

Loudness





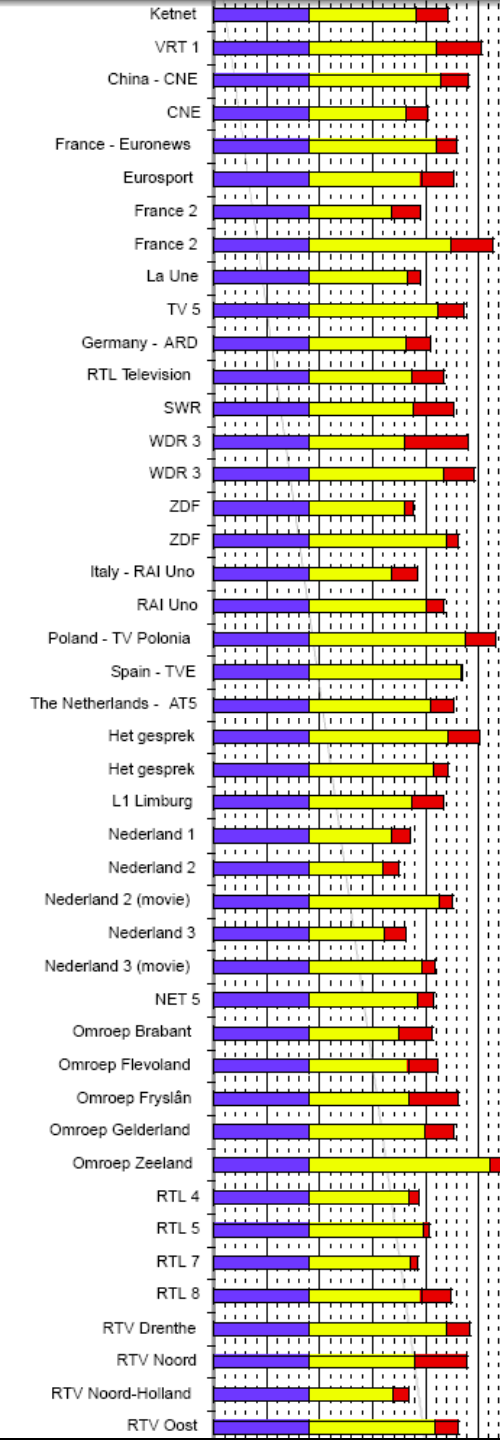
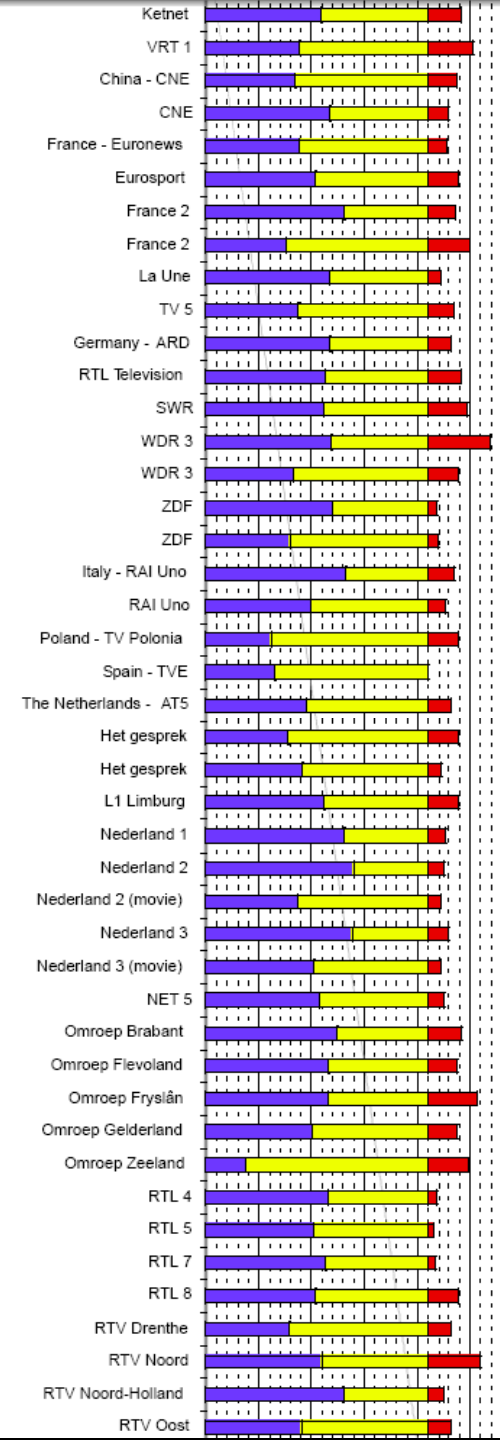
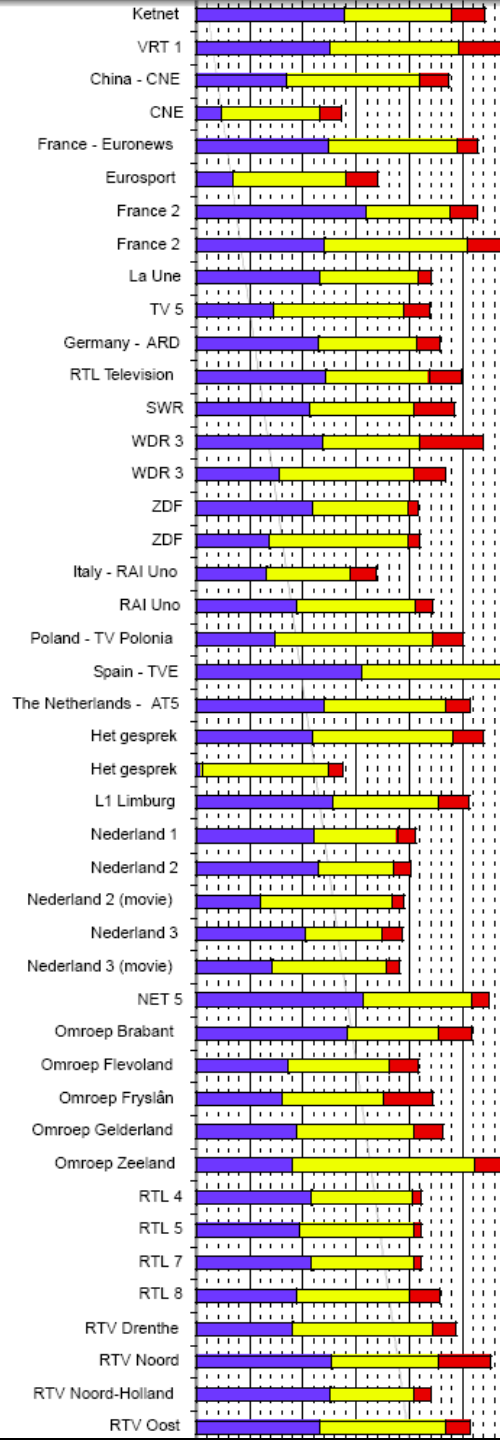
Loudness differences

complaints

tv, radio, music

Differences

1. within channels
2. between channels





EBU Group

P/LOUD

140+, cross-industry



P/LOUD

- Loudness Rec: target level + gating
- Practical guidelines
- Metering requirements
- Loudness range
- Distribution guidelines

Hot topic

- National initiatives
- ATSC RP A85
- ITU-R agreed Rec for intl. prog. exch
- Interest from 'non-Loudness' manufs

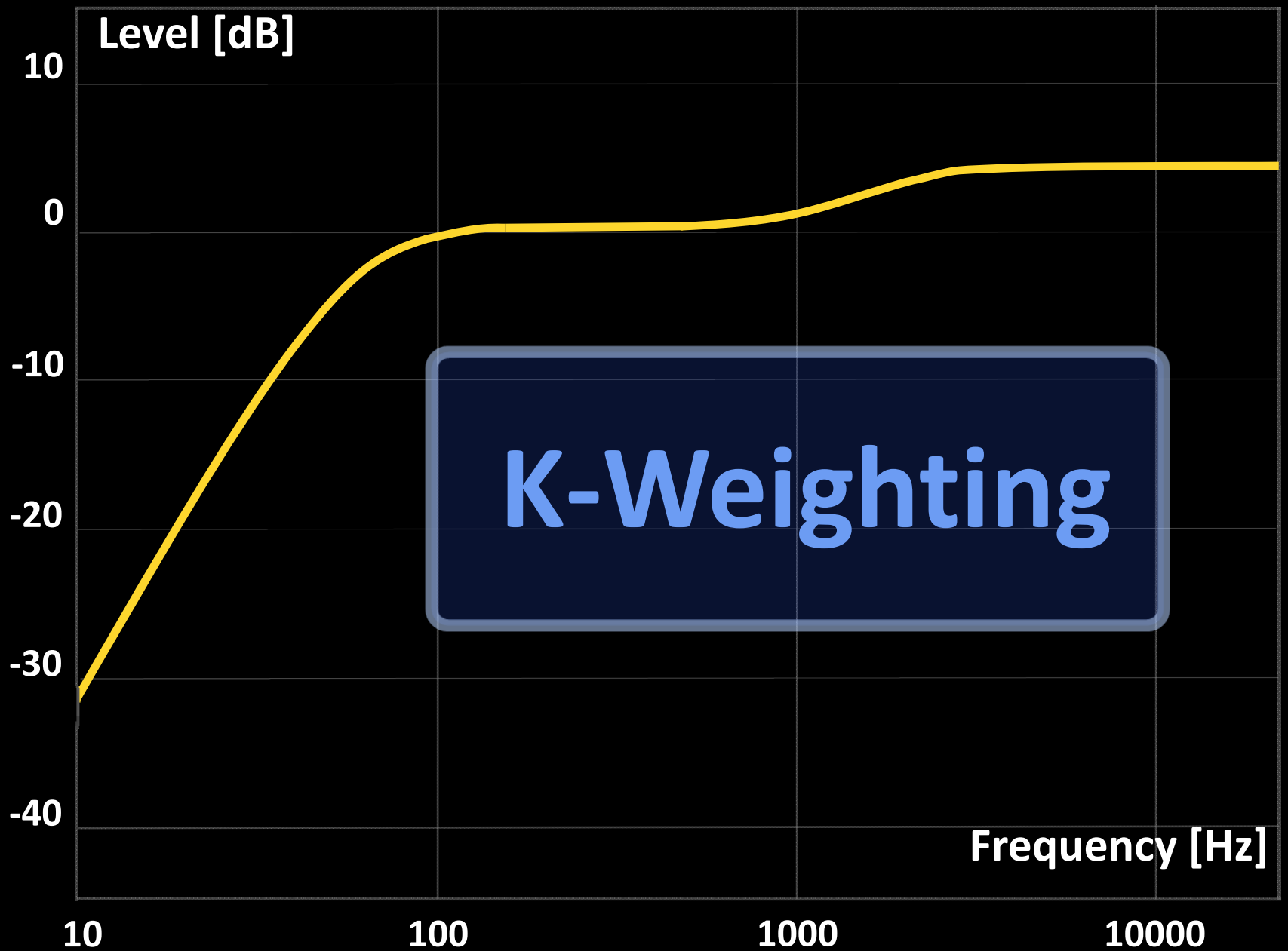
Measurement

ITU-R BS.1770

Objective measurement



Subjective impression



Loudness

K-Weighting

Full Scale

→ **LKFS**

Loudness Metering

Momentary

400ms
(250-500ms)

Short term

3s

10s

Long term

start/
stop



Voice

Sound FX

Music

Voice

all signal types

Music



Target level

-22
-23
-24

(not fixed yet)

LKFS gated

Gating

under study

Q1 2010

PPM -> Loudness meters

Target level in LKFS

**Practical guidance
coming soon**

tech.ebu.ch/loudness





Production

Distribution

Transmission

One loudness
standard

LKFS = absolute

Loudness Unit = relative

→ **LU**

1 LU \cong 1 dB