

Table 3.8. Attenuation values used to calculate maximum permitted spurious emission power levels for use with radio equipment

Service category in accordance with Article S1, or equipment type ¹⁵	Attenuation (dB) below the power supplied to the antenna transmission line
All services except those services quoted below:	43 + 10 log (<i>P</i>), or 70 dBc, whichever is less stringent
Space services (earth stations) ^{10, 16}	43 + 10 log (<i>P</i>), or 60 dBc, whichever is less stringent
Space services (space stations) ^{10, 17}	43 + 10 log (<i>P</i>), or 60 dBc, whichever is less stringent
Radiodetermination ¹⁴	43 + 10 log (<i>PEP</i>), or 60 dB, whichever is less stringent
Broadcast television ¹¹	46 + 10 log (<i>P</i>), or 60 dBc, whichever is less stringent, without exceeding the absolute mean power level of 1 mW for VHF stations or 12 mW for UHF stations. However, greater attenuation may be necessary on a case by case basis.
Broadcast FM	46 + 10 log (<i>P</i>), or 70 dBc, whichever is less stringent; the absolute mean power level of 1 mW should not be exceeded
Broadcasting at MF/HF	50 dBc; the absolute mean power level of 50 mW should not be exceeded
SSB from mobile stations ¹²	43 dB below <i>PEP</i>
Amateur services operating below 30 MHz (including with SSB) ¹⁶	43 + 10 log (<i>PEP</i>), or 50 dB, whichever is less stringent
Services operating below 30 MHz, except space, radiodetermination, broadcast, those using SSB from mobile stations, and amateur ¹²	43 + 10 log (<i>X</i>), or 60 dBc, whichever is less stringent, where $X = PEP$ for SSB modulation, and $X = P$ for other modulation
Low-power device radio equipment ¹³	56 + 10 log (<i>P</i>), or 40 dBc, whichever is less stringent
Emergency transmitter ¹⁸	No limit

P: mean power in watts supplied to the antenna transmission line, in accordance with definition in section 1.7. When burst transmission is used, the mean power *P* and the mean power of any spurious emissions are measured using power averaging over the burst duration.

PEP: peak envelope power in watts supplied to the antenna transmission line, in accordance with definition in section 1.7.

dBc: decibels relative to the unmodulated carrier power of the emission. In the cases which do not have a carrier, for example in some digital modulation schemes where the carrier is not accessible for measurement, the reference level equivalent to *dBc* is decibels relative to the mean power *P*.

- ¹⁰ Spurious emission limits for all space services are stated in a 4 kHz reference bandwidth.
- ¹¹ For analogue television transmissions, the mean power level is defined with a specified video signal modulation. This video signal has to be chosen in such a way that the maximum mean power level (e.g. at the video signal blanking level for negatively modulated television systems) is supplied to the antenna transmission line.
- ¹² All classes of emission using SSB are included in the category “SSB”.
- ¹³ Low-power radio devices having a maximum output power of less than 100 mW and intended for short-range communication or control purposes; such equipment is in general exempt from individual licensing.
- ¹⁴ For radiodetermination systems (radar as defined in section 1.5 in chapter 1), spurious emission attenuation (dB) shall be determined for radiated emission levels, and not at the antenna transmission line. The measurement methods for determining the radiated spurious emission levels from radar systems should be guided by Recommendation ITU-R M.1177.
- ¹⁵ In some cases of digital modulation (including digital broadcasting), broadband systems, pulsed modulation and narrow-band high-power transmitters for all categories of services, there may be difficulties in meeting limits close to $\pm 250\%$ of the necessary bandwidth
- ¹⁶ Earth stations in the amateur-satellite service operating below 30 MHz are in the service category “Amateur services operating below 30 MHz (including those using SSB)”.
- ¹⁷ Space stations in the space research service intended for operation in deep space as defined in 1.9 chapter 1, are exempt from spurious emission limits.
- ¹⁸ Emergency position-indicating radio beacon, emergency locator transmitters, personal location beacons, search and rescue transponders, ship emergency, lifeboat and survival craft transmitters and emergency land, aeronautical or maritime transmitters.