

## Where to Listen - Below 30 Mhz - Part 1

Most "shortwave" radios sold today actually tune a much broader frequency range that includes the AM broadcast band and parts of the longwave spectrum. A typical tuning range is from about 150 kHz to 30 MHz.

By international agreement, the radio spectrum has been divided up among various users. While there are some exceptions, most nations and the stations they authorize do follow the allocations described below:

**150 kHz and below:** Signals on these frequencies cannot propagate well via the ionosphere, but are able to penetrate ocean water well. As a result, several military stations used for submarine communications are found here. Most transmissions are in CW and RTTY. You need a really large antenna to hear much here, and in most locations electrical noise and static will be too high.

**150 to 540 kHz:** This is what most SWLs mean by "Longwave." Most stations heard in this range are navigation beacons that continuously repeat their call signs in Morse code. There is also a broadcasting band in Europe from 155 to 281 kHz. Some RTTY signals are found in the upper end of this band. Marine weather and safety broadcasts, known as NAVTEX, are transmitted on 512 kHz. Your best reception here will be at night, especially during the fall and winter months.

**540 to 1700 kHz:** This is the AM broadcasting or "medium wave" band which use to end at 1600 kHz. The AM broadcast band now ends at 1700 kHz, with 1610 to 1700 kHz being the new "X" or "extended" band. New stations began appearing here in late 1997, and this new "X band" is providing excellent DX listening opportunities.

**1700 to 1800 kHz:** This is a "grab bag" of miscellaneous radio communications, mainly beacons and navigation aids. You may hear several transmitters that sound like chirping crickets; these are floating beacons used to mark fishing and offshore oil exploration locations.

**1800 to 2000 kHz:** This is the 160-meter ham radio band. Most voice communications will be in LSB, with best reception at night during the fall and winter months.

**2000 to 2300 kHz:** This range is used for maritime communications, with 2182 kHz reserved for distress messages and calling. There are also several regularly scheduled maritime weather broadcasts from U.S. Coast Guard stations. Most activity will be in USB, and best reception is at night.

**2300 to 2498 kHz:** This is the 120-meter broadcasting band, mainly used by stations located in the tropics. However, other stations are now appearing here. WWCR in Nashville, Tennessee now broadcast here and others may follow.

**2498 to 2850 kHz:** More maritime stations are found here, as well as standard time and frequency stations WWV and WWVH on 2500 kHz.

**2850 to 3150 kHz:** This band is used mainly by aeronautical stations in USB. Several stations broadcasting aeronautical weather bulletins, and you can also hear traffic between airports and airplanes aloft.

**3150 to 3200 kHz:** This range is allocated to fixed stations, with most communications in RTTY.

**3200 to 3400 kHz:** This is a very interesting segment. This is the 90-meter broadcasting band, used mainly by stations in the tropics. Canadian standard time and frequency station CHU can be heard on 3330 kHz. Several fixed stations also use this range, including several associated with various agencies of the U.S. government. It could be an interest area to monitor at this time. Best reception will be at night.

**3400 to 3500 kHz:** This range is used for aeronautical communications in USB.

**3500 to 4000 kHz:** This is the 80-meter ham radio band. The 3500 to 3750 kHz range is used for CW and RTTY communications, and the rest of the band is used for LSB voice. The 3900 to 4000 kHz range is used for broadcasting in Europe and Africa. Best reception is at night.

**4000 to 4063 kHz:** This is a fixed station band, mainly used by military forces for SSB traffic. Could also be interesting listening!

**4063 to 4438 kHz:** This is a band used for maritime communications in USB, with 4125 kHz being used as a calling frequency.

**4438 to 4650 kHz:** This range is mainly used for fixed and mobile stations in USB.

**4750 to 4995 kHz:** This is the 60-meter broadcasting band, used mainly by stations in the tropics. Best reception is in the evening and night hours during the fall and winter. In winter, stations to the east of you begin to fade in an hour or two before your local sunset, and stations to the west of you don't start to fade out until an hour or so after your local sunrise.

**4995 to 5005 kHz:** This range is allocated internationally to standard time and frequency stations. You'll mainly hear WWV and WWVH on 5000 kHz.

**5005 to 5450 kHz:** This range is a real jumble! Several broadcasting stations are found in the lower part of the segment, and fixed and mobile stations in SSB, RTTY, and CW are found throughout this band. Best reception is during the evening and night hours.

**5450 to 5730 kHz:** This is another band for aeronautical communications in USB.

**5730 to 5950 kHz:** Another jumble of different stations! For years, this band has been used by fixed stations of the U.S. government for communications in USB and RTTY. However, several broadcasters are also showing up here.

**5950 to 6200 kHz:** This is the 49-meter broadcasting band, and is loaded with signals from late afternoon to a couple of hours after your local sunrise.

**6200 to 6525 kHz:** This is a very busy band for maritime communication in USB and various FSK modes like AMTOR and FEC.

**6525 to 6765 kHz:** This is another busy band, this time for aeronautical communications in USB. Best reception is during the evening and night hours.

**6765 to 7000 kHz:** This segment is allocated to fixed stations, with signals in SSB, CW, FAX modes, and miscellaneous digital modes.

**7000 to 7300 kHz:** The 7000 to 7100 kHz range is allocated exclusively to ham radio worldwide, although an occasional broadcaster will show up here. The 7100 to 7300 kHz range is allocated exclusively to ham radio in North and South America, but is used for broadcasting in the rest of the world. Several stations transmit programs intended for reception in North and South America in this range. As a result, interference is often very heavy here during the night and evening hours. Hams use CW and RTTY from 7000 to 7150 kHz, and mainly LSB from 7150 to 7300 kHz. Best reception is from the late afternoon to early morning, although some hams can usually be heard here around the clock. Used a lot during daytime hours for ZL Coms.

**7300 to 8195 kHz:** This segment is mainly used by fixed stations, although several broadcasters can be found in the lower reaches. Various FSK and digital modes are used.

**8195 to 8815 kHz:** This is a busy maritime band from the late afternoon until early morning, with most traffic in USB and FSK modes.

**8815 to 9040 kHz:** This is another aeronautical communications band, with traffic in USB. Several stations hear broadcast aeronautical weather reports. 8867 USB used heavily by New Zealand Air Traffic Oceanic Control.

**9040 to 9500 kHz:** This range is used mainly by fixed station in various FSK and digital modes, but it is also used by several international broadcasters.

**9500 to 9900 kHz:** This is the 31-meter international broadcasting band, and is packed with stations from around the world. Best reception is usually from mid-afternoon to around mid-morning, although some stations can be heard here throughout the day, especially in winter.

**9900 to 9995 kHz:** Several international broadcasters use this range along with fixed stations using FSK modes.

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**9995 to 10005 kHz:** This is set aside for standard time and frequency stations, like WWV and WWVH on 10000 kHz.

**10005 to 10100 kHz:** This range is used for aeronautical communications.

**10100 to 10150 kHz:** This is the 30-meter ham radio band. Because it is so narrow, operation here is restricted to CW and RTTY.

**10150 to 11175 kHz:** This segment is used by fixed stations. In addition to various FSK and digital modes, you may hear several international broadcast stations being relayed in SSB. These "feeder" stations are used to send programming to relay sites not served by satellite downlinks.

**11175 to 11400 kHz:** This range is used for aeronautical communications in USB.

**11400 to 11650 kHz:** This segment is mainly used by fixed stations in FSK and digital modes, but some international broadcasters also operate here.

**11650 to 11975 kHz:** This is the 25-meter international broadcasting band. You can usually hear several stations here no matter what time of day you listen.

**11975 to 12330 kHz:** This band is primarily used by fixed stations in FSK and digital modes, although several international broadcasters are found in the lower area.

**12330 to 13200 kHz:** This is a busy maritime communications band during the day and evening hours, with traffic in USB and various FSK modes.

**13200 to 13360 kHz:** Aeronautical communications in USB are heard here during the day and evening.

**13360 to 13600 kHz:** This range is used by fixed stations, mainly in FSK and digital modes.

**13600 to 13800 kHz:** This is the 22-meter international broadcasting band, with best reception generally during the daytime and early evening.

**13800 to 14000 kHz:** This is used by fixed stations, with most communications in FSK modes.

**14000 to 14350 kHz:** This is the 20-meter ham radio band. The lowest 100 kHz is reserved for CW and RTTY use, with USB popular in the rest of the band (although U.S. hams cannot transmit in SSB below 14150 kHz). Best reception is during the daytime and early evening.

**14350 to 14490 kHz:** This segment is used by fixed stations, primarily in FSK and digital modes.

**14990 to 15010 kHz:** This sliver is reserved for standard time and frequency stations, with the best heard being WWV and WWVH on 15000 kHz.

**15010 to 15100 kHz:** This range is for aeronautical communications in USB, although a few international broadcasters do show up here.

**15100 to 15600 kHz:** This is the 19-meter international broadcasting band, and it is usually packed with signals during the daytime and early evening.

**15600 to 16460 kHz:** This band is used by fixed stations in USB, FSK modes, and digital modes.

**16460 to 17360 kHz:** This range is shared between maritime and fixed stations using USB, FSK modes, and digital modes. Best reception here is generally during the daytime.

**17360 to 17550 kHz:** The range is shared by aeronautical and fixed stations using USB, FSK modes, and digital modes.

**17550 to 17900 kHz:** This is the 16-meter international broadcasting band, and best reception is usually during the daylight hours.

**17900 to 18030 kHz:** This band is used for aeronautical communications in USB.

**18030 to 18068 kHz:** This range is used by fixed stations, mainly in FSK and digital modes.

**18068 to 18168 kHz:** This is the 17-meter ham radio band, where CW, RTTY, and USB are used.

**18168 to 19990 kHz:** This large band is used by fixed stations, with a few maritime stations also found here. Most traffic is in FSK and digital modes. An interesting frequency is 19954

kHz, used for decades as a beacon frequency by Soviet/Russian manned spacecraft. Reception in this range will usually be limited to daylight hours.

**19990 to 20010 kHz:** This segment is reserved for standard time and frequency stations, like WWV on 20000 kHz. Reception here is usually possible only in daytime.

**20010 to 21000 kHz:** This range is mainly used by fixed stations and a few aeronautical stations. Most traffic is in FSK and digital modes as well as USB.

**21000 to 21450 kHz:** This is the 15-meter international broadcasting band. CW and RTTY is mainly found in the first 200 kHz, and USB is used in the rest of the band. Best reception here is in the daytime hours.

**21450 to 21850 kHz:** This is the 13-meter international broadcasting band, with best reception during the daytime.

**21850 to 22000 kHz:** This band is shared by fixed and aeronautical stations in FSK and digital modes as well as USB.

**22000 to 22855 kHz:** This range is reserved for maritime communications in USB and FSK modes. Best reception is in daytime during years of high sunspot activity.

**22855 to 23200 kHz:** This band is used by fixed stations, mainly in FSK and digital modes.

**23200 to 23350 kHz:** Aeronautical communications in USB are found here.

**23350 to 24890 kHz:** This segment is used by fixed stations in FSK and digital modes.

**24890 to 24990 kHz:** This is the 12-meter ham radio band, used for CW, FSK, and USB work. Reception is usually limited to the daytime during years of high sunspot activity.

**24990 to 25010 kHz:** This range is for standard time and frequency stations, although none are currently operating here.

**25010 to 25550 kHz:** This band is used by fixed, mobile, and maritime stations, many of them low powered units in trucks, taxicabs, small boats, etc. USB and AM are mainly used, along with FM having 5 kHz deviation. Best reception is during daytime in years of high sunspot activity or during a sporadic-E propagation opening.

**25550 to 25670 kHz:** This region is reserved for radio astronomy and is usually free of stations.

**25670 to 26100 kHz:** This is the 11-meter international broadcasting band. However, only Radio France International has any broadcasts scheduled here at this time.. Reception is usually possible only in daytime during years of high sunspot activity.

**26100 to 28000 kHz:** This band is used by fixed, mobile, and maritime stations, many of them low powered units in trucks, taxicabs, small boats, etc. USB and AM are mainly used, along with FM having 5 kHz deviation. The citizens band (CB) is found from 26965 to 27405 kHz (VK and USA) and from 26330 to 26770 Khz here in ZL.. Best reception is during daytime in years of high sunspot activity or during a sporadic-E propagation opening.

**28000 to 29700 kHz:** This is the 10-meter ham radio band. Most activity is in USB from 28300 to 28600 kHz, with FM used on 29600 kHz. Best reception is during daytime in years of high sunspot activity or during a sporadic-E propagation opening.

**29700 to 30000 kHz:** This range is used by low powered fixed and mobile stations, mainly using FM with 5 kHz deviation.