6.2 Operation of wired control panel (continued)

① CA F

Item on menu selection up
Press to select the front view camera

② CA L

Item on menu selection left
Press to select the left view camera

③ CA R

Item on menu selection right
Press to select the right view camera

④ CA B

Item on menu selection down
Press to select the back view camera

⑤ AV

Press to select or exit AV

⑥ QUAD

Display mode (dual, triple, quad, PIP) selection. Short press to compile
the next character when changing the name of camera

⑦ JUMP

Jumps to a Pre-selected camera for quick viewing. See page 12 for setup.

⑧ MENU

Press to show menu or exit menu

⑨ AUTO LIGHT CONTROL

Backlighting indicator lights up when it is getting dark.

⑩ IR

Align the remote control with this position for remote operation

⑪ CONNECTOR OF TOUCH-BUTTON CONTROL

Connects to the 5PIN port "KEY IN" on the device

⑫ SPEAKER SWITCH

Push up to cancel the warning tone; push down to turn on the "BEEP BEEP"

warning tone.

⑬ SPEAKER

Produces audibles to indicate control pad operation

7. Menu

Press MENU to display the master menu:

MAIN MENU	
CAMERA	SETUP
CAMERA	NAME
OSD	SETUP
SYSTEM	SETUP
TRIGGER	SETUP
TRIGGER	PRIORITY
SPLIT	SETUP
RESET	ALL

7. 1 CAMERA SETUP

①Press CA F / CA B / SEL to select CAMERA SETUP, and then press CA L / CA R
to enter into CAMERA SETUP:

CAMERA SETUP	
CAMERA	LEFT
BRIGHTNESS	56
CONTRAST	75
COLOR	50
HUE	50
MIRROR	OFF

②Press CA L / CA R to select the camera to be set (LEFT, RIGHT, FRONT or BACK)

③Press CA F / CA B / SEL to select BRIGHTNESS, and then press CA L / CA R to adjust the
brightness level (0~100).

④Press CA F / CA B / SEL to select CONTRAST, and then press CA L / CA R to adjust the
contrast level (0~100).

⑤Press CA F / CA B / SEL to select COLOR, and then press CA L / CA R to adjust the
color level (0~100).

⑥Press CA F / CA B / SEL to select HUE, and then press CA L / CA R to adjust the hue level
(0~100).

⑦Press CA F / CA B / SEL to select MIRROR, and then press CA L / CA R to select image
display (OFF, H-V, V and H are optional as illustrated below:)

OFF

H-V

V

H

7.2 CAMERA NAMING

Press MENU to go back to master menu, and then press CA F / CA B / SEL to select CAMERA NAME.

```
        MAIN   MENU

CAMERA           SETUP
CAMERA           NAME
OSD              SETUP
SYSTEM           SETUP
TRIGGER          SETUP
TRIGGER          PRIORITY
SPLIT            SETUP
RESET            ALL
```
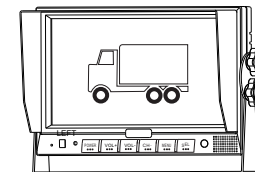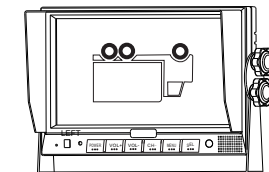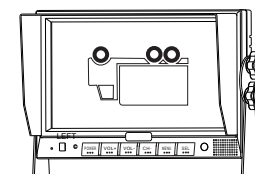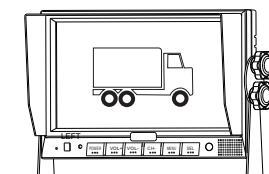
① press CA L／ CA R to enter CAMERA NAME:

```
        CAMERA NAME

LEFT        LEFT _ _ _
RIGHT       RIGHT_ _ _
FRONT       FRONT_ _ _
REAR        REAR _ _ _ _
DISP        ON
```

② Press CA F / CA B / SEL to select LEFT, RIGHT, FRONT or BACK (default name of each camera is also "LEFT", "RIGHT", "FRONT" and "BACK"). For remote control (See page 4), if you want to rename cameras, the letters can be revised by pressing CA L/CA R. On the remote control, press IMG/MODE to choose the character. For wired control pad (See page 6), press QUAD to select the character. There are 62 characters available.

③ PressCA F / CA B / SEL to select DISP, and then press CA L／ CA R to select ON or OFF (default is ON.)   When it is ON, title of each camera is displayed; otherwise, it is not.
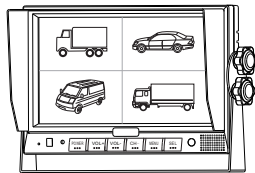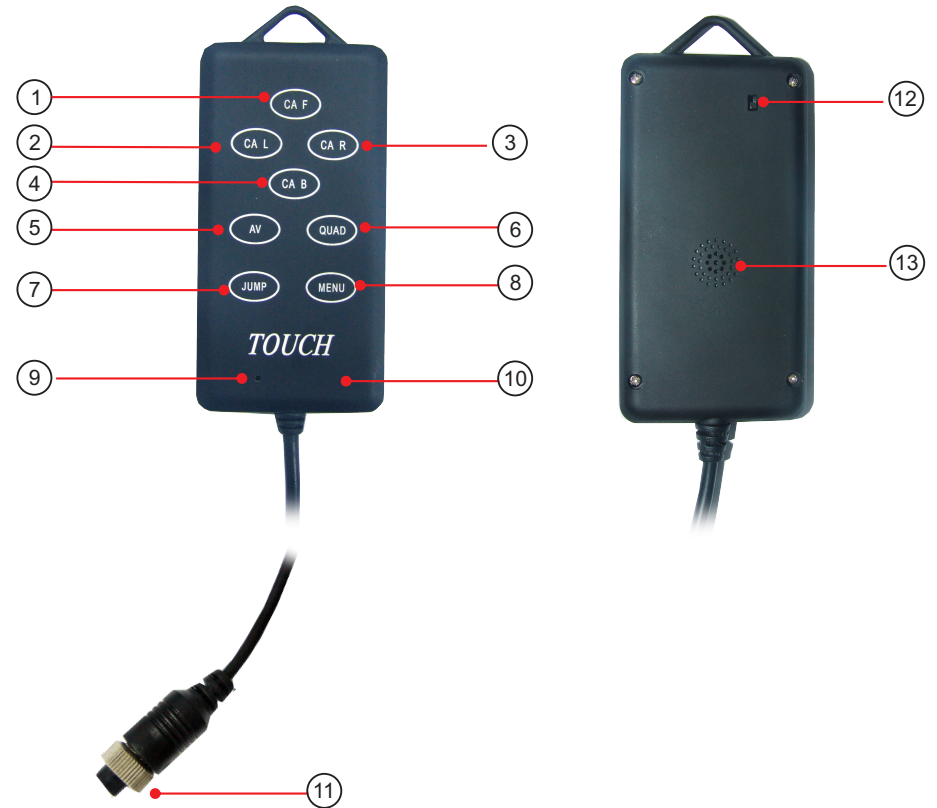
OFF
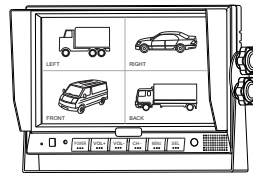
ON

7.3 OSD SETUP

Press MENU to go back to master menu, and then press CA F / CA B / SEL to select OSD SETUP.

```
        MAIN   MENU

CAMERA           SETUP
CAMERA           NAME
OSD              SETUP
SYSTEM           SETUP
TRIGGER          SETUP
TRIGGER          PRIORITY
SPLIT            SETUP
RESET            ALL
```

6.2 Operation of wired control pad(touch buttons)

```
1 ── CA F
2 ── CA L   CA R ── 3
4 ── CA B
5 ── AV     QUAD ── 6
7 ── JUMP   MENU ── 8

TOUCH

9 ──────────── 10

                 ── 12

                 ── 13

── 11
```

| ⚠Special Notice |
|---|
| This device is optional. |

① MUTE
Not used.

② POWER
Press to turn the video processor on/off

③ MENU
Press to show menu or exit menu

④ CA F
Item on menu selection up
Press to select the front view camera

⑤ CA B
Item on menu selection down
Press to select the back view camera

⑥ CA L
Item on menu selection left
Press to select the left view camera

⑦ CA R
Item on menu selection right
Press to select the right view camera

⑧ MODE
Display mode (dual, triple, quad, PIP) selection. Short press to adjust the next
character when changing the name of camera

⑨ SEL.
Jump key selector. Short press makes entry into JUMP KEY setup in SYSTEM
SETUP. See page 7. Jump Key only featured on hard-wired control pad

⑩ P／N
PAL/NTSC TV system selector

⑪ IMG
Only used when adjusting camera names. See page 9

⑫ REST
System reset. Press to resume factory setup default

⑬ AV
Press to select or exit AV - in

7.3.1 Rear gauge

① Press CA L／CA R to enter OSD SETUP.:
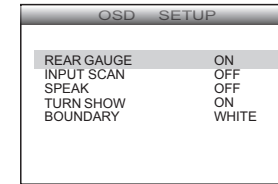
② Press CAF / CAB / SEL to select REAR GAUGE (Backup Grid), and then press CAL／CAR to
select ON or OFF. When it is ON, there is distance grid displayed; otherwise there is not.
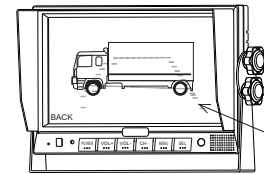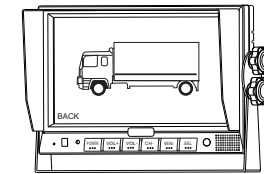
ON   OFF

7. 3. 2 INPUT SCAN

Press CAF / CAB / SEL to select INPUT SCAN, and then press CAL/CAR to select ON
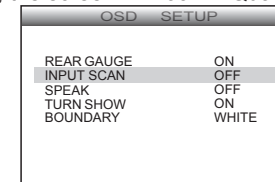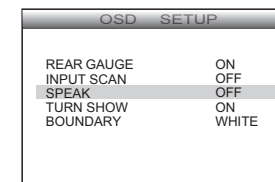or OFF. When it is ON, the screen will lock in Quad mode display, while OFF is in normal
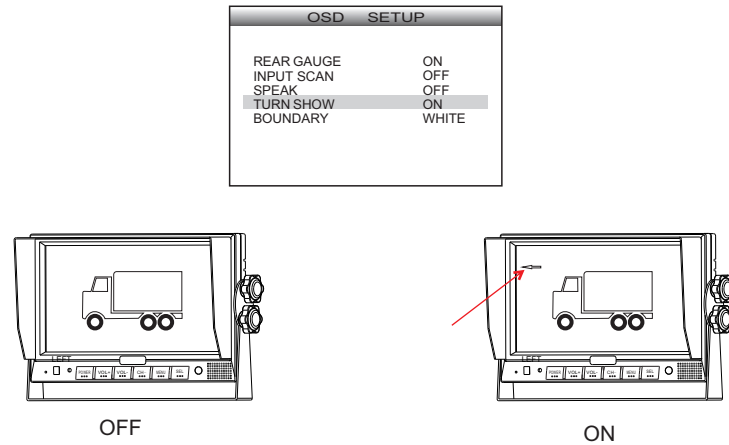mode display

7. 3. 3 SPEAK

Press CAF / CAB / SEL to select SPEAK, and then press CAL/CAR to select ON or
OFF. When it is ON, it turns on the audio, while OFF is to turn off the audio
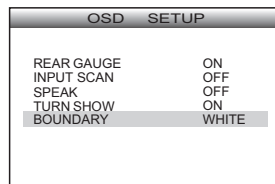
7.3.4 Arrow setup (Turn Signal Indicator)

Press CA F / CA B / SEL to select TURN SHOW, and then press CA L / CA R to select ON or OFF. ON is applied when the monitor is for LEFT & RIGHT Indication, while OFF is applied for regular security.

```
           OSD    SETUP

   REAR GAUGE        ON
   INPUT SCAN        OFF
   SPEAK             OFF
   TURN SHOW         ON
   BOUNDARY          WHITE
```

OFF

ON

7.3.5 Boundary color

Press CA F / CA B / SEL to select BOUNDARY, and then press CA L / CA R to select color of the boundary. WHITE, BLACK and GRAY are available.

```
           OSD    SETUP

   REAR GAUGE        ON
   INPUT SCAN        OFF
   SPEAK             OFF
   TURN SHOW         ON
   BOUNDARY          WHITE
```

7.4 System setup

Press MENU to go back to master menu, and then press CA F / CA B / SEL to select SYSTEM SETUP as below:

```
           MAIN   MENU

   CAMERA            SETUP
   CAMERA            NAME
   OSD               SETUP
   SYSTEM            SETUP
   TRIGGER           SETUP
   TRIGGER           PRIORITY
   SPLIT             SETUP
   RESET             ALL
```
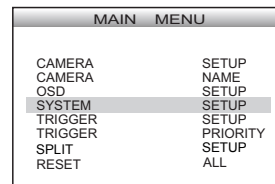
6. Control Operation

6. 1 Remote control operation
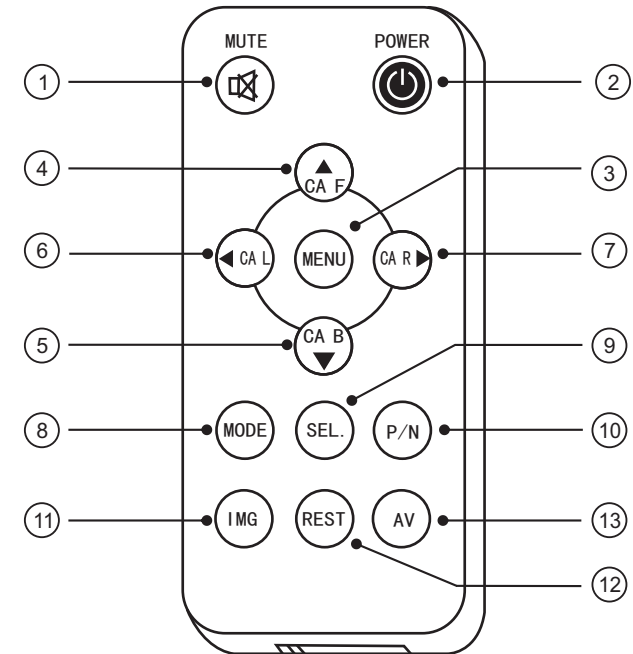
⚠ Special Notice
1. Please point the remote control to the video module when operating.   2. Never disassemble the remote control, allow it to drop, or become wet.

4.2 Camera pin-out definition

4PIN

5PIN

KEY IN

5.Parts Identification

Video out (REC)
Audio out (REC)
Key in
Power
Power indicator
IR
Live out

Front

AV Video In
Camera 1 input
AV Audio In
Camera 2 input
Camera 3 input
Camera 4 input

Back

7.4.1 Record video output

① Press CA L／ CA R to enter SYSTEM SETUP:

```
            SYSTEM  SETUP

REC-V      OUT        QUAD
SCAN                  OFF
SCAN       DELAY      01_SEC
JUMP       KEY        LEFT
P-ON       MODE       QUAD
SYSTEM                PAL
```

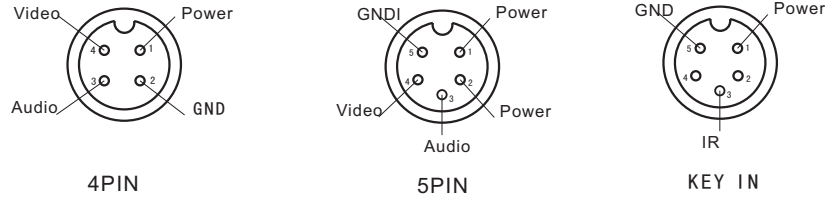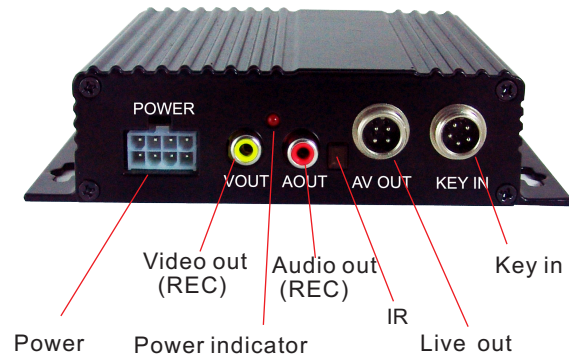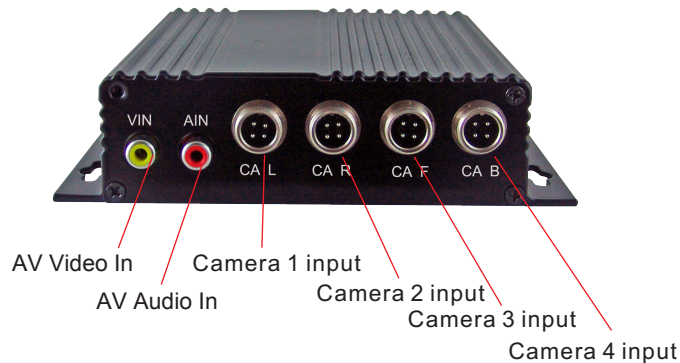② Press CA F / CA B / SEL to select REC-V OUT，and then press CA L／CA R to select LEFT, RIGHT, FRONT, BACK or QUAD. Thus the output image will be left, right, front, back or quad accordingly.

7. 4. 2 Auto Scan

① Press CA F / CA B / SEL to select SCAN as below:

```
            SYSTEM  SETUP

REC-V      OUT        QUAD
SCAN                  OFF
SCAN       DELAY      01_SEC
JUMP       KEY        LEFT
P-ON       MODE       QUAD
SYSTEM                PAL
```

② Press CA L／CA R to select ON or OFF. When it is ON, cameras will be auto switched in the sequence of LEFT, RIGHT, FRONT, BACK, QUAD, LEFT, RIGHT... If there is no video input in any channel, the channel will be automatically skipped.

7. 4. 3 Auto switch time

①Press CA F / CA B / SEL to select SCAN DELAY:

```
            SYSTEM  SETUP

REC-V      OUT        QUAD
SCAN                  OFF
SCAN       DELAY      01_SEC
JUMP       KEY        LEFT
P-ON       MODE       QUAD
SYSTEM                PAL
```

② Press CA L／CA R to set up auto switch time (1~60 seconds).

7. 4. 4 Jump key

Press CA F / CA B / SEL to select JUMP KEY, and then press CA L／CA R to set up display mode from "LEFT", "RIGHT", "FRONT", "BACK", "QUAD", "DUAL 1", "DUAL 2", "TRIPLE 1", "TRIPLE 2", "H - SPLIT", "PIP 1", "PIP 2", "PIP3", "TREFOIL", and "Y - SPLIT". In this case, when monitor is out of "MENU", pressing SEL on the remote control or JUMP on the wired panel will switch directly to the JUMP KEY image.
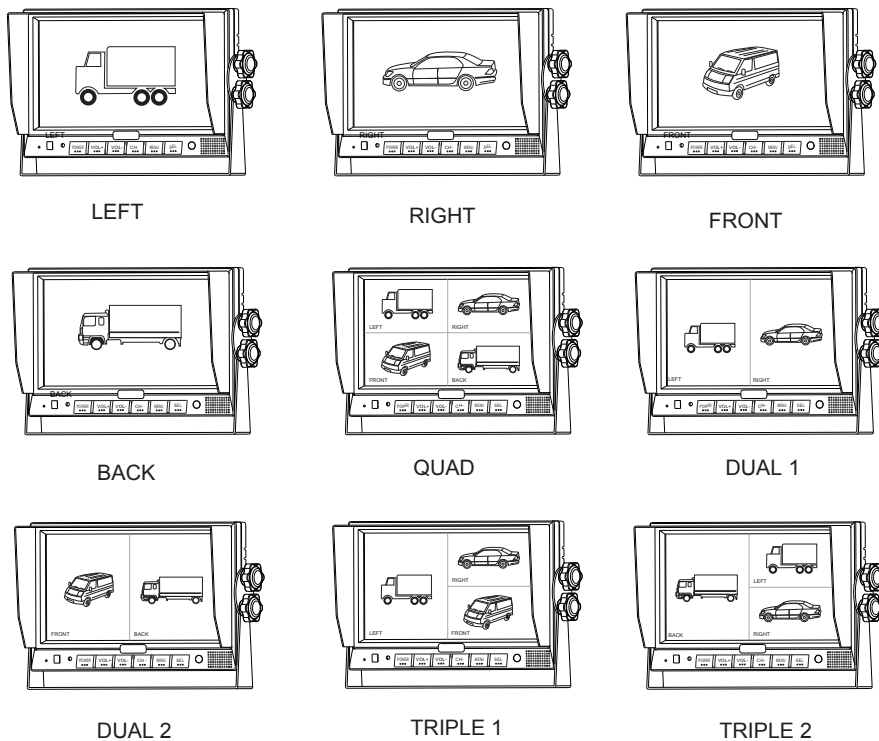
SYSTEM SETUP

REC-V	OUT	QUAD
SCAN		OFF
SCAN	DELAY	01_SEC
JUMP	KEY	LEFT
P-ON	MODE	QUAD
SYSTEM		PAL

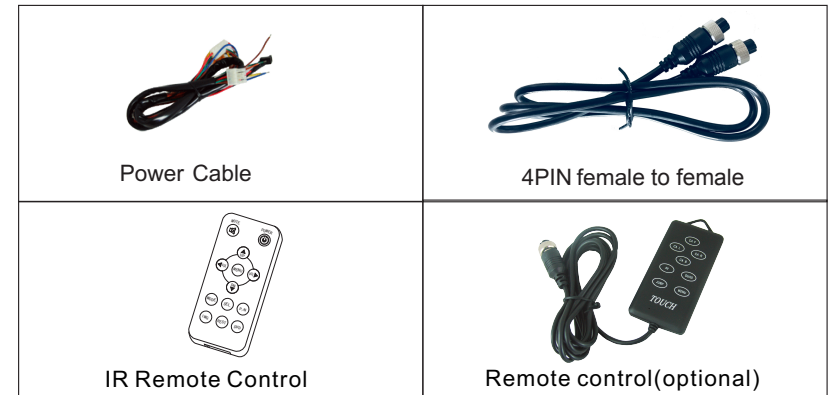### 7.4.5 Switch-on mode (Default Screen At Power-On)

Press CA F / CA B / SEL to select P-ON MODE, and then press CA L / CA R to assign one of the following views upon power-on: "LEFT", "RIGHT", "FRONT", "BACK", "QUAD", "DUAL 1", "DUAL 2", "TRIPLE 1", "TRIPLE 2" "H - SPLIT", "PIP 1", "PIP2", "PIP3", "TREFOIL" and "Y - SPLIT"

SYSTEM SETUP

REC-V	OUT	QUAD
SCAN		OFF
SCAN	DELAY	01_SEC
JUMP	KEY	LEFT
P-ON	MODE	QUAD
SYSTEM		PAL

Different display modes are as illustrated below:

LEFT

RIGHT

FRONT

BACK

QUAD

DUAL 1

DUAL 2

TRIPLE 1

TRIPLE 2

4. Accessories

Power Cable	4PIN female to female
IR Remote Control	Remote control(optional)

⚠ Special Notice

Accessories may vary due to different applications.

4. 1 .System connection

4.1.1 Connection

4-PIN AV OUT: CONNECT TO MONITOR OR DVR.
OPTIONAL: USE ROSCO STSH496 Y-ADAPTOR TO CONNECT TO MONITOR AND DVR.

Monitor (Example: ROSCO STSM270)

DVR (Example: ROSCO DV440)

Monitor (Example: ROSCO STSM270)

RED	+VCC/POWER DC IN 12~32V
BLACK	GND
WHITE	LEFT CAMERA
GREEN	FRONT CAMERA
BLUE	RIGHT CAMERA
BROWN	BACK CAMERA
YELLOW	DOUBLE-SPLIT TRIGGER
Orange	EMPTY
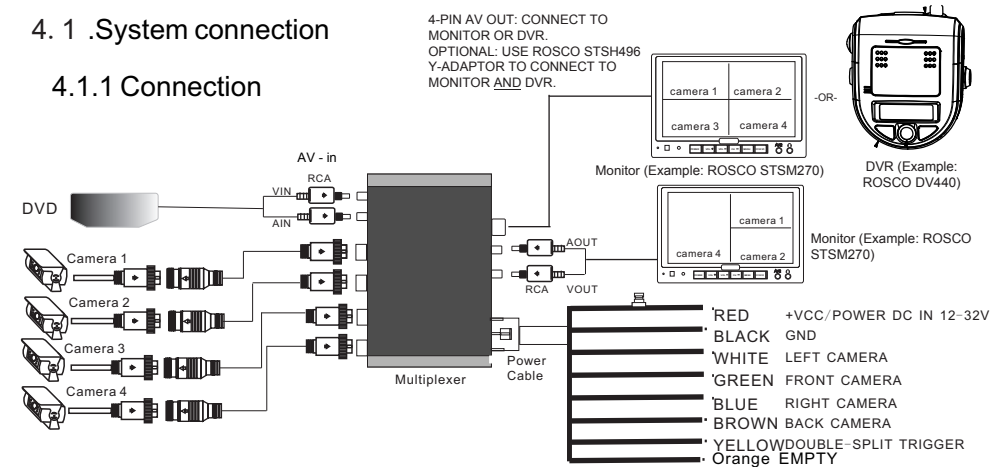
1. VCC (red wire)
   Connect to the vehicle +12 or +24 VDC power
2. GND (black wire)
   Connect to vehicle ground
3. CAMERA L TRIGGER(white wire)
   Left-turn trigger wire suggested connection: the positive wire of left-turn light
4. CAMERA F TRIGGER (green wire)
   Front trigger wire suggested connection: the positive wire of brake
5. CAMERA R TRIGGER (blue wire)
   Right-turn trigger wire suggested connection: the positive wire of right-turn light
6. CAMERA B TRIGGER (brown wire)
   Back-up trigger wire suggested connection: the positive wire of back-up light
7. SPLIT (yellow wire)
   Trigger wire for dual picture suggested connection: the positive wire of door control
8. Do not connect (orange Wire)

1. Precautions

Storage and Keeping
1. Avoid using this device in extreme temperatures. The storage temperature of this device is
-30~+80℃. and the operating temperature is -20~+70℃. The humidity is RH90%.
2. Never expose this device to excessive moisture, dust or oil smoke etc.
3. Avoid dropping or striking this device.
4. Avoid using this device in areas subject to excessive vibration or severe impacts.
5. Do not place cables where they may be pinched or stepped on.

2. Product Features

1. 1 AV input and 4 camera inputs; camera title can be set: (maximum 8 characters).
2. Single, dual, triple, quad image and PIP functions.
3. Default display at power-on can be set to single or split views.
4. Four trigger wires control auto switching between cameras.
5. A fifth trigger wire is available for activation of a custom split screen.
6. Priority of trigger wire can be set up.
7. Backup distance grid & left/right turning indicator arrow available.
8. Brightness, color, contrast and sharp of each camera can be separately set up.
9. Mirror/normal image for each camera can be separately selected.
10. Auto switch to blue screen when there is no video input.
11. Live video output: connected to monitor display.
12. REC video output: picture can be single or split.
13. Auto scan available. Image switching time 1~30 seconds.
14. Operates from 12~32V.
15. Supports max. 4x300mA power output.
16. Trigger-off Delay

3. Technical Specifications

1. Operating Temperature: -20℃-+70℃
2. Storage Temperature: -30℃-+80℃
3. Power for cameras: max. 4×300mA, 12V
4. Video inputs: 4 video inputs for cameras: peak value: 1Vp-p, impedance: 75 ohm.
    1 AV input: peak value: 1Vp-p, impedance: 75 ohm.
5. Audio inputs: 4 audio inputs for cameras: peak value: 1Vp-p, impedance: 4.7K ohm.
    1 AV input: peak value: 1Vp-p, impedance: 4.7K ohm.
6. Video outputs: 1 REC video output: peak value: 1Vp-p, impedance: 75 ohm.
    1 LIVE video output: peak value: 1Vp-p, impedance: 75 ohm.
7. Audio output: 1 REC audio output: peak value: 1Vp-p, impedance: 4.7K ohm.
    1 LIVE audio output: peak value: 1Vp-p, impedance: 4.7K ohm

⚠ Special Notice

All specifications are subject to change without notice.

7.4.6 TV system

Press CA F/ CA B/ SEL to select SYSTEM, and then press CA L/CAR R to select "NTSC" or "PAL". (Note: all Rosco cameras, monitors, and other systems use NTSC.)


```
           SYSTEM  SETUP

REC-V     OUT              QUAD
SCAN                       OFF
SCAN      DELAY            01_SEC
JUMP      KEY              LEFT
P-ON      MODE             QUAD
SYSTEM                     PAL
```

7.5 Trigger wire setup

Press MENU to go back to master menu, and then press CA F / CA B / SEL to select TRIGGER SETUP as illustrated below:

```
       MAIN   MENU

CAMERA            SETUP
CAMERA            NAME
OSD               SETUP
SYSTEM            SETUP
TRIGGER           SETUP
TRIGGER           PRIORITY
SPLIT             SETUP
RESET             ALL
```

7.5.1 TURN IMAGE

Press CA F / CA B / SEL to select TURN IMAGE, and then press CA L / CA R to select the display mode at turning. When it is set to be SPLIT, the images of left and right -side cameras will be displayed; when it is SINGLE, it shows Image from either left or right-side camera.
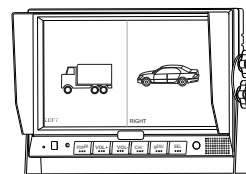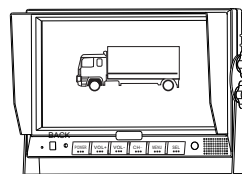


```
      TRIGGER   SETUP

TURN IMAGE         SINGLE
REAR IMAGE         BACK
DELAY              01SEC
DOUBLE   SPLIT:

   LEFT WARD       LEFT
   RIGHT WARD      RIGHT
   AUDIO           LEFT
```
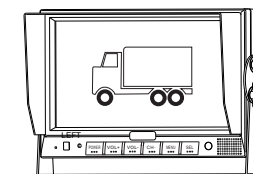
SPLIT   SINGLE

7.5.2 Backup display

Press CA F / CA B / SEL to select REAR IMAGE, and then press CA L / CA R to select the display mode when backing up. If it is BACK, the monitor shows image from backup camera when reversing trigger is activated; if it is TRIPLE, it shows images from back-up, left-side and right-side cameras on one screen when reversing.


```
      TRIGGER   SETUP

TURN IMAGE         SINGLE
REAR IMAGE         BACK
DELAY              01SEC
DOUBLE   SPLIT:
   LEFT WARD       LEFT
   RIGHT WARD      RIGHT
   AUDIO           LEFT
```
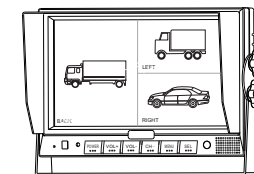
BACK   TRIPLE

7.5.3 Trigger off delay

Press CA F / CA B / SEL to select DELAY, and then press CA L ／ CA R
 to set up the delay time (from 0~60 seconds) as illustrated below:

```
        TRIGGER   SETUP

  TURN IMAGE          SINGLE
  REAR IMAGE          BACK
  DELAY               01SEC
  DOUBLE   SPLIT:

      LEFT WARD       LEFT
      RIGHT WARD      RIGHT
      AUDIO           LEFT
```
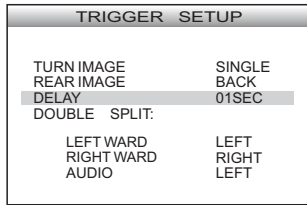
E.G.: If delay time is 5 seconds, the image
will still be displayed for 5 seconds after
the trigger wire is cut off.
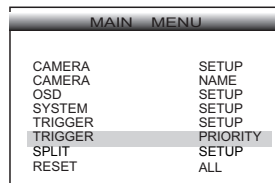
7.5.4 Duplex split display

Press CA F / CA B / SEL to select LEFT, and then press CA L / CA R to select the camera to be

displayed on the LEFTWARD (left side of split screen). The same applies to RIGHTWARD.

```
        TRIGGER   SETUP

  TURN IMAGE          SINGLE
  REAR IMAGE          BACK
  DELAY               01SEC
  DOUBLE   SPLIT:

      LEFT WARD       LEFT
      RIGHT WARD      RIGHT
      AUDIO           LEFT
```
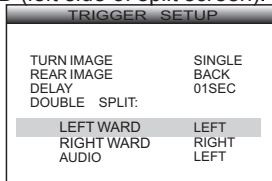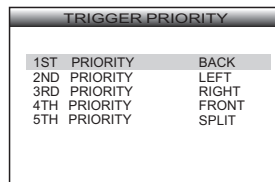
① Any camera can be displayed on the rightward or leftward screen. However, the camera
   selections must be different.

② Audio setup. The audio output is selectable from left, right, front and back camera.

7.6 Trigger Priority

Press MENU to go back to master menu, and then press CA F / CA B / SEL
 to select TRIGGER PRIORITY as illustrated below:

```
        MAIN   MENU

  CAMERA              SETUP
  CAMERA              NAME
  OSD                 SETUP
  SYSTEM              SETUP
  TRIGGER             SETUP
  TRIGGER             PRIORITY
  SPLIT               SETUP
  RESET               ALL
```

 ① Press CA L ／ CA R to enter TRIGGER PRIORITY:

```
        TRIGGER PRIORITY

  1ST   PRIORITY      BACK
  2ND   PRIORITY      LEFT
  3RD   PRIORITY      RIGHT
  4TH   PRIORITY      FRONT
  5TH   PRIORITY      SPLIT
```

② Press CA F / CA B / SEL to select 1st TRIGGER PRIORITY, and then press CAL ／CAR
   to set up which camera would be 1st trigger priority. Every priority level can be
   set up as LFET, RIGHT, FRONT,BACK or SPLIT. Default priority settings are BACK,
   LEFT, RIGHT, FRONT and SPLIT respectively from the first to the fifth.

Contents

7.7 Split Setup

This menu is used to re-assign cameras to each window of any split-screen configuration if the default camera assignments are not desired. This menu is also used for routing of audio from the camera microphones. To access this menu, press MENU to go to the master menu, and then press CA F / CA B / SEL to select Split. Then press CA L/CA R to enter the Split Setup menu.

```
            MAIN   MENU

  CAMERA            SETUP
  CAMERA            NAME
  OSD               SETUP
  SYSTEM            SETUP
  TRIGGER           SETUP
  TRIGGER           PRIORITY
  SPLIT             SETUP
  RESET             ALL
```

Press CA F / CA B / SEL to select the split screen arrangement that needs new camera assignments. Then press CA L/CA R to enter the camera assignment menu for that particular split screen arrangement.

E.G. Press CA L/CA R to enter the QUAD camera assignment menu.

```
            SPLIT  SETUP

  DUAL 1            SCREEN
  DUAL 2            SCREEN
  TRIPLE1           SCREEN
  TRIPLE2           SCREEN
  QUAD              SCREEN
  PIP1              SCREEN
  PIP2              SCREEN
  PIP3              SCREEN
  TREFOIL           SCREEN
  Y-SPLIT           SCREEN
```

E.G. Inside the QUAD SCREEN camera assignment menu, press CA F/CA B to choose a window of the split screen, and press CA L/CA R to choose a camera for that window.

Press CA F/CA B to choose AUDIO, and then press CA L/CA R to choose the camera from which to route microphone audio.

```
            QUAD SCREEN

  LEFT UP           LEFT
  LEFT DOWN         RIGHT
  RIGHT UP          FRONT
  RIGHT DOWN        BACK
  QUAD              SCREEN
  AUDIO             FRONT
```

7.8 Reset

Press MENU to go back to master menu, and then press CA F / CA B / SEL or RES on the remote control to select REST ALL. Press CA L ╱ CA R to reset all menu settings to factory default.

```
            MAIN   MENU

  CAMERA            SETUP
  CAMERA            NAME
  OSD               SETUP
  SYSTEM            SETUP
  TRIGGER           SETUP
  TRIGGER           PRIORITY
  SPLIT             SETUP
  RESET             ALL
```

SAFE-T-SCOPE®

BACKUP CAMERA SYSTEMS

STSS1000A

VIDEO PROCESSOR-MULTIPLEXER
INSTALLATION/USER MANUAL V1.5

Please read this manual thoroughly before operating the device, and keep it for future reference.