

Hardware User Manual Hardware Installation Manual



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Introduction

All of us at REI would like to thank you for purchasing an SD-300 Mobile Recording System. This manual is intended to provide the user with the information required for proper installation, initial setup, and explanation of the individual programming options. If you have any questions, or need assistance, please call:

24 HOUR SERVICE HOT LINE USA & CANADA 1-877-726-4617 Toll Free 1-402-339-2200

The SD-300 is a cost effective, fanless Mobile Recording solution supporting up to 3 camera inputs. This system features a unique compact rugged design engineered to meet the demands of harsh mobile environments. The SD-300 features the latest technologies including H.264/MPEG-4 Advanced Compression, dual streaming technology, and all solid-state construction.

Features

- Ultra-compact extruded aluminum housing, low weight, high temperature and vibration resistant
- Low-voltage, low-current architecture designed for harsh mobile environments
- Removable SD memory with tamper-resistant lock and secure controls
- 3 channels for image input, full-motion (30 FPS / camera) continuous recording and display. Those channels are designed for high-fidelity, digitally recorded, independent synchronized audio channels matched to independent image channels, secure, constant recording while system is powered with event bookmarks for easy event searching
- Utilizes H.264/MPEG-4 Advanced Compression for high quality, low storage requirements, and long record times
- User-selectable settings for quality and audio enable/disable for each channel
- Password protection for settings, playback, remote access, and more
- Integrated and filtered power supply for cameras, sensors, relays, and other accessories
- Selectable idle frame rate with event-triggered burst recording speeds up to 30fps
- Multiple alarm inputs with selectable pre-alarm and post-alarm recording
- Full event logging of every operation controlled by the Recorder
- TV output channel for recorded and live images

Image Viewing

- DVD-quality steaming
- Convenient USB media updating and status file downloading

Retrieval and Archiving

- USB 3.0 (2.0 compatible) port on the front panel for easy image retrieval on the vehicle with a notebook computer or USB flash drives
- Easy to use PC-based software application for playback, file transfer, archiving management, and image file format conversion
- Vehicle management PC software interprets audio, images, and vehicle data for driver and vehicle use assessment
- Event search software allows intelligent searching of images based on event information

Supplemental Data and Driver Management Modules

- External GPS antenna module for embedded digital information of GPS location, speed, heading, and time
- External 3-axis inertia sensor for embedded digital information or trigger of image-matched motion events for accident reconstruction

System Overview

SD-300 3CH WIFI GPS





Front and Back Panels



Figure 2: Front Panel Layout



Figure 3: Rear Panel Layout

Live View:

The default view in live view mode on the 3-channel recorder is to display all channels in matrix view. Double Left clicking a USB mouse while in matrix view displays the images from that window into full screen. Double Left clicking the mouse returns the display to matrix view.

Initial Set Up

The Digital SD-300 will operate prior to any user setup with the default settings. However, it may not show the correct time and date (factory set to Central Standard Time). To set the correct date and time, and program the system operation to your requirements, please refer to the *Menu Configuration* section of this manual.

When accessing the menu, it is necessary to connect a windows laptop (with REI VMS loaded on the laptop) to the network port of the unit (utilizing CAT5 cable and adapter cable SD-300 Network Adaptor #512936), or restart the SD-300 and connect wirelessly with a mobile device to the system default access point (remains on for 3 min after reboot), or utilizing the REI wireless dongle with SD reader (710610) and connecting wirelessly.

SD Card

SD Card Loading and Unloading

Accessing SD Cards: To access the SD card slots on the recorder, simply utilize your security key. Insert the key until firmly in place and turn counter clockwise to unlock the SD card slots and slide open the security door.





Loading SD Card: To install your SD cards, the SD cards will only easily insert into the SD Card Slots when faced the right direction. Slide the SD card into the slot until it clicks into place.

Unloading SD Card: To remove SD card Simply press on the card and the card should partially eject from the slot. Once the card is loose in the slot, gently remove the SD card.

Record Time Estimator

To help estimate record times please visit our website http://radioeng.info/rte/

Radio Engineering Record	Time Estimator		- 🗆 X
Platform:	Storage Cap 64 GB	v Custo	nfiguration: m ×
Enable	Resolution	Frame Rate	Quality
✓ Analog Camera 1	720P ~	5 fps ~	100% ~
🗌 Analog Camera 2	720P ~	30 fps ~	100% ~
🗌 IP Camera 1	1080P ~	30 fps 🛛 🗸	100% ~
✓ Sub-Stream	CIF ~	30 fps *	100% ~
Main Stream 24 Hours]	Res Sub-Stream Ar 146 Hours	ource Utilization halog: 9% IP: 0%

Figure 4: Estimator for Record Times

Long Term Storage

Although the SD-300 Series Mobile Recorder system draws very little current in the stand-by mode, if the systems are installed but not used for an extended period of time (longer than 2 weeks) it is recommended that the power be disconnected from the Mobile Recorder to avoid draining the vehicle battery. The internal clock will hold time and date for up to 10 years sitting on a shelf, and the daylight-saving time functions will kick in upon re-initialization when power is applied.

Installation

WARNING

DISCONNECT VEHICLE BATTERY VOLTAGE <u>BEFORE</u> INSTALLING System WIRING

WARNING

DISCONNECT POWER TO THE DIGITAL SD-300 Series Mobile Recorder <u>BEFORE</u> JUMP STARTING VEHICLE

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System Wiring – Power and Camera Cables

Note: All cables should be hidden from view.

For the basic system there are five (5) cables, one (1) power cable (P/N 512929) 10 Feet, one (1) camera cable 10 Feet (P/N 512931 or any different length cable),One (1) record indicator / event mark button harness (P/N 530203) for external record indication and alarm/event marking, One (1) GPS harness (P/N 710745) used for satellite location and movement information, and one (1) vehicle sensor options harness (P/N 512934)..

Connect the camera(s) using cable P/N 512931, or equivalent. If multiple types of cameras are installed in a single system, be careful to note which cameras are located where. Use lenses with more magnification (4mm) to bring objects closer. Use lenses with less magnification (2.4mm) for wide angle viewing.

Connect power using cable P/N 512929, or equivalent. The black wire connects to the negative terminal of the battery. The white wire (labeled 12V Battery) connects directly to the positive terminal of the battery. **The white wire should be fused at 10 Amps**.

If the System operates in the Manual Record Mode, connect the red wire (labeled 12V SW), to the switched side of the ignition switch. The red wire should be fused at 1 A. The red wire does not need to be connected if the system is in Timer Record Mode, however, best practices should include this connection in case configuration is changed in the future.

Event Marker Button - Harness Connection



Figure 5: Event Marker Button - Harness Connection

The optional Digital SD-300 Series Event Marker Button (part# 530203) plugs into the connection labeled Event Marker (or Panic Button) on the SD-300 Vehicle Sensor Harness (part# 512934). The Event Marker has a threaded round back and an easy to tighten bolt for secure installation. The back light on the button is also used as a dashboard indicator light providing status of the recording. A solid light indicates the SD-300 is recording, a slow blinking indicates that an event has been triggered, and a fast blinking back light means a system fault has triggered and the SD-300 needs service.

GPS Antenna Module Harness



Figure 6: GPS Antenna Module Harness Connection

The GPS antenna module harness (710745) plugs into the back of the SD-300 as shown above. This module will track up to twelve satellites at a time while providing onesecond navigation updates at low power consumption. The GPS antenna module is housed in a black, water-resistant case and designed to withstand rugged operating conditions. Information provided to the SD-300 includes longitude, latitude, speed, heading, date, and time. Internal memory backup allows the GPS antenna module to retain critical data such as satellite orbital parameters, last position, date, and time, to reduce valid data acquisition time.

Vehicle Sensor Harness

	51 CABLI INPUTS/SERIAL INCLUDED V	12934 E,SD300 /EVENT V/710742			
			Connection		
// ////////////////////////////////////		Wire Color	Taxi	Limo	Van
// // /////////////////////////////////	Sensor Input 1	Black	Ignition	Ignition	Ignition
// // /////////////////////////////////	Sensor Input 2	Brown	Right Turn Signal	Right Turn Signal	Right Turn Signal
// // /////////////////////////////////	Sensor Input 3	Red	Left Turn Signal	Left Turn Signal	Left Turn Signal
<u> </u>	Sensor Input 4	Orange	Brakes	Brakes	Brakes
	Sensor Input 5	Yellow	Taxi Meter	Privacy Shield	Side Door
타 및	Sensor Input 6	Green	In Service Lamp	Rear Door	Rear Door
	Sensor Input 7	Blue	Door Open	Door Open	Door Open
	Sensor Output 8	White			
	RS232 (G-force)	Black	Accelerometer	Accelerometer	Accelerometer
	Incident Button	Black	Event Button	Event Button	Event Button
12343070					

Figure 7: Vehicle Sensor Harness Connection

The SD-300 Vehicle Sensor Harness connects to various locations in the vehicle to provide on-screen information regarding vehicle performance. Vehicles have different sets of signals that can be monitored. Three levels of on-screen displays are available to the installer application: Taxi, Limousine, and Fleet.

The Fleet vehicle sensor option allows for most other situations. The letters that appear on the screen are settable through the menu system. The default settings are blank.

When using these options, the DEFAULT condition is that the Digital SD-300 considers a low voltage (or ground) in the OFF state. A high voltage (5-15 VDC) is interpreted as the ON state. To switch the polarity of these signals, reference the Vehicle Sensor Levels Options menu.

On-Screen Information with SD-300 Sensor Harness

The Digital SD-300 Series Mobile Recorder, when equipped with the SD-300 Series Mobile Recorder Sensor Harness, will display information on-screen in the Installers Mode when the vehicle's monitored switches are activated and signals are applied to the monitored sensors.

ACTIVE SWITCH OR SIGNAL	ON-SCREEN DISPLAY
Door Open	DO
Right Turn Signal	RT
Left Turn Signal	LT
Brakes	BK
In Service Lamp	IS

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Taxi Meter	TM
FRONT DOOR OPEN	FD
REAR DOOR OPEN	RD
SPEEDOMETER	XX MPH
(SEE NOTE 1)	

NOTE:

1. The XXs represent the vehicle speed (i.e. 35).

Accelerometer Module Harness



Figure 8: Accelerometer Module Harness Connection

The optional external Accelerometer, or Inertia Sensor, must be hard mounted to the vehicle floor, frame, or some other non-dampened part of the vehicle (non-vibrating flat surface). The reason for this is so that if external dampening is used for SD-300, it will not throw off the Accelerometer readings.

To properly install the Accelerometer Module, the user must align the device with the picture on top of the module as shown in Figure 9 below. The X axis is drawn from the back to the front of the vehicle, the Y axis is drawn from the side of the vehicle to the other side of the vehicle, and the Z axis is drawn from the bottom to the top of the vehicle. The Accelerometer Module then needs to be calibrated.



Figure 9: 3 Axis Inertia Sensor Directions

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Physical Mounting Requirements

L Bracket Mounting



Figure 10: L Bracket Mounting

The SD-300 has two mounting brackets on the sides for easy mounting, as shown above. This type of installation is recommended for mounting behind the dash, in the trunk, or in a secure location in the vehicle.



Figure 11: SD 300 Dimensions

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Security Cover Mounting

There may be installations that require the back of the SD-300 get enclosed in its own protective enclosure. Security covers can be installed to protect the back connections on the SD-300.



Figure 12: Security Cover Mounting

IMPORTANT:

Check local, state, and federal guidelines as to modification of the existing structures within the vehicle.

Camera Placement

The SD-300 cameras can be mounted anywhere in the vehicle, as long as you have a stable mount that won't vibrate excessively. The suggested mounting locations are to the right or just below of the rear-view mirror for the inward facing camera (710748 or 710751). The forward-facing camera (710749 and 710752) could be mounted behind the rear-view mirror when not causing any functionality issues with the mirror, otherwise it can be mounted just below the mirror. The rear facing camera or lift camera (710753) can be mounted in the lower center of the rear window or just above the window/door of a van or bus.



Figure 13: Potential Camera Placement Options

Recording & Playback

System Start-Up

To start the recording process, place the *system switch* in the ON position (this will be done automatically if the *system switch* is connected to the ignition switch and the ignition switch is in the ON position). Upon turning the system switch ON, the Digital SD-300 will commence recording.

System Shut-Down

To stop the recording process, turn the ignition in the OFF position. If the OFF DELAY option is enabled in the Setup menu, the Digital SD-300 Series Mobile Recorder will continue to record for the prescribed number of minutes. When the off-delay expires, the camera and Digital SD-300 Series shut off.

Playback Options

There are many ways to view the recorded images: through the TV Video Outputs, through the SD card, through the PC USB Port, and with a mobile device such as a cell phone or a tablet.

TV Video Outputs

Using a TV Monitor and a USB mouse, the user can access recorded files by Date and Time or by Event. After selecting the appropriate file, the user can review the images using Play, Stop, Pause, Fast Forward, Fast Rewind, Slow Forward, Slow Rewind, Frame Forward, and Frame Reverse.

SD Card

Using the REI VMS PC Software, the user can access the files by connecting SD card to the computer directly

PC Network Connection

Using the REI VMS PC Software, the user can access the files by connecting the computer to the SD-300 through the network port and SD-300 Ethernet Adapter (512936).

Figure 14: Connecting to the SD-300 with a Computer through the Network Port

SD-300 Default Settings:

IP Address: 192.168.0.200

Net Mask: 255.255.255.0

Gateway: 192.168.0.254

Username: admin

Password: 11111111

In order to access the SD-300 from a computer, the TCP/IP network settings on the computer need to be set up accordingly to match the settings in the SD-300 to insure both devices are in the same network.

IP Address: 192.168.0.x (x being any number but different from SD-300 IP address)

Net Mask: 255.255.255.0 (Net Mask)

Gateway: 192.168.0.254 (Gateway) - optional

Internet Protocol Version 4 (TCP/IPv4)	Properties ? X								
General									
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.									
Obtain an IP address automatical	у								
• Use the following IP address:									
IP address:	192.168.0.1								
Subnet mask:	255 . 255 . 255 . 0								
Default gateway:	192 . 168 . 0 . 254								
Obtain DNS server address autom	natically								
• Use the following DNS server add	resses:								
Preferred DNS server:									
<u>A</u> lternate DNS server:	• • •								
Validate settings upon exit	Ad <u>v</u> anced								
	OK Cancel								

Once the computer is set up, open a web browser and type in the IP address of the SD-300 in the web address bar. In some cases, the web browser may ask to install add-on software in order to access the SD-300 Web UI. Before displaying the Web UI, the web browser will prompt for username and password for the SD-300. After entering username and password, the web browser will open up the Web UI. Refer to Web UI section for more information.

Menu Configuration

<u>Main Menu Page</u>

🐉 Setup	() Info	X Maintenance	Di Live	D Playback
	F	Figure 15: Main Me	nu	

SD-300 Main Menu can be accessed by using any standard USB mouse or REI offers a Handheld USB Trackball Mouse; part number 690896. Then the user can access recorded images and customize the settings on the SD-300.

<u>Setup</u> allows the user to customize the SD-300.

<u>System</u> you can give the vehicle a name, set the time and date, set when the SD-300 starts recording, set fault indicators, fault beepers, external record indicator, standby mode display and set a password for the SD-300.

<u>Video</u> here you can enable or disable the channels you want and set up the camera configuration. Setup amount of time you want to record before and after alarms. Configure the system to record to SD card for alarms. Configure your sub-stream settings. Change the settings for your image. Setup motion detect and motion alarms and configure the OSD.

<u>Input Setup</u> is where you change the settings for speed, inputs, Accel alarms and GPS port.

<u>Network</u> here you can configure the SD-300 to connect to your network. It has inputs for WAN/LAN settings, server, WIFI, Cellular connections and Routes.

<u>Info</u> is where the user can setup active channels, change what inputs the user would like, view active alarms, view system information, check WAN/Cell and WIFI connections, view what version you have and look at the logs.

<u>Maintenance</u> allows you to upgrade your firmware, import or export your configuration or reset it to the defaults. Under storage you can format the SD card or the USB.

Live allows the user to view any camera or all cameras live.

<u>Playback</u> is where the recorded images can be accessed. It allows users to search by Time/Date and Alarm. Playback also allows users to backup images using the USB port onto external storage.

Advanced Setup Menu

This section describes where all of the various record configuration settings can be viewed or set using a video monitor and a USB mouse.

	REI	-	Setup	0
<u>System</u>				
	ID]		
Ō	Time&Date]		
Ċ	Start Up]		
\square	Faults]		
ď	Password]		
Video				
500	Camera			
	Alarm			
	Sub-Stream			
	Image			

Figure 16: Advanced Setup Menu

The Setup section of the Menu is subdivided into four main categories: System Setup, Video Setup, Input Setup, Network.

System Setup Menu

Figure 17: System Setup

The System section of the System Setup Sub-Menu is subdivided into five subcategories: Vehicle I.D., Time & Date, Start Up, Faults and Password.

Vehicle I.D. Menu

		-									
	REI	- 🕸 -	Setup	!	Info	×	Maintenance		Live	⊘	Playback
<u>System</u>		*						Vehicle	(test1		
	ID										
Ō	Time&Date							Company	Spencer		
Ó	Start Up							Driver	Test		
$\underline{\mathbb{A}}$	Faults							nstaller ID	tester		
				Eia	10. T	Ichia					

Figure 18: Vehicle I.D.

Vehicle I.D Menu allows the user to enter Vehicle I.D., Company name, Driver information, and an Installer ID.

<u>Vehicle I.D.</u>: allows custom information to identify the SD-300s, such as medallion number.

Company Name: allows the user to enter company name utilizing the SD-300

<u>Driver</u>: allows user to enter a driver's name. If there is a requirement for technician/installer information to be displayed or tracked this would be a good place to enter that information as well

<u>Installer ID</u>: allows for the admin to add an Installer ID to the SD-300. This can not be changed by the installer if they are using an installer password. This is normally used in situations where an installer needs to be tracked or known by city officials such as by inspectors or transit authorities.

Time & Date Menu

		-	Setup	!	Info	×	Maintenance		Live	⊘	Playba	ck	J
<u>System</u>	4						Time/Date	à	13:37:27		5/22/2017	ו	
ī.	D						Display Format	t	24 Hours			J	
Ō	Time&Date						Sync Source	•	NONE	\checkmark	SYNC NO	w	
Ċ	Start Up						Time Zone	9	Central	_			\leq
Λ	Faults						REI DST		ON-AUTO	\leq			
<u></u>							DST Star	t	2:00 AM	2ND	SUNDAY 🗸	MAR.	<u> </u>
ď	Password						DST End	I	2:00 AM	✓][1ST §	SUNDAY 🗸	NOV.	~ (r

Figure 19: Time & Date

Time & Date menu allows the user to configure options for setting the Date and the Time. The SD-300 uses high accuracy, extended temperature range Real Time Clocks with

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10-year internal battery backup for consistent and reliable time keeping over the life of the SD-300 system.

 $\underline{\text{Time}}/\underline{\text{Date}}$ shows the current date and time, allowing the user to change the date and time.

Display Format allows user to select between 12-hour or 24-hour display format.

<u>Sync Source</u> allows the SD-300 to synchronize to a time synchronization service, either GPS (Global Positioning System), or NTP (Network Time Server), or None. When Time Sync Source is selected except None, press Sync Now button to synchronize the time immediately, or the SD-300 will synchronize time automatically at mid night.

<u>Time Zone</u> is for use with the GPS and Sync Time, as GPS satellite time comes in as GMT and needs to be offset for your time zone for proper automatic time synchronization.

Day Light Savings Time, when set to On-Auto, will make the system clock change automatically with Daylight Saving Time. If your region does not use Daylight Saving Time, setting this item to OFF disables the Daylight-Saving Time function.

Day Light Savings Time can be changed from Auto to Custom. The Energy Policy Act of 2005 changed the time change dates for Daylight Saving Time in the U.S. DST begins on the second Sunday of March and ends the first Sunday of November. Because Congress retains the right to revert Daylight Saving Time back to the 1986 time schedule, certain real-time clock embedded systems need to have the ability to be changed. The DST Mode can be set from 'On-Auto' to 'On-Manual'. When the DST Mode is set to 'On-Auto', the Daylight-Saving Time triggers will conform to the EPA of '05 rules. When the DST Mode is set to 'On-Manual', the Daylight-Saving Time triggers can be changed to any of the first, second, third, fourth, or last week of any month, not overlapping, as shown below.

DST Start	2:00 AM 🗸	2ND SUNDAY V	MAR. V	(MAR. 12)
DST End	2:00 AM 🗸	1ST SUNDAY 🗸	NOV. V	(NOV. 5)

Figure 20: Custom DST Triggers

Operating Mode Menu

The Start Up Menu allows the user to choose when the SD-300 starts/stops recording, how long the SD-300 stays on after shutting off the ignition.

Start Up Mode lets user to choose when the SD-300 starts recording. There are three settings for user to choose: Ignition, Schedule, Either Ignition or Schedule.

Ignition: SD-300 starts recording as long as ignition signal stays on.

		-	Setup	()	Info	×	Maintenance		Live	D Playback
System	~						Mode Ig	nition		
	D						Off Delay 0	(0-	~199)Mins	
٥	Time&Date						Download Delay 0	(0-	~199)Mins	
Ċ	Start Up								Record Schedule	
\land	Faults						Days MON T	JE WED		
6	Password						Schedule(1) 00 : 00	00 : 00	Schedule(2) 00 : 00 - 00 : 00
Video									Download Schedule	
\$ ~4	Camera						Days MON T	JE WED		SAT SUN
۵	Alarm						Schedule 00 : 0	00 : 00		
ā										

Figure 21: Ignition Start Up Menu

Schedule: SD-300 starts recording only by schedule regardless ignition signal.

		A Datum	Maintananaa	D i liva	Blaubaak
		Setup	Maintenance	Live	Playback
System	^		Mode	chedule	
	ID		Off Delay 0	(0~199)Mins	
Ō	Time&Date		Download Delay	(0~199)Mins	
Ċ	Start Up			Record Schedule	
\wedge	Faults		Days MON T		RISATSUN
<u>ک</u>	Password		Schedule(1) 00 : 0	0 - 00 : 00 Schedu	le(2) 00 : 00 - 00 : 00
Video				Download Schodu	0
.	Camera		Days MON T		
Å	Alarm		Schedule 00 : 0	0-00:00	
æ	SD				

Figure 22: Schedule Start Up Menu

<u>Either Ignition or Schedule:</u> SD-300 starts recording by schedule and when ignition is on at the same time.

		-	Setup	0	Info	*	Maintenance		Live	D Playback
System	~						Mode Ig	nition Or Sch	edule 🗸	
	ID						Off Delay 0)	(0~199)Mins	
Ō	Time&Date						Download Delay 0		(0~199)Mins	
Ċ	Start Up								Record Sched	lule
\wedge	Faults						Days MON T		р тни	FRI SAT SUN
S	Password						Schedule(1) 00 : 0	0 - 00 : 00	Sche	edule(2) 00 : 00 - 00 : 00
/ideo									Download Scho	dulo
Ma	Camera									
<u></u>	Alarm						Sebedulo 00 : 0			
æ	sn									

Figure 23: Ignition or Schedule Start Up

Schedule section of the menu is where the user can set the date and times that the SD-300 will automatically turn on and shut off.

<u>Record Schedule:</u> Mon, Tue, Wed, Thu, Fri, Sat, Sun. Options for schedule 1 and schedule 2, both have start and stop times.

<u>Download Schedule:</u> Mon, Tue, Wed, Thu, Fri, Sat, Sun. Allowing to set the start/stop under schedule.

MON TUE WED THU FRI SAT SUN dule(1) 00 : 00 - 00 : 00 Schedule(2) 00 : 00 : 00	MON TUE WED THU FRI SAT SUN edule(1) 00 : 00 00 : 00 Schedule(2) 00 : 00 00 : 00 Download Schedule Download Schedule Download Schedule		Record Schedule		
dule(1) 00 : 00 - 00 : 00 Schedule(2) 00 : 00 - 00 : 00	edule(1) 00 : 00 - 00 : 00 Schedule(2) 00 : 00 - 00 : 00 Download Schedule	ays MON TUE WED	THU FRI	SAT	SUN
	Download Schedule	hedule(1) 00 : 00 - 00 : 00	Schedule(2)	00:00 -	00 : 00
Download Schedule		D	ownload Schedule		
				Л Л	

Figure 24: Record Schedule Menu

		- 42	Setup	()	Info	×	Maintenance	Þ	Live	٨	Playback	J
		_										
System		^							Fai	ult Indicator		
							Blir	nd Cam 🔽			HDD Fault 🗸	
Ō	Time&Date						Vide	eo Loss 🔽			System Fault 🗸	
\bigcirc	Start Up								Fa	ult Beeper		
\mathbb{A}	Faults						Blir	nd Cam			HDD Fault	
ď	Password						Vide	eo Loss			System Fault	
Video									External	Record Ind	icator	
\$	Camera						Display	/ Faults			Display Alarms 🗸	
	Alarm								Standby	y Mode Dis	play	
	SD						Display	/ Faults			Display Alarms	
	Sub-Stream						s	tandby Period	5 (0~	199)Mins		
				D .	05 F	1.						

Figure 25: Faults

Audio/Visual Setup menu allows SD-300 to display Audio/Visual alert if the SD-300 is experiencing an alert condition.

Fault Indicator: the types of alerts that the user can select for visual/audio alert.

Blind Camera: Camera blocked by objects.

Image Loss: not receiving camera images.

<u>SD Fault:</u> not able to record onto SD Card.

System Fault: experiencing problems such as voltage too high or too low.

Fault Beeper: the types of alerts that the user can select for visual/audio alert.

Blind Camera: Camera blocked by objects.

Image Loss: not receiving camera feed.

SD Fault: not able to record onto SD Card.

System Fault: SD-300 experiencing problems such as voltage too high or too low.

External Record Indicator: allow SD-300 to display alarm on external record indicator.

Display Faults: allows SD-300 to display faults.

Display Alarms: allows SD-300 to display alarms.

Standby Mode Display: allows SD-300 to display faults and alarms in standby mode.

Display Faults: allows SD-300 to display faults in standby mode.

Display Alarms: allows SD-300 to display alarms in standby mode.

Standby Period: allows user to how many minutes for the standby period.

Password



Figure 26: Password

The Password Menu gives user the ability to secure the SD-300 and it's SD memory cards with a password. On the SD-300 there are 4 password options to access the system. A local password for direct connection to the SD-300, a Remote password for connecting through an IP port or through a wireless network, an Installer password that limits the abilities to access settings and secure or confidential information and an SD Card Password that is typically set up by local authorities where cameras are mandated.

<u>Local Password:</u> when set to On, a password is required when entering the setup menu. This is considered your admin password. Whomever has this password can access all settings and data stored on the SD-300.

<u>Remote Password:</u> This password is for anyone who might access the SD-300 through the network IP port or through a wireless connection. Typically, this is set to the same password as Local, but can be different if required.

<u>Installer Password:</u> This password is for someone that might need access during installation to label the ID field on the SD-300 Vehicle title, Company name or Driver fields, but will not allow access to change settings on the SD-300 or review stored footage in the Playback Tab

<u>SD Card Password:</u> password to access images directly from the SD memory card. For example; if the driver of the car was robbed or assaulted the police may want to pull the SD memory card(s) for evidence. Only an authorized agent will be able to access the images and audio on that card. This helps with providing a legal evidence chain and can help prevent any footage tampering.

Video Setup



Figure 27: Video Setup

The Video Setup section of the menu is subdivided into seven main categories, Camera Setup, Alarm, SD, Sub-Stream, Image, Motion and OSD.

Camera Setup

				1	-		
		🌠 Setup	(! Info	🔀 Maintenance	🗾 (Live	D Playback	
System		^		Ch	nnel Enable 1 2 3	4 5 6 7 8 9 10 11	12
	ID				Enable All Enable Conne	cted	
Ō	Time&Date			Re	cord Time: Main/Sub 370/371	Hours	
0	Start Up				Resource: FR 13% AFR	13% IPC 0% SD 7%	
	Faults				c	amera Configuration	
6	Password				Channel 1 Chan	nnel Name CAM1 IPC Setu	q
Video					Resolution 720P	Quality 100%	\leq
	Camera			F	rame Rate 30	Alarm Frame Rate 30	$\overline{}$
	Alarm				fideo Loss 🛛 Warn 🔍	Audio 🔽 Live 🥄	
	SD				Blind Ignore 🗸	Blind Sensitivity 5 HI	\sim
	Sub-Stream				Copy To 2,3,4	Сору	

Figure 28: Camera – Camera Setup

The Camera Setup subsection of the Video Setup section allows the user to change all the related camera record settings, such as number of cameras, resolution, frame rate, etc.

Custom Configuration: Custom record setting for each camera.

Enable All	Enable	Connected			
Record Time:	Main/Sub 3	70/371 Hours			
Resource:	FR 13 <mark>%</mark>	AFR 13% IF	PC 0% SI	0 7%	
		Camera Con	figuration		
Channel	1 ~	Channel Name	CAM1)	IPC Setup
Resolution	720P 🗸)		Quality	100% 🗸
Frame Rate	30 ~)	Alarr	n Frame Rate	30 🗸
Video Loss	Warn 🗸]	Au	dio 🔽	Live 🔽
Blind	Ignore 🗸)	BI	ind Sensitivity	5 ні 🗸

Figure 29: Custom Record Settings

The Custom Record setting allows user to customize record setting to each individual camera.

Channel:	Enable channel to display on screen when selected. Note: When Live is selected but Rec is not selected, SD-300 only displays that camera image but does NOT record it.
Res:	Record resolution. (Camera dependent, up to 1080p)
Fr:	Frame rate during non-alarm recording: can select any number between 1 and 30.
VL:	User can select one of three options. Ignore, Warn and alarm.
Blind:	User can choose between three options. Ignore, Warn, and alarm.
Quality:	Image quality. 100% being highest taking up more SD storage space; 10% being lowest taking up less SD storage space.
Alarm FR	: Frame rate during alarm recording: can select any number between 1 and 30.
Audio:	Record camera audio if selected.
Live:	Displays live view of cameras.
Blind Sen	sitivity: User can choose between $1 - LO$ and up to $5 - HI$.
Copy to:	User can select the cameras they wish to copy the settings to.

Record Capacity: For how long the SD card can record under current camera setup.

FR/AFR: Non-alarm and Alarm Frame rate percentage at current camera setup.

<u>Alarm</u>

		- 42	Setup	()	Info	×	Maintenance	Di Live		D Playbac
System							Pre-Alarm Video To In	clude With Alarm	0	(0~300) Seconds
	ID						Post-Alarm Video To In	clude With Alarm	[10) (10~1800) Secon
Ō	Time&Date									
Φ	Start Up									
Δ	Faults									
S	Password									
<mark>∕ideo</mark>										
Ma	Camera									
2	Alarm									

Figure 30: Alarm Set Up

Pre-Alarm images to include with Alarm: user can select between 0-300 seconds of record time.

Post-Alarm images to Include with Alarm: user can select between 10-1800 seconds of record time.

SD Card



card.

Mirror SD Record Mode: Mirrors the settings for the image recorded to the main hard drive.

SD Record Stream: Main or Sub

Main SD Record Stream: Primary stream that has a direct effect on your record quality. You can make changes to this under Camera section.

Sub SD Record Stream: This allows the user to record in a lower quality and can be changed under the Camera section.

Channel Enable: Here you can select which cameras you want to be affected by the settings you have chosen.

Sub-Stream

		-	Setup	0	Info	🗶 Maint	enance	Live	٨	Playback
System		^					Resolution	CIF	\geq	
	Time&Date						Frame Rate Quality	30 100%		
	Start Up Faults					3rd	d Stream Source HDD Allocation	Sub-Stream		
C C	Password						Main Stream 370 Hours	 		Sub-Stream
	Camera									
	Alarm									
-1/-	Sub-Stream									

Figure 32: Sub-Stream Set Up

Resolution: User can choose what image quality you would like to record in, such as 720P or CIF.

Frame Rate: Can select between 1 being the lowest and 30 being the highest.

Quality: Can select between 10% being the lowest and 100% being the highest.

IIIIuev

	REI	- 10	Setup	0	Info	×	Maintenance		Live	۵	Playback
<u>System</u>		^				Channel	2 🗸		02/03/2013))9:31:3	id an
	a					Brightness	26	CAN2 Hello III from	m 129456779		1
Ō	Time&Date					0	63	JoesTard	SD5615	mak	2
\bigcirc	Start Up					Contrast	39				2 2 2.
	Faults					0	63				
ď	Password					Color	31				ANET
Video						0	63				
\$	Camera					Saturation	31			-	12
	Alarm					RI	63 ESET				
	Sub-Stream										
10	lmage										
	OSD										

Figure 33: Image Set Up

The user can customize all the settings for each camera individually. You can choose between four options: Brightness, Contrast, Color, and Saturation. Each having a range between 0 to 63.

OSD (On Screen Display)

		Setup		Info	×	Maintenance	Di Live	٩	Playback
System							Record	Playback	live
	ID					Date/Time	•		
Ō	Time&Date					Company/Vehicle	•		
C)	Start Up					Drive	r 🗍	\checkmark	
	Faults					Channel Name	•		
<u> </u>	Password					Input	5		
Video						Acceleromete	r		
, see	Camera					GPS	3		
	Alarm								
	SD								
- \	Sub-Stream								
	Image								
*	Motion								
	OSD								
		г.	24.0		C	D' 1			

Figure 34: OSD (On Screen Display) Set Up

<u>OSD:</u> On Screen Display – is divided into three subcategories Record, Playback, and Live. Playback and Live have eight options you can turn on and off, and Record has four options you can turn on and off.

Export Configuration Menu

		*	Setup	(!)	Info	×	Maintenance	Þ	Live	٩	Playback
0	Firmware						Configu	ration File	Export	Browse	
	Config						Reset T	Defaults	Reset		
B	Storage										



Export Configuration Menu allows user to export current SD-300 settings onto an external storage for quick multiple SD-300 installation.

<u>Upgrade Firmware</u>

		\$ Setup	Info	X Mainten	ance	Live		Playback
	_		N	lain Firmware Ver	Browse	Upgrade	Current	T2017061205
	Firmware							
(af	Config							
B	Storage							



Upgrade Firmware allows user to upgrade the SD-300's Main and MCU firmware to the latest version. Select Main Firmware to upgrade only the Main firmware. Select MCU Firmware to upgrade only the MCU firmware. Select Both to upgrade both Main and MCU firmware.

Reset to Defaults

		<u>.</u>						_			
			Setup		Info	\times	Maintenance		Live	⊘	Playback
0	Firmware						Configu	uration File	Export	Browse	
	Config						Reset T	o Defaults	Reset		
B	Storage										
				Figur	e 37: Re	set to	Defaults				

Reset to Default changes all settings to factory configuration in case of user experiencing problems caused by inappropriate settings.

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Camera Names

		_													
		- 45	Setup	(!)	Info	×	Maintenance		li Li	/e	⊅	Playb	ack	J	
											_			_	_
System	· · · · · · · · · · · · · · · · · · ·	^					Cł	hannel Enable	3 1	2 3 4	5	6 7	8 9	10 1	1 12
	D						ſ	Enable All	Enab	le Connected]				
Ō	Time&Date						R	ecord Time:	Main/Sub	370/371 Hours					
Ċ	Start Up							Resource:	FR 139	6 AFR 139	6 IPC	0% SD	7%		
	Faults									Camer	a Configu	ration			
ۍ م	Password							Channel	1 \	Channel N	lame C	AM1		IPC Set	up
Video								Resolution	720P	4			Quality	100%	\leq
\$200	Camera							Frame Rate	30 \	2		Alarm	Frame Rate	30	\sim
	Alarm							Video Loss	Warn	2		Audi	• 🔽	Live	<u> </u>
	SD							Blind	Ignore \	/		Blin	d Sensitivity	5 HI	\sim
	Sub-Stream							Copy To	2,3,4	Сору					
				E:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Cor	nono No								

Figure 38: Camera Names

Camera Names Menu allows user to set camera name individually. Each camera name is displayed on the screen inside each window. Use on-screen keyboard to enter names.

USB Config Download Setup

		*	Setup	()	Info	×	Maintenance		Live	٨	Playback
6	Firmware						Configu	ration File	Export	Browso	
R	Config						Reset T	o Defaults	Reset	Drowse	Import
B	Storage										

Figure 39: Export and Import Configuration

The Config tab under Maintenance is where you can import a certain configuration for a company or local mandated standard. Your configuration can be saved to a USB storage device by plugging it into the front USB slot on the SD-300 and selecting that storage drive by clicking the Browse button and then hitting the Export button. The same works for importing a configuration to the SD-300. Pick the drive or file location the configuration is saved and then click the Import button.

Input Setup



The Input Setup Menu contains all the settings to configure SD-300's inputs including: Speed, Input, Accel, and GPS Port Setup.

Speedometer Setup

			ø	Setup	!	Info	×	Maintenance		Live		D Playback
System		^						Speed Source	e	6	GPS 📏	3
	ID							Speed Unit	s	ŀ	MPH 📏	2
Ō	Time&Date							Overspeed Alar	n			
()	Start Up							Overspeed Threshol	d	C	75	(0~200)
	Faults							Overspeed Duratio	n	[5	0~255) Seconds
								J1939#1 Bitrate		2	250 🗸]
٢	Password							J1939#1 Address		[186	(128~247)
Video								1939#1 Request Enable			>	
.	Camera							J1939#2 Bitrate		2	250 🗸	7
A	Alarm							J1939#2 Address		ſ	187	(128~247)
	SD							1939#2 Request Enable			<u>/</u>	
	Sub-Stream											
÷.	Image											
*	Motion											
	OSD											
Input Set	ше											
\bigcirc	Speed											

Figure 41: Speedometer Set Up

Speedometer Setup Menu contains settings to change speedometer source, speed unit, speedometer calibration, and high-speed alarm.

Speed Source: the source that the SD-300 is reading speed from GPS.

Speed Unit: SD-300 supports MPH and KMH speed units.

<u>Overspeed Alarm:</u> when select On, if speedometer reading is higher than threshold value, SD-300 records images as high-speed alarm for the duration that you set.

Input Setup

	RE	Setup	() Inf	io	X Maintenance	E Live		Playback
<u>System</u>	~			#	Name	Display	Active	Alarm
	a			-	PANIC	РВ		<u> </u>
Ō	Time&Date			1	BRAKES	ВК	High 🗸	
(h)	Start Up			2		LT	High 🗸	
	Faults			3		RT	(High 🗸	
				4	FLDOOR	FLD	High 🗸	
ď	Password			5	FRDOOR	FRD	High 🗸	
Video				6	RLDOOR	RLD	High 🗸	
<u>_</u>	Camera			7	RRDOOR	RRD	High 🗸	
(🌲	Alarm							
-∿-	Sub-Stream							
Ö.	Image							
	OSD							
Input Setu	τp							
\bigcirc	Speed							
1.1	Inputs							

Figure 42: Input Set Up

The Input Setup shows all the available inputs on the SD-300. Each signal can be renamed, adjusted to active high/low, and set to trigger alarms when activated. Each field is editable and can be labeled to a customer's preference.

#	Name	Display	Active	Alarm
-	PANIC	РВ	-	\sim
1	METER	ВК	High 🗸	
2		LT	High 🗸	
3		RT	High 🗸	
4	SERVICE DOME	DM	High 🗸	
5	FRDOOR	FRD	High 🗸	
6	RLDOOR	RLD	High 🗸	
7	RRDOOR	RRD	High 🗸	\square

Figure 43: Input Set Up - Custom

Input #: the input numbers correspond to pin number of the SD-300 input.

Panic: name of the signal.

PB: OSD abbreviation.

<u>Input When Activate:</u> set to High if signal is high (positive) when activated; set to Low if signal is low (ground or negative) when activated.

<u>Alarm When Activate:</u> when set to On, SD-300 triggers an alarm when the particular input is activated.

		-	Setup	()	Info	×	Maintenance		Live	0	Playback	
ď	Password						Accel Alar	m				
Video							X Thresho	ld	Į	5	GS(+/-)	
S a	Camera	113					Y Thresho	ld	<u>ب</u>	5	GS(+/-)	
	Alarm						Z Thresho	ld	(t	5	GS(+/-)	
	SD											
	Sub-Stream								_	Current X:+U.0	0 Y:+0.00	Z: -
-joj:-	Image								L	Calibrate		
*	Motion											
	OSD											
Input Setu	Þ											
\bigcirc	Speed											
≥*્	Inputs											
-	Accel											

Figure 44: Accelerometer Set Up

The Accelerometer Setup Menu gives user options to configure accelerometer.

<u>Calibrate Accelerometer:</u> accelerometer must be calibrated after installation. Select Calibrate to calibrate accelerometer.

<u>Current Values:</u> current acceleration readings from the accelerometer.

<u>Accel Alarm Sensitivity:</u> SD-300 gives three options to configure how the accelerometer triggers alarm.



When set to Manual, SD-300 allows user to enter threshold values on each axis.

		-	Setup	0	Info	X Maintenance		Live	٨	Play
	Password					Assol Alar				
	Fassword					X Thresho	ld	5		ിദ്ദം
v	Camera					Y Thresho	d	5] GS(
	Alarm					Z Thresho	d	5) GS(+
-	SD									
- \/-	Sub-Stream							Curren	nt X:+0.00	Y: +(
v j.	Image							Cal	librate	
	Motion									
n	OSD									
Setu) تو									
)	Speed									
<u>e</u>	Inputs									
	Accel									

Figure 46: Accelerometer Threshold

Network Setup



Figure 47: Network Set Up

The Network Setup Menu contains three subsections: LAN, Server and WIFI

General Network Setup

		-	Setup	Info	×	Maintenance		Live	0
	Password	^				WA	AN		
<u>0</u>						IP Mode STATIC		IP Add	ress 1
Tag.	Camera							Netn	nask 2
	Alarm							Auto I	DNS
	SD							Primary I	
∿-	Sub-Stream					_ 14	AN	Secondary I	DNS 0
ģ.	Image							IP Add	ress 1
)-	Motion							Netn	nask 2
	OSD								
Setu	2								
)	Speed								
↓ [℃]	Inputs								
	Accel								
ý	GPS Port								
vork									
3	WAN/LAN								

Figure 48: General Network Set Up

General Network Setup is where the user set up the network configurations if using SD-300's wireless access point feature.

<u>IP Mode:</u> SD-300 can be set to Dynamic if network supports DHCP function or Static if static network setting is needed.

<u>IP Address</u>: The IP address needs to be set up differently for each SD-300 in the same network. The IP address contains four three-digit numbers from 0 to 255. The first three numbers need to be the same as the local gateway IP address in order to have access to the SD-300. The last number must be set up independently on each SD-300. The user can set this for both the WAN and the LAN.

<u>Net Mask:</u> A mask address is to use with the IP address as a pair. The default setting is 255.255.255.000. Depending on how the network is set up, the user needs to change it to work with the network. The user can set this for both the WAN and the LAN.

DNS Server IP Address: DNS Server IP is needed when SD-300 tries to access non-IP internet addresses.

<u>Server Network</u>

		- 40	Setup	(! Info	X Maintenance		Live	٩
	Password				Local Server	P	000.00	0.000.000
20					Local Update Interv	al	300	Sec
Teq	Camera]			Remote Server	Р	000.00	00.000.000
	Alarm	ĺ			Remote Update Interv	al	300	Sec
,	SD	í			Server Alerts Po	rt	8010	
	Out Otragen	ſ			Server Discovery Po	rt	13503	
<u>^-</u>	Sub-Stream	ļ			DVR API Po	rt	80	
E	Image	Į			DVR Discovery Po	rt	13502	
-	Motion				VMS Server I	Р	000.00	000.000.000
2	OSD				VMS Server Po	rt	5556	
t Setu	Ð	ĺ			Enable Teln	et		
)	Speed							
<u>ج</u>	Inputs	Ĵ						
#	Accel	Ĵ						
Ś	GPS Port							
vork								
נ	WAN/LAN							
8	Server							

Figure 49: Server Set Up

Please contact your IT specialists to configure this page.

Wireless Network

		\$	Setup	(!)	Info	×	Maintenance		Live	D Playback
~	Password	A					SSID	BUSWATCI	H_AP	
Video							Security	WPA2	$\overline{\mathbf{v}}$	
ma	Camera						Key	•••••		
^	Alarm						Show Key	\square		
	SD							$\overline{\neg}$		102 168 2 200
-	Sub-Stream								IP Ad	tmask 255.255.255.0
-0-	Image								Auto	
	Motion								Primary	DNS 192.168.2.254
	050								Secondary	DNS 0.0.0
nput Setu	£									
\bigcirc	Speed									
<u>२</u> *५	Inputs									
	Accel									
8	GPS Port									
Network)									
<u>ت</u>	WAN/LAN									
	Server									
6	WIFI									

Figure 50: Wireless Network

The Wireless Network settings allow the SD-300 to be connected wirelessly. It also supports Auto IP detection for easy set up.

<u>SSID</u>: In order for the SD-300 to find the wireless access point, it needs to know the correct wireless network name for it to connect to. Enter the Access Point SSID.

<u>IP Mode:</u> When set to Dynamic, the SD-300 automatically finds an available network set up from the wireless access point. The access point DHCP function will assign the SD-300 an IP automatically. When set to Static, it allows the user to enter the network settings manually.

<u>IP Address</u>: The IP address needs to be set up differently for each SD-300. The IP address contains four three digit numbers from 0 to 255. The first three numbers need to be the same as the local gateway IP address in order to have access to the SD-300. The last number must be set up independently on each SD-300.

<u>Net Mask:</u> A mask address is to use with the IP address as a pair. The default setting is 255.255.255.000. Depending on how the network is set up, the user needs to change it to work with the network.

<u>Authentication:</u> when connecting to an access point with network security settings, SD-300 needs to know the correct authentication to be able to connect to the network. The SD-300 supports NONE and WPA2 type authentication. Select accordingly.

<u>Security:</u> in addition to Authentication, user needs to select the appropriate Encryption type for the SD-300 to connect to the wireless network.

<u>Key:</u> If the wireless network has a password, the SD-300 needs to know it in order to use the network. Enter using the on-screen keyboard.

DNS Server IP Address: DNS Server IP is needed when SD-300 tries to access non-IP internet addresses.

		🐉 Se	etup	(!)	Info	×	Maintenance		Live	D Playback
System	^						Mode	chedule	$\overline{\neg}$	
	ID						Off Delay 0	(0~1	199)Mins	
Ō	Time&Date						Download Delay 0	(0~1	199)Mins	
Ċ	Start Up					(R	Record Schedule	
\triangle	Faults						Days MON T	UE WED	THU FR	SAT SUN
S	Password						Schedule(1) 00 : 0	0 - 00 : 00	Schedule(2) 00 : 00 - 00 : 00
<u>/ideo</u>						ĺ		Do	woload Schedule	
.	Camera									SAT SUN
Å	Alarm						Schedule 00 : 0			
æ	SD					Į				

Start Up Schedule

Figure 51: Network Schedule

User can choose Ignition, Schedule, and Ignition or Schedule. User also can select for how long the SD-300 stays up after off delay expires for the server to download alarm images.

Off Delay: for how long the SD-300 stays on after off delay mode expires.

Download Delay:

<u>Record Schedule:</u> the user can specify certain days and times to record image, even if the vehicle is off.

<u>Download Schedule:</u> the user can specify certain days and times to download images.

System Information



System Information Menu contains eight subsections: Camera, Inputs, Alarms, System, WAN/Cell, WIFI, Versions, and Log. All the SD-300 system information, such as temperature and voltage can be found here.

System Status

		🗱 Setup	1 Info	X Maintenance	Di Live	D Playback
- In a	Camera			Model	HD5-1200	
				Serial Number	00860002	E4
5.	Inputs			System ID(ETH0 MAC)	00:18:F5:	24:9E:C9
	Alarms			Main Firmware Ver	T2017061	205
al.	System			MCU Ver	T1704110	11
	WAN/Cell			Alpr Ver		
(((•	WIFI					
	Versions					
			Figure 53: Vers	ions		

Versions contains the Main/MCU Firmware version, Serial Number, System ID, Model, MCU Ver, and Alpr Ver.

System History

		🗱 Setup	() Info	🔀 Maintenance	Di Live	D Playback
.	Camera			Ignition:	Speed: 0 MPH	
245	Inputs			Inputs RW Y	W LT RT SA BK	FD RD PB
	Alarms			Data X: +0.00 Y: +0	.00 Z: +0.00	
ala	System			GPS:		
11	WAN/Cell			Data LAT: 0.0.0'N	LON: 0.0.0'E	HEAD: 0.0 °
((î•	WIFI			J1939		
	Versions			SYNC	DATA SPEED	

Figure 54: Inputs

Inputs contains maximum and the minimum readings as well as when it happened from various of sensors, including Accelerometer Readings, GPS, Inputs, and J1939 data.

System Log

	REI	\$ Setup	O	info	Х Ма	aintenance		Live		⊘	Playback
\$ 14	Camera				Fault V	FEBRUARY	8	\sim	2019	\searrow	
₽₽	Inputs				10:14:26 - 10:14:	43 VIDEO LOSS C	H2				
٨	Alarms										
ala	System										
((-	WIFI										
•	Versions										
閭	Logs										

Figure 55: System Log

System Log contains all the logs that the SD-300 generates in order to diagnose if there is a problem with the SD-300. To navigate the logs, highlight the Date/Time/Type bar and press Enter, use up/down arrows to go up and down entry by entry or use left/right arrows to go forward/backward page by page.

		🗱 Setup	() Info	X Maintenance 🗾 Live 🕑 Playback
m	Camera			Fault V JUNE V 27 V 2017 V
₹. 	Inputs			20:37:57 - 20:38:06 TIME INVALID
	Alarms			
	System			
	WAN/Cell			
((î•	WIFI			
	Versions			
Ē	Logs			

Figure 56: System Log - Search

Search function allow user to search logs by event types, start date, start time, end date, and end time .

Play Back



Images recorded on the SD card can be fully accessed from the Play Back menu. User can search images by using the Time/Date Search function, and the Alarm Search function.

Time/Date Search

		1 4	Setup	Info	×	Mainten	ance		Liv	e	(B	Play	back	
	Video					~								
200	VILLEO					L.	HDD			2017	\sim			
≜	Alarm						S	M	O	W	D	Ø	6	
							28	29	30	31	1	2	3	Sub Only
							4	5	6	7	8	9	10	Main/Sub
							11	12	13	14	15	16	17	Alarm
							18	19	20	21	22	23	24	Cialiti
							25	26	27	28	29	30	31	
							1	2	3	4	5	6	7	

Figure 58: Time/Date Search - Date

The Time/Date Search function gives user the ability to search images by choosing the Time and Date.

The screen shows a calendar of days that contain images. If the day is green, it means there is no alarm event on that day. If there is an alarm event, the day will appear yellow. Use the left and right arrows on the top of the screen to select month and year. Once month and year is selected, select the date.

Alarm Search

~		1.000					(
Playback	ive 🕑		Maintenance	Info	(!)	Setup			
2017	26 🗸	JUNE V	HDD V					Video	
	ON TYPE	DURATION	ТІМЕ					VILLO	
N	5 MOTION	00:00:15	19:54:38					Alarm	2
N	2 MOTION	00:00:22	19:30:50						
N	1 MOTION	00:02:01	19:28:41						
N	2 MOTION	00:00:42	19:27:55						
N	6 MOTION	00:00:16	19:27:35						
N	2 MOTION	00:00:22	19:27:10						
N	5 MOTION	00:00:35	19:26:26						
N	7 MOTION	00:00:17	19:25:35						
	MOTIO	00:00:17	19:25:35						

Figure 59: Alarm Search

Alarm Search allows user to quickly search for alarm images. It offers the ability to search for specific images using the Search function. Images will be displayed in a form of log, and user can use the USB mouse to navigate.

<u>Playback:</u> start play back alarm images from the beginning. <u>Search:</u> search alarm image by alarm type, start time/date, and end time/date.

		🗱 Setup	(!) Info	🔀 Maintenance	Dive Live	Playback
-	Video				JUNE 💙 22	2017 🗸
	Alarm			TIME	DURATIC 26	E Contra de
-	Aidim			14:41:33	00:00:33	ION
				14:27:04	00:00:29 23	ION
				14:23:51	00:00:16	
					SAVI	
			Figure 60: Alarr	n Search - Sear	rch	

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USB Backup

		🗱 Setup	() Info	⊁ м	aintenance	Di Live	🕑 Playbac	k
\$ 14	Video			HD		JUNE V 26	2017 🗸	
4	Alarm				TIME 19:54:38	DURATION	TYPE	<u>^</u>
					19:30:50	00:00:22	MOTION	
					19:28:41 19:27:55	00:02:01		
					19:27:35	00:00:16	MOTION	
					Backup			
	Export Time Period: 19:54:38 - 19:54:53						~	
	Data Type REI data_Video(AVI) Data_MP4 d OK Cance					MP4 data		

Figure 61: USB Backup

The USB backup function allows user to back up image files onto an external USB storage. User can select the image type, start time/date, end time/day. In addition, user can select to include player that allows to playback SD images on the computer.

Hosted Web User Interface

The Web UI provides the ability for users to remotely monitor cameras, play back images, and access the SD-300 settings. Before using the Web UI, the SD-300 network setting needs to be set up. Please refer to PC Network Connection and Network Setup sections.

Once the network is correctly set up, open a web browser, and enter the SD-300 IP address to access the Web UI. Username and password are required, and the browser may ask to install add-on software for the Web UI. After that, the Web UI should appear.



Figure 62: Web UI - Live

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Specifications

SD-300

- Recording Medium: SD Card 32GB up to 512GB per SD Slot
- Display Capability: On Screen Display and embedded stream data
- GPS: Time Synchronization, Latitude, Longitude, Speed, Heading & Mapping
- Input: 2: 720P AHD Channel Inputs, 1:1080P IP Input, 1V p-p / 75 ohm
- Image Output: 1 x Composite Video, WiFi, and 1 x USB 3.0
- Image Resolution: AHD channels 720 (H) x 480 (V) maximum
- Image Compression: H.264 (8 quality settings)
- Frame Rate: 1 to 30fps Selectable
- Audio Input : 3 independent channel inputs
- Recording Modes: Continuous, Ignition, Scheduled & Event Triggered
- Playback: Search by Alarm, Date, Time & Camera
- Image Loss Detection

Input / Output

- 1 x USB 3.0 Port
- 7 x Vehicle Sensor Inputs
- 1 x External GPS
- 1 x Accelerometer Input
- 1 x Transmission Pulse Speedometer Input

Environment

- Relative Humidity: 10%~95% at 40.C, Non-Condensing
- Operating Temp.: $-40C \sim +65C$
- Shock: 225Gs 2ms (Operating) / 900Gs 1 ms (Storage / Transit)
- Vibration: 1.0G, 5 ~ 500Hz (Operating), 5.0G, 5 ~ 500Hz (Storage / Transit)
- Power Requirement: 12VDC @ 2A / 24VDC @ 1A
- Power Consumption: 24W Maximum
- EMC and Safety: CE, FCC