

**BELSTAR**

**Wireless Information System**

**Operating Instructions**

**DRAFT**

**Harmony Co., Ltd.**

# Copyright

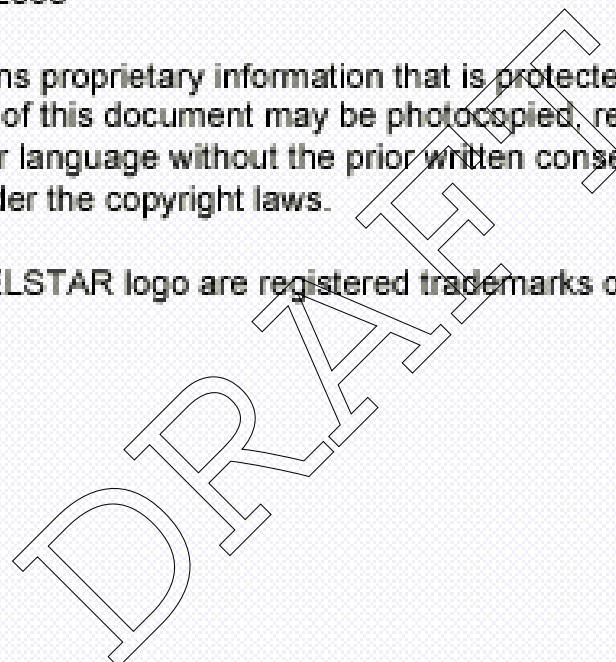
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# Regulatory Compliance & FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

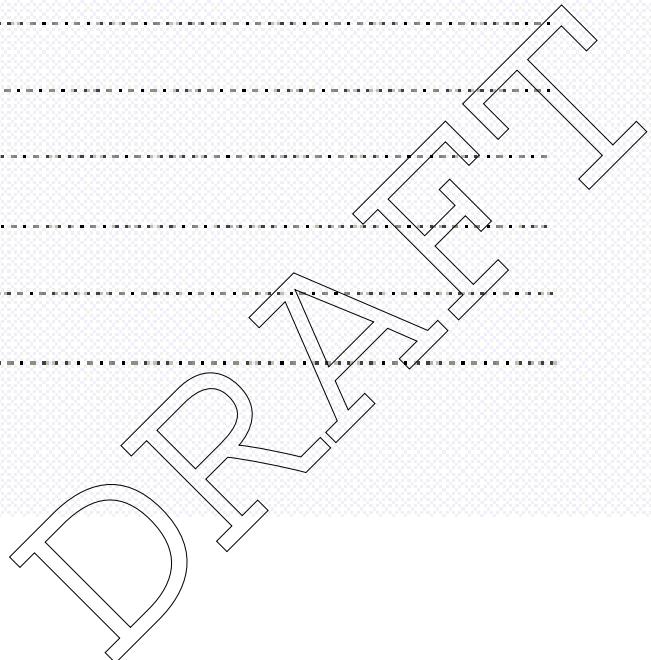
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate 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 try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications to this product not expressly approved by the manufacturer could void any assurances of safety or performance and could result in violation of Part 15 of the FCC Rules.

# Contents

	Page
Safety Precautions.....	1-2
Transmitter.....	3-4
Number Eraser.....	5-6
Receiver.....	7-9
8-Channel Transmitter.....	10-11
Maintenance.....	12
Option.....	12
Troubleshooting.....	13
Specifications.....	14
Service.....	15
Warranty.....	Back cover



# Safety Precautions

Thank you for the purchasing BELSTAR. Please read this manual carefully, especially this Safety Precautions section, to ensure correct use of the system.

Keep this manual in a safe place for future reference.

Read all of the safety precautions prior to using BELSTAR.

These safety precautions are intended to ensure the correct and safe use of the product and prevent harm to the user(s) and bystanders. They are divided into two groups, **Warning!** and **Caution!**, depending on the degree of harm the improper use of the product may cause. Please adhere to the following safety precautions when using BELSTAR.



## WARNING

Loss of life or serious injury may occur if this warning is ignored in handling the product.



## CAUTION

Injury or property damage may occur if this precaution is ignored in handling the product.

### Symbol Examples



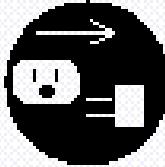
This symbol signifies prohibited activities. Activities are illustrated inside or near the sign (the example on the left indicates "No Disassembly").



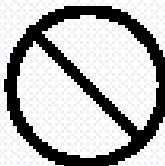
This symbol signifies required or strongly recommended activities. Activities are illustrated inside the sign (the example on the left indicates "Unplug").



## WARNING



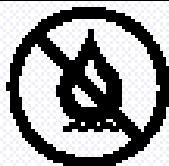
- Unplug BELSTAR before cleaning it to prevent electrical shock.



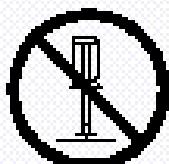
- Do not use the power cord or plug if they are damaged.
- Do not bend, pull, twist, fold, or pinch the cord with undue force; do not place a heavy object on it; and do not attempt to modify the cord.



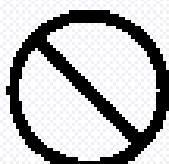
## WARNING



- Do not pour water or detergent on the product.
- Keep the product away from wet places.



- Do not try to take apart, repair or modify the product. Servicing by qualified service personnel only.



- Handle the power cord with care.
- If there is foreign object on plug or prongs, wipe it off before inserting the plug into the outlet.

DATE

## Transmitter

(Parts names and functions)

1 Transmitter BS-X

2 Call button

3 The transmitter issues a high-pitched tone when the call button is pushed, sending the signal to the receiver.

4 Transmitter BX-3

5 Call button

6 Code number nameplate

7 The last two digits appear on the receiver's display (set at the factory); these numbers can be changed by the user.

8 Battery lid

9 Open the lid to replace the batteries.

10 Menu stand type

11 Number sticker

12 Menu stand

13 A simple menu can be put here.

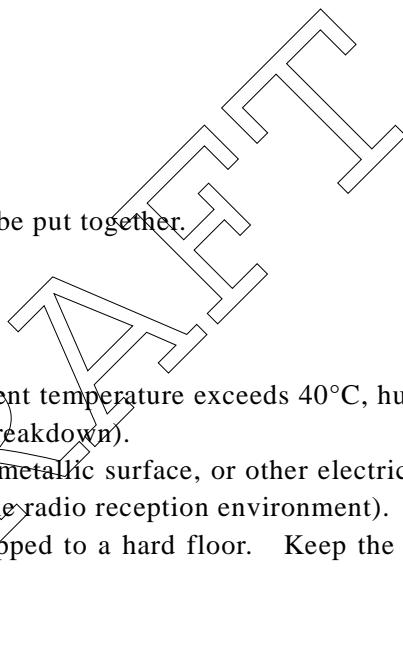
14 Napkin stand type

15 Napkins can be inserted here.

16 A menu can be inserted here.

17 Napkin stand

18 <Caution> Napkins and menus cannot be put together.



(Where to set)

**CAUTION!**

Do not set the transmitter where the ambient temperature exceeds 40°C, humidity is high, or there is water nearby (to prevent corrosion or breakdown).

- Set the transmitter away from the wall, metallic surface, or other electric equipment as much as possible (to prevent the deterioration of the radio reception environment).

- The transmitter may be damaged if dropped to a hard floor. Keep the transmitter on a secure surface.

(How to use)

- The transmitter issues a short high-pitched tone when the call button is pushed, sending the signal to the receiver. The receiver, upon receiving the signal, displays the transmitter's registration number in its window--the number first appears in the window on the extreme left, then proceeds toward right as the customers press the call buttons.

- The number already in a window begins to flash if the transmitter's call button is pushed again.

From left to right, in the order the buttons are pushed.

(How to change the registered number)

The registered number on the bottom of the transmitter can be changed in the following manner.

(1) Open the lid and take out just one battery.

(2) Put the battery back while pressing the call button (see the drawing).

(3) Remove finger from call button upon hearing the short high-pitched tone.

<The following procedures should be carried out as the user watches the receiver.>

(4) Press the call button again--the receiver deletes the displayed number and then moves to the registration mode. Shown in the fifth window is the number that is larger than the previously registered number by one.

(5) Keep pressing the switch until the desired number is displayed for registration.

- Tips -

\*Numbers appear at a rapid pace when the call button is kept pushed for more than 3 seconds.

\*Numbers will return to zero after reaching 99.

a Numbers displayed in the registration mode

b The numeral 1 indicates that the number is being registered.

c The transmitter number being registered

(6) Move your finger off the call button; the transmitter will issue a short high-pitched tone after 5 seconds, indicating that the registration of the new number is finished.

(7) The display on the receiver will disappear 5 seconds after the registration is over.

(8) To check if the desired number has been registered, push the call button again and check the displayed number.

(9) Put the lid back and screw it on.

(The newly registered number differs from the number on the code nameplate. Make the appropriate change.)

**CAUTION!**

Do not tighten the screw with too much force, or the screw head will be crushed.

(How to change the batteries)

- To check the battery, push the call button to hear a short high-pitched tone. If the first tone is followed by another one second later, the battery's life has run out.

- Replace the old batteries with new ones (two size AAA alkali batteries).

- Battery have an operating life of about a year. Check them regularly. It is recommended that the batteries of all the transmitters be changed at the same time.

Screw

Battery lid

(1) Unscrew the lid with a Phillips (cross-tipped) screwdriver.

(2) Remove the lid and the batteries.

(3) Put new batteries in the transmitter (check the polarities).

(4) Put the lid back on and tighten the screw (do not screw it with undue force).

## Number Eraser

(Parts names and functions)

1 Eraser switches (5 push buttons)

2 Push the switch corresponding to the display window--the number eraser issues a short high-pitched tone, erasing the number being displayed on the receiver.

3 Push these buttons to change the call receive tone, brightness of the display panel, and the sound volume.

4 Wall hanging hole (two holes)

5 These holes are for hanging the number eraser on the wall. Hook the eraser on the screw heads protruding from the wall.

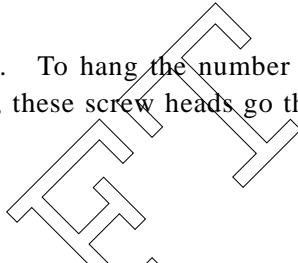
6 Battery lid

7 Open the lid to change the batteries.

8 Nameplate

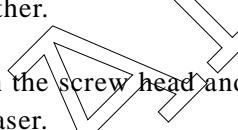
(Preparation)

Read the instructions in "Where to install" below. To hang the number eraser on the wall, put two screws into the wall as shown in the drawing; these screw heads go through the holes on the back of the eraser.



Screw interval: 130 mm

The two screws must be level with each other.



There should be a space of 3 mm between the screw head and the wall surface. Too much space may damage the interior of the number eraser.

(Where to install)

CAUTION!

Do not install the number eraser where the ambient temperature exceeds 40°C, the humidity is high or there is water nearby (to prevent corrosion or breakdown).

- Keep the number eraser away from the heat insulated wall covered with aluminum foil, metallic surface, and other electric appliances as much as possible (to prevent the deterioration of the radio reception environment).

- The number eraser may be damaged if dropped to a hard floor. Keep it on a secure surface.

### (How to change the batteries)

- To check the battery, push the call button and hear the short high-pitched tone. The battery has run out of life if the first tone is followed by another one second later.
- Replace the old batteries with new ones (three size AA alkali batteries).
- The battery has an operating life of about a year.

### (How to use)

#### - Basic operation

Push one of these five switches of the number eraser and the number in the receiver's corresponding window will be erased.

Numbers shown on the receiver's display      PUSH      Move forward to left      PUSH

1. If the user wants to erase the number "3" in the second window from left on the receiver, he pushes the second switch from left on the number eraser.
2. The number "3" will be erased, and the next number "22" will be pushed forward to replace it.
3. Repeat the same procedure to erase the number "22."

#### - Tip -

\*Push only the button on the extreme left if the user wants to erase the numbers on the receiver in the order the customers push the call buttons.

- The user needs to wait more than 1 second before pushing another switch.
- The receiver's tone type, panel brightness, and sound volume can also be changed by the number eraser. See ("How to change the receiver's setting") below for details.
- The eraser's buttons do not work while the receiver is being set. Wait until the setting is finished.

### (How to change the receiver's setting)

The number eraser can be used to change the setting of the receiver--call tone, panel brightness, and call sound volume.

(1) Watch the receiver's display and keep pressing one of the eraser's switches--Tone, Brightness, Sound Volume--for about 3 seconds until you hear the high-pitched sound (chi-chi).

Push the button.

The receiver will go into the setting mode after one of these three buttons is pushed, displaying the sign of the chosen setting.

\*The call numbers that have been shown on the display will disappear for the time the receiver's setting continues. They will reappear when the setting is over.

(2) Push the same button again to change the setting; the setting is changed each time the button is pressed. Stop pressing the button when the desired setting is obtained.

(3) Wait for 5 seconds until the change has been finalized and the receiver returns to the operation mode.

#### - Tip -

\*Stick to one setting at a time. The user, for instance, cannot change either the panel brightness or the sound volume while the call tone is being changed.

## Receiver

(Parts names and functions)

FRONT

1 Plug

2 Display window

3 Displays the received transmitter numbers, from left to right, in the order of receipt.

4 Receive lamp (two lamps)

5 On while the call signal is being received.

6 Antenna (two antennas)

7 Speaker

8 Call signal level, setting level

9 Shows the signal level during normal operation, but indicates the setting level while brightness and display duration are being set.

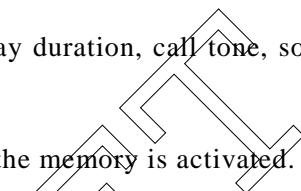
10

Setting switches

For setting signal receive sensitivity, signal display duration, ~~call tone~~, sound volume, and panel brightness.

11 On/off lamp

12 Comes on when the power is on, flashes when the ~~memory~~ is activated.



BACK

1 Wall hang holes (two holes)

2 For hanging the receiver on the wall. ~~Hook the receiver on the screw heads protruding from the wall.~~

3 Nameplate



(Where to install)

CAUTION!

Avoid a place where the ambient temperature exceeds 40°C, humidity is high or there is water nearby (to avoid electric shock or fire).

- Keep the receiver away from the ceiling, metallic surfaces and other electric equipment as much as possible.

- Keep the antennas tilted forward and outward at 45 degrees. If radio reception is poor, check the call signal level and place the receiver where the reception is good.

- To hang the receiver from the ceiling, make sure to use the hooks (option) and the plastic chains

(option). If they are not available, contact the sales store.

(Preparation)

1. Install the receiver as instructed in the above "Where to install." To hang it on the wall, put the screws into the wall as shown in the illustration and hook the receiver onto the screw heads.

Keep the screws 389 mm apart. Keep them level with each other.

There should be space of 6 mm between the screw head and the wall surface. Too much space may damage the interior of the receiver.

2. Plug in the receiver.

### (How to use)

Customers push the transmitters' call buttons, and the receiver's windows then display the corresponding numbers, from left to right, in the order of receipt.

- If more than five call numbers are transmitted, extra numbers will be stored in the memory (capacity: up to 10 call numbers).
- If the customer pushes the transmitter button again, the displayed number in the window begins to flash.
- To erase the displayed number on the receiver, press the number eraser's switch corresponding to the receiver's window.
- The number eraser can also be used to change the setting of the receiver (see "How to change the receiver's setting" on page 6).

(How to change the setting)

Use the following switches to change the receiver's setting--signal receive sensitivity, display duration, call tone, sound volume, and panel brightness.

Display duration To change the amount of time during which the number stays displayed until it automatically disappears.

Call tone To choose the desired call tone from among several variations (this cannot be used to change the call tone of the signal from the 8-channel transmitter) switch

Sound volume To change the sound level of the received call tone.

Brightness To change the level of brightness on the display panel.

## - Procedures

1. To change the setting, keep pushing the proper setting switch (for about 3 seconds) until the operation mode changes to the setting mode.
2. The setting changes (shown in the first window and the signal level indicator) each time the button is pushed.
3. Keep your finger off the switch and wait for about 3 seconds. The setting change has been completed and normal operation begins.

### - Display duration change

- 1 Setting level indicator
- 2 Setting level display (first window)
- 3 Display duration
- 4 \* 1-min. timer
- 5 2-min. timer
- 6 3-min. timer
- 7 Continuous display

- Call tone change

1 Setting level display (first window)

2 Call tone

- Sound volume change

1 Setting level display (first window)

2 Sound volume

3 No sound

4 Small

5 \*Medium

6 Large

- Brightness change

1 Setting level indicator

2 Setting level display (all windows)

3 Brightness

4 Dark

5 \*Bright

6 All the windows show the number "88." They are lit at the chosen level of brightness.

\*The settings with the asterisk were standard settings made at the time of factory shipment.

(Signal level indicator)

Weak <---> Strong

- The small lamps of the indicator come on when the transmitter's signal reaches the receiver in accordance with the strength of the signal (the stronger the signal is, the more lamps come on). The lamps stay on for 1 second.

- The indicator comes in handy when trying to find the best place to set the receiver.

(The indicator lamps come on depending on the strength of the call signal from the transmitter. If the transmitter is placed at a distance, the indicator lamps may not come on (but the transmitter number will be displayed in the receiver's window)).

## 8-channel transmitter

(Parts names and functions)

1 Keyboard

2 Push any one of these switches (you hear the high-pitched sound), and the registered number appears in the window of the receiver.

3 The standard call tone of this 8-channel transmitter is "Horohoro A (t-5)." To change it, contact the sales store.

4 Wall hang hole (two holes)

5 For hanging the transmitter on the wall. Hook it on the screw heads on the wall.

6 Battery lid

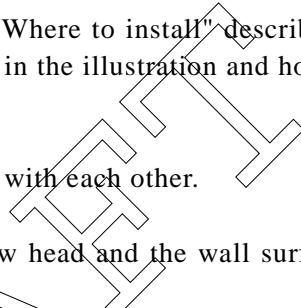
7 Open the lid to change the batteries.

8 Nameplate

(Preparation)

Install the 8-channel transmitter as instructed in "Where to install" described below. To hang it on the wall, put the screws into the wall as shown in the illustration and hook the transmitter onto the screw heads.

Keep the screws 130 mm apart. Keep them level with each other.



There should be space of 3 mm between the screw head and the wall surface. Too much space may damage the interior of the transmitter.



(Where to install)

CAUTION!

Do not install the 8-channel transmitter where the ambient temperature exceeds 40°C, the humidity is high or there is water nearby (to prevent corrosion or breakdown).

- Keep the transmitter away from a heat insulated wall covered with aluminum foil, metallic surface, and other electric appliances as much as possible (to prevent the deterioration of the radio reception environment).

- The transmitter may be damaged if dropped to a hard floor. Keep it on a secure surface.

(How to change the batteries)

- To check the battery, push the call button and hear the high-pitched sound. The battery has run out of life if the first tone is followed by another one second later.

- Replace the old batteries with new ones (three size AA alkali batteries).

- The battery has an operating life of about a year.

(How to register the number)

The numbers of the keyboard switches can be changed.

(1) Open the battery lid and take out just one battery.

(2) Push the switch whose number you wish to change. Keep pressing it as you put the battery back.

(3) Hear the high-pitched tone and then remove your finger from the switch.

<Proceed with the following while watching the receiver>

(4) The operation moves to the number registration mode when the transmitter's keyboard switch is pushed. The window on the extreme left shows the number "1," indicating that the operation is now in the number registration mode. The fifth window shows the number which is larger by one than the currently registered number.

(5) The number on the fifth window increases by one each time the switch is pushed. Repeat pushing the switch until the desired number is reached.

- Tips -

\*Numbers appear at a rapid pace when the button is kept pushed for more than 3 seconds.

\*Numbers will return to zero after reaching 99.

1 Numbers displayed in the receiver windows.

2 The number "1" indicates the number registration mode.

3 The number of the transmitter being registered.

(6) Remove your finger off the switch and wait for 5 seconds. The transmitter issues a high-pitched sound, completing the procedures in the registration mode. (The number registration is now over.)

(7) The numbers on the receiver will disappear 5 seconds after the registration is over.

(8) To check the new number, push the switch one more and check the number displayed on the receiver.

(9) Put the battery lid back on again.

\*The registered number written on the sticker differs from the new number. Rewrite it after the above change.

- To continue the switch number change

(1) Carry out procedures (1) to (5) above.

(2) When procedure (5) is completed, push the other switch within 5 seconds. Repeat this for other switches.

(3) Remove your finger off the switch and wait for 5 seconds. The transmitter issues the high-pitched sound, completing the procedures in registration mode. (Number registration is now over.)

(4) The numbers on the receiver will disappear 5 seconds after the registration is over.

(5) To check the new number, push the switch one more and check the number displayed on the receiver.

(6) Put the battery lid back on again.

\*The registered number written on the sticker differs from the new number. Rewrite it after the above change.

## Maintenance

### WARNING!

Unplug the equipment before carrying out maintenance (to avoid electric shock).

#### (Cleaning)

- Use a soft cloth to clean the equipment (squeeze out the cloth well if it is wet).
- If the stain on the equipment is persistent, first try to remove it with a detergent-soaked cloth, and then wipe it off with a soft cloth (squeeze out the cloth well if it is wet).

(Dust tends to gather on the equipment in winter because of static electricity.)

### WARNING!

Keep the equipment and the plug away from water or detergent (to avoid fire or electric shock).

### CAUTION!

Do not use benzene, thinner, cleanser, or a nylon brush to clean the equipment, as they might damage the plastic surface (the plastic may crack and injure the user).

## Option

### (Receiver)

#### Separate antenna

For use if there is much noise in the operation site or if radio reception is poor.

Contact the sales store.

- Hooks (two)
- Plastic chain

For hanging the equipment from the ceiling (use two hooks and plastic chain).

### (Transmitter)

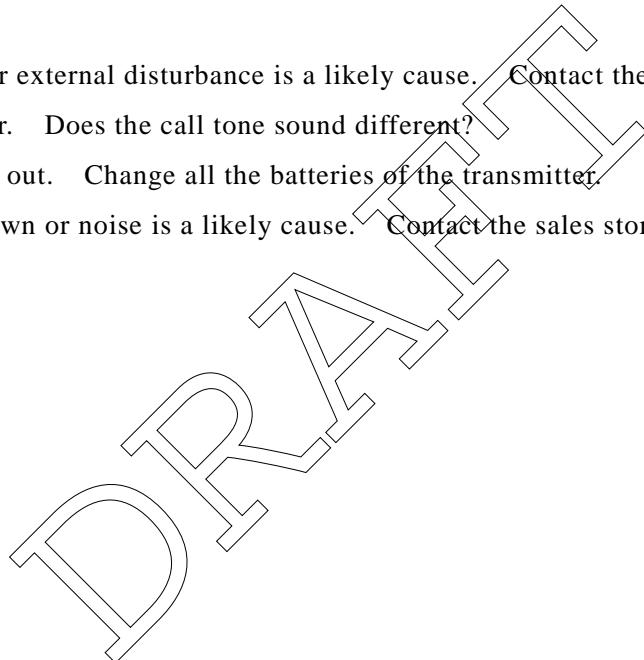
Stand type Has a space for showing the menu.

Napkin stand type Can hold napkins or a menu.

- Ball chain For theft and fall prevention.
- Fastener A (Use the ball chain and the two fasteners together.)
- Fastener B

## Trouble Check

- 1 No call number is displayed on the receiver when the transmitter is pushed.
- 2 Is the receiver's red on/off lamp on?
- 3 Plug in the receiver.
- 4 Does the receiver's red on/off lamp come on?
- 5 Trouble with the receiver. Contact the sales store.
- 6 Does the call number properly appear on the receiver when the transmitter is pushed?
- 7 O.K.
- 8 Is the green receive lamp on?
- 9 Take out all the batteries from the transmitter and put them back again.
- 10 Is the receive lamp on?
- 11 O.K.
- 12 Noise or some other external disturbance is a likely cause. Contact the sales store.
- 13 Push the transmitter. Does the call tone sound different?
- 14 The battery has run out. Change all the batteries of the transmitter.
- 15 Equipment breakdown or noise is a likely cause. Contact the sales store.



## Specifications

(Transmitter)

Power voltage	3 V (two size AAA alkali batteries)
Transmission frequency	300 MHz
Registered number	0-99, registered in the built-in memory, changeable by user
Operating temp.	-10 $\pm$ 50
Weight	about 100 g
Size	BS-X: 81 mm (diameter) x 75.6 mm (height) BX-3: 81 mm (diameter) x 53 mm (height)

(Number eraser) (8-channel transmitter)

Power voltage	4.5 V (three size AA alkali batteries)
Transmission frequency	300 MHz
Operating temp.	-10 $\pm$ 50
Weight	About 300 g
Size	200 mm (W) x 100 mm (H) x 30 mm (D)
Accessory	Screws for wall hanging 4 x 25 (two screws)

(Receiver)

Power voltage	100 VAC (10 VA)
Reception frequency	300 MHz
Reception distance	About 20 meters (depending on environment)
Number display	5 display windows, double digits (first come, first shown from left to right), number height: 41 mm, LED
Memory capacity	Up to 10 numbers when all the windows are occupied
Number erasing	Random deletion by the number eraser, auto deletion by timer
Call tone	Chosen from eight different call tones
Sound volume change	4 levels
Speaker output	300 mW
Operating temp.	-10 $\pm$ 50
Weight	About 1.4 kg
Size	513 mm (W) x 140 mm (H) x 58.5 mm (D) (not including protrusion)
Accessory	- Operation manual - Screws for wall hanging 3.5 x 16 (2 screws)

\*These product specifications are subject to change without prior notice.

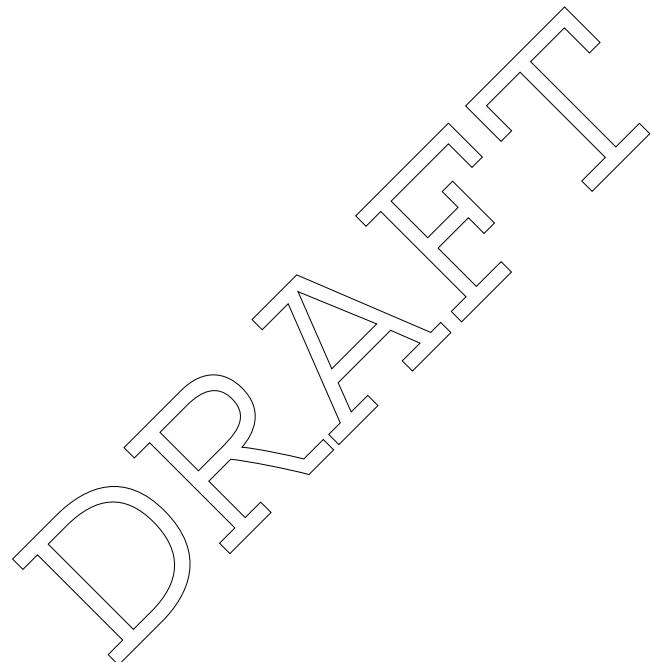
## After-sales Service and Warranty

### Warranty

- Make sure to receive the warranty for this product from the sales store. Check the store's name, the date of installation and other important information on the warranty. Keep it in a secure place.
- The warranty covers the product for one year after the date of its installation.

### Period of guaranteed supply of parts

- The manufacturer will ensure the supply of maintenance parts for this equipment for four years after it is no longer produced. These parts are necessary to maintain the performance of the equipment.



## <Warranty>

This warranty guarantees that the product will be repaired free of charge within the stated period of time. If any problem arises with the equipment within the stated period, present this warranty and request the sales store for repairs.

### <Warranty rules>

1. Free repairs will be provided within the stated period of time if the product develops a problem after it is used correctly in accordance with the instructions stated in the operation manual, precautions on the label attached to the equipment, and any other relevant instructions.
2. To request the sales store for repairs within the warranty period, present this warranty to the store.
3. If you are moving, consult the sales store for after-sales service.
4. The user will be charged for repairs even during the warranty period:
  - (a) Trouble with or damage to the equipment caused by incorrect use or unauthorized repairs or modification.
  - (b) Trouble with or damage to the equipment caused by its relocation after it was properly installed.
  - (c) Trouble with or damage to the equipment attributable to the following: fire, earthquake, flooding, lightning strike, freezing, other natural causes, pollution, gas damage, salt damage, abnormal voltage.
  - (d) Trouble with or damage to the equipment attributable to its use aboard ships, vehicles.
  - (e) If the warranty box below does not bear the date of installation, the user's name, the sales store's name, and the store's stamp, or if the information provided in the box has been rewritten.
6. This warranty will not be reissued. **Keep it in a secure place.**

Product name

**BELSTAR**

Model

BS-3

Warranty period 1 year from XXX (date of installation)

User's name

Name

Address

Tel

Store's name

Name

Address

Tel

Harmony Co., Ltd.