

### Disruption of satellite navigation

Among the many wireless communication services that may be disrupted, Global Navigation Satellite System (GNSS) is one of the most vulnerable. GNSS is the joint designation for satellite navigation systems such as GPS, Galileo, GLONASS and BeiDou.

The satellites orbit the Earth at heights of approximately 20,000 kilometres. The radio signals are therefore very weak and vulnerable when they reach Earth's surface.



### Serious consequences of jamming

Jamming exposes many important societal functions to risk and loss of their ability for precise position, navigation and timing.

### Critical public functions:

- aviation
- shipping
- emergency services
- eCall in vehicles in the EU
- air ambulance
- armed forces
- police

### Private and commercial use:

- cell phone services
- navigation services
- drivers/professional drivers
- petroleum activities
- fishing industry

### Seizure of equipment

The Norwegian Customs is authorised under the Norwegian Customs Act to control and stop goods at the border.

Nkom and the Norwegian Customs have the legal authority to confiscate goods that constitute a serious risk.

The Police has its own authority to seize equipment.

**Nkom wants to be tipped off about the use and sale of jammers**

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Photo: Hans O. Torgersen/Aftenposten

# USE OF JAMMERS IS ILLEGAL

# JAMMERS THREATEN THE PUBLIC SECURITY

Signals from jammers can disrupt and block critical services. Jamming can lead to very serious incidents, potentially endangering life, health and safety when communication, navigation or emergency services are disrupted.

## Use of jammers is a criminal offence

Sale and use of jammers is in general prohibited in Norway. Use of jammers may entail significant fines for infringement, or imprisonment for up to six months.

## What is a jammer?

A jammer is a kind of illegal electronic equipment. It is designed to block wireless communication and navigation signals by emitting noise signals. As a consequence, the wireless receivers will stop working. People may experience losing their cellular or satellite coverage altogether as a result of jamming.

Jammers may also be traded under other designations, such as “anti-tracking GPS blocker” and “privacy protection”.

## Criminal use of jammer

A simple jammer can interfere with signals several hundred metres away.

It can be used to hide one's own position and to block wireless communication. The purpose may be to hide the location of stolen goods, prevent calls, evade satellite-based road pricing or to disable alarm systems and tracking systems.

## Nkom wants to be tipped off

The Norwegian Communications Authority (Nkom) performs market surveillance to prevent the sale of jammers in Norway. Yet the equipment may also be obtained abroad or from foreign websites.

Nkom has staff in several parts of the country with considerable expertise in using advanced measuring instruments to detect and locate jammers.

Nkom wants to be tipped off about the use and sale of jammers, in order to prevent serious incidents of jamming.

## EXAMPLES OF JAMMERS

Experience shows that jammers are purchased abroad, or via foreign websites. Here are examples of such equipment:



### Cell phone jammer

This is a widely used cell phone jammer. The main objective is to disrupt or block cellular communication. There also exist combined jammers that disrupt both wireless internet and navigation signals from GPS, Galileo, GLONASS and BeiDou.



### Jammers for navigation signals

This jammer is often highly compact and affordable and is often used in cars, where it is placed in the cigarette lighter. It disrupts signals for position, navigation (such as GPS) and timing. The use of such equipment has caused ambulance helicopters losing their navigation signals.



### Camouflaged jammers

There are a number of different jammers that are camouflaged in a design that gives the impression of it being something else. The picture on the left shows a jammer disguised as a pack of cigarettes.



### “Hedgehog” jammer

The “hedgehog” jammer has many antennas and can therefore disrupt many different services at the same time.