

# Vehicle Safety Video System

- 2.4 GHZ Wireless Camera Control Box
- 2.4 GHZ Wireless Camera
- LCD Monitor



## FEATURES

### Wireless Camera Control Box

#### KEY FUNCTIONS

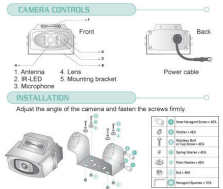
- This system is designed with ultrahigh frequency channel rated at 2.4GHz which is very close to microwave bands.
- The frequency bands range from 2400MHz to 2483MHz (ISM Band).
- Aside from the ISM 2.4G within the system, there is another ISM dual-direction control channel by using GSM433 channel to control over 2.4G channel for camera signaling and the frequency is automatically receivable to assure of more stable signaling.
- The ISM 2.4G is designed with analog, while ISM 433 is used for digital control.
- Within this system, each unit is designed with an ID code. Before operation, please setup the password previously so that users can avoid erroneous operation.



### Wireless Camera

#### KEY FUNCTIONS

- The wireless camera is powered by voltage level from 10V-30V and this voltage range is quite different from that of general cameras only rated at 12V. Thus, it is available for automobile application.
- The camera is designed with internally hidden antenna with the least damage possibility under operation.
  - The camera is automatically turned on when the monitor is turned on.
  - The camera utilizes a CCD image sensor having a high quality picture.
  - The camera automatically adjusts the picture quality with changing in light.
  - Wide field of view: 120° (up to 180°)
  - Wide angle in the horizontal plane: 120° degree in the horizontal plane.
  - Water resistant housing.
  - Operates over a wide temperature range.



### WIRELESS CAMERA SETTING

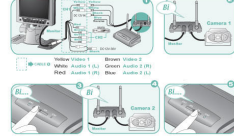
Please connect the camera control box to the dedicated monitor (picture 1).

#### Camera 1 Setup:

- Insert the CA power cords into the receiver box and ID setup hole 1 whenever it gives off a short beeping sound, immediately after that, the unit is ready to enter setup status.
- Press "CH" key with beeping sound happening and the CA1 indicator steadily lamp lights up. It means the setup completeness of CA1. (Picture 5)

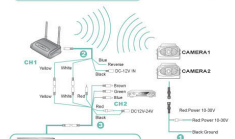
#### Camera 2 Setup:

- Insert the CA power cords into the receiver box and ID setup hole 1 whenever it gives off a long beeping sound (approximately 3 seconds of duration), the unit is therefore ready to enter setup status.
- Press "CH" key with beeping sound happening and the CA2 indicator steadily lamp lights up. It means the setup completeness of CA2. (Picture 5)



## CONNECT

### WIRING DIAGRAM (1)



### CABLE



### CAMERA CONTROLS USING

#### CA1 Key



#### CA2 Key

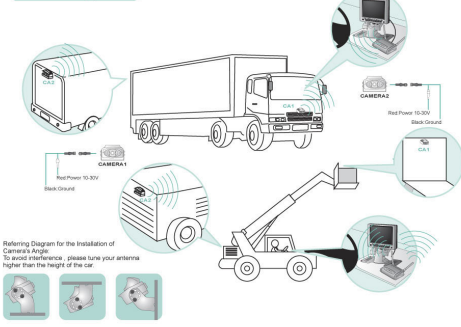


#### CH Key

Whenever the screen is blanking (see figure (a)), users can switch to the clear channel by pressing the CH key.



### WIRING DIAGRAM (2)



## SPECIFICATIONS

### 2.4 GHZ Wireless

|                          |   |                            |               |     |
|--------------------------|---|----------------------------|---------------|-----|
| 2.4GHz Working Band      |   | 2400MHz-2483MHz (ISM Band) | Audio Support | YES |
| 2.4GHz Channel Frequency | CH1: 2400MHz<br>CH2: 2402MHz<br>CH3: 2404MHz<br>CH4: 2406MHz<br>CH5: 2408MHz<br>CH6: 2410MHz<br>CH7: 2412MHz<br>CH8: 2414MHz<br>CH9: 2416MHz<br>CH10: 2418MHz<br>CH11: 2420MHz<br>CH12: 2422MHz<br>CH13: 2424MHz<br>CH14: 2426MHz<br>CH15: 2428MHz<br>CH16: 2430MHz<br>CH17: 2432MHz<br>CH18: 2434MHz<br>CH19: 2436MHz<br>CH20: 2438MHz<br>CH21: 2440MHz<br>CH22: 2442MHz<br>CH23: 2444MHz<br>CH24: 2446MHz<br>CH25: 2448MHz<br>CH26: 2450MHz<br>CH27: 2452MHz<br>CH28: 2454MHz<br>CH29: 2456MHz<br>CH30: 2458MHz<br>CH31: 2460MHz<br>CH32: 2462MHz<br>CH33: 2464MHz<br>CH34: 2466MHz<br>CH35: 2468MHz<br>CH36: 2470MHz<br>CH37: 2472MHz<br>CH38: 2474MHz<br>CH39: 2476MHz<br>CH40: 2478MHz<br>CH41: 2480MHz<br>CH42: 2482MHz<br>CH43: 2484MHz<br>CH44: 2486MHz<br>CH45: 2488MHz<br>CH46: 2490MHz<br>CH47: 2492MHz<br>CH48: 2494MHz<br>CH49: 2496MHz<br>CH50: 2498MHz<br>CH51: 2500MHz<br>CH52: 2502MHz<br>CH53: 2504MHz<br>CH54: 2506MHz<br>CH55: 2508MHz<br>CH56: 2510MHz<br>CH57: 2512MHz<br>CH58: 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3728MHz<br>CH666: 3730MHz<br>CH667: 3732MHz<br>CH668: 3734MHz<br>CH669: 3736MHz<br>CH670: 3738MHz<br>CH671: 3740MHz<br>CH672: 3742MHz<br>CH673: 3744MHz<br>CH674: 3746MHz<br>CH675: 3748MHz<br>CH676: 3750MHz<br>CH677: 3752MHz<br>CH678: 3754MHz<br>CH679: 3756MHz<br>CH680: 3758MHz<br>CH681: 3760MHz<br>CH682: 3762MHz<br>CH683: 3764MHz<br>CH684: 3766MHz<br>CH685: 3768MHz<br>CH686: 3770MHz<br>CH687: 3772MHz<br>CH688: 3774MHz<br>CH689: 3776MHz<br>CH690: 3778MHz<br>CH691: 3780MHz<br>CH692: 3782MHz<br>CH693: 3784MHz<br>CH694: 3786MHz<br>CH695: 3788MHz<br>CH696: 3790MHz<br>CH697: 3792MHz<br>CH698: 3794MHz<br>CH699: 3796MHz<br>CH700: 3798MHz<br>CH701: 3800MHz<br>CH702: 3802MHz<br>CH703: 3804MHz<br>CH704: 3806MHz<br>CH705: 3808MHz<br>CH706: 3810MHz<br>CH707: 3812MHz<br>CH708: 3814MHz<br>CH709: 3816MHz<br>CH710: 3818MHz<br>CH711: 3820MHz<br>CH712: 3822MHz<br>CH713: 3824MHz<br>CH714: 3826MHz<br>CH715: 3828MHz<br>CH716: 3830MHz<br>CH717: 3832MHz<br>CH718: 3834MHz<br>CH719: 3836MHz<br>CH720: 3838MHz<br>CH721: 3840MHz<br>CH722: 3842MHz<br>CH723: 3844MHz<br>CH724: 3846MHz<br>CH725: 3848MHz<br>CH726: 3850MHz<br>CH727: 3852MHz<br>CH728: 3854MHz<br>CH729: 3856MHz<br>CH730: 3858MHz<br>CH731: 3860MHz<br>CH732: 3862MHz<br>CH733: 3864MHz<br>CH734: 3866MHz<br>CH735: 3868MHz<br>CH736: 3870MHz<br>CH737: 3872MHz<br>CH738: 3874MHz<br>CH739: 3876MHz<br>CH740: 3878MHz<br>CH741: 3880MHz<br>CH742: 3882MHz<br>CH743: 3884MHz<br>CH744: 3886MHz<br>CH745: 3888MHz<br>CH746: 3890MHz<br>CH747: 3892MHz<br>CH748: 3894MHz<br>CH749: 3896MHz<br>CH750: 3898MHz<br>CH751: 3900MHz<br>CH752: 3902MHz<br>CH753: 3904MHz<br>CH754: 3906MHz<br>CH755: 3908MHz<br>CH756: 3910MHz<br>CH757: 3912MHz<br>CH758: 3914MHz<br>CH759: 3916MHz<br>CH760: 3918MHz<br>CH761: 3920MHz<br>CH762: 3922MHz<br>CH763: 3924MHz<br>CH764: 3926MHz<br>CH765: 3928MHz<br>CH766: 3930MHz<br>CH767: 3932MHz<br>CH768: 3934MHz<br>CH769: 3936MHz<br>CH770: 3938MHz<br>CH771: 3940MHz<br>CH772: 3942MHz<br>CH773: 3944MHz<br>CH774: 3946MHz<br>CH775: 3948MHz<br>CH776: 3950MHz<br>CH777: 3952MHz<br>CH778: 3954MHz<br>CH779: 3956MHz<br>CH780: 3958MHz<br>CH781: 3960MHz<br>CH782: 3962MHz<br>CH783: 3964MHz<br>CH784: 3966MHz<br>CH785: 3968MHz<br>CH786: 3970MHz<br>CH787: 3972MHz<br>CH788: 3974MHz<br>CH789: 3976MHz<br>CH790: 3978MHz<br>CH791: 3980MHz<br>CH792: 3982MHz<br>CH793: 3984MHz<br>CH794: 3986MHz<br>CH795: 3988MHz<br>CH796: 3990MHz<br>CH797: 3992MHz<br>CH798: 3994MHz<br>CH799: 3996MHz<br>CH800: 3998MHz<br>CH801: 4000MHz<br>CH802: 4002MHz<br>CH803: 4004MHz<br>CH804: 4006MHz<br>CH805: 4008MHz<br>CH806: 4010MHz<br>CH807: 4012MHz<br>CH808: 4014MHz<br>CH809: 4016MHz<br>CH810: 4018MHz<br>CH811: 4020MHz<br>CH812: 4022MHz<br>CH813: 4024MHz<br>CH814: 4026MHz<br>CH815: 4028MHz<br>CH816: 4030MHz<br>CH817: 4032MHz<br>CH818: 4034MHz<br>CH819: 4036MHz<br>CH820: 4038MHz<br>CH821: 4040MHz<br>CH822: 4042MHz<br>CH823: 4044MHz<br>CH824: 4046MHz<br>CH825: 4048MHz<br>CH826: 4050MHz<br>CH827: 4052MHz<br>CH828: 4054MHz<br>CH829: 4056MHz<br>CH830: 4058MHz<br>CH831: 4060MHz<br>CH832: 4062MHz<br>CH833: 4064MHz<br>CH834: 4066MHz<br>CH835: 4068MHz<br>CH836: 4070MHz<br>CH837: 4072MHz<br>CH838: 4074MHz<br>CH839: 4076MHz<br>CH840: 4078MHz<br>CH841: 4080MHz<br>CH842: 4082MHz<br>CH843: 4084MHz<br>CH844: 4086MHz<br>CH845: 4088MHz<br>CH846: 4090MHz<br>CH847: 4092MHz<br>CH848: 4094MHz<br>CH849: 4096MHz<br>CH850: 4098MHz<br>CH851: 4100MHz<br>CH852: 4102MHz<br>CH853: 4104MHz<br>CH854: 4106MHz<br>CH855: 4108MHz<br>CH856: 4110MHz<br>CH857: 4112MHz<br>CH858: 4114MHz<br>CH859: 4116MHz<br>CH860: 4118MHz<br>CH861: 4120MHz<br>CH862: 4122MHz<br>CH863: 4124MHz<br>CH864: 4126MHz<br>CH865: 4128MHz<br>CH866: 4130MHz<br>CH867: 4132MHz<br>CH868: 4134MHz<br>CH869: 4136MHz<br>CH870: 4138MHz<br>CH871: 4140MHz<br>CH872: 4142MHz<br>CH873: 4144MHz<br>CH874: 4146MHz<br>CH875: 4148MHz<br>CH876: 4150MHz<br>CH877: 4152MHz<br>CH878: 4154MHz<br>CH879: 4156MHz<br>CH880: 4158MHz<br>CH881: 4160MHz<br>CH882: 4162MHz<br>CH883: 4164MHz<br>CH884: 4166MHz<br>CH885: 4168MHz<br>CH886: 4170MHz<br>CH887: 4172MHz<br>CH888: 4174MHz<br>CH889: 4176MHz<br>CH890: 4178MHz<br>CH891: 4180MHz<br>CH892: 4182MHz<br>CH893: 4184MHz<br>CH894: 4186MHz<br>CH895: 4188MHz<br>CH896: 4190MHz<br>CH897: 4192MHz<br>CH898: 4194MHz<br>CH899: 4196MHz<br>CH900: 4198MHz<br>CH901: 4200MHz<br>CH902: 4202MHz<br>CH903: 4204MHz<br>CH904: 4206MHz<br>CH905: 4208MHz<br>CH906: 4210MHz<br>CH907: 4212MHz<br>CH908: 4214MHz<br>CH909: 4216MHz<br>CH910: 4218MHz<br>CH911: 4220MHz<br>CH912: 4222MHz<br>CH913: 4224MHz<br>CH914: 4226MHz<br>CH915: 4228MHz<br>CH916: 4230MHz<br>CH917: 4232MHz<br>CH918: 4234MHz<br>CH919: 4236MHz<br>CH920: 4238MHz<br>CH921: 4240MHz<br>CH922: 4242MHz<br>CH923: 4244MHz<br>CH924: 4246MHz<br>CH925: 4248MHz<br>CH926: 4250MHz<br>CH927: 4252MHz<br>CH928: 4254MHz<br>CH929: 4256MHz<br>CH930: 4258MHz<br>CH931: 4260MHz<br>CH932: 4262MHz<br>CH933: 4264MHz<br>CH934: 4266MHz<br>CH935: 4268MHz<br>CH936: 4270MHz<br>CH937: 4272MHz<br>CH938: 4274MHz<br>CH939: 4276MHz<br>CH940: 4278MHz<br>CH941: 4280MHz<br>CH942: 4282MHz<br>CH943: 4284MHz<br>CH944: 4286MHz<br>CH945: 4288MHz<br>CH946: 4290MHz<br>CH947: 4292MHz<br>CH948: 4294MHz<br>CH949: 4296MHz<br>CH950: 4298MHz<br>CH951: 4300MHz<br>CH952: 4302MHz<br>CH953: 4304MHz<br>CH954: 4306MHz<br>CH955: 4308MHz<br>CH956: 4310 |                            |               |     |

# Vehicle Safety Video System

- **2.4 GHZ** Wireless Camera Control Box
- **2.4 GHZ** Wireless Camera
- LCD Monitor



**2.4 GHZ  
Wireless Camera  
Control Box**



**2.4 GHZ  
Wireless Camera**

## FEATURES

### Wireless Camera Control Box

#### KEY FUNCTIONS

1. This system is designed with ultrahigh frequency channel rated at 2.4GHz ,which is very close to microwave bands.
2. The frequency bands range from 2400MHz to 2483MHz(ISM Band).
3. Aside from the ISM 2.4G within the system, there is another ISM dual-direction control channel by using ISM433 channel to control over 2.4G channel for camera signaling and the frequency is automatically swappable to assure of more stable signaling.
4. The ISM 2.4G is designed with analogy, while ISM 433 is used for digital control.
5. Within this system, each unit is designed with an ID code. Before operation, please setup the password previously so that users can avoid erroneous operation.

1. Camera 1 indicator and CA1 signal Indicator.
2. Channel option key and setup keys for CA1 ID.
3. Camera option key and setup keys for CA2 ID.
4. Camera 2 indicator and CA2 signal indicator.



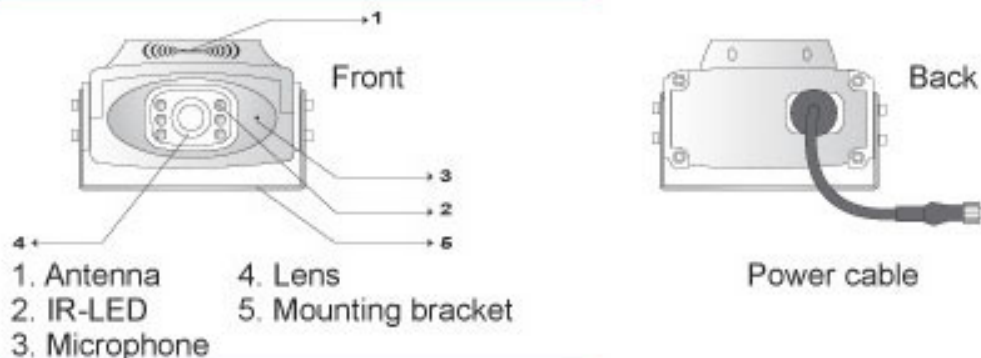
1. Antenna 1.
2. Mirror & Normal Setup.
3. Terminals to connect the dedicated monitor.
4. The setup connection hole for Camera ID.
5. Antenna 2.

# Wireless Camera

## KEY FUNCTIONS

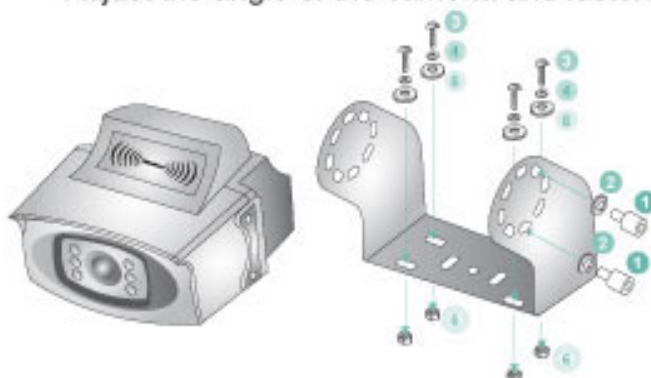
1. The wireless camera is powered by voltage level from 10V~30V and this voltage range is quite different from that of general cameras only rated at 12V. Thus , it is available for automobile application.
2. This camera is designed with internally hidden antenna with the least damage possibility under operation.
  - The camera is automatically turned on when the monitor is turned on.
  - The camera utilizes a CCD image sensor having a high quality picture.
  - The camera automatically adjusts the picture quality with changing in light.
  - Wide field of view : (option)  
96 degree in the horizontal plane.  
120 degree in the diagonal plane.
  - Water resistant housing.
  - Operates over a wide temperature range.

## CAMERA CONTROLS



## INSTALLATION

Adjust the angle of the camera and fasten the screws firmly.



|  |                                     |
|--|-------------------------------------|
|  | 1 Inner Hexagonal Screw x 4EA       |
|  | 2 Washer x 4EA                      |
|  | 3 Stainless Bolt or Cap Screw x 4EA |
|  | 4 Spring Washer x 4EA               |
|  | 5 Plain Washer x 4EA                |
|  | 6 Nut x 4EA                         |
|  | 7 Hexagonal Spanner x 1EA           |



## WIRELESS CAMERA SETTING

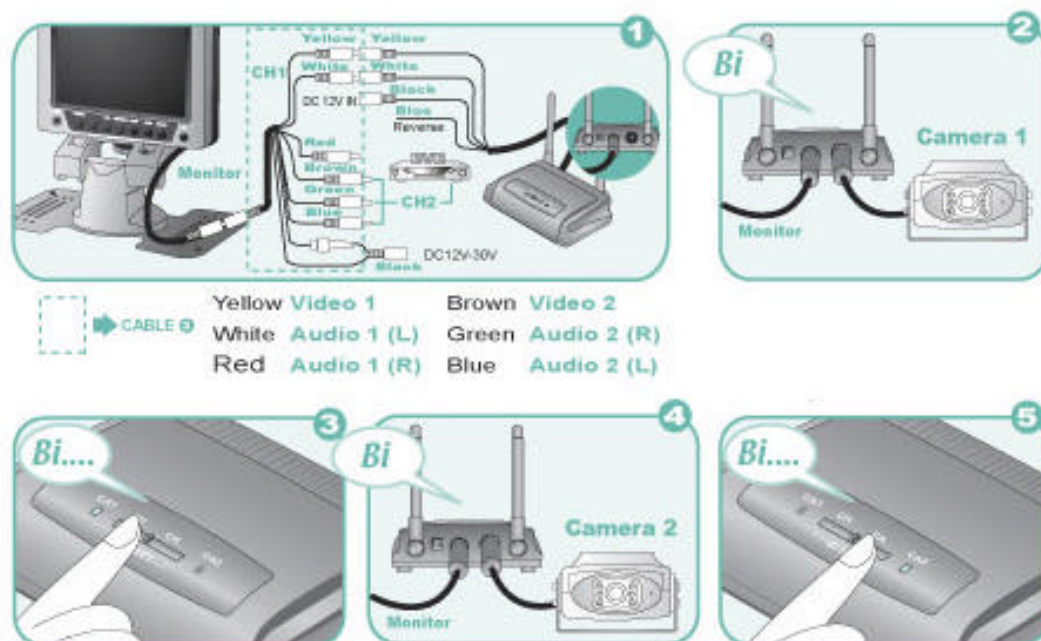
Please connect the camera control box to the dedicated monitor.-----picture 1

### Camera 1 Setup :

1. Insert the CA power cords into the receiver box and ID setup hole : whenever it gives off a short beeping sound, immediately after that , the unit is exactly under setup status.-----Picture 2
2. Press "CH"key with beeping sound happening and the CA1 indicator stably lamp lights up . It means the setup completeness of CA1.-----Picture 3

### Camera 2 Setup :

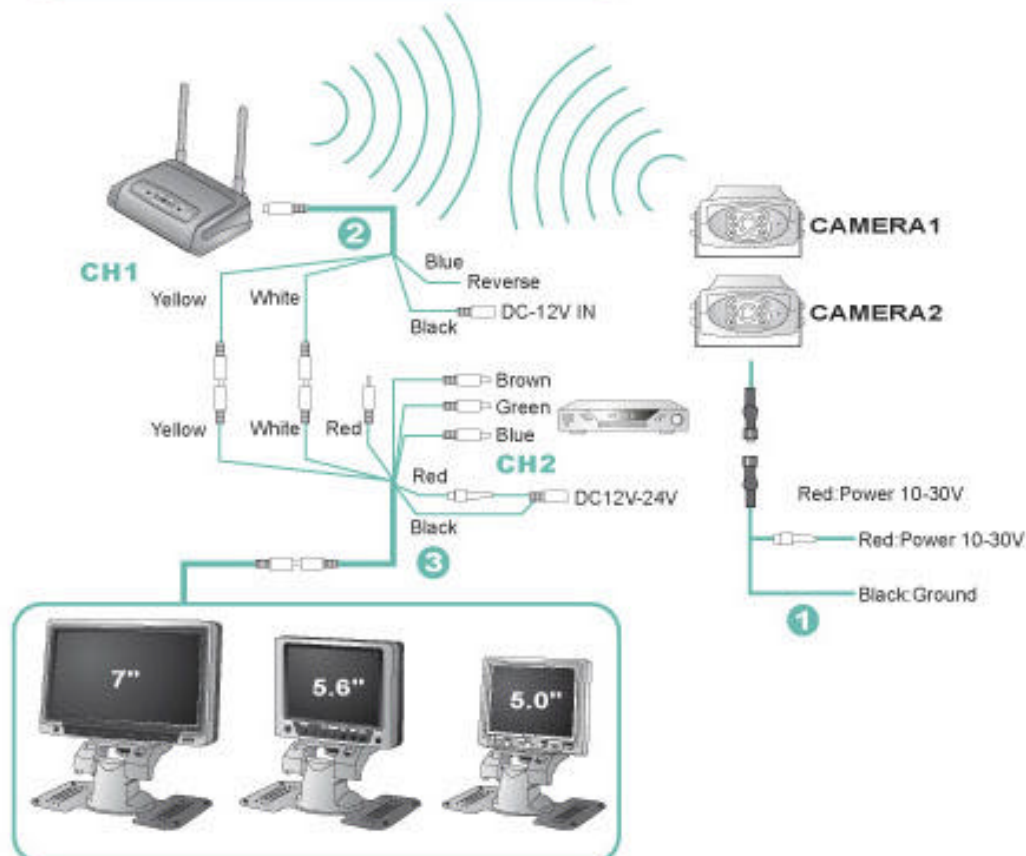
1. Insert the CA power cords into the receiver box and ID setup hole : whenever it gives off a long beeping sound (approximately 3 seconds of duration), the unit is therefore exactly under setup status.-----Picture 4
2. Press "CH"key with beeping sound happening and the CA2 indicator stably lamp lights up . It means the setup completeness of CA2.-----Picture 5



# Car Safety Video System

## CONNECT

### WIRING DIAGRAM (I)



### CABLE

#### For LCD Monitor



## CAMERA CONTROLS USING

### *CA1 Key*



### *CA2 Key*

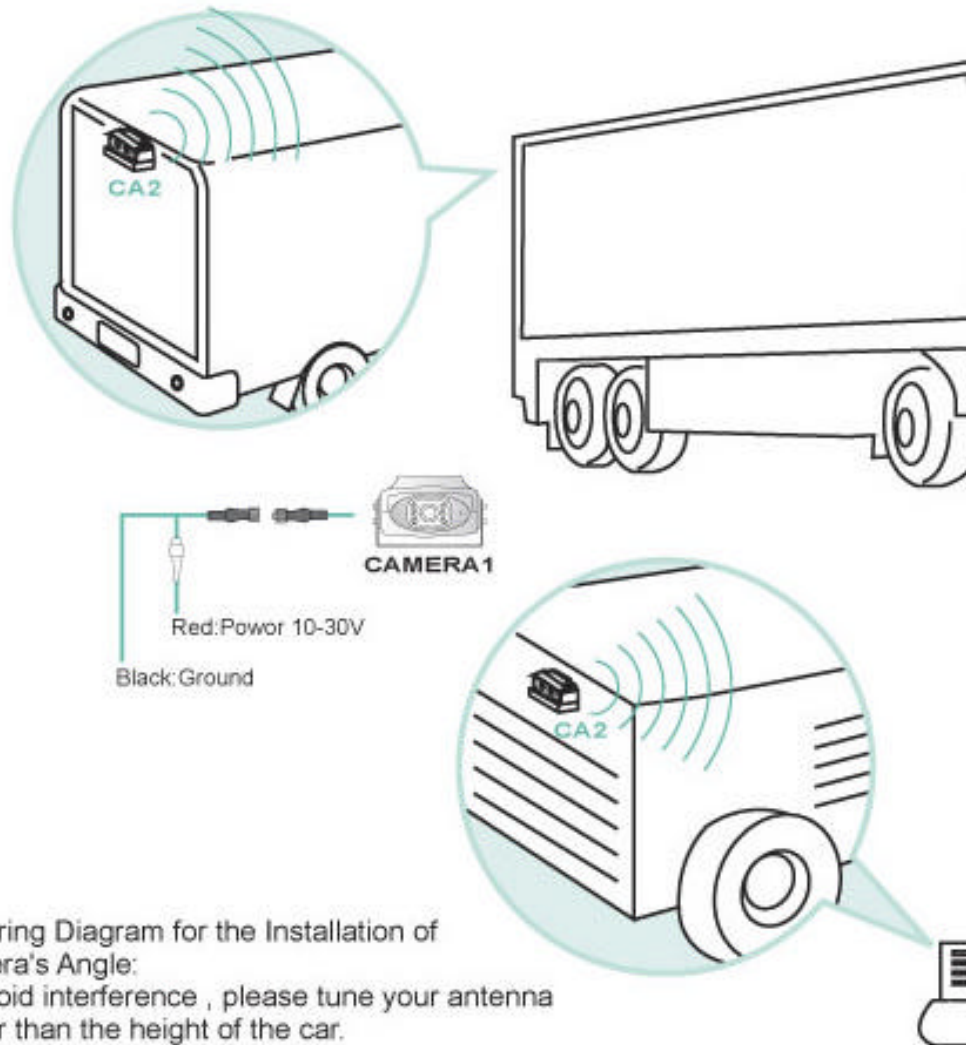


### *CH Key*

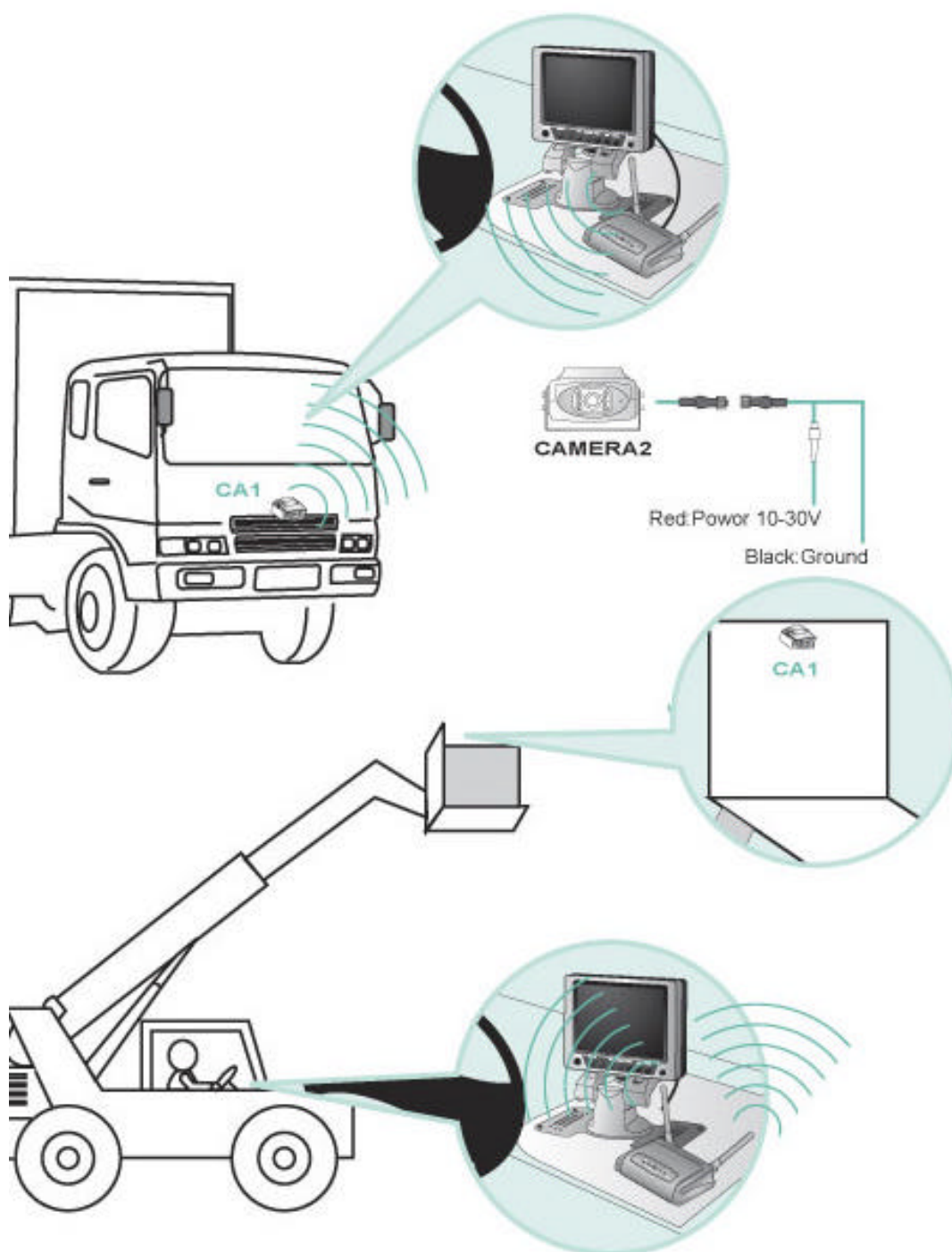
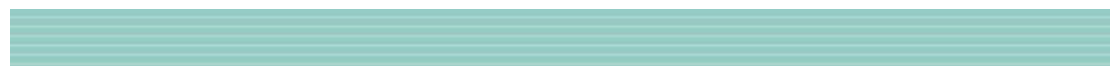
Whenever the screen is blinking like figure (a), users can switch to the clear channel by pressing the CH key.



## WIRING DIAGRAM (2)







# SPECIFICATIONS

## 2.4 GHz Wireless

### Camera Control Box --- W-2400R

|                                 |  |                     |
|---------------------------------|--|---------------------|
| 2.4GHz Receiving Band           | 2400MHz~2483MHz (ISM band)                             | ACC'Y Supplied      |
| 2.4GHz Channel Frequency        | CH1: 2414MHz CH2: 2432MHz<br>CH3: 2450MHz CH4: 2468MHz | Power cable 1EA     |
| 2.4GHz Channel Setting          | By Tact Switch   | Touch Fasteners 1EA |
| 2.4GHz RF Sensitivity           | -80 dBm (min.)   |                     |
| 433 MHz Transmission Frequency  | 433.92 MHz or 434.33 MHz                               |                     |
| 433 MHz RF Output Power         | For FCC or R&TTE                                       |                     |
| 433 MHz Receiver Sensitivity    | -95dBm (min.)  |                     |
| Control Data Modulation         | FSK  |                     |
| Control Data Communication Type | Half-Duplex  |                     |
| <b>Camera Setting</b>           |  |                     |
| CA1/CA2 Camera Selection        | Normal-DIP Switch<br>Reverse Gear auto Change to CA1   |                     |
| CA1/CA2 Camera Mirror Setting   | By DIP Switch  |                     |
| <b>Power Supply</b>             |  |                     |
| Supply Voltage                  | DC12V  |                     |
| Supply Current                  | ≤350mA   |                     |

### Monitor(5.6" LCD MONITOR)

|                   |   |                                     |
|-------------------|---|-------------------------------------|
| Display Type      | TFT LCD Panel for<br>JEMITEK(CHI MEI) J560Q1-01   | <b>Input Terminals</b>              |
| Screen Size       | 5.6 inch  | Mini Din Cable (Power, Ground, RCA) |
| Active Area       | 113.28( W ) × 84.708( H ) mm  | <b>Input Signal</b>                 |
| Screen Color      | Full-Colors   | NTSC/PAL Auto Switching             |
| Resolution        | 960 (H) × 234 (V) dots  | <b>Operation Temperatures</b>       |
| Brightness        | 250 cd/m <sup>2</sup>   | -10~+65°C                           |
| Display Driver    | TFT Active Matrix System  | <b>Storage Temperatures</b>         |
| Display Frequency | NTSC: fh=15.73KHz, fv=60Hz<br>PAL: fh=15.63KHz, fv=50Hz   | -20~+85°C                           |
| Back light        | Cold Cathode Filament Tube  | <b>Humidity</b>                     |
| Operating Voltage | DC12V ( 11-30V)   | 10~90%RH                            |
| Power Consumption | 12 V/ 0.5A  | <b>Overall Dimension</b>            |
| Key Functions     | Video Control: Power, Channel<br>Reverse (Mirror), Color, Bright<br>Contrast Audio Control: VOL+,<br>VOL-, Earphone | <b>Weight</b>                       |
| Video             | 1Vp-p/75ohm   | 400gm                               |
| Audio Input       | 350 mv Rms  | <b>ACC'Y Supplied</b>               |
| Audio Output      | 1w x 2 @ 6 ohms   | Stand and tray 1EA                  |
|                   |   | Screw kit 1EA                       |
|                   |   | Power cable 3EA                     |

## Wireless Camera(Color Outdoor Mounting Camera)

### —CA-2400TC

|                                 |   |
|---------------------------------|---|
| 2.4GHZ Receiving Band           | 2400MHZ~2483MHZ (ISM Band)                          |
| 2.4GHZ Channel Frequency        | CH1: 2414MHZ CH2: 2432MHZ CH3: 2450MHZ CH4: 2468MHZ |
| 2.4GHZ Channel Setting          | By Control Box @Reote side                          |
| 2.4GHZ RF Output Power          | For FCC or R&TTE                                    |
| Video Modulation Type           | FM  |
| Audio Modulation Type           | FM-FM   |
| 433MHZ Transmission Frequency   | 433.92 MHZ or 434.33 MHZ                            |
| 433MHZ RF Output Power          | For FCC or R&TTE                                    |
| 433MHZ Receiver Sensitivity     | -95dBm (min.)                                       |
| Control Data Modulation         | FSK   |
| Control Data Communication Type | Half-Duplex   |
| <b>Power Supply</b>             |   |
| Supply Voltage                  | DC12~24V  |
| Supply Current                  | ≤350mA  |

### Color Camera

|                       |   |                    |
|-----------------------|---|--------------------|
| Image Sensor          | 1/3"COLOR CCD   | ACC'Y Supplied     |
| Picture Elements      | NTSC: 510(H) x 492(V) , PAL: 500(H) x 582(V)          | Camera Bracket 1EA |
| Scanning System       | 525 TV Lines 2:1Interlace , 625 TV Lines 2:1Interlace | Screw kit 1EA      |
| Min. Illumination     | 1.0Lux / F1.2   | Power Cable 1EA    |
| Electronic shutter    | 1/60(1/50)~1/100,000                                  |                    |
| Sync. System          | Internal  |                    |
| Scanning Frequency    | NTSC: 15,750Hz , PAL: 15,625 Hz                       |                    |
| Horizontal Resolution | 330TV Lines   |                    |
| S/N Ratio             | 45dB or more (AGC Off)                                |                    |
| Video Output Signal   | VBS 1.0Vp-p/75Ω                                       |                    |
| Shock Resistance      | 10G   |                    |
| Lens                  | Angular Diagonal 120° F=3.0mm ±5%                     |                    |
| Power Supply          | DC12V±1V  |                    |
| Power Consumption     | 200mA   |                    |
| Audio Output          | 2V / 600Ω   |                    |
| Operating Temp        | -20°C to 55°C   |                    |
| Weight                | 280g  |                    |
| Dimension             | 105 x 65 x 65 (W x H x D) mm                          |                    |

**Car Safety Video System**  
Made in Taiwan