

# Instruction Manual

## 2.4GHz Wireless Intercom System

**Model No.:** SB-100BW4, SB-101BWL, SB-102BWC

**Description :** SB-100BW4: 6" B/W Wireless Monitor (Indoor)  
SB-101BWL: Wireless Door phone (Outdoor)  
SB-102BWC: B/W Wireless Camera with PIR



## CONTENT

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# 1.GENERAL

## 1.1 Safety Precaution

### **Preventing fire or shock hazard:**

Please keep away from children, avoid moisture or any wet environment, such as rain or wet surfaces or bathtub or washbowl or sink or laundry tub. Avoid using this product close to a swimming pool or in basement.

### **Caution:**

For proper warranty and compliance and ability to use the product properly, please make sure that no changes or modification are made to the product.

### **Note:**

This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- \* Redirect or relocate the receiving antenna.
- \* Increase the distance between the equipment and receiver.
- \* Plug the equipment into an outlet on a different circuit from that to which the receiver is plugged into.
- \* Consult with the seller or an experienced radio/TV technician for assistance.

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## **1.2 2.4GHz Wireless System Introduction:**

### **General Instruction;**

The product provides quality video and audio in B/W up to 300 feet utilizing the latest wireless communication technology. It avoids the crowded 40 MHz/49MHz width used by various Electronic Manufacturers in this wireless category. This FCC/CE approved your unit utilizes FM signal modulation to deliver high-quality video and audio. It enhances its quality by utilizing the state-of-the-art circular polarized high gain bi-directional receiving/transmitting antennas. This causes less interruption from unwanted signals and delivers high-quality video and audio.

### **Maximum Performance:**

Flat and horizontal surface should be used for preventing this product to fall or tilt.

For quality video/audio, the maximum transmission range is 300 feet. All obstacles from TV, other wireless products and steel structures should be avoided between camera and receiver.

If interference occurs, please relocate or redirect the equipments till performance is improved.

Avoid directing the camera at light fixtures or extreme sunlight as it will interfere with providing a quality image.

Always keep lens clean to get quality video.

The door phone and camera are weatherproof designed but not waterproof. They are not supposed to place in water or moist place for long time, otherwise it will shorten the product's life.

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## **2. FEATURES AND SPECIFICATIONS:**

### **2.1 FEATURES:**

#### **1) Wireless Monitor (Indoor)**

6" B/W monitor

Use 2.4GHz and 49.86MHz frequency band

Build-in antenna

Received up to 4 channel signals

1 channel wireless door phone

3 channel wireless cameras

4 channels auto switch function , 4 sec interval

3 channel cameras alarm function

Intercom (door phone & monitor)

Wireless unlock

Switch on automatically when someone arrives

Switch off automatically after 30 seconds delayed when nobody answers

Automatic image storage ( 32 frames picture )

#### **2) Wireless Door phone (Outdoor)**

1/4" CMOS sensor

Use 2.4GHz and 49.86MHz frequency band

With calling function

Intercom (door phone & monitor)

Doorplate ( name-cover ) lighting

With 6 pcs IR LEDs for night-vision

Remote unlock

#### **3) Wireless Camera (Outdoor)**

1/4" CMOS sensor

Weatherproof design

Use 2.4GHz and 49.86MHz frequency band

Build-in antenna

Build-in microphone

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Motion detection function (PIR)

With channel setup function

With 8 pcs IR LEDs for night-vision

With CDS to control LEDs

## 2.2 SPECIFICATIONS :

### 1) Monitor (Indoor)

Item	Specification
Display Tube	6" ( 15CM ) B/W CRT
System	CCIR or EIA
Panel Control	Mode/play/Intercom/Unlock/standby switch Brightness、 Contrast、 V-hold、 Volume Camera PIR switch, CODE reset (hidden )
Operation Indicator	LED (mode/storage/standby)
2.4GH, transmission	2414/2432/2450/2468.4 MHz
Audio Output(speaker)	≥0.3W
Resolution	≥380TVL
Image Storage	EIA:256×240 CCIR:256×256 , 32 frames
Crust	Plastic
Power Supply	13.5V 1.2A
Consumption	Standby ≤5W , In operation≤15W
Operation Temperature	-10 ~-40
Storage Temperature	-40 ~+85
Size	165(L)*190(W)*190(H)mm
Weight	1500g

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**2) Door phone (Outdoor )**

Item	Specification	
Sensor	1/4" CMOS	
Active Pixels	CCIR:352 (H) X 288 (V), EIA:320 (H) X 240 (V)	
Resolution	380 TVL	
System	CCIR or EIA	
Scanning Frequency	CCIR H:15625 V:50 , EIA H:15734 V: 60(Hz)	
Transmit/Receive Frequency	Control	49.86MHz
	Audio	49.86MHz
	Image	2468.4 MHz
Transmitting Distance	≥80 m (open area)	
Min Illumination	0 LUX (With IR LED)	
S/N Ratio	≥48 dB	
Back Light Compensation	Auto	
Electronic Shutter	1/50S~1/6000	
Lens	f=3.6 60° (approx)	
Crust	Plastic	
Power Supply	9V 300mA	
Unlock	AC/230/AC120/DC24V 1A	
Consumption	≤2.7W	
Operation Temperature	-10 ~ +40	
Storage Temperature	-40 ~+85	
Size	178(L)*110(W)*45(H)mm	
Weight	300g	

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3) Camera (Outdoor)

Item	Specification
Sensor	1/4" CMOS
Active Pixels	CCIR: 352 (H) X 288 (V), EIA: 320 (H) X 240 (V)
Resolution	380 TVL
System	CCIR/EIA
Scanning Frequency	CCIR H:15625 V:50 , EIA H:15734 V: 60(Hz)
Transmitting Frequency	2414/2432/2450 MHz 49.86MHz
Transmitting Distance	≥80 m (open area)
PIR Sensor Distance	≥5m
PIR Range	30degree ( pan ) 110degree ( tilt )
Min Illumination	0 LUX (With IR LED)
S/N Ratio	≥48 dB
Back Light Compensation	Auto
Electronic Shutter	1/50S~1/6000
Lens	f=3.6 60° (approx)
Power Supply	9V 300mA
Consumption	≤2.7W
Operation Temperature	-10 ~ +40
Storage Temperature	-40 ~+85
Crust	Plastic
Size	110(L)*70(W)*40(H)mm
Weight	200g (W/bracket)

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### 3. SYSTEM CONSTITUTION AND INSTALLATION

The product package includes: monitor, door phone, camera and DC adaptors. The monitor can be connected with 1 door phone, and at most up to 3 cameras. According to different applications, users can just connect the door phone, or together with one camera, or 2 ones, or totally 3 ones.

#### 3.1 MONITOR W/ adaptor, 13.5V/1.2A, (see PIC.3)

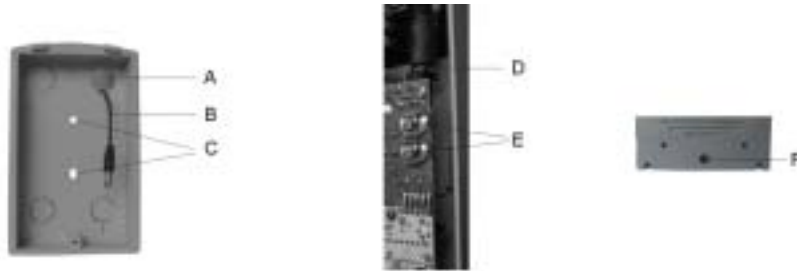
Angle adjustment (see PIC.1)



PIC.1

#### 3.2 DOOR PHONE W/ adaptor, 9V/300mA, see (PIC.4)

Installation of rear cabinet (see PIC.2)



PIC.2

Take off the decorative silica gel in the front cabinet, dismantle the screw then follow the steps below:

- A. Open the 4 holes according to wiring requirements;
- B. Put through the power cable;
- C. Install the rear cabinet onto the walk with the attached screws in the package;
- D. Connect power cable to DC IN jack;

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- E. Connect the switch wires from the electronic lock;
- F. Install the screw and put on the decorative silica gel;

Installation of Name Cover (see PIC.4)

Use a small sharp rod to prize up the name cover via the hole on it. (see PIC.4, point 6) Write down the host name and address on the paper, put it back and push back the name cover.

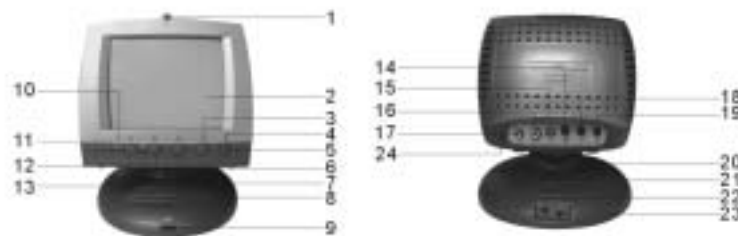
### 3.3 CAMERA W/ adaptor, 9V/300mA, see (PIC.5)

Installation of bracket (see PIC.5)

Set up the channel allocation, set code with monitor then install the bracket into the slot of the rear cabinet. Adjust the camera's angle according to surveillance requirement. If it is difficult to take off the bracket, use a small sharp rod to insert one of the two holes at the bracket. (see PIC.5 point 8)

## 4. MONITOR:

Monitor is the indoor unit, to receive signal from door phone and cameras, and to intercommunicate with door phone as well as to unlock the door.(see PIC.3)



PIC.3

- 1). MICROPHONE;
- 2). CRT;
- 3). UNLOCK;
- 4). STANDBY (screen on/off, hang up);
- 5). LED INDICATOR FOR STANDBY
- 6). TALK (intercommunication);
- 7). PLAY (image review);
- 8). SPEAKER;

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- 9). VOLUME;
- 10). LED INDICATOR FOR CH4 (door phone);
- 11). LED INDICATORS FOR CH1,2,3 (cameras);
- 12). MODE (channel selection);
- 13). LED INDICATOR FOR STORAGE;
- 14). CONTRAST;
- 15). PIR SENSOR ON/OFF SWITCH
- 16). AUDIO OUT;
- 17). VIDEO OUT;
- 18). BRIGHTNESS;
- 19). V-HOLD;
- 20). TIME SETTING;
- 21). + (time/date adjustment)
- 22). DC IN (13.5V/1.2A)
- 23). RING (ring volume adjustment)
- 24). CODE SETTING;

#### **4.1 MODE:**

It is workable only if SCREEN ON, and is for switching between the four channels. The four channels are corresponding to camera 1(CH1), camera 2(CH2), camera 3(CH3), door phone (CH4), and each channel is represented by a LED indicator respectively. The CH4 is the default setting when screen on and the corresponding LED indicator will be lighted. Press the MODE key for the first time, it turns to automatic switching mode (each channel will be displayed for 4 seconds consecutively) and all of the LED indicators will be lighted for 1 second. Press the MODE key for the second time, CH1 will be displayed and the corresponding LED will be lighted; press the third time then CH2 and its LED lighted; press the fourth time then CH3; the fifth time, then return to CH4, and so on.

#### **4.2 PLAY:**

It is used to review the stored images. When some one press the CALL button of door phone, or camera is triggered by PIR, the monitor will save the corresponding image. Press this key, a sound "DI" will be heard and images can be reviewed. When an image is saved, on top of the screen there will appear PXX to indicate total number of stored images.

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#### **4.3 TALK:**

It is used to communicate with the door phone. Press and hold the TALK key, and talk in front of the "MIC" hole on top of the monitor. To hear from the visitor, TALK key must be released.

#### **4.4 UNLOCK:**

Press and hold the UNLOCK key for 1 second, the door controlled by door phone will be unlocked accordingly. Switching is realized by a relay, the switching will last for about 2 seconds once received signal from monitor.

#### **4.5 STANDBY:**

It is used to turn on / off the screen when power is connected.

- 1) When power on and the STANDBY LED indicator is lighted, press the STANDBY key, the indicator will be off and monitor is SCREEN ON;
- 2) When power on and the indicator is off, press the key, the indicator is lighted and monitor is SCREEN OFF(standby);
- 3) When intercommunication with door phone is over, press this key to hang it up. If not, the monitor will not respond to any signal from the cameras in 3 minutes.
- 4) When monitor is receiving signal from door phone, it will not respond to any signal from camera in the coming 30 seconds.

#### **4.6 CODE:**

It is used to set coding between monitor and door phone, monitor and cameras;

#### **4.7 PIR Switches:**

From left to right it stands for CH1, CH2, CH3, and N/A (not applicable). When the switch is put to OFF, the monitor will not respond to the corresponding camera;

#### **4.8 Explanation for LED indicators:**

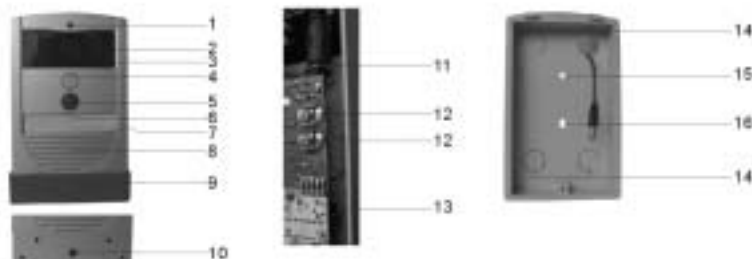
- 1) Indicator for STANDBY: It will be lighted when monitor is connected with power and the monitor is SCREEN OFF, while it will be off when SCREEN ON or power off;

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- 2) Indicator for Storage: after monitor receives signal from door phone and camera, and saves the corresponding images, the indicator will flicker on and on, indicating that there are stored images waiting for review. To stop flickering, press the PLAY key to review the images one by one until the latest one has been reviewed, or press and hold the key for more than 2 seconds;
- 3) Indicators for CH1, CH2, CH3, CH4: represent the corresponding channel on display;

## 5. DOORPHONE

Door phone is the outdoor unit, for visitors' calling and via which the host can intercommunicate with visitors and unlock the door. (see PIC.4)



PIC.4

- 1) POWER INDICATOR;
- 2) LENS;
- 3) IR LEDs;
- 4) MICROPHONE;
- 5) CALL;
- 6) HOLE FOR OPENING NAME COVER;
- 7) NAME COVER;
- 8) SPEAKER;
- 9) DECORATIVE SILICA GEL;
- 10) HOLE FOR INSTALLATION;
- 11) DC IN (9V/300mA);
- 12) UNLOCK CONNECTORS;
- 13) CODE RESET;
- 14) OUTLET FOR CABLES;
- 15).16) HOLES FOR INSTALLATION;

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## 6. CAMERA

It is outdoor unit (up to 3 ones), to be placed where need surveillance. It is triggered by PIR sensor.



PIC.5

- 1) COVER;
  - 2) LENS;
  - 3) IR LEDs;
  - 4) PIR SENSOR;
  - 5) MICORPHONE;
  - 6) DECORATIVE SILICA GEL;
  - 7) POWER CABLE;
  - 8) HOLE FOR DISMANTLE BRACKET;
  - 9) BRACKET;
  - 10) HOLE FOR INSTALLATION;
  - 11) CODE RESET;
  - 12) CHANNEL SELECTION;
- Channel setting panel:



## 7. OPERATION INSTRUCTION

### 7.1 MONITOR AND DOORPHONE

- 1) Pressing the CALL button on the door phone, if monitor is SCREEN OFF at the beginning, then

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door ring will be heard, the screen ON, CH4's LED indicator lighted, and image saved. After the screen is turned ON and if there is not any operation for 30 seconds, screen will be OFF again and storage LED indicator will start flickering until image is reviewed.

2) Pressing the CALL button, if monitor is SCREEN ON at the beginning, at the first case, if one of the cameras is on display (the CH1/2/3 LED is lighted) at the beginning, then monitor will switch to door phone automatically, door ring will be heard CH4's LED indicator lighted and image saved. 5 seconds later, monitor will switch back to the camera again (the corresponding LED will be lighted again); at the second case, if door phone is on display at the beginning, then same thing will happen as point 1).

3) Hearing the door ring, the host can choose to unlock the door by holding the UNLOCK key for 1 second, or press and hold the TALK key to talk to the visitor. To hear the visitor, please release the TALK key.

## **7.2 MONITOR AND CAMERA**

When camera is triggered by PIR sensor, the monitor will switch to the corresponding camera automatically, the relative LED indicator will be lighted and a sound "DI" will be heard.

For door phone, each time the CALL button is pressed, one image will be saved accordingly, while it is different case for the camera. Once the camera is triggered by PIR, the image will be saved. However, if camera has been being triggered for a certain time, the second image will not be saved until 1 minute later from the first image but the sound will still be heard.

If the PIR of camera is ON, when CH1 is triggered the sound will be "DI, DI, DI.....", if CH2, it will be "DIDI, DIDI, DIDI.....", if CH3, then "DIDIDI, DIDIDI, DIDIDI.....".

## **8. INSTRUCTION FOR CODE SETTING**

### **8.1 In which cases code setting is required?**

For a new set of product, it is not required code setting. It functions after power is connected. Code setting may be required in case one of the following phenomena occur:

- 1) A new camera is added to the system;
- 2) There is no door ring after pressing CALL button, or can not unlock the door, or visitor at the door phone side can not hear from the host after the host press the TALK key.
- 3) PIR is ON, but monitor can not receive signal from triggered camera;

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## 8.2 Instruction for code setting

### 1) Code Setting

The code setting process usually lasts for no more than 30 seconds.

After connected with power, STANDBY LED indicator will be lighted and a sound "DI" will be heard.

Make sure to press the CODE key with power connected. (a sound "DI" can be heard when pressing the key). During code setting process, all of the keys will be disable, and the 4 LED indicators of 4 channels will keep flickering one by one until setting is finished. If one of the channel is finished setting, the corresponding LED indicator will stop flickering and a sound "DI" will be heard. For those not successfully setting channels, the corresponding LED indicators will keep flickering.

If none of the channel is successfully set code, the monitor will have a sound "DIDI" indicating failure setting.

During code setting, power can not be cut, otherwise code setting will not be completed. All of the cameras and door phone should be set code before application.

### 2). Code Cleaning

If code setting fails, the unsuccessful unit has to clean the code.

For door phone, code cleaning can be done (with power connected) by pressing and holding the RESET key for over 0.5 second. (see PIC.3)

For camera, user need open the camera cover and shorten two touch points by a piece of metal (with power connected) and hold for over 0.5 second. (see PIC.4)

After code cleaning finished, please repeat the code setting process.

3). Remarks: A. Code setting can be carried out for monitor no matter it is SCREEN ON or SCREEN OFF, as long as power is connected; B. If code setting is failed, please repeat all the above code setting and code cleaning process until door phone and all the cameras are successfully setting code with the monitor.; C. After code setting finished, monitor will turn back to the status at the beginning; D. Monitor will not response to any signal from camera for about 30 seconds after code setting finished.

## 9. TROUBLE SHOOTING

ITEM	TROUBLES	SOLUTION
1	Door ring volume is too low	Put the switch in PIC.3 point 23, from left to right

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2	It is hard to hear from visitor by the side of monitor.	Adjust the volume control in PIC.3 point 9.
3	Video quality is not satisfactory	Redirect/relocate the monitor's position.
4	Visitor can not hear from the host	Check if the TALK key is pressed when talking
5	Unlock is not workable	Make sure press and hold the UNLOCK key for 1 second
6	Trouble 4&5 appear simultaneously	Have code setting process
7	There is interference when talk at the monitor and unlock the door	It is normal for 49.86MHz module's working
8	Camera's PIR is not workable	A、 It is normal if it is within 30 seconds after code setting or if in the process of intercom, or the host do not hang it up after talking. B、 Make sure the PIR sensor switch is ON. C、 Have code setting process again.
10	Code setting fails	Clean code of door phone and camera. Make sure to last code cleaning(hold reset of door phone, remained short for the two touching points of camera) more than 0.5second.

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