

## Potential interference of VHF-FM radio and AIS reception

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The United States Coast Guard (USCG) have published [Safety Alert 13-18](#), regarding numerous reports on poor reception of VHF frequencies used for radiotelephone, digital selective calling (DSC) and automatic identification frequencies (AIS).

### What happened?

- Poor reception was noticed when around LED lighting on-board vessels (navigation lights, searchlights and floodlights); interior and exterior lights and adornment lighting are just some of the few lighting systems containing LED lighting.
- The radio frequency (RF) interference caused was found to create potential safety hazards.
- A maritime rescue coordination centre was unable to contact a ship involved in a traffic separation scheme incident by VHF radio. The ship had also experienced very poor AIS reception.
- Other ships in various ports experienced degradation of VHF receivers, including AIS, caused by their LED navigation light. LED lighting installed near VHF antennas has shown to interfere with the reception.

### What lessons were learned?

- RF interference may not be immediately obvious to maritime radio users. However, it may be possible to test for interference caused by LEDs;
  - turn off LED light(s)
  - tune the VHF radio to a quiet channel
  - adjust the VHF radio's squelch control (until the radio outputs audio noise)
  - re-adjust the VHF radio's squelch control until the audio noise is quiet (slightly above the noise threshold)
  - turn on the LED light(s) – if the radio outputs audio noise, then the LED lights have raised the noise floor
  - if the radio does not output audio noise, then the LED lights have not raised the noise floor
- If the noise floor is found to have been raised, then it is likely that both shipboard VHF marine radio and AIS reception are being degraded by LED lighting.

The USCG has requested that anyone experiencing this kind of problem, to send reports to [Coast Guard Navigation Center](#).

The full safety alert can be found on the USCG's [website](#).

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