

Safe Fleet FOCUS H1 In-Car Video System



Installation Guide

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1. Introduction

This document is intended for use with Safe Fleet FOCUS H1 In-Car Video System and contains instructions for using the Safe Fleet FOCUS H1.

Safe Fleet 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, Safe Fleet employs the latest communication, database, and storage technologies to deliver complete and scalable solutions to our customers, regardless of the size of the agency.

DISCLAIMER

Due to variations in vehicles, agency equipment requirements, and the placement of existing equipment, every installation in a public safety vehicle is unique.

The information contained herein is subject to change without notice. Safe Fleet 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.

1.1 Purpose

The H1 is a high definition (1080p) in-car video recorder intended for the law enforcement market. Additionally, the H1 is designed to allow for Edge computing. The design recognizes the significant benefit that can be gained by law enforcement with real-time analytics that don't rely on a high bandwidth connection back to the cloud. This document describes the overall hardware design/capabilities and the intended and desired structure and function of the software/firmware.



2. Installing Focus H1 In-car Video System

2.1 Package Contents



Focus H1 CPU



Front Camera



Rear Camera



H1 Monitor



GPS



Power Harness



Monitor/Camera
Extension Cable



I/O Cable



Drive Key & Removable
Drive

2.2 Mounting Parts List



CPU mount



Front camera mount



Rear camera mount

Monitor mount
(universal mount)

i NOTE: CPU Mount

CPU mount includes carriage bolts which should be used instead of self-drilling screws when possible. There are two mounting options: forward holes and mid holes for the CPU in the bracket.

i NOTE: Monitor Mount

The universal monitor mount is used when installing the monitor on the center console or on vehicle that does not have a vehicle specific mount. (Vehicle specific mounts are available for 2020+ Ford Explorer Utility, 2018-2020 Tahoe, and 2021+ Tahoe).

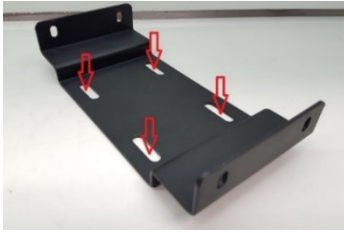
2.3 Mounting the Focus H1 CPU

The following images show the front and the back of the Focus H1 CPU respectively.



To mount the CPU, follow these steps:

1. Locate a flat surface.
2. Use the 4 carriage bolts screws to secure the mounting bracket.
3. After the CPU is securely mounted, locate the lock on the front of the CPU.
4. Use the key provided with the installation kit to open the protective cover on the front of the CPU. You will now see additional ports, as seen in the image to the left.



⚠ CAUTION: Be Careful...

Be careful not to damage the vehicle's fuel tank with the self-tapping screws.

2.4 Mounting the Monitor

To mount the Focus H1 monitor, follow these steps:

1. Attach the Ram Diamond Ball Mount and secure it to the back of the monitor with the 8-32 machine screws.



2. Mount the second Ram Diamond Ball Mount to the vehicle using the self-tapping screws and attach the monitor assembly to the vehicle using the Ram arm as shown in the example below.



3. Adjust the monitor to the desired position and tighten the ram mount as shown in the example below.



2.5 Mounting the Front Camera

To mount the front camera, follow these steps:

1. Install the flat plate by removing the visor clip and placing the plate around the hole. Mark and drill pilot holes first to make the self-drilling screws easier to install. Once this is mounted firmly, replace the visor clip.



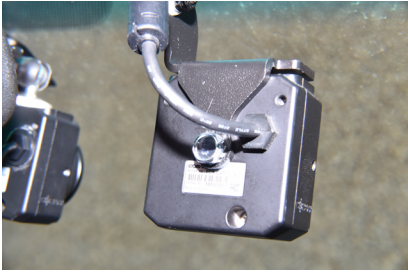
2. Install the carriage bolt through the front center hole pointing down as shown in the image above. Do not install a washer between the carriage bolt head and the flat plate.
3. If the camera is allowed to be adjusted by the officer, install the nylon washers. If not, install the star washers between the metal pieces, and these will lock the mount in place.
4. Install the hanging bracket. Notice that there are upper and lower mounting positions to choose from, depending on the agency's mounting policy. After inserting the carriage bolt into the plate, add a washer and the hanging bracket, followed by a washer and a locking nut.



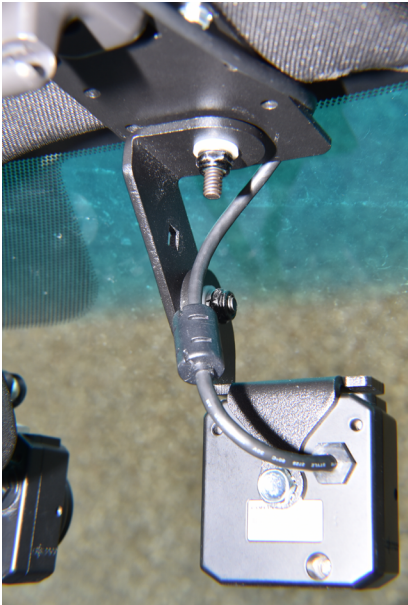
5. Install the camera mount by using the same hardware as the hanging bracket. Insert a carriage bolt into the hanging bracket. Add a washer and the camera mount, followed by a washer and a locking nut.



6. With the star washer bolt, mount the camera to the bracket and properly position the camera.

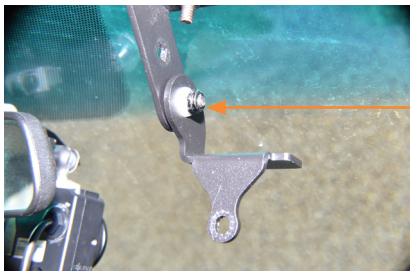


7. Make sure to zip tie the camera cable out of the way, but allow enough slack to move the camera if needed.

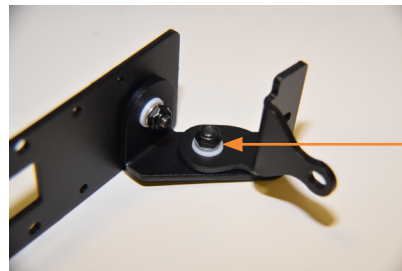


NOTE: Upper and Lower Mounting Holes

There are upper and lower mounting positions to choose from, depending on the agency's mounting policy.



Lower
mounting
position



Upper
mounting
position

2.6 Mounting the Rear Camera

Hardware provided for rear camera installation:

(2) self-drilling screws, mounting plate, camera mount, camera bolt with star washer, mounting plate bolt, flat washer, and lock washer



To mount the rear camera, follow these steps:

1. Make sure the rear camera is orientated correctly. The part number sticker should face up. Bolt the camera mount to the rear of the camera with the bolt/star washer. Make sure the camera mount is on the bottom of the camera.



2. Mount the plate on the cage using the (2) self-drilling screws with an 8mm socket. Make sure the mounting section is on the bottom of the plate.
3. Using the bolt, flat washer and lock washer, connect the camera to the mounting plate. Position the camera and tighten the bolt with an 11mm socket.



4. Hide the cable above the headliner or towards the front of the cage.

2.7 Wiring the Focus H1

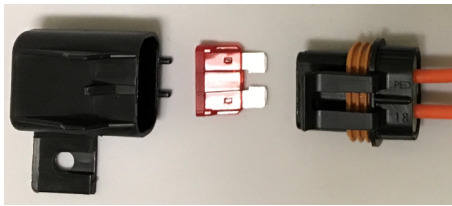
2.7.1 Using the Power Harness for Wiring the CPU

To wire the FOCUS H1 using the Power Harness, follow these steps:

1. Attach the BLACK wire of the POWER HARNESS to ground.



2. Take the inline fuse holder and release the clasp on the holder to remove the fuse.



3. Securely attach one end of the fuse holder wire to the RED wire.
4. Connect the other end of the fuse holder wire to the positive terminal of the battery.
5. Reattach the fuse, and fix the fuse holder firmly into place.
6. From the power harness, run the YELLOW wire along the dash, and finally, connect it to an ignition source.
7. Connect the Power Harness to the power pigtail on the CPU.

NOTE: Connecting the Power Connector

When connecting the power connector, line up the arrows on each connector to point to each other.

2.7.2 Wiring the Monitor

To wire the monitor, follow these steps:

1. Lay out the monitor extension cable (black) from the monitor location to the CPU.
2. Connect the monitor pigtail to the monitor extension cable.
3. Connect the monitor extension to the port on the back of the CPU labeled **LCD**. To connect the extension securely, thread up and thread down the connectors at the base of the plugs.



Connect the monitor extension cable (black) here

NOTE: Orientation

For proper orientation make sure the top flat side of the connector is facing up.

2.7.3 Wiring the Front Camera

To wire the front camera, follow these steps:

1. Run the camera extension cable (brown) from the front camera location to the CPU.
2. Connect the camera pigtail to the camera extension cable.
3. Connect the camera extension to the port on the back of the CPU labeled **CAM 1**. To connect the extension securely, thread up and thread down the connectors at the base of the plugs.



Connect the camera extension cable (brown) here

NOTE: Orientation

For proper orientation make sure the top flat side of the connector is facing up.

2.7.4 Wiring the Rear Camera

To wire the rear camera, follow these steps:

1. Run the camera extension cable (red) from the rear camera location to the CPU.
2. Connect the camera pigtail to the camera extension cable.
3. Connect the camera extension to the port on the back of the CPU labeled **CAM 2**. To connect the extension securely, thread up and thread down the connectors at the base of the plugs.



NOTE: Orientation

For proper orientation make sure the top flat side of the connector is facing up.

2.7.5 Connecting the I/O Cable

To connect the I/O cable, follow these steps:

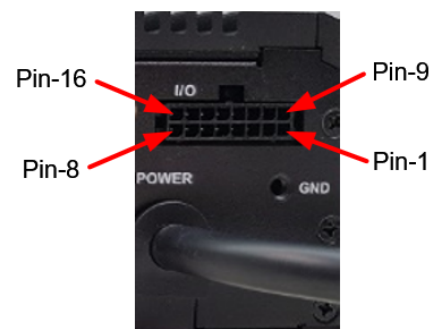
1. Connect the I/O cable to the port on the CPU labeled I/O.
2. Attach the Black wire with the Yellow Stripe to a 12V output signal from the lightbar.

NOTE: Digital Inputs & Outputs

Digital Inputs and outputs are configured in the Command Center Back office.



CPU Back Panel



I/O Port

Input and Output Descriptions

Pin #	CONNECTOR	FUNCTION	COLOR
1	DI - 1 INPUT	LIGHTBAR	BLK / Yellow Stripe
2	DI - 2 INPUT	BRAKE	BLK / White Stripe
3	DI - 3 INPUT	SPARE	BLK / Blue Stripe
4	DI - 4 INPUT	SPARE	BLK / Green Stripe
5	DI - 5 INPUT	SPARE	BLK / Red Stripe
6	DI - 6 INPUT	SPARE	BLK / Orange Stripe
7	DO - 1 +	OUTPUT (NO) +	BLK / Brown Stripe
8	DO - 1 -	OUTPUT - Load	BLK / Gray Stripe
9	N/C	Gnd	N/A
10	N/C	Gnd	N/A
11	N/C	Gnd	N/A
12	N/C	Gnd	N/A
13	N/C	Gnd	N/A
14	N/C	Gnd	N/A
15	DO - 2 +	OUTPUT (NO) +	BLK / Violet Stripe
16	DO - 2 -	OUTPUT - Load	BLK / Pink Stripe

2.8 Connecting the Peripherals

This section describes how you can connect the peripherals of the Focus H1 in-car Video System.

2.8.1 Connecting the GPS

To wire the GPS, follow these steps:

1. Place the GPS receiver near a window to allow better connection with satellite.
2. Run the cable to the CPU.
3. On the CPU, find a USB port labeled "GPS".
4. Insert the USB connector in to this port.

NOTE: Extension Cable

Each system comes with an extension cable. If the GPS cable is not long enough to reach the CPU, please use the extension cable and tape the connectors together to keep them from coming apart inside the panels after being installed.

2.8.2 Connecting the Wireless Microphone

Overview of the Wireless Microphone

1. WIRELESS MICROPHONE
2. BATTERY
3. MICROPHONE CHARGING UNIT
4. CAR CHARGING POWER CORD
5. WALL CHARGING POWER CORD
6. LAPEL MICROPHONE
7. LEATHER BELT POUCH



The H1 In-car video system supports up to two wireless microphones, in addition to the In-car microphone. To access the secondary receiver contacts, remove the cover located near the primary receiver.

When a recording on camera 1 is started, the wireless microphones are turned on. When camera 1 is stopped, the microphones are turned off.

The microphone has the following three buttons

- **Rec** – larger button on top
- **PB1** – smaller button on top. This is a programmable function button.
- **PB2** – side button. This is a programmable function button.

If there are two wireless microphones, their push buttons are given the same functions.

- **Mute** – mutes the sound from the wmic. When mute is on, a button LED displays. When the mute is off the button LED is turned off.
- **Marker** – records the time when the button is pressed. This is the same as a bookmark.
- **TriggerCam2** – starts camera2.
- **Snapshot** – This is the same as the snapshot function on the live view screen.

Assembling the Microphone Unit

The microphone comes in a package, which also includes a battery, a wall charging unit, and an antenna. To use the microphone, you must first assemble it.

To assemble the microphone:

1. Remove the microphone, battery, antenna, and power adapter from the packaging.
2. Unscrew the lid of the battery compartment, and fit the battery inside.
3. Carefully fix the lid on to the battery compartment.
4. Thread the antenna inside the screw hole meant for this purpose. You should find the screw hole along the breadth of the microphone unit.
5. Use the charging unit to fully charge the microphone battery.

Installing the Microphone Receiver

The Microphone Receiver makes available the audio signal that is transmitted by the microphone.

Follow these steps to install the microphone receiver:

1. Install the microphone receiver as high as possible to clear the firewall. This will give the longest range for the body microphone.
2. Install the backing plate first. Then, mount the microphone receiver on top of the backing plate.
3. Fix the backing plate and the microphone receiver together with the provided screws.



NOTE: Mounting position of the microphone receiver

The microphone receiver will need to be accessible to the officer to sync the microphone.

Connecting the Microphone Receiver to the CPU

Follow these steps to connect the microphone receiver to the CPU.

To connect the microphone receiver to the CPU:

1. On the CPU, find the 15-pin port labeled "WMIC".
2. Insert the DB15 connector of the microphone cable into this port. Make sure the end with the red heat shrink is inserted into the CPU.
3. Connect the other end of the microphone cable to the microphone receiver.



Syncing the Wireless Microphone

In order to ensure that the microphone works with the microphone receiver, you must synchronize the microphone with the receiver. You can have as many microphones as you want, but for each microphone, you must have a separate receiver.

To sync the wireless microphone, follow these steps:

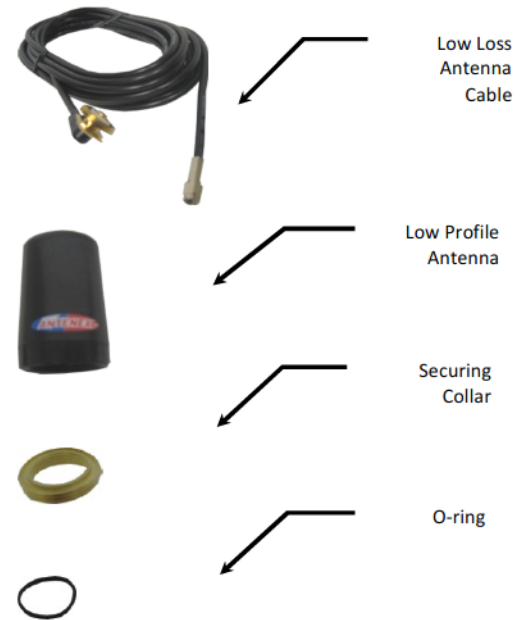
1. Verify your microphones are fully charged.
2. Power on the In-car Video System.
3. Touch the microphone contacts (located on the bottom of the wireless microphone unit) to the receiver's register contacts.
A confirmation tone sounds indicating the receiver and microphone have synchronized frequencies. The microphone is now in Standby mode and ready for use.
4. If necessary, repeat these steps with additional microphones while ensuring each is synced to its own receiver.

i NOTE: Second Microphone

Syncing a second microphone to the same receiver will replace the first microphone.

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

- 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') away from any other antenna or the light-bar.
- This antenna operates on the "line-of-sight" concept, and needs a clear path to locate the access point.
- 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.
- Safe Fleet recommends routing this cable along the same route as the Safe Fleet color coded cables.
- This accessory will be plugged into the back of the CPU, near the pig-tails, utilizing a RP SMA Male connector.



i NOTE: Number of antennas required

2 antennas are required for proper wireless operation.

Obtaining Safe Fleet Support

Safe Fleet offers the following ways to obtain support. Before you contact us, please have the following information ready to provide Support:

- Department Name
- Name of the registered contact with Safe Fleet. If not registered within our system as an authorized contact, contact your project manager and request to be added to our contact list. Failure to do so may delay support assistance.
- Best contact number and preferred contact time
- Error Code/Description of issue you are experiencing
- Troubleshooting steps already taken

To obtain Safe Fleet support:

Call support at 281-925-0488, then select Option 2. You can hold for immediate assistance or leave a voicemail for Safe Fleet Support to respond as soon as possible.

Mon-Fri 8:00am to 6:00pm Central Standard Time (CST)

Email Support at cobansupport@safefleet.net and include a detailed description of the issue you are experiencing. Also include any troubleshooting steps you have taken to resolve the issue. Support may request additional information or troubleshooting.