

From the International Guidelines on Non-Ionising Radiation <https://www.ignir.org/Guidelines>

<https://files.persona.co/72583/IGNIR-Guidelines-Issue-1.1-Oct.2018b.pdf>

ADVICE FOR REMEDIATION to help make a location comply with IGNIR Guidelines Remediation covers two aspects,

- (a) location (the room etc) and
- (b) personal (your own devices and protection).

Although the IGNIR guidelines relate to locations, compliance there can be compromised by the use or presence of personal devices like mobile phones. (a) Location (i)

Daytime (and night)

A room at home, classroom, lecture hall, hospital ward, shop, theatre etc can all be made more likely to comply with the IGNIR guidelines for Day (D), by the following.-

Wifi:

- o Remove Wifi and use ethernet cables for each computer or laptop.

- o Ensure Wifi is fully disabled on each device.
- o Use a wired USB adaptor for a notebook without an ethernet port.
- o If ethernet cables are not available, you can access the internet with wired powerline adapters. Although these are

preferable to Wifi, they send radio frequencies over power cables and should be switched off at night.-Appliances with wireless:

- Switch off home networks for appliances (Internet of Things) and smart meter transmitters for homeappliance.
- Check that any transmitter on appliances can be switched off before buying the appliance, or ask the supplier to disable the transmitter.
- Replace any wireless keyboard, mouse, game console etc with wired versions. Infrared controls do not cause most wireless health effects. -Cordless phones:

○Replace cordless phones with wired telephones.

○For conference calls, wired hands free receivers are useful.-Wireless baby alarms:

○Use wired baby alarms, or keep the cot in the parent's room.

○Do not use wireless baby alarms or wireless video monitors.-Burglar, movement and smoke detectors and alarms:

○Replace active wireless systems with passive wired units-

Smart meters:

- Refuse a wireless smart meter.
- Apply shielding if a neighbour's smart meter is close to your property-

CFLs (compact fluorescent lights):

- o Replace with incandescent bulbs where possible, or with halogens if incandescent bulbs are unavailable.

- o Remove all CFLs (compact fluorescent lights). –

Electric battery chargers:

- o Keep switched off when not in use.

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- o Avoid wireless electric chargers.-Mobile phones, iPads, etc:

- o All mobile phones and wireless devices should be switched to airplane mode.

- o Alternatively, all mobile phones should be stored in a Faraday box.

It is advisable to check that mobile phones are not emitting radiation. Some switch back onto wireless the following morning or act as relay stations

(ii) Night The IGNIR guidelines for Night (N), are focused on the sleeping area in the bedroom. The general remediation advice given for (i) Day should also be applied in the bedroom.-

Beds:

- Use wooden frames.
- Use mattresses without metal springs.-

Bedrooms, alarm clocks:

- Use a battery alarm clock, not a plugged in alarm unless it is kept well away from the bed.-

Bedrooms, mobile phones:

- Do not leave mobile phones switched on in a bedroom; keep them in flight mode.
- Do not place mobile phones under the pillow.
- Do not charge mobile phones in a bedroom.

-Bedrooms, other electrical equipment:

- Keep as much switched off as possible.
- Fitting a demand switch for the bedroom is good practice and may be necessary to achieve low fields in the bed space.
- Switching off the lighting circuit for the floor below may also be necessary.
- Switching off the ring main to the bedroom and other circuits may help hypersensitive persons.

Keep a torch (flash light) near the bed if the breaker is off.

(iii) Shielding:

For both Day (D) and Night (N) locations, some people use shielding, in addition to the general remediation advice given for (i) Day (D) and (ii) Night (N).

For wireless from masts or neighbours' Wifi some shielding systems may help but:-it can be difficult to make effective;-it can make the situation worse by reflecting radiation;- shielding paint can be difficult to remove.

Shielding usually needs earthing, but check your home wiring Earth to see if it carries stray currents, or use a separate earth.

Common shielding solutions include:

- o metallic fabrics or netting;
- o carbon-based paints;
- o window screening.

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It is very difficult and expensive, or impossible, to shield effectively against power frequencies, such as being near to substations, overhead power cables, main power cables in blocks of flats, etc.

To reduce 'dirty electricity' some people use filters on the wiring circuit.

Shielded cabling is advisable for a new building or renovations.

(b) Personal

Even if a location is compliant with the IGNIR guidelines, it is also essential not to compromise that compliance by introducing wireless devices into the location.-

Always keep your mobile phone as far from your body as you can if it is not on flight mode.

-Do not carry an active mobile phone in your pocket, bra or on your person-

Keep your mobile phone in airplane mode as much as you can, but note that some smart phones revert to active mode each night.

-Although texting rather than speaking reduces exposure to your head, is not advised since it exposes other parts of your body to high levels of radiation.

-If you have to speak, use an air tube headpiece or loudspeaker mode, and keep the phone as far away as you can, ideally at least 1 metre (3 feet) from you or anyone else.

This distance is still far too close for hypersensitive people who may be consciously affected at up to 15 metres or 45 feet depending on conditions.

-Avoid wireless fitbits, wireless watches, glasses with transmitters, and any other wireless device next to or near your body.

-Keep away from wired electric battery chargers.

-Keep away from wireless electric chargers.

-Some appliances with high fields in their immediate vicinity:

- mobile phones
- iPads and notebooks
- cordless phones
- Wifi laptops
- Wifi routers
- Bluetooth devices
- smart meters
- solar panel inverters
- electrical fuse boxes and meters
- electric storage heaters
- electric chargers
- mains adaptors
- electric blankets: do not have them switched on when in bed
- hair dryers
- microwave ovensoinduction hobs
- electric shavers
- electric fans
- some LED lights
- dimmer switches

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- o electric cars

- o radial tyres reinforced with steel wires

- o cars with inbuilt Bluetooth

Or Wifi appliances with inbuilt Wifi such as some printers, TVs, fridges, boilers

- o wireless radio hearing aids

- o wireless radio controls for games, toys, drones etc.

or radar trackers to measure ball speeds in games practice

- o virtual helpers (e.g. Alexa, Echo, Home).-

Protection:

- o Some EHS people wear protective clothing, but unless this entirely inclusive of the whole body, it does not provide full protection.

- o Wireless devices can be kept in 'Faraday' bags. However, since this simply impairs their function, it is better to switch them to airplane mode and off.

-Avoidance:

- o Maximise your distance from wireless and electrical appliances.

- o Mobile phones have their heating absorption (SAR) inside the small print of the manual. Often these state that a phone should be kept about 2 cm (¾ inch) away from all parts of the body. This means that the mobile cannot be held in the

hand. This distance prevents heating but not the other established harm from wireless radiation at below heating levels.

o Keep at least 2 metres(6 feet 6 inches)from your microwave oven if possible. Household microwave ovens are allowed to leak up to 50,000,000 $\mu\text{W}/\text{m}^2$ (microWatts per metre squared) at 5 cm (2 inches) (or 100,000 $\mu\text{W}/\text{m}^2$ in Russia). At 1 metre (3 feet) they typically give out 36,400 $\mu\text{W}/\text{m}^2$. Although these 2.4 GHz microwaves are not pulsed like Wifi, Bluetooth or cordless phones, they can still be harmful, especially for sensitive persons. Older ovens can leak more than new ovens.They also emit low frequency fields.

o Keep as far a possible from electric induction hobs. These use 20-100 kHz. Some have exceeded heating limits at 0.3 metre (1 foot). Sensitive people, especially pregnant women and children, should try to keep out of the kitchen while an induction hob is in use. It is best to replace this type of cooker with another.