MTM750

MTM

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CONTENTS

CHANGE LOG

Date	Changes	Author
03/22/21	Install guide updated	Alethea Braham
04/10/21	Added sound alerts, modified a few app pictures and removed some incorrect pointers.	Alethea Braham
04/23/21	Updated LED indicators, added UI interface, added information on WiFi connection during installation.	Alethea Braham
07/22/21	Add force ignition for camera install	Alethea Braham
09/28/21	Add more details to installation process	Alethea Braham
12/08/21	Added Engineering feedback to install guide	Alethea Braham
12/14/21	Added GCF comments on securing harnesses/connectors and adding driver-initiated Alert for installers/technicians	Alethea Braham
02/10/22	Changed Standard Harness to P309, added P309 image , added improved connection diagrams and improved overall camera install instructions.	J.H
02/15/22	Added Registration and Install Complete Images	Alethea Braham

IDENTIFICATION

Hardware

MTM750

VS800 Main Unit (Road Camera)

VS800 Aux Camera (driver)

VS800 Kit Harness

P309 Harness

P305 Driver Button/ Install tool

Accessories

T6 tool & extra screw

Driver Camera Retainer

Cable clips

Alcohol pad

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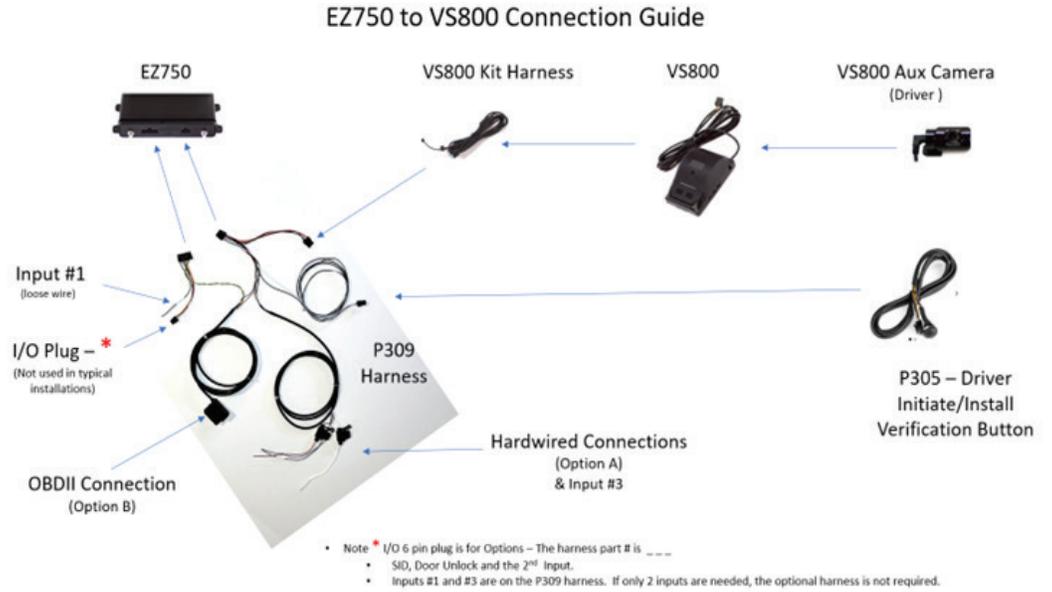1.800.434.1101

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Connection Diagram

This diagram shows how the VS800 is connected to the MTM750 via the standard P309 Harness. When the MTM750 & VS800 are ordered, all the standard cabling arrives as part of the order. No extra harnesses are need for a typical installation.

The connection diagram is purposely placed in the beginning of this guide, so as you progress through the installation guide, you will learn how to complete an efficient and accurate installation. The actual power connections options are explained in detail on page 13 of this document. Please follow this entire guide, to ensure you complete all the steps in the proper sequence.

PRE-INSTALLATION

Step 1: Record the IMEI NUMBER of the MTM750 prior to installation

Step 3: Scan code to Install A.I. Fleet Cam app to your mobile device.

Step 2: Record the Serial Number of the VS800 prior to installation

Make sure that the serial number of the box and the serial number on the front of the product are

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Things to do before installation

1.Remove T6 screw using provided tool and set aside.
2.Slide cover to remove and set aside.
3.Remove P1 screw to release and remove top cover. Use a Philips head screwdriver.
4.Unplug the buzzer. (un-plugging the buzzer allows the top cover to be removed for an easier installation.)
5.Put the cover back on without the "screw" as it's Easier to "mount the camera to the windshield" with the cover ON.
6.Set aside the screws to avoid losing them.
7.Loosen up the lens screw (in the middle of camera) to be able to move the lens up and down. (Do not loosen it too much or setting the lens will take longer)
8.Glass must be clean & dry—run vehicle defroster on high if moisture is present.
    •Recommended application temperature is 70°F –100°F.
    •Warm or cool windshield as needed for application.
    •Use the alcohol wipe to clean the area of the windshield where you are placing the cameras.
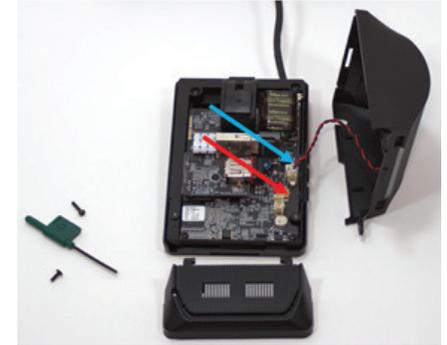
CAMERA INSTALLATION

Ideal Road facing (VS800) camera placement:

•As close to center as possible
•No more than 7 ½" to right from center
•The camera should be mounted as "high up" as possible on the windshield and tucked behind the right side of the rear-view mirror to minimize obstructing the drivers view.
•It is critical that the Camera Lens is "within the wiper blade path" and not looking through any "dots, tinting or shading" on the windshield.

Ideal Driver facing camera (VS800 Aux Camera) placement:

•Left of center with a clear line of sight to the driver.
•Make sure the "sun visor" can't cover the camera lens.
    oOn larger trucks, some owners prefer to have the Driver Camera mounted above the passenger door, so it's looking in towards the driver from that angle.
•Camera rotates to adjust as needed to optimize the camera view (you will hear a clicking when rotating the camera lens. No tools are required.)

Note: Make sure the area is "clean and dry" (including area for driver facing/ VS800 Aux camera) using alcohol wipe provided

•Make sure the camera is installed straight (i.e. its not tilted to the left or right.
    oThe picture above shows a properly installed camera.)
    oThis is critical for a successful camera alignment.
•Remove adhesive backing and firmly press camera into place.
•Hold for 30 seconds.
•You can now remove that TOP cover to gain access to the camera alignment screw.

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•Camera will be adjusted via app at the end of alignment procedure
•Prepare by slightly loosening the P1 screw in the middle of the camera.
•Do not reinstall the cover yet!

Select location for driver facing camera (VS800 Aux Camera) placement.

•Route and plug driver facing camera (VS800) into main camera.
•Carefully Install the cable retainer. (i.e. it prevents the driver from being able to unplug the cable)
•Install cable clips as needed if the cable can't be hidden safely under the headliner
•Do Not Reinstall the cover yet!

Remove adhesive backing and firmly press camera into place.

•Make sure that the Driver (Aux) Camera can NOT be blocked by a Sun Visor and keep in mind on larger pickups, vans & trucks, that visor can extend, so keep that in mind.
•Hold for 30 seconds
•Remove protective film from Aux camera lens.

•Route main Camera cable neatly towards where tracking device is to be installed.
        oNote: the Aux (driver) camera cable can be hidden under the headliner in most vehicles.
•When routing cables stay clear of any moving parts, ex.—Steering shaft, pedals, airbags.
•Secure using wire ties as needed or if you can't "hide the cable" use the provided clips and mount the cable along the edge of the windshield.
•DO NOT OBSTRUCT AIRBAGS!

The proper installation of Aux (Driver) Camera retainer looks like this:
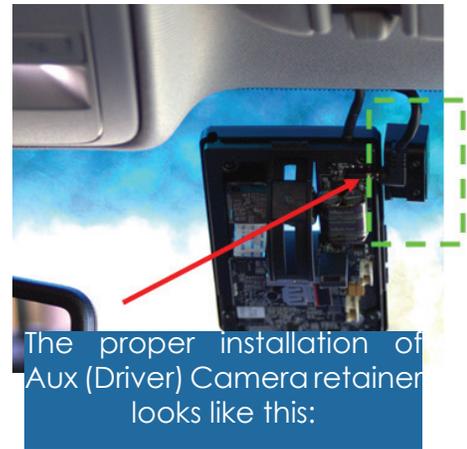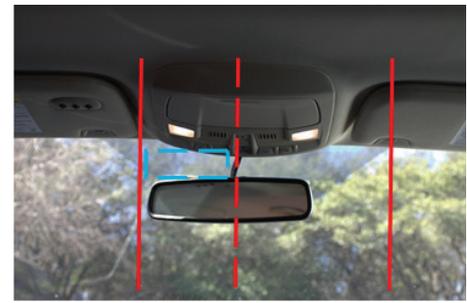
Caution: The in-ward (driver camera) should be plugged in prior to connecting any power to the EZ750. If the In-ward (driver) camera is installed while connected to the APP a "error" occurs which disconnects the camera and from the APP and you have to restart the entire process.
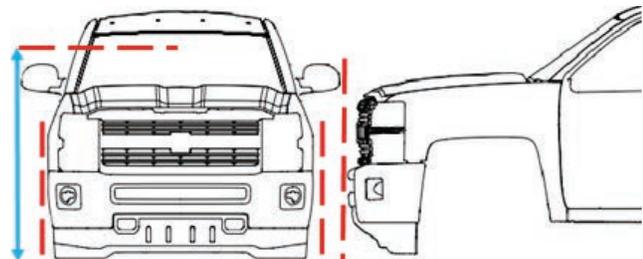
Measure and record the following:

•Vehicle width (outside front wheel to wheel)
•Distance from front bumper to camera lens
•Height from camera to ground

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MTM750 INSTALLATION – connecting all the components & power connections

•Select location for tracking device.
•Ensure top of device has a clear line of sight to the sky.
•Device will function properly through most materials with the exception of metal. Do Not Place Directly Under Metal!
•Device is required to be mechanically secured Ex—wire ties, screws, VHB/Double stick tape and even Velcro. (Wire tied to a panel in this example)
•When routing cables stay clear of any moving parts, ex.— Steering shaft, pedals, airbags
•Secure using wire ties as needed.
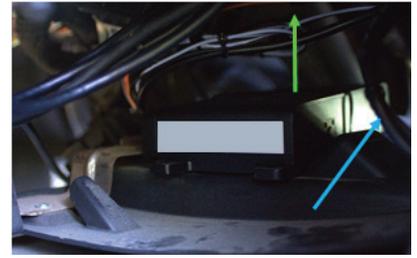
CONNECT HARNESSES

Connect VS800 to MTM750

Connect harness VS800 to Kit Harness and connect Kit harness to OBD-II harness

CONNECT MTM750 TO POWER

OPTION A - Hardwired – using the standard P309 cable

Preferred option for power connection is using the Hardwired connection.

Red – Constant Power (+12 to 24v)
White – Ignition Sense
> **Note**: This should be +12v when Ignition is ON with the Engine Running and Zero volts when the key is in the OFF or ACCY position.

Black – Chassis Ground

OPTION B -   Connect the MTM750 Via OBD-II Connector on the P309 Harness

This option is best in situations where finding the hardwired connections is difficult (i.e. cars and smaller trucks/vans). Keep in mind that the driver can easily remove the "plug from the OBDII port".

Note: If a covert installation is desired, order the "Y" Cable which will allow the "connections" to be hidden under the dash. Part number is P107 OBDII Splitter.

Connect OBD-II adapter to OBD-II port on vehicle and then connect to MTM750
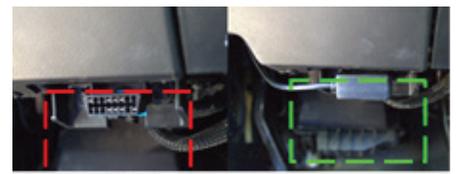
When the Option B is chosen, it will look like this when the OBDII plug is positioned correctly.

CONNECT DRIVER INITIATED BUTTON TO MTM750 HARNESS

Install the Driver Button – to install the driver button, you will need to drill a ½" hole somewhere in the dashboard within an easy reach of the driver.

- Use caution when drilling and do your best to position this "driver button" in a logical spot based on both appearance and location.
- You will need to remove the "silver nut and lock washer" from the button before routing the cable through the hole that you drilled, then carefully reinstall them.

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- Connect the driver-initiated button to the MTM750's 4 pin connector (Note: only 2 wires are on this cable). This is critical for both normal operation by the driver and to "verify the installation" after the camera alignment procedure.

NOTE:

- Make sure you fully seat all plugs.
- Make sure the "connectors" are safely zip tied in a bundle whereby there is no stress on the connectors (i.e. to avoid it coming apart with a "bounce or what not" from the truck) and NOT on the top of the MTM750.

NEXT STEPS

Powering up the Units - After all your power connections are confirmed and all the cables are connected as show in the System diagrams. Start the vehicle and watch for the lights
MTM750 – LED overview

The MTM750 Unit has multiple LED's and a Power button.
•Note: The VS800 gets its power from the MTM750 upon Ignition ON. There is NOT a separate power line feeding the VS800.
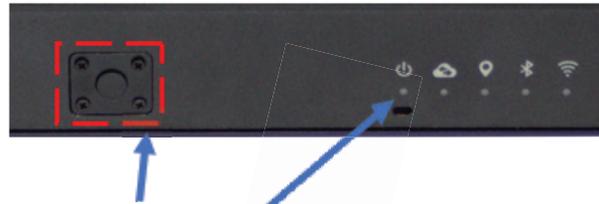
MTM750 Status – Live

•Power Button
•LED's (in order left to right)
oPower – will typically be RED when vehicle is ON.
oNote: The unit goes to sleep after the vehicle ignition is turned OFF.
oData – The GREEN light will illuminate when data is transmitting from the EZ750 to the Cloud (i.e. our servers)
oGPS – this is the GPS module and will be BLUE when GPS is signal is present.
oNote: this light will go OFF when unit is in sleep mode (i.e. vehicle is off)
oBluetooth - currently not used.
oWIFI – this will light when the Vehicle ignition is ON and the VS800 is communicating with the MTM750.

	Power	Data	GPS
OFF	Device off or sleeping	Modem off	GPS off
ON	System awake	Connected	GPS has fix
Rapid Flash	Transferring diagnostic data	Transferring data	GPS acquiring fix
Medium Flash	Device unlocked (3x4flashes)	Searching for network	Searching for satellites

If you are not seeing the lights working properly on the MTM750 , then you can use the "power button" to reset the MTM750.

Press Duration	Action
2-4 seconds	Power on
5-10 seconds	Check for errors (see Troubleshooting section) Sync settings w/ cloud device
>15 seconds	Power down (if unlocked and disconnected from power)

Note: There is a more detailed troubleshooting section near the end of this installation guide.

VS800 SETUP

1.Turn Ignition On wait for 5 minutes until VS800's Blue LED is on.

2.If the BLUE LED on the VS800 is not on, then press the EZ750's button for 6 seconds or until the Green LED on the MTM750 lights up, then let go. The BLUE LED on the VS800 will turn on and the APP setup can be completed.

Setup Camera Via App
Open app and proceed with configuration
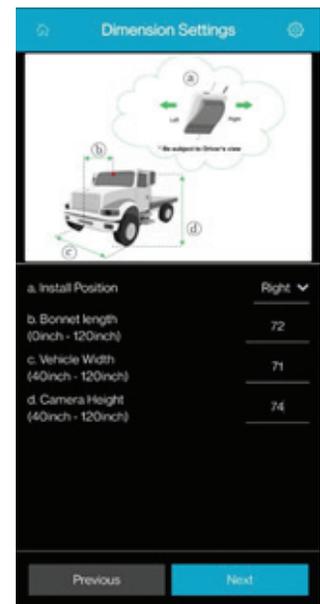
Camera Setup
Open the AI Fleet APP (BLUE LED shall be blinking on camera) and follow the instructions.
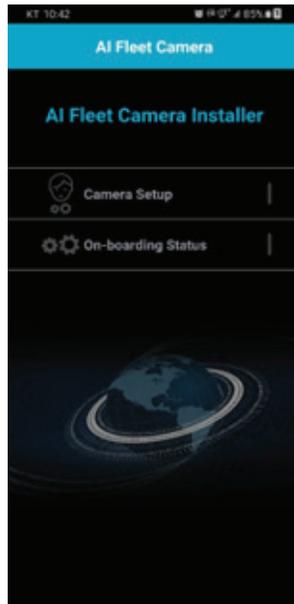
Select camera setup   Select desired units   Select vehicle

Pair the APP with the VS800 by scanning the 3D code on the cover and continue with the setup.
Enter camera position and   measurements taken after installing VS800. This value may change on each installation as the height of the camera will vary depending on the vehicle and windshield.

Select Start Pairing use the 2D label on the camera's top cover or enter the camera's serial number manually.

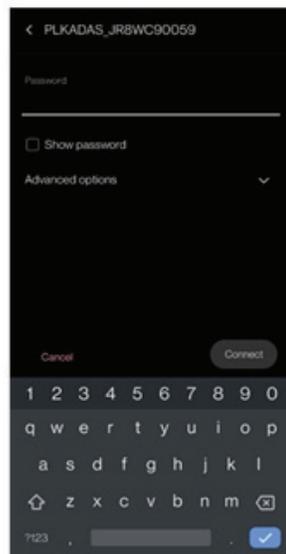**MTM750**

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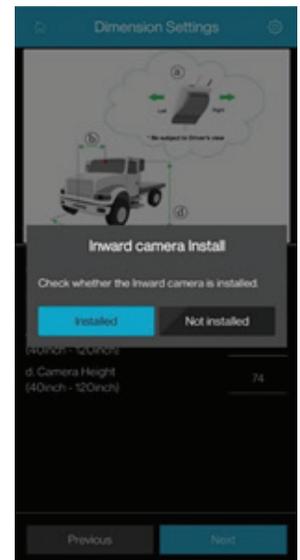**Email**
info@mytruemiles.com

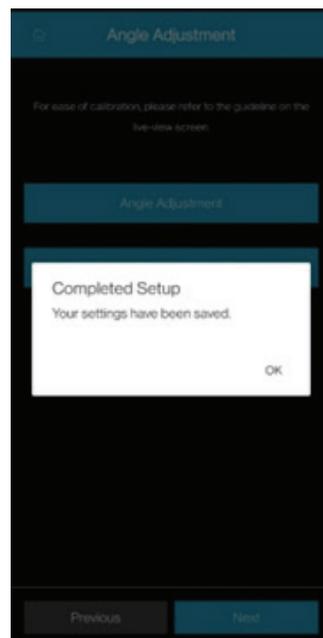**Website**
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Select camera WiFi network (camera serial number) & Enter password (located on camera)

Select Installed if driver facing camera was installed

Note: If you do not install the in-ward (Driver) camera and it is installed at a later time you will need to go over the entire install/alignment process again.

Select Inclination Angle ▶

Select OK to continue

Select Next to continue ▶

Set vehicle ground angle – High possibility of malfunction when installed tilted.

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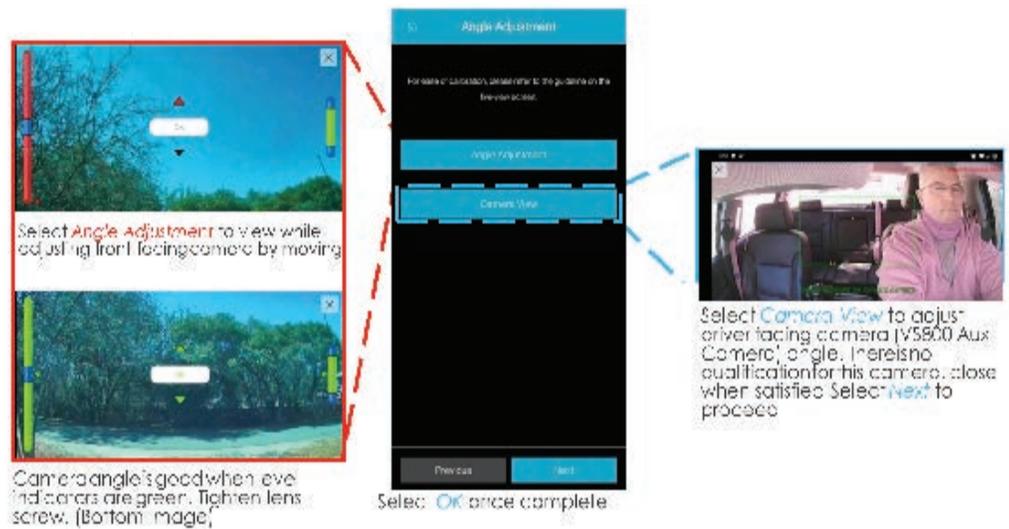
In a vehicle, SUV or pickup you must see a little of the hood and then the rest would be the front and sky view.
For a truck you should see about 1/3 of the hood and then the rest is the front and sky.
On the driver's image you should have a clear view of driver's face and seatbelt.

Note: You will need to swipe once to view the image from the main camera and you need to swipe once more for the view of the in-ward (driver) camera.
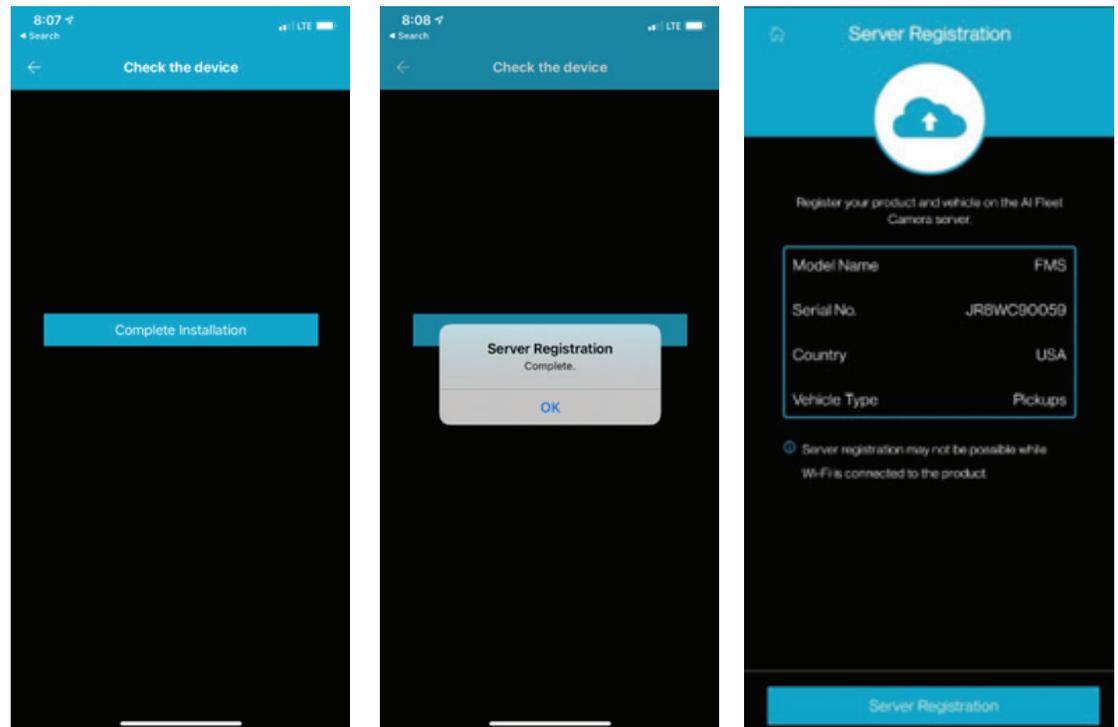
Select Complete Installation to continue   Select OK to continue   Server Registration
Parameter are saved and Stored   Install Information is sent to server

Once you have reached this screen your configuration is complete and installation history is sent to the server.

At this point the camera will switch to the WiFi Client on the MTM750 you will not see the camera on your device anymore.

Note: If there is any adjustment or change that has to be done to the camera installation a WiFi reset is needed to switch back to your device. If this is the case, please contact our support team to set it up. To reset the wifi press the up and down volume buttons for ~25 seconds or until Camera's LED is blue.

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Confirmation of completion of installation using APP. (Installer, administrator should be able to check)
    •If the install profile was uploaded or not.
      •To force a video and if the driver initiated button is installed press on the button for 1 second.
      If the video is initiated, you will hear one beep and if it is uploaded you will hear a second beep. If
      there is only one beep, verify MTM750 has cell coverage.

TROUBLESHOOTING

Troubleshooting Camera
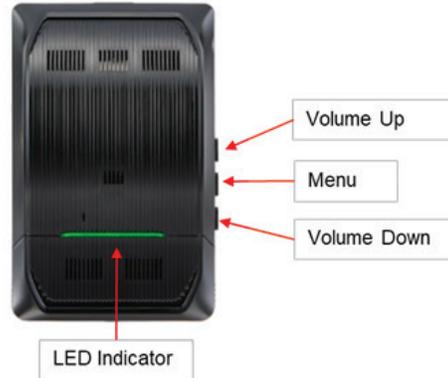
LED Indicator

LED Indicate Items		LED Color					Support	Remark
Low Voltage		RED					O	
Power on (Booting)		CYAN					O	
Power on (Normal Operation)		GREEN					O	
Event create		GREEN (Flashing 5s)					O	
Serial Communication Issue		WHITE					O	
Server connection issue		BLUE					O	
Device malfunction	General	YELLOW					O	* To check detail malfunction code hold Menu button over 5s
	Check Memory Card	YELLOW + Blink 1 time					X	
	Angle adjustment X	YELLOW + Blink 2 times					X	
	Check Camera Connection	YELLOW + Blink 3 times					X	

•If the Green LED on the VS800 is not on during IGN on, then press the MTM750's button for 6 seconds or until the Green LED on the EZ750 blinks. The Green LED on the VS800 will turn ON for the APP setup to be completed.
•Connect to the APP when Blue LED is blinking
•Camera server not connected when Blue LED is solid.
•SD Card Error
    oFormat SD Card
    oReplace SD Card
•Wi-Fi dongle error
    oVerification method
        -See if Blue LED blinks for 3 minutes after installation
            >If still blinks, Wi-Fi dongle doesn't work.
            >If still on, normal state that it connected to MTM750.
        -Search for the Wi-Fi with the camera's serial number
            >If available, try the APP installation again
            >If not available, verify if connected to MTM750 (Green LED on camera)
    oIf WiFi is still not available the WiFi module would need to be replaced.
•2nd camera not connected
    oDamaged if not in position when attaching holder
•Attach the front camera without being tilted
    oOperate as a team of two to prevent the front camera from being tilted
•Camera does not turn on
    oIf the front camera does not turn on, test with a dedicated test cable

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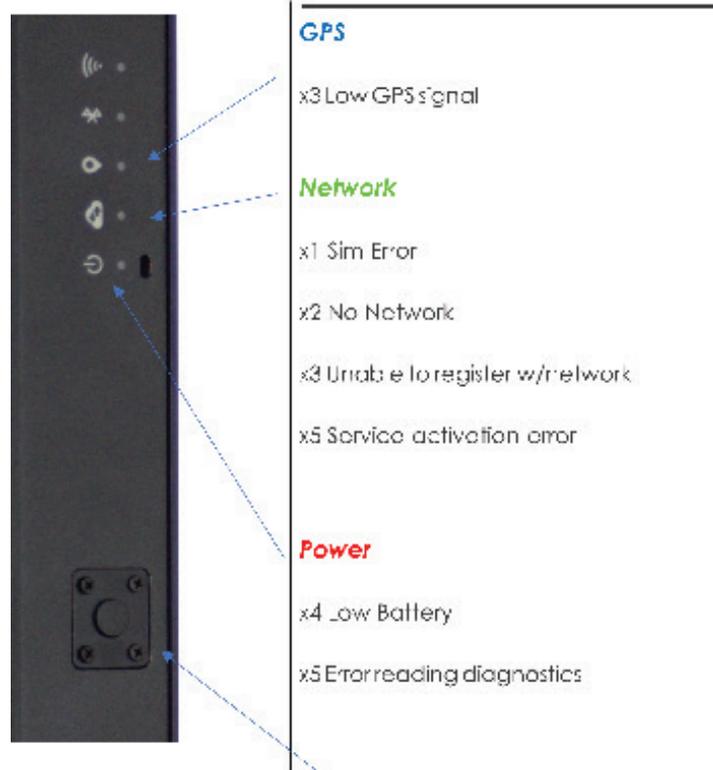
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Audio/Sound Alerts

The VS800 has some sound effect for warning and others for events.

- •Front collision Warning: "Watch out" / 6 fast beeps (chiming)
- •First Safe Distance Alert: "Keep a safe distance" /1 beep decreasing intensity.
- •Front Care Departure Alert: "Look ahead" / Doorbell chime
- •Virtual Bumper: "Beware of front vehicle" / 2 fast chimes
- •Stop Sign Violation: "Start event recording" /
- •Red Light Violation: "Start event recording" /

TROUBLESHOOTING MTM750

The LEDs on the device will flash to indicate specific error(s)

GPS

x3 Low GPS signal

Network

x1 Sim Error

x2 No Network

x3 Unable to register w/network

x5 Service activation error

Power

x4 Low Battery
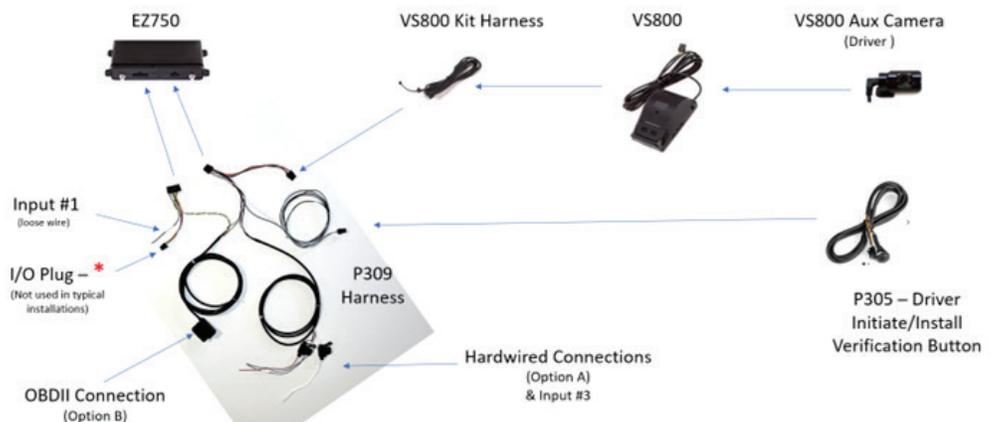
x5 Error reading diagnostics

Error Codes

To check the system status press and hold the multi-function button for 2-4 seconds; release when the GPS LED illuminates.
Errors will be displayed as seen above.

SYSTEM DIAGRAM

EZ750 to VS800 Connection Guide

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FUNCTIONAL DESCRIPTION

The camera detects several events that can trigger warning alerts and/or video alerts.

Camera Events & Triggers

The following are the events the camera can detect and brief description.

- Tailgating: Driving close to the vehicle ahead for continuous periods.
- Reckless Driving: Careless driving and frequently changing lanes.
- Red-Light Violation: Violating Red Traffic signal.
- Rolling-Stop Violation: Not sopping for the expected time at a Stop signal. Violation under California law (CVC22450)
- Collision Risk: A safe distance to avoid collision is not kept.

The Camera will trigger the events when the following conditions are met.

Event	Sedan (Normal)	Truck (Normal)
Tailgating	Event triggers when driving 15 ~ 30seconds with TTT≤0.4 *Operating speed ≥ 25mph *TTT = Distance/Driving speed TTT means Time to Target	Event triggers when driving 15 ~ 30seconds with TTT≤0.5 *Operating speed ≥ 25mph
Collision Risk	Event triggers when Within 4 seconds of FCW(Front Collision Warning) occurs, & G-sensor Z reach -0.4G, *Operating speed ≥ 20mph * G-sensor Z : Vehicle inclination value of back and forth	Event triggers when Within 4 seconds of FCW occurs, & G-sensor Z reach -0.4G, *Operating speed ≥ 20mph
Reckless Driving	Event triggers When get ≥ 140 points, for 20 seconds after got a first score. *Operating speed ≥ 25mph **Type** / **Score** Lane Change / 35 FCW / 30 TTT 0.5 / 20	Event triggers When get ≥ 140 points, for 20 seconds after got a first score. *Operating speed ≥ 25mph **Type** / **Score** Lane Change / 35 FCW / 30 TTT 0.5 / 20
Rolling-STOP Violation	Event triggers when moving for more than 8 seconds without 3mph≤ at an intersection with a "Stop Sign" *Operating speed ≤ 35mph	Event triggers when moving for more than 8 seconds without 3mph≤ at an intersection with a "Stop Sign" *Operating speed ≤ 35mph
Red-Light Violation	At the "Red traffic lights", Event triggers when the Driver is driving 15mph and passes through an intersection. *Operating speed ≤ 45mph	At the "Red traffic lights", Event triggers when the Driver is driving 10mph≤ and passes through an intersection. *Operating speed ≤ 45mph

Sedan is considered when the camera's height is below 63 in.
Truck is considered when the camera's height is above or equal to 63 in.

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MTM750 EVENTS & TRIGGERS

The following are the events the EZ750 detects and triggers a video to be recorded.

- •Harsh Acceleration
- •Harsh Brake
- •Harsh Left
- •Harsh Right
- •Harsh Cornering
- •Crash

Light vehicle settings are:

- •harshLightPeriod – Current default 1000 ms
- •harshLightBrake - Current default 450 miliGs
- •harshLightAccel -Current default 373 miliGs
- •harshLightTurn - Current default 400 miliGs
- •harshLightImpact -Current default 1500 miliGs

Heavy vehicle settings are:

- •harshHeavyPeriod – Current default 250 ms
- •harshHeavyBrake - Current default 244 miliGs
- •harshHeavyAccel -Current default 188 miliGs
- •harshHeavyTurn - Current default 375 miliGs
- •harshHeavyImpact -Current default 1500 miliGs

If the driver-initiated button is installed and it is pressed for ~1 sec then it will initiate a video to be up-loaded (15 sec).

SETTING VIDEO ALERTS ON UI

When you go into the UI the first step is that the camera needs to be linked to the device.
To see the camera and serial number select them on the drop-down menu by clicking on the binoculars and marking serial and camera.

Then you should see the device and camera as:

If the camera does not show up, then right click on the device row and select edit. Scroll down to the camera section and select the correct camera.

If you have already assigned the camera to a specific device on the fleet it will not show up on the drop-down menu. To switch cameras already assigned you will need to unassign them.
To set up the video alerts go into the Alerts tab. Go to Recipients. If you do not have a Recipient Created, you can add one using the "+" sign. Give it a name and select the video alerts.

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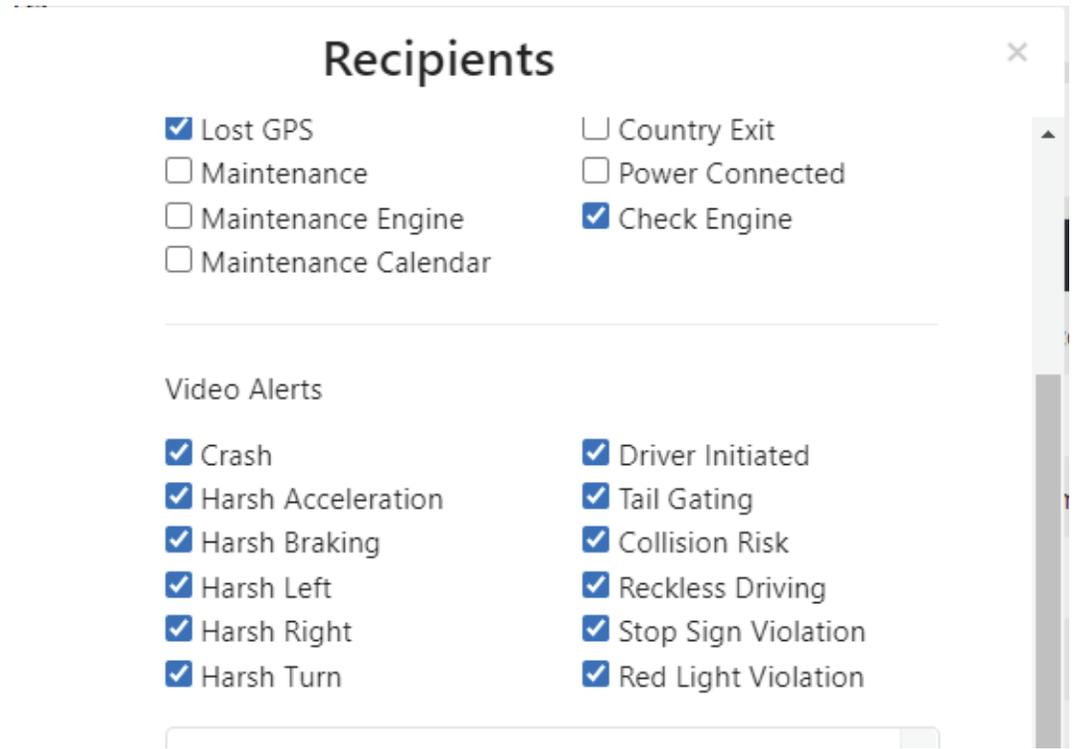My True Miles, LLC

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Note: if multiple installs are taking place, the reseller should set their technicians and/or installers phone up for the Driver Initiated button alert to their mobile phone…..then it will pop on their phone and will know the installation was completed successfully.

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