

**Sprinter 360 Vision System for Factory Display 2014 to Current  
(Kit # AVMS-3811)**

**DUE TO THE COMPLEXITY OF THIS KIT  
PROFESSIONAL INSTALLATION IS REQUIRED**

**CALIBRATION KIT IS REQUIRED FOR FINAL PROGRAMMING**

**Please read thoroughly before starting installation and check that kit contents are complete.**

**Items Included in the Kit:**

Sprinter dual camera interface for factory display  
Factory display T-harness  
SMB to RCA connector  
Update USB cable  
18 pin power and video harness for interface  
360° camera control module  
Key box power/image buttons  
Front camera w/under grill mount pod and harness  
2 side cameras w/pods and harnesses  
3 gray rubber gaskets for camera pods  
3 black rudder sticker gaskets  
6 rubber well nuts  
6 long Philips screws  
Rear third brake light replacement camera and harness  
2 video output RCA cables  
Power/camera input harness  
These instructions

**Tools & Supplies Needed:**

Wire strippers  
Wire cutters  
Electrical tape  
Zip ties  
Plastic panel removal tools  
Screwdriver  
Power Drill  
Large Uni-bit/Step bit  
5/16" drill bit  
1/2" drill bit  
Torx bits  
Fish tape (wire guide)  
Computer safe test light/Volt meter  
Tape measure  
Masking tape

**Safety Precautions:**

- Work in well ventilated area that is clear of obstructions.
- Secure vehicle with tire chucks in both front and rear of tires.
- Turn vehicle accessories OFF and ensure ignition key is in OFF position.
- Wear safety goggles and snug fitting clothes.
- Use tools only for their intended purpose and which are in good repair.
- Only perform this task if confidence, skill, and physical ability permit.

**NOTE: We strive to provide accurate and up-to-date installation instructions. For the latest full color instructions, as well as an installation video, please visit [www.brandmotion.com](http://www.brandmotion.com)**



**Front camera install:**

1. Open the hood and locate the (4) Torx screws at the top of the grill that holds the grill in.



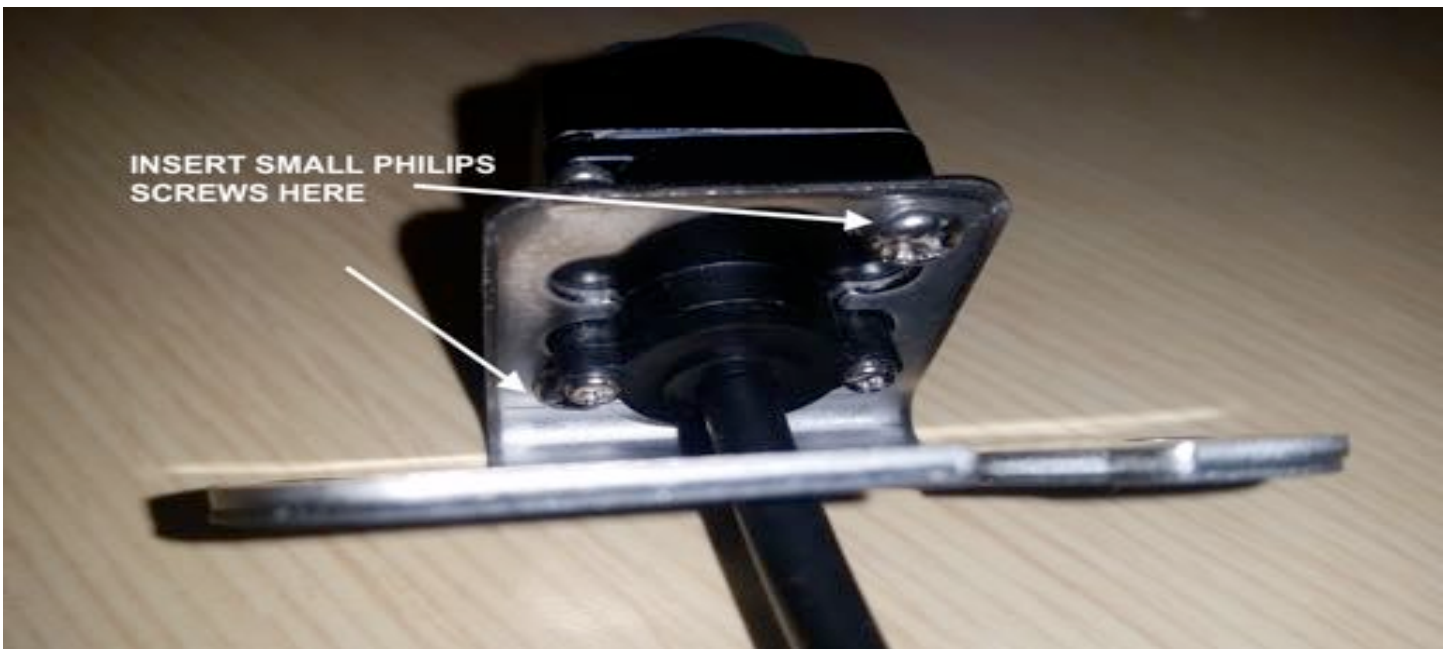
2. Remove the (4) Torx screws and lift the grill up from the rubber stoppers that hold in the bottom of the grill.



3. Find the center of the front of the Sprinter just below the bottom of the grill. (Above the step in the bumper.)
4. Using one of the camera housings rubber gaskets mark the center wire hole and (2) outer screw holes.



5. Remove the gasket and drill the holes, for the outer screw holes drill a 5/16 hole. The center hole drill a 1/2 hole using a step drill or Uni-bit for a clean hole.
6. If the camera housing needs to be painted do this before mounting housing.
7. Mount the camera to the angle camera mount bracket with the (2) small silver Phillips screws. (The white sticker on the camera is the up position on the camera.)



8. Place the black sticker gasket on the bottom of the angle bracket.



9. Insert the camera and angle bracket into the outer camera housing and then place the grey rubber gasket on the bottom of the assembly.





10. In the (2) outer holes drilled insert a rubber well nut in each one, push until lip is flush with the bumper.
11. Run the camera cable through the center hole and insert the long Phillips screws in each hole to mount the assembly.





12. Tighten the (2) screws to hold the camera assembly in place.
13. Connect the camera cable to the camera harness labeled front camera.
14. Run the harness along the inside of the under grill mount. Zip tie to hold harness in place.



15. Run the harness into the engine compartment and to the lower passenger side firewall. (A hole will have to be drilled in the firewall to route the harness into the passenger cabin.)
16. Remove the passenger floor cover to expose the lower floor and firewall. (It is the cover over the jack.)
17. Run harness into the cabin on the lower passenger front firewall.

18. The main 360° control module will be mounted above the glove box.



**Rear camera install:**

1. Remove the factory rear high mount brake light. The light is held in by (2) Torx. Unplug the connector for the light in the housing.





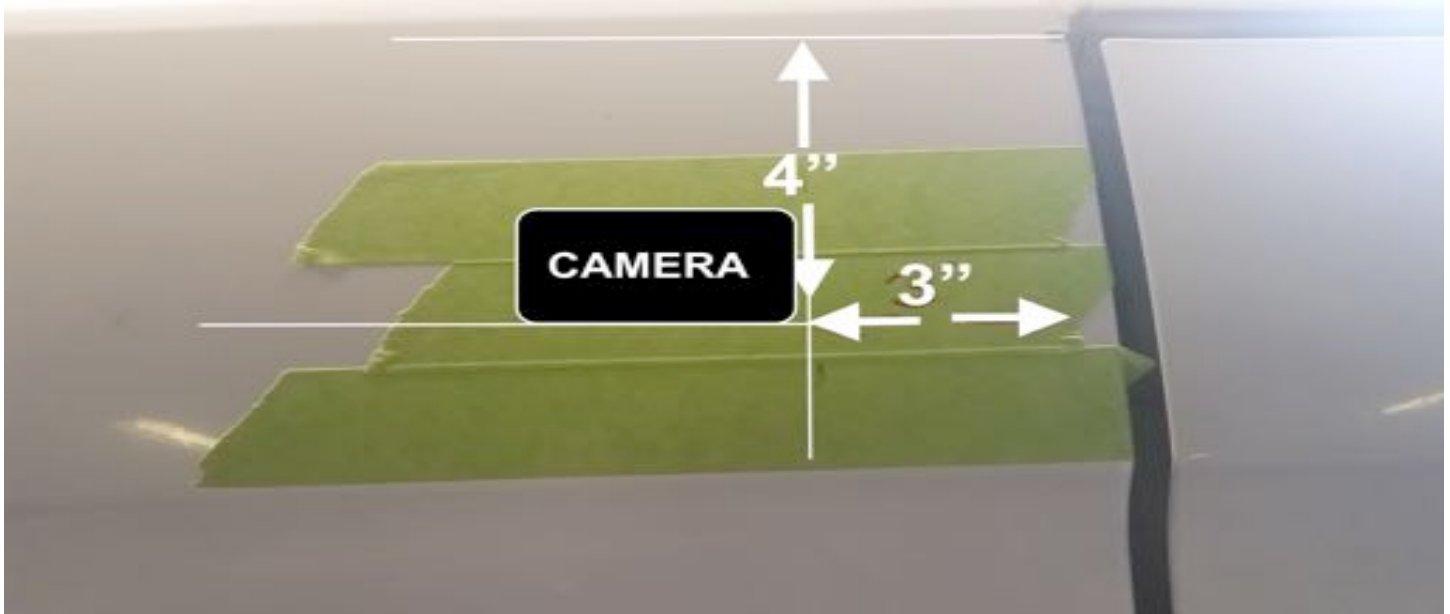
2. On the factory light that was just removed, unsnap the inside plastic with the light bulbs inside. It will have small clips around the outside of the inter trim of the light. Use a plastic panel tool to remove the inter trim.
3. Insert the plastic center trim piece in to the new brake light/camera.
4. Clean the old foam gasket off of the roof of the vehicle.
5. Insert the harness that is labeled rear camera (with the loose terminals into the back side of where the brake light is.)
6. Route the harness over to the brake light opening. Insert the terminals into the provided connector as the diagram on the last page shows. (Match the wire color from the camera cable.)
7. Install the new foam gasket on the light housing or on the vehicle.
8. Connect the camera cable to the harness and reconnect the brake light connector.
9. Install the housing into the vehicle and mount with the factory (2) Torx screws. Do not over tighten the screws.



10. Depending on the build out of the inside of the Van you may need to remove interior panels from the vehicle to run the harness forward. Be sure to secure the harness to the vehicle.
11. Route the harness down the passenger side to end up where the 360° main control module will be mounted.
12. (Running the harness to the side sliding door and stop there until the side cameras are installed will make it easier to run all (3) harness to the passenger glove box area.)

### Side camera install:

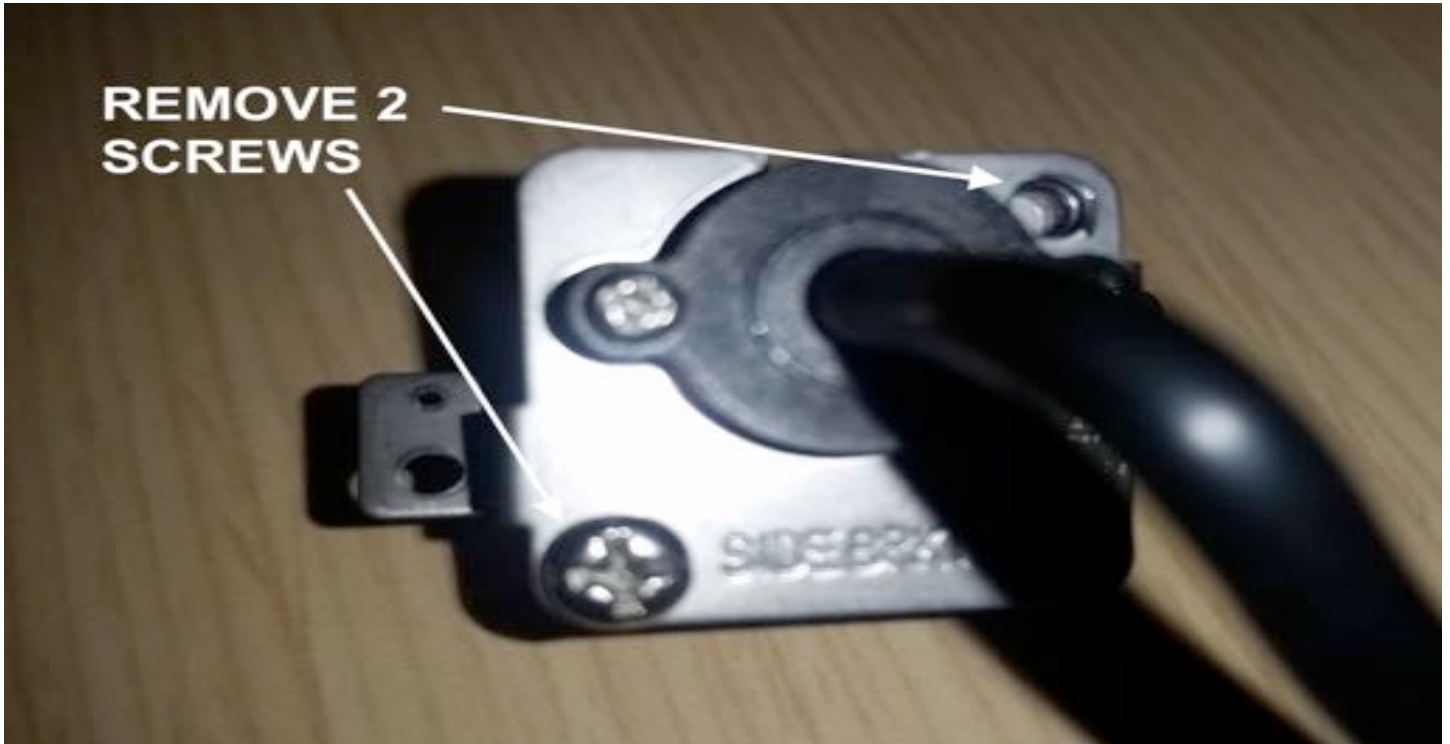
1. Use masking tape to tape up the upper side of the vehicle. About 6" behind the side sliding door, about 6" from the top of the door. (*The cameras will be mounted to the body of the vehicle NOT THE DOOR.*)
2. Measure from the door seam back 3" and make a line up and down.
3. Measure down from the top of the door 4" and make a line along the make front to back.



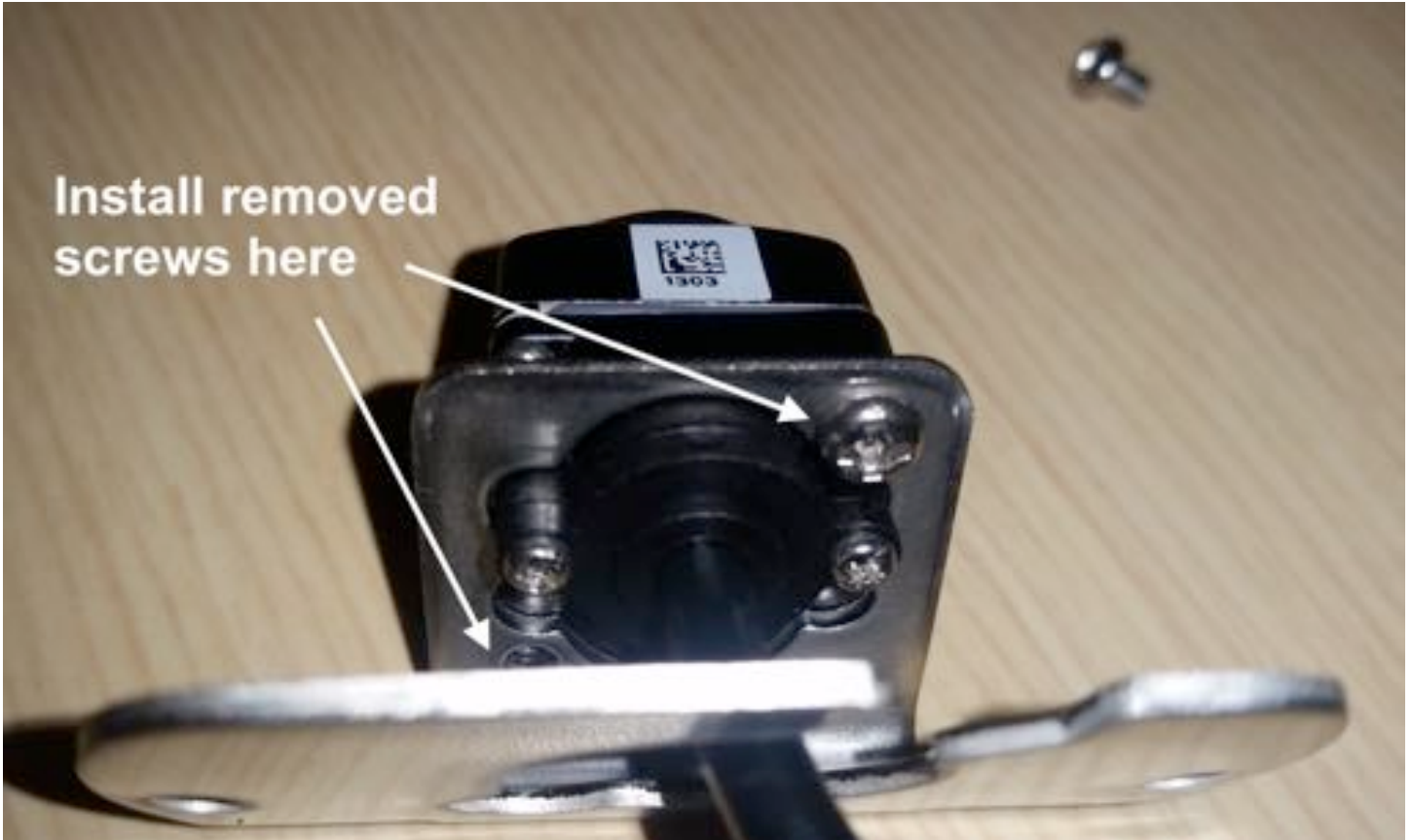
4. The 90° will be the bottom corner of the camera housing.
5. Use one of the rubber gaskets and mark the holes to be drilled.
6. Open the sliding door all the way and hold the camera housing up to the marks for the holes and check for clearance between the door and the camera housing. (**Brandmotion will not be responsible for holes drilled into vehicle and fitment that is not correct due to changes in production of vehicles.**)
7. If the camera housings are going to be painted to match the vehicle do so now before mounting to vehicle.
8. Drill the holes into the side of the vehicle, for the outer screw holes drill a 5/16 hole. The center hole drill a 1/2 hole using a step drill or Uni-bit for a clean hole.



9. Through the center hole, insert a old antenna or fish tape to see if it is all the way to the inside of the vehicle.
10. Drill hole all the way through if not or try to find a opening to go through to the inside of the van.
11. From the inside of the vehicle, connect the harness that is labeled left or right depending on what side of the vehicle is being worked on. Connect the end of the harness that has the loose terminals. Tape that end to the antenna or what ever is being used to pull through to the outside vehicle.
12. Once to the outside of the vehicle insert the terminals into the provided connector. (Follow the diagram on the last page.)
13. Remove to (2) small screws from the brackets installed on the side cameras now. *(If there are no brackets on the side cameras then the screws will be in a enclosed zip lock bag with (6) screws in it for the front and side cameras.)*



14. Mount the camera to the angle camera mount bracket with the (2) small silver Phillips screws. (The white sticker on the camera is the up position on the camera.)



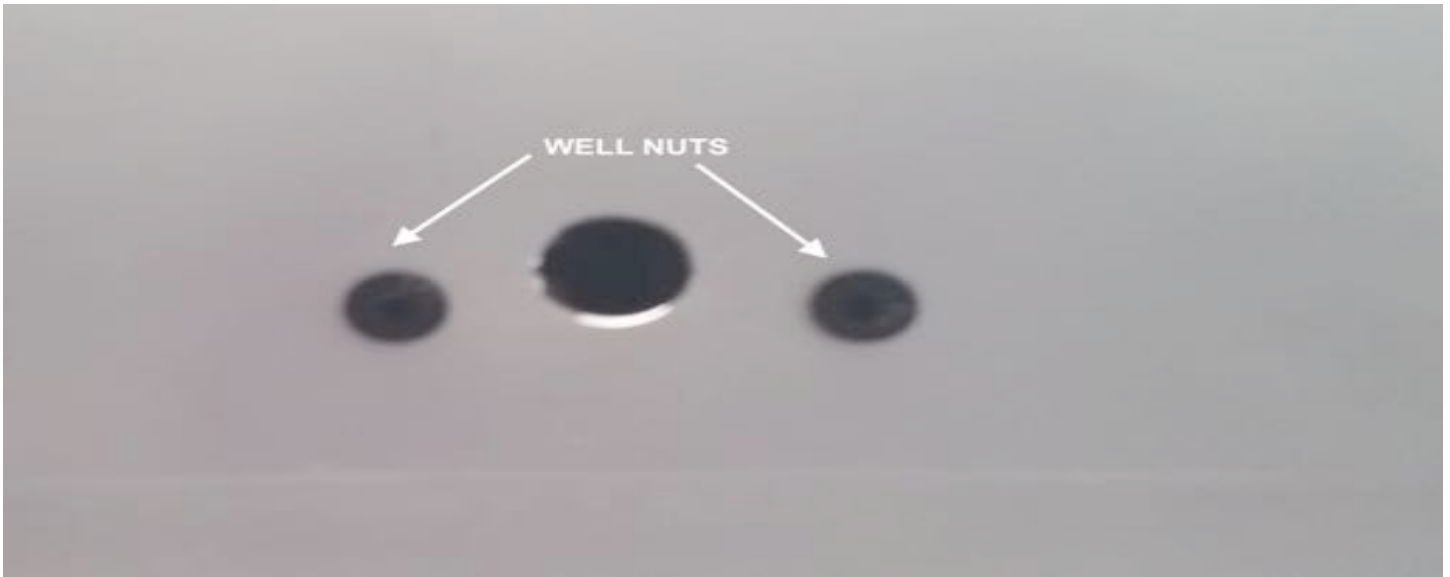
15. Place the black sticker gasket on the bottom of the angle bracket.



16. Insert the camera and angle bracket into the outer camera housing and then place the grey rubber gasket on the bottom of the assembly.



17. In the (2) outer holes drilled insert a rubber well nut in each one, push until lip in flush with the metal of the vehicle.



18. Connect the camera cable to the harness and tape up or heat shrink the connector to make sure that it does not come unplugged.
19. Insert the extra cable into the vehicle. (Pull from the inside until it is tight.)
20. Use clear silicone to fill center hole to prevent water from entering vehicle.
21. Insert the long Phillips screws in each hole to mount the assembly.



22. Tighten the (2) screws to hold the camera assembly in place.

23. Make sure gasket is in place and not curled under the housing.



24. Repeat for the other side of the vehicle.

25. After other side is complete route the harness to the passenger side and run the sides and rear camera to the front of the vehicle towards the glove box area. (Follow the headliner to the passenger side A-plier and run down to the glove bow.) The plier unclips from the top to the bottom.

**Key box install:**

1. Remove trim from around the shifter by using a plastic panel remover tool.



2. Remove the trim from around the radio and heater controls by unsnapping it with a panel remover.
3. To the right of the shifter there is a flat place to mount the Key box.
4. Begin by drilling (2) 5/16 holes on top of each other. Then filling the middle to make a slot.



5. Insert the plug end of the key box harness through the slot opening and attach the key box to the shifter trim.





6. Route the cable into the heater control opening and then to the glove box area.
7. Reinstall the shifter trim, making sure not to pinch the cable.

### Factory display interface install:

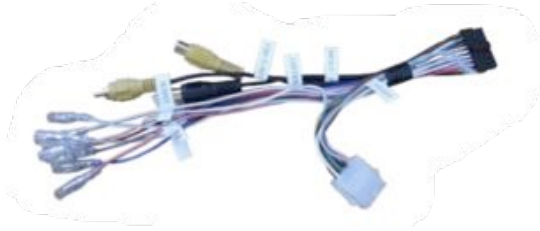
1. Remove the factory radio. This requires pulling panels and removing screws. Disconnect all connected harnesses and set the radio aside.
2. Connect the male end of the factory 44-pin plug to the female end of the provided Plug & Play T-Harness.



3. Disconnect the two smaller plugs on the factory 44-pin plug and connect them both to the male end of the provided Plug & Play T-Harness.



4. Connect the *CAN-XG Adapter* harness to the 8-pin plug located in the center of the *Plug & Play T- Harness*.
5. Connect the *MB Sprinter-CAM module* to the 18-pin Molex connector on the end of the *CAN-XG Adapter*.



6. Connect the provided SMB to RCA Adapter to the green port on the back of the Sprinter's factory radio (if there is already a plug at the green port, disconnect it and use the provided SMB cable instead).



7. Connect the RCA end of the SMD to RCA adapter to the RCA on the T-harness labeled video to radio.
8. Connect the RCA on the T-harness labeled Backup Cam to the CVBS RV RCA from the 360° Main control module.
9. Connect the RCA on the T-harness labeled Video in to the CVBS RCA from the 360° Main control module.
10. Connect the male end of the provided 44-pin Plug & Play T- Harness back to the radio and leave the module outside of the dash, or accessible.
11. Proceed to Programming (below).
12. Once programming is complete, start the vehicle and place it into reverse. The reverse camera's image should appear on the screen automatically. (After 360° Main control module is installed)

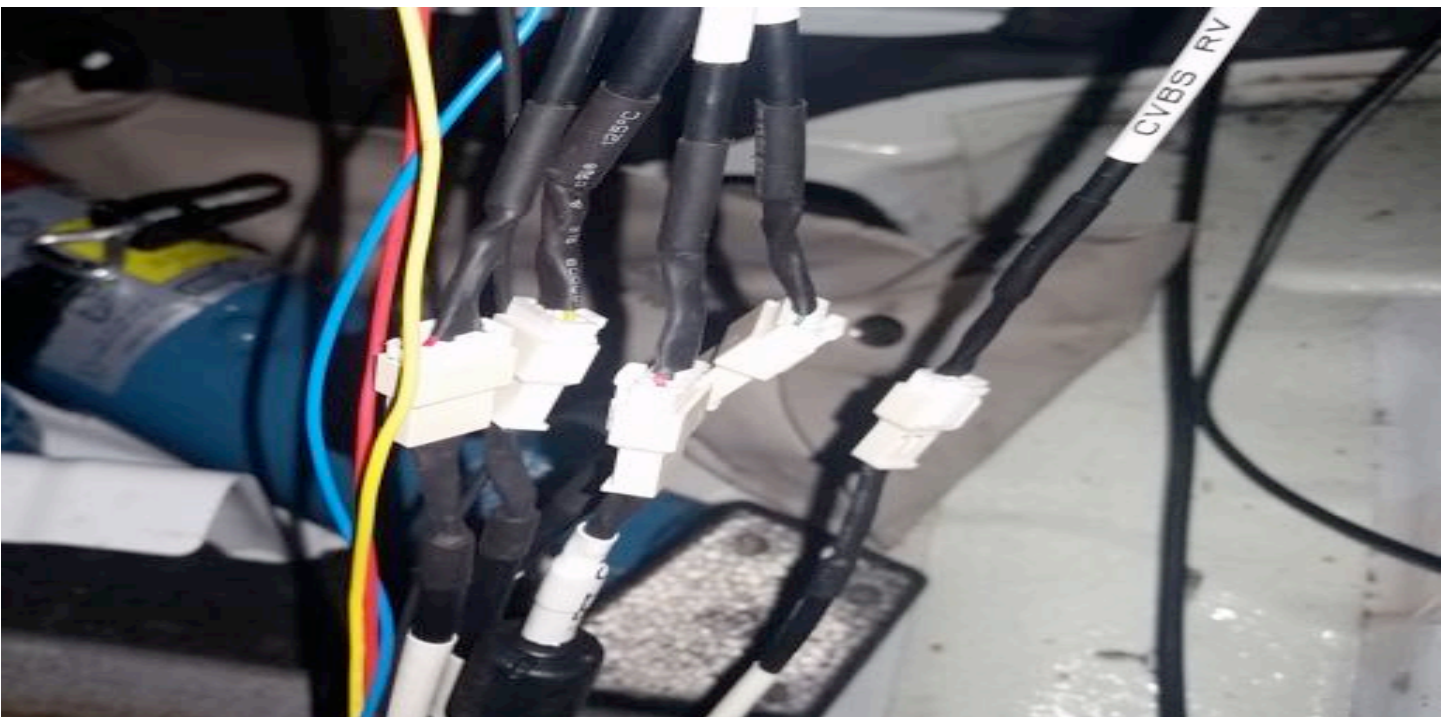
## Module Programming

13. Begin by installing this kit
14. From the 18-pin Molex connector, find the Blue wire labeled Input 2.
15. Cut the metal connector off of the blue wire and strip the end back.
16. Connect this wire temporarily to 12v (+). When programming is complete, you must remove this wire from power! Note: The yellow wire on the white 8-PIN Molex connector is a CAN wire, not constant power. Use the RED wire in this plug (constant 12v) or the yellow wire from 18-PIN XG module.
17. Turn the vehicle's ignition ON (not ACC or running, but ON).
18. Wait at least 1 minute for the radio to fully boot and settle.
19. With Input 2 connected to 12v (+), toggle (pull and release once) the high-beam head lamp lever and 'DIAGNOSIS' will appear on the screen. Refer to the chart below during programming.
20. Once the radio has been programmed, it will shut down (not reboot, but turn off).
21. After a few seconds, press the power button on the radio to bring the radio back up.
22. Remove Input 2 from 12v (+). Insulate the wire end.

LED Response	Description
NO LED	<b>Programming...</b>
1 flash	<b>NO VIN</b> (VIN isn't identified OR the module has a VIN stored already)
2 flashes	<b>Vehicle is already provisioned</b> (Programming has been completed already)
3 flashes	<b>Programming rejected</b> (CAN needs to go down for 2 mins)
4 flashes	<b>Programming complete</b> (The radio has accepted the program)

**360° Main Control Module install:**

1. Remove the passenger side dash trim. It will unclip from the dash.
2. Open the glove box and release the stops to open all the way.
3. Remove the (3) Torx screws from the top inside of the glove box.
4. Remove the (3) Torx screws from under the front of the glove box. It will then pull straight out.
5. Finish routing the camera harnesses to the glove box area.
6. Connect the camera harness, key box ,CVBS RV RCA and CVBS RCA to the main power harness on the main control module. UART will not be used for this install.



7. Connect the YELLOW wire from the main control module to constant 12-volt power. It can be found at the ignition switch, black 5-Pin plug, pin 1. The wire color is Red/gray.
8. Connect the RED wire from the main control module to accessory 12 volt power. It can be found at the ignition switch, black 5-pin plug, pin 2. The wire color is Black
9. Connect the BLUE wire from the main control module to reverse 12 volt power. It can be found at the BCM on fuse/relay box in driver kick, 20-pin plug (C3), pin 14. The color of the factory wire is white/dark Blue.
10. Connect the BLACK wire from the main control module to a clean metal surface.
11. Connect the BLUE wire from the TR-7 attached to the 360 main control module labeled Aux trigger output to the PINK wire on the 18-pin harness from the interface labeled Input 3.
12. Plug in the main power harness to the control module.
13. Connect the CVBS RV RCA to the rear camera input on the harness for the interface.

14. Connect the CVBS to the AUX video input on the harness for the interface.
15. Turn key to the run position and turn on the aftermarket display to the correct video input.  
The 360° image should display on the screen. (There will be a warning message through the display because the system has not been calibrated yet.)



(FLTW-7670 monitor shown- not included)

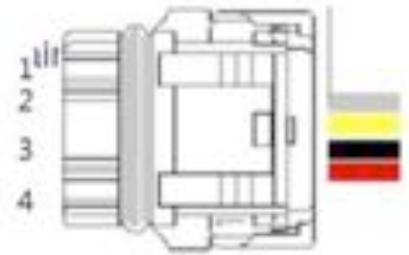
16. Press the view select button on the key box to change the views.
17. Place the vehicle shifter into reverse to see the 360° view and the reverse camera.
18. If the system is working the next step is to calibrate the system.
19. Calibrate the system.
20. After the calibration is done mount the main control module to the under side of the das in the glove box opening. Use self-drilling screws to screw into the factory metal bracket.



21. Zip tie up the harnesses to the back of the dash.
22. Clean up all wiring and seal the hole that was drilled into the fire wall for the front camera harness with silicone, 3M rubber strips or a grommet.
23. Put dash and glove box area back together and clean up around vehicle.
24. Test system again for 360° view and reverse camera image.

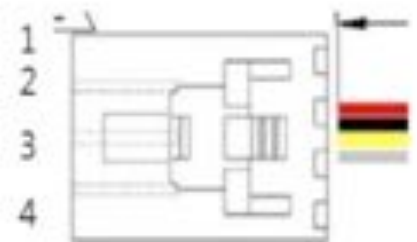
**1.2.2 Front Camera Connector pin map**

Pin No.	Description
1	V-GND(White & Drain)
2	Video(Yellow)
3	Power_GND(Black)
4	Power(Red)



**1.2.3 Rear Camera Connector pin map**

Pin No.	Description
1	Power(Red)
2	Power_GND(Black)
3	Video(Yellow)
4	V-GND(White & Drain)



**1.2.4 Side Camera Connector**

Pin No.	Description
1	Power(Red)
2	Power_GND(Black)
3	Video(Yellow)
4	V-GND(White & Drain)

