

SUMMARY/SETUP MANUAL Power Board Unit VA-94S

Megapixel Camera VCC-MCH5600 VCC-MCH5600P

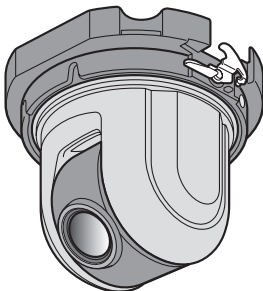
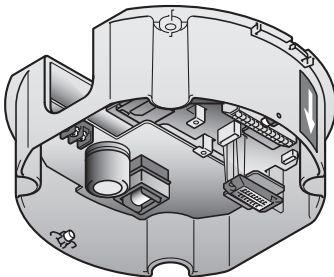
THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES.

Before installing and using the camera, please read this manual carefully.

Be sure to keep it handy for later reference.

In addition, be sure to read carefully the electronic manual (INSTRUCTION MANUAL) contained in the supplied CD-ROM to ensure correct operation of the camera.

(Power Board Unit)



(Megapixel Camera)

Important

- Be careful when opening holes for installing the unit. Work with the power and video cables pulled out for easy installation.
- Make sure to properly perform waterproofing for the ceiling where you are installing the unit.
- Make sure that the surface in the installation location has no unevenness and is strong enough to bear the total weight of the unit.
- Install this unit in an environment where the temperature range stays between -10°C and $+50^{\circ}\text{C}/14^{\circ}\text{F}$ and 122°F (no condensation allowed).
- As a precaution against static electricity damage, touch a nearby metal object (door knob, etc.) to dissipate static electricity in your body before touching this unit.

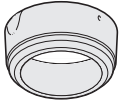
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■ Accessories

• Camera Unit

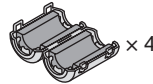
① Surface cover



② Drop-prevention cable

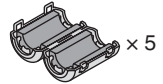


③ Clamping core
(VCC-MCH5600)



× 4

(VCC-MCH5600P)



× 5

• Power unit

① Pattern sheet



② Dust sheet



③ Interface board



④ CD-ROM



■ Check your operating environment.

To operate the camera via network operation, you must meet the following operating requirements.

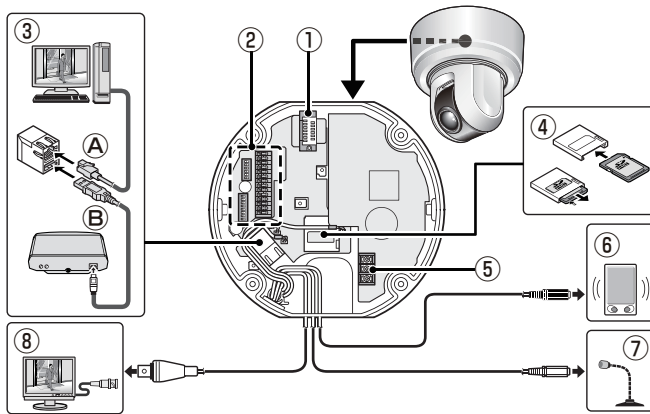
- **PC** : IBM PC/AT compatible
- **Operating system** : Windows XP Professional/Windows Vista
- **CPU** : Core2Duo E6700 2.66 GHz or higher
- **Memory** : Windows XP: 1GB or more
Windows Vista: 2GB or more
- **Network interface** : 10Base-T/100Base-TX (RJ-45 connector)
- **Display card** : 1920×1200 pixels or higher
- **Graphics chip** : ATI RADEON HD2600 series or higher
nVIDIA GeForce 8600 series or higher
nVIDIA Quadro FX550 series or higher
- **Web browser** : Internet Explorer Ver. 6.0 SP2 or higher,
or Internet Explorer Ver. 7.0

■ You can automatically set up the IP address of the camera.

This software application is useful when two or more cameras are connected to the network. Download "Auto IP Setup" software application from the supplied CD-ROM.

Name and Function of Each Component

This device is composed of a camera unit and power unit (VA-94S).

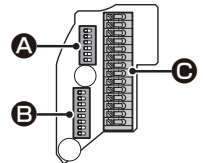


① Connection Point

This is the connection point between the camera unit and the power unit.

② Interface Board (accessories)

- Ⓐ Control switch (transmission rate and protocol setting, etc.)
- Ⓑ Address switch (control camera address setting)
- Ⓒ Control terminal (connection of controller and alarm input/output cable)



③ LAN/EX-HDD Terminal


- Ⓐ LAN terminal (RJ-45 type):
Use this socket to connect the camera to your PC to enable network operation.
- Ⓑ EX-HDD terminal (USB type):
When recording live video onto an external hard disk, put the hard disk in a dedicated hard disk case (VA-HDC4000; sold separately) and then connect the case to the camera.

④ SD Card Slot

When recording live video onto an SD memory card, insert the card into the slot.

⑤ Power terminal

Use this cable to connect a 24 VAC power supply.

 **There is no power indicator on the camera.**

⑥ Audio output terminal (black: 3.5-mm mini jack)


Connect this jack via an audio cable to the audio input jack of an amplified speaker system or the monitor.

⑦ Audio input terminal (white: 3.5-mm mini jack)

Use this jack to connect an external microphone to listen to the sound while monitoring the live video, or simultaneously record the video and sound.

⑧ Monitor output terminal (BNC type)

This terminal is used for video output. Connect this terminal to a monitor, etc.

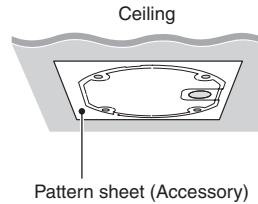
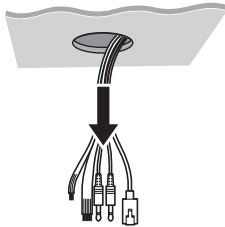
 **By installing an HDMI option board (VA-HDB90; sold separately), the camera can be connected to a high vision monitor.**

Installation

1. Installing the power board unit

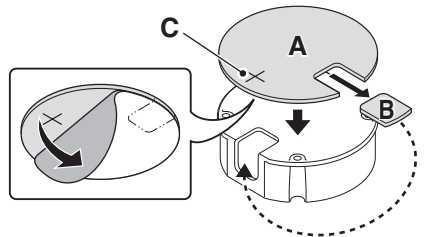
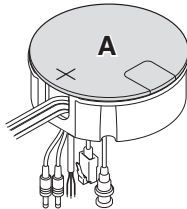
- 1** Place the supplied pattern sheet on the ceiling, mark the locations and drill the holes for the cables and screws.

- Pull out the cables from the ceiling.



- 2** Attach the supplied dust sheet (A) to the base of the power board unit and the detachable piece of the sheet (B) to the side.

- When routing cables through side face of power board unit



- 3** Pass the cables through the slit (C) in the dust sheet.

- 4** Fix the power board unit to the ceiling using commercially available screws (4 places).

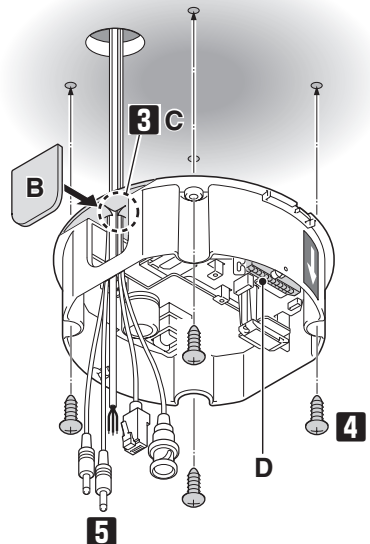
- ⚠ Make sure to tighten the screws properly. Using screws of sizes other than specified may cause the unit to fall.

Screw size (equivalent to M4/No.8)

- Nominal length: 40 mm (1.6 in) or more
- Head diameter: $\varnothing 8.3$ mm (0.3 in)

- 5** Connect the cables and set the switches (D).

- 📖 “Connections” (Page 5), “Control/Address Settings” (Page 9)”

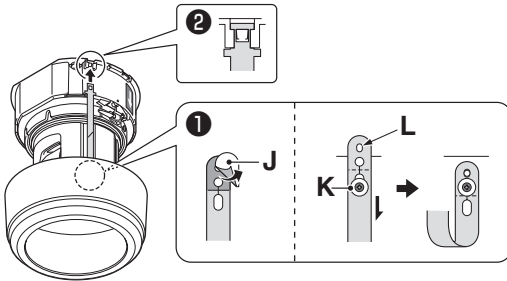


2. Mounting the camera unit

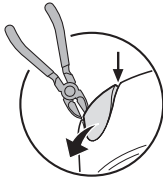
- 6** Fasten the camera unit safety wire (E) to the hook (F) on the inner side of the power board unit.
- 7** Align the colored dot (blue) on the camera unit with the arrow on the power board unit, and push the camera unit until they click.
- 8** Align the colored dot (blue) on the inside of the surface cover with the arrow on the power board unit, and turn the surface cover in the direction of the arrow to secure it in place.

■ How to attach the drop-prevention cable (accessory)

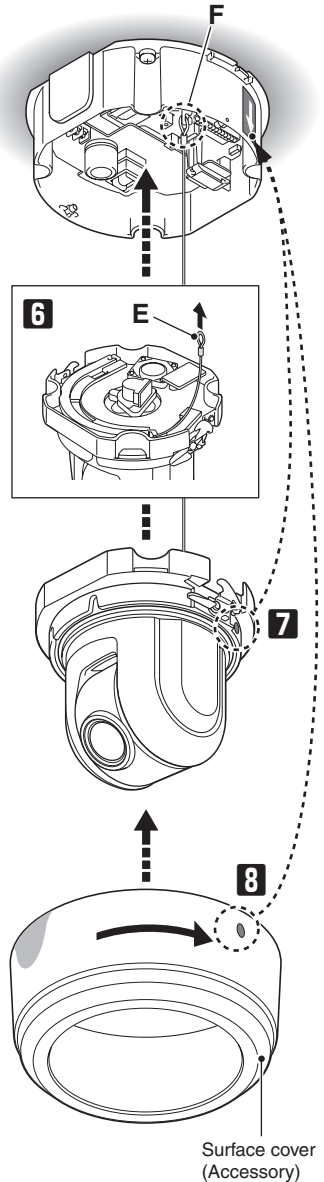
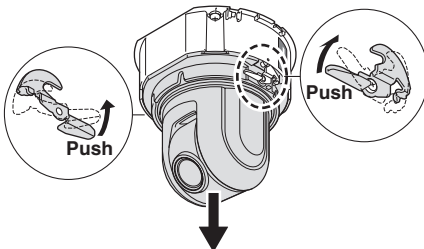
- 1** Peel off the two-sided tape (J) at the end of the cable, attach the cable end to the hook (K) on the inside of the surface cover as shown in the figure, and then pull the cable downward until the small protrusion (L) and the hook (K) fit in the cable's first and second holes from the top, respectively.
- 2** Fasten the cable to the hook on the side of the power board unit.



■ When routing cables through side face of power board unit



■ To remove the camera unit



Connections

■ VCC-MCH5600



- Before attempting the following connections, be sure to turn off all components of your system.
- Improper connection may cause smoke or failures. Before attempting to connect each system component, carefully read the instruction manual that comes with it to familiarize yourself with the correct connection procedure.

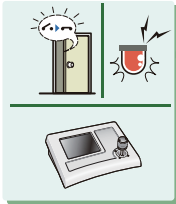
<Monitor Connection>



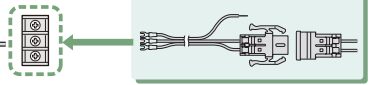
<Audio Jack Connection>



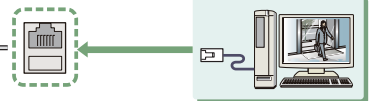
<Control Terminal Connections>



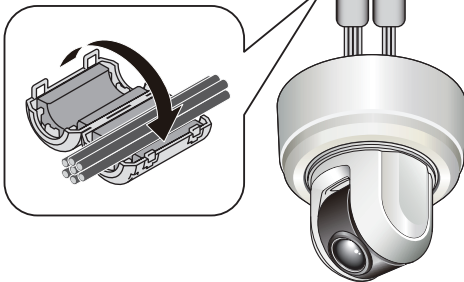
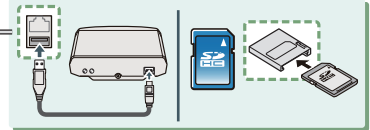
<Power Connection>



<Network Connection>



<Installing Recording Media>



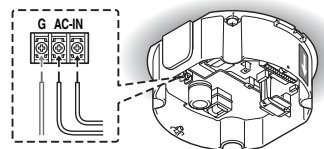
A Power Connection

This unit is 24 VAC type. Connect the power cable to the power terminal.

Although the power terminals have no polarity, the earth grounding wire must be connected to the G (earth terminal) terminal.



- To prevent a fire hazard use any UL listed wire rated VW-1. Be sure to use an 18AWG or thicker wire power cable.



■ VCC-MCH5600P

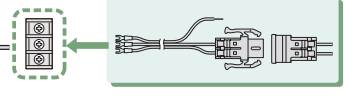


- Before attempting the following connections, be sure to turn off all components of your system.
- Improper connection may cause smoke or failures. Before attempting to connect each system component, carefully read the instruction manual that comes with it to familiarize yourself with the correct connection procedure.

<Monitor Connection>



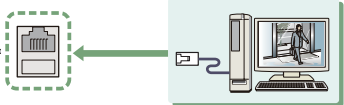
<Power Connection>



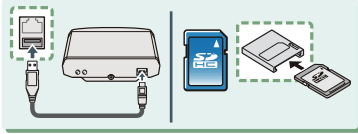
<Audio Jack Connection>



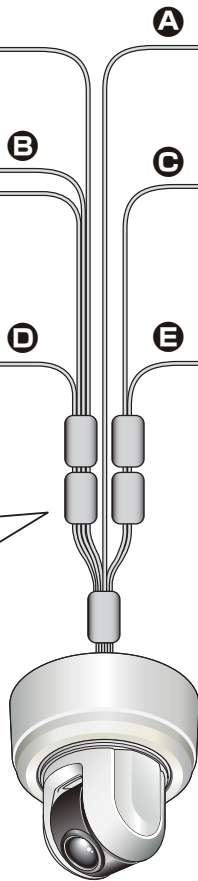
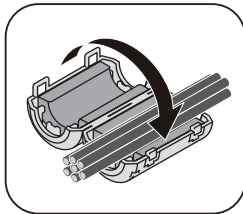
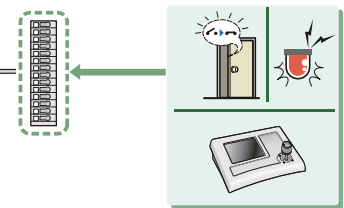
<Network Connection>



<Installing Recording Media>



<Control Terminal Connections>



Ⓑ Audio Jack Connection

AUDIO OUT Jack (Black)

Connect this jack via an audio cable to the audio input jack of an amplified speaker system or the monitor.

AUDIO IN Jack (White)

Use this jack to connect an external microphone to listen to the sound while monitoring the live video, or simultaneously record the video and sound.

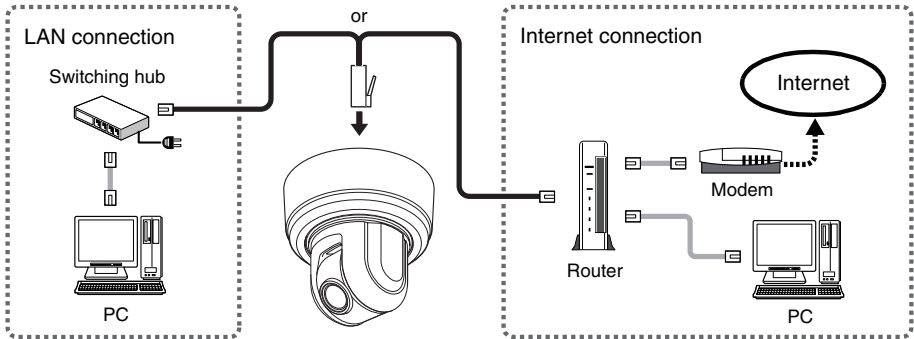


This terminal is compatible with a 3.5-mm diameter mono microphone or line mono signals (only the left channel in cases of stereo signals).

Connections

C Network Connection

This camera is designed so that you can use all of its functions via network operation. By connecting the network (LAN) socket of the camera to your PC using a LAN cable, you can configure and operate it from the Web browser installed on your PC.



- Use a LAN cable no longer than 100 m (109.4 yards) with the shield type CAT5 or higher.
- Use a straight-type cable if connecting to LAN, and use a cross-type cable if directly connecting the camera to a PC.
- The supported Web browser is Internet Explorer Ver.6.0 SP2 or higher, or Internet Explorer Ver.7.0.

D Installing Recording Media

When recording live video on the camera, install an SD memory card or external hard disk on the camera.

- Always turn the power off when installing a recording medium.

1 Connecting an External Hard Disk

Put the hard disk in a dedicated hard disk case (VA-HDC4000; sold separately) and then connect the case to the camera.

2 Inserting an SD Memory Card

Insert the SD card into the slot until it is locked with a clicking sound. Push the SD card a bit further into the slot to eject it.

- When you insert a new recording medium, format it on the SD/HDD screen.
- When you remove the recording medium, first set [SD MEMORY CARD]/[HDD] on the SD/HDD screen to "NO USE".

E Control Terminal Connections

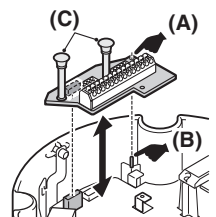
Connect the alarm input/output cable and controller to the control terminal of the interface board.

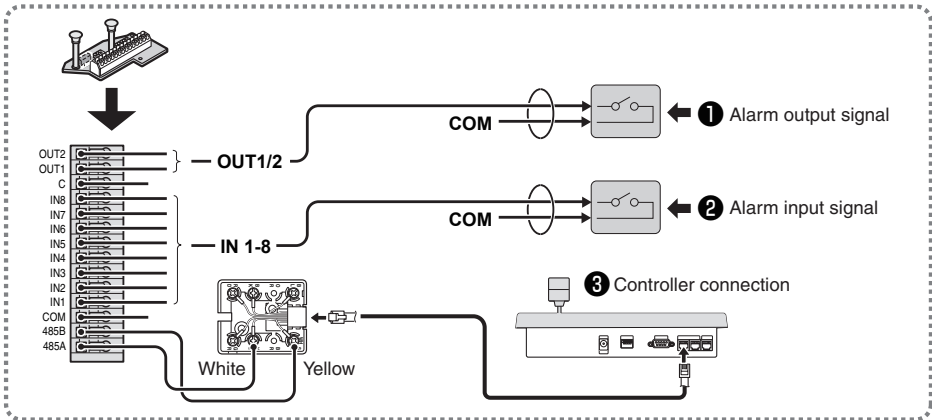
- Use a thicker cable than 24AWG for connection. (Maximum length 600 m/656 yards)

Installing and removing the interface board

To place the board back, align the hole (A) at the right corner of the board to the protruding portion (B) and securely fix the board by depressing it.

To connect alarm or other cables to the interface board, take out the board by pulling the portion (C).





1 Outputting Alarm Signals (OUT 1-2)

Connect a buzzer, lamp, or other alarm device to the alarm output cable. Alarm can be output via two channels.



- After connecting an alarm device, configure the output conditions for the corresponding alarm output terminal (ALARM OUT1 or 2) via network operation on the ALARM SETTINGS screen.
- Configuration of alarm output terminal is also possible via remote operation. For that, set [ALARM OUT] to "REMOTE" on the ALARM SETTINGS screen.

2 Inputting Alarm Signals (IN 1-8)

Connect an alarm switch, infrared sensor, or other device to detect alarm conditions to the alarm input cable. Alarm can be input via eight channels.



- After connecting an alarm device, configure the input conditions for the corresponding alarm input terminal (ALARM IN1 or 2) via network operation on the ALARM SETTINGS screen.
- When using the alarm input terminal for day/night switching, configure the following settings.
 - Under [DAY/NIGHT], set [DAY/NIGHT] to "COLOR" and select the terminal you want to use in [EXT ALARM].
 - On the ALARM SETTINGS screen, in [POLARITY], select the signal polarity of the alarm input terminal.
- Connecting an external switch to ALARM IN1 allows you to set the system clock by operating the switch. To set the system clock, configure the [CLOCK IN] setting on the CLOCK SETTINGS screen.

3 Connecting the Controller (485A/485B)

By connecting a system controller (sold separately), the camera can be controlled remotely.



- Configure the protocol, baud rate and address. (Refer to "Control/Address Settings" Page 9.)

Control/Address Settings

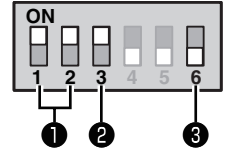
When you connect the camera to a controller, it is necessary to configure the interface board control switch and address switch.

■ Control switch

This is used to configure transmission rate and protocol, etc.



- **Switches 4 and 5 are not used.**
- **Settings in bold typeface in the table below show the factory default configurations.**



① Baud Rate

Configure the transmission rate of connected devices to the transmission rate of the camera.

Transmission Rate	Switch 1	Switch 2
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON



When protocol is set to "PELCO", set to 2400.

② Protocol

Select the protocol for controlling the camera.

Protocol	Switch 3	Corresponding Protocol
SSP (SANYO)	OFF	Automatic switching between Sanyo SSP and high speed SSP
PELCO	ON	Automatic switching between PELCO-D and PELCO-P

③ Terminator

When you connect multiple cameras, set the terminator setting (Switch 6) of the final device to "ON" and all other devices to "OFF".

■ Address switch

When you connect multiple cameras, allocate a unique RS485 protocol address (camera number) to each camera.

Configure the address by setting the dip switches to "ON" and "OFF".



For further information, refer to the "Address Settings Table" on the next page.



Address Settings Table

In the table, the circle mark “○” means ON. Set switches as shown in the table.



When protocol is set to "SSP (SANYO)":

- Available address: 1 – 127
- Switch 8 should be set to "OFF".

When protocol is set to "PELCO":

- Available address: 1 – 255
- When you set the address to 128 – 255, make sure to turn Switch 8 "ON".




Address (Camera No.)		Switch No.						
Protocol		1	2	3	4	5	6	7
SANYO/PELCO	PELCO							
–	128							
1	129	○						
2	130		○					
3	131	○						
4	132		○					
5	133	○		○				
6	134		○	○				
7	135	○	○	○				
8	136				○			
9	137	○			○			
10	138		○		○			
11	139	○			○			
12	140		○		○			
13	141	○			○			
14	142		○		○			
15	143	○			○			
16	144					○		
17	145	○				○		
18	146		○			○		
19	147	○	○			○		
20	148			○		○		
21	149	○		○		○		
22	150		○		○			
23	151	○	○			○		
24	152			○		○		
25	153	○			○			
26	154		○		○			
27	155	○	○					
28	156			○		○		
29	157	○			○			
30	158		○		○			
31	159	○	○		○			
32	160						○	
33	161	○					○	
34	162		○				○	
35	163	○					○	
36	164			○			○	
37	165	○					○	
38	166		○				○	
39	167	○	○				○	
40	168			○			○	
41	169	○					○	
42	170		○				○	

Address (Camera No.)		Switch No.						
Protocol		1	2	3	4	5	6	7
SANYO/PELCO	PELCO							
43	171	○	○		○		○	
44	172							
45	173	○			○		○	
46	174		○		○		○	
47	175	○	○		○		○	
48	176							○
49	177	○					○	
50	178		○					○
51	179	○					○	
52	180			○			○	
53	181	○			○		○	
54	182			○			○	
55	183	○	○				○	
56	184			○			○	
57	185	○					○	
58	186		○				○	
59	187	○	○				○	
60	188			○			○	
61	189	○					○	
62	190		○		○		○	
63	191	○	○		○		○	
64	192							○
65	193	○						○
66	194		○					○
67	195	○	○					○
68	196			○				○
69	197	○						○
70	198							○
71	199	○	○					○
72	200				○			○
73	201	○						○
74	202		○					○
75	203	○	○					○
76	204							○
77	205	○			○			○
78	206		○					○
79	207	○	○		○			○
80	208							○
81	209	○						○
82	210		○					○
83	211	○						○
84	212		○					○
85	213	○	○					○

Address (Camera No.)		Switch No.						
Protocol		1	2	3	4	5	6	7
SANYO/PELCO	PELCO							
86	214	○	○		○		○	
87	215							○
88	216							○
89	217	○						○
90	218							○
91	219	○	○					○
92	220							○
93	221	○						○
94	222		○					○
95	223	○	○					○
96	224							○
97	225	○						○
98	226		○					○
99	227	○						○
100	228							○
101	229		○					○
102	230	○	○					○
103	231		○					○
104	232							○
105	233	○						○
106	234							○
107	235	○	○					○
108	236							○
109	237	○						○
110	238		○					○
111	239	○	○					○
112	240							○
113	241	○						○
114	242							○
115	243	○	○					○
116	244							○
117	245	○						○
118	246		○					○
119	247	○	○					○
120	248							○
121	249	○						○
122	250		○					○
123	251	○						○
124	252							○
125	253	○						○
126	254		○					○
127	255	○	○					○

Network Settings

Preparing Your Computer for Network Operation

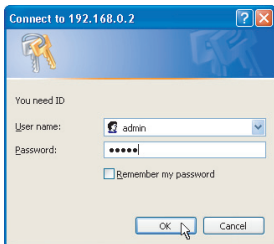
- 1 Check your operating environment.** ( Page 1)
- 2 Connect the camera to the network to which your PC is also connected.**
- 3 Configure the network information on your PC.**
Configure information such as the IP address of your PC.
- 4 Install the “H.264 Plug-in” from the supplied CD-ROM onto your PC.**
You are now ready to monitor the surveillance video in the H.264 format.
- 5 Start Internet Explorer.**
The supported Web browser is Internet Explorer Ver.6.0 SP2 or higher, or Internet Explorer Ver.7.0.
- 6 Access the camera from your Web browser.**
From your Web browser (Internet Explorer), access the camera and log into the system as an “admin” user (administrator).
- 7 In the address bar, type the IP address of the camera and press [Enter] key.**
When you access the camera, the login screen appears.
If this is the first access to the camera, in the Address bar, enter the default IP address as follows.

Address



If you set [SSL] to “ON”, before the IP address, type “https://” (instead of “http://”). Attempts to access the camera using the default IP address will fail if that address is already being used by another device in the network. If so, change the IP address of the existing device before accessing the camera.

- 8 Type your user name and password and click [OK].**
The language selection screen appears.



If this is the first access to the camera, log in as an admin user (administrator) using the following default authentication information.

- User name: admin
- Password: admin

- 9 Click the button corresponding to the language you want to use.**
The live screen appears.
From the second login onwards, the live screen appears automatically by skipping the language selection screen.
If this is the first access to the camera, configure the system clock on the CLOCK SETTINGS screen.

Specifications

Camera Unit (VCC-MCH5600/MCH5600P)

Image pickup device	1/2.5" CMOS sensor
Effective pixels	16:9 1920 (H) × 1080 (V), 4:3 1600 (H) × 1200 (V)
Lowest image illumination	50IRE: 2.0 lx (F1.8, in color mode with high gain) 50IRE: 0.1 lx (F1.8 in black-and-white mode with high gain)
Video S/N ratio	50 dB or higher (when AGC is 'Off')
Lens	Focal Length: 6.3 to 63 mm, F number: F1.8 - 2.5 Optical zoom 10x, electronic zoom 16x (up to 160x when used in combination with the optical zoom)
Rotational scope	Pan: 360° endless pan Tilt: -20 to +200°
Rotation speed	Pan: Max 420°/sec Tilt: Max 360°/sec (0.1 to 120°/sec during manual operation)
Preset position	Max 255
Auto mode	Sequential, auto pan, tour, automatic return
Privacy mask	ON/OFF, up to 32 positions
Motion sensor	ON (detection area setting, video analytics)/OFF, face detection function
Auto pursuit	ON/OFF
Sway compensation	ON/OFF
Language selection	English, French, German, Spanish, Japanese

For further details on the specifications of the camera, refer to the electronic manual.

Power unit (VA-94S)

■ I/O

Video output	Monitor output terminal (BNC)
LAN	10BASE-T/100BASE-TX (RJ-45 connector)
EX-HDD Connector	For connecting SANYO-specified external hard disk case (VA-HDC4000)
SD Card Slot	1 (SDHC compliant, max. 32 GB supported)
Alarm input	8 (NO/NC), also serving as Day/Night switching terminal <control terminal>
Alarm output	2 (NO/NC switching, 16 V, 150 mA, open collector) <control terminal>
Audio input/output	Audio input (white: 3.5-mm mini jack) Audio output (black: 3.5-mm mini jack)
Communication method	RS-485
Protocol	SSP, PELCO-D
Baud rate	2400, 4800, 9600, 19200
Address	1 - 255 (Sanyo SSP: 1 - 127)

- **HDMI output:** Possible when an HDMI option board (VA-HDB90; sold separately) is attached

■ Power source

Operating ambient temperature/humidity	-10 to +50°C/14 to 122°F 90% RH or less (no condensation)
Power source	24 VAC±10%, 50/60 Hz
Power consumption	29 W

Specifications

■ Recording media

SD memory card/ External HDD	Normal recording, alarm recording, backup video recording in event of a network failure, log information
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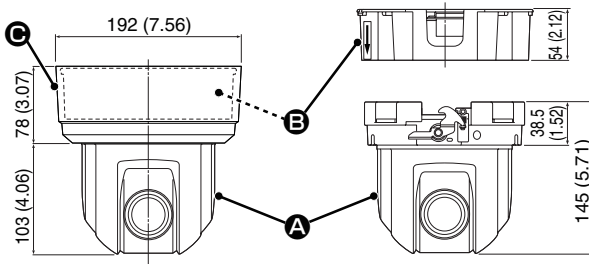
For the recommended SD memory cards, visit our website.

<http://www.sanyo-cctv.net/>

■ Network

Image/video compression	H.264/JPEG
Video size (H.264)	(16:9) 1920×1080, 1280×720, 640×360, 320×180 (4:3) 1600×1200, 1280×960, 1024×768, 640×480, 320×240
Video size (JPEG)	(16:9) 1920×1080, 1280×720, 1024×576, 640×360 (4:3) 1600×1200, 1280×960, 1024×768, 800×600, 640×480, 320×240
Picture quality	QUALITY mode: BASIC, NORMAL, ENHANCED, FINE, SUPER FINE BITRATE mode: User-specified bit rate
Interface	10BASE-T/100BASE-TX
Protocol	TCP/IP, UDP, HTTP, HTTPS, SMTP, NTP, DHCP, FTP, DDNS, RTP, RTSP, RTCP
Audio	G.711 (Bidirectional)
Simultaneous access	20
Security	BASIC authentication (ID/password), SSL, IP filtering

■ Dimensions/Weight



- A** Camera unit:
approx. 1.3 kg/45.9 oz.
- B** Power unit:
approx. 450 g/15.9 oz.
- C** Surface cover:
approx. 110 g/3.9 oz

Unit: mm (inch)

Appearance and specifications are subject to change without prior notice or obligations.

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- It is recommended that important data be copied to a separate medium.
- In the following situations, it is possible that recorded data may be lost (destroyed). Our company bears absolutely no responsibility for damages or profits loss due to the loss of data.
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 - The medium is not installed on the device correctly.
 - The medium is subjected to electrical or mechanical shock.
 - The card is removed or the power is turned off while the card is being accessed.
 - The medium has reached the end of its service life.

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