# VisionPlus **Auto-Focus** CCD Camera – **CCT545b**
**(The same specification as the CCT545 but with different connections)**

The CCT545b is a high performance colour camera with a built in *auto focus* Cannon Zoom lens means one camera really does suit many applications.

The powerful Cannon lens provides a zoom factor of 22X (3.7-85mm) and the cameras 10X digital zoom combine to create a 220X zoom facility This incredible lens means you can use the camera to look at wide-angle scenes such as car parks and distant scenes such as entrances with equal success.

Having an auto focus mode the camera can be used to automatically focus on a scene helping to get the sharpest possible picture and also saving valuable engineer set-up time.  The advanced auto-focus feature can even be used to constantly readjust to keep a person or object in focus as they approach or leave the cameras view, for example a person walking towards the camera in a corridor. This feature also enables the CCT545b to be used with great success in PTZ housing and domes. The CCT545b is supplied with the lens pre-fitted and configured so installation is as quick and painless as possible.
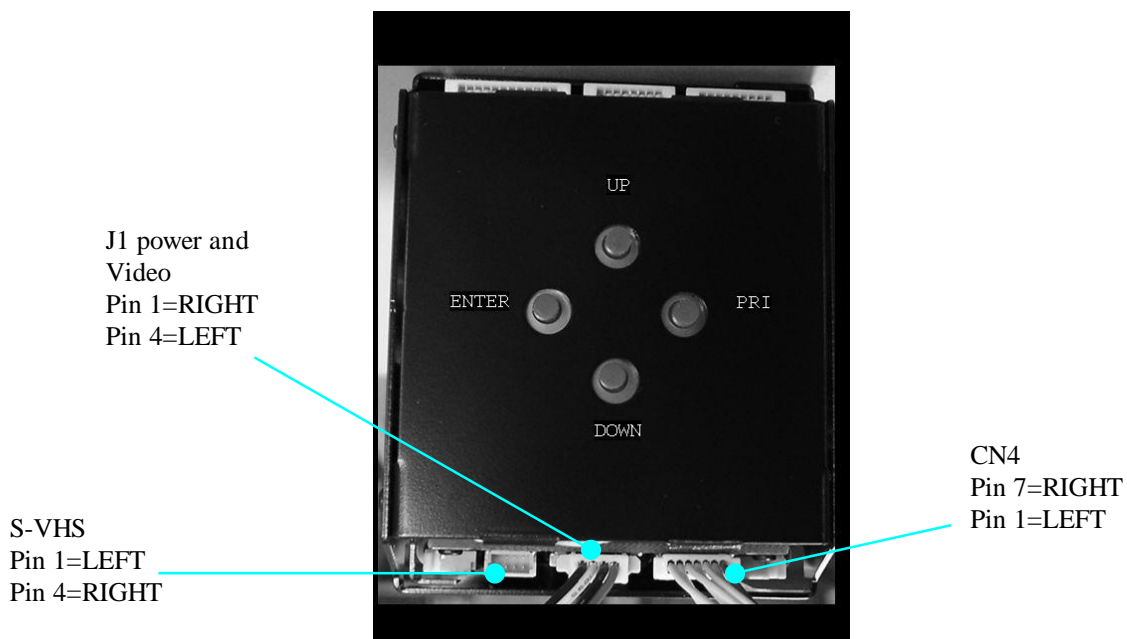
## Features

- Excellent Picture Quality
- High resolution 470TVL (580TVL Enhanced)
- Canon 3.7-85mm auto focus lens
- Auto Focus
- Auto Iris
- Automatic Gain Control (AGC)
- 220x zoom (22x Optical 10x digital)
- Intelligent Back Light Compensation (BLC)
- Zoom control – Voltage (+/- 6v to 12v)
- White Balance – ATW / AWC / Manual
- S/N ratio – 52db (AGC off)
- BLC Function – Standard & 48 Zone
- Digital Signal Processing (DSP)
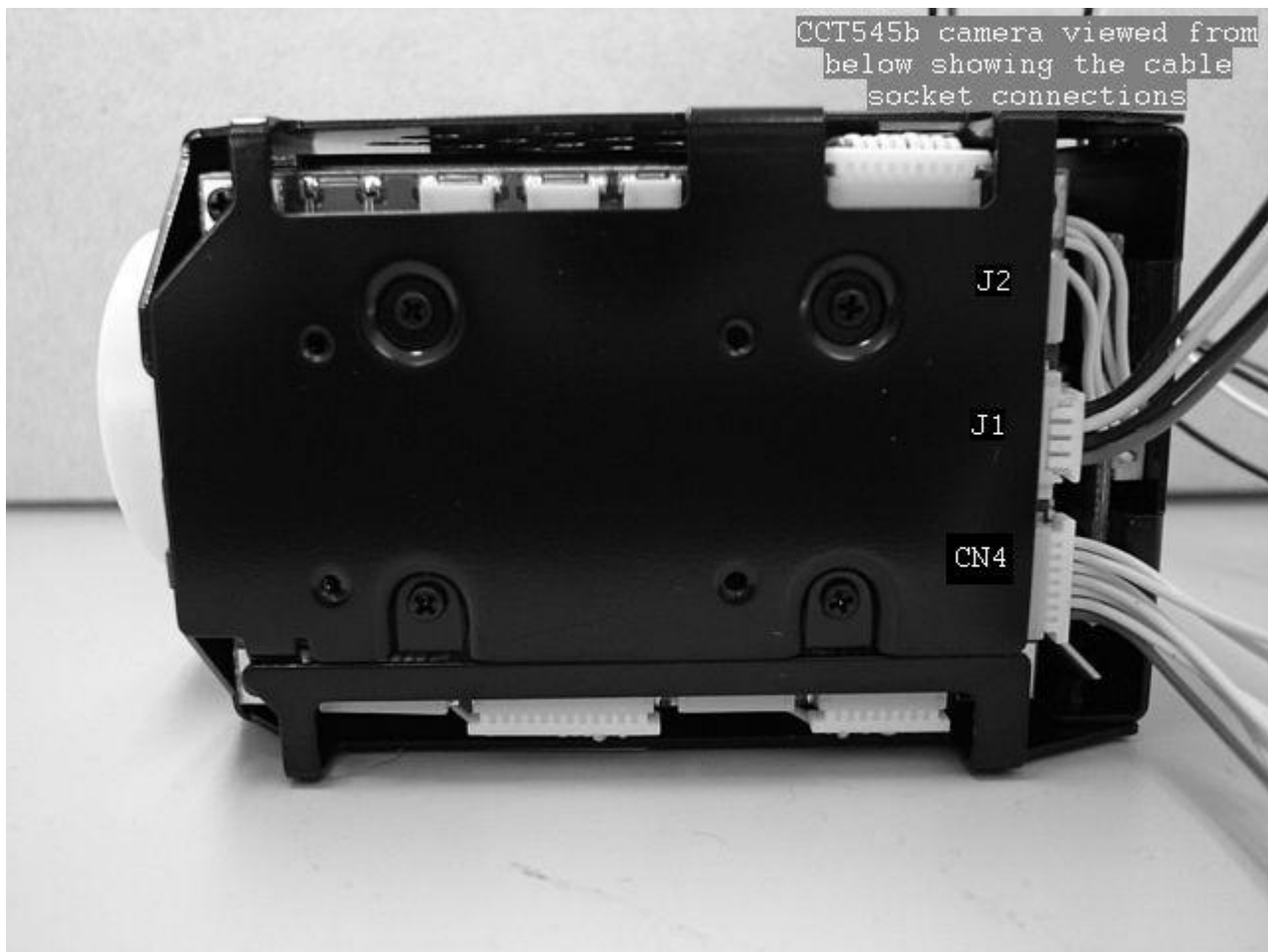- Low Current Compensation (200mA)
- Menu driven

## Specifications

| | | |
|---|---|---|
| Model Number | | CCT545B |
| Video Standard | | PAL 625Lines 50fps |
| Image Sensor | | ¼-Inch Sony CCD Image Sensor |
| CCD Total Pixels | | 795(H) x 596(V) |
| Minimum Illumination | Typical | 1.5 Lux (F1.2, 5600°K) |
| | Moon Light Mode | 0.02 Lux (F1.2, 5600°K) |
| Resolution | | 470TVL |
| S / N Ratio | | 48dB (MIN) / 52dB (TYP) |
| Whit Balance | | ATW/AWB/FIX (Zero Colour Rolling) |
| White Balance Range | | 3200 ~ 9600 °K |
| BLC Function | | Super BLC, 48 Zone BLC |
| Gamma Correction | | 0.45 |
| AGC | | Auto (18dB max) |
| ALC | | Auto / Fix |
| Image Negative | | Select by OSD menu |
| Cross Line | | On/Off select by OSD menu (position adj. by software) |
| Freeze Function | | Alarm in trigger or select by OSD |
| Electronic Shutter | | AES: 1/60 (1/50) ~ 1/120000 sec. / MANU: 8 Step |
| Lens | | Canon 22x optical zoom lens, F1.6~3.8, f = 4~88mm |
| Focus | | Auto / Manual |
| Position | | 64 position (Zoom, focus) |
| Video Output | | Composite & Y/C output 1.0V |
| Control Function | | Dry Switch, RS-232C (Drive option), OSD control |
| Comm Baud Rate | | 9600bps |
| Operation Temp. | | -10°C - 50°C |
| Power Supply | | 12VDC 3.6W |
| Dimensions | | 120mm(L) X 59mm(W) X 80mm(H) |

## Connections and Switches

Rear of the camera



J1 power and Video
Pin 1=RIGHT
Pin 4=LEFT

S-VHS
Pin 1=LEFT
Pin 4=RIGHT

CN4
Pin 7=RIGHT
Pin 1=LEFT

UP

ENTER     PRI

DOWN

CCT545b camera viewed from below showing the cable socket connections

Cable Connections: (looking at the camera from the rear with the cables at the bottom)

CN4 = 7-way connector (right side connector)
Pin 1 is on the left hand side, pin 7 on the right.
1= Zoom +ve
2= Zoom –ve

J1 = 4-way connector (center)
Pin 1 is on the right, pin 4 on the left.
1= +12 volts
2= 0 volts
3= Video signal
4= Video Ground

J2 = 4-way connector (left side)
Pin 4 is on the right side, pin 1 on the left.
1= Ground
2= Ground
3= Y – Out
4= C - Out

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## <u>Powering the camera.</u>

The CCT545b requires a power supply that has a continuous rating of 200mA or higher per camera. It is recommended to use a power supply that is rated at 300mA; this prevents the PSU from running at its maximum rating.  The PSU that is chosen must be a regulated 12V unit.

**WARNING** – This PSU **MUST NOT** be a 13.8V security type used in intruder alarms as the over voltage may damage the camera and void the warranty.  The earthing arrangement of an intruder type alarm PSU may give rise to problematic "earth-loop" and poor voltage regulation, which can give poor/noisy image quality.  We offer no technical support or warranty with the camera if it is powered by a 13.8V intruder alarm PSU, as it is contrary to the installation and usage instructions of the camera.

The CCT545b is available with a terminal connector socket on the rear of the camera. A short 4-way lead is supplied ready to wire the camera to +12 volts and a video lead.

If using the System Q Camera Connection Kit (CCT806/807) to power the camera, please proceed as per the instructions supplied with the kit.  The DC plug will have to be cut off and the bare wires shall be used to connect to the terminal wires.

## Video Out

There are two video outputs from the CCT545b, Composite and S-VHS type
S-VHS standard provides a high definition video signal.
$1V_{pk-pk}$ conventional composite video signal.

A typical connection would be as follows; The picture shows the BNC connection of the CCT545. The 545b is terminated with wires that connect to the sockets on the camera PCB.
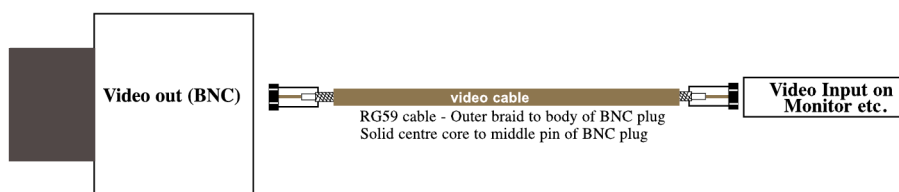


It is recommended that when you are first setting up the cameras that you use a short cable to link the camera directly to the monitor and to set it up at the same time. This allows you to both understand the camera and get the very best out of this great product as you will be able to adjust the camera whilst looking at the monitor screen. Obviously whilst you are setting up the camera, it does need to be powered!

## Using the menu system

**Using the Menu System.**
The following table shows what each function button does:

| UP | Up & Right Move Key |
|---|---|
| DOWN | Down & Left Move Key |
| ENTE R | Enter Key |
| PRI | Pre Confirm Key |

## Main Menu

To enter the main menu system press the key mode button to transfer control form the lens (the lens LED goes out) and gives the user the ability to access the menu.  Press and hold the ENT key for two seconds. The main menu shall appear on the screen.  To scroll up and down through the menu use the UP & DN keys respectively.
To leave the main menu press and hold the PEI key for two seconds.

```
Main Menu

IRIS
BLC
AGC.SENS
COLOUR
APC
LENS
REV
POSITION
ID
PRESET
MARK
```

## Iris sub–menu

This menu is used to control the iris & shutter speed of the lens.  It included three items "PEAK", "ALC", and "AES".  "PEAK" is used to control the reaction of auto iris, which is based on the average light of picture signal or the light rate of the peak.
Press the ENT key to access the IRIS menu level.  The following screen will appear.
To move the cursor, press UP to move the cursor up and DN to move the cursor down.  Once the desired position has been reached press enter to store the information.
Press DN to go back to the start of the IRIS sub – menu.
Scroll down to (using DN key) ALC, press ENT, now the settings can be changed, or scroll down to FIX and press ENT to change ALC to a fixed setting, press ENT to store.

```
IRIS

(1)      PEAK          OFF
                       ON   A---------P

(2)      ALC    ———▶   AUTO A---------P
                       FIX

(3)      AES           AUTO A---------P
                       FIX
```

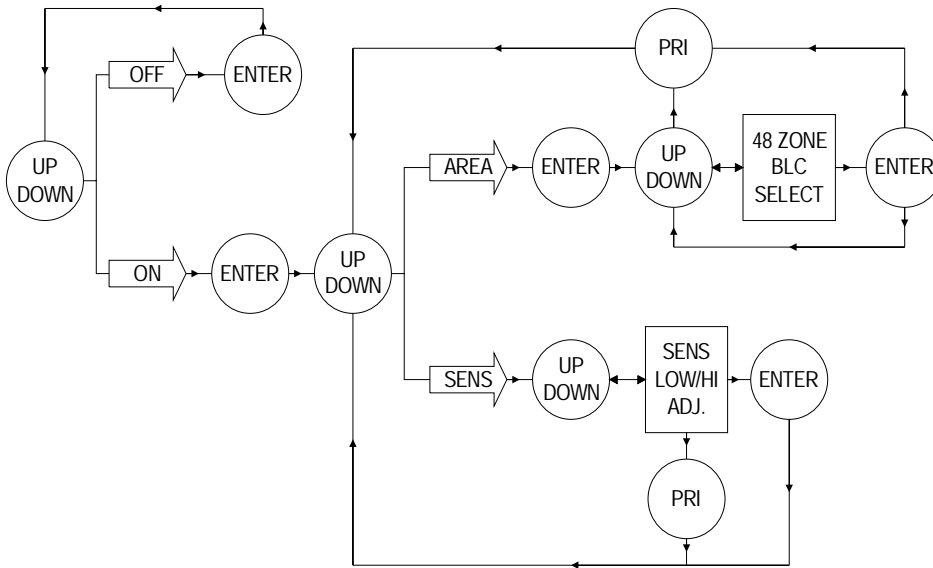When desired settings are set press PRI to escape back to the IRIS sub menu.
Scroll down to AES, press ENT.  To change press ENT now scroll up/down from off, 1/120, 1/250, 1/1500, 1/1000, 1/2000, 1/4000 and 1/10000.
Press enter to store.
OR set AES to auto, from AES press ENT then scroll up one & ENT, press up/down to alter, press ENT top save.
Please refer to chart below:

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## BLC sub-menu

This sub-menu is used to control the Back Light Compensation (BLC) i.e. ON or OFF.

When turning the BLC ON, there is two sub items: AREA and SENS.

In the AREA sub-menu there are 48 BLC zones that can be set separately, depending upon what areas are required to be masked.

The SENS sub-menu is used to enhance the BLC effect.  See chart below for directions.

After the desired setting are set press PEI to return to the main menu.

```
BLC




            OFF
            ON
              AREA
              SENS    LOW --------- HI
```

### AGC, SENS sub-menu

When the light falling on the CCD reduces to a certain level, there is insufficient light to create a full video signal.  The AGC increases the amount of amplification in these conditions that brings the signal up to the required level.

This sub-menu is used to select the FREEZE and the AGC, SENS function.

To enter freeze press ENT then choose either field or frame using the UP/DN keys.  Press enter to save.  The default setting is Freeze is set to off, when set to on the picture is held as if it were a still.

To adjust the Automatic Gain Control, select AGC then there are nine adjustable steps: 0dB, 2.25dB, 4.5dB, 6.75dB, 9dB, 11.25dB, 13.5dB, 15.75dB, and 18dB.

SENS is used for low light applications.

Adjusting the slide scale changes the SENS setting. Default setting is to the left, which is 0 Frame, then as follows: 6 Frame, 12 Frame, 16 Frame, 18 Frame, 22 Frame, 24 Frame, 30 Frame, and 9 steps in all.

When the camera is in low light conditions it will automatically compensate and switch to its Moonlight mode, which gives a Time-Lapse visual effect as it digitises the picture. The SENS mode needs to be selected over AGC.
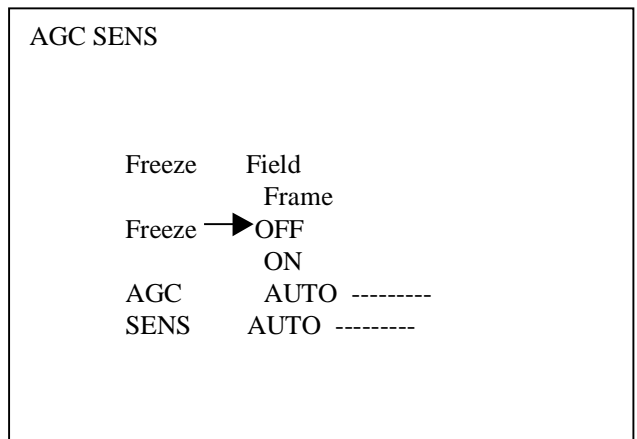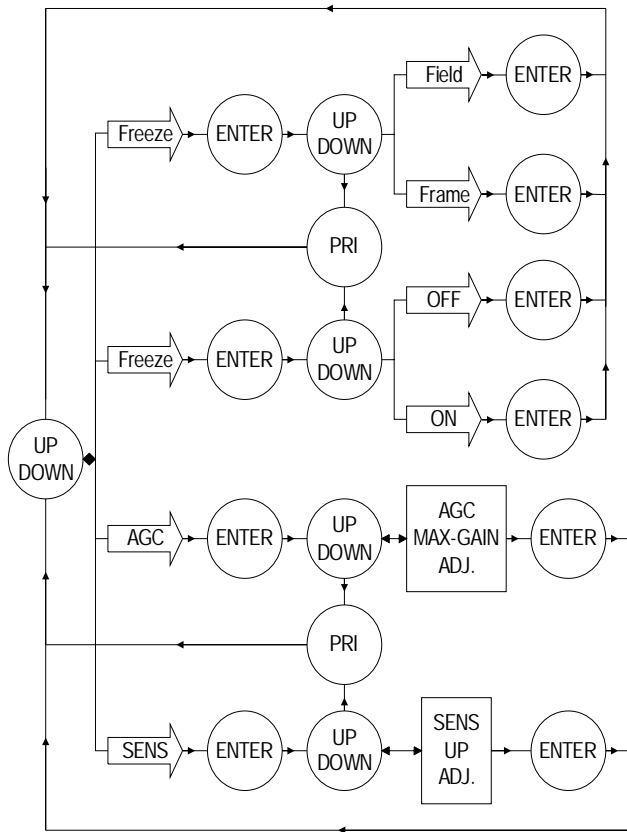
## Colour sub-menu

This menu is used to control the White balance and the gain of the RED and BLUE colour.
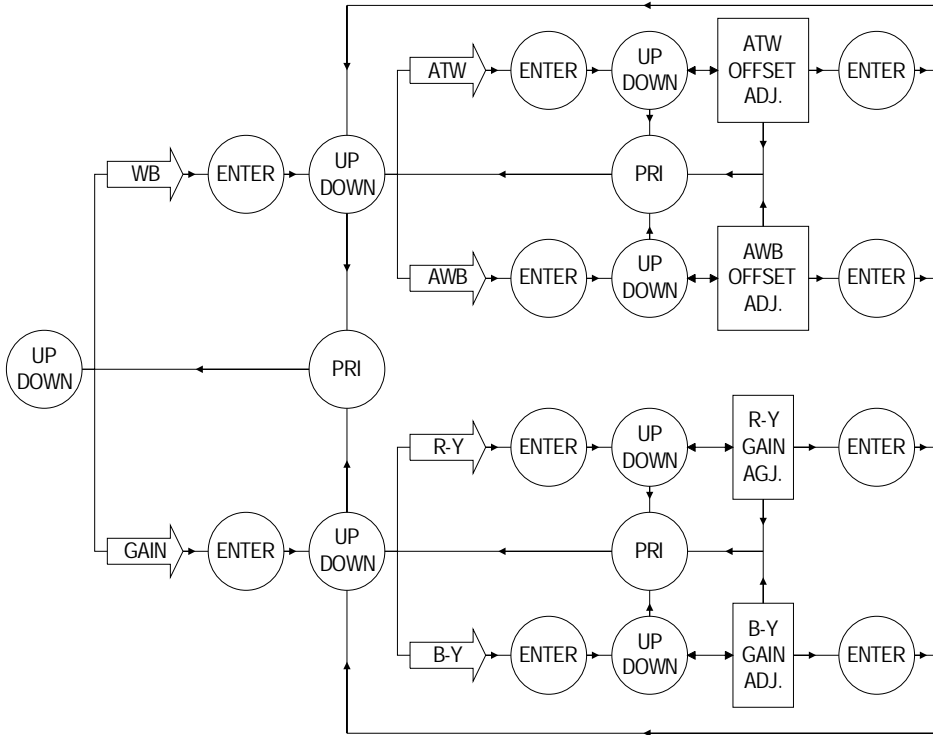
WB:- White Balance control;

ATW is Auto Trace White balance

AWB is One push white balance.  Push ENT key, AWB will start to flicker, once the flickering has stopped it will also lock the current colour.

Gain:- This is the gain of the Blue and Red and can be adjusted separately.

See chart below:

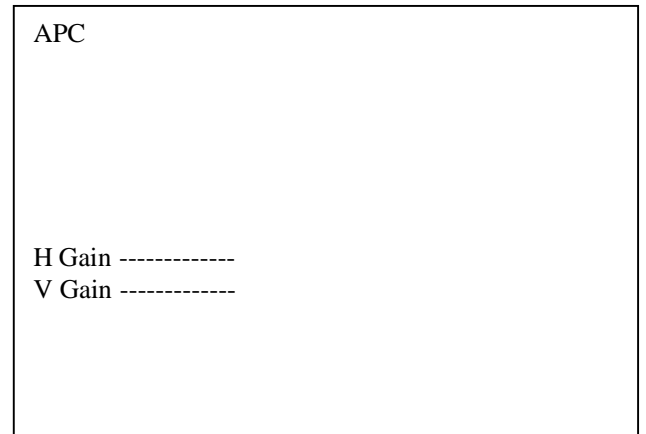| Color | | |
|---|---|---|
| | | |
| WB | ATW | R---------B |
| | AWB | R---------B |
| Gain | R-Y | --------- |
| | B-Y | --------- |
| | | |

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## APC sub-menu

The APC sub-menu is used to enhance the picture quality.
H Gain is the Horizontal Compensation
V Gain is the Vertical Compensation.
See chart below.

```
APC




H Gain -------------
V Gain ------------
```
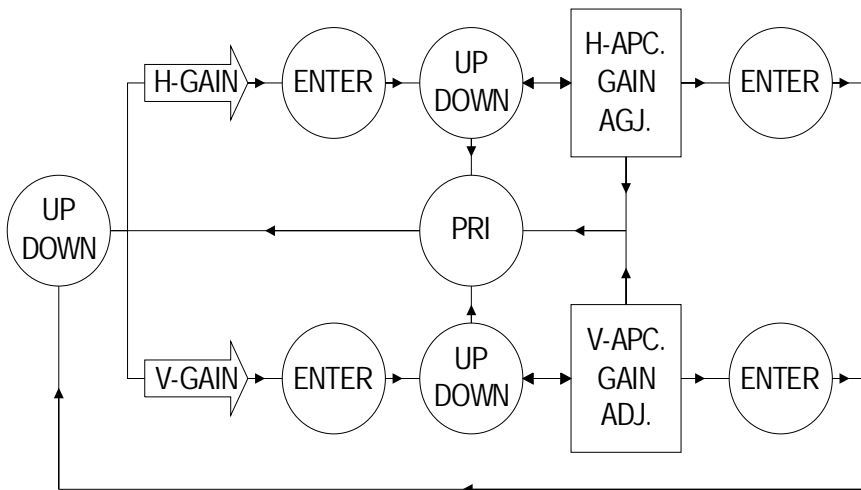
## Lens sub-menu

This sub-menu is used to control the lens.
DIGITAL ZOOM can be turned on or off depending on the application requirements.
ZOOM Speed this sets the speed of the zoom on the lens
FOCUS Speed this sets the speed of the auto focus
ZOOM: WIDE/TELE this sets the zoom to either a wide angle or a narrow one.
FOCUS:AUTO/MANUAL setting.
See chart below.

```
LENS
  Digital ZOOM   OFF
                        ON

  ZOOM SPEED -----
  FOCUS SPEED-----

  ZOOM WIDE    TELE
FOCUS
   MANUAL     INF     NEAR
   AUTO
```
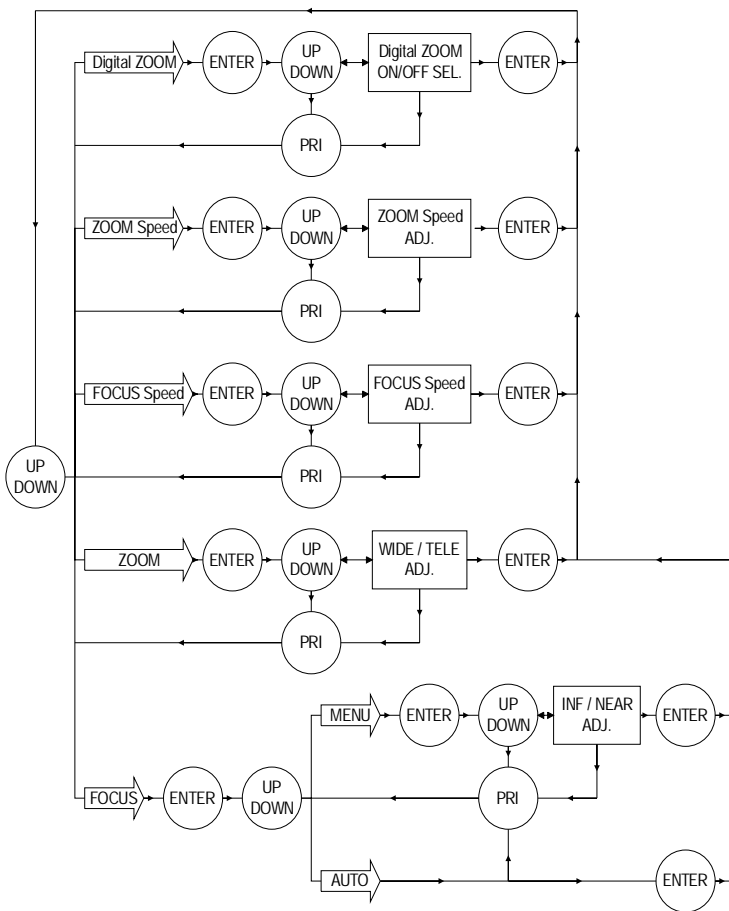


## REV sub-menu

This sub-menu gives option of selecting Positive or Negative views of the image.  This menu also allows Horizontal Reverse and Vertical Reverse of the image.
POSI/NEGA   Image positive and negative select.
H.REV                Horizontal Reverse (Mirror) ON/OFF
V.REV                Vertical Reverse (Up-side down) ON/OFF
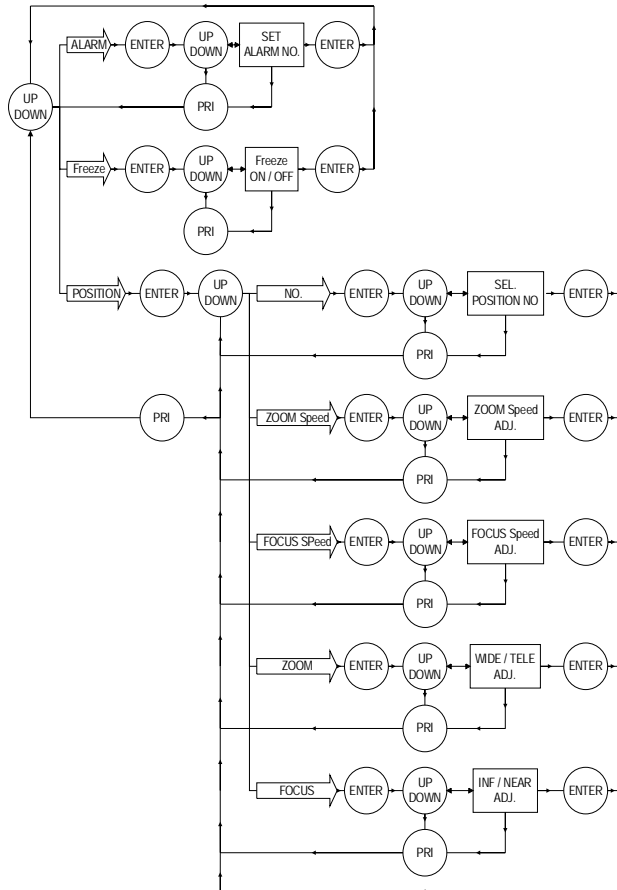See chart below for directions.

```
REV

POSI/NEGA
        POSI
        NEGA

H .REV OFF
            ON
V .REV OFF
            ON
```

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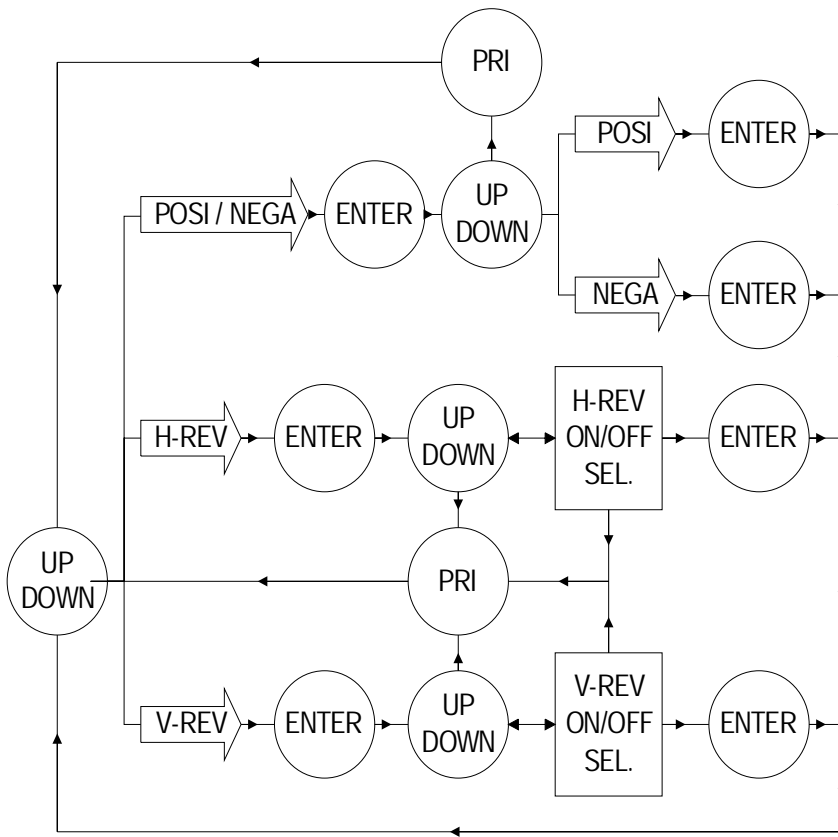
**Position sub-menu**

This sub-menu is used to set the alarm in function; this can be set to either alarm position or image freeze.

```
POSITION
ALARM          NO=0
FREEZE         OFF
               ON
POSITION
      NO=1
      ZOOM           SPEED -----
      FOCUS SPEED -----
      ZOOM   WIDE   TELE
      FOCUS INF     NEAR
```
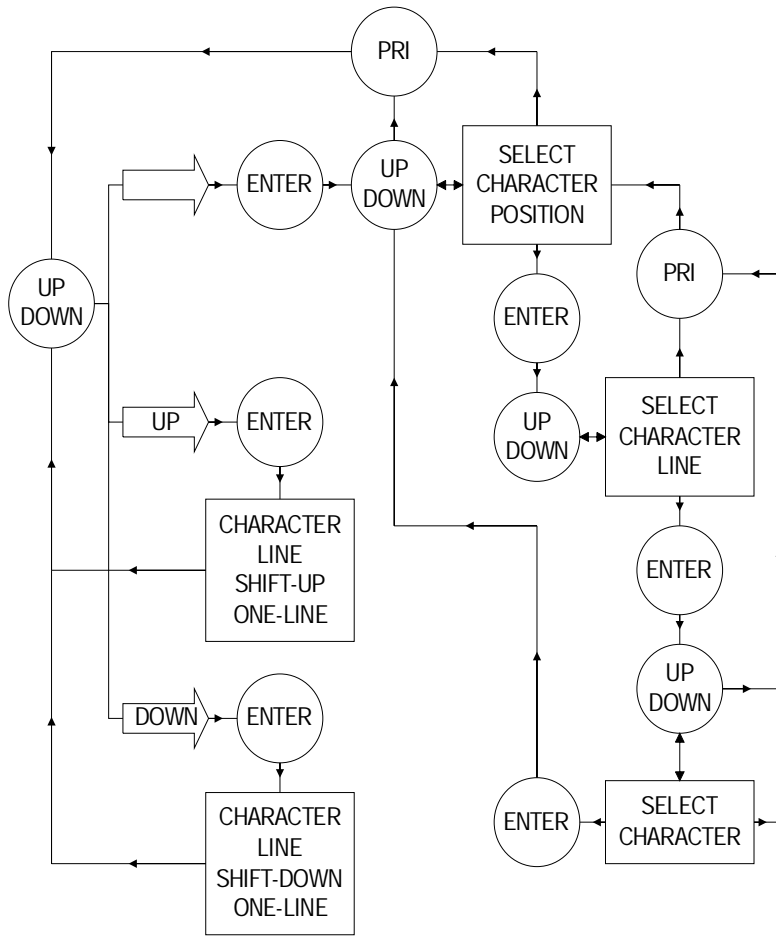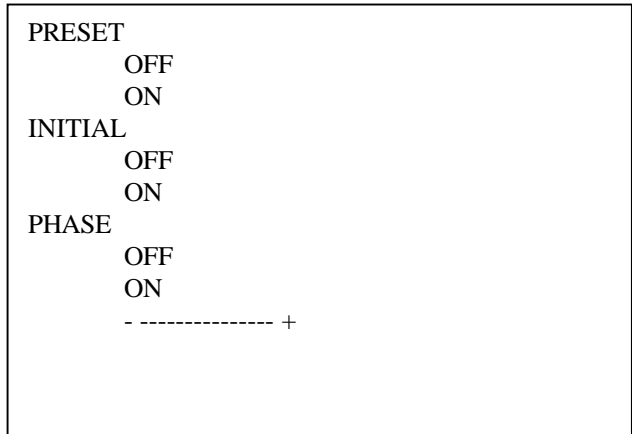
## TITLE sub-menu

This sub-menu is used to set up the identification figures and position on the screen.
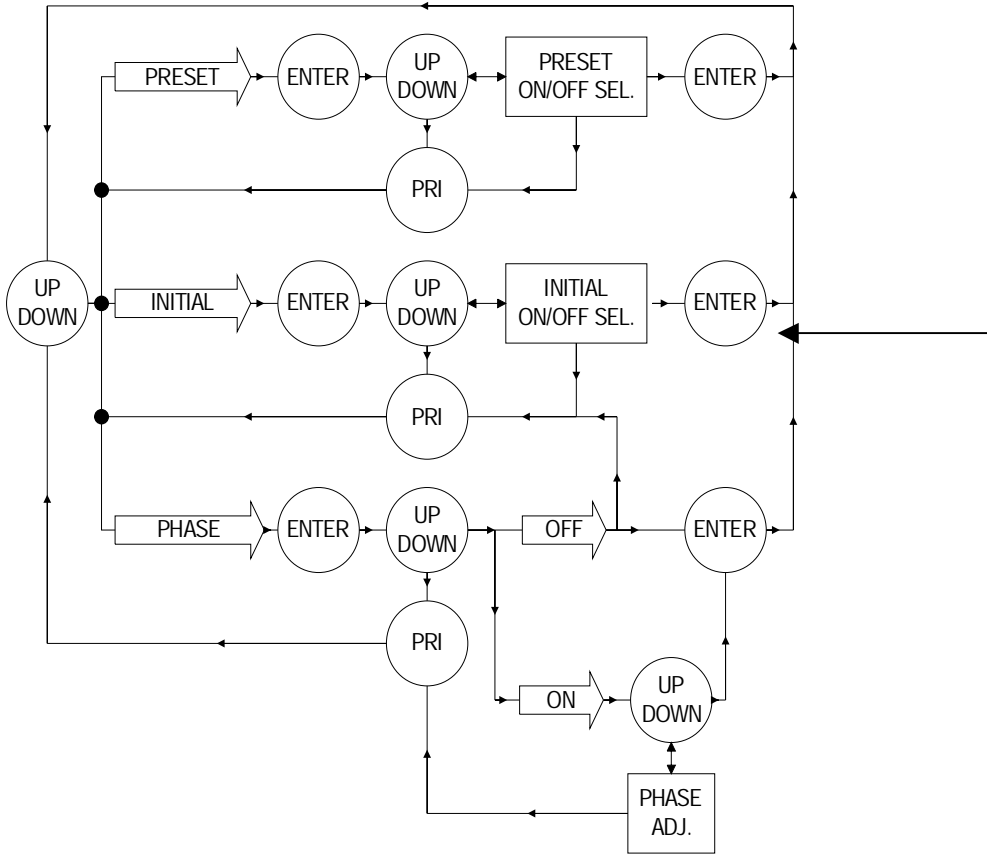See chart below.

```
TITLE

     0123456789
     ABCDEFGHIJKLM
     NOPQRSTUWXYZ
     a b c d e f g h I j k l m
     n o p q r s t u v w x y z
     : ; ' " . , ( ) < > [ ] { } -*/
     UP
     DOWN
```

### PRESET sub-menu

This sub-menu is used to select the camera to go back to PRESET, INITIAL and PHASE condition. See chart below.

```
PRESET
        OFF
        ON
INITIAL
        OFF
        ON
PHASE
        OFF
        ON
        - --------------- +
```

### MARK sub-menu

This sub-menu is located on the next page.
Once this function is activated it puts a hairline
cross across the screen.  This hairline cross enables
the user to zoom in and focus on a desired area; it
is also useful for when setting up the preset areas.
See chart below

```
MARK
      OFF
      ON
```

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