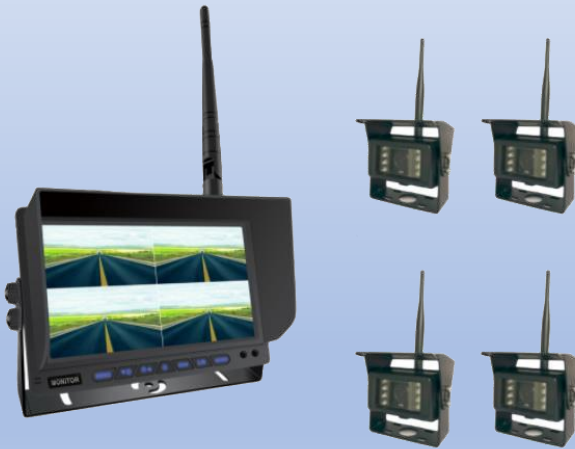# BOYO®
VISION

VTC701AHD-Q2
VTC701AHD-Q4

7" 1080P Full HD Digital
Wireless 2/4 Channel Monitor and Camera System
with Digital Video Recorder

USER MANUAL

Please read the instructional complete before use and keep it for future reference.

Product Features

- 1080P Full HD Image Quality System
- 7" All View Angle IPS TFT LCD Panel
- 4 Channel Wireless Monitor with Single, Dual, or Quad View
- Waterproofed, Heavy Duty Wireless Camera
- Reliable Wireless Operational Range up to 300 ft
- Audio Monitoring with a Microphone Built into the Camera
- Built-in DVR for Audio/Video Recording up to 4 Channels
- Camera with Heater Function
- Easy Installation and Operation

Contents

| Monitor Set (1x) | Camera Set (2x for Q2) (4x for Q4) | 12V Power Adapter Power Chords (3x for Q2) (4x for Q4) | Mounting HW |

Before Installation

- Please check contents.
- Perform bench test. Ensure the product is working before installation by connecting the monitor and the camera to 12VDC.
- Perform pre-install test, before mounting the monitor and the camera. In very rare instances, a running engine causes interference, resulting in image freezing and jerky object movements. In such situation, the monitor and the camera need to be moved and positioned at various places to determine the best performance position.
- For recording, please use the high speed C10 SD memory card.

Wiring

    a.   Monitor wiring:

BROWN – Ch1 Trigger
GREY – Ch2 Trigger
BLUE – Ch3 Trigger
GREEN – Ch4 Trigger

12VDC – ACC
* use a provided power chord

Trigger: The reverse backup light or turn signals are used for trigger input. For example: pair a camera to Ch 3 to a backup camera facing backup of the vehicle and connect reverse backup light positive to the blue (Ch 3) wire. Whenever, a gear is put in reverse and the backup light is turned on, it will trigger the monitor to display the backup camera.
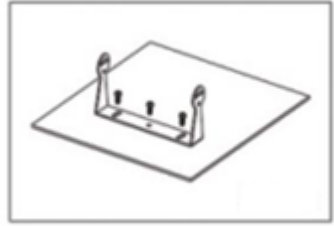
    b.   Camera wiring:
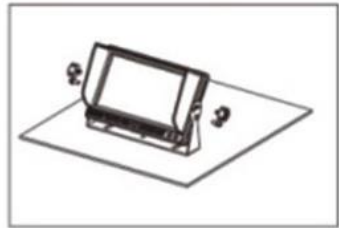

Pairing Button

12VDC – ACC

Monitor Installation

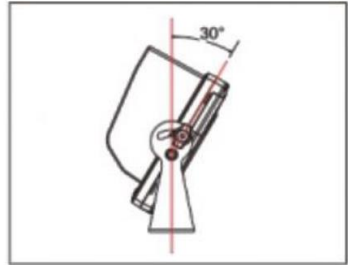a. Install the monitor bracket using the 3 self-tapping screws.
   - Screw in the center.
   - Adjust the angle.
   - Tighten all screws.

b. Install the monitor using 2 bolts on each sided.
   * Do not tighten bolts.

c. Adjust the monitor angle.
   * Tighten all bolts.

Operation

The wireless camera system is operated using the buttons on the front face of the monitor. These are 7 buttons.

MENU	▲ ☼	▼ ☼	⏻	MODE		OK

Each button has different function in three different modes. Three different modes are **Split Screen Multi- Channel Display Mode, Single Channel Screen Display** and **Menu Display Mode.**

1. Monitor Button Functions

Split Screen Multi-Channel Display Mode

Button	Function
MENU	-
▼ ☼	Audio Channel -
▲ ☼	Audio Channel +
⏻	Display On / Off
MODE	Video Ch +
🚗	-
OK	-

Single Channel Screen Display Mode

Button	Function
MENU	Enter Menu
▼ ☼	Brightness -
▲ ☼	Brightness +
⏻	Display On / Off
MODE	Video Channel +
🚗	Scale line on/off
OK	-

Menu Mode

Button	Function	
MENU	Exit Menu Level	
▼ ☼	Previous Menu Item	Decrease
▲ ☼	Next Menu Item	Increase
⏻	Display On / Off	
MODE	-	
🚗	-	
OK	Select Submenu	Confirm

2. Menu Button – Single Channel Screen Display Mode

	Pairing: By pairing assign a camera to each channel
	Picture Setting: Brightness, Contrast, Saturation, Audio Volume
	Picture Orientation: Flip L/R, Flip U/D
	Screen Display Settings: Dual, or Quad split screen on/off
	Camera Settings: Camera on/off, Display Scan time
	System Settings: Set date/time, Set trigger delay, Set parking guidelines
	Playback: Play back recorded video
	Record Settings: Format SD, Rewrite on/off

3. Pairing:

For a wireless camera to transmit video to a monitor, each camera must be paired with specific monitor channel (or screen division).

In the following example, Ch 1 has been selected (Ch 1 single screen display mode).

Menu button is pressed.

'Pairing' is selected and the monitor starts count-down immediately.
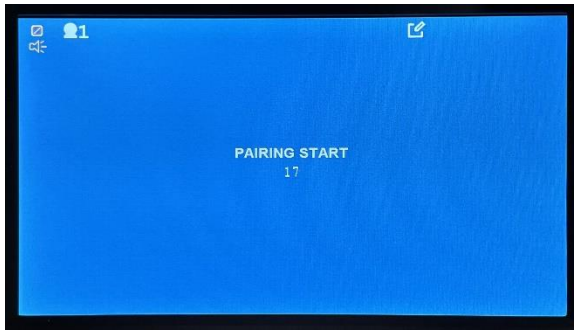
During the count-down, press the camera's RED pairing button on the camera.

Pairing Button

12VDC – ACC

When pairing is successful, the camera video will be displayed.

4. <u>Picture Settings:</u>

Decrease		Increase
▼ ☼	Brightness	▲ ☼
▼ ☼	Contrast	▲ ☼
▼ ☼	Hue	▲ ☼
▼ ☼	Volume	▲ ☼

5. Picture Orientation:

|	
NORMAL	**Normal Camera pointing forward:** An object at the **front-right** side of the vehicle is displayed on the right side of the screen.
MIRROR	**Normal Camera pointing backward - installed as a rearview camera**: Flip image horizontally. An object at the **rear- right** side of the vehicle is displayed on the right side of the screen.
FLIP	**Normal Camera installed upside down:** Rotate the image (180 degrees) to get the normal view.
MIR-FLIP	**Rear view camera installed upside down:** Flip horizontally and rotate the image (180 degrees) to get the normal view.

6. Screen Display Setting:
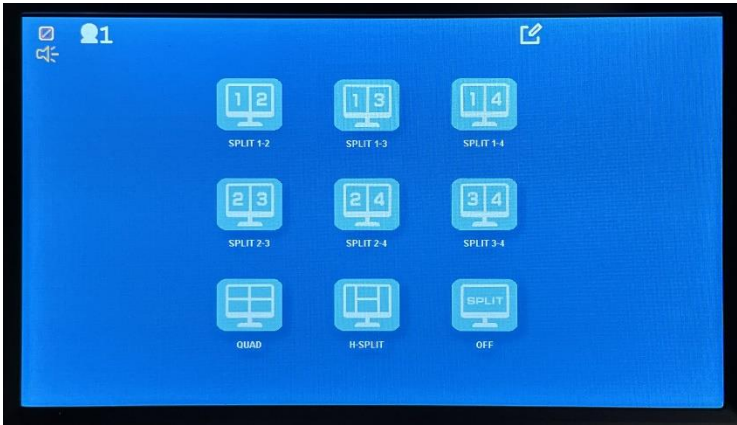
The screen divisions, applicable to enabled cameras in "Camera Settings" are enabled (white colored) and non-applicable screen divisions are disabled (grayed out).

Use ▼☼ or ▲☼ button to the enabled screen division, and then use the OK button to select. Selected screen divisions will pink background 1 3 .

VTC701AHD-Q2: There are only two cameras and if they are paired with Ch 1 and Ch 2, then only 1 2 will be enabled for selection. Other 2-screen divisions (1 4, 2 4 and 3 4) will be disabled (greyed-out).

VTC701AHD-Q4: If Camera 2 is turned off in the camera setting menu (🔳), the screen divisions, (1 2, 2 4) will be disabled from selection and grayed out.

When 'Split Off' (🔳) is selected, the split screen display will not be displayed.

10

7. Camera Settings:

	ON: Selected camera is monitored and recorded. OFF: Not monitored. Not recorded.
	Auto Scan Time. Set the duration time for each channel to be displayed during auto scanning for monitoring purposes.
	Auto Scan ON or OFF. Display a camera for the specified auto scan time and display next camera for the specified auto scan time. And so on.

Defaults:

VTC701AHD-Q2: Camera 1 and Camera 2 are turned on from the factory.

VTC701AHD-Q4: All cameras are turned on from the factory.

8. <u>System Settings:</u>
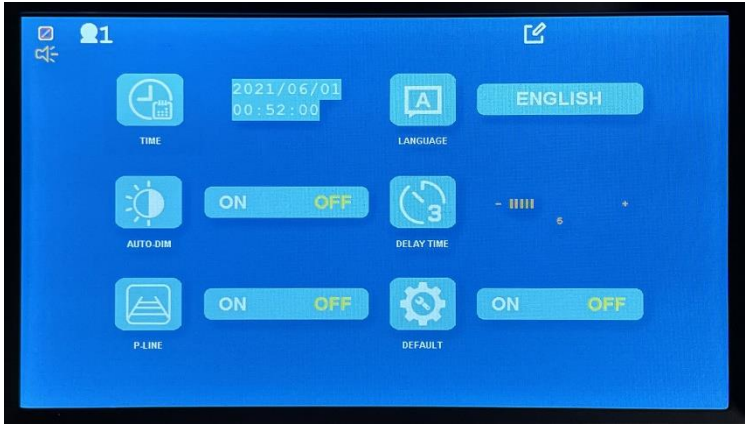
	Set System Time
	Select UI Language
	Auto Dim On or Off. The setting dims the display when it becomes dark
	Trigger off display delay If set to 0, the turn signal triggers will cause the display to blink.
	Parking guidelines on/Off
	Reset system to the factory defaults

9. Playback Recording:

The recorded video can be played on the monitor.

Here are steps:

a. From the main menu, select 'Play' and the available storage media will be displayed.
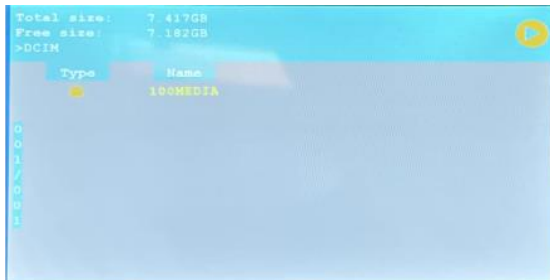
b. Select a storage media (by clicking the $\boxed{\text{OK}}$ button) and the recording list will be displayed.
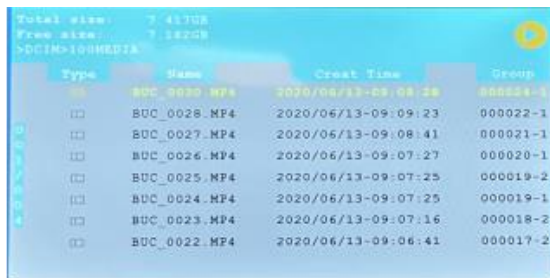
c. Use 'Up' ▲ or 'Down' ▼ button to a video file (.MP4) and press the 'select' $\boxed{\text{OK}}$ button and the selected video will be played.

d. The recorded video can be played by a PC media player.

10. <u>Record Settings:</u>
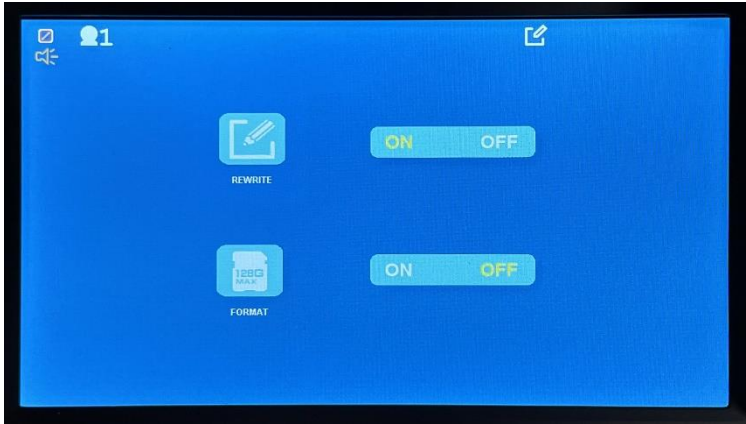
	ON:	Overwrite the oldest recording when storage is full.
	OFF:	Stop recording when storage is full.
	ON:	Format SD card. Support up to 128GB Class 10

Monitor, Camera and Wireless Specifications

1. Monitor Specification

Panel:	7" Digital Panel TFT IPS panel
View Angle:	Full Angle of View
Resolution:	1024*600
Display Ratio:	16:9
Audio:	Built-in Speaker with Volume Control Buttons
Image Control:	Reverse / Non-Reverse (Horizontal Flip)
Parking Guidelines:	Display / No-Display (Selectable)
Trigger:	2 x Trigger Input (VTC701AHD-Q2)
	4 x Trigger Input (VTC701AHD-Q4)
Video Recording:	720P, 1080N
Memory Card:	C10 SD up to 128GB
Operating Voltage :	DC12V & DC24V （MAX. to 36V）
Power Consumption:	Less than 5W
Max. Current:	Less 450mA
Storage temperature:	-30℃～80℃
Working temperature:	-20℃ to 70℃

2. Camera Specification

Image Sensor:	1/3 CMOS sensor
Effective Pixels:	1920 x 1080
Video Transmission:	1080P AHD
View Angle:	170° (Diagonal)
IR Night Vision:	IR
Night Vision IR distance:	up to 12ft
Audio:	Microphone Built-in
Temperature control:	Heater function
Environment:	IP68
Operating Voltage:	DC 12V & 24V
Power Consumption:	< 5W
Max. Current:	< 450mA
Storage temperature:	-30℃～80℃
Working temperature:	-20℃ to 70℃

3. Wireless Specification

Operating frequency:	2.4GHz~2.4835GHz
Output Power:	17±1dBm @TYp 20dBm@max (if necessary)
Modulation Type:	FSK/GFSK

RX Sensitivity: -89dBm(Typical)@4MHz BER:<1E-3
RF Bit Rate: 4MHz BER<1E-3
Spread Spectrum: FHSS
Distance: > 300 ft Open Line of Sight

4. DVR Specification

Recording: Per channel
Resolution: 1024 x 608
Frame per Second   30fps
Memory Card   SD Class 10 or above
Storage Size   Max. 128GB

WARRANTY INFORMATION

This one year limited warranty is given to the end-user or the retail purchaser (referred to this warranty as "Original Purchaser") that it will be free from defects in material and workmanship for a period of one year from the date of the purchase of the new product (excluding accessory items such as power cords, cradle, memory card, adaptor, and cables).

This limited warranty does not cover any physical damage to, or misuse of, this product, damage caused by improper installation; improper use; misuse; neglect; repair of cracked, scratched, broken or modified cosmetics; or parts that have been altered or removed; damages done by another device used with this product resulting from use of non BOYO®- brand parts. This warranty is VOID if you purchased this product as used, floor model sample, or refurbished; if the product has been altered or modified in any way (including but not limited to attempted repair without authorization from BOYO®- Vision Tech America, Inc. and/or alteration/removal of the serial number).

For warranty information, visit: https://www.visiontechamerica.com/get-warranty

For technical support: **Call:**   **(888) 941-3060**
                              Email: info@visiontechamerica.com
                              Visit: **www.VisionTechAmerica.com**