

Changes in Receiver Bandwidth:

Scan time factors required to maintain SNR

Chg to □	+2kHz	+4kHz	+8kHz	+12kHz	+16kHz	+24kHz	+32kHz	+48kHz	+64kHz
Chg from □									
+2kHz		2.0	4.0	6.0	8.0	12.0	16.0	24.0	32.0
+4kHz			2.0	3.0	4.0	6.0	8.0	12.0	16.0
+8kHz				1.5	2.0	3.0	4.0	6.0	8.0
+12kHz					1.3	2.0	2.7	4.0	5.3
+16kHz						1.5	2.0	3.0	4.0
+24kHz							1.3	2.0	2.7
+32kHz								1.5	2.0
+48kHz									1.3
+64kHz									

SNR = (Voxel Volume) / (Total Sampling Time)
 (ST = Slice Thickness, Nx = Frequency Encoding, Ny = Phase Encoding)

Voxel Volume = (ST)(FOVx/Nx)(FOVy/Ny)
 Total Sampling Time = (NEX)(Ny)(Nx/BW)

For example:

- Change receiver bandwidth from +16kHz to +32kHz.
- All other scan parameters remain constant (1 NEX used in original).
- Multiply NEX by factor to determine new scan time required to maintain SNR of original scan.

$$1 * 2 = 2 \text{ NEX}$$

$$\Rightarrow +16\text{kHz} @ 1 \text{ NEX} = +32\text{kHz} @ 2 \text{ NEX}$$