

# ENDURACAM<sup>®</sup>

Ruggedized Rear View and Surveillance Equipment



*Dakota Micro, Inc.*

CAMERAS MADE IN THE U.S.A.  
★ ★ ★



## WHY IS THE ENDURACAM RIGHT FOR ME?

If you're looking for a ruggedized camera system that can withstand anything and everything you can throw at it, then you're in the right place.

The EnduraCam camera system is the most durable, dependable and user friendly camera system available to the industrial, military and public works market today.

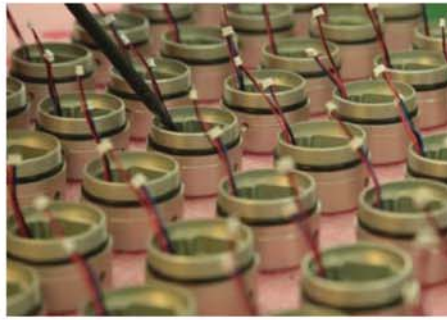
The EnduraCam's sister product, the AgCam, was initially designed for harsh use in the agricultural market, giving the EnduraCam the genetics to give you the quality you have been searching for.

EnduraCam cameras are available with your choice of focal distances and viewing widths, ranging from a 3.6mm lens with a 92° field of view; perfect for a backup or side view camera, up to a 16mm lens, offering a 15° field of view, allowing for excellent viewing in surveillance applications.

When you add in the wide variety of adaptor cables that allow you to hook up to nearly any third party monitor available, the EnduraCam is the right product at the right price.

### See What's Behind You





## WHY DO PEOPLE LOVE ENDURACAM?

The EnduraCam system has been designed and manufactured to give you a product that will last for years, even in the harshest environments. With cameras that are 100% waterproof, 10G shock and vibration certified and feature an unmatched 3 year warranty, there is no better camera for use in even the toughest situations.

With most electronics being imported from overseas, Dakota Micro is proud to manufacture the EnduraCam cameras in North America.



# ENDURACAM LENS SELECTION GUIDE

	3.6MM CAMERA	6MM CAMERA	12MM CAMERA	16MM CAMERA
<b>VIEWING ANGLE</b>	 <p>92°</p>	 <p>53°</p>	 <p>22°</p>	 <p>15°</p>
<b>CAMERA LOCATED 100FT FROM VEHICLE</b>				
<b>CAMERA LOCATED 50FT FROM VEHICLE</b>				
<b>COMMON USES</b>	<ul style="list-style-type: none"> <li>Close monitoring of moving parts</li> <li>Unloading Trucks/ Semi</li> <li>Material Loading &amp; Unloading</li> <li>Machine Hopper</li> <li>Backup Camera</li> </ul>	<ul style="list-style-type: none"> <li>Rear View for Tractor or Truck</li> <li>Monitor Sprayer Booms</li> <li>Large Augers and Conveyors</li> <li>Unloading Spouts</li> <li>Monitor Gauges</li> </ul>	<ul style="list-style-type: none"> <li>Surveillance Inside Buildings</li> <li>Site Security &amp; Surveillance</li> </ul>	<ul style="list-style-type: none"> <li>Monitor Outside Buildings</li> <li>Monitoring Outdoor Traffic</li> </ul>

## CAMERA DETAILS/SPECIFICATIONS

CAMERA WARRANTY	3 YEARS
VIDEO SYSTEM	NTSC (SILVER ANODIZED) / PAL (BLACK ANODIZED)
SHOCK RESISTANCE	10G CERTIFIED
VIBRATION RESISTANCE	10G CERTIFIED
INFRARED CAPABILITY	50+ FEET IN 100% DARKNESS
IR TYPE	900NM HIGH INTENSITY LED'S
92° FIELD OF VIEW	3.6MM LENS
OPTIONAL BACKUP VIEWING ANGLE	53° FOV (6MM LENS)
OPTIONAL NARROW VIEWING ANGLE	22° FOV (12MM LENS) OR 15° FOV (16MM LENS)
COUNTRY OF MANUFACTURE	USA
IMAGE PICK-UP DEVICE	SONY 1/3" SUPER HAD CCD SENSOR
HORIZONTAL RESOLUTION	540 HORIZONTAL LINES
MINIMUM ILLUMINATION	0 LUX @ F2.0
OPERATING TEMPERATURE	-45°F - 150°F (-42°C - 66°C)
OUTER CONSTRUCTION	8018 ALUMINUM BILLET
OUTER FINISH	TYPE 2 HARD ANODIZED
CAMERA LENS	TRIPLE HARDENED GLASS
WATERPROOFING CRITERIA	IP 69 (WATERPROOF TO HIGH PRESSURE DIRECT SPRAY)
BODY DIMENSIONS	53 (W) X 58 (L) MM (BODY ONLY)
INTERNAL REINFORCEMENT	POTTED CIRCUIT BOARD WITH SILICONE SECURED LED ARRAY



## 9" ENDURACAM KITS

EnduraCam 9 inch monitors are available with or without a built in quad processor. 9 inch EnduraCam monitors with a built in quad processor allows for viewing of 4 cameras simultaneously. All monitors include individual camera triggers, allowing users to activate cameras with a pre-determined event, like backing up.

### ENDURACAM 9 INCH MONITOR KIT

**PN: DMEC-9M**

- Qty. 1 - 9in LED Backlit Monitor w/ 4 Camera Inputs
- Qty. 1 - Monitor Remote Control (DMAC-REMOTE)
- Qty. 1 - 9in Monitor Stand (DMAC-9M BRACKET)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)



### ENDURACAM 9 INCH QUAD MONITOR KIT

**PN: DMEC-9MQ**

- Qty. 1 - 9in LED Backlit Quad Monitor w/ 4 Camera Inputs
- Qty. 1 - Monitor Remote Control (DMAC-REMOTE)
- Qty. 1 - 9in Monitor Stand (DMAC-9M BRACKET)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)



### ENDURACAM 9 INCH SINGLE CAMERA KIT

**PN: DMEC-9M-C1**

- Qty. 1 - 9in LED Backlit Monitor - Stand & Remote
- Qty. 1 - 3.6mm EnduraCam Camera (DMEC-RC)
- Qty. 1 - 20ft Cable w/ Watertight Connectors (DMAC-EC20)
- Qty. 1 - 60ft Cable w/ Watertight Connectors (DMAC-EC60)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)





## ENDURACAM 9 INCH DOUBLE CAMERA KIT

**PN: DMEC-9M-C2**

- Qty. 1 - 9in LED Backlit Monitor w/ Stand & Remote
- Qty. 2 - 3.6mm EnduraCam Camera (DMEC-RC)
- Qty. 2 - 20ft Cable w/ Watertight Connectors (DMAC-EC20)
- Qty. 2 - 60ft Cable w/ Watertight Connectors (DMAC-EC60)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)



## ENDURACAM 9 INCH QUAD DOUBLE CAMERA KIT

**PN: DMEC-9MQ-C2**

- Qty. 1 - 9in LED Backlit Monitor - Stand & Remote
- Qty. 2 - 3.6mm EnduraCam Camera (DMEC-RC)
- Qty. 2 - 20ft Cable w/ Watertight Connectors (DMAC-EC20)
- Qty. 2 - 60ft Cable w/ Watertight Connectors (DMAC-EC60)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12v)
- Qty. 1 - AC Power Adaptor (DMAC-PA)



## ENDURACAM CAMERA & CABLE KITS

Kits include 1 camera, 1 Camera Mounting Bracket w/ Magnetic Base Kit, (1) 36in Camera Pigtail, (1) 20ft Power/Video Extension Cable, (1) 60ft Power/Video Extension Cable

- PN: DMEC-C1 Kit Includes a 3.6mm Camera - 92° FOV
- PN: DMEC-C1-6 Kit Includes a 6mm Camera - 53° FOV
- PN: DMEC-C1-12 Kit Includes a 12mm Camera - 22° FOV
- PN: DMEC-C1-16 Kit Includes a 16mm Camera - 15° FOV



## 7 INCH ENDURACAM KITS

EnduraCam monitors are also available in a more compact 7 inch size. All monitors include individual camera triggers, allowing users to activate cameras with a pre-determined event, like backing up.



### ENDURACAM 7 INCH MONITOR KIT

**PN: DMEC-7M**

- Qty. 1 - 7in LED Backlit Monitor w/ 4 Camera Inputs & Sunshield
- Qty. 1 - Monitor Remote Control (DMAC-REMOTE)
- Qty. 1 - Monitor Stand (DMAC-7M BRACKET)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)

### ENDURACAM 7 INCH SINGLE CAMERA KIT

**PN: DMEC-7M-C1**

- Qty. 1 - 7in LED Backlit Monitor w/ Stand & Remote
- Qty. 1 - EnduraCam Camera w/ Magnetic & Hard Mount (DMEC-RC)
- Qty. 1 - 20ft Cable w/ Watertight Connectors (DMAC-EC20)
- Qty. 1 - 60ft Cable w/ Watertight Connectors (DMEC-EC60)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)



### ENDURACAM 7 INCH DOUBLE CAMERA KIT

**PN: DMEC-7M-C2**

- Qty. 1 - 7in LCD Display Monitor w/stand & Remote
- Qty. 2 - 3.6mm EnduraCam Cameras (DMEC-RC)
- Qty. 2 - 20ft Cables w/Watertight Connectors (DMAC-EC20)
- Qty. 2 - 60ft Cables w/Watertight Connectors (DMAC-EC60)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)





## PAL CAMERA KITS

EnduraCam cameras are also available in PAL format. PAL EnduraCam cameras are available individually, or as a kit with power/video extension cables.



### ENDURACAM PAL 3.6MM CAMERAS

#### *PN: DMEC-RC-PAL*

Qty. 1 - EnduraCam PAL 3.6mm Camera (DMEC-RC-PAL)

Qty. 1 - Camera Mounting Bracket w/ Magnetic Base Kit (DMAC-CBM)

Qty. 1 - 36in Camera Pigtail (DMAC-CT)

### ENDURACAM PAL CAMERA 3.6MM W/ CABLES

#### *DMEC-C1-PAL*

Qty. 1 - EnduraCam PAL 3.6mm Camera (DMEC-RC-PAL)

Qty. 1 - Camera Mounting Bracket w/ Magnetic Base (DMAC-CBM)

Qty. 1 - 36in Camera Pigtail (DMAC-CT)

Qty. 1 - 20ft Power/Video Extension Cable (DMAC-EC20)

Qty. 1 - 60ft Power/Video Extension Cable (DMAC-EC60)

## WHAT IS THE DIFFERENCE BETWEEN NTSC AND PAL?

NTSC and PAL are two types of color encoding systems. NTSC delivers a frame rate of 30 frames per second (fps) at an aspect ratio of 720x480. PAL utilizes a frame rate of 25 fps and an aspect ratio of 720x576.

NTSC video standard is popular in North America and Japan, while PAL format is more common in countries such as the UK, Australia and Sweden.

## WHAT IS THE BEST RESOLUTION FOR AN ANALOG CAMERA?

The maximum possible resolution over analog composite video is 720x480 for NTSC and 720x576 for PAL. Any additional resolution above that means that information has to be "removed" in order to send it to the receiving monitor. While many modern analog cameras boast frame rates of 700 or 800 lines of resolution, in reality, anything over 480 lines is removed before it reaches the screen and gives you no added visual benefit.

## ENDURACAM ACCESSORIES

The EnduraCam camera line also offers a wide variety of accessories giving you many new options such as the ability to record, all the way to making your camera feed wireless.



### DIGITAL VIDEO RECORDER

#### PN: DMAC-1DVR

- Qty. 1 - Digital Video Recorder
- Qty. 1 - USB SD Card Reader
- Qty. 2 - RCA Adaptor
- Qty. 1 - 12V & 2000 mA A/C power adaptors
- Qty. 2 - BNC to RCA Adaptors
- Qty. 1 - Television Adaptor

### FULL COLOR QUAD PROCESSOR

#### PN: DMAC-Q

- Qty. 1 - Quad Processor
- Qty. 1 - Quad Power Harness (DMAC-QPH)
- Qty. 1 - Quad Video Input Harness (DMAC-QWH)
- Qty. 1 - Remote Location Control Box (DMAC-Q-RCB)
- Qty. 1 - 12V Power (Cigarette Lighter) (DMAC-12V)
- Qty. 1 - A/C Power Adaptor (DMAC-PA)

### ADAPTOR CABLES

OVERVIEW CAMERA TO ENDURACAM MONITOR ADAPTOR  
DMAC-OVC

OVERVIEW MONITOR TO ENDURACAM CAMERA ADAPTOR  
DMAC-OVM

CAT SINGLE CAMERA ADAPTOR  
DMAC-CAT1

CAT5 TO ENDURACAM CAMERA ADAPTOR  
DMAC-B024-F

BNC TO CAT5 ADAPTOR  
DMAC-B024  
DMAC-B022 (W/ DATA)

BNC FEMALE VIDEO ADAPTOR  
DMAC-SCA

ENDURACAM TO TELEVISION ADAPTOR  
DMAC-TVA

CAT5 TO ENDURACAM MONITOR ADAPTOR  
DMAC-B024-M

BNC MALE SINGLE CAMERA ADAPTOR  
DMAC-DVR-P

BNC FEMALE VIDEO ADAPTOR W/ SEPERATE POWER  
DMAC-SSA

TRAILER CONNECTION KIT  
DMAC-TCK

MALE BNC TO FEMALE RCA ADAPTOR  
DMAC-BNC-RCA

A/V ADAPTOR ENDURACAM MALE TO RCA MALE  
DMAC-AV-M

A/V ADAPTOR ENDURACAM FEMALE TO RCA MALE  
DMAC-AV-F

ENDURACAM TO FENDT SINGLE CAMERA ADAPTOR  
AC-FDT01

ENDURACAM TO AGCO C2000 MONITOR  
AC-A2C

ENDURACAM TO AGCO GTA MONITOR  
AC-GTA

## STANDARD WIRELESS PAIR

### FEATURES:

- Allows for easy wireless upgrade to your EnduraCam system.
- Your receiver is conveniently powered from your EnduraCam monitor for mobile applications.
- Easy access RCA output jacks enable you to directly view the image on your own television.
- You can have as many as 4 cameras, each on their own wireless channel (ch. 1 - 4), available to view.
- All transmitters & receivers available individually.
- Optional antennas allow you to view cameras up to 3+ miles away (with line of sight).
- Transmits on powerful and reliable 2.4 GHz bandwidth.
- Fully FCC Certified.

### PN: DMAC-RHPAIR

Qty. 1 - Wireless Transmitter, 4-channel (DMAC-RHTX)

Qty. 1 - Wireless Receiver, 4-channel (DMAC-RHRX)

Qty. 2 - 3dBi Antenna (Transmission up to 2,000ft)

Qty. 1 - 12V Power (cigarette lighter) (DMAC-12V)

Qty. 2 - A/C Power Adaptor For TX (DMAC-PA)

Qty. 2 - RCA Adaptors



### SPECIFICATIONS:

<b>Channels</b>	Transmitter & Receiver - 4 Selectable Channels
<b>CH1 Frequency</b>	2.411 GHz
<b>CH2 Frequency</b>	2.431 GHz
<b>CH3 Frequency</b>	2.451 GHz
<b>CH4 Frequency</b>	2.471 GHz
<b>Video In/Out</b>	1Vp-p (NTSC/PAL)
<b>Audio In/Out</b>	600 ohms (NTSC) / 10K ohms (PAL) - EnduraCam cameras no audio capable
<b>A/V Connections</b>	A/V Jack-RCA to RCA line jacks OR EnduraCam plug
<b>Antenna</b>	Detachable dipole antenna (optional larger antennas available)
<b>Operating Voltages</b>	DV 9V-12V/1500mA power adaptor
<b>Temperature Limit</b>	Not to Exceed 120°F
<b>Calculated RF Exposure</b>	0.71 [at d=cm (mW/cm <sup>2</sup> )]



## WIRELESS RECEIVER

**PN: DMAC-RHRX**

- Qty. 1 - Wireless Receiver, 4-channel
- Qty. 1 - 3dBi Antenna (Transmission up to 2,000ft)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)
- Qty. 1 - RCA Adaptor



## EASY SWITCH RECEIVER

**PN: DMAC-RHES**

- Qty. 1 - Ranch Hand Easy Switch Receiver
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)
- Qty. 1 - 3dBi Replaceable Antenna
- Qty. 1 - Audio/Video Output Adaptor



## WIRELESS TRANSMITTER

**PN: DMAC-RHTX**

- Qty. 1 - Wireless Transmitter, 4-channel
- Qty. 1 - 3dBi Antenna (Transmission up to 2,000ft)
- Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 1 - AC Power Adaptor (DMAC-PA)
- Qty. 1 - RCA Adaptor



## WIRELESS PAIR W/ WATERPROOF TRANSMITTER

**PN: DMAC-RHWP PAIR**

- Qty. 1 - Waterproof Wireless Transmitter, 4-channel
- Qty. 1 - Standard Wireless Receiver, 4-channel
- Qty. 2 - 3dBi Antenna (Transmission up to 2,000ft)
- Qty. 2 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)
- Qty. 2 - 2000mA A/C Power Adaptor (not pictured) (DMAC-PA)
- Qty. 1 - RCA Adaptor

## WATERPROOF TRANSMITTER

**PN: DMAC-RHWP TX**

Qty. 1 - Waterproof Wireless Transmitter, 4-channel

Qty. 1 - 3dBi Antenna (Transmission up to 2,000ft)

Qty. 1 - 12V Cigarette Lighter Power Adaptor (DMAC-12V)

Qty. 1 - AC Power Adaptor (DMAC-PA)



## 8DBI OMNI-DIRECTIONAL ANTENNA

**PN: DMAC-WA8**

Qty. 1 - 8dBi Omni-Directional Antenna with Bracket

Qty. 1 - 20ft Antenna Cable (DMAC-AC20)

### SPECIFICATIONS:

Connector	Reverse SMA to N
Frequency Range	2.4 GHz
Mounting Type	Bracket
Cord Length	20ft
Antenna Length	17in
Transmission Distance	2+ miles w/ line of sight



## 8DBI DIRECTIONAL ANTENNA

**PN: DMAC-WA8P**

Qty. 1 - 8dBi Directional Antenna with Bracket

Qty. 1 - 20ft Antenna Cable (PN: DMAC-AC20)

### SPECIFICATIONS:

Connector	Reverse SMA to N
Frequency	2.4 GHz
Mounting Type	Wall mount Bracket
Cord Length	20ft
Antenna Dimensions	7in(W) x 8in(H) x 1 3/4in(D)
Transmission Distance	3+ miles w/ line of sight



## 5DBI OMNI-DIRECTIONAL ANTENNA

**PN: DMAC-WA5**

Qty. 1 - Whip Style 5dBi Antenna

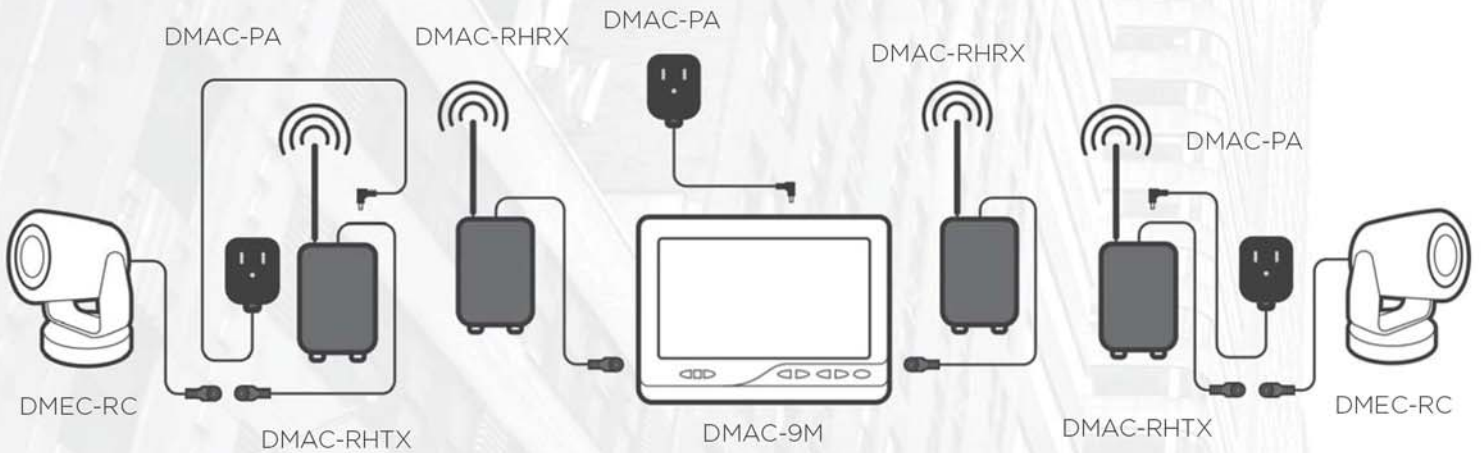
Qty. 1 - Attached 6ft Extension Cord (permanent)

Qty. 1 - Attached Magnet Mounting Base (permanent)

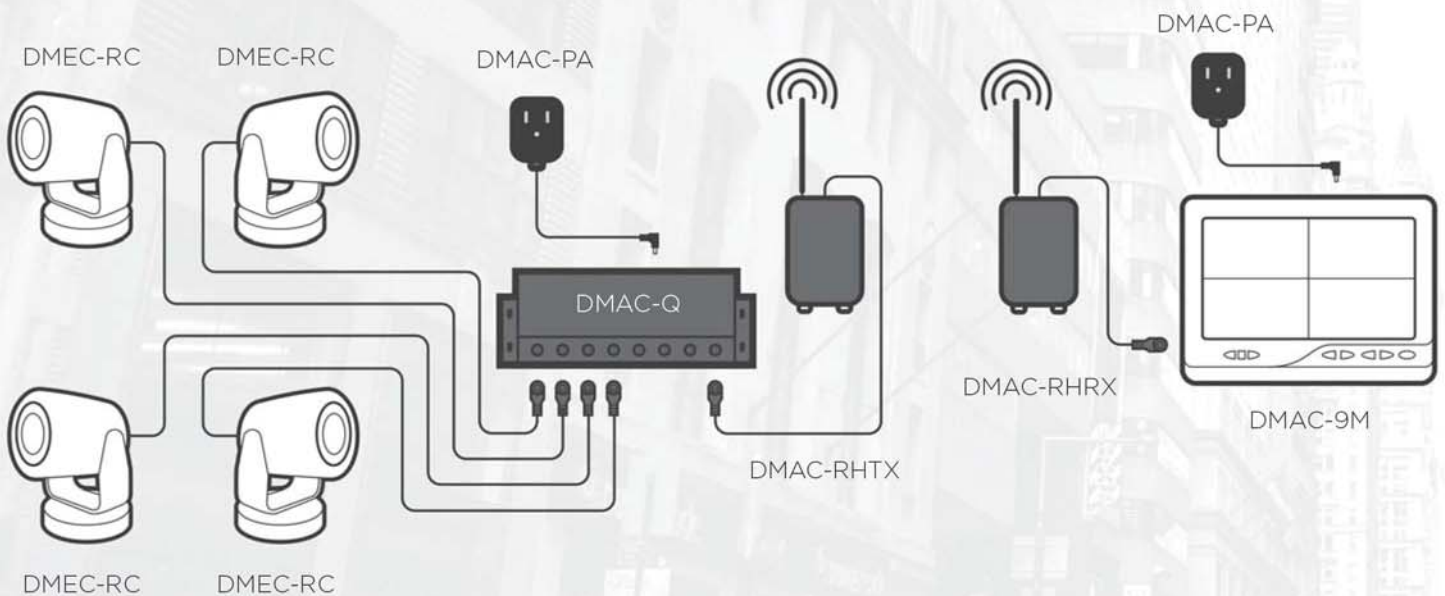


## WIRELESS CONNECTION DIAGRAMS

**Two Camera Wireless Diagram:** Transmit individual camera signals from different locations to matched receivers.



**Four Camera Wireless Diagram:** Transmit 4 combined camera signals from a single transmission point to a single receiver.



## ENDURACAM ACCESSORIES

### MISCELLANEOUS ENDURACAM ACCESSORIES

- PANAUISE SUCTION CUP MONITOR MOUNT (UNIVERSAL)  
DMAC-PV-SM
- PANAUISE SCREW DOWN MONITOR MOUNT (UNIVERSAL)  
DMAC-PV-PM
- ENDURACAM CAMERA TAIL - 90 DEGREE ANGLE  
DMAC-CT-ANGLED
- MULTI POWER SPLITTER, 4-WAY  
DMAC-MP4
- DUST CAP FOR FEMALE ENDURACAM CONNECTOR  
DMAC-SWCAP
- 6FT THRU TANK/CAB ADAPTOR  
DMAC-ACA6
- 1FT THRU TANK/CAB ADAPTOR  
DMAC ACA1
- ENDURACAM EXTENSION CABLES  
DMAC-EC10 (10' LENGTH)  
DMAC-EC20 (20' LENGTH)  
DMAC-EC30 (30' LENGTH)  
DMAC-EC40 (40' LENGTH)  
DMAC-EC50 (50' LENGTH)  
DMAC-EC60 (60' LENGTH)  
DMAC-EC80 (80' LENGTH)

### ENDURACAM REPLACEMENT COMPONENTS

- U-BRACKET MOUNT FOR 7 INCH ENDURACAM MONITOR  
DMAC-7M Bracket
- U-BRACKET MOUNT FOR 9 INCH ENDURACAM MONITOR  
DMAC-9M Bracket
- ENDURACAM CAMERA 65LB MOUNTING MAGNET  
DMAC-CM
- ENDURACAM CAMERA MOUNTING BRACKET  
DMAC-CB
- ENDURACAM CAMERA MOUNTING BRACKET W/ MAGNET SET  
DMAC-CBM
- REPLACEMENT MONITOR WIRE HARNESS  
DMAC-MWH
- REPLACEMENT QUAD WIRE HARNESS (VIDEO INPUTS)  
DMAC-QWH
- REPLACEMENT QUAD POWER HARNESS  
DMAC-QPH
- ENDURACAM MONITOR REMOTE REPLACEMENT (SERIAL # REQ)  
DMAC-REMOTE-\_\_\_
- ENDURACAM CAMERA TAIL - STRAIGHT (STANDARD)  
DMAC-CT
- REPLACEMENT 20FT ANTENNA CABLE (8DBI ANTENNAS)  
DMAC-AC20
- ANTENNA EXTENSION CABLE  
DMAC-AEC20

### ENDURACAM POWER ACCESSORIES

- 2000MA A/C POWER ADAPTOR  
DMAC-PA
- 2000MA A/C POWER ADAPTOR AUSTRALIAN  
DMAC-AUPA
- 2000MA A/C POWER ADAPTOR EUROPEAN  
DMAC-EUPA
- 2000MA A/C POWER ADAPTOR UK  
DMAC-UKPA
- 12V CIGARETTE LIGHTER POWER ADAPTOR  
DMAC-12V
- 12V HARDWIRE POWER ADAPTOR  
DMAC-HARDWIRE

**Can We  
Break It?**

Since we here at Dakota Micro, Inc. claim to build the toughest camera around, we feel it's our responsibility to test it appropriately. Our methods may not always be orthodox, or come with pedigreed certification (we have them too, but they're BORING!), but they are usually interesting, sometimes comical, and always answer our burning question... Can We Break it™?

Take a look, be entertained and realize that you simply cannot live without one of these cool cameras...and it's built here in the USA.

CanWeBreakIt™ is brought to you by Dakota Micro, Inc. Proudly bringing you products with more reliability, more capability and more profitability.

[WWW.CANWEBREAKIT.COM](http://WWW.CANWEBREAKIT.COM)



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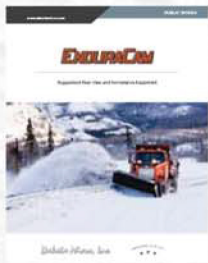
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