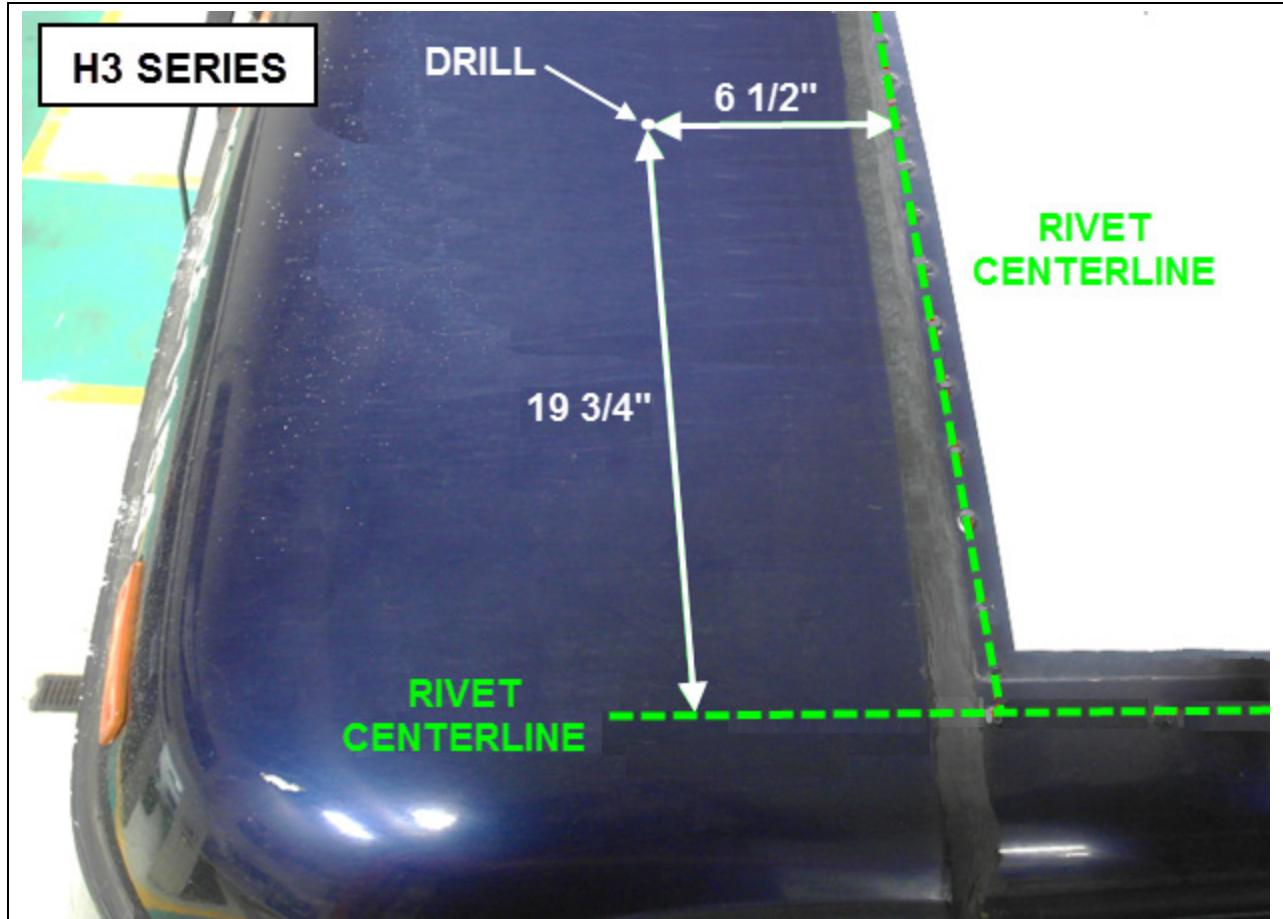
2. Mark the antenna position on the vehicle driver's side part of the roof (see image below).



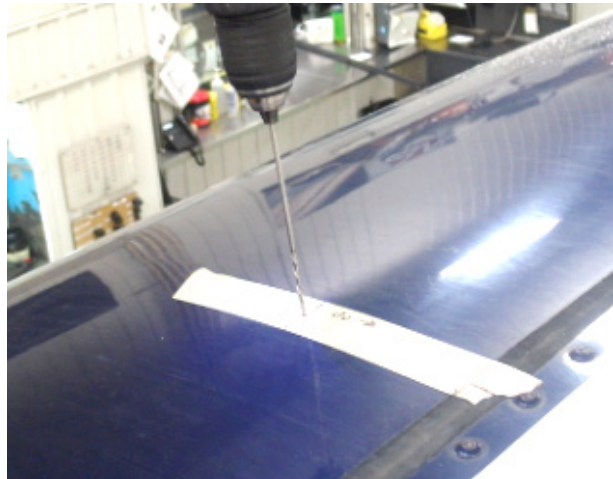
### DANGER

- Do not climb on the vehicle roof without appropriate safety harness and life line.
  - The use of an approved elevator (scissor lift) is highly recommended.
- Position driver side antenna on the front fiberglass part of the roof.
  - Draw a line **6 1/2in** (65mm) from the center of the transversal rivet row (left to right row).
  - Draw another line **19 3/4in** (500mm) from the center of the longitudinal rivet row (front to back row).
  - The intersection of both lines is the antenna center point (drilling point).





3. Drill a guide hole at the intersection point using a long 1/8 drill bit, the hole must be drilled all the way through (both inner & outer fiberglass skins).



4. Drill the antenna mounting holes on the vehicle roof.

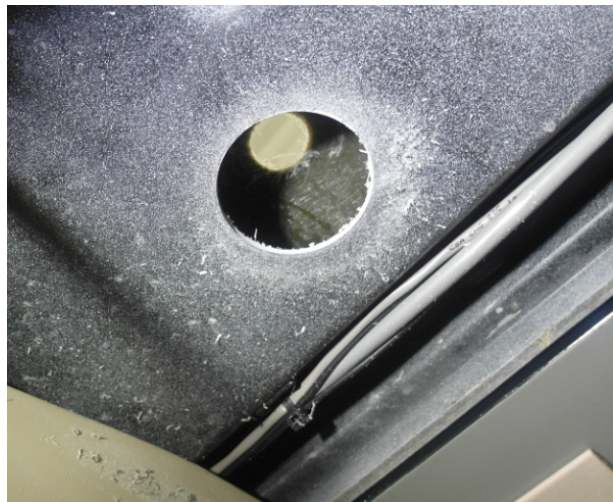
- Use a 1in-hole cutter (hole saw) and drill at the determined point.



- Inside the vehicle, drill a larger 3in hole through the interior skin using a hole saw.



- Remove sharp edges as required (exterior) & remove debris from the vehicle roof.



5. Install the antenna **900274** on the vehicle roof.

**IMPORTANT**

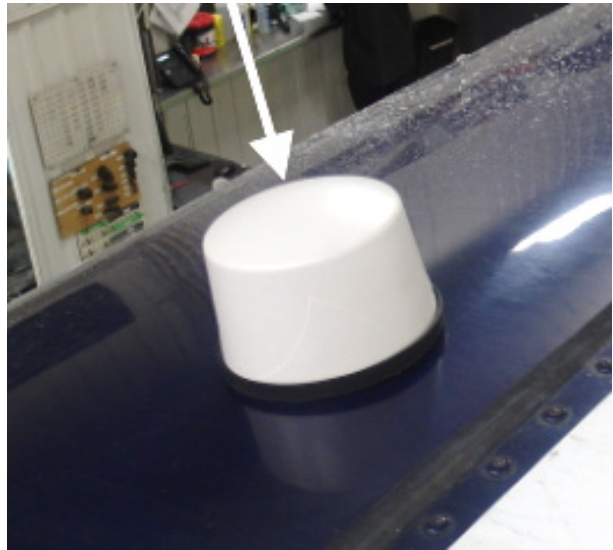
*The antenna **900274** with the smaller GPS cable (5 cables total) must be installed on the driver side of the vehicle.*

- Clean the hole area with silicone remover.
- Pass the antenna cables through the hole.
- Apply a generous bead of black **Simson ISR 70-03** sealant inside the rubber seal of the antenna (peel-off the factory installed double faces adhesive tape).





- Also apply a large bead of adhesive around the threaded area of the antenna.
- Carefully insert the antenna in its location and apply pressure to ensure complete contact of the sealant with the roof.
- Repeat the process (steps 2 to 5) on the other side of the vehicle with antenna **900275** (antenna with 4 long cables).



6. Secure the antennas to the vehicle roof.

- Snugly hand tight the antenna slotted mounting nuts inside the vehicle left and right compartments.
- Screw the mounting nuts enough to compress the antenna base rubber seal.
- Apply final torque to both nuts to finalize the antennas installation on the vehicle roof.

Prevost special tool # **7775182** and **7770447** (mounted on a 3/8in drive torque wrench) are recommended.

**TORQUE: 80 to 120 lb-in (9 to 14 Nm)**



7. Route the cables through the first, then second parcel rack.

- Route the curb side antenna cables through the roof channel (under the roof panel) up to the driver side overhead compartment (panel is secured to the structure using strong Velcro).

**NOTE**

*On vehicles equipped with a central screen, it is possible to pass the antenna cable inside the central trim/cover close to the windshield (behind the "watch your step" sign).*

*Available cable length in the parcel rack will be slightly reduced when using this option.*

- Pass the cables through the openings in the overhead compartment / first parcel rack separator.
- Route the cables behind the audio-video equipment in the first parcel rack (secure with cable ties as required).

**NOTE**

*Audio video configuration in the first parcel rack will vary from one vehicle to another.*

*When routing antenna cables behind installed equipment, make sure that no devices are inadvertently disconnected or shut-off.*

- Pass the wires through the second parcel rack separator (if the separator does not have a factory cut-out, drill an opening in the separator and install the supplied grommet).



## X3 SERIES VEHICLES - ANTENNAS INSTALLATION

1. Inside the X3 Series vehicle, open both driver's & entrance door overhead compartment.

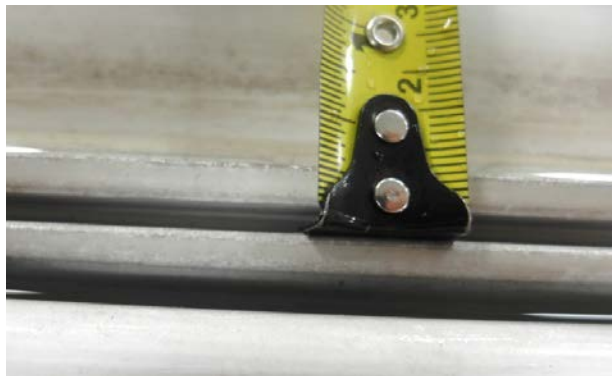
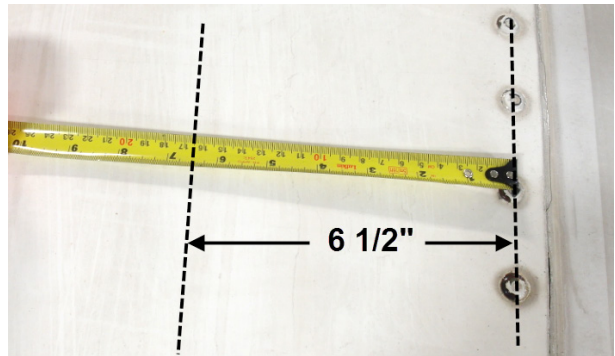


2. Mark the antenna position on the vehicle driver's side part of the roof (see image below).

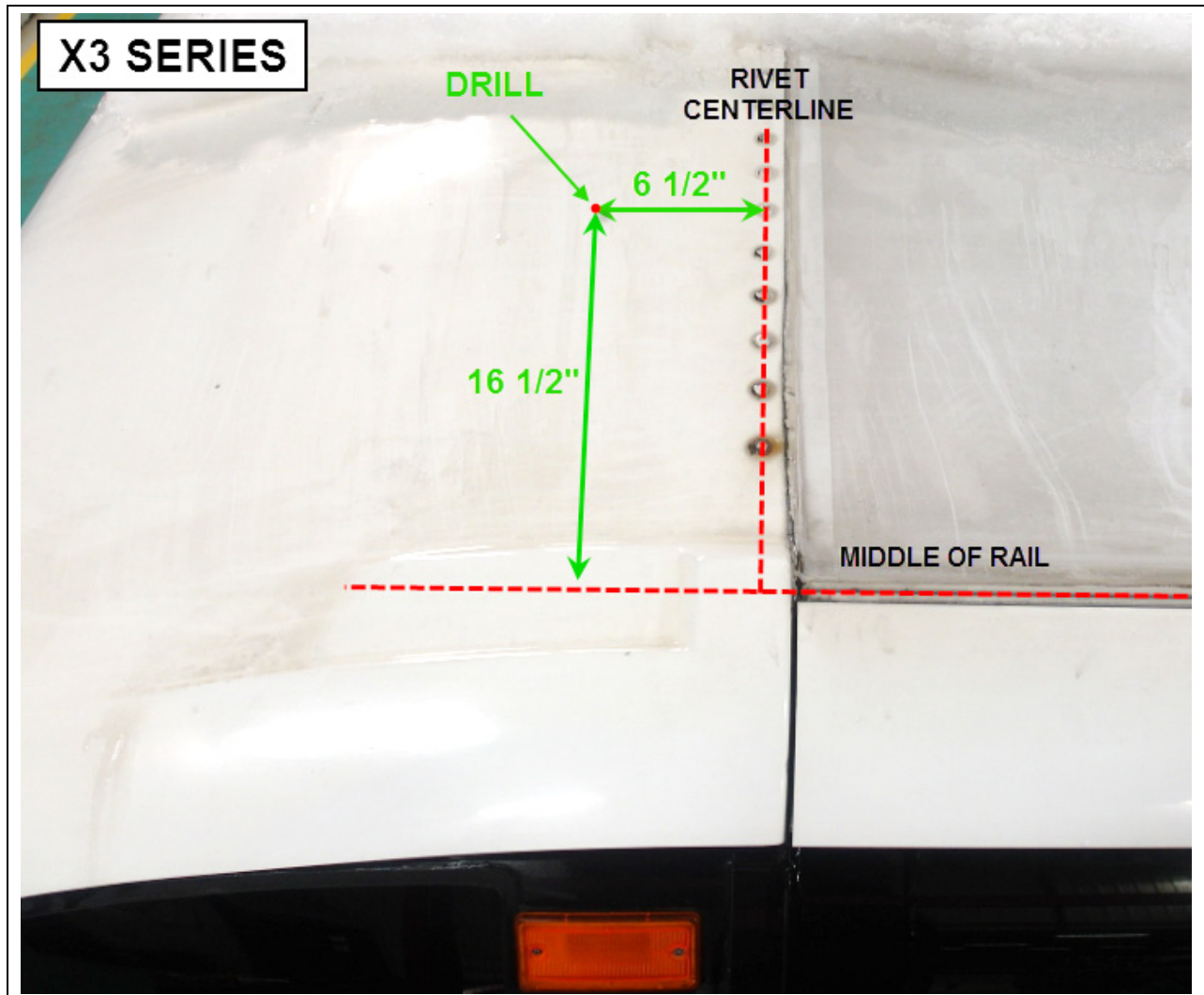


### DANGER

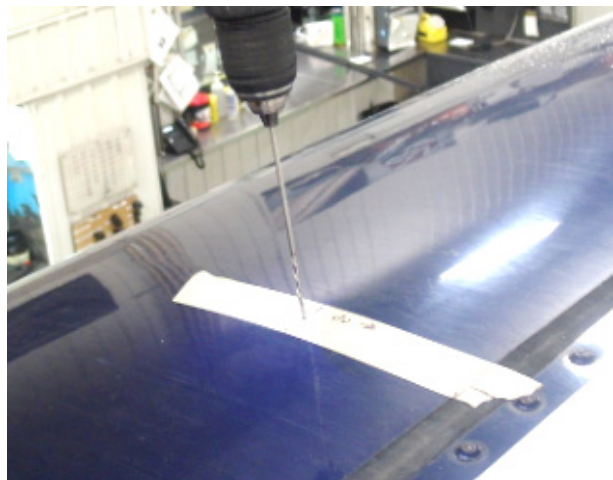
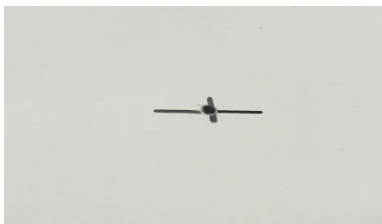
- Do not climb on the vehicle roof without appropriate safety harness and life line.
  - The use of an approved elevator (scissor lift) is highly recommended.
- 
- Position driver side antenna on the front fiberglass part of the roof.
  - Draw a line **6 1/2in** (65mm) from the center of the transversal rivet row (left to right row).
  - Draw another line **16 1/2in** (420mm) from the *center* of the longitudinal rail.
  - The intersection of both lines is the antenna center point (drilling point).





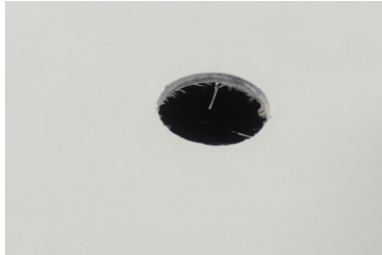


3. Drill a guide hole at the intersection point using a 1/8 in drill bit.



4. Drill the antenna mounting holes on the vehicle roof.

- Use a 1in hole cutter (hole saw) and drill at the determined point.
- Remove sharp edges as required (exterior) & remove debris from the vehicle roof.

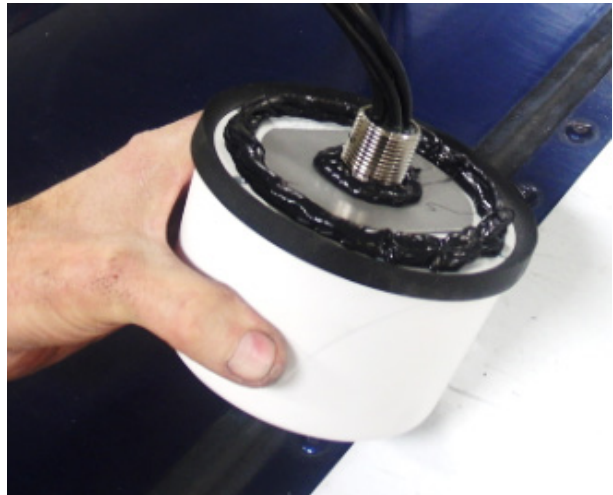


5. Install the antenna **900274** on the vehicle roof.

**IMPORTANT**

*The antenna **900274** with the smaller GPS cable (5 cables total) must be installed on the driver side of the vehicle.*

- Clean the hole area with silicone remover.
- Pass the antenna cables through the hole.
- Apply a generous bead of black **Simson ISR 70-03** sealant inside the rubber seal of the antenna (peel-off the factory installed double faces adhesive tape).
- Also apply a large bead of adhesive around the threaded area of the antenna.
- Carefully insert the antenna in its location and apply pressure to ensure complete contact of the sealant with the roof.
- Repeat the process (steps 2 to 5) on the other side of the vehicle with antenna **900275** (antenna with 4 long cables).



6. Secure the antennas to the vehicle roof.

- Slide the supplied **500825** flat washer over the cables, up to the threaded part of both antennas.



Optional: Grind an opening in the washer to ease cable insertion.

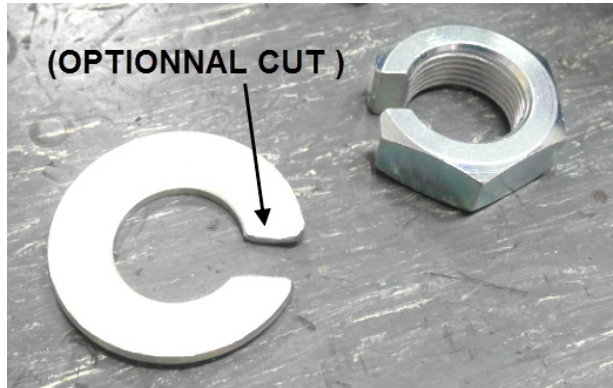
**NOTE**

The washer will add support between the antenna nut and the uneven insulated roof surface. On some vehicle, it may be necessary to remove some of the insulating material to obtain a flatter mounting surface.

- Snugly hand tight the antenna slotted mounting nuts inside the vehicle left and right compartments.
- Screw the mounting nuts enough to compress the antenna base rubber seal.
- Apply final torque to both nuts to finalize the antennas installation on the vehicle roof.

Prevost special tool # **7775182** and **7770447** (mounted on a 3/8in drive torque wrench) are recommended.

**TORQUE: 80 to 120 lb-in (9 to 14 Nm)**



7. Route the cables through the first, then second parcel rack.

- Route the curb side antenna cables through the roof (under the roof panel) up to the driver side overhead compartment (panel is secured to the structure using strong Velcro).



**NOTE**

*On vehicles equipped with a central screen, it is possible to pass the antenna cable inside the central trim/cover close to the windshield (behind the "watch your step" sign).*

*Available cable length in the parcel rack will be slightly reduced when using this option.*

- Pass the cables through the openings in the overhead compartment / first parcel rack separator.
- Route the cables behind the audio-video equipment in the first parcel rack (secure with cable ties as required).

**NOTE**

*Audio video configuration in the first parcel rack will vary from one vehicle to another.*

*When routing antenna cables behind installed equipment, make sure that no devices are inadvertently disconnected or shut-off.*

- Pass the wires through the second parcel rack separator (if the separator does not have a factory cut-out, drill an opening in the separator and install the supplied grommet).



## X-CUBE MODULE & WIFI ANTENNA INSTALLATION (ALL VEHICLES)

1. Install the WIFI antenna inside the parcel rack.
  - Install the WIFI inside antenna **900223** on the antenna bracket **400648**, secure using nut wells **500519** and **5001299** screws.



- Connect the WIFI short cables **900388**, **900396** and **900397** to the underside of the antenna.

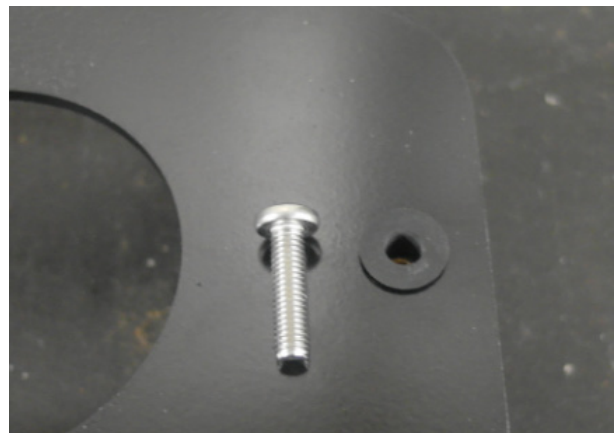
*Cables are identified PORT1, PORT2 and PORT3; Make sure they are connected to the corresponding antenna ports (WIFI 1, WIFI 2 and WIFI 3).*



- Position the antenna and cables in the parcel rack. The bracket is shaped to fit the rear 45deg upholstered part of the parcel rack.



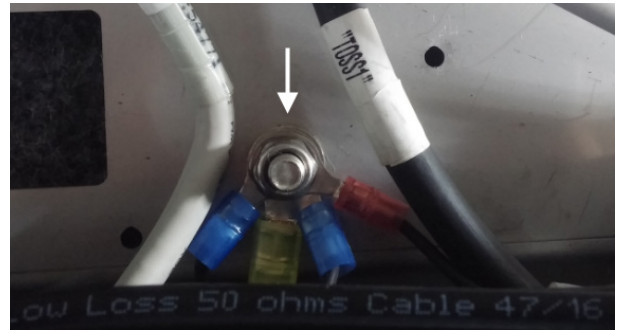
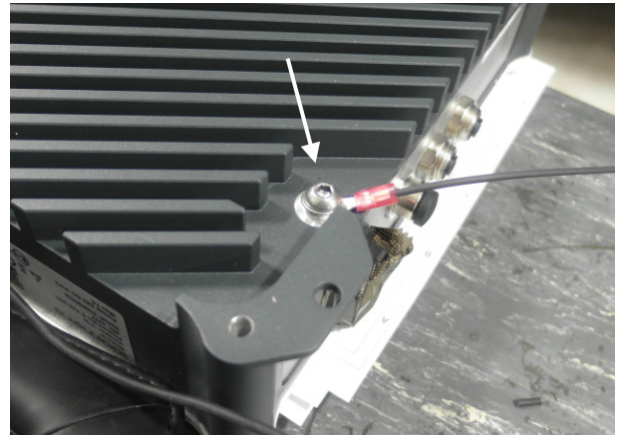
- Secure the bracket to the rack floor using supplied **500638** screws.



2. Connect the X-CUBE ground wire.
  - Connect supplied **061515** ground wire to the ground screw under the X-CUBE module.



- Install the **900240** X-CUBE module in the parcel rack (*do not secure the module to the floor at this point*).
- Connect the opposite end of the ground wire to one of the ground studs in the first parcel rack.



3. Connect the X-CUBE module to antennas.

**IMPORTANT**

*All cables are identified close to their connectors end.*

*Double check and make sure all cables are connected at their respective position.*

- Connect the WIFI antenna to the X-CUBE module W1-1, W1-2 and W1-3 ports.
- Connect the driver side antenna to port W2-1, W2-2, C3-M & C4-A of the X-CUBE module.
- Connect the driver side GPS cable to the GPS connection of the module.
- Connect the curb (entrance door) antenna to port C3-A, C4-M, C5-A and C5-M of the X-CUBE module.

INSIDE WIFI ANTENNA connection to X-Cube



ANTENNA X-CUBE  
WIFI 1 = W1  
WIFI 2 = W2  
WIFI 3 = W3

DRIVER SIDE ANTENNA connection to X-Cube  
(2 x WIFI - 2X LTE - GPS)

Connect one of the antenna WIFI cable to W2-1  
Connect the other antenna WIFI cable to W2-2  
Connect one of the antenna LTE cable to C3-M  
Connect the other LTE cable to C4-A  
**IMPORTANT:** Do not connect both LTE cables to C3 or C4  
Connect the GPS on the large connector

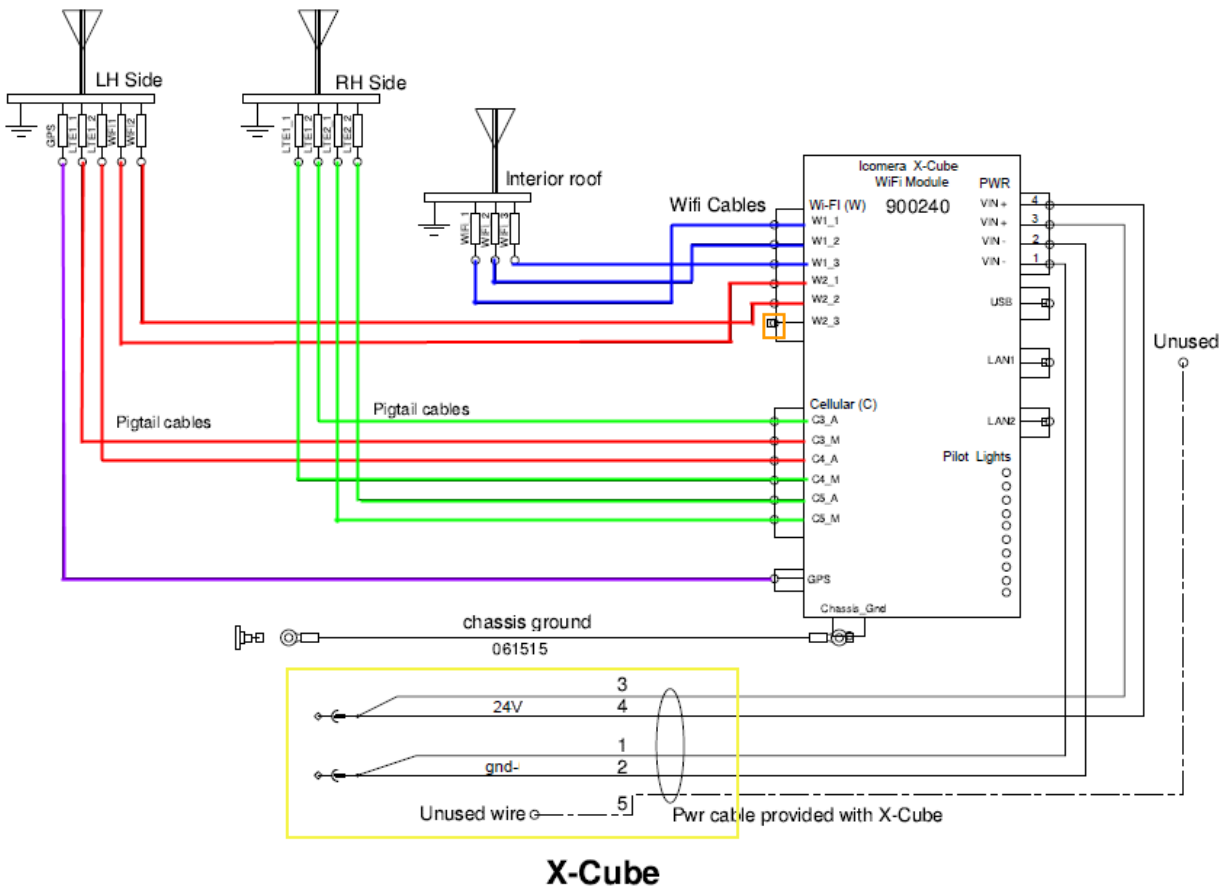


- Connector W2-3 is not used (do not remove dust protector).



CURB SIDE ANTENNA connection to X-Cube  
(4X LTE)

Connect antenna cables to:  
C3A, C4-M, C5-A & C5-M



4. Connect the X-CUBE power cable to the vehicle 24V wake-up circuit.

**IMPORTANT**

*Do not connect the power cable to the X-CUBE module at this point!*

**ON VEHICLES FACTORY EQUIPPED WITH ELECTRIC RADIATOR FANS:**

Connect the supplied **900268** power cable *directly to the C542 wake-up connector* located in the first parcel rack, close to the fuse holder (connector is labeled). This is a direct connection, go to step 5.

**ON OLDER VEHICLES NOT EQUIPPED WITH ELECTRIC RADIATOR FANS:**

Connect the supplied **900268** power cable to the C70 flip screen connector (24V wake-up) located in the driver side overhead compartment (proceed with steps below).

**NOTE**

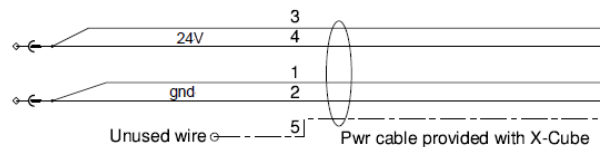
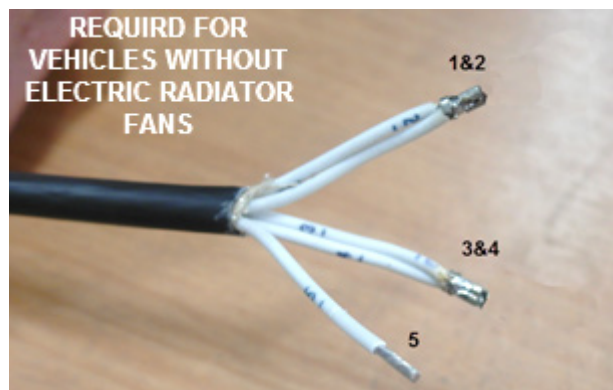
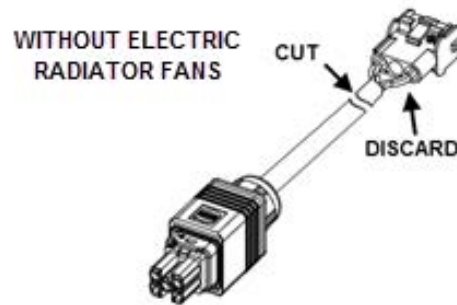
**ON VEHICLES NOT EQUIPPED WITH ELECTRIC RADIATOR FANS.**

*The factory installed 3 prongs connector at the end of the cable must be cut and the cable extended to reach the overhead compartment*

- a) Twist the cable wires number 1 and 2 together.
- b) Twist the cable wires number 3 and 4 together
- c) Wire number 5 of the Icomera cable is not used.

NOTE: Wires are numbered on their insulators.

- d) Connect the **500673** black wire to the number 1 and 2 wires of the Icomera cable (gnd).
- e) Connect the **500669** red wire to the number 3 and 4 wires of the Icomera cable (24V).



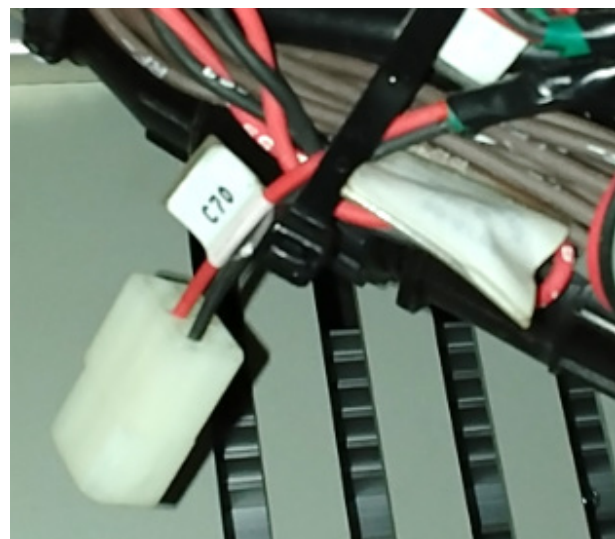
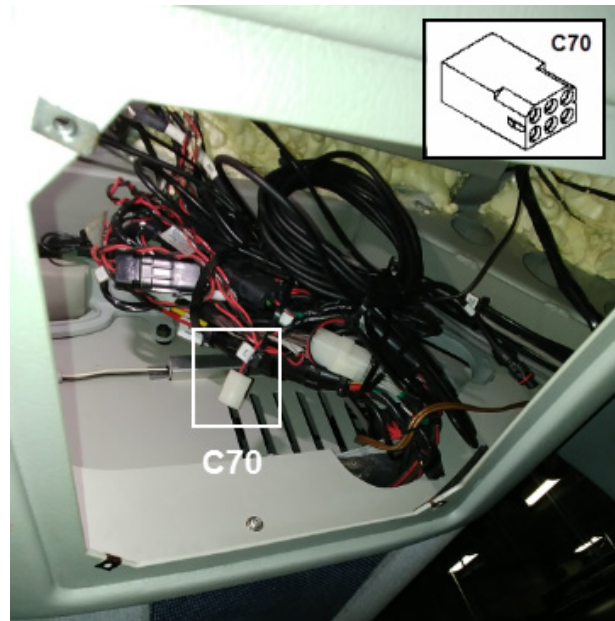
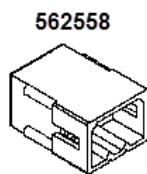


**IMPORTANT**

*Solder all connections, use supplied **562228** butt splices and protect with supplied shrink tubing **560784***

- f) Cover the wires with a 6ft (1.8m) length of 0.25" ID **562387** convoluted tubing.
- g) Add a short length of 0.35" ID **561681** convoluted tubing over the larger diameter part of the cable (tape the ends to secure in place).
- h) Route the wires up to the driver's overhead compartment.
- i) Solder the two supplied **562547** terminals to the end of both wires.
- j) Connect the wires to the **C70** 6 PIN connector in the overhead compartment (use supplied **562558** connector). *Check polarity & wire color!*

*This wake-up circuit is using fuse **F106** (10amp)*



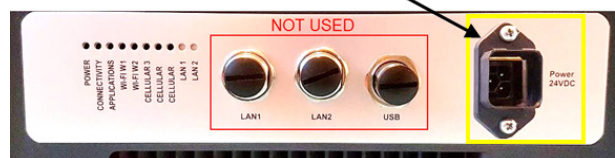
**NOTE**

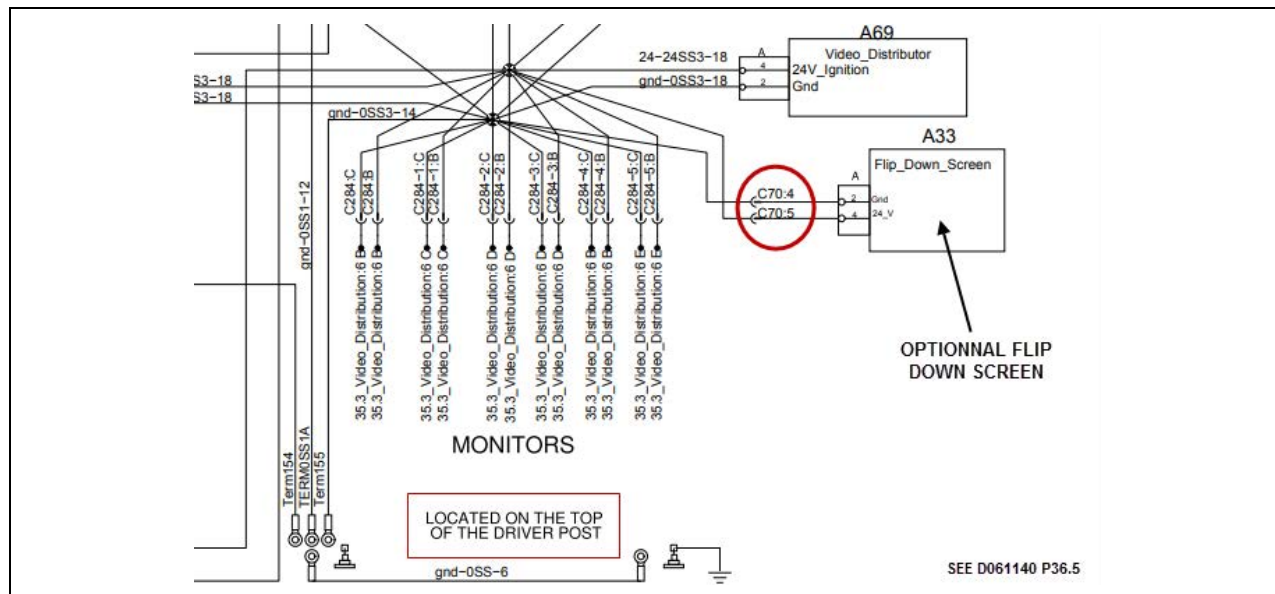
*If the C70 connector is already connected to a central flip screen, use two of the available cavities in the connector to connect (bridge) the X-CUBE.*



- k) Connect the power cable to the X-CUBE power connection.

X-CUBE POWER CONNECTION





5. Secure the X-CUBE to the parcel rack.

- Pivot the connected X-CUBE module so the antenna cables are either facing the interior of the parcel rack or pointing toward the back of the vehicle (the module pilot lights must be visible once installed).
- Raise the X-CUBE module from the parcel rack floor using the supplied **285478** spacers installed at the four corners of the module.



**CAUTION**

*Securing the module directly to the parcel rack floor may cause overheating due to lack of airflow under the module.*

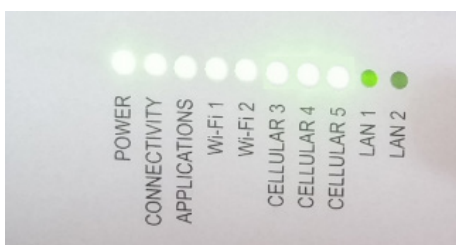
*Always use spacers to raise the module at least 13mm (1/2in) from the mounting surface.*

- Drill pilot holes at the center of the bushing and secure to the floor using the supplied **500865** screws.
- Route the excess length of wire/antenna cables inside the overhead compartment and secure loose cables inside the parcel rack using supplied **504637** cable ties and **504013** tie mounts.



6. Check for proper operation of the system.

- Set the main power switch to the ON position and start the vehicle.
- Move the vehicle outside and wait +/-15 minutes for the system to acquire data and GPS signals.
- Check that all X-CUBE pilot lights (except LAN1 & LAN2) on the side of the module are turning to green.



- Using an available online application like "Wi-Fi Analyzer", check for proper WIFI signal reception

*Signal should not drop below -60dBm anywhere in the vehicle.*

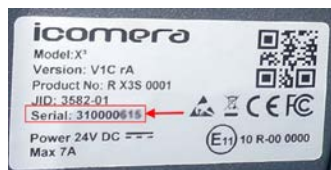
- Check for GPS localization of the vehicle using suitable application.



```
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})
```

7. Take note of the serial numbers.

- Take note of the X-CUBE module serial number.



Also take note of the Vehicle Identification Number (VIN).



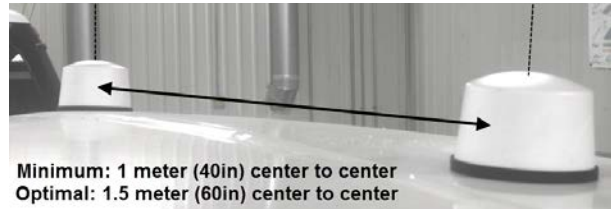
**PARTS / WASTE DISPOSAL**

Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

## GENERAL INSTALLATION GUIDELINES (CUSTOM INSTALLATIONS)

### EXTERIOR ANTENNAS INSTALLATION:

- Antennas should be mounted on a flat surface on each side of the vehicle.
- Minimum distance between exterior antennas is 1 meter (40in), 1.5 meters (60in) is recommended.
- Antenna with GPS connector must be mounted on the same side as the X-CUBE module (shorter cable length).
- Adhesive must be used between the antenna base and the vehicle roof (do not rely on factory double sided tape to seal the installation).
- Antenna nuts must be torqued **80 to 120 lb-in (9 to 14 Nm)**



### INTERIOR ANTENNA INSTALLATION (WI-FI):

- Antenna should be mounted close to the X-CUBE module.
- Antenna must be mounted above head height.
- Best coverage is achieved when the antenna is mounted parallel to the vehicle.
- Wi-Fi antenna is intended for indoor/dry areas use only.
- For non-standard location, it is possible to use a universal support with flat mounting tabs (available under part # **400835**).

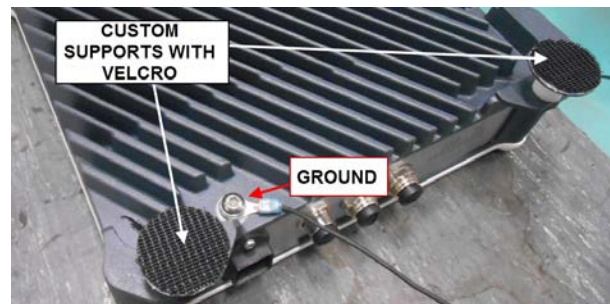


### X-CUBE MODULE INSTALLATION (POSITION):

- The X-Cube module can be mounted horizontally or vertically.
- A cooling air gap of at least 1/2in (13mm) must be present between the module and the mounting surface (use spacers).
- It is possible to mount the X-CUBE module over existing equipment using strong Velcro (air gap must be maintained using spacers, also make sure that the X-CUBE module will not obstruct other equipment cooling openings or fins).



- Do not install other equipment over the X-CUBE module.
- X-CUBE module must be grounded to vehicle chassis (use provided ground connection under the module).



### CABLE ROUTING:

- Cables must be routed in a way that prevents tensile stress and sharp bends.
- Use cable ties to secure cables from the same antenna every 12 to 18in (300 to 450mm) intervals.



**POWER CABLE:**

- Supplied power cable can be extended as long as the same gage wire is used and that connections are soldered.
- Cable should be connected to a 24V wake-up power source.
- If a wake-up power source is not available, a direct 24V connection with a 10 Amp inline fuse can be used.

**NOTE**

*When using a direct 24V circuit, connection will be lost as soon as the vehicle ignition is switched to OFF.*

