VITEK ®
INDUSTRIAL VIDEO PRODUCTS, INC.

VTC-C770DS
700TVL Day/Night EX-View CCD
Camera w/Effio-E Processing

VITEK

VTC-C770DS
TRUE DAY/NIGHT
ICR CAMERA

(Lens not included)

- 1/3" High Density EX-View CCD (960H)

- High Resolution of 700 Horizontal Lines

- Sony Effio-E Digital Signal Processor

- Advanced IR Optimizer helps reduce over saturation of IR illuminated video without engaging the Image Signal Processor chip.

- Small scale design to fit in 5" dome enclosures

- E-WDR by ATR (Adaptive Tone Reproduction)

- Sensitivity of 0.003Lux (F1.2@40IRE)

- 2D-DNR - 2D Digital Noise Reduction

- True Day/Night by ICR - Infrared Cut Removal

- Built-in Motion Detection

- Privacy Mask function

- On Screen Display (OSD) Menu

- 24VAC/12VDC Dual Voltage

WARNING   To prevent fire or shock hazard, do not expose the unit to rain or moisture.

The symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the unit.

The symbol is intended to alert the user to the presence of Non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to person.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Caution

To prevent electric shocks and risk of fire hazards, do NOT use other than specific power source.

  Warning(NTSC version) -- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution -- Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Table of contents

1. Safety Instructions and Notes

- Please read these safety and operating instructions before putting the camera into operation.
- Keep the operating instructions in a safe place for later use.
- The Standard Box Camera is designed for indoor use only and it must not be installed where exposed to rain and moisture.
- Do not operate the cameras beyond their specified temperature, humidity or power ratings.
- Never open the case of the camera because there are precision parts inside. Otherwise a trouble or an accident may result
- Do not put anything metallic and other foreign substances through the vent. A trouble fire or electric shock may result.
- Be sure to turn off the power before installing or making connection.
- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks or damage and no moisture can get in.
- Do not install the camera in places exposed to vibrations and shocks.
- Be very careful not to drop or shock the camera while carrying it in.
- Do not orient the camera to the sun.
- Do not make any modification to the unit (neither to the software nor the hardware). Improper modification voids the warranty and can cause malfunctions or damages.
  The manufacturer accepts no liability for damages resulting from unauthorized or improper modifications to the unit
- Some of types of lenses may cause hunting, light amount drop or other problems. In such case, readjust the lenses.
- Because of the digital image device characteristics, images may look rugged at high temperatures. This does not mean the camera is in trouble.
- The warranty becomes void if repairs are undertaken by unauthorized persons.
- Contact the supplier if any functional problems arise.

Cleaning:
- Do not touch the surface of the imaging device.
- Keep clean the lens surfaces at both sides of front and rear..

Notice -- The images used in manual are processed to help comprehension and may differ from actual video of the camera.

2. General Features

This camera is an ultraclear resolution camera which realizes over 700TVL resolution and a crisp color reproduction with Sony 960H EX-view CCD and Effio-E image signal processor.

With Effio-E digital imaging system,
- Delivers the crystal clear images with over 700TVL resolution that accurately capture every aspect of any scene
- Color signal processing provides the optimum balance between the luminance and chroma signals for high color reproducibility even for the detail scene which contains very high spatial frequency.
- Incorporates 2-D noise reduction signal processing

With ICR mechanism,
- Enhances its sensitivity about 10x at night time
- Can accepts the infrared light

With 24VAC/12VDC dual power design,
- Offers the flexibility of installation
- Ensures the reliability

Main features;
• 1/3" Sony High Density Sony EX-View CCD (960H)
• High Resolution of 700 Horizontal Lines
• Sony Effio-E Digital Signal Processor
• Small scale design to fit in 5" dome enclosures
• E-WDR by ATR (Adaptive Tone Reproduction)
• Sensitivity of 0.003Lux (F1.2@40IRE)
• 2D-DNR - 2D Digital Noise Reduction Processing
• True Day/Night by ICR - Infrared Cut Removal
• Built-in Motion Detection
• Privacy Mask function
• On Screen Display (OSD) Menu
• 24VAC/12VDC Dual Voltage

3. Supplied Items

1 x VTC-C770DS Color Camera
1 x Dust protection cap
1 x L-Wrench (1.5mm)
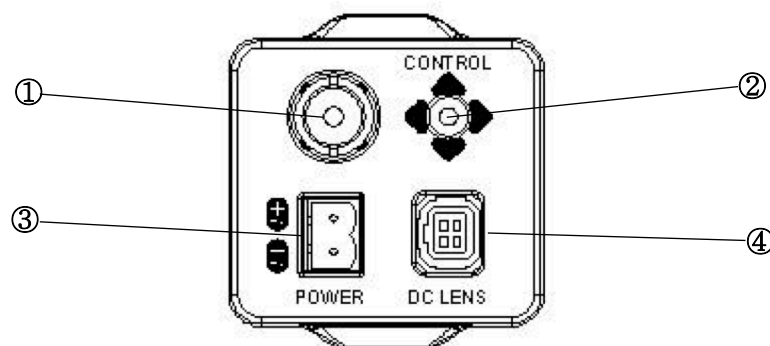1 x Power Connector
1 x Installation and Operating Instructions

4. Part Names

4.1 Perspective
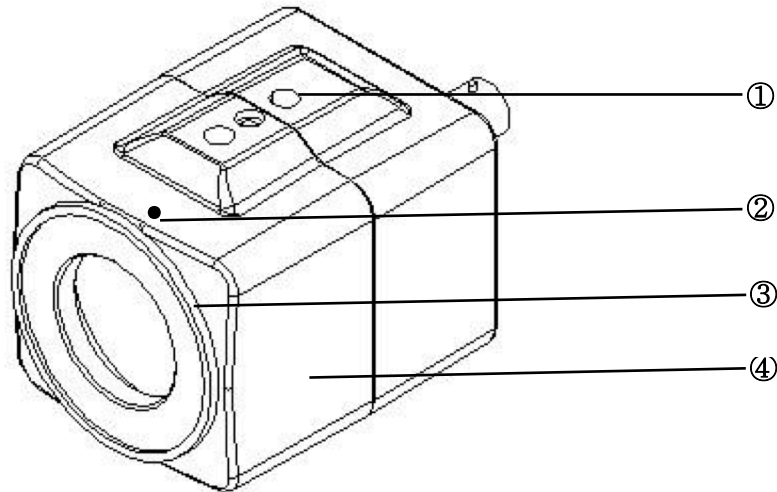
① MOUNT HOLE (1/4" UNC)
② FLANGE LOCK SCREW
③ BACK FOCUS ADJUSTING FLANGE
④ CAMERA BODY

4.2 Rear side view

① Video Output Connector (BNC)
② OSD Control Joystick (Up/ Down/ Left/ Right / Enter)
③ Power Input Terminal
④ AUTO IRIS LENS CONTROL (DC LENS ONLY)

- Lens Connector for Auto-iris lens (DC Drive)

PIN 4   PIN 2

PIN 3   PIN 1
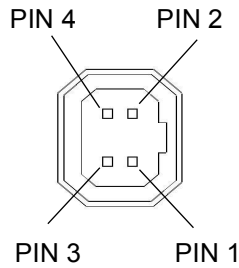
PIN No	DC Iris
1	Damp(-)
2	Damp(+)
3	Drive(+)
4	GND

5. Installation Instructions

5.1 Installing lens

Before installing lens, make sure the power is not connected to the camera.
Do not touch any lens or filter surfaces

5.2 Adjust back-focus (If required)

When the factory set of Back focus needs to be adjusted due to tolerance of the lenses or when the camera is employed at a distance closer than the minimum object distance (MOD) require an adjustment to the back focus.

1) Loosen ①FLANGE LOCK SCREW to adjust the back focus of lens
2) Camera Focus can be adjusted by turning   BACK FOCUS ADJUSTING FLANGE.
3) After adjustment, lock ②FLANGE LOCK SCREW.

5.3 Power Supply Connections

Camera can work with either 24VAC or 12VDC, dual voltage power. It does NOT require the polarity-matched connection for 12VDC supply. Primary and secondary grounds are completely isolated to avoid the possible ground-loop problems. Its excellently wide operating voltage range of 10.5V-30V for DC and 12-28.8V for AC gives an extra flexibility at the installation.
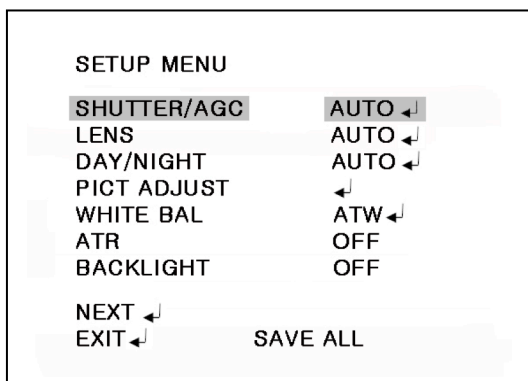
CLASS 2

AC 24V
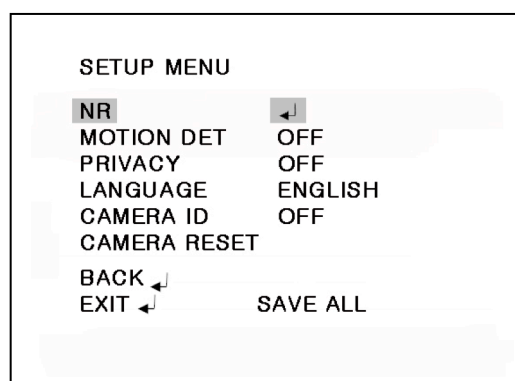DC 12V

6
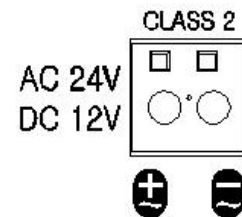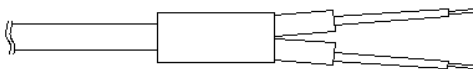
6. SETUP menu

6.1 In the menu

Use ⬆ , ⬇ buttons to move menu ◀,▶ buttons to change the settings and press ◎ button shortly to select or enter.
◎ button stands for MENU or ENTER button.

## 6.2 MAIN menu

Follow below chart for submenu setting.

```
SETUP MENU

SHUTTER/AGC      AUTO ↵
LENS             AUTO ↵
DAY/NIGHT        AUTO ↵
PICT ADJUST          ↵
WHITE BAL        ATW↵
ATR              OFF
BACKLIGHT        OFF

NEXT ↵
EXIT↵        SAVE ALL
```

MAIN menu-1

```
SETUP MENU

NR                   ↵
MOTION DET       OFF
PRIVACY          OFF
LANGUAGE         ENGLISH
CAMERA ID        OFF
CAMERA RESET

BACK ↵
EXIT ↵        SAVE ALL
```

MAIN menu-2

6.2.1 MAIN menu-1

MAIN menu-1	Default	Descriptions
SHUTTER /AGC	AUTO	Sets the parameters related to the shutter mode and AGC for AUTO and MANUAL settings. See the details '6.3 SHUTTER/AGC menu'
LENS	AUTO	Selects the lens type, AUTO or MANUAL. AUTO supports DC auto-iris lens only. See '6.4 LENS menu' for details.

DAY/NIGHT	AUTO	Sets DAY/NIGHT mode to AUTO, COLOR or B/W
		AUTO – Camera switches DAY from/to NIGHT automatically.
		  BURST, DELAY CNT, DAY→NIGHT, NIGHT→DAY can be set.
		  See '6.5 DAY/NIGHT menu' for details.

PICT ADJUST	-	Sets MIRROR, BRIGHTNESS, CONTRAST, SHARPNESS, HUE or GAIN. See '6.6 PICT ADJUST menu' for details.
WHITE BAL	ATW	Sets ATW, PUSH, USER1, USER2, ANTI CR, MANUAL or PUSH LOCK. See '6.7 WHITE BAL menu' for details.
ATR	OFF	Sets ON/OFF for enabling/disabling ATR(Adaptive Tone Reproduction) compensation for the better dynamic range(E-WDR) of the image. See '6.8 ATR menu' for adjusting the dynamic ranges.
BACKLIGHT	OFF	Selects BACKLIGHT mode out of OFF, HLC or BLC. Areas and gains for HLC and BLC are factory preset and not user adjustable.
NEXT		Moves to MAIN menu-2.
EXIT		Exits the setup menu. To save the changes, move cursor to 'SAVE ALL' and press ◎ button before exiting the setup menu
SAVE ALL		Saves all parameters by pressing ◎ button when cursor is on 'SAVE ALL'

6.2.1 MAIN menu-2

MAIN menu-2	Default	Descriptions
NR	-	Sets the noise reduction parameters for NR MODE and Y LEVEL, C LEVEL. See '6.10 NR menu' for details.
MOTION DET	OFF	Sets ON/OFF for enabling/disabling MOTION DET. See '6.11 MOTION DET menu' for the parameter settings.
PRIVACY	OFF	Sets ON/OFF for enabling/disabling PRIVACY. See '6.12 PRIVACY menu' for the parameter settings.
LANGUAGE	ENGLISH	Selects the language out of 7 languages.
CAMERA ID	OFF	Sets ON/OFF for enabling/disabling of ID display. Factory default ID is Software version of camera. User programmed camera ID will be lost and restored with Factory default ID by CAMERA RESET. See '6.14. ID menu' for editing ID.
CAMERA RESET		Restores FACTORY DEFAULT. To save the restored parameters, move cursor to 'SAVE ALL' and press ◎ button before exiting the setup menu.
BACK		Returns to MAIN menu-1.
EXIT		Exits the setup menu. To save the changes, move cursor to 'SAVE ALL' and press ◎ button before exiting the setup menu
SAVE ALL		Saves all settings by pressing ◎ button when cursor is on 'SAVE ALL'

6.3 SHUTTER/AGC menu

This menu offers how to control/select SHUTTER, AUTO IRIS and AGC to get the best image for the high luminance and the low luminance according to the scene.

For example, to reduce the wash out and extend the dynamic range for the highlight scene, it is improved by SHUTTER+AUTO IRIS in the outdoor daylight. But this mode may show the color rolling or video level hunting problem in a certain lighting condition such as fluorescent lights.

For Flickerless mode which reduces the flickers by NTSC camera under 50Hz light or PAL camera under 60Hz light, MAIN>SHUTTER/AGC>MANUAL>SHUTTER must be set to 1/100(NTSC), 1/120(PAL) and MAIN>SHUTTER/AGC>AUTO>MODE to AUTO IRIS. Normal shutter speed with an auto iris lens should be set to 1/60(NTSC) and 1/50(PAL) for the best sensitivity.

This menu is complicated and handled with care because the shutter speed at MAIN>SHUTTER/AGC> MANUAL> SHUTTER is applied to this menu too.

To enter SHUTTER/AGC menu, press ◎ button at MAIN menu-1>SHUTTER/AGC.

```
AUTO SETUP

HIGH LUMINANCE
MODE          AUTO IRIS
BRIGHTNESS    ||||||||||||||||  32
LOW LUMINANCE
MODE          AGC
BRIGHTNESS    x0.50

RETURN↵
```

```
MANUAL SETUP

MODE          SHUT+AGC
SHUTTER       1/50
AGC           6.00



RETURN↵
```
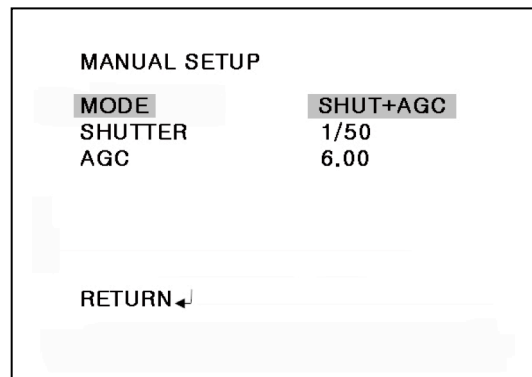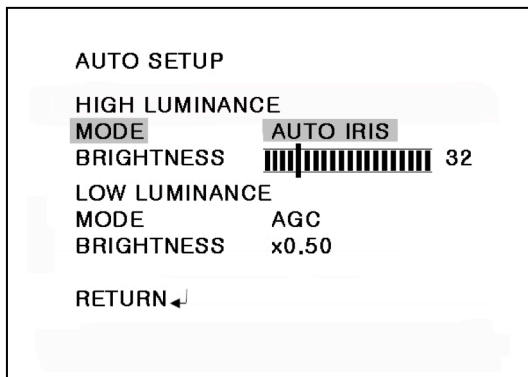
6.3.1 SHUTTER/AGC>AUTO SETUP menu

AUTO SETUP		Default	Descriptions
HIGH LUMINANCE	MODE	AUTO IRIS	Selects the shutter mode from AUTO IRIS or SHUT+AUTO IRIS when MAIN>LENS>AUTO but it is fixed to SHUT if MAIN>LENS>MANUAL. **AUTO IRIS** - Light level is controlled by an auto iris lens only. For proper auto iris operation, the auto iris operation mode in MAIN> LENS>AUTO>MODE must be set to AUTO. The shutter speed is fixed to the setting at MAIN>SHUTTER/AGC> MANUAL> SHUTTER in this mode. Set SHUTTER to 1/60(NTSC) or 1/50(PAL) for the best sensitivity unless it is Flickerless mode. To set Flickerless mode, MAIN>SHUTTER/AGC>MANUAL>SHUTTER must be set to 1/100(NTSC), 1/120(PAL) and MAIN>SHUTTER/AGC> AUTO>MODE to AUTO IRIS. **SHUT+AUTO IRIS**- Light level is controlled by the combination of an auto iris lens and a shutter control to improve the highlight from wash-out and extend the dynamic range. Shutter speed can vary between 1/60(1/50)~1/10,000sec. This mode can enhance the overall video quality of daylight outdoor but may show more smear for very bright spot light or color rolling or video level hunting under a certain lighting condition such as fluorescent lights.
	BRIGHT-NESS	032	Adjusts the brightness of the image by an auto iris lens or a shutter speed control + an auto iris lens.
LOW LUMINANCE	MODE	AGC	Sets AGC to compensate the video level when the scene is dim.
	BRIGHT-NESS	x0.50	Sets the brightness level which starts AGC from x0.25, x0.50, x0.75 and x1.0 of full video level. If set to x0.50, camera starts AGC when the video level goes down below 50% level.

NOTICE : The setting AUTO IRIS at SHUTTER/AGC>AUTO SETUP>HIGH LUMINANCE MODE will be changed to SHUT+AUTO IRIS once if MAIN menu-1>LENS is changed to MANUAL. As a result of this, the lens iris can NOT be fully opened when MAIN menu-1>LENS> AUTO IRIS> MODE is OPEN. This can be recovered by setting SHUTTER/AGC>AUTO SETUP>HIGH LUMINANCE MODE to AUTO IRIS.

6.3.2 SHUTTER/AGC>MANUAL SETUP menu

MANUAL SETUP	Default	Descriptions
MODE	SHUT +AGC	Compensates the video level by the manual shutter control and AGC.
SHUTTER	1/60 (1/50)	Sets the manual shutter to 1/60(1/50), 1/100(1/120), 1/250,1/500,1/1000, 1/2000,1/4000 or 1/10000. Manual shutter is only useful for the scene which luminance is unchanged.
AGC	6.00	Sets AGC gain in dB. Higher gain compensates brighter but noise increases. Manual AGC can be set to 6, 12,18,24,30,36,42 or 44.8dB.

6.4 LENS menu

To enter LENS menu, press ◉ button at MAIN **menu-1**>LENS>AUTO.

```
AUTO IRIS

TYPE          DC
MODE          AUTO
SPEED         ▐▐▐▐▐│▐▐▐▐▐▐▐▐▐▐▐▐080




RETURN↵
```
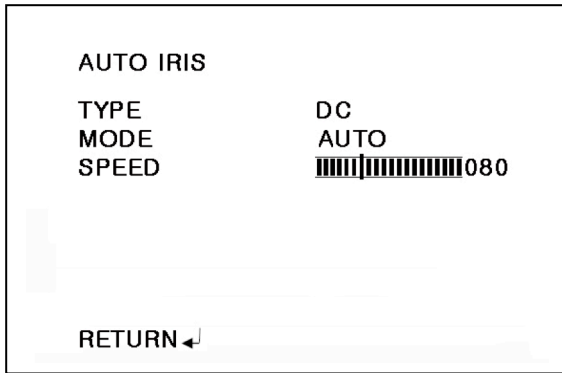
AUTO IRIS	Default	Descriptions
TYPE	DC	**MUST BE SET TO DC ONLY**. This camera does NOT support video type auto iris lens.
MODE	AUTO	**AUTO** - Lens iris is automatically controlled according to the scene light level. **OPEN** - Lens is fully opened regardless of the light level. **CLOSE** - Lens is fully closed.
SPEED	080	Adjusts the iris control speed. The lower value is the faster speed. If the speed is too slow or fast, the iris control may be unstable.

6.5 DAY/NIGHT menu

To enter DAY/NIGHT menu, press ◎ button at MAIN **menu-1**>DAY/NIGHT...

```
B/W

 ▶ BURST          OFF
   IR  OPTIMIZER   OFF
   MODE            –
   LEVEL           –


   RETURN↵
```
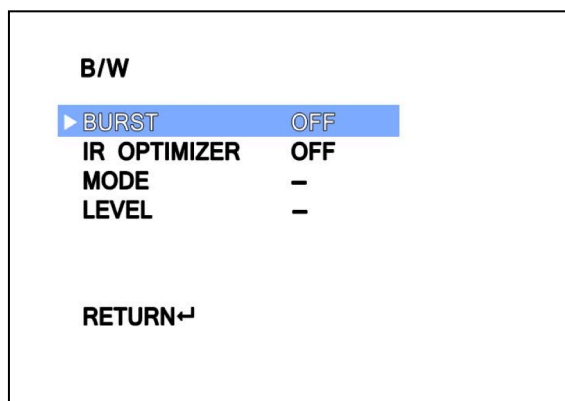
> ### IMPORTANT ACTIVITY!!!
> *DAY->NIGHT and NIGHT->DAY operations must be examined and verified at the final installation.*
> Block the lens for a few seconds for NIGHT mode then release and let it return to DAY mode.
> If camera stays at NIGHT mode for more than 10sec, slightly decrease NIGHT→DAY THRES and repeat the fore-mentioned steps.
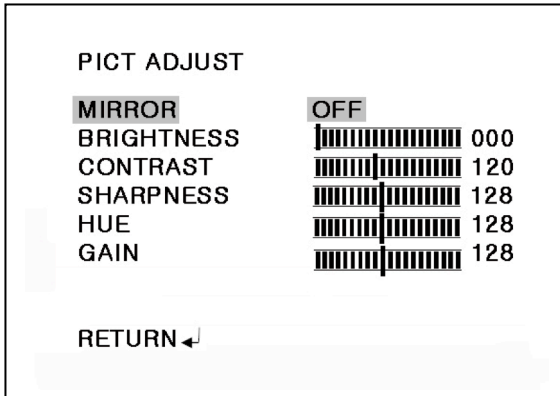> If the scene is too dim or lens iris was adjusted too low (near close), it may not return to DAY.

DAY/NIGHT	Default	Descriptions
IR OPTIMIZER	OFF	IR OPTIMIZER feature can reduce the over-saturation in video caused by the narrow emitting IR LEDs **OFF** - Disables IR OPTMIZER. **ON** - Enables IR OPTIMIZER.
MODE	AUTO	There are two modes available by how to manage IR OPTIMIZER. **AUTO** - Reducing the over-saturation is automatically adjusted along with the location of the subject. **CENTER** - Center area is prioritized to reduce the over-saturation. Over-saturation in the side area could be ignored.
LEVEL	015	Overall brightness is adjusted when IR OPTIMIZER is working. High value in LEVEL increases the brightness but the over-saturation could occur. Low value in LEVEL decreases the brightness and the dim area could be darker.

6.6 PICT ADJUST menu

To enter PICT ADJUST menu, press ◎ button at MAIN **menu-1**>PICT ADJUST.

```
PICT ADJUST

MIRROR        OFF
BRIGHTNESS    |IIIIIIIIIIIIIIII 000
CONTRAST      IIIIIIIIII|IIIIIIIII 120
SHARPNESS     IIIIIIIIII|IIIIIIIII 128
HUE           IIIIIIIIII|IIIIIIIII 128
GAIN          IIIIIIIIII|IIIIIIIII 128


RETURN↵
```

PICT ADJUST	Default	Descriptions
MIRROR	OFF	Picture will be flipped horizontally if it turns ON.
BRIGHTNESS	000	Increases or decreases the brightness of the picture. This is different from that of DC iris lens and simply increases or decreases the digital gain of video. Do not increase this too much, the dynamic range for the highlight area will decrease.
CONTRAST	120	Increases or decreases the contrast of the picture.
SHARPNESS	128	Increases or decreases the sharpness of the picture. Too much sharpness can make image harsh and show more noise as well as line flicker at the edge of object in the picture.
HUE	128	Adjusts hue for NTSC version only
GAIN	128	Increases or decreases the color gain of the picture

6.7 WHITE BAL menu

White balance can be set to ATW, PUSH, USER1, USER2, ANTI CR, MANUAL or PUSH LOCK. ATW(Auto Tracking White balance) and PUSH(Full pull-in) is continuously monitoring/analyzing the color temperature of the incoming light and correcting the white balance.

ATW limits the color temperature range at about 2,500°K~8,500°K to reduce the excessive compensation for the big object which has a single color.
PUSH has no limits between about 1,800°K~10,500°K but it may over-compensate the white balance for the big object which has a single color.

In a certain case under 2,500°K such as halogen light, ATW may stop and if so, PUSH mode is recommended.

USER1 and USER2 are a fixed white balance which is user-programmable by R-GAIN and B-GAIN and useful only for the steady light.

ANTI CR(Anti Color Rolling) can reduce color rolling under the fluorescent light when the camera operates in shutter control without an auto iris lens.(NTSC version only)

MANUAL white balance is a kind of fixed white balance which is user-programmable by B-GAIN(R-GAIN will be automatically adjusted in accordance with B-GAIN) and useful only for the steady light.

PUSH LOCK is a fixed white balance which the white balance is compensated only while ◎ button is pressed at MAIN>WHITE BAL>PUSH LOCK and finishes the white balance when ◎ button is released.

To enter ATW(MANUAL) menu, press ◎ button at MAIN **menu-1**>WHITE BAL>ATW(MANUAL).

```
ATW
SPEED                  |||||||||||||| 250
DELAY CNT              |||||||||||||| 001
ATW FRAME        X2.00
ENVIRONMENT      INDOOR



RETURN↵
```

```
MANUAL WB
LEVEL            ||||||||||||| 064




RETURN↵
```

ATW	Default	Descriptions
SPEED	250	Sets the AWB compensating speed. Lower value makes AWB faster. **CAUTION** Too fast AWB may make the color oscillation.
DELAY CNT	001	Adjusts the AWB compensation period to next update of AWB. The smaller value will update AWB more frequently (faster).
ATW FRAME	X2.00	Determines the ATW range with respect to the fundamental range. Higher value than x1.00 extends the ATW range at lower and higher color temperature.
ENVIRON-MENT	INDOOR	Selects INDOOR or OUTDOOR. Their ATW is optimized for the limited application and can not cover **INDOOR** - Optimized for Indoor installation and more easily compensates ATW for low color temperature such as incandescent lights **OUTDOOR** - Optimized for outdoor sunlit applications and more easily compensates ATW for high color temperature such as daylight.

MANUAL WB	Default	Descriptions
LEVEL	064	Adjusts the manual white balance by LEVEL, where is B-GAIN.

6.8 ATR (Adaptive Tone Reproduction) menu

ATR feature improves the dynamic range and the visibility of the image by providing the optimal gradation compensation of the image in one field. This is achieved by two ways of image processing, luminance compression and contrast enhancement, so that the tone can be enhanced at highlight and dark area..

To enter ATR menu, press ◎ button at MAIN **menu-1**>ATR.

```
ATR

LUMINANCE      MID
CONTRAST       MID




RETURN↵
```

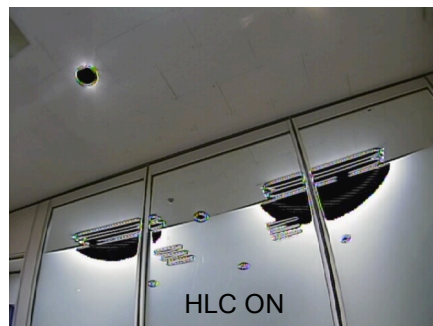| ATR	Default	Descriptions
LUMINANCE	MID	Compresses the highlight area and enhances the dark area so that the entire image can converge toward the medium level. LOW will compensate minimally and HIGH will be averaging the image more. With setting HIGH, the image may look less contrastive and noise may increase in the dark area.
CONTRAST	MID	Adjusts the strength of the image contrast. If set to too high, the dark area may loss detail and the high luminance area may saturate.

6.9 BACKLIGHT menu

To enter BACKLIGHT menu, press ● button in MAIN menu-1>BACKLIGHT.
The Backlight Compensation – BLC – function is used to brighten an image in the foreground with a highly lit area behind it such as sunlight, limiting the affect of silhouetting.
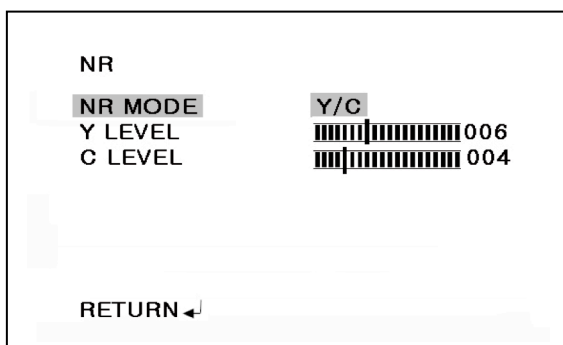
The Highlight Compensation – HLC – function is used to black out highlighted areas that may blind the camera, in order to enable a clear visual image of objects, such as the license plates of an oncoming vehicle or other objects that may be obstructed by headlamps.

HLC OFF

HLC ON

6.10 NR menu

To enter NR menu, press ◎ button at MAIN **menu-2**>NR.

```
NR

NR MODE          Y/C
Y LEVEL          ‖‖‖‖‖|‖‖‖‖‖‖‖‖006
C LEVEL          ‖‖‖|‖‖‖‖‖‖‖‖ 004




RETURN↵
```

NR	Default	Descriptions
NR MODE	Y/C	Selects OFF, Y, C or Y/C which noise reduction is performed with.
Y LEVEL	006	Indicates the noise reduction strength for the luminance signal. Higher value performs the stronger noise reduction and makes the image less sharper. Due to the limitation of 2D NR, noise reduction may not be effective enough.
C LEVEL	004	Indicates the noise reduction strength for the chrominance signal. Higher value performs the stronger noise reduction and makes the image less sharper. Due to the limitation of 2D NR, noise reduction may not be effective enough.

6.11 MOTION DET menu

Up to 4 motion detection areas are available and each area is programmable in size and location. The motion is displayed by means of blocks when MAIN **menu-2**>MOTION DET and MOTION DET>BLOCK DISP are ON.

To enter MOTION DET menu, press ◎ button at MAIN **menu-2**>MOTION DET>ON.

```
MOTION DET

DETECT SENSE    ||||||||||||||||||||  080
BLOCK DISP      ON
MONITOR AREA    OFF
AREA SEL        1/4
  TOP           ||||||||||||||||||||  015
  BOTTOM        ||||||||||||||||||||  135
  LEFT          ||||||||||||||||||||  020
  RIGHT         ||||||||||||||||||||  232
  RETURN↵
```
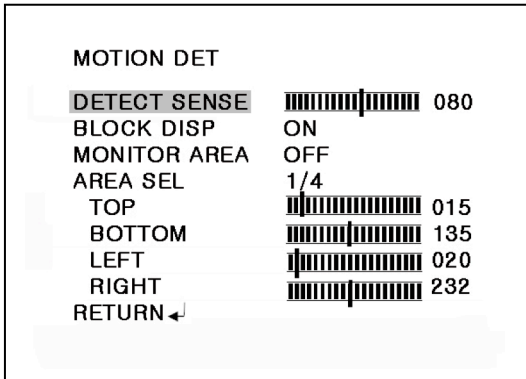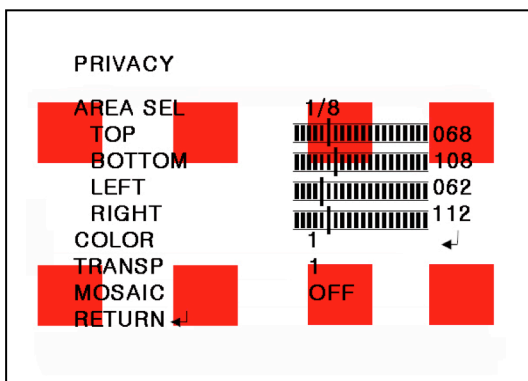
MOTION DET	Default	Descriptions
DETECT SENSE	080	Adjusts the sensitivity for detecting motion. Higher value is more sensitive.
BLOCK DISP	ON	Enables or disables displaying blocks for the area which the motion is detected.
MONITOR AREA	OFF	Displays four motion windows as programmed in sizes and positions.
AREA SEL	1/4	Selects one of AREA1~AREA4 to be adjusted. TOP(BOTTOM) ◀ button moves up and ▶ button moves down the top (bottom) border of the selected window at AREA SEL. LEFT(RIGHT) ◀ button moves left and ▶ button moves right the left (right) border of the selected window at AREA SEL

6.12 PRIVACY menu

Up to 8 privacy areas are available and each area is programmable in size and location.
The number of privacy areas is limited to four when MOTION DET>MONITOR AREA is ON.
The privacy areas are masked with the color selected by PRIVACY>COLOR.

To enter PRIVACY menu, press ◎ button at MAIN **menu-2**>PRIVACY>ON.

```
PRIVACY

AREA SEL        1/8
  TOP           ||||||||||||||||||||  068
  BOTTOM        ||||||||||||||||||||  108
  LEFT          ||||||||||||||||||||  062
  RIGHT         ||||||||||||||||||||  112
COLOR           1                  ↵
TRANSP          1
MOSAIC          OFF
RETURN↵
```

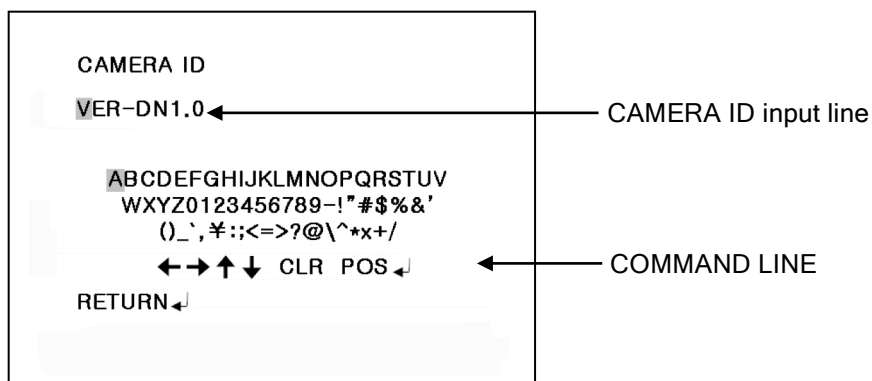| PRIVACY	Default	Descriptions
AREA SEL	1/8	Selects one of AREA1~AREA8 to be adjusted. TOP(BOTTOM) - ✖ button moves up and ✖ button moves down the top (bottom) border of the selected window at AREA SEL. LEFT(RIGHT) - ✖ button moves left and ✖ button moves right the left (right) border of the selected window at AREA SEL
COLOR	1	Sets one of 8 colors for the selected mask window at AREA SEL.
TRANSP	1.00	Transparency rate for the mask can be adjusted. 0.00 - Mask is fully transparent and not visible. 0.50 - Mask is 50% transparent. 0.75 - Mask is 25% transparent. 1.00 - Mask is not transparent.
MOSAIC	OFF	Enables or disables the mosaic effect for the selected mask window at AREA SEL

6.13 LANGUAGE menu

Seven languages, ENGLISH ,JAPANESE, DEUTCH, FRANCAIS, RUSSIAN, PORTUGUES and ESPANOL, are available with this camera.

6.14 CAMERA ID menu

Up to 40 characters can be input for camera ID.

To enter CAMERA ID menu, press ◎ button at MAIN menu-2>CAMERA ID.

```
CAMERA ID

VER-DN1.0◄──────────────────── CAMERA ID input line


ABCDEFGHIJKLMNOPQRSTUV
 WXYZ0123456789-!"#$%&'
  ()_`,¥:;<=>?@\^*x+/
    ←→↑↓ CLR POS↵◄──────────── COMMAND LINE
RETURN↵
```

Use ▲▼◀▶ buttons to move a block cursor in character table and press◎ button to input the selected character.

To move the character input position on CAMERA ID input line, move a cursor to ←→ on COMMAND LINE and press ◎ button on ← or →.
To clear CAMERA ID input line, move a cursor to CLR on COMMAND LINE and press ◎ button.
To set the location of CAM TITLE to be displayed on the monitor, move a cursor to POS and press ◎ button and then menu disappears and CAMERA ID will be displayed on the monitor.

Move CAMERA ID by using ▲▼◀▶ buttons and press◎ button to fix.
Menu will appear again.
To finish CAM TITLE menu, press ◎ button on RET on command line.

6.15 CAMERA RESET

Camera loads Factory defaults..
To save them, go to SAVE ALL and press ◎ button.

6.16 EXIT

Exits SETUP MENU and returns to the normal display

7. Specifications

VTC-770DS	
Image Device	1/3" Sony EX-VIEW CCD w/Effio-E
Resolution	700TVL
Effective Pixels	976(H) x 494(V)
Minimum Illumination	0.0003Lux @ F1.2
Lens mount	CS mount
Day/Night	True Day/Night by ICR
WDR	E-WDR by ATR (Adaptive Tone Reproduction)
Noise Reduction	2D-DNR
Motion Detection	24x16 Grid
Privacy Mask	Up to 8 programmable mask areas
White Balance	1,800~10,500ºK Automatic tracking
Auto Iris Control	DC drive iris control. Level control is fixed internally.
Light Compensation	BLC , HLC
DSS	NO
D-PTZ	NO
FLIP	NO
Synchronization	Internal
S/N Ratio	More than 50dB with AGC OFF at 50IRE
TV system	NTSC
Scan frequency.	59.94Hz(V), 15.734Khz(H)
Flicker reduction	Yes
OSD Language	Yes
Video Output	VBS 1Vpp +/-10%, 75ohm
Electronic Iris	1/60 ~ 1/100,000sec
Power Source	12VDC / 24VAC
Power Consumption*	2 Watts / 120mAmp
Operating condition	-4°~122°F (-20°-50°C)
Dimensions	1.9" x 2" x 2.4" (48mm x 51mm x 60.5mm)

● Design and specifications are subject to change for product improvements without prior notice.

8. Dimensional Drawings

1.89"

1.81"

2.89"

2.38"

.83"

.55"
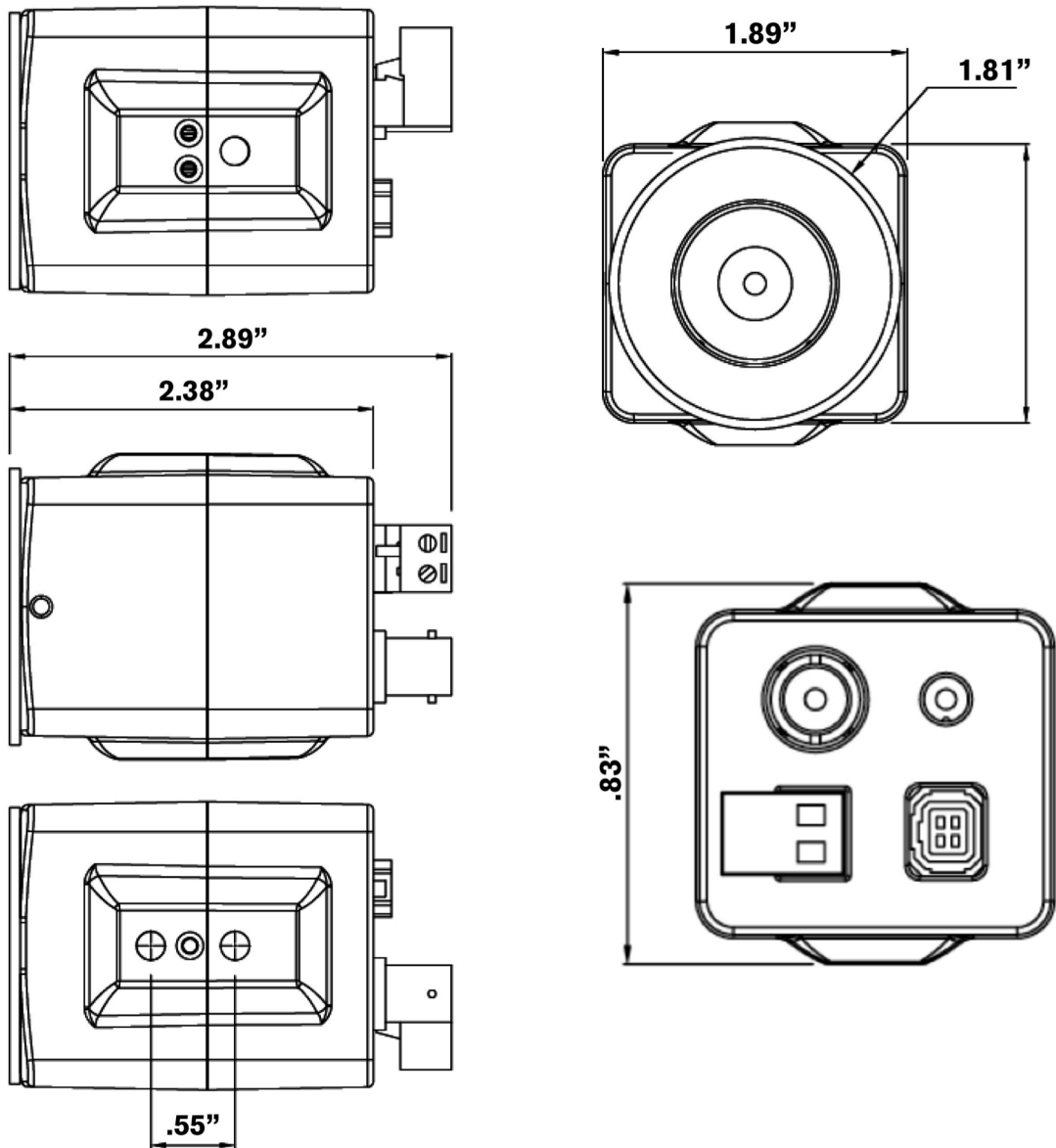
VT-EHP
8 & 16 Channel Digital Video Recorders

The highest recorded resolution in a Real Time Analog DVR, the EHP delivers "D1" – 704 x 480 @ 480pps maximum frames per second. All of the powerful features and applications of the EH Family can be found in the EHP plus a built in DVD/RW, Jog Shuttle for ease of playback, Individual video loop through, individual alarm inputs & outputs as well as Point-of-Sale (POS) integration and search functions. Available configurations of 8 and 16 channels with a maximum 8 Terabytes internal storage and HDD Mirror redundancy place this DVR at the pinnacle of the VITEK EH Lineup.

FEATURES:

- 8 or 16 Video Inputs with Main, 4 Spot, and 1080P HDMI outputs
- H.264 Compression
- 4 Alarm Inputs / 1 Relay Out
- Up to 480fps Live Display & 480fps Recording (VT-EHP16) / 240/240 (VT-EHP8)
- Built-in Point-of-Sales support
- Built-in Data Redundancy
- Remote Viewing over a LAN or Internet
- Free Applications for iPhone, iPad, iTouch and Droid Devices
- 500GB to 8TB Internal Storage Options (up to 8TB @ 4x2TB)
- Email Event Notification with Snapshot
- CMS Central Management Software (Included)
- MAC Client Software (Included)
- Control locally via Front Panel, USB Mouse or with the Included IR Remote control
- PTZ Control over RS-485

|	VT-EHP8	VT-EHP16
Video Input	8 Channels	16 Channels
IPS (Display / Recording)	240 / 240	480 / 480
Video Output	HDMI - 1 1080P (1920 x 1080) / VGA - 1 SXGA (1280 X1024)	
BNC Output	Monitor: 1 Composite (BNC) / Spot: 4 Composite (BNC)	
Audio In/Out	4 Line In (RCA) / 1 Line Out (RCA), CODEC : G.711 (64Kbps)	
Storage	Up to 4 Internal HDD (SATA) / Internal DVD-RW / E-SATA	
Archive	CD/DVD-RW / USB Device / Network	
USB Port	2 Front + 1 Rear	
System Control	Front Panel, USB Mouse, Joystick Controller, Included IR Remote Control	
Network	TCP/IP, HTTP, DHCP (DDNS)	
RJ-45 Ethernet Port	10M/100M/1Gbps	
Playback Rate	240 fps @ 704x480	480 fps @ 704x480
PTZ	2 - RS-485 - Supports most of PTZ protocols with up to 255 Presets	
Point of Sale (POS)	YES	
Motion Area Setting	Adjustable Grid (16 x 12)	
Recording Resolution Setting	By each camera for different resolution setting(CIF/2CIF/D1)	
Recording Quality Control	4 Levels (Low/Standard/High/Highest)	
Player	Backup player, Window Media Player and HDD PC Viewer	
E-mail notification	E-mails to specific users to notify events	
System Configuration	Full setup configuration over network	
Bandwidth limit	YES: Adjustable by User	
Two-Way Audio	YES	
Case Form Factor	2U	

Remote Viewing Apps for iPhone, iPad & Android
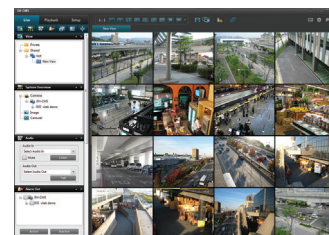
Included VT-EH CMS Software allows remote viewing and control of multiple VT-EH Series DVR's even when located at multiple locations!
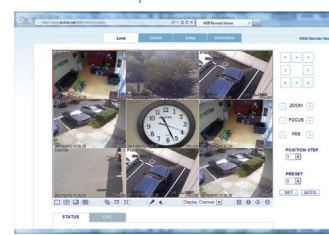
Remote Viewing from anywhere using Internet Explorer

VT-EHP8 Rear Connections

VT-EHP16 Rear Connections

VITEK LIMITED PRODUCT WARRANTY

VITEK products carry a three (3) year limited warranty. Digital recording and storage products are also warranted for 3 years except for the hard drives which carry their own independent factory warranty from the hard drive manufacturer. VITEK warrants to the purchaser that products manufactured by VITEK are free of any rightful claim of infringement or the like, and when used in the manner intended, will be free of defects in materials and workmanship for a period of three (3) years, or as otherwise stated above, from the date of purchase by the end user. This warranty is non-transferable and extends only to the original buyer or end user customer of a Vitek Authorized Reseller.

"Alpha Series by VITEK" products carry a three (3) year limited warranty. All other factors of the standard VITEK warranty will apply as stated above. ** Three Year "Alpha Series by VITEK" Warranty effective September 1st 2010. "Alpha Series by VITEK" products purchased prior to September 1st 2010 carry a one (1) year warranty.

** Three Year Warranty on all products except Alpha Series became effective on April 1st 2009. Legacy Products purchased prior to April 1st 2009 carry a two (2) year warranty.

This warranty shall not apply to repairs or replacements necessitated by any cause beyond the control of VITEK, including but not limited to, acts of nature, improper installation, excess moisture, misuse, lack of proper maintenance, accident, voltage fluctuations, or any unauthorized tampering, repairs or modifications. This warranty becomes VOID in the event of alteration, defacement, or removal of serial numbers.

Within the first 6 months of purchase, VITEK will replace or credit any defective product at the request of the customer (subject to availability) with a new product that equals or exceeds the performance of the original product purchased.

Within the first 6 months of purchase, at its sole discretion, VITEK may issue an advance replacement for a defective product; however, all related costs including, but not limited to shipping and/or delivery charges will be the responsibility of the customer. If upon return inspection a product is determined to be in good working order or shows evidence of misuse, the customer will be responsible for full payment of the original product purchased as well as the replacement product.

Beyond the first 6 month period for the remainder of the warranty, VITEK'S responsibility shall be limited to repairing the defective product, including all necessary parts and related labor costs. At its sole discretion, VITEK may choose to either exchange a defective product or issue a merchandise credit towards future product purchases. Any replacement parts furnished in connection with this warranty shall be warranted for a period not to exceed the remaining balance of the original equipment warranty.

A Return Authorization number or "RA" number must be obtained prior to the return of any item for repair, replacement, or credit. VITEK requires that this "RA" number be clearly printed on the outside of the shipping carton to avoid refusal of said shipment. The Return Authorization number expires after 30 days. Products returned after the 30 day period will be subject to refusal. Shipping charges, if any, must be prepaid. A copy of the bill of sale (or invoice of purchase), together with a complete written explanation of the problem must accompany all returns.

Vitek makes no warranty or guarantee whatsoever with respect to products sold or purchased through unauthorized sales channels. Warranty support is available only if product is purchased through a Vitek Authorized Reseller.