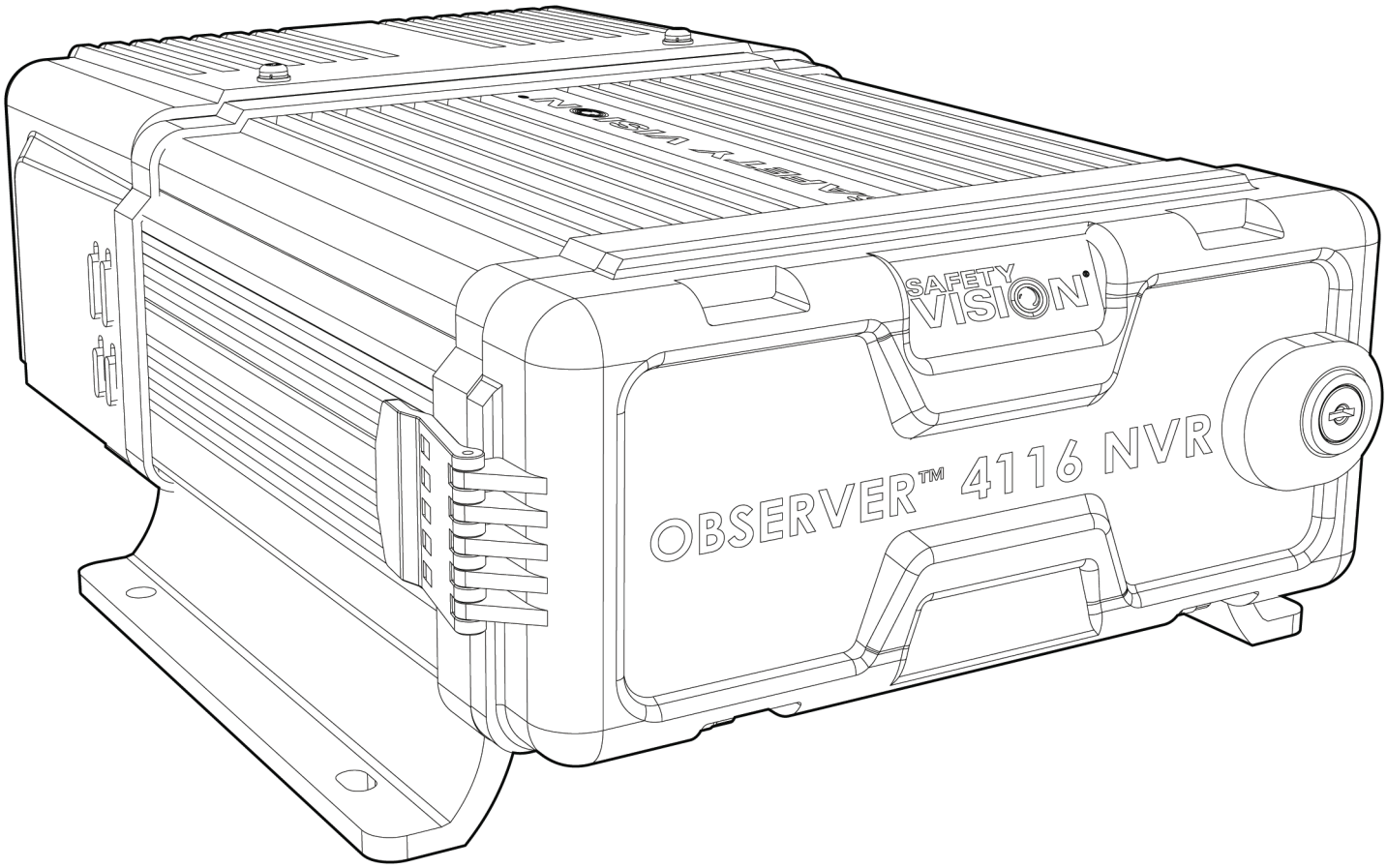

OBSERVER™ 4116 NVR HARDWARE USER GUIDE

For system configuration, please refer to the Observer Series Configuration Guide.

SAFETY VISION®

Important Notices

Title: Observer™ 4116 HVR Hardware User Guide
Document Version: 1
Revision: 3

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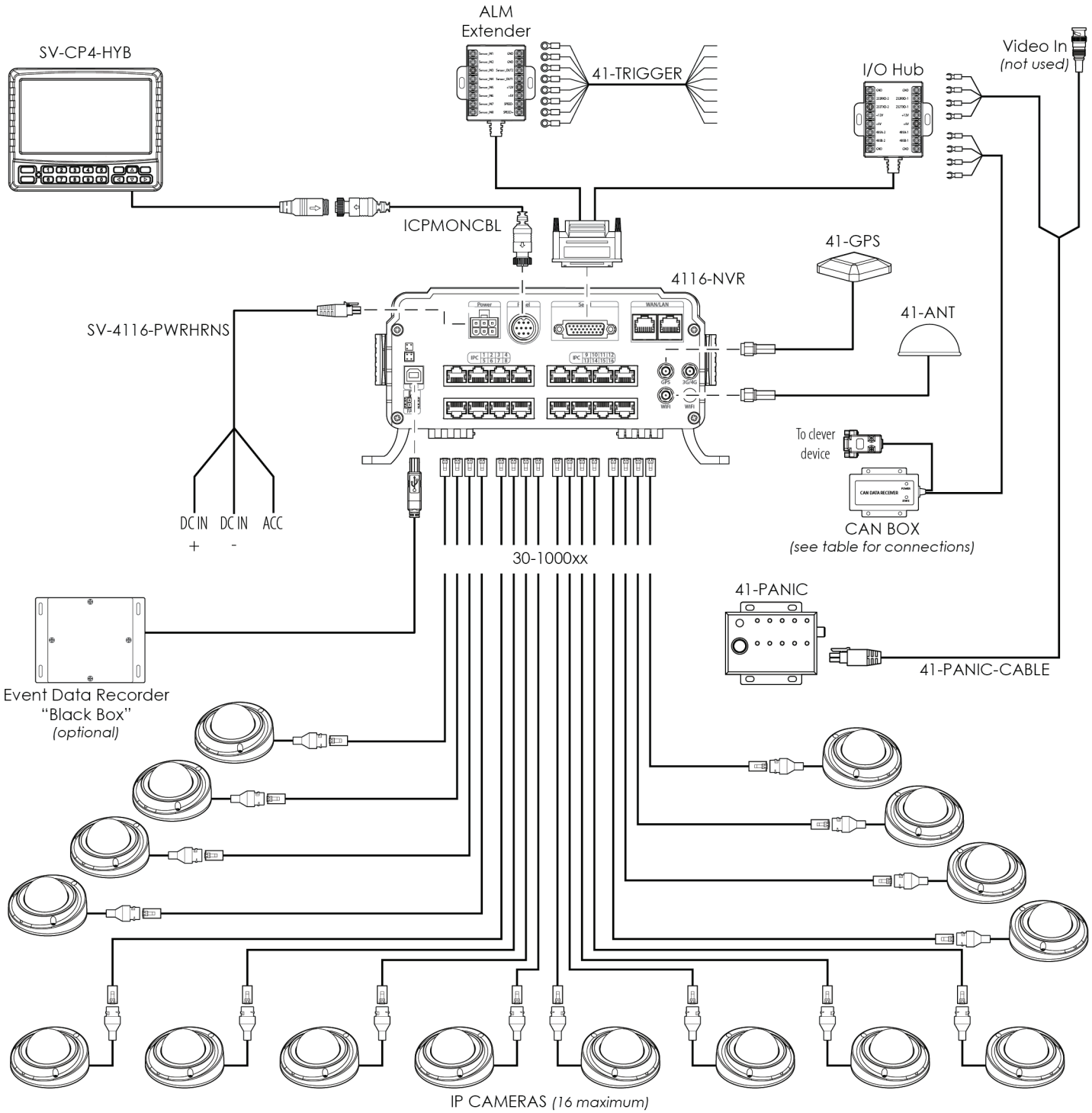
The Observer Series Recorders consists of two (2) separate user guides:

1. ***Hardware User Guide***
2. ***Configuration User Guide***

This document is the Hardware User Guide. It provides wiring, installation, and components description.

For system configuration, please refer to the Observer Series Configuration Guide.

Main Wiring Diagram



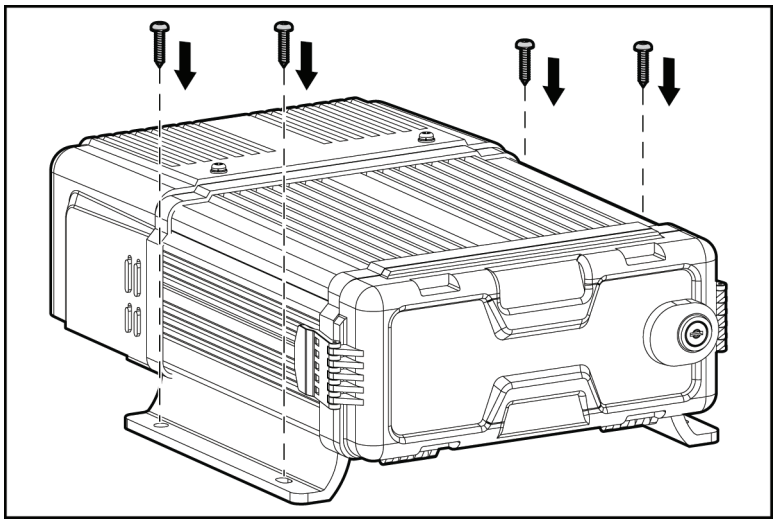
CAN BOX connections	
TO	COLOR
GND	BLACK
485B-1	GREEN
485B-1	WHITE
+5V	RED

Installation

Flat Mount

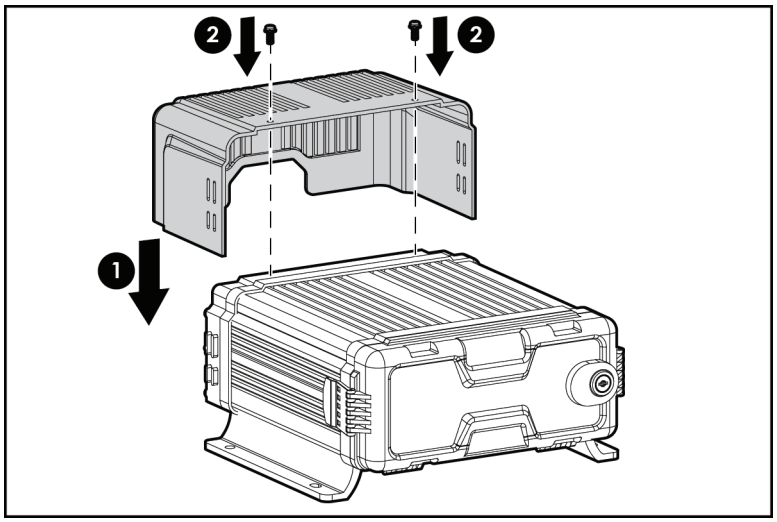
Secure the NVR to the surface with self-tapping screws or rivets.

Ensure that the front panel of the NVR remains accessible and there is a minimum 2.5 inches of clearance for cables.. Do not install the NVR in an area of the vehicle cabin that could interfere with the safe operation of the vehicle.



Security Cover

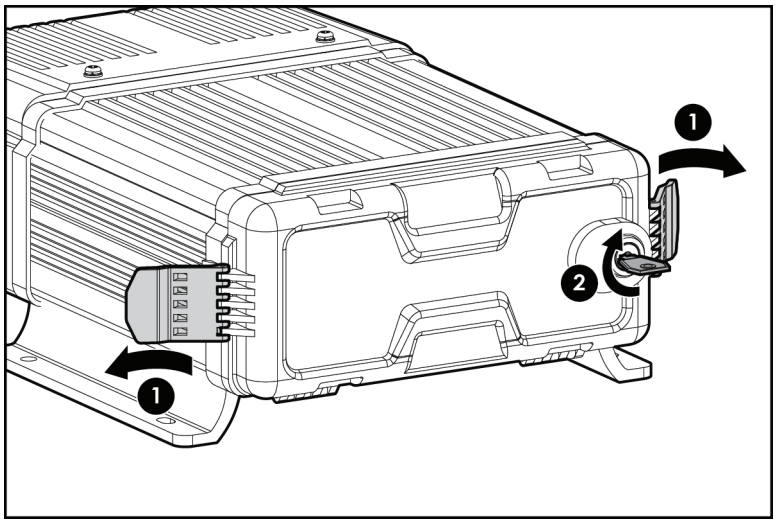
After connecting all needed cables to the rear of the NVR as shown in the Main Wiring Diagram, secure the Security Cover with the included Phillips head screws as shown in the diagram.

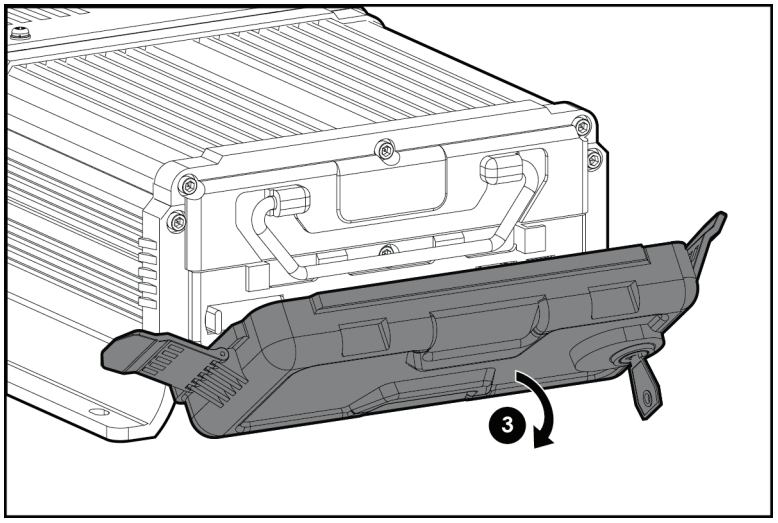


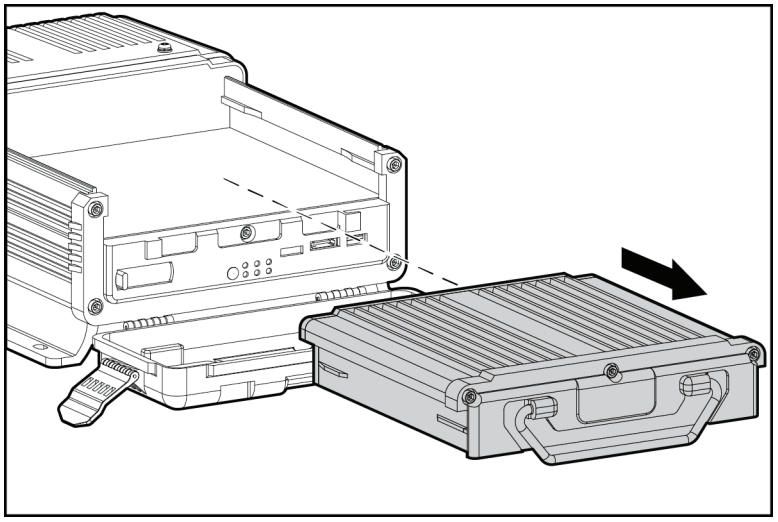
Hard Drive Removal

To remove the hard drive from the NVR:

1. Ensure the NVR is powered off.
2. Release the two faceplate security tabs on the side of the enclosure.
3. Insert the key into the faceplate lock and turn it clockwise.
4. Open the faceplate.
5. Pull the hard drive firmly and straight out.







SD Card Insertion /Removal

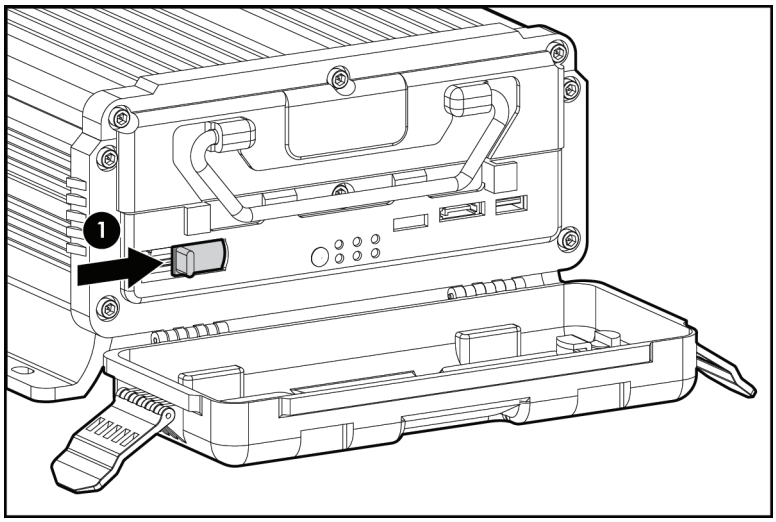
Do not force the SD card into the slot upside down or backwards.

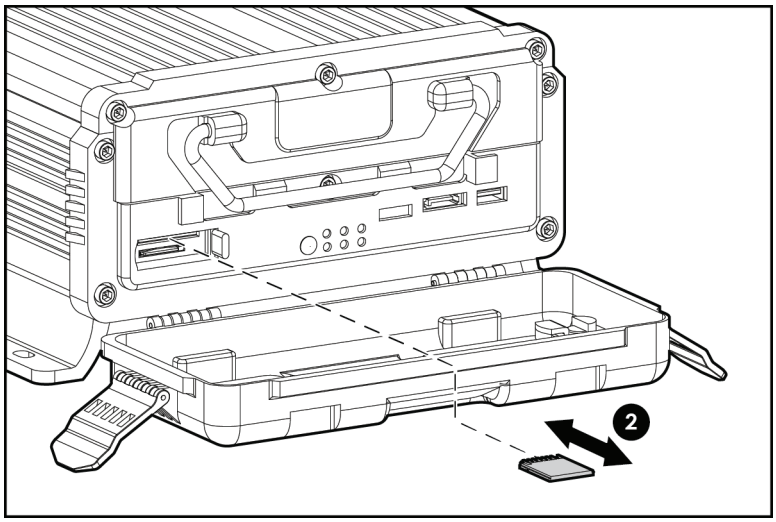
Ensure the SD card's write protection slider is in the "unlocked" position.

Do not remove the SD card until the NVR is turned off.

1. Open the faceplate as described in the previous procedure.
2. Open the SD card slot door from the left edge.
3. Insert an SD card into the SD card slot label-side up, with the notch to the right, until it clicks in place.

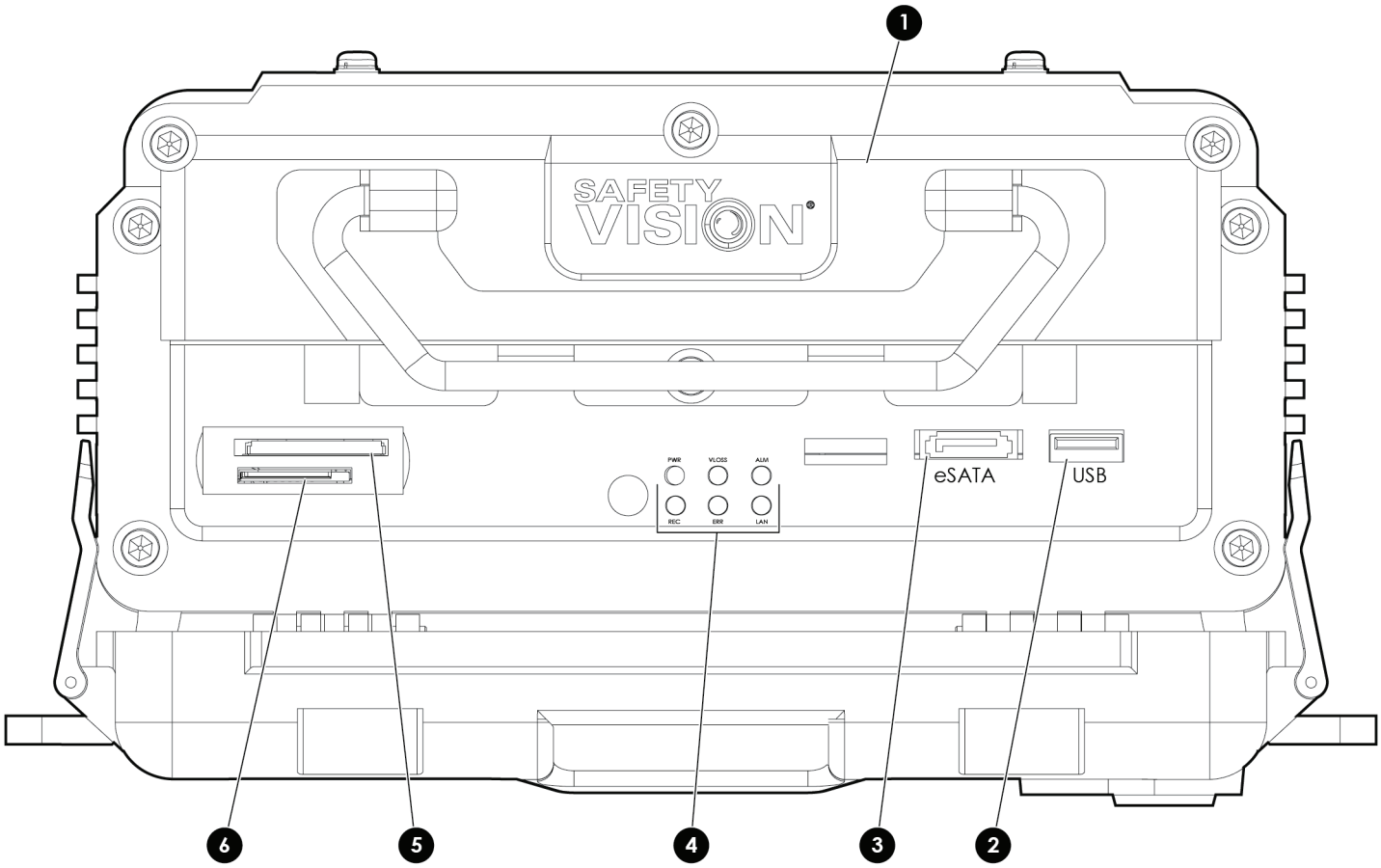
   To remove the SD card, press the SD card as far as it will go in the slot, then allow it to "spring" out.





Components

Front Panel



1 - Removable Hard Drive The hard disk drive (HDD) provides the main storage for recorded data.

2 - USB Port Insert a USB flash drive to download events quickly without having to remove the SD card or hard drive, or upload firmware updates. A USB mouse may also be attached to navigate menus in collaboration with an external monitor.

3 - eSATA Port Connect optional external equipment.

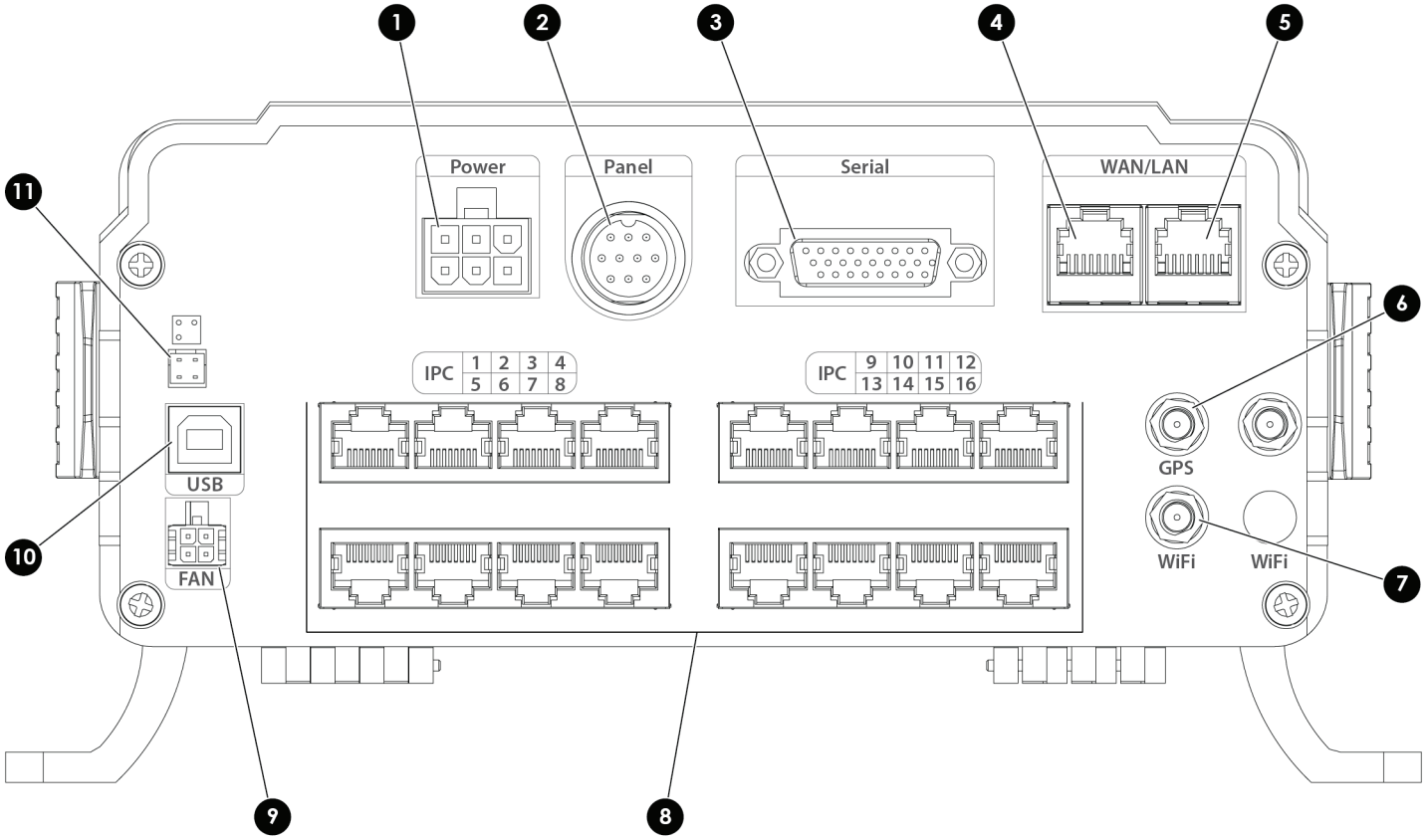
4 - Status LEDs The Status LEDs illuminate to display the current status of the NVR. See chart at left.

5 - SD Card Slot Insert an SD card into the slot until it clicks. To remove the SD card, briefly press it in until it ejects.

6 - SIM Card Slot Insert a SIM card as required by a cellular network provider.

STATUS LEDS	
LAN	Indicates network activity
Power	NVR is receiving power
REC	NVR is recording video
VLoss	One or more cameras is detached or malfunctioning
ALM	Event/alarm has occured
ERR	Storage Error - corrupted driver or unformatted drive

Rear Panel



1 - Power Port Connection for the main power harness.

2 - Panel Port Connection for optional CP4-series monitors.

3 - Serial Port Connection for the sensor block wiring harness.

4 - WAN Port (RJ45) Connection for optional network accessories.

5 - LAN Port (RJ45) Connection for the POE Smart Switch IP camera hub. The Smart Switch MUST be connected to the LAN port.

6 - GPS Antenna Port Connection for the external antenna for the internal GPS module.

7 - WiFi Antenna Port Connection to an external antenna for the internal WiFi module.

8 - IPC Ports Connections for up to 16 network IP cameras.

9 - Fan Power Connection for fan power when the NVR is installed in an optional lockbox equipped with a fan.

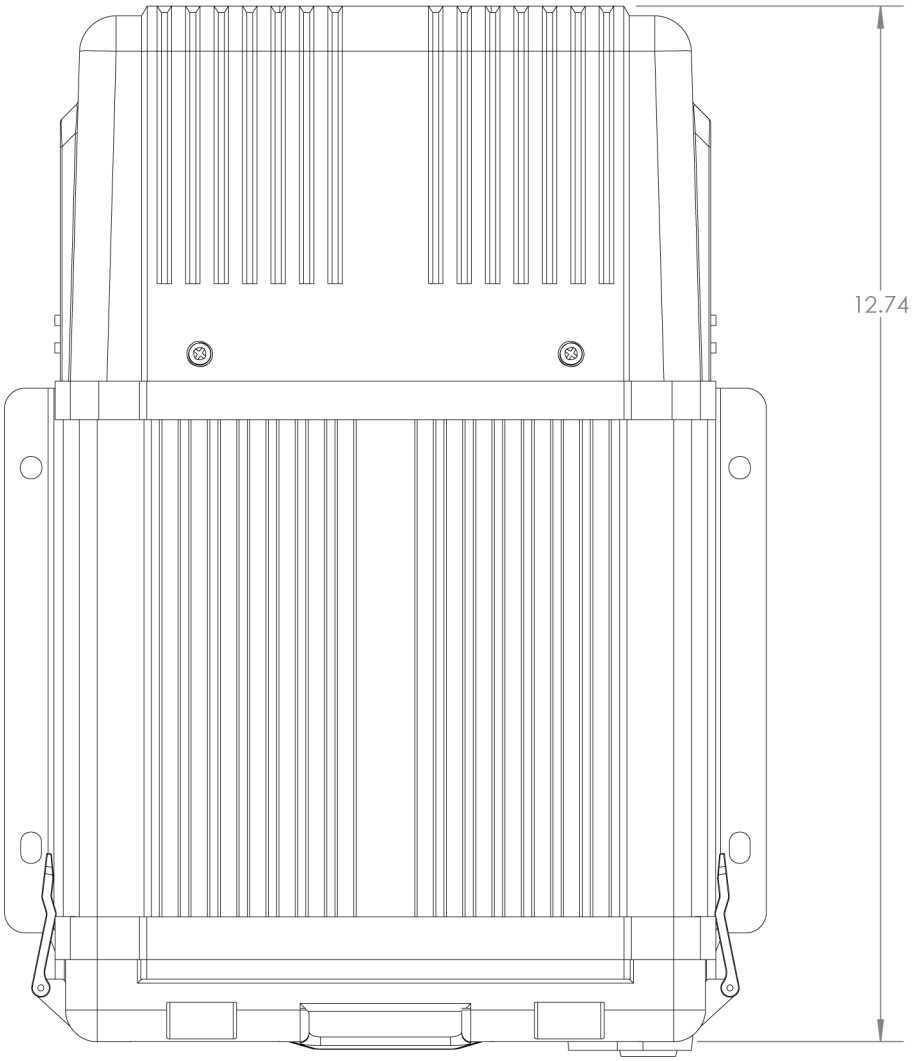
10 - USB Port Connection for optional USB accessories.

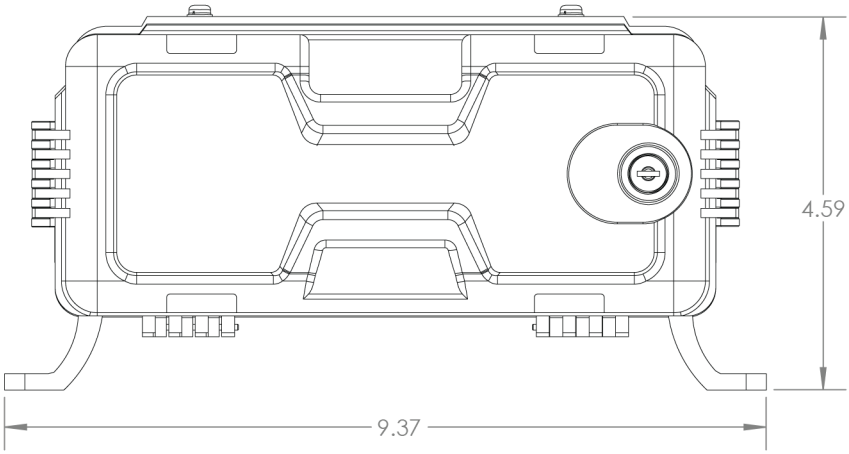
11 - Debugging Port Connection for debugging and development *(Service Technician use only)*.

Appendix A: Specifications

SPECIFICATIONS	
Part No. 4116-NVR	
OS Support	Linux 3.0.8
Access Control	CP4, web interface *(WiFi or interface)*, mouse *(wireless)*
Cameras Supported	Up to 16 IP cameras
Audio/Video Output Port	1 video output channel and 1 audio output channel *(SV-VID-MON-OUT required)*
Display	1 / 4 / 9 image display
On-Screen Display	GPS information, trigged alarm, temperature, acceleration, voltage, device information, software version, MCU version, network status
Image Quality	8 levels
Image Resolution	**NTSC:** 1080p (1920 × 1080) at 30 fps, 720p (1280 × 720) at 30 fps **PAL:** 1080p (1920 × 1080) at 30 fps, 720p (1280 × 720) at 30 fps
Storage	2 × SATA II SSD *(2 TB max each, 4 TB total)* **OR** 2 × SATA II HDD *(2 TB max each, 4 TB total)*
Recording Modes	Power on / manual / timer / alarm event recording
Mirror Recording	1 × SD card *(up to 256 GB)*
Redundant Storage	External fire proof box *(optional)*
Pre-Event Recording	Configurable up to 60 minutes
Post-Event Recording	Configurable up to 30 minutes
Ethernet	2 × RJ45 (10/100 M and 1000M)
Wi-Fi (Antenna Required)	Embedded module (802.11b/g/n)
GPS (built-in)	Location tracking, speed detection, and sync time
Accelerometer	3-Axis
Interfaces	**Front:** 1 × USB 3.0 *(type A)*, 1 × eSATA **Rear:** 1 × USB 2.0 *(type B)*, 2 × RS232, 2 × RS485
Sensors	8 inputs, 2 outputs
Power Input	8 ~ 36V DC, ACC
Power Output	5V @ 500 mA, 12V @ 500 mA
Operating Temperature	-14° F ~ 158° F (-10° C ~ 70° C) -40° F ~ 158° F (-40° C ~ 70° C) *(with heating module)*
Dimensions (w × h × d)	9.4 × 4.5 × 12.8 in (238 × 115.5 × 324.6 mm)
Certifications	MIL-STD-810, IEC 60068, FCC, CE, EN50155 EMC, ISO7673

Appendix B: Dimensions





FCC Compliance Statement

NOTE

This device 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 in which case the user will be required to correct the interference at his own expense.

CAUTION

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for the compliance could void the user's authority to operate the equipment.

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