

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

RF Safety At Sites

Document Manager	Mark Kite, Principal Engineer
Final Approver	Greg Hukins, Site Design Manager

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

Contents

1. Introduction 3

2. Roles & Responsibilities 3

2.1. Reporting Company3

2.2. Cellnex UK Site Access Team3

2.3. Cellnex UK SHE Team3

3. Training..... 4

4. Information provided by Cellnex UK for risk assessment..... 4

5. Instructions: Where to find the AIR, Risk Register and RF Safety Noticeboard 5

6. Risk Register: What is included; how to use it..... 7

6.1. Site specific general risks.....7

6.2. RF Safety Noticeboard.....7

7. Antenna Information Report (AIR) 7

8. Use of RF Safe System of Work 8

9. False alarms and Minimum measurement distance 8

10. Emergencies 8

11. Change Control..... 8

Appendix A: Monitors accepted for use on Cellnex UK sites 9

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

1. Introduction

Cellnex UK owns and manages a large number of sites, rooftops and structures with a variety of antennas. It is essential that the Radio Frequency (RF) hazards these represent are properly considered at the planning stage for each visit. Cellnex UK provides the means by which relevant safety information can be accessed at the planning stage for each site visit. Hence the responsibility for RF safety rests with the contractor. This guide outlines more details on all these aspects to ensure that all contractors understand their responsibilities and how to access all the correct information.

The majority of reported “near misses” and “unexpected alarms” are due to poor job planning on the part of the contractor or lack of experience or training of staff. These notes are issued to try to improve both those aspects, when accessing Cellnex UK sites.

2. Roles & Responsibilities

The responsibility for risk assessment lies with the contractor. A site and task specific risk assessment and method statement must be carried out.

All climbers must be equipped with a personal RF monitor of a type accepted by Cellnex UK. The frequency range must be suitable for the frequencies found on Cellnex UK sites. Cellnex UK publishes a list of monitors that have been assessed as suitable.

For work on most Cellnex UK managed rooftops a minimum of one personal monitor per team is required (depending on the risk assessment for the task and site). The exception to this is some BT rooftop sites for which access is tightly controlled, reducing the probability of pirate antennas.

Appendix A details the RF monitors that are accepted for use on Cellnex UK sites.

2.1. Reporting Company

All companies approved for rooftop or structural access must have an RF policy and provide RF awareness training to their employees. Within their policy and training they must make employees aware of how personal RF monitors can create an alarm and the action to take.

Any alarms reported must be fully investigated by the company prior to reporting and escalation to Cellnex UK.

If the unexpected alarm is coming from a Fieldsense monitor, the alarm must be verified during the same visit by a secondary reading from another Cellnex UK accepted personal monitor or survey meter prior to reporting to Cellnex UK, refer to Appendix A for details.

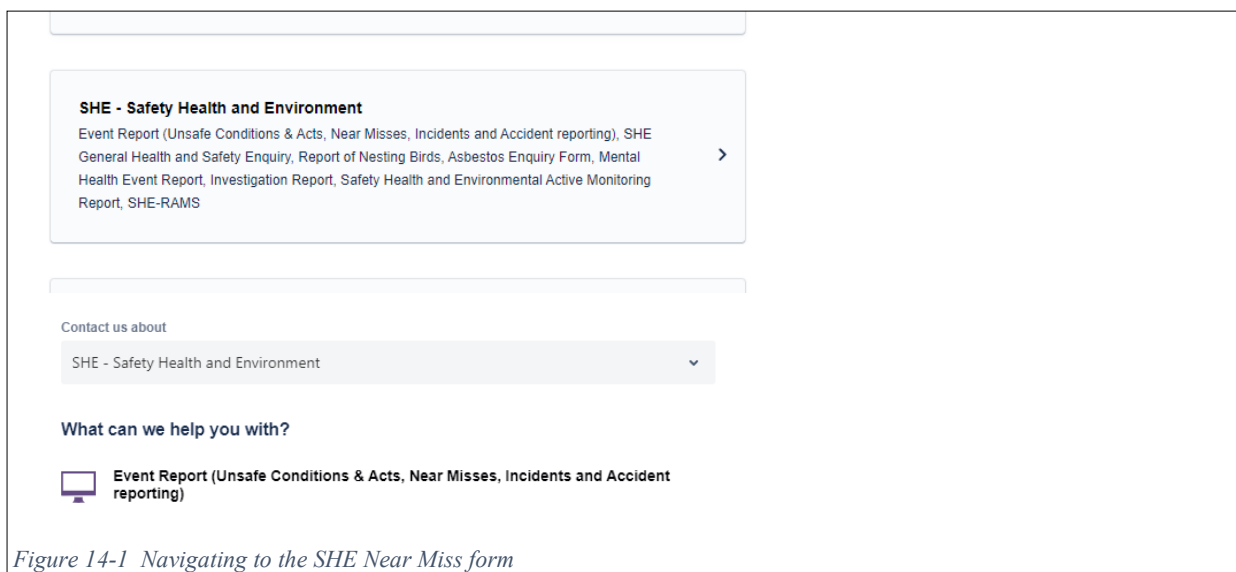
2.2. Cellnex UK Site Access Team

If the Site Access Team receives a report of unexpected alarms they should request the reporter to submit a Near Miss form via Jira. This can be reached via the Jira Service desk, see Figure 14-1.

2.3. Cellnex UK SHE Team

The Cellnex UK SHE Team will be responsible for the investigation of all unexpected alarms. NB This assumes all conditions given in this document have been met.

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024



3. Training

All contractors who access Cellnex UK structures or rooftops must be trained in RF Safety awareness via a course that has been assessed as suitable. A list of Cellnex UK approved training providers is available separately.

4. Information provided by Cellnex UK for risk assessment

Prior to planning any task on site, the Risk Register and RF Safety Noticeboard for the site should be consulted; also the Antenna Information Report (AIR). For Cellnex sites, these can be downloaded from Agora via the Access Module. For Arqiva sites, Agora does not hold all antenna information and so those must be obtained from Arqiva.

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

5. Instructions: Where to find the AIR, Risk Register and RF Safety Noticeboard

The Antenna Information Report (AIR) is generated for each download request whereas the Risk Register and RF Safety Noticeboard is a saved document. For Cellnex sites, both can be obtained via the Agora Access Module.

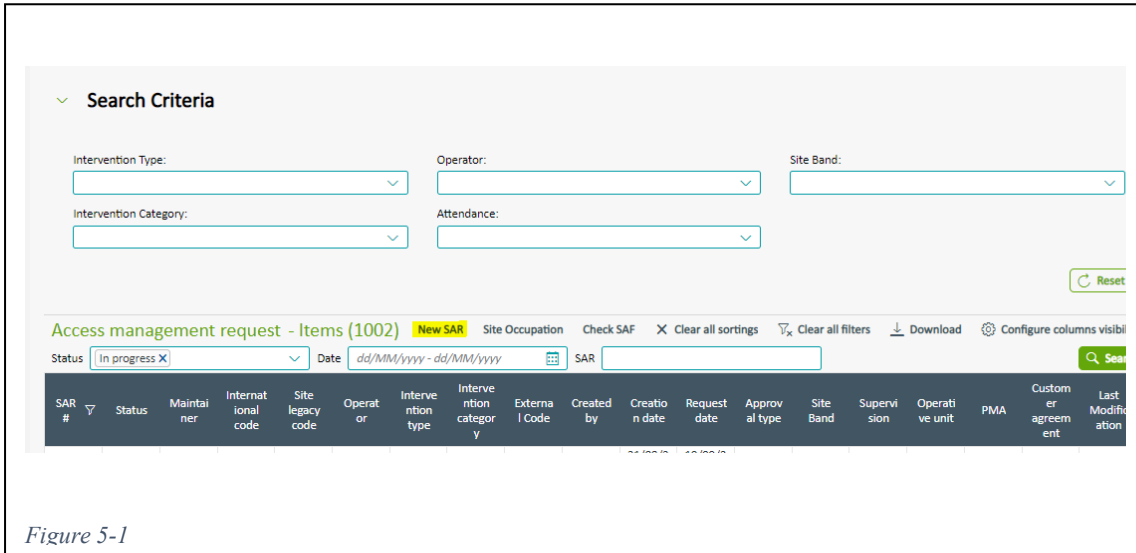
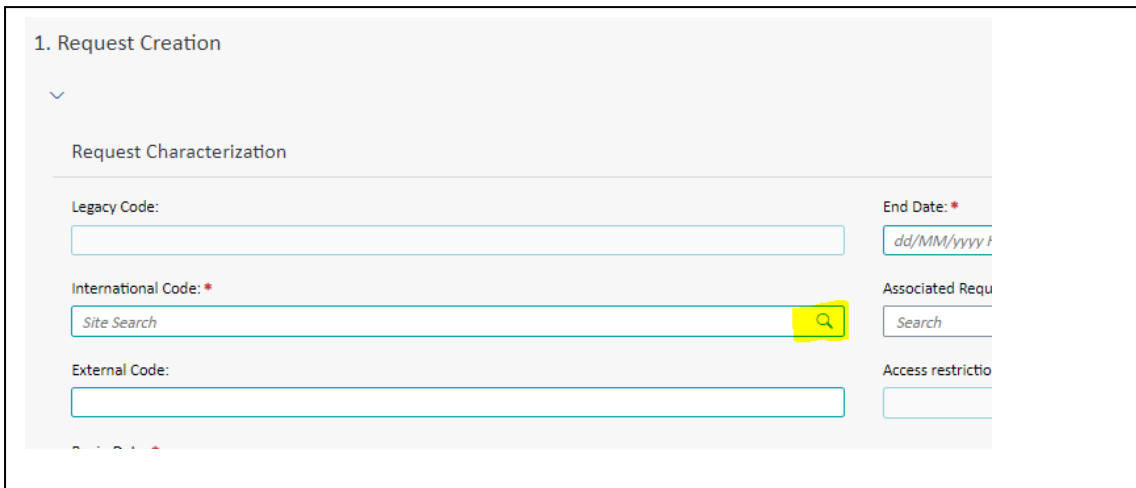


Figure 5-1

One way to do this is to start as if you were creating a new Site Access Request (SAR).

NB You do not need to complete and submit the request in order to obtain the information.



Click to find the site – you can search by name as well as by the site code.

Then, click on the right hand arrow to navigate to that site.

At the top of the page, is a button to download the AIR.

NB This is greyed out if the site is an Arqiva site as Agora does not hold all the antenna information; therefore the AIR and RF Safety Noticeboard information must come from Siterra the Arqiva systems.

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

Total Results (4)

International code	Legacy Code	Status	Site Name	Select
UK-SY-007858	303565	CREATED	ESHER MOLESEY ROAD	>
UK-SY-004713	1490346	CREATED	ESHER RUGBY FC	>
GB-95-000617	TWJ/00287	CREATED	ESHER STW	>
UK-SY-006053	165467	CREATED	ESHER TE	>

Figure 5-3

Request Creation

Role: Access Requester Owner: Karina Beeke

Air Report Check SAF

1 Request Creation 2 Manage request

Figure 5-4

At the bottom of the page is a list of the documents associated with the site – including the Risk Register and RF Safety Noticeboard.

Document Name	Document Subtype
ESHER TE - RR.pdf	Risk Register & RF Safety Notice Board

Figure 5-5

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

6. Risk Register: What is included; how to use it

6.1. Site specific general risks

This includes any risks that are specific to this site. Sometimes risks are of a temporary nature and if you notice on your visit that one of these risks is no longer valid then please report it.

6.2. RF Safety Noticeboard

The RF Safety Noticeboard details any known risks in the climbing zone. The climbing zone is defined as the ladder and rest platforms. Information in the Arqiva Siterra RF Safety Noticeboard will detail where the restriction is and what planned work is needed to work in that area. For example, "NO CLIMBING ABOVE 51m WITHOUT -6dB REDUCED POWER ON DAB SYSTEM DA_BBH_01". If the restriction is applicable to your task, then make sure you speak to the Site Access team to request that the planned work is booked.

Your task may mean that you need to work off the ladder and climb around the structure to access your work area. The Information in the RF Safety Noticeboard cannot take that into account and as a trained contractor you are expected to understand industry standard exclusion zones. If this involves areas outside the structure more exposed to neighbouring broadcast systems, the RF Safety Noticeboard recommendations will be subject to additional Risk Assessments and reviews to be approved by an RFST representative.

To understand which antennas, you need to pass or work close to, you must consult the Antenna Information Report (AIR).

Generally, any broadcast customers need a minimum of 2 weeks' notice for outages and power reductions.

7. Antenna Information Report (AIR)

This gives a full listing in height order of all the antennas on the structure.

There are also columns to indicate whether the antenna is a broadcast antenna or one used for paging. Experience suggests that broadcasting and paging antennas can be overlooked by some contractors in their risk assessment.

Please ensure that any errors you notice are fed back.

Proper use of all the information provided in the Risk Register should prevent the large number of reported "unexpected alarms" and near misses.

Frequently it is found that "unexpected alarms" are reported when the work area is only 1 m away from a paging or Broadcast Radio antenna for example. These could and should have been expected if the risk assessment had been carried out properly.

NB. As mentioned in 5, it is only for Cellnex sites that this information can be downloaded from Agora. For Arqiva (PMA) sites, then this must be obtained from Arqiva.

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

8. Use of RF Safe System of Work

When you are working on your customer's antenna you must have in place a process to ensure that you or your customer removes the power to the antenna prior to your work. When your task requires that other services need to be reduced in power or shutdown to give you safe access then all the parties involved (the climbing team, the Cellnex UK representative and any engineers attending site to switch transmitters) must have a discussion about what is to be done and how and by whom, and document it before any work commences on site.

For Arqiva (PMA) sites the Arqiva safe system of work procedure must be followed.

9. False alarms and Minimum measurement distance

In situations where there is a significant level of RF, personal monitors will alarm constantly. The occasional bleep, especially in areas where the personal monitor touches the ladder as it is climbed, are not usually considered to be real alarms.

When a monitor alarms, site staff should first ascertain how close they are to metal work, latch way bonds, feeders, etc. If it is closer than 100 mm then re-position to a distance where the monitor is more than 100 mm away from metal (in free space) and see if the alarm continues. If the alarm continues, refer to Appendix B.

10. Emergencies

All accident, incidents and near misses must be reported to the Cellnex UK [SHE Reporting Form](#) ; QR code shown below.



Unexpected personal monitor alarms must be reported to the Site Access Team on 020 4526 8561 whilst still on site and in addition the contractor should carry out their own investigation. Only when the reporting company has ruled out any immediate obvious causes should the form be submitted to the Cellnex SHE Team for investigation. Alarms will not be investigated unless this form has been completed and submitted.

If there has been an incidence of a suspected RF overexposure, ring Site Access on 020 4526 8561. The Site Access team will arrange to send RF information for doctors to the medical facility that the individual is attending. Most doctors do not fully understand the effects of RF and it is important that they receive this information, so they can accurately diagnose any health implications and provide the correct treatment.

11. Change Control



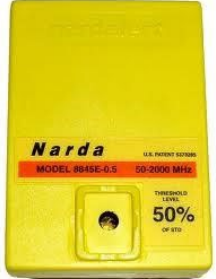
This document is controlled as part of the Cellnex UK IMS via the Engage platform which maintains history of changes / version control. Downloaded or printed copies are uncontrolled.

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024



Appendix A: Monitors accepted for use on Cellnex UK sites

The following rules apply:




- A Cellnex UK accepted RF meter or monitor is to be used at all times when accessing a structure.
- The monitor must be suitable for the site in question
- Visitors ascending a structure must ensure that they do not stray outside the area specified on the access authorisation for that site.
- Cellnex UK specifies that all climbers on structures must use a personal monitor. On rooftops one personal monitor per team must be used (as a minimum) in any given area. These monitors must be set to the Cellnex UK Working limits which are 50% and 90% (equivalent to the Action Levels of the Control of EMF at work Regs 2016). This is because of the broad range of broadcasting and telecommunications systems found on Cellnex and Arqiva.

Name of Monitor	Manufacturer		Frequency Range ¹ / Constraints
S3	Narda		100 kHz - 100 GHz Not to be used where levels of fields at 50 Hz are above 100 kV/m
XT (D-8860 & D-8862)	Narda		100 kHz - 100 GHz Not to be used where levels of fields at 50 Hz are above 6 kV/m
8845E-0.5	Narda		50 MHz – 2 GHz Not to be used on LF/MF sites. Not to be used on cellular sites with frequencies in the 2100 MHz band or above Not to be used on satellite earth station sites Not to be used on sites with high levels of 50 Hz fields, eg Pylon sites

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

ESM20/Radman XT	Narda		<p>1 MHz – 40 GHz</p> <p>Not to be used on LF sites</p> <p>Not to be used on MF sites with frequencies below 1 MHz</p> <p>Evidence that this check has been carried out must be included in the RAMS (risk assessment & method statement) for the task. This is to include:</p> <ul style="list-style-type: none"> • Frequencies at the site • Name of person carrying out the check <p>Not to be used on sites with high levels of 50 Hz fields, eg Pylon sites</p>
<p>Radman 2LT (50 MHz to 8 GHz)</p> <p>Radman 2XT (900 kHz to 60 GHz)</p>	Narda		<p>Radman 2LT: 50 MHz – 8 GHz</p> <p>Not to be used on LF/MF sites</p> <p>Not to be used on satellite earth station sites</p> <p>Radman 2XT: 900 kHz – 60 GHz</p> <p>Not to be used on LF sites</p> <p>Not to be used on MF sites with frequencies below 900 kHz</p> <p>Evidence that this check has been carried out must be included in the RAMS (risk assessment & method statement) for the task. This is to include:</p> <ul style="list-style-type: none"> • Frequencies at the site • Name of person carrying out the check <p>Not to be used on sites with very high levels of 50 Hz fields, eg Pylon sites</p>

Document title	RF Safety At Sites		
Document Code	UK-DE-PRO-0033	Version 4.0	Date 25-March-2024

FieldSENSE 2.0	FieldSENSE		<p>50 MHz – 6 GHz</p> <p>Not to be used on LF/MF and satellite earth station sites</p> <p>Arqiva Broadcast sites with VHF FM or DAB – Alarms must be confirmed with one of the following: Nardalert S3, Nardalert XT, Radman 2LT, Radman 2XT</p> <p>Not to be used on sites with high levels of 50 Hz fields, eg. Pylon sites</p>
WaveMon RF-8 (ICN or EUD)	WaveMon		<p>300 kHz – 8 GHz</p> <p>Not to be used on LF sites</p> <p>Not to be used on satellite earth station sites</p> <p>Not to be used where levels of fields at 50 Hz are above 37 kV/m</p>
WaveMon RF-60 (ICN or EUD)	WaveMon		<p>100 kHz – 60 GHz</p> <p>Not to be used where levels of fields at 50 Hz are above 37 kV/m</p>

A.1 Notes

1. With the exception of the Narda 8845, all frequencies for cellular bands, Airwave, Smart metering and TV are covered by all of the above monitors.
2. For broadcast VHF FM or DAB please ensure that FieldSENSE monitors are not the only type available on site as the sensors in these monitors are likely to alarm due to re-radiation picking up false alarms. A secondary monitor is mandatory at these sites as described above.
3. Where other services are included on a site, and a limitation is given in the table above, an assessment must be carried out to ensure that the monitor is appropriate. Evidence that this assessment has been carried out must be documented in the RAMS for the work, including details of the frequencies for the site and the person who has carried out the assessment.
4. Where monitors include both E and H-field sensors, the frequency range quotes relates to the E-field – generally the H-field sensor frequency range is narrower.