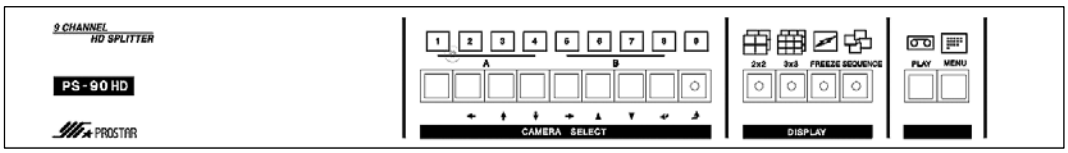
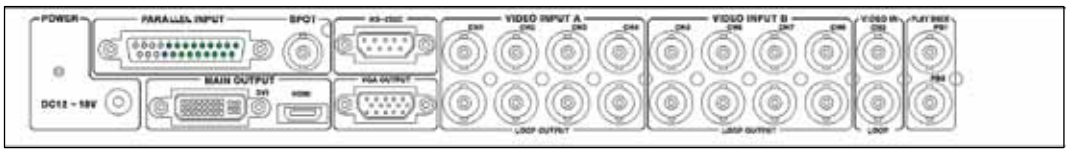
User's Manual

PS-90XD

9 Channel HD Output Splitter
1920 x 1080





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Index

1. MAIN FEATURES AND FUNCTIONS ---------- 3
2. PS-90XD SPECIFICATION ---------- 4
2-1. REAR PANNEL SPEC
2-2. FRONT PANNEL SPEC
2-3. ELECTRICAL AND PHYSICAL CHARACTERISTICS
2-4. CATEGORIZED SPECS
3. OUTER APPEARANCE AND FEATURES ---------- 5
3-1. PS-90XD FRONT
3-2. PS-90XD REAR
4. MAIN FEATURES DESCIPTION---------- 6
4-1. MONITOR SCREEN
4-2. MOTION DETECTION
4-3. VIDEO LOSS ARARM
4-4. Serial REMOTE CONTROL
4-5. Paralell REMOTE CONTROL
5. MENU SETUP ---------- 7
5-1. TIME/DATE SETUP
5-2. CAMERA NAME SETUP
5-3. SEQUENTIAL DISPLAY SETUP
5-4. DISPLAY SETUP
5-5. MOTION DETECTION SETUP
5-6. OTHERS
6. INSTALLATION ---------- 10
6-1. VIDEO SIGNAL CONNECTION
6-2. VIDEO SIGNAL INPUT/OUTPUT PROTECTION
6-3. RS-232C REMOTE CONTROL PORT
6-4. RS-232C Remote Control Code
7. INITIAL MODE SETUP ---------- 11

1. Main features and functions

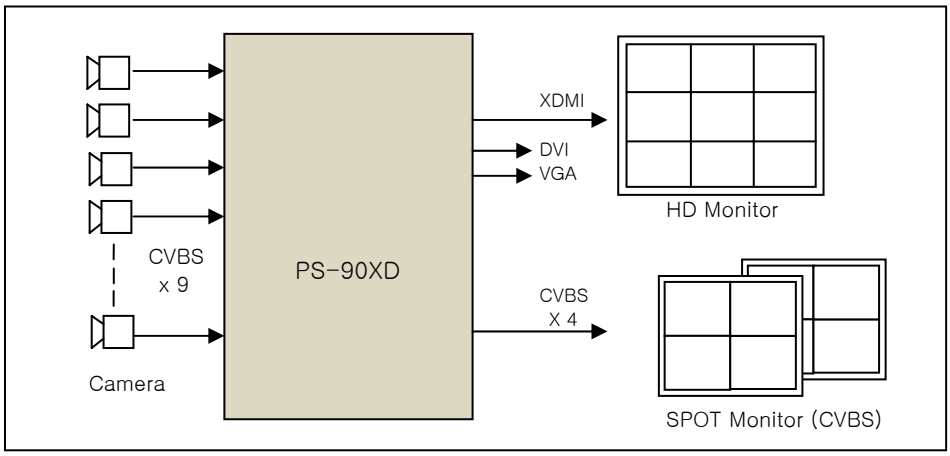
PS-90XD is a high-quality 9ch screen splitter manufactured with Prostar Co., Ltd.'s long experience and know-how.

All-in-one board design and high-density digital components guarantee excellent display quality.

PS-90XD supports such functions as alarm, buzzer, remote control, motion detection, etc.

Main features

- 9 channels split displayed on a Ful HD monitor(1920x1080)
- NTSC 720x480 / PAL 720x576
- NTSC / PAL
- Auto Sequence and Video Loss Auto Skip
- Video Motion Detection
- OSD - On Screen Display and Real Time Clock
- 1:1(FULL)Screen Call up
- Freeze
- Variable Monitor Output: HDMI, DVI, VGA
- Spot Monitor Output
- Remote Control Port (RS-232C)
- 19" Rack Mount type
- Low Poewer Consumption (Less then 6 W)



Splitter Diagram

2. PS-90XD Specigication

2-1. PS-90XD Rear Pannel

Name	갯수	Type	Signal	Description
Camera Input	9	BNC	CVBS	1Vpp @75 Ohm Load, CH1~CH9
Loop Output	9	BNC	CVBS	Auto Switch type, CH1~CH9
Play Back Input	2	BNC	CVBS	1Vpp @75 Ohm Load, PB1,PB2
Main Monitor Output	1	XDMI	XDMI	Digital Signal
	1	DVI	DVI	Digital Signal
Secondry Monotor Outpu	1	DSUB-15	VGA	Analog VGA Signal
Spot Monitor	1	BNC	CVBS	1Vpp @75 Ohm Load, only Quad Split
Remote Control Serial	1	DSUB-9	RS-232C	Prostar Protocol
Power	1	DC Jack	DC12~24V	DC12~24V Power Input
Ground	1	Bolt	3Px7mm	Ground Terminal

2-2. Front pannel

Name	Button	No.	Description
Camera	1,2,3,4,~9	9	1~9 FULL Screen / Cutsor Move
Display	4 SPLIT	1	4 Split Mode
	9 SPLIT	1	9 Split Mode or 6 Split Mode
	FREEZE	1	All Channel Freeze
	SEQUENCE	1	Sequential Display
External Input	PLAY	1	Select PB(Play back) Input
MENU	MENU	1	Menu Mode / Exit from Menu

2-3. Electrical and Physical size and characteristics

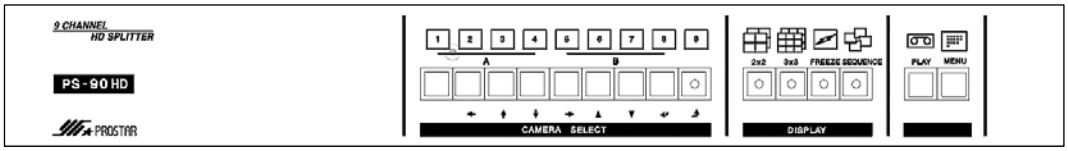
Name	Description
Input Resolution	NTSC - 720x480 60field, 30frame/Sec PAL - 720x576 50field, 25frame/Sec
Display Output Resolution	XDMI, DVI - 1920x1080 CVBS - 720x480 60field, 30frame/Sec
Size	W 300mm x D 200(+10)mm x H 44mm
Weight	2Kg
Power	DC12V / 0.48A / Less then 6W
Operation Temperature/ Humedity	-10 °C ~ +50 °C / 20~85 % RH

2-3. Categorized Specs

Name	Values	Description
Time/date	Asia-Euro-US, Disp. ON/OFF	Three display modes, 24-hour display (On/Off)
Camera Title	12 Character, Disp. ON/OFF	OSD type diplay (English,Number,Special Character) On/Off
Switching Time in Sequence	Off-59Sec	Sequential channel switching time (split mode included, and video loss channel excluded)
Split Screen mode	4 Type	FULL, 4,9 or 6
Motion Detection	ON/OFF	Motion detection and motion sensitivity setup according to the program-set areas. (ON/Off)

3. Outer Appearance and Features

3-1. PS-90XD Front Pannel



① ② ③ ④ ⑤

① Model / Logo

② Full Screen Select button Ch1～9

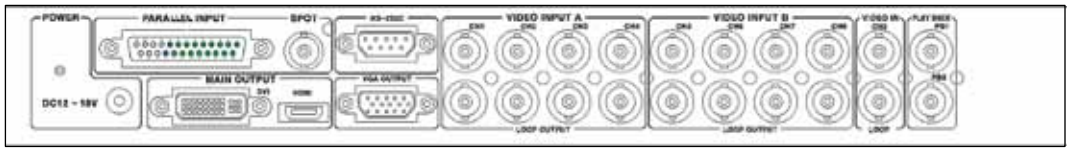
③ 4, 9 Split (6 Split) Selection Button and FREEZE / SEQUENCE Button

④ Play-Back from Rear BNC PB1～2

⑤ Menu Mode

3-2. PS-90XD Rear Pannel

① ② ③ ④ ⑤ ⑥ ⑦ ⑧



⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

① Earth Terminal

② Paralell Remote control

③ SPOT Output

④ RS-232C Terminal

⑤ Video Input (CH. 1-4)

⑥ Video Input (CH. 5-8)

⑦ Video Input (CH. 9)

⑧ Play-Back Input (PB1)

⑨ Power Input DC12V～24V

⑧ Monitor Output DVI

⑨ Monitor Output HDMI

⑩ Monitor Output VGA

⑪ LOOP OUT (CH.1-4)

⑫ LOOP OUT (CH.5-8)

⑬ LOOP OUT (CH.9)

⑭ Play-Back Input (PB1,2)

4. Main features Decription

4-1. Monitor Output

1). Main Monitor Output : DVI and HDMI is the only one to use.

2). The main output and VGA output, the same split-screen output.

3). SPOT output will operate as separate from the main output. Only Quad Split Screen is provided.

4-2. Video Motion Detaction

You can activate the alarm when there's a motion within the set area and the letter "M" appears on the screen with the beep.

4-3. Video Loss Alarm

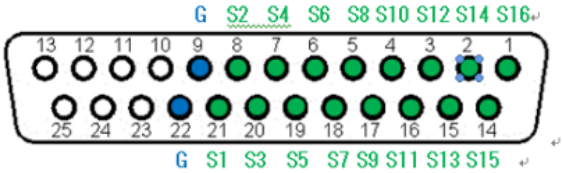
In case of a video loss because of a possible camera malfunction, the letter "L" or appears on the screen with the beep.

4-4. Serial Remote Control

RS-232C port by using a computer or other device that can be controlled using the specified protocol.

4-5. Paralell Remote Control

You can use this port to control other devices' contacts or switches as shown in the diagram below.
The operation differs according to the state of S15.



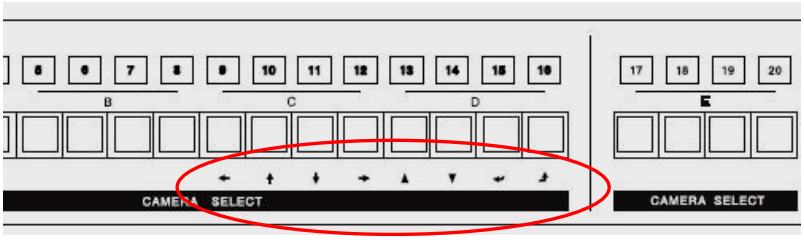
Operation Table

Items	Operation	
Short S1~S9 to Gnd	Full screen corresponding to contact point	
Short S1~S9 to Gnd (Multiple points)	S15-Gnd Open	Full Screen corresponding to final contact point
	S15-Gnd Short	Multiple channels switch sequentially full screen. Sequential conversion interval: menu setting 5-3-1
S11- Gnd Short	Sequential full-screen switching - Same operation as the front SEQ button.	
S12- Gnd Short	Switch to Quad Split A screen. (CH1,2,3,4) - Same operation as front 4 Split button	
S13- Gnd Short	Switch to Quad Split A screen. (CH5,6,7,8) - Same operation as front 4 Split button	
S14- Gnd Short	Switch to 3 x 3 Split screen. - Same operation as front 4 Split button	
Ofen all	No response.	

5. Menu Setup

You push **MENU** Button to enter the Menu mode. The values set in Menu remain unchanged even after power-off.

You can move cursors to set values with the keys as below:



Button	Button Function
⇦ ⇧ ⇩ ⇨	Move cursor
▲▼	Incriease or Decrease the Value
⏎	Enter Key (confirmation) / Enter Submenu.
⎋	Exit / Enter Uppermenu.

- MAIN MENU-

1. TIME/DATE
2. CAMERA
3. AUTO SEQUENCE
4. DISPLAY
5. MOTION DETECTION
6. MISCELLANEOUS

You select any menus with the cursors (⇧ ⇩) and enter (⏎) to have sub menus.

5-1. Time/Date Setup

- TIME/DATE -

1. TIME : 12:25:30(HH:MM:SS)
2. DATE: 2001-01-09(YY-MM-DD)
3. TIME/DATE DISPLAY : ON
4. DATE FORMAT : ASIA
5. TIME CORRECT: DAY+00SEC
6. TIME/ DATE OSD SIZE : 1.5X
7. TIME/DATE OSD LOCATION :B

1. **TIME:** Time Setup.
2. **DATE**: Date Setup.
3. **TIME/ DATE DISPLAY**: You can set the time Time or Display on or off.
4. **DATE FORMAT:** You can choose any one of three Date formats (ASIA, US, EURO).
   1) ASIA: yyyy – mm – dd
   2) USA : mm – dd – yyyy
   3) EURO: dd – mm – yyyy
5. **TIME CORRECT:** You can set time correction values(seconds) to maintain the most correct time. The set values will be added to or subtracted from the current time every day or month.
6. **TIME/DATE OSD SIZE** : The size of the letter is x1, x1.5, x2
7. **TIME/DATE OSD LOCATION** : You can change the date time display position to one of A, B, or C

5-2. Camera Name Setup

- CAMERA -

1. CH01_NAME: CAM01
2. CH01_NAME: CAM02
3. CH01_NAME: CAM03
4. CH01_NAME: CAM04
5. CH01_NAME: CAM05
6. CH01_NAME: CAM06
7. CH01_NAME: CAM07
8. CH01_NAME: CAM08
9. CH01_NAME: CAM09

10. DISPLAY CH_NAME: ON

1. **1~:** To change the camera name, you select any channel using cursors and push the enter button ↵. Now you can choose characters for the channel you have selected. You move cursors ⇦,⇨ to place the cursor on the character you'd like to choose, and then you push the enter button ▲,▼. You repeat the same process until you finish inputting the whole words.
2. **DISPLAY CH_NAME**: If you choose **OFF** the name does not appear on the screen.

5-3. Sequencial Display Setup

- AUTO SEQUENCE -

1. FULL : 03SEC
2. 4SPLIT : 03SEC
3. LOSS AUTO SKIP: ON

1. **FULL:** You set the switching time of channels for the Sequence mode. If a camera is set in off mode, the corresponding channel does not appear in the Sequence mode.
2. **4SPLIT:** You can include 4SPLIT mode in the Sequence by setting time values for it.
5. **LOSS AUTO SKIP** : Loss Auto Skip: If it's ON, video loss channels do not appear in the Sequence. If it's OFF, even the video loss channels appear in the Sequence.

5-4. Display Setup

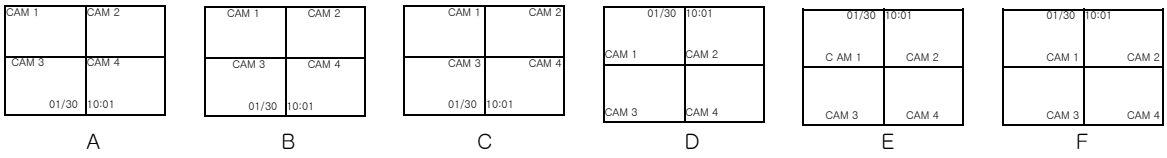
- DISPLAY -

1. RESOLUTION: 1920X1080
2. OSD DISPLAY: ON
3. OSD SIZE : AUTO
4. OSD POSITION : A
5. 9 SPLIT MODE : 9 SPLIT
6. CH BOUNDARY :GRAY

1. **RESOLUTION** : The resolution sets the main output.
   Choose one of AUTO, 1920X1080, 1650X1050, 1280X1024.
   AUTO is to scale to moitor resolution automatically .

2. **OSD DISPLAY**: Set to OFF, the camera name, time, date, etc, characters on the screen does not display information.
3. **OSD SIZE**: Set to font size to one of 1, x1.5, x2 or Auto.

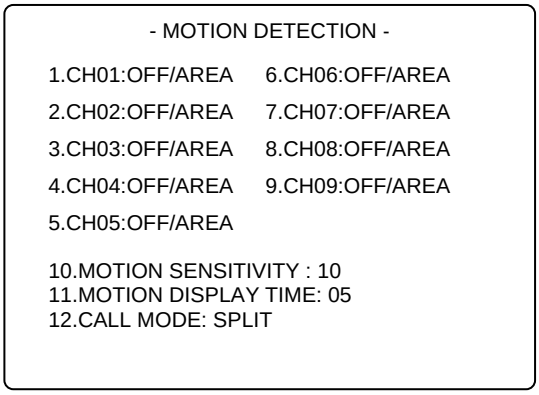
4. **OSD POSITION**: Select the place on which you will place the one among A, B, C, D, E , and F 6 type of the OSD.



5. **9 SPLIT MODE**: You can select 9 Split mode or 6 Split mode.
   9 SPLIT button in front follow this setting, showing 9 split mode or 6 split mode.

5-5. Motion Detection Setup

Each channel can detect individual program Motion Detection areas and each channel can you turn this feature On and off.



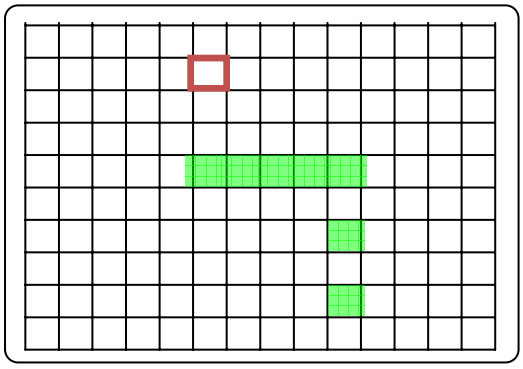
1~9 **CHxx: OFF/AREA** : You can set the motion detection area and motion sensitivity for each channel. You can deactivate it(OFF) if you are not going to use it. If you select 'AREA', you are required to mark areas for motion detection.

17. **MOTION SENSITIVITY**: Set the motion sensitivity. As the sensitivity gets closer to '1', the more sensitive it becomes.

18. **MOTION DISPLAY TIME**: After motion is detected, whether to set how long to display.

19. **CALL MODE**: When motion is detected on a certain channel, the channel becomes a full screen in FULL mode. In QUAD mode 'M' or appears on the motion-detected channel to identify the channel.

Motion Detaction Area:
Cell Size: 16X12



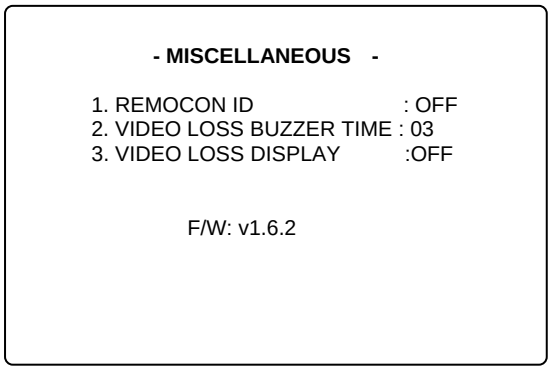
Red : Cursor

Black : Detection Area

Green : Detection Display

Black: Ignore Area

5-6. Others

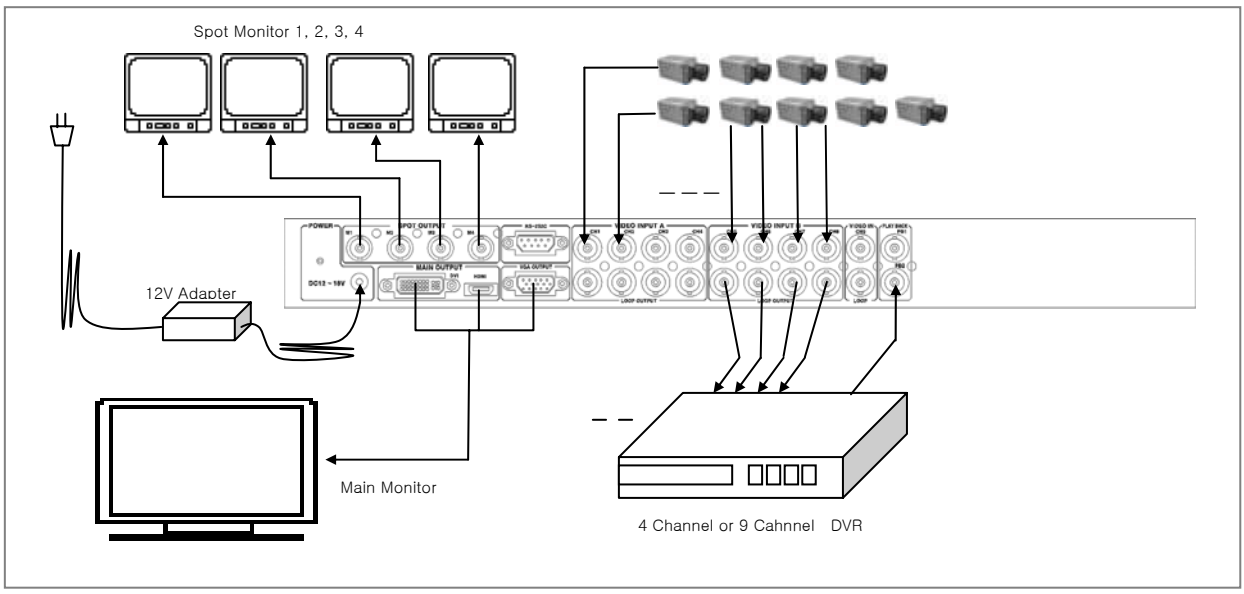


1. **REMOTE CONTROL ID**: When controlling more than one device using RS232C, you assign different device numbers to each device to control them remotely.

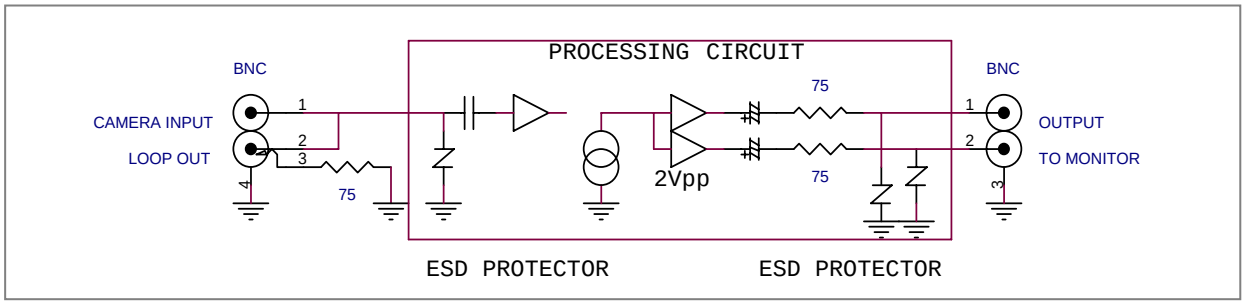
2. **F/W :** version indicates

6. Installation

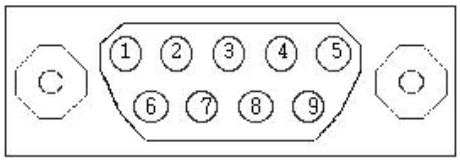
6-1. Video Signal Connection



6-2. Video Input Output Signal Protection



6-3. RS-232C Pin Assignment



2 TXD
3 RXD
5 GND

1) data bit = 8
2) parity = None
3) stop bit = 1
4) board rate =9,600 bps
5) flow control = Harf Simplex (Only Recieve)

6-4. RS-232C Remote Control Code

① STAND ALONE: You can use the following three codes when using one serial port. You should check MULTI REMOTE ID off after entering MISCELLANEOUS in menu.

STX	OP CODE	ETX

② MULTI COMMUNICATION: If you want to control more than one multiplexer with one port, you should have HEADER codes to distinguish the multiplexers from one another. The maximum number of multiplexers to be combined is 16. You have to set each multiplexer with different MULTI REMOTE ID from 1~16, after entering MISCELLANEOUS in menu.

SOH	HEADER	STX	OPCODE	ETX

③ The following codes show each of their functions.

CONTROL CODE

INITIAL	CODE
SOH	0x01
STX	0x02
ETX	0x03

OP CODE

CODE	FUNCTION
0x01	CH1
0x02	CH2
0x03	CH3
0x04	CH4
0x05	CH5
0x06	CH6
0x07	CH7
0x08	CH8
0x09	CH9

CODE	FUNCTION
0x21	2X2
0x22	3X3
0x25	FREEZE
0x26	SEQ
0x28	MENU

7. Initial Mode Seup

After a possible malfunction or repair of a device, the status of inner programs might change. In this case, you can retrieve the initially setup mode.
To go back to the initially setup mode, you turn the power on and off while you keep pushing the “MENU” button

INSTRUCTIONS

1. READ ALL SAFETY AND OPERATING INSTRUCTIONS BEFORE OPERATING THIS PRODUCT.
2. RETAIN THE SAFETY AND OPERATING INSTRUCTIONS FOR FUTURE REFERENCE.
3. UNPLUG THE PRODUCT BEFORE CLEANING. DO NOT USE LIQUID OR AEROSOL CLEANERS. USE A DAMP CLOTH FOR CLEANING.
4. ONLY MANUFACTURER-RECOMMENDED ATTACHMENTS ARE TO BE USED. OTHERWISE, IT MAY RESULT IN THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY.
5. KEEP THE PRODUCT AWAY FROM LIQUID OR ANY OTHER TYPE OF MOISTURE.
6. DO NOT PLACE THIS PRODUCT ON AN UNSTABLE CART, STAND OR TABLE. OTHERWISE, IT MAY CAUSE SERIOUS INJURY TO A CHILD OR ADULT AND SERIOUS DAMAGE TO THE PRODUCT. ANY MOUNTING OF THE PRODUCT SHOULD FOLLOW THE MANUFACTURER'S INSTRUCTIONS AND SHOULD USE A MOUNTING ACCESSORY RECOMMENDED BY MANUFACTURER.
7. THE PRODUCT SHOULD BE OPERATED ONLY FROM THE TYPE OF POWER SOURCE INDICATED ON THE LABEL.
8. DO NOT PUT ANYTHING ON THE POWER CORD AND PREVENT IT FROM ANY TYPE OF ABUSE.
9. IF THE PRODUCT IS NOT USED FOR A LONG TIME, PLEASE UNPLUG IT FROM THE POWER SUPPLY AND DISCONNECT IT FROM OTHER EQUIPMENT. THIS WOULD PREVENT FROM DAMAGE TO THE PRODUCT DUE TO LIGHTING AND POWER-LINE SURGES.
10. DO NOT OVERLOAD WALL OUTLETS AND EXTENSION CORDS TO PREVENT FROM THE RISK OF FIRE OR ELECTRIC SHOCK.
11. DO NOT INSERT ANY KIND OF OBJECTS INTO THE PRODUCT.
12. DO NOT TOUCH ANY PARTS INSIDE FOR REPAIR. THERE ARE NO USER SERVICEABLE PARTS. IT MAY EXPOSE YOU TO DANGEROUS VOLTAGES OR OTHER HAZARDS. REFER TO QUALIFIED PERSONNEL FOR REPAIR.
13. REPLACEMENT PARTS ARE TO BE PROVIDED BY THE AUTHORIZED TECHNICIANS DESIGNATED BY THE MANUFACTURER. THE USE OF UNAUTHORIZED SUBSTITUTE COMPONENTS MAY RESULT IN FIRE, ELECTRIC SHOCK OR OTHER HAZARDS.
14. ASK THE SERVICE TECHNICIAN AS FOR SAFETY CHECK UPON COMPLETION OF ANY SERVICE OR REPAIR OF THE PRODUCT.

WARRANTY AND LIABILITY

WARRANTY

PROSTAR CO., LTD WARRANTS THAT THE GOODS ARE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP AND WILL SUBSTANTIALLY CONFORM TO PROSTAR'S PUBLICLY AVAILABLE SPECCIFICATIONS DURING THE PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE.

EXTENT OF LIMITED WARRANTY

THIS LIMITED WARRANTY DOES NOT COVER THE DAMAGES DUE TO EXTERNAL CAUSES, INCLUDING ACCIDENT, PROBLEM WITH ELECTRICAL POWER, AND USAGE NOT IN ACCORDANCE WITH PRODUCT INSTRUCTIONS, MISUSE, NEGLECT, ALTERATION, REPAIR, IMPROPER INSTALLATION, OR IMPROPER TESTING.

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