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W®

Wireless Technology, Inc.

C-MAX
ULTRA DOME SERIES

Installation and
Operation Manual

R0115

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

IC NOTICE
This device complies with the RSS-210 Industry Canada.

Operation is subject to the following two conditions:
1.) This device may not cause interference, and
2.) This device must accept any interference, 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
>FAX 805/339-0932
>
>EMAIL: sales@wirelesstech.com
>
>INTERNET: http://www.gotowti.com or http://www.wirelesstech.com

PRODUCT 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 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 WTI (*Wireless Technology, Inc.*) 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 WTI 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.

REPAIR AUTHORIZATION
Please contact WTI (*Wireless Technology*, *Inc.*), 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.

IMPORTANT
1. Read, follow and retain these instructions. It is important to read all safety and operating instructions before installing or using this equipment.
2. Adhere to all warnings on the equipment, and in this manual.
3. Do not mount the machine on an unstable surface or bracket.
4. Prevent all liquids or other material from entering the dome housing.
5. Protect the unit against extremes of vibration, pressure or dampness while transporting unit. Damage can occur from improperly packaging the unit while shipping.
6. When connecting the power source, please follow all electric safety standards and only use the power supply designated for this device. The speed dome's RS-485 and video signal uses TVS technology to protect it from strong electrical surges. This technology prevents damage to the device resulting from impulse signals such as lightning strikes or surges of power. Allow for enough distance between the RS-485 and video signals and high-voltage equipment or cables during the transmission process.
7. Do not power the unit until all connections are secure and installation is complete.
8. 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.
9. Avoid shooting very bright objects directly into the camera's CCD (such as the sun or light fixtures).
10. The outdoor dome camera system is designed to be installed in outdoor environments only. The indoor dome camera system is designed to be installed in indoor environments only.

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

Dome Address, Transmission Speed, Protocol Setting
Before the dome is installed, the communication protocol, baud rate and dome address, should be set and confirmed. Set the code switch, keeping the setting consistent with the control system. Refer to the diagram below for the relative code switch site and connecting wires locations.
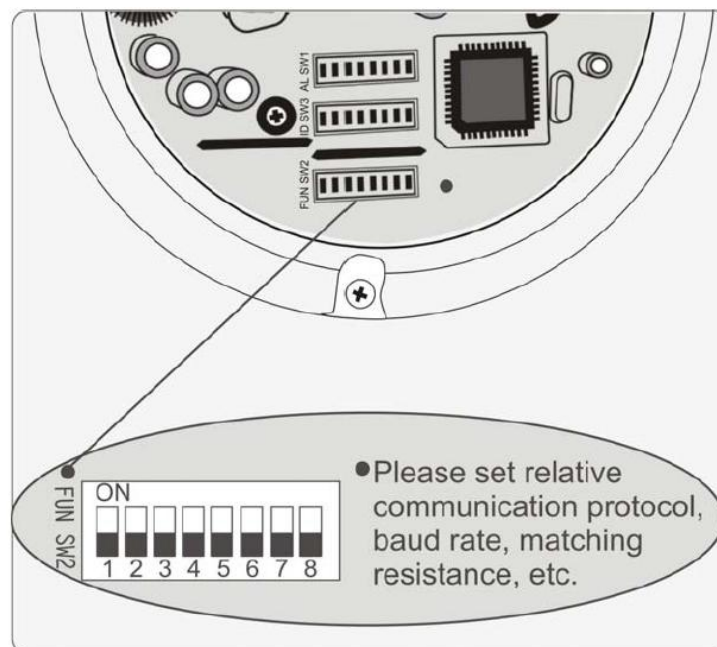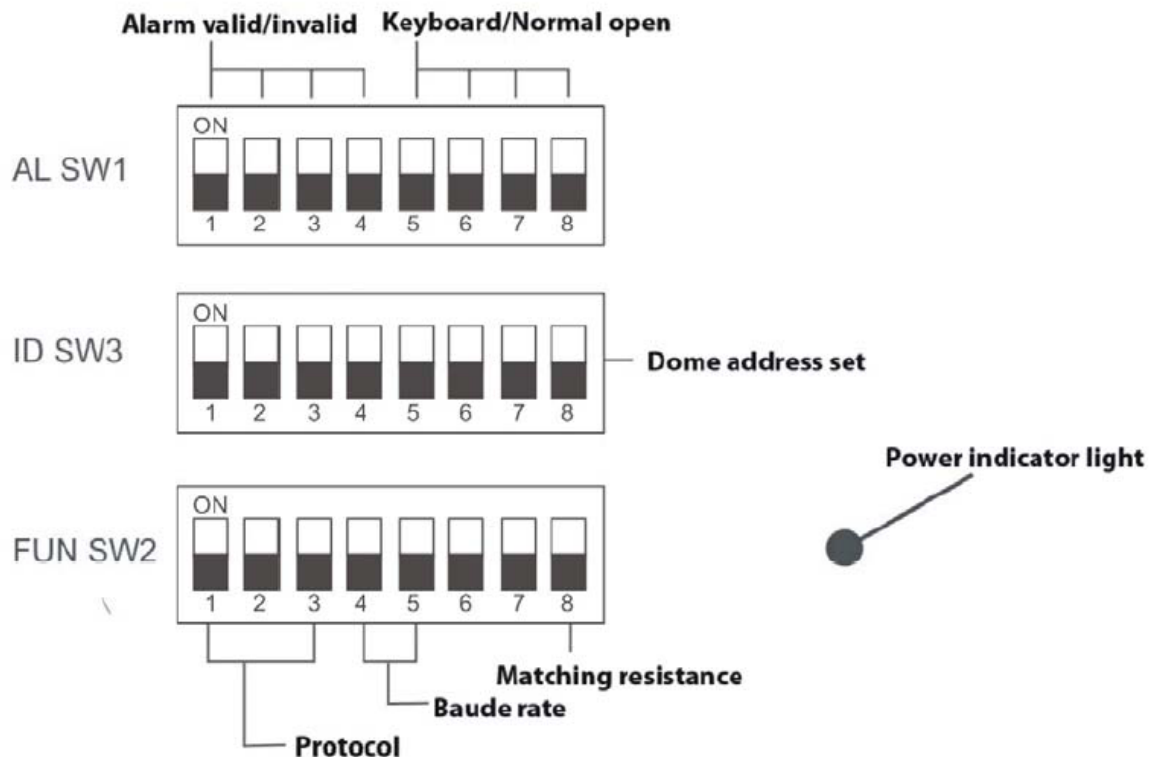
WTI C-MAX Ultra Dome Series Camera Address Setting
The address code for the C-MAX Ultra Dome should be properly set before use to ensure the accuracy of the address of the dome at the control center. The address code is made up of SW2 (8 bits) on PCB board. The 8 bit switch uses the 8421 binary coded decimal system. The largest value is 256. 1 means ON status and 0 means OFF status. Each dome address code and keyboard relative screen display mode is represented in the chart below (see the following figure and the address/digits in following chart).

With reference to the above chart: When all code switches are under "OFF" status on the dome, address code is 1. When you input Numerical key No.1 on the control keyboard then press CAM key for confirmation it will then show that set keyboard address is the No.1 control address., At this time, the keyboard can control speed dome camera (its control address is 0001). Other addresses should be set as above.

⚠ When "DATA" column is not showing "0," "DATA" column is showing the address of the dome camera. When "DATA" column is showing "0," "CAM" column is showing the address of the dome camera.

After establishing the address, please restart the dome to save the changes.

WTI C-MAX Ultra Dome Series Camera Communication Protocol Setting

The 1st, 2nd and 3rd bits in SW3 are used to set communication protocol (see the following diagram).
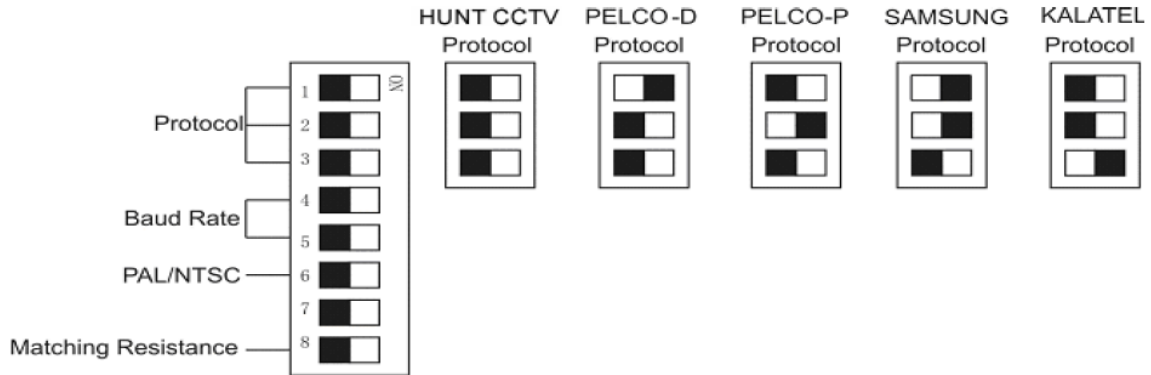
After establishing the communications protocol, please restart the dome to save the changes.

Ensure that the controlling device and the camera are using the same protocol.

WTI C-MAX Ultra Dome Series Camera Transmission Speed Setting (Baud Rate Setting)

The 4th and 5th bits of SW3 on the PCB board are used to set the baud rate (see following figure). The default baud rate setting is 9600.
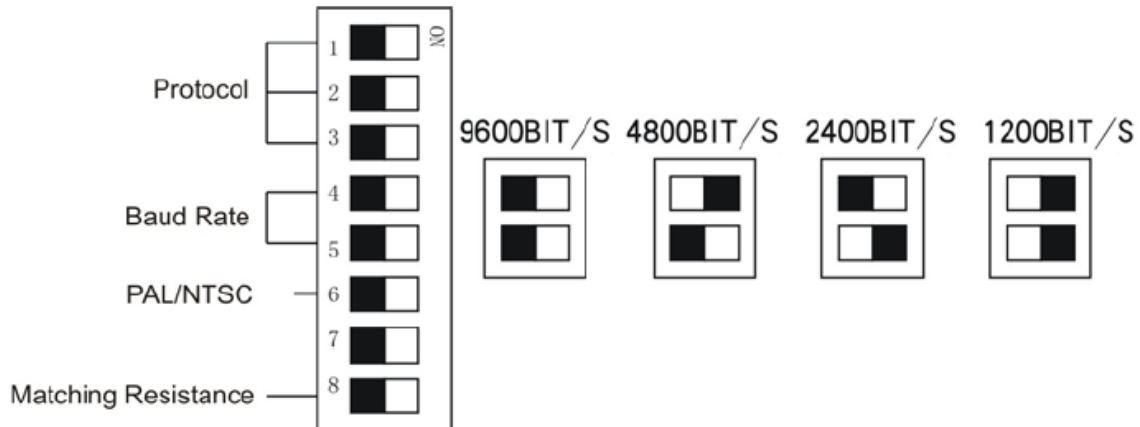
Baud Rate Options: 1200BIT/S, 2400BIT/S, 4800BIT/s, 9600BIT/s. Please refer to the controlling device and protocol for baud rate requirement.

⚠ After establishing the transmission speed, please restart the dome to save the changes.

RS-485 Bus Matching Resistance
For better centralized control, a matching resistance should be connected in a parallel way at the connecting port where the RS-485 is connected into the device which is the furthest away from the center controller. By doing this, reflection and interference from the RS-485 signal and the like can be cleared up. There is a switcher for controlling of the matching resistance at the end of SW2 on the PCB board. And the matching resistance is connected to the RS-485 cable when the "No. 8" switcher is set to "ON" status.
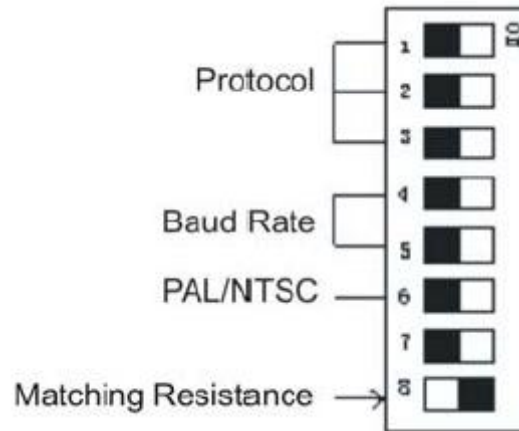
> ⚠ When the dome is out of control or does not work under RS485 bus control status, please set switching of matching resistance to ON status.

Basic Function of Dome Camera
Use the WTI PKC-8000 Professional Keyboard Controller to utilize the complete potential of the dome. (The keyboard control protocol is set as the default protocol for the dome.)

Preset Position
The Preset function is the dome's default level angle, lean angle and camera focal length in EMS memory. By using this saved parameter, the dome and camera can run to the preset positions when it is required. The operator can save and adjust preset positions by using the WTI PKC-8000 Professional Keyboard Controller; the dome can support up to 256 preset positions.

Dome Pattern Tours
Before using the PKC-8000 Professional Keyboard Controller to setup a dome pattern tour, please set the parameters of preset positions first. If not, the dome will run according to its default setup.

Preset Position Parameter Setting

The dome camera has the capacity to set preset positions using the PKC-8000 keyboard. It can program the running speed to each preset position from 0.4m/s to 280m/s (1-64 grades) and dwell time from (1-60 seconds).

Note: The dome can rotate at low speeds and at fast speeds. Its speed can be divided into 64 levels. 1 is the lowest speed and 64 is the fastest speed.

Pattern Tours Setting
- ➤ The Speed dome camera has the capacity to set up to 8 pattern tours each of which can have up to 16 present positions.
- ➤ Add present positions in the pattern tours.
- ➤ Set dwell time (1-60 seconds) and the rotational speed (1-64 grades) of each present positions.
- ➤ There are two option pattern tours: 1. To-and-from scanning 2. Cruise scanning.

Auto Scanning (Two points scanning, 360° scanning)

The operator can also run a simple point-to-point scan (also called back-and-forth scanning). To do this, set Preset Point A first (at the same time set the dwell time at Point A), and then set Present Point B (at the same time set the dwell time at Point B). Finally execute the command to scan between points A and B.

Two Points Scanning

To set Point A move the joystick to the desired position and in the Main Menu enter a dwell time for Point A. Example: If the Dwell time is 2 seconds the PKC-8000 displays:

```
MON    CAM    DATA
 00    0000   0002
```
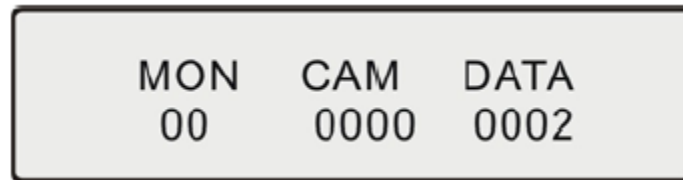
Press PAN A.

To set Point B. Move the joystick to the desired position.
In the Main Menu enter a Dwell time for Point B.
Input the grade Speed (1-64) and Press AUTO

Example: Set dwell time of Point A as 2 seconds, dwell time of Point B as 3 seconds. Make the scanning at 32-grade speed between the two points:
- a. Move control joystick to Point A of scanning
- b. Input 02, then press Pan-A on the keyboard after two seconds
- c. Move control joystick to Point B of scanning
- d. Input 03, then press Pan-B on the keyboard after two seconds
- e. Input 32 grade, then press AUTO.

This will scan starting at Point A to Point B at a scanning rate of grade 32 stopping at Point A for 2 seconds and Point B for 3 seconds.

360° Scanning
The Operator can also start an auto cruise scan. This scan will rotate 360° from the desired position.

In the Main Menu, input desired cruise group No.
Example: Desired Group No. is 4 the control keyboard displays:

```
MON     CAM     DATA
00      0000    0004
```

Press SHIFT + SCAN to place PTZ into cruise scanning.
OR
1. Move the joystick to desired position.
2. Input the running speed (1-64) and then input SHIFT + AUTO.

Note: When speed dome camera is under the auto scanning status, you can use the joystick if you want it to stop scanning.

Guard Location
The guard location is an important position that the speed dome camera will come back to automatically when there is no operation for a defined period. The user can set a guard location and control the waiting time to the guard location, starting and stopping (1-255S) before allowing the camera to return to the guard location.

Setting the Guard Location
Intelligent speed dome can set a guard location and dwell time. Use the control keyboard to set the guard location and its waiting time.

Turning the Guard Location On/Off and Setting delay time to Guard Location
To set the guard location to start or stop (control keyboard recognizes this action as a Switch): ON Start / OFF Stop
Press F1 ON to startup the guard location
Press F2 OFF to stop the guard location

Example: Press F1 ON to start up guard location. The Dome will rotate to set position within XX seconds.

The keyboard default status displays the Main Menu. In the Main Menu screen, press FUN once, control keyboard displays:
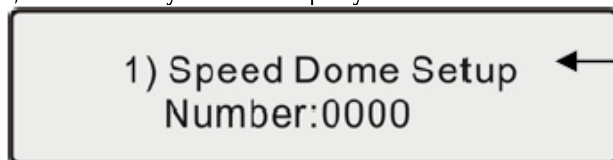
```
1) Speed Dome Setup
   Number:0000
```
← Displays Current Speed dome address

Press ENTER to Confirm.

Press FUN three times, control keyboard displays:

4) Watch   Position
Time: 000 Switch

Input the desired waiting time using the number keys:

Example: After inputting time: 05, press ENTER.

4) Watch   Position
Time: 005 Switch

Setting the Guard Location
When the keyboard is under default (Main Menu) status, press FUN once, control keyboard displays:

1) Speed Dome Setup
Number:0000

Press Enter to confirm.

Press FUN two times, control keyboard displays:

3) Press Enter Key To
Setup Watch Position

Move the joystick/rocker to the target position you would like to set as the Guard Location.

Press Enter to set the Guard Location.
The position is set as the guard location.

Alarm Linkage Function

WTI's C-MAX Ultra Dome Series cameras support a 4 alarm input. Every alarm input end matches a preset position No.: 29, 30, 31, 32. First connect the defense area into speed dome camera, and switch the corresponding switch ("AL SW1") to ON status in order to enable the defense area to work. Then switch the "keyboard/always defend" to ON status, enable the defense area under alert status in 24 hours (Any break in into this area will cause the camera to turn to the corresponding position that has been preset). Turn the switch to OFF status to enter the keyboard setting defense in order to set the alarm status with keyboard. When the dome camera detects an alarm input, the camera will automatically turn to the preset position that has been set.

Objective Tracking

A user can rotate the camera lens up, down, left and right to view objects through the field of vision using the control keyboard. In addition, a user can adjust focal length to change the angle of view or the size of the objects. When in auto-iris and auto-zoom mode, the camera adjusts automatically to get a clear picture with changing image environments.

Focus/Rotate Auto Speed Controls

When manually adjusting the zoom length or focal distance at longer ranges, a typical P/T/Z dome may move too quickly resulting in the loss of important images. WTI's C-MAX Ultra Dome Series is especially designed to adjust the sensitivity of the Pan and Tilt controls making navigation easy and intuitive at these long ranges.

Auto Flip

The dome's auto-pan rotation with 180° flip capabilities automatically rotates the camera 90° when the camera tilts to the vertical position. This feature enables the continuous monitoring of an object as it passes through the field of vision.

When the camera tilts to the vertical position, it does not flip automatically, and other operations can be carried on. If it needs to rotate 180°, release the joystick when it is on vertical position, and then move the joystick to the bottom again to achieve the auto-flip function. (Plane 180° / vertical 90°)

Focus/Rotation Speed Auto Match Technology

When adjusting manually, and in the case of having a very long focus, the dome's rapid reaction enables a slight touch of the joystick to result in a large movement of screen, and cause the loss of picture. WTI's C-MAX Ultra Dome Series cameras automatically adjust the rotation and tilting speed according to the distance of the focus, enabling manual objective tracking to be more simple and effective.

Zoom Control
The user can adjust the advanced zoom feature to acquire a needed image through the control keyboard. The C-MAX Ultra Dome Series features a maximum combined 216x zoom magnification (18x Optical and 12x Digital).

Focus Control
WTI's C-MAX Ultra Dome Series default setting is for auto-adjust focusing. Under special conditions, a user can adjust the focus manually to acquire the required image.

The C-MAX Ultra Dome Series will not auto-focus on a targeted object under the following conditions:
  a. The object is not in the center of the picture.
  b. Attempting to view images that are far and near at the same time.
  c. Object is a strongly lit object, such as neon lamp, etc.
  d. Objects behind glass covered with dirt/dust.
  e. Objects moving quickly.
  f. Objects within large area and single color such as a wall.
  g. Objects that are too dark or faint.

Iris Control
The dome's default setting is for auto-adjust iris. It can make an adjustment quickly by auto detecting the beam change. User can adjust iris size manually through the control keyboard to get the required image brightness. User can renew auto iris after moving the joystick or sending additional commands through the controller (We suggest the use of the auto iris).

Note: When controlling the iris manually, the dome locks in its current control position and will not reset the auto-iris even if current object changes. You need to move the joystick or send a control order to reset the auto iris.

Auto Backlight Compensation
WTI's C-MAX Ultra Dome Series camera is divided into six areas to realize auto backlight compensation. In lighting conditions where a strong backlight exists, the speed dome will adjust the light levels relative to the foreground and background objects in order to achieve the highest resolution image. The camera is divided to 6 zones to best handle unique lighting conditions.

Auto White Balance
WTI's C-MAX Ultra Dome Series will automatically adjust the white balance to contrast the changing background lighting conditions to achieve the truest digital color image.

Camera Menu (OSD Menu) Setting

Through the control keyboard, you can enter the dome camera menu (OSD Menu) setting. Functions of the menu may differ in different camera models.

Enter camera menu with HUNT CCTV protocol, Press FUN once, control keyboard displays:

Press FUN four times, control keyboard displays:
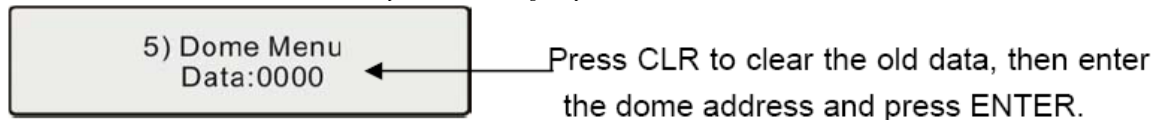
The key functions are as below:

Operating Key	Function
MON	Dome menu cursor down
SEQ	Dome menu cursor up
ACK	Current menu configuration
LIST	Current menu change

If using PELCO-D, PELCO-P, SAMSUNG or KALATEL protocol, please set the menu buy loading present positions. For example, use the PKC-8000 keyboard to control the C-MAX Ultra Dome with PELCO protocol.

First, input 55 and press CALL to enter the menu setting. By loading No. 56 (Goes up in the menu list), No. 57 (Goes down in the menu list) present position to select options in the menu list. By loading No.60 present position to change the data of the selected option. After setting, select the No. 22 option in the menu list, load No. 61(confirmation) present position to save the setting. Then select No. 23 option in the menu list, and load No. 61 present position to exit the menu.

PELCO protocol supports joystick binding function. After entering menu, users can set menu by moving joystick upward (Goes up in the menu), downward (Goes down in the menu), leftward or rightward (change the content of current selection). When options in the menu is "UP","DOWN", move joystick leftward would choose "DOWN"; move joystick rightward would choose "UP".

NOTE: If users want to use the joystick to control the dome, please load no. 60 present position. Then, the joystick binding function will be released, and the menu setting can only be operated on keyboard. If users want to exit the menu, please select no. 23 option in the menu, and choose YES.

Present Position Char Over Lap Function (Multi-Function Series Only)
Through 232-845 adapters, the C-MAX Ultra Dome Series cameras can transfer the PC deferent 232 signal to RS-485 signal which the dome can recognize and can be communicated. This enables the dome to display multi-language and images in every present position.

Protocol Order
PELCO-D，PELCO-P Protocol Order Chart
Note: The PELCO protocol has no relative order of control protocols for some special functions. In order to control these functions, we make function shift to usual function. Usually adopt "adjust preset position/set preset position order" to make shift. Refer to the Order shift chart below:

N Code	Keyboard Operations		N Code	Keyboard Operations	
	Adjust preset position: No. N	*Set No. N preset position*		*Adjust preset position: No. N*	*Set No. N preset position*
51	Start line scan (low speed)	Set start location of line scan	57	Cursor (down)	Delete no. 4 preset position
52	Start line scan (mid-speed)	Set end location of line scan	58	Cursor (left)	Delete no. 5 preset position
53	Start line scan (high-speed)	Set guard position	59	Cursor (right)	Delete no. 6 preset position
54	Start auto-cruise (1-8 preset position)	Guard position open	60	Menu data select	Delete no. 7 preset position
55	Into menu	Guard position close	61	Menu data confirm	Delete no. 8 preset position
56	Cursor (up)	Delete no. 3 preset position	62		

SAMSUNG, KALATEL Protocol Order Chart

N Code	Keyboard Operations		N Code	Keyboard Operations
	Adjust preset position: No. N	*Set No. N preset position*		*Adjust preset position: No. N*
51	Start line scan (low speed)	Set start location of line scan	57	Flip down/cursor (down)
52	Start line scan (mid-speed)	Set end location of line scan	58	Cursor (left)
53	Start line scan (high-speed)		59	Cursor (right)
54	Start auto-cruise (8th preset position)		60	Menu data select/Increase
55	Into menu		61	Menu data confirm
56	Cursor (up)		62	Menu data select/decrease

For example: To use the PKC-8000 keyboard to control a WTI C-MAX Ultra Dome with the PELCO protocol. Set the protocol, address and baud rate of the dome camera, make it same as that of the keyboard. Input 51, then input CALL, the dome will make the slow scanning between two points. Enter input 51, then input SHIFT + CALL, will enter starting point of line scanning (i.e. point 1).

If another control device is used to control the dome camera, some of the special functions of the WTI's C-MAX Ultra Dome Series can't be realized because of protocol limitation. When another control device is used to control the dome camera, you will need to set the protocol, address and baud rate correctly. When you set the address, please set the dome to an address different from the control device.

For example: DVR address is 1, dome camera address should be set as 2 for normal control. The movement control of the dome stops when we enter OSD menu. There are two ways available to set the "Flip Up", the "Flip Down", "Select"/"Increase", "Decrease" in the OSD menu. One is by setting the preset points (as discussed above); the other is by combining the direction of the movement of the joystick with the wanted functions. Namely, turn the joystick upwards for "Flip Up", downwards for "Flip Down", leftwards for "Menu Data Select"/"Decrease" (Only available when there is the display of "UP"/"DOWN"), rightwards for "Menu Data Select"/"Increase."

Camera Menu of available models
Sony camera menu

1. CAM ID: (camera marking No.)
2. DZOOM: OFF (Digital zoom switch). Press LIST, status from OFF↔ ON change.
3. FOCUS: AUTO (Auto Focus). Press LIST, status from AUTO↔ MAN (Manual) change.
4. MIRROR: OFF (Right-Left shift). Press LIST, status from OFF↔ ON change.
5. NEGATIVE: OFF. Press LIST, status from OFF↔ ON change.
6. ICR: AUTO (B/W – color auto shift). Press LIST, status from AUTO (auto) ↔ OFF change. When on AUTO status, the Day/Night dome camera will shift to a B/W image when the illumination is low; when OFF, it will not shift to a B/W image.
7. COLOR: OFF (Color display). Press LIST, status from OFF↔ ON change.
8. FREEZE: ON (Picture Freeze). Press LIST, status from OFF↔ ON change.
9. DISPAY: OFF (Screen display). Press LIST, status from OFF↔ ON change.
10. BACKLIGHT: ON. Press LIST, status from OFF↔ ON change.
11. WBC MODE: AUTO (white balance). Press LIST, status from AUTO ↔ INDOOR ↔ OUTDOOR↔ MAN.
12. RGAIN: (Red gain). Press LIST, showing "up" means red gain increase, "Down" means red gain decrease. Press LIST to cycle 12 times. Press LIST for gain increase, press "Enable" for gain decrease.
13. BGAIN: (Blue gain). Press LIST, showing "up" means blue gain increase, "Down" means blue gain decrease. Press LIST to cycle 12 times. Press LIST for gain increase, press ENABLE for gain decrease.
14. EXPOSURE: (Exposure Select). Press LIST, status from AUTO↔ PRIORITY↔ MAN.
15. BRIGHT: (Brightness Adjustment). Press LIST, showing "up" means brightness increase, "Down" means brightness decrease. Press LIST to cycle 12 times. Press LIST for gain increase, press ENABLE for gain decrease.

16. GAIN: Press LIST, showing "up" means gain increase, "Down" means gain decrease. Press LIST to cycle 12 times. Press LIST for gain increase, press ENABLE for gain decrease.
17. SHUTTER: Press LIST, showing "up" shutter increase, "Down" means shutter decrease. Press LIST to cycle 12 times. Press LIST for gain increase, press ENABLE for gain decrease.
18. IRIS: (Iris adjustment). Press LIST, showing "up" iris increase, "Down" means iris decrease. Press LIST to cycle 12 times. Press LIST for gain increase, press ENABLE for gain decrease.
19. SET PRIVACY ZONE.
20. EXPOSURE COMPENSATION: (Exposure compensation ON/OFF). Press LIST, status from OFF↔ ON.
21. EXPOSURE COMPENSATION: (Exposure compensation adjustment). Press LIST, showing "up" exposure compensation increase, "Down" means exposure compensation decrease. Press LIST to cycle 12 times.
22. SAVE SETTING (Set saving). Press ACK and save current set, Press AREA, resume the camera.
23. EXIT MENU (Exit menu). Press ACK and exit the menu.

LG Camera
Press MON (menu downwards) and SEQ (menu upwards) to select option. Press ENABLE to continue selecting.

Camera ID: OFF
Focus setting: Press ACK key to enter the sub menu.
1. Focus mode: optional: "keyboard auto," "auto," "manual." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
2. Focus arrange: optional: "1CM," "10CM," "50CM," "1M," "3M," "5M." Press ACK or LIST to select, if selected, press ENABLE to continue selecting.
3. Zoom start bit: optional: "×1~×26." Press ACK to increase and press LIST to decrease, press ENABLE to confirm.
4. Zoom end bit: optional: "×1~×270." Press ACK to increase and press LIST to decrease, press ENABLE to confirm.
5. Zoom speed: optional: "High speed," "Middle speed." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
6. Zoom mode: optional: "Auto," "Manual." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
7. Default setup: Press LIST to restore the default setup.
8. Back: Press LIST to exit the sub menu.

Auto white balance setting: Press ACK to enter the sub menu
1. White balance mode: optional: "Auto," "Special white balance," "Indoor mode," "Outdoor mode," "Manual": Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
2. Red adjust: Nonuse.
3. Blue adjust: Nonuse.
4. Auto keyboard control: Nonuse.
5. Default setup: Press LIST to restore the default setup.
6. Back: Press LIST to exit the sub menu.

Automatic exposure setting: Press ACK key to enter the sub menu
1. Exposure mode: optional: "Auto," "Iris manual," "Gain manual," "Manual."
2. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
3. Iris adjust: optional: "Auto" (Only after set the exposure mode).
4. Auto gain adjust: optional: "Auto" (Only after set the exposure mode).
5. Brightness: Press ACK to increase and press LIST to decrease, press ENABLE to confirm.
6. Backlight compensation: optional: "OFF," "ON." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
7. Backlight sensitivity: Press ACK TO increase and press LIST to decrease, press ENABLE to confirm.
8. Anti-flash: optional: "OFF," "ON." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
9. Shutter speed: Press ACK to increase and press LIST to decrease, press ENABLE to confirm.
10. Default setup: Press LIST to restore the camera's default setup.
11. Back: Press LIST to exit the sub menu.

Special setting: Press ACK key to enter the sub menu
1. User's name.
2. Acutance: optional: "OFF," "ON."
3. Mirror: optional: "OFF," "ON."
4. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
5. Multicolor: optional: "OFF," "ON."
6. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
7. Negative: optional: "OFF," "ON."
8. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
9. Signal extension: optional: "OFF," "ON."
10. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
11. English: optional: "English."
12. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
13. Default setup: Press LIST to restore the default setup.
14. Back: Press LIST to exit the sub menu.

Dynamic detection setting: Press ACK key to enter the sub menu
1. State detection: optional: "OFF," "ON."
2. Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
3. Sensitivity: Press ACK key to increase and press LIST to decrease, press ENABLE to confirm.
4. Default setup: Press LIST to restore the default setup.
5. Back: Press LIST to exit the sub menu.

Screen display setting: Press ACK key to enter the sub menu
1. Function display: optional: "ON," "OFF." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.

2. Dynamic detection display: optional: "ON," "OFF." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
3. Camera ID: optional: "ON," "OFF." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
4. Zoom status display: optional: "ON," "OFF," Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
5. User's name display: optional: "ON," "OFF." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
6. Starting display: optional: "ON," "OFF." Press ACK or LIST to select, or if selected, press ENABLE to continue selecting.
7. Default setup: Press LIST to restore the camera's default setup.
8. Back: Press LIST to exit the sub menu.

Electronic sensitivity setting: nonuse

Broad dynamic setting: nonuse

CNB camera menu
1. Mirror: optional: "ON," "OFF." Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
2. Positive/Negative card: optional: "Positive," "Negative." Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
3. Multicolor: optional: "ON," "OFF." Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
4. White balance: optional: "Auto," "Keyboard control." Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
5. Shutter: optional: "*10000," "*4000," "*2000," "*1000," "*500," "*250," "125," "Auto." Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
6. Identify code.
7. Zoom starting point: Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
8. Zoom ending point: Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
9. Brightness: Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
10. Sharpness: Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
11. Focus: optional: "Auto," "Keyboard control." Press ACK to select this option, press SEQ or MON to select state, press ACK to exit the state selection.
12. Default setup: Press ACK to selection this option, and press SEQ to restore the default setup.

Address-Binary code chart

Binary System Code	Hunt CCTV	Samsung / Kalatel	Pelco-D / Pelco-P	Binary System Code	Hunt CCTV	Samsung / Kalatel	Pelco-D / Pelco-P
00000000	1	0	1	00000001	2	1	2
00000010	3	2	3	00000011	4	3	4
00000100	5	4	5	00000101	6	5	6
00000110	7	6	7	00000111	8	7	8
00001000	9	8	9	00001001	10	9	10
00001010	11	10	11	00001011	12	11	12
00001100	13	12	13	00001101	14	13	14
00001110	15	14	15	00001111	16	15	16
00010000	17	16	17	00010001	18	17	18
00010010	19	18	19	00010011	20	19	20
00010100	21	20	21	00010101	22	21	22
00010110	23	22	23	00010111	24	23	24
00011000	25	24	25	00011001	26	25	26
00011010	27	26	27	00011011	28	27	28
00011100	29	28	29	00011101	30	29	30
00011110	31	30	31	00011111	32	31	32
00100000	33	32	33	00100001	34	33	34
00100010	35	34	35	00100011	36	35	36
00100100	37	36	37	00100101	38	37	38
00100110	39	38	39	00100111	40	39	40
00101000	41	40	41	00101001	42	41	42
00101010	43	42	43	00101011	44	43	44
00101100	45	44	45	00101101	46	45	46
00101110	47	46	47	00101111	48	47	48
00110000	49	48	49	00110001	50	49	50
00110010	51	50	51	00110011	52	51	52
00110100	53	52	53	00110101	54	53	54
00110110	55	54	55	00110111	56	55	56
00111000	57	56	57	00111001	58	57	58
00111010	59	58	59	00111011	60	59	60
00111100	61	60	61	00111101	62	61	62
00111110	63	62	63	00111111	64	63	64
01000000	64	64	64	01000001	66	64	66
01000010	67	66	67	01000011	68	67	68
01000100	69	68	69	01000101	70	69	70
01000110	71	70	71	01000111	72	71	72
01001000	73	72	73	01001001	74	73	74
01001010	75	74	75	01001011	76	75	76
01001100	77	76	77	01001101	78	77	78
01001110	79	78	79	01001111	80	79	80
01010000	81	80	81	01010001	82	81	82
01010010	83	82	83	01010011	84	83	84

Binary System Code	Hunt CCTV	Samsung / Kalatel	Pelco-D / Pelco-P	Binary System Code	Hunt CCTV	Samsung / Kalatel	Pelco-D / Pelco-P
01010100	85	84	85	01010101	86	85	86
01010110	87	86	87	01010111	88	87	88
01011000	89	88	89	01011001	90	89	90
01011010	91	90	91	01011011	92	91	92
01011100	93	92	93	01011101	94	93	94
01011110	95	94	95	01011111	96	95	96
01100000	97	96	97	01100001	98	97	98
01100010	99	98	99	01100011	100	99	100
01100100	101	100	101	01100101	102	101	102
01100110	103	102	103	01100111	104	103	104
01101000	105	104	105	01101001	106	105	106
01101010	107	106	107	01101011	108	107	108
01101100	109	108	109	01101101	110	109	110
01101110	111	110	111	01101111	112	111	112
01110000	113	112	113	01110001	114	113	114
01110010	115	114	115	01110011	116	115	116
01110100	117	116	117	01110101	118	117	118
01110110	119	118	119	01110111	120	119	120
01111000	121	120	121	01111001	122	121	122
01111010	123	122	123	01111011	124	123	124
01111100	125	124	125	01111101	126	125	126
01111110	127	126	127	01111111	128	127	128
10000000	129	128		10000001	130	129	
10000010	131	130		10000011	132	131	
10000100	133	132		10000101	134	133	
10000110	135	134		10000111	136	135	
10001000	137	136		10001001	138	137	
10001010	139	138		10001011	140	139	
10001100	141	140		10001101	142	141	
10001110	143	142		10001111	144	143	
10010000	145	144		10010001	146	145	
10010010	147	146		10010011	148	147	
10010100	149	148		10010101	150	149	
10010110	151	150		10010111	152	151	
10011000	153	152		10011001	154	153	
10011010	155	154		10011011	156	155	
10011100	157	156		10011101	158	157	
10011110	159	158		10011111	160	159	
10100000	161	160		10100001	162	161	
10100010	163	162		10100011	164	163	
10100100	156	164		10100101	166	156	
10100110	167	166		10100111	168	167	
10101000	169	168		10101001	170	169	
10101010	171	170		10101011	172	171	

Binary System Code	Hunt CCTV	Samsung / Kalatel	Pelco-D / Pelco-P	Binary System Code	Hunt CCTV	Samsung / Kalatel	Pelco-D / Pelco-P
10101100	173	172		10101101	174	173	
10101110	175	174		10101111	176	175	
10110000	177	176		10110001	178	177	
10110010	179	178		10110011	180	179	
10110100	181	180		10110101	182	181	
10110110	183	182		10110111	184	183	
10111000	185	184		10111001	186	185	
10111010	187	186		10111011	188	187	
10111100	189	188		10111101	190	189	
10111110	191	190		10111111	192	191	
11000000	193	192		11000001	194	193	
11000010	195	194		11000011	196	195	
11000100	197	196		11000101	198	197	
11000110	199	198		11000111	200	199	
11001000	201	200		11001001	202	201	
11001010	203	202		11001011	204	203	
11001100	205	204		11001101	206	205	
11001110	207	206		11001111	208	207	
11010000	209	208		11010001	210	209	
11010010	211	210		11010011	212	211	
11010100	213	212		11010101	214	213	
11010110	215	214		11010111	216	215	
11011000	217	216		11011001	218	217	
11011010	219	218		11011011	220	219	
11011100	221	220		11011101	222	221	
11011110	223	222		11011111	224	223	
11100000	225	224		11100001	226	225	
11100010	227	226		11100011	228	227	
11100100	229	228		11100101	230	229	
11100110	231	230		11100111	232	231	
11101000	233	232		11101001	234	233	
11101010	235	234		11101011	236	235	
11101100	237	236		11101101	238	237	
11101110	239	238		11101111	240	239	
11110000	241	240		11110001	242	241	
11110010	243	242		11110011	244	243	
11110100	245	244		11110101	246	245	
11110110	247	246		11110111	248	247	
11111000	249	248		11111001	250	249	
11111010	251	250		11111011	252	251	
11111100	253	252		11111101	254	253	
11111110	255	254		11111111	256	255	

Note: PELCO—D and PELCO—P protocols only have 128 address.

Issue	Possible Reason	Solution
Power on, no movement, no image, indicator light does not light.	• Power line connected incorrectly. • Power damaged. • Blowout.	• Correct or replace the power.
Power on, self check. Has image, can't control, indicator light does not flicker.	• The address code, protocol or baud rate is incorrect. • RS485 bus is incorrectly connected.	• Reset the unit. • Make sure the bus is connected properly.
Camera can't reposition itself (camera can no longer move).	• Mechanical failure. • Camera Incline. • Not enough power is being supplied to the unit.	• Repair. • Correct. • Replace.
Image is unstable.	• The video line connected is bad. • Not enough power is being supplied to the unit.	• Check the video line. • Replace.
Image is dim.	• Focus is set to manual and is out of focus. • Unit is dirty.	• Adjust the manual setting to auto. • Clean the unit.
Control is not stable, or it is delayed.	• Not enough power is being supplied to the unit. • The matching resistance of the furthest unit is not working properly.	• Change the power supply. • Make the matching resistance work.

Please contact one of WTI's knowledgeable "solutions specialists" for more information at 1/866/gotowti.

TECHNICAL SPECIFICATIONS

C-MAX *Ultra Dome Cameras*

C-MAX *Ultra Dome* I (UD126*x*)	
Day/Night Filter	Built in
Masking Feature	Yes
Min. Illumination	0.7 lux/0.01 lux (b/w mode)
Zoom	26X Optical / 10X Digital
Focal Length	f=3.6-82.8mm, F=1.6-3.7
C-MAX *Ultra Dome* II (UD218*x*)	
Min. Illumination	0.7 lux
Zoom	18X Optical / 12X Digital
Focal Length	f=4.1-73.8mm, F=1.4-3
C-MAX *Ultra Dome* IV (UD436*x*)	
Day/Night Filter	Built in
Masking Feature	Yes
Min. Illumination	1.0 lux/0.01 lux (b/w mode)
Zoom	30X Optical / 10X Digital
Focal Length	f=3.6-122.4mm, F=1.6-4.5
Resolution	540 TVL
C-MAX Ultra Dome I, II & IV	
Communication Bus	RS485 Bus
Communication Transmission Speed	1200/2400/4800/9600 bps
Horizontal Rotation Speed	0.4° - 280° (1-64 grade shift gears)
Horizontal Rotation Range	360° continuous rotation
Tilt Rotation Range	90°
Auto Flip	Rotates 180° when camera tilts to the vertical position
Auto Zoom Speed Control	Control speed auto-adjusted according to zoom length changes
2 Points Scan	Yes
2 Points Scan Speed	1- 64 grades available
Dwell Time (2 points scan)	1 - 60s available
Preset Positions	128 positions
Running to Preset Speed	1 - 64 grades available, 0.4° - 280°
Dwell Time at Preset Position	1 - 60s available
Cruise Tour	8 group
Cruise Points Qty per Cruise Group	16 preset positions
Heater, Blower	Auto starts 24VAC, heater <5° C, fan >45° C, heater 24VAC, 0.73A, 17.5W blower: 12VDC, 0.12A, 1.44W
Sync	Internal/external
Scan	2:1 Interlace
Iris	Auto/manual
Focus	Auto/manual
Zoom	Auto/manual
Angle of View	47° (wide), 2° (Tele)
Backlight Compensation	Yes
White Balance	Automatic
Gain	Automatic
S/N Ratio	>55 dB
Video Signal Output	1.0 ± 0.2V p-p
Power Supply	24VAC ± 5%
Power Consumption	20W
Operating Temperature	-50° F ~ +113° F (-10° C ~ +45° C)
Storage Temperature	-86° F ~ +140° F (-30° C ~ +60° C)

WTI

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An ISO 9001 Certified Company

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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 are subject to change without notice.