

CCT730

16-way Colour DVR

Information Pack



April 2003 - Version 1.2

Thank you for your interest in the CCT730 16-way DVR. Sorry for the delay in our response which is due to a large number of enquiries for this product.




The CCT730 really is a great opportunity for forward-thinking CCTV and security companies to get more sales and open more doors.

Below is a strictly trade only price list for this excellent range of products. Unlike some other distributors, System Q only supply to the trade and we seek genuine repeat business sales.



<u>Order Code</u>		Trade Price ex-VAT		
		<u>1 off</u>	<u>3off</u>	<u>5 off</u>
CCT730	16-way Colour DVR with 80Gb HDD	£795	£779	£749

Optional Accessories for the CCT730

	Order Code		Price ex-VAT
	CCT731	USB Hard Disk Holder for removable caddy	£89
	CCT732	Spare Caddy	£20
	CCT740	Spare 80Gb Hard Drive	£99

Client Software Packages

FREE	Unbranded Client Software	FREE
FREE	Branded Client Software via e-mail	FREE
CCT739	Branded Client Software on CD	£10

What can the CCT730 do?

The CCT730 is a digital recording device that can record video images from up to 16 cameras simultaneously without the use of tapes or any other external recording device. Unlike switchers or quad systems it doesn't matter what camera picture you are watching on the monitor screen the CCT730 records all the cameras all the time.

The CCT730 records the video images on to a removable hard drive in a digital format that enables the user to play-back images from any of the cameras at the press of a button.

With no tapes to rewind, jam or deteriorate, the CCT730 takes CCTV in to the digital age. You can leave the CCT730 to look after itself so that as its built in hard drive gets full the unit automatically starts to overwrite its oldest video footage first for complete unattended security.

So how long can the CCT730 record for?

The CCT730 has many options such as motion detection; external alarm inputs, scheduled recording and more that can all extend recording time. For example, you may set the CCT730 to record only when it detects movement in a cameras picture by utilising its comprehensive Motion Detections circuitry that can be set up for each individual channel. Or you may wish to enable scheduled recording so that you only record in working hours, this may be suitable for shops and similar businesses. If you want the CCT730 to record 24hrs a day everyday you can still extend the CCT730's recording capability by automatically altering the number of frames recorded in "day hours" to that of "night hours". All this is very easy to adjust in the simple menu settings of the CCT730.

The CCT730 is fitted with a very easy to use "hot swapping" hard disk system that means you can swap the hard drive in the CCT730 in seconds, this serves three purposes;

- 1- Extends recording times, by sensible disk rotation.
- 2- Allows you to have an easy and fast back up of video footage
- 3- Allows you to view video footage on a remote PC, for convenient viewing.

For example

You may use 2 hard drives with the CCT730. One would be in the CCT730 protecting a business or premises and the other drive may be stored at a managers or owners home. The manager can attach the Hard drive to his home computer and replay any of the video stored on it at his convenience and in the privacy of his own home. If therefore an event takes place that he thinks the CCT730 may have captured, all he needs to do is swap over the two disks so that he has the vital evidence to study at his leisure. He may wish to swap over the disk at some predefined regular interval. Once you have connected the hard drive to a computer you can

save the video footage to a CD (if a CD writer is connected), print off stills, email video and more.

For a guide to CONTINUOUS RECORDING TIMES, please refer to the recording table, please remember that these figure are easily extended by any of the above methods.

So what are the Key features of the CCT730?

- Customisable software. We can put your company name in the "Client Software" that is used to replay the video on a remote PC using the hot swapping hard drive. For a professional image 24hrs a day 365 days a year.
- Hot Swap Hard Drive. Enables the Disk drive to be swapped without stopping or powering down the CCT730. Fast simple back up.
- Motion Detection. Intelligent, fully adjustable and independent motion detection on all 16 channels, enabling extended and event only recording* You can even alter the sensitivity of the motion detection to alter automatically between day and night. Please note – Although the video motion detection is fully adjustable on sensitivity and area of detection independently on all 16 channels once triggered the unit will record video from all 16 inputs to prevent losing vital video information. The length of recording after video motion detection is adjustable by the engineer.
- Adjustable Record Quality. Adjustable record quality so that you can get the right balance of picture quality and storage capacity. Image quality can be set to automatically adjust between day and night settings.
- Day & Night Setting. You could call these "working hours" and "out of working hours" and they give the installer and customer superb flexibility in the way and what the CCT730 records.
- Multiple Level Password protection. This means that only the right person can access the right menus. The engineer gets to the engineer menus and the customer gets to the end-user menus saving unwanted call-backs and hassle to all.
- Reset to Engineers settings. This useful feature allows you at any time to reset the system back to exactly how you installed it. Ideal if you change settings that you latter regret!
- Reset to factory settings. Your obvious get out of jail card.

- Weekend Setting. In addition to the "day -night" setting you can automatically adjust how and what the CCT730 records at the weekend as opposed to weekdays. This is a very useful feature for Monday-Friday businesses.
- Digital Zoom. You can digitally zoom in to a live or recorded image using the zoom feature to get a more detailed view.
- Camera Auto Detect. This feature automatically works out how many cameras are connected to the system so that it does not record unwanted "blank" video footage on unused inputs.
- Covert Camera. This feature allows you to record cameras that cannot be seen or detected by normal operation on the CCT730.
- Twin monitor outputs. These allow two separate images to be displayed and adjusted on two separate monitors. Typically one monitor may display all 16 cameras in a multiscreen mode and one monitor is used to display full size picture of areas of interest identified on the multiscreen monitor.
- Independent gain control on all 16-camera inputs. As different lengths of cable to the individual camera produce different sizes of video signal you can adjust the gain on all 16 inputs to help get the best possible picture quality.
- Fast and Easy Video playback. As there are no tapes to change or rewind, replaying video footage on the CCT730 is fast and easy but to prevent unwanted prying eyes the playback function is password protected.
- Auto-Reboot after power failure. Obviously if the CCT730 is subject to a power failure when the power is restored if it was previously recording you would want it to carry on recording and that's exactly what it does.
- Full Duplex. Whilst playing back video footage the CCT730 can also carry on recording so it never misses vital video footage.
- Standalone System. The CCT730 has its own built in control software so it does not rely on a PC to function; it is a true "black-box" solution.
- Robust Reliable. Non-Windows OS. Need we say any more!

- Alarm inputs and outputs. These can be used to trigger external devices such as sounders and lights, or they could be used to start the CCT730 recording.
- Day-Night input. There is even an input on the CCT730 that can be used to tell it when it has changed to "night" hours. This could be used in conjunction with an output from a burglar alarm panel to tell the CCT730 to automatically adjust its recording mode when premises have been vacated at the end of a day.

Client software features include:

- Multiple screen display options
- Play, fast-forward, rewind, stop and pause controls
- Save, delete, and cut features to make video footage into smaller sections
- Emailing of video footage (requires a standard email client).

Downloads:

You can download a demo version of the CCT730 Client software from our website:

<http://www.planetcc.tv/web/file/cct730d.exe>

(File size 3.7Mb, estimated download time 10 mins)

FREE PERSONALISED SOFTWARE



If you would like the client software for the CCT730 DVR to be personalised to include your own or your customer's company details, please supply us with the following information in writing:

Company Name:	
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Valid e-mail address:	
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You can post, fax or e-mail us this information but we will need a return e-mail address to supply you with the personalised software and its installation instructions at no charge.

If you would prefer a CD copy of the software and instructions, there is a small charge of £10+vat inc P&P. Please tick the box below and return this sheet with your payment.

<u>Client Software Packages</u>			
FREE	Branded Client Software via e-mail	FREE	<input type="checkbox"/>
CCT739	Branded Client Software on CD	£10	<input type="checkbox"/>

CCT730

16-way Colour DVR

Instructions



April 2003 - Version 1.2

Warning Notes

- All the safety and operating instructions should be read before the CCT730 is operated.
- All the safety and operating instructions should be retained for future reference.
- Ensure all operating instruction and warning notes are complied with at all times.
- Do not use strong or abrasive detergents when cleaning the CCT730.
- There are no user-serviceable parts inside. Please contact a qualified engineer for servicing and maintenance.
- Do not expose the CCT730 to water or moisture and do not try to operate it in wet areas.
- Please make sure that both ends of the power lead are plugged in.
- Do not drop foreign objects through the CCT730's case or expose it to moisture.
- Do not attempt to disassemble the CCT730.
- Contact a qualified engineer if the following situation happens:
 - The power lead or plug is damaged.
 - The CCT730 has been exposed to rain or water.
 - The CCT730 does not operate normally by following the operating instructions.
 - The CCT730 falls to the ground or its cover is damaged.
- When replacement parts are required, make sure that the service engineer has used replacement parts specified by System Q Ltd or that these parts have the same characteristics as the original ones. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Use only with a mounting accessory recommended by System Q Ltd.
- Never push objects of any kind into the case of the CCT730 as they may touch dangerous voltage points or short cut parts that could result in a fire or electric shock.
- If an outside cable system is connected to the CCT730, be sure that the cable system is grounded so as to provide some protection against voltage surges and built-in static charges.
- All normal precautions to avoid component damage due to electrostatic discharge should be taken during installation and operation.
- To prevent electric shock, do not remove screws or the unit's cover.

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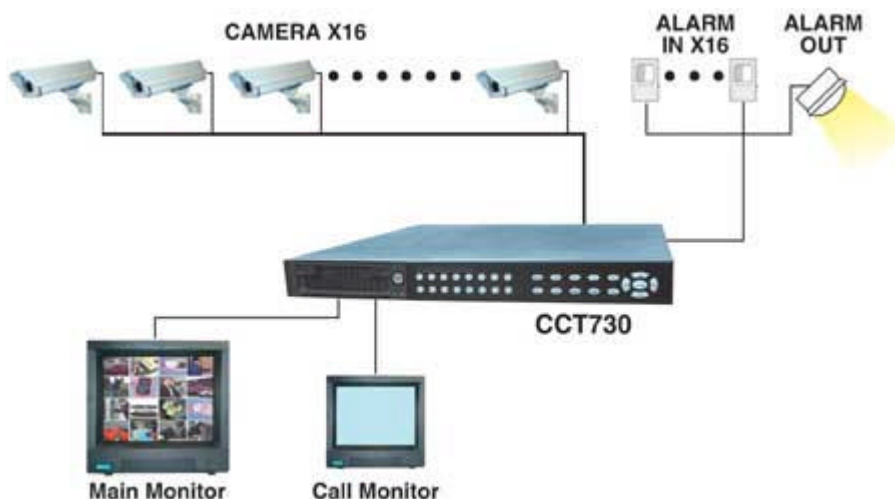
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1. Features

- Powerful Wavelet compression
- Proprietary real time Operating System.
- Duplex operation: View live video and playback simultaneously
- Support NTSC and PAL system
- Programmable recording picture rate (up to 60 pics per sec)
- Recording priority of each camera dynamically adjusted by motion detection
- Hot swappable Hard Disk Drive
- Windows compatible Data format
- Powerful Alarm Processor allows flexible alarm trigger and response configuration
- Programmable motion detection area and sensitivity for each individual camera
- Different motion sensitivities available for day and night time
- Intelligent algorithm refreshing main monitor display dynamically
- User-friendly video search
- Versatile multiple-windows display format
- Password to secure installation authorization
- System auto reboot after power interruption
- System software stored in non-volatile memory, free from hard disk crash

2. CCT730 Applications

CCT730 is a cost-effective and easy-to-use multiplexed digital video recorder, equipped with a proprietary real time operating system, powerful Wavelet compression engine, duplex multiplexer and a hot swappable Hard Disc Drive.



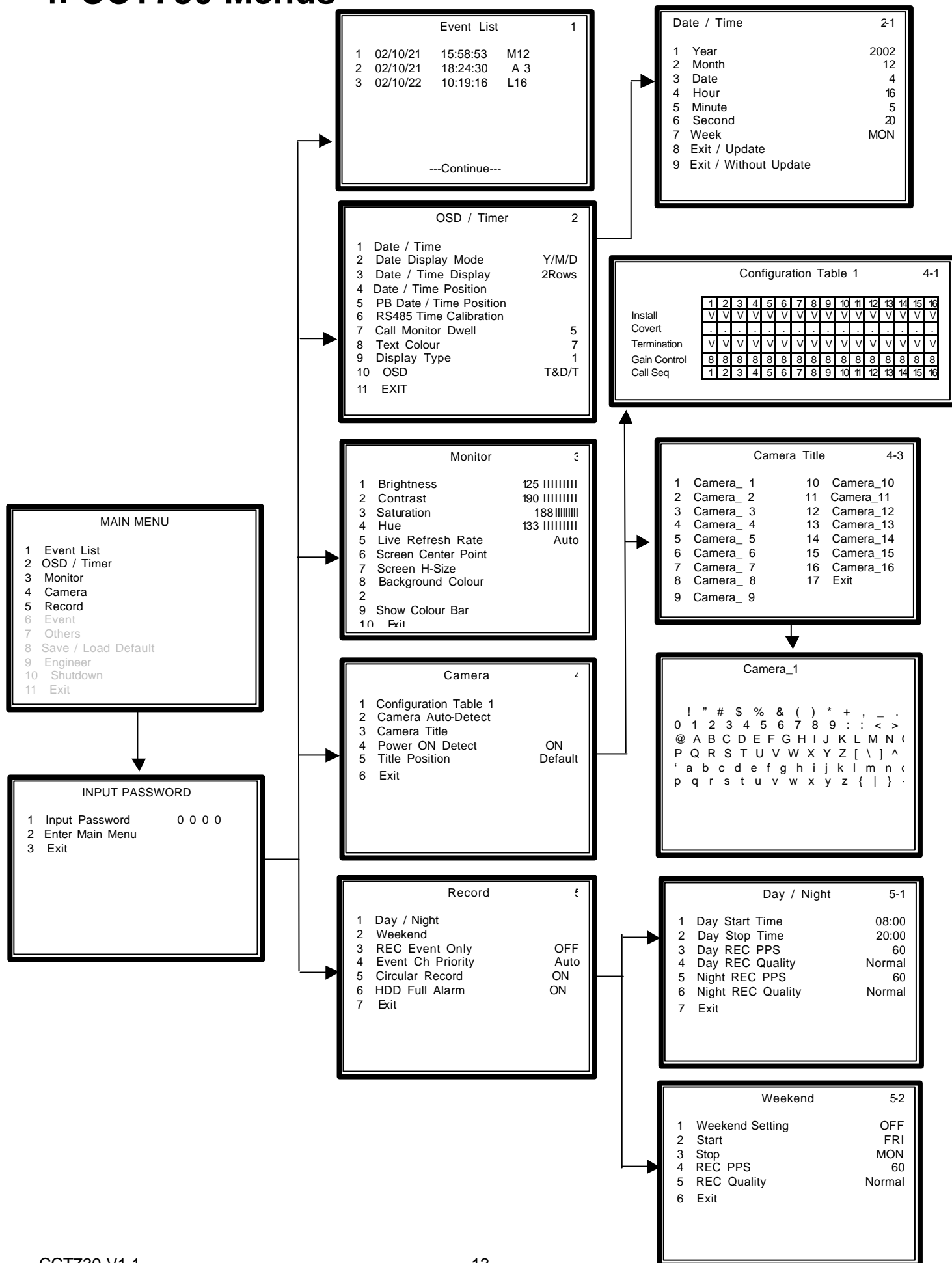
3. Quick Installation Guide

The CCT730 is equipped with a hot-swap Hard Disk Drive (HDD) that can be exchanged when it is full. The following photos illustrate how to install the HDD into its removable caddy.

- 1) Pull the exterior handle towards you and unlock with the key provided.
- 2) Pull the handle outwards until the caddy is free from the case of the CCT730.
- 3) Push the release latch to slide the top cover backwards and remove the HDD.
- 4) Insert the DC power cable and IDE cable into the HDD. Make sure the HDD is set to **“Master”**.
- 5) Position the empty HDD into the caddy and slide the top cover back to secure. Secure the HDD using the screws provided.
- 6) Slide the caddy back into the CCT730 case and lock it with the key provided.



4. CCT730 Menus



MAIN MENU

- 1 Event List
- 2 OSD / Timer
- 3 Monitor
- 4 Camera
- 5 Record
- 6 Event**
- 7 Others
- 8 Save / Load Default
- 9 Engineer
- 10 Shutdown
- 11 Exit

Event 6

- 1 Day / Night Switch
- 2 Event Response
- 3 Motion Detect
- 4 Alarm In
- 5 Video Loss Detect
- 6 Alarm Set / Reset SW
- 7 Release Time
- 8 Clear Event List
- 9 Exit

Day / Night Switch 6-1

- 1 Day / Night SW Enable Nc
- 2 Switch<OFF> Day
- 3 Delay For Active 60
- 4 Exit

Event Response 6-2

- 1 Internal Buzzer ON
- 2 Event Relay Output ON
- 3 Event List ON
- 4 Event Full Screen OFF
- 5 Call Event Display ON
- 6 Response Duration 10
- 7 Any Key To Stop ON
- 8 Exit

Motion Detect 6-3

- 1 Motion Detect OFF
- 2 Configuration Table 2
- 3 Condition Set Up
- 4 Exit

Condition Set Up 6-3-3

1 Camera_ 1	10 Camera_10
2 Camera_ 2	11 Camera_11
3 Camera_ 3	12 Camera_12
4 Camera_ 4	13 Camera_13
5 Camera_ 5	14 Camera_14
6 Camera_ 6	15 Camera_15
7 Camera_ 7	16 Camera_16
8 Camera_ 8	17 Exit
9 Camera_ 9	

Camera_1 6-3-3

- 1 Detect Area
- 2 Sensitivity
- 3 Exit

Alarm In 6-4

- 1 Alarm In Detect OFF
- 2 Configuration Table 2
- 3 Exit

Release Time 6-7

- 1 Motion RES Time 2
- 2 Video Loss RES Time 2
- 3 Alarm In RES Time 10
- 4 Exit

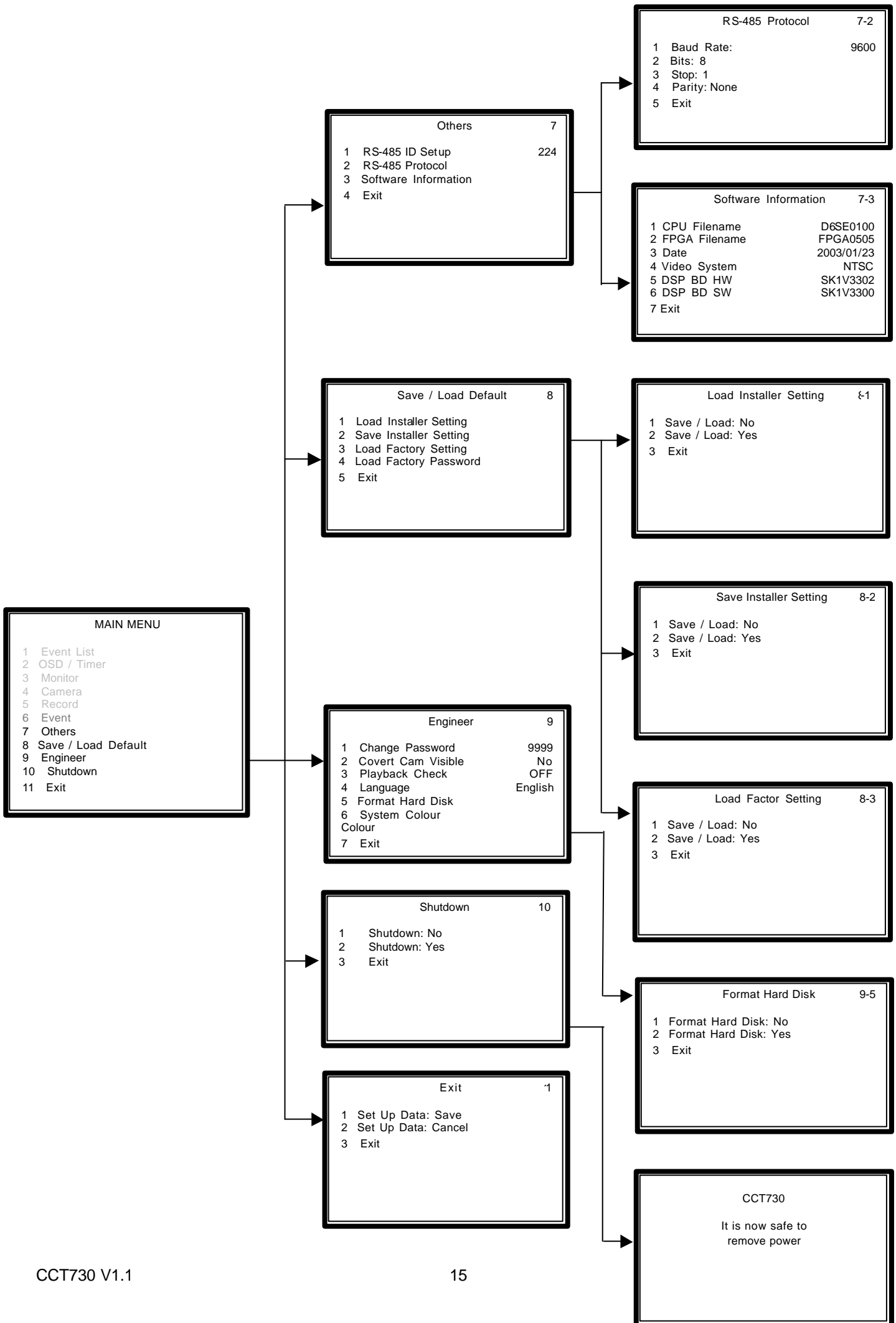
Clear Event List 6-8

- 1 Clear Event List: No
- 2 Clear Event List: Yes
- 3 Exit

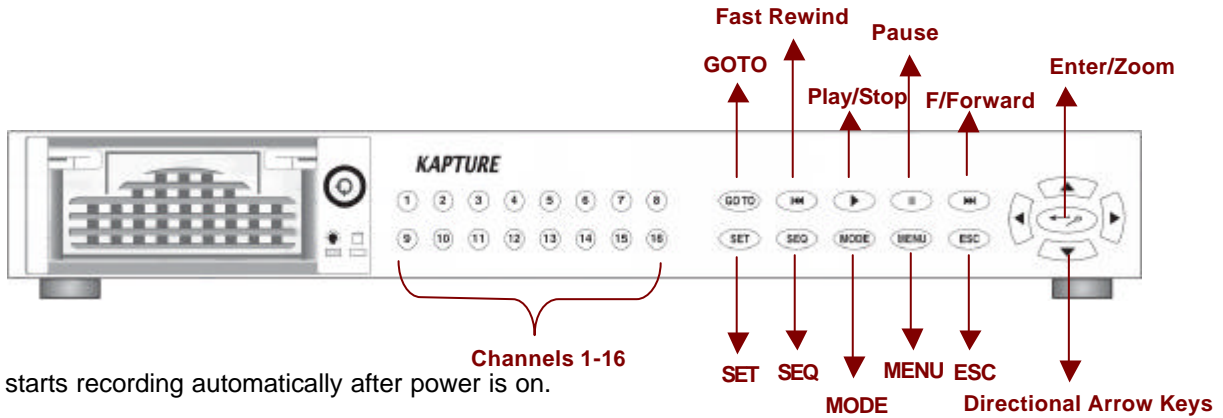
Configuration Table 2 6-4-2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Alm In Type	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Day: Alm In	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Day: Motion	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Night: Alm In	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Night: Motion	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

ESC For Return



5. Front Panel



*CCT730 starts recording automatically after power is on.

CHANNEL 1~16

Press one of these buttons to view the a camera image in full screen.

GOTO

In playback mode, you can press the GOTO button to access the GOTO menu. This menu allows you to search for certain recorded images by entering the date and time.

You can either use the arrows buttons on the front panel to move down to the “5 GoTo Begin” option and press the ENTER button to take you to the start of the recorded images; or move down to the “6 GoTo End” option and press ENTER to go to the end of the recording.

GOTO	
1 Minute	30
2 Hour	20
3 Day	21
4 Month	11
5 Year	02
5 Goto Begin	
6 Goto End	
7 Exit	

FAST REWIND ◀◀

1. Whilst in playback mode, press this button to rewind through the recorded images. Press it again to increase the rewind speed: x1, x2, x4 and x8.
2. In playback mode, you can also press and hold this button for 3 seconds to move automatically to the beginning of the recording.

PLAY/STOP ▶

1. When in Live mode, press this button to start to playback recorded images.
2. In playback mode when the PLAY button is illuminated, press this button to stop playing the images and start recording.

PAUSE II

Press this button to pause a recorded image or to freeze live video, the PAUSE button will illuminate.

FAST FORWARD ▶▶

1. Whilst in playback mode, press this button fast forward through the recordrd images. Press it

again to increase the fast forward speed: x1 x2, x4 and x8.

2. In playback mode, you can also press and hold this button for 3 seconds to move automatically to the end of the recording.

ENTER / ZOOM ↵

1. In the menu screens, this button is used to “ENTER” a sub-menu or to confirm a command.
2. In full-screen mode where a live or recorded image is being displayed in full-screen, you can also use this button to zoom (x2) into the image and then use the arrow buttons on the front of the unit to move around the “zoomed” image. In this mode the button will be illuminated.

SET

In a split-screen display, press this button to enter SET mode where each of your cameras can be assigned a Channel. These will relate to the Channel numbers/buttons on the front display of the CCT730. The SET menu will appear with a cursor flashing over the first image/window. Use the arrow buttons ◀▶▲▼ to move the cursor to the desired camera image and then press the desired CHANNEL or Number button to assign the camera. The cursor will move on to the next window automatically. Press the ESC button to exit this mode.

SEQ

1. Press this button to start sequencing through the camera images and press it again to stop sequencing. The SEQ button will be illuminated as well as the camera channel on display when the unit is in sequencing mode.
2. A number of different sequencing options can be obtained with the CCT730. These options are set up using a menu, which can be accessed by pressing the SET button whilst in the sequencing mode. The number at the top of the menu indicates which Sequence you are setting up.

1	Pages	16	11	Page 8	£
2	Mode	0	12	Page 9	£
3	Timer	Ind.	13	Page 10	£
4	Page 1	5	14	Page 11	!
5	Page 2	5	15	Page 12	£
6	Page 3	5	16	Page 13	£
7	Page 4	5	17	Page 14	£
8	Page 5	5	18	Page 15	£
9	Page 6	5	19	Page 16	£
10	Page 7	5	20	Exit	

Pages - this allows you to decide the total number of pages/images to be used in the sequence. The maximum value is 16, which means that each sequence can have up to 16 pages/images.

Mode - this item allows you to decide which display mode will be used in this sequence. “0” represents full screen mode and “7” represents the 16-windows mode.

Sequence Timer - this item allows you to select “Com” or “Ind” Sequence Timer. “COM” means every page in this sequence has a common dwell time; whilst IND means that each page can have an individual dwell time.

Dwell Time and Page Setup – this allows you to set up the dwell time of each page. If the sequence timer is selected as “COM”, once you change the dwell time of one page, the dwell time of all the other pages will be changed as well. If the sequence timer is selected as “IND”, the dwell time value can be changed individually page by page.

Using the arrow keys, move the cursor down to one of the page numbers and use the

right/ left arrow buttons to change the dwell time or press the ENTER button for page setup.

MODE

Press this button to select your chosen display format (4, 5,7,9,10,13 or 16 windows). The camera buttons of all the selected cameras will be illuminated.

MENU

Press this button to enter the on-screen set-up menus (the button will be illuminated).

ESC

In the menu screens, press this button to return to previous menu.

DIRECTION ARROWS ◀▶▲▼

These buttons function as directional controls in the Zoom mode and on the menu screens.

6. Menu Set-up

The CCT730 menu set-up is hierarchical and is displayed in the initial pages of this document. The menus allow you to configure the unit according to the application you will be using it for. Many functions can be selected via these menus.

To enter the main menu, press the MENU button on the CCT730's front panel, the main menu will appear with a cursor over the first item. This cursor can be moved using the up/ down buttons on the front panel. If you wish to exit the menu at any time, you may either select the last item on the menu "EXIT" and then press ENTER button or simply press the ESC button on the front panel of the CCT730.

MAIN MENU	
1	Event List
2	OSD / Timer
3	Monitor
4	Camera
5	Record
6	Event
7	Others
8	Save / Load Default
9	Engineer
10	Engineer
11	Exit

6.1 Event List

This item allows you to enter the Event List. Up to 255 alarm events will be logged in the unit's non-volatile memory on a "First In, First Out" basis, so the latest events always remain on the list.

Event List			
1	02/10/20	08:12:39	L16
2	02/10/22	12:38:21	A3
3	02/10/22	15:58:53	M12
---Continue---			

6.2 OSD/ Timer

This menu item allows you to set the current date/ time, and other On-Screen-Display (OSD) parameters. Press the ENTER button to enter the date/time sub-menu.

OSD / Timer	
1	Date/ time
2	Date Display Mode
3	Date/ Time Display
4	Date/ Time Position
5	RS485 Time Calibration
6	Call monitor Dwell
7	Text Colour
8	Display Type
9	OSD Display
10	Exit

6.2.1 OSD/ Timer - Date/ Time

Items 1~7 allow you to set the date and time, use the right/ left buttons to adjust the CCT730 to the accurate time.

If you want to save the modifications, move the cursor to the Exit/ Update option and press Enter, your settings will be memorized. If you don't want to save the modifications, move the cursor to the Exit / Without Update and press the Enter button, your adjustments will be discarded.

Date / Time	
1	Year
2	Month
3	Date
4	Hour
5	Minute
6	Second
7	Week
8	Exit / Update
9	Exit / Without Update

6.2.2 OSD/ Timer - Date Display Mode

This item allows you to select a format of date display. You may use the right/ left arrow buttons to choose from: Year/Month/Day, M/D/Y and D/M/Y.

6.2.3 OSD/ Timer - Date/ Time Display

This item allows you to select from a one or two row date/time display.

6.2.4 OSD/ Timer – PB Date/ Time Position

This item allows you to move the current Date/ Time Display to any position on your screen. Use the directional arrow buttons to move the Date/ Time display around your screen.

6.2.5 OSD/ Timer - RS485 Time Calibration

RS-485 is used for multi-point communications: many devices can be connected to the same bus. Move to this item and press the ETNER button, all CCT730 timers will be synchronized.

6.2.6 OSD/ Timer - Call Monitor Dwell

The call monitor display is always full screen switching of all the installed cameras, this item allows you to set the Dwell Time between switching. The timer value ranges from 1 to 255 seconds.

6.2.7 OSD/ Timer - Text Colour

This item allows you to select from 16 different colours for the Date/ Time display.

6.2.8 OSD/ Timer - Display Type

This item allows you to select one from 6 different text types (reverse, bold...) for the Date/ Time display.

6.2.9 OSD/ Timer – OSD Display

This item allows you to select which information you wish to display; you can choose from ① T&D/T(camera title and date/time); ② Title; ③ D/T(date/time); ④ OFF.

6.3. Monitor Menu

This menu allows you to adjust the quality of the displayed image.

Monitor	
1 Brightness	125||||||
2 Contrast	190||||||
3 Saturation	188||||||
4 Hue	133||||||
5 Live Refresh Rate	Aut
6 Screen Center Point	
7 Screen H-Size	
8 Background Colour	
9 Show Colour Bar	
10 Exit	

6.3.1 Monitor - Video Setup

Items 1~4 involve adjusting the brightness, contrast, saturation and hue of the attached cameras. Use the front panel arrow buttons to adjust these values.

6.3.2 Monitor- Live Refresh Rate

This item allows you to set-up the camera refresh rate on the Main monitor; use the right/ left arrow buttons to select between Fix or Auto. “Fix” means each camera has the same refresh rate. “Auto” means the camera where more motion is detected will receive a higher refresh rate automatically.

6.3.3 Monitor - Screen Center Point

This item allows you to move the center point of the main monitor. Use the arrow buttons to move the monitor center point. Press the ESC button to exit when finished.

6.3.4 Monitor - Screen H-Size

This item allows you to change the horizontal size of the displayed image. Press the right/ left arrow buttons to adjust this.

6.3.5 Monitor - Background Colour

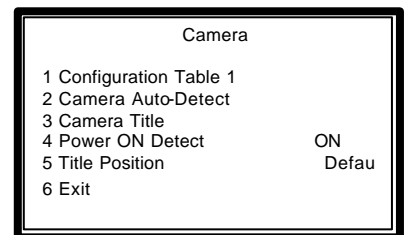
This item allows you to select from 16 different colours for the background colour of ① video-loss, ② un-installed cameras and ③ covert situations.

6.3.6 Monitor - Show Colour Bar

This function allows you to fine tune the monitor's performance using a colour bar pattern generated by the CCT730.

6.4 Camera Menu

This menu allows you to adjust camera-related items, ex. Camera title, Power On Detect, etc.



6.4.1 Camera Configuration Table 1

Configuration Table 1 allows you to configure 5 parameters for each individual camera.

Configuration Table 1																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Install	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Covert	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Termination	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Gain Control	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Call Seq	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

ESC For Return

Install

This item allows you to install individual cameras with each one being installed by default. Any camera can then be un-installed manually. Once un-installed, all related functions are disabled.

v = camera installed • = camera not installed

Covert

This item allows you to make each camera's input invisible (covert) on both the main and call monitors, while the unit continues to record all the camera images. This is ideal where cameras

are installed covertly. The default setting is to have every camera visible.

v = covert • = not covert

Termination

This allows you to enable or disable the video loop-through output for each camera channel. If the camera loop-through is not used, this setting should be enabled to get correct signal termination. This is the default condition.

v = Termination enabled • = Termination disabled

Gain Control

This item allows you to adjust the camera’s video level. You may adjust the value between 1 and 16 for each camera.

REC Priority

This item allows the user to set the recording priority for each camera under a normal state (No alarm occurred). The CCT730 will record the camera that is assigned with a higher priority more frequently. The user can move the cursor and use the ENTER key to adjust the value. The value ranges from 1 to 16; “1” stands for the lowest priority; “16” stands for the highest priority. If the camera is not installed, the priority will be set to 0 automatically.

Alarm REC Priority

This item allows you to set the recording priority when an alarm is triggered for the current channel, either by Alarm In or by Motion.

For example:

If you set the PPS rate to “30”, the record priority of the channel to level “4”, and the record priority of all the other channels to level “1”, then each channel’s PPS can be calculated by the formula below.

Situation 1: No alarm event occurs.

$$\text{Channel 1 PPS} = 30 * \frac{4}{4+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1} = 6.31$$

$$\text{Channel 2 PPS} = 30 * \frac{1}{4+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1} = 1.58$$

$$\text{Channel 3 PPS} = 30 * \frac{1}{4+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1} = 1.58$$

Situation 2: An alarm event occurs on channel 2.

$$\text{Channel 1 PPS} = 30 * \frac{4}{4+8+1+1+1+1+1+1+1+1+1+1+1+1+1+1} = 4.61$$

$$\text{Channel 2 PPS} = 30 * \frac{8}{4+8+1+1+1+1+1+1+1+1+1+1+1+1+1+1} = 9.23$$

$$\text{Channel 3 PPS} = 30 * \frac{1}{4+8+1+1+1+1+1+1+1+1+1+1+1+1+1+1} = 1.15$$

Call Seq

The Call monitor sequence mode has 16 programmable steps. This item allows you to assign a camera for each programmable step (1~16), “0” means skip this step. Those cameras, which are not installed or are set as covert will not be displayed on the call monitor.

6.4.2 Camera Auto-Detect

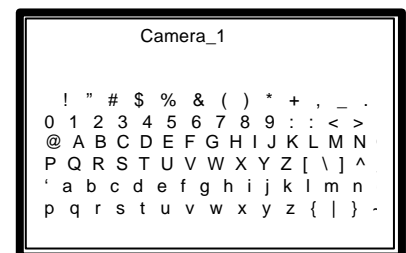
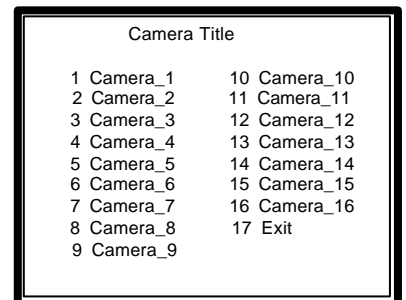
The CCT730 is able to auto-detect which and how many cameras are connected to it by looking for their video signal. If a camera channel is not used, it is recommended that it is set as “not installed”. Otherwise that channel will be detected as suffering from “video loss”. Move back to the Configuration Table 1 menu to un-install a camera.

6.4.3 Camera Title

Each camera can be assigned a title up to 12 characters long. The default title for each camera is their channel number, eg, Camera_1.

Move the cursor to the Camera Title option and press ENTER, the list of camera titles will appear. Select a channel and press ENTER again, the character sub-menu will appear.

Use the arrow buttons to select your chosen character and press ENTER to add it to the title. If the wrong character is entered, the MODE button on the front panel of the CCT730 also doubles as a backspace key. NB. the first character on the full list of characters is a space.



6.4.4 Power ON Detect

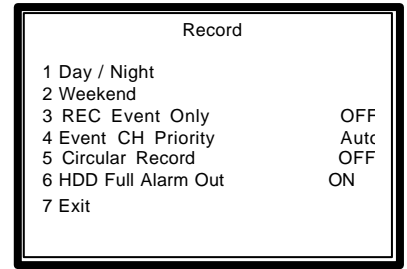
This item allows you to enable /disable the camera auto-detection when the power is on. The default setting is ON.

6.4.5 Title Position

The camera title can be placed in one of five positions in the display window: Default, Top-R (top-right), Top-L (top-left), Bom-R (bottom-right) and Bom-L (bottom-left).

6.5 Record

This menu allows you to set up all the parameters related to the recordings that you wish to make.



6.5.1 Day/ Night

This menu allows you to set up the Day start/ stop time, the PPS (Picture Per Second) and the recording quality for Day and Night-time.



Day Start Time/ Day Stop Time

These two items allow you to set the start/ stop time of the daytime recording schedule. Use the arrow buttons to select the desired start/ stop time and press ENTER to save the setting.

Day REC PPS/ Night REC PPS

These two items allow you to set the Day/ Night record PPS (Pictures Per Second). The higher the number of pictures per second, the smoother the video playback appears but the more storage space is taken up on the hard drive.

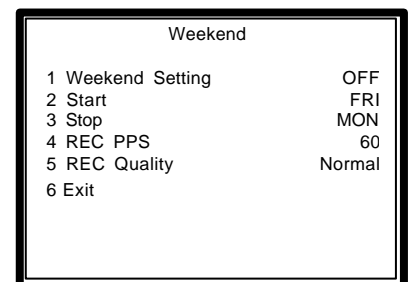
Day REC Quality/ Night REC Quality

These two items allow you to set up the Day/ Night record quality. A superior picture quality affects playback but will fill the hard disk faster and the total record time will be shorter. Options are Low, Normal, High, Super and Ultra. See Appendix 3 for a more comprehensive list of estimated recording times.

HDD size	Total Record Time (Hour)				
	Quality: Ultra	Quality: Super	Quality: High	Quality: Normal	Quality: Low
40 GB	5	7	9	12	15
80 GB	10	14	18	24	30
120 GB	15	21	27	36	45
160 GB	20	28	36	48	60

6.5.2 Weekend

This menu allows you to set up weekend start/ stop times, the recording PPS and the recording quality. It is programmed in the same way as the Day/night schedules.



Weekend Setting

This item allows you to enable/ disable the weekend-related functions. If the item is set to “OFF”, all the weekend related functions will be disabled.

Weekend Start Time/ Weekend Stop Time

These allow you to set up weekend start/ stop time.

Weekend REC PPS

This item allows you to set weekend record PPS (Pictures Per Second).

Weekend REC Quality

This item allows you to set up the weekend record quality

6.5.3 REC Event Only

This item allows the CCT730 to be set up to record alarm events only. When this option is set to ON, the unit will only record when an event occurs.

6.5.4 Event CH Priority

This option allows you to give a certain camera priority in the event recording. Using the right/left arrows you can select either FIX or Auto. FIX gives all the channels the same priority and Auto gives the channel a higher priority. Having a higher priority means that the channel will be recorded more often than the others. This is a useful feature where cameras are used to protect particularly vulnerable areas.

6.5.5 Circular Record

The CCT730 can store recorded video information in rotation. If this setting is ON (default), the earliest recorded images will be over-written automatically when the hard disk becomes full (none-stop recording). If the Circular Record setting is OFF, the recording will stop when the HDD is full. In this situation, a flashing message (HD Full) will be displayed when there is only 45 minutes of recording space left on the disk and a buzzer (if on) will activate when 15 minutes is left.

6.5.6 HDD Full Alarm

If you select ON for this item, the buzzer will be activated when there is 15 minutes of recording time left on the HDD. This buzzer will stop when a new HDD has been inserted.

Event	
1 Day / Night Switch	
2 Event Response	
3 Motion Detect	
4 Alarm In	
5 Video Loss Detect	Di:
6 Alarm Set / Reset SW	Er
7 Release Time	
8 Clear Event List	
9 Exit	

6.6 Event

This menu allows you to configure how an EVENT is handled by the CCT730.

6.6.1 Day/ Night Switch

The CCT730 allows the installer to attach an external device to its I/O connector to tell the unit when it should use its day or night settings. This might be an output from an alarm panel that tells the CCT730 to move into its Night mode when the panel has been activated.

Day/ Night Switch	
1 Day / Night SW Enable	Nr
2 Switch <OFF>	Day
3 Delay For Active	6
4 Exit	

Day/ Night SW Enable

Use the right/ left arrow buttons to select YES (enable) or NO (disable) for this option. If you select "NO", the Day/ Night Switch signal will be ignored and the unit will follow the day/night timer schedules defined in the Record menu. If you select YES, the unit will follow the On/ Off position of the external trigger.

Switch <OFF>

This item allows you to configure which setting (Day/ Night) will be activated when the switch is OFF. You may select Day or Night by using the right/ left arrow buttons.

Delay For Active

After the Day/ Night switch setting has changed, there is a delay before the process takes place to avoid the operator triggering a false event by mistake.

6.6.2 Event Response

This sub-menu allows you to set how the CCT730 will respond to a triggered event.

Internal Buzzer

This item allows you to set an internal buzzer to activate when an event is triggered.

Event Response	
1 Internal Buzzer	ON
2 Event Relay Output	ON
3 Event List	OI
4 Event Full Screen	OFF
5 Call Event Display	ON
6 Response Duration	1C
7 Any Key To Stop	OI
8 Exit	

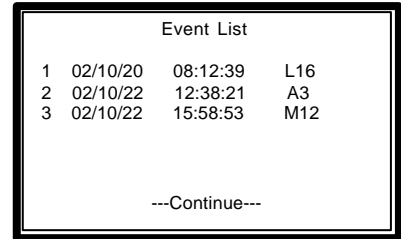
Event Relay Output

There are two alarm output relays available on the unit's I/O connector, Alarm N.O. (normally open) and Alarm N.C. (normally closed). These signals are driven by an on-board relay and can be used to drive a light or siren to warn the operator of an alarm event. This item allows you to

enable/ disable the alarm output pins. If the alarm output is OFF (disabled), the relay will not be energized when an alarm is triggered.

Event List

Up to 255 alarm events will be logged in the unit’s non-volatile memory. A full list can be accessed on this menu, which displays the alarm event number, the date, the time, the type of event and finally the channel it occurred on. For the type of event “A” represents Alarm Input, “L” represents Video Loss, and “M” represents Motion Detection.



Event List			
1	02/10/20	08:12:39	L16
2	02/10/22	12:38:21	A3
3	02/10/22	15:58:53	M12
---Continue---			

Event Full Screen

When an event occurs on any camera input, the image from this camera can be displayed on the main monitor in a full screen display and kept until its response duration has passed. This option allows you to enable/ disable this function.

Call Event Display

If set to YES, the Call Monitor will be made to switch to the activated camera as soon as an event is triggered. Otherwise, the Call Monitor switches between each installed camera sequentially.

Response Duration

This item allows you to decide how long the buzzer and Alarm Out relays continue after an event is triggered. This ranges from 1~9999 seconds.

Any Key To Stop

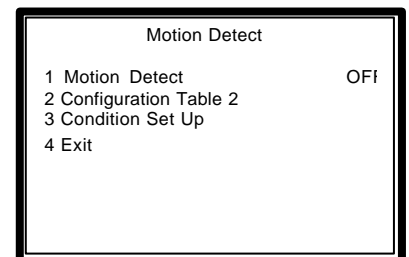
When the event is triggered, the buzzer will beep and the Alarm Out relay will be activated. If you want to stop these actions by pressing any one key on the front panel of the CCT730, then you must select YES for this item.

6.6.3 Motion Detect

This menu allows you to configure how the Motion Detection feature operates. Each camera channel can have its own “Detect Area” and “Sensitivity” individually defined.

Motion Detect

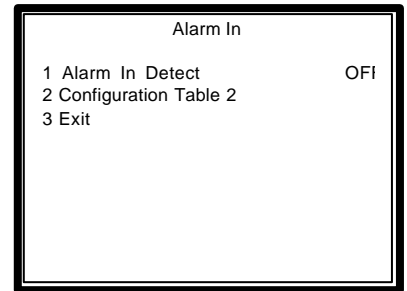
This item allows you to globally enable/ disable the motion detect function of the CCT730.



Motion Detect	
1 Motion Detect	OFF
2 Configuration Table 2	
3 Condition Set Up	
4 Exit	

6.6.4 Alarm In

This menu allows you to enable/ disable the Alarm pins of rear I/O connector and to select N.O. (normal open) or N.C. (normal close) type for each pin.



Alarm In Detect

This item allows you to enable (YES) or disable (NO) the Alarm In pins.

Configuration Table 2

This item allows you to select N.O. (normal open) or N.C. (normal close) type for each Alarm In pins.

6.6.5 Video Loss Detect

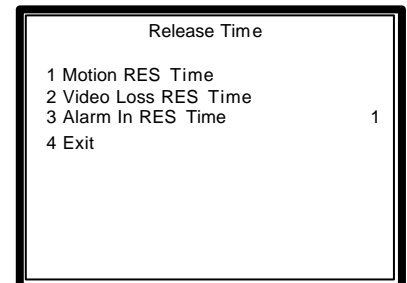
This item allows you to enable/ disable the CCT730 to detect Video Loss as an alarm event.

6.6.6 Alarm Set/ Reset SW

This item allows you to enable/ disable the Alarm Set/ Reset signal of the rear I/O connector. If you select EN (enable), then you can force the alarm output to on/ off by using the Alarm Set signal.

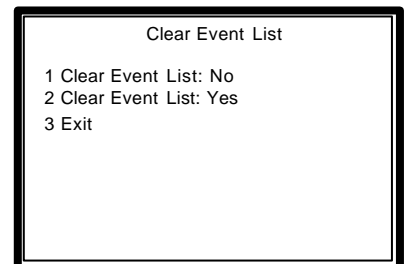
6.6.7 Release Time

This menu allows you to set the “release time” of an alarm trigger from motion detection, video loss or an alarm input. The release time defines how long time after an alarm condition ends should another be recognized. This should help avoid false alarms.



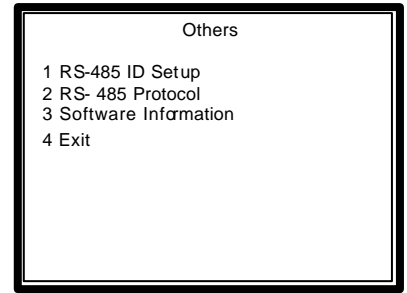
6.6.8 Clear Event List

This menu allows you to clear alarm event list. By selecting the Clear Event list menu, you are presented with 2 further options, NO or YES. This extra menu is to prevent you from clearing the list in error.



6.7 Others

This menu allows you to check the RS485 communication protocol and software version.

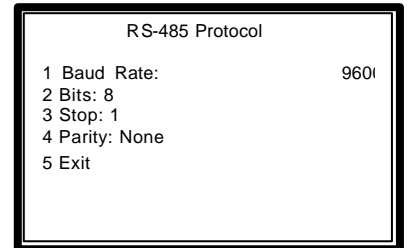


6.7.1 RS-485 ID Set Up

This item can only be accessed by the installer; the RS-485 ID address of the CCT730 can be modified here.

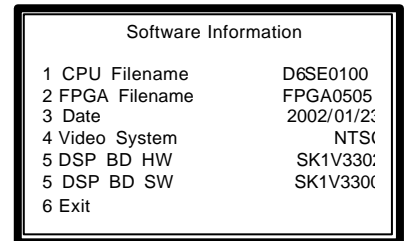
6.7.2 RS-485 Protocol

This menu shows the details of RS-485 protocol. The only setting that can be changed here is the “Baud Rate”. You can choose from 38400, 19200, 9600, 4800 and 2400.



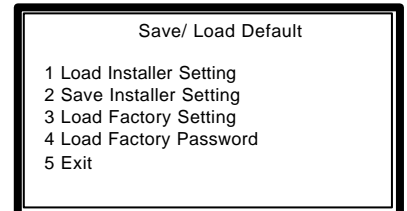
6.7.3 Software Information

This menu presents the software information.



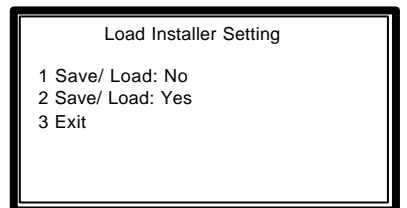
6.8 Save/ Load Default

This menu allows you to restore the CCT730 to the default installer or factory configuration settings.



Load Installer Setting

This item allows you to recall the original “Installer Setting” from the on-board non-volatile memory.



Save Installer Setting

This item allows you to save the current setting as the new “Installer setting”. This operation can only be executed with an engineer’s password otherwise an illegal operation message will be displayed.

Load Factory Setting

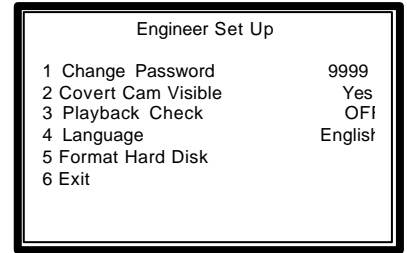
This item allows you to recall the default “Factory Setting” from the read only memory.

Load Factory Password

This item allows you to reload the factory password in case you forget your own password.

6.9 Engineer Set Up

If you enter the main menu with the engineer's password, you can enter this menu.



6.9.1 Change Password

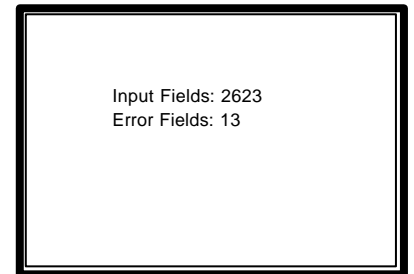
This password can be changed to any four-digit number using the right/ left arrow buttons to change it to a new number, press the ESC button when you have finished and the password will be saved into the unit's memory. If the user forgets this new password, he can recall the factory password by using the Load Factory Password in the Save/ Load Default sub-menu.

6.9.2 Covert Cam Visible

This option should be marked as YES if you wish to view the video playback from the cameras that you have marked as COVERT.

6.9.3 Playback Check

This item allows you to check the internal cabling of CCT730 is functioning correctly. A small number of Error Fields is permissible for the system to be functioning correctly.

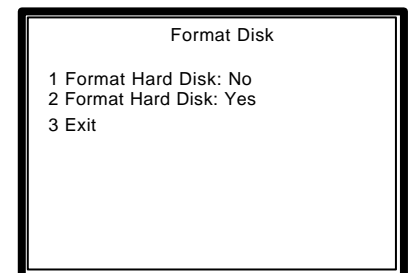


6.9.4 Language

Only the English version is currently available.

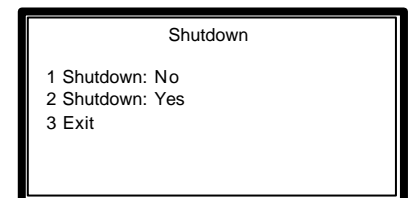
6.9.5 Format Hard Disk

This item allows you to format the HDD. To format, choose option 2 and press ENTER. The unit formats the HDD to Windows FAT32. If the HDD has been used in another machine with another kind of file system, it must be formatted to FAT32 in CCT730 before starting the recording process.



6.9.6 System Colour

This item allows you to choose "Colour" or "Mono" for the system.

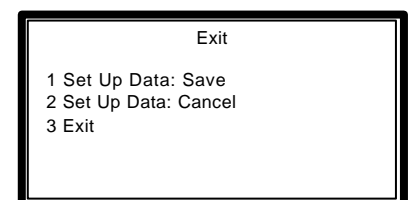


6.10 Shutdown

This item allows you to shutdown the CCT730.

6.11 Exit

Before exiting the menus, to save your modifications in the unit's memory, you will need to select option 1, the Set Up Data Save option.



7. Windows Application Software

The file format of CCT730 is compatible with Windows OS; you can process your recorded video images in Windows 98, 2000 and XP. The application software allows you to playback, print out, export JPEG files or clip a segment of video.

7.1 Connecting the Caddy to a PC

Remove the hot-swap HDD from the CCT730 and insert it into a caddy. Then connect the caddy to the PC with a USB Cable.



7.2 Download the Software

To process recorded video on your computer, you will need to install the DVR Windows application software on your PC first. This application is available on the CD enclosed with the unit. Install the file named "dvrwinap.exe" and connect the hot-swap HDD to your PC to view and process the recorded video.



7.3 Function Buttons

1. Open File

Press this button to open and search a recorded video file.

2. Print Out

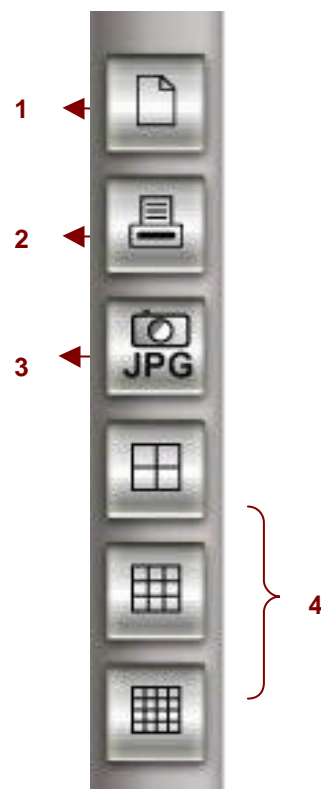
Press this button to print out a single picture.

3. Save Image

Press this button to save a current image as a JPEG on your P.C.

4. Display Mode

Press these buttons to choose a display mode (4, 9 and 16 windows).



5. Set (top right)

This button will allow you to select which camera is displayed in each window. Select a window with the mouse and then press a channel button at the bottom of the screen to assign it to that window. The cursor will automatically move to the next window.



6. File Information

The information on the open file will be displayed here: File Name, Start Time and End Time.



7. Video Clipping ✂

Press this button to clip a small period of video so that it can be more easily forwarded by e-mail. Press this button to start clipping and press it again to stop.

8. Back to Start I◀◀

Press this button to go to the first image of the recorded video.

9. Fast Rewind ◀◀

Press this button to rewind the recorded video. Press it again to increase the rewind speed: x1, x4, x8, x16, x32 and x64.

10. Rewind ◀

Press this button to rewind the recorded video at normal speed.

11. Frame Rewind (-)

Press this button to move back a frame.

12. Playback

Press this button to playback the recorded video images and press it again to pause it.

13. Frame Forward (+)

Press this button to move forward a frame.

14. Stop ■

Press this button to stop playing the recorded video.

15. Fast Forward ►►

Press this button to play the recorded video in forward direction. Press this button repeatedly to change the playback speed: x1, x4, x8, x16, x32, and x64.

16. Go to End ►►|

In playback mode, press this button to go to the end image of the opened file.

17. GOTO

In playback mode, press this button to search for a certain date and time on the recorded video.

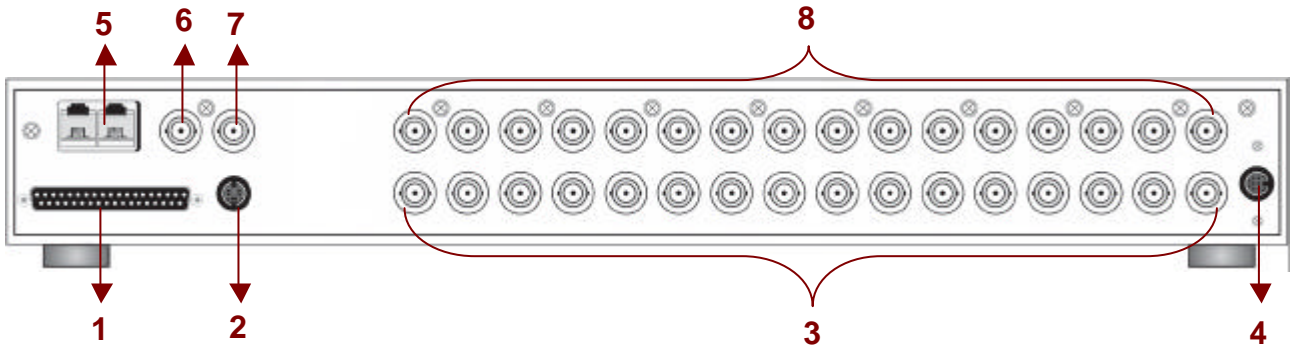
18. Select Channel 1~16

Press one of these buttons to view any of the channels in full screen.



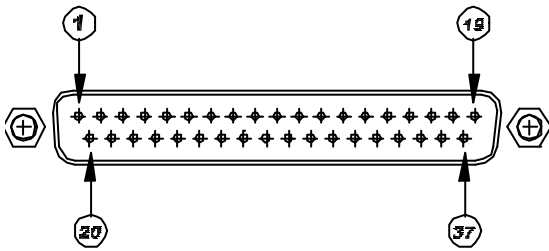
8. Connectors

Rear



Item	Description
1	External I/O
2	Monitor output
3	Video Loopthroughs (1~16)
4	Power Socket
5	RS-485
6	Call Monitor (BNC)
7	Monitor Output (BNC)
8	Video Inputs (1~16)

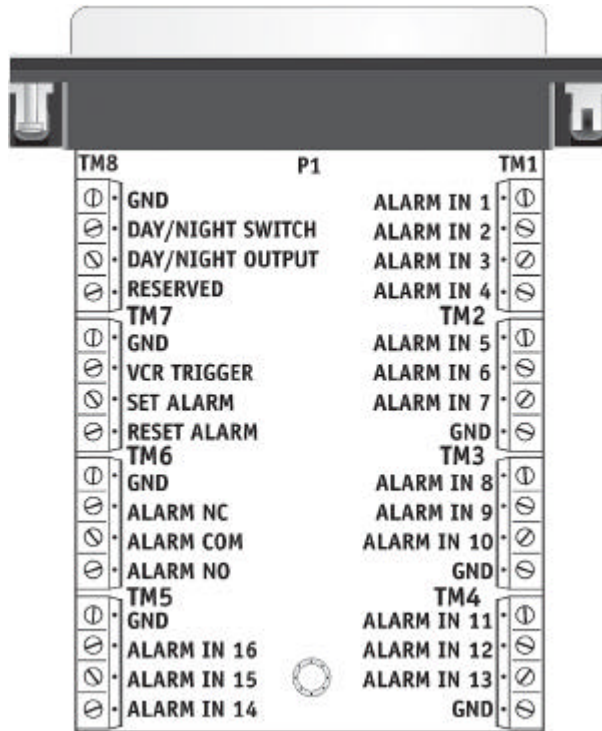
External I/O Port (37pin DSUB)



Pin No.	Definition	Direction	Pin No.	Definition	Direction
1	GND	Power	20	Reserved	Input
2	GND	Power	21	Reset Alarm	Input
3	GND	Power	22	Day / Night output	Output
4	GND	Power	23	Day / Night switch	Input
5	Reserved	-	24	Set Alarm	Input
6	Reserved	-	25	Reserved	-
7	Alarm NO	Output	26	Alarm In 13	Input
8	Alarm COM	Output	27	Alarm In 12	Input
9	Alarm NC	Output	28	Alarm In 11	Input
10	GND	Power	29	Alarm In 10	Input
11	GND	Power	30	Alarm In 9	Input
12	GND	Power	31	Alarm In 8	Input
13	GND	Power	32	Alarm In 7	Input
14	GND	Power	33	Alarm In 6	Input
15	GND	Power	34	Alarm In 5	Input
16	Alarm In 16	Input	35	Alarm In 4	Input
17	Alarm In 15	Input	36	Alarm In 3	Input
18	Alarm In 14	Input	37	Alarm In 2	Input
19	Alarm In 1	Input			

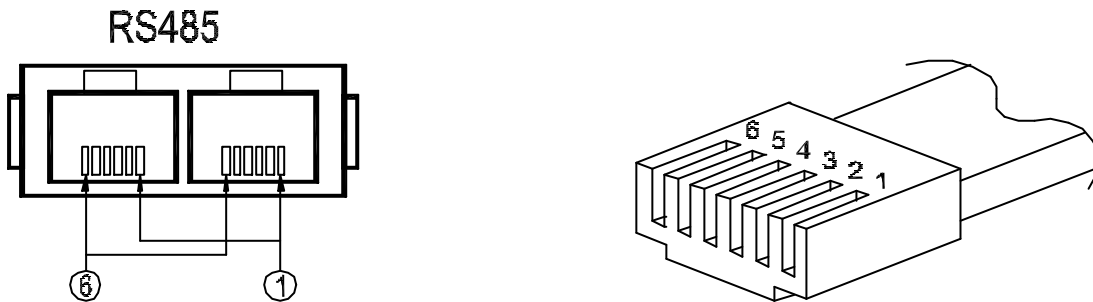
External I/O Board

There is an “External I/O board” included in the CCT730 box. You can connect it to the External I/O port; the pins are identified as the names listed on the board. Three pins are listed which are not used: VCR Trigger, RS-232 RX and RS-232 TX.



RS-485 (RJ11)

The default RS-485 port connector is RJ11 6P6C connector.



RJ11 Cable 6P6C pin definition:

Pin No.	Definition	Direction
1	-	-
2	+ 12V	Power
3	GND	Ground
4	DA (D +)	I/O
5	DB (D -)	I/O
6	-	-

9. CCT730 Specification

Compression Method	Wavelet
Video System	PAL
Resolution-Live Video	720 x 576 pixels
Resolution-Recorded	720 x 288 pixels
Recording Rate	Up to 50 pictures per second
Recording Device	Hot swappable HDD
Recording Quality	Super / High / Normal / Low
Video Input	BNC x 16, 1.0 V p-p, 75 Ω
Video Looping Through	BNC x 16, 1.0 V p-p, 75 Ω
Main Monitor Output	BNC x 1, S-VHS x 1, 1.0 V p-p, 75 Ω
Call Monitor Output	BNC x 1, 1.0 V p-p, 75 Ω
Alarm Input	x 16, DSUB 37 pin male (TTL level)
Alarm Output	x 1, DSUB 37 pin male, 2.0 A / 24 V
Remote Control	RS-485 DSCP
Playback Speed	Fast Forward / Rewind (x1~x8), picture by picture
Zoom	Yes
Power Supply	DC 12 V / 4 A
Title	12 characters
Alarm List	Up to 255 events
Dimensions	432 x 44 x 400mm (W x H x D)
Operating Temperature	0~40°C

Appendix 1: Hard Disk Error Message

Some messages will be shown on the screen when the H.D.D. is unable to operate.

◆ **Message:** H.D.D. Detect Time Out

Symptom: The system checks the H.D.D. but gets no response for over 30 seconds

Possible reason: H.D.D. power on failure

Tip: 1. Wait for the DVR to automatically reset the H.D.D.
2. Power off and on again

◆ **Message:** No Hard Disk

Symptom: No HDD has been found by the system.

Possible reason: 1. No H.D.D.
2. H.D.D. detects a failure

Tip: 1. Insert a formatted (FAT 32) H.D.D.
2. Check the power/ IDE bus connectors, ensure they are connected properly and then insert the H.D.D. again.

◆ **Message:** File System Error

Symptom: The file system is not acceptable.

Possible reason: The H.D.D. has not been formatted with the "FAT32" file system.

Tip: Enter menu screens and reformat the H.D.D.

◆ **Message:** IDE Bus Error

Symptom: IDE bus error or H.D.D. Master/ Slave jumper error.

Possible reason: 1. The cable of IDE connectors may be damaged.
2. H.D.D. jumper may not be set to "Master".

Tip: 1. Check the cable of IDE connectors; it may be damaged.
2. Check the H.D.D. cable and ensure it has been connected properly to the caddy.
3. Check H.D.D. jumper; the jumper must be set to "Master".

◆ **Message:** Unknown H.D.D.

Symptom: The H.D.D. format is not acceptable.

Possible reason: The H.D.D. has been formatted with "NTFS" file system.

Tip: Enter the menu screens and format the H.D.D. again.

◆ **Message:** H.D.D. Detect Error

Symptom: H.D.D. is unusable.

Possible reason: Other unknown reasons.

Tip: Exchange the H.D.D. for a new one.

Appendix 2: Supported HDD

The supported H.D.D.s are listed as below:

Brand	Capacity	Rotation Speed	Part Number
Maxtor	40GB	5400 RPM	4D040k2
Maxtor	80GB	5400 RPM	4D080H4
Maxtor	80GB	7200 RPM	D740X-6L
Maxtor	120GB	5400 RPM	4G120J6
Maxtor	160GB	5400 RPM	4G160J8
Maxtor	200GB	5400 RPM	4G200J8
SAMSUNG	40GB	5400RPM	SV4002H
Seagate	40GB	7200RPM	ST340021A
Seagate	60GB	7200RPM	ST360021A
Seagate	120GB	7200RPM	ST3120023A
IBM	61.5GB	7200RPM	IC35L060AV
IBM	76.8GB	7200RPM	DTLA30707S
IBM	82.3GB	7200RPM	IC35L080AV
IBM	123.5GB	7200RPM	IC35L120AV
IBM	185GB	7200RPM	IC35L180AV
Western Digital	80GB	7200RPM	WD800JB
Western Digital	40GB	5400RPM	WD400EB
Western Digital	60GB	5400RPM	WD600AB
Western Digital	80GB	5400RPM	WD800AB
Western Digital	120GB	5400RPM	WD1200AB
Western Digital	200GB	7200RPM	WD2000JB

NB

The CCT730 cannot support Seagate 80GB HDD (P/N 9T6006-003 firmware 3.19).

Appendix 3: Estimated Recording Times

HDD	Total Record Time (Hrs) at 50 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	5 hrs	7 hrs	9 hrs	12 hrs	15 hrs
80 GB	10 hrs	14 hrs	18 hrs	24 hrs	30 hrs
120 GB	15 hrs	21 hrs	27 hrs	36 hrs	45 hrs
160 GB	20 hrs	28 hrs	36 hrs	48 hrs	60 hrs

HDD	Total Record Time (Hrs) at 25 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	10 hrs	14 hrs	18 hrs	24 hrs	30 hrs
80 GB	20 hrs	28 hrs	36 hrs	48 hrs	60 hrs
120 GB	30 hrs	41 hrs	54 hrs	72 hrs	90 hrs
160 GB	40 hrs	56 hrs	72 hrs	96 hrs	120 hrs

HDD	Total Record Time (Hrs) at 12.5 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	20 hrs	28 hrs	36 hrs	48 hrs	60 hrs
80 GB	40 hrs	56 hrs	72 hrs	96 hrs	120 hrs
120 GB	60 hrs	84 hrs	108 hrs	144 hrs	180 hrs
160 GB	80 hrs	112 hrs	144 hrs	192 hrs	240 hrs

HDD	Total Record Time (Hrs) at 10 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	25 hrs	35 hrs	45 hrs	60 hrs	75 hrs
80 GB	50 hrs	70 hrs	90 hrs	120 hrs	150 hrs
120 GB	75 hrs	105 hrs	135 hrs	180 hrs	225 hrs
160 GB	100 hrs	140 hrs	180 hrs	240 hrs	300 hrs

HDD	Total Record Time (Hrs) at 6.25 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	40 hrs	56 hrs	72 hrs	96 hrs	120 hrs
80 GB	80 hrs	112 hrs	144 hrs	192 hrs	240 hrs
120 GB	120 hrs	168 hrs	216 hrs	288 hrs	360 hrs
160 GB	160 hrs	224 hrs	288 hrs	384 hrs	480 hrs

HDD	Total Record Time (Hrs) at 5 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	50 hrs	70 hrs	90 hrs	120 hrs	150 hrs
80 GB	100 hrs	140 hrs	180 hrs	180 hrs	300 hrs
120 GB	150 hrs	210 hrs	270 hrs	360 hrs	450 hrs
160 GB	200 hrs	280 hrs	360 hrs	480 hrs	600 hrs

HDD	Total Record Time (Hrs) at 2.5 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	100 hrs	140 hrs	180 hrs	240 hrs	300 hrs
80 GB	200 hrs	280 hrs	360 hrs	360 hrs	600 hrs
120 GB	300 hrs	420 hrs	540 hrs	720 hrs	900 hrs
160 GB	400 hrs	560 hrs	720 hrs	960 hrs	1200 hrs

HDD	Total Record Time (Hrs) at 2 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	125 hrs	175 hrs	225 hrs	300 hrs	375 hrs
80 GB	250 hrs	350 hrs	450 hrs	600 hrs	750 hrs
120 GB	375 hrs	525 hrs	675 hrs	900 hrs	1125 hrs
160 GB	500 hrs	700 hrs	900 hrs	1200 hrs	1500 hrs

HDD	Total Record Time (Hrs) at 1 Pics per second				
	Ultra Quality	Super	High	Normal	Low
40 GB	250 hrs	350 hrs	450 hrs	600 hrs	750 hrs
80 GB	500 hrs	700 hrs	900 hrs	1200 hrs	1500 hrs
120 GB	750 hrs	1050 hrs	1350 hrs	1800 hrs	2250 hrs
160 GB	1000 hrs	1400 hrs	1800 hrs	2400 hrs	3000 hrs