Audio levels and radio mics cheat sheet

Line-up, loudness targets, reference levels and UK radio mic licensing

VIRTUAL STUDIO EVENTS

Line-up levels

Convention	Digital	Analogue
EBU (UK, Europe)	-18 dBFS	0 dBu
SMPTE (US)	-20 dBFS	+4 dBu (common pairing)

EBU R68 puts alignment 18 dB below digital full scale; SMPTE RP 155 sets the reference at -20 dBFS. A US encoder or camera lined up to -20 sits 2 dB lower than your UK desk expects. Agree which one before the line-up.

Reference voltages

0 dBu	0.775 V
+4 dBu	1.228 V, professional line level
-10 dBV	0.316 V (-7.8 dBu), consumer line level

A consumer laptop output into a +4 dBu input arrives about 12 dB low. Use a DI or a proper interface, not more gain.

Idents: telling left from right

- **EBU stereo ident:** 1 kHz at alignment, left drops out for 250 ms every 3 seconds.
- **GLITS (BBC):** every 4 seconds the left drops out once and the right twice.
- If the gaps are on the wrong side, the legs are swapped somewhere in the chain.

Loudness targets

Where it's going	Integrated	True peak
UK and EU broadcast (EBU R128)	-23 LUFS (live: within 1 LU)	-1 dBTP
Apple Podcasts	About -16 LKFS	-1 dBFS
Spotify (normal setting)	-14 LUFS	-1 dBTP
YouTube	Turns loud material down. YouTube doesn't publish its target; measurements usually put it near -14 LUFS	

For a corporate stream played in browsers and on platforms that normalise, -16 to -14 LUFS integrated with peaks under -1 dBTP is a sensible target. A broadcaster's delivery spec overrides it: they will usually ask for R128.

Stream mix habits

- [ ] Separate stream mix from the room mix: the PA mix is wrong for a stream
- [ ] Mix-minus to every remote contributor, checked by talking to them
- [ ] Ambient mics on the audience for applause and questions
- [ ] A loudness meter on the programme output, not just peak meters
- [ ] Tone and ident sent to the encoder and checked at the far end

Radio mics and in-ear monitors in the UK

Band	Status	Notes
606.5-613.5 MHz (Channel 38)	UK Wireless Microphone Licence, 1 or 2 years	Shared, not protected; anywhere in the band with some geographic restrictions. Handheld 10 mW, body-worn 50 mW
470-790 MHz (co-ordinated)	Site-specific licence from Ofcom	Ofcom assigns channels around TV at each location. Book early for big shows and city venues
821.5-832 MHz and 1785-1805 MHz	Licence-exempt since 29 April 2026	Equipment must meet IR 2030 and the Wireless Telegraphy (Exemption) Regulations
863-865 MHz, 2.4 GHz digital	Licence-exempt	Few channels and shared with other devices. Fine for one or two mics; risky for a full stage

- [ ] Scan the room on the day, with the venue's own systems switched on
- [ ] Coordinate frequencies with the house and every supplier on site
- [ ] Fresh batteries per session; log the swap times
- [ ] Licence paperwork on site and the licence number on the RF plan
- [ ] A wired handheld on stage as the backup for the presenter mic
- [ ] Walk the stage edges and the aisles with a mic before doors

Sources. EBU R 128 · EBU Tech 3304 · Spotify loudness · Apple Podcasts audio · Ofcom licensing updates · Ofcom Channel 38 · Ofcom PMSE licences. Checked 9 November 2026.

Watermarked preview. Get the clean file free at www.virtualstudio.events/tech-audio-levels-cheat-sheet.html