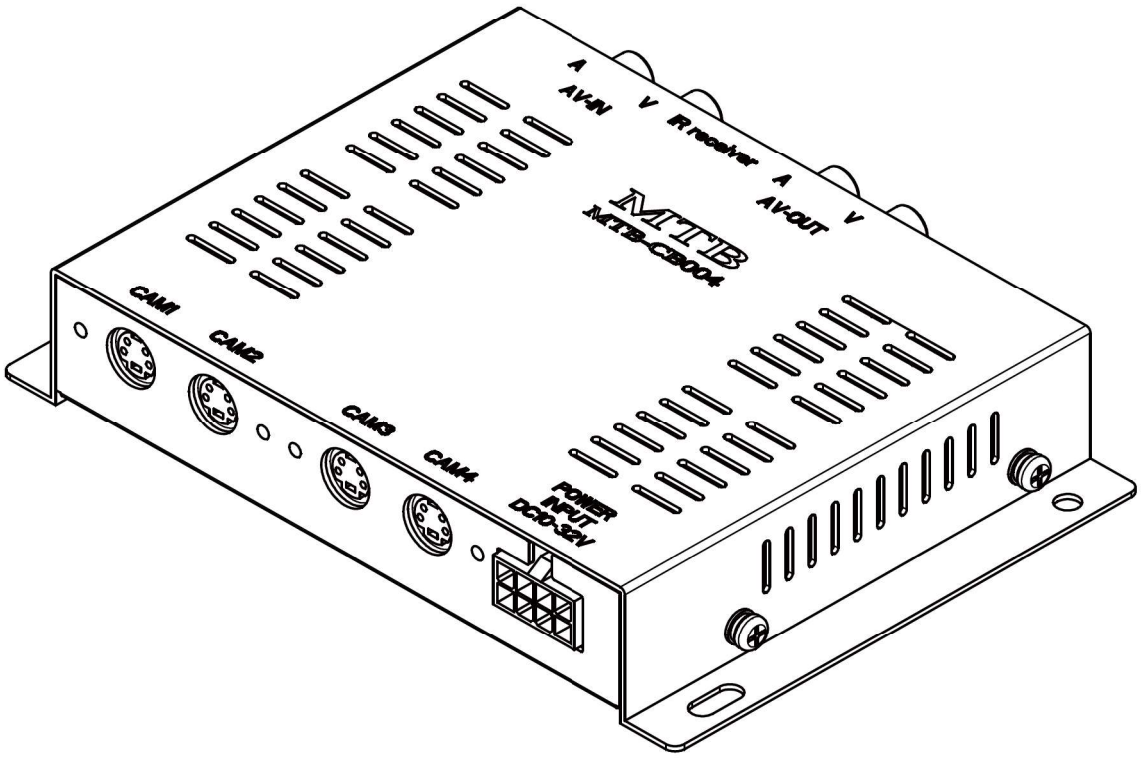
PLEASE READ CAREFULLY BEFORE USING AND KEEP WELL.

MTB®

OWNER'S MANUAL

MULTI-PURPOSE CAMERA CONTROLBOX WITH SPLITSCREEN AND PICTURE IN PICTURE FUNCTION



Model: MTB-CB004

Design and Specifications are subject to change without notice.

OWNER'S RECORD

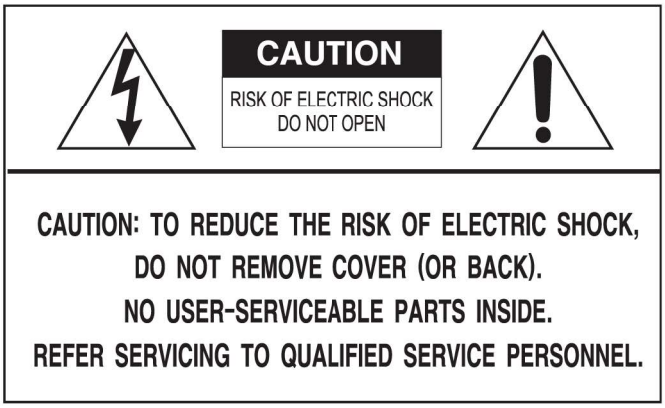
The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your dealer regarding this product.

Model No. MTB-CB004

Serial No. _____

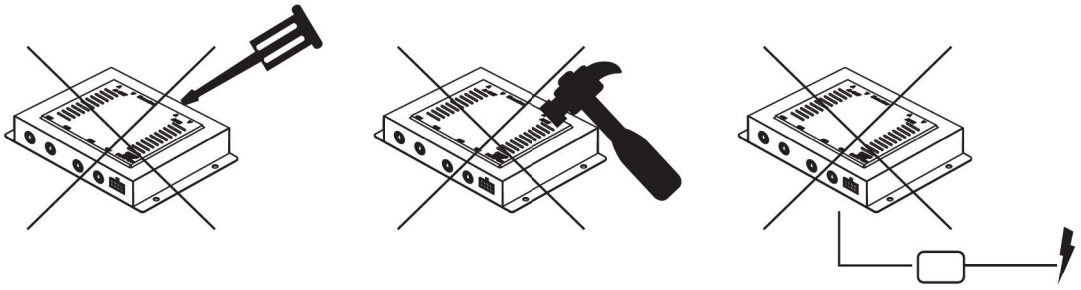
WARNING

To avoid electric shock, do not open the cabinet. Refer servicing to qualified personnel only.



This symbol 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 risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance.



You are cautioned that any changes or modifications which is not expressed or approved in this manual could void your warranty and make this equipment not working.

SUGGESTIONS

MULTI-PURPOSE CAMERA CONTROLBOX WITH SPLITSCREEN AND PICTURE IN PICTURE FUNCTION

❶ Safety

Use only DC 10V ~ DC 32V.
In case that dust or liquid was soaked into the case, please turn off power and consult an experienced technician before using.

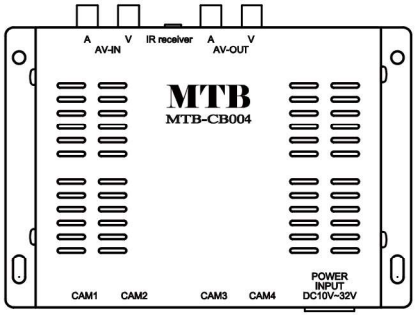
❷ Installation

Do not install the unit in an extremely hot or humid place (radiator, air duct, etc.) or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock. If your vehicle has been parked in direct sun light resulting in a considerable rise in temperature inside the vehicle, allow the unit to cool off before operating.

❸ General cleaning information

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

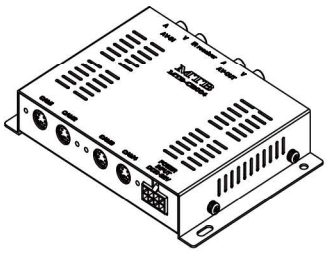
FEATURES



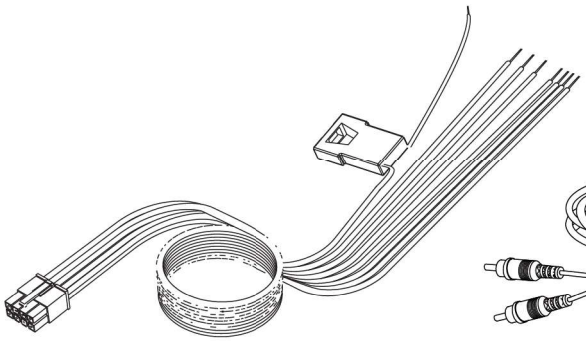
- DC10V ~ DC32V
- NTSC / PAL Standard signal
- 4 camera inputs /1 AV Input / 1 AV Output
- Multiple display mode (SINGLE, SPLIT, TRIPLE, QUAD, PIP)
- Automatic picture display (4Triggers & 1 Speedswitch)
- Auto scanning function
- OSD
- IR receiver with built in status LED

PACKAGE CONTENTS

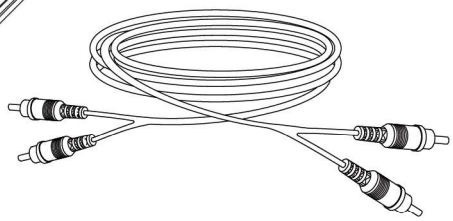
Please check that you have the correct contents before using this product.
If any item is missing, please contact your dealer.



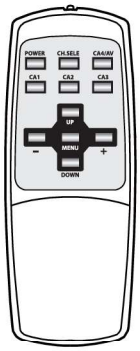
Control Box



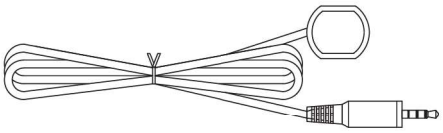
Power Cable



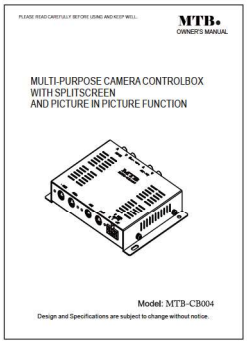
RCA Cable



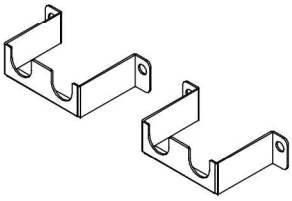
Remote Controller



IR Receiver for
Remote Controller



Operation Manual

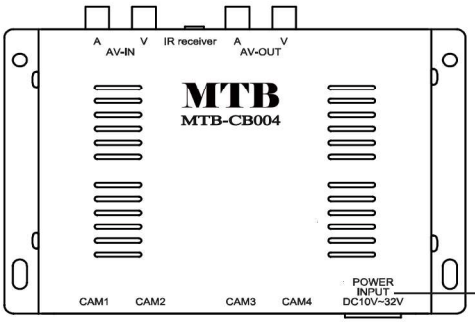


Cable Bracket (2EA)

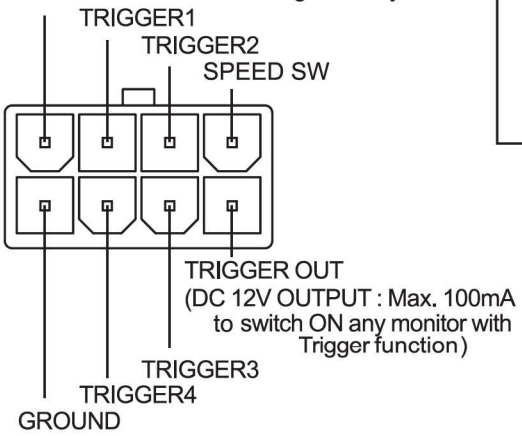
M4X15
STAINLESS
(4EA)

M3X6 with
spring flat washer
(4EA)

INSTALLATION

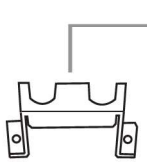


Power IN DC 10V~32V via ignition key



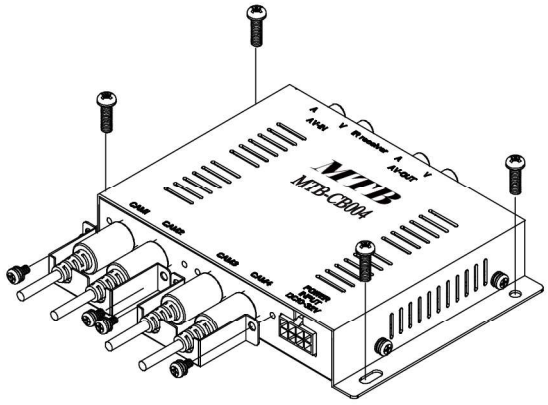
POWER/TRIGGER WIRE FUNCTIONS

REF #	WIRE COLOR	DESCRIPTION
1	RED	Power IN DC 10V~32V(via ignition key)
2	BLACK	Ground
3	GREEN	Trigger 1 (Power IN DC 10V~32V)
4	YELLOW	Trigger 4 (Power IN DC 10V~32V)
5	WHITE	Trigger 2 (Power IN DC 10V~32V)
6	BLUE	Trigger 3 (Power IN DC 10V~32V)
7	ORANGE	Speedswitch(Frequency 10~200Hz)
8	PURPLE	Trigger OUT DC 12V OUTPUT : (Max.100mA to switch ON any monitor with Trigger function)



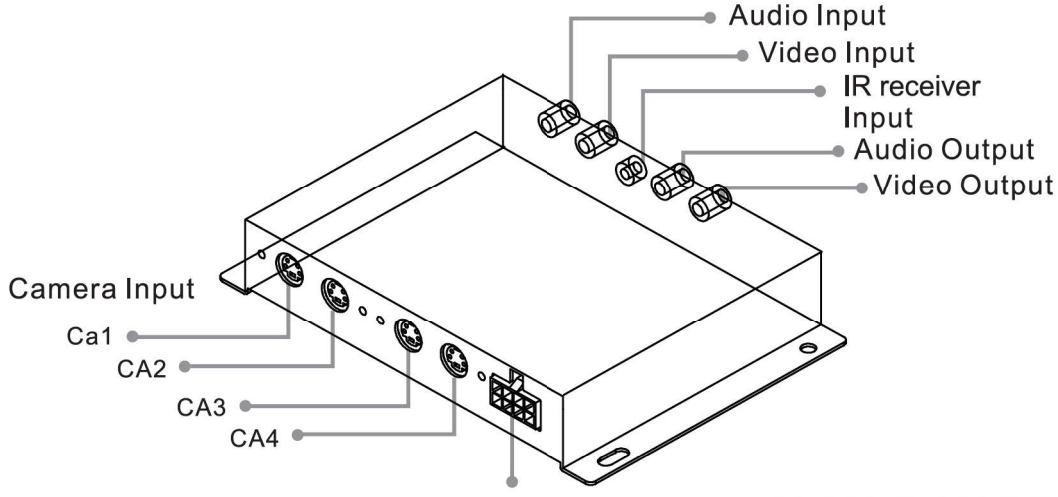
Bracket Jack

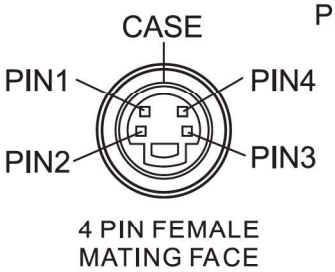
Fix the bracket jack with provided screws after connecting the cameras.



Mounting on the floor, console, etc.

- Install the control box on the place which can stand more weight than 5 Kg (11 lb)
- Fix the control box with the provided screws as the drawings below.



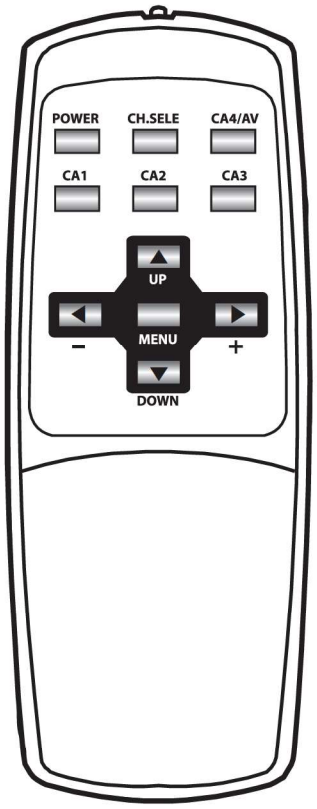


CAMERA INPUT TERMINAL

PIN#	DESCRIPTION
1	AUDIO
2	B+
3	VIDEO
4	HEATER/SHUTTER FUNCTION
CASE	GROUND

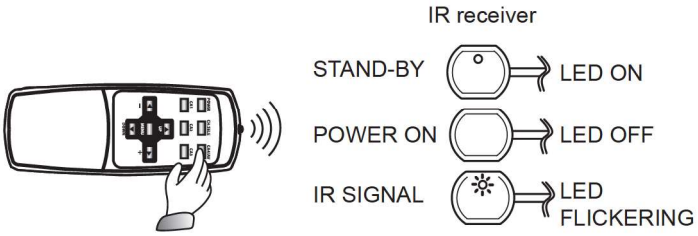
OPERATIONS

Remote Controller



❶ POWER button

Press POWER button to turn the control box on or off.
* When a trigger signal is activated, the controlbox does not respond at the remote control's signals.
(Please refer to TRIGGER MODE in MAIN MENU for further information)



❷ - / + button

Press - / + button to adjust BRIGHT, CONTRAST, COLOR and TINT setting values.
Press - / + button to select the content of the selected line in each submenu.

❸ UP / DOWN button

Press UP/ DOWN button to move the cursor up or down in MAIN MENU and each submenu.

❹ CH.SELE button

Press CH.SELE button to select the display image.
Sequential press shows the image of each camera in turn below.
(CAM1 → CAM2 → CAM3 → CAM4 → AUX → SPLIT2 → SPLIT3 → SPLIT4)
* OSD indicates which image is displayed on the screen.

Press CH.SELE button to select the items, in which the cursor is in menu.
Press CH.SELE button to start or stop scanning each display mode channel.
Available only when AUTO SCAN in menu is ON.

❺ CA1,CA2,CA3,CA4/AV button

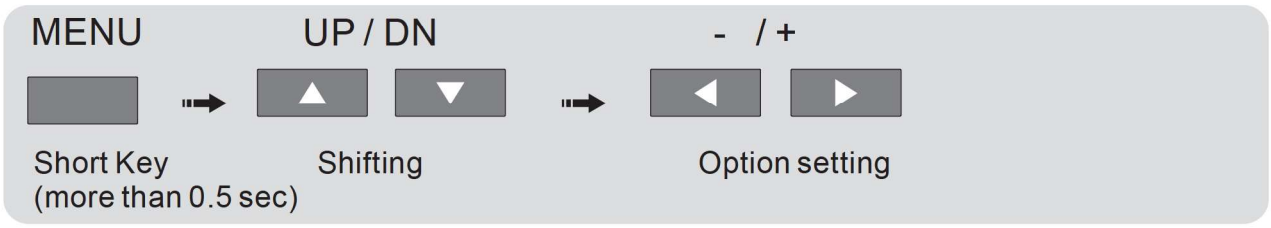
Press CA1, CA2 or CA3 button to select each camera.
Press CA4 / AV button to select CA4 and press again to select any AV device.

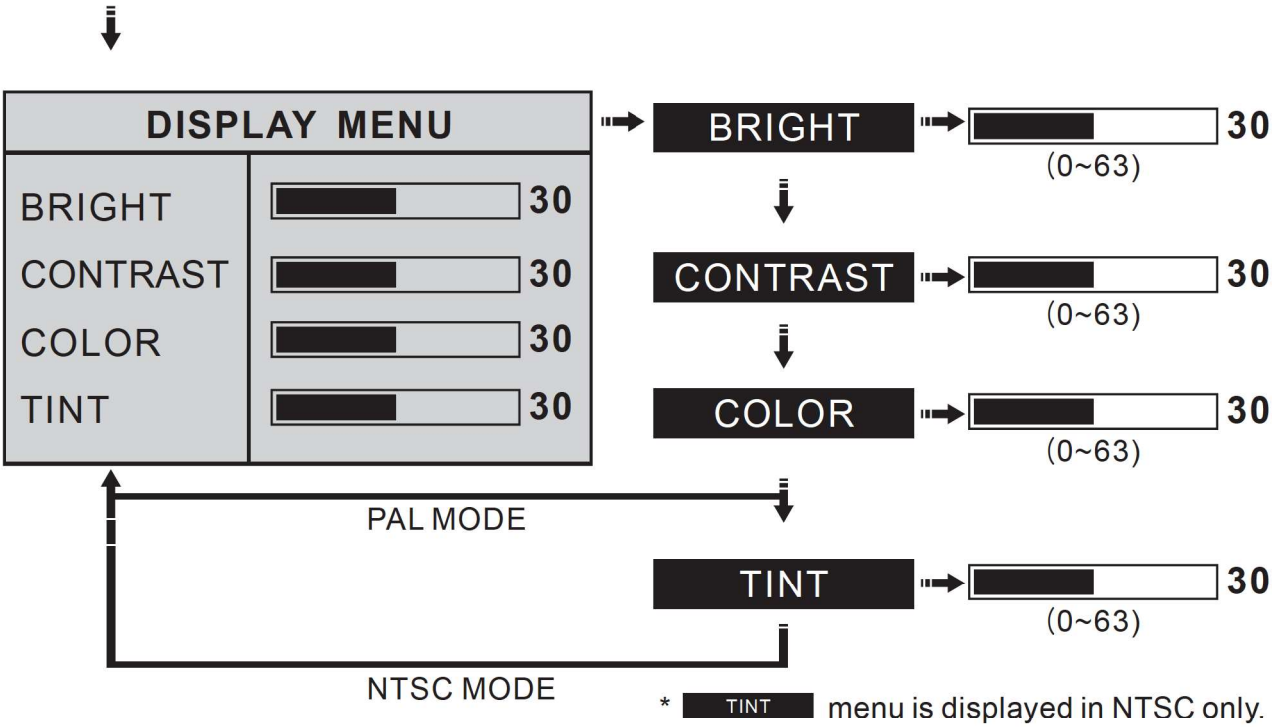
OPERATIONS

❻ MENU button

Use MENU button to enter Display Menu (Short key) and Main Menu (Long key).
Press once to enter menu mode.
Press again to exit from menu mode.
Selectable OSD Menu disappears within 10 sec. if there's no new button pressed.
Press menu button over 2 sec to go back to main menu from submenu.

1. DISPLAY MENU

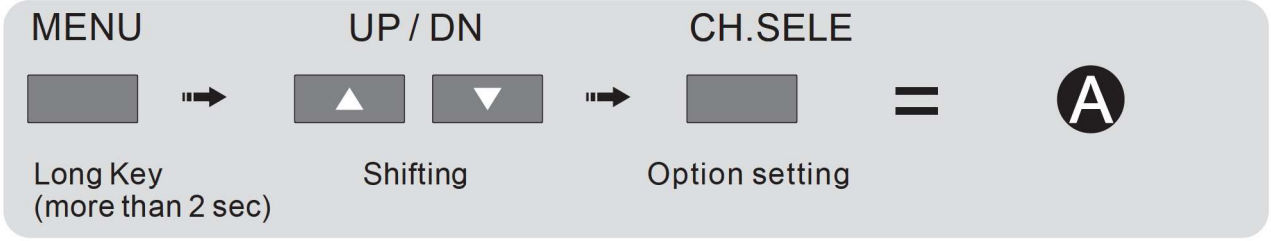




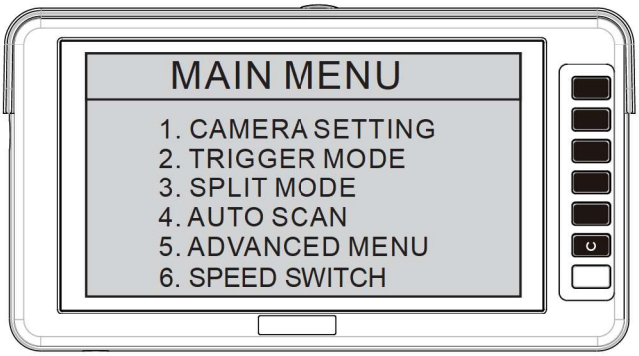
* TINT menu is displayed in NTSC only.

2. SET UP MENU

Press MENU button for a while (over 2 sec.) to enter MAIN MENU. Selectable OSD MENU disappears within 10sec. if there's no new button pressed.



OPERATIONS



❶ CAMERA SETTING

1. CAMERA SETTING	
CAM1 CAM2 CAM3 CAM4	NOR/MIR: [MIRROR;NORMAL] UP/DOWN: [UP;DOWN] NAME: [CAM1] SORT: [NORMAL;SHUTTER]

- NOR/MIR: [MIRROR;NORMAL]

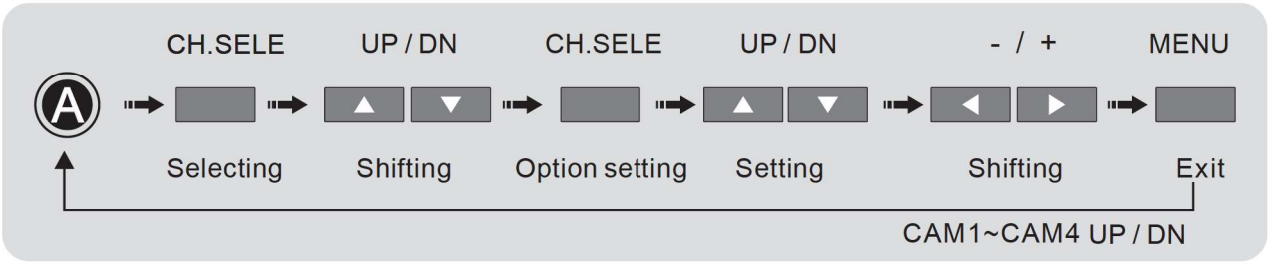
Each camera's Normal/Mirror view can be selected per camera.

- UP/DOWN: [UP;DOWN]

Each camera's converted image can be selected (top and bottom).

- NAME: [CAM1]

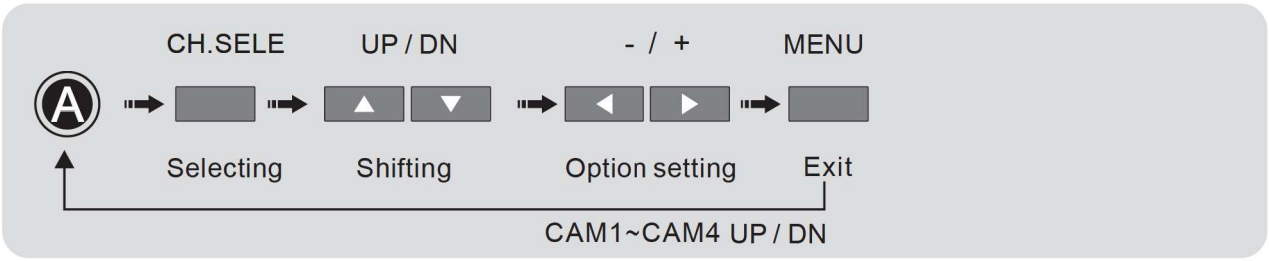
Camera name can be set per camera.



- SORT:[NORMAL;SHUTTER]

A sort of camera can be selected: NORMAL; SHUTTER

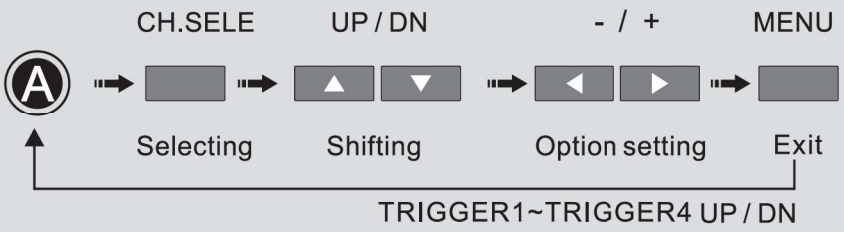
Normal = without heater/shutter. Shutter = with motorized shutter.



❷ TRIGGER MODE

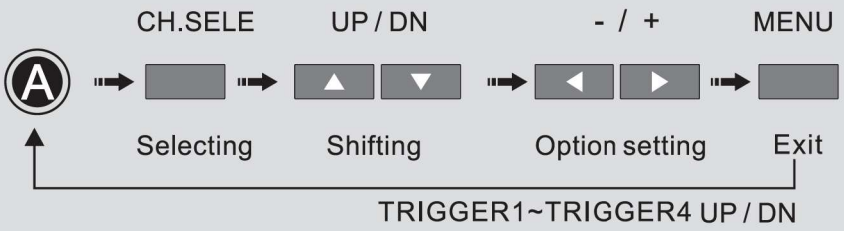
2. TRIGGER MODE	
TRIGGER1 TRIGGER2 TRIGGER3 TRIGGER4	SOURCE: [CAM1~4;AUX; SPLIT1~3] DELAY : [0~20sec] SCALE : [ON;OFF] DISPLAY SCALE

- SOURCE: [CAM1~4;AUX;SPLIT1~3]



1. User can use 4 triggers and each trigger source (CAM1~SPLIT3) can be selected.
2. When the trigger is activated, the selected source's image is displayed.

- DELAY: [0~20 sec]



1. Each trigger's delay time is adjustable from 0 sec to 20 sec.

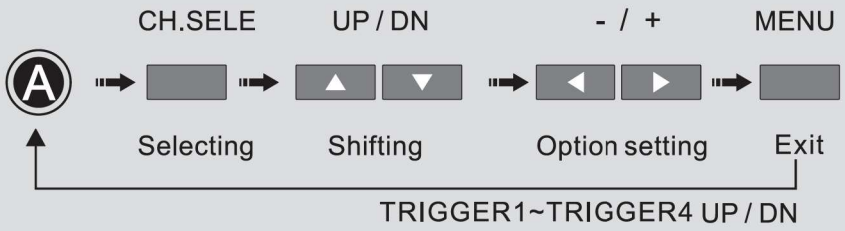
NOTE If one camera is activated by an intermittent signal (e.g. from an indicator light) the delay must be activated to prevent the picture from flickering.

⚠ CAUTION

1. The trigger Out line(DC 12V:Max 100mA) can be used only for trigger out function.
2. The trigger Out line cannot be used as main power to other devices.

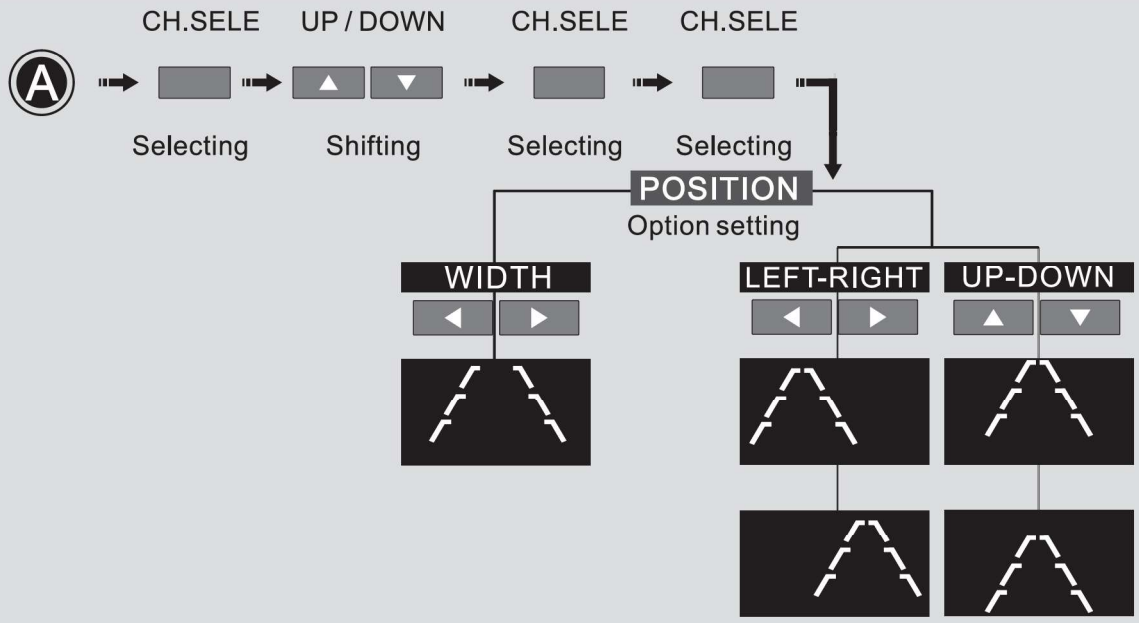
OPERATIONS

- SCALE:[ON;OFF]



1. ON/OFF setting for distance marker when any trigger is engaged.

- DISPLAY SCALE



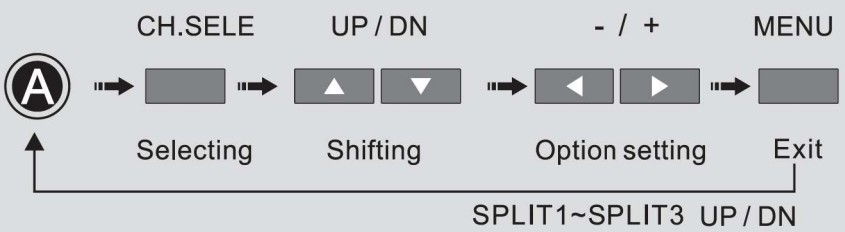
1. POSITION & WIDTH setting for distance marker when any trigger is engaged.

❸ SPLIT MODE

3. SPLIT MODE	
SPLIT1 SPLIT2 SPLIT3	SOURCE1: [CAM1~4;OFF] SOURCE2:[CAM1~4;OFF] SOURCE3:[CAM1~4;OFF] SOURCE4:[CAM1~4;OFF] AUDIO:[CAM1~4;OFF] TYPE: [DEFAULT;CUSTOM]

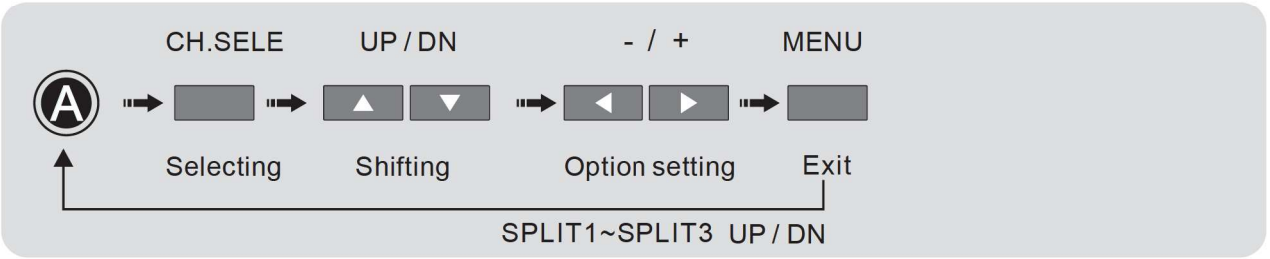
1. Multiple display modes can be selected.
2. Full/Split/Triple/PIP/Quad

- SOURCE1~SOURCE4 : [CAM1~4;OFF]

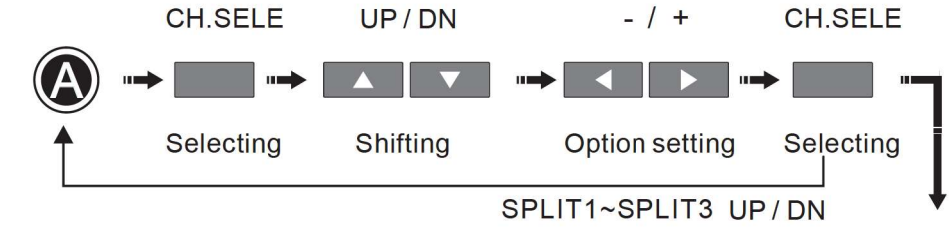


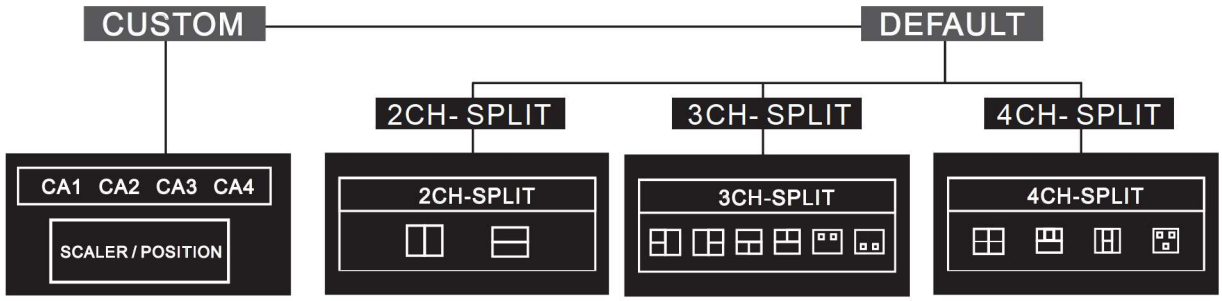
OPERATIONS

- AUDIO : [CAM1~4;OFF]



- TYPE:[DEFAULT;CUSTOM]





CUSTOM

- CA1, CA2, CA3, CA4 / AV Button: Select camera which you want to change.
- CH.SELE Button : Select SCALER or POSITION.
- -/+ Button : Change the size of SCALER'S right & left.
  Change the position of SCALER'S right & left
- UP / DOWN Button : Change the size of SCALER'S up & down.
  Change the position of SCALER'S up & down.

NOTE 1. Multiple Display modes are selectable according to the number of selected sources.

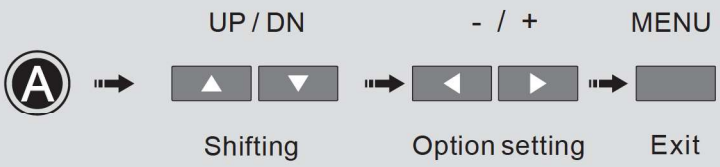
2. If user select "OFF mode" for all the sources from split 1~3, the monitor skips split 1~3 while scanning monitor channel.

3. If user select only one source or all off mode, SPLIT type is not activated.

❹ AUTO SCAN

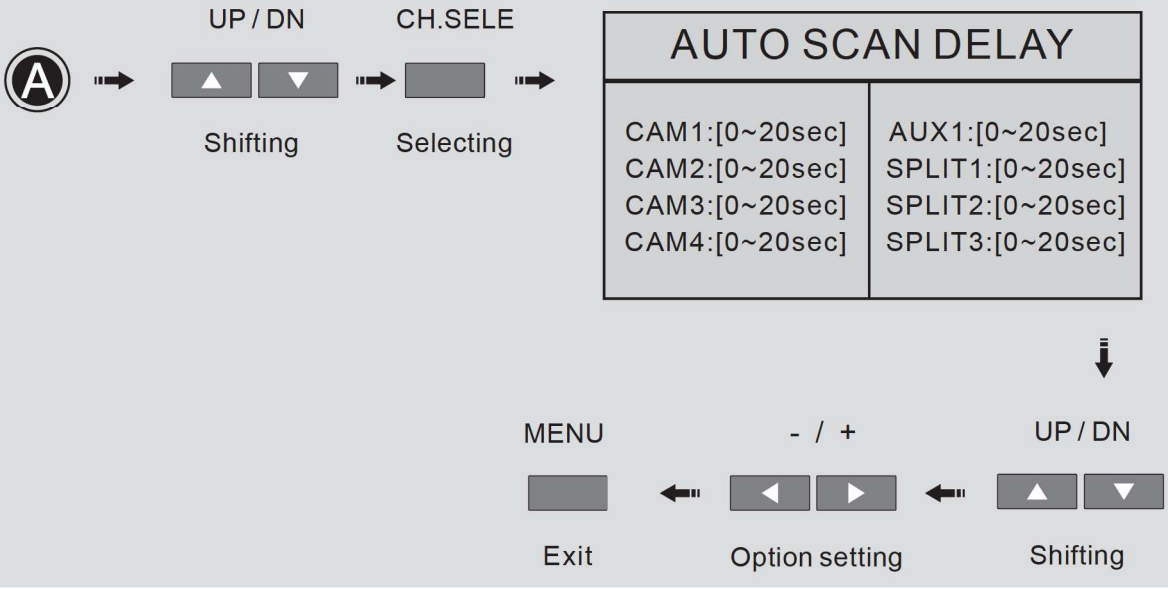
4. AUTO SCAN
AUTO SCAN:[ON;OFF] AUTO SCAN DELAY

- AUTO SCAN:[ON;OFF]



1. ON/OFF setting for auto scan function.

- AUTO SCAN DELAY

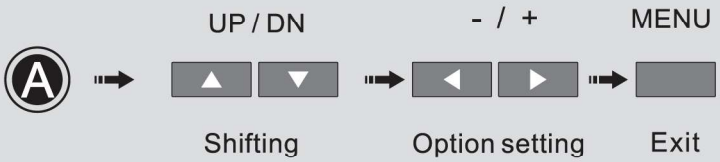


NOTE 1. Auto scanning time of each camera can be adjusted from 0 sec to 20 sec.
2. Auto scan delay time setting is only available with SOURCE .
To give a pause while scanning, press SOURCE .
3. When user select " 0 sec "for one channel, monitor skips the concerning channel during scanning.

❺ ADVANCED MENU

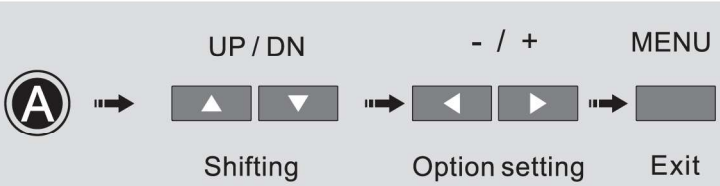
5. ADVANCED MENU
AUTO POWER:[ON;OFF;AUTO] 12V OUT DURING: [ON MODE;TRIGGER IN ONLY] FACTORY RESET

- AUTO POWER:[ON;OFF;AUTO]



NOTE 1. Off Setting: Controlbox starts up in Stand-by mode (regardless the previous mode before the ignition key was turned off).
2. On setting: Controlbox will be activated automatically when ignition key is turned on (regardless the previous mode of the controlbox before the ignition key was off).
3. Auto Setting: Controlbox keeps the last setting in memory: Controlbox will start up in Power-On mode or Stand-by mode according to its last mode before the ignition key was turned off.

- 12V OUT DURING:[ON MODE;TRIGGER IN ONLY]



NOTE **12V OUT DURING: ON MODE**
12V DC OUT signal at purple wire when MTB-CB004 is activated manually via the IR remote controller. (IR receiver LED OFF)
0V DC OUT signal at purple wire when MTB-CB004 is in Stand-by mode. (IR receiver LED ON)
12V OUT DURING: TRIGGER IN ONLY
12V DC OUT signal at purple wire, only when MTB-CB004 is activated (by 12/24V DC at trigger 1~4 or by Hz frequency signal at Speedswitch)
0V DC OUT signal at purple wire, When Trigger 1~4 or Speedswitch are not activated.

OPERATIONS

- FACTORY RESET

NOTE Reset for factory setting.

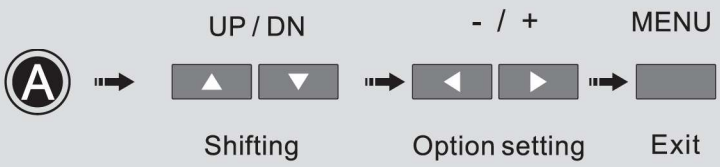
⑥ SPEED SWITCH SETUP

6. SPEED SWITCH
SPEED SWITCH : [ON; OFF] FREQUENCY : [67 ;10~200]Hz UNDER FEQ.CAM:[CAM3;CAM4; CAM1;CAM2] OVER FREQUENCY:[DISPLAY ON; DISPLAY OFF] OVER FREQ. CAM:[CAM1;CAM2 ;CAM3;CAM4]

NOTE

When SPEED SWITCH is selected 'ON' the orange triggerwire needs to be connected with the vehicle's tacho signal (10~200Hz).

- SPEED SWITCH : [ON; OFF]



1. SPEED SWITCH wire (orange) connected to the tacho signal of a vehicle, detects the vehicle's speed and controls Monitor ON/OFF by 12V DC out signal of the purple wire.

2. Above example shows settings to activate the monitor via the speedswitch. When the vehicle's speed is 0km ~ 30km/hr (66Hz), CAM3 screen is displayed. When the vehicle's speed is over or equal to 30km/hr (67Hz), CAM1 screen is displayed.

3. Priority of the Triggers and Speed switch
T1>T2>T3>T4>Speedswitch

SPECIFICATIONS

Model: MTB-CB004

Power Input	DC 10V~32V	
Power Consumption	Max. 25Watt	
Video System	NTSC / PAL compatible	
Camera input (4CH)	4-pin mini DIN, 1Vp-p 75Ω	
A/V Output (1CH)	RCA, Composite Video Signal, 1Vp-p 75Ω	
	RCA, Audio Signal, 150mV RMS, 47K	
A/V Input (1CH)	RCA, Composite Video Signal, 1Vp-p 75Ω	
	RCA, Audio Signal, 150mV RMS, 47K	
Operating Temp.	-25℃ ~ +75℃	
Storage Temp.	-30℃ ~ +85℃	
Ambient Condition	Indoor use only	
Vibration	5.5G	
Dimensions	148(W) X 102(D) X 27(H) mm	
Weight	Approx. 500g	
Supplied acc'y	Power Cord 2M	(1)
	RCA Cable	(1)
	Screw Kits	(1)
	Bracket Jack	(2)
	Remote Controller	(1)
	IR receiver for Remote Controller	(1)

THIS SYMBOL MEANS DO NOT DISPOSE OF AS MUNICIPAL WASTE.
RE-USE OR RECYCLE WHEREVER POSSIBLE.
ELECTRICAL / ELECTRONIC COMPONENTS MAY CONTAIN SUBSTANCES WHICH ARE HARMFUL TO THE ENVIRONMENT.
FOR ENVIRONMENTALLY SOUND METHODS OF DISPOSAL, PLEASE CONTACT YOUR LOCAL GOVERNMENT AUTHORITY.

Part no.
printed in korea