



Zeus TITAN USER MANUAL



V1.2

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Introduction

The Zeus TITAN DVR captures your vehicle's video from multiple cameras and organizes the files allowing end-users to retrieve video with a few mouse clicks. Zeus TITAN also makes it easy for you to access cameras and saved video in real-time. Not just state-of-the-art, Zeus TITAN and the DVRViewer Pro software DEFINE the mobile video surveillance industry. Future-proof technology includes AI capabilities and firmware updates.

Zeus TITAN features:

- A dynamic bit rate for each camera
- Configurable frame rate up to 30 fps per camera
- Image quality control
- Real-time previewing on all channels, while still recording
- Alarm triggers
- Sensor configuration
- Easy retrieval and transfer of video files over cellular, WiFi and LAN
- GPS tracking

In addition, ZEUS allows end-users to independently manipulate these parameters for each camera if desired. (Note that some parameters should only be adjusted if the user has specific knowledge or under the direction of 247 Security Inc tech support).

Overview

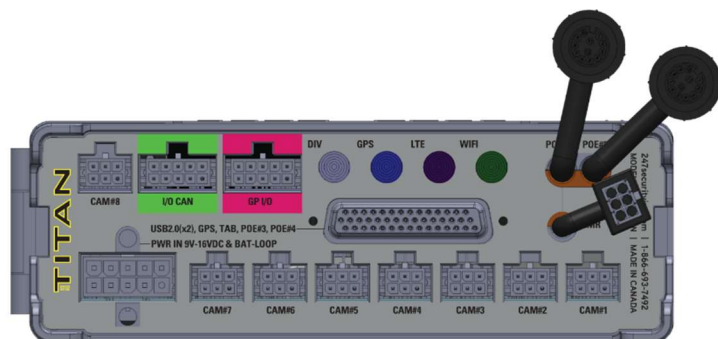
Front – door closed



Front – door open



Rear



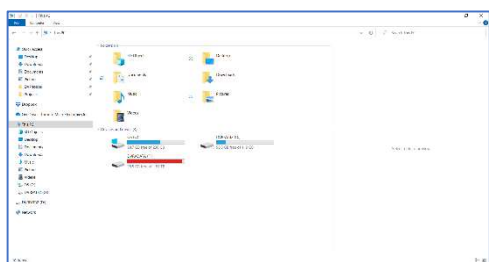
The Infinity (DHD) Drive



'DHD' = dual hybrid drive, renamed 'Infinity Drive'

This is a patent-applied for technology that resolves the issues with both solid state (SSD) and mechanical hard disk drives (HDD), by combining both with intelligent software in one device.

When the DVR starts, it formats the smaller (120GB) SSD; while the vehicle is moving, everything is recorded to this drive. When the vehicle parks and is turned off, the DVR will copy the contents of the SSD to the cheaper and larger (1 or 2TB) for long-term access and storage.



This image shows both drives mounted in *Windows File Explorer\This PC*.

Retrofit notes

If replacing a ZEUS PT with a ZEUS TITAN, there are a few important changes:

- TITAN uses a different power cable than PT
- SD Cards are not recommended as a storage media; use an *Infinity drive*

Operation

Once your Zeus TITAN has been installed, it's ready to start recording.

VIEWING VIDEOS

Use the proprietary software *DVRViewer Pro* to view and edit videos. This can be downloaded from the My247 Customer Resource portal; sign up through 247securityinc.com or surveillance247.com.

Videos are retrieved wirelessly through *TouchDown* (WiFi), *247Live* (cellular data) and from the *Infinity Drive* media storage tray from the DVR. Connect the *Infinity Drive* to your computer, and open *DVRViewer Pro*. Refer to the *DVRViewer Pro User Guide* available at *My247* for more information.

Removing the Infinity Drive tray

The media storage tray can be removed and inserted with or without the vehicle running, but the POWER LED must be off.

This process is necessary so that the ZEUS can properly close all video/audio files and safely turn the HDD (hard disc drive) power off. This process takes roughly 15 to 30 seconds to complete. The feature is helpful when access to video is needed but vehicle is required to remain running.

For a full explanation of the Titan lights, refer to *Status Indicators* on page 28.

Turn the key to the “Open” position. Open the door and wait until the *POWER* light is off.

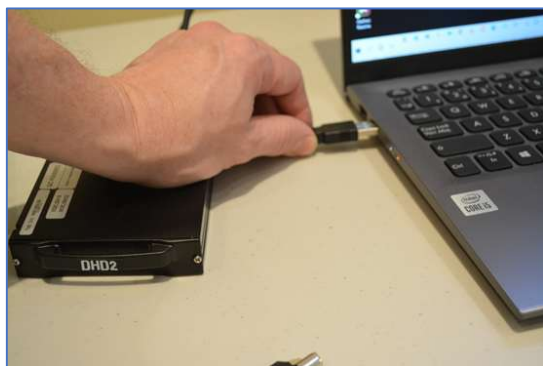
Pull the *Infinity Drive* out from the DVR until it is free from the rails.



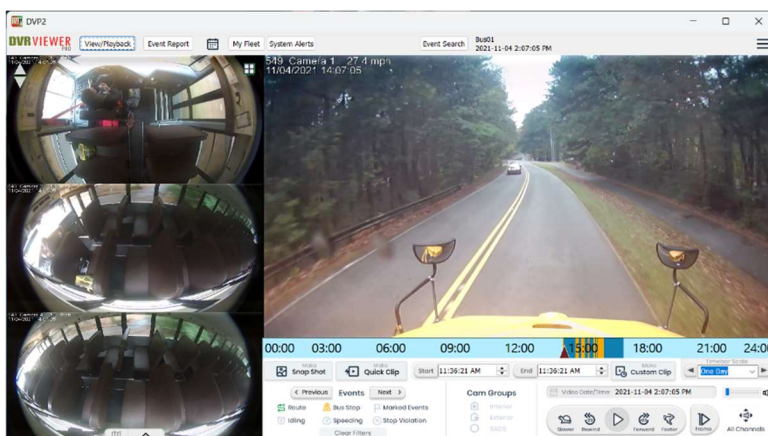
If swapping the drive, insert new media storage, and close the door.

Turn the key to the “Lock” position.

The ZEUS will now turn the HDD power on, detect the new media and start recording again.



If viewing videos, connect the media tray to the computer with the supplied cable.



Refer to the *DVRViewer Pro User Manual* for more information.

WIRELESS VIDEO RETRIEVAL

You can retrieve video from the DVR wirelessly through *TouchDown* or *247Live*. Refer to the *TouchDown* manual for more information or talk to your *247Security* representative.

Configuring Zeus TITAN

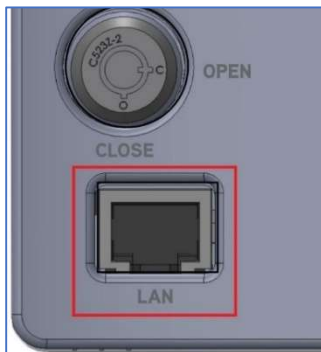
Your 247 Security installer will configure your TITAN DVR as part of the installation process. Changes to the initial configuration can be made by following these steps.

1. Connect TITAN to your PC or laptop, with the supplied Ethernet Crossover Cable
2. Set up your computer's Ethernet port (temporarily) with a static IP
3. Use *DVRViewer*, *DVRViewer Pro*, or a browser to access configuration settings.
4. After disconnecting from TITAN, return your laptop/PC to dynamic IP settings as necessary

1. Connect TITAN to PC or laptop

An Ethernet Crossover Cable is included with the unit. This is how the installer views the cameras for aiming purposes. A crossover Ethernet cable is slightly different than a normal Ethernet cable: the connection is not between a PC and a network device per se, such as a router/switch/modem, but between two terminal devices on a LAN.

Use the grey cross-over cable that shipped with the DVR. Attach one end to the LAN port on the laptop or PC



,...and the other end to the DVR port labeled LAN.

Verify that one end of the cable has a "XOVER" label. A standard Ethernet network cable will not work.

2. Static IP setup

Your PC/laptop and the TITAN need to be set up with "static" IP addresses to connect to each other.

TITAN's default IP address is 192.168.1.100.

SETTING UP YOUR PC - WINDOWS 10

1. Right click on the *Start/Windows* button in the lower left corner
2. Select "Network Connections"
3. Select and open "Network and Sharing Center"
4. Select "Change adapter settings"

5. Right click on “Local Area Connection” and select “Properties”
6. Left click on “Internet Protocol Version 4 (TCP/IPv4)” and select “Properties”
7. Record ANY numbers on this screen; you may need to return to these numbers when finished configuring TITAN
8. Left click on “Use the following IP Address” button
9. In the “IP address” window type “192.168.1.50”
10. Left click on “Subnet mask:”, and “255.255.255.0” should populate automatically
11. There should be no other numbers in the TCP/IP properties window
12. Left click on “OK”
13. Left click on “Close”

SETTING UP YOUR PC – WINDOWS 11

1. Click the *Start/Windows* button in the lower left corner
2. Type “network connections”, click on “View Network Connections”
3. Right click on “Local Area Connection” and click “Properties”
4. Left click on “Internet Protocol Version 4 (TCP/IPv4)”
5. Click the “Properties” button
6. Make sure that “Use the following IP address:” is selected
7. In the “IP address” window type “192.168.1.50”
8. Left click on “Subnet mask”, and “255.255.255.0” should populate automatically
9. Click “OK”
10. Click “Close” or “OK”

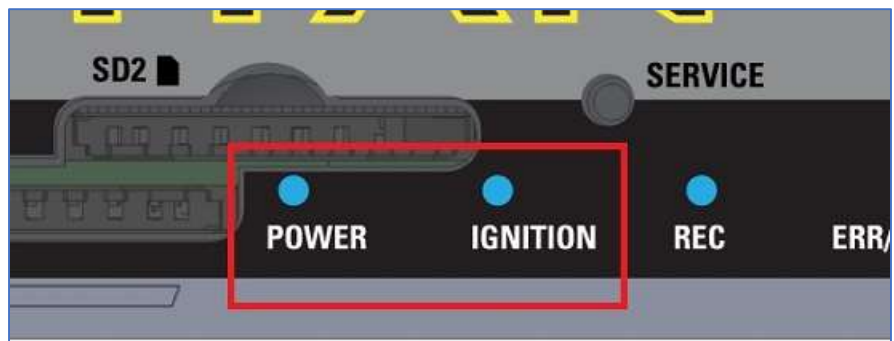
Note: If the steps in setting up your PC do not work, contact you IT department concerning your PC, this is a one-time setup to configure the Zeus Titan DVR.

You may need to return your computer to dynamic settings by selecting “Obtain an IP address automatically”. See Step 4 below.

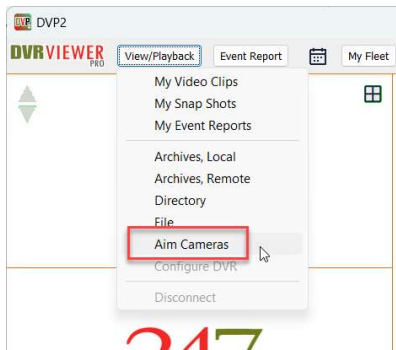
3. Run *DVRViewer Pro*

Refer to the “DVRViewer Pro User Manual” for details on downloading, installing, and launching the program on your PC or laptop.

Verify that the DVR is powered up – the Power and Ignition LEDs should be on and solid. The bus can be idling or on “Accessory” without the engine running, in which case the IGNITION light may be unlit.



Open *DVRViewer Pro* and login. The user “admin” has the password “247SECURITYINC”.



Click “View/Playback”, select “Aim Cameras” or “Live Look-in”.

Select the DVR from the list. The cameras will populate DVRViewer Pro.

Click “View/Playback”, select “Configure DVR” or “Configure”.

Login: admin / admin

Configure TITAN as needed.

Note that some settings should not be changed unless the user has specific knowledge or is under the direction of 247Security tech support. If unsure, make no changes without contacting tech support.

4. RETURN THE IP SETTING TO DYNAMIC

You may not have to switch your Local Area Connection back to “Obtain an IP address automatically” if your setting was already set to “Use the following IP address” but it was blank. We recommend that you follow the previous instructions, reverse order, to return your laptop to its proper state.

CONFIGURATION MENUS

Firmware: ZEUSTITAN.1.0.26.0225.11



The DVR setup is divided into six major sections: System, Camera, Sensor, Network, Status and Tools.

TITAN DVRs are configured at the factory for most system requirements. Click *Apply* after changes.

Note that some settings can impact the proper functioning of the DVR and require specific knowledge before changing. If not certain, contact tech support first.

SYSTEM CONFIGURATION MENU

The System tab is where you configure general parameters such as the name of the DVR (the bus name), time zone, shutdown delay, etc.

Also, the G-Force set-up parameters are here if the Drive-Safe module is attached to the DVR.

DVR SERVER NAME

DVR Server Name: BUS001

The name of the bus goes here, **only using** letters & numbers with a maximum of 16 characters and no spaces.

Note: DO NOT USE spaces or symbols.

COMPANY ID

Company ID: ABC001

Don't change this field, it is assigned by 247SECURITY.

247 Security Inc.

System Camera Sensor Network Status Tools

DVR Server Name: BUS001
Company ID: ABC001
Admin Password: *****

DVR Time Zone: US/Eastern - (GMT-5:00) New York
Shutdown Delay (seconds): 300
Standby Time (seconds): 2

Maximum File Size(MB): 500
Maximum File Time(s): 3600
Number of Disks: 2

Event Marker: Event Marker
Event Marker Type: Rectangle
Pre-Lock Time (s): 150
Post-Lock Time (s): 150

Stop Recording When Play Back: ☒
Stop Recording When Live View: ☒

Enable File Encryption: ☐
File Encryption Password: *****

Enable GPS: ☒
Enable External GPS: ☐
Enable Tab101: ☐
Show Tab101 Peak on OSD: ☐
Enable External Wifi: ☐
Maximum of Recording Hours Per Day: 3
Enable SSD Recording: ☐
Enable Parallel Recording: ☐
Enable DHD Recording: ☒
Enable Tandem Recording: ☐
Wake Up Option for File Copy: Right Away After Shut Down
Wake Up Time Setting:
Enable Deleting All Files When the DVR Server Name changes: ☒

G-Force Direction - Forward: -X
G-Force Direction - Upward: Top

Apply

The Company ID appears on all uploaded events and Event Reports. The field is used for identifying the DVR to TouchDown Cloud and for cellular modem services, including Live Look-In and GPS data.

ADMIN PASSWORD

Admin Password:

This is the “admin” password and can be changed to avoid unauthorized access. Note that 247Security cannot recover

access to the DVR should you change the password from the default and misplace it. The default username is “admin” and cannot change.

DVR TIME ZONE

DVR Time Zone:

Select the time zone where the vehicle is operating from the drop-down menu.

SHUTDOWN DELAY (seconds)

Shutdown Delay (seconds):

This setting controls how long TITAN will continue to record after the ignition key is switched to the OFF position. For

example, in situations where the bus is parked in a “No idle zone” but you want to continue to record video. The default value of 300 seconds (5 minutes) is pre-set in the DVR, with the range of values from 10s to 2400 (4 hours).

STANDBY TIME (seconds)

Standby Time (seconds):

This field determines how long after the *Shutdown Delay* that TITAN will be in “Standby Mode” before completely turning

off. In Standby Mode the DVR is not recording but is accessible via *TouchDown* (Wi-Fi) and *247Live* (cell data). The recommended setting is 2400 seconds, or 4 hours.

MAXIMUM FILE SIZE (MB) & MAXIMUM FILE TIME (s)

Maximum File Size(MB):	500
Maximum File Time(s):	3600

These parameters determine the maximum size and duration of the video files saved to the storage device. For “Maximum File Size (MB)”, values range from 10 MB to 500 MB; for

“Maximum File Time (s)”, values range from 60 seconds to 7200 seconds (2 hours).

Recommended settings are shown here. There are pros and cons associated with larger or smaller settings; it can either slow down or speed up recording, searching, playback, and uploading video.

NUMBER OF DISKS

Number of Disks:

This field tells TITAN the number of SD cards being used to store video. If the number of SDs detected doesn’t match this

setting, the ERR/USB LED will light. We strongly discourage the use of SD cards. This is normally set to “2” to match the number of SD card slots. See “Recording Media settings” below for details.

EVENT MARKER

Event Marker:

- Event Marker
- Amber
- Stop Arm
- Brake
- Left
- Right
- Front
- Back
- Middle
- Disable

This drop-down list selects the sensor to use for the event marker.

The Event Marker (Sensor 1) is the default sensor to be used with the included event marker cable unless there is a required custom solution to use a different sensor.

EVENT MARKER TYPE:

Event Marker Type:	Circular ▼
	Rectangle
	Circular

This field tells TITAN what type of button configuration that is being used for the installed Event Marker. There are 2 types of Event Markers, each has a separate wiring configuration.



The vehicle operator will push this button to 'mark' video when something significant happens. Your internal policies will define when this should be used.

PRE-LOCK TIME (S) & POST-LOCK TIME (S)

Pre-Lock Time (s):	60
Post-Lock Time (s):	60

"Pre-Lock Time" and "Post-Lock Time" (in seconds) defines how many seconds are included in the marked event before and after the button push (or triggered event).

For instance, with settings of "60" in both fields, if the Event Marker Button was pressed at 8:30am, the video event file is marked from 8:29am until 8:31am.

STOP RECORDING WHEN PLAY BACK / LIVE VIEW

Stop Recording When Play Back:	☒
Stop Recording When Live View:	☒

This option disables recording when the TITAN is accessed by *DVRViewer Pro 2* either to Play Back videos or for a Live View of cameras. Checking these boxes improves simultaneous

multiple video channel viewing, however video content may be lost if it stops recording.

ENABLE FILE ENCRYPTION & FILE ENCRYPTION PASSWORD

Enable File Encryption:	☐
File Encryption Password:	

This is a global setting that password-protects the video. The password is needed to view video in DVP2. This prevents unauthorized users from viewing the video. However, ...

Note: If the password is lost, the video CANNOT be retrieved and you will NOT be able to play back your recorded video files! It is not recommended to use this feature. We don't recommend you use this feature, but it is added for an extra layer of security if necessary.

ENABLE GPS

Enable GPS:	☒
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This is normally enabled for GPS installed by 247Security. GPS is recorded and synchronized with video recordings. Uncheck

if using an existing or third-party GPS system. See next field.

ENABLE EXTERNAL GPS

Enable External GPS:	☐
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This enables an external third-party GPS system to input its information to TITAN for inclusion with the video.

ENABLE Tab101 / SHOW TAB101 PEAK ON OSD

Enable Tab101:	☐
Show Tab101 Peak on OSD:	☐

TITAN will record G-Force information and display it on-screen if TAB101 devices are installed on the vehicle. These are typically unchecked.

ENABLE EXTERNAL WIFI

Enable External Wifi: ☐

Check this box if the DVR is using an external third-party WiFi Bridge to use with *TouchDown*.

MAXIMUM OF RECORDING HOURS PER DAY

Maximum of Recording Hours Per Day: 10 ▾

10 hours is recommended. The DVR will delete the oldest files if the full day's recording exceed 10 hours,

Recording media settings – SD, SSD, DHD, Tandem, Parallel

	WHAT IT DOES	WHEN TO USE IT
Enable SSD Recording: ☒ Enable Parallel Recording: ☐ Enable DHD Recording: ☐ Enable Tandem Recording: ☐	DVR is set-up to have a single SSD drive in the storage media cartridge, labelled SSD on the handle.	When the vehicle is operating and the DVR is recording 16 – 20 hours/day without shutting off. A larger SSD eliminates the possibility of being overwritten. Can be used with <i>TouchDown</i> .
Enable SSD Recording: ☐ Enable Parallel Recording: ☒ Enable DHD Recording: ☐ Enable Tandem Recording: ☐	Records data to two devices at the same time (E.g., SD & SSD or SD & SD).	When you want the video always available. Remove one of the SD cards and relock the DVR and it will continue to record on the remaining storage media. The record light will be on and flashing until the media is returned to the DVR. This setting can be used with <i>TouchDown</i> .
Enable SSD Recording: ☐ Enable Parallel Recording: ☒ Enable DHD Recording: ☒ Enable Tandem Recording: ☐ SD card and DHD	Records video to the SD card and SSD at the same time; when the ignition is shutoff and the <i>Shutdown Delay</i> ends, the DVR will complete the DHD copy process: copying from the SSD to the HDD.	This setting provides redundancy and uses the best features of the DHD process. Customers can access video immediately from the SD card and still take advantage of the security of DHD processes. Works with <i>TouchDown</i> .
Enable SSD Recording: ☐ Enable Parallel Recording: ☐ Enable DHD Recording: ☒ Enable Tandem Recording: ☐	The patent pending DHD process that we have used since 2013. See page 4 for more information.	The standard option for the lowest price, this setup works well with <i>TouchDown</i> if the customer isn't pulling drives to review data.
Enable SSD Recording: ☐ Enable Parallel Recording: ☐ Enable DHD Recording: ☐ Enable Tandem Recording: ☒ Only for 2 SD cards!	The DVR records continuously from the first card to the 2 nd card when the first becomes full. The total of the two SD cards combine to behave like 1 card.	You won't know which card has the date and time you are looking for; remove both cards for editing. Not for use with <i>TouchDown</i> .
Enable SSD Recording: ☐ Enable Parallel Recording: ☐ Enable DHD Recording: ☐ Enable Tandem Recording: ☐	If no box is checked it will default to the number of disks selected. This is the ONLY option where the number of disks is used. When any of these 4 boxes are checked the number of disks is not applicable. Number of Disks: 2 ▾ 1 2	It is recommended to choose one of the above options. This specific setting can be used with <i>TouchDown</i> .

WAKE UP OPTION FOR FILE COPY:

Wake Up Option for File Copy:	Right Away After Shut Down ▼
	Right Away After Shut Down
	By Wake Up Time

This setting defines when TITAN will copy files from the SSD to the HDD (both are inside the Infinity, DHD and DHD2 devices). “Right Away After Shutdown” occurs at the end of the Shut

Down period as set in the Shut Down Delay field above, and before the TITAN enters Stand-by mode.

If there is a *TouchDown* system, set this to “By Wake Up Time”. It allows TouchDown processes to begin and finish before the SSD copies video to the HDD. Titan will turn on at the set time (the next field) and copy SSD files to the HDD. If there’s no TouchDown system, set this to “Right Away After Shut Down”.

WAKE UP TIME SETTING:

Wake Up Time Setting	Hour: 23 ▼	Minute: 30 ▼	Second: 0 ▼
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If “By Wake Up Time” is selected above, this field sets the Wake Up Time when TITAN will turn on and start moving

video from the SSD to the HDD. This is a 24-hour clock format.

ENABLE DELETING ALL FILES WHEN DVR SERVER NAME CHANGES

Enable Deleting All Files When the DVR Server Name changes:	☒
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This option, when ticked, deletes all the recordings and files on the storage media when you swap drives between

vehicles, or if you change the “DVR Server Name”. If drives are taken from DVRs in several buses and are returned to different buses, all data will be erased if this is checked.

If this is a concern, make sure that this box remains unchecked. **Default is checked.** This is a security feature to prevent unauthorized access to video.

BEST PRACTICE is to set each “DVR Server Name” to the bus name, label the Infinity Drive as such, and make sure it only goes back to the bus from where it came.

DRIVE-SAFE G-FORCE SET-UP

G-Force Direction - Forward:	-X ▼
G-Force Direction - Upward:	Top ▼

If the TAB101 option is checked as listed above, the G-Force parameters will then appear on the system set-up page after a system re-boot.

The TAB101 detailed settings are not to be reset except by a qualified technician or installer.

CAMERA CONFIGURATION MENU

The TITAN DVR can record up to 16 cameras. Select a camera by clicking on its tab.

ENABLE CAMERA

Click the

check box to enable or disable the camera input.

CAMERA NAME

Set each camera to

have a different name, usually based on where it is installed in the vehicle, up to 16 characters.

CAMERA TYPE

Select the correct camera type:

analog or IP. This is normally an installer-only setting, so if unsure, leave as default or set to Analog. Generally, cameras 1-8 are analog and 9-16 are IP.

CAMERA ROLE & ENABLE STOP ARM CAMERA

Leave the setting as Normal, unless the camera is a stop-arm camera, and is to be used for automatic SAV detection. Check the box to enable. Consult with the installer and 247Security regarding automatic SAV detection.

CAMERA IP ADDRESS

If Camera Type above is set to “Analog”, this field will be blank. If “IP” is selected, enter an IP address. This setting should be set by the installer. A best practice is to use 192.168.1.1xx with consecutive numbering.

RECORDING MODE

Three modes:

CONTINUE - The camera is recorded until the DVR is powered down or the storage media is removed from DVR. This is the typical and recommended mode for video recording.

TRIGGER BY SENSOR - In this mode, the camera is recorded if it detects an event trigger on one of the programmable sensors. If this mode is selected, the required sensors must be enabled.

NO RECORDING - This mode disables recording of the camera input. The camera is still accessible through 'Aim Cameras' in DVRViewer Pro, and from live video feeds with *247Live*.

MAIN AND SECOND CAMERA STREAMS

TITAN can take a camera feed and route it to two destinations. Systems are normally installed with the "MAIN" stream directed toward a high-quality recording on the DVR, and the "SECOND" stream to the *247Live* option (Live Look-In).

Note: If unsure, leave these settings to the installer.

SECOND STREAM ENABLE:

Second stream Enable ☒

Leave unchecked.

SECOND STREAM RECORDING MODE

Second Stream Recording Mode: Continue 
Continue
Trigger by sensor
No recording

Set to "No recording".

LIVE VIEW STREAM

Live View Stream: Main Stream 
Main Stream
Second Stream

Set to "Main Stream".

PLAY BACK STREAM

Play Back Stream: Main Stream 

Selects the Main or Second stream for the Play Back from DVRViewer Pro 2.

Keep this set to "Main Stream".

VIDEO CODEC TYPE

Video Codec Type: H264 
H264
H265

You can choose the codec type based on your needs. Normally set to "H264".

HDMI output Enable

HDMI output Enable: ☐

This check box turns the HDMI output function on and off.

Video Multiplexer output EnableVideo Multiplexer output Enable: ☐

This checkbox enables a multiplex output to go to a Samsara device. This was developed for only one customer, leave it unchecked.

MAIN STREAM RESOLUTION:

Main Stream Resolution:	1920x1080 ▼
	1920x1080
	1280x720
	720x540
	960x540
	640*360
	360*240

The highest resolution creates the best image but the largest file sizes. "1920x1080" is recommended, also known as "1080p".

A lower resolution trades video clarity for file size, accessibility, and bandwidth issues.

Second Stream Resolution

Second Stream Resolution:	360*240 ▼
	720x540
	960x540
	640*360
	360*240

If not being used, keep this at 360*240.

MAIN STREAM FRAME RATE:

Main Stream Frame Rate:	15 ▼
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Frame rate defines the level of detail in the recorded video, and like RESOLUTION above, the higher the detail = larger

files sizes. Frame rate is adjustable from a minimum 1 fps to 30 fps maximum for each individual camera. TITAN can process a maximum of 300fps at full resolution 1920x 1080 over all cameras.

SECOND STREAM FRAME RATE:

Second Stream Frame Rate:	5 ▼
---------------------------	-----

Frame rate is adjustable from 1fps to 5fps for each camera. The recommended setting is 2fps.

BIT RATE MODE

Bit Rate Mode:	VBR ▼
	Disable
	VBR
	CBR

"VBR" (variable bit rate) is the recommended encoder setting, providing maximum compression and maintaining picture quality.

MAIN STREAM BIT RATE

Main Stream Bit Rate:	2 Mbps ▾
	512 Kbps
	768 Kbps
	1 Mbps
	1.25 Mbps
	1.5 Mbps
	1.75 Mbps
	2 Mbps
	2.5Mbps
	3.0Mbps
	4.0Mbps
	5.0Mbps
	6.0Mbps
	7.0Mbps
	8.0Mbps
	9.0Mbps
	10.0Mbps

The default and recommended bit rate is 4.0Mbps for cameras 1 and 3, 2.0Mbps for cameras 2 and 4, and 1.75Mbps for cameras 5-8.

Bit rates are affected by other resolution settings: higher resolutions require higher bit rates to maintain picture quality.

Higher rates can improve picture quality, but with larger file sizes; smaller bit rates result in smaller file sizes, but less picture quality.

If unsure, go with the recommended setting above.

SECOND STREAM BIT RATE

Second Stream Bit Rate:	128 Kbps ▾
	128 Kbps
	256 Kbps
	384 Kbps
	512 Kbps
	768 Kbps
	1 Mbps

It is recommended to leave this setting as the default for Live View purposes (128 Kbps).

PICTURE QUALITY

Picture Quality:	high ▾
	highest
	high
	medium
	low
	lowest

The default setting of “high” is recommended. As with other settings, a higher setting provides better picture at the cost of larger file sizes.

BRIGHTNESS, CONTRAST, SATURATION AND HUE

Brightness:	5 ▾
Contrast:	5 ▾
Saturation:	5 ▾
Hue:	5 ▾

Each camera can be individually adjusted for Brightness, Contrast, Hue and Saturation to enhance the recorded video based on the location of the camera. Values range from 1 to 10, 1 being the lowest and 10 being highest. These settings have minimal impact on file sizes.

TRIGGERS and ON SCREEN DISPLAY (OSD)

Event Marker	☐ Trigger	☒ OSD
Amber	☐ Trigger	☒ OSD
Stop Arm	☐ Trigger	☒ OSD
Brake	☐ Trigger	☒ OSD
Left	☐ Trigger	☒ OSD
Right	☐ Trigger	☒ OSD
Front	☐ Trigger	☒ OSD
Back	☐ Trigger	☒ OSD
Middle	☐ Trigger	☒ OSD

TITAN has 9 digital inputs available to connect to sensors. Selecting “Trigger” will signal TITAN to start recording the camera when that sensor is activated. I.e., TITAN will not record until one of these sensors triggers. Normally these are left unchecked.

“OSD” stands for “On-Screen-Display”; this feature embeds the sensor name into the video files. When playing back video, the sensor(s) can be identified by the embedded text on the video. Placing a check mark on the OSD box enables this feature.

PRE-RECORDING & POST-RECORDING TIME

Pre-Recording Time (s):	30
Post-Recording Time (s):	30

These two fields determine how many seconds of video to include in a triggered event, before and after the trigger.

SHOW GPS SPEED ON OSD

Show GPS Speed On OSD:	☒
Speed Display:	mph mph km/h

TITAN records GPS data as a separate stream, as well as embed the data onto the video. Place a check mark in the box to display and record the vehicle GPS speed in the video. If this option is not enabled, GPS data is still recorded in a log file on the video storage media. Speed can be displayed in

“mph” or “km/h”.

SHOW GPS COORDINATE ON OSD

Show GPS Coordinate On OSD:	☐
-----------------------------	--------------------------

Checking this box will display the vehicle’s GPS coordinates (longitude and latitude) to the On Screen Display.

VIDEO LOST ALARM

Video Lost Alarm:	Mode: 0.5s Flash
-------------------	---

the event occurs.

You can control the LED mode by clicking on the “Mode” drop menu and selecting either flashing by the chosen interval, *ON* or *OFF* when

SENSOR CONFIGURATION MENU

Select Power Control Enable ☐	
Sensor 1	Name: Event Marker Inverted ☐
Sensor 2	Name: Amber Inverted ☒
Sensor 3	Name: Stop Arm Inverted ☒
Sensor 4	Name: Brake Inverted ☒
Sensor 5	Name: Left Inverted ☒
Sensor 6	Name: Right Inverted ☒
Sensor 7	Name: Front Inverted ☒
Sensor 8	Name: Back Inverted ☒
Sensor 9	Name: Middle Inverted ☒

Apply

TITAN has 9 sensor inputs that can be recorded and displayed on-screen. For example: the Event Marker, turn signals, brakes, etc. A unique name can be assigned to any sensors listed in the menu. This diagram shows the factory default settings.

“Inverted” defines how the sensor works. For instance, if you check the box “Inverted” then TITAN detects “0” as the active state of the sensor. If the check box is not checked then

TITAN detects “1” as the active state of the sensor. Please make sure you understand how your sensors work before connecting them to the digital inputs.

POWER CONTROL ENABLE

Select Power Control Enable ☐

This option is intended for trained installers only. Do not adjust unless you have specific knowledge of this setting.

When checked, TITAN will assign Sensor 9 as Power Ignition. This means that the sensor 9 input (pin 8 on IO/ CANBUS) will behave identically to the Ignition input and cause the DVR to power up and record if sensor is triggered high. The DVR will reboot every time this option is enabled or disabled.

SENSOR NAME 1 - 9

Sensor 1 Name: Event Marker Inverted ☐

These fields let you enter the sensor name for the specified digital input and select what the active state of the sensor

should be when triggered.

NETWORK MENU

It is important that only qualified technicians make changes to the installed settings. Incorrect settings may cause TITAN to be inaccessible and require servicing. Should you have any questions regarding this, please contact Tech Support.

Do not make changes unless you have specific knowledge of each setting.

247 Security Inc.

System Camera Sensor **Network** Status Tools

Ethernet IP Address: 192.168.1.100
Ethernet Subnet Mask: 255.255.255.0
DHCP Enable for Wireless IP: ☐
Wireless IP Address:
Wireless Subnet Mask:
Wireless ESSID: DVRTEST
Auth/Encryption: Open/None
Wireless Encryption Key: ☐ Show Key
Video Multiplexer IP Address: (Leave as blank if not used)
Network POE1 Always On: ☒
Network POE2 Always On: ☒
Default Gateway:
Static Route:

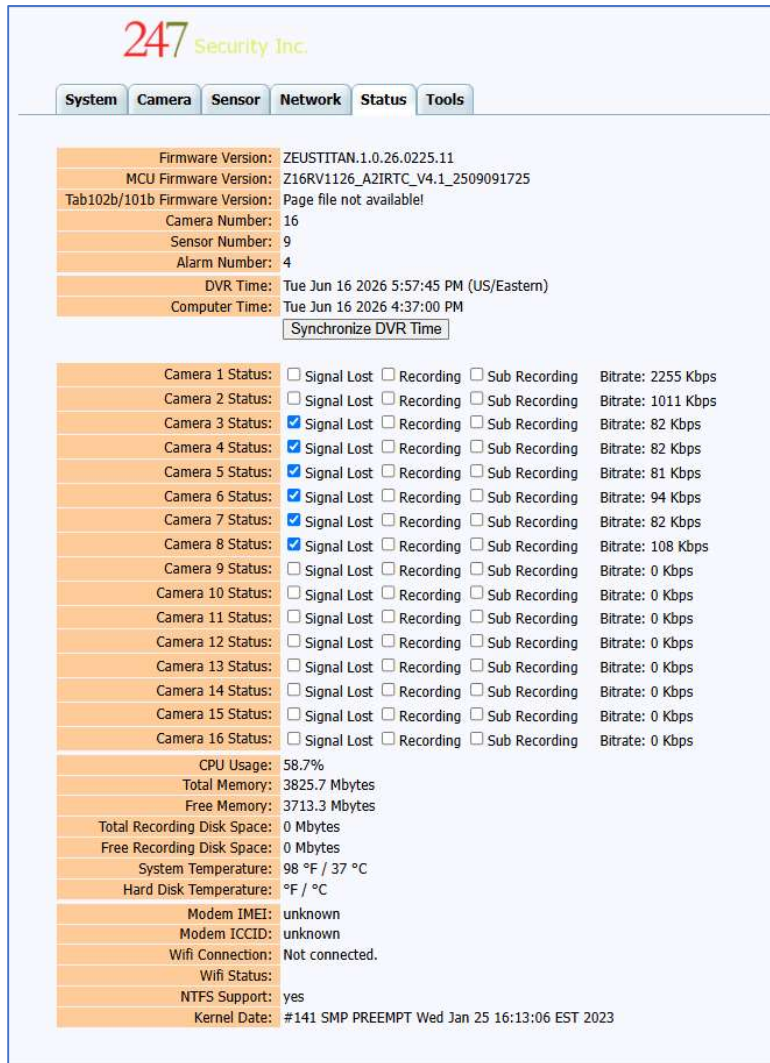
Address	Netmask	Gateway

Video upload type: Disable
Upload IP (blank for discovery):
Upload Port (blank for default):
Cell Modem APN:
Cell Modem type: Disable

Default settings are shown here.

Call Tech Support before making changes.

STATUS MENU



247 Security Inc.

System Camera Sensor Network **Status** Tools

Firmware Version: ZEUSTITAN.1.0.26.0225.11
 MCU Firmware Version: Z16RV1126_A2IRTC_V4.1_2509091725
 Tab102b/101b Firmware Version: Page file not available!
 Camera Number: 16
 Sensor Number: 9
 Alarm Number: 4
 DVR Time: Tue Jun 16 2026 5:57:45 PM (US/Eastern)
 Computer Time: Tue Jun 16 2026 4:37:00 PM
 Synchronize DVR Time

Camera 1 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 2255 Kbps
Camera 2 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 1011 Kbps
Camera 3 Status:	☒ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 82 Kbps
Camera 4 Status:	☒ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 82 Kbps
Camera 5 Status:	☒ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 81 Kbps
Camera 6 Status:	☒ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 94 Kbps
Camera 7 Status:	☒ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 82 Kbps
Camera 8 Status:	☒ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 108 Kbps
Camera 9 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 10 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 11 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 12 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 13 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 14 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 15 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
Camera 16 Status:	☐ Signal Lost	☐ Recording	☐ Sub Recording	Bitrate: 0 Kbps
CPU Usage:	58.7%			
Total Memory:	3825.7 Mbytes			
Free Memory:	3713.3 Mbytes			
Total Recording Disk Space:	0 Mbytes			
Free Recording Disk Space:	0 Mbytes			
System Temperature:	98 °F / 37 °C			
Hard Disk Temperature:	°F / °C			
Modem IMEI:	unknown			
Modem ICCID:	unknown			
Wifi Connection:	Not connected.			
Wifi Status:				
NTFS Support:	yes			
Kernel Date:	#141 SMP PREEMPT Wed Jan 25 16:13:06 EST 2023			

This tab displays the current system configuration and a real time health status summary of the DVR. There are no actionable or optional fields on this page. Users will only access this page under the direction of Tech Support.

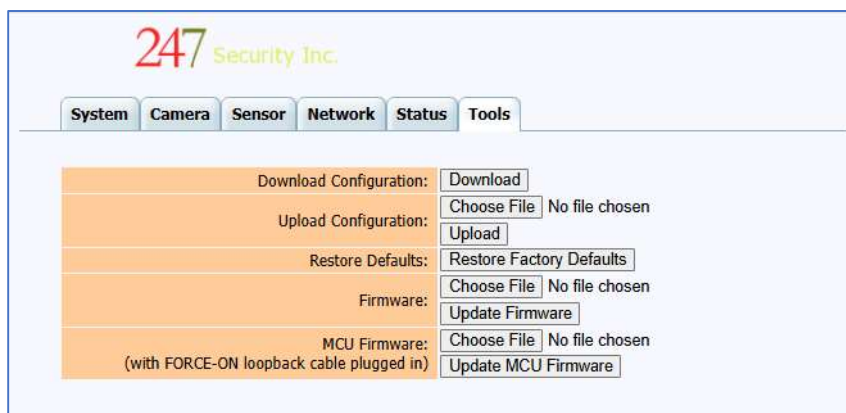
Starting from the top, this tab informs the user which firmware versions are currently loaded, version of Tab101, number of cameras, sensors and alarms the DVR currently supports and the current DVR time as well as your local computer time. The local computer time is extracted from the computer currently connected to the DVR.

The “Synchronize DVR Time” button will synchronize the DVR time with the local time on the connected laptop or computer.

The information below the Synchronize DVR Time button provides the user a general system health snapshot of the DVR as well as indication of all camera inputs status.

Generally only a service or installation tech will find actionable information on this page.

TOOLS MENU



This page is for installation and service techs.

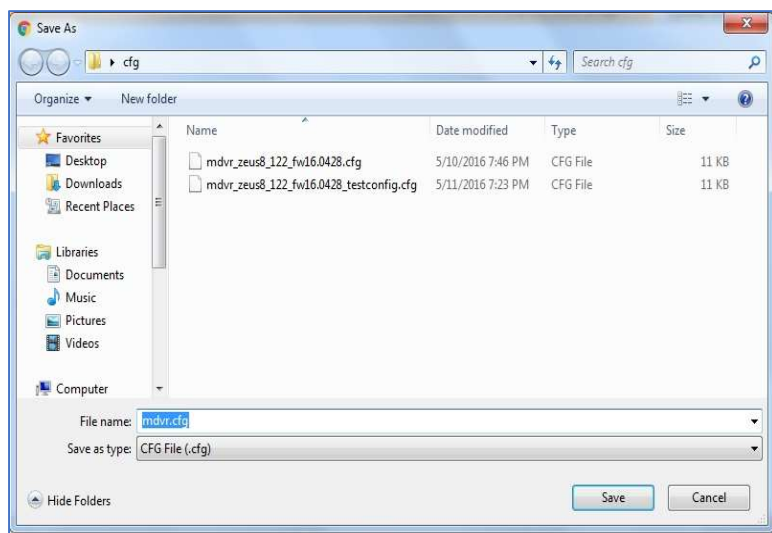
The Tools tab has a few options to assist in DVR configurations, and to update DVR and MCU firmware. There may be future firmware releases that contain new features or improvements. Contact 247Security Inc for the latest information on firmware updates.

DOWNLOAD CONFIGURATION



This option will save you time to restore a DVR's configuration when updating firmware, and to quickly configure multiple ZEUS systems in a fleet. You can download a configuration file from one TITAN and then upload and apply it onto another then alter only the required settings to make that TITAN unique.

Once the DVR has been configured, click the "Download" button to save your settings to a file on your desktop or a location of your choice.



Navigate to the location on your computer where you want to save the file.

Click the "Save" button.

A file named "mdvr.cfg" will be saved to the chosen location.

From Windows Explorer, you can rename the file to better identify which DVR/vehicle it came from.

For example, you can rename the file to incorporate the vehicle name and the date it was configured, like the following example: "mdvr_ZEUS TITAN_bus122_2022-06-16.cfg".

UPLOAD CONFIGURATION

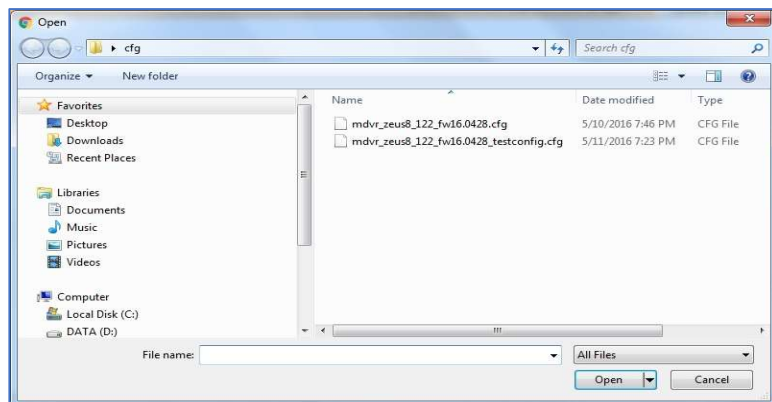


This option selects a backup configuration file, uploads it to the DVR, and overwrites all the current settings with the settings from the configuration file. The only value you may

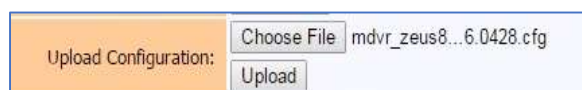
need to change is the "DVR Server name" under the System tab.

Note: All video data on the DVR may be lost if the DVR Name is changed if the *ENABLE DELETING ALL FILES WHEN DVR SERVER NAME CHANGES* is selected.

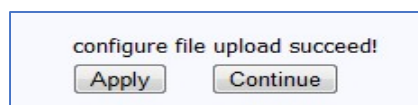
Note: The Download - Upload Configuration feature is not compatible between different versions of firmware; this feature can only be used when deploying multiple DVRs with same hardware and software. Generally, the installer configures the first DVR and then uses the configuration file to quickly make the changes to other DVRs in the fleet.



To upload a configuration file, click the “Choose File” button, navigate to the configuration file you wish to upload, and click “Open”.



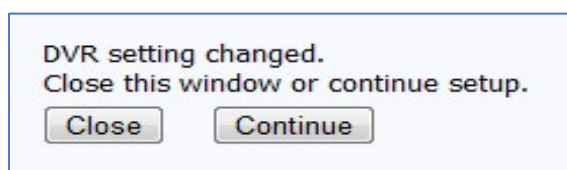
Click the “Upload” button to start the process. The following message will display:



Click “Apply” to apply the new settings or “Continue” to review your new settings before applying. Once the uploaded configuration file has been applied, the previous settings will be lost. It is recommended to click “Continue” so that you can verify all the new settings.

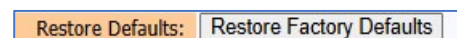
After clicking Apply, this confirmation message will display.

Click “Close” to close the DVR setup or “Continue” to make additional changes.



NOTE: Change the “DVR Server Name” at this point, as well as other settings unique to the new vehicle.

Restore Defaults

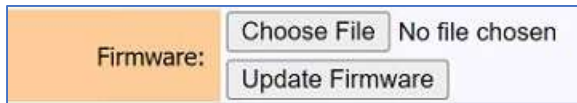


As indicated. The DVR reverts to it’s original production state, including settings and Firmware.

FIRMWARE UPDATE

NOTE: THIS INFORMATION IS FOR REFERENCE ONLY!

The update process should only be done by a qualified technician under the direction of technical support. You can seriously impair the functionality of your TITAN.



Firmware updates may contain new features and improvements. If the update process is not done correctly, your DVR may fail to start or function properly and must be

returned to your dealer for repair.

1. Remove Hard Drive / DHD
 - a. If DVR is running, turn the key lock to OPEN position and wait until DVR shuts down. Both POWER and REC LEDs must be off. If the vehicle is idling or on Accessory, the IGNITION light will be on.
 - b. Open the door (Note: Leave it open during upgrading process).
 - c. Remove hard drive by pulling the tray straight out from the DVR until it's free from the rails.
 - d. With the DVR door open, turn the key to the LOCK position and wait until TITAN boots up. The DVR has finished booting when both IGNITION and POWER LEDs (green) are on solid. The engine can be idling or in Accessory mode.
2. Connect to DVR and download the current Configuration
 - a. Follow the first 2 steps from "CONNECT TITAN TO PC/LAPTOP" on page 6.
 - b. Launch your browser and delete all browsing history including history, temp files, cookies and web form information; or go to Configure DVR in DVRViewer Pro.
 - c. Go to "http://192.168.1.100/" to access DVR setup.
 - d. At the login page, type "admin" as the User Name and "admin" as the Password.
 - e. Go through each page and manually record on paper all the settings, it is very important to record the correct DVR Server Name.
 - f. Download the configuration file, see DOWNLOAD CONFIGURATION on page 26.
3. Choose the firmware update file
 - a. Click the "Choose File" button and browse to the location on your computer where you have the firmware file saved.
 A brief reminder, if Tech Support did not send you an update, **DO NOT PROCEED**.
 The name of the firmware update file will always start with "HOST_DEP".
Note: the firmware update will set DVR to factory default settings.
4. Update Firmware
 - a. Click the "Update Firmware" button. After about 10 seconds you should see the message "Updating firmware...DVR will reboot itself please wait for 300 seconds", and the time will be counting down to 0 seconds.
 - b. Once the web page shows 0 seconds, press RESET on the TITAN front panel and wait for DVR to boot-up.
 - c. After DVR boot-up, both ignition LED (green) and Power LED (green) should be on solid.
5. Verify Firmware Update
 - a. From your browser, go to http://192.168.1.100/, or use DVRViewer Pro.
 - b. Verify the new firmware version on the Status page.



6. Reconfigure TITAN
 - a. Change all settings to the original fields, as you have recorded, or...
 - b. Upload the saved configuration file, see **UPLOAD CONFIGURATION** on page 27.
 - c. Ensure the DVR name is exactly what it was before.
 - d. Make sure DVR Server Name on system configuration page is the same name on hard drive.
7. Verify functionality
 - a. Turn the key lock to the **OPEN** position and wait until DVR powers off.
 - b. Insert storage drive (Infinity, DHD, or SD cards).
 - c. Turn the key lock to the **LOCK** position and wait until the DVR boots up.
 - d. Reconnect to the DVR at <http://192.168.1.100/> using your browser or DVRViewer Pro.
 - e. Verify new settings by comparing to what you recorded at Step 2e.
 - f. Download a new configuration file.
 - g. Launch DVRViewer Pro, click on View/Playback, and select Live Look-in.
 - h. Verify the live view of cameras.
 - i. Verify the “Record” LED on the Event Marker is on, indicating that DVR is currently recording video.
 - j. Turn the key lock to the **OPEN** position and wait for TITAN to shut down. Close your browser and DVRViewer Pro, disconnect crossover cable, close and lock the door.

MCU (MicroController Unit) FIRMWARE UPDATE

NOTE: THIS INFORMATION IS FOR REFERENCE ONLY!

The update process should only be done by a qualified technician under the direction of technical support. You can seriously impair the functionality of your TITAN.

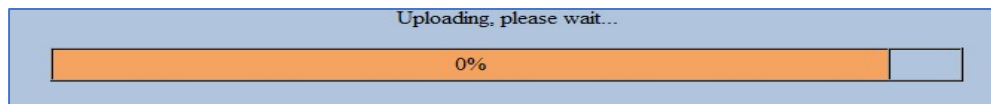
Firmware updates may contain new features and improvements. If the update process is not done correctly, your DVR may fail to start or function properly and must be returned to your dealer for repair.

MCU Firmware: (with FORCE-ON loopback cable plugged in)	Choose File	No file chosen
	Update MCU Firmware	

Follow these steps to update your ZEUS MCU firmware. Read all steps before beginning and have everything you need ready before you start.

- Remove Hard Drive / DHD
 - a. If DVR is running, turn the key lock to the **OPEN** position and wait until DVR shuts down. Both **POWER** and **REC** LEDs must be off. If the vehicle is idling, the **IGNITION** light will be on.
 - b. Open the door (Note: Leave it open during upgrade process).
 - c. Remove storage drive by pulling the tray straight out from the DVR until it's free from the rails.
 - d. Turn the key lock to the **LOCK** position and wait until DVR boots up. TITAN has finished booting when both **IGNITION** and **POWER** LEDs (green) are on solid. The vehicle can be idling or in Accessory mode.
- Connect to TITAN and Save Current Configuration
 - a. Follow the first 2 steps from “**CONNECT TITAN TO PC/LAPTOP**” on page 7.
 - b. Launch your browser. Delete all browsing history including: history, temp files, cookies and web form information.
 - c. Go to “<http://192.168.1.100/>” to access DVR setup. You should now be at the login page.
 - d. Type “admin” as the User Name and “admin” as the password.

- e. Go through each page and manually record on paper all the settings; it is very important to record the correct DVR Server Name.
- f. Download the configuration file, see DOWNLOAD CONFIGURATION on page 26.
- Upgrading MCU (1 to 2 minutes)
 - a. Go to the *Tools* tab in the setup page.
 - b. Insert *Force Power-on plug* into the I/O CANBUS port on the rear of the system.
 - c. Click *Choose File* to browse your computer for the MCU file. A brief reminder, if Tech Support did not send you an update, DO NOT PROCEED.
 - d. Click *Update MCU Firmware*. This popup will display:



- e. The popup will close. Follow instruction on screen.
- f. When "Synchronizing (ESC to abort)..." displays, immediately press the *RESET* button on the front panel of TITAN:

```
Start updating MCU firmware, please wait....
(Try press RESET button when message "Synchronizing" appear)

lpc21isp version 1.81
File /home/www/mcufw:
loaded...
Start Address = 0x00000000
Start Address = 0x00010000
converted to binary format...
image size : 71564
Image size : 71564
COM-Port /dev/ttyS1 opened at rate:115200...
Synchronizing (ESC to abort)...
```



- g. After about 6 minutes, more messages will display, such as:

```
Start updating MCU firmware, please wait....
(Try press RESET button when message "Synchronizing" appear)

lpc21isp version 1.81
File /home/www/mcufw:
loaded...
Start Address = 0x00000000
Start Address = 0x00010000
converted to binary format...
image size : 71564
Image size : 71564
COM-Port /dev/ttyS1 opened at rate:115200...
Synchronizing (ESC to abort)..... OK
Read bootcode version: 4
3
Read part ID: LPC2368, 512 kiB ROM / 58 kiB SRAM (0x1600F925)
Will start programming at Sector 1 if possible, and conclude with Sector 0 to ensure that checksum is written last.
Wiping Device. OK
Sector 1: .....
Sector 2: .....
Sector 3: .....
Sector 4: .....
Sector 5: .....
Sector 6: .....
Sector 7: .....
Sector 8: .....
Sector 9: .....
Sector 0: .....
Download Finished... taking 350 seconds
Now launching the brand new code

MCU firmware update finished!
Please reset unit.
```

- h. Remove the *Force Power-on plug* and wait for 60 seconds until TITAN restarts.
- i. Click "Close" to close the browser page.
- j. Re-open your browser, clear the cache and browsing history.
- k. Go to <http://192.168.1.100/> again, to access DVR setup.
- l. Verify the new MCU version on the status page.

Reference Appendix

This section includes “nice-to-know” information and technical details that will help you fully understand the Zeus TITAN.

INFINITY DRIVE (DHD - DUAL-STAGE HYBRID DRIVE) MEDIA



The *INFINITY Drive* (same as DHD or DHD2) is patent-applied-for technology designed by 247Security to accommodate the rigors of the road that vehicles experience. Regular mechanical drives are prone to vibration and bumps (potholes), and SSD drives develop corruption with frequent read/write routines. The Zeus TITAN and *INFINITY* media address these issues. Here’s a brief description of how it works.



Inside the enclosure are two disks: a SSD (solid state drive) and a HDD (hard disk drive, a mechanical spinning disk). The SSD is formatted in FAT32, and the HDD is formatted in NTFS or EXT3.

For DHD recording, *Enable DHD Recording* must be selected on the System configuration menu. See page 12 for details.

DHD Recording Process

The cameras are only recorded on to the SSD part of the INFINITY Drive; once the vehicle is parked and the ignition turned off, the SSD copies its contents to the HDD. That’s why the POWER and REC lights must be off before removing the DHD media. Also, during configuration, the *Enable DHD Recording* field must be checked, otherwise Zeus TITAN will record straight to the SSD part of the DHD storage.

At the boot up stage

When the system boots up, Zeus TITAN will do a Power-On-Self-Test to make sure all systems are operational. If DHD recording is enabled, the SSD will be selected as recording disk and the HDD will be powered off. The SSD is freshly formatted (FAT32), erasing all data for the new bus run.

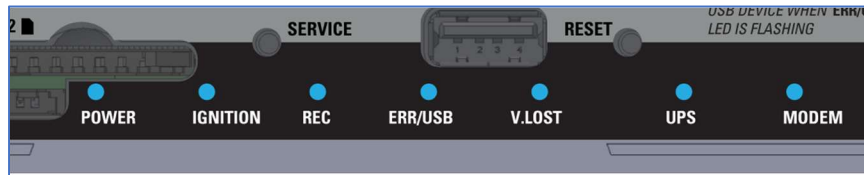
Shutdown

When the vehicle ignition is turned off, the DVR stays on and the files recorded to the SSD will copy to the HDD. Should something interrupt this transfer, and the files from the SSD are not completely copied to the HDD.

If the media is removed from the DVR before the file transfer completes (i.e., If the POWER or REC LEDs are on), or if *Live View* or *Play Archive* is accessed, the file copy from SSD to HDD is paused. After *Live View* or *Play Archive* is disconnected, the file copy from SSD to HDD will resume.

If you are set up with TouchDown, Zeus TITAN will start uploading requested video and data from the HDD to your TouchDown server. Note that this feature can be enabled/disabled on the setup page.

Status Indicators



POWER

This LED indicates that system power is on (when lit).

IGNITION

If the vehicle's ignition has been turned on, or is in "Accessory" mode, the DVR will power on.

- If this LED is blinking slowly, the DVR is powering on and booting up.
- When lit solid, this LED indicates that the DVR is on.
- The LED will blink very quickly when ignition is turned off and the DVR is powering off.

REC

When lit this LED indicates that the DVR is recording. When flashing, the INFINITY drive is transferring the most recent video from the SSD to the HDD.

ERR/USB

This LED indicates that the system has encountered an error and cannot continue normal operation. Please call tech support for troubleshooting procedures.

V.LOST

This LED indicates that TITAN has lost a video signal. For example, a camera cable is damaged or is not securely connected, or a camera failure has occurred.

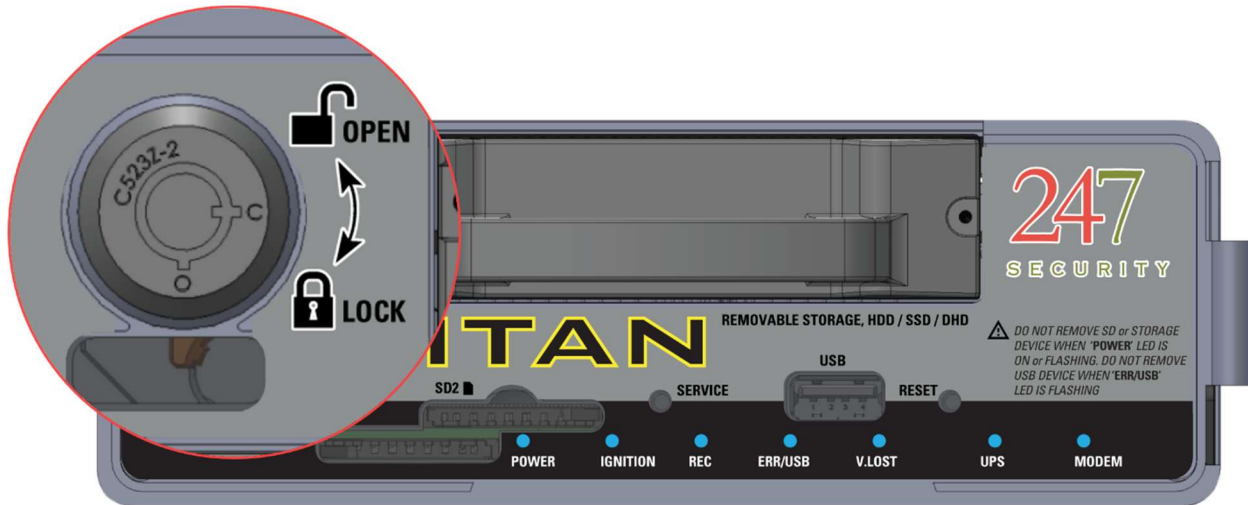
UPS

The internal battery is charging and will go out when fully charged.

MODEM

Indicates that the cellular modem is active. Requires a data contract and DVP2.

LOCK AND DHD ON/OFF



The OPEN/LOCK mechanism has two functions:

- It secures the hard drive (DHD) to prevent unauthorized access
- When in the OPEN position, it signals TITAN to complete its internal routines to allow removal of the INFINITY drive.

Turn the key to position “LOCK” to lock media storage or “OPEN” to unlock.

NOTE: TITAN will not record video if the lock mechanism is in the “OPEN” position.

MEDIA STORAGE REMOVAL

Before swapping Infinity drives between buses, refer to “ENABLE DELETING ALL FILES WHEN DVR SERVER NAME CHANGES” on page 13. Depending on settings, you may lose video on the replacement DHD.

The media storage (INFINITY Drive) is hot swappable and can be removed and inserted without turning the vehicle ignition off. This process will take roughly 15 to 30 seconds to complete. The feature is helpful when access to video is needed but vehicle is required to remain running. The user can remove the media storage and insert another one so that the needed video can be retrieved right away.

1. Turn the key to the “OPEN” position. TITAN will close all video/audio files and safely turn the hard drive power off. Open the door and wait until the REC light is off. Note: the ignition light will remain illuminated if the vehicle is running or in ACCESSORY mode.
2. Pull the drive straight out from the bay until it is free from the rails.
3. Insert new media storage, close the door.
4. Turn the key to the “LOCK” position. TITAN will mount the drive, detect the new media and start recording again.



WIRELESS VIDEO RETRIEVAL

Refer to the TouchDown manual.

CONNECTIONS

10/100BASE-T LAN CONNECTOR and POE Connector

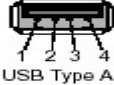
The DVR has a 10-pin RJ50 port, labeled as “LAN” and has a default static IP address of 192.168.1.100. The port is used to connect to the DVR for Setup, Live View and Video Playback.

Pin Number	Signal	Description	Pin out
1	TX+	Transmit Data +	
2	TX-	Transmit Data -	
3	RX+	Receive Data +	
4	COM	Common	
5	N/C	Not connected	
6	RX-	Receive Data -	
7	COM	Common	
8	COM	Common	
9*	GND	POE Ground	
10*	VCC	POE 12VDC	

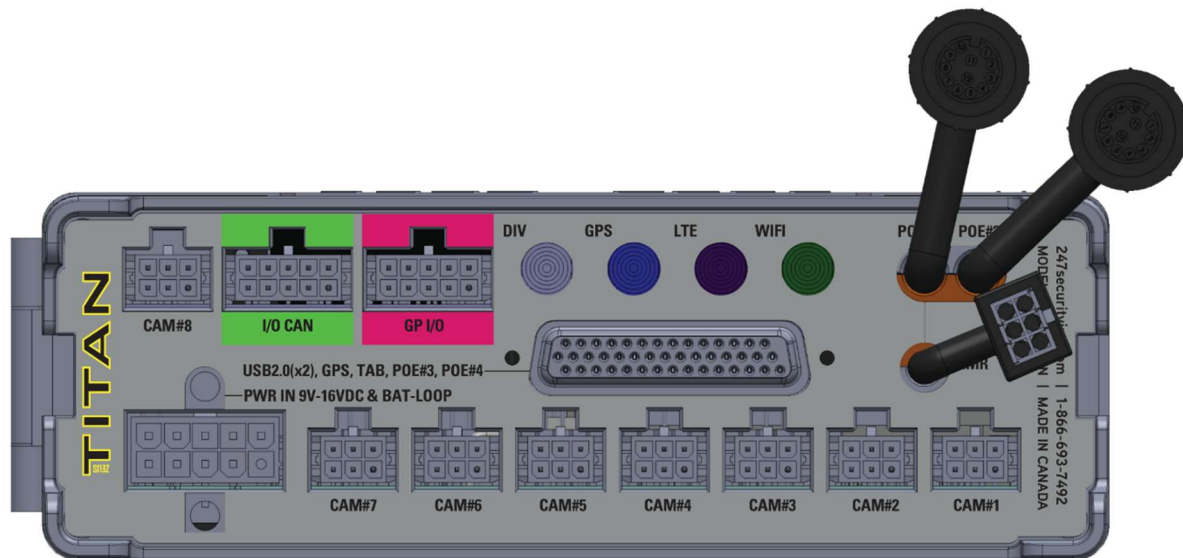
USB 2.0 CONNECTOR

Note: The USB port is for future functionality.

Connector type: 4-pin friction-lock header.

Pin Number	Signal	Description	Pin out
1	VCC	Cable Power +5 V	 USB Type A
2	-Data	Balanced Data Line -	
3	+Data	Balanced Data Line +	
4	GND	Cable Ground	

REAR CONNECTIONS



POWER and BATTERY Loopback (UPS operation)

The ZEUS TITAN has a built-in intelligent power circuit that can operate from +6.5v ~ +16V DC-IN. A constant 12v Ignition and Ground are required. The DVR is energized by the vehicle's ignition signal and triggers start up, power shut-down delay and the timing circuitry. TITAN will remain ON until the ignition signal has been turned off and the shut-down delay time has been reached. The system will then go into Standby mode for the set period, then through its normal shutdown procedures before completely powering down.

TITAN has an on-board battery system ("UPS" or uninterruptable power supply) for providing backup power for up to 15 minutes after the main power has been lost. The UPS battery will also keep the DVR running in case of voltage spikes (greater than 16VDC) and voltage drops (less than 8VDC).

The Battery Loopback must be connected so the UPS battery can charge. Installers connect the battery loopback to the DVR after the device has been fully installed and connected to the vehicle power source.

Remove the loopback plug and store with the DVR when removing the DVR from the vehicle or disconnecting the vehicle's battery for extended periods of time.

Camera Connectors

TITAN supports a maximum of 16 cameras. Eight cameras use Micro-fit connectors that carry video, audio, and infrared illumination. Also included in each camera connection is DV12V Out to power the camera. You can refer to the rear cover of the DVR for the camera assignments of each connector. When any of the cameras are not connected properly – for instance, loose cables, unplugged etc. – TITAN notifies the end-users with “blue screen and OSD info” on the preview screen. Camera inputs are labeled “CAM#1 – CAM#8”. The remaining 8 cameras must be IP cameras connected to the POE connections.

I/O CAN

This optional connector provides 3 additional digital inputs, labeled as DI_6, DI_7 and DI_8. These can be assigned to any sensors, up to 3 sensors can be wired to this connector. This connector also provides +12VDC OUT on pin 4 with a built-in 0.75A fuse. An optional second I/O cable is required.

GP I/O (General Purpose Input/Output)

This connector provides 5 digital inputs and 1 digital output. The digital inputs are labeled as DI_1, DI_2, DI_3, DI_4 and DI_5. The digital output is labeled as DO_3. End-users can assign any sensors to one of these digital input signals. Up to 5 sensors can be wired to this connector. Alternatively, one alarm (LED, Siren, etc.) is available on the digital output.

D-SUB 44PIN Connector

This multi-function connection carries several I/O connections, including:

- GPS receiver
- USB
- TAB101
- Additional POE

DIV, GPS, LTE, WIFI

The “DIV” connection is for future use. The remaining three are individual antenna connections as indicated.

POE#1 and #2

For IP cameras.

EMR – Event Marker input

This connection is for the included Event Marker cable.

SPECIFICATIONS

VIDEO

Recording Resolution

Each camera channel can be set independently using AHD (1920x1080), AHD 720P(1280x720), D1 (720x480), CIF (360x240), DCIF (640x480) configurations.

Compression

The ZEUS TITAN uses a modified h.266 high performance video compression standard to optimize the video/audio data stream so that it can be sent over a network or stored directly on a local disk. The compression algorithm runs on a DSP Engine, freeing up valuable resources within the system to do other jobs.

Frame Rate

Channels can be independently set to record a maximum 30 fps. Zeus TITAN is capable of multiple streams totalling 300 fps.

Simultaneous channels

Up to 8 channels can record simultaneously at 30fps with AHD1080p (1920xx1080) resolution, plus 8 IP Camera channels (additional equipment required).

AUDIO

- Internal cameras have mono microphones; external cameras have no audio
- Recording Channels: Up to 10 audio channels
- Cameras have built-in microphones with noise-reduction processing, and the software (DVP2) also has noise-reducing DSP
- Each audio recording channel synchronizes to its own video recording channel

VIDEO STORAGE

A removable dual-stage hybrid drive, named the INFINITY Drive, or “DHD”. See “INFINITY DRIVE...” on page 32 for more information about DHD operation.

WIRELESS NETWORK

TITAN uses an external WLAN 802.11g and can support external Wi-Fi 802.11gn or 802.11bg. This requires additional equipment, such as an external wireless connection.

GPS

A GPS module can be connected to TITAN using one cable, up to 40' in length.

ETHERNET

- 10/100 Base-T Ethernet port
- IEEE 802.3u 100BASE-T Fast Ethernet compatible
- POE (Power Over Ethernet)

SENSORS

Up to 9 sensors can be connected (Five Standard).

ALARMS

Up to 4 alarms can be connected.

PHYSICAL ATTRIBUTES

Housing

- Ionized Aluminum for rugged applications

Form Factor

- Depth: 184 mm (7.25 inches)
- Width: 159 mm (6.25 inches)
- Height: 51 mm (2 inches)
- Not including shock and vibration isolator

Weight

- Approximately 1.3 kg (2.8 lb.)
- Not including shock and vibration isolator

POWER

Power Supply

- 12V Intelligent Power Circuit
- ESD protected
- UPS battery backup

Battery

- Lithium Coin Cell CR2032 (20.0 x 3.2 mm)
- 3 V / 235 mAh

Input Power Range

- +8 VDC ~ +16 VDC normal operating voltage
- UPS for out of range backup power
- Over voltage protection up to 110VDC

Ignition Signal / Power Down Timer

- Software configurable delay power off signal from 1- 14400 seconds (4 hours)
- Software configurable sleep mode after power down 50mA current draw

Power Consumption

- Typical 10W
- DVR draws less than 24ma when off

ENVIRONMENT

Temperature Range

- -30°C to +55°C (-22°F to +131°F) operating temperature

Relative Humidity

- 10% to 90% non-condensing