User Manual

AgCam® or EnduraCam® 9" AHD Quad DVR Monitor Kit

Dakota Micro Part Numbers(s):
9" AHD DVR Quad Monitor – DM-H9QD

AGCO Part Number(s):
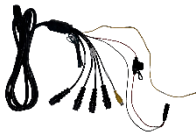9" AHD DVR Quad Monitor – AG-H9QD

Table of Contents

Thank you for purchasing equipment from Dakota Micro, Inc.
Always read the manual prior to operating this equipment. Also, please follow all safety signs and precautions.
See the Dakota Micro, Inc. website for installation training videos at www.dakotamicro.com.

I. **INCLUDED MONITOR KIT COMPONENTS**
     (PER PN: DM-H9QD AND AG-H9QD)

Description	Picture
Dakota Micro, Inc. 9" AHD Quad DVR Monitor Includes SD card	
24-pin Locking Monitor Wire Harness *PN: DM-HMWH*	
Monitor Remote *PN: DM-H9QRMT* (Styles vary by kit & battery is included)	
12v Locking Hardwire Power Adapter *PN: DM-HDWRE*	
Monitor U-bracket with 4 Wing Bolts *PN: DMAC-9M Bracket*	
Monitor Sun Shield	
12v Cigarette Lighter Power Adapter *PN: DM-12v* (Styles vary by kit)	

The AgCam® and EnduraCam® camera lines are a durable, reliable surveillance system with the innovative ability to be quickly moved from one application to the next.

II.   STANDARD FEATURES

- Feature the latest in Analog HD technology
- View 1, 2, 3 or 4 cameras at the same time
- Multiple camera layouts
- LED backlit
- Compatible with NTSC or PAL cameras, simultaneously
- Compatible with AHD or CBVS cameras, simultaneously
- Advanced LCD technology allows you to clearly see your image from any angle
- Mirror the view of any of your cameras for use as a backup camera
- 2 Year Warranty
- 16:9 aspect ratio
- 4 Camera Inputs
- Records up to 4 cameras simultaneously or independently onto SD card for easy transfer of files
- Available in 9in size
- Event triggers for each camera allow for triggered events to bring your camera to full view (IE: putting the vehicle in reverse)
- Color, brightness, contrast, and volume controls that allow compensation for use in different environments
- Remote control, sun shield, and metal U-bracket monitor stand included
- ACC wire allows for monitor power on/off with ignition

III.   IMPORTANT INFORMATION ABOUT AHD & ANALOG

- For multi-camera systems, all cameras can be either AHD or Analog.

IV.   MONITOR INSTALLATION & MOUNTING

A. Mounting Precautions

Remove your monitor carefully from packaging and inspect all mounting hardware. Mounting location is the most important part of the monitor installation as it ensures you the maximum visual benefit from your AgCam® system. With that said, when installing your monitor, ensure to follow these three (3) precautions:
1. The monitor is out of direct sunlight. This will prolong the life of the unit as well as ensure optimum visibility.
2. The monitor does not obstruct view.
3. The monitor does not interfere with the normal operation of equipment.

WARNING:

Dakota Micro, Inc. is not responsible for any damages caused to your monitor, or yourself, due to the improper installation or use of a suction cup monitor mount, whether it be product sold by DM or product purchased from another source.

B. Universal Bracket Mounting

1. Hold monitors U-bracket in place on monitor.
2. Attach bracket with included wing bolts.

C. Finalizing Universal Bracket Installation

1. With the mount and monitor attached, find and mark the desired position for the monitor.
2. Remove the monitor from the mount.
3. Attach the monitor to the mount and tighten the wing nuts.
   *Use ONLY the nuts included in the kit, bolts longer than 10mm will damage your monitor.

NOTE: Turn the monitor on only after it has been securely mounted, supplied with power, and the cameras are connected

V. INSTALLATION

A. Monitor Wire Harness Details
1. Input to Monitor
2. AV1-4 Event Trigger Wires
3. AV1 – Audio/Video Input
4. AV2 – Audio/Video Input
5. AV3 – Audio/Video Input
6. AV4 – Audio/Video Input
7. RCA-Video Output
8. Power Input
9. ACC Power
10. Fuse
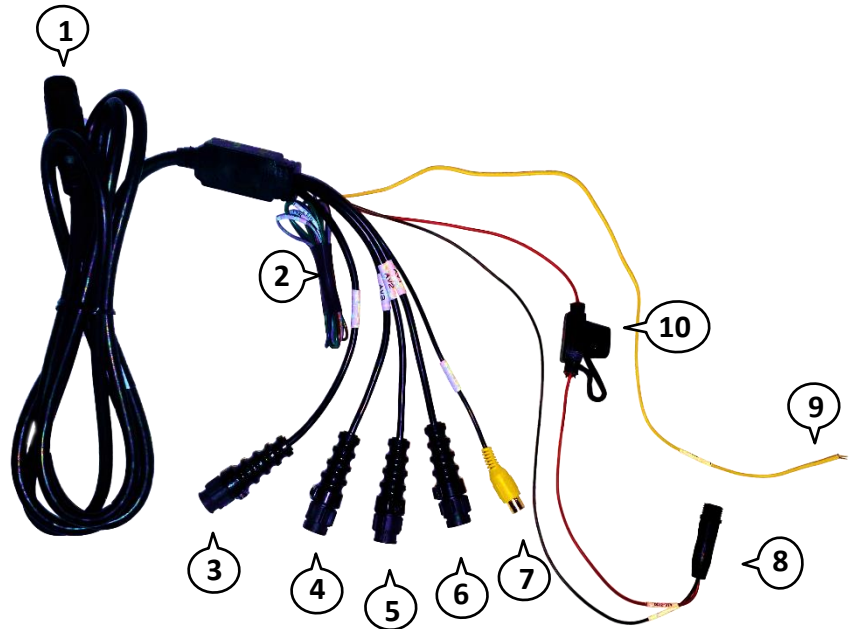
VI. POWER OPTIONS

Note that both the power (red) and ACC (yellow) wires need to be powered for the monitor display to turn on. Depending on your needs, there are a few different ways to power your monitor and/or recordings.

A. Cigarette Adapter – No Recording When Power Off
Note: This scenario does *not* allow the monitor to record once power is shut off or removed.
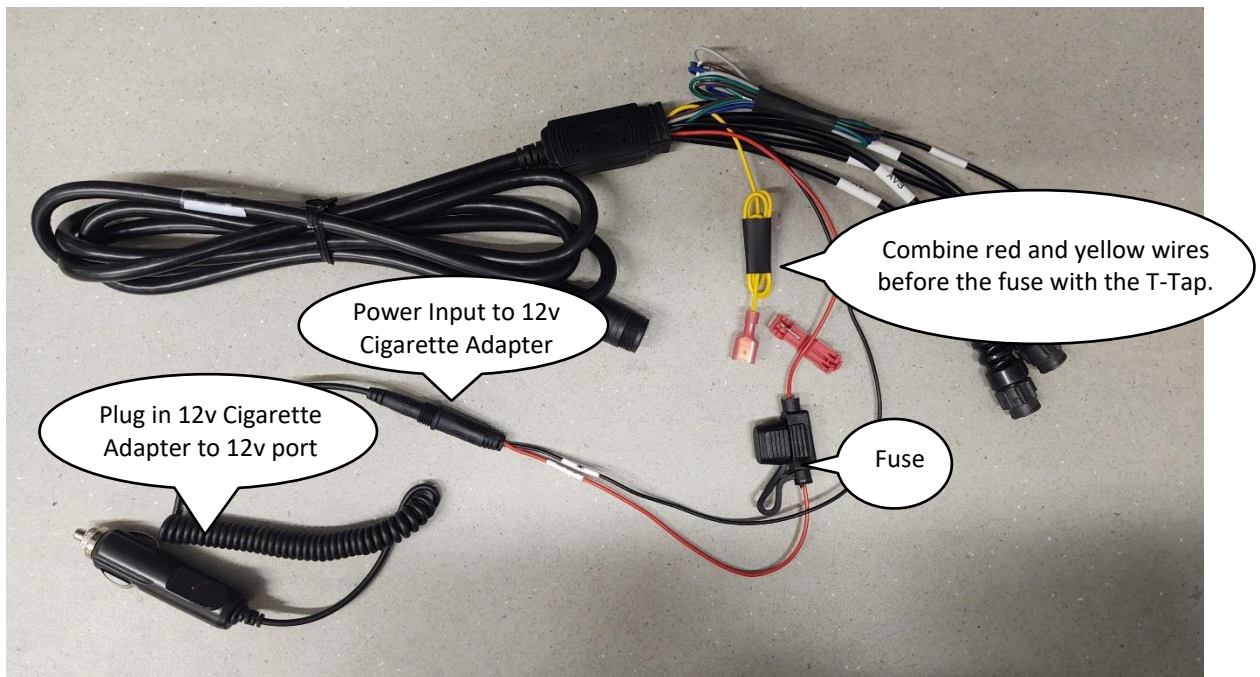
Combine red and yellow wires before the fuse with the T-Tap.

Power Input to 12v Cigarette Adapter

Plug in 12v Cigarette Adapter to 12v port

Fuse

Installation Steps:
1. Connect the power (red) and ACC (yellow) wires together with the provided T-tap. To protect the circuit, combine before the fuse.
2. Plug the 12v Cigarette Adapter into the Power Input.
3. Power the 12v Cigarette Adapter by plugging in to any 12v accessory or port.

B. **Cigarette Adapter – Recording When Ignition Off**
Note: This scenario allows the monitor to record even when the ignition is off. You *must* have the 12v Cigarette Adapter plugged into a port with constant power for this to work.

Installation Steps:
1. Hardwire the ACC (yellow) wire to the vehicle's keyed/switched wire or fuse.
2. Plug the 12v Cigarette Adapter into the Power Input.
3. Power the 12v Cigarette Adapter by plugging in to any 12v accessory or port with constant power. Note: If not plugged in to a port with constant power, the recording feature will not work if the vehicle ignition is turned off.

C. Hardwire Adapter - Constant Power

Note: This scenario allows the monitor to record even when the ignition is off. This installation is best used when you need constant power when a vehicle is off, but do not have a 12v Cigarette Adapter port available to use. Hardware is included.
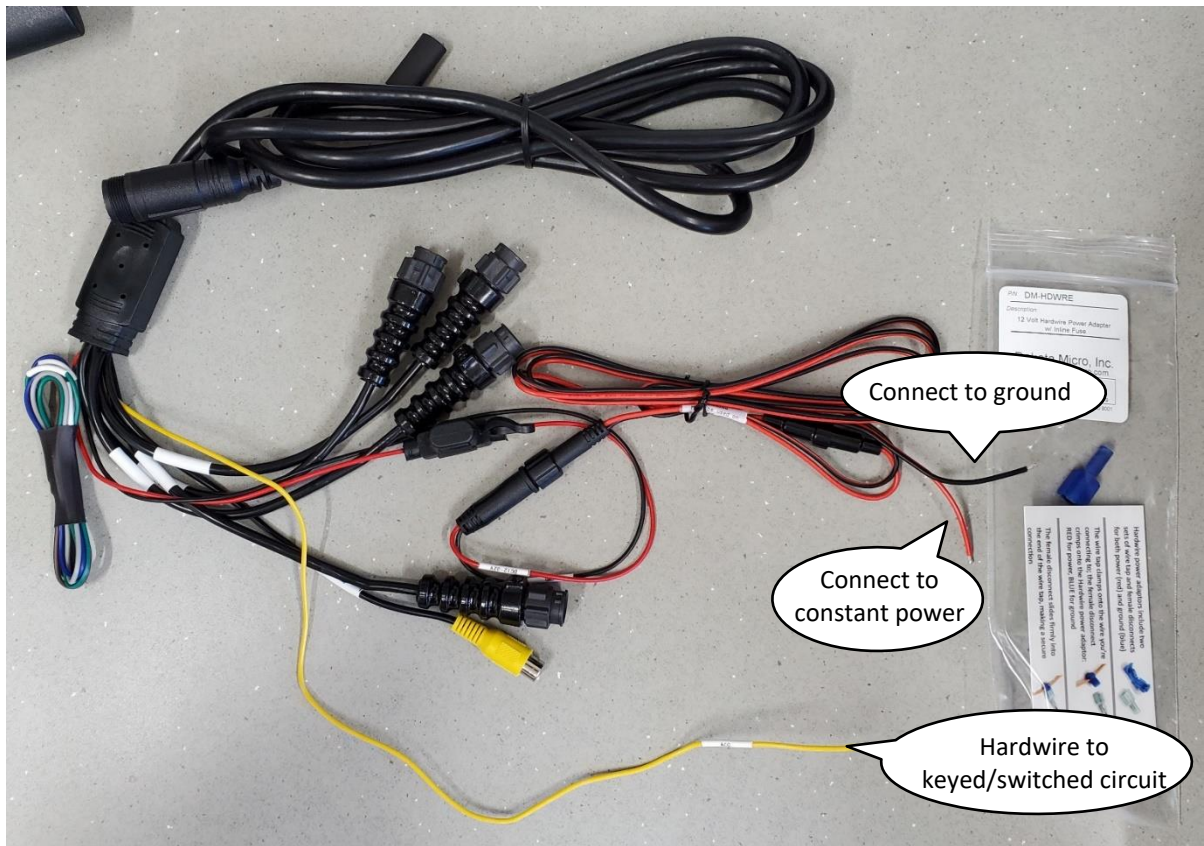
Installation Steps:
1. Hardwire the ACC (yellow) wire to the vehicle's keyed/switched wire or fuse.
2. Hook the power (red) to a constant power circuit.
3. Hook the ground (black) to a proper ground.

D. **Wall Adapter Power – Power Only When Plugged In**
This option allows for all monitor function. If the adapter is removed from the wall power source, the monitor settings will be saved by the internal monitor battery; however, you won't be able to record.

Combine red and yellow wires before the fuse with the T-Tap.

Fuse

Plug DC adapter into wall outlet*
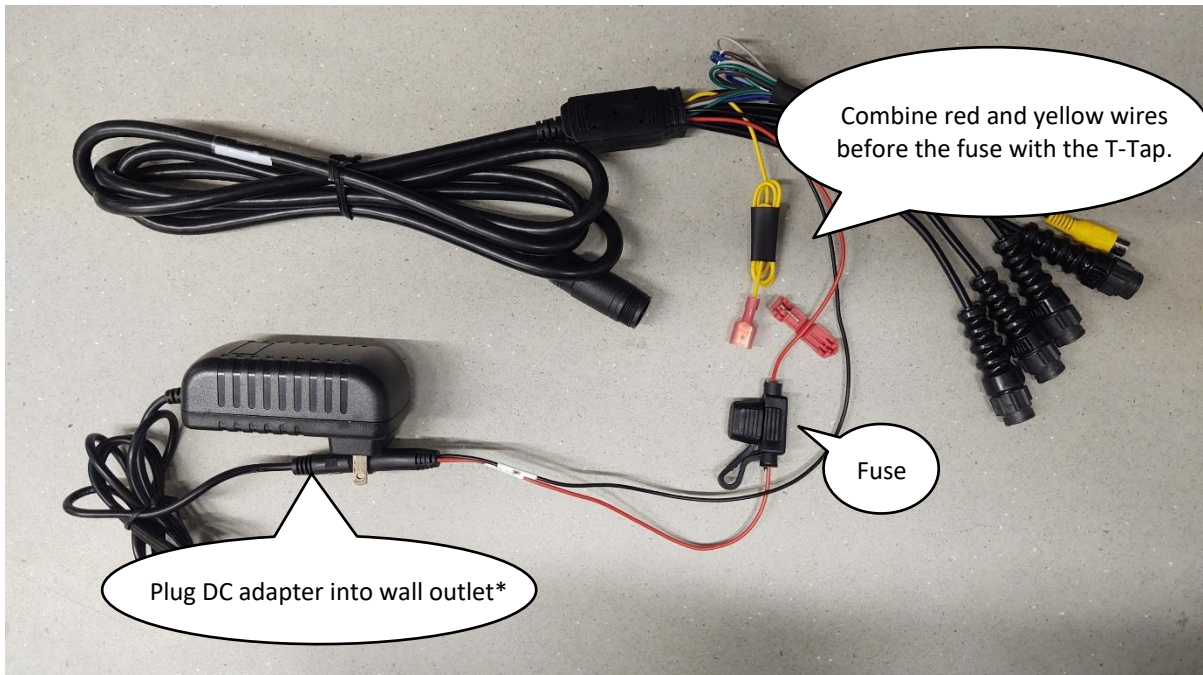
*North American DC Adapter (DM-PA3) not included in kit. Contact dealer to purchase this accessory.
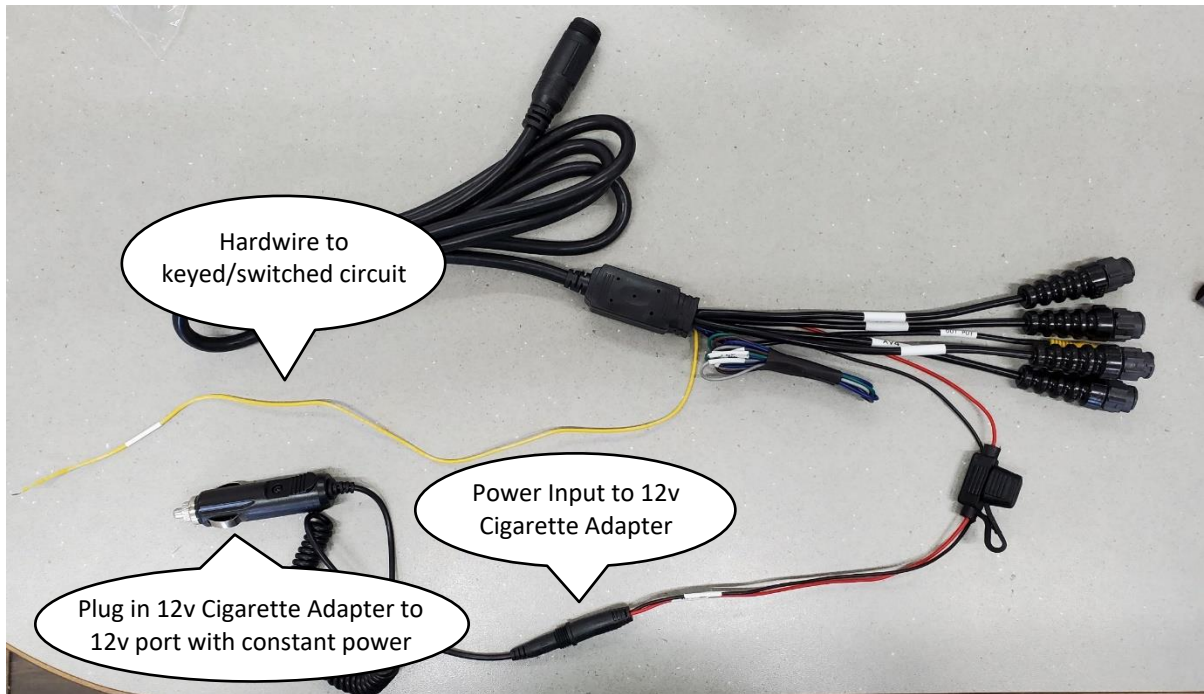
Installation Steps:
1. Connect the power (red) and ACC (yellow) wires together with the provided T-Tap. To protect the circuit, combine before the fuse.
2. Plug the monitor into the wall outlet.

WARNING:

Dakota Micro, Inc. is not responsible for any damages caused to your monitor, or yourself, due to the improper installation, whether it be product sold by DM or product purchased from another source. We recommend contacting a vehicle specialist before completing work yourself.

FUSE REPLACEMENTS
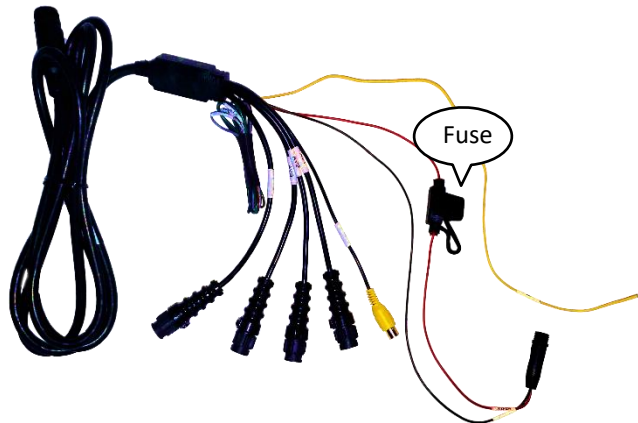
1. There is a small in-line blade fuse located on the red and black power wire of the wiring harness. When replacing this fuse, use a MAX 3amp blade fuse.

2. There is a small glass fuse located on the inside tip of the 12v portion of the power adapter (PN: DM-12v). When replacing this fuse, use a MAX 3amp glass fuse.

VII.   **EVENT TRIGGER WIRE OPERATIONS**

A. **Event Trigger Wire Color Guide**
1. Camera 1 – Gray
2. Camera 2 – Green
3. Camera 3 – Blue
4. Camera 4 – Brown

B. **Event Trigger Wires Explained**

Event trigger wires can be attached to any 12v or 24v positive event. This will cause the monitor to change to that camera, regardless of the state of the monitor (i.e. ON/OFF or channel selection). The most recent event will be the primary display. So, if two (2) video channels (AV1 & AV2) are attached to an event output, the event that happens last will change the monitor to its respective camera view.

The wires can be attached to any positive output 10.5v to 24v switch or supply to cause the monitor to automatically switch the unit to its respective channel camera. *Example:* If you were to attach the AV1 wire to a positive output from an unloading auger on a combine, the monitor would switch from channel 2, 3, or 4 to channel 1 when the auger is extended. The event circuit should be neutral in its normal state and change to HIGH (+12v or 24v) when the event is active.

VIII. **MONITOR & REMOTE OPERATIONS**

1. **Monitor Operations**

1	Headphone Jack	Output for audio (disabled)
2	Full Screen	Will show cameras 1/2/3/4 each time pressed.
3	Duplex / Triplex Screen	Will show different duplex & triplex camera combinations each time pressed
4	Quad Screen	First press will display all four (4) cameras in equally sized boxes (1/4 screen each camera) Second press displays alternative four (4) camera view
5	- Key	To decrease parameter/Up/Down
6	+ Key	To increase parameter/Up/Down
7	MENU	Enables / Disables Menu. Also acts as "enter" key once within menu
8	AV Key	Will show cameras 1/2/3/4 each time pressed/ In MENU acts as ENTER key & Down arrow
9	POWER	Turns monitor ON/OFF.
Port 10 and 11 is located on the back side of the monitor		
10	Battery **(Included)**	Saves settings for DVR function **(Included)**
11	SD Card	Required for onboard recording

2. **Remote Operations**

DVR Remote

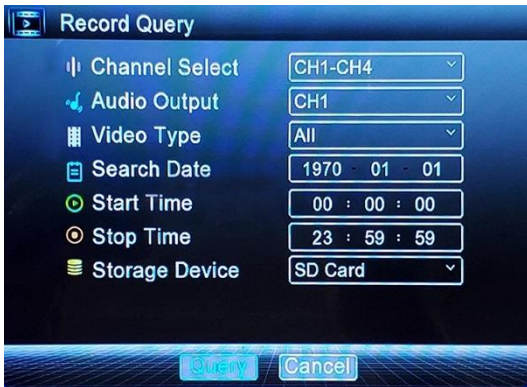|	
	POWER ON (few seconds delay)/OFF
	Switches between video channels
	N/A
	Navigation Arrows
	Navigation Arrows
	Navigation Arrows
	Navigation Arrows
	Fast Forward
	Rewind
	Next File/Skip
	Previous File/Skip
	Acts as "back" button in Menu
	Acts as "enter" button in Menu
	Play/Pause
	Activates Menu
	N/A
	N/A
	N/A

IX. MENU SETTINGS

A. Monitor Menu Settings

1. Press the MENU key on the face of monitor or remote.
2. Use the AV key on the monitor (up and down arrows on remote) to select an item under each section. Selected menu items turn blue.
3. Use MENU key on face of monitor to select menu item (MENU button acts as an ENTER button)
4. AV button moves your cursor down the list of menu items
5. MENU button brings up drop down of sub-menu options
6. AV button allows for selection of sub-menu items
7. To exit: Press AV Button to move cursor to bottom of menu screen. Use + to select CANCEL. Press MENU to select CANCEL option

	MAIN MENU **Playback:** Access to and control of recorded events **Record Set:** Adjusts recording setup **Display:** Adjusts monitor display settings **System:** System Settings including time setup
	RECORD QUERY "Playback" (Memory card must be in place): **Channel Select**: Select cameras (channels) to search **Audio Output:** Not applicable **Video Type:** Choose type of recorded event to search: All, Common Record, Planned Record, Alarm Record, Emergency Record, Snap Picture **Search Date:** Search recordings by date **Start Time:** Search recordings by start time **Stop Time:** Search recordings by stop time **Storage Device:** Search SD Card (no Hard Disk available) Once all selections are made, select "Query." Selecting "Cancel" will exit screen and clear all selections.
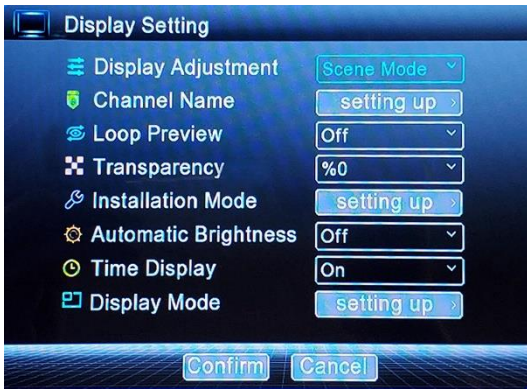
DISPLAY

Display Adjustment:

Scene Mode:	Adjusts look of entire display – standard, highlight, film, brilliance, cool, warm, and custom. Adjustment of brightness, contrast, saturation & hue of chosen scene also available
Screen Margins:	Adjusts image scale, horizontal & vertical placement
Image Adjust:	Allows adjustment of individual cameras – brightness, contrast, saturation, hue

Channel Name:	Individually title cameras
Loop Preview:	Select number of seconds preview recorded video will loop – OFF, 3, 5, 8, 10 or 15 seconds
Transparency:	Adjust transparency of menu display in 10% increments from 0-50%
Installation Mode:	Input default settings when installing new cameras (channels)
Install Select:	Select Mode 1 for regular screen view and Mode 2 to flip screen upside down
Reverse Line:	Choose which cameras you'd like to see reverse guidelines
Reverse Priority:	Pick which camera takes priority when a reverse event is triggered
Automatic Brightness:	Turns auto dimming function ON/OFF
Time Display:	Turns screen time ON/OFF
Display Mode:	Allows adjustment of how cameras are displayed on screen as well as background & border colors
Back Color:	Select Black or Blue for the background color
Border Color:	Choose between White, Red, Green, Yellow or No border color
Display Mode:	Pick the camera display arrangement options available when toggling between layouts

RECORD SET

Channel Select:	Select which camera (channel) is being recorded
Flameout Delay:	Sets delay for monitor to power off after the ACC wire is disconnected (or key is turned off) – 5 or 10 seconds, 3, 10, or 30 minutes 1, 2, 6, or 12 hour increments
Record Time:	Select amount of time to be recorded – 3, 5, 10, 15, 20, or 30 minute segments
Record Mode:	Select record mode – Shutdown, Automatic, Scheduled, Alarm, Auto+Alarm, Plan+Alarm
Image Flip:	Allows adjustment of camera images – Normal, Horizontal, Vertical, HV, Rotate 90, Rotate 270
Anti Collision:	Not applicable
Encode Setting:	Allows adjustments to video settings for each camera (channel)
Channel Select:	Choose which camera (channel) to adjust
Resolution:	Pick between 720P or 1080N resolution for the Main Stream and CIF or D1 for the Sub Stream
Image Quality:	Select Bad, General, Good, or Best quality
Advanced:	Set Frame Rate, Rate Type, Rate, and Frame Interval for Main and Sub-Streams

| | **Print Setting:** | Chose any or all you'd like displayed on recording: Channel Selection, Time Print, Cars Print, Channel Print, Location Print, Speed Print |
| | **Audio:** | Not applicable |

SYSTEM

Language Setting:	Select display language
Power Saving Mode:	Set power saving mode duration – Off, 10 or 30 minutes, 1 or 2 hours
System Time:	Time settings – date, time, time format, daylight savings, proof time, time zone, NTP address, NTP port
Vehicle Information:	Set vehicle info details
User Management:	Manage users and passwords
Storage Management:	Manage SD card storage
Restore Factory:	Restore monitor to factory settings
System Upgrade:	Install firmware updates (SD card would need to be supplied by manufacturer to update; updates generally not needed)
System Information:	System information details

X. **SPECIFICATIONS**

B. LCD Monitor	
Screen Size	16:9 digital panel
Overall Size	9.25in(L)x 6.1in(H)x1.44in(D) 235mm(L)X155mm(H)X36.5mm(D)
Weight	30.4oz (862g)
Power Input	DC 12v-24v
Color System	NTSC/PAL auto switch
ACC Power	Powers on the monitor with key activation
Operating Temp.	-30°F~130°F (-34°C~+54°C)
Brightness	350cd/m^2
Resolution (HxV)	1024(H)x600(V)
Contrast	500:1
Viewing Angle	L/R: 70° Up: 50° Down: 70°
Operating Voltage	Min. 12v (Check monitor label for specific voltage range)
Lighting Source	LED Backlit
Environmental Rating	IP50
Video Output Format	Full/Quad/split/ Auto Switch
Video Output Port	RCAx1 Video Out - Analog (CVBS) ONLY
Video Input Port	X4 AHD video input channels
Removable DVR Memory	Over 7 hours of recording (4 individual cameras) with included 16GB SD Card

XI. <u>WARNINGS</u>

- When selecting a camera system from Dakota Micro, be sure to utilize the appropriate system for your use. AgCam and EnduraCam cameras are designed for high impact, moisture, vibration, and a variety of other rough conditions. OverView cameras and kit components are designed for light use, low vibration, and low moisture. OverView equipment is not warranted when used in situations outside of the above-mentioned parameters. We always request that customers keep in mind that our less expensive OverView product line is cheaper because it does not feature the reliability and durability of our AgCam and EnduraCam lines. The warranty available on these products reflects that durability.

- To avoid electrical shock and maintain optimal functionality, do not open the enclosures. High voltage may be present and there are no user serviceable parts inside. All warranties will be void should any enclosures be tampered with in any way.

- Do not use any harsh chemical solvents, cleaning agents or corrosive detergent to clean away dirt on the surface of the screen or lens.

- On AgCam and EnduraCam products, the photo-chromic camera lenses have been made impact-resistant and have been drop-ball tested according to Sec. 3.84,21 CRF BUT ARE NOT UNBREAKABLE. Because they have been hardened chemically, they show no stress pattern. Inspect your lenses frequently. Chipped or scratched surfaces will reduce protection. Such lenses should be replaced only by the manufacturer.

- Power to cameras is not interrupted by turning off monitor; 12v power source must be terminated when not in use to avoid battery drain. To avoid this problem be sure when hard wiring a unit, use a 5-amp fused circuit.

- Do not use your Dakota Micro camera system for anything other than legal surveillance and observation uses. Dakota Micro, Inc. is not liable for any illegal or nefarious usage.

XII.   **PRODUCT WARRANTY/REPAIR PROCESS**

1. For Technical Support call 1 701-538-4403 OR email techsupport@dakotamicro.com

2. Technician will assist in troubleshooting product malfunction.

3. If product malfunction cannot be remedied and a repair is deemed necessary, Technician will issue a Repair Authorization (RA) number.

IMPORTANT NOTE:

The Technician will note on the RA form if the repair APPEARS to be a warranty or non-warranty issue based on customer description of the issues at hand. No final determination can be made until inspection and testing of the equipment is completed at the factory.

4. To ensure fast and effective repairs, customer is required to send:

   - Dakota Micro Product that Technician has requested/deemed necessary in the proper diagnosis and repair of malfunction. This may include some or all components of the kit.
   - Original/Copy of purchase receipt.
   - For serialized items ONLY, If a copy of the original purchase receipt cannot be provided, then DAKOTA MICRO will use the product manufacture date.
   - Customer information, including return address & phone number. If the phone number is not included, the customer will be sent a letter requesting the needed information.
   - RA Number provided by Dakota Micro Technical Support
   - Shipping and associated costs to ship product to DM factory to be borne by the customer unless otherwise specified.

5. Customer should mail product to:

   Dakota Micro, Inc.

   RA # XXXXX

   8659 148 ½ Ave. SE

   Cayuga, ND 58013

6. Upon receipt and evaluation of product at Dakota Micro Factory, it will be established if the repair is warranty or non-warranty. If requested, customer will be called and notified of any applicable charges.

7. If the repairs are deemed non-warranty and require a service/repair fee of any kind, a credit card number will be requested by Order Processing after the repair is completed.

8. If customer is unable to be contacted over the course of 3 weeks regarding required non-warranty repairs, product will be returned, unrepaired, to the customer.

9. Any product returned without proper documentation may be returned at customer's expense.

10. Product returned with unconfirmed problems will be assessed a $60 evaluation fee per unit

11. Return shipping costs will be borne by the party at fault; in other words, if Dakota Micro determines that the defective product was covered under warranty, Dakota Micro pays the shipping charges. If Dakota Micro determines that it was the customers fault, the customer will pay shipping charges. If a circumstance cannot be determined than the cost of shipping charges will be decided on a discretionary basis depending on the situation at hand.

XIII.   CONSUMER LIMITED WARRANTY

LIMITED WARRANTY

Subject to the disclaimer, limitations and other directions stated hereafter, Dakota Micro, Inc. warrants that the Product will be free from defects in material and workmanship for periods as stated hereafter from the date of original purchase. **THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS. THE EXCLUSIVE REMEDY OF THE BUYER IS LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT. EXCEPT AS STATED IN THIS WARRANTY, DAKOTA MICRO SHALL NOT BE LIABLE FOR ANY LOSS, INCONVENIENCE, OR DAMAGE, INCLUDING DIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER RESULTING FROM BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY OF ANY OTHER LEGAL THEORY**. Any oral statements or representations made by anyone which are contrary to or at variance with the terms stated in this **LIMITED WARRANTY** are void.

Dakota Micro will, at its option, either repair the defect or replace the defective Product or part thereof with a new or remanufactured equivalent at no charge to the purchaser for parts or labor for the period of three (3) years for AgCam® /EnduraCam® and InnoPro® cameras; two (2) years for AgCam®/ EnduraCam® monitors, and Wireless components; Twelve Months (12) for all Overview Cameras & Monitors, cables and all other accessories.

The Dakota Micro limited warranty periods outlined above apply throughout the United States and Canada only. A one (1) year maximum limited warranty for all Products applies to all other geographic locations unless otherwise stated in writing by Dakota Micro.

This limited warranty does not apply to any issues connected with appearance that have no relation to the performance of the Product nor to any Product the exterior of which has been damaged or defaced, which has been subjected to improper voltage or other misuse, abnormal service or handling, or which has been altered or modified in design or construction.

In order to enforce the rights under this limited warranty, the purchaser should follow the steps set forth in the complete Dakota Micro "Warranty & Repair Policy" listed on page 11 - section XVI , and provide proof of purchase to Dakota Micro.

Neither the sales personnel of Dakota Micro nor any dealer or any other person is authorized to make any warranties other than those described herein, or to extend the duration of any warranties beyond the time periods described herein.

The warranties described herein shall be the sole and exclusive warranties and remedies provided by Dakota Micro. Correction of defects, in the manner and for the period of time described herein, shall constitute complete fulfillment of all liabilities and responsibilities of Dakota Micro to the purchaser with respect to the Product, and shall constitute full satisfaction of all claims. In no event shall Dakota Micro be liable or in any way responsible for any damages or defects in the Product which were caused by repairs or attempted repairs performed by anyone other than Dakota Micro.

Some states do not allow the limitation or exclusion of incidental or consequential damages, so said limitation may not apply to you.

Any action at law, suit in equity, or other judicial proceeding for the enforcement of any right provided for herein or otherwise, or with respect to any claim that a purchaser may have against Dakota Micro shall be instituted only in the Courts of the State of North Dakota, either in the state district court located in Wahpeton, North Dakota or in Federal District Court location in Fargo, North Dakota. Without regard to conflicts of law principles, the laws of the state of North Dakota shall govern the interpretation and enforcement of the terms of this Limited Warranty and all aspects of the relationship between Dakota Micro and the purchaser.

This warranty gives you specific legal rights and you may also have other rights, which may vary from state to state.

XIV.   DISCLAIMER

Dakota Micro Inc. products, specifications, pricing and programs are subject to change without prior notice. Dakota Micro Inc. reserves the right to make design changes at any time without obligation to retroactively install them on previously sold units.

XV.   CONTACT US

8659 148 ½ Ave. SE.
Cayuga, ND 58013
Management System Registered to ISO 9001
www.dakotamicro.com