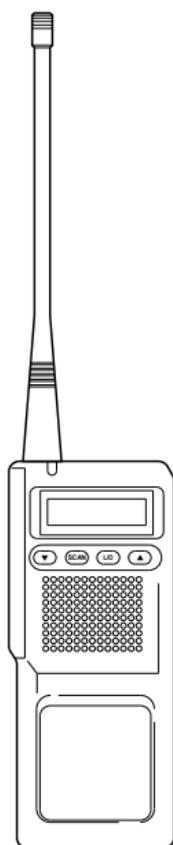


*Operator's Manual*

## **Two-Way FM Transceiver**

**KRD 103 117/1  
KRD 103 117/3**



## **NOTE!**

Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Any repairs, alterations or substitution of recommended parts made by the user to this equipment not approved by the manufacturer could void the user's authority to operate the equipment in addition to the manufacturer's warranty.

This manual is published by **Ericsson Inc.**, without any warranty. Improvements and changes to this manual necessitated by typographical errors, inaccuracies of current information, or improvements to programs and/or equipment, may be made by **Ericsson Inc.**, at any time and without notice. Such changes will be incorporated into new editions of this manual. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose, without the express written permission of **Ericsson Inc.**

## Table of Contents

<b>Safety Information</b>	<b>4</b>
<b>Controls &amp; Functions</b>	<b>5</b>
<b>Introduction</b>	<b>6</b>
Congratulations	6
Description	6
Service	6
Features	6
<b>Unpacking</b>	<b>8</b>
<b>Getting Started</b>	<b>5</b>
Charging the Battery	9
Attaching/Removing the Battery	9
Installing the Antenna	10
Attaching the Belt Clip	10
<b>Operation</b>	<b>11</b>
LCD Display	11
Transmit/Receive Indicator	11
Applying Power and Setting the Volume	12
Receive	12
Channel Scan	13
Dual Watch	13
Create a Channel Scan List with Channel Lock Out	13
Drop Out Delay	13
Transmit	13
Transmit During Scan	14
Transmit Time Out Timer	14
<b>Special Features</b>	<b>15</b>
Battery Save	15
Function Tone	15
Optional Accessories & Replacement Parts	15
Technical Support and Service	16
Specifications	16
<b>Nickel Cadmium Battery Warranty</b>	<b>17</b>
<b>Warranty</b>	<b>18</b>

## SAFETY INFORMATION

Through the provisions of the Occupational Safety and Health Act (OSHA) of 1970, the United States Department of Labor has established an electromagnetic safety standard which applies to the use of two-way radio equipment. The proper use of this transceiver will result in exposure below the OSHA limit.

The following precautions shall be observed:

- **DO NOT** operate the transceiver of any radio equipment with the antenna touching, or close to, the eyes, face, or exposed body parts.
- **DO NOT** operate the transmitter of any radio equipment unless all the Radio Frequency (RF) connectors are secure and any open connectors are properly terminated.
- **DO NOT** operate the transmitter of any radio equipment near electrical blasting caps or in an explosive environment.
- **DO NOT** let children operate any transmitter-equipped radio equipment.

Have your radio equipment installed and serviced by a qualified technician.

### Rechargeable Nickel-Cadmium Battery Pack Warning

This radio contains a Rechargeable Nickel-Cadmium Battery Pack. Cadmium is a chemical known to the State of California to cause cancer. The Nickel-Cadmium Battery Pack contained in this radio may explode if disposed of in a fire.



**Ni-Cd**

- **Do not** short circuit this Nickel-Cadmium Battery Pack.
- **Do not** charge this Rechargeable Nickel-Cadmium Battery Pack except with the recommended chargers.

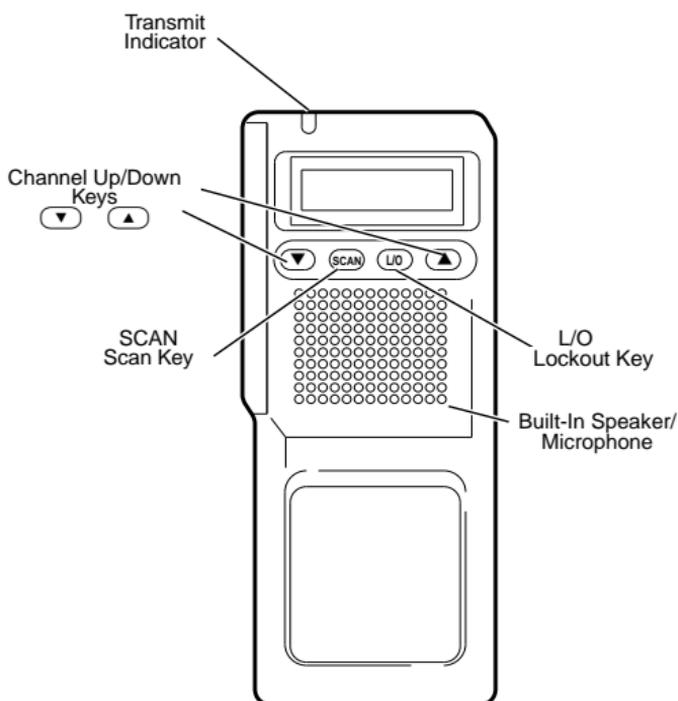
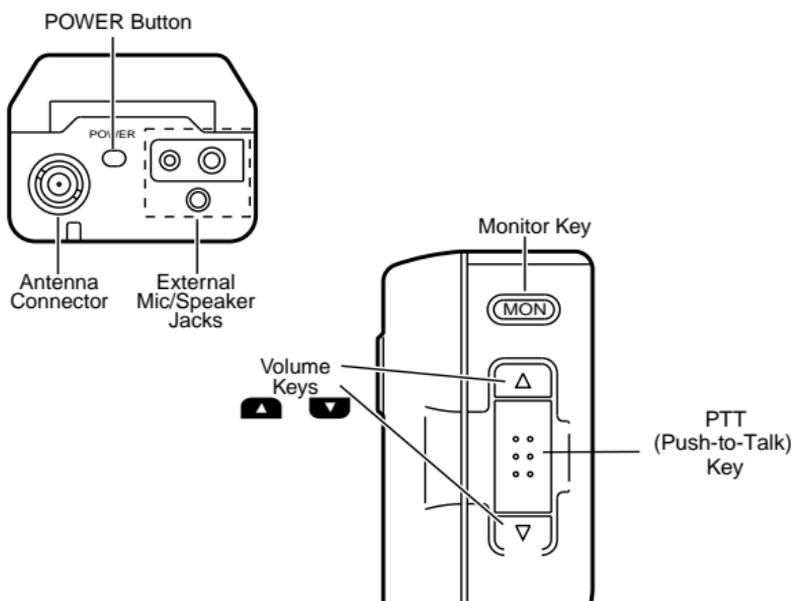
### Rechargeable Nickel-Cadmium Battery Packs Must Be Recycled or Disposed of Properly!

Residents of Minnesota should contact 1-800-8BATTERY for information concerning reclamation and disposal of Rechargeable Nickel-Cadmium Battery Packs. Residents outside of Minnesota should contact their local authorities for information concerning reclamation and disposal of Rechargeable Nickel-Cadmium Battery Packs.

**Caution:** Ericsson Inc. does not represent this radio to be waterproof. Do not use the radio in damp or high-moisture environments.

# CONTROLS & FUNCTIONS

---



# Introduction

---

## Congratulations

You now own the best value in portable radios, a professional communications radio. The **KRD 103 117/1** and **KRD 103 117/3** give you consistent, outstanding performance in virtually all conditions and situations.

Your **KRD 103 117/1** or **KRD 103 117/3** Two-Way FM Transceiver offers many special features. Read this Operator's Manual completely to be sure you are getting the most from the radio.

## Description

The **KRD 103 117/1** and **KRD 103 117/3** are 16-Channel portable Two-Way FM Transceivers. They are microprocessor-controlled, frequency-synthesized, and programmable. They are lightweight, rugged, and fit easily in your hand.

The **KRD 103 117/1** operates in the 146 to 174 MHz range with a maximum RF power output rating of 5 watts.

The **KRD 103 117/3** operates in the 438 to 470 MHz ranges with a maximum RF power output rating of 4 watts.

## Service

If your radio does not work properly, take it to a dealer for servicing. These radios contain no user serviceable parts. Unauthorized adjustments will void the warranty and may cause illegal radio operation. Make sure that a qualified technician services your radio equipment. When servicing these radios, use only factory authorized replacement parts.

## Features

- **Scan Mode**—Monitors all Channels. (You can temporarily *lock out* selected Channels.)
- **External Speaker/Microphone Jacks**—Allows use of an optional speaker or microphone for improved operation in special situations.
- Channel/Function LCD
- Channel Monitor Switch
- Battery Low Indicator
- User-Programmable Channel Scan List
- TX/Busy LED

### Program Selectable (Dealer Programmable):

The Channel frequencies and options (such as Tone-Coded Channels and Priority Channel) have been pre-programmed into your radio by your dealer . Check with your dealer for the specific features in your radio.

- Scan Dropout Delay
- Transmitter Time Out Timer
- Battery Save
- Busy Channel Lockout
- Function Beep
- CTCSS/DCS/2-Tone Receive/Transmit Codes
- TX Power High/Low

# Unpacking

---

The following should be included with your two-way radio:

- Transceiver Unit
- Antenna
- Belt Clip
- Operator's Manual (AE/LZT 123 1883)
- Nickel-Cadmium Rechargeable Battery Pack (BKB 191 207/1)

If any of these items are missing from the box, contact your dealer for help.

## FCC Licensing

Before you transmit with your radio, you must have the proper license issued by the Federal Communications Commission (FCC). Your dealer can tell you what is required, and can help you with all your future communication needs.

Features, specifications, and availability of optional accessories are all subject to change without notice.

# Getting Started

---

Before you can use your radio, you must install and charge the battery and install the antenna as follows.

## Charging the Battery

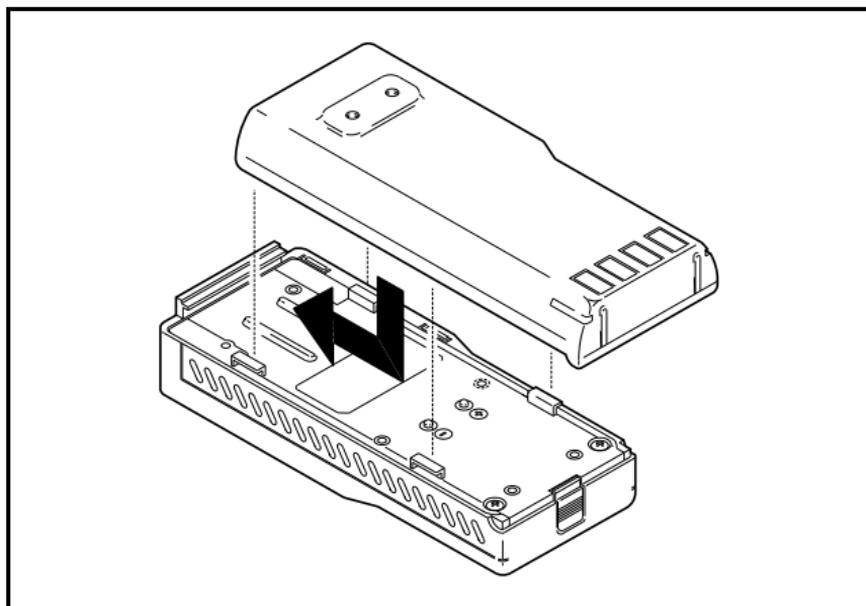
Your radio is powered by a specially-designed, nickel-cadmium battery. You should fully charge the battery before operating the radio. Only use the following charger.

### ■ Model BML 161 60/1 Desktop Rapid Charger

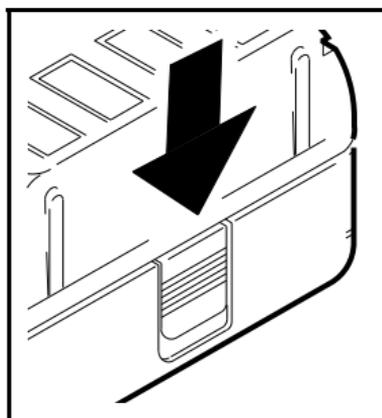
Follow the charging instructions that come with the charger. Also, be sure to observe the following warning/safety information for nickel-cadmium batteries (on page 4 of this Operator's Manual).

## Attaching/Removing the Battery

To attach the battery to the radio, align the slots in the battery with the hooks on the radio as shown. Then, slide the battery toward the top of the radio until it locks into place.

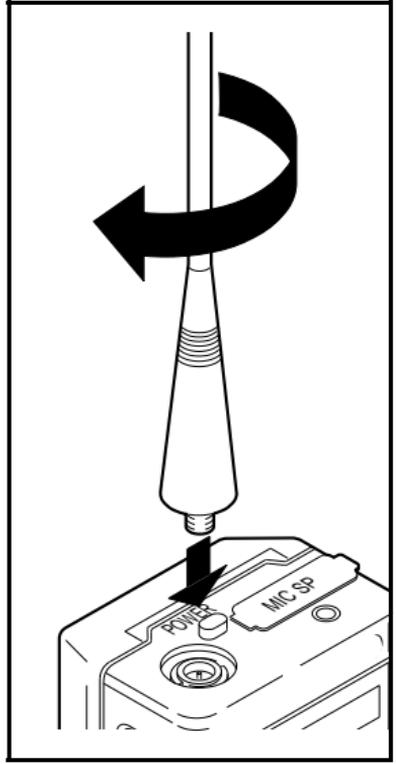


To remove the battery from the radio, push the battery release lever toward the front of the radio and slide the battery toward the bottom of the radio.



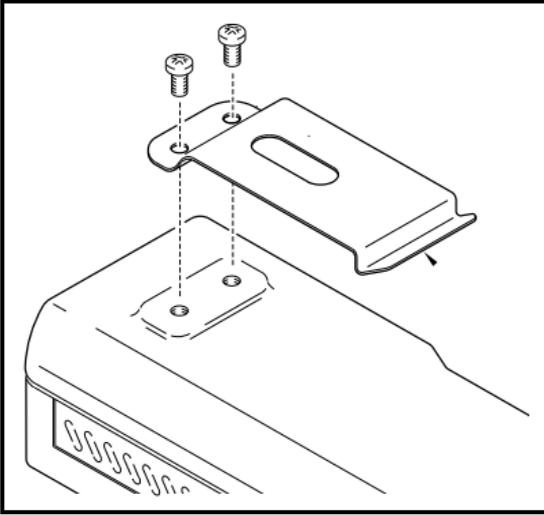
## Installing the Antenna

To install the antenna, align it with the antenna connector on the top of the radio and turn it clockwise until it seats snugly against the radio.



## Attaching the Belt Clip

Attach the supplied belt clip as shown.

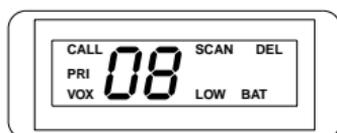


# Operation

---

## LCD Display

The liquid crystal display (**LCD**) has several indicators that show the current operating mode. The two digits show the current selected channel. The smaller displays show which features are enabled.

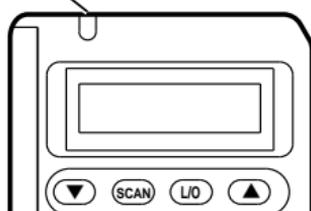


- CALL** Call Received with CTCSS/DCS/2-Tone Coding
- PRI** Priority Channel
- VOX** Voice-Operated Switch activated
- SCAN** Scanning in operation
- DEL** Channel removed from Scan List
- LO BATT** Blinks when the Battery Power is low

## Transmit/Receive Indicator

The Transmit/Receive Indicator shows different colors depending upon the operation:

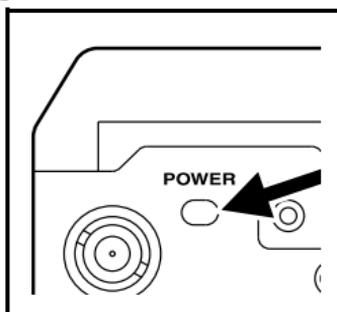
Transmit Indicator



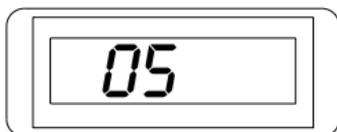
- Transmit:** Steady RED
- Channel Busy:** Blinking RED
- 2-Tone-Coded Signal:** Blinking ORANGE
- Monitor ON:** Steady ORANGE for 4 seconds

## Applying Power and Setting the Volume

1. Turn the radio on by pressing the POWER button to the *in* position.



The display lights and shows the last-selected Channel number.



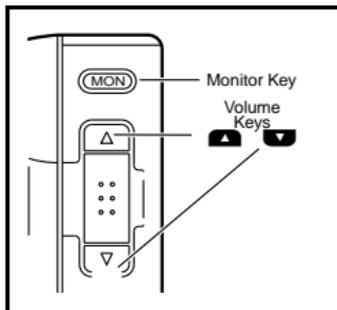
Note: To turn the radio off, release the POWER button to the *out* position.

2. Press the Channel Up or Channel down key (▲ or ▼) to display the desired Channel number.



Note: If you press and hold either key, the radio changes Channels rapidly.

3. Press the Monitor Key (MON).  
Adjust the speaker volume to a comfortable level by pressing the Volume Up (▲) or Volume Down (▼) Key



Note: If you hold down either of the keys, the volume steps rapidly in the selected direction.

5. Press (MON) again.

**Note:** While Monitor is ON, your radio may detect (on the selected channel) transmissions from stations outside your own system, as well as transmissions within your system.

## Receive

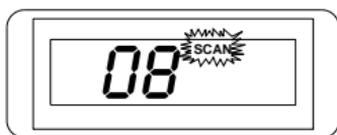
1. When a call is received, the Transmit/Receive Indicator blinks RED. If the signal is coded with CTCSS, DCS, or 2-Tone Code, the CALL indicator appears on the LCD.



## Channel Scan

In the scan mode, the radio alternately monitors each Channel until it receives a call. You can scan all Channels, or you can temporarily lock out individual Channels from scanning as desired.

1. Press **(SCAN)** to begin scanning. The SCAN indicator begins to flash.

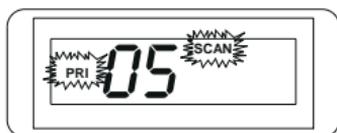


2. The radio stops on any Channel that receives a call, and you hear the caller. When the transmission stops, the radio resumes scanning after a brief delay.
3. To disable scanning, press **(SCAN)**.

## Dual Watch

If your radio has been programmed with a Priority Channel, the radio will sample the Priority Channel between any other receiving Channel during Scan Mode. This is usually the Channel you use for most of your communications.

During scan the PRI indicator will flash whenever the Priority Channel is being monitored.



## Create a Channel Scan List with Channel Lock Out

Deleting channels (from the channel scan list) increases the scanning speed.

Use **(▲)** or **(▼)** to select the desired channel and press **(L/O)**. The locked-out channel blinks, and the DEL indicator appears.



To remove the lock-out condition from a channel, manually select the channel and press **(L/O)** again.

## Drop Out Delay

While scanning, the radio stops at a busy channel and receives a transmission. When the received call is over, it resumes scanning after a short delay (programmable).

## Transmit

1. Use **(▲)** or **(▼)** to select the desired channel.
2. Before you transmit, press **(MON)** and listen for activity on the channel. Also check the Transmit/Receive Indicator. If it is blinking RED, the Channel is locked out, and you cannot transmit.

- When the channel is clear, press the **PTT** switch to transmit. The **TX LED** lights RED when you transmit. Hold the radio with the microphone approximately two inches in front of your mouth with the antenna at approximately a 45-degree angle away from your head. Speak in a clear, normal, conversational voice.
- When you are through speaking, release the **PTT** switch and listen for an answer.

### Transmit During Scan

Depending on how your radio is programmed, you will transmit on a particular Channel during the scan function.

TALK BACK	HOME CH	TRANSMIT ON
Enabled	Disabled	Current Channel
Disabled	Enabled	Home Channel
Enabled	Enabled	Home Channel or Current Channel

Note: If both conditions are programmed, the radio will transmit on the Current Channel during Drop Out Delay, and on the Home Channel during scanning.

### Transmit Time Out Timer

Continuous transmission time is limited. When you transmit longer than the preset time, you hear a beep from the speaker, and the radio automatically returns to receive mode. When you release the **PTT** button, the **Time Out Timer** is reset.

# Special Features

---

## Battery Save

In Battery Save or “sleep” mode, the radio receives only when it detects an RF carrier. This helps reduce battery power consumption.

## Function Tone

Every time you press any key other than PTT or POWER, you will hear an alert tone.

## Optional Accessories & Replacement Parts

The following Optional Accessories and Replacement Parts are available from your dealer.

- Rechargeable Battery Pack (BKB 191 207/1)
- Battery Charger:  
Desktop Rapid Charger (BML 161 60/1)
- External Microphone with Speaker (KRY 101 1641/1)
- Programming Cable (RPM 113 2482/1)
- Operator's Manual (AE/LZT 123 1883)
- VHF Antenna (KRE 101 1502/1 or KRE 101 1502/2)  
See your dealer for exact model
- UHF Antenna (KRE 101 1502/11)

## Technical Support and Service

Your dealer can provide you with technical assistance and information. If your radio does not perform properly, take it to a dealer for servicing. The radio contains no user-serviceable parts. Unauthorized adjustment will void the warranty and may cause illegal radio operation. Be sure that a qualified technician services your radio equipment. When servicing the radio, use only factory-authorized replacement parts.

## Specifications

Power . . . . . Rechargeable Battery Pack (BKB 191 207/1)

Temperature Range . . . . . – 30°C to +60°C

Operating Frequencies

**KRD 103 117/1** . . . . . 146 MHz to 174 MHz

**KRD 103 117/3** . . . . . 438 MHz to 470 MHz

Nominal Dimensions

(with Battery) . . . . . 2.36" (W) x 1.77" (D) x 5.55" (H)

Weight (with Battery) . . . . . 1.08 lbs

Duty Cycle . . . . . 5, 5, 90 (TX, RX, STDBY)–8Hr Typical

## NICKEL CADMIUM BATTERY WARRANTY

- A. Ericsson 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 Service Center (ASC). To obtain the name and address of an ASC, 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 USA, 804-528-7711)

## WARRANTY

- A. Ericsson 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, one (1) year.
- 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 three (3) 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 Service Center 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 Center or other approved Servicer's place of business will include a charge for transportation.
- 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 SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.**

This warranty applies only within the United States.

1-800-528-7711 (Outside USA, 804-528-7711)

ECX-362S



## EMERGENCY NUMBERS

Police

---

State Police

---

Fire

---

Poison Control

---

Ambulance

---

Life Saving and  
Rescue Squad

---

**Ericsson Inc.**  
Private Radio Systems  
Lynchburg, Virginia 24502  
1-800-528-7711  
(Outside USA, 804-528-7711)

**AE/LZT 123 1883RIA**  
Printed in the Philippines