

EBU

OPERATING EUROVISION AND EURORADIO

R 128 s1

LOUDNESS PARAMETERS FOR SHORT-FORM CONTENT (ADVERTS; PROMOS, ETC.)



SUPPLEMENT 1 TO R 128

Geneva
August 2020

Document History

EBU Committee	TC	
Drafting Group	PLOUD	
First published	November 2014	
Revised	January 2016	V2; Simplification, removed alternative Maximum Momentary Loudness limit
	August 2020	V3; Addition of tolerances (for QC and True-peak)

Publication Keywords: Audio levels, loudness, normalisation, short-form content, R 128.

Acknowledgement

EBU technical publications are the work of experts from EBU Members, Associate Members and third parties consisting of international standards bodies, industry partners, academic institutions and independent consultants.

Their contribution to EBU technical publications is a very generous act by the individuals concerned and by their employers. The EBU appreciates their efforts and thanks them most sincerely.

This document has been produced with the assistance of the following entities:

EBU Members: Florian Camerer (ORF), Andrew Mason (BBC R&D), Askan Siegfried (NDR), Bosse Ternstrom (SR), Erik Lundbeck (SVT), Mikko Hahkio (YLE), Matthieu Parmentier (France Television), Andrzej Bialczyk (TVP), Tin Jonker (NPB),), Gabriel Leuzinger (SRG SSR), Jean-Paul Moerman (VRT), Bjørn Aarseth (NRK), Daniele Airola Gnota (RAI)

Third parties: Richard van Everdingen (Delta-Sigma-Consultancy), Eelco Grimm (HKU Utrecht), Thomas Lund (Genelec), Esben Skovenborg (tc electronic), Mike Kahsnitz (rtw), Ralph Kessler (penguin Ingenieurbüro), Christian Hartmann (IRT), Paul Tapper (NuGen Audio), Alessandro Travaglini (FOX Italia), Scott Norcross (Dolby)

EBU Project Manager: Paola Sunna

Loudness Parameters for Short-form Content

After the introduction of recommendation R 128 [1], the EBU has studied the practical adoption and its consequences. Especially for short-form content like advertisements (commercials) and promos (as well as interstitials etc.) there is a need to give guidance using the parameter **Maximum Short-term Loudness** in addition to the basic parameters **Programme Loudness** and **Maximum True Peak Level**.

In compliance with R 128, the EBU recommends the measurement of the average loudness of a short-form programme (*Programme Loudness*) for the normalisation of such audio signals. The measure *Maximum Short-term Loudness* should be used to further characterise and control the audio signal and so avoid overly dynamic short-form programmes, which would lead to audience complaints. The *Maximum True Peak Level* of an audio signal should be used to check compliance with the upper technical limit of the signal chain.

The measure *Loudness Range* is not useful for short-form content. It is based on a statistical analysis of the Short-term (3 s) Loudness values. For commercials, promos etc. this leaves too few data points for a meaningful result. Therefore, a maximum and/or minimum value for Loudness Range shall not be specified for programmes of this length/genre.

The EBU recommends (see Summary):

- a) that the measures **Programme Loudness**, **Maximum Short-term Loudness** and **Maximum True Peak Level** shall be used to characterise the audio signal of short-form content;
- b) that the **Programme Loudness Level** shall be normalised to a **Target Level** of **-23.0 LUFS**. For the implementation of Loudness workflows (for example, in Quality Control environments) a tolerance of **±0.2 LU** is allowed in order to take account of measurement errors;
- c) that in special cases, the Programme Loudness Level may be normalised to a Target Level *lower* than **-23.0 LUFS** on purpose. This exception shall be clearly indicated to ensure that such a lower Programme Loudness Level is not compensated;
- d) that the **Short-term Loudness Level** (measured in compliance with EBU Tech 3341 [2]) shall not exceed **-18.0 LUFS** (+5.0 LU on the relative scale). For the implementation of loudness workflows (for example, in Quality Control environments) a tolerance of **+0.2 LU** is allowed in order to take account of measurement errors;
- e) that the measurements shall be made with a loudness meter compliant with ITU-R BS.1770 [3] and EBU Tech 3341;
- f) that the audio signal shall generally be measured in its **entirety**, without emphasis on specific foreground elements such as speech, music or sound effects;
- g) and that the **True Peak Level** of the programme shall not exceed **-1 dBTP** (dB True Peak) for linear audio¹, measured with a meter compliant with ITU-R BS.1770 and EBU Tech 3341. The measurement tolerance is **±0.3 dB** (for signals with a bandwidth limited to 20 kHz).

¹ See EBU Tech 3344 [4] for Maximum Permitted True Peak Levels for different distribution systems

Summary - Loudness Parameters for Short-form Content (adverts; promos, etc.):

Programme Loudness	-23.0 LUFS
Maximum Short-term Loudness	-18.0 LUFS (+5.0 LU on the relative scale)
Maximum True Peak Level	-1 dBTP
Loudness Range	(not applicable)

Definitions:

Programme:	An individual, self-contained audio-visual or audio-only item to be presented in Radio, Television or other electronic media. An advertisement (commercial), trailer, promotional item ('promo'), interstitial or similar item shall be considered to be a programme in this context.
Programme Loudness:	The integrated loudness over the duration of a programme - Programme Loudness Level is the value (in LUFS) of Programme Loudness.
Short-form content:	A programme of short duration (up to approximately 2 minutes), typically shorter than 30 seconds; In addition to advertisements (commercials) and promotional items also interstitials, stingers, bumpers and similar very short items belong to that category.
Maximum True Peak Level:	The maximum value of the audio signal waveform of a programme in the continuous time domain

References

- [1] EBU R 128 *'Loudness normalisation and permitted maximum level of audio signals'*
- [2] EBU Tech 3341 *'Loudness Metering: 'EBU Mode' metering to supplement loudness normalisation in accordance with EBU R 128'*
- [3] ITU-R BS.1770 *'Algorithms to measure audio programme loudness and true-peak audio level'*
- [4] EBU Tech 3344 *'Guidelines for Distribution and Reproduction of Programmes in accordance with EBU R 128'*