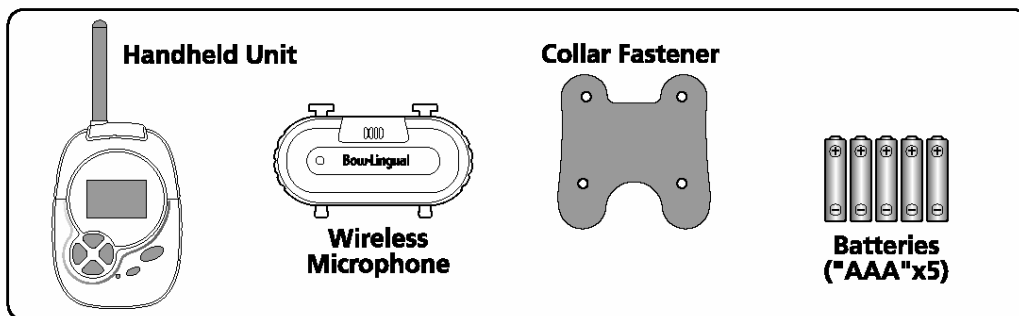


Your Dog Has Something to Tell You!

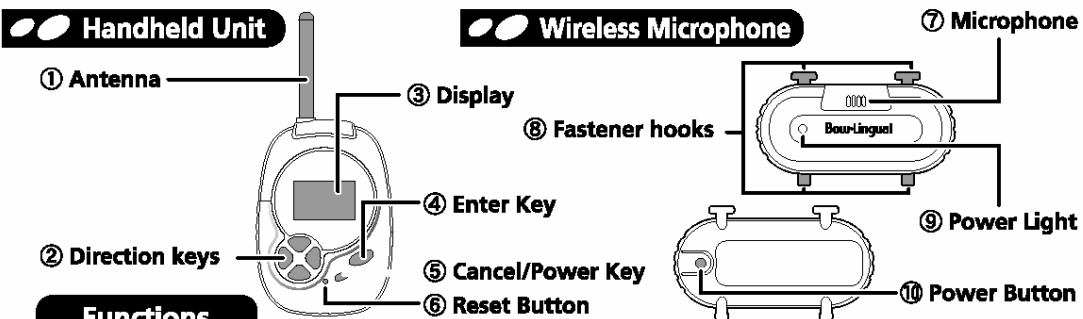
# BowLingual

## User's Manual

### 1. Contents

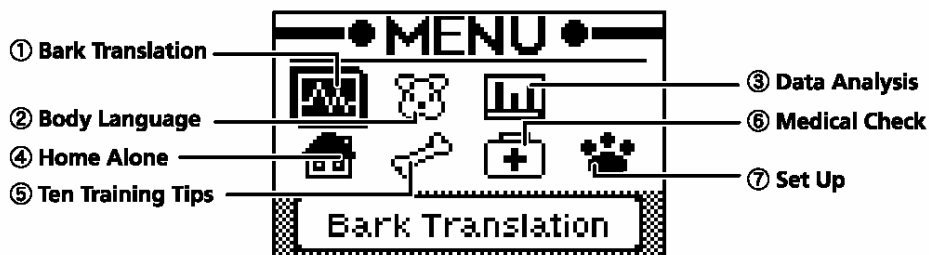


### 2. Part Names and Functions



Functions	
① Antenna	Receives wireless signals from the Radio Microphone
② Direction Keys	Used to navigate the display
③ Display	Operation directions and analysis results are shown here
④ Enter Key	Press to enter selections on the Display
⑤ Cancel/Power Key	Press to cancel. Also press and hold for 2 seconds to turn on/off the Handheld Unit
⑥ Reset Button	Press to reboot when there is an error. (The data stored will not be erased.)
⑦ Microphone	Captures your dog's voice
⑧ Fastener hooks	Attach the Collar Fastener to your dog's collar
⑨ Power Light	Shows that the power is on when lit
⑩ Power Button	Press to turn On/Off the Wireless Microphone

### 3. Main MENU



The selected icon will be highlighted. (In the screen above, "Bark Translation" has been selected.)  
To select a desired function, use the Direction Keys and press the Enter Key.

#### Menu Descriptions

① <b>Bark Translation</b>	Analyzes your dog's barks to determine its emotion, then gives a phrase matched to the emotion.
② <b>Body Language</b>	A guide to interpret your dog's behavior.
③ <b>Data Analysis</b>	Maintains a record of the 100 most recently analyzed barks and Home Alone data.
④ <b>Home Alone</b>	Monitors and records your dog's barks for up to 12 hours while you are away.
⑤ <b>Ten Training Tips</b>	Useful training tips for your dog.
⑥ <b>Medical Check</b>	Medical checklist to help you keep your dog healthy.
⑦ <b>Set Up</b>	Calibrates Bow-Lingual to the breed of your dog.

### 4. Quick Start

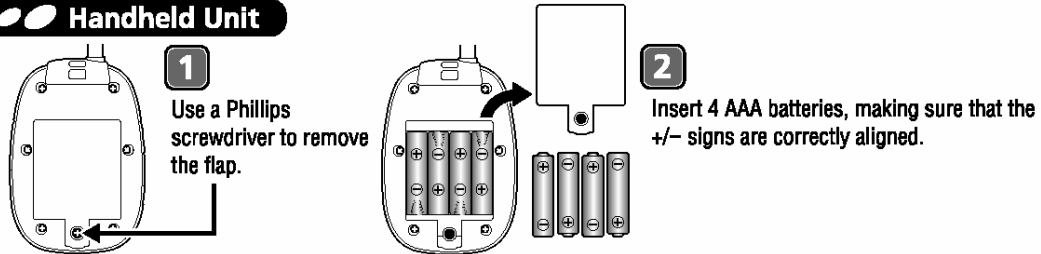
**Quick start guide for the first-time user.**

- 1 Insert batteries into the Handheld Unit and Wireless Microphone using a Phillips screwdriver. (See "5. Inserting the Batteries")
- 2 Set the Date / Time and your Dog's Profile (See "7. Setting the Date/Time & Dog Breed")
- 3 Turn on the Radio Microphone and attach it to your dog's collar (See "8. Attaching the Wireless Microphone")
- 4 Select Bark Translation Mode and press the Enter Key. (See "9. Using the Bark Translation Mode")

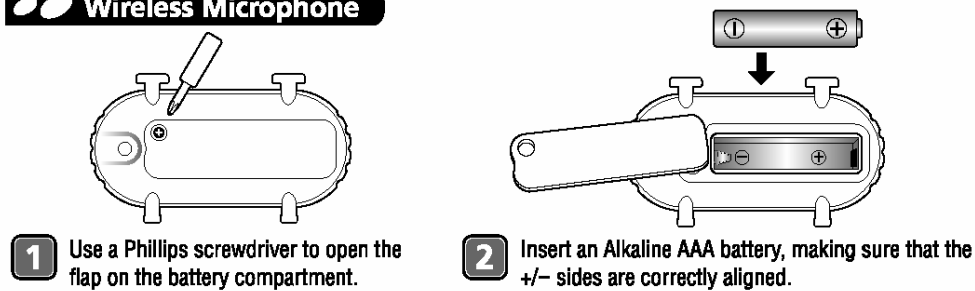
**Your Bow-Lingual is now ready for a bark!**

## 5. Inserting the Batteries

### Handheld Unit



### Wireless Microphone

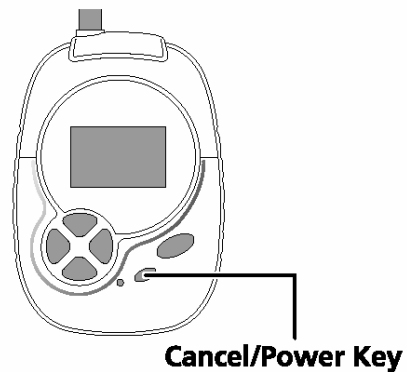


**Always close and screw the flap back on before use!**

## 6. Turning on the Bow-Lingual

### Powering on the Handheld Unit

- 1** **From the first use:** When you insert batteries into the Handheld Unit for the first time, it will automatically power on, then will automatically guide you through the Set Up process of setting Date/Time and your dog's profile.
- 2** **From the second use on,** press the Cancel/Power Key for approximately two seconds to turn on the Handheld Unit.  
\*You will be guided through the Set Up process of setting Date/Time every time you put new batteries into the Handheld Unit.



### Powering off the Handheld Unit

Press the Cancel/Power Key for approximately two seconds to turn it off.  
(The Handheld Unit will also switch off automatically after 15 minutes of inactivity.)

### Powering on the Wireless Microphone

Press the Power Button on the back of the Wireless Microphone to turn it on. When it is on, the Power Light will light up.

### Powering off the Wireless Microphone

Press the Power Button on the back of the Wireless Microphone to turn off.  
(The Wireless Microphone does not have an auto power off function. Turn it off when not in use.)  
\*If there is no noise for 3 minutes while the device is on, it will automatically enter "Stand-by" mode; it will resume sending signals when it hears a bark. The power and the Power Light will remain on during "Stand-by".

## 7. Setting Up the Date/Time & Dog Breed

When using Bow-Lingual for the first time, you will be directed to the "Set Up" screen automatically after inserting the batteries. From the second use on, please select "Set Up" from the Main Menu.

### Date/Time Setting

- You will be guided to set the date and time in the following order: year→month→day→hour→minutes

Use the Directional Keys (↑ ↓) to increase or decrease the digits that are highlighted. Once you select the desired number, press the Enter Key to save the setting. The cursor will automatically move to the next setting.



\*If you make a mistake, press the Cancel Key to delete the last entry.

- When you finish selecting the minutes, press the Enter Key to highlight "OK", then press the Enter Key to confirm. The Date/Time setting is now finished.

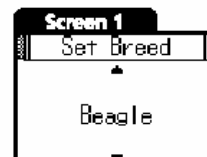


When setting up the Bow-Lingual for the first time, you will be directed to "Dog Profile Set Up" automatically after setting the "Date/Time". From the second use on, when you finish the "Date/Time" setting, you will return to the "Set Up" menu.

### Dog Profile (Breed Setting)

Use the Direction Keys (↑ ↓) to scroll through the dog breeds. Once you have selected a breed, press the Enter Key to save the setting. (The breeds are listed alphabetically.)

If you cannot find your dog's breed in the list, please select from the six Mix/Other Breeds which are characterized by the combination of the size of the body (Small/Medium/Large) and the length of the snout (Long/Short).



#### Body Size

- Large:** Height more than 20"; Weight over 65lbs.
- Medium:** Height 16-20"; Weight 22-65lbs
- Small:** Height less than 16"; Weight less than 22lbs

#### Snout Shape

- Long Nose:** Long snout (for example, Retriever or German Shepherd)
- Short Nose:** Short snout (for example, Pug or Bulldog)

\*Mixed/Other breed settings are on the top of the Breed Setting list.

## Preprogrammed Dog Breeds

To use with other breeds and mixed breeds, simply select your dog's size and the shape of the snout to calibrate.

Preprogrammed Breeds:		
Airedale Terrier	Dachshund	Poodle (Miniature)
Akita	Dalmatian	Poodle (Standard)
Alaskan Malamute	Doberman Pinscher	Poodle (Toy)
American Cocker Spaniel	English Cocker Spaniel	Portuguese Water Dog
American Staffordshire Terrier	English Springer Spaniel	Pug
Australian Cattle Dog	Fox Terrier	Rhodesian Ridgeback
Australian Shepherd	French Bulldog	Rottweiler
Basenji	German Shepherd Dog	Saint Bernard
Basset Hound	German Shorthaired Pointer	Samoyed
Beagle	German Wirehaired Pointer	Schipperke
Bernese Mountain Dog	Giant Schnauzer	Scottish Terrier
Bichon Frise	Golden Retriever	Shetland Sheepdog
Bloodhound	Great Dane	Shiba Inu
Border Collie	Great Pyrenees	Shih Tzu
Boston Terrier	Havanese	Siberian Husky
Bouvier des Flandres	Irish Setter	Silky Terrier
Boxer	Italian Greyhound	Soft Coated Wheaten Terrier
Brittany	Jack Russell Terrier	Vizsla
Brussels Griffon	Japanese Chin	Weimaraner
Bull Terrier	Labrador Retriever	Welsh Corgi (Cardigan)
Bulldog	Lhasa Apso	Welsh Corgi (Pembroke)
Bullmastiff	Maltese	West Highland White Terrier
Cairn Terrier	Mastiff	Whippet
Cavalier King Charles Spaniel	Miniature Pinscher	Yorkshire Terrier
Chesapeake Bay Retriever	Miniature Schnauzer	
Chihuahua	Newfoundland	
Chinese Crested	Old English Sheepdog	
Chinese Shar-Pei	Papillon	
Chow Chow	Pekingese	
Collie	Pomeranian	

When you finish the "Breed Setting" selection, you will be directed to "Name Setting" and then "Gender Setting".

## Dog Profile (Name Settings)

- Using the Direction Keys (←→), select the letters that make up your dog's name. (Screen 1, 2)
- As each desired letter is highlighted, press the Enter Key to enter the letter. (Screen 3)  
\* If you make a mistake, press the Cancel Key to delete the last letter.
- Once you have entered your dog's name, press the (↓)Key until you see "OK" on the bottom of the screen. (Screen 4)

Press the Enter Key on "OK" to confirm the name of your dog.

\*If you choose "BACK", you will exit from the name settings.



## Dog Profile (Gender Setting)

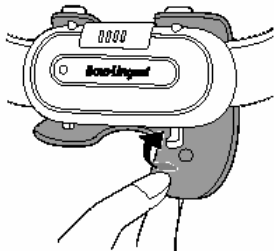
- 1 Use the Direction Keys (↑ ↓) to select either Male or Female.
- 2 Press the Enter Key to enter and press the (↓)Key then "OK" on the bottom of the screen to confirm.



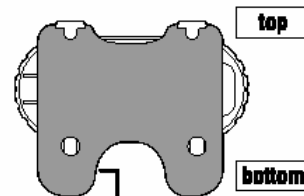
**At this point you have finished "Set Up". You may correct any errors from the "Set Up" function on the Main Menu. If using Bow-Lingual for the first time, you will now be directed to the Main Menu.**

## 8. Attaching the Wireless Microphone

- 1 Affix the top portion of the Collar Fastener to the top portion of the Wireless Microphone.  
*\*The diagram shows the microphone affixed to the fastener from the back.*



- 2 Pass the Collar Fastener through the collar of your dog and affix the bottom portion of the fastener to the bottom hooks of the Wireless Microphone.



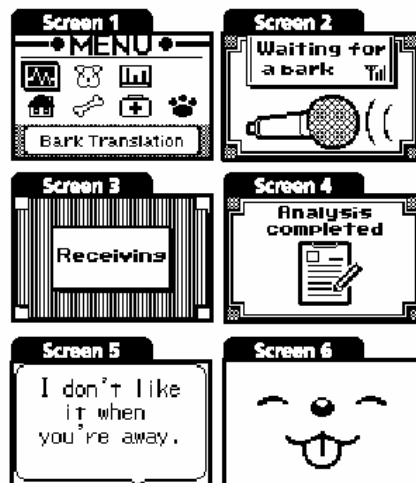
The lower half of the Collar Fastener has longer tabs than the top half.



## 9. Using Bark Translation Mode

### Bark Translation

- 1 Select Bark Translation from the Main MENU. Press the Enter Key. (Screen 1)
- 2 When you see the "Waiting for a bark" screen, the Bow-Lingual is ready for a bark. (Make sure the Wireless Microphone is turned on.)
- 3 When the Wireless Microphone picks up your dog's bark, the display will say "Receiving", and then start analyzing the bark. (Screen 3)  
The display changes to "Analyzing the data".
- 4 When the analysis is done, "Analysis Completed" will appear on the screen. (Screen 4)
- 5 The translation result will be shown on the screen. (Screen 5, 6)



The Bark Translation function analyzes your dog's barks to determine which of six emotions it is feeling: happy, sad, frustrated, on-guard, assertive and needy. The Bow-Lingual then provides a phrase matched to the emotion, to represent what your dog might say if only it could speak.

**Press Enter Key to clear the screen, the Bow-Lingual is ready for the next bark.**

### Notes using Bark Translation

The Bow-Lingual is optimized for adult dogs. When using with puppies, the accuracy of the results may be reduced.

When the Wireless Microphone picks up an untranslatable bark or environmental noise, a dog tilting its head, as shown on "Screen 1", will appear. After three seconds, the screen will automatically shift to the "Waiting for a bark" screen as shown on "Screen 2".

The signal strength may be checked by the antenna icon (Till) on the "Waiting for a bark" screen as shown on "Screen 2". If the Handheld Unit is not receiving the signal, the bars next to the antenna icon disappear. To boost signal strength, hold the Handheld Unit closer to the Wireless Microphone, or move to an area with less signal interference. When no sound is registered for three minutes, the Bow-Lingual enters into "Stand-by" mode and the antenna icon will disappear. It resumes operation after picking up a sound.

If the Bark Translation begins when there seems to be no sound, there may be signal interference. To boost signal strength, hold the Handheld Unit closer to the Wireless Microphone, or move to an area with less signal interference.

### To exit Bark Translation Mode

Press the Cancel Key while at the "Waiting for a bark" screen to exit Bark Translation Mode. Use the Direction Keys (←→) to select YES or NO, and press the Enter Key.

- YES You will be directed to the MENU screen.
- NO You will be directed back to the "Waiting for a bark" screen.



## The Science Behind Bow-Lingual

### **Beginnings:**

The Bow-Lingual is the result of many years' work by experts in acoustics and animal behavior. The core Animal Emotion Analysis System (AEAS) was developed by Dr. Matsumi Suzuki of the Japan Acoustics Laboratory. Dr. Suzuki's research with dolphins indicated they communicate emotions using sounds, and he sought to apply the same techniques to analyze how dogs communicate using barks.

### **Data Collection:**

Dr. Suzuki collected and analyzed thousands of voiceprints of dog barks from over eighty breeds, visiting the homes of dog owners and digitally recording bark samples along with video footage of the dog's behavior and the context of the bark samples. Using an FFT analyzer, which breaks down sounds into their frequency components, Dr. Suzuki was able to transform the bark samples into digital voiceprints with unique features. This analysis indicated that dog barks fall into six distinct patterns.

#### **How to Read a Dog Bark**

Here are two examples of a bark voiceprint from the same breed of dog:

##### **Sad:**

A 'sad' bark has a strong component in the 5000hz range, but not lower than 3000hz with no harmonic component. In a typical pattern, the bark lasts .2 to .3 seconds.

##### **On-Guard**

An angry bark has a clear, non-harmonic, fundamental frequency in the 250-8000hz range; a strong frequency component of approximately 1000hz, followed by fundamental frequencies in the 240-350hz range; a clear harmonic wave of up to 1500hz and a harmonic wave of up to 8000hz lasting .8 to 1.5 seconds.

Source: Japan Acoustic Laboratory

### **Emotion Analysis:**

Reviewing footage of the dogs' behavior and environment during voiceprint recording, the JAL, in consultation with Tokyo's Kogure Animal Hospital, the dogs' owners and veterinarians, concluded that the distinct voiceprint patterns represent six emotions: happy, sad, on-guard/ territorial, frustrated, assertive/ playful and needy.

### **Translation:**

Based on the AEAS emotional classification, Takara Corporation, Japan's second-largest toy company, then worked with the JAL and Kogure researchers to develop over 200 English phrases carefully chosen and classified by emotion expressed, in order to represent what your dog might be trying to say. Takara has tried to communicate the spirit of dogs' playful tones in making a set of phrases which are entertaining.

### **Teaching and Caring for your Dog:**

In addition to bark translation, the Bow-Lingual includes a body language interpreter and training tips developed in collaboration with Dr. Norio Kogure, author of *The Health and Training of Your Dog*, as well as a medical reference developed by Dr. Tamara Shearer, author of *Emergency First Aid for Your Dog* and lecturer at Ohio State University's College of Veterinary Medicine. We hope you will use the Bow-Lingual to help you train, teach and care for your dog.