

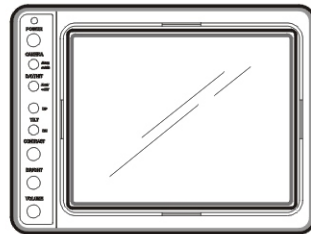
**OPERATION MANUAL**

# ***Voyager***<sup>®</sup>

**7" Monochrome Four Camera Observation Monitor**

**VOM-784CT**

**with adjustable tilt camera control**



**VOM-784CT Features:**

- Four Camera input
- Adjustable tilt camera control
- Brightness / Contrast / Volume Day-night Adjustment Control
- Audio output
- Automatic Trigger Operation (Standby-On, Camera Switching)
- Illuminated Front Panel
- Mirror / Normal selectable
- Auto-trigger switching compatible with turn signals

**Camera-Monitor Warnings!**

1. Camera/monitor system aids in the use of, but does not replace vehicle side/rear-view mirrors.
2. Objects in camera/monitor view are closer than they appear.  
When backing up, proceed cautiously and be prepared to stop.

**ASA**  
AUDIOVOX SPECIALIZED APPLICATIONS, L.L.C.  
[www.asaelectronics.com](http://www.asaelectronics.com)

# VOM-784CT OPERATIONS MANUAL

## **IMPORTANT:**

The VOYAGER Observation System has been designed to provide years of trouble-free operation.

Please read this manual thoroughly. This manual contains instructions to ease installation of the camera and monitor.

The VOYAGER Observation System is a supplement to standard rearview mirror systems, and will provide additional rearview vision when installed and maintained properly.

The VOYAGER Observation System is not intended in any way to be a substitute for careful, cautious, defensive driving or for the consistent adherence to all applicable traffic laws and motor safety regulations. This product is not intended to be a substitute for rearview mirrors or for any other motor vehicle or boat equipment mandated by laws.

## **FEATURES:**

### **VOM-784CT Monochrome 7" Monitor**

- Day / night switch
- Brightness and contrast controls
- Volume control.
- Power / stand-by switch
- Audio output
- Four camera inputs
- Auto-trigger switching compatible with turn signals
- Tilt up / down switch

### **CONTENTS OF VOM-784CT 7" Monochrome Monitor**

- 1- 7" monitor
- 1- Snap-on sun visor
- 1- Monitor bracket
- 1- Power harness with locking connector
- 1- Range markers
- 4- Thumb screws (M5 x 15) with plain washer & spring washers
- 4- Attachment screws with washers(M5 X 12)

# VOM-784CT OPERATIONS MANUAL

## **VEC-65 Cable**

1- 65ft cable with waterproof connector. (Not supplied)

## **VCT-655 Cable**

1- 65ft cable with waterproof connector for tilt camera. (Not supplied)

## **Documents:**

1- Operations manual

## **BEFORE INSTALLATION:**

1. This system operates from 10 volts DC to 32 volts DC , negative ground.
2. Please install this system according to the instructions in this manual.
3. **DO NOT DISASSEMBLE THE CAMERA OR THE MONITOR.**  
Disassembling the camera will compromise the waterproof seal and this voids the Warranty.
4. Connect the system to a switched ignition power source. Connection to a non-switched battery power source will reduce battery life.

## **\*\* WARNING\*\***

1. To prevent electrical shock, **DO NOT OPEN THE MONITOR CASE.** *There are potentially lethal voltages inside the monitor,* there are no serviceable parts inside, if evidence of tampering is detected, the warranty will be considered void.
2. Keep monitor away from leaking water, rain, moisture etc. It is not waterproof. Any moisture inside the monitor could cause extensive damage.

# VOM-784CT OPERATIONS MANUAL

## INSTALLATION INSTRUCTIONS

### VOM-784CT MONITOR

1. Attach monitor inside vehicle in a location convenient to the driver (e.g. Center of dash, overhead or in dash).  
Do not impede the operator's view of any vehicle controls or the view outside the vehicle.
2. Use a compression plate to attach the monitor bracket to the dash or overhead (See Fig.1).
3. Adjust mounting angle of the monitor to allow driver to easily view the screen from all seat position (See Fig.2).
4. If necessary, snap sun visor into groove on front face of monitor. Press all (4) sides of the visor to snap it into place.

### VEC-65 & VCT-655 CABLE (Not supplied)

1. The camera-to-cable connection is waterproof. The cable-to-monitor connection is not waterproof.  
Be sure to orient the cable properly. The cylindrical end attaches to the camera. The rectangular box end attaches to the monitor.(See Fig.3)
2. Do not run the VEC-65 & VCT-655 cable over sharp edges. Do not kink the cable.  
Keep the cable away from hot and rotating parts.
3. Place all excess cable in convoluted tubing.
4. Tie the cable securely.

### MAINTENANCE:

Remove dust and dirt with a damp soft cloth. Heavier dirt should be removed with a damp soft cloth and mild detergent. Do not use strong cleaning agents containing gasoline, thinner, benzene or alcohol. These substances may damage the exterior surface of the monitor.

# VOM-784CT OPERATIONS MANUAL

## **\*\* CAUTION \*\***

1. Before drilling, be sure no cable or wiring is on the other side. Be sure to drill a 3/4" diameter hole only.
2. Feed as much cable as possible into vehicle and clamp securely. This reduces the possibility of being hooked during production.
3. Keep all cables away from HOT, ROTATING and ELECTRICALLY NOISY components.
4. To increase protection of cable, place all excess wire and extension cable in convoluted tubing.
5. Do not twist camera cable and do not cut camera pigtail or cable.

## **WIRING MONITOR**

1. See wiring diagram for connections.(See Fig.3)
2. Wiring Monitor:
  - Insert extension cable into camera #1 position if four cameras are used , be sure to mark each extension cable properly, plug second ,third and four cables into camera #2, #3 or #4 position.
  - Bundle excess cable together using a cable tie or vinyl tape. This will avoid possible damage to cable during operation.(See Fig.3)
3. The red wire is connected to an ignition power source, the black wire is connected to chassis ground, and the blue wire is connected to the rear gear position, the brown, green and orange wires are connected to the direction signals.(See Fig.3)

# VOM-784CT OPERATIONS MANUAL

## FUNCTIONS AND OPERATION

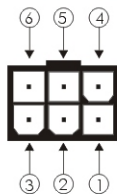
### Front of Monitor : See FIGURE 4

1. Power switch : STAND- BY Monitor operates when vehicle transmission is switched into "REVERSE" ON - monitor and system operate when ignition switch is "ON"
2. Camera selection : "CA1" used mainly for rear mounted camera or as specified by the installer. "CA2", "CA3" & "CA4" and used mainly for side or mirror mounted camera or as specified by the installer.
3. Day/ Night switch : Pre-set brightness and contrast levels optimized for day or night operation.
4. UP switch : Adjustable tilt control to see upward image when use tilt camera.
5. Down switch : Adjustable tilt control to see downward image when use tilt camera.
6. Contrast : Variable control of contrast. Should be adjusted if the "DAY/ NIGHT" switch does not achieve the most desirable picture.
7. Brightness : Variable control of brightness. Should be adjusted if the "DAY/ NIGHT" switch does not achieve the most desirable picture.
8. Volume : Variable control of internal speaker volume and output audio level.

## FUNCTIONS AND OPERATION CONTINUED

### Rear of monitor : See FIGURE 4

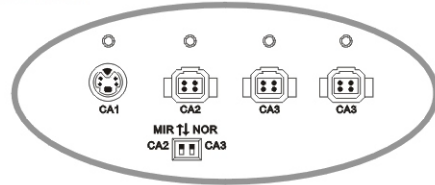
#### 9. POWER CONNECTION :



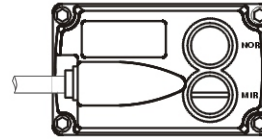
Pin No.	Description
1	Power ( DC 10V ~ 32V)
2	Trigger 3 ( DC 12V ~ 24V)
3	Ground
4	Trigger 4 ( DC 12V ~ 24V)
5	Trigger 1 ( DC 12V ~ 24V)
6	Trigger 2 ( DC 12V ~ 24V)

# VOM-784CT OPERATIONS MANUAL

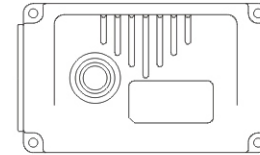
## 10. MIR/NOR OPTION





Monitor switch position in "MIR" position



Voyager camera switch (magnet) in "MIR" position



Voyager Tilt camera (VBC-130CT)

- When the switch is in MIR (  ) position, the picture will be reversed.
- When the switch is in NOR (  ) position, the picture will be normally displayed.
- Camera 2 & Camera 3 are operated individually.

## 11. AUDIO JACK

- Connects audio connector to an (option) external speaker.

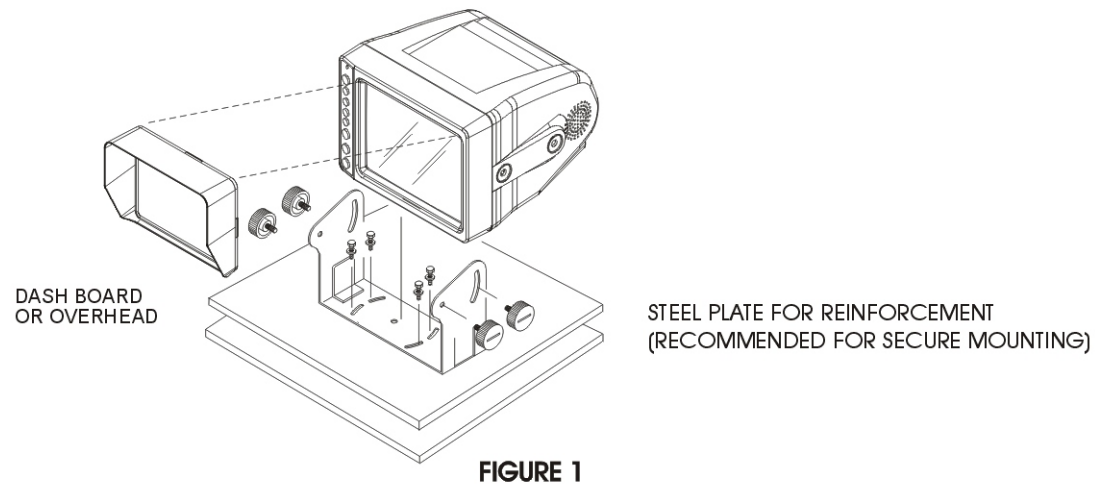
## 12. CA1/CA2/CA3/CA4 INPUT JACK

- "CA1" used mainly for rear mounted camera or as specified by the installer.
- "CA2", "CA3" & "CA4" used mainly for side or mirror mounted camera or as specified by the installer.

# VOM-784CT OPERATIONS MANUAL

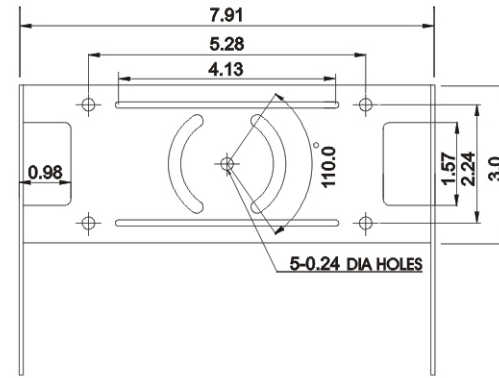
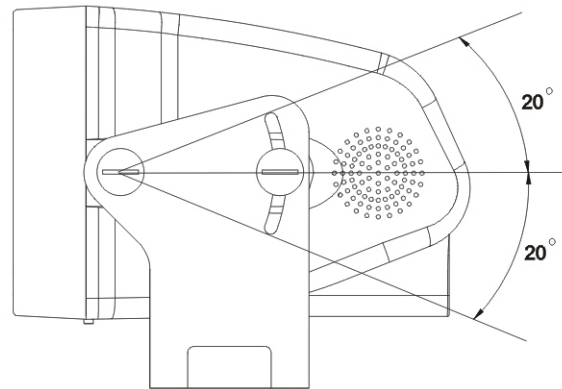
## AFFIXING DISTANCE MARKERS TO THE MONITOR SCREEN

1. Clean monitor screen surface of fingerprints. Place distance indicators behind the vehicle at (3) feet, (6) feet and (9) feet along the width of the vehicle.  
These distances are measured from the rear bumper.(Refer to fig. 5)
2. Attach the markers to the monitor screen over the images of the distance indicators.  
These markers represent distances of (3) feet, (6) feet and (9) feet from the back of the vehicle (See fig.5)
3. Affix the "STOP" marker on the monitor screen over the image of the rear bumper to locate the rear bumper.
4. The monitor screen is now "calibrated" for distances behind the vehicle of (3) feet, (6) feet and (9) feet.





# VOM-784CT OPERATIONS MANUAL



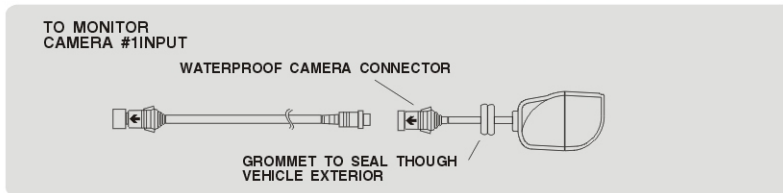
Unit : Inch

MONITOR MOUNTING HOLE PATTERN

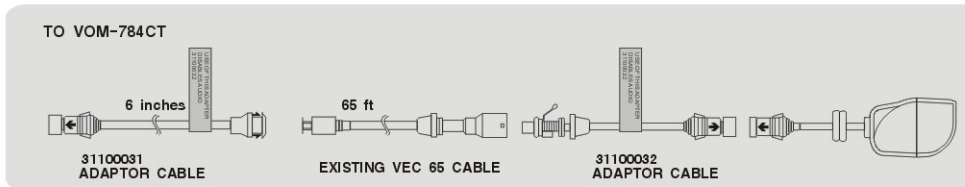
FIGURE 2

# VOM-784CT OPERATIONS MANUAL

## \* For Tilt Camera Installation in the CA1 Postion

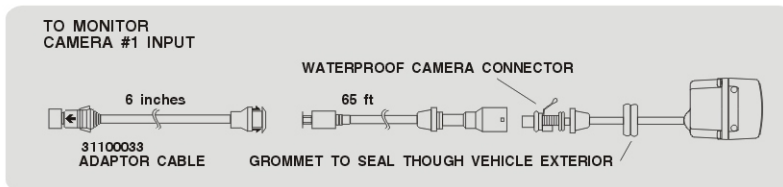


## \* For Tilt Camera / Monitor Installation with existing VEC65 cable installed



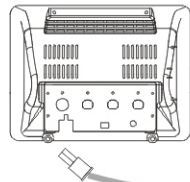
note :  
The audio line will  
be used as the camera  
tilt line resulting in  
no Audio

## \* For Non Tilt Camera Installation in the CA1 Postion

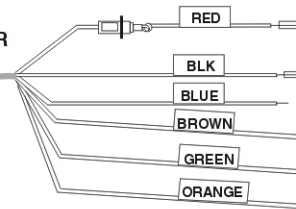


# VOM-784CT OPERATIONS MANUAL

## REAR OF MONITOR

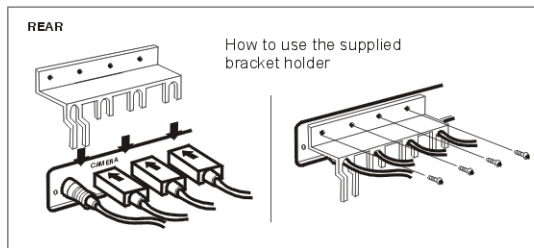


TO MONITOR



RED (To Power  
DC 10V~32V)  
BLK (Ground)  
TRIGGER 1  
TRIGGER 2  
TRIGGER 3  
TRIGGER 4

## CONNECTIONS



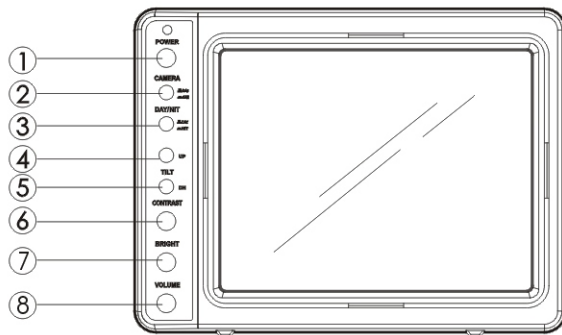
### Caution

- Before making the connections, disconnect the ground terminal of the car battery to avoid short circuiting.
- The plugs should be fully inserted into the connectors or jacks. A loose connection may cause the unit to malfunction.

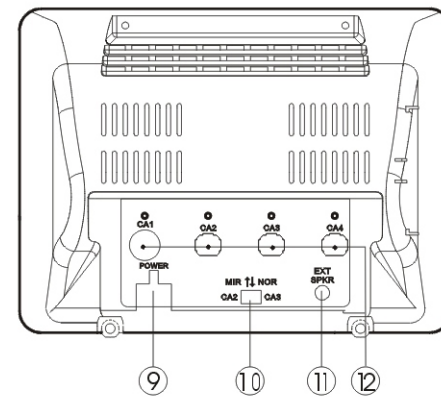
FIGURE 3

# VOM-784CT OPERATIONS MANUAL

- MONITOR FRONT VIEW -



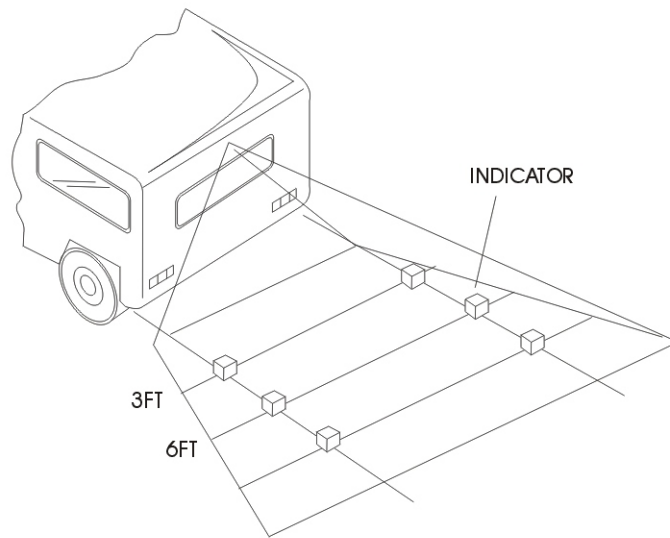
- MONITOR BACK VIEW -



MONITOR OPERATING CONTROLS AND CONNECTIONS

FIGURE 4

# VOM-784CT OPERATIONS MANUAL

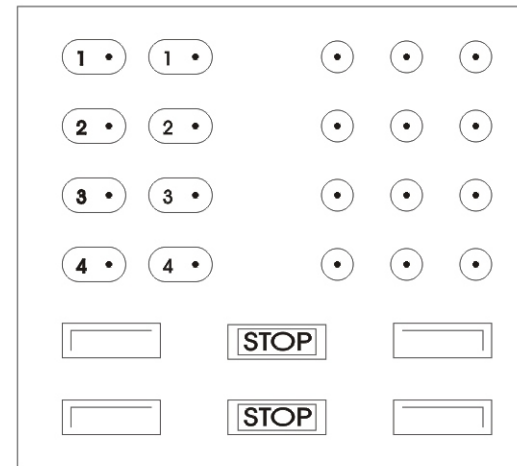


3FT

6FT

INDICATOR

WIDTH OF VEHICLE



MARKERS EXAMPLE

FIGURE 5

# VOM-784CT OPERATIONS MANUAL

## Operation Manual SPECIFICATIONS:

System	Rated voltage	12 volt DC, negative ground
	Operating voltage	10 to 32 volt DC
	Current consumption	3.0 amperes (at 12vdc)
VOM-784CT monitor	TV system	EIA
	Picture tube	Black and White 7 inch picture measured diagonally 90° degree deflection angle
	Picture image	Factory preset to normal image
	Picture resolution	600 TV lines
	Power connector	• Red : Positive Power      • Brown : Trigger 2 (12V ~ 24V) • Black : Ground              • Green : Trigger 3 (12V ~ 24V) • Blue : Trigger 1 (12V ~ 24V) • Orange: Trigger 4 (12V ~ 24V)
	Inputs	4-pin mini jack 1) Video input : 1.0V p-p Sync. Negative 2) 12V Tilt control power (CA1 only) 3) Audio input 4) 12V, 0.2A DC (output) 5) Shield Ground
	Power requirements	10V to 32V DC
	Power consumption	20W Maximum

## VOM-784CT OPERATIONS MANUAL

	Operating Temperature Range	-15°C to + 50°C (+5°F to +122°F)
	Storage Temperature Range	-25°C to + 85°C (-13°F to +185°F)
Dimensions	200(W) X 152(H) X 220(D) mm	
	7.9(W) X 6.0(H) X 8.7(D) Inch	
	Including projecting parts and controls	
Weight Approx.	2.5Kg / 5 lbs	
	Including mounting bracket	
Accessories Supplied:	A - Mounting bracket	1EA
	NUT	4EA
	Machine screws	4EA
	Tapping screws	4EA
	Spring washers	4EA
	Flat washers (12X5)	4EA
	Flat washers (20X5)	4EA
	B - Cable bracket	1EA
	Machine screws	3 EA
	C - Handle screws	4EA
	D - Sun visor	1EA
Power cable	5 ft	

DISCLAIMER: The use of the VOYAGER Observation system does not guarantee or promise that the user will not be in an accident or otherwise not collide with an object.

The VOYAGER Observation system is not intended in any way to be a substitute for careful and cautious driving or for the consistent adherence to all applicable traffic laws and motor safety regulations.

This product is not intended to be a substitute for rearview mirrors or for any other motor vehicle or boat equipment mandated by law.

**\* Design And Specifications Are Subject To Change Without Notice.**

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