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2m-Band/144MHz

144MHz

Das 2-Meter-Amateurfunkband umfasst den Frequenzbereich von 144 bis 146 MHz (ITU-Region 1: Europa, Russland, Afrika); im Rest der Welt (ITU-Regionen 2 und 3, z. B. USA) von 144 bis 148 MHz. Dieses VHF-Band wird gerne für die lokale Kommunikation in FM genutzt, da die Reichweite einer festen Funkstelle bei normalen Ausbreitungsbedingungen etwa 50 km beträgt, die eines Handfunkgerätes vom Geländeprofil abhängig etwa 5 bis 10 km. Relaisfunkstellen, das sind automatisch arbeitende Funkstationen auf exponierten Standorten, ermöglichen zudem regelmäßige Verbindungen über viel größere Strecken als diese mittels direkter Verbindung möglich wären.

In den schmalbandigen Modulationsarten CW und SSB sind auf diesem Band täglich Verbindungen über 300 km möglich (mit 10 Watt Sendeleistung und 10 dB horizontalem Antennengewinn), während mit 100 Watt SSB und einer 15 dB Antenne Entfernungen von 500+ km erzielbar sind.

Operating on the 2\-meter band

Because it is local and reliable, and because the licensing requirements to transmit on the 2-meter band are easy to meet in many parts of the world,[5] this band is one of the most popular non-HF ham bands. This popularity, the compact size of needed radios and antennas, and this band's ability to provide easy reliable local communications also means that it is also the most used band for local emergency communications efforts, such as providing communications between Red Cross shelters and local authorities.[6] In the US, that role in emergency communications is furthered by the fact that seemingly every amateur-radio operator has a 2-meter handheld transceiver (HT), or walkie-talkie.

Much of 2-meter FM operation uses a radio repeater, a radio receiver and transmitter that instantly retransmits a signal over a longer distance. However, even without repeaters available, it provides reliable crosstown communications throughout smaller towns, making it ideal for emergency communications. Simple radios for FM repeater operation have become plentiful and inexpensive in recent years.

Long distance communications

While the 2-meter band is best known as a local band, there are many opportunities for long distance (DX) communications. Occasionally, bending in the atmosphere's troposphere (ducting) can allow 2-meter signals to carry hundreds of miles. This is called skip

In rare cases, Sporadic E propagation can bring contacts well over a 1,000 miles (1,600 km). The 2-meter band is also utilized in conjunction with the 70-centimeter band (Mode B or V/U) [clarification needed] on some amateur radio satellites, giving distances of up to around 3,000 miles (4,800 km) with a Low Earth Orbit satellite.

By speeding up Morse code using an audio tape recorder, or using a computer, very short bursts of signal can be bounced off the ionized gas trail of meteor showers allowing DX. This is often called burst transmission.

Another phenomenon that produces upper atmosphere ionization suitable for 2-meter DXing are the auroras. Since the ionization persists much longer than meteor trails, regular audio signals can be used, but the constant movement of the ionized gas leads to heavy distortion of the signals causing the audio to sound 'ghostly' and whispered.

To communicate over the longest distances hams use moon bounce. This involves high power and good antennas to reflect the VHF signals off the moon. VHF signals normally escape the Earth's atmosphere, so using the moon as a target is quite practical. Due to the delay of the signal traveling to the moon and back (travel time approx. 2.5 seconds), a person transmitting may hear the end of his own transmission returning.