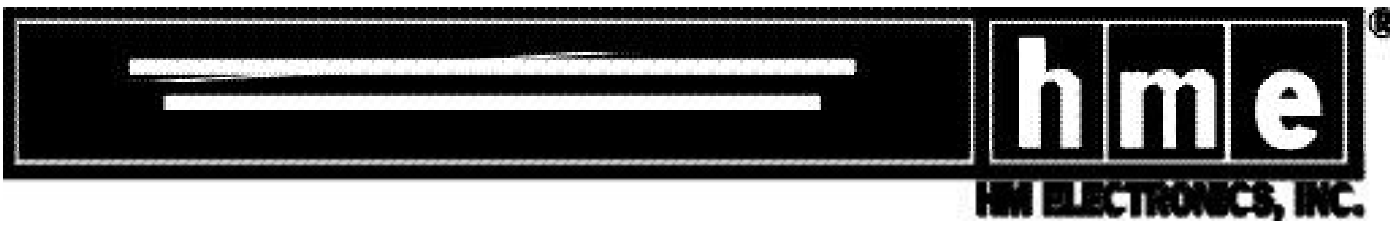
SYS2500E-64 6/21/99
HME# 400421 Rev -

System 2500E

Wireless Drive-Thru Audio System

Operating Instructions



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SECTION 1. SYSTEM DESCRIPTION

I. GENERAL

The System 2500E is a wireless audio system primarily for use at drive-thru, quick-service restaurants.

II. EQUIPMENT IDENTIFICATION

A. Main Components

- Base station
- COMMUNICATOR®
  (plus one spare battery)
- Battery charger

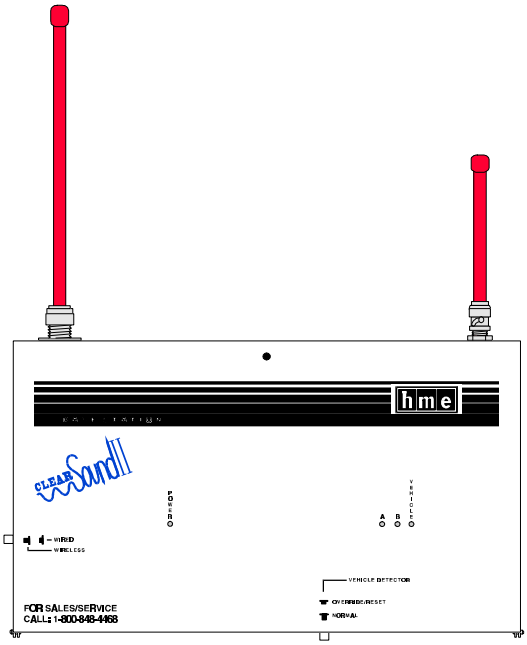

Figure 1. Base Station

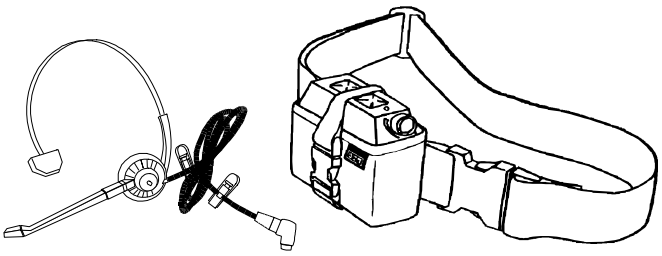

Figure 2. Communicator

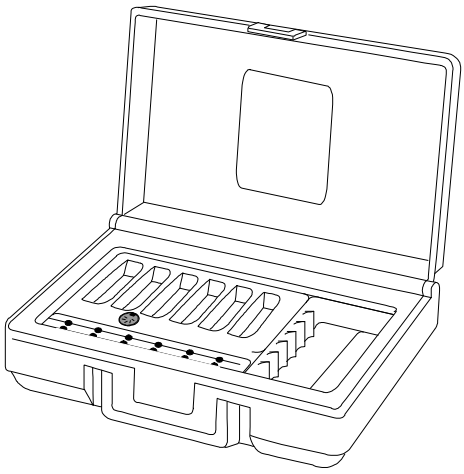

Figure 3. Battery Charger

B. Controls, Switches, Connectors and Lights

1. Base Station

Front **System indicator lights**

- **POWER light** is on when the base station has power.
- **"A" light** is on during channel-A transmission.
- **"B" light** is on during channel-B transmission.
- **VEHICLE light** is on when a vehicle is present in the drive-thru lane or when system is in vehicle-detect override.

Bottom

- **VEHICLE DETECTOR button**; to override a vehicle detector, push and leave IN; to reset vehicle detector, push IN and leave IN for 5 seconds, then push again and leave OUT for normal vehicle detection.

Left Side

- **WIRED/WIRELESS button**; must be OUT when using the wireless System 2500E, IN when using a wired backup system.

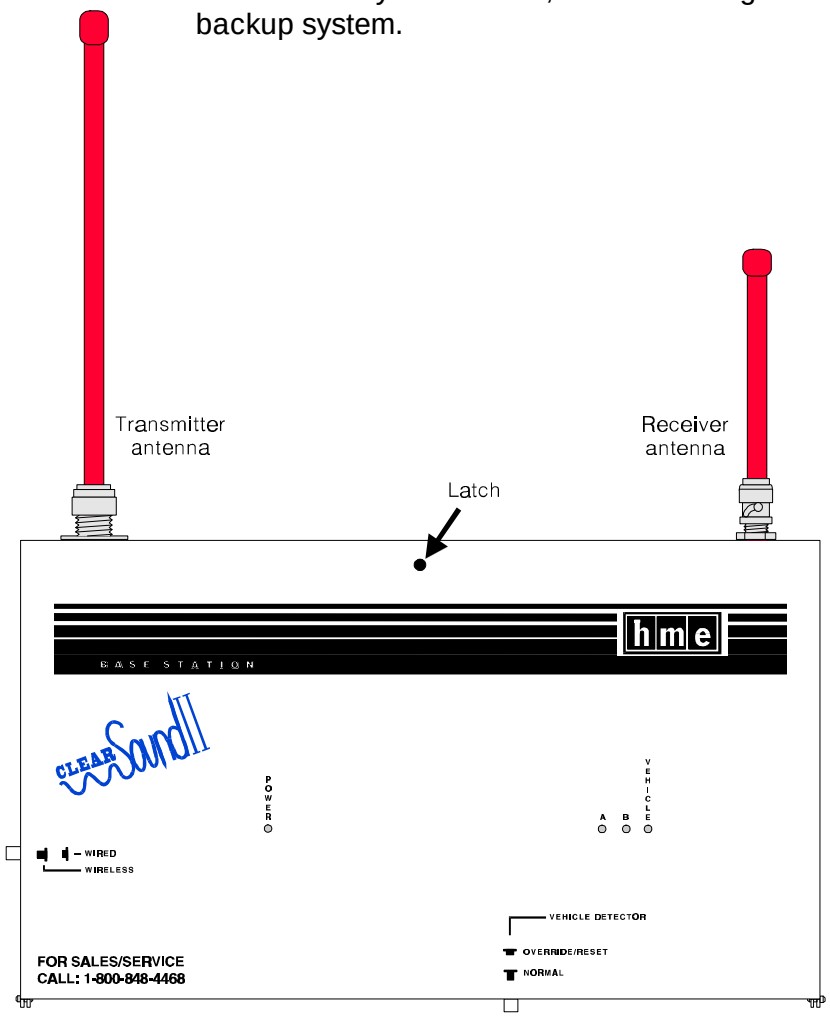

Figure 4. Base station features

2. COMMUNICATOR®

Top

- **Button "A"** is used to communicate with the customer.
- **Button "B"** is used to communicate with other personnel wearing Communicators.
- **ON/POWER light** indicates the Communicator is on and receiving power from the battery. On standard Communicators, this light is red. On latching Communicators, this light is yellow.
- **OFF/VOLUME control** is for turning the Communicator on and off, and adjusting the volume level.
- **Headset connector** is for connecting the headset cable to the Communicator belt-pac.
- **Headset connector** support bracket is a strain relief to reduce the possibility of damage to the receptacle from twisting on the headset cable connector.

Bottom

- **Battery compartment cover** holds batteries in the Communicator. (To see the battery compartment cover, the Communicator must be removed from its belt-pac pouch.)

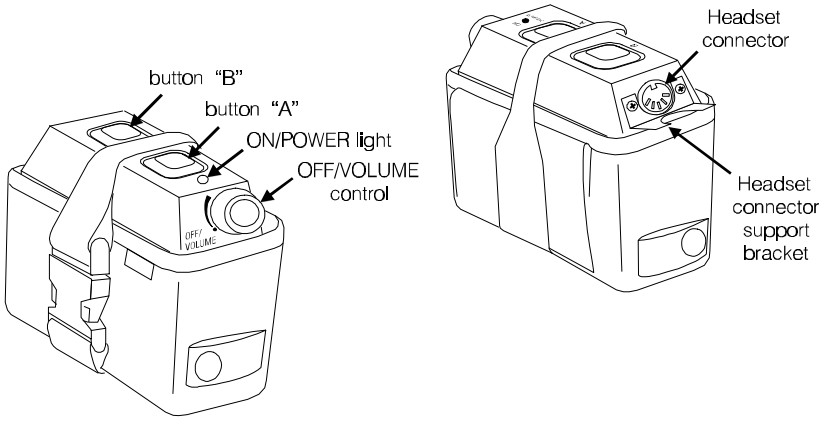

Figure 5. Communicator features

3. Battery Charger (See Figure 8 on page 5.)

Top

- **Red lights** indicate batteries above the lights are charging.
- **Green lights** indicate batteries above the lights are fully charged.
- **Headset checker** is used to check headsets for normal operation. Plug the headset cable connector into the headset connector receptacle and speak into headset microphone. If the headset is operating normally, you will hear your own voice in the earpiece. If the headset is defective, you will hear nothing.

Back

- **AC adapter connector** is for connecting AC adapter cable to battery charger.

III. BATTERY CHARGING

A. When to Charge the Batteries

1. New Batteries

It is recommended that new batteries be placed in the battery charger to be certain they are fully charged before they are used. Follow the instructions inside the lid of the battery charger case.

2. Weak Batteries

When a fully charged battery is placed in the COMMUNICATOR® and the power is turned on, the ON/POWER light on top of the Communicator will come on. This light only indicates the power is on; it does not indicate how much power is left in the battery. As a battery weakens during routine use, the voice you hear in the headset or speaker will fade or completely disappear, indicating the battery needs to be recharged. When this happens, remove the battery from the Communicator and replace it with a fully charged battery.

NOTE: Do not charge a battery until it begins to weaken, or you will shorten its life and lessen its ability to hold a charge.

B. How to Remove and Install Batteries

1. Removal

CAUTION: Turn the Commujnicator OFF!
To prevent damage to the Communicator, be certain the OFF/VOLUME control is in the OFF position, completely counterclockwise, before removing or installing batteries.

To remove the battery, release the strap which holds the Communicator in its pouch by squeezing together the catches on either side of the buckle, and lift the Communicator out of its pouch. Press down with your thumb on the battery cover release grid on the bottom of the Communicator, sliding back to release the cover from the battery compartment. Invert the Communicator to empty the battery into your hand.

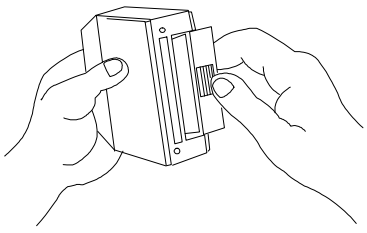

Figure 6.
Slide battery release cover to open battery compartment

2. Installation

Installation of the battery is simply the opposite of its removal. Insert the battery into the battery compartment with the arrow pointing toward the opening. Hold the battery in, and slide the compartment cover into the grooves on either side of the compartment opening until its catch clicks securely in place.

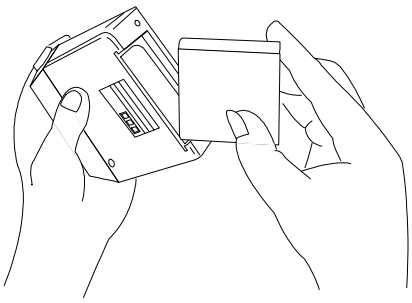

Figure 7.
Install battery in Communicator battery compartment

C. How to Charge the Batteries

Be sure your battery charger is set up in a low-traffic area, away from dust and splashing water or grease. The AC adapter cord must be plugged into the connector on the back of the battery charger case, and the adaptor must be plugged into an electrical outlet. You may place up to six batteries in the chartger at a time. As each battery is placed in the charger, the red CHARGING light on the panel in front of the battery will light, indicating the battery is charging. See Figure 8. When a battery is fully charged, the green READY light on the panel in front of it will light. Batteries take approximately 10 hours to fully charge.

CAUTION: Do not remove batteries from the battery charger until the green READY light is lit, or the charger will restart the charge cycle.

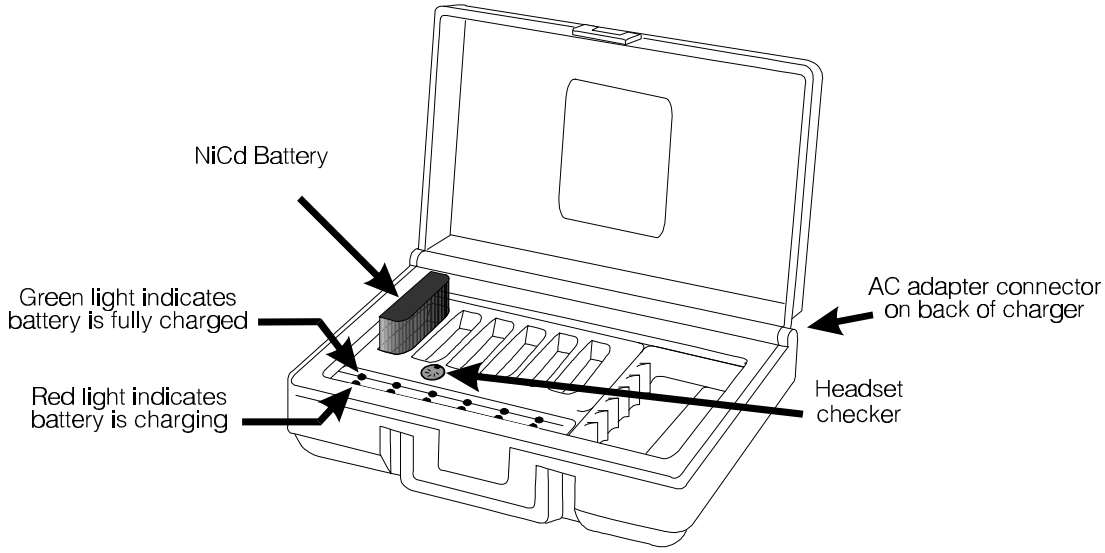

Figure 8. Battery charger features

IV. WEARING THE COMMUNICATOR®

With the Communicator in its pouch and the strap buckled over it, locate the headset receptacle on its top corner. Align the key and pins of the headset connector with the receptacle, and plug the connector into the receptacle as shown in Figure 9.

NOTE: Do not wiggle or twist the headset connector when installing or removing it.

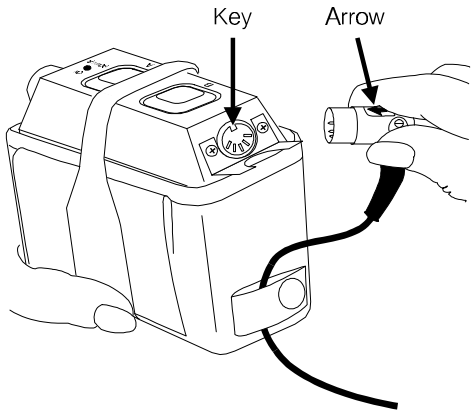

Figure 9.
Plug headset cable connector into receptacle on Communicator

Put the Communicator belt-pac around your waist, with the Communicator in front of either hip, so the OFF/VOLUME control and ON/POWER light are toward the front. Fasten the belt tightly enough so it will not move around on your waist.

Place the headset on your head with the earphone on your ear and the cord behind your shoulder. Fasten the cord clips to your clothing, behind your back. Adjust the headset band until it fits comfortably and securely. Position the microphone approximately two inches in front of your mouth. See Figure 10.

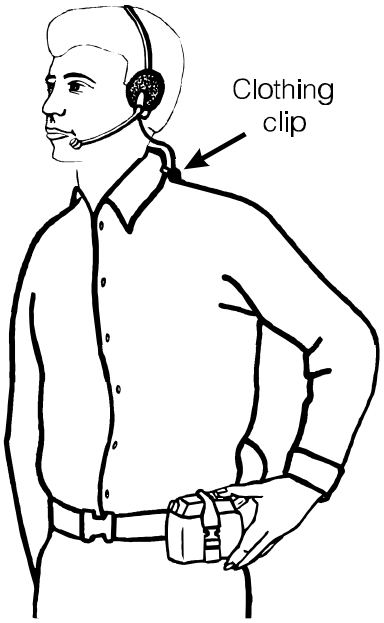

Figure 10.
Fasten clips to your clothing behind your back

V. OPERATION

In single or dual drive-thru operations, COMMUNICATOR® button “A” is for communication with the customer, and button “B” is for communication with other crew members wearing Communicators.

A. Full-Duplex Operation

ACTION	RESULT
If you are using the Communicator latching feature: Press and release button "A” to latch communication channel open for speaking and listening to customer. The channel will unlatch, ending communication with the customer, if; 1. you press and release button "A” again, or 2. you press button "B,” or 3. the customer drives away **If you are not using the Communicator latching feature:** Press and hold button “A” while speaking and listening to customer. Release when transaction is completed.	Customer hears your voice and you hear customer’s voice (two-way conversation). Everyone wearing a Communicator will hear the conversation.
While customer is speaking, turn the volume knob to the desired level.	Volume increases/ decreases. Customer’s voice becomes louder or softer.
Press and hold button "B” to speak to other crew members wearing Communicators. Release to listen.	Other personnel wearing Communicators hear your voice in their headsets.

B. Half-Duplex Operation

ACTION	RESULT
Press and hold button "A” while speaking to customer.	Customer and everyone wearing a Communicator hear your voice.
Release button “A” and listen to customer.	Customer’s voice is heard in headsets of everyone wearing Communicators.
While customer is speaking, turn the volume knob to the desired level.	Volume increases or decreases. Customer’s voice becomes louder or softer.
Press and hold button "B” to speak to other crew members wearing Communicators. Release to listen.	Other personnel wearing Communicators hear your voice in their headsets.

NOTE: If you have a COM2000L Latching Communicator, and you are operating in the half-duplex mode, you must disable the latching feature by moving the small switch inside the battery compartment to the minus (-) position. To enable the latching feature, move the switch back to the plus (+) position

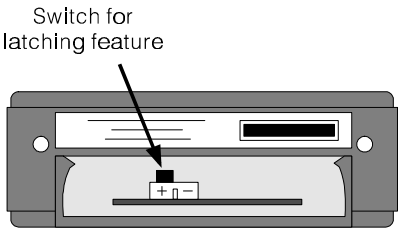

Figure 11.
Latching feature switch inside Communicator battery compartment

VI. CLEANING AND CARING FOR THE EQUIPMENT

A. How to Clean the Equipment

The following cleaning procedure is recommended at least once each month.

1. The COMMUNICATOR®

- Remove the Communicator from the pouch.
- Remove the battery from the Communicator.
- Wash the belt and pouch in a washing machine with normal laundry detergent. Dry them in a dryer or hang them to drip dry.
- Clean the Communicator with a damp sponge. First wet the sponge and wring it out so it is damp, but not dripping wet. Spray household cleaner on the sponge (NOT ON THE EQUIPMENT). Clean the Communicator with the sponge and dry it thoroughly.
- Clean the metal battery contacts on the battery and on the Communicator with alcohol on a cotton swab. Wet the tip of the swab with alcohol and squeeze the excess alcohol from it. Wipe each contact with the swab, and be certain all the contacts are dry before reinstalling the batteries.
- Place the battery back into the Communicator, and place the Communicator back into the pouch, fastening the strap securely over it.

2. The Headset

- Clean the headset and cable with a damp sponge that has been sprayed with household cleaner. The foam muff on the headset earpiece is easily removed and replaced for sanitary purposes. To order extra foam muffs, call your local HME sales representative.

B. How to Care for the Headset Cable and Connector

ALWAYS	*NEVER*
align key and connector pins with key and holes in receptacle when plugging headset into Communicator	twist headset connector into Communicator receptacle
clip cable to clothing with clothing clips	allow cable to hang freely
grasp connector to plug in or unplug headset	grasp and pull cable to unplug headset
use both hands to remove headset from your head	remove headset with only one hand
use both hands to adjust microphone position	adjust microphone position with one hand
handle the headset cable with care	pull, twist, bend or knot the headset cable
carry and hang the headset by its metal headband	carry or hang the headset by its cable

VII. IN CASE OF PROBLEMS

In case of any problems with your System 2500E, refer to the following troubleshooting checklist and the circuit board illustration on page 11. If you cannot correct any problems using the checklist, call HME Customer Support at 1-800-848-4468.

PROBLEM	PROBABLE CAUSE	SOLUTION
No sound in headset when you press COMMUNICATOR® button "A" and speak into headset microphone.	Power is off at base station.	Check circuit breaker for building.
	Power supply in base station is not working.	Check power indicator light on base station. If it is not lit, be certain AC power adapter is plugged into AC electrical outlet, and is connected to J2 connector on audio circuit board in base station.
	Communicator not turned on.	Turn Communicator on by turning OFF/VOLUME control clockwise.
	Volume not set correctly.	Turn OFF/VOLUME control clockwise.
	Headset connector not plugged firmly into Communicator.	Plug headset connector firmly into Communicator receptacle.
	Headset defective.	Replace with another headset.
	Low or dead battery.	Check ON/POWER light. If not lit, replace battery.
	Communicator failed.	Use another Communicator. Call HME. *
	Base station frequency does not match Communicator frequency.	Be certain base station S1 frequency settings match Communicator frequency settings. Call HME. *
	Incorrect subaudible tones.	Be certain base station S4 settings match Communicator tone settings. Call HME. *
Communicator channel "A" or "B" functions not working.	Communicator not turned ON.	Turn on Communicator being used.
	Dead or weak battery in one Communicator.	Replace battery.
	One Communicator failed. Channel A or B light does not light when Communicator button A or B is pressed.	Use another Communicator. Call HME. *
	Incorrect subaudible tones.	Be certain base station S4 settings match Communicator tone settings. Call HME. *
Outbound sound too low.	Outbound volume set too low for environment.	Turn outside speaker level adjustment clockwise with small screwdriver until level is satisfactory.
No outbound sound; customer cannot hear anything.	Loose speaker wires on base station circuit board.	Check speaker wire connections in base station.
	Defective speaker.	Call HME. *

* For assistance, call HME at 1-800-848-4468, or Fax 858-552-0172.

PROBLEM	PROBABLE CAUSE	SOLUTION
Inbound audio too noisy.	ClearSound is not active.	Activate ClearSound by moving the S4, position 8 switch to the ON position. Call HME. *
Personnel hear static only in headsets.	Transmitter antenna connection on base station is loose.	Tighten transmitter antenna connection.
	No power to base station.	Be certain power supply is properly plugged into electrical outlet, and cable is properly connected to J2 on audio circuit board in base station.
	Circuit board defective.	Call HME. *
Personnel hear customer in headsets or ceiling speaker, but cannot hear each other.	Receiver antenna connection on base station is loose.	Tighten receiver antenna connection.
	Status lights are not lit. Circuit board is defective.	Call HME. *
	Defective COMMUNICATOR® or headset.	Call HME. *
No tone or sound in headset or ceiling speaker when vehicle approaches speaker post.	Power interruption has caused vehicle detection circuit to be out of balance.	When no vehicle is at speaker, press RESET switch on base station.
	Vehicle detector failed or connector may be loose.	Place vehicle detector override switch in OVERRIDE position. This will cause audio loop to remain open for communication with customer. Check connectors on base station. If loose, reconnect and return override switch to NORMAL. Call HME. *
	Incorrect S6 switch position.	Be certain S6, positions 4 and 8 switches are in the ON position.
Personnel cannot hear outside customers in headset or ceiling speaker.	Loose wires on audio circuit board in base station.	Be certain red, black and shield wires in base station are securely connected.
	Outside speaker or audio circuit board has failed.	Call HME. *
Communicator has intermittent sound.	Low battery.	Replace battery.
	Defective Communicator.	Try another Communicator.
	Defective headset cable.	Check headset with headset checker on battery charger. If headset is defective, use another headset. Call HME. *
Battery charger not working.	Charger not plugged in.	Plug in battery charger. If still not working, call HME. *
Feedback heard in Communicator headset	Green and white wires of second audio cable reversed.	Reverse wires
	Outside speaker volume (outgoing) control turned too high.	Turn volume control counterclockwise.

* For assistance, call HME at 1-800-848-4468, or Fax 858-552-0172.

System 2500E Base Station Circuit Boards

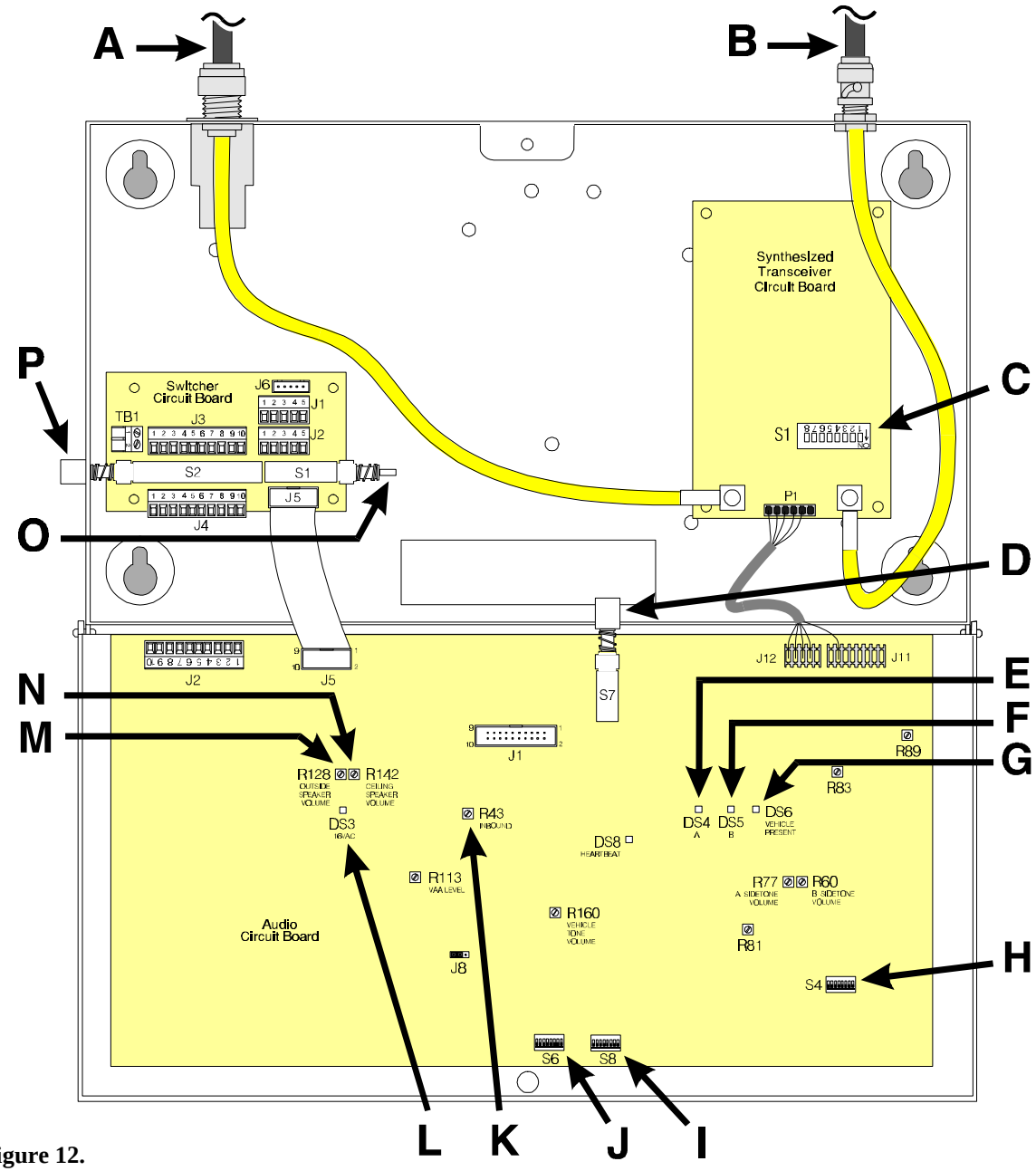

Figure 12.

A - Transmitter antenna
B - Receiver antenna
C - Transceiver frequency settings switch - **S1**
D - Vehicle detector override switch - **S7**
E - Channel “A” light - **DS4**
F - Channel “B” light - **DS5**
G - Vehicle present light - **DS6**
H - Configuration switch - **S4**
I - Configuration switch - **S8**
J - Configuration switch - **S6**
K - Inbound audio level adjustment - **R43**
L - Power light - **DS3**
M - Outside speaker volume adjustment - **R128**
N - Ceiling speaker volume adjustment - **R142**
O - DM1 microphone switch - **S1**
P - Wired/Wireless audio system switch - **S2**

VIII. SYSTEM 2500E SPECIFICATIONS

Base Station

1.	Voltage input	16VAC ±2.5V
2.	AC current input	350mA nominal, 1.4A maximum
3.	Audio distortion	<5% maximum level
4.	Outside speaker output	3 watts RMS into 8 ohms
5.	Ceiling speaker power	3 watts RMS into 8 ohms
6.	Controls/Switches	2-position vehicle detector switch (Normal - Override/Reset) Outside speaker volume control Outside speaker Hi-Lo volume jumper “A” sidetone “B” sidetone Inbound volume control VAA level control Ceiling speaker volume control Vehicle present tone volume control (3) 8-position DIP switches Wireless/wired system select switch Horn speaker/DM1 select switch
7.	RF Frequency	Receive — 151.670 - 154.600 MHz Transmit — 31.400 - 35.020 MHz
8.	Dimensions	8.2"H x 14.2"W x 3.5"D (208mm x 361mm x 89mm)
9.	Weight	5.5 lbs (2.49kg) maximum

Battery Charger

1.	Voltage input	16VAC ±2.5V
2.	AC current input	380mA maximum
3.	Number of charge ports	6
4.	Indicators	6 red “Charging” LEDs 6 green “Ready” LEDs
5.	Charge time	10-12 hours
6.	Dimensions	8”L x 12”W x 3.5”D (203mm x 305mm x 89mm)
7.	Weight	6 lbs (2.72kg) maximum

COMMUNICATOR®

1.	Battery voltage	6.5V maximum, operational down to 4.2V
2.	Battery life	8 hours
3.	RF Frequency	Receive; 31.400 - 35.020 MHz Transmit; 151.670 - 154.600 MHz
4.	Dimensions (less pouch and belt)	3.8”H x 3.7”W x 1.5”D (97 x 94 x 38mm)
5.	Weight (less pouch and belt)	14 oz (397 gm)
6.	Control	On/Off, Volume, button “A” and button “B”
7.	Indicator	Power-on LED

IX. OPTIONAL EQUIPMENT

Equipment	Model Number
Battery, Spare for COMMUNICATOR®	BAT2000
Belt Extender	BE20B
Headset, Lightweight	HS3, HS5, HS5A
Headset Earmuff	
Headset Earmuff and Microphone Cap	
Lapel Microphone with Earpiece	HS4
Pocket Receiver (battery operated)	PR5
Portable Receiver (battery operated)	PR6
Antenna (remote)	ANT3000
Antenna Diversity System	AD3000
Ceiling Speaker	MM100
Ultrasonic Vehicle Detector	DU1, DU2, DU3
Vehicle Detector Board	VDB101
Vehicle Detector Loop (underground)	VDL100
Emergency Backup System	EMG2000
Emergency Backup System	EMG3000
Cabled Intercom	IC100, IC200

X. FCC NOTICE

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.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by HM Electronics, Inc. could void the users authority to operate this equipment.