

## Appendix F. Operating Manual

# BackupView Installation Manual

Model: NSP-700

### PRODUCT

The BackupView is engineered with the latest technology and equipped with the most advanced features. The system helps the driver to be in better control when reversing a vehicle. When the car approaches too close to, an object (in the range of the detection zone) an alarm sounds with increasing intensity proportional to the distance from the object, and simultaneously displaying the direction and distance. This allows the driver to have better control when parking in tight spaces and moving large vehicles with greatly improved safety level.

### OPERATING METHODS

When gear is put in reverse the BackupView system automatically starts with a beeo. It senses the first detection zone and displays without any beep from 7.0ft to 9.5ft. Second zone is detected from 4.0ft to 6.5ft with intermediate beeps. Third zone is detector from 2.0ft to 3.5ft with fast beeps. Fourth zone is detected from 1.0ft to 1.5ft with continuous beep. Distance will be displayed in increments of 0.5ft and anything under 1.0ft will display "n.0" with continuous beep indicating that the driver MUST STOP.

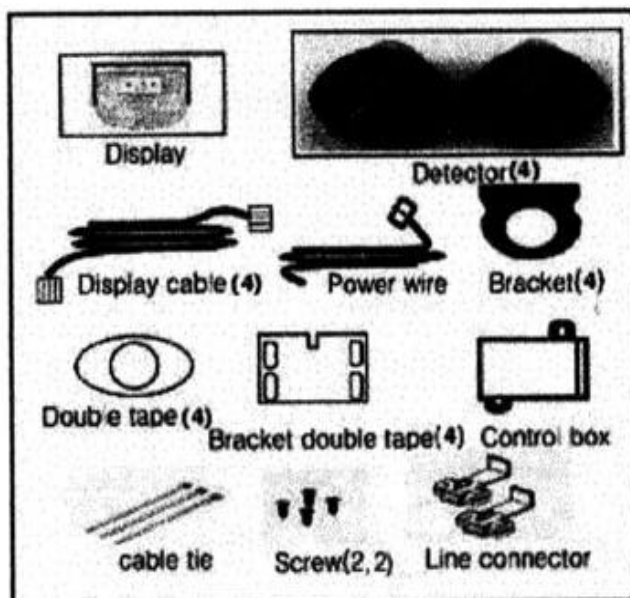
### FEATURES

- Distance & direction display, and sound:
- Multiple level alarm sound
- Aids reversing in most weather conditions.
- Discreet bumper sensors.
- Easy Installation on any vehicle with WIRELESS connection to display unit.
- Specially designed built-in LED display.
- Scratchproof sensors

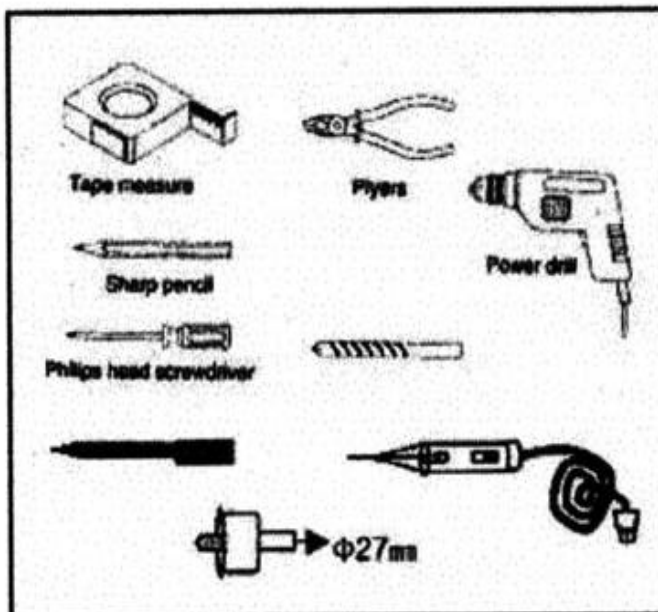
### SPECIFICATIONS (Model: NSP-700)

Detection	Ultrasonic Sensor
Input Power	12 V
Ultrasonic Frequency	40 kHz
RF Frequency	447.700 MHz
Operating Temperature	-20 C ~ +50 C (-4 F ~ 122 F)
Length of Display Cable	Wireless
Length of Detector Cable	5 m (16 FT)
Length of Power Wire	5 m (16 FT)
Display Unit Size	97 mm x 69 mm x 27 mm (3.8" x 2.7" x 1.1")
Display Power Cord	1.5 m (4 FT)
Control Box Size	55 mm x 90 mm x 22 mm (2.1" x 3.5" x 1")
Weight	910g (2.00 lbs)

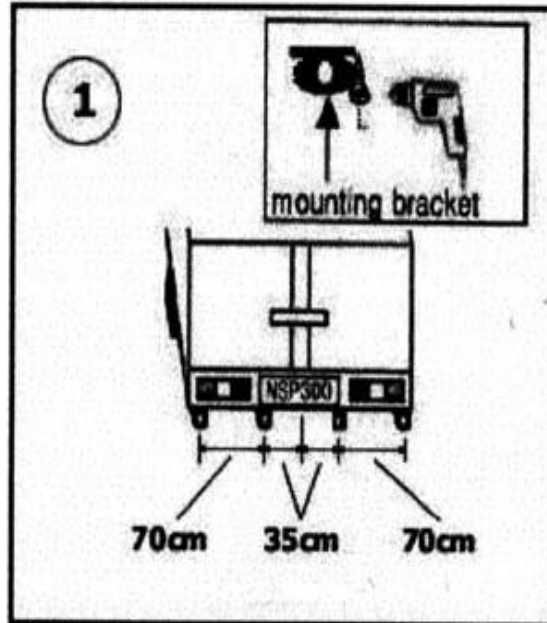
## Contents



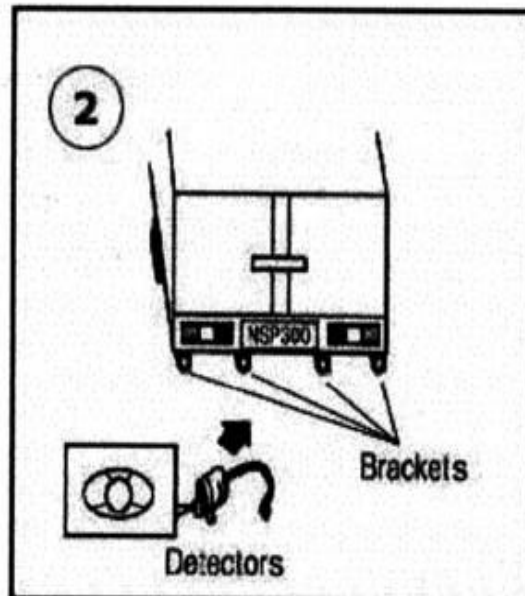
## Tools



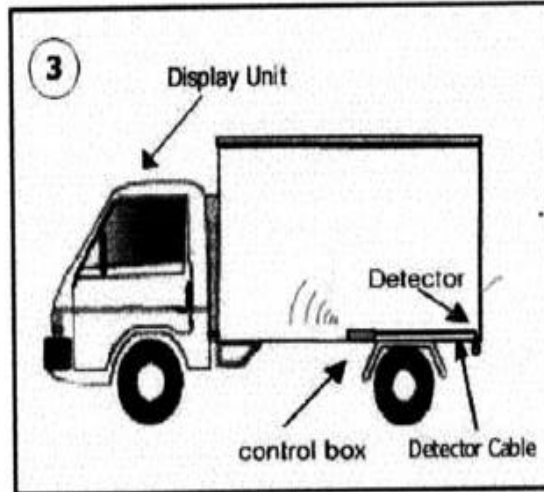
### Mounting Sensors and Control Box (Trucks)



**Diagram 1.** Mount the brackets approximately 35 cm (13.78 inch) left and right of the center. And, 70 cm from the first two brackets.

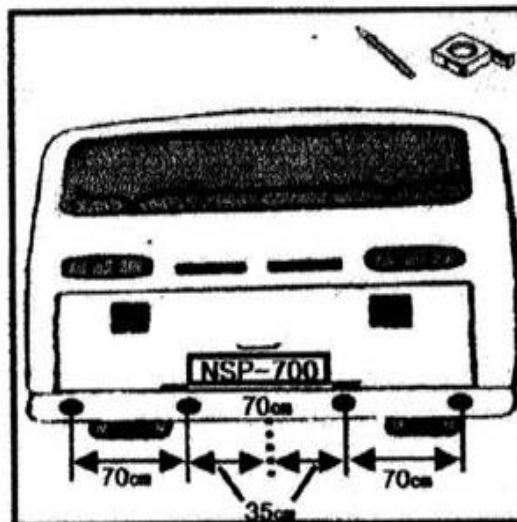


**Diagram 2.** Put double-sided tape on the detectors and insert into the brackets



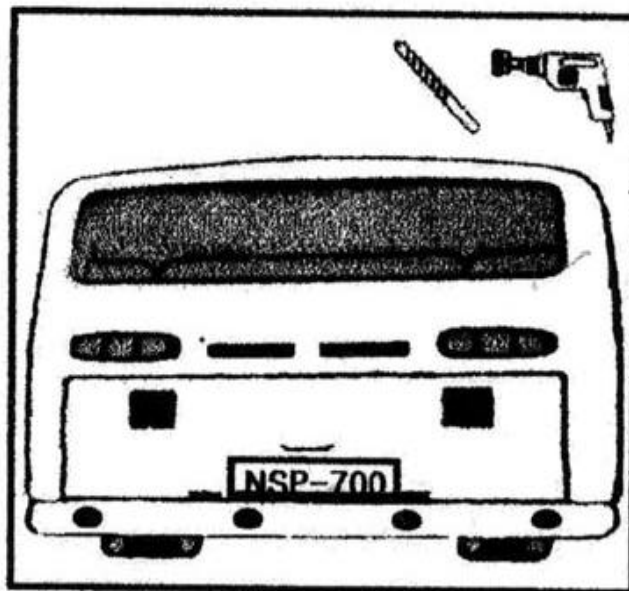
**Diagram 3.** Attach the control box under the body then connect the detector cable to the box then Extend the display cable from the control box to the rear view mirror

### Mounting Sensors and Control Box (Bus)

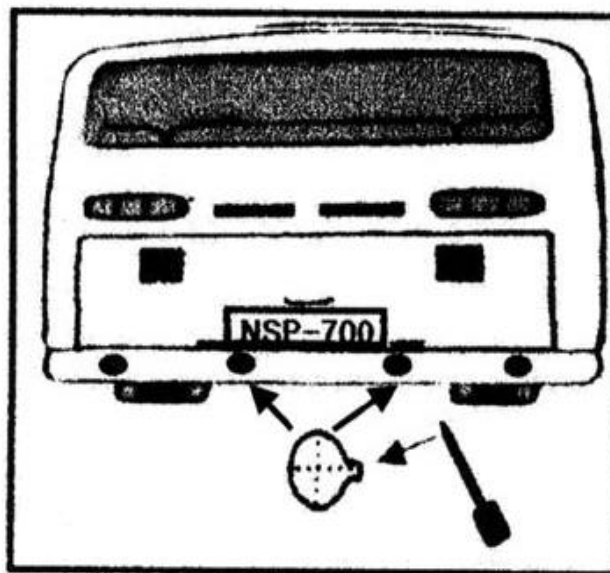


**Diagram 4.** Mark two spots 35cm (13.78 inch) left and right of the center. And, 70 cm (27.56 inch) apart from the first two marked spots.





**Diagram 5.** Drill holes on the marked spots using a 27mm (1 1/16 inch) saw drill.



**Diagram 6.** After cleaning out the holes, make a 2mm (0.79 inch) deep cut on the right center edge of the holes using a file.

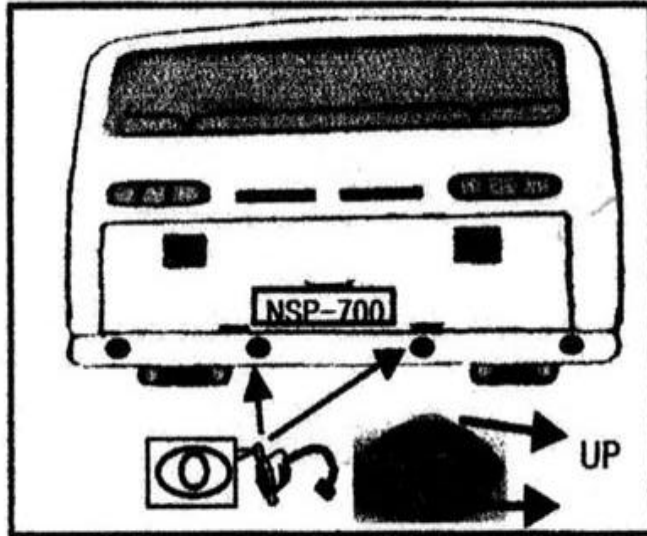


Diagram 7. Secure the sensors in the holes using double-sided tape.

### Wiring

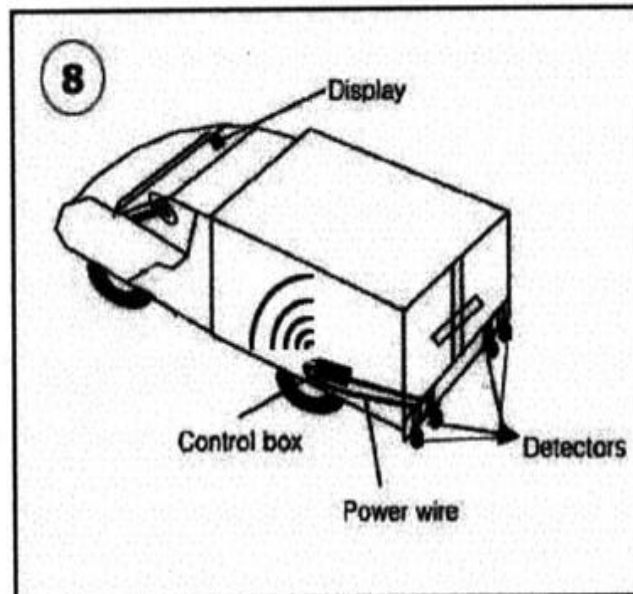


Diagram 8. Wiring overview (Trucks)

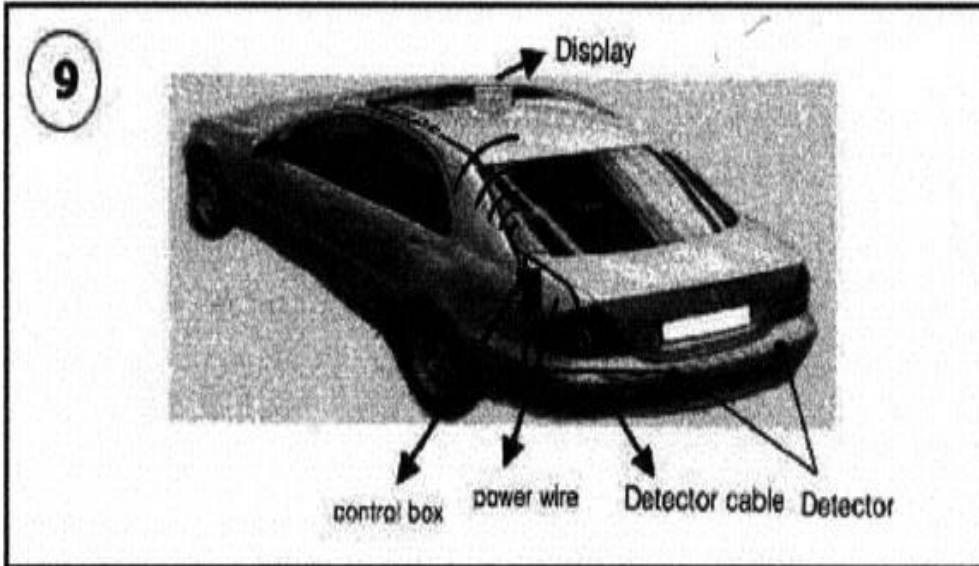
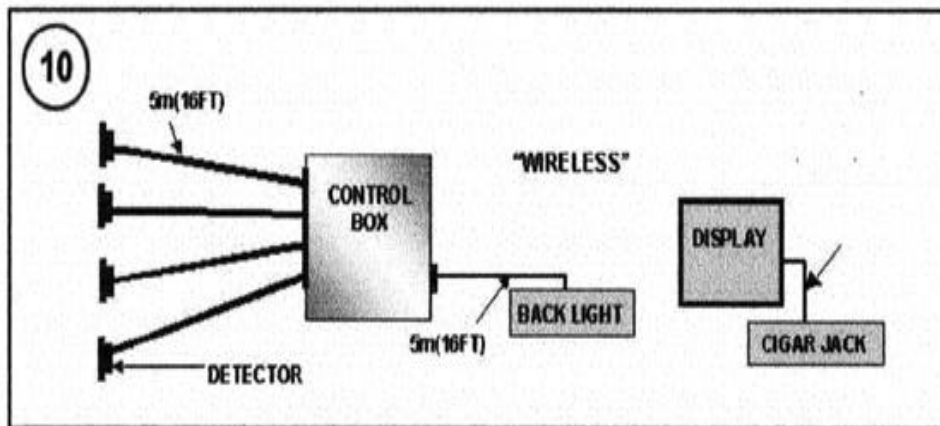
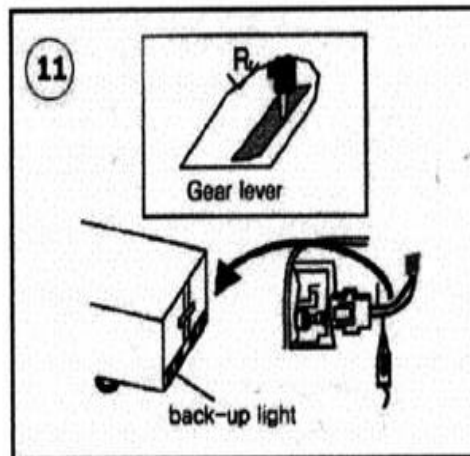


Diagram 9. Wiring overview (Passenger Vehicles, RVs, and Vans). Secure the control box inside the back-up light casing.

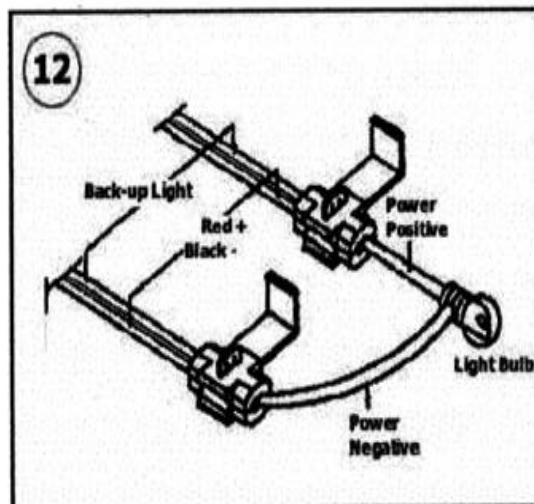


**Diagram 10.** Connect the wires from the detectors to the S1, S2, S3, and S4 on the control box, then, connect the display wire to the DISPLAY on the control box.

### Power Wire



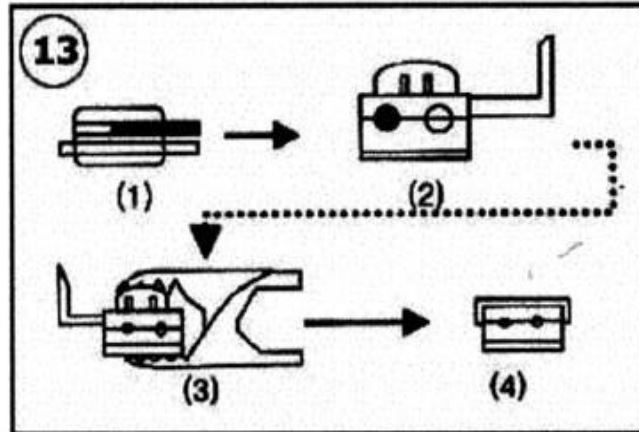
**Diagram 11.** Put the gear in Reverse and verify the Positive (+) and Negative line into the back-up light (CAUTION: MAKE SURE THAT ENGINE IS NOT RUNNING AND PARKING BRAKE IS ON DURING THIS PART OF INSTALLATION!)



**Diagram 12.** Connect the positive (+) wire of the back-up light to the Red cable and negative (-) to the black cable using the Line Connectors (Refer to the next section)

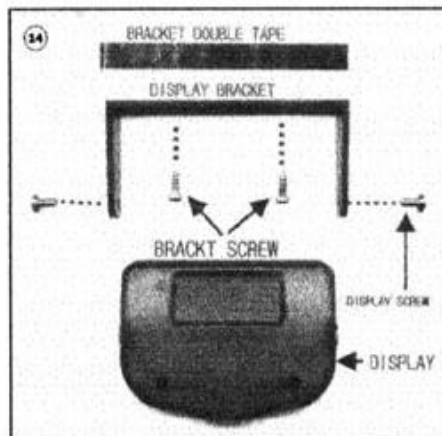


### Line Connector



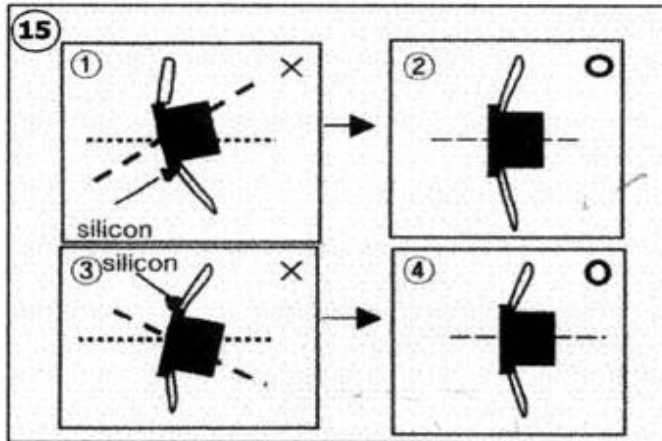
**Diagram 13.** (1) Insert positive power line through the hole of the connector and insert the red wire through the other hole. Make sure that the red wire is put through past at least middle point of the connector.  
(2) Check to see both wires are in the slot correctly.  
(3) Press the metal connector down with pliers as shown above. Make sure the metal connector is all the way down so that it cuts through the wire and both wires are connected through the metal.  
(4) Clip the plastic brace on.  
Repeat these steps with the negative power line and the black wire.

### Display



**Diagram 14.** User may use either Bracket Screws to mount the display module onto the dashboard or ceiling, or use the double tape to stick it on the dashboard. Then, plug the power cord into the Cigarette Lighter input.

## Round Bumpers



**Diagram 15.** In order to keep the sensors to make accurate distance, user must keep the sensors horizontal to the ground; Eliminate any gaps between the sensors and the bumper by filling the gaps with silicon paste. Also, be sure to install the sensors with correct orientation (Left and Right, Top and Bottom –Refer to Diagram 7).

## Detection Range

Zone 1	9.5 ft – 7.0 ft
Zone 2	6.5 ft – 4.0 ft
Zone 3	3.5 ft – 2.0 ft
Zone 4	1.5 ft – 1.0 ft

**Diagram 16.** Be aware of the detectable zone.

## Caution

- Do not disassemble or modify the product. Result of this action will void the warranty
- Keep the display unit away from any moisture
- Keep the sensors clean. If necessary spray small amount of water to clean the sensors before using
- Be careful not to peel off any covering of the cable during installation
- This product may not detect the area right below or above the bumper, or around both corners of the bumper
- The speed of vehicle must be less than 3 mi/h for the product to operate properly
- Objects with sharp angles, frequency absorbent, or thin objects (i.e. lines, wires) may not be detected
- Following conditions may cause incorrect readings:
  - Extreme weather condition (i.e. heavy snow)
  - Carrying a heavy load
  - Operating near heavy noise area
  - Operating near high output wireless devices
- Leaving the sensors under direct sunlight for a long duration may reduce performance of the product
- Leaving the sensors in extremely cold temperature for a long duration may reduce performance of the product

## One-Year Limited Warranty

TeleVideo, Inc. warrants this product to be free from defects in material and workmanship for one (1) year from the date of purchase as long as the system is the original installation. This warranty is limited to repairing or replacing free of charge, defective products.

Buyer will notify manufacturer or an authorized distributor of manufacturer, in writing, within the warranty period, within ten (10) days of discovery of any alleged defect, and will permit manufacturer or its representatives to make such investigation examination and tests, as manufacturer deems appropriate. If requested by manufacturer, buyer will return the alleged defective product to manufacturer's factory at 2345 Harris Way, San Jose, CA 95131, U.S.A. prepaid for examination and testing. If manufacturer determines that the product is defective. Manufacturer will repair or replace the item. F. O. B. manufacturer's factory.

If buyer modifies the products or uses any attachment to the product not specifically authorized by manufacturer, then all warranties whatsoever shall be void.

This warranty does not cover any defect, malfunction or failure caused by or resulting from improper or unauthorized service, maintenance, installation, repair or use not within the working specifications for which this product was designed, or from abuse, neglect, tampering with opening, accident, or any other cause beyond the control of the manufacturer. This warranty is made only to the original purchaser and is effective only upon presentation of evidence of date of purchase.

**THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH WARRANTIES ARE HEREBY DISCLAIMED AND EXCLUDED BY THE MANUFACTURER.  
THE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS AS PROVIDED HEREIN IS THE SOLE AND EXCLUSIVE REMEDY PROVIDES HEREUNDER, AND THE MANUFACTURER WILL NOT BE LIABLE FOR ANY FURTHER LOSSES, DAMAGES, OR EXPENSES, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES DIRECTLY OR INDIRECTLY ARISING FROM THE SALE OR USE OF THIS PRODUCT.**



## NOTICES TO USER

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

One or more of the following statements may be applicable:

### **FCC WARNING**

*This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.*