INSTRUCTION MANUAL

Hybrid Camera

MODEL
IHD-D525S

eco products
Ikegami

Ikegami

Ikegami Electronics (U.S.A), Inc.

Thank you for choosing this Ikegami Hybrid Camera.
Please read this Instruction Manual carefully to keep your Ikegami camera at peak performance for longer service period.
This unit is a dome-type 1 CMOS color camera and making use of a 1/2.9" sensor.
This Ikegami product is made of ECO friendly components based upon the Company policy and corporate social responsibility to contribute towards the Global Environmental Solution for energy conservation and environmental sustainability, all the components used in this product are Non-hazardous, Toxic Free, Non-Lead and conform with Japan's Green Product regulation, EU's RoHS directive and other Environmental and hazardous chemical substances related regulations and laws.

Contents

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Instructions for Disposal of Electrical and Electronic Equipment in Private Households

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with a dry cloth.

7) Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use the attachments/accessories specified by the manufacturer.

12) Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) CAUTION - These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

1. Handling Precautions

- Do not expose the internal mechanism of the camera in a water-splashed or highly humid environment.
- Do not use the camera where the ambient temperature drops below -10°C or rises above +50°C. The images and component parts may be adversely affected or the camera may not function correctly.
- Do not open the case of the camera, unless it is absolutely necessary for setup or installation because there are precision electrical and electronic components inside and accident may result.
- Be sure to turn off the power before installing or making connections.
- Be careful not to drop or give a strong shock to the camera while transporting it.
- Do not touch the image sensor
- Do not orientate the camera directly towards the sun.
- Because of the digital image device characteristics, images may look unnatural at high temperatures, this does not mean the camera is faulty.

2. General

This color camera is provided with a 1/2.9-inch CMOS sensor. The CCTV camera features wide dynamic range, high sensitivity and high resolution, and is equipped with the color/black-and-white switching, back-light compensation, automatic iris control, line lock and other functions. The unit is best suited for general surveillance.

3. Features

(1) Compact Dome Configuration
The camera lens is housed in a compact dome configuration to enable surveillance with images without having to be aware that a camera is installed.

(2) Integrated unit with triaxial adjustment varifocal lens in a single unit
This is an integrated type design featuring a varifocal. Because it can operate with triaxial adjustment, even when attached to a wall, it can be adjusted to an arbitrary imaging range.

(3) Wide Dynamic Range (CVI,AHD)
The WDR function provides for very effective compensation of high light and dark areas in screen. This situation may occur generally outside or viewing from indoor to outdoor scenes. Even in large light fluctuations, bright-and-dark subjects can be captured and viewed clearly with a natural appearance.

(4) High-quality picture and high resolution
The camera is designed for smear-free imaging and low noise. The well-designed DSP, Digital Signal Processor, effectively enhances details, which achieves crisp and sharp images with a high signal-to-noise ratio.

(5) Automatic white balance
Thanks to the automatic follow-up white balance control (ATW), the white balance adjusts itself no matter how great the subject's color temperature fluctuates.

(6) Automatic Sensitivity Control
In conjunction with the wide dynamic control by the multi-sampling system, the camera incorporates the automatic sensitivity control function that always provides adequate and bright images even through its fixed-iris lens.

4. Camera Installation

4-1. Pre-work before installation

For camera fixing, two holes are needed.

68.5

Holes for camera fixing
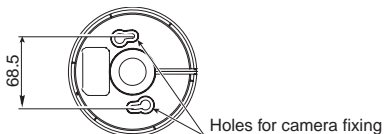
4-2. Mounting the camera (Ceiling)

Put two fixing screws leaving about 5mm clearance. Those two screws will be tightened later to secure the dome camera. Put the cable wiring through the center hole of the camera base ①, and align two key hole slot to the screws.

And turn the unit clockwise until it stops and tighten two fixing screws. Put back the dome cover.

Screws

Camera

Dome cover

5mm
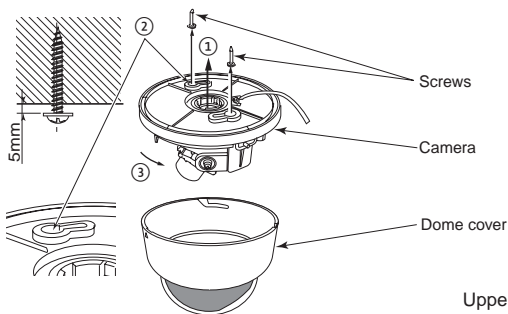
4-3. Mounting the camera (Wall)

The way of installation is the almost same as to a ceiling. Install the main unit so that the switch becomes upper side as shown in the illustration right and set the "FLIP" in the setup menu to "V-FLIP".

Upper

Lower

E-3
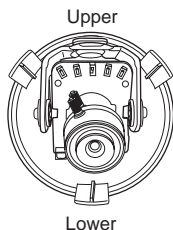
5. Name of each section and its function
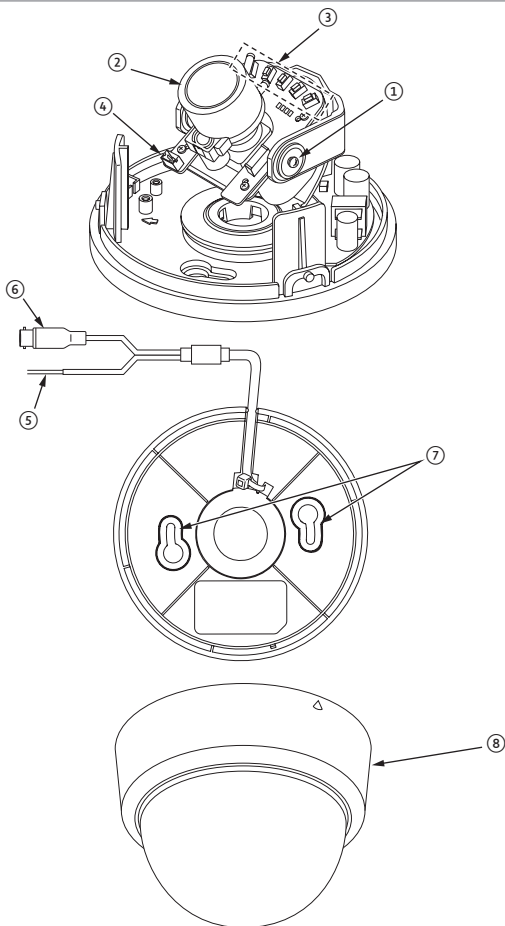
① Lens fixing screws (elevation)

These are screws to fix the camera in the desired elevation position.

Fix these screws after setting the viewing position.

② Vari-focal lens

Can be used with flexible angle of view using varifocal lens.

③ Switches for camera setup

Refer to Section 8 (Operating Procedure)

④ Test monitor output

Connect accessory MON.OUT output harness.

⑤ Power cable

This is a power cable. Non-polarity AC24V (AC 21.6V ~ 26.4V) or
DC12V has to be connected. Check the power voltage from the external
power supply before applying power to the camera.

  * This installation should be made by a qualified service person and
    should conform to all local codes.

⑥ Video Output cable (BNC)

This is the output of video signal. Connect this to a monitor or switcher.

⑦ Fixing holes (two key hole slots)

⑧ Dome Cover

6. Connections

Be sure not to apply power before making connections.

6-1. Power cable

Use DC12V (10.5V to 15V), or AC24V (± 10%) in both 60Hz and 50Hz.
* This installation should be made by a qualified service person and
  should conform to all local codes.

6-2. Video output cable (BNC)

This is a video output terminal. To be use an ordinary video output, for
monitors, or switcher.

6-3. Test monitor output (MON.OUT)

• Image output terminal used when installing the camera.
• By using the accessory cable to connect to the VIDEO IN of the monitor
  or the image input terminal, it is easier to carry out positioning and
  focusing.

7. Angle and Lens adjustment

7-1. Angle adjustment

Before doing this, the clear dome cover has to be removed.

● Remove the dome cover

Turn the black section of the dome cover in a counterclockwise direction to remove.

Pay attention not to drop a dome cover while doing this.

Note: When imaging in a horizontal direction, the black section of the dome cover may be imaged so that part of the image is missing. Adjust the angle of vision in a horizontal direction so that the dome cover is not imaged.
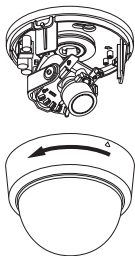
7-2. Vari-focal lens adjustment

To re-direct lens, loosen the lens fixing screws for elevation.

Adjust the zoom knob for framing and angle, and a focus knob for focusing.

Using those two knobs, adjust the lens to have desired framing, angle and focal point. Repeat this procedure a couple of times, so that you may achieve the best result.

Once the desired settings have been achieved, tighten the screws to fix the position.

Zoom knob
Focus knob
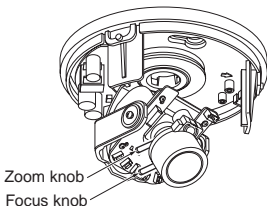
8.   Operating Procedure

8-1. User Setup

This dome camera is provided with user setup function for picture quality, and camera ID. The setup menu is a tree type on-screen-display.
When installing the camera it is possible to set up the various functions.

8-2. Names and functions of the setup bottons
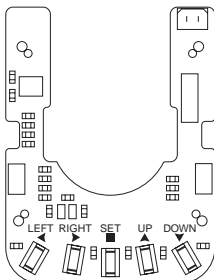
UP ————— To select setup parameters
DOWN ———— (up and down)
RIGHT ———— To change setup parameters
LEFT
SET ————— To get in or get out to setup mode, and to enter and execute procedures.

* To get into Setup mode, hold SET button more than 2 seconds.

8-3. Setup mode Procedures

Hold down the SET button longer than 2 seconds, and the setup menu screen at left appears on screen. A highlighted item is now selected.
Use the LEFT/RIGHT buttons to change the selection items.

8-3-1. MAIN MENU

When the OSD menu is launched, you are presented with the adjacent
opening screen.
A menu option followed by a ↵ indicates the presence of a sub-menu.
Options set to OFF will not show a ↵ until set to ON.
Use RETURN ↵ to the previous menu.

```
            MAIN MENU

  FOCUS ADJUST     OFF
  EXPOSURE           ↵
  BACKLIGHT        OFF
  DAY&NIGHT        AUTO
  WHITE BAL          ↵
  DNR              MIDDLE
  ADJUST             ↵
  MOTION           OFF
  SYSTEM             ↵
  EXIT             SAVE↵
```

(1)FOCUS ADJUST

FOCUS ADJUST is a function to support focus adjustment.
A focus indicator displayed on the screen can be used to confirm
the focus conditions.

Near   Far   Complete
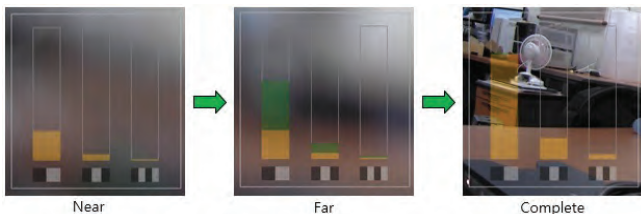
- From the Main Menu, turn the Focus ADJ from OFF to ON to create
 a Focus Adjust Box on the screen's bottom left
- Move the lens to direct towards the object to be focused, and turn the lens focus
 from near to far until the location from the Focus Assist Box shows a green bar.
 Next turn the lens focus until the yellow bar has a similar size with the green bar
 for focus. Your camera should now have a clear crisp image.

(2)EXPOSURE

It selects Lens Mode, Brightness, Shutter speed, Sens-up and AGC Gain.
① LENS - DC or Manual selection.
② BRIGHTNESS - Sets the level of the overall.
③ SHUTTER - Auto, Manual, FLK selection, 1/30~1/30K.
   Set this on to reduce the exposure time of each image.
   This can be used to reduce blur in images with fast changing content.
   FLK mode use this when flicker is observed in the image
   under fluorescent lighting.
④ SENS UP - Slows frame rate and increases low light sensitivity.
⑤ AGC- Level Control -Used to adjust overall gain.

```
          EXPOSURE

LENS             DC
BRIGHTNESS       10 |ııı|ııı|
SHUTTER          AUTO
SENS-UP          X4
AGC              10 |ıııııııı|
RETURN              ↵
```

(3)BACKLIGHT

Setting the backlight compensation and light source correction function
are available.
① WDR - Used to improve contrast in bright/dark areas.
   (NOTE : WDR function is only inactive on CVBS output.)
② BLC - Adjust the area to be enhanced and sets the level.
③ HLC - It is the ability to reverse bright points to black or gray,
   (areas such as headlights, any high luminance areas) this function will
   improve the overall picture.

(4)DAY & NIGHT

Selecting Day or Night is available.

① AUTO - The image is automatically switched between high-quality color image for the day and highly-sensitive monochrome image for the night.

② COLOR - Fixes the camera in color mode.

③ B/W - Fixes the camera in monochrome mode.

④ EXTERN - This mode which forcibly switches the Day/Night mode using an external input.

(5)WHITE BALANCE

Setting a white balance is available.

① AUTO

The camera automatically samples the image for optimum white balance.

② AUTOext(default)

The camera automatically samples the image for optimum white balance in an exterior environment.

③ PRESET

Allows the white balance to be set automatically and locked. This option is normally used when no white reference is present in the image.
To set the white balance, hold a white object in front of the camera, with light from the source falling on it and press the joystick to set and lock the white balance.

④ MANUAL

This option allows a selection of color temperature, Red and Blue gain to be manually set in the image. Note, using this option requires care to ensure all cameras on one system have the same color response.

```
┌─────────────────────────────────┐
│           WHITE BAL             │
│                                 │
│   AWB           AUTOext         │
│   RETURN          ↵             │
│                                 │
│                                 │
│                                 │
│                                 │
│                                 │
└─────────────────────────────────┘
```
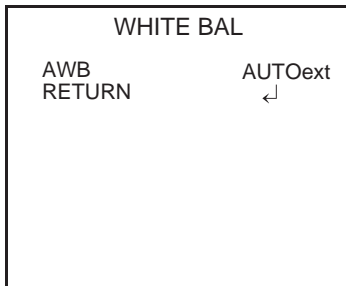
(6)DNR(Digital Noise Reduction)

This function is used to improve the picture quality by filtering the noise which is generated under low light conditions.

(7)ADJUST

Color gain, sharpness, gamma, mirror, flip, ace, defog and privacy are available.

① COLOR GAIN

It adjusts the color intensity.

② SHARPNESS

It adjusts the edge intensity of the video.

③ GAMMA

This function is for compensating the saturation and brightness of the images shown on the display.

④ MIRROR

It flips the video vertically.

⑤ FLIP

It flips the video horizontally.

⑥ ACE(Adaptive contrast enhancer)

Preserves fine details, reduces artifacts and loss of local contrast in the image areas of bright/dark.

⑦ DEFOG

Used to help improve the captured image in poor weather conditions such as smog, fog, or smoke. It automatically controls contrast ratio by spatially analyzing the histogram characteristics.

⑧ PRIVACY

The maximum 16 privacy masks can be set.
Setting mask color, intensity, and size are available.

```
              ADJUST

   COLOR GAIN        15 |‖‖‖‖|‖|
   SHARPNESS              ↵
   GAMMA             0.5
   MIRROR            OFF
   FILP              OFF
   ACE               OFF
   DEFOG             OFF
   PRIVACY           OFF
   RETURN                ↵
```

(8)MOTION

This function detects and dispalys the object in motion.

  ① DET WINDOWS

    Select and set up to 4 motion areas.

  ② SENSITIVITY

    Level control.

  ③ TEXT ALARM

    Display "Motion Alarm" on Screen.

  ④ SIGNAL OUT - N/A

```
                MOTION

     DET WINDOWS        ↵
     DET TONE           2
     MDDECT FILL        ON
     SENSITIVITY        5 |ını|ınıl
     MOTION OSD         ON
     TEXT ALARM         ON
     SIGNAL OUT         OFF
     RETURN             ↵
```

(9) SYSTEM

①OUTPUT

CVBS(default), CVI, AHD Selectable.

②FRAME RATE

Select from 1080P - 30P or 720P - 30P or 720 - 60P

③FREQ

60Hz or 50Hz can be seleted.

④COM

Set com port and speed.

⑤ IMAGE RANGE

Used to adjust black level in dark sceen.

⑥ COLOR BAR

This function is to get the color displayed.

⑦LANGUAGE

Select from 5 languages.(ENG, CHN, CHN(s), JPN, KOR)

⑧CAMERA TITLE

The screen can display 8 characters.

⑨RESET

It returns to the factory default.

```
┌─────────────────────────────┐   ┌─────────────────────────────┐
│          SYSTEM             │   │          OUTPUT             │
│                             │   │                             │
│  OUTPUT          ↵          │   │  HD ANALOG      CVBS        │
│  FRAME RATE    1080-30 p    │   │  RETURN          ↵          │
│  FREQ          60Hz         │   │                             │
│  COM             ↵          │   │                             │
│  Image range   FULL         │   │                             │
│  COLOR BAR     OFF          │   │                             │
│  LANGUAGE      ENG          │   │                             │
│  CAMERA TITLE  OFF          │   │                             │
│  RESET         ON ↵         │   │                             │
│  RETURN          ↵          │   │                             │
└─────────────────────────────┘   └─────────────────────────────┘
```

9.   Warranty and after-sale service

A warranty accompanies this product. Read and fill out the warranty card that you have received at your dealer. Keep this card in a safe place.

● Please consult Ikegami Electronics (U.S.A.) Inc. or Ikegami Electronics (Europe) GmbH or your dealer for full warranty information. Your dealer will repair or replace free of charge within the warranty period according to the warranty coverage.

● For repairs after the expiration of the warranty period, consult your dealer or sales representative. It will first be judged whether the fault is repairable or not. Charged servicing will then be made upon request of the user.

● Before you ask for servicing, please ensure you read the Instruction Manual. If the unit still fails, take note of the model number, date of purchase, problem, etc. in detail, and inform your dealer or sales representative.

● If you have questions about the after-sale service, contact your dealer or sales representative.

 * We suggest you ask for preventive inspection as soon as possible.

10. *Specifications*

(1) Image Sensor:	2Mega Pixel Cmos Sensor
(2) HD Resolution:	Full HD (1920 x 1080)
(3) Scanning system:	16:9 Progressive scan
(4) Sync system:	Internal
(5) Video output:	Analog Output-CVBS(default)
	HD Output-CVI,AHD(Full HD)
(6) Day/Night switching:	Digital Day/Night
(7) S/N ratio:	Over 52dB(p-p/rms)
(8) Minimum object illumination:	0.08Lx at B/W at Sens up<<off>>
(9) Wide Dynamic Range:	Support (1080p@15fps)
(10) AGC:	ON/OFF(Variable)
(11) Eletronic shutter:	Auto, Manual, Flicker,
	1/30,000 sec maximum
(12) White Balance Control:	AUTOext/AUTO/PRESET/MANUAL
(13) Digital Noise Reduction:	Built-in, On or OFF, Selectable
(14) ACE:	Built-in, On or OFF, Selectable
(15) DEFOG:	Built-in, On or OFF, Selectable
(16) Private Mask Setting:	Built-in, Up to 16 areas
(17) Camera ID:	1 Line, up to 8 characters
	(alphanumeric)
(18) Motion Detection:	Built-in, On or OFF, Selectable
(19) Operating Temperature	
and Relative humidity:	-10 to + 50°C
	RH 30% to 90%(no condensation)
(20) Lens:	Built-in. Vari-focal Lens:
	f 2.8mm ~ 11.0mm
	f 9.1mm ~ 21.5mm
(21) Power Requirement:	AC 24 V±10%(50/60Hz)
	DC 12 V (+10.5V ~ +15V)
(22) Power consumption:	2.0W

(23) Dome cover:	Inner and Outer, Double Dome Type
(24) Size (Diameter & Height):	∅124.2mm x 102.0mm (excluding protrusions)
(25) Weight:	Approx. 340g
(26) Input/Output connectors:	• VIDEO OUT: BNC
	• Power input : open-ended wires
	• MON.out : Connecter output
(27) Supplied accessories:	Instruction Manual: 1
	Tapping screws to secure camera: 2
	MON.out output harness: 1

* Specifications and design are subject to change for product improvements without notice.

11. External Appearance

φ100.0

102.0

49.0

φ124.2

φ68.5
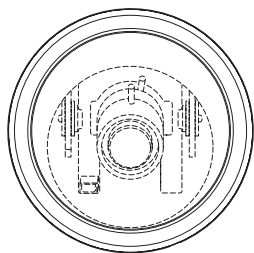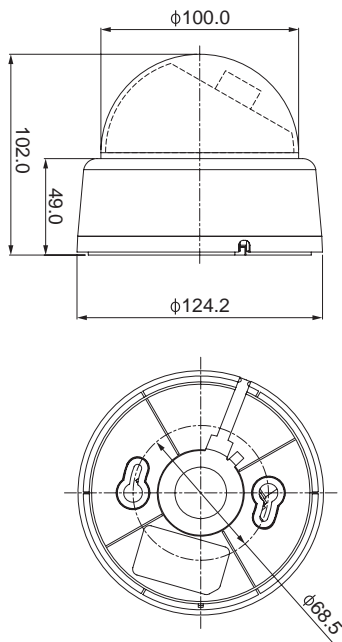
(Unit:mm)

12. Setup Flow Chart

SET UP MENU
PUSH SET

	TOP	2DN	3RD	4TH
	U.D / L.R	U.D / L.R	U.D / L.R	U.D / L.R

FOCUS ADJUST
- OFF / ON
- FOCUS AREA: WIDE / NARROW / MIDDLE
- DISP TONE
- DISP H.POS
- DISP V.POS
- DISP H.SIZE
- DISP V.SIZE

EXPOSURE
- OFF / FLC
- LENS: DC / MANUAL
- BRIGHTNESS
- SHUTTER: AUTO / MANUAL
- MODE: NORMAL / DEBLUR
- SPEED: 1/30 ~ 1/30000

BACKLIGHT
- OFF / BLC / HSBLC
- SENS-UP: MANUAL / FLICKER
  - OFF / X2 / X4 / X8 / X16 / X32
- AGC
- LEVEL
- COLOR

DAY/NIGHT
- AUTO / COLOR / B/W / EXTERN
- BOX / CUSTOMIZE
- PATT / YEL / CYN / GRN / MAG / RED
- H.POS
- V.POS
- H.SIZE
- V.SIZE
- MODE: NORMAL / BOX
- BRIGHT: LOW / MIDDLE / HIGH
- ANTI-SAT
- COLOR THRES
- COLOR/B&W/MIN
- DELAY
- EXTERN SW
- WINDOW ZOOM
- WINDOW USE: ON / OFF
  - H.POS
  - V.POS
  - H.SIZE
  - V.SIZE

WHITE BAL
- AUTO / MANUAL / PRE SET
- ATW: ON / OFF
- DELAY
- EXW
- C.TEMP
- R-GAIN
- B-GAIN
- 2800K/5600K/6700K / 3200K / 4200K

DNR
- OFF / LOW / MIDDLE / HIGH

OSD Menu Tree

TOP	2DN	3RD	4TH

ADJUST
- COLOR GAIN — 0-20
- SHARPNESS — 0.45/0.5/0.88, 0.6/0.65/0.7
- GAMMA — OFF, ON
- MIRROR — OFF, ON
- FLIP — OFF, ON
- AGC — LOW, MIDDLE, HIGH
- DEFOG — OFF, ON
- PRIVACY — OFF, ON
  - SET WINDOW — OFF, ON
    - WINDOW/ZONE
    - WINDOW USE — ON, OFF
    - H-POS — 0-16
    - V-POS
    - H-SIZE — 0-34
    - V-SIZE — 0-90
    - MODE — MANUAL, AUTO
    - LEVEL — LOW, MIDDLE, HIGH
    - ZONE NUM
    - ZONE DISP
    - H-POS
    - V-POS — 0-34
    - H-SIZE — 0-90
    - V-SIZE — 0-34
    - Y LEVEL — 0-90
    - CR LEVEL — 0-20
    - CB LEVEL
    - TRANS — 0-3

MOTION
- DET TONE — 0-4
- PERFECT FILL — OFF, ON
- SENSITIVITY — 0-15
- MOTION OSD — OFF, ON
- TEXT ALARM — OFF, ON
- SIGNAL OUT — ON
- OUTPUT — 50/60.30p, 720.60p, 720.50p
- FRAME RATE — 8bit / 10bit

SYSTEM
- COLOR BAR — OFF, ON
- LANGUAGE — ENG/CHN(S), JPN, KOR
- CAM TITLE — OFF, RIGHT UP, LEFT DOWN
- RESET
  - RS-ANALOG — CVBS, CVI, AHD
  - CAM ID — 0-255
  - BAUDRATE — 2400/4800/9600, 57600/115200
  - SET DONE
  - FULL — 0-32
  - COMP
  - BEER
  - Y GAIN — 0-32
  - CB GAIN — 0-255
  - CR GAIN — 0-255
  - POSITION — 0-255
  - BURST FREQ — 0-255
  - B&W — NOT USED
  - 728 E.X — NOT USED

EXIT
- SAVE
- CANCLE

Ikegami