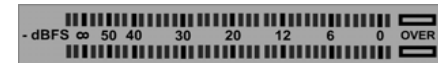
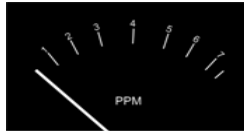


SAFE/UNDER THE LIMIT		dBu				PPM				VU(ITU-R 645-2)				VU(IEC 268-17)				dBFS(EBU)			dBFS(SMPTE)								
Material	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range						
Dialogue	-4.0	4.0	-4.0	8.0	-4.0	2.0	4.0	2.0	5.0	-14.0	-18.0	-10.0	-18.0	-6.0	-14.0	-22.0	-14.0	-22.0	-10.0	0.0	-22.0	-14.0	-22.0	-10.0	0.0	-28.0	-20.0	-28.0	-16.0
Uncompressed Music	4.0	4.0	-8.0	8.0	-4.0	4.0	4.0	1.0	5.0	-14.0	-10.0	-10.0	-22.0	-6.0	-14.0	-14.0	-14.0	-26.0	-10.0	0.0	-14.0	-14.0	-26.0	-10.0	0.0	-20.0	-20.0	-32.0	-16.0

NORMAL/PEAK LIMITING		dBu				PPM				VU(ITU-R 645-2)				VU(IEC 268-17)				dBFS(EBU)			dBFS(SMPTE)								
Material	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range						
Dialogue	0.0	8.0	0.0	12.0	-4.0	3.0	5.0	3.0	6.0	-14.0	-14.0	-6.0	-14.0	-2.0	-14.0	-18.0	-10.0	-18.0	-6.0	0.0	-18.0	-10.0	-18.0	-6.0	0.0	-24.0	-16.0	-24.0	-12.0
Uncompressed Music	8.0	8.0	-4.0	12.0	-4.0	5.0	5.0	2.0	6.0	-14.0	-6.0	-6.0	-18.0	-2.0	-14.0	-10.0	-10.0	-22.0	-6.0	0.0	-10.0	-10.0	-22.0	-6.0	0.0	-16.0	-16.0	-28.0	-12.0
Compressed Music	4.0	4.0	-4.0	4.0	-4.0	4.0	4.0	2.0	4.0	-14.0	-10.0	-10.0	-18.0	-10.0	-14.0	-14.0	-14.0	-22.0	-14.0	0.0	-14.0	-14.0	-22.0	-14.0	0.0	-20.0	-20.0	-28.0	-20.0
Heavy M & E	8.0	12.0	8.0	12.0	-4.0	5.0	6.0	5.0	6.0	-14.0	-6.0	-2.0	-6.0	-2.0	-14.0	-10.0	-6.0	-10.0	-6.0	0.0	-10.0	-6.0	-10.0	-6.0	0.0	-16.0	-12.0	-16.0	-12.0
Background M & E	-8.0	0.0	-8.0	0.0	-4.0	1.0	3.0	1.0	3.0	-14.0	-22.0	-14.0	-22.0	-14.0	-14.0	-26.0	-18.0	-26.0	-18.0	0.0	-26.0	-18.0	-26.0	-18.0	0.0	-32.0	-24.0	-32.0	-24.0

HOT/FULL SCALE LIMITING		dBu				PPM				VU(ITU-R 645-2)				VU(IEC 268-17)				dBFS(EBU)			dBFS(SMPTE)								
Material	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range	Under	Normal Peaks	Dynamic Range						
Dialogue	4.0	12.0	4.0	16.0	-4.0	4.0	6.0	4.0	7.0	-14.0	-10.0	-2.0	-10.0	2.0	-14.0	-14.0	-6.0	-14.0	-2.0	0.0	-14.0	-6.0	-14.0	-2.0	0.0	-14.0	-6.0	-14.0	-2.0
Uncompressed Music	12.0	12.0	0.0	16.0	-4.0	6.0	6.0	3.0	7.0	-14.0	-2.0	-2.0	-14.0	2.0	-14.0	-6.0	-6.0	-18.0	-2.0	0.0	-6.0	-6.0	-18.0	-2.0	0.0	-6.0	-6.0	-18.0	-2.0



KEY

Under

Owing to meter ballistics, the amount (in dB) by which a meter **under**-reads *true* peaks during programme monitoring.

ITU-R 654-2 suggests under-read values of 3dB for a PPM, 13 dB for a VU meter and a 3 dB operator error. This chart uses these values but with a 1 dB operator error.

Your are playing safe, recording *under* the Permitted Maximum Signal (PMS) at all times.

SAFE/UNDER THE LIMIT

You are recording normally, allowing only signal **peaks** to go above the PMS by a few dB. These peaks are then **limited** to the PMS value.

NORMAL/PEAK LIMITING

HOT/FULL SCALE LIMITING

You are "*living on the edge*", allowing signals to reach almost **full-scale** on the recorder. Set the limiter to 17 dBu on the mixer to avoid clipping.