

- **Linear PCM**

Linear PCM (Pulse Code Modulation) is a WAVE audio format file. WAVE is the most widely used audio format mainly because it is the format used in commercially available music CDs. Linear PCM is an uncompressed format with a wide frequency response. Therefore, the files are very large and use a great deal of memory. Because of the size of the files, WAVE files are very difficult to send through the Internet. The table below shows the overall frequency response of the Linear PCM format recording modes used in the LS-10:

Recording Mode	Overall Frequency Response
96 kHz	20 Hz to 44 kHz
48 kHz	20 Hz to 23 kHz
44.1 kHz	20 Hz to 21 kHz

- The 44.1 kHz setting is similar to the one used in commercial music CDs and its frequency response is the closest to human hearing. The higher settings may have usefulness in scientific applications.

- **MP3**

MP3 (MPEG-1/MPEG-2 Audio Layer 3) is a highly compressed audio format file with a compression ratio of approximately 11:1. It is popular because its compression produces recordings with smaller file sizes that are easier to send through the Internet, enabling music downloads. The files also require much less memory than other formats, making portable music players viable. The trade-off is lower-quality sound, but since most MP3 files are played through earbuds and lower-quality speaker systems, the quality is acceptable.

- The table below shows the overall frequency response of the MP3 format recording modes used in the LS-10:

Recording Mode	Overall Frequency Response
320 kbps	50 Hz to 20 kHz
256 kbps	50 Hz to 20 kHz
128 kbps	50 Hz to 17 kHz

- **WMA**

WMA (Windows Media® Audio) is popular because it is supported by Windows Media Player, which is native to Windows® computer platforms. It has a very low compression ratio that is slightly lower than 2:1. Therefore, it creates detailed digital audio files that use a great deal of memory. However, recording at a 64 kbps bit rate can extend recording capacity significantly.

- The table below shows the overall frequency response of the WMA format recording modes used in the LS-10:

Recording Mode	Overall Frequency Response
160 kbps	50 Hz to 19 kHz
128 kbps	50 Hz to 19 kHz
64 kbps	50 Hz to 15 kHz