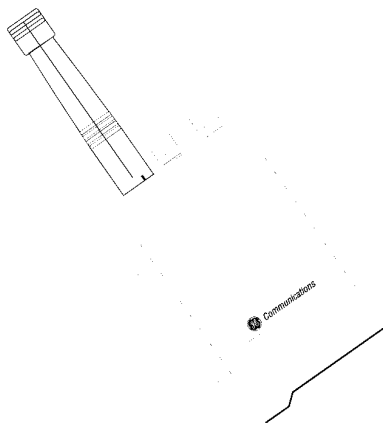




## *Mobile Communications*

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## *Monogram* Series 4/16 CHANNEL SCAN PORTABLE

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# Operator's Manual

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## **SAFETY AND CAUTION INFORMATION**

*To ensure optimum performance of your new Monogram Series Scan Radio, please read these Operating Instructions completely.*

### **CAUTION**

*Do not tamper with internal adjustments. Damage to the equipment and/or improper operation may result. There are no user serviceable items inside the radio.*

*It is recommended that you return your radio to a qualified GESS for any services or repairs.*

*The Federal Communications Commission (FCC), with its action in General Docket 79144, March 13, 1985, has adopted a safety standard for the human exposure to radio frequency (RF) electromagnetic energy emitted by FCC regulated equipment. Proper operation of this radio will result in user exposure far below the FCC recommended limits.*

*DO NOT hold the radio in such a manner that the antenna is very close to, or touching, exposed parts of the body, especially the face or eyes, while transmitting.*

*DO NOT press and hold the transmit switch (P-T-T) when not actually wishing to transmit.*

*DO NOT allow children to play with any radio equipment containing a transmitting device.*

**DO NOT** operate a portable transmitter near unshielded electrical blasting caps or in an explosive atmosphere unless it is a type especially designed and qualified for such use.

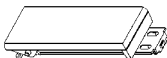
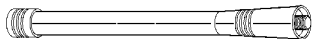
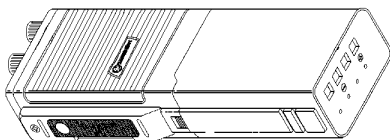
#### **NOTE**

*This radio operates in FCC regulated frequency bands. All radios must be licensed by the FCC before use. Because this radio contains a transmitter, Federal Law prohibits unauthorized usage or adjustments of this radio.*

### **UNPACKING INFORMATION**

Remove and carefully inspect the contents of your package(s) for the following items:

- 1 - Radio
- 2 - Battery
- 3 - Antenna
- 4 - Belt Clip
- 5 - Operator's Manual.



## **DESCRIPTION OF RADIO COMPONENTS**

- 1 - **Antenna Receptacle:** Attaches the antenna to the radio.
- 2 - **Accessory Jack:** For use with optional Speaker Microphone or Mini-VOX unit. May be used for an external 8 Ohm Speaker or an Earphone.
- 3 - **On/Off - Volume Control:** Turns the radio "On" and "Off" and adjusts the volume level.
- 4 - **Channel Selector Switch:** Selects the operating channel (4 or 16). Also initiates "Scan" mode if programmed.
- 5 - **BUSY/TX/BT Indicator:** A tri-color Light Emitting Diode (LED) identifies: (See Table 1 for more information).
  - Red LED** signals normal transmission.
  - Amber LED** signals "Busy Channel" status - the selected receiver channel has traffic on it.
  - Green LED** identifies tone-coded squelch calls are being received on the selected receiver channel.
- 6 - **HI/LO "TX" Power Switch:** HI power position for full 5 watts output, LO power position for approximately 1.5 watts output.
- 7 - **Monitor Button:** Located at the top portion of the P-T-T bar. This is a tone-coded squelch defeat switch. It can also be used for "Scan Channel Delete" when in "Scan" mode.
- 8 - **P-T-T Bar:** When depressed and held, engages the transmitter/encoder and puts radio in the "Transmit" mode. When released, the radio operates in the "Receive" mode.

9 - **Slide-On Battery Pack:** 600 mAh or optional 1200 mAh battery pack.

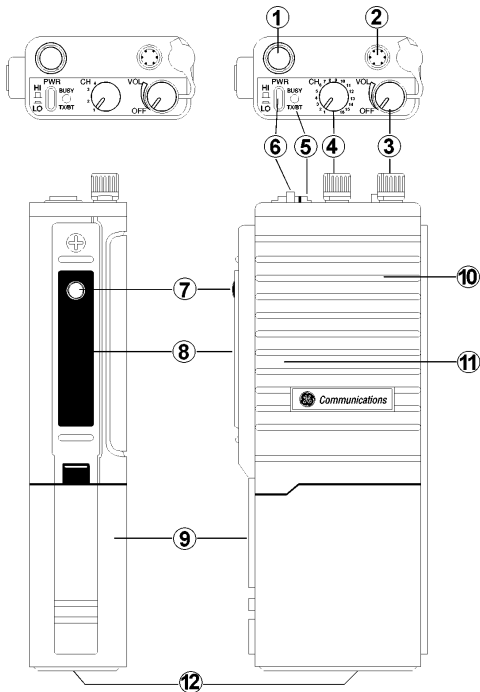
10-**Speaker:** 8 Ohm internal speaker.

11-**Microphone:** Note the location of the microphone. To transmit clear messages, talk about two inches away from the microphone at normal voice levels.

12-**Battery Charge Contacts:** Charging contacts for standard desk or desktop rapid charger.

4 Channel "Top View"

16 Channel "Top"



## **OPTIONS AND ACCESSORIES**

<i>MHNC3N</i>	<i>Antenna, 148-174 MHz</i>
<i>MHNC3P</i>	<i>Antenna, 450-470 MHz</i>
<i>MHAE1V</i>	<i>Speaker/Microphone</i>
<i>MHDE5U</i>	<i>DTMF Encoder</i>
<i>MHHC5L</i>	<i>Leather Case Assembly (use with standard battery)</i>
<i>MHHC5M</i>	<i>Leather Case Assembly (use with high capacity battery)</i>
<i>MHPA5B</i>	<i>Standard Battery, Nickel-Cadmium battery</i>
<i>MHPA5C</i>	<i>High Capacity Battery, Nickel-Cadmium battery</i>
<i>MHC3HJ</i>	<i>Standard Desk Charger</i>
<i>MHC3HK</i>	<i>Dual Rate Charger</i>

## **OPERATION**

### **RADIO ON/OFF**

*Turn the radio "On" by rotating the Volume Control clockwise (to the right) until you hear a click and the "Self Test" alert tone.*

*Turn the radio "Off" by rotating the Volume Control fully counterclockwise (to the left) until you hear a click and feel the switch go to the detent position.*

## **TO RECEIVE**

- 1) Turn the radio "On" and set the Channel Selector Switch to the desired channel.
- 2) Adjust the volume to the desired listening level with the On/Off Volume Control. Unscquelch the radio by depressing the Monitor Switch on the side of radio. When the radio is unscquelched (a rushing sound coming from the speaker), the volume may be adjusted to the desired level.

## **TO TRANSMIT**

### **WARNING**

**OPERATION OF THE TRANSMITTER WITHOUT A PROPER ANTENNA INSTALLED MAY RESULT IN PERMANENT DAMAGE TO THE RADIO**

- 1) Hold the radio upright with the antenna in a vertical position with the front grille 2 to 3 inches away from the mouth. Keep the antenna away from the face and eyes.

### **NOTE**

*It is necessary to monitor a channel for activity before transmitting. **TRANSMITTING ON AN ACTIVE CHANNEL MAY INTERFERE WITH OTHERS.***

- 2) Press the Monitor Button to monitor the channel for activity. To avoid interrupting another user, make sure the channel is clear before you begin transmitting.



*The TriColor LED located on the top panel can help with channel monitoring. It will glow amber if RF activity is present; or green if the transmission has a tone that matches a tone programmed for receive in your radio. When this LED is "Off" or not present, the radio is indicating a "clear channel".*

- 3) When the channel is clear, press and hold the P-T-T bar on the side of the radio, and speak slowly and clearly into the grille area. When you have finished transmitting, release the P-T-T bar to receive. The LED will glow red when transmitting. This red indicator should be on continuously while the P-T-T bar is being pressed and the radio is transmitting.*

*Should the red LED be "flashing", this is an indication that the battery needs to be recharged and transmission will cease. Recharge the battery before attempting more than one transmission.*

*When finished transmitting, receiving, monitoring, etc., turn the radio "Off" by rotating the On/Off Volume Control fully counterclockwise, to the detent position.*

*See Table 1 for more information on radio status.*

**Table 1 - Radio Status Indicators**

<b>STATUS</b>	<b>DESCRIPTION</b>	<b>LED COLOR</b>	<b>AUDIBLE TONE</b>
<b>NORMAL</b>	<i>Power "On" Ready</i>	<i>N/A</i>	<i>Melody</i>
	<i>Busy</i>	<i>Amber</i>	<i>N/A</i>
	<i>Correct Call</i>	<i>Green</i>	<i>N/A</i>
	<i>Transmit</i>	<i>Red</i>	<i>N/A</i>
	<i>Busy Lock</i>	<i>Amber, Flashing</i>	<i>Single Tone</i>
<b>IN SCAN</b>	<i>Scan is initiated</i>	<i>Green, Flashing</i>	<i>N/A</i>
<b>WARNING</b>	<i>Time-Out Timer</i>	<i>N/A</i>	<i>Single Tone</i>
	<i>Battery Low</i>	<i>Red, Flashing</i>	<i>Four Tone, Repeated</i>
<b>ERROR</b>	<i>EEPROM Error</i>	<i>Red, Flashing</i>	<i>Single Tone, Repeated</i>
	<i>PLL Error</i>	<i>Red, Flashing</i>	<i>Double Tone, Repeated</i>
	<i>Filtering Error</i>	<i>Red, Flashing</i>	<i>Three Tone, Repeated</i>

### **STATUS INDICATIONS AND AUDIBLE ALERT TONES**

*The Monogram Series Scan Radio, with its sophisticated microprocessor control, provides a series of audible alert tones.*

*Upon initial power up, a quick four tone melody indicates that the self test of the microprocessor functions have been completed satisfactorily. A series of tones may be sounded with any of the following conditions:*

- Attempt to "Transmit" on a channel set for "receive only".*

- *Attempt to "Transmit" on a channel that is already in use when "Busy Channel Lockout" has been programmed into the radio.\**
- *Transmitting time has exceeded "TimeOut Timer" Programmed length. \**
- *Low Battery Condition.*
- *Selecting a channel with no programmed frequency.*

*\* Indicates a function that is initially programmed into the radio.*

#### **NOTE**

*All audible tones can be programmed "Off" for silent operation.*

### **CHANNEL SCAN**

*Channel Scan is a programmable feature that allows you to monitor a number of channels. You define a channel "scan list" and a scan channel location (any channel, 1-4 or 1-16) that the list is to be programmed into. Once that channel location is selected, scan is initiated.*

#### **Normal Scan**

*Once the "Scan List" is programmed into a channel scan position, the user can initiate "Scan". Simply move the channel selector knob to that position and the radio will start to "Scan". The status LED on the top panel can be programmed to flash green as the radio is scanning.*

*If a conversation is detected on any of the channels in the "Scan List", the radio will stop on that channel and you will be able to hear the conversation. If programmed for "Normal Scan TX" you will be able to transmit on that active channel during the programmable "Scan Delay" time. The "Scan Delay" time is the amount of time the radio will stay on that channel once activity has ceased (programmable, 4-7 seconds is typical). The radio will resume scanning once the "Scan Delay" time has expired.*

### **"Priority" Channel Scan**

*A single channel may be programmed as the "Priority" channel. The radio will constantly monitor this channel while scanning and when the radio has stopped on an active channel. If a call is detected on the "Priority" channel, the radio will automatically move to, and remain on, the "Priority" channel for as long as the priority conversation takes place. "Priority" channel activity takes precedence over all other conversations.*

#### **NOTE**

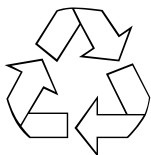
*"Priority" channel scan and "Look Back" requires that the radio leave the active channel for a fraction of a second (at regular intervals) to check the priority channel for a message. Depending upon how the radio is programmed (Scan Speed, etc.) this may or may not be noticeable as "breaks" on the active channel for that same fraction of a second.*

## OTHER SCANNING FEATURES

- **"Look Back":** Any channel when not in the scan mode, can be programmed to Look Back" at the "Priority" channel. This feature is ideal for those who do not need scan as defined above, but want to make sure that they never miss a call on the "Priority" channel if another channel has been selected. Once a "Look Back" channel has been selected, the radio will constantly scan the priority channel. If activity is detected on the "Priority" channel, the radio will move to that channel for as long as it remains active.
- **Scan Channel Delete:** From time to time you may wish to temporarily delete a channel from the "Scan List". To do so, simply press the monitor button while scanning and stopped on the channel to be deleted. This will remove that channel from the "Scan List" until the selector is moved from the "Scan List" channel position or the radio's power is reset. When power is restored or the "Scan List" channel position is again selected, the original programmed "Scan List" will be activated.
- **Channel Guard on Digital Channel Guard Scanning:** The radio can be programmed to scan for tone. This will help block out unwanted calls.
- **"Priority" Scan TX:** Your radio can be programmed to transmit on the "Priority" channel when scanning and not stopped on an active channel. It can also be programmed to always transmit on the "Priority" channel if scanning or stopped on an active channel.

- **"Receive Only" Scan:** If programmed for "Receive Only" Scan, the radio will not allow the user to transmit while the radio is in the "Scan" channel position.

## **RECHARGEABLE BATTERY PACK DISPOSAL**



**Ni-Cd**

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal. Call Toll Free 1-800-822-9362 for information and/or procedures for returning rechargeable batteries in your state.

## **INTRINSICALLY SAFE USAGE**

Selected portable radios with appropriate battery packs installed are certified as Intrinsicly Safe. Intrinsicly Safe approval includes Class I, II, III, Division 1 hazardous locations in the presence of Groups C, D, E, F and G atmospheres. Non-Incendive approval includes Class I, Division 2 hazardous locations in the presence of Groups A, B, C and D atmospheres.

Hazardous locations are defined in the National Electrical Code. Useful standards NFPA 437A and NFPA 437M for the classifications of hazardous areas can be ordered from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

## **BATTERY PACKS**

*Only battery packs identified as intrinsically safe shall be used with a portable radio that is rated and labeled as Intrinsically Safe. Use of nonspecified battery packs voids approval. The following battery pack option is approved for use with intrinsically safe radios.*

*MHPA5B Rechargeable Battery Pack,  
Standard Capacity (Short Case)*

## **OPERATIONAL PRECAUTIONS**

*In either repeater or simplex operation, the positioning of the transceiver will change the "talkable distance" significantly. Hold the unit firmly in the palm of your hand to get a good body ground, and find the best positioning to get better receiver quieting; this is likely to provide the best path to reach the other party. Sometimes moving a few feet in the right direction can produce a much better result. In a marginal area, placing the unit on a metal surface, such as a car roof will also help.*

*Some repeater systems (when using sub audible tone control) require as much as 250 milliseconds for tone recognition. Rapid operation of the P-T-T may cause the first syllables of words to be clipped.*

*The unit is designed for use under a variety of environmental conditions and is MIL-STD 810 D and E approved. However, a few precautions will ensure long life of this transceiver, and they should be heeded without fail.*

- *High Humidity: The Monogram Series Scan radios are not waterproof. Therefore, do not expose directly to continuous rain or submerge in water.*
- *Extreme Heat: Avoid direct exposure to extreme heat. At very high temperatures the nickel cadmium battery tends to self discharge and reduce operating time.*
- *Low Temperature: The unit can operate in temperatures down to -30 degrees C (-22 deg. F.). However, in extreme cold, nickel cadmium battery capacity is reduced. Try to keep the unit inside your coat if using in a very cold environment for an extended period of time.*

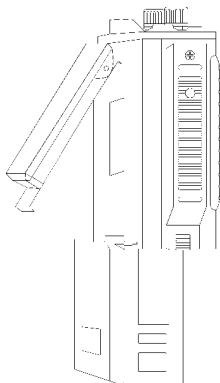
### **ANTENNA INSTALLATION**

*Install the antenna to the radio by screwing the antenna into the antenna receptacle on top of the radio.*

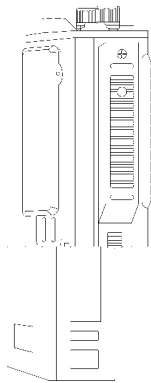
### **BELT CLIP INSTALLATION**

*Remove slide-on battery pack. Insert top portion of belt clip into recessed hole located on rear top of radio body. Position bottom of belt clip against radio back and re-install battery. Once the battery is re-installed, the belt clip cannot be removed without first removing the battery pack.*





*Belt Clip Installation/Removal*



*Battery Pack Removal*

## **BATTERY PACK REMOVAL**

*To remove battery pack, place thumb under latch at side of radio. Lift upward while sliding battery away from thumb.*

*To re-assemble, follow the reverse of above.*

## **GENERAL DESCRIPTION**

*Monogram Series Scan Radios are designed specifically for Professional Two-Way Radio operations and are available in both 4 or 16 channel models. They offer a wide variety of advanced programmable features - including several different "Scan" modes - permitting the user to "customize" the radio to his communication requirements.*

*A wide selection of accessories is available. A choice of battery capacity (600 mAh or 1200 mAh) and chargers (single or dual unit) offer additional versatility.*

## **BATTERY CHARGING AND CARE**

*To ensure peak performance from your radio, the battery pack must be fully charged. Proper care and charging will allow maximum performance and life of your battery pack.*

*The MHC3HJ Standard Desk Charger offers convenient charging capabilities. The charging cycle with this charger is overnight (12-16 hours). For longest battery life try to avoid charging the radio for more than 24 hours at a time.*

*The MHC3HK Dual Rate Charger provides "one hour" charging and normal "slow" charging to two units simultaneously. The high capacity 1200 mAh battery pack will take longer to fully charge.*

*To receive maximum performance from your radio and battery pack, periodically completely discharge and recharge the battery pack.*

### **CAUTION**

*To ensure maximum charge, the transceiver should NOT be left on when charging in either charger.*

## **MAINTENANCE**

*Your Monogram Series Scan Radio is designed to be maintenance free. However, there are a few suggestions to keep your radio in top shape:*

*Clean external surfaces of the radio with a mild solution of dishwasher detergent diluted in water. Apply sparingly to avoid excessive moisture contact*

*into cracks and crevices. Do not submerge the radio, but instead, use a nonmetallic brush to dislodge stubborn particles. Thoroughly dry the surfaces with a soft, lint free cloth.*

*DO NOT use solvents or spirits for cleaning purposes as they may permanently damage the housing.*

*Clean the battery contacts on the bottom of the radio with a lint free cloth to remove dirt, grease, or other foreign material that may impede good electrical contact.*

*Avoid heavy physical abuse of the radio.*

*DO NOT pound or drop the radio.*

*DO NOT carry the radio by the antenna.*

*DO NOT disassemble the radio for purposes other than changing the battery pack as there are no user serviceable adjustments inside.*

*In case of difficulty, reread the instruction manual thoroughly.*

*Check the battery and recharge if necessary.*

*Check that the antenna is properly installed.*

*Reposition the radio and try different operating locations; performance may be improved by slight movement changes.*

## WARRANTY

- A. Ericsson GE Mobile Communications Inc. (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that Equipment manufactured by Seller shall be free from defects in material, workmanship and title, and shall conform to its published specifications. With respect to any Equipment not manufactured by Seller (except for integral parts of Seller's Equipment to which the warranties set forth above shall apply). Seller gives no warranty, and only the warranty, if any, given by the manufacturer shall apply. Batteries are excluded from this warranty but are warranted under a separate Nickel-Cadmium Battery Warranty.
- B. Seller's obligations set forth in Paragraph C below shall apply only to failures to meet the above warranties (except as to title) occurring within the following periods of time from date of sale to the Buyer and are conditioned on Buyer's giving written notice to Seller within thirty (30) days of such occurrence:
1. for fuses, incandescent lamps, vacuum tubes and non-rechargeable batteries, operable on arrival only.
  2. for parts and accessories (except as noted in B.1) sold by Seller's Service Parts Operation, ninety (90) days.
  3. for all other Equipment of Seller's manufacture, two (2) years.
- C. If any Equipment fails to meet the foregoing warranties, Seller shall correct the failure at its option (i) by repairing any defective or damaged part or parts thereof, or (ii) by making available at Seller's factory any necessary repaired or replacement parts. Any repaired or replacement part furnished hereunder shall be warranted for the remainder of the warranty period of the Equipment in which it is installed. Where such failure cannot be corrected by Seller's reasonable efforts, the parties will negotiate an equitable adjustment in price. Labor to perform warranty service will be provided at no charge only for the Equipment covered under Paragraph B.3, and only during the first twenty-four (24) months following the date of sale to the Buyer. Thereafter, labor will be charged at prevailing rates. To be eligible for no-charge labor, service must be performed by an authorized General Electric Service Station or other Servicer approved for these purposes either at its place of business during normal business hours, for mobile or personal equipment, or at the Buyer's location, for fixed location equipment. Service on fixed location equipment more than thirty (30) miles from the Service Station or other approved Servicer's place of business will include a charge for transportation. Equipment located off-shore is not eligible for no-charge labor.
- D. Seller's obligations under Paragraph C shall not apply to any Equipment, or part thereof, which (i) has been modified or otherwise altered other than pursuant to Seller's written instructions or written approval or, (ii) is normally consumed in operation or, (iii) has a normal life inherently shorter than the warranty periods specified in Paragraph B, or (iv) is not properly stored, installed, used, maintained or repaired, or, (v) has been subjected to any other kind of misuse or detrimental exposure, or has been involved in an accident.
- E. The preceding paragraphs set forth the exclusive remedies for claims (except as to title) based upon defects in or nonconformity of the Equipment, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of all other warranties, whether oral, written, expressed, implied or statutory. **NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES**

This warranty applies only within the United States.  
1-800-528-7711 (Outside U.S.A. 804-528-7711)

ECX-915A

### **NICKEL-CADMIUM BATTERY WARRANTY**

- A. Ericsson GE Mobile Communications Inc. (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that nickel-cadmium batteries supplied by Seller shall be free from defects in material and workmanship, and shall conform to its published specifications for a period of twelve (12) months from the date of purchase.
- B. For purposes of this warranty, batteries shall be deemed defective if (1) the battery capacity is less than 80% of rated capacity, or (2) the battery develops leakage.
- C. If any battery fails to meet the foregoing warranty, Seller shall correct the failure by issuing a replacement battery upon receipt of the defective battery at an authorized General Electric Service Station (GESS). To obtain in the name and address of a GESS, ask your salesperson, consult the Yellow Pages, or call the number printed at the bottom of this page.
- D. Replacement batteries shall be warranted only for the remaining unexpired warranty period of the original battery. This warranty becomes void if:
  - (1) The battery has been subjected to any kind of misuse, detrimental exposure, or has been involved in an accident.
  - (2) The battery is used in equipment or service other than the radio equipment for which it is specified.
- E. The preceding paragraphs set forth the exclusive remedies for claims (except as to title) based upon defects in or non-conformity of any battery, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of all other warranties, whether oral, written, expressed, implied or statutory. **NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.**

*This warranty applies only within the United States.  
1-800-528-7711 (Outside U.S.A. 804-528-7711)*

ECX-841B

## **NOTES**

## **NOTES**

## **EMERGENCY NUMBERS**

*Police*

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*State Police*

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*Fire*

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*Poison Control*

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*Ambulance*

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*Life Saving and  
Rescue Squad*

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