



SECURITY PRODUCTS

—————•2007

PTZ Combination Dome Cameras



Vandalproof Cameras



Box Cameras



Digital Video Recorders



Multiplexers



Coaxial Transmission Systems



CRT & LCD Monitors



Network Intercom Systems



Security Intercom Systems



800.733.7088 • www.toaelectronics.com



Dedicated to Security and Safety.

A global security solutions leader for over 20 years, TOA has developed cutting edge technologies: IP network-ready cameras, digital video recorders and intercom systems – plus break-through Wide Dynamic Range cameras for clear, crisp images in adverse lighting conditions. With today's increased demands for enhanced security and safety, TOA strives to continually develop advanced technologies to help serve the needs of society. Our full line of security products also includes: Pan-Tilt-Zoom combination dome cameras, compact box and mini-dome cameras, monitors, and much more. These innovative products can be used in a wide range of applications requiring high quality video surveillance. TOA's "installer-friendly" products help reduce installation time and increase your profit margins for every CCTV job. With industry-leading warranty coverage, comprehensive design resources and free technical support, you can rely on TOA for high-performance, cost-effective video surveillance and intercom solutions!



Digital Video Recorders

page 2 - 5



PTZ Combination Dome Cameras

page 6 - 9



Wide Dynamic Range Box Camera

page 10



Compact Box Cameras

page 11



Mini-Dome Cameras

page 11



Vandal Resistant Day/Night Camera

page 12



IP Network Camera System

page 13 - 14



Multiplexers

page 15



Switchers, Video Distributor, and Coaxial Transmission System

page 16



LCD and CRT Monitors

page 17



Brackets, Plugs, Cables and Lenses

page 18



IP Network Intercom System

page 19 - 21



Voice Security Intercom System

page 22 - 23



Network Audio Adapter

page 24



Resources

inside back cover

Digital Video Recorders

16-Channel Digital Video Recorders

C-DR161D08
(HDD 80GB with DVD)

C-DR161D1
(HDD 160GB with DVD)

C-DR161D3
(HDD 320GB with DVD)

C-DR161D6
(HDD 600GB with DVD)



C-DR161-08
(HDD 80GB)

C-DR161-1
(HDD 160GB)

C-DR161-3
(HDD 320GB)

C-DR161-6
(HDD 600GB)



9-Channel Digital Video Recorders

C-DR091D08
(HDD 80GB with DVD)

C-DR091D1
(HDD 160GB with DVD)

C-DR091D3
(HDD 320GB with DVD)

C-DR091D6
(HDD 600GB with DVD)



C-DR091-08
(HDD 80GB)

C-DR091-1
(HDD 160GB)

C-DR091-3
(HDD 320GB)

C-DR091-6
(HDD 600GB)



The TOA C-DR161/091 Series is made up of 16 DVR (digital video recorder) units, offering a wide range of video input, HDD storage and DVD burning capabilities. Up to eight DVR units can be linked in cascade configurations to form a large-scale system with a maximum of 128 cameras connected. By linking as many as four C-RM1000 remote control units, a sophisticated zone-based security system can be configured. Operational efficiency and economy are greatly enhanced because there is no need for additional special equipment.

A network can be set up for live surveillance and playback, with web browser control, and email transmission to report alarm.

A high quality picture of 720 x 240 pixels and high frame rate of 120 IPS (Images Per Second) are provided. Each camera can have individual recording rate and picture quality settings.

There is a wide selection of recording and search modes, as well as backup to a DVD-R or external USB memory. PC viewer software is also automatically created. Password and USB key corresponding to the operation level protects the DVR system from unauthorized access.

Extensive range of products in the series satisfy any demand.

TOA's latest DVR products are the C-DR161/091 Series. This series is composed of 16 units which feature different video input capabilities, HDD storage capacities, and optional DVD burner. These products can be partnered with a range of

peripherals including the C-RM1000 dedicated remote controller and two external HDD expansion units in order to configure systems that can fulfill the needs of many specific applications.

Versatile system expansion possibilities for fulfilling specific requirements.

Utilizing the new DVR C-DR161/091 Series makes it possible to assemble large-scale systems using up to eight DVR units in cascade configuration. Each DVR unit can have two external HDD expansion units and the system can be efficiently operated using up to a maximum of 4 remote controllers. Such large systems allow connecting up to 128 cameras with HDD expanded externally by up to 4.8TB per DVR unit. Configuring systems as needed can be performed efficiently as well as economically as special or dedicated devices are not required.

Remote control capabilities via network enhance system performance.

Each DVR from the C-DR161/091 Series offers remote surveillance, search and playback of recorded images via a 10/100 BASE-T network. Remote surveillance can be performed just with unit controls without dedicated software and control can be performed via a web browser such as Internet Explorer. In addition, there is an e-mail transmission function to report alarm.

High quality picture with high frame rate.

TOA DVRs feature a maximum high frame rate of 120 IPS for image recording with a high quality picture of 720 x 240 pixels. Each camera in a system can have individual settings for recording rate and picture quality which in turn enable setting priority recording.

Multiple search modes for quicker results.

Searching recorded data is easy as various data search modes are offered: Time/day search and Event search (priority recording, timer recording, alarm recording, motion detection recording). This versatility makes it possible to select an optimal search method for particular requirements.

Backing up data with dedicated viewer software.

Recorded data can be backed up to the built-in DVD-R drive or external USB memory. Whenever a backup copy is made, viewer software that allows image viewing on a PC is also copied to the backup medium.

Secure measures protect system.

System security is also provided by a user log-in password corresponding to the operation level and USB-based protection that "locks" the unit, preventing operation or any changing to the settings unless a registered USB memory key is used. To safeguard recorded images, the DVRs are supplied with software that will detect images that have been altered.

Wide selection of recording modes.

Recording modes are Priority recording, Auto recording (Alarm event/Normal), Pre-recording.

Accurate time synchronizing.

Recording time data is absolutely essential for the integrity of the recorded images, so the new DVR units include an NTP server-based time correction function. Time correction can also be accessed for TOA combination cameras that are connected to the DVR.

Full-featured remote controller assists operation.

The C-RM1000 remote controller can control the new C-DR161/091 Series DVR's in addition to TOA combination dome cameras via the DVR. A single remote controller can control up to eight DVR units and when the maximum eight DVRs are cascaded, controlling 128 combination dome cameras becomes possible.

Grouping maximizes surveillance efficiency.

Effective surveillance is accomplished by dividing surveillance into multiple zones for security purposes, and this is desirable for many sites including factories, commercial facilities, schools and buildings. The new DVR also makes it possible to group using the C-RM1000 remote controller, helping to easily configure optimal, sophisticated systems.



Digital Video Recorders



C-RM1000
Remote Control Unit

The C-RM1000 Remote Controller is used to remotely control the 9-CH/16-CH Digital Video Recorder (C-DR161/091 Series). It can also control combination cameras connected to the Digital Video Recorder. A built-in 3-axis joystick allows main operations to be performed with one hand.



C-RF1000
Interface Unit

The C-RF1000 Interface Unit is used to operate the 9-CH/16CH Digital Video Recorder (C-DR091/161 Series) with multiple remote controllers (up to 4 remote controllers can be connected). Equipped with an RS-232C terminal, the C-RF1000 can connect to a PC.



C-DA1000-1 (1.2TB)
C-DA1000-2 (2.4TB)
Hard Disk Expansion Unit

The C-DA1000 Series are hard disk units used to expand recording capacity of 9CH/16CH Digital Video Recorder (C-DR091/161 Series). Up to two units per DVR can be connected.



Digital Video Recorder Control

Digital Video Recorder's recording and playback operation can be remotely controlled by the Remote Controller. It is also possible to display the Digital Video Recorder's menu to change settings.

Screen Display Operation

Camera images can be viewed in full-screen, 4-segment, 9-segment, or 16-segment split screen displays or in sequential displays. (Monitor 2 output can provide only full-screen, 4-segment split screen, and sequential displays.)

Combination Dome Camera Operation

The Combination Dome Camera's pan, tilt, and zoom operation, as well as focus and iris adjustments can be remotely controlled. It is also possible to display the Combination Dome Camera's menu to change settings.

Preset Position Programming and Playback

The Combination Dome Camera's preset positions can be easily programmed. Images set to the preset position can also be displayed on the monitor screen.

Quick Display Function

Digital video recorder numbers, camera numbers, and position numbers can be programmed into a function key (F1 – F4) or number (1 – 508). Pressing the programmed key or number permits the corresponding camera image to be displayed on the full screen.

Function Programming

Functions, such as Auto-focus, Auto operation, and electronic zoom, can be programmed into a function key (F1 – F4) or number (1 – 508).

Digital Video Recorder Grouping

Two or more cascade-connected Digital Video Recorders can be grouped, allowing images of all Digital Video Recorders in the group to be displayed on one master monitor. Further, multiple Digital Video Recorders can be viewed in sequential order through group sequence.

Password Setting

Accessible functions can be restricted by setting a password. There are 3 operation levels and different passwords can be set for each level.

Monitor Locking

Operations of the Digital Video Recorder's Monitor Outputs 1 and 2 can be individually restricted. This function is convenient if two or more Remote Controllers are connected in the system.

Web Functions

The Digital Video Recorder is equipped with a variety of web-accessible functions. Connecting to the unit using a PC over a LAN cable allows the video recorder to remotely monitor camera outputs, or to search and/or play back recorded images using a web browser. The following specific functions can be accessed on a connected PC using the web interface:

- Simultaneous operation of 3 client PCs
- Viewing of live images
- Control of combination dome cameras
- Search and/or playback of recorded images
- Operation duplicating that of the keys mounted on the Digital Video Recorder's front panel



System Requirements

PC

OS: Windows 2000/XP
 CPU: Celeron, 600 MHz or more
 Memory: 64 MB or more
 Available HDD space: No limit

Browser

Internet Explorer 5.5 or later

Java

Sun JRE 1.4 or later

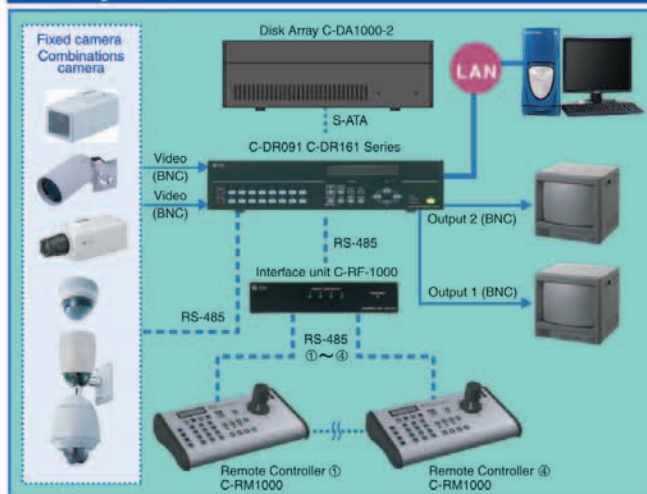


Camera Control Section

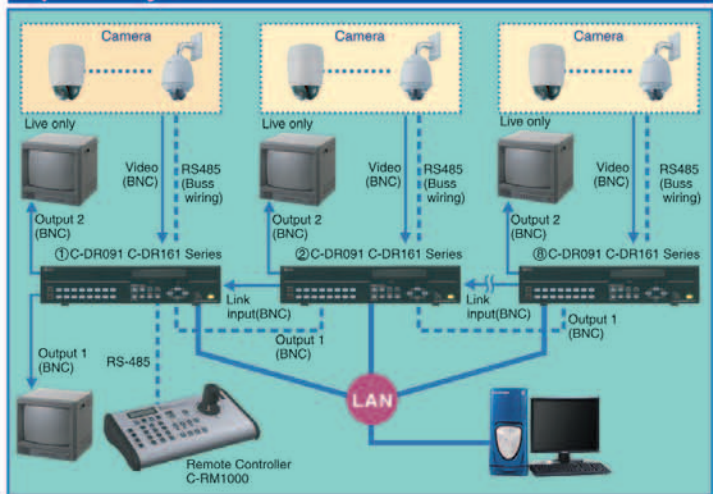
- Reference to and changing of menu settings
- Downloading of recorded images

Visit www.toaelectronics.com to download an MS Excel DVR Storage Calculator.

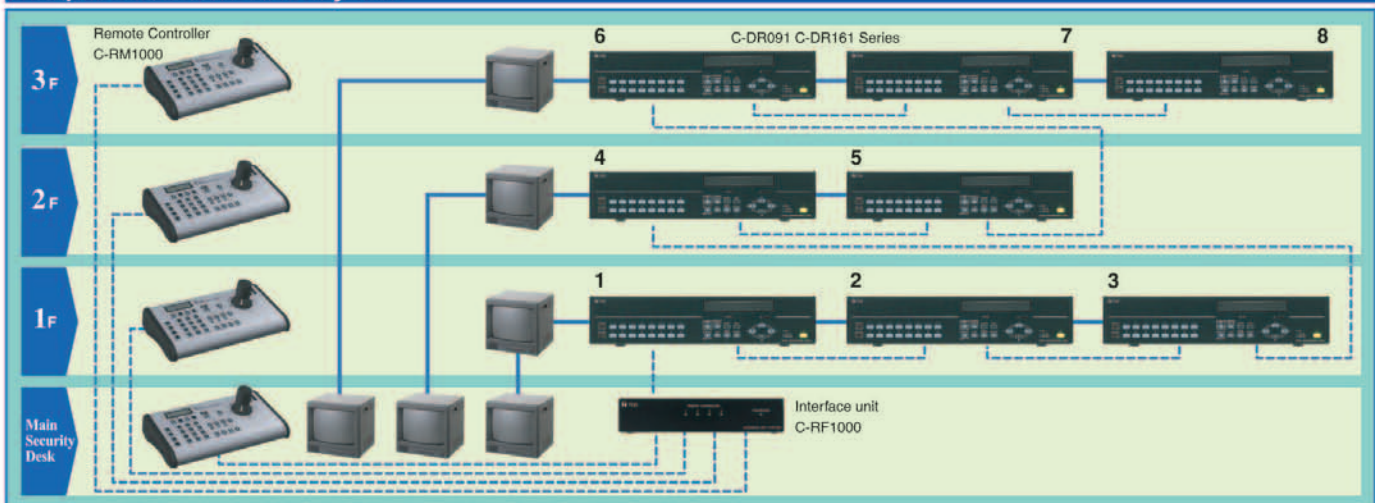
Basic System



Expanded System



Multiple Remote Controller System



PTZ Combination Dome Cameras

FEATURES

- Higher resolution delivers superior images.
 - Horizontal resolution of 540 lines. (C-CC774/574)
- All points coverage at high speed.
 - 360° rotating range.
- Expanded zooming ability.
 - 35X optical zoom lens (C-CC774/574).
- Electronic Image Stabilizer (C-CC774/574).
- Intelligent image optimizing using the Wide Dynamic Range function.*
- Sophisticated autofocus modes add versatility.
 - Three auto focus modes.
- Motion detection function initiates operation.*
 - 8 motion detection area.
- Color image clarity maintained with sensitivity boost.
 - Maximum 32 times.
- Day/Night operation improves low light performance.*
 - Automatic B/W mode.
- Protecting privacy.
 - Privacy Masking function (maximum 8 areas).*
 - Restricting camera movement.
- Outdoor installation ready (C-CC774/764/714).
 - Meets IP66 standards.
- Withstands cold weather conditions (C-CC774/764/714).
 - Operating temperature -40°C to +50°C.
- Route tracing facilitates subject monitoring.
 - Up to 60 seconds (two routes).
- Configuring programmable tours.
 - Up to 16 tour patterns.
- Programmable camera operation initiated by alarm input.
- Preset operation start with Timer program function.
- Software for maintenance.
- Flexible installation options.
- Tilting options.
- Other functions.
 - Tilt (vertical) range: +5° to -185°.*
 - Auto flip function*.
 - Rotation speed can be varied to match lens zooming ratio in manual operation mode.
 - Freeze preset function*.
 - Flicker-free operation.
 - Alarm input and auxiliary contact output.
 - RS-485 protocol control.

*C-CC774/764/574/564 only.

OUTDOOR USE



35X Zoom
Multi-function

C-CC774 OUTDOOR USE

- 255 preset positions + Home position
- 420X zoom (optical 35X, electronic 12X)
- Electronic Image Stabilizer
- Tilt rotation range +5° to -185° (using Auto-Flip function)
- Pan rotation range continuous 360°
- Pan/tilt maximum rotating speed is 360°/sec
- 1/4 type CCD image device
- 540 lines high resolution
- Wide dynamic range
- Autofocus
- High-sensitivity function (color and B/W modes)
- Preset sequency function
- Privacy masking function
- Restricting camera movement
- Auto-trace function
- Auto-tour function
- Motion detection function
- Auto-pan function
- Preset image freeze function
- Dust/Water Protection: IP66
- RS-485 multi-protocol compatible

INDOOR USE



35X Zoom
Multi-function

C-CC574 INDOOR USE

- 255 preset positions + Home position
- 420X zoom (optical 35X, electronic 12X)
- Electronic Image Stabilizer
- Tilt rotation range +5° to -185° (using Auto-Flip function)
- Pan rotation range continuous 360°
- Pan/tilt maximum rotating speed is 360°/sec
- 1/4 type CCD image device
- 540 lines high resolution
- Wide dynamic range
- Autofocus
- High-sensitivity function (color and B/W modes)
- Preset sequency function
- Privacy masking function
- Restricting camera movement
- Auto-trace function
- Auto-tour function
- Motion detection function
- Auto-pan function
- Preset image freeze function
- RS-485 multi-protocol compatible



**23X Zoom
Multi-function**

C-CC764 OUTDOOR USE

- 255 preset positions + Home position
- 276X zoom (optical 23X, electronic 12X)
- Tilt rotation range +5° to -185° (using Auto-Flip function)
- Pan rotation range continuous 360°
- Pan/tilt maximum rotating speed is 360°/sec
- 1/4 type CCD image device
- 480 lines high resolution
- Wide dynamic range
- Autofocus
- High-sensitivity function (color and B/W modes)
- Preset sequency function
- Privacy masking function
- Restricting camera movement
- Auto-trace function
- Auto-tour function
- Motion detection function
- Auto-pan function
- Preset image freeze function
- Dust/Water Protection: IP66
- RS-485 multi-protocol compatible



**22X Zoom
Standard**

C-CC714 OUTDOOR USE

- 255 preset positions + Home position
- 264X zoom (optical 22X, electronic 12X)
- Tilt rotation range +5° to -90°
- Pan rotation range continuous 360°
- Pan/tilt maximum rotating speed is 360°/sec
- 1/4 type CCD image device
- 480 lines high resolution
- Autofocus
- High-sensitivity function (color mode)
- Preset sequency function
- Restricting camera movement
- Auto-trace function
- Auto-tour function
- Auto-pan function
- Dust/Water Protection: IP66
- RS-485 multi-protocol compatible



**23X Zoom
Multi-function**

C-CC564 INDOOR USE

- 255 preset positions + Home position
- 276X zoom (optical 23X, electronic 12X)
- Tilt rotation range +5° to -185° (using Auto-Flip function)
- Pan rotation range continuous 360°
- Pan/tilt maximum rotating speed is 360°/sec
- 1/4 type CCD image device
- 480 lines high resolution
- Wide dynamic range
- Autofocus
- High-sensitivity function (color and B/W modes)
- Preset sequency function
- Privacy masking function
- Restricting camera movement
- Auto-trace function
- Auto-tour function
- Motion detection function
- Auto-pan function
- Preset image freeze function
- RS-485 multi-protocol compatible



**22X Zoom
Standard**

C-CC514 INDOOR USE

- 255 preset positions + Home position
- 264X zoom (optical 22X, electronic 12X)
- Tilt rotation range +5° to -90°
- Pan rotation range continuous 360°
- Pan/tilt maximum rotating speed is 360°/sec
- 1/4 type CCD image device
- 480 lines high resolution
- Autofocus
- High-sensitivity function (color mode)
- Preset sequency function
- Restricting camera movement
- Auto-trace function
- Auto-tour function
- Auto-pan function
- RS-485 multi-protocol compatible

PTZ Combination Dome Cameras

For C-CC774/C-CC764/C-CC714 (Outdoor use)



C-BC711P Ceiling Suspension Bracket

The C-BC711P is designed to be used to suspend TOA's outdoor combination camera from a ceiling or eaves.



C-BC711PM Pole Mounting Bracket

Using the optional YS-60B and C-BC711W, the C-BC711PM can mount the outdoor combination camera on a pole.



C-BC711W Wall Mounting Bracket

The C-BC711W is designed to be used to mount TOA's outdoor combination camera on a wall.



C-A711DM Smoked Dome Cover

The C-A711DM Smoked Dome Cover is designed to be used in conjunction with TOA's Combination Cameras. The smoked dome prevents individuals from seeing the camera's orientation.

PAB05F

Pendant mount coupling adapter, 1.5" female pipe threads, aluminum, white powder coat finish.

PWM30G/GPC

Parapet mount bracket, w/extension piece, aluminum, 1.5" male pipe threads, white powder coat finish, also requires PAB05F adapter.

Q-C-BC711C

Corner mount bracket

For C-CC574/C-CC564/C-CC514 (Indoor use)



C-BC511C Ceiling Mount Cover

The C-BC511C is a camera installation cover designed solely for mounting TOA's Combination Cameras. The cover is used when mounting the Combination Camera directly to a ceiling or wall or suspending it from the ceiling.



C-BC511C-S Ceiling Mount Cover (Smoked)

The C-BC511C-S is a camera installation cover designed solely for mounting TOA's Combination Cameras. The cover is used when mounting the Combination Camera directly to a ceiling or wall or suspending it from the ceiling. The smoked dome prevents individuals from seeing the camera's orientation.



C-BC511U Flush Ceiling Mounting Bracket

The C-BC511U bracket is designed to be exclusively used for flush ceiling mounting of TOA's combination camera. Use this bracket when mounting the camera to the ceiling surface where the fixing screws cannot be securely installed, such as on the plaster panel of the dual-construction ceiling.



C-BC511U-S Flush Ceiling Mounting Bracket (Smoked)

The C-BC511U-S bracket is designed to be exclusively used for flush ceiling mounting of TOA's combination camera. Use this bracket when mounting the camera to the ceiling surface where the fixing screws cannot be securely installed, such as on the plaster panel of the dual-construction ceiling. The smoked dome prevents individuals from seeing the camera's orientation.



C-BC511W Wall Mounting Bracket

The C-BC511W Wall Mounting Bracket is specially designed to mount TOA's Combination Cameras to wall surfaces. Install the unit only in a location that can structurally support weight of the unit and camera.



C-BC511P Ceiling Suspension Bracket

The C-BC511P is a Ceiling Suspension Bracket designed solely for suspending TOA's Combination Cameras from the ceiling.



C-BC511A Anchor Bracket

The C-BC511A is specially designed to mount TOA's Combination Cameras directly on the ceiling. The bracket facilitates mounting of the camera on the plasterboard in the double ceiling or other locations where the mounting screws cannot be installed securely.

Q-C-BC511E

Pendant adapter, required for indoor combination dome pipe mounting, also requires PAB05F adapter.

PAB05F

Pendant mount coupling adapter, 1.5" female pipe threads, aluminum, white powder coat finish.



C-RM500 Remote Controller

The C-RM500 Remote Controller is designed for use in camera-based systems that allow remote control from up to 1.2km away over RS-485 communication lines. It allows video images to be switched remotely and supports a maximum of 16 TOA Combination Dome Cameras when used together with the TOA Multiplexer. Easy-to-see LEDs inform status of control, alarm, focus and other functions. Power Source: 12V DC.



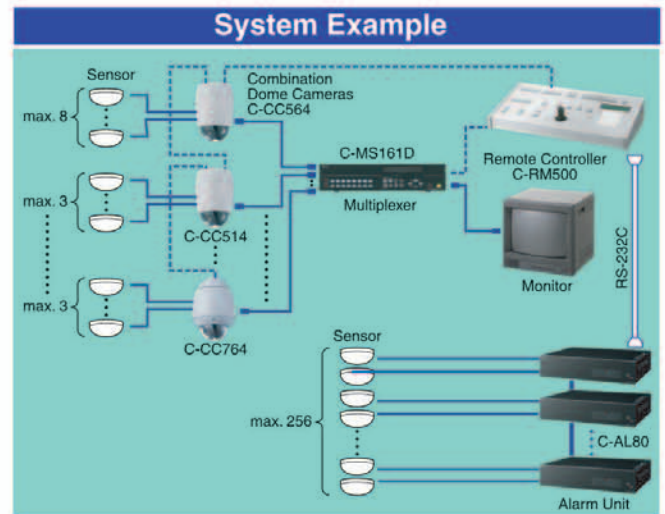
C-AL80 Alarm Unit

The C-AL80 Alarm Unit serves as the main controller for the alarm requirements of a system by converting alarm signals initiated by externally connected equipment into RS-232C-compatible signal data. In addition to its 32 alarm or remote inputs, the C-AL80 can also be linked to a maximum of 8 other C-AL80 units in master/slave configurations. This provides a total of 256 alarm or remote inputs to be transmitted to the C-RM500 remote controller. Power Source: 230V AC.



C-IF500 Interface Unit

A useful option for configuring camera systems, the C-IF500 functions as a splitter. It provides control over expanding a camera system when the distance is over 1.2km (max. 3km) between the dedicated C-RM500 Remote Controller and system cameras linked to it. It will also allow configuring a star connection. Receiving the RS-485 communication line serial signals, the C-IF500 splits the signals into 4-channel data for slave units and converts into RS-232C data to be used for public line or fiber optics communication. Data communication between master and slave terminals is bidirectional. The C-IF500 also allows easily setting the data communication data transfer rate in four increments via DIP switch to suit network requirements. Power source: 12V DC.



Combination Dome Camera Comparison Table

Function/Specification	C-CC774	C-CC764	C-CC714	C-CC574	C-CC564	C-CC514
Application	Outdoor	Outdoor	Outdoor	Indoor	Indoor	Indoor
Water Dust Protection	IP66	IP66	IP66	—	—	—
Operating Temperature	-40°C to +50°C	-40°C to +50°C	-40°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Auto Iris Lens Zoom Ratio	35X	23X	22X	35X	23X	22X
Focal Length (f=)	3.4 – 119.0 mm	3.6 – 82.8 mm	4.0 – 88.0 mm	3.4 – 119.0 mm	3.6 – 82.8 mm	4.0 – 88.0 mm
Electronic Zoom Ratio	12X	12X	12X	12X	12X	12X
Image Device	1/4 CCD	1/4 CCD	1/4 CCD	1/4 CCD	1/4 CCD	1/4 CCD
Horizontal Resolution (at Center)	540 line	480 line	480 line	540 line	480 line	480 line
Minimum Required Illumination						
350mV	1 lx	3 lx	1 lx	1 lx	3 lx	1 lx
140mV	0.3 lx	1 lx	0.3 lx	0.3 lx	1 lx	0.3 lx
High Sensitivity ON 350mV	0.005 lx	0.03 lx	0.03 lx	0.005 lx	0.03 lx	0.03 lx
High Sensitivity ON 140mV	0.0015 lx	0.01 lx	0.01 lx	0.0015 lx	0.01 lx	0.01 lx
Number of Preset Positions	255+Home	255+Home	255+Home	255+Home	255+Home	255+Home
Zoom Speed (WIDE end to TELE end)						
Preset Operation	2.0 sec.	1.5 sec.	1.3 sec.	2.0 sec.	1.5 sec.	1.3 sec.
Manual Operation	3.2 sec.	2.9 sec.	2.4 sec.	3.2 sec.	2.9 sec.	2.4 sec.
Rotating Range						
Panning	360° endless	360° endless	360° endless	360° endless	360° endless	360° endless
Tilting	+5° to -185°	+5° to -185°	+5° to -90°	+5° to -185°	+5° to -185°	+5° to -90°
Rotating Speed	360°/sec.	360°/sec.	360°/sec.	360°/sec.	360°/sec.	360°/sec.
Electronic Image Stabilizer	●	—	—	●	—	—
Wide Dynamic Range	●	●	—	●	●	—
Back Light Compensation	●	●	●	●	●	●
White Balance	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB
Sensitivity Up (Color mode)	Max. 32 times	Max. 32 times	Max. 32 times	Max. 32 times	Max. 32 times	Max. 32 times
Day/Night operation (B/W mode)	●	●	—	●	●	—
Motion Detection	●	●	—	●	●	—
Privacy Masking	● Max 8 area Up to 4/Screen	● Max 8 area Up to 2/Screen	—	● Max 8 area Up to 4/Screen	● Max 8 area Up to 2/Screen	—
Alarm Input	3	3	3	8	8	3
Power Source	24V AC	24V AC	24V AC	24V AC	24V AC	24V AC

Wide Dynamic Range Color Camera

FEATURES

- New Wide Dynamic Range**
 Provides a new level of performance with natural looking images even in backlight condition.
- 500-line high resolution**
- Minimum required illumination level of as low as 0.5 lx (350mV)**
- Day/Night operation**
 Clear images are provided even in unsatisfactory light by B/W mode.
- Maximum 64X sensitivity booster**
 Enables increasing sensitivity to take color images even in night conditions.
- Privacy masking function**
 Allows privacy protection for up to 4 locations.
- Can be controlled from a distant location**
 Using the C-RU10 Remote Control Interface allows convenient control of camera parameters.
- Backlight compensation**
 Allows optimal viewing of dark areas in a backlight condition.
- Newly developed DSP**
- Easy focusing without using the ND filter**
- Alarm input**
- Motion detection**
- Fully automatic operation mode shift**
- Easy menu-driven setup**
- 2X Electric Zoom**
- Screen Reverse function (Horizontal/Vertical)**
- Optional Outdoor Housing**
 Model ACH13HBWM (aluminum body, clear window, hinged, flip-top opening plus metal wall mount, and 24V AC heater/blower/thermostat)



C-CC364 (Lens is optional)
Wide Dynamic Range Color Camera



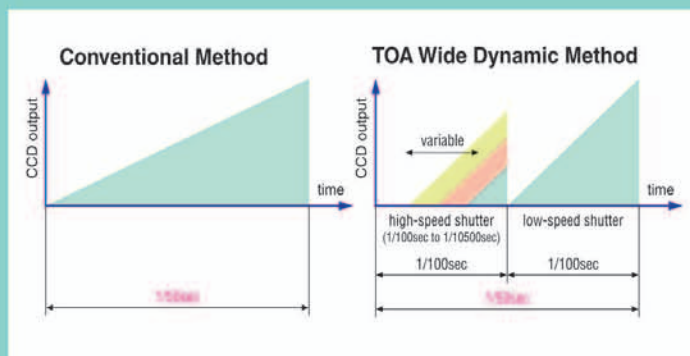
C-RU10
Remote Control Interface

Camera function settings, and color and brightness adjustments can be remotely controlled with ease by connecting the C-RU10 to the C-CC364 camera. The C-RU10 permits control signals to be superimposed over the camera video signal by connecting cameras with a single coaxial cable, and motion detection or alarm signals from the camera to be received. With the use of an optional rack mounting bracket, it can be mounted in an EIA Standard equipment rack (1 unit size). Power source: 220 – 240V AC.



TOA Wide Dynamic Range Method

Conventional cameras employ a single speed of 1/50sec. when taking images. TOA's Wide Dynamic Range Method makes use of two shutter speeds, one set at 1/100sec. and one that is variable from 1/100sec. to 1/10500sec. to take two images which are electronically combined to produce a single, high-quality image.



High-speed shutter loses details of indoor.



Low-speed shutter creates whiteout of outdoor.



Electronically combining the images taken using both low-speed and high-speed shutter gives single clear image.

Compact Box and Mini-Dome Cameras

FEATURES

Easy power requirements

TOA compact color cameras operate on 24V AC or 12V DC.

High-performance CCDs

Each camera incorporates a 1/4" CCD with a resolution of 440,000 pixels resulting in a high horizontal resolution that exceeds 470 lines.

2X varifocal lens

To easily allow on-site adjustment for the viewing angle, each camera is fitted with a 2X manual varifocal lens having an auto iris.

Wide-ranging view angles

Optimal camera angle of view extends from 53.2 to a wide 105.1 degrees, enhancing coverage over a wide range for more effective monitoring (C-CV14-2 and C-CV24-2).

Backlight compensation

To cope with varying lighting conditions, backlight compensation can be switched on or off as required.

Flicker-free for easier viewing

The cameras do not cause the image to deteriorate as often caused by fluorescent lighting. Annoying image flicker is eliminated for more effective monitoring.

Focus adjustment switch for easy focusing

To simplify focusing even without using the ND filter, an adjustment switch is provided for foolproof focusing.



C-CV14-CS

Indoor Color Box Camera

- Indoor color camera
- Requires CS-compatible lens
- Auto-iris
- 1/4 in. CCD, 480 TVL
- Backlight compensation
- 24V AC or 12V DC



C-CV14-2

Indoor Color Integrated Camera

- Indoor color camera
- 2.0 to 4.0mm
- Varifocal
- Auto-iris
- 1/4 in. CCD, 480 TVL
- Backlight compensation
- 24V AC or 12V DC



C-CV102-CS

Indoor Color Box Camera

- Requires CS-compatible lens
- 1/4 in. CCD, 480 TVL
- Backlight compensation
- 12V DC



C-CV44-3

Outdoor Color Integrated Camera

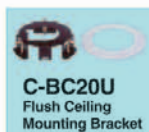
- 3.0 to 6.0mm
- Varifocal
- Auto-iris
- 1/4 in. CCD, 480 TVL
- Backlight compensation
- 24V AC or 12V DC
- Water-resistant construction (IP-66)



C-CV24-2

Indoor Mini-dome Color Camera

- 2.0 to 4.0mm Varifocal
- Auto-iris
- 1/4 in. CCD, 480 TVL
- Backlight compensation
- Monitor output
- Wide camera lens angle setting
- 3-axis adjustment
- 24V AC or 12V DC



C-BC20U
Flush Ceiling
Mounting Bracket



C-CV202-3 C-CV202-F3

Indoor Mini-dome Color Camera

- 2.8 to 5.8mm varifocal auto-iris lens (C-CV202-3)
- Built-in fixed focus, fixed-iris lens (C-CV202-F3)
- Auto-iris
- 1/4 in. CCD, 480 TVL
- Backlight compensation
- Monitor output
- 2-axis adjustment
- 12V DC

Vandal Resistant Day/Night Camera

FEATURES

- **High resolution (horizontal: 500 lines)**
 - 1/3" CCD with a resolution of 380,000 pixels
- **High sensitivity**
 - 0.5lx in color mode and 0.05lx in B/W mode, with electronic sensitivity boost of up to 4X
- **Day/Night operation**
 - Clear monochrome image is provided even under poor lighting conditions.
- **Backlight compensation**
 - Allows optimal viewing of dark areas in a backlight condition.
- **Easy viewing**
 - Flicker-free function
 - Noise reduction function
- **Dust- and water-proof construction (IP66)**
- **Tamper-proof, sturdy design**
 - Impact-resistance against 50-joule energy
- **Wide range of view angles (3X varifocal lens)**
 - Horizontal: 90.3° – 31.9°, Vertical: 66.4° – 23.9°, Diagonal: 115.4° – 39.8°
- **Easy installation**
 - 3-axis (horizontal, vertical and rotational) adjustment mechanism
 - Direct output to the monitor
- **Easy focusing without requiring an ND filter***
- **Flexible camera power source**
 - Compatible with 24V AC or 12V DC
- **Operating temperature of as low as –30°C**
 - With optional heater unit C-A854H



C-CV854D-3 INDOOR/OUTDOOR USE
Vandal Resistant Day/Night Camera
(3X varifocal lens)



C-A854H
Heater Unit

The C-A854H heater unit is designed to be used in conjunction with the C-CV854D-3 Vandal resistant day/night camera. Installing this heater unit in the camera allows the camera to be used in locations exposed to extremely low ambient temperatures.



Bottom view without dome cover
(Heater unit attached)

IP Network Camera System



Product Lineup



(Lens is optional)

N-CC2360 Network Color Camera

- High-performance model allows mounting a CS lens and includes Wide Dynamic Range and Day & Night functions.
- PoE capability simplifies connectivity requiring just a single LAN cable. 24V AC or 24V DC operation is possible.
- The built-in microphone and audio output terminal allows bidirectional audio transmission.
- Analog signal output terminal for connecting a monitor display.
- Contact output × 2; Contact input × 2



with Ceiling Mount Cover C-BC511C

N-CC2564 Network Combination Dome Camera

- All-in-one model equipped with 23X optical and 12X electronic zooms, capable of 255 preset camera positions.
- Rotation range: horizontal 360° continuous; vertical +5° to 185°.
- High-speed horizontal and vertical rotations of up to 360° /sec.
- Maximum of 8 locations can be designated for privacy masking.
- Protocol for absolute coordinate designation.
- Bi-directional audio transmission (line input × 1; line output × 1)
- Alarm input × 8; Auxiliary contact output × 2
- Power source: 24V AC



N-VT2010 Network Video Transmitter

- Connection for analog camera to digitally transmit images to a network.
- Bidirectional audio transmission (Mic/Line input × 1; Line output × 1)
- PoE capability simplifies connectivity requiring just a single LAN cable. 24V AC or 24V DC operation is possible.
- RS-232C × 1; RS-485 × 1 for remoted control of combination dome camera.
- Contact input × 2; Contact output × 2
- Power supply for CV Series camera (12V DC)



N-VR2010 Network Video Receiver

- Allows displaying digital image data from a network camera or network video transmitter on an analog monitor screen.
- Bi-directional audio transmission (Mic/Line input × 1; Line output × 1)
- PoE capability simplifies connectivity requiring just a single LAN cable. 24V AC or 24V DC operation is possible.
- RS-232C × 1; RS-485 × 1 for remote controller
- Contact input × 2; Contact output × 2
- Power supply (12V DC)



N-DR2000 Network Video Recorder

- Ongoing digital images (JPEG formats) and audio (Sub-band ADPCM, PCM) are recorded.
- Simultaneous recording of data from up to 16 cameras and transmitters. (playback up to 8 recorded data)
- Recorded data is converted into a database to allow high-speed searching and viewing.
- Search modes: day/time, block, search fine-tuning alarm, motion detection.
- Distributing recorded data to multiple locations
- Web, FTP, NTP, SMTP (mail) and DHCP server capabilities
- Browser-based setup
- System-wide time synchronization by NTP server
- Highly reliable Linux OS.
- HDD 640GB (320GB × 2)



N-SD2000 Software Decoder

- Detects NetCanSee devices on a network.
- Single view and quad view image of MPEG-4 in real time.
- Bidirectional audio transmission.
- Search and playback of images and bidirectional audio recorded by the Network Video Recorder(N-DR2000).
- Control of external devices Combination camera (C-CC564/764 Series) Multiplexer (C-MS91D/161D Series) Contact output control

Network-based system advantages

- Facilitates configuring remote surveillance and remote control systems.
- Able to simultaneously control devices and transmit audio bidirectionally together with images, minimizing cable use.
- Utilizing more cameras allows further reducing cable use and freeing up space that cable installations would require.
- Total system versatility for system expansion, adaptability and flexibility.
- No image degradation or audio deterioration because transmission is digital.
- High quality regardless of TV signal types.
- Allows integration into other systems such as IP intercom systems.

IP Network Camera System



FEATURES

Transmits MPEG-4 and JPEG simultaneously (dual stream).

- Monitors with smooth-movement images and records high-quality still images.
- Image output sizes and frame rates can be varied as required to satisfy bandwidth limitations of LAN and WAN networks.

Utilizes MPEG-4ASP (Advanced Simple Profile)

- Accommodates transmission rates ranging from 16 kbps to 4Mbps.
- Can transmit D1-size (720 x 576) image output at 25 fps, with image quality better than using MPEG-2 CODEC (if same transmission speed is maintained.)
- The MPEG-4ASP codec has improved compression efficiency with enhanced interlacing and B-frame capabilities compared to the conventional MPEG-4SP(Simple Profile) codec.

Bidirectional, high-quality audio transmission

- Audio signals are available as uncompressed PCM or with Subband ADPCM compression. Audio can be bidirectionally transmitted over a network along with images at an 8 kHz or 32 kHz sampling rate.

PoE (Power over Ethernet) eliminates need for a dedicated power cable.

- As power is provided alongside data in the same cable over a network, wiring requirements are minimized and the number of cables is reduced as well (excluding network combination dome cameras and network video recorders).

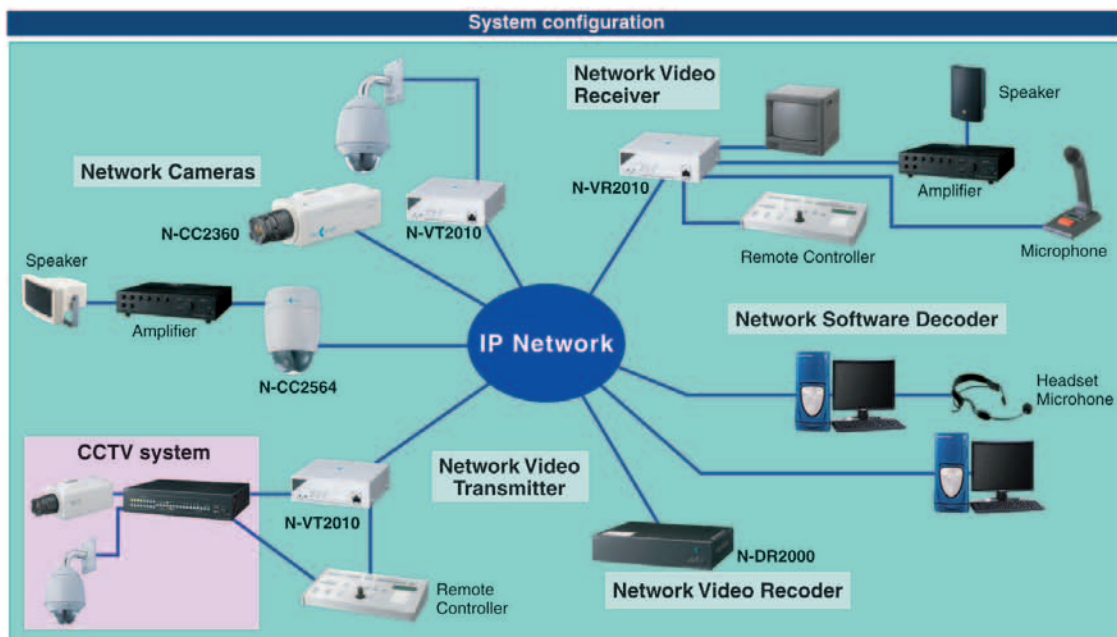
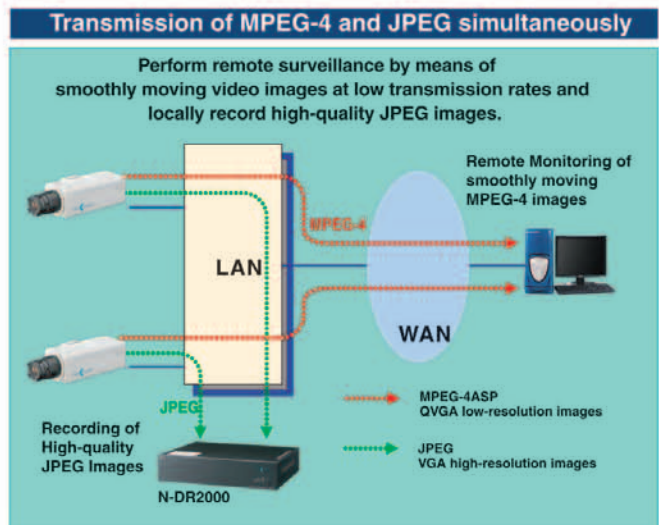
Simultaneous real-time surveillance as well as image/audio recording and playback with the software decoder.

- A single channel viewer (standard) and a multichannel viewer (optional) are available. The viewer enables real-time surveillance and simultaneous image/audio recording and playback on a PC.

The Network Video Recorder records digital data as data is generated.

- Images from each network-based cameras can be recorded as JPEG files and high quality audio recording is also possible.
- Recorded data can be searched at high speed and viewed via network.

Able to withstand potential network problems to maintain functioning as a surveillance system.



Multiplexers

FEATURES

- **Special Video Signal Processor**
- **Optimizes split-screen displays**
- **Digital Filter**
- **V-SYNC Position Compensation Circuit**
- **Multiple Split Screen Display**
 - Live monitoring and DVR playback can be seen in all split screen options (16 segment only with C-MS161D).
 - For live camera monitoring segments, cameras can be assigned to the desired position.
 - With camera selection, a required camera can be assigned priority to always be shown (camera 1 selected).
- **Motion Detection Function**
 - Object Size Settings
 - Motion Detection Area setting
 - Sensitivity Setting
 - Alarm Recording
- **"Seamless Operation" by Connecting 2 DVRs.**
- **Electronic Zoom, Auto Tilt and Auto Panning Features Included.**
- **Versatile Alarm Functions**
 - Sensor Alarm
 - DVR Reproduction Alarm
 - Video Loss Alarm
 - Alarm Information
- **Multi-Language Ability**
- **Summer Time (daylight savings)**
- **Remote control by C-RM500**
- **Key-lock function**



C-MS161D
16-Channel Duplex Multiplexer



C-MS91D
9-Channel Duplex Multiplexer

1-Channel Digital Video Recorders



C-DR0105: HDD 500GB (2 x 250GB)
C-DR0101: HDD 240GB (2 x 120GB)

Recording Functions

- 500GB storage with 250GB x 2 HDDs built-in (C-DR0105)
- High picture quality
- Versatile recording with a choice of three modes
 - General recording
 - Internal timer recording
 - Alarm recording
- Pre- and Post-Alarm recording
- Time Lapse recording
- Audio recording
- Mirroring enhances reliability

Playback Functions

- Comprehensive high-speed search functions
 - Time Search
 - Block Search
 - Time Shift Search

- Flexible playback modes enhance system operation

- Forward and reverse playback modes
- Fast forward and fast reverse playback modes with selectable X2, X4 and X8 speeds
- Forward Frame Playback and Reverse Frame Playback
- Forward Block and Reverse Block Playback

- Convenient simultaneous recording and playback

Other Functions

- Network connectivity
- Logging
- Useful status indication
- Summer Time (Daylight Savings Time)
- Key-lock function
- Compact single rackmount (1U) size

Switchers, Video Distributor, and Coaxial Multi-Transmission System

Manual Switchers

These manual mechanical lock-type switchers can manage up to six (CC-3011B) or twelve (CC-3021B) camera inputs from a single output. Both units can also be mounted in a rack using an optional bracket, model MB-15B-BK (1 unit) or MB-15B-J (2 units).



CC-3011B



CC-3021B

Video Distributor

TOA's C-VD6 video distributor adds versatility to CCTV operation by distributing one video signal to six video outputs, or two different video signals each to three outputs. The unit is compact and lightweight and can be mounted on a standard rack cabinet with an optional bracket, model MB-15B-BK (1 unit) or MB-15B-J (2 units).



C-VD6

Coaxial Multi-Transmission System

Transmit video, audio and control signals on one coaxial cable.

- Video signal (simplex)
- Audio signal (duplex)
- Control signals (4 contacts/duplex)

System integration with security and audio equipment.

- Camera/monitor/microphone/speaker/sensor etc.
- Save cable lines

Speaker output

- 1W (8 ohms) amplifier

Maximum cable length 600m

Power Source: 12V DC

Optional Rack-mount Kits:

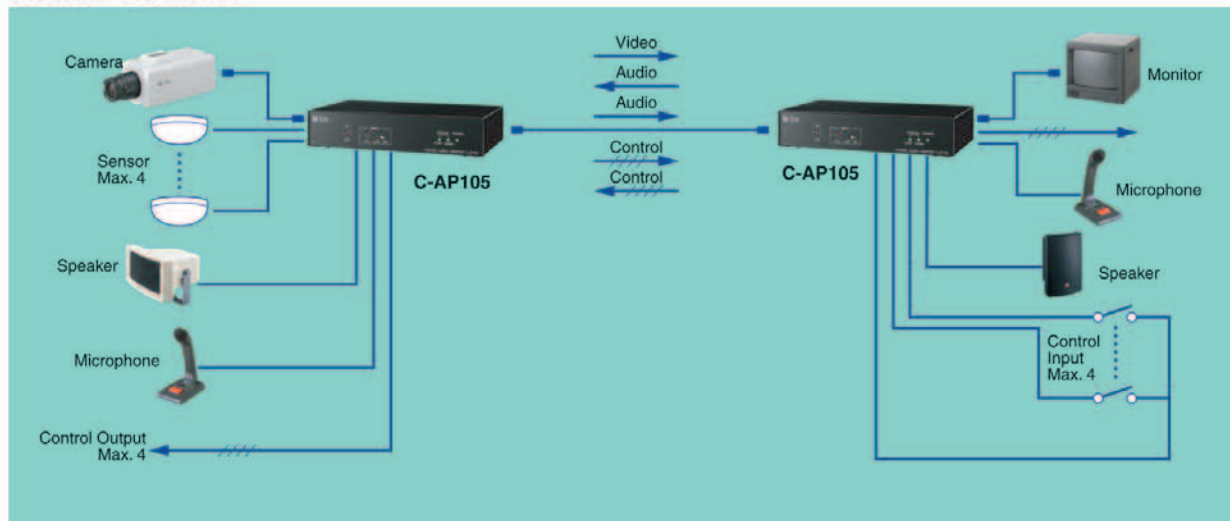
- MB-15B-BK (1 unit)
- MB-15B-J (2 units)



C-AP105
(2 units in every set)

Note: The C-AP105 includes one each of Unit A and Unit B.

SYSTEM EXAMPLE



LCD and CRT Monitors

LCD Monitors

IK-H550V

- LCD monitor, 15"
- Active Matrix Super TFT
- 1024 x 768 pixels



IK-H550V

IK-H750V

- LCD monitor, 17"
- Active Matrix Super TFT
- 1280 x 1024 pixels



IK-H750V



IK-H950V

IK-H950V

- LCD monitor, 19"
- Active Matrix Super TFT
- 1280 x 1024 pixels

CRT Monitors

VCM-901

- CRT monitor, 9", color
- 300TVL, audio



VCM-901



VCM-14H

VCM-14H

- CRT monitor, 14", color
- 350TVL, audio

VCM-1501

- CRT monitor, 15"
- 700TVL, audio
- metal cabinet



VCM-1501



VCM-2101

VCM-2101

- CRT monitor, 21", color
- 450TVL, audio
- metal cabinet

Optional Rack-mount Kits:

RMK-901

Rack mount kit for (2) VCM-901

RMK-14H

Rack mount kit for (1) VCM-14H

RMK-1401

Rack mount kit for (1) VCM-1501

Lenses, Brackets, Plugs, and Cables

LENSES

13VG2812AS
 • Lens, normal, vari-focal, 2.8 - 12mm, CS-mount



13VG308AS
 • Lens, normal, vari-focal, 3.0 - 8mm, CS-mount



13VG550
 • Lens, normal, vari-focal, 5 - 50mm, CS-mount



13VG20100AS
 • Lens, normal, vari-focal, 20 - 100mm, CS-mount



13VG2811ASIR
 • Lens, IR Sens., vari-focal, 2.8 - 12mm, CS-mount



13VG308ASIR
 • Lens, IR Sens., vari-focal, 3.0 - 8mm, CS-mount



13VG1040ASIR
 • Lens, IR Sens., vari-focal, 10 - 40mm, CS-mount

13FG22IR
 • Lens, IR Sens., mono-focal, 2.2mm, CS-mount



13FG28IR
 • Lens, IR Sens., mono-focal, 2.8mm, CS-mount



13FG04IR
 • Lens, IR Sens., mono-focal, 4mm, CS-mount



13FG06IR
 • Lens, IR Sens., mono-focal, 6mm, CS-mount



13FG08IR
 • Lens, IR Sens., mono-focal, 8mm, CS-mount



13PZG10x6C
 • Lens, Motorized, 6 - 60mm, CS-mount



CAMERA MOUNTING BRACKETS

C-BC11
 Camera Mounting Bracket



C-BC21
 Camera Mounting Bracket



C-BC31
 Camera Mounting Bracket



C-BC41
 Camera Mounting Bracket



BNC PLUG AND CABLE

CC-4900
 BNC Plug (Set: 10 pieces)

- BNC plug for connection with CCTV-associated devices.
- Soldering type.
- Compatible with 3C-2V or 5C-2V coaxial cables.



CC-4904
 BNC T-Shape Connector
 (Set: 10 pieces)

- T-shape relay connector for BNC jacks

CC-4901
 BNC Plug (Set: 10 pieces)

- BNC plug that allows solderless connection with coaxial cables.
- Compatible with 3C-2V or 5C-2V coaxial cables.



CC-P5BB
 Coaxial Cable with BNC Plugs (0.5m) (Set: 10 cables)

- Cord for 0.5 m 3C-2V coaxial cables and double-ended BNC plugs

CC-4902
 BNCJ-RCAP Plug
 (Set: 10 pieces)

- Conversion connector for BNC jacks and RCA pin plugs



CC-01BB
 Coaxial Cable with BNC Plugs (1m) (Set: 10 cables)

- Cord for 1 m 3C-2V coaxial cables and double-ended BNC plugs

CC-4903
 BNC-BNCJ Plug
 (Set: 10 pieces)

- Intermediary connector for two BNC jacks



CC-05BB
 Coaxial Cable with BNC Plugs (5m) (Set: 5 cables)

- Cord for 5 m 3C-2V coaxial cables and double-ended BNC plugs

IP Network Intercom Systems

FEATURES

- Scalable network communications for up to 1280 stations over data networks (LAN/WAN)
- Flexible configuration options for existing cabling and network infrastructure
- Station Options:
 - IP Stations with Ethernet port connect directly to the network (up to 80 stations)
 - Connect up to sixteen two-wire stations to compact Network Exchange (up to 80 exchanges for up to 1,280 stations)
- Occupies minimal network bandwidth — 130 kbps max. (station to station call)
- Hands-free full-duplex conversation
- Control and monitor through software and web browser
- Versatile features including 160 zone paging, time-based call forwarding and scan monitoring



N-8000EX **IP Network Intercom Exchange** **(Internal: 4 links/External: 8 links)**

The IP Network Intercom Exchange uses packet audio technology to permit connection of up to sixteen N-8000 Series stations, and features two outputs for public address paging. Simultaneous hand-free conversation is possible between stations. Moreover, the exchange is equipped with a networking interface, allowing up to 80 exchanges to be connected over a network using additional network intercom exchanges. The Exchange can be mounted in an EIA standard rack (1-unit size) or to a wall using the supplied bracket.



N-8010EX **IP Network Intercom Exchange** **(Internal: 1 link/External: 2 links)**

The IP Network Intercom Exchange uses packet audio technology to permit connection of up to sixteen N-8000 Series stations. Simultaneous hand-free conversation is possible between stations. Moreover, the exchange is equipped with a networking interface, allowing up to 80 exchanges to be connected over a network using additional network intercom exchanges. The Exchange can be mounted in an EIA standard rack (1-unit size) or to a wall using the supplied bracket.



N-8000MI **Multi Interface Unit**

The N-8000MI is a multi-interface unit designed for use with TOA's packet intercom system (IP network-compatible intercom system) that employs the packet audio technology. Connecting the multi-interface to a local area network permits the ideal system for in-house or wide-area information transmission applications, such as paging, periodical broadcasts, and background music broadcasts, to be built between the multi-interface and IP intercom exchange or other multi-interface unit. The contact bridge function can be realized through contact input and output control. The N-8000MI also features the tie-line function to be connected the EXES-2000 intercom system or the EXES-6000 system. A total of up to 80 multi-interface units and IP intercom exchanges can be connected to a network. The unit can be mounted in an EIA standard rack (1-unit size) or to a wall using the supplied bracket.

IP Network Intercom Systems

MASTER STATIONS



N-8000MS
Multifunction Master Station



N-8010MS
Standard Master Station



N-8011MS
Standard Hands-Free Master Station



N-8020MS
Industrial-Use Master Station



N-8031MS
Flush-Mount Hands-Free Master Station

RS-191
Optional Handset Unit

DOOR STATION



N-8050DS
Door Station

IP STATIONS



N-8500MS
IP Multifunction Master Station

The N-8500MS is an IP multifunction master station employing packet audio technology. Connecting the N-8500MS to a network (LAN or WAN) allows conversation of high sound quality to be made between the N-8500MS and intercom stations connected to the IP Intercom Exchange, or between the N-8500MS units. Besides, the N-8500MS can be used in conjunction with the Multi Interface units through a network. In addition to the functions of the standard Master Station, Power can be supplied from the PoE (Power over Ethernet) switching hub. (In this case, an AC adapter is not required)



N-8540DS
IP Door Station

The N-8540DS is an IP door station employing packet audio technology. Connecting the N-8540DS to an IP network (LAN or WAN) allows conversation of high sound quality to be made between the N-8540DS and intercom station connected to the IP Intercom Exchange, or between the N-8540DS and IP multifunction master station. Besides, the N-8540DS can be used in conjunction with the Multi Interface units through a network. It is in full conformity with IP54 water-proof and dust-proof standards.

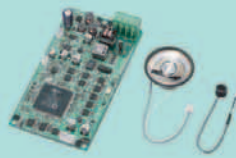


AD-1210P (CE)/(CU)
AC Adapter for IP Station

STATION BOARD UNIT



N-8031SB
Hands-Free Master Station Board Unit



N-8050SB
Hands-Free Substation Board Unit

Wall Mounting Bracket



YC-290
(for N-8011MS)



YC-280
(for N-8000MS, N-8010MS and N-8020MS)

BRACKET/OTHER

Surface Mount Back Box



YS-13A
(for N-8050DS and N-8540DS)



YC-251
(for N-8031MS)

Flush Mount Back Box



YC-150
(for N-8050DS and N-8540DS)



YC-241
(for N-8031MS)



(Without front panel)

E-7000TB
Terminal Board

FUNCTIONS

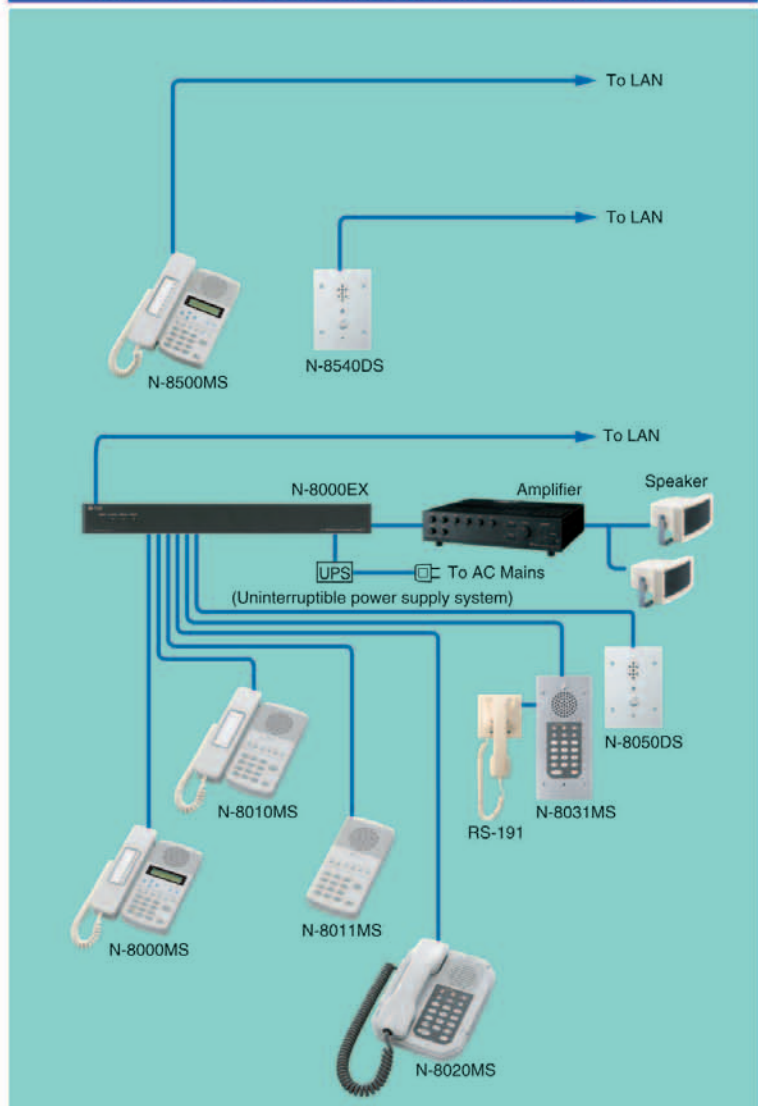
Exchange Basic Functions

- Conversation
 - Hands-free conversation
 - Handset conversation
 - PTT conversation
- Call
 - Individual call
 - Redialing
 - Recall
 - Voice calling
 - Group call
 - Master call
- Incoming Call Selection
 - Automatic connection
 - Continuous call
- Speed Dialing
 - Auto-dialing
 - One-touch dialing
- Hold
 - Mic Off
 - Call hold
- Call transfer
 - Group hunting
 - Absence transfer
 - Call forwarding
- Remote Response
- Executive Priority
- Paging
 - Zone paging
 - Paging
 - All-call paging
- Paging Response
 - Automatic response
 - Zone number response
- Scan Monitor
- Door Remote Control (Door Station only)
- Time-out
- Group blocking
- Station Speaker Output Setting
- Ambient Noise Control

Multi Interface Unit's Functions

- External Input Paging
- PBX connection
- Tie-Line Connection
- BGM
- External Equipment Control
 - One-shot make output
 - Make/break output
- Calling Station Indication/CCTV Interlock
- Door Remote Control
- Contact Bridge
- Paging Busy Input

SYSTEM CONFIGURATION EXAMPLE



Voice Security Intercom System



MASTER STATION



MS-900
Master Station

SYSTEM FEATURES

- **System Capacity**
 - Single Exchange
 - 4 Master stations
 - 64 Substations
 - Up to 16 Exchanges
 - 64 Master stations
 - 1,024 Substations
- **Remote system management via RS-232C port**
 - PC programming and monitoring software
 - Program and maintain multiple exchanges offsite from one PC (via modem)
- **Audio and Data Logging**
 - PC archive of all system activity (RS-232C port)
 - Record individual Master station and telephone audio
- **Master Station Flexibility**
 - TOA master with alphanumeric display and clock
 - Supports single-line telephone equipment with Caller-ID*
- **Outside Line Communication**
 - Supports two C/O trunks
 - Substation to outside telephone line communication
- **Paging Interface**
 - 16 control outputs
 - 1 voice output
- **External Audio Input**
 - 4 activation inputs and 1 audio input for external source distribution

*in compliance with FCC regulation Part 68.

FUNCTIONS

- **CALL-RELATED FUNCTION**
 - Group Call
- **TRANSFER-RELATED FUNCTION**
 - Call Transfer
- **CALL FORWARDING-RELATED FUNCTIONS**
 - Call Forwarding
 - Time-Based Call Forwarding
 - NO-Answer Call Forwarding
 - Busy Call Forwarding
- **MONITOR-RELATED FUNCTION**
 - Scan Monitor
- **PAGING-RELATED FUNCTIONS**
 - Zone Paging
 - All-Zone Paging
 - Emergency Paging
 - External Source Distribution
 - Paging Time-Out
 - Paging Redial
- **TELEPHONE-RELATED FUNCTIONS**
 - Outgoing Telephone Calls
 - Incoming Outside Line Calls (Direct-In Line)
 - Incoming Outside Line Calls (Direct-In Dialing)
 - Outside Line Connection Time-Out
 - Outside Line Conversation Recording
 - Outside Line Call Forwarding
 - Time-Based Outside Line Call Forwarding
- **CONFERENCE-RELATED FUNCTIONS**
 - Three-Party Conference (Individual Call Conference)
 - Emergency Conference (Up to 4 parties)

SUBSTATIONS



RS-150
Substation (Indoor Type)



RS-170
Substation (Outdoor
Vandal-Resistant Type)



RS-190
Full-Duplex Substation
(Indoor Type with Control Output)



RS-160
Substation
(Indoor Vandal-Resistant Type)

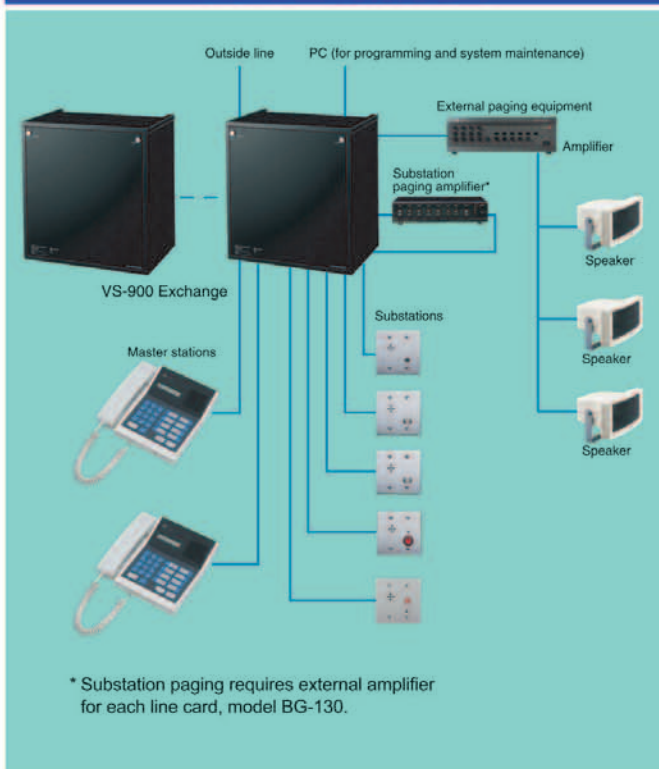


RS-180
Substation
(Outdoor Vandal-Resistant
Type with Control Output)



RS-191
Option Handset
for RS-190

SYSTEM EXAMPLE



SYSTEM SPECIFICATIONS

- **Exchange Method:** PCM and space division
- **Control Method:** Common stored program control
- **Maximum Cable Length**
 - Exchange to Master station: 1.5km (22AWG)
 - Exchange to Substation: 800m (22AWG) (RS-190: 1.5km)
 - Exchange to telephone: less than 500Ω (loop impedance)
 - Exchange to Exchange: 1.0km (22AWG) (total extension length)
- **Wiring**
 - Master station: 2 twisted pairs
 - Substation: 2-core shielded (RS-190: 2 twisted pairs)
 - Telephone: 1 twisted pair
 - Exchange to Exchange: 2-core shielded for Data, 2 twisted pairs for Audio (per link)
- **Frequency Response:** 300 – 3,400Hz
- **Conversation Method**
 - Substation to Master station: Voice Switch or PTT-activated talk-back
 - Master station to Master station: Full-duplex handset communication
- **Power Requirements**
 - Exchange: AC mains (PU-200) or 24V DC
 - VS-900DI/VS-910DI: 24V DC
- **Operating Temperature**
 - Exchange and Master station: 0 to 40°C
 - Substation: -10 to 50°C

Network Audio Adapter

FEATURES

- IP-addressable Audio Codec converts analog audio (mic or line) to standard IP-based format for transmission over existing local or wide area networks (LAN/WAN) including the Internet
- Bi-directional audio transport
- Contact closure transport - eight assignable control inputs/outputs
- Serial RS-232 data transport (NX-100 only)
- Reduces installation and operational costs when distributing audio signals to remote locations
- Balanced mic/line input with adjustable volume control
- Balanced line output
- Built-in Ethernet port (10/100BaseT)
- Point-to-point transmission (Unicast) of audio signals to up to four locations
- Simultaneous transmission (Multicast) of audio signals to up to 64 locations
- Control inputs can initiate and terminate audio transmissions without the need for dedicated PC-based or other control equipment
- Intuitive Configuration, Operating and Management software
- Browser-based software allows control and monitoring from any network-based PC
- External 24 VDC input for battery backup operation (NX-100 only)
- Requires AC power supply, model AD-246
- Optional rack-mount kits:
MB-15B-BK (1 unit)
MB-15B-J (2 units)

Comparison Table

	NX-100	NX-100S
Power source	AC adapter or 24V DC	AC adapter only
RS-232C port	Yes	No
Input signal LED	No	Yes
Input peak level LED	No	Yes
Phantom power supply	No	Yes
IPv6-compatible	Yes	No

Guidelines on Line Band, Sound Quality and Delay Time

(1) For LAN and dedicated lines

Line Band	Voice Compression	Audio Band	Sampling	Voice Packet Loss Recovery	Delay Time (sec)	Band Used (kbps)
Over 1.5 Mbps	PCM	50-14kHz	32 kHz	Silence	0.02	776
				Redundancy	0.93	820
	Sub-Band ADPCM	50-14kHz	32 kHz	Silence	0.02	392
				Redundancy	0.93	245
128 kbps (Dedicated line, etc.)	Sub-Band ADPCM	50-7kHz	16 kHz	Silence	1.3	68
				Redundancy	7.4	102
64 kbps (ISDN, etc.)	Sub-Band ADPCM	50-3.4kHz	8 kHz	Silence	2.6	34
				Redundancy	15	51

(2) For the Internet

Line Band	Voice Compression	Audio Band	Sampling	Voice Packet Loss Recovery	Delay Time (sec)	Band Used (kbps)
Over 512 kbps (ADSL, etc.)	Sub-Band ADPCM	50-14kHz	32kHz	Silence	0.6	136
				Retransmission	30	369
128 kbps (Dedicated line, etc.)	Sub-Band ADPCM	50-7kHz	16kHz	Silence	1.3	68
		50-3.4kHz	8kHz	Retransmission	30	92
64 kbps (ISDN, etc.)	Sub-Band ADPCM	50-3.4kHz	8kHz	Silence	2.6	34
				Redundancy	15	51

NOTES:

Note 1: Voice packet size

Voice packet size other than for "Line band of 1.5 Mbps or higher" is for data of 1024 bytes.

Voice packet size for "Line band of 1.5 Mbps or higher" is for data of 256 bytes (PCM)/32 bytes (Sub-Band ADPCM) data.

Note 2: Voice Packet Loss Recovery

Voice Packet Loss Recovery is a processing method when a voice packet cannot be received due to communication interference.

Silence: Method of processing lost sectors as silence.

Redundancy: Method of accurately outputting continuous losses of up to 8 packets.

Resend: Method of accurately outputting continuous losses of up to 15 seconds.

Note 3: Required band

Required band represents the frequency band required for voice transmission. When it is necessary to transmit serial data, a transmission band is separately required.

NX-100



Front



Rear

NX-100S

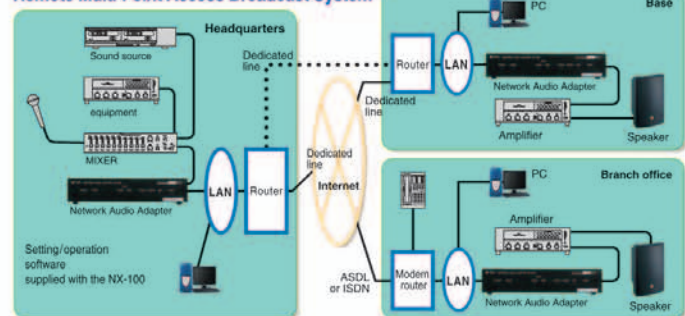


Front



Rear

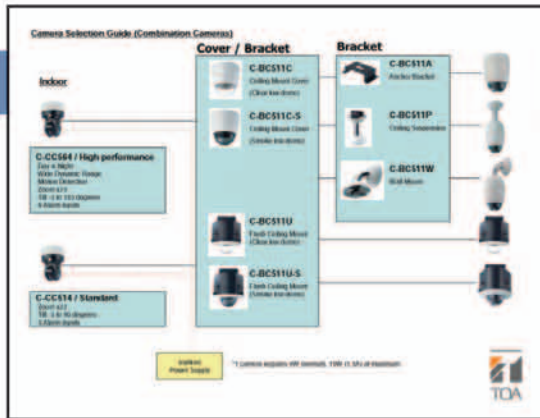
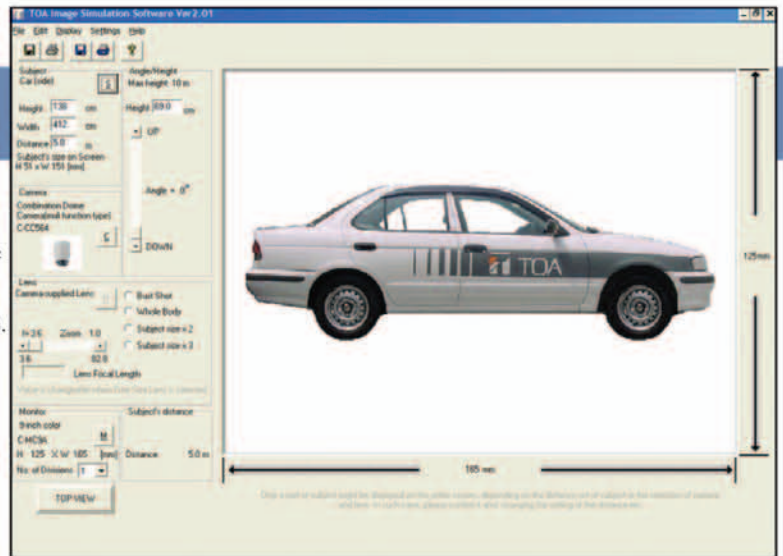
Remote Multi-Point Access Broadcast System



CCTV VIEWER SIMULATION SOFTWARE

The TOA CCTV Viewer Simulation Software is a powerful new CCTV sales and training tool. It provides a virtual monitor view of various TOA cameras and allows you to adjust parameters and view a virtual real-time simulation.

The CCTV Viewer Simulation Software is available as a FREE download from www.toaelectronics.com!



CCTV SELECTION GUIDE

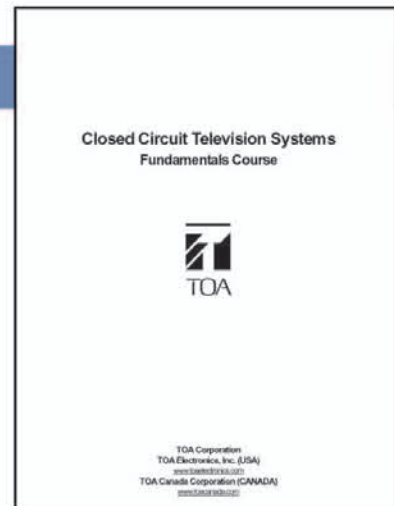
Selecting the right TOA camera and accessory couldn't be easier with the new TOA CCTV Selection Guide! This 4-page guide includes all of our PTZ Combination Dome, Compact Box, and Fixed-Dome Cameras, Lenses, and Brackets.

The CCTV Selection Guide is available for download from www.toaelectronics.com.

CCTV TRAINING TEXTBOOK

Need a crash course in CCTV systems? No problem. We've designed the new TOA CCTV Training Textbook, a comprehensive "fundamentals" guide filled with useful topics such as CCTV System Design, Camera Selection, Switcher Selection & Video Recording, Remote-Controlled Surveillance & Network Cameras, and a whole lot more!

The CCTV Training Textbook can be found at www.toaelectronics.com.



SECURITY A&E SPECIFICATION GUIDE

The TOA Video Surveillance Products Architectural and Engineering Specification Guide is a compilation of all current TOA CCTV engineering specifications and is designed to help you easily specify the correct TOA CCTV product for your projects.

The TOA Security A&E Specification Guide can be downloaded at www.toaelectronics.com.



TOA is recognized worldwide for the development and production of high quality and reliable audio and security products.

The TOA security product line includes digital video recorders, PTZ combination dome cameras, compact color cameras, IP network cameras, intercom systems, and more. Visit us on the web at www.toaelectronics.com.



TOA Electronics, Inc.
601 Gateway Blvd. Suite 300
South San Francisco, CA 94080
650.588.2538 usa
905.564.3570 canada

800.733.7088 • www.toaelectronics.com