



Installation Guide

DVM-800



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On behalf of the Digital Ally team, I want to thank you for this order. We appreciate the trust and confidence you have shown us.

We will strive to do everything we can to provide you with the best products, support and customer service. Please know we have a team of engineers, sales, manufacturing, customer service, accounting, technicians and support personnel who work to provide the excellent customer experience and satisfaction you demand and of which is the cornerstone of our business.

Below are a few comments and suggestions before you get started with the installation of your Digital Ally DVM-800 system:

- The DVM-800 is designed to be easily installed into virtually any make or model of vehicle.
- Please check the packing list against the items enclosed to make sure you have received all the items.
- Pictures of the various components of the system are shown throughout this guide to assist you.
- Please refer to the DVM-800 Operation Guide for operating instructions. You can download and print this document by logging in to the Digital Ally website at <http://www.digitalallyinc.com/login.cfm>.
- The default passwords to access the DVM can be located on [page 4-1](#) of this document.
- The system diagram is provided on [page 2-5](#), and the wiring connections chart is provided on [page 2-6](#).

If you need any help, have any questions, or just want to provide some comments, please feel free to contact us and we will be happy to assist you. We are located in the Kansas City metro area.

Best regards,



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Section 1

Before You Begin

This document references the installation of the DVM-800 system, external cameras, and the cabling harnesses.

Tools Needed

- #2 Phillips head screwdriver
- #20 Torx screwdriver or bit
- 1/8" (4 mm) flat-blade screwdriver
- Digital Volt Meter
- Tie wraps
- 16 Gauge Scotchlok or butt connectors
- Wire Crimpers

Cautions and Notes

Please read the following instructions and precautions before installing the DVM-800.

- For assistance, a qualified installation technician or mechanic should be consulted.
- Do not use excessive force when removing the mirror from the windshield. The mirror mounting plate may become separated from the windshield and/or the windshield may break if excessive force is used. If you are unfamiliar with rearview mirror removal seek professional assistance.
- Do not route wiring and cabling over sharp metal edges where they may become damaged or cut.
- To prevent electrical shorts or breakage in the wiring and cabling, do not allow wiring and cabling to be pinched behind trim pieces, panels, or other objects.
- Do not run wires or cables in areas where they may become damaged by heat from the engine or the exhaust system.
- Do not install any DVM components or wiring in the deployment path of the air bags.
- When installing the cables or making wire connections, it is recommended you leave a little slack in the cable connections to allow for service loops and for adjustment of the mirror so the connections do not get pulled or accidentally disconnected.
- Do not connect any Digital Ally wiring in series with a vehicle charge guard or battery saver. All system battery connections must be made to a constant +13.8VDC location within the vehicle.
- Where possible, do not leave excessive cable above the headliner. We recommend at least 2 feet of distance between our cabling and that of other systems which may carry a signal for transmit and/or receive.



Section 2

Parts List and System Diagrams

DVM-800 Standard Parts Kit 001-00081-00

External Camera Packages are shown on the next page

Part #	Image and Description
006-08265-31	 DVM-800, Main Unit
002-05146-00	 DVM Mount Assembly
002-05168-00	 Accessory Kit: Includes Windshield Mounting Puck, Lanyard, Mounting Hardware, Security Tamper Resistant Screw and Key Kit
006-08210-01	 IF Box (model IFE-20)
008-01388-00	 Cable, Main Power to IF Box 3.1m (10.1ft.)
008-01386-01	 Cable, IF Box to DVM 4.6m (15.0ft.)
002-05185-00	 DWM-928 System, (900MHz) Includes Wireless Microphone, Charging Cradle, Mounting Bracket, and Lapel Microphone. (DWM-865 version available for countries that require 800MHz)
004-09064-00	 Backseat Microphone for DWM-928/865, 20ft. 2.5mm plug
008-0100	 Cable, USB 2.0 Type A to Mini-B, 3.3 ft.
008-01455-00	 Cable, Wireless Microphone to DVM-800
008-01464-00	 Cable, IF Box, Sensor, RJ45
001-00010-20	 Wi-Fi Antenna
008-01410-00	 GPS Module
363-00087-00	 SD card, 32GB
860-00184-00	 Quick Reference Guide



External Camera Packages

Part Number		Kit Contents
<p>Option 1 Front 12XC Camera & Backseat Camera with 2 Cables 002-05136-12</p>		<ul style="list-style-type: none"> • 566-00138-00 Front 12XC Camera • 566-00134-00 Backseat Camera, w/Smart IR, Reverse Image Switch, Water Resistant (IP69) • 008-01390-00 Backup Camera Cable • 008-01442-00 Cable, 12XC Camera to DVR
<p>Option 2A Front 12XC Camera & License Plate Camera 002-05136-21</p>		<ul style="list-style-type: none"> • 566-00138-00 Front 12XC Camera • 566-00141-00 License Plate Backup Camera w/adapter cable • 008-01390-00 Backup Camera Cable • 008-01442-00 Cable, 12XC Camera to DVR
<p>Option 2B Front 12XC Camera & Mini Backup Camera 002-05136-22</p>		<ul style="list-style-type: none"> • 566-00138-00 Front 12XC Camera • 566-00144-00 Mini Backup Camera w/adapter cable • 008-01390-00 Backup Camera Cable • 008-01442-00 Cable, 12XC Camera to DVR
<p>Option 3A Front 12XC Camera, Backseat Camera & License Plate Camera 002-05136-32</p>		<ul style="list-style-type: none"> • 566-00138-00 Front 12XC Camera • 566-00141-00 License Plate Backup Camera w/adapter cable • 566-00134-00 Backseat Camera, w/Smart IR, Reverse Image Switch, Water Resistant (IP69) • 008-01390-00 Backup Camera Cable • 008-01443-00 Y-Cable, 12XC Camera and Backseat Camera to DVR
<p>Option 3B Front 12XC Camera, Backseat Camera & Mini Backup Camera 002-05136-33</p>		<ul style="list-style-type: none"> • 566-00138-00 Front 12XC Camera • 566-00134-00 Backseat Camera, w/Smart IR, Reverse Image Switch, Water Resistant (IP69) • 566-00144-00 Mini Backup Camera w/adapter cable • 008-01443-00 Y-Cable, 12XC Camera and Backseat Camera to DVR • 008-01390-00 Backup Camera Cable
<p>Option 4 Front 12XC Camera & Backseat Camera with Y-Cable 002-05136-42</p>		<ul style="list-style-type: none"> • 566-00138-00 Front 12XC Camera • 566-00134-00 Backseat Camera, w/Smart IR, Reverse Image Switch, Water Resistant (IP69) • 008-01443-00 Y-Cable, 12XC Camera and Backseat Camera to DVR

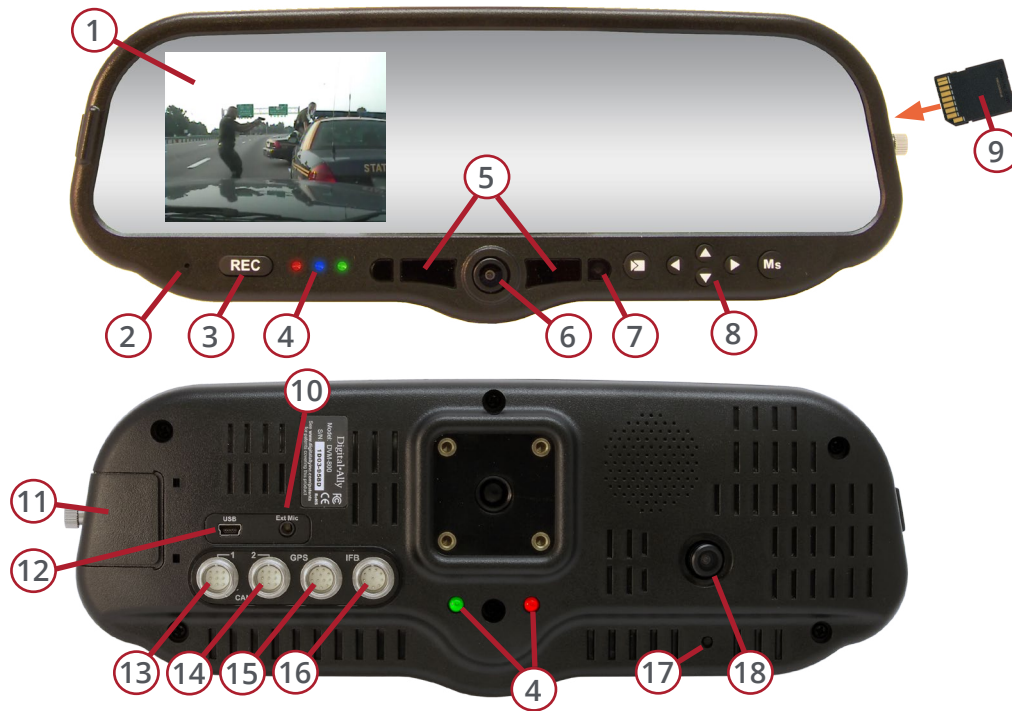


Optional Parts

Part Number	Image and Description	
008-01382-00 008-01382-01 008-01382-02 008-01382-03		Backup Camera 25ft Extension Cable Backup Camera 40ft Extension Cable Backup Camera 60ft Extension Cable Backup Camera 15ft Extension Cable
025-00018-00 025-00019-00		DWM-928 External 900MHz Antenna. DWM-865 External 800MHz Antenna.
002-05091-00		Charger, RMT Desktop Charger 120VAC
002-05153-00		Auxiliary 4-Camera Switch Box V3
002-05204-00		SD Card Reader with USB Cable for PC
740-00388-00		Panel Mount Remote Activation Switch
740-00399-00		Footswitch, Maintained (18/2AWG, 6ft, bare leads)
002-05030-00		Drop Mount Adapter
002-05112-00		Windshield Mount Adapter Kit, Dodge Charger
006-08267-00		Windshield Mount Adapter Kit, Dodge Sprinter
006-0030		Visor Mount For external front camera
006-0050		Siren Adapter Interface



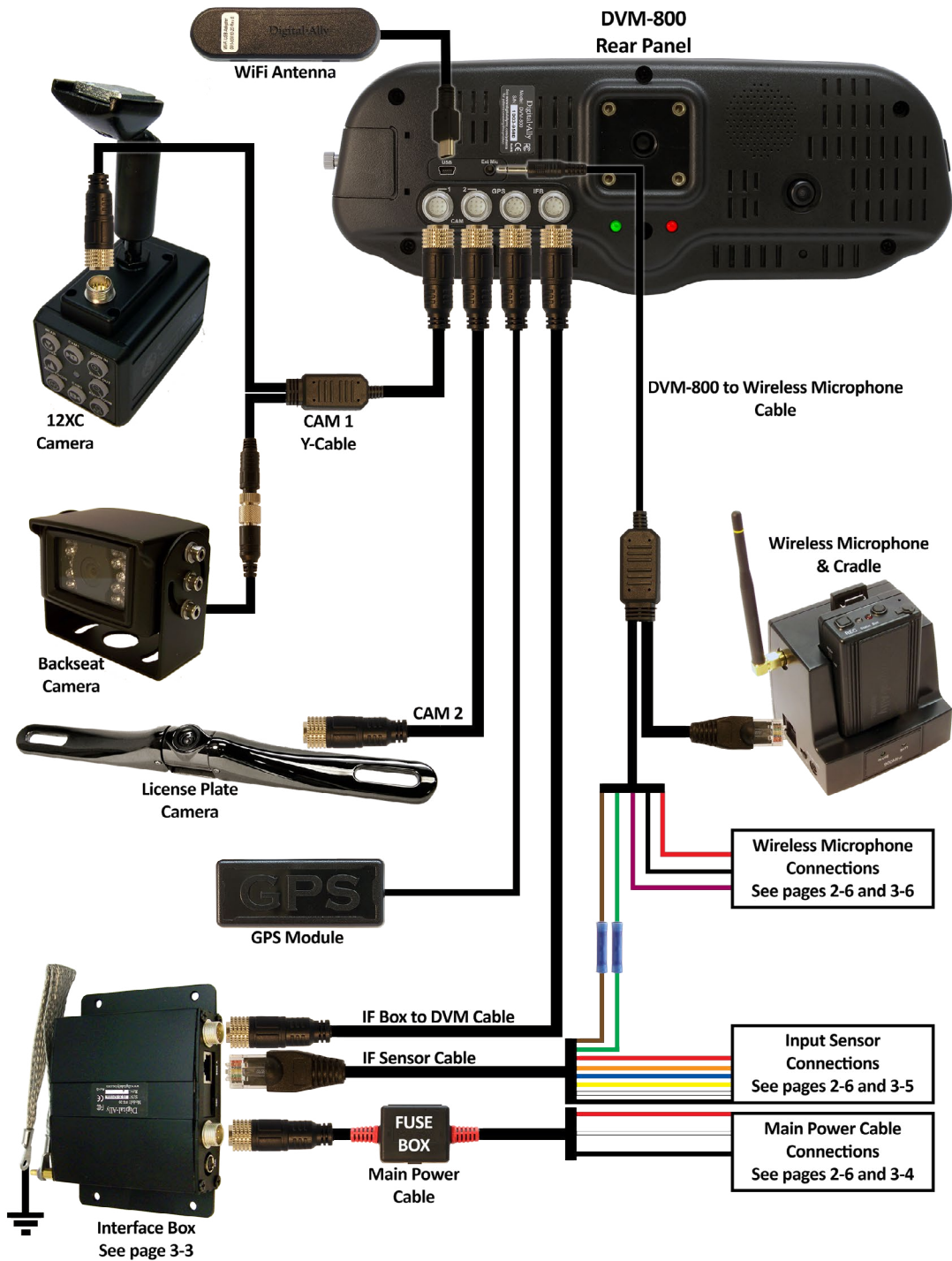
DVM Features Diagram



1	LCD Display: Used for viewing video. LCD is behind the mirror and is not visible when off.
2	Internal Microphone: Records audio from the passenger compartment.
3	Manual Record button: This button is used to Start/Stop a manual event recording.
4	LED Status Indicators (Passenger Facing & Road Facing): These visible indicators give the operator feedback on the operational status of the DVM from inside or outside of the vehicle.
5	Infrared Illuminators: Automatically provides Infrared illumination for the Passenger Facing Camera during low light conditions.
6	Passenger Facing Camera: Records video of the vehicle passenger area.
7	Ambient Light Sensor: Senses ambient light to automatically adjust LCD brightness and interior Infrared Illuminators.
8	Menu and Playback Buttons: Used to navigate the DVM menus, play back videos, and log into the system.
9	SD Card: A removable SD card is installed behind the external SD door. The SD card is installed at a slight angle and positioned with the connector pads as shown above.
10	External Microphone Input: The Digital Wireless Microphone audio cable is connected here.
11	SD Card door: Provides access to the removable SD memory card.
12	USB Port: For data transfer and Wi-Fi download.
13	Camera 1 Port: An external camera can be connected to the DVM with this port.
14	Camera 2 Port: A 2nd external camera is connected to the DVM here.
15	GPS Port: The GPS antenna is connected here.
16	Power Port: Provides power to the DVM. Also used to connect the Interface Box to the DVM.
17	Reset Button: Used to perform a hard reset of the system.
18	Road Facing Camera: Records the view in front of the vehicle.



System Diagram



Wiring Connections Chart

Input Signal	Color	Pin #	Description
Main Power Cable (page 3-4)			
Battery	Red	1	+13.8VDC Unswitched Power. Connect directly to the engine compartment battery. DO NOT connect any Digital Ally equipment through a vehicle charge guard or battery saver.
Ignition	White	2	+13.8VDC Switched. Powered only when ignition is in the ACC or On position. Ignition is used to cycle the system power on and off.
Ground	Black	3	Chassis Ground. Secure directly to vehicle frame.
Sensor Input Cable (page 3-5)			
Reverse	Red	1	Connect to reverse gear relay, or reverse light bulb.
Emergency Lights	Orange	2	Connect to light bar controller. +12VDC when emergency lights are activated.
Brakes	Blue	3	Connect to brake pedal switch or 3rd brake light. +12VDC when brake is active.
VSS	Yellow	4	Connect to Vehicle Speed Sensor pulse signal.
Sensor 5	White	5	Configurable input sensor
Mic Trigger Out	Green	6	Connect to Green wire of Wireless Microphone Cable
Mic Trigger In	Brown	7	Connect to Brown wire of Wireless Microphone Cable
Ground	Black	8	Chassis Ground
RJ45	RJ45	N/A	Connect to "SENS A" RJ45 input of Interface box
DWM Wireless Microphone Cable (page 3-6)			
Battery	Red	1	+13.8VDC Unswitched Power. Connect directly to the engine compartment battery.
Ground	Black	2	Connect to Chassis Ground
Mic Trigger Out	Green	3	Connect to Green wire of Input Sensor Cable.
Mic Trigger In	Brown	4	Connect to Brown wire of Input Sensor Cable.
Remote Accessory Out	Violet	5	Connect to auxiliary equipment (optional connection)
RJ45	RJ45	N/A	Connect to Wireless Microphone Cradle.
Audio	3.5mm	N/A	Connect to 3.5mm Ext Mic jack on back of DVM.



Section 3

Installation Instructions

Step 1: Factory Mirror Removal

The current factory rear-view mirror must be removed from the windshield mounting plate. There are several versions of mirror mounting systems. Below are the most common methods of rear-view mirror removal. If you are unfamiliar with rearview mirror removal, seek professional assistance.



Be very careful and do not use excessive force when removing the mirror from the windshield. The mirror mounting plate may become separated from the windshield and/or the windshield may break if excessive force is used.

Use one of the following methods that match the mirror mounting configuration of your vehicle:

Screw Mount Rearview Mirror Removal

1. Using a Philips screwdriver or #20 Torx bit, loosen the screw in the base of the mirror.
2. After loosening the screw, gently lift upward to slide mirror off of mirror mount.

Wedge (Screwless) Mount Rearview Mirror Removal

1. Using a small 1/8" (4 mm) flat-blade screwdriver, insert the flat end into the opening at the bottom of the mirror mount next to the windshield.
2. Slide the screwdriver into the center of the mirror mount until resistance is felt.
3. Gently apply a small amount of additional upward force to lift away the locking spring inside the mount.
4. While still applying upward pressure with the screwdriver, grasp the mirror bracket and wiggle it from side to side. Lift the mirror up toward the headliner and off the windshield mount button.

Cam Lock Rearview Mirror Removal

1. With your right hand, grip the mirror and keep it stabilized.
2. With your left hand, grip the base of the factory mount where it meets the glass.
3. Apply a small amount of inward pressure toward the glass and rotate the base clockwise.
4. The spring loaded factory mount should release from the windshield puck.



Step 2: DVM Installation

1. Install the provided Mirror Mount to the back of the DVM using 3 of the supplied M4 x 6mm black screws. Using the longer 8mm black screw, attach one end the Tether Cable to the Mirror Mount and DVM.
2. Slide the new DVM onto the existing windshield mounting plate and secure your DVM to the vehicle windshield. For some 2011 and later Dodge vehicles, attach and orient the optional adapter to factory windshield as shown. Use Loctite™ #03346 glue to secure the adapter to the factory windshield mount. If needed, attach optional the drop-down bracket as shown.



3. Use a #20 Torx screw driver to tighten the mounting screw.
4. Adjust the viewing angle for the rearview mirror.

NOTE

In some vehicles, the position of the manufacturer's windshield mounting plate may not allow for proper rearview DVM adjustment for some individuals, especially when the vehicle is equipped with an overhead console and/or interior emergency lighting. In these cases, the mounting plate included with the DVM package must be glued to the windshield in a location that will allow proper adjustment. Loctite #03346 glue is recommended. Please follow the instructions on the Loctite package.

5. Securely attach the other end of the Tether Cable to the metal structure of the vehicle above the DVM using either the supplied self-drilling screw, or by drilling a hole and using the supplied bolt, nut, and washer.

NOTE

The Tether Cable is a safety feature to minimize the chance of personal injury should the windshield be broken in an accident or if the DVM otherwise becomes disengaged from the windshield.

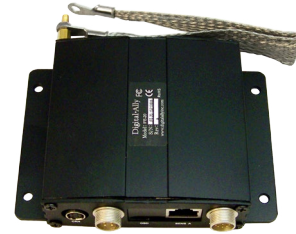
6. Remove the protective film cover from the:
 - Internal Road Facing camera
 - Internal Passenger Facing camera



Step 3: Interface Box Installation

Interface Box

The IF Box must be securely mounted on a solid area of the vehicle structure in a moisture free location where it can be easily accessed for reset or replacement.



Possible mounting locations include:

- Under the dash on the passenger side.
- Behind the kick panel on the passenger side (or driver side).
- Mounted into the transmission tunnel sheet metal below the dash. On some vehicles this is not advisable due to extreme heat radiated from the transmission.
- Mounted on the exterior of the center console. Do NOT mount inside the center console.
- Under the seat on some SUV-type vehicles.
- Behind a panel on the right hand side of the dash (nearest to the door).
- Do not place the IF Box directly on floorboard, or mount it in areas where it could be exposed to moisture such as air conditioner condensation, accidental liquid spills, rain, snow, mud, or other elements that could be tracked into the vehicle.
- Do not place the IF Box in an area that will subject the unit to excessive heat such as the transmission tunnel or engine firewall.

Mount the IF Box

1. Use the *IF Box to DVM Cable* as a gauge to estimate an appropriate location for mounting the IF Box. Secure the IF Box to a location free from moisture.
2. Once a suitable mounting location has been identified for the IF Box, verify that the shielding strap can be securely connected to the metal surface of the vehicle chassis. If the shielding strap does not reach a suitable metal surface, reposition the IF Box appropriately.
3. Secure the unconnected end of the shielding strap to the vehicle chassis.
4. The shielding strap must be connected to a metal surface of the vehicle chassis to prevent electrical interference. Failure to properly connect the shielding strap may cause system operation issues.

DVM to Interface Box Cable Installation

1. Plug the *IF Box to DVM Cable* into the back of the DVM.
2. Leaving slack in the cable at the mirror mounting bracket for DVM adjustment, begin routing the cable from the DVM under the front edge of the headliner down the windshield pillar towards the mounting location for the IF Box. To conceal the cable, it may be necessary to loosen the sun visor mounting bracket and/or other trim pieces to allow the cable to be tucked in behind the headliner.
3. Do not route wiring and cabling over any sharp metal edges. Avoid running the cable parallel to other wiring and/or antenna coax from other equipment in the vehicle. To prevent electrical shorts or breakage in the wiring and cabling, do not allow wiring and cabling to be pinched behind trim pieces, panels, or other objects.
4. Secure the cable using velcro or standard tie wraps as required.
5. Plug the remaining end of the cable into the IF Box *Mirror* jack.



IF Box to DVM Cable



Step 4: Power, Ground, and Input Sensor

Power Cable Installation

1. Plug the connector of the *Main Power Cable* into the IF Box.
2. Route the cable to a suitable location for electrical connection.
3. Remove 4 to 5 inches of the outer jacket at the bare end of the power cable. Separate the braided shield from the individual conductors, attach an electrical terminal to the end of the braided shield, and attach the terminal to the chassis of the vehicle.
4. Connect the **Red** wire of the power cable to the vehicle Positive battery terminal and the **Black** wire of this power cable directly to the vehicle's chassis. It is required that the power wires be connected to the battery with no obstructions such as a cutoff switch or charge guard system.
5. Connect the **White** wire to the ignition switch where +13.8VDC is only present when the vehicle ignition key is in the ON position.



Main Power Cable

Figure 3-4: Power Connections

Input	Color
Power Connect to +13.8VDC Battery Terminal	Red
Ignition Connect to +13.8VDC Ignition Switch	White
Ground Vehicle Chassis	Black

6. Secure the cable and the inline fuse housing using Velcro or standard cable ties as required. The cable contains a 5 Amp, 250V fuse and a filter to help minimize unwanted RF noise.
7. Re-connect the cable to the connector on the back of the DVM.



IF Input Sensor Cable Installation

The IF Box provides multi-purpose sensor inputs that allow external devices to trigger an event record in the mirror. Common external sensors include; emergency lights, siren, brake pedal, vehicle speed sensor, reverse gear, covert foot-switch, or door sensors.



IF Box Sensor Input Cable

Determine the Device Trigger Signal Level

For the administrator to configure each of the six multi-purpose input sensors, the signaling from the external device must be found and documented. Determine the signaling of each external device that will be used and document the signal information on the *Interface Box Sensor Worksheet* that has been provided on [page 5-3](#).

1. Position the RJ45 end of the sensor cable near the IF Box RJ45 jack, but do not plug it into the IF Box yet.
2. Leaving a service loop for connection to the IF Box, begin routing the non-terminated end of the sensor cable to the desired location in the vehicle for connection to each of the input sensor devices.
3. Cut off excess cable as required.
4. Use *Figure 3-5* below for wiring connections to the sensor cable and connect the external devices to the appropriate wire of the RJ45 sensor cable.
5. The **Green** and **Brown** wires are reserved for the DWM wireless microphone system. Connect the wires as shown in below to ensure microphone activation functions correctly. Use butt splice connectors to connect the green and brown wires.
6. When all external devices have been connected, plug the RJ45 into the jack labeled "SENS A" on the IF Box.

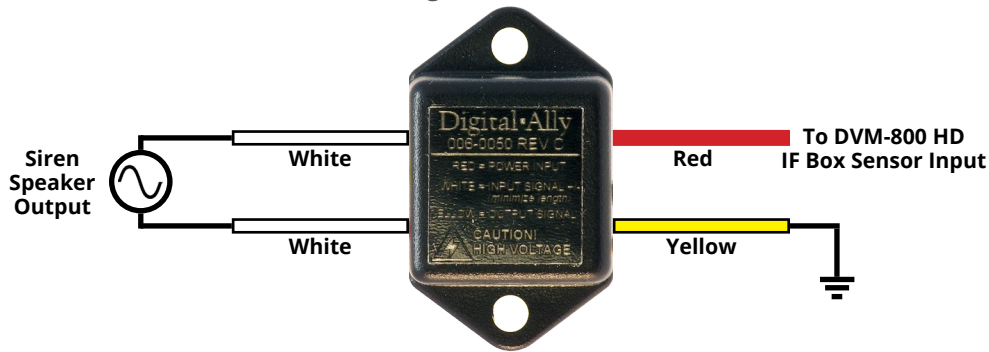
Figure 3-5: Input Sensor Connections

Pin	Sensor	Wire Color
1	Reverse Reverse Gear Sensor	Red
2	Lights Connect to +12VDC Light Bar Output	Orange
3	Brakes Connect to +12VDC Brake Switch	Blue
4	Speed Connect to VSS Output (Vehicle Speed Sensor)	Yellow
5	Sensor #5 Configurable Input	White
6	Mic Trigger Out Connect to Green wire of DWM harness	Green
7	Mic Trigger In Connect to Brown wire of DWM harness	Brown
8	Ground Connect to vehicle chassis	Black
N/A	Sensor In/Out Connect to "SENS A" input on interface box	RJ45



Siren Adapter Interface (optional)

If an acceptable DC output cannot be obtained from the siren controller, the optional Siren Adapter Interface can be used to connect the siren speaker to the interface box. Follow the diagram below to install the siren interface.



NOTE

When using the siren adapter, the input sensor must be configured for a High to Low, Standard Threshold within the VuVault device configuration.

Step 5: Wireless Microphone Installation

1. Attach the mounting bracket to the back of the Wireless Microphone Cradle; the assembly can then be mounted at your preferred location, such as the side of the center console. Do not mount the cradle in close proximity to a cup holder or other area which may be exposed to moisture. Damage caused by a liquid spill is not covered under warranty.
2. Attach the antenna. If you are using the external In-Car Microphone, connect it to the DWM Cradle Microphone jack and route the microphone to your preferred location in the vehicle. The typical mounting location for the external in-car microphone is in the rear seat area along the headliner & below the weather strip.



DWM Wireless Microphone Cable Installation

Carefully route the cable to the **Ext Mic** jack on the back of the DVM. Make the following connections:

Figure 3-6: Wireless Microphone Cable Connections

Connection	Wire Color
Power Connect to +13.8DVC Battery Terminal	Red
Ground Connect to vehicle chassis	Black
Remote Accessory Out Connect to auxiliary equipment (optional connect, see next page)	Violet
Microphone Trigger Out Connect to Green wire of IF Sensor Cable	Green
Microphone Trigger In Connect to Brown wire of IF Sensor Cable	Brown
Transmit/Receive Connect to RJ45 input jack on the DWM Microphone Cradle	RJ45
Audio Out Connect to 3.5mm Ext Mic jack on the back of the DVM	3.5mm Audio Plug



When connecting the 3.5mm Audio Plug to the **Ext Mic** jack on the back of the DVM, be sure to leave enough slack in the cable to allow for adjustment of the mirror.

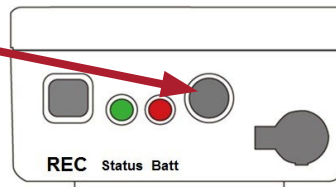


Remote Accessory Out

The Remote Accessory Out button (unmarked) on the top of the DWM Microphone Transmitter can be configured to activate or deactivate an auxiliary device. Below is a general outline showing how this can be wired using an interposing relay. The device, relay, and fuse are optional customer provided items. Be sure to select a relay which can handle the power requirements of your device.

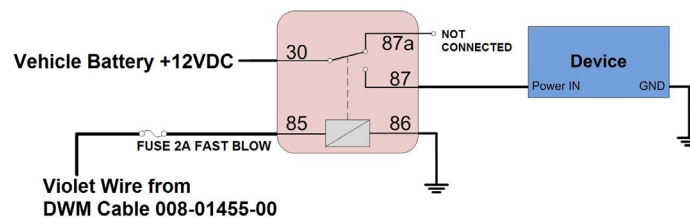
Remote Accessory Button

Note: Pressing this button does not cause a recording to start.

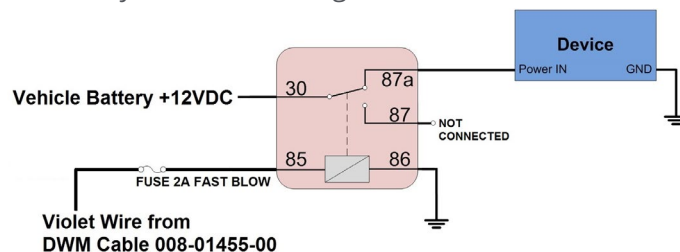


Example Relay Wiring Diagrams:

1. **Activate device when button is momentarily pressed:** To activate a +12VDC device that is normally off by default by pressing the button, connect it as shown below. When the button is pressed once, the relay will be energized and the external device will be powered on. When the button is pressed again, the relay will not be energized and the device will turn off.



2. **Deactivate device when button is momentarily pressed:** To deactivate a +12VDC device that is normally on by default by pressing the button, connect it as shown below. When the button is pressed once, the relay will be energized and the device be powered off. When the button is pressed again, the relay will not be energized and the device will be powered on.



Step 6: External Camera Installation

Overview

There are 6 External Camera Package options for the DVM-800. Choose the instruction that matches the camera option you have purchased.

Option 1: 12XC Camera & Backseat Camera - with 2 Cables

1. Attach the visor mount through the visor clip and attach front camera to the mounting plate as shown below. Connect the 12XC camera cable (008-01442-00) to the DVM-800 CAM1 input.



2. Determine a mounting location for the backseat camera. The example below has the camera mounted in the center of the cage. This gives a wide angle view of the entire back seat. Secure the camera using the supplied hardware.



DO NOT install the backseat camera behind plexiglass (or glass); The infrared lights will reflect back into the camera lens and completely obscure any video.

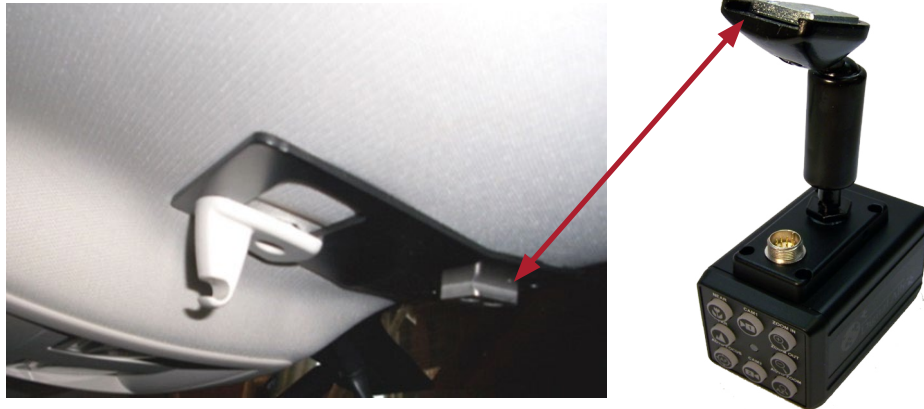


3. If the camera is to be mounted facing the rear of the vehicle, adjust the image switch on the back of the camera to the *Reverse* position.
4. Attach the backseat camera cable (008-01390-00) to the DVM-800 CAM 2 input. Secure extra cable in the headliner away from any other existing cabling and/or airbags. Leave slack in the cable as a service loop and for DVM adjustment; then begin routing the cable to the backseat area. To conceal the cable it may be necessary to loosen interior trim and other components within the vehicle.



Option 2A and 2B: 12XC Camera & License Plate Camera

1. Attach the visor mount through the visor clip and attach front camera to the mounting plate as shown below. Attach the front camera cable (008-01442-00) to the DVM-800 CAM 1 input.



2. Determine a mounting location for the backup camera. Secure the camera using the supplied hardware.
3. Attach the backup camera cable (008-01390-00) to the DVM-800 CAM 2 input. Leave slack in the cable as a service loop and for DVM adjustment; then begin routing the cable to the rear of the vehicle.
4. Depending on your vehicle you may be able to route the cable down the side of the headliner to a rear compartment of the vehicle. Otherwise find a suitable route on the floorboard of the vehicle.
5. To conceal the cable it may be necessary to loosen interior trim and other components within the vehicle.
6. The cable connector for the Backup Camera should be routed to a rear compartment of the vehicle such as the trunk of a car, to a location within 3 feet of the rear license plate.

Mounting the License Plate Backup Camera (Option 2A)



7. Remove the top two screws holding the rear license plate to the vehicle.
8. Use the screws to attach the backup camera bracket along the top edge of the license plate.

Mounting the Mini Backup Camera (Option 2B)

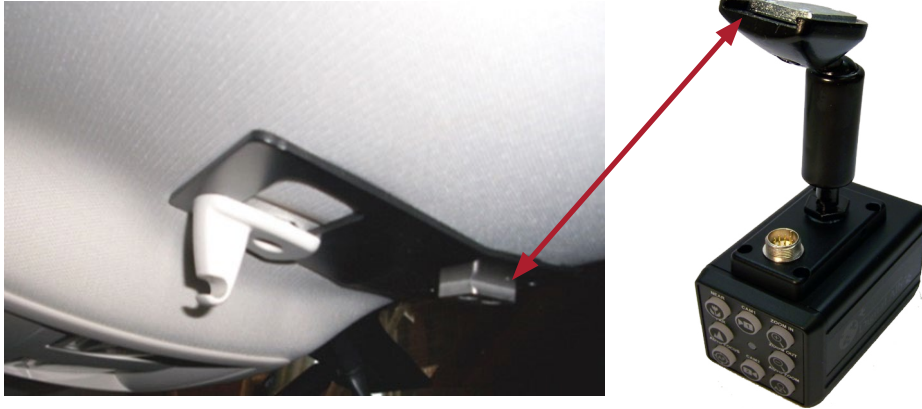


9. Using the supplied self-drilling screws, mount the camera to an appropriate location on the back of the vehicle where it will not obscure any part of the license plate.



Option 3A and 3B: 12XC Camera, Backseat Camera & License Plate Camera

If a backup camera is used, the vehicle's reverse gear signal will allow the DVM LCD image to switch to the Licence Plate camera when active. In this configuration, the front and backseat cameras share the single Y-Cable (008-01443-00) on the CAM 1 port. The License Plate camera uses the CAM 2 port. You must also connect to the vehicle's reverse gear signal. Please consult the "DVM-800 Operation Guide" for assistance with creating a device configuration file.



1. Attach the visor mount through the visor clip and attach front camera to the mounting plate as shown below. Attach the camera Y-Cable (008-01443-00) to the DVM-800 CAM 1 input.
2. Determine a mounting location for the backseat camera. The example on page 3-8 has the camera mounted in the center of the cage. This gives a wide angle view of the entire back seat. Secure the camera using the supplied hardware.



DO NOT install the backseat camera behind plexiglass (or glass); The infrared lights will reflect back into the camera lens and completely obscure any video.

3. Route the remaining portion of the camera cable to the backseat camera and connect. Secure extra cable in the headliner away from any other existing cabling and/or airbags. Leave slack in the cable as a service loop and for DVM adjustment. To conceal the cable it may be necessary to loosen interior trim and other components within the vehicle.
4. Attach the backup camera cable (008-01390-00) to the DVM-800 CAM 2 input. Leave slack in the cable as a service loop and for DVM adjustment; then begin routing the cable to the rear of the vehicle.
5. Depending on your vehicle you may be able to route the cable down the side of the headliner to a rear compartment of the vehicle. Otherwise find a suitable route on the floorboard of the vehicle.
6. To conceal the cable it may be necessary to loosen interior trim and other components within the vehicle.
7. The cable connector for the Backup Camera should be routed to a rear compartment of the vehicle such as the trunk of a car, to a location within 3 feet of the rear license plate.



Mounting the License Plate Backup Camera (Option 3A)



8. Remove the top two screws holding the rear license plate to the vehicle.
9. Use the screws to attach the backup camera bracket along the top edge of the license plate.

Mounting the Mini Backup Camera (Option 3B)



10. Using the supplied self-drilling screws, mount the camera to an appropriate location on the back of the vehicle where it will not obscure any part of the license plate.

Option 4: 12XC Camera & Backseat Camera - with Y-Cable

1. Attach the visor mount through the visor clip and attach front camera to the mounting plate as shown below. Attach the camera Y-Cable (008-01443-00) to the DVM-800 CAM 1 input.



2. Determine a mounting location for the back seat camera. The example on page 3-8 has the camera mounted in the center of the cage. This gives a wide angle view of the entire back seat. Secure the camera using the supplied hardware.



DO NOT install the backseat camera behind plexiglass (or glass); The infrared lights will reflect back into the camera lens and completely obscure any video.

3. Route the remaining portion of the camera cable to the backseat camera and connect. Secure extra cable in the headliner away from any other existing cabling and/or airbags. Leave slack in the cable as a service loop and for DVM adjustment. To conceal the cable it may be necessary to loosen interior trim and other components within the vehicle.



Step 3: GPS Module

Clean the windshield glass with isopropyl alcohol. Plug the GPS Module connector into the port on the back of the DVM and screw the locking ring down. Use full length of cable to locate the GPS module away from the DVM in the upper right or left corner of windshield, outside of the black shaded area.

Do Not mount the GPS Module:

- In the headliner
- Under metal
- Within 1 foot of the Wi-Fi Antenna



Using the included double-sided tape, attach the module to an unobstructed location on the windshield below the roofline. Do not place the GPS Module near any other vehicle antenna.

Step 4: Wi-Fi Antenna






Clean the windshield glass with isopropyl alcohol. Plug the Wi-Fi Antenna into the USB port on the back of the DVM. Using the included double-sided tape, attach the antenna to an unobstructed location on the windshield below the roofline away from the GPS Module.





Section 4

Testing the Installation

Initial Power Up

1. Insert the SD card into the DVM.
2. Turn the vehicle ignition switch to the ON position. The vehicle does not have to be running.
3. The DVM will begin the boot-up process; all 3-LEDs will light in sequence until boot up is complete.
4. Once the boot-up process is complete, the Blue LED will be lit indicating the DVM is powered on, is ready, and in standby mode.
5. Login to the DVM using the     arrow buttons. The default administrator password is 111111, the default user password is 222222. Press the  button to save your entry.



Record an Event

1. Press  button.
2. The Red status indicator will illuminate to indicate the manual event is being recorded.
3. After 10 seconds, press the  button to stop the manual event record.
4. The Red status indicator will extinguish, indicating the DVM has returned to standby mode.

Viewing the Backup Camera

1. Start the vehicle and leave the transmission in Park. Allow the DVM to boot.
2. Apply the brake and put the transmission into Reverse gear.
3. The LCD will turn on and the live video from the backup camera will be displayed.
4. If configured as an Event Trigger, the Red status indicator will illuminate indicating the back-up event is being recorded.
5. Put the transmission back into Park.
6. The LCD monitor will turn off.

Input Sensor & Wireless Microphone Tests

1. Remove the wireless microphone transmitter from the charging cradle and turn the power switch ON. The Green LED should be lit solid.
2. Activate a trigger input device (such as emergency lights) to start a recording.
3. The Red status indicator on the DVM will flash to indicate the event is being recorded, and the Green LED on the Wireless Microphone should start blinking.
4. Press the  button on the DVM to stop the recording.
5. The Red status indicator will extinguish, indicating the DVM has returned to standby mode.
6. Press the REC button on the wireless microphone. The system should again start to record as previously in step 3.
7. Press the  button on the DVM to stop the recording. The Ignition Shutdown Timer will start when the vehicle ignition is turned off.



Section 5

Support

How to Reset the DVM-800 System

Using a small blunt object such as a small eye-glass screwdriver or a paper clip, press the reset button on the DVM. The reset button is recessed and on the road facing, driver's side of the housing as shown here.



Basic Troubleshooting

Symptom	Resolution
System will not power up	<ul style="list-style-type: none"> Verify the power cable connector is connected to the back of the DVM. Check the power cable fuses located in the in-line fuse housing on the power cable. Verify there are no breaks, pinches, or cuts in the wiring or cable harness. Check the wiring and voltage levels to the vehicle power and ignition switch wiring (page 3-4)
All LEDs are flashing rapidly in unison	<ul style="list-style-type: none"> The external SD card does not have enough free available storage. Replace the external SD card with a blank SD card. An internal error has occurred. Try resetting the DVM, if problem continues, call tech support.
DVM powers up but doesn't record	<ul style="list-style-type: none"> Verify the device configuration. Try resetting the DVM, if problem continues, call tech support.
DVM powers up and goes directly to an event record (Red LED Flashes)	<p>An event record has been triggered from either an internal sensor or from an IF Box:</p> <ul style="list-style-type: none"> Disconnect the Sensor Cable RJ45 connector from the IF Box and reset the DVM. If the problem doesn't re-occur, check the wiring from the vehicle to the sensor cable. Check the DVM configuration parameter values for all internal sensors and/or IF Box sensors.



Symptom	Resolution
Optional Backup Camera not visible on the LCD when the vehicle is in Reverse gear	<ul style="list-style-type: none"> • Verify the DVM is powered ON and operational. • Note: Backup camera operation will only occur when vehicle ignition is on and running. • Verify the reverse gear wiring is connected to the RJ45 sensor cable. • Verify the Reverse Gear signal voltages to the IF Box in the active and non-active state. • Verify there are no breaks, pinches, or cuts in any of the wiring or cable harnesses for the backup camera, IF Box, reverse gear wiring, vehicle power and ignition wiring. • Verify the IF Box is connected to the DVM. • Verify the camera cable connector is connected to the back of the DVM. • Verify the camera cable from the DVM is connected to the connector on the hard-wired harness from the camera. • Verify the DVM sensor inputs are configured correctly through the VuVault software settings menu. Refer to the <i>"DVM-800 Operation Guide"</i> for additional details for configuring the DVM.
Backup Camera is visible when the vehicle is in Park	The default operation for the IF Box reverse gear signal is from Low to High (0vdc to +12vdc). If the reverse gear signal that is connected has 0VDC when in reverse, the DVM will need to be re-configured. Refer to the <i>"DVM-800 Operation Guide"</i> for additional details for configuring the DVM.
Backup Camera video is garbled or not intelligible	<ul style="list-style-type: none"> • Verify backup camera, cabling, and connectors. • Interface Box may be defective. Replace with known good IF Box.
DVM is unresponsive	<ul style="list-style-type: none"> • Verify the cables and cable connections. • Verify power input voltages to the IF Box (page 3-5) • Press the reset button on the back of the DVM.
False Triggering of Event Recordings	<ul style="list-style-type: none"> • Determine which trigger is causing the false trigger by viewing the event recording. • The unit can be reconfigured to default settings and enable each trigger to determine which one is causing the false trigger. • If the Accelerometer is causing false triggering, verify the mirror is in the normal rearview mirror orientation.
Wireless Microphone does not trigger the DVM to record	Verify the cable connections (page 3-6). Verify the DWM Cradle is receiving power and the microphone is synced to the system. Verify device configuration in the VuVault software.



Interface Box Sensor Worksheet

Date: _____ Installer: _____
 Vehicle #: _____ Make, Model, Year: _____
 License Plate: _____ Vehicle Color: _____
 DVM Serial #: _____ VIN Number: _____

To configure an input sensor, the Administrator must know the signaling of the device. Measure and record the DC voltages and provide the information to the Administrator.

Vehicle Electrical Data

IF Cable Wire Color	Device Type/Description	Measured DC Voltage	
		Inactive VDC	Active VDC
RED	Reverse Gear Signal	(Park)	(Reverse)
ORANGE	Emergency Lights		
BLUE	Brakes		
YELLOW	VSS (Pulse Only) or Configurable		
WHITE			

.....
Installer to complete upper section

.....
Administrator to complete lower section

Sensor Configuration

Sensor #	Sensor Name	Wire Color	Connection	Signal to Input Sensor	
				Detection Type	Threshold
1	Reverse	RED	Reverse Gear Switch	<input type="checkbox"/> Low to High	<input type="checkbox"/> Standard
				<input type="checkbox"/> High to Low	<input type="checkbox"/> High
2	Lights	ORANGE	DC Output-Light Bar Controller	<input type="checkbox"/> Low to High	<input type="checkbox"/> Standard
				<input type="checkbox"/> High to Low	<input type="checkbox"/> High
3	Brakes	BLUE	Brake Switch or 3rd Brake Light	<input type="checkbox"/> Low to High	<input type="checkbox"/> Standard
				<input type="checkbox"/> High to Low	<input type="checkbox"/> High
4	VSS	YELLOW	VSS	<input type="checkbox"/> Pulse	
	Configurable	YELLOW	Configurable	<input type="checkbox"/> Low to High	<input type="checkbox"/> Standard
5	Configurable	WHITE	Configurable	<input type="checkbox"/> Low to High	<input type="checkbox"/> Standard
				<input type="checkbox"/> High to Low	<input type="checkbox"/> High
6	Wireless Microphone	GREEN	MIC Trigger from Green Wire of DWM Harness		
	REMOTE TRIGGER OUT	BROWN	MIC Trigger from Brown Wire of DWM Harness		
	GROUND	BLACK	Chassis Ground		



Section 6

Contact Information



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