

System Safety Information

Ericsson System Products

SAFETY INSTRUCTION

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Abstract

This document presents system safety information that applies when working with Ericsson system products.



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1 Introduction

This document presents the system used for presenting system safety information for Ericsson products. The instructions included are mandatory to ensure product safety while working with Ericsson products.

Local regulations must be taken into consideration. The system safety information in this document is in addition to local regulations.

Note: Reduce the risk of accidents by studying all the instructions carefully before starting work. If questions arise regarding the safety instructions, contact the supervisor or the local Ericsson company for clarification.

For information on personal health and safety for Ericsson system products, see:



*Personal Health and Safety
Information, Ericsson System
Products*

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Local Regulations

Local regulations, first and foremost national regulations, override the information in this document. Where applicable local regulations are not available, the information herein prevails.

Product Exclusion Indication

The information in this document covers system safety information for all Ericsson system products. As all the information does not apply to a specific product, the readers must familiarize themselves with the potential hazards indicated on the product they are working with to understand which document parts apply to their product.

1.1 Target Group

The target group for this system safety information is personnel who work with Ericsson products. All personnel who work with engineering, installation, test, and operation and maintenance of Ericsson products must familiarize themselves with this information.

1.2 Educational Requirements

The product safety instructions in the relevant manuals or documents require that persons performing work on Ericsson products have the necessary education, training and competence required to perform work correctly. For certain work, additional or special training may be required, for example authorization for Authorized Service Providers (ASP). ASP is an Ericsson certification procedure.

A good understanding of technical English is required, or of the language that the information is presented in, to ensure that these instructions can be understood and complied with.

2 Admonitions and Safety Symbols

This section presents the types of admonitions and safety symbols used in all documents for Ericsson system products. There are two types of system safety admonitions that indicate risk to products: Do! and Stop!. When admonitions are encountered anywhere in a document, the information included should be read and any instructions should be followed.

The figures below show the symbols used to indicate product safety admonitions:



Figure 1 Do Safety Symbol



Figure 2 Stop Safety Symbol

The terms Do! and Stop! are defined below:

Do! Indicates an action that must be performed to prevent equipment damage, software corruption, data loss or service interruption.

Stop! Indicates that action must be avoided to protect equipment, software, data or service.

The term “Note” is used to present important information that might otherwise be overlooked.



2.1 Special Hazard Symbols

This section presents special hazard symbols used to indicate the risk of Electrostatic Discharge (ESD):



Figure 3 Electrostatic Discharge Hazard Symbol

3 Batteries

This section provides information on damage that can be caused to products containing batteries that are damaged.

3.1 Overheated Batteries



Do!

Check batteries for signs of overheating. The casing surrounding overheated batteries can be soft and warped. Replace damaged batteries according to instructions.

If it is suspected that batteries are overheated, check the following:

- The internal temperature of the equipment is below +60°C (140°F).
- Batteries have not leaked.

Corrective Actions

1. Replace overheated batteries.
2. Treat leakages from batteries as described in Section 3.2 Treating Hazardous Waste from Leaks on page 4.



3.2 Treating Hazardous Waste from Leaks



Do!

Check batteries for acid leakage. Acid can corrode the product. Replace leaking batteries according to instructions.

In case of spillage of hazardous substances, there should always be sufficient absorbers or neutralizing materials available on site. There is a danger of spillage occurring when installing, removing, replacing or servicing batteries. The absorbers and neutralizing materials must be suitable for the hazardous substances involved. Typical neutralizing agents are shown in Table 1.

Table 1 Typical Neutralizers

Typical Neutralizers	Chemical Compound
Baking soda (bicarbonate)	NaHCO_3
Sal soda	$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
Soda ash	Na_2CO_3

Note: Absorbers and neutralizing products will vary, depending on the country and battery manufacturer. Consult the battery manufacturer for specific details of absorbers and neutralizing materials.

4 Electrical Installation

This section provides information on ensuring that AC and DC powered products are not damaged due to improper installation.



Stop!

Do not install or modify AC or DC powered equipment unless you are a qualified and authorized electrician. Improper installation work can seriously damage the equipment.



4.1 Safety Precautions for Working with Electrical Installations

The following precautions must be observed when working with electrical installations:

1. Ensure that approved circuit breakers or fuses are installed.
2. Ensure that the cables used have a sufficient cross-sectional area in accordance with product requirements and local laws and regulations.
3. Ensure that conductors are connected according to the connection diagram.
4. Label the cables correctly.
5. Check the installation work upon completion.

5 Electrostatic Discharge

This section provides information and instructions on Electrostatic Discharge (ESD) product safety. ESD is defined below.

ESD

A static electric charge accumulates when a body rubs against clothes, slides against a chair, when shoes rub against a floor, or when ordinary plastics are handled, and so on. The electrostatic charge can remain for a considerable length of time and is discharged when the body comes into contact with conductive material.

An ESD wrist strap must be used when working with ESD sensitive components, even in equipment rooms fitted with ESD protective floor covering. Although ESD floor covering reduces the risk of ESD, if the wrong type of shoes are used, or if the person is already charged when they enter the room, the floor covering in itself does not protect from this, and therefore an ESD wrist strap must be used.

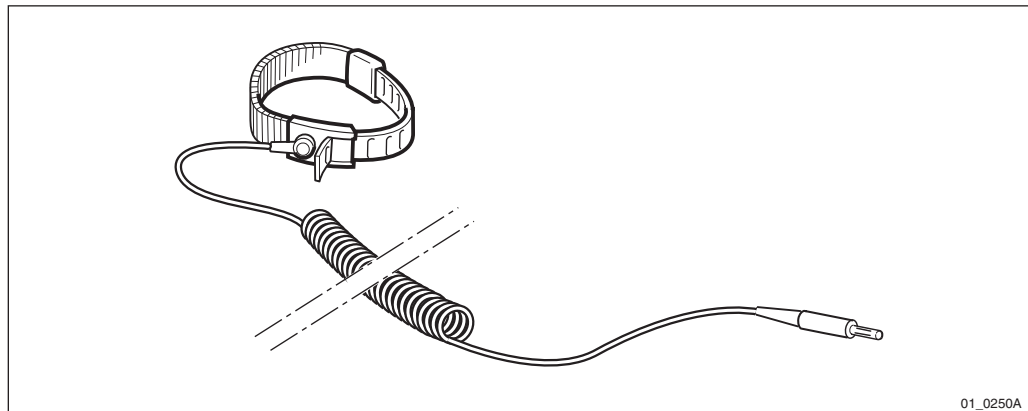


Figure 4 Standard ESD Wrist Strap

Note: Other types of ESD wrist strap are available than that shown in the figure above. For details, see the RBS-specific CPI.

The ESD wrist strap contains a resistor with resistance greater than 1 M Ω in the cable to protect the operator. The resistance value is low enough to discharge the electrostatic voltage. The ESD wrist strap must be connected to ground.

Instructions for ESD Wrist Strap Use

1. Place the ESD wrist strap around your wrist and insert the connector at the other end to the ground (earth) terminal on the equipment.
2. Always use the wrist strap when and where its use is required.

Note: Test the ESD wrist strap regularly.

5.1

Handling Printed Board Assemblies and IC Components

Note: Treating all components as if they are ESD sensitive, whether they have IC components or not, reduces the risk for ESD and significantly reduces the operating time between failure.



Stop!

This product contains components sensitive to ESD. Use an approved ESD wrist strap, connected to the product grounding point, to avoid damaging these components.



Do!

Always use an approved ESD wrist strap when working with sensitive equipment. Damage to components mounted on printed board assemblies can occur if an ESD wrist strap is not used.

5.2 Storing and Transporting Printed Board Assemblies and IC Components

When storing or transporting printed board assemblies or IC components, ensure one of the following:

- The item is stored or transported in its original packaging, or in other anti-ESD material.
- The item is stored or transported in a conductive material, or a special IC carrier that either short-circuits or insulates all leads of the components.

6 Equipment Handling

This section provides information on how to avoid damage to products when handling them.



Do!

Tip risk! This equipment has a high center of gravity without all units installed. Secure the equipment before opening the door.



Stop!

Never lift a unit by the cables as this can damage the equipment.



7 Ground Connection

This section provides information on product grounding (earthing) safety.

Note: The terms “grounding” and “earthing” are synonyms.



Do!

Products not connected to ground risk being damaged by overvoltage or overcurrent. Always connect products to ground according to instructions.

8 Lightning Protection

This section provides information on protecting products from damage due to lightning where a lightning protection system is available.



Do!

Connect products to the lightning protection system to protect the equipment from transient surges.
