

System 900

Wireless Audio System

Operating Instructions

(For Full-Duplex and Half-Duplex Operations)

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HM ELECTRONICS, INC.

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— NOTICE —

In the event of an electrical power outage such as from a lightning storm or power generator failure, if you experience problems with your HME equipment after the electricity comes on again, unplug the AC power adapters from their electrical outlets, then plug them back in.

I. GENERAL

The System 900 is a wireless audio system primarily for use at quick-service restaurants.

II. EQUIPMENT FUNCTIONS

A. Base Station

Front –

System indicator lights

- ! **POWER light** is on when the base station has power.
- ! **MESSAGE RECORD light** is on when the base station is ready to record a message for the message repeater, and blinking while a message is being recorded. The MESSAGE REPEATER button must be IN.
- ! **RECEIVE light** is used only for troubleshooting, but is also on during channel-A and channel-B transmissions.
- ! **“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 the system is in vehicle-detect override.

Bottom –

- ! **PUSH FOR RECORD MODE button**; must be pushed IN and released to prepare the base station to record a message for the message repeater.
- ! **MESSAGE REPEATER button**; must be IN to use the message repeater, OUT when the message repeater is not being used.
- ! **SPEED TEAM button**; must be IN for speed-team operation, OUT for normal drive-thru operation
- ! **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 900, IN when using a wired backup system.

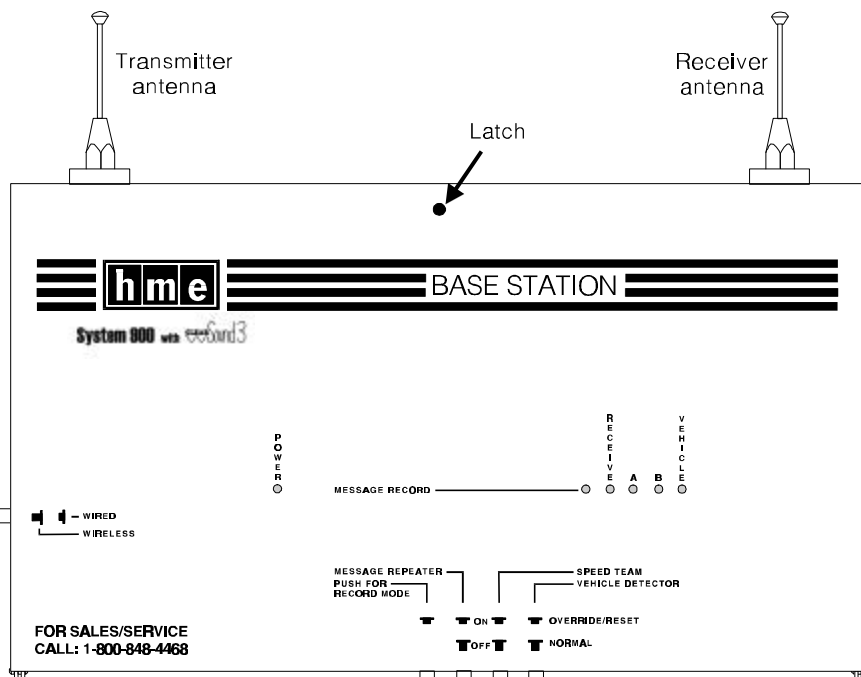


Figure 1. Base station

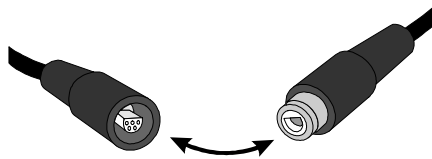
B. COM900CC COMMUNICATOR®

The COM900CC COMMUNICATOR® is a 900MHz receiver/transmitter designed to be used with the HME Wireless Drive-Thru Audio System 900. The Communicator is worn around the user's collar, and a lightweight headset plugs into a connector on the unit.



Figure 2.
COM900CC COMMUNICATOR®

1. Connectors



Plug the headset cable connector into the cable connector on the COM900CC collar unit, as shown in Figure 3. Be careful to correctly match the positions of the pins inside the connector.

Figure 3. Headset cable connectors

2. Wearing the COM900CC COMMUNICATOR

Place the Communicator collar unit around your neck and put the headset on your head as shown in Figure 4. Fasten the clothing clips to your collar as shown in Figure 4.

Adjust the headset band so it rests comfortably on top of your head, with the microphone to the side of your mouth.

Adjust the flexible arms of the Communicator around your shoulders and neck for maximum comfort.

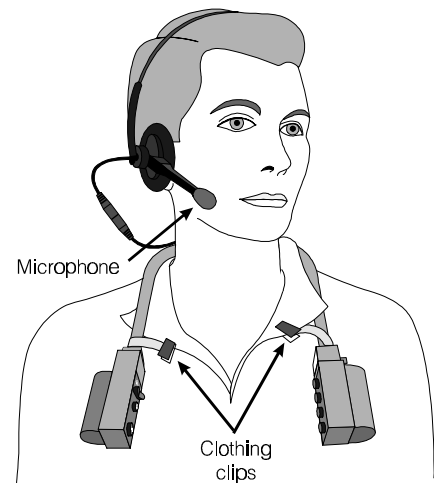


Figure 4.
Wearing the COM900CC

3. Operating the COM900CC COMMUNICATOR®

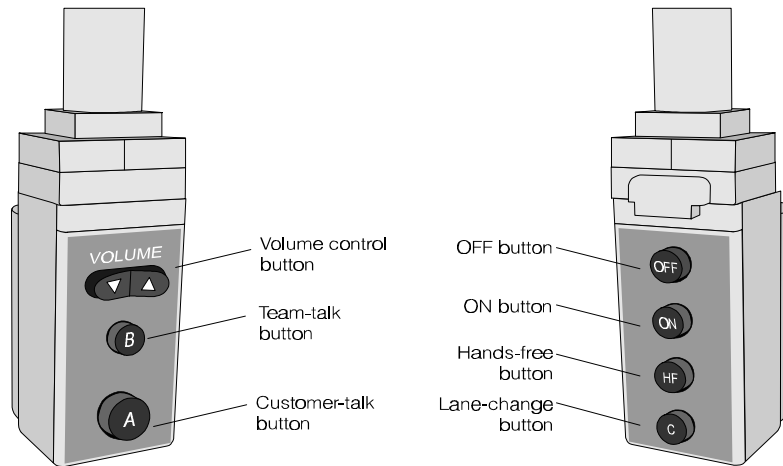


Figure 5. COM900CC controls

To operate the Communicator, use the control buttons shown in Figure 5 as follows:

Volume-control button — Press the up-arrow • side of the VOLUME button to increase headset volume. As the volume increases, you will hear a series of beeps in the headset earpiece, increasing in pitch as the volume increases. Press the down-arrow — side of the button to decrease headset volume. As the volume decreases, you will hear a series of beeps in the headset earpiece, decreasing in pitch as the volume decreases.

(B) Team-talk button — Press and hold button **B** to talk to other team members without the customer hearing your conversation. Release button **B** when you are finished.

(A) Customer-talk button — If you are not operating in a hands-free mode, press and hold button **A** to talk and listen to a customer. Release button **A** when you are finished. If you are operating in a hands-free mode, press and release button **A** to talk and listen to a customer. Press and release button **A** again when you are finished. **NOTE:** Some operations may require pressing and holding button **A** to talk to a customer, and releasing it to listen. See pages 11 and 12 for further details.

(HF) Hands-free button — Press and hold the **HF** button for two seconds to begin operating in the hands-free mode. You will hear "Hands free on" in the headset earpiece. Press and hold the **HF** button for two seconds again to stop operating in the hands-free mode. You will hear "Hands free off" in the headset earpiece.

OFF button — Press and hold the **OFF** button for several seconds to turn the Communicator power off. You will hear "Power off" in the headset earpiece, just before the power goes off.

ON button — Press the **ON** button to turn the Communicator power on. You will hear "Power on, Lane one (or two)" in the headset earpiece. The Communicator will come on in the same lane you were operating when it was last turned off.

(C) Lane-change button — Press and release the **C** button to change drive-thru lane operation. If your system is set up for dual-lane operation, you will hear "Lane one" or "Lane two" in the headset earpiece.

4. Charging the COM900CC Batteries

If the COMMUNICATOR® battery is weak and requires changing, you will hear "Low battery" in the headset earpiece. When this happens, remove and replace the battery from the Communicator according to the instructions shown in Figure 6. Typical battery life with normal use is 7 hours.

Place the battery in the AC900 Battery Charger for recharging. Battery charging takes approximately 2 hours.

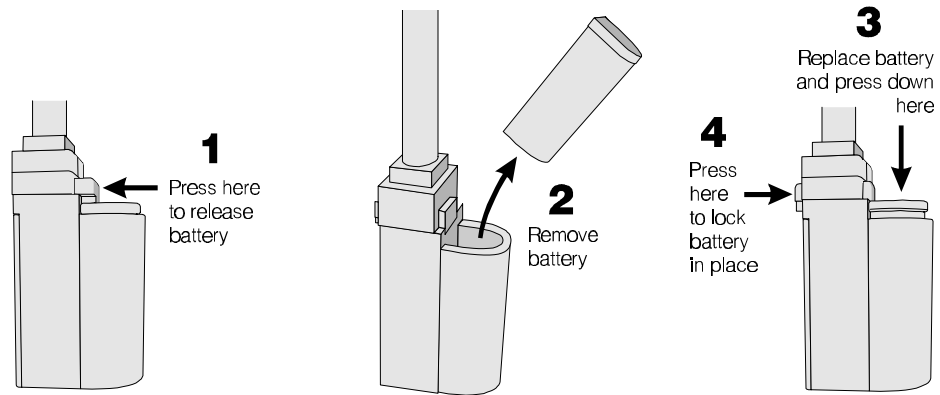


Figure 6. COM900CC battery replacement

Use the AC900 Battery Charger as follows:

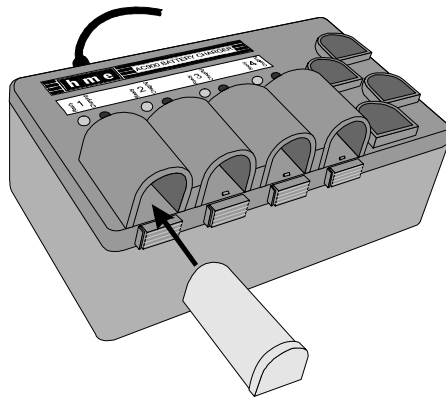


Figure 7. Inserting a battery into the AC900 battery charger

Place up to four batteries in the charger for charging at a time, as shown in Figure 7. The red Charging light, adjacent to a battery being charged will blink for a few seconds when the battery is placed in the charger, then will go on and remain on while the battery is charging.

NOTE: The COM900CC uses "smart batteries." That means each battery will retain charging information that will cause it to automatically discharge completely before being recharged, every tenth time it is placed in the AC900 Battery Charger. This will improve the battery's performance and life. While a battery is discharging, its red Charging light will blink on and off at 2 second intervals.

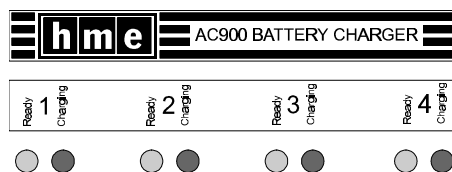


Figure 8. Battery charging indicator lights

When the battery is fully charged and ready for use, the red light will go off and the green Ready light adjacent to the battery will go on. Refer to Figure 8.

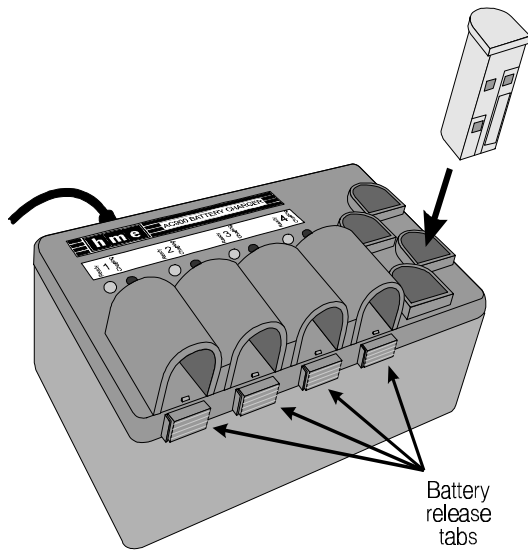


Figure 9. AC900 battery release tabs

To remove fully charged batteries from the battery charger, press down on the battery release tab next to the battery, and push the battery from the end near the status lights.

Store fully charged batteries in the storage ports on the right side of charger until you need them, as shown in Figure 9.

CAUTION: Always unplug the battery charger before cleaning it.

Clean the battery charger monthly as follows: Wet the tip of a cotton swab with rubbing alcohol, and squeeze the excess alcohol from the swab. Wipe the metal contacts inside each battery port with the damp swab. Allow the contacts to dry before placing batteries in the ports.

Charge COM900CC batteries in the AC910 Battery Charger as follows:

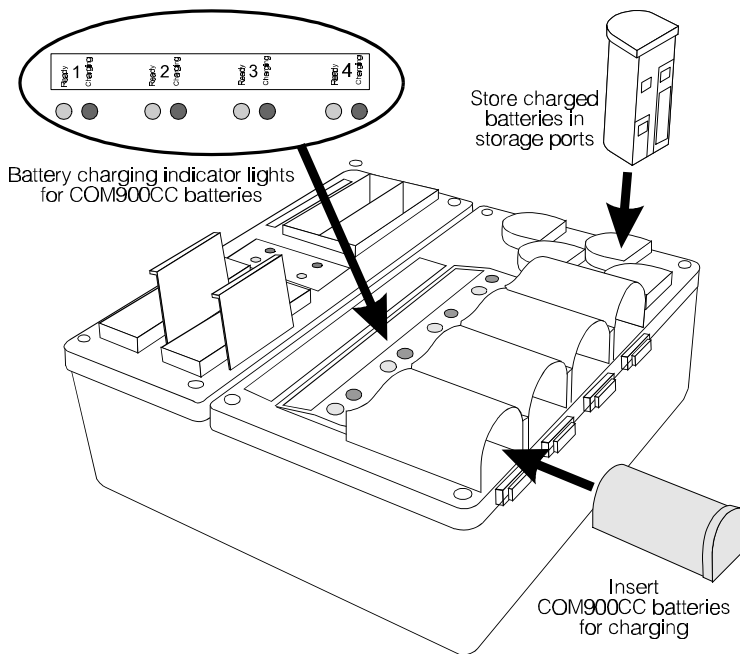


Figure 10. COM900CC battery charging in the AC910 Battery Charger

Place up to four batteries in the charger for charging at a time. The red Charging light, adjacent to a battery being charged will blink for a few seconds when the battery is placed in the charger, then will go on and remain on while the battery is charging.

NOTE: The COM900CC uses “smart batteries.” That means each battery will retain charging information that will cause it to automatically discharge completely before being recharged, every tenth time it is placed in the charger. This will improve the battery’s performance and life. While a battery is discharging, its red Charging light will blink on and off at 2 second intervals.

When the battery is fully charged and ready for use, the red light will go off and the green Ready light adjacent to the battery will go on.

To remove fully charged batteries from the battery charger, press down on the battery release tab next to the battery, and push the battery from the end near the status lights. Store fully charged batteries in the storage ports until you need them.

CAUTION: Always unplug the battery charger before cleaning it.

Clean the battery charger monthly as follows: Wet the tip of a cotton swab with rubbing alcohol, and squeeze the excess alcohol from the swab. Wipe the metal contacts inside each battery port with the damp swab. Allow the contacts to dry before placing batteries in the ports.

C. COM900BP COMMUNICATOR®

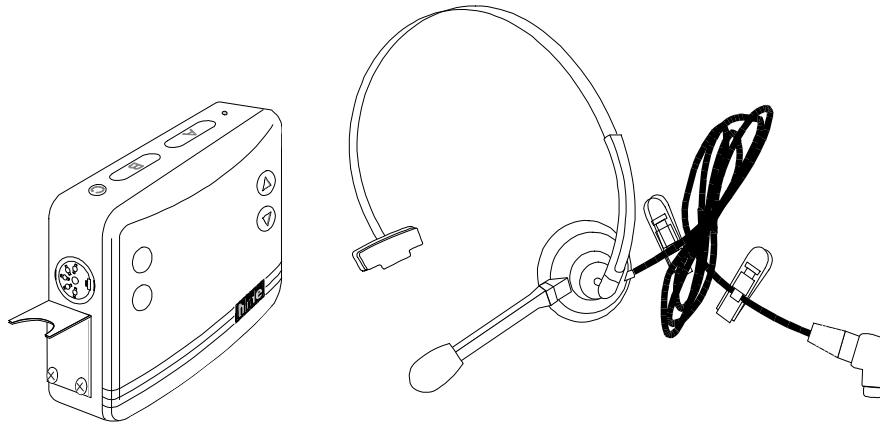


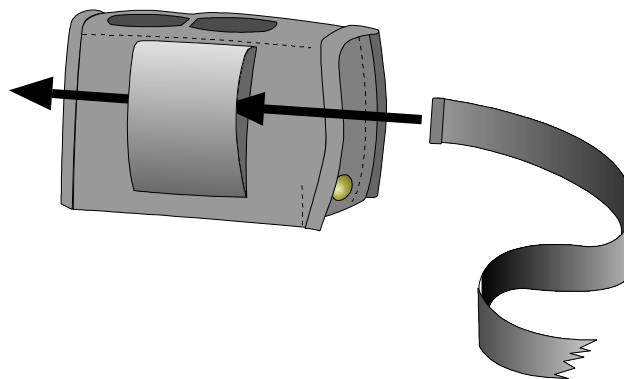
Figure 11. COM900BP COMMUNICATOR®

The COM900BP COMMUNICATOR® is a 900MHz receiver/transmitter designed to be used with the HME Wireless Drive-Thru Audio System 900. The Communicator is worn around the user's waist, and a lightweight headset plugs into a connector on the unit.

1. Wearing the COM900BP COMMUNICATOR®

Belt-Pac (Pouch with Belt Loop)

If your Communicator has a belt loop on the back of its pouch, insert a belt through the loop on back of the pouch as shown in Figure 12, and fasten the belt securely around your waist. The Communicator can be worn over either your right or left hip. Adjust the belt to fit your waist properly.



**Figure 12. Insert belt through belt loop
on back of Communicator pouch**

Belt-Pac (Pouch with Belt Clip)

If your Communicator has a belt clip on the back of its pouch, simply squeeze open the belt clip and slide it over your belt or waist band. The Belt-Pac can be worn on your right or left side.

The Headset

Plug the headset-cable connector into the receptacle on the Communicator as shown in Figure 13. The connector is keyed so it can only be inserted in the correct position, with the cord extending downward. After plugging the connector into the receptacle, cover it with the connector cover flap shown in Figure 13, and fasten the snap securely in place. Loosen the snap on the cord protection flap on the bottom of the pouch, and resnap it with the flap over the cord.

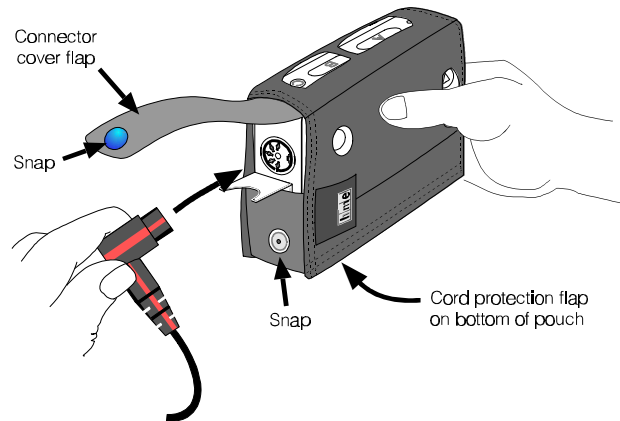


Figure 13. Plug the headset-cable connector into the cable receptacle



Put the headset on your head and clip one of the clothing clips to your collar as shown in Figure 14. Clip the other clothing clip to the back of your shirt, above your waist.

Figure 14. Correct wearing of the Communicator headset

2. Operating the COM900BP COMMUNICATOR®

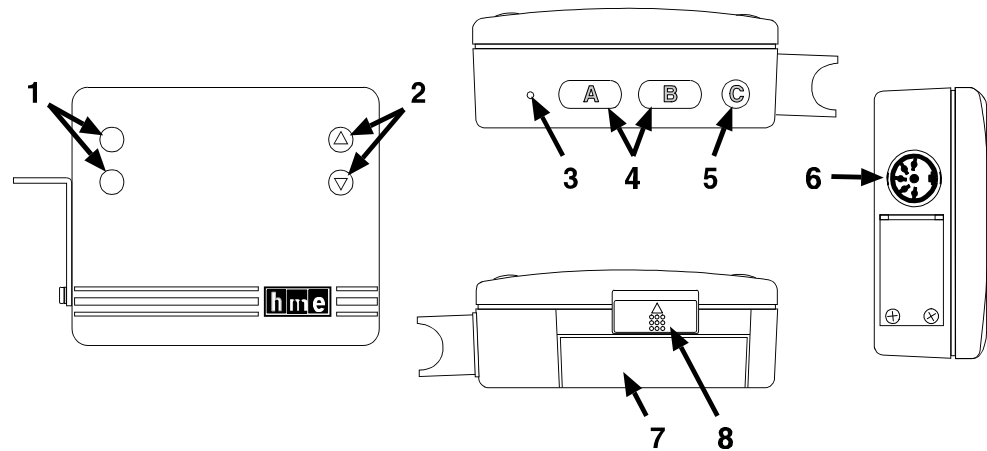


Figure 15. Communicator controls

To operate the Communicator, use the control buttons shown in Figure 15 as follows:

- 1 – **OFF/ON buttons:** turn Communicator on and off.
- 2 – **Volume control buttons:** adjust listening level in earpiece.
- 3 – **Power-on light:** lights when power goes on, and remains lit until battery needs replacing or Communicator is turned off. The power-on light blinks when transmitting on "A" or "B" channel.

When the Communicator is in single lane mode with no transmission, the Power-on light will be on steadily. When the **A** button is pushed, the Communicator is transmitting and the Power-on light will blink.

When the Communicator is in dual-lane mode and the **C** button is pushed to switch to the second lane the Power-on light will have a slow blink with no transmission. When the **A** button is pushed and the Communicator is transmitting, the Power-on light will have 3 rapid blinks that repeat.

- 4 – **Buttons A & B:** Button **A** allows two-way communication when pushed and held; when it is released, the user can listen only. Button **B** must be pushed and held to talk, and released to listen. The two buttons are in convenient positions whether Communicator is worn on left or right hip.
- 5 – **Button C:** switches from one base station to another in systems with two base stations. Press and release the **C** button to change drive-thru lane operation. If your system is set up for dual-lane operation, you will hear "Lane one" or "Lane two" in the headset earpiece.
- 6 – **5-pin DIN receptacle:** receptacle for earpiece/microphone cable connector.
- 7 – **Battery:** provides power for the wireless belt-pac Communicator.
- 8 – **Battery release latch:** slides to release battery for removal, and snaps in place when a battery is inserted to secure battery in Communicator.

Handsfree mode –

To turn Handsfree mode on: With the Communicator OFF, press and hold B+• (vol. up). Then press ON. You will hear "handsfree on."

To turn Handsfree mode off: With the Communicator OFF, press and hold B+– (vol. down). Then press ON. You will hear "handsfree off."

3. Using the COM900BP Batteries and Battery Charger

Before operating your COM900BP COMMUNICATOR®, be certain you have a fully charged NiCd battery. Place it in the Communicator as instructed below.

Installing and removing Communicator batteries

Install a fully charged NiCd battery in the battery compartment with the arrow on the battery pointing out as shown in Figure 16. Slide it into the tracks on both sides of the compartment until its catch clicks securely in place.

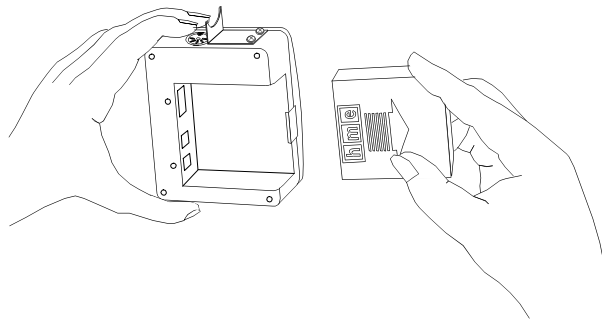


Figure 16. Installing the battery

To remove the battery from a COM900BP COMMUNICATOR®, slide the battery latch open and push the battery in the direction of the large arrow on the battery as shown in Figure 17.

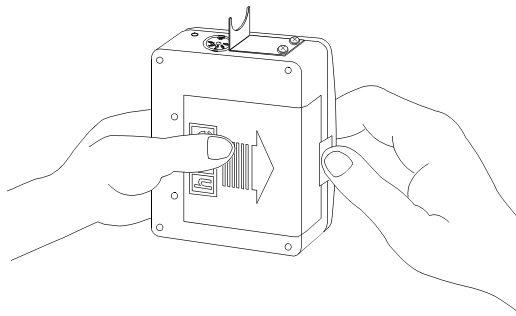


Figure 17. Opening the COM900BP battery compartment

When to replace batteries

When a good battery is in the Communicator and the power is on, the red light on top of the unit will be lit. 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, you will hear "Low battery" in the earpiece, indicating the battery needs to be replaced. Typical battery life with normal use is 8 to 9 hours.

CAUTION: Turn Communicator OFF before removing batteries !

Charging NiCd batteries with the AC420 battery charger

Your battery charger should be used in a low-traffic area, away from dust or splashing water and grease. If your battery charger is not already plugged in, plug its AC adapter into an electrical outlet.

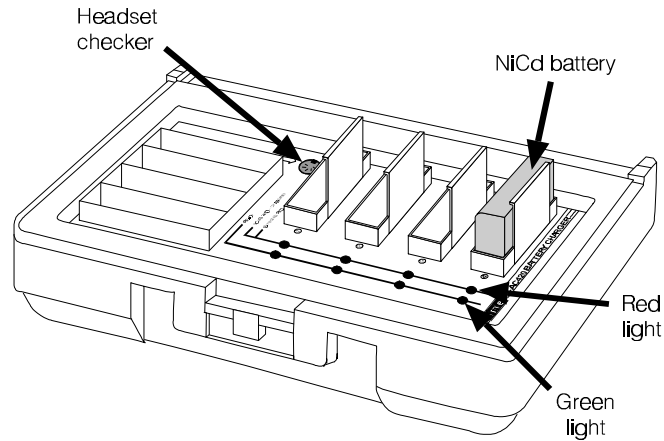


Figure 18.
**AC420 Battery Charger shown with
a properly installed battery**

Place up to four batteries in the charger to charge at the same time, as shown in Figure 18. A few seconds after each battery is placed in the charger, the red CHARGING light on the panel adjacent to the battery, will indicate the battery charging status. See the CHARGING LIGHT STATUS TABLE for a detailed explanation of what is happening. When a battery is fully charged, the green READY light on the panel adjacent to it will light. (**approximately 4 hours**) It can then be placed back into a COMMUNICATOR®.

CAUTION: *Do not remove batteries from the charger until the green READY light is lit or the red light is flashing, or the charger will reset and the charge cycle will begin again.*

Charge NiCd batteries in the AC910 Battery Charger as follows:

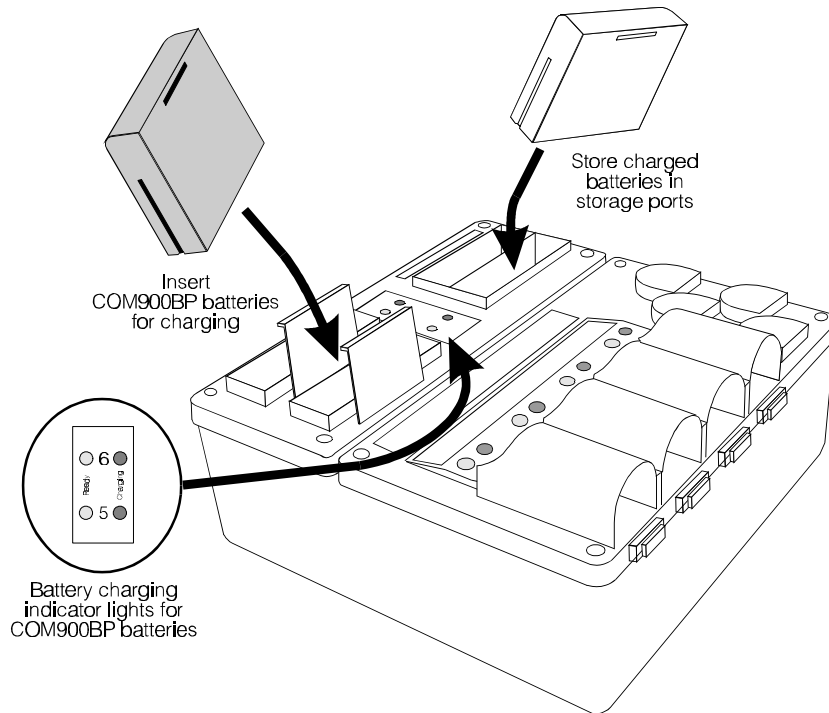


Figure 19.
COM900BP battery charging in the AC910 Battery Charger

Place up to two batteries in the charger to charge at the same time. A few seconds after each battery is placed in the charger, the red CHARGING light on the panel adjacent to the battery, will indicate the battery charging status. See the CHARGING LIGHT STATUS TABLE for a detailed explanation of what is happening. When a battery is fully charged, the green READY light on the panel adjacent to it will light. **(approximately 4 hours)** It can then be placed back into a COMMUNICATOR®.

CAUTION: *Do not remove batteries from the charger until the green READY light is lit or the red light is flashing, or the charger will reset and the charge cycle will begin again.*

CHARGING LIGHT STATUS TABLE – WITH BATTERY INSERTED		
RED CHARGING LIGHT	WHAT IT MEANS	WHAT TO DO
OFF	Charger doesn't see the battery	See NOTE
STEADY ON	Battery is being charged	Wait. Do not remove battery.
BLINKS: 2 seconds ON; 2 seconds OFF	Battery is being discharged.	Wait. Do not remove battery.
BLINKS: 2 times quick; 3 seconds OFF	DISCHARGE ERROR	Battery is not discharging properly. See NOTE.
BLINKS: 3 times quick; 3 seconds OFF	CHARGING ERROR	Battery is not charging properly. See NOTE.
BLINKS: 4 times quick; 2 seconds OFF	LOW BATTERY ERROR	See NOTE.
BLINKS: 5 times quick; 2 seconds OFF	CHARGING ERROR	See NOTE.
NOTE: Either the battery or the charger has a problem. Mark the battery and retry in a different slot. The battery is faulty if it has the same problem in a different slot AND a known-good battery passes in the same slots. The charger circuitry is faulty if a known-good BATTERY fails in the same slots.		

III. 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. In dual drive-thru operations, the Communicator button "C" is used to switch between Lanes 1 and 2. Button "C" has no function in single drive-thru operations.

A. Single Drive-Thru Lane, Full-Duplex Operation

<i>ACTION</i>	<i>RESULT</i>
<p>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;</p> <ol style="list-style-type: none"> 1. you press and release button "A" again, or 2. you press button "B," or 3. you turn off the Communicator, or 4. the customer drives away, or 5. after 10 minutes of continuous latched communication. <p>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.</p>	<p>Customer hears your voice and you hear customer's voice (two-way conversation). Operation is "hands-free" until the customer pulls away. Everyone wearing a Communicator hears the communication.</p>
<p>While customer is speaking, press the • or – arrow to adjust volume level.</p>	<p>Beep tones of increasing/decreasing frequency are heard in headset as volume level increases/decreases. Customer's voice becomes louder or softer.</p>
<p>Press and hold button "B" to speak to other crew members wearing Communicators. Release to listen.</p>	<p>Other personnel wearing Communicators hear your voice in their headsets.</p>

B. Single Drive-Thru Lane, Half-Duplex Operation

<i>ACTION</i>	<i>RESULT</i>
<p>Press and hold button "A" while speaking to customer.</p>	<p>Customer hears your voice. Everyone wearing a Communicator hears the communication.</p>
<p>Release button "A" and listen to customer.</p>	<p>Customer's voice is heard in headsets of everyone wearing a Communicator.</p>
<p>While customer is speaking, press the • or – arrow to adjust volume level.</p>	<p>Beep tones of increasing/decreasing frequency are heard in headset as volume level increases/decreases. Customer's voice becomes louder or softer.</p>
<p>Press and hold button "B" to speak to other crew members wearing Communicators. Release to listen.</p>	<p>Other personnel wearing Communicators hear your voice in their headsets.</p>

C. Dual Drive-Thru, Full-Duplex Operation

<i>ACTION</i>	<i>RESULT</i>
<p>If you are using the COMMUNICATOR® latching feature: Press and release button "A" to latch communication channel open for speaking and listening to customer in Lane 1 or 2. The channel will unlatch if:</p> <ol style="list-style-type: none"> 1. you press and release button "A" again, or 2. you press button "B", or 3. you press button "C", or 4. you turn off the Communicator, or 5. the customer drives away, or 6. after 10 minutes of continuous communication. <p>If you are not using the Communicator latching feature: Press and hold button "A" while speaking and listening to a customer in Lane 1 or 2. Release when the transaction is completed.</p>	<p>Customer hears your voice and you hear customer's voice (two-way conversation). Operation is "hands-free" until the customer pulls away. Everyone wearing a Communicator hears the communication.</p> <p>NOTE: When transmitting in Lane 1 operation, the Communicator power light will blink rapidly. When transmitting in Lane 2 operation, the Communicator power light will blink rapidly 3 times, then pause and repeat.</p> <p>Lanes 1 and 2 have different sounding vehicle-present tones.</p>
While customer is speaking, press the • or – arrow to adjust volume level.	Beep tones of increasing/decreasing frequency are heard in headset as volume level increases/ decreases. Customer's voice becomes louder or softer.
Press button "C" to switch to the other lane.	You can begin speaking and listening to the customer in the other lane.
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.

D. Dual Drive-Thru, Half-Duplex Operation

<i>ACTION</i>	<i>RESULT</i>
Press and hold button "A" while speaking to customer in Lane 1 or 2.	Customer hears your voice. Everyone wearing Communicators hears the communication.
Release button and listen to customer.	Customer's voice is heard in headsets of everyone wearing Communicators.
While customer is speaking, press the • or – arrow to adjust volume level.	Beep tones of increasing/decreasing frequency are heard in headset as volume level increases/ decreases. Customer's voice becomes louder or softer.
Press button "C" to switch to the other lane.	You can begin speaking and listening to the customer in the other lane.
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.

E. Handsfree Operation for COM 900BP

<i>ACTION</i>	<i>RESULT</i>
With the Communicator OFF, press and hold B+• (vol. up). Then press ON. (handsfree ON)	The transmit button A can be released while talking.
With the Communicator OFF, press and hold B+– (vol. down). Then press ON. (handsfree OFF)	The transmit button A must be held down while talking.

F. Message Repeater Operation

<i>ACTION</i>	<i>RESULT</i>
Press the MESSAGE REPEATER button IN on the System 900 base station and do the following.	None
Press and release the red RECORD MODE button on the System 900 base station.	The MESSAGE RECORD light on the System 900 base station will come on.
Press and hold button "B" on the Communicator and talk into the headset microphone to record a message (16 second maximum).	The MESSAGE RECORD light on the System 900 base station will begin blinking.
Release button "B."	The record function will stop and the light will go off.

After a new message has been recorded, or after the base station has lost and regained power, the message will always be heard in the Communicator headset the first three times it plays.

G. Speed-Team Operation

Speed-team operation is used during high-volume times. An order taker wearing a belt-pac relays orders from outside into the store using the "B" channel on the COMMUNICATOR®. Placing the speed-team switch in the ON (in) position will disable the speaker and microphone in the speaker post or menu board, and will also disable the vehicle tone and alert tone from the timer.

H. Remote Display Operation

One or more R30 Remote Displays may be used with your System 900. Each remote display was set up by the installer to show the amount of time the current car has been at the menu board, speaker post or service window. A remote display shows the time for one location only. It begins counting when the car arrives and stops when the car leaves. The remote displays will only **display** time. They will not store or record information.

IV. IN CASE OF PROBLEMS (Refer to the circuit board illustration on page 17)

TROUBLESHOOTING CHECKLIST		
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 supply indicator lights on base station. If any light is not lit, be certain AC power adapter is plugged into AC electrical outlet, and connected to J4 connector on audio circuit board in base station.
	Communicator not turned on.	Turn Communicator on by pushing ON/OFF button for 1 second. Be certain light goes on.
	Volume not set correctly.	Push volume-control buttons to adjust volume.
	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. *
Communicator channel "A" or "B" functions not working.	Communicator not turned ON.	Turn Communicator on.
	Dead or weak battery.	Replace battery.
	Communicator or base station failure. Channel "A" or "B" light on base station does not light when Communicator button "A" or "B" is pressed.	Use another Communicator. Call HME. *
"C" button does not switch between channels in a dual-lane drive-thru.	Set for dual-lane operation.	With power off, press and hold the "C" button while turning the Communicator on.
Outbound sound too low.	Outbound volume set too low for environment.	Turn outside speaker volume control (R128 in base station) clockwise with small standard (slotted) screwdriver until level is satisfactory.
No outbound sound; customer cannot hear anything.	System may be set for speed-team operation.	Be certain SPEED TEAM button on base station is out (OFF).
	Loose wires on base station circuit board.	Check all wire connections to J2 on base station switcher board.
	Defective speaker or base station.	Call HME. *

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

Problem	Probable Cause	Solution
No inbound sound from customer (in half-duplex operation)	Latching feature may be on.	See instructions on page 3 (COM900CC) or page 9 (COM900BP) to turn off handsfree feature.
	System may be set for speed-team operation.	Be certain SPEED TEAM button on base station is out (OFF).
	Base station may be set for wrong drive-thru mode (full or half-duplex).	Check S6 switch on base station circuit board. Switch #1 should be ON for full-duplex OFF for half-duplex
Personnel hear static only in headsets.	Transmitter antenna connection on base station is loose.	Tighten transmitter antenna connection. (the antenna on top, left of base station.)
	No power to base station.	Check base station power adapter connections.
	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. (the antenna on top, right of base station.)
	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 drives into drive-thru lane.	Power interruption has caused unbalanced detecting circuit.	When no vehicle is in the drive-thru lane, press vehicle detector override switch on base station to RESET position.
	System may be set for speed-team operation. See page 13, paragraph G.	Be certain SPEED TEAM button on base station is out (OFF).
	Connector may be loose.	Check all connectors. Call HME. *
Personnel cannot hear outside customers in headset or ceiling speaker.	Loose wires on base station circuit board connector.	Be certain wires are securely connected in base station.
	System may be set for speed-team operation.	Be certain SPEED TEAM button on base station is out (OFF).
	Outside speaker or audio circuit board has failed.	Call HME. *
Communicator has intermittent sound.	Low battery.	Replace battery.
	Defective headset cable.	Use another headset. Call HME. *
Headset does not become silent after customer has driven away.	OVERRIDE/NORMAL/RESET switch on base station is in the OVERRIDE position.	Place switch in the NORMAL position.
	Vehicle detector is locked up.	Press OVERRIDE/RESET switch twice.
Battery charger not working.	Charger not plugged in.	Plug in battery charger. If still not working, call HME. *
Can not record message.	Message repeater not turned on.	Turn message repeater on.
Message will not play.		

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

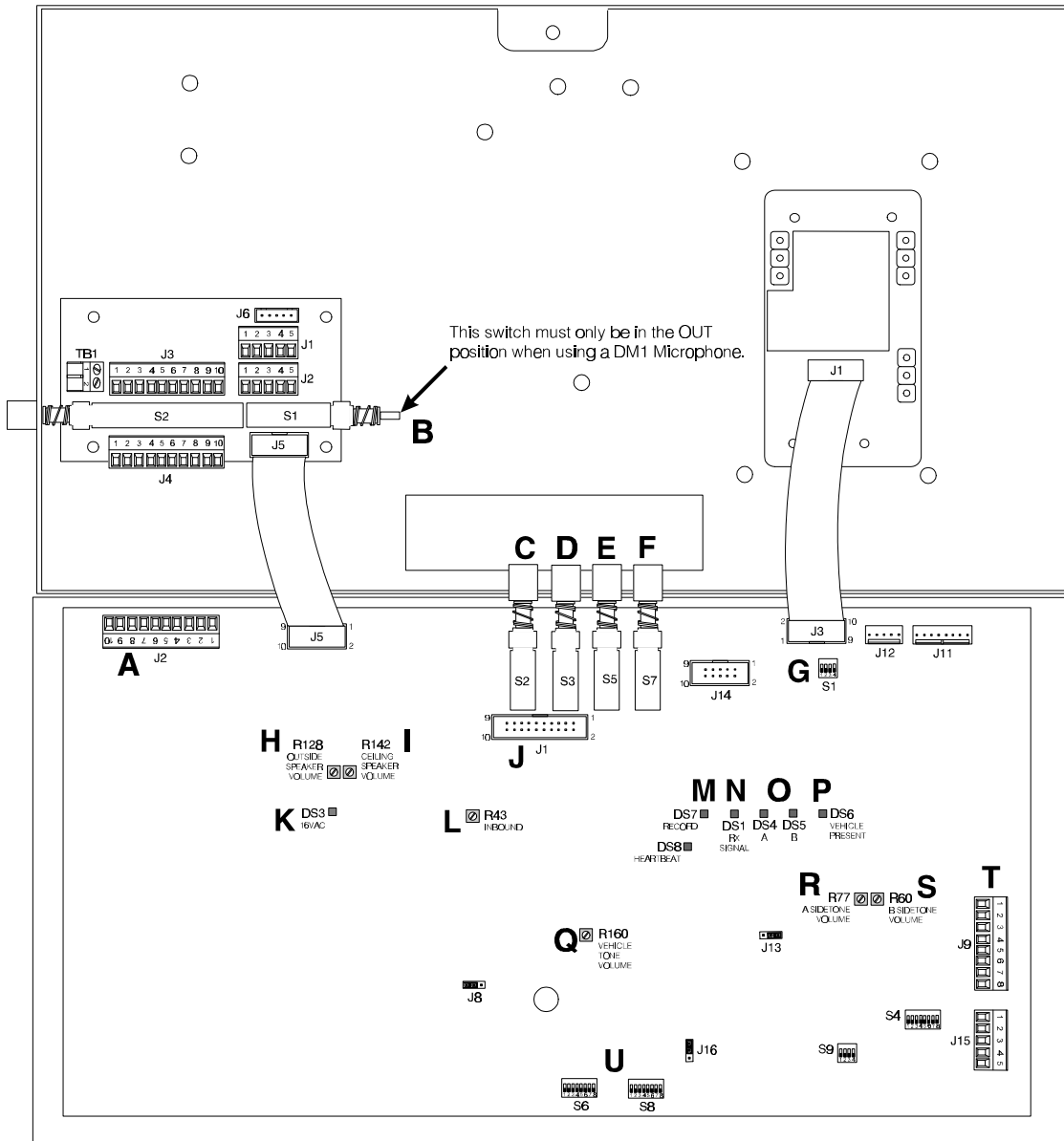


Figure 20. Base station circuit boards

- A** - Power and ceiling speaker connector - **J2**
- B** - DM1 select switch
- C** - Record message switch - **S2**
- D** - Message repeater ON/OFF switch - **S3**
- E** - Speed team switch - **S5**
- F** - Vehicle detector override switch - **S7**
- G** - Frequency select switch - **S1**
- H** - Outside speaker volume control - **R128**
- I** - Ceiling speaker volume control - **R142**
- J** - Automatic test equipment (ATE) connector - **J1**
- K** - Power supply LEDs, 16VAC - **DS3**
- L** - Inbound volume control - **R43**
- M** - Message record LED - **DS7**
- N** - Receiver LED - **DS1**
- O** - Channel A & B LEDs - **DS4, DS5**
- P** - Vehicle present LED - **DS6**
- Q** - Vehicle present tone volume control - **R160**
- R** - Channel "A" sidetone volume adjustment - **R77**
- S** - Channel "B" sidetone volume adjustment - **R60**
- T** - Base-to-base connector (for dual drive-thru operations) - **J9**
- U** - System configuration switches - **S6, S8**

V. SPECIFICATIONS

Base Station

1.	Voltage input	16VAC \pm 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.	Message repeater	Message duration - 16 seconds
7.	Controls/Switches	2-position vehicle detector switch (Normal - Override/Reset) 2-position "Speed Team" ON/OFF switch 2-position "Message Repeater" ON/OFF switch 1-position "Record" switch 4-position RS485 bias/term switch Outside speaker volume control Outside speaker Hi-Lo volume jumper Vehicle present tone level control "A" sidetone "B" sidetone Inbound volume control VAA level control Ceiling speaker volume control Vehicle present tone volume control (3) 8-position DIP switches 4-position frequency select switch Wireless/wired system select switch Horn speaker/DM1 select switch
8.	RF Frequency	Receive — 902 - 928 MHz Transmit — 902 - 928 MHz
9.	Dimensions	8.2"H x 14.2"W x 3.5"D (208mm x 361mm x 89mm)
10.	Weight	5.5 lbs (2.49kg) maximum

COMMUNICATOR® COM900CC

1.	Battery voltage	1.2V nominal
2.	Battery life	7 hours
3.	RF Frequency	Receive; 902-928 MHz Transmit; 902-928 MHz
4.	Dimensions	11" H x 10"W x 4"D (279 x 254 x 101 mm)
5.	Weight	12 oz (.34 kg) including battery
6.	Control	Touch sensitive Power, Volume arrows, Channel "A" and "B", Lane selector "C"

COMMUNICATOR® COM900BP

1.	Battery voltage	4.8V nominal
2.	Battery life	9 hours
3.	RF Frequency	Receive; 902-928 MHz Transmit; 902-928 MHz
4.	Dimensions (less pouch and belt)	3"H x 4"W x 1.5"D (86 x 114 x 38 mm)
5.	Weight (less pouch and belt)	11 oz (.31 kg) including battery
6.	Control	Touch sensitive Power, Volume arrows, Channel "A" and "B", Lane selector "C"
7.	Indicator	Power-on and status LED
8.	Connector	5-pin DIN

AC900 Battery Charger

1.	Voltage input	16.5VAC
2.	AC current input	1A maximum
3.	Number of charge ports	4
4.	Charge time	3-4 hours
5.	Dimensions	7.6"L x 4.6"W x 3.6"D (193mm x 117mm x 92mm)
6.	Weight	20 oz. maximum
7.	Indicators	Battery charging (red) LEDs (4) Battery ready (green) LEDs (4)

AC410 Battery Charger

1.	Voltage input	16.5VAC
2.	AC current input	1.2A maximum at 16.5VAC
3.	Number of charge ports	4
4.	Charge time	4-8 hours
5.	Dimensions	8"L x 12"W x 3.5"D (203mm x 305mm x 89mm)
6.	Weight	1.5 lbs (.69kg) not including AC adapter
7.	Indicators	Battery charging (red) LEDs (4) Battery ready (green) LEDs (4)

AC910 Battery Charger

COM900CC battery charging section: same as AC900 Battery Charger

COM900BP battery charging section: same as AC410 Battery Charger, but with 2 charge ports

VI. ACCESSORIES AND OPTIONAL EQUIPMENT

The following optional equipment is available for use with your System 900.
To order any of these products, call the HME Sales Department at (858) 535-6060.

Equipment	Model Number
Spare Battery for COM900CC COMMUNICATOR [®]	BAT900
Spare Battery for COM900BP COMMUNICATOR [®]	BAT400
Headset Earmuff	
Ultrasonic Vehicle Detector	DU2/DU3
Vehicle Detector Board	VDB101
Vehicle Detector Loop (underground)	VDL100
Message Repeater	MR100A
Remote Display	R30
Ceiling Speaker	MM100
Variable, Low-Profile Speaker	MM2500

VII. 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.