

Wide Band FM (WBFM)



Where the band regulations allow wider transmit spectra (in the 433MHz ISM band for example), it is possible to employ this popular class of lower cost, smaller modules with a wider bandwidth, offering higher data rates up to 64 (or even 160) kbps. Due to their wider receiver bandwidth, sensitivity will be lower, reducing their typical operating range to about 200-300m line of sight with 10mW RF transmit power, compared to the 500m+ of the more costly narrowband alternatives.

Narrow Band FM (NBFM)



“Narrow Band FM” refers in our case to modules with channel spacings of 12.5kHz or 25kHz. These provide better operating range for a given transmit power, due to the higher receiver sensitivity (down to -118dBm for 12dB SINAD, or better). They also allow access to more tightly restricted operating bands where TX higher powers are often allowed (such as the 458MHz industrial band, where 500mW is legal).

However, due to their lower bandwidth, data rate is restricted to 5-10kbps maximum. Narrowband radios typically offer much tighter RF performance parameters than the simpler, cheaper wideband units, offering greatly improved resistance to interferers in and out of band, and so far greater link reliability.