

NOKIA

**Nokia InSite Base Station
Warnings and Cautions, DRAFT**

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Contents

	Contents	3
1	About this document	5
1.1	Safety guidelines	5
2	Warnings	7
2.1	Personnel	7
2.2	Dangerous voltage	7
2.3	Electromagnetic fields and RF power	8
2.3.1	General guidelines	8
2.3.2	Compliance with ICNIRP basic restrictions	9
3	Cautions	11
3.1	Handling of Nokia InSite Base Station	11
3.1.1	Storage and transportation	11
3.1.2	Installation	11
3.1.3	Environmental restrictions	12
3.1.4	Heat management	12
3.2	Power supply to Nokia InSite Base Station	12
3.2.1	NiMH battery	13
3.2.2	AC and DC connectors	13
3.2.3	Power cabling	13

1

About this document

This document details the safety precautions to be followed when working with Nokia InSite Base Station. The instructions in *Installation* and *Maintenance* in this User Manual must be followed when installing Nokia InSite Base Station and performing any maintenance on it. Failure to follow these instructions may be dangerous to the installation and maintenance personnel.

1.1 Safety guidelines

The safety guidelines are designed as follows:

- Warnings alert the reader to dangers which may cause loss of life, physical injury or ill health in any form. The symbol denoting a warning is presented below.



WARNING

This is a warning!

- Cautions are used to denote possible damage to equipment but not dangers to personnel. The symbol denoting a caution is presented below.



Caution

This is a caution!

2 Warnings

2.1 Personnel

Installation, commissioning and maintenance measures concerning any Nokia Base Station (BTS) may only be performed by properly trained and authorised personnel. Nokia InSite Base Station must be installed so that only the authorised personnel have access to its sensitive parts.

2.2 Dangerous voltage

Potentially lethal voltages are present within this system. For more information on power supply, see *Requirements for Installation and Operation*.



WARNING

MAINS VOLTAGE! Follow all applicable national legislation when working with the power supply.

The AC cord set shall be in accordance with all applicable national wiring rules.

The mains plug will act as a disconnecting device for AC mains and no other AC disconnecting device is needed. The power is always ON when the mains power cable (AC cable) is connected!

The power supply unit feeds power to the BTS even after the AC has been disconnected. To stop the power feeding, the DC cable has to be disconnected also.

**WARNING**

Opening the back cover of the power supply unit is strictly forbidden!

**WARNING**

Do not disconnect the possible external antenna connector when Nokia InSite Base Station is powered on.

**WARNING**

When choosing the installation location and drilling the holes, make sure that you do not damage any cables that may be routed behind the wall.

**WARNING**

Follow all applicable national regulations when choosing the possible cable cover types and installing the cable covers.

2.3 Electromagnetic fields and RF power

Nokia InSite Base Station generates electromagnetic radiation, which very close to the antennas can exceed safety levels. Observe the general guidelines presented in Section 2.3.1.

2.3.1 General guidelines

**WARNING**

This equipment generates electromagnetic radiation which can exceed safety levels when a person is working at a distance less than 10 cm (4 in) from the antennas. Observe the 10 cm (4 in) distance precautions when working in close proximity to antennas operating in full power.

**WARNING**

Do not install Nokia InSite Base Station or its antennas in areas where there is a potential risk for interference with inadequately shielded medical equipment, such as life supporting devices, hearing aids or other electrically or magnetically sensitive devices!

**WARNING**

When installing Nokia InSite Base Station or its antennas, the emission of other antennas nearby has to be known beforehand so that ambient emissions can be managed properly.

2.3.2 Compliance with ICNIRP basic restrictions

A substantial amount of scientific research conducted all over the world over many years demonstrates that radio signals within established safety levels emitted from mobile telephones and their base stations present no adverse effects to human health.

There exist national and international safety guidelines for exposure of the public to radio waves:

- *International Commission on Non- Ionizing Radiation Protection (ICNIRP): Guidelines for limiting exposure to time varying electric, magnetic and electromagnetic fields. Health Physics 1998 74(4): 494-522.*
- *Institute of Electrical and Electronics Engineers (IEEE): IEEE Standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz. IEEE C95.1-1991 (revision of ANSI C95.1-1982) New York 1992.*
- *CENELEC: Human exposure to electromagnetic fields. High frequency (10 kHz to 300 GHz). European prestandard ENV 50166-2, Brussels 1995.*

The most widely accepted standards are those developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and Institute of Electrical and Electronics Engineers (IEEE). Nokia InSite Base Stations must be installed according to instructions specified by Nokia, as well as taking any country-specific regulations for Non-Ionizing radiation protection into account.


Nokia InSite Base Station's maximum output power at the antenna connector is 19 dBm for 900 MHz and 22 dBm for 1800/1900 Mhz frequency variants. The antenna gain is 2 dBi and 4 dBi respectively. It is important to note that an additional 6 dB increase in power density may occur due to installing a Nokia InSite Base Station on a conductive surface.

The exposure limits of local SAR defined by ICNIRP (2 W/kg averaged over 10 g tissue, as stated in *International Commission on Non-Ionizing Radiation protection (ICNIRP): Guidelines for limiting exposure to time varying electric, magnetic and electromagnetic fields. Health Physics 1998 74(4): 494-522.*) are not exceeded at the distance of 10 cm (4 in) from the integrated antenna of 900 MHz, 1800 MHz or 1900 MHz frequency variants of Nokia InSite Base Station. All applicable national regulations shall be followed when Nokia InSite Base Stations are being installed.

3 Cautions


3.1 Handling of Nokia InSite Base Station

3.1.1 Storage and transportation

 **Caution**


During storage and transportation, Nokia InSite Base Station must remain in its original package in order to:

- avoid mechanical damage
 - maintain traceability
 - protect the unit against static electricity.
-

 **Caution**

Handle Nokia InSite Base Station with care. Do not drop Nokia InSite Base Station or the package containing it.

3.1.2 Installation

 **Caution**

In North America this equipment is to be installed in accordance to National Electric Code (NEC) ANSI/NFPA 70 and Canadian Electric Code (CEC) Part 1, C22.1.

3.1.3 Environmental restrictions



Caution

Do not install Nokia InSite Base Station in direct sunlight or in a place where water may drop on the device (for example under air-conditioning equipment).



Caution

Do not wipe Nokia InSite Base Station with a wet cloth.



Caution

Do not paint or otherwise coat Nokia InSite Base Station.

3.1.4 Heat management



Caution

Do not cover Nokia InSite BTS or the power supply unit. To maintain proper circulation of air, the air inlets and outlets must not be obstructed.



Caution

Nokia InSite BTS and the power supply can only be installed in a vertical position. This is for the cooling to work properly, and it is also vital for the power supply unit battery lifetime. Nokia InSite BTS or the power supply unit must not be installed upside down.

3.2 Power supply to Nokia InSite Base Station



Caution

Nokia InSite Base Station must only be used with Nokia power supply unit PBU-11.

3.2.1 NiMH battery**Caution**

Use only the NiMH 6HR-SCC 7.2V battery which is provided by Nokia.

**Caution**

The battery is a NiMH rechargeable battery, and it must be recycled or disposed of properly. Do not dispose of the battery in fire!

**Caution**

Do not short-circuit! The power supply unit recharges the battery automatically when needed.

3.2.2 AC and DC connectors**Caution**

Do not connect AC power until you have verified that the line voltage is correct!

3.2.3 Power cabling**Caution**

Use only the Nokia InSite Base Station DC cable which is provided by Nokia. Do not cut or otherwise modify the DC cable.

Note

The socket outlet should be installed near the equipment and should be easily accessible.
