



*COBAN M700  
Installation Manual*

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## Table of Contents

<b>Introduction</b> .....	<b>3</b>
<b>Warnings and Safety Issues</b> .....	<b>4</b>
<b>Tools and Electrical Parts List</b> .....	<b>6</b>
<b>CPU Installation</b> .....	<b>7</b>
<i>Plywood Deck Mount</i> .....	7
<i>Tray Mount</i> .....	9
<b>Camera Installation</b> .....	<b>10</b>
<b>Monitor Installation</b> .....	<b>12</b>
<b>Optional COBAN Accessories</b> .....	<b>13</b>
Drivers License Card Reader .....	13
Crash Sensor .....	13
GPS.....	14
Fixed Mount Antenna with Low Loss Cable (for Wireless Upload) .....	14
Dual Receivers .....	14
Wide Angle Camera .....	15

# *Introduction*

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COBAN manufactures state-of-the-art Mobile Data Computers and Digital Video Recording Equipment for use in the Public Safety, Utility and Military community. In addition to innovative mobile computing devices and digital video technology, COBAN employs the latest communication, database, and storage technologies to deliver complete and scalable solutions to our customers, regardless of the size of the agency.

Due to variations in vehicles, Agency equipment requirements, and the placement of existing equipment, every installation in a Public Safety Vehicle is unique. This Manual assumes, and illustrates, installations in Ford Crown Victoria, Chevy Impala, Silverado and Tahoe, as well as Dodge Charger and Magnum.

The information contained herein is subject to change without notice. COBAN Technologies reserves the right to make changes to this product, has no obligation to update or keep current the information contained within, and assumes no responsibility for any errors or omissions that may be present in this document.

Manual Name: COBAN Technologies – M700 Hardware Installation Manual

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**UNDER NO CIRCUMSTANCES WILL COBAN TECHNOLOGIES BE LIABLE FOR ANY LOSS OR DAMAGES RESULTING FROM THE USE OF THIS MANUAL.**

**FOR HELP WITH ANY QUESTIONS REGARDING INSTALLATION OR THE USE OF THIS MANUAL, PLEASE CONTACT COBAN SUPPORT AT: 281-277-8288**

# Warnings and Safety Issues

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**Failure to properly install, operate, and care for the COBAN System can increase the risk of ELECTRIC SHOCK or FIRE. Failure to properly install and secure the COBAN System in accordance with this manual can increase the risk of any component becoming dislodged from its mounting structure and may possibly result in SERIOUS INJURY or DEATH to the VEHICLE PASSENGERS, or DAMAGE TO THE COBAN SYSTEM.**

**Do not expose any Component of the COBAN System to Liquid or Moisture.**

- Do not install this apparatus near water or expose it to rain, moisture, chemicals, and dripping or splashing liquids of any type
- Do not clean the COBAN System with water, liquid cleaners, solvents, or aerosols

**Prevent the COBAN System from overheating.**

- Do not block any Ventilation Openings
- Install in a well-ventilated area
- Do not place the COBAN System near any soft surface that may block ventilation openings
- Do not install near any heat sources or any apparatus that produces heat

**Stay away from DANGEROUS VOLTAGE inside the COBAN System, DO NOT take the COBAN System Apart.**

- Contact with energized parts inside the COBAN System can cause SERIOUS INJURY or DEATH from ELECTRIC SHOCK
- Do not attempt to service, modify, repair, or tamper with the COBAN System
- Refer all Servicing to the COBAN Customer Service Department or COBAN Authorized Service Personnel

**Avoid damaging any electrical Wires or Cables.**

- Protect the Cables from being stepped on or pinched, particularly at Plugs, and the point where they exit from the apparatus
- Do not jerk, knot, sharply bend, or otherwise abuse the Cables
- Do not expose Cables or electrical Wiring to sources of Heat
- When connecting and disconnecting Plugs, **PULL ON THE PLUGS, DO NOT PULL ON THE CABLE**, and be sure to check the alignment of the Pins for damage prior to plugging them in
- Arrange all Connectors and Cables so that passengers are not likely to trip over them or accidentally pull on them as they move around, or enter and exit the vehicle
- If any Cable or Wire becomes damaged in any way, immediately discontinue use of the COBAN System and call the COBAN Customer Service Department or COBAN Authorized Service Personnel

**Only use COBAN approved and authorized Attachments, Accessories, and Peripherals.**

**Always disconnect the Vehicle Battery Ground Lead prior to installing any Component.**

**Always remove the fuse at the 12v positive Battery Terminal before Jump-starting or Charging the Battery while it is still in the Vehicle**

**The USER acknowledges and understands that the installation of after-market equipment in motor vehicles can compromise a vehicle's safety-related design characteristics, including but not limited to:**

- Airbags, including but not limited to potential obstruction of airbag deployment;
- Front and Rear Passenger compartments, including but not limited to potential for ergonomic problems, physical obstacles, etc.
- Trunk/gas tank protection, including but not limited to the potential for trunk-mounted equipment to exacerbate tank vulnerability in a rear collision.

COBAN shall bear no liability whatsoever for any claims, expenses, losses or costs relating to the safety of any equipment provided hereunder or the safety of any installations thereof.

Digital Video Surveillance Systems, including in-vehicle systems, offer new functionality and added convenience, but they may also introduce some unique security and privacy exposures. These exposures include, but are not limited to, policies and operating procedures related to: a) the capture, transfer, and management of digital images; b) the use of these digital images in legal proceedings; and c) the use of these digital images for other purposes. Numerous techniques are available that may mitigate some of these unique security and privacy risks, including ensuring that security reliance is not placed solely on the system, and that the system and resulting images are used only in compliance with comprehensive department policies and standard operating procedures. The USER acknowledges and understands that the USER is solely responsible for developing, implementing and maintaining appropriate Security and Privacy Policies and operating procedures for the system(s) described in this SOW, and ensuring on-going compliance with them.

COBAN shall bear no liability whatsoever for, and the USER hereby fully, irrevocably and unconditionally release COBAN and its successors and assigns from, any claims, expenses, losses, or costs relating to the USER's use of the materials, system or services provided by COBAN hereunder, including any claims based on the content of any information captured on any video recorder provided hereunder. The USER will be solely responsible for any and all such claims made against COBAN which are based on the USER's use of the materials, system or services provided by COBAN hereunder,

The USER acknowledges and agrees that COBAN's performance hereunder does not include any obligation to provide testimony or other evidence of any kind in any legal, regulatory, administrative or other proceeding excluding subpoenas issued by judge or court of law. In the event that COBAN is requested by the "Department or the USER" to be the expert witness to provide testimony or any evidence of any kind in connection with its performance hereunder, whether required by the USER or any other third party, the USER agrees to pay COBAN's time and materials rates plus COBAN's actual expenses incurred in the provision of such testimony or evidence.

# Tools and Electrical Parts List

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COBAN DOES NOT supply Tools and Materials for installations. Due to the uniqueness of every installation, COBAN cannot predict exactly what tools, electrical connectors, or hardware may be necessary for each individual installation. COBAN provides a connector kit and hardware kit that includes the basic connectors and hardware for most installs, however this may not cover every installation. It is recommended that the installing technicians have a ready supply of these basic tools and supplies on hand:

- 8" x 12" x 3/4" thick - plywood
- Liquid Nail™ adhesive (this brand only)
- Power drill (12V minimum)
- Drill bits (various sizes)
- 5/16" driver bit
- #20 TORX™ bit
- 7/16" socket with ratchet (full socket set is recommended)
- 7/16" wrench
- Adjustable wrench
- Phillips screwdriver
- Wire cutters
- Wire crimpers
- 3/4" antenna hole saw
- Razor knife
- Windproof lighter (for shrink terminals)
- Wire fish
- Electrical tape
- Silicone sealant (to seal grommet in firewall, after wire is run through it)
- Assortment of fuses
- 16AWG stranded primary wire
- 14AWG stranded primary wire
- Various sizes of cable zip ties
- Various sizes of wire loom
- Various sizes and types of electrical connectors

**Note:** COBAN requires the use of shrink type connectors only for waterproofing purposes; please remember to apply heat to shrink the ends of the connectors. Failure to shrink these connectors as prescribed may result in VOIDING THE COBAN WARRANTY if there is exposure to corrosion or moisture in these electrical connections.

**WARNING:** The use of "Vampire Clips" and "Scotch Locks" is NOT ALLOWED by COBAN due to frequent failure and connectivity degradation over time, and said use thereof will VOID THE COBAN WARRANTY, unless the following criteria are followed explicitly:

- Only allowed when used to tap into the vehicle factory wire harness
- Only 3M™ brand T-taps and spades are allowed
- Allowed for use to tap into only the factory wire harness of the brake sensor circuit, gunlock sensor circuit, and door sensor circuits

In addition to the installation of these specified taps, each connection will be further secured by wrapping with electrical tape, cold shrink tape, or heat shrink tubing.

# CPU Installation

The CPU and Smart Power Module should be mounted directly on the pullout tray in the trunk. If there is no tray available; the Components should be mounting on a piece of plywood at least three quarter inch ( $\frac{3}{4}$ " ) thick, which could be glued to the Deck above the fuel tank.

**Note:** COBAN Technologies **WILL NOT** take responsibility for a DAMAGED FUEL TANK if units are installed by a Third Party Contractor or Fleet Personnel.

## Plywood Deck Mount

1. Locate an appropriate space on the Trunk Deck for mounting the Smart Power Module.

**WARNING:** The Installation Technician MUST ensure that the installation of the CPU mount does not in any way compromise the integrity of the vehicle's Fuel Tank. Be sure that the fastening screws are not longer than the thickness of the Plywood. Use the recommended glue, as fast drying glues become brittle, and can easily vibrate loose from the Deck surface.



2. Remove the carpeting covering the hole plug.
3. Apply adequate amount of Liquid Nail to the mounting surface.



4. Press a piece of plywood (minimum  $\frac{3}{4}$ " thick) firmly onto the glue.



5. Replace the carpet over the plywood, and allow sufficient time for the glue to set.

**WARNING:** Liquid Nail™ requires 8 hours to set, and 24 hours to completely cure. It is not recommended to release the vehicle back into service before the full curing time has been reached.

LIQUID NAIL™ IS HIGHLY FLAMMABLE AND SHOULD NOT BE EXPOSED TO OPEN FLAME OR SPARKS BEFORE THE FULL CURING TIME HAS BEEN REACHED.



6. The four ( 4 ) ¼ -20 x ½” hex head bolts with nylon threaded nuts slide into the grooves in the railing of the CPU and secure it to the CPU Mount.



7. Tighten the four ( 4 ) ¼ -20 x ½” hex head bolts with nylon threaded nuts with a crescent wrench and ensure that the CPU is secured in place.





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## Tray Mount

1. Set the CPU Mount onto the sliding tray and mark the position for pilot holes.
2. Use a  $\frac{5}{16}$ " metal drill bit to drill the four pilot holes in the sliding metal tray.



3. The four ( 4 )  $\frac{1}{4}$  -20 x  $\frac{1}{2}$ " hex head bolts with nylon threaded nuts slide into the grooves in the railing of the CPU and secure it to the CPU Mount.



4. Tighten the four ( 4 )  $\frac{1}{4}$  -20 x  $\frac{1}{2}$ " hex head bolts with nylon threaded nuts with a crescent wrench and ensure that the CPU is secured in place.



# Camera Installation

The camera mount installation procedure described in the following steps was captured during the installation of the M700 system in an overhead/visor orientation in a Ford Crown Victoria. Different installation procedures will need to be followed for installation of the M700 system on other types of vehicles. For more information please contact COBAN Technologies for more details on your specific vehicle type and orientation.

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## Note:

1. Remove the screw from the passenger side Visor Clip.



2. Use the passenger side Visor Clip to temporarily secure the Camera Mount.



- Secure the Camera to the Camera Mount with the supplied  $\frac{1}{4}$  - 20 x  $\frac{1}{2}$ " bolt and washer.



- Ensure that the zoom switch is correctly situated in the Camera Mount Arm so it can be activated by the driver.



- Adjust the camera to the optimal position, secure the Camera Mount to the headliner with the two (2) provided #10-16 x  $1\frac{1}{4}$ " self-tapping screws.



# Monitor Installation

The Monitor installation procedure described in the following steps was captured during the installation of the M700 system in a Ford Crown Victoria. Different installation procedures will need to be followed for installation of the M700 system on other types of vehicles. For more information please contact COBAN Technologies for more details on your specific vehicle type and orientation.

**CAUTION:** COBAN Technologies will not assume any responsibility or liability in the event that any type of damage is caused to the windshield by a third party installer during the installation process.

Note:

1. The Department will need to use its existing Laptop / MDC Mounts, or procure an additional Pedestal Mount to support COBAN's Monitor and Keyboard mounts.



2. Department may choose to mount the Monitor/Keyboard assembly on the existing Laptop/MDC Mounts already in the Vehicle
3. Department may choose to mount the Monitor/Keyboard assembly on a Pedestal/MDC Mount procured through, or designed by, COBAN



**NOTE:**  
COBAN does NOT supply any Hardware or Mounting Components below the VMDT Monitor and Keyboard Mounts. The Department will need to use its existing Laptop/MDC mounts, or procure an additional MDC/Pedestal Mount to support COBANs' Monitor and Keyboard Mounts.

# Optional COBAN Accessories

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## Driver License Card Reader

1. COBAN recommends 'Dual-Lock' or 'Double Sided Adhesive Tape' (by 3M™ Products) for mounting this Accessory.
2. The Card Reader will be plugged into the USB Port on the back of the Monitor, or in some cases, it may be plugged into the USB Port on the face of the CPU.



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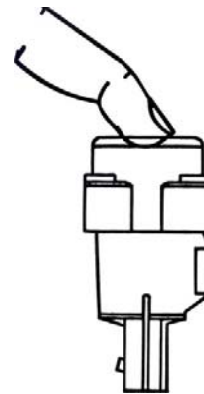
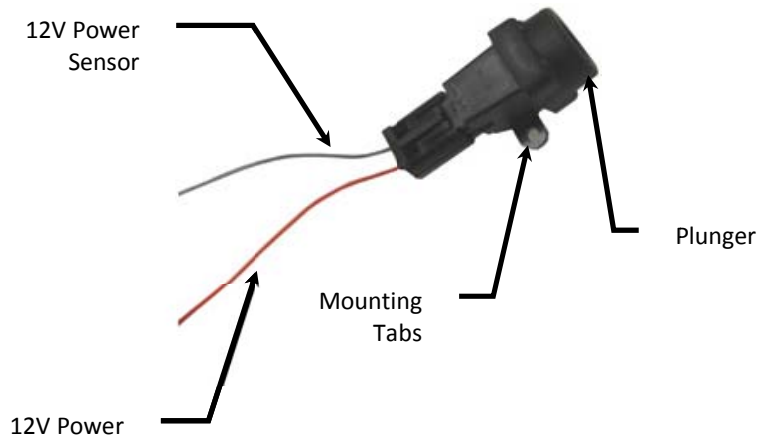
## Crash Sensor

1. This Accessory is best mounted in the Trunk of the Vehicle, preferably near the 'Emergency Fuel Cut-Off Switch' (in Crown Vic's) or in the corresponding location on the passenger side.
2. This Component must be mounted in a vertical position, as level as possible, to the framework of the Vehicle Chassis, and be easily located by the Vehicle Operator in the event that it needs to be reset.
3. The Crash Sensor will be wired into the COBAN Power Distribution Wire Harness.

12v Power Sensor – Blue Wire  
Splices to Blue 'Spare' wire on Power Distribution Wire Harness

12v Power – Red Wire  
Splices into Red wire on Power Distribution Wire Harness

4. Depress the Plunger at the top of the Crash Sensor after installation; before testing the System; and before the vehicle is released into service.





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## GPS

1. This Accessory can be mounted almost anywhere, although the recommended location is the on the passenger side Dashboard of the Vehicle.
2. COBAN recommends 'Dual-Lock' or 'Double Sided Adhesive Tape' (by 3M™ Products) for mounting this Accessory.
3. Plug the GPS into the USB Port on the face of the COBAN CPU.



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## Fixed Mount Antenna with Low Loss Cable (for Wireless Upload)

1. This Accessory should be mounted either on the Trunk Lid (at least one foot (1') away from the rear Windshield), or on the Roof of the Vehicle (preferably forward of the Light-bar), at least one foot (1') from any other Antennae, or the Light-bar.
2. This Antenna operates on the "line-of-sight" concept, and needs a clear path to locate the Access Point.
3. The Low Loss Cable should be routed as far away from any High Frequency or High Voltage equipment and their related Cables and Wiring as possible.
4. COBAN recommends routing this cable along the same route as the COBAN color coded cables.
5. This Accessory will be plugged into the back of the CPU, near the Pig-Tails, utilizing an 'RP SMA Male' connector.

Low Loss  
Antenna  
Cable



Low Profile  
Antenna



Securing  
Collar



O-ring



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## Dual Receivers

This Accessory is composed of three (3) components; TWO Wireless Receivers, and the Wireless Splitter Box, which is usually integrated into the System prior to shipping. The Installer should take care to note that **the Cables are specifically designated as 'Driver Side' (Black Plug) and 'Passenger Side' (Gray Plug)**. The Wireless Receivers must be vertically placed at least Three Feet (3') apart from each other, with the Antennae pointing upwards, (placing these components too close together will cause Interference, static in the Audio Recording, and Feedback).



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## Wide Angle Camera

This Camera is often used to view the Prisoners in the rear passenger compartment; through the rear Windshield; or passenger side windows of the Vehicle. It utilizes a 'Proprietary' Camera mount designed by COBAN, and should be secured firmly to the side Structural Rib, or the Roll Bar of the Prisoner Cage (mounting locations will vary according to Department specifications).

As this is a Wide Angle Camera, some view adjustments will need to be made by the Technician during the testing phase and before releasing the vehicle back into service.

This Accessory will be plugged into the designated Color Coded Pig-Tail on the CPU (blue), or may possibly be routed through a 'Multi-Camera Junction Box' (depending on the number of Cameras being installed in that particular vehicle), that will be mounted near the CPU. COBAN will have Tags on the Cables and the Multi-Camera Junction Box to designate Camera 1, 2, or 3, and these Cameras will be placed in locations designated by Department specifications.

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NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device is restricted to indoor use when operated in the 5.15 to 5.25 GHz frequency range.

**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.