**MXN** ®

OWNER'S MANUAL

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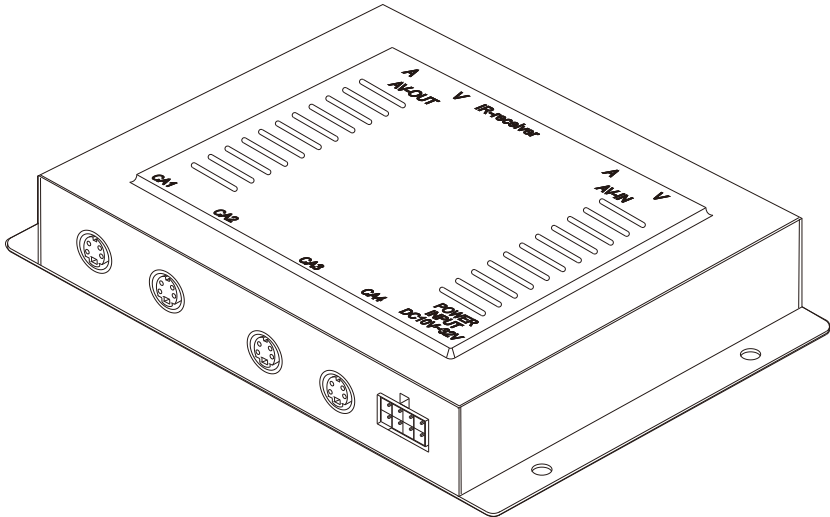


## Model: MXN201C

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.** MXN201C

**Serial No.** _____

## WARNING

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

```
    ⚡         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.
```

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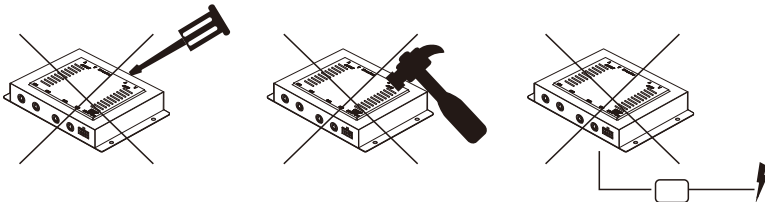
You are cautioned that any changes or modifications which is not expressed or approved in this manual could void your warranty and make this equipment not working.

# ☐ SUGGESTIONS

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

### ① 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.

### ② 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.

### ③ 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.
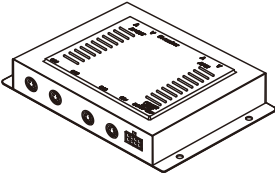
# ☐ FEATURES
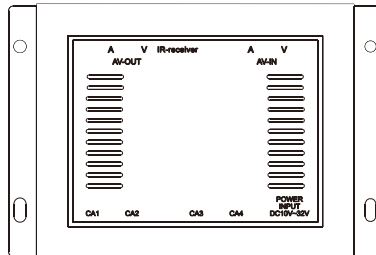
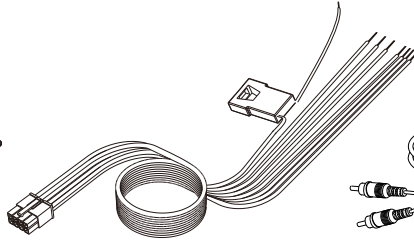

- DC10V ~ DC32V
- NTSC / PAL Standard signal
- 4 camera inputs /1 AV Input / 1 AV Output
- Multiple display mode (SINGLE, SPLIT, TRIPLE, QUAD, PIP)
- Automatic picture display (5 Triggering Functions)
- Auto scanning function
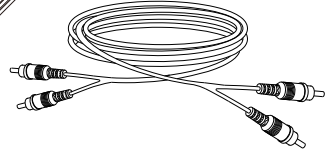- OSD

# PACKAGE CONTENTS

Please check that you have the correct contents before using this product. If any items are missing, please contact your dealer.
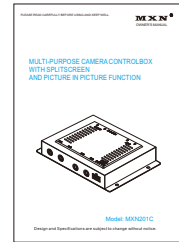
Control Box
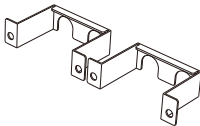
Power Cable

RCA Cable

Remote Controller

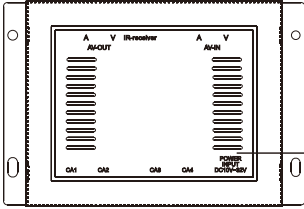RX Module For Remote Controller

Operation Manual
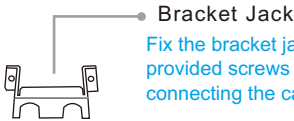
Cable  Bracket(2EA)

T/H  M4X15L STAINLESS BK (4EA)

M3X6L  W/SPRING FLATE WASHER,BK (4EA)

# INSTALLATION

**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 6V~32V ) |
| 4 | WHITE | Trigger 2 ( Power IN DC 6V~32V ) |
| 5 | BLUE | Trigger 3 ( Power IN DC 6V~32V ) |
| 6 | YELLOW | Trigger 4 ( Power IN DC 6V~32V ) |
| 7 | BROWN | Trigger 5 ( Power IN DC 6V~32V ) |
| 8 | ORANGE | Trigger OUT DC 12V OUTPUT : Max. 100mA to switch ON any monitor with Trigger Input |

Power IN DC 10V~32V via ignition key (red)
TRIGGER1
TRIGGER2
TRIGGER5
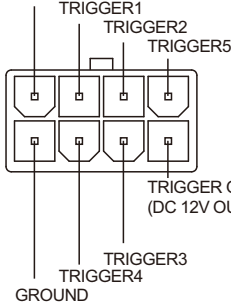
TRIGGER OUT
(DC 12V OUTPUT : Max. 100mA to switch ON any monitor with Trigger Input (orange))

TRIGGER3
TRIGGER4
GROUND

Bracket Jack

Fix the bracket jack with provided screws after connecting the cameras.
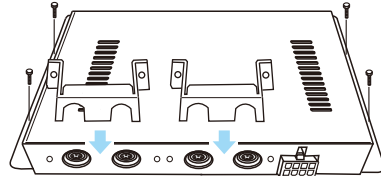
Mounting on the floor, console, etc.

- 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.

Audio Output
Video Output
Sensor Signal Input
Audio Input
Video Input

Camera Input
Ca1
CA2
CA3
CA4

Power / Trigger Input
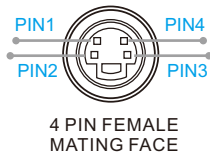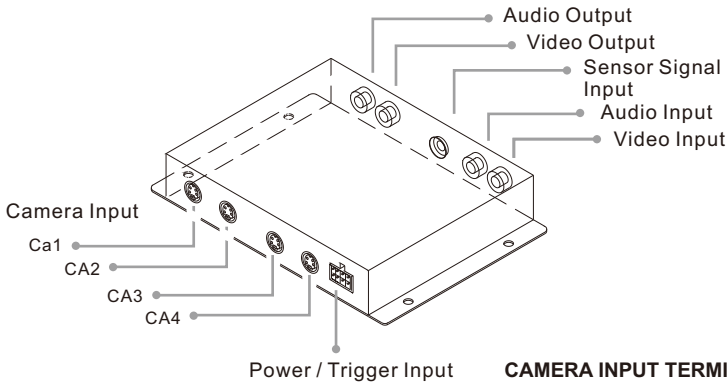
**CAMERA INPUT TERMINAL**

| PIN# | DESCRIPTION |
|------|-------------|
| 1 | AUDIO |
| 2 | B+ |
| 3 | VIDEO |
| 4 | HEATER/SHUTTER FUNCTION(CA4 - N.C) |
| CASE | GND |

PIN1　　PIN4
PIN2　　PIN3

4 PIN FEMALE
MATING FACE

# OPERATIONS

## Remote Controller
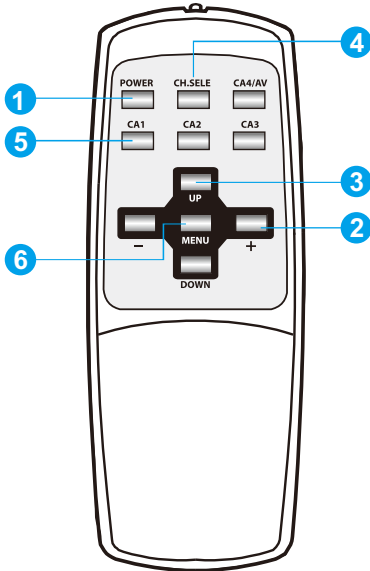
**1** POWER button

Press POWER button to turn the
control box on or off.
* When the trigger signal is activated,
the selected source's image will be displayed
on the monitor screen automatically.
( Please refer to TRIGGER MODE in MAIN
MENU for further information )

**2** - / + button

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

**3** UP / DOWN button

Press UP / DOWN button to adjust TILT (PAN)
camera position upward or downward.
(Available only when TILT (PAN) camera is connected to CA1, CA2, or CA3 input)
Press UP/ DOWN button to move the cursor up or down in MAIN MENU and
each submenu..

**4** 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.

**5** 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

| MENU | UP / DN | - / + |
|------|---------|-------|
| Short Key (more than 0.5 sec) | Shifting | Option setting |

**DISPLAY MENU**

| | |
|-------|----|
| BRIGHT | 30 |
| CONTRAST | 30 |
| COLOR | 30 |
| TINT | 30 |

BRIGHT → 30 (0~63)

CONTRAST → 30 (0~63)

COLOR → 30 (0~63)

PAL MODE

TINT → 30 (0~63)

NTSC MODE

\* TINT menu is displayed in NTSC only.
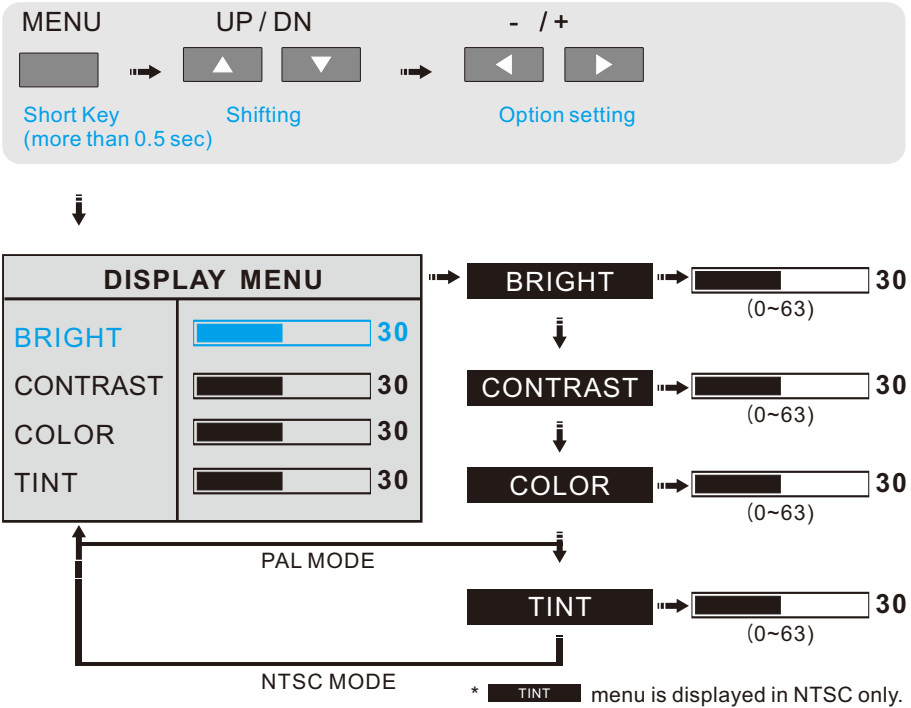
## 2. SET UP MENU

Press MENU button for a while (over 2 sec) to enter MAIN MENU. Select-able OSD MENU disappears within 12sec if there's no new button pressed.

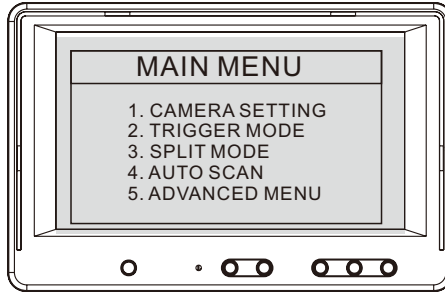| MENU | UP / DN | CH.SELE | = | Ⓐ |
|------|---------|---------|---|---|
| Long Key (more than 2 sec) | Shifting | Option setting | | |

# ☐ OPERATIONS

### MAIN MENU

1. CAMERA SETTING
2. TRIGGER MODE
3. SPLIT MODE
4. AUTO SCAN
5. ADVANCED MENU
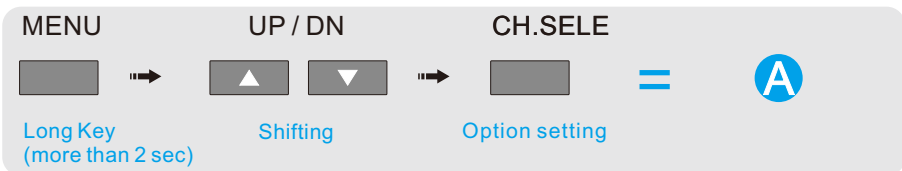
## ① CAMERA SETTING

| **1. CAMERA SETTING** | |
|---|---|
| CAM1<br>CAM2<br>CAM3<br>CAM4 | NOR/MIR:<br>　　[MIRROR;NORMAL]<br>UP/DOWN: [UP;DOWN]<br>NAME:　[CAM1　　]<br>SORT:<br>　　[NORMAL;SHUTTER;<br>　　　TILT.AT;TILT.MT] |

📄 **NOTE** 1. CAM4 is only available with NORMAL CAMERA.

2. Tilt.AT (Automatic Tilt): When trigger is activated, Tilt CAM automatically turns to downward(-40˚). When trigger is off ,Tilt CAM automatically turns to upward(0 ˚).

3. Tilt.MT (Manual Tilt): When trigger is a-ctivated, Tilt cam turns to the last set position.

4. User can adjust tilt angle manually only in TILT.MT mode ▲ ▼ .

● **NOR/MIR: [MIRROR;NORMAL]**
Each camera's Normal/Mirror view can be selected.

● **UP/DOWN: [UP;DOWN]**
Each camera's converted image can be selected (top and bottom).

● **NAME:　[CAM1　　]**
Camera name can be set

| CH.SELE | UP / DN | CH.SELE | UP / DN | - / + | MENU |
|---|---|---|---|---|---|
| Ⓐ ▸ ▢ ▸ | ▲ ▼ ▸ | ▢ ▸ | ▲ ▼ ▸ | ◀ ▶ ▸ | ▢ |
| Selecting | Shifting | Option setting | Setting | Shifting | Exit |

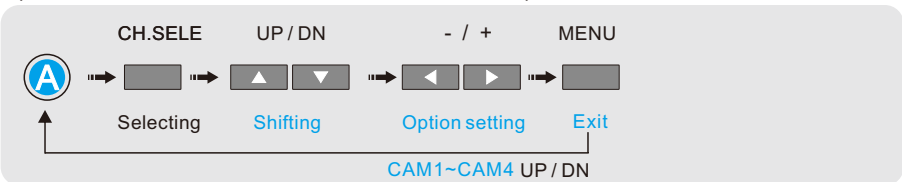CAM1~CAM4 UP / DN

● **SORT:[NORMAL;SHUTTER; TILT.AT;TILT.MT]**
A sort of camera can be selected.
(NORMAL;SHUTTER;TILT.AT;TILT.MT).

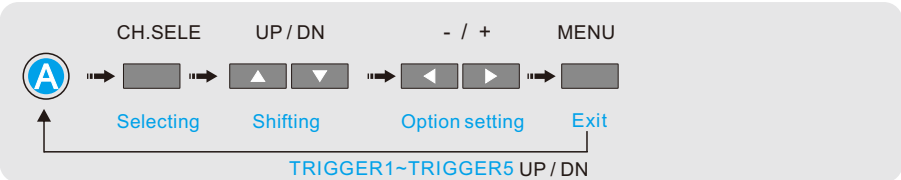| CH.SELE | UP / DN | - / + | MENU |
|---|---|---|---|
| Ⓐ ▸ ▢ ▸ | ▲ ▼ ▸ | ◀ ▶ ▸ | ▢ |
| Selecting | Shifting | Option setting | Exit |

CAM1~CAM4 UP / DN

# ◻ OPERATIONS

## ❷ TRIGGER MODE

| 2. TRIGGER MODE | |
|---|---|
| TRIGGER1<br>TRIGGER2<br>TRIGGER3<br>TRIGGER4<br>TRIGGER5 | SOURCE:<br>[CAM1~4;AUX1~2;<br>　　　　SPLIT1~3]<br>DELAY : [0~20sec]<br>SCALE : [ON;OFF]<br>DISPLAY SCALE |

● SOURCE: [CAM1~4;AUX1~2;SPLIT1~3]



CH.SELE　　UP / DN　　　　- / +　　MENU

Ⓐ

Selecting　　Shifting　　Option setting　　Exit

TRIGGER1~TRIGGER5 UP / DN
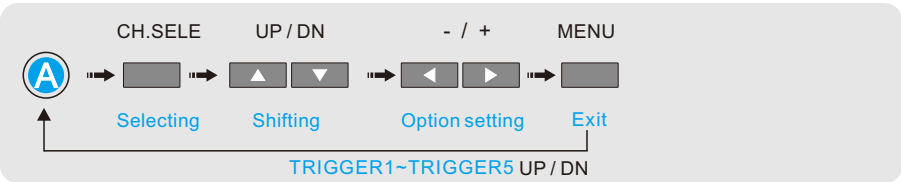
1. User can use 5 triggers and each trigger source(CAM1~SPLIT3) can be selected.
2. When the trigger is activated, the selected source's image is displayed.

● DELAY:　　[0~20 sec]



CH.SELE　　UP / DN　　　　- / +　　MENU

Ⓐ

Selecting　　Shifting　　Option setting　　Exit

TRIGGER1~TRIGGER5 UP / DN

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

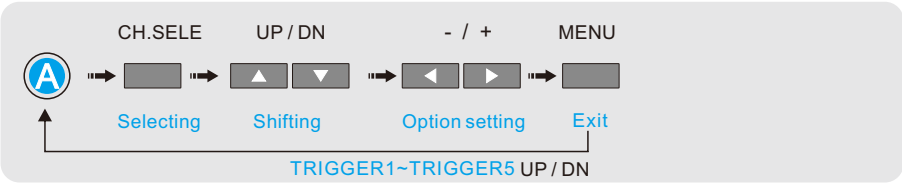📄 **NOTE**　If one camera is activated by an intermittent signal ( e.g. from an indicator light's ) the delay must be activated to prevent the picture from flickering.

⚠ **CAUTION**
1. Trigger out line(DC 12V:Max 100mA) can be used only for trigger out function.
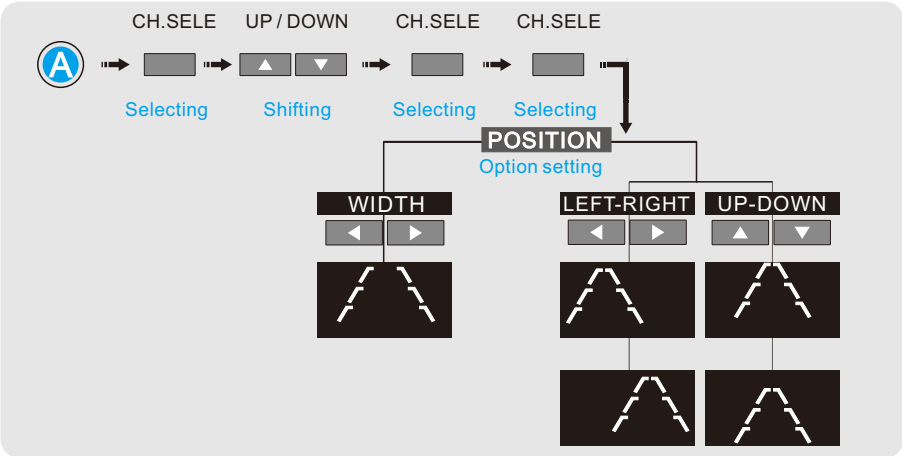2. It cannot be used for a main power to other devices.

# ☐ OPERATIONS

## ● SCALE:[ON;OFF]

| | CH.SELE | UP / DN | - / + | MENU |
|---|---|---|---|---|
| Ⓐ | Selecting | Shifting | Option setting | Exit |

TRIGGER1~TRIGGER5 UP / DN

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

## ● DISPLAY SCALE

| | CH.SELE | UP / DOWN | CH.SELE | CH.SELE |
|---|---|---|---|---|
| Ⓐ | Selecting | Shifting | Selecting | Selecting |

**POSITION**
Option setting

WIDTH ◄ ►

LEFT-RIGHT ◄ ►     UP-DOWN ▲ ▼

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

## ③ SPLIT MODE

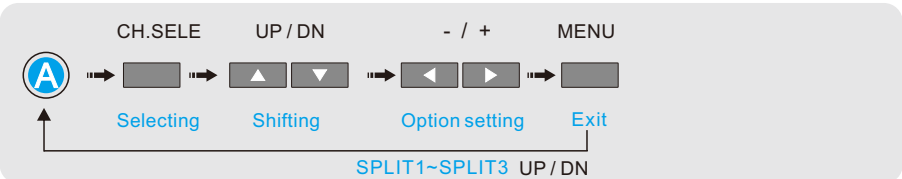| 3. SPLIT MODE | |
|---|---|
| SPLIT1 SPLIT2 SPLIT3 | SOURCE1: [CAM1~4;OFF] SOURCE2:[CAM1~4;OFF] SOURCE3:[CAM1~4;OFF] SOURCE4:[CAM1~4;OFF] AUDIO:[CAM1~4;OFF] TYPE: [DEFAULT;CUSTOM] |

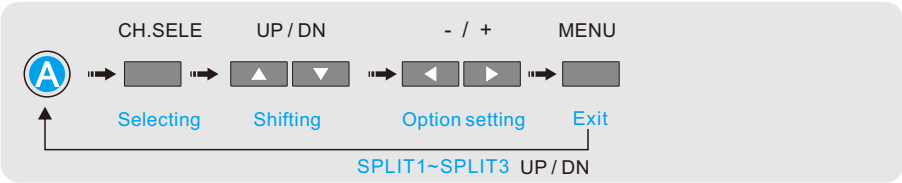1. Multiple display modes can be selected.
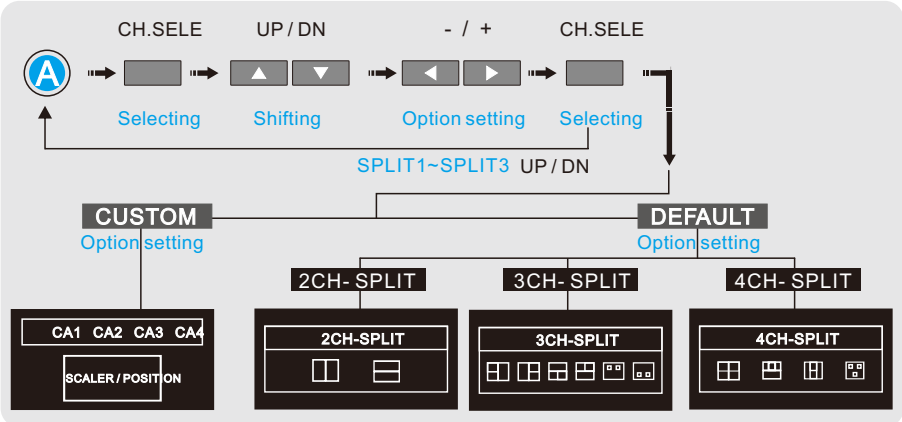2. Full/Split/Triple/PIP/Quad

## ● SOURCE1~SOURCE4 : [CAM1~4;OFF]

| | CH.SELE | UP / DN | - / + | MENU |
|---|---|---|---|---|
| Ⓐ | Selecting | Shifting | Option setting | Exit |

SPLIT1~SPLIT3 UP / DN

# ◻ OPERATIONS

## ● AUDIO : [CAM1~4;OFF]

| CH.SELE | UP / DN | - / + | MENU |
|---|---|---|---|

**A** ▢ ➡ ▢ ➡ ▲ ▼ ➡ ◄ ► ➡ ▢

Selecting     Shifting     Option setting     Exit

SPLIT1~SPLIT3 UP / DN

## ● TYPE:[DEFAULT;CUSTOM]

| CH.SELE | UP / DN | - / + | CH.SELE |
|---|---|---|---|

**A** ➡ ▢ ➡ ▲ ▼ ➡ ◄ ► ➡ ▢

Selecting     Shifting     Option setting     Selecting

SPLIT1~SPLIT3 UP / DN

**CUSTOM**                            **DEFAULT**

Option setting                           Option setting

            2CH- SPLIT       3CH- SPLIT       4CH- SPLIT

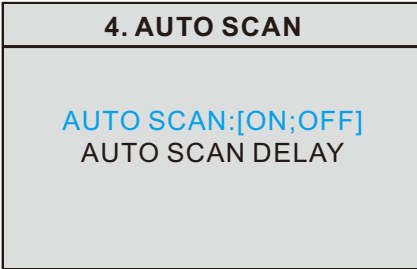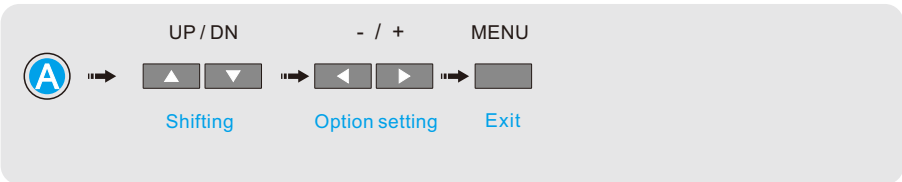| CA1  CA2  CA3  CA4 | 2CH-SPLIT | 3CH-SPLIT | 4CH-SPLIT |
|---|---|---|---|
| SCALER / POSITION | ▯▯  ▭ | ⊞ ⊞ ⊞ ⊞ ▢ ▢ | ⊞ ⊞ ▯▯ ▢ |

### 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 is selectable according to the number of selected source.

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

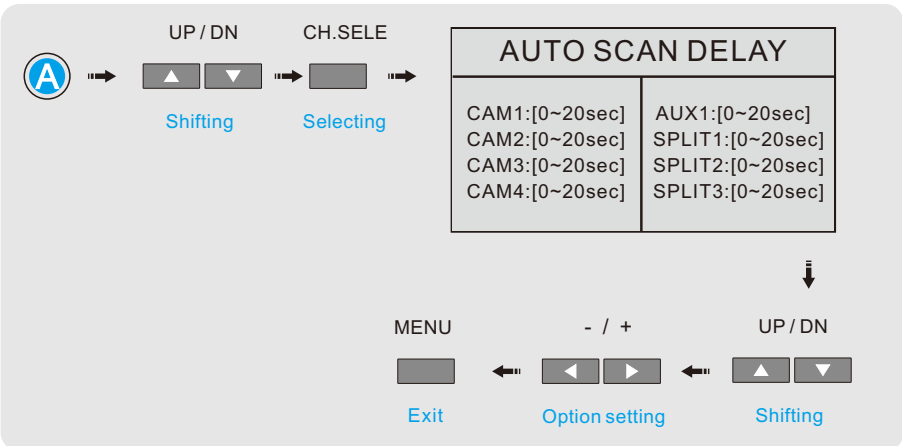3. If user select only one source or all off mode, **TYPE** is not activated.

# ⬜ OPERATIONS

## ❹ AUTO SCAN

| 4. AUTO SCAN |
| --- |
| AUTO SCAN:[ON;OFF]<br>AUTO SCAN DELAY |

● AUTO SCAN:[ON;OFF]



Ⓐ ➡ UP / DN ▲ ▼ ➡ - / + ◀ ▶ ➡ MENU □
Shifting    Option setting    Exit

1. ON/OFF setting for auto scan function.

● AUTO SCAN DELAY

Ⓐ ➡ UP / DN ▲ ▼ ➡ CH.SELE □ ➡

| AUTO SCAN DELAY | |
| --- | --- |
| CAM1:[0~20sec] | AUX1:[0~20sec] |
| CAM2:[0~20sec] | SPLIT1:[0~20sec] |
| CAM3:[0~20sec] | SPLIT2:[0~20sec] |
| CAM4:[0~20sec] | SPLIT3:[0~20sec] |

Shifting    Selecting

MENU □ ⬅ - / + ◀ ▶ ⬅ UP / DN ▲ ▼
Exit    Option setting    Shifting

📄 **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 skip scanning the channel.

# ☐ OPERATIONS

## 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]

Ⓐ ⇢ ▲ ▼ ⇢ ◄ ► ⇢ ☐
UP / DN    - / +    MENU
Shifting    Option setting    Exit
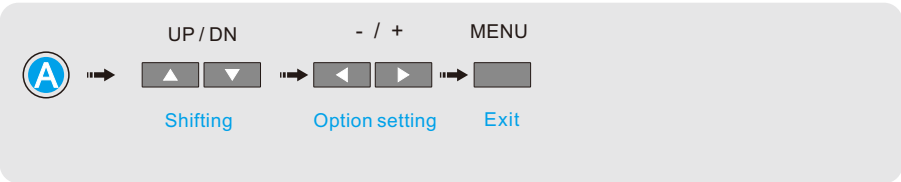
📄 **NOTE** 1. Off Setting: Monitor keeps "Stand- by" mode regardless of the last mode before the ignition key off.

2. On setting: Monitor will be turned on automatically when ignition key on regardless of the last mode of the monitor before the ignition key off.

3. Auto Setting: Monitor keeps the last setting in memory: Monitor will start up "Power-on" mode or "Stand- by" mode according to its last mode before the ignition key off.

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

Ⓐ ⇢ ▲ ▼ ⇢ ◄ ► ⇢ ☐
UP / DN    - / +    MENU
Shifting    Option setting    Exit
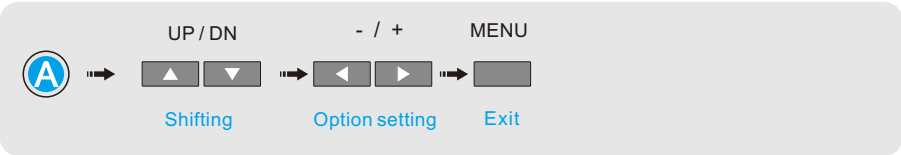
📄 **NOTE** 1) **12V OUT DURING: ON MODE**
12V DC OUT signal at orange wire when MXN201C is activated manually via the IR remote controller. (Green color LED ON)
0V DC OUT signal at orange wire when MXN201C is in Standby mode. (Red color LED ON)
 2) **12V OUT DURING: TRIGGER IN ONLY**
12V DC OUT signal at orange wire, only when MXN201C is activated (by 12/24V DC signal at Trigger 1 ~ 5).
0V DC OUT signal at orange wire, when Trigger 1 ~ 5 are not activated.

# ☐ OPERATIONS

## ● FACTORY RESET

UP / DN

CH.SELE

Ⓐ ➡ ▲ ▼ ➡ ▢

Shifting
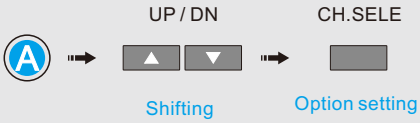
Option setting

📄 **NOTE** Reset for factory setting.

# ☐ SPECIFICATIONS

## Model: MXN201C

| | |
|---|---|
| Power  Input | DC 10V~32V |
| Power  Consumption | Max. 25Watt |
| Video System | NTSC / PAL compatible |
| Camera  input(4CH) | Mini DIN 4,   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℃ ( -13℉ ～ 167℉ ) |
| Storage  Temp. | -30℃ ～ +85℃ ( -22℉ ～ 185℉ ) |
| Ambient Condition | Indoor use only |
| Vibration | 5.5G |
| Dimension | 154(W) X 105(D) X 29(H) mm |
| | 6.1(W) X 4.1(D) X 1.1(H) inch |
| Weight | Approx. 500g |
| Supplied acc'y | Power Cord 2M                       (1) |
| | RCA Cable                              (1) |
| | Screws Kits                            (1) |
| | Bracket Jack                          (2) |
| | Remote Controller                 (1) |
| | RX Module 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.