



Release Notes for DVM Firmware

(In order of most recent first.)

Version: Build-334

Features:

- Added a Default Night Mode function to the Camera Menu which is accessible from the Main Menu. This feature allows the user to select which of the specific night modes will be activated by the automatic day/night camera switch timer.

You can select from N-Night, N1, N2, N3, or N4 as the default.

Note: This function requires the Auto Night Switch option to be set to ON (enabled) under the camera sub-menu.

- Added a function to the Main Menu called “View External Video” that allows external (DVF-500) video to be viewed on the DVM-500 LCD screen in a pass-thru mode.

By selecting this function on the DVM and connecting the DVF to the ‘A/V In’ port on the back of the DVM, the DVM will act as an external monitor to the DVF allowing you to navigate the DVF menus and play back videos.

*Note: A standard Male-Male 3.5mm **audio/video** cable is required. Please contact Digital Ally at 1-800-440-4947 for pricing and availability.*

- Added RMT pass-thru audio monitor function.

This feature will allow a user to hear the live RMT (External 900MHz wireless Mic) audio inside the patrol vehicle during a traffic stop. This feature is enabled by pressing and holding the MIC/5 button while the RMT is on and recording outside the vehicle, and the Internal Mic is off.

Note: This feature should be enabled only after the other officer with the wireless Mic is outside the vehicle, or audio feedback can occur. Likewise, it should be turned off before the other officer re-enters the vehicle.

- Added a “Disk Full” indication to be displayed when attempting record or pre-event record (“Creating New Video File” message on the monitor when going to live video) with insufficient space remaining on the CF card to record a video.

The system will have to be powered down, and a CF card with sufficient space installed and then the system powered up again to clear the message.

- Added a Jump to Mark function and ability to advance to next/previous mark during playback using the UP/DOWN buttons.

From Pause mode, press MENU to enter the Playback function menu overlay on the Paused video. Selecting Jump To Mark will bring up a selection of Marks to choose from. Selecting “Up/Down Buttons” will allow the use of the buttons for normal FF/RW or to skip to the next/previous mark. When jumping to a mark in any fashion, the display will pause rather than immediately begin playing back.

- Added a setting in the Date/Time menu under the Main/Settings menu to allow the user to select from the following formats: mm/dd/yyyy, yyyy/mm/dd, or dd/mm/yyyy.

Version: Build-256

Features:

- The default zoom level is now adjustable and can be accessed through *Main Menu/Settings/***Front Camera Focus**.

This setting will be used to determine the Default/Home Zoom level applied to the camera upon system startup.

The default zoom level is adjustable in a loop from 1x to 5x advancing one step with each Zoom/Select button press, and will be displayed on the LCD.

The factory default Zoom setting was changed from 1x to 2x, making license plates more readable during a typical traffic stop at 18 feet distance.

- The configuration settings within the DVM are now retained after an update to the firmware build.

Reconfiguration of the settings in the DVM should no longer be necessary when updating the firmware from builds 188 and greater, with builds 256 and higher.

Note: Updating to build-256 and above from a build prior to build 188 will still require you to reconfigure your settings after flashing the firmware.

This will not be necessary for future updates.

- The DVM now has the ability to display the vehicle speed via the GPS in MPH or KPH as well as via the vehicle's speedometer sensor.

The speed input source is selected in the *Main Menu/Settings/Record Triggers* menu.

- When the GPS speed signal is not received properly, then the speed will be displayed as 0.
- When NONE is selected in the Triggers Menu for the speed source, 0 will be displayed if the Vehicle Speed has been set to ON in the Text Display menu.
- The Metadata speed value stored will be the value from the speed source that was selected in the Record Triggers Menu.
- The speed source selected in Record Triggers will be shown on the video screen if the Vehicle Speed has been set to ON in the Text Display menu.
- GPS speed will be displayed in the Speedometer Menu along with the car speed.
- If CAR (Vehicle's speedometer sensor) is selected in the Record Triggers, then both GPSMPH and GPSKPH will be displayed in the Speedometer Menu.
- If GPSMPH is selected as the speed source, then only GPSMPH will be displayed in the Speedometer Menu.
- If GPSKPH is selected as the speed source, then only GPSKPH will be displayed in the Speedometer Menu.

Version: Build-248

Features:

- Supports new encryption system for user, vehicle, and event id files.

- Supports passwords 0-9.
 - Press the REC Button to enter 7, and two quick presses to enter 8.
 - Press the MARK Button to enter 9, and two quick presses to enter 0.
 - Password entry is now covered by “*” character shortly after digit is entered.

- Improved the recorded audio gain providing a higher volume level during playback.

- The left/right turn signal indicator functions are now available. The turn signals will be indicated by LSIG and RSIG on-screen indicators. Their display is default to OFF and may be enabled under the Display Text Menu.

This function requires the Violet (Left Turn) and Pink (Right Turn) wires to be connected as part of the system installation.

- A Front Camera Focus feature has been added to the settings menu to allow the factory setting of manual focus position as well as modification in the field. Each camera is slightly different when tuned by the supplier and a fixed setting for all cameras results in slight differences from camera to camera.

The Focus function will display live video and have notes on the screen describing button function.

The preferred method of setting manual focus is to have a single target a fixed distance away from the camera (30 feet), press Auto Zoom button to engage auto focus, and then press Menu to save the new focus setting into the camera's EEPROM memory.

The manual focus can also be adjusted by pressing/holding the Up/Down buttons. Saving is accomplished by pressing the Menu button, and Stop or a record trigger will cancel the focus changes and exit accordingly.

Version: Build-188

Minor changes / fixes:

- Changed the way the Day/Night auto switching works. Instead of defaulting to Day mode upon boot, it will check the settings and come up in either Day or Night mode based on the switch over time settings in the 'Camera' menu.
- Found and fixed a potential time calculation error for the switch over from Day to Night and Night to Day that could show up under certain conditions.

Version: Build-179

Features:

- Added the ability for the mirror to switch between day and night camera modes automatically based on a user selectable time. This setting can be accessed from the main menu under the 'Camera' sub menu. There are three settings on this screen related to this feature:
 - Auto Night Switch:
Set this to 'ON' to enable the feature.
 - Switch Day Time hh:mm:
This is the time in which the unit will change from Night to Day mode.
 - Switch Night Time hh:mm:
This is the time in which the unit will change from Day to Night mode.
- *These time settings are in 24 hour military time format.*
- *The automatic switchover system will take effect after the onboard clock passes the first day/night, night/day boundary time, set in the menu.*

- *Manually changing the setting of the camera mode, will override the automatic switching of the camera until the clock passes the next boundary time.*

- Added the ability to manually switch the between the Day/Night camera modes without having to go into the menu settings screens. By pressing and holding the 'Camera/4' button, it will cycle through each of the settings options. Simply press and hold the button until the setting you wish to use is displayed in the upper right hand corner of the DVM's monitor, then release. We also changed the naming convention of the settings from FIX1–FIX4, to N1–N4

DVM Day-Night Settings Explained

Note: *Although the camera offers a lot of automation such as Auto Iris, we have tweaked the camera using software to optimize it during certain situations.*

The '**D-Day/Normal**' mode should be considered the Normal mode of operation and should work well for most conditions.

The '**N-Night Auto**' setting optimizes the camera for the best performance in normal nighttime situations. An example is that it helps cut down on blooming from bright lights such as headlights, street lights, license plate lights, etc.

The four fixed gain night settings are provided for varying light conditions as follows:

'N1 – Night 1' - High Light: Recommended to be used in high lighted situations such as in the parking area of a convince store.

'N2 – Night 2' - Med High Light: Recommended to be used on a bright lighted city street.

'N3 – Night 3' - Med Low Light: Recommended to be used on a dimly lighted side street or highway.

'N4 – Night 4' - Low Light: Recommended to be used in very dark situations such as a dark highway without any lights.

- Changed the way in which the Zoom feature functions. Instead of having 4 preset Zoom levels, it now has continuous manual Zoom.

Manual Zoom will begin after the user presses and holds the 'Zoom/2' button, and will continue until the button is released, or the maximum zoom is reached.

Additional press-holds of the Zoom button will continue the zoom function.

A quick press and release of the Zoom button will begin an auto-zoom out, back to the normal modes' home position.

Auto-Zoom is functional when the manual zoom is active and will continue the zoom function, then auto-zoom out as before, back to the home position.

- Added support for an Accelerometer (G-Force sensor). This sensor will detect a sudden change in the G-Force of the vehicle, and trigger a recording automatically if set to do so.

The acceleration sensor measures the relative G force that the Interface Box experiences in a Vehicle where the force of 1G is 32 ft/sec² or 9.8 m/sec². The amount of force detected by the acceleration sensors in the Interface Box depends on its location in the vehicle.

The mirror can be set to start recording when the Interface Box detects a reading over a minimum G force that has been set in the Trigger Menu. This setting can be accessed from the main menu under Settings/Record Triggers/Exceed Accelerometer Limit.

In order to facilitate setting a trigger value, an Accelerometer Menu under the Settings Menu is available to monitor the Accelerometer.

The following is a guide to the Accelerometer Menu display

Display Text	--	Value displayed	--	Action when Select is pressed
Reset Max G Reading	--	The reading since the DVM was turned on	--	Resets the value to 0.0
Reset Max G Since Menu Start	--	The largest value since this menu started	--	Resets the value to 0.0
Set Zero G Referenced	--	N/A	--	Sets the sensor to detect 0G at the current force reading
Current Relative G Reading	--	G value experienced by the Accelerometer	--	N/A

Trigger Threshold in G -- Min G value that will start recording (0.1G to 5.9 G)
(This is set in the Record Trigger Menu)

Setting up the Accelerometer:

1. The Interface Box must be installed in the vehicle before setting the Accelerometer.
2. With the vehicle stationary and on level ground, go to Menu/Settings/Accelerometer Sensor.
3. Select 'Set Zero G Reference' and press the Zoom/2 button to set the accelerometer sensor for 0 relative G.
4. Select "Reset Max G Reading" and press the Zoom/2 button to reset this value.
5. Return to the Settings Menu by pressing the Menu button.
6. To set the Accelerometer Trigger level value that will start Recording, go to Menu/Settings/Record Triggers.
7. Select the Accelerometer Trigger and change it to the desired G value. This value can be set from 0.1 to 5.9. When set to 0.0 this disables the trigger.

Note: *The Accelerometer is an optional accessory. Please contact Digital Ally at 1-800-440-4947, or your sales rep directly for pricing and availability.*

Version: Build-158

Features:

- Support for the Kustom radar with Full Gateway is now available. *(The Radar function requires an interface cable (Available from Digital Ally) in order to work. This function will also require the interface box located between the main wiring harness, and the DVM's main connection cable to be exchanged for a new one if the box does not state "Radar Enabled" on the sticker above the serial number label.)*
- A new menu option to allow or disallow the ability to download video to VideoManager via the DVM's USB port is now available. This setting can be accessed from the main menu under Settings/USB Menu.

Version: Build-149

Features:

- The Vehicle Speed is now active and functional. The unit needs to be configured for the vehicle type, and the number of pulses per unit distance (Usually pulses per mile). These settings can be accessed from the main menu under Settings/Speedometer. This setting screen also has the ability to calibrate vehicle speed automatically* after the correct vehicle type and pulse settings have been input. Simply select "Automatic Calibration", and follow the on screen instructions. *(This function requires the Grey vehicle speed signal wire in the main wiring harness to be connected as part of system installation.)*
(This function will also require the interface box located between the main wiring harness, and the DVM's main connection cable to be exchanged for a new one if the box does not state "Radar Enabled" on the sticker above the serial number label.)
*(*Automatic Calibration is used only to calibrate the speed inputs for the DVM to the vehicle's speedometer reading and will have no effect on the vehicle's speedometer calibration itself.)*
- Added an "Exceed Speed Limit" record trigger. This setting can be accessed from the main menu under Settings/Record Triggers. Selecting this setting will prompt you to input a vehicle speed value and when the vehicle goes above the set speed, the DVM will start recording automatically. If the Record Stop is enabled on this screen, it will not allow

you to stop the recording as long as the vehicle remains above the speed setting.

- Added an option to un-mute/enable the DVM's internal MIC automatically if the camera input is switched to the rear facing or backseat camera. This setting can be accessed from the main menu under Settings/Internal Audio.
- Added a message to the Radar and Speedometer settings menus that will display "Radar/Speedometer Not Supported by Current Interface Version" if the new style interface box is not detected.

Version: Build-125

Features: (In order of most recent first.)

- Added a setting for disabling the Power/Mark button after the unit is powered on. This setting is accessible in the 'Power' menu under the Settings menu. This feature is designed to be used in conjunction with the 'Ignition Shutdown' feature located within the same 'Power' menu. *(When setting the Power Button Shutdown option to 'Disabled', it will automatically change the 'Ignition Shutdown' setting to 'Enabled'.)* The default setting for the Power Button Shutdown is 'Enabled' which means there is no change to the power button function. If it is set to 'Disabled' the Power/Mark button will NOT shut the unit down when pressed and held. Powering down the unit can only be done when the vehicle's ignition is shut off. The amount of time delay before the power down is initiated; it is based on the time settings selected in the Power menu. *(This requires the Blue Ignition signal wire in the main wiring harness to be connected as part of system installation.)*
- Added a "Covert Mode" feature. Covert Mode turns off all exterior lights and indicators, as well as the monitor display on the DVM. Pressing and holding the 'Menu' button for approximately 2 seconds will set the DVM to covert mode. This works regardless of which operating mode the unit is in, whether it is recording, in a menu, etc. Any single button press will exit covert mode without performing its usual function. The next button press will perform its normal function.
- The Radar interface is now active and functional. The unit needs to be configured with the brand and baud rate of your particular radar unit. These settings can be accessed from the main menu under Settings/Radar Interface. *(The Radar function requires an interface cable (Available from Digital Ally) in order to work. This function will also require the interface box located between the main wiring harness, and the DVM's main connection cable to be exchanged for a new one if the box does not state "Radar Enabled" on the sticker above the serial number label.)*
- Added the ability to Enable/Disable the display of metadata information on the monitor during record and playback. These settings can be accessed from the main menu under Settings/Display. Even if the metadata is disabled it is still recorded onto the media.

Version: Build-118

Features:

- Added a setting to allow the user to disable the status indicator LEDs on the back of the mirror. This setting is under Settings/Backlight Menu/Rear Status LEDs within the DVM's menu system.
- Added a Low Space warning, and a Time Left countdown that starts with 30 minutes left of recording time. The blue LEDs on the buttons (button backlighting) will blink in 30 second increments, and the time left will be displayed as an overlay on the monitor. When the time left reaches 5 minutes, the overlay will change from showing the amount of time left, to displaying "Low Space" and the frequency of the blinking LEDs will increase to every 10 seconds.
- Changed the file naming format from RECxx to the 8 digit DVM serial number, followed by yyymmddhhmmssxx. This indicates the date and time of the file creation followed by a digit field (xx) to insure a unique file name.
- Added Marks support to the metadata. Pressing the 'Mark' button during a recording, will insert a flag in the video. Pressing the 'Menu' button during playback on the DVM will access the Mark menu and allow you to instantly jump to that mark. On the Playback screen it will indicate how many marks are associated with each video file.
- Modified the date setting to display a 4 digit year in the settings menu.
- Added support for an external monitor.

Version: Build-41 thru Build-91

Features:

- GPS data now available. Data displays as degrees, minutes, seconds, hemisphere to the user
- Ignition auto-shutdown is now enabled. Allows unit to be powered down (controlled shutdown) after a preset time interval when ignition is turned off. Independent time settings for while recording, and when not recording in the setup menu.
- Vehicle ID is now displayed on the LCD and added to metadata file.
- Added a bar graph at the bottom of the LCD showing space left in the file, and total space left on the CF card during record and live mode.
- Messages displayed on LCD when opening and closing of video files.
- LCD can be toggled off/on by pressing the “Menu” button during record.
- Auto-Daylight savings time support. Allows Auto Daylight savings time to be turned on or off.
- Record mode setting enabled. Allows choosing between High, Medium, and Standard record modes.
- Pressing stop while recording now returns to live video mode instead of exiting to the menu mode.
- Changed the date setting’s menu to be more user friendly and also display the DVM’s internal temperature.
- New and improved night setting. As well as four fixed night settings. FIX1 – High light, FIX2 – Med High light, FIX3 – Med Low light, FIX4 – Low light.
- Unit will display a warning if/when internal temperature of -20c or +77c is reached, and then perform an auto-shutdown.

Fixes:

- Ability to detect when unit was not shutdown properly, or if the CF card was removed/inserted while unit is powered on. Unit will display *“System was not shut down properly. The current CF card may contain lost data that could be recovered by Video Manager. Press and hold the Mark Button to power down and take the CF card to a Video Manager system”* error message upon next power-up if this occurs.