NECESSARY BANDWIDTH DESCRIPTION

The main spectral lobe of the transmitted signal's power spectrum has an envelope given by

$$P(f) = \left[ \text{sinc}\left( \frac{f - f_0}{f_c} \right) \right]^2 \qquad \text{Eq. (1)}$$

where $f_c$ is the chip rate of the pseudo-random binary sequence and $f_0$ is the carrier frequency. Due the large bandwidth ratio, the transmitted signal classifies as an ultra-wideband transmission, which is characterized by its -10 dB bandwidth. The transmitted signal will be filtered tightly about this main spectral lobe, which extends from $f_0$-$f_c$ to $f_0$+$f_c$, so as to reduce the spectral sidelobes.

For $f_0$=760 MHz and $f_c$=254 Mchips/second, the -10 dB bandwidth of the transmitted signal will be 374 MHz, extending from 573 MHz to 947 MHz.

For $f_0$=2.45 GHz and $f_c$=700 Mchips/second, the -10 dB bandwidth of the transmitted signal will be 1.04 GHz, extending from 1.93 GHz to 2.97 GHz.