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Wireless Technology, Inc.

**SIDEWINDER : 720A TI
Thermal Camera**

*On Screen Menu Operation
Manual*

Rev. A : R0911

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INFORMATION

FCC NOTICE

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.
- 2.) This device must accept any interference that may be received, including interference that may cause undesired operation.

READ THIS MANUAL

Every effort has been made to insure that this WTI system is of the highest quality. This product has been carefully inspected to comply with rigid quality standards before shipment to you. In consideration of your investment and the desire to obtain full performance capability engineered into your new WTI product, we recommend that you read this manual before attempting to operate your system.

FOR MORE ASSISTANCE OR MORE INFORMATION:

WTI (Wireless Technology, Inc.)
2064 Eastman Avenue, Suite 113
Ventura, CA 93003-7787

TEL: 805/339-9696
TOLL FREE: 866/gotowti
FAX: 805/339-0932

EMAIL: sales@gotowti.com

INTERNET: <http://www.gotowti.com>

The software / firmware furnished with the equipment is confidential to and is copyrighted by *Wireless Technology, Inc.* (WTI). It is not to be copied or disclosed in any manner without the consent of *Wireless Technology, Inc.* (WTI). The software/firmware is furnished to the purchaser under a license for use on a single system.

Information furnished by *Wireless Technology, Inc.* (WTI) is believed to be accurate and reliable. However, no responsibility is assumed by *Wireless Technology, Inc.* (WTI) for its use or for any infringements of other rights of third parties, which may result from its use. No license is granted by implications or otherwise under any patent or patent rights of *Wireless Technology, Inc.* (WTI).

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WARRANTY

We appreciate your purchase of *Wireless Technology, Inc.* (WTI) security products. We take pride in the quality of our products and have manufactured each new WTI product to exacting quality standards. In normal use, it will provide you with years of satisfactory performance. However, should you experience difficulty; you are protected under the provisions of this warranty.

WTI warrants to the original user a product that is free of defects in materials and workmanship in normal use. WTI warrants to the original user that WTI's Sidewinder and related Sidewinder products will be free of defects in materials and workmanship in normal use for a period of 12 months from the date of sale. WTI's obligation under this warranty shall be limited to the repair, including all necessary parts and the cost of labor connected therewith, or at our option, the replacement of any product that shows evidence of a manufacturing defect within the warranty period.

This warranty is extended to all WTI products purchased and used within the United States of America and is valid only when service is rendered by the authorized *Wireless Technology, Inc.* (WTI) Warranty Station.

This warranty shall not apply to appearance or accessory items including, but not limited to, knobs, connectors, cabinets and connecting cables. This warranty shall not, in addition, apply to repairs or replacements necessitated by any cause beyond the control of WTI including, but not limited to, acts of nature, improper installation, misuse, lack of proper maintenance, accident, voltage fluctuations, unauthorized repairs or modifications.

This warranty becomes void in the event serial numbers are altered, defaced or removed, or an attempt is made to field service or alter performance of any Sidewinder and related Sidewinder products.

WTI reserves the right to make changes in design, or to make additions to, or improvements upon, products without incurring any obligation to install the same on products previously manufactured.

The foregoing is in lieu of all other warranties expressed or implied and WTI neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the sale of our products. In no event shall WTI or its Authorized Dealers be liable for special or consequential damage arising from the use of this product, or any delay in the performance of this warranty due to causes beyond its control.

REPAIRS AND RETURNS

REPAIR AUTHORIZATION

Please contact *Wireless Technology, Inc.* (WTI), to obtain a repair authorization number (RA) and provide the following information:

1.) Product Model & Serial Numbers

2.) Date of shipment, purchase order number, sales order number or WTI invoice number.

3.) Details of the defect or malfunction. If there is a dispute regarding the warranty or product, which does not fall under the warranty conditions stated within the description of the written warranty, please include a written explanation with the product when returned.

SHIP FREIGHT PRE-PAID TO:

WTI (*Wireless Technology, Inc.*)
2064 Eastman Avenue, Suite 113
Ventura, CA 93003-7787

TEL 805/339-9696
FAX 805/339-0932

RETURNS

No unauthorized returns will be accepted. All returns must have an authorized (RA) number issued by the factory (CA number if returned for credit and RA number if returned for repair). Products returned for repair or credit will be rejected if no authorization number has been issued or freight has not been pre-paid. All merchandise returned for credit will be subject to a 20% restocking and refurbishing charge.

SAFEGUARDS AND TOOLS

IMPORTANT SAFEGUARDS

- 1.) Read Instructions. It is important to read all safety and operating instructions before installing or using this equipment.
- 2.) Retain Instructions. Retain this manual and any supplements for future reference.
- 3.) Follow Instructions. Follow all instructions herein for use of this equipment.

Do not attempt to open the sealed camera assembly. There are no user-serviceable parts inside. Refer servicing to the *Wireless Technology, Inc. (WTI)* factory service center only.

- 4.) Heed all warnings. Adhere to all warnings on the equipment, and in this manual.
- 5.) To reduce the risk of electric shock or equipment damage, work on the unit only when the power is shut off and is unplugged from its power source to prevent accidental activation. Also take precautions to avoid contact between the equipment and other electrical wires or power sources that may be present at the installation site.

RECOMMENDED TOOLS AND ACCESSORIES FOR PROPER INSTALLATION:

- 1.) Tie-wraps to secure cable runs
- 2.) Phillips screwdriver
- 3.) Slot screwdriver
- 4.) Cordless power drill
- 5.) Set of open end or SAE wrenches
- 6.) Silicone caulking compound for antenna connector
- 7.) Self-sealing connector tape - Used to weatherproof all outdoor cable connections
- 8.) ¾" PVC flex conduit if boxes are mounted outdoors
- 9.) Hand held radios

WTI (*Wireless Technology, Inc.*) recommends the use of RG59/U such as Belden 8241 or equivalent 75Ω coaxial cable with 22-gauge solid copper center conductor and foam polyethylene dielectric. Either RG6/U or RG11/U would make an excellent substitute.

Long coaxial cable runs cause signal degradation and/ or "SYNC" discrepancies. Limit RG59/U cable lengths to 800 feet. For coaxial runs from 800 feet to 1000 feet, use RG6/U or RG11/U.

Do not use screw on type BNC connectors. They are not suited for reliable installations.

THERMAL SIDEWINDER INFORMATION

WTI's Thermal Sidewinder provides Powerful Capabilities for Critical Applications

Features Include:

- Continuous 360° rotation in both axes.
- 320x240 un-cooled micro bolometer.
- 19mm lens with a 36° horizontal field of view.
- Sees through smoke, dust and fog.
- 8 to 14 micron long wave infrared spectral band.
- Standard NTSC, 30 fps video output.
- ENG option – locks pan/tilt motion during vehicle travel.
- SDI option – SMPTE 259M serial digital interface option.



ON SCREEN MENU OPERATION

The Sidewinder SW720A TI camera is provided with an On Screen Display (OSD) setup feature that allows some camera features to be customized for different applications. The OSD menu system can be accessed by using the WTI HHC-SW controller, the WTI DTC-720 controller or any other industry standard controller that is capable of setting camera presets up to #95.

1.) The OSD menu is enabled by using the controller to “SET Preset #95”. Press “9”, then “5” and then press and hold the “Preset” key for 5 seconds. The following menu will be displayed on the video monitor:

```
SIDEWINDER CAMERA  
  
<CONFIGURATION>  
<SYSTEM>  
<CAMERA PARAMETER>  
EXIT
```

2.) The OSD menu is navigated slightly differently depending on whether you are using the HHC-SW or the DTC-720 controller.

The HHC-SW controller uses the following buttons for OSD operation:

UP ARROW and DOWN ARROW move the highlight selection within the menu options, and the “ZOOM IN” button performs the “ENTER” function for selecting options.

The DTC-720 controller uses the joystick for OSD operation:

UP and DOWN joystick commands move the highlight selection within the menu options, and the rotating the “ZOOM” knob performs the “ENTER” function for selecting options.

3.) CONFIGURATION OPTIONS – After selecting the <CONFIGURATION> menu item, the following options will appear (defaults shown):

```
<PROTOCOL> PELCO D  
<DEVICE ADDRESS> 1  
BAUD RATE 2400  
<POWER UP> LAST POSITION  
<2ND HOME SEARCH>  
<NORMAL FLIP>  
<CONFIGURATION II>  
BACK  
EXIT
```

ON SCREEN MENU OPERATION

3.1) <PROTOCOL> PELCO D [PELCO P] [COHU]– The three options for protocol are Pelco D protocol at 2400 baud, Pelco P protocol at 4800 baud and COHU protocol at 9600 baud.

3.2) <ADDRESS> 1 – Addresses up to 99 are currently supported.

3.3) BAUD RATE – The baud rate is selected automatically, according to the protocol that is selected.

3.4) <POWER UP> – [LAST POSITION] [STAY AT HOME] [GOTO PRESET 1] [START TOUR 1] – The four choices for power up mode after camera initialization are; go to the stored last known position before power up, stay at the mechanical initialization “zero” coordinates, go to preset one or start tour 1.

3.5) <SECOND HOME SEARCH> [NO SECOND HOME SEARCH] – This feature allows the user to specify that a second initialization be performed 30 minutes after power up. This feature is usually only necessary on location where the temperature gets below freezing. The second initialization after the camera has had a chance to warm up will allow a more accurate home position to be determined.

3.6) <NORMAL FLIP> [INVERT FLIP] – This feature allows the camera video signal to be flipped in applications where the camera is mounted in an inverted configuration.

3.7) <CONFIGURATION II> – This selection provides a link to less commonly used camera features.

3.7.1) <NO 24h RESETTING> [RESETTING EVERY 24h] – This feature provides a once a day camera re-initialization. This feature would only be used in situations where the camera position may get moved by an external cause, like heavy birds or other impacts to the camera.

3.7.2) <NO BRAKE CONTROL> [BRAKE CONTROL] – This feature allows the internal electric brake controls to be set so that the brakes remain open at all times when the camera is powered up, or to have the brakes engage and hold the camera still when it is not moving.

3.7.3) <HALF AND MICRO STEPS> [ONLY MICROSTEPS] – This feature allows the camera to be set to use only micro-stepping, in order to provide a very smooth pan and tilt motion at all zoom settings. This would typically be used when the camera is operated at very high magnification.

3.7.4) <NORMAL ACCELERATION> [SLOW ACCELERATION] – This feature allows the camera pan and tilt motion to be slowed down to provide more available motor torque reserve in very high wind areas.

3.7.5) <TERMINATION> [ON] [OFF] – This feature allows the RS-485 internal termination resistors to be switched off in situations where more than one camera is attached to the same set of RS-485 control signal lines.

ON SCREEN MENU OPERATION

3.7.6) <CONFIGURATION I> – This selection returns to the previous configuration menu.

3.7.7) <LOAD DEFAULTS> - This selection returns the features in CONFIGURATION I and CONFIGURATION II to the factory default condition.

3.7.8) BACK – This menu selection returns to the previous menu.

3.7.9) EXIT – This menu selection calls up the final save and store functions.

4.0) SYSTEM MENU

4.1) <POSITION> [TIMEOUT] [PERMANENT] [DISABLE] – This feature allows the visibility of the on screen azimuth and elevation values to be set for a 3 second display each time the camera is moved by the operator, always on or always off.

4.2) <COMPASS ID> [TIMEOUT] [PERMANENT] [DISABLE] – This feature allows the visibility of the on screen compass text to be set for a 3 second display each time the camera is moved by the operator, always on or always off.

4.3) ZONE ID – This feature is not currently supported.

4.4) <PRESET ID> [TIMEOUT] [PERMANENT] [DISABLE] – This feature allows the visibility of the on screen preset ID text to be set for a 3 second display each time the camera is moved by the operator, always on or always off.

4.5) <ID TEXT> - This menu selection calls up the feature that allows a title to be placed on the video image.

4.5.1) <EDIT ID1> - This menu selection calls up a screen showing the characters available for creating a title for the video image. Navigate to the desired character using the joystick right, left and up, down functions and select each letter or number by rotating the joystick zoom knob or pressing the “ZOOM IN” button. A backspace menu item is provided to change selections. After completing the character selection for the title, select the <ACCEPT INPUT> function to store the new title in the camera. To exit without changing the existing title, select <CANCEL>.

4.5.2) <ENABLE ID1> [OFF] [ON] – This function allows the first line of titling to be turned on or off.

ON SCREEN MENU OPERATION

4.5.3) <EDIT ID2> - This menu selection calls up a screen showing the characters available for creating a second line of titling for the video image. Navigate to the desired character using the joystick right, left and up, down functions and select each letter or number by rotating the joystick zoom knob or pressing the "ZOOM IN" button. A backspace menu item is provided to change selections. After completing the character selection for the title, select the <ACCEPT INPUT> function to store the new title in the camera. To exit without changing the existing title, select <CANCEL>.

4.5.4) <ENABLE ID2> [OFF] [ON] – This function allows the second line of titling to be turned on or off.

4.6) <INTERFACE> - This feature allows the camera tube pressure and camera temperature to be displayed on the video image. The type of interface board (pressurized or non-pressurized) used in the camera will also be displayed.

4.6.1) <ALTITUDE> - This feature allows the camera altitude to be set using the same type of character selection used in the camera titling feature.

4.6.2) <PRESSURE ALARM> [OFF] [ON] – This feature allows the 1psi on screen pressure alarm display to be turned on and off for cameras with the pressurization option.

4.6.3) <MAINTENANCE MODE> - This feature displays the camera tube pressure and camera temperature on the video display.

4.7) <ABOUT> - This menu selection displays the firmware versions used in the camera.

5.0) <CAMERA PARAMETERS> - This menu selection allows special thermal imaging camera parameters to be set.

5.1) <POLARITY> [BLACK HOT] [WHITE HOT] – This feature allows the camera thermal sensor output to be inverted to either show warmer temperatures as blacker or warmer temperatures as whiter, depending on what works best for any particular application.

5.2) <COLOR> [GRAYSCALE] [MAGENTA] [CRIMSON] [LOW RAINBOW] – This feature allows selection of either a simple black and white gray scale video output, or a selection of three different color palettes that can be selected to highlight certain temperature ranges.

6.0) <EXIT> This menu selection goes to the final menu screen where changes can be accepted or discarded before exiting the OSD setup menus.

ON SCREEN MENU OPERATION

6.1) <EXIT NOTHING CHANGE> - This selection discards any changes that were made during the current OSD session and exits the OSD session.

6.2) <LOAD DEFAULT SETTINGS> - This menu selection changes the CONFIGURATION I and CONFIGURATION II setting to the factory default settings.

6.3) <SAVE CHANGES> - This menu selection saves the changes made during the current OSD session and stays in the OSD session.

6.4) <DISCARDING CHANGES> - This menu selection discards any changes made during the current OSD session and remains in the OSD session.

6.5) <BACK> - This menu selection goes back to the main menu.

6.6) <EXIT SAVING CHANGES> - This menu selection saves the changes made during the current OSD session and exits the OSD menu system.

CAMERA SPECIFICATIONS

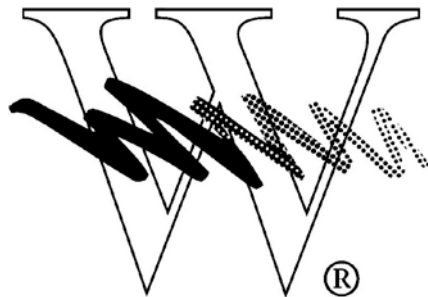
SIDEWINDER : Thermal T.I. : 720A

<u>Camera</u>	
Imager	8-14 micron spectral band un-cooled micro-bolometer
Resolution	225 horizontal TV lines
Effective Pixels	320 x 240
Lens	19mm fixed
Field of View	36° H x 27° V
Sensitivity	<85 mK NEdT (Noise Equivalent Delta Temperature)
<u>Electrical</u>	
Power Input	24 VAC ± 6 VAC
Power Consumption (with heater on)	50W
<u>Environmental</u>	
Ambient Temp. Limit	-29 F to +165 F (-34 C to +74 C), conforms to NEMA 2.1.5.1 std. TS2 for traffic control systems
Humidity	100% relative humidity
Protection Rating	IP-67/NEMA-4X/ASTM-B117 (entire camera)
<u>Mechanical</u>	
Weight	14.5 lbs. (6.5 kgs.)
Vibration (less lens)	3g (rms) random 5 to 1000 Hz, any axis
Air Contaminants	Withstands exposure to sand, dust, fungus, salt atmosphere, per MIL-E-5400T, paragraph 3.2.24.7, 3.2.24.8, and 3.2.24.9
<u>Positioner</u>	
Pan/Tilt Drive : Pan Angle Range	Continuous 360°
Pan/Tilt Drive : Tilt Angle Range	Continuous 360°
Pan/Tilt Drive : Pan Speed	100°/sec - proportional to zoom
Pan/Tilt Drive : Tilt Speed	50°/sec - proportional to zoom
Pan/Tilt Drive : Pan/Tilt Encoder Resolution	0.05°
Pan/Tilt Drive : Pan/Tilt Repeatability	0.05°
Preset	64 preset positions
Tours	8 tours of 32 presets with individual dwell settings per preset
Inverted Operation	Automatic camera image inversion
<u>Communications</u>	
Communication/Physical Layer	RS-422 or RS-485 standard, RS-232 for RackVision™ (specify on order)
Protocol	WTI proprietary industry standard or optional NTCIP
Firmware	Field upgradeable flash memory



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Due to Wireless Technology, Inc. (WTI) continuing efforts to engineer the best product that is most responsive to our customer's needs, the above specifications and information are subject to change without notice.