INSTRUCTION MANUAL

MINITRAX DOME CAMERA
PTZ VANDAL RESISTANT
D&N DOME CAMERA

MANUAL LABEL : 50201270

Please read this manual thoroughly before use, and keep it handy for future reference.

148(+/-5)mm

105(+/-5)mm

BUYER BRAND TYPE

BRAND

MODEL No.

POWER RATING

ADDRESS

24mm

81mm

NOTES
1. MODEL: **HCV-850PNZ1S8** / ALL BRAND
2. MATERIAL: 모조지 100g/m², WHITE
   BIND : STAPLES-2
3. COLOR: BLACK
4. SIZE: 105(+/-5)mm x 148(+/-5)mm
5. LABEL: 50201270(81mm x 24mm)
6. ANY CHANGE OR ALTERNATION MUST BE
   APPROVED BY HITRON DESIGN TEAM.

50302171	ITEM	DESCRIPTION/MATERIAL		QTY
		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN MM.
- TOLERANCE
LABEL   +/- 3
MANUAL   +/- 5
GUIDE   +/- 5

	APPROVALS	DATE	HITRON
	N.C.PARK	11-20-M8	TITLE
MATERIAL 2	CHKED W.S.CHOI	11-20-M8	MANUAL INSTRUCTION
COLOR 3	DRAWN A.K.HAN	11-20-M8	SIZE A4 REV. D

SCALE DO NOT SCALE

협의

전자
우용교 책임
11-20-M8

MINITRAX DOME CAMERA
PTZ VANDAL RESISTANT
D&N DOME CAMERA

◼ LIMITATION OF LIABILITY

◾ WARNINGS AND CAUTIONS:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION:

```
                    CAUTION
              RISK OF ELECTRIC SHOCK
                    DO NOT OPEN

      CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
              DO NOT REMOVE COVER(OR BACK).
              NO USER-SERVICEABLE PARTS INSIDE.
      REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
```
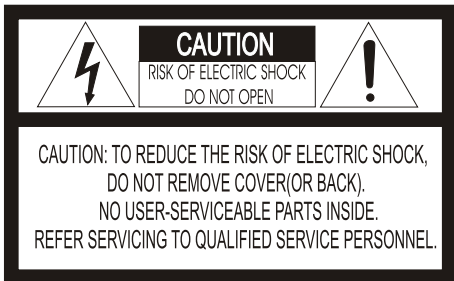
◾ EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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 product.

◾ PRECAUTIONS

Safety ----------------------------------

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further.

Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials(curtains, draperies) that may block the ventilation holes. may block the ventilation holes.

Height and vertical linearity controls located at the rear panel are for special adjustments by qualified personnel only.

Installation -------------------------------

Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust, mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

Cleaning ---------------------------------

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

Retain the original carton and packing materials for safe transport of this unit in the future.

■ FCC COMPLIANCE STATEMENT

INFORMATION TO THE USER : THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT.

THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

CAUTION : CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

■ CE COMPLIANCE STATEMENT

WARNING
THIS IS A CLASS A PRODUCT. IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE MEASURES.

▪ IMPORTANT SAFEGUARDS

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 dry cloth.
7. Do not block any 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 product 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 are provided for your safety. If 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 thy exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. 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.
14. 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.
15. Use Certified/Listed Class 2 power supply transformer only.

1 Introduction

1.1 Features

The PTZ Dome keyboard controller and the PTZ Dome camera make up the building blocks for any surveillance/security system. Using multiple keyboard controllers and multiple dome cameras, no place is too large for monitoring. Extensible and flexible architecture facilitates remote control functions for a variety of external switching devices such as multiplexers and DVRs.

- Auto focus 22X Optical Zoom (11X Digital Zoom)
- Day & Night (Auto / BW / Color / Global)
- Pan 360° Endless Rotation
- 60 Preset Positions
- 4 Tours consist of Preset, the Speed is selectable from 1 to 10
- 4 Auto Scans, the Speed is selectable from 1 to 10
- 8 Area Titles
- Home Function: camera automatically goes to preset, tour, auto scan after the controller has been idle for an amount of time
- 1 Alarm Input (OFF / NC / NO), 1 Alarm Output (OFF / NC / NO) and 2 Alarm states (momentary, time out)
- Programmable user preferences (preset, tour, auto scan, area title, alarm etc.)
- Up to 63 selectable camera addresses
- Built-in RS-485 receiver driver
- Clear bubble with black liner (shelter) for concealing the camera
- Optional tinted bubble, wall mount
- AC 24V or DC 12V
- Use Certified/Listed Class 2 power supply transformer only

1.2 Operation Requirements
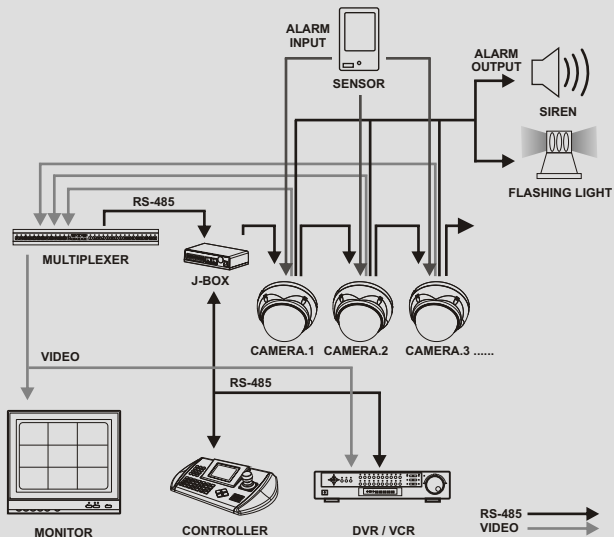
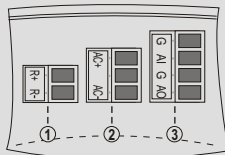

Typical System Configuration

2.1 Package Contents

- Dome camera 1
- Instruction manual (This document) 1
- Template sheet 1
- Accessory kit 1
  ① Mounting screws (PH 6 x 35.0)   (4)
  ② Plastic anchors .... (4)
  ③ O-Rings .... (4)
  ④ Torx wrench .... (1)
- Accessory connector 1
  ① 2PIN Terminal Block .... (1)
  ② 3PIN Terminal Block .... (1)
  ③ 4PIN Terminal Block .... (1)

Dome Camera **Manual**

Accessory connector

140.0

140.0
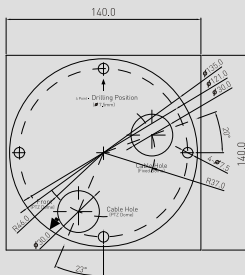
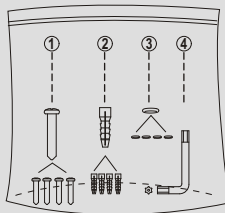**Template sheet**

Accessory kit

2.2 Base Installation

1. Make mounting holes and cable hole in the place(ceiling) to which this dome camera is installed using the supplied template sheet.

Warning: The total mass of the main unit is approx 2.9 lbs.(1.3kg).
Check whether the ceiling to which the Dome Camera is
installed is strong enough to hold the unit mass.
If not, the Dome Camera could fall, causing injury.

Template sheet

Plastic Anchors(4x)

Rubber Safety
O-Rings(4x)
Mounting Screws(4x)

Torx Screws(4x)
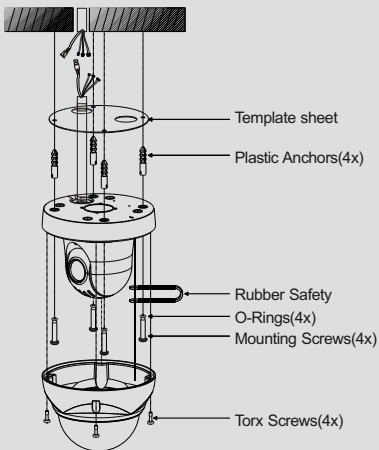
2. Extract each wire through the cable hole and connect the supplied power, RS-485 and alarm-in-out Terminal Block.
3. Please note that rubber safety has been adhered to bottom of Main PCB closely to prevent getting rubber safety contacted.
4. Unlock torx screws (4x) the dome cover and fix the dome base firmly with supplied mounting screws (4x), plastic anchors (4x), O-Rings (4x)
5. Lock the housing cover with torx screws (4x).

NOTE: The 4 O-Rings are the PRIMARY SEAL and must be fitted to prevent moisture ingress.

2.3 Basic Configuration PTZ Dome Camera System

CAUTION
**Do not connect the power cable until all other connections have been completed. If you complete the whole connection of cameras, then you have to cut the extra cable.**

VIDEO(BNC)

MONITOR

DVR / VCR

3PIN

RED
WHITE

POWER CONNECTION

Do Not use power sources other than that specified

2PIN

GREEN
BLUE

RS-485 CONNECTION

4PIN

BLACK
GRAY
YELLOW
WHT-BLK

SENSOR

SIREN, FLASHING LIGHT
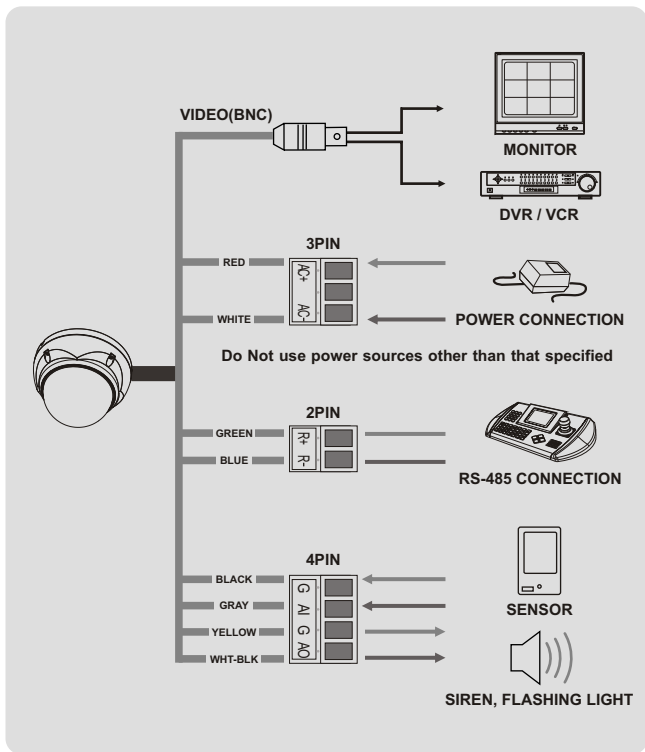
2.4 Setting Dome Camera Termination

The device which is connected at end of line, whether it be a dome camera or keyboard controller, must have the cable for communication terminated by setting the appropriate DIP switch. Without proper termination, there is potential for control signal errors. Total length of the cable for communication should not exceed 1.2km.

RS-485 Termination S/W	
Dip SW3	3
Terminated	ON
Not terminated	OFF

Dip Switch3

Termination Diagram
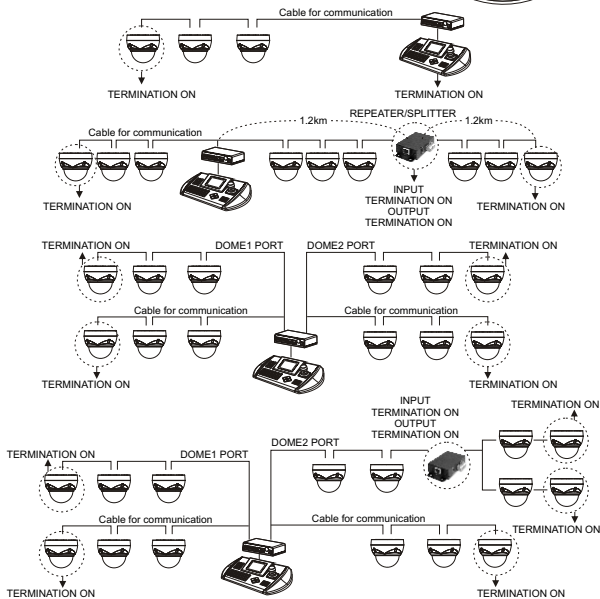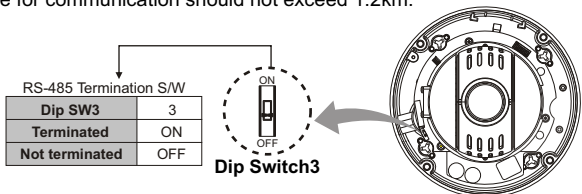
2.5 Setting the Protocol of Dome Camera

Dip Switch2

Dip Switch1

Dome ID Setting ⟶

Dome Camera Function ⟶

Dome Camera Protocol Function ⟶
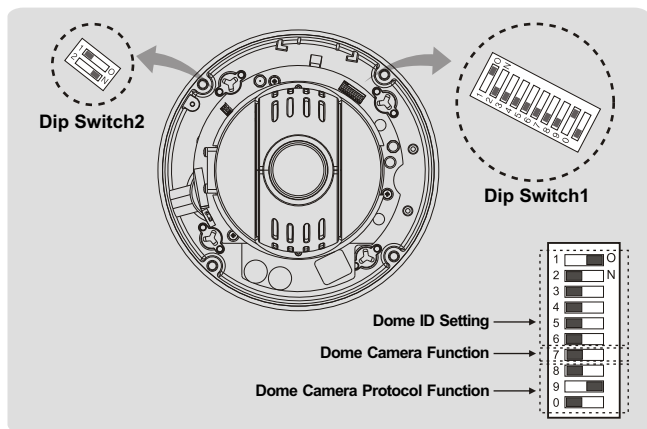
S/W-No.	ON	OFF	Function
7	NTSC	PAL	NTSC/PAL

Table 1 - Dome Camera Function Selection (Dip Switch1)

No. 8	No. 9	No. 10	Protocol
OFF	ON	OFF	Fastrax-ll
OFF	OFF	OFF	Pelco-D
ON	OFF	OFF	Pelco-P

Table 2 - Dome Camera Protocol Selection (Dip Switch1)

No. 1	No. 2	BPS
OFF	OFF	2400bps
ON	OFF	4800bps
OFF	ON	9600bps
ON	ON	19200bps

Table 3 - Dome Camera Baud Rate Setting (Dip Switch2)

2.6 Setting Address (ID) of Dome Camera

To prevent wrong operation and malfunction, each dome camera must have a unique address (ID).

The factory default setting is 1.

Refer to Table 1 ~ 4 for setting the dome camera address (ID) and protocol selection.

Table4 : ID SETTING

ID Address	SW1	SW2	SW3	SW4	SW5	SW6
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF
17	ON	OFF	OFF	OFF	ON	OFF
18	OFF	ON	OFF	OFF	ON	OFF
19	ON	ON	OFF	OFF	ON	OFF
20	OFF	OFF	ON	OFF	ON	OFF
21	ON	OFF	ON	OFF	ON	OFF
22	OFF	ON	OFF	OFF	ON	OFF
23	ON	ON	ON	OFF	ON	OFF
24	OFF	OFF	OFF	ON	ON	OFF
25	ON	OFF	OFF	ON	ON	OFF
26	OFF	ON	OFF	ON	ON	OFF

ID Address	SW1	SW2	SW3	SW4	SW5	SW6
27	ON	ON	OFF	ON	ON	OFF
28	OFF	OFF	ON	ON	ON	OFF
29	ON	OFF	ON	ON	ON	OFF
30	OFF	ON	ON	ON	ON	OFF
31	ON	ON	ON	ON	ON	OFF
32	OFF	OFF	OFF	OFF	OFF	ON
33	ON	OFF	OFF	OFF	OFF	ON
34	OFF	ON	OFF	OFF	OFF	ON
35	ON	ON	OFF	OFF	OFF	ON
36	OFF	OFF	ON	OFF	OFF	ON
37	ON	OFF	ON	OFF	OFF	ON
38	OFF	ON	ON	OFF	OFF	ON
39	ON	ON	ON	OFF	OFF	ON
40	OFF	OFF	OFF	ON	OFF	ON
41	ON	OFF	OFF	ON	OFF	ON
42	OFF	ON	OFF	ON	OFF	ON
43	ON	ON	OFF	ON	OFF	ON
44	OFF	OFF	ON	ON	OFF	ON
45	ON	OFF	ON	ON	OFF	ON
46	OFF	ON	ON	ON	OFF	ON
47	ON	ON	ON	ON	OFF	ON
48	OFF	OFF	OFF	OFF	ON	ON
49	ON	OFF	OFF	OFF	ON	ON
50	OFF	ON	OFF	OFF	ON	ON
51	ON	ON	OFF	OFF	ON	ON
52	OFF	OFF	ON	OFF	ON	ON
53	ON	OFF	ON	OFF	ON	ON
54	OFF	ON	ON	OFF	ON	ON
55	ON	ON	ON	OFF	ON	ON
56	OFF	OFF	OFF	ON	ON	ON
57	ON	OFF	OFF	ON	ON	ON
58	OFF	ON	OFF	ON	ON	ON
59	ON	ON	OFF	ON	ON	ON
60	OFF	OFF	ON	ON	ON	ON
61	ON	OFF	ON	ON	ON	ON
62	OFF	ON	ON	ON	ON	ON
63	ON	ON	ON	ON	ON	ON

For example :

ID Address	SW1	SW2	SW3	SW4	SW5	SW6
1	ON	OFF	OFF	OFF	OFF	OFF

ID Address	SW1	SW2	SW3	SW4	SW5	SW6
2	OFF	ON	OFF	OFF	OFF	OFF

-
-
-

ID Address	SW1	SW2	SW3	SW4	SW5	SW6
63	ON	ON	ON	ON	ON	ON

2.7 Connecting Wiring

2.7-1 Connecting to the RS-485
The dome camera can be controlled remotely by an external device or control system, such as a control keyboard, using RS-485 half-duplex.

2.7-2 Connecting Video out connector
Connect the video out(BNC) connector to the monitor or video input of the DVR.

2.7-3 Connecting Alarms
· AI (Alarm In)
  You can use external devices to trigger the dome camera to react to events.
  Mechanical or electrical switches can be wired to the AI (Alarm In) and G (Ground) connectors.
  See Chapter 3 - Program and Operation for configuring alarm input.

· G (Ground)

NOTE: All the connectors marked G or GND are common.

  Connect the ground side of the alarm input and/or alarm output to the G (Ground) connectors.

· AO (Alarm Out)
  The dome camera can activate external devices such as buzzers or lights.
  Connect the device to the AO (Alarm Out) and G (Ground) connectors.
  See Chapter 3 - Program and Operation for configuring alarm output.

2.7-4 Connecting the Power
Connect the power of AC 24V or DC 12V 1A to the dome camera.
When using a DC 12V adapter, connector the positive(+) pole to the 'AC+' position and the negative(-) pole to the 'AC-' position.
Use Certified / Listed Class 2 power supply transformer only.

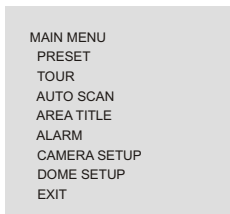# 3 Program and Operation

Notice

The symbols shown below mean some action of the joystick controller.

- ▲ / ▼ : move joystick up and down direction.
- ◀ / ▶ : move joystick left and right direction.
- ⊙ : twist joystick.
- **KEY** : push defined key.

3.1 Start up Screen

```
START UP...
PROTOCOL : FASTRAX-II

              DOME : 01
                    Vx.xx
```

3.2 Main Menu

```
MAIN MENU
  PRESET
  TOUR
  AUTO SCAN
  AREA TITLE
  ALARM
  CAMERA SETUP
  DOME SETUP
  EXIT
```

- ▲ / ▼ : move cursor up and down.
- ▶ : select.
- ◀ / **ESC** : exit current menu.

The **MAIN MENU** displays the available all functions of dome. You should press **MENU** key to display the **MAIN MENU**.

3.3 Preset Menu

```
PRESET MENU
 NUMBER: 01
 TITLE: ==========
0/1234567890    1/1234567890
    *       *           *
2/1234567890    3/1234567890

4/1234567890    5/1234567890

HOME POSITION: 07
EXIT
                        306.2 017.4
```

- ▲ / ▼ : move cursor up and down.
- ◀ / ▶ : move cursor left and right or select or change values.
-   ⦿ : change character at **TITLE:** or move dome camera to saved preset point at **NUMBER: xx.**
- ◀/ESC : exit current menu.

If you need to view specific places routinely, you should program presets. A preset is a programmed video scene with memorized pan, tilt and zoom settings. Once programmed, selecting the preset number in your Keyboard or DVR automatically calls up the preset. In addition, presets may be assigned to the Home Function or Home Position. The dome is capable of as many as 60 presets when using an external keyboard.

3.3-1 Set Presets at the MENU

1. Move to the **NUMBER: 01** and select the preset number by using joystick.
2. Press **IRIS OPEN** or **CTRL** button to move the position of the dome then the message **"CONTROL"** displays on the screen.
3. Move the dome to the desired position using joystick and set the zoom level using ⦿.
4. Press **IRIS CLOSE** or release **CTRL** button then the message of **"CONTROL"** disappears on the screen.
5. The '*' mark is appeared then the Preset is saving automatically.

To insert title, move cursor to **TITLE**: and set proper title by joystick. If you don't select the title of the Preset, the **PRESET**xx will be displayed. (xx : the recalled preset number)

You can select the **Home Position** from the saved presets.

3.3-2 Set ShortCut Preset

1. First of all move the dome to the desired position using joystick and set the zoom position using Ⓠ.
2. Press **Preset Number** you want to save and press **PGM** and **PRST** button in sequence.
   For example, if you want to save to number 23, press **2** + **3** + **PGM** + **PRST** button in sequence.

3.3-3 Recall Presets

Press **Preset Number** and press **PRST** button.
For example, if you want to recall the Preset 13, press **1** + **3** + **PRST** button in sequence.

3.3-4 Home Position

The Home Position is the one of the saved presets. If press **HOME** button, the PTZ will be go to the Home Position.

3.4 Tour Menu

```
TOUR MENU
 TOUR : 1
 TITLE: ==========
 DWELL TIME: 10 SEC
 SPEED: 07
 == == == == == == == ==
 == == == == == == == ==
 SAVE
 EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
  ⊙ : change character at **TITLE:** or change the saved preset
        number on the '==' mark.
◀/ESC : exit current menu.

3.4-1 Set Tours

1. Move cursor to **TOUR:** and select tour number by using joystick.
2. To insert the title of the Tour, move cursor to **TITLE:** and set proper title
   by using joystick. If title is not selected, **TOURxx** will be displayed.
   (xx : the recalled tour number)
3. Set Dwell time(5~99 seconds) by using joystick at **DWELL TIME**.
4. **SPEED** is selectable from 1(slow speed) to 10(fast speed).
5. Move cursor to '==' and select proper preset number by ⊙.
   Each point can be inserted progressively.
6. Move cursor to right at the **SAVE** menu to save this Tour.
7. Move cursor to right at the **EXIT** menu to escape this menu.

3.4-2 Delete Tour

1. Move cursor to **TOUR:** and select tour number to delete.
2. Press **HOME** button then the selected Tour will be deleted.

3.4-3 Recall Tour

Press **Tour Number** and press **TOUR** button. For example, if you want to
recall the Tour3, press **3** + **TOUR** button in sequence. When turning the
TOUR ELEMENT on at the **OSD DISPLAY MENU**, the preset number
consisting of the recalled tour will be displayed.

3.5 Auto Scan Menu

```
AUTO SCAN MENU
 SCAN: 1
 TITLE: ==========
 START POINT: 000.0 000.0
 END   POINT: 000.0 000.0
 SCAN DIR. : CW
 SPEED: 07
 SWAP: OFF
 SAVE
 EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
⊙ : change character at **TITLE**:.
◀/ESC : exit current menu.

3.5-1 Set Auto Scans

1. Move cursor to **SCAN**: and select scan number by using joystick.
2. To insert the title of the Auto Scan, move cursor to **TITLE**: and set proper title by using joystick. If title is not selected, **SCAN**xx will be displayed. (xx : the recalled scan number)
3. Move cursor to **START POINT**: and press IRIS OPEN or CTRL button to move the position of the dome then the message **"CONROL"** displays on the screen.
4. Move the dome to desired PAN starting point, Tilt point of Auto Scan range and Zoom position.
5. Press IRIS CLOSE or release CTRL button then the message of **"CONTROL"** disappears on the screen. It is saved automatically.
6. Move cursor to **END POINT**: Move the dome to desired PAN end point of Auto Scan range and set end position by pressing IRIS OPEN or CTRL button. When the setting is completed, press IRIS CLOSE or release CTRL button.
   (Note. At this point, only PAN position will be adjustable.)
7. **SCAN DIR**. means Auto Scan Direction. **CW** is Clock Wise and **CCW** is Counter Clock Wise.
8. **SPEED** is selectable from 1(slow speed) to 10(fast speed).

9. **SWAP** will change the PAN position between **START POINT** and **END POINT**.
10. Select **SAVE** to save this Auto Scan.
11. Select **EXIT** to escape this menu.

3.5-2 Set ShortCut Auto Scan1

You can adjustable the Auto Scan1's Pan Limit by using the ShortCut button.
1. First of all move the dome to the desired PAN & TILT starting point using Joystick.
2. Press $\boxed{6}$ + $\boxed{5}$ + $\boxed{\text{PGM}}$ + $\boxed{\text{PRST}}$ button in sequence. Then **"SAVING: PAN LEFT AND TILT"** is displayed and the message will be disappeared after a few seconds.
3. To adjust the PAN end point, move the dome to the desired position by using the Joystick.
4. Press $\boxed{6}$ + $\boxed{6}$ + $\boxed{\text{PGM}}$ + $\boxed{\text{PRST}}$ button in sequence. Then **"SAVING: PAN RIGHT"** is displayed and also the message will be disappeared after a few seconds.

3.5-3 Delete Auto Scan

1. Move cursor to **SCAN:** and select scan number to delete.
2. Press $\boxed{\text{HOME}}$ button then the selected Scan will be deleted.

3.5-4 Recall Auto Scan

Press $\boxed{\text{Auto Scan Number}}$ and press $\boxed{\text{SCAN}}$ button. For example, if you want to recall the Scan2, press $\boxed{2}$ + $\boxed{\text{SCAN}}$ button in sequence. If you don't select title, **SCANxx** will be displayed. (xx : the recalled scan number)

3.6 Area Title Menu

```
AREA TITLE MENU
 AREA: 1
 TITLE: AREA1======
 START POINT: 000.0
 END    POINT: 045.0
 SAVE
 EXIT
```

- ▲ / ▼ : move cursor up and down.
- ◀ / ▶ : move cursor left and right or select or change values.
- ⊙ : change character at **TITLE**:.
- ◀ / **ESC** : exit current menu.

3.6-1 Set Area Titles

Each area title has default value. There are 8 Area Titles that are dividing 360 degrees into 8 equal parts.

1. To modify to another value, move to **START POINT**: and press **IRIS OPEN** or **CTRL** button to move the position of the dome then the message "**CONTROL**" displays on the screen.
2. Move the dome to desired starting point of Area Title range and set start point.
3. Press **IRIS CLOSE** or release **CTRL** button then the message of "**CONTROL**" disappears on the screen.
4. The **END POINT** is the same as the **START POINT**. But the **END POINT** should be larger than the **START POINT**.
5. Select **SAVE** to save this Area Title.
6. Select **EXIT** to escape this menu.

3.6-2 Delete Area Titles

1. Move cursor to **AREA**: and select area number to delete.
2. Press **HOME** button then the selected Area will be deleted.

3.6-3 Display Area Titles

When turning the **AREA TITLE**: of the **OSD DISPLAY MENU** to ON and escape this menu, **AREA**x will be displayed at the screen.
(x : area title number)

3.7 Alarm Menu

```
ALARM MENU
  INPUT: OFF
  OUTPUT:
  OPTION:
  PRESET:
  HOLDING TIME:
  SAVE AND EXIT
  EXIT
```

- ▲ / ▼ : move cursor up and down.
- ◀ / ▶ : move cursor left and right or select or change values.
- ◀ /‾ESC‾ : exit current menu.

3.7-1 Set Alarm

・INPUT: NC / NO / OFF

You can select alarm input types here. **NC** means Normal Closed, **NO** means Normal Open. If you select input types as **OFF**, the alarm input is disregarded.

・OUTPUT: NC / NO / OFF

You can select alarm output types here. **NC** means Normal Closed, **NO** means Normal Open. If you select output types as **OFF**, the alarm output is disregarded.

・OPTION: TIME OUT / MOMENTARY
- **TIME OUT**: The alarm is automatically reset after the alarm duration time has completed.
- **MOMENTARY**: When alarm is triggered, the dome will maintain alarm activation until it is reset manually.

・PRESET: xx

The selected preset number is called when the alarm is activated. The camera remains at the preset position during alarm. After release alarm, dome camera returns to previous function.

・HOLDING TIME: 10~99 SEC

This is activated when the option is **TIME OUT** and selectable from 10 seconds to 99 seconds.

3.7-2 Release Alarm

If you want to release alarm, press ‾ALRM‾ button at any alarm option.

3.8 Camera Setup Menu

```
CAMERA SETUP MENU
 FOCUS CONTROL
 WB CONTROL
 AE CONTROL
 L/L CONTROL
 PICTURE
 NIGHT SHOT CONTROL
 INITIALIZE CAMERA
 EXIT
```

   ▲ / ▼ : move cursor up and down.
      ▶ : select.
   ◀ / ESC : exit current menu.

· **FOCUS CONTROL**

  Controls the focus mode and digital zoom.
· **WB CONTROL**

  Controls the white balance mode.
· **AE CONTROL**

  Controls the auto exposure options.
· **L/L CONTROL**

  Controls access between changing line lock and internal mode.
· **PICTURE**

  Controls the sharpness, mirror, nega/posi, DNR, PIP setting.
· **NIGHT SHOT CONTROL**
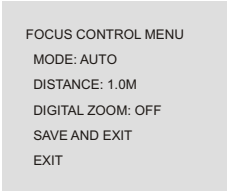
  Controls the IR cutoff filter.
· **INITIALIZE CAMERA**

  Resets to the default settings for the camera setup menu only.

3.8-1 Focus Control Menu

```
FOCUS CONTROL MENU
 MODE: AUTO
 DISTANCE: 1.0M
 DIGITAL ZOOM: OFF
 SAVE AND EXIT
 EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
◀ / ESC : exit current menu.

· **MODE: AUTO / MANUAL**
 You can select focussing mode, auto or manual.
· **DISTANCE: 0.1 / 1.0 / 1.5 / 2.5 / 6.0 M**
 Camera doesn't focus nearer than this range.
· **DIGITAL ZOOM: ON / OFF**
 When this is set to OFF, camera zoom uses only optical zoom mode.

3.8-2 WB Control Menu

```
WB CONTROL MENU
  MODE: AWB
  RGAIN:
  BGAIN:
  SAVE AND EXIT
  EXIT
```

- ▲ / ▼ : move cursor up and down.
- ◄ / ► : move cursor left and right or select or change values.
- ◄ / ESC : exit current menu.

· MODE: AWB / INDOOR / OUTDOOR / MANUAL / WAWB
  - **AWB** : Auto White Balance mode.
  - **INDOOR**: Indoor White Balance mode.
  - **OUTDOOR**: Outdoor White Balance mode.
  - **MANUAL**: Manual mode. You can adjust R and B Gain manually.
  - **WAWB**: Wide Range Auto White Balance mode.
· R-GAIN: 0 ~ 255
  You can adjust the red color gain only in the manual mode.
· B-GAIN: 0 ~255
  You can adjust the blue color gain only in the manual mode.

3.8-3 AE Control Menu

```
AE CONTROL MENU
  MODE: AUTO
  SHOT: NORMAL
  SHUTTER:
  IRIS:
  GAIN:
  BRIGHT: 30
  BLC MODE: OFF
  BLC LEVEL: – –
  SAVE AND EXIT
  EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
◀ / ESC : exit current menu.

• **MODE: AUTO / SHUTTER PRI / IRIS PRI / MANUAL / FLICKERLESS**
  - **AUTO**: means all functions are activated automatically.
  - **SHUTTER PRI**(ority): means that you can set only shutter value and others are controlled automatically.
  - **IRIS PRI**(ority): You can set only iris value and others are automatic in mode.
  - **MANUAL**: The Shutter, Iris and Gain are adjustable in this mode.
  - **FLICKERLESS**: This function is used to removing flicker when the format of camera signal does not coincide with power source frequency being used.
• **SHOT: NORMAL / LOW-SHUTTER / WDR / DIS**
  - **Low-Shutter** means Low Shutter Speed Mode.
  - **WDR** means Wide Dynamic Range
  - **DIS** means Digital Image Stabilization.
• **SHUTTER: X60 / X32 / X16 / X8 / ... / 2000 / 4000 / 10000**
  You can set shutter speed in this menu.
• **IRIS: F1.6 / F2 / F2.8 / F4 / F5.6 / F8 / F11 / F16 / F22 / F32 / CLOSE**
  You can control lens's F number in this menu.
• **GAIN: 0 ~ 30 DB**
  The value is changeable from 0 to 30.

- **BRIGHT: 0 ~ 90**
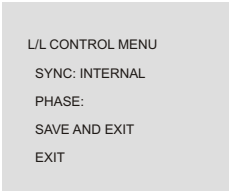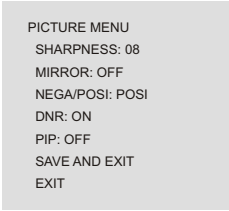 The brightness value is changeable from 0 to 90.
- **BLC MODE: ON / OFF**
  The Back Light Compensation is active when **ON** is set.
- **BLC LEVEL: 0 ~ 90**
  The BLC Level is selectable from 0 to 90.

3.8-4 L/L Control Menu

```
L/L CONTROL MENU
 SYNC: INTERNAL
 PHASE:
 SAVE AND EXIT
 EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
◀ / ESC : exit current menu.

・**MODE: INTERNAL / LINE LOCK**
 - **INTERNAL**: Synchronizes camera to an internal crystal. This choice is
                recommended if there is noise on the power line.
 - **LINE LOCK**: Synchronizes camera to AC power. This choice eliminates
                picture roll in multi-camera systems.
・**PHASE: PAL(0 ~ 620), NTSC(0 ~ 519)**
 Optimizes the line lock mode to eliminate picture roll in multiphase power
 application.

3.8-5 Picture Menu

```
PICTURE MENU
 SHARPNESS: 08
 MIRROR: OFF
 NEGA/POSI: POSI
 DNR: ON
 PIP: OFF
 SAVE AND EXIT
 EXIT
```

   ▲ / ▼ : move cursor up and down.
   ◀ / ▶ : move cursor left and right or select or change values.
   ◀ / ESC : exit current menu.

・**SHARPNESS: 0 ~ 15**
  The Sharpness can be controlled from 0 to 15 and the default value is 8.
・**MIRROR: ON / OFF**
  Video image can be reversed along vertical line.
・**NEGA/POSI: NEGA / POSI**
  You can see the **NEGA**tive screen or **POSI**tive screen.
・**DNR: ON / OFF**
  The **DNR** means Digital Noise Reduction.
・**PIP: ON / OFF**
  The **PIP** means Picture In Picture. If ON state is selected, the small
  screen will be appeared at the lower right corner.

3.8-6 Night Shot Control Menu

```
NIGHT SHOT CONTROL MENU

D/N MODE: AUTO

D/N LEVEL: HIGH

DELAY: 10 SEC

SAVE AND EXIT

EXIT
```

▲ / ▼ : move cursor up and down.

◀ / ▶ : move cursor left and right or select or change values.

◀ / ESC : exit current menu.

・**D/N MODE: AUTO / BW / COLOR / GLOBAL**

- **AUTO**: The camera automatically engages the switch from color to b/w depending on the ambient light, allowing the camera to be effective in day/night environments.

- **GLOBAL**: If you press 888 + ENTR(GLBL) in a state of global setting, every dome will change BW state. And if you press 999 + ENTR(GLBL) in a state of global setting, every dome will change COLOR state. At this state, the Dome ID doesn't matter.

・**D/N LEVEL: HIGH / MID / LOW**

Adjust the AGC Gain when the **BW** mode turns into the **COLOR** mode. This is effective only in case of selecting the **AUTO** mode.

・**DELAY: 0 / 10 / 15 / 20 SEC**

Adjust the working time of the filter when D/N operated. This is effective only in case of selecting the **AUTO** mode.
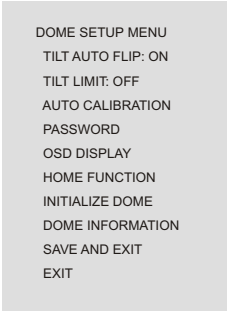
3.8-7 Initialize Camera

If you run this menu, camera's all setting options are initialized as default setting.

```
CAMERA WILL BE INITIALIZED!!
ARE YOU SURE?
  NO
  YES
```

3.9 Dome Setup Menu

```
DOME SETUP MENU
  TILT AUTO FLIP: ON
  TILT LIMIT: OFF
  AUTO CALIBRATION
  PASSWORD
  OSD DISPLAY
  HOME FUNCTION
  INITIALIZE DOME
  DOME INFORMATION
  SAVE AND EXIT
  EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
◀ / ESC : exit current menu.

3.9-1 Tilt Auto Flip: ON / OFF

Allows the dome camera to automatically turn 180 degrees when the camera tilts to its lowest position.

When the camera reaches the floor 90 degree tilt down, it will stop. Release the joystick handle instantly and then pull down to run the flip function. The tracking speed will be the same as previous.
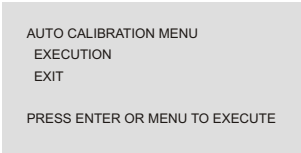
3.9-2 Tilt Limit: ON / OFF

OFF : The tilt range of the camera is 0 ~ 90 degrees.
ON : The tilt range of the camera is 10 ~ 90 degrees.

3.9 Dome Setup Menu, continued

3.9-3 Auto Calibration Menu

```
AUTO CALIBRATION MENU
 EXECUTION
 EXIT

PRESS ENTER OR MENU TO EXECUTE
```
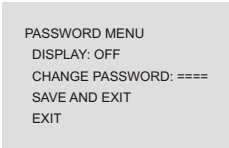
▲ / ▼ : move cursor up and down.
   ▶ : select.
◀ / **ESC** : exit current menu.

If there is an error on angle of the Camera, just press **ENTR** or **MENU** key at the **EXECUTION** of the **AUTO CALIBRATION MENU**. The motor of the Pan / Tilt will adjust its angle automatically.

3.9 Dome Setup Menu, continued

3.9-4 Password Menu

```
PASSWORD MENU
 DISPLAY: OFF
 CHANGE PASSWORD: ====
 SAVE AND EXIT
 EXIT
```
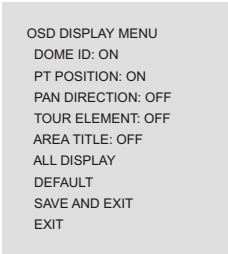
▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
  ⊙ : change character at **CHANGE PASSWORD:**
◀ / ESC : exit current menu.

To allow only authorized personnel to change camera settings, turn the
DISPLAY ON and then select **SAVE AND EXIT**. The default password is
'**1234**' but if need to change this password, select password at the **CHANGE
PASSWORD** by using Joystick and then select **SAVE AND EXIT** to save this
changed data. Once change this password to the other number, '1234' is not
work any more.
If **DISPLAY** menu is **ON**, press MENU button at the outside of the menu, the
password menu will be displayed instead of the Main Menu. Select the proper
number at this menu by using Joystick. Move Joystick to the right at the 4th
number and then the Main Menu will be displayed.

3.9-5 OSD Display Menu

```
OSD DISPLAY MENU
 DOME ID: ON
 PT POSITION: ON
 PAN DIRECTION: OFF
 TOUR ELEMENT: OFF
 AREA TITLE: OFF
 ALL DISPLAY
 DEFAULT
 SAVE AND EXIT
 EXIT
```

- ▲ / ▼ : move cursor up and down.
- ◀ / ▶ : move cursor left and right or select or change values.
- ◀ / ESC : exit current menu.

You can see only video or some character with video. Each element is able to handle in several. The **PT POSITION** means Pan / Tilt Position. If the **PAN DIRECTION** is **ON**, 'N' is displayed at the 0 degree. If the **TOUR ELEMENT** is **ON**, the preset number consists of the recalled tour is displayed at the lower left corner. Selecting **ALL DISPLAY** makes all menu ON state. **DEFAULT** makes only **DOME ID** & **PT POSITION** to **ON** and the rest will be **OFF**.

3.9-6 Home Function Menu

```
HOME FUNCTION MENU
 MODE: OFF
 FUNCTION TYPE:
 FUNCTION NUMBER:
 DWELL TIME:
 SAVE AND EXIT
 EXIT
```

▲ / ▼ : move cursor up and down.
◀ / ▶ : move cursor left and right or select or change values.
◀ / ESC : exit current menu.

· **MODE: ON / OFF**
· **FUNCTION TYPE: PRESET / TOUR / AUTO SCAN**
· **FUNTION NUMBER: xx**
· **DWELL TIME: 10 ~ 600 SEC**

The Home Function can be set so that the camera automatically goes to a preset, a tour or auto scan after the Keyboard control has been idle for some amount of time.
For example, the Mode is **ON**, Auto Scan2 is selected, and the Dwell time is 20 seconds. If the Keyboard control is idle for 20 seconds, the camera goes to Auto Scan2 until stop.

3.9 Dome Setup Menu, continued

3.9-7 Initialize Dome

```
INITIALIZE DOME MENU
 PRESET DATA
 TOUR DATA
 AUTO SCAN DATA
 AREA TITLE DATA
 DOME SETUP DATA
 ALL DOME DATA
 EXIT

PRESS ENTER OR MENU TO EXECUTE
```

▲ / ▼ : move cursor up and down.
   ▶ : select.
◀ / **ESC** : exit current menu.

You can initialize all data separately. Pressing **ENTR** or **MENU** key at the **ALL DOME DATA** will initialize all dome data (preset, tour, auto scan, area title, dome setup) except camera setting.

3.9-8 Dome Information

```
DOME INFORMATION
 VERSION: Vx.xx
 EXIT
```

This menu just displays dome's software version information.

4 Troubleshooting and Maintenance

4.1 Troubleshooting

If you experience difficulties operating your camera, refer to the following. If the guidelines do not enable you to solve the problem, contact an authorized technician.

PROBLEM	CHECK
Nothing appears on the screen.	• Check all cable connections and the power of the interface unit.
The image on the screen is dim.	• Is the lens dirty? If so, clean the lens with a soft, clean cloth.
The camera is not working properly and the surface of the camera case is hot.	• Is the camera connected to the proper power?
The contrast on the screen is too weak.	• Adjust the contrast feature of the monitor. • Is the camera exposed to strong light? If so, change the camera position.
The image on the screen is flickers.	• Does the camera face directly into the sun or fluorescent lighting? If so, reposition camera. Check for flickerless setting of the camera.

4.2 Preventive Maintenance

Following the preventive maintenance schedule allows detection and correction of minor faults before they become serious and cause equipment failure.

Periodically perform the following:

1. Inspect all connecting cables for deterioration or other damage.

2. Wipe housing with a clean damp cloth.
   Clean P.C(LEXAN) dome/windows with an approved P.C(LEXAN) Cleaner.*

3. Verify that all the mounting hardware is secure.

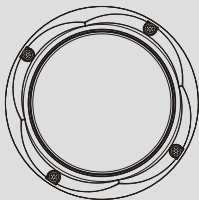* (Novus LEXAN cleaner-plastic polish)

5 Specifications

5.1 General Specifications

MODEL		NTSC	PAL
POWER	Power Source	DC12V / AC24V ±10%	
	Power Consumption	12.0 Watts	
GENERAL	Image Sensor	1/4" SONY Super HAD CCD	
	Total Pixels	811(H) x 508(V)	795(H) × 596(V)
	Scanning System	2:1 interlace	
	Scanning Frequency	15.734KHz(H), 59.94Hz(V)	15.625KHz(H), 50Hz(V)
	Sync. System	Internal / Line Lock	
	Resolution	480 TV lines(COLOR), 530 TV lines(B/W)	
	Min. illumination	0.5 lux (Color), 0.05 lux (B/W), 0.001 lux (Low-shutter)	
	ideo Output	1.0 Vp-p (75 ohm, composite)	
	S/N Ratio	more than 50dB (AGC off)	
	Camera Control	RS485 (FastraxII, Pelco-D, Pelco-P)	
	FUNCTION CAMERA Focus Mode	Auto / Manual	
	Distance	0.1M / 1.0M / 1.5M / 2.5M / 6.0M	
	Digital Zoom	Off / On	
	White Balance	AWB / Indoor / Outdoor / Manual / WAWB	
	Auto Exposure	Auto / Shutter PRI / Iris PRI / Manual / Flickerless	
	Shot	Normal / DIS / WDR / Low Shutter	
	Shutter Speed	1/60 ~ 1/10,000 sec. [x2 ~ x60 (Low Shutter)]	1/50 ~ 1/10,000 sec. [x2 ~ x60 (Low Shutter)]
	Iris Control	Auto / Manual (F1.6 ~ F32, Close)	
	Gain Control	Auto / Manual (0 ~ 30dB)	
	BLC	Off / On	
	Brightness	0 ~ 90 steps	
	Sharpness	0 ~ 15 steps	
	Picture	Mirror, Nega/Posi, DNR, PIP	
	D&N Control	Auto / BW / COLOR / GLOBAL [Mechanical IR cut filter]	

5.1 General Specifications, continued

MODEL			NTSC	PAL
GENERAL	F U C N T I O N D O M E	Panning Angle	360°continuous rotation	
		Panning Speed	Manual : Max. 150°/sec.	
			Auto : Max. 375°/sec.	
		Tilting Angle	0°~ 90° [Auto Flip : Off / On]	
		Tilting Speed	Manual : Max. 150°/sec.	
			Auto : Max. 375°/sec.	
		Preset	60 Positions	
		Tour	Courses (1~4 x 16 Presets)	
		Auto Scan	Courses (4)	
		Area Title	Courses (8)	
		Alarm Input	Off / NC / NO (1 Channel)	
		Alarm Output	Off / NC / NO (1 Channel)	
		Alarm State	Time out / Momentary	
		485-Termination	Off / On	
		Tilt Limit	Off (0°~ 90°) / On (10°~ 90°)	
		Auto Calibration	Execution	
		Password Protection	Off / On (OSD setup protection)	
		Home Function	Off / On (Preset, Tour, Auto Scan)	
		Dome ID	63 ID (DIP switch)	
		Baud Rate	2400 / 4800 / 9600 / 19200 bps (DIP switch)	
	L E N S	Zoom Ratio	Optical x22, Digital x11 Zoom (Video AF)	
		Focus Length	f = 3.9 mm ~ 85.8 mm	
		Aperture Ratio	F1.6 (wide) ~ F3.7 (tele)	
CONNECTOR & ETC.		Power Input	3-pin terminal block	
		Video Output	BNC connector	
		RS485 Control	2-pin terminal block	
		Alarm Input/Output	4-pin terminal block	
		Operating Temperature	-10℃ ~ +50℃	
		Operating Humidity	0 ~ 96% (non-condencing)	
		Storage Temperature	-20℃ ~ +60℃	
		External Dimension	Ø154.0 x 130 (H) mm (Bubble diameter Ø110.0)	
		Weight	1300g	
		Housing	Weatherproof IP66	

5.2 Dimensions

TOP VIEW

Ø 110

130

51

25

Ø 150

Ø 154

FRONT VIEW

Origin direction(0°)

86

86

4X Ø 7
Moungting Holes
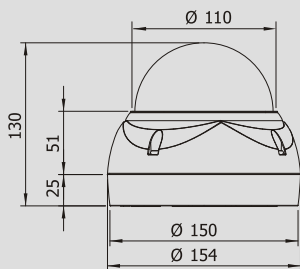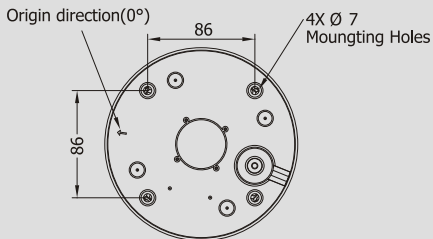
BOTTOM VIEW

APPENDIX. PELCO PROTOCOL FUNCTION LIST

FUNCTION	KEY	Preset No.	How To.	EXAMPLE
PRESET	PRESET	1 - 60	No.+PRESET	1+PRESET
PRESET shortcut saving	NOTE1	1- 60	NOTE1	NOTE1
RUN PAN ZERO	PRESET	34	No.+PRESET	34+PRESET
SCAN	PRESET	61 - 64	No.+PRESET	61+PRESET
SCAN LEFT LIMIT	NOTE1	65	NOTE1	NOTE1
SCAN RIGHT LIMIT	NOTE1	66	NOTE1	NOTE1
TOUR	PRESET	71 - 74	No.+PRESET	71+PRESET
ALARM RELEASE	PRESET	90	No.+PRESET	90+PRESET
RUN HOME	PRESET	91	No.+PRESET	91+PRESET
DOME MENU	PRESET	95	No.+PRESET	95+PRESET
ESC KEY	PRESET	96	No.+PRESET	96+PRESET
CTRL_KEY(In Menu)	PRESET	95	No.+PRESET	95+PRESET
VERSION DISPLAY	PRESET	99	No.+PRESET	99+PRESET

NOTE1

To program, position camera, enter desired preset number(1-60), and hold
down **PRESET** for two seconds.

In Cm6700 and Cm6800 modes, a label appears on the monitor. Select
'SET' and press **ACK** or tap the joystick to the right and release.

**PTZ Vandal Resistant
D&N Dome Camera**