

# **Operation Guide**

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2.4GHz Wireless  
Back-up Camera System with  
Color LCD Monitor Series  
Model:ARV35SYS

## CONTENTS

Foreword .....	1
Packing List .....	1
Structure .....	2
Installation .....	3
FCC Information .....	11
Specifications .....	12

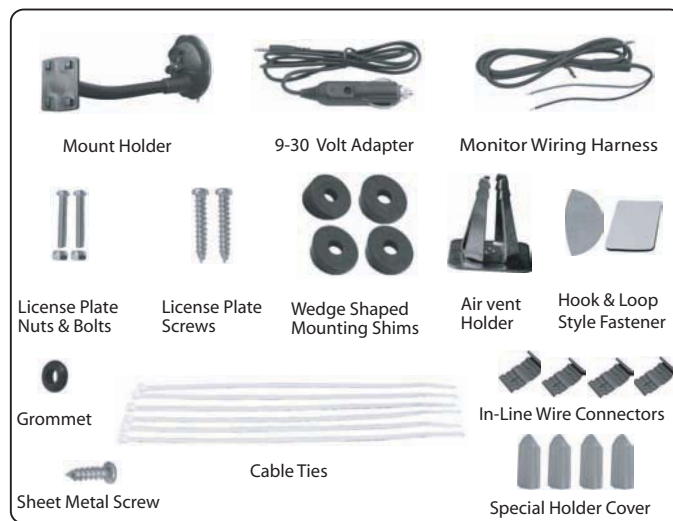
## FOREWORD

CONGRATULATIONS. The Wireless Reversing Camera, when used as described, will give you years of dependable service in your car, truck, RV, or mini-van. We have taken numerous measures in quality control to ensure that your product arrives in top condition, and will perform to your satisfaction.

## PACKINGLIST

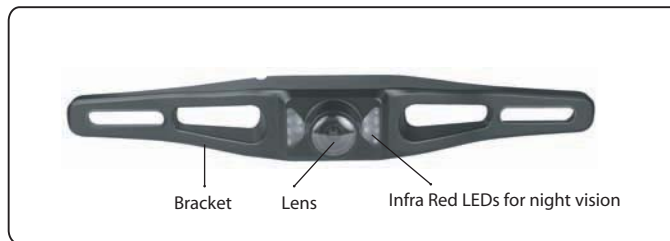


### Accessories

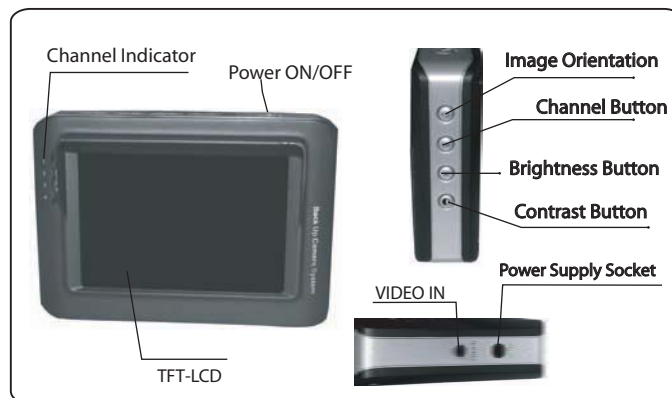


## STRUCTURE

### LICENCE PLATE MOUNTED REVERSING CAMERA



### TFT-LCD MONITOR



## INSTALLATION

These installation instructions do not apply to all vehicles. They are meant as only as a general guide due to the large number of vehicle makes & models. For vehicle specific questions, contact your vehicle's manufacturer.

Consult your local motor vehicle laws on the use of this product.

### MONITOR INSTALLATION

When choosing a location to mount the monitor, be sure the monitor is on a smooth, flat, level area that will not obstruct your vision while driving, or otherwise interfere with the safe operation of the vehicle.

There are two ways to install the monitor. The first one is the air vent holder, the second one is the suction holder, the third one is the universal holder.

1. Using the special holder to install the monitor.(Fig.1)

Special holder is plugged into the window of car air vent



Fig.1

2. Using the suction mount holder to install the monitor.(Fig.2)

Mount holder is stamped on the front window glass



Fig.2

### 3.1 Choose a Location and Power Cable

3.1.1 Temporarily place the monitor stand in the location that you have chosen.

3.1.2 If you are using the supplied Monitor Wiring Harness, route the power cable to the vehicle's fuse box.

If you are using the 9-30V adapter, route the power cable to the vehicle's cigarette lighter socket/9-30V power outlet.

The cable must not interfere with the safe operation of the vehicle.



Monitor with the 9-30 Volt Cigarette lighter Adapter

### 3.2 Mounting the Monitor

Before permanently mounting the monitor, clean the mounting area well with isopropyl alcohol, then dry thoroughly.

3.2.1 With the two pieces of the round fastener attached to each other, peel the backing plastic from bottom the round shaped Hook & Loop fastener. (Fig. 1)



Fig. 1

3.2.2 Next attach on the glass of car with the bottom of the bracket and press firmly to adhere. (Fig. 2)



Fig. 2

3.2.3 Switch the hook fastener and press it to fix the bracket firmly. (Fig.3)



Fig.3

3.2.4 Then fasten the back of the monitor with top of the bracket (reaches maximum strength in 24 hours). Moving the fastener from its original position will weaken the adhesive and may damage the mounting surface. (Fig.4)



Fig.4

To maximize the effectiveness of the Hook & Loop fastener, it is recommended that the application be performed under the following conditions:

Surface temperature should be between 21 C and 38 C(70F and 100F)

Application below 10C(50F) should be avoided.

Application should not occur in direct sunlight.

Mounting should be protected from exposure to direct sunlight for a period of 24 hours.

**UNDER EXTREMELY BRIGHT LIGHTING CONDITIONS, THE IMAGE ON THE MONITOR MAY TAKE A FEW SECONDS TO BECOME STABLE. PLEASE WAIT UNTIL THE IMAGE HAS STABILIZED BEFORE BACKING UP.**

## MONITOR POWER CONNECTION

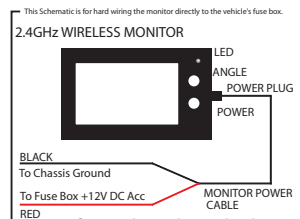
There are two ways to supply the monitor with power, one uses a 9-30 Volt cigarette lighter adapter plugged into the vehicle's cigarette lighter socket, and the other uses a wiring harness hard wired to the vehicle's box.

### 9-30 Volt Cigarette Lighter Adapter Using the Monitor' ON/OFF Button

1. Plug the end of the power cable into the monitor.
2. Plug the 9-30V cigarette lighter adapter into the cigarette lighter socket.
3. Press the ON/OFF button to turn the monitor ON and OFF.

### Hard Wired to Fuse Box Using the Monitor's ON/OFF Switch(Fig. 1)

1. Disconnect the negative battery cable from the vehicle's negative battery terminal.
2. Connect the Red wire to the 9-30 Volt +/-ACC terminal in the vehicle's fuse box. See vehicle's owner's manual for fuse box diagram.
3. The ground cable must be located on an area of metal on the vehicle's body/firewall that does not have any vehicle components behind it. Sand off any paint to reveal bare metal, this area will be your chassis ground.
4. Drill a hole for the supplied self tapping sheet metal screw. Make sure there are no vehicle components behind where you are drilling the hole.
5. Strip the insulation from the end of the black wire 1.3cm and wrap the wire around the self-tapping sheet metal screw before tightening.
6. Re-connect the negative battery cable.
7. Plug the power cord into the monitor, use the ON/OFF button to turn the monitor ON & OFF.





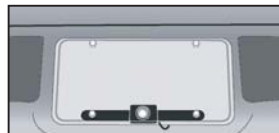
## CAMERA INSTALLATION

You may mount the camera using the license plate's top or bottom mounting bolts or screws. When mounting the camera you must make sure that its field of view is not obstructed. To adjust the angle of the camera, use the supplied wedge shaped shims.

1. Loosen the license plate bolts/screws, then remove the rear license plate.
2. Insert each license plate bolt into a supplied wedge, then through the bolt holes of the camera, then through the remaining wedges and the license plate. (Fig.1)
3. Align with holes on vehicle and temporarily tighten the license plate bolts/screws. The wedges will angle the camera down.



Fig. 1



4. You will need to choose a route for the camera's power cable through the vehicle's body to the reverse light circuit. (Fig. 2)

5. Some vehicle's may have a hole available to pass the wire through, (Fig. 3) such as where the license plate light is mounted, or you can drill a hole close to where the power cable is attached to the camera. (Fig. 4) Once you have chosen where the cable will enter the vehicle's body, remove the camera. If you are able to use an existing opening, skip the next two steps.

Using an Existing  
Opening for Access



Fig. 3

Drilling an Access Hole



Fig. 4

6. If you are going to drill a hole, choose a location as close to the camera where the power cable comes out of it. **BEFORE YOU DRILL A HOLE YOU MUST CHECK**

AND SEE WHAT IS BEHIND WHERE YOU ARE DRILLING. If there are any vehicles components, such as electrical parts or fuel system components behind where you are drilling, you must take whatever precaution is necessary not to damage them. Remove the license plate and camera before drilling.

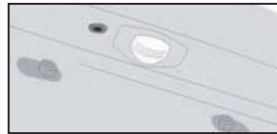


Fig. 5

7. After you have drilled a hole, insert the supplied grommet (Fig. 5), then pass the power cable through the grommet into the vehicle (Fig. 6). You must use the grommet to prevent the metal edge of the hole from cutting the power cable.



Fig. 6

8. Next you'll need to find the vehicle's reverse lights. Turn the vehicle's reverse lights. Turn the vehicle's ignition key to the accessory position, engage the parking brake and put the car in reverse. Look at the vehicle's tail lights to see where the reverse lights are located, they are the white lights.



Fig. 7

To locate the reverse light's 9-30V+ wire it will be necessary to gain access to the rear of the vehicle's tail light.

For help locating the vehicle's reverse light circuit contact your vehicle's manufacturer for vehicle specific wiring diagrams.

9. Once you have located the reverse light circuit you will have to route the camera's power cable to that location. You must securely fasten the power cable to prevent it from being caught on any vehicle component such as the trunk hinge (Fig. 7). Never route the cable on the outside of the vehicle.

10. The reverse light sockets on most vehicles have two wires connected to them. Usually the negative wire is black and the positive wire is a

colored wire. If you are uncertain about the wiring, you can use a 9-30 volt test light available at most auto parts stores to determine which is the positive wire.

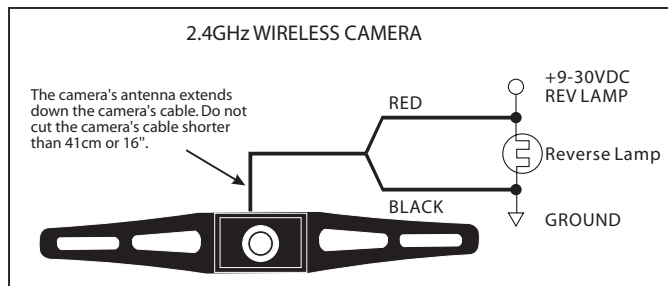
- a. Remove the reverse light socket from its housing, then remove the bulb from the socket.
- b. Engage the parking brake, turn the ignition key to the ON position, but do not start the vehicle. Put the gear shift in the reverse position.
- c. Attach the ground wire of the test light to the vehicle ground, then touch one of the socket's contacts with the positive lead.
- d. If the test light lights up, then the wire corresponding to that contact is the positive wire. If it doesn't light up the opposite wire is the positive wire.

Follow the manufacturer's instructions for the safe use of the test light.

11. After determining which wire is the positive and which is the negative, turn off the ignition key, then remove the battery's negative cable.
12. Following the Scotch-Lok™ instructions section, splice the Red wire using the supplied in-line Scotch-Lok™ wire connectors to the reverse light's positive(+) wire.  
Use a set of slip joint pliers to squeeze the TAP and insure good connection.
13. Next splice the black wire of the camera's power cable to the reverse light's negative(-) wire or ground.
14. Replace the reverse light bulb, then re-install the light socket. Secure all the wires with cable ties or electrical tape. Re-attach the negative battery cable to the battery.

#### CAMERA WIRING DIAGRAM

The camera is equipped with Reverse Voltage Protection. If the camera does not operate, please check that the Red wire is connected to positive (+) and the Black wire is connected to negative(-).



### SCOTCH-LOK™ INSTRUCTIONS



Insert the existing wire to be tapped.



Insert the wire to be attached.



Crimp tap with pliers, then close lock

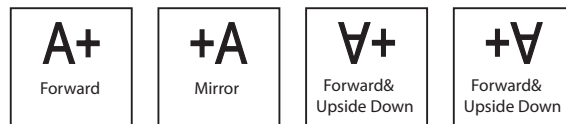
You do not need to use the Scotch-Lok™ connectors. The camera can be wired directly to the reverse light circuit by stripping the reverse light wires then twisting the camera wires to the exposed reverse light wires. Once connected, wrap with electrical tape. Do not attempt this if you are not knowledgeable with electrical installation practices.

### TESTING THE SYSTEM

1. Re-attach the vehicle's negative battery cable.
2. Engage the parking brake and turn the ignition key to the ON position.  
DO NOT start the vehicle. Put the gear shift into reverse.
3. The camera will start broadcasting, and the monitor will detect the signal and turn itself ON. If the monitor does not come ON press the ON/OFF button.

- 4.If the image does not match your rear view mirror,press the top button on the monitor to change the image until it matches your rear view mirror.
- 5.When you take the gear shift out of reverse the camera will turn OFF, and the monitor will turn black.

There are four different views for the monitor, each time the Image Orientation button is pressed the image will change.



These different views allow you to mount the camera and/or monitor either right side up or upside down and still display the image correctly on the monitor. The image displayed should match your rear view mirror. After testing the unit, fully tighten the license plate bolts. Route all wire behind interior panels or under carpeting so they are hidden. Use supplied cable ties to neatly gather any excess wire.

Keep camera lens and monitor clean to ensure optimum picture quality.

### EMC information

This device complies with AS/NZS CISPR 22:2004 "Information technology Radio disturbance characteristics- Limits and methods of measurement" Operation is subject to the following conditions:

- 1) This is a class A product and in a domestic environment this device may cause radio interference in which case the user may be required to take adequate measures.
- 2) Changes or modifications by unauthorised persons are expressly not approved and could void the user's authority to operate the equipment.

## **SPECIFICATIONS**

	<b>Items</b>	<b>Camera</b>
<b>CAMERA</b>	Imaging Sensor	CMOS
	Total Pixels	720x480(NTSC) / 720x576(PAL)
	Horizontal View Angle	90-110 degree
	Transmission Frequency	ISM 2,400~2,483MHz
	Transmission Power	10mW/FCC,2wm/CE
	Minimum Illumination	0 Lux (IR ON)
	IR Night Range	3m
	Modulation Type	FM
	Bandwidth	18MHz
	Power Supply	+9-30VDC
	Consumption Current(Max.)	130mA
	Unobstructed Effective Range (Min.)	100m
	Dimensions (W x D x H)	215x32.5x32.5(mm)
	Weight (about)	122g
<b>RECEIVER</b>	Monitor Type	3.5 inch TFT color LCD (Diagonal)
	Transmission Frequency	ISM 2,400~2,483MHz
	Effective Pixels	960(H) x 240(V)
	Video System	NTSC/PAL
	Color Configuration	RGB.delta
	Received Sensitivity	+/-85dBm
	Consumption Current (Max.)	250mA
	Unobstructed Effective Range(Min.)	100m
	Power Supply Voltage	+9-30VDC
	Dimensions(WxDxH) (Excluding Bracket)	108x37x75(mm)
	Weight(about)(Excluding Bracket)	165g
	Operating Temperature	-10°C ~ +50°C / +14°F ~ +122°F
	Operating Humidity (Max.)	85%RH

\* Channel Frequency: CH1=2,414MHz; CH2=2,432MHz; CH3=2,450MHz;  
CH4=2,468MHz

\* Actual transmission range may vary according to the weather, location,  
interference and building construction.

\* All the specifications are subject to minor change without prior notice.

## **CAUTIONS**

- The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
- Turn off the Camera/Receiver if the system is not in use.
- The adapter is used as the disconnect device from the mains. The adapter shall remain readily operable.
- The Camera/Receiver can only be completely disconnected from the mains by unplug the adapter.
- Do not cut the DC power cable of the apparatus to fit with another power source.
- Attention should be drawn to the environment aspects of battery disposal.

### **EU Environmental Protection**

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

