

Exposure to Radio Frequency Electromagnetic Fields

Requirement Specification



Executive Summary

This Standard defines global minimum Health, Safety, and Well-being (HSW) requirements for ensuring the proper management of work activities where occupational limits for exposure to Radio Frequency (RF) Electromagnetic Fields (EMF) apply.

Application

This Standard shall apply to the Ericsson Group and any other party working on behalf of Ericsson.

Where there are more restrictive or additional requirements in local regulations or from Ericsson local organizations, customers, or site owners, these shall supersede the corresponding specifications in this Standard.

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1. Standard

1.1 General Requirements

The limits in applicable national regulations on occupational exposure to Radio Frequency (RF) Electromagnetic Fields (EMF) shall be applied. If no specific national limits exist in a particular jurisdiction, the occupational exposure limits in the most current version of the International Commission on Non-Ionizing Radiation (ICNIRP) guidelines [\[1\]](#) shall be applied.



Relevant Ericsson service providers, i.e. those who work in environments where the RF EMF exposure may exceed applicable general public exposure limits and where occupational limits apply, shall be familiar with the applicable safety requirements including relevant customer information.

Note: General public RF EMF exposure limits are normally set with an extra margin in addition to the safety margin applied for the occupational exposure limits.

Service providers shall respect signage (notice/caution/warning) and follow work instructions.

If the RF EMF exposure exceeds the occupational exposure limits in the workplace, service providers shall ensure relevant equipment is switched off or the power reduced, as deemed necessary.

Service providers shall not disconnect antenna feeders, waveguides or connectors associated with a transmitter in operation, unless it is known that the RF EMF exposure will not exceed the occupational exposure limits.

Work near loose or defective cables and connectors associated with a transmitter in operation shall be avoided as this may lead to RF EMF exposure exceeding the occupational exposure limits.

RF EMF exposure surveys shall be conducted according to applicable standards.

1.2 Risk Assessment

The Person in Charge of Work (PICW)/Team Leader shall complete a site-specific risk assessment prior to the start of all work where RF EMF levels may exceed occupational exposure limits.

Work shall not begin until all identified controls are in place.

Information regarding RF EMF exposure collected during the Site Survey shall be used during the site-specific Risk Assessment.

Note: For further information about health and safety of RF EMF, see: [Radio Waves and Health](#)

1.3 Competence & Training

Only service providers who have received relevant RF EMF safety training shall carry out work in areas where RF EMF exposure may exceed general public exposure limits, and where occupational exposure limits apply.

Service providers, i.e., those who work in environments where the RF EMF exposure may exceed applicable general public exposure limits, shall receive relevant safety training about RF EMF.



RF EMF training shall cover:

- Occupational exposure limits and safety guidelines.
- RF EMF control measures.
- Actions to be taken in case of suspected exposure exceeding the occupational exposure limits.
- Methods to determine RF EMF exposure levels.
- If relevant, measurement equipment training.

The training provided shall validate the knowledge of the course participants at the end of the training.

Only trained service providers with knowledge about RF EMF measurement techniques and equipment shall carry out RF EMF exposure measurements.

1.4 Medical Fitness and Response

1.4.1 Medical Devices

Service providers using medical devices, such as heart pacemakers, insulin pumps and implanted metal plates, shall seek medical advice prior to work in areas where RF EMF exposure levels may exceed general public RF EMF exposure limits.

If needed, the responsible manager shall make sure that specific safety measures are arranged.

1.4.2 Suspected Exceedance of Exposure Limits

In case of suspected RF EMF exposure above the occupational exposure limits, the Responsible Line Manager shall be notified, and the incident shall be investigated by the Responsible Line Manager with support from Occupational Health and Safety personnel and reported in the Global Incident Reporting Tool (GIRT).

If symptoms are present, a medical doctor shall be consulted to determine the reasons and relevant treatment.

Note: Since the occupational exposure limits include wide safety margins (typically a factor of 10), and the exposure levels shall be determined over a specified time (typically six minutes), RF EMF levels much above the occupational limits and for longer periods are needed to cause any health effects and symptoms.



1.5 RF EMF Safety Procedures

1.5.1 Work at Antenna Sites

During the planning phase and before commencement of any work at an antenna site:

- Persons responsible for conducting site surveys must identify any instance where it is necessary to have an assessment of RF EMF exposure carried out in advance of work commencing.
- Relevant local safety requirements shall be gathered from the site owner, network provider, operator and/or Ericsson.
- If RF EMF exposure level or EMF Compliance Boundary (Exclusion Zone) information is not available, the service provider shall take any of the following actions:
 - Contact the Responsible Line Manager who should request an RF EMF exposure assessment from the site manager, or
 - Measure the RF EMF exposure levels, if the service provider has received appropriate training in measurement techniques and is equipped with a calibrated field monitor covering the frequency range of the radio services at the site.

Before entering an antenna site, service providers shall:

- Review relevant RF EMF safety information for the site.

When accessing and while being present on a site, the following shall apply:

- PICW/Team Lead shall identify other relevant RF EMF sources near the work location and access routes and if needed, obtain RF EMF exposure information.
- When work shall be performed within the Compliance Boundary (Exclusion Zone) of a live antenna transmitting at full or unknown power levels, the PICW/Team Lead shall ensure the relevant transmitter(s) power is switched off or reduced following network operator's outage procedure.
- Service providers shall not disconnect antenna feeders, waveguides, or connectors associated with a transmitter in operation, unless it is known that the RF EMF exposure will not exceed the occupational exposure limits.

1.5.2 Work in Radio Test Laboratories

work is conducted in radio test laboratories and over-the-air (OTA) test chambers with intended RF EMF transmissions, service providers shall:

- Remain outside the Compliance Boundary (Exclusion Zone) of an active radio.
- Follow all work instructions, notice signs, and access restrictions.
- The test laboratory manager shall ensure When that work instructions and signage are available.



Only trained personnel shall perform RF EMF exposure measurements in radio test laboratories and only using appropriate and calibrated equipment.

1.6 Field Monitor Equipment

Where a personal field monitor (e.g., Narda RadMan and Nardalert, or Alphawave fieldSENSE) is used to ensure the RF EMF exposure is not exceeding the Exposure Limits, the service providers shall:

- Follow the manufacturer's instructions supplied with the field monitor, as well as relevant standards.
- Suspend work whenever the field monitor alarm is triggered or a meter shows a value exceeding the occupational exposure limits, until the actual RF EMF exposure can be confirmed by a more accurate measurement survey.
- Wear the personal field monitor throughout the duration of the work activity with potential RF EMF exposure.
- Calibrate personal field monitors according to intervals specified by the manufacturer. Evidence of such calibration shall be available with the monitor.

2. Responsibilities

2.1 Responsible Line Manager

- Ensure personnel under their responsibility are competent, trained, and authorized to perform work where RF EMF exposure may exceed general public exposure limits.
- Ensure work is planned and resourced so that applicable RF EMF safety requirements, customer requirements, site owner requirements, and local regulations can be met.
- Ensure specific safety arrangements are made for service providers using medical devices where needed.
- Ensure suspected RF EMF exposure above the applicable occupational exposure limits is reported, investigated, and followed up with support from EHS expertise.

2.2 Person in Charge of Works / Team Leader

- Complete a site-specific risk assessment before work starts where RF EMF levels may exceed general public exposure limits.
- Ensure work does not begin until identified controls are in place and relevant site RF EMF safety information has been reviewed.
- Identify RF EMF sources near the work location and access routes, and obtain RF EMF exposure information where needed.
- Ensure relevant transmitter power is switched off or reduced, following the network operator's outage procedure, when work must be performed within the Compliance Boundary (Exclusion Zone) of a live antenna.



- Ensure workers follow signage, work instructions, access restrictions, and required RF EMF control measures during the activity.

2.3 Crew Members

- Complete required RF EMF safety training before carrying out work in areas where RF EMF exposure may exceed general public exposure limits.
- Review and follow relevant RF EMF safety information, signage, work instructions, access restrictions, and site-specific controls.
- Do not enter or work within a Compliance Boundary (Exclusion Zone) unless required controls are confirmed and implemented.
- Do not disconnect antenna feeders, waveguides, or connectors associated with a transmitter in operation unless it is known that RF EMF exposure will not exceed the applicable occupational exposure limits.
- Suspend work and notify the responsible person if a field monitor alarm is triggered, a meter indicates exposure above the applicable occupational exposure limits, or non-compliant RF EMF conditions are suspected.
- Use personal field monitors, where required, in accordance with manufacturer instructions and calibration requirements.

2.4 Occupational Health and Safety Personnel

- Provide RF EMF safety expertise to support planning, risk assessment, implementation of controls, and interpretation of applicable requirements.
- Support responsible managers and PICW/Team Leaders in determining when RF EMF exposure assessments, measurements, or additional controls are required.
- Support investigations of suspected RF EMF exposure above the applicable occupational exposure limits and advise on corrective actions.
- Support monitoring of implementation and adherence through assurance activities, site inspections, incident investigations, and internal audits.

3. References

- [1] [ICNIRP Guidelines for limiting exposure to electromagnetic fields.](#)

4. Change Information

Revision E: Split RF EMF Safety Procedures section (1.5) into two subsections, 1.5.1 on work at antenna sites and 1.5.2 on work in test laboratories; Removed section about operational standards for service providers; Edits to comply with Standard Template; Various editorial updates.