

1 Scope

This Operational Practice is recommended by Free TV Australia and refers to the carriage of metadata through the television broadcasting transmission chains to the end viewer.

This document should be considered in conjunction with other Free TV Australia operational Practices:

OP48 Audio Levels and Loudness

OP56 Metadata exchange for Australian television broadcasting

OP 59 Measurement & Management of loudness in soundtracks for television broadcasting

2 Introduction

Metadata is increasingly being used as a parameter to manage the characteristics of a soundtrack which has been encoded into an audio bit stream.

Use of a specified set of metadata values ensure some consistency and repeatability of the soundtrack being broadcast as it was originally mixed in the sound production studio.

This is becoming an increasingly useful tool as the number of channels in surround sound systems are being applied to broadcasting.

3 Audio coding schemes utilising metadata

Audio coding schemes which have established metadata parameters are:

- Advanced audio coding which is found in ISO/IEC 13818 Part 7
- High efficiency audio coding which is found in ISO/IEC 14496 Part 3
- AC-3 which is found in ATSC standard A/52 and Recommendation ITU-R BS.1196

Australian terrestrial television transmissions include MPEG-1 Layer II and AC-3 audio bit streams.

While not a metadata parameter the recommended level for reference tones for transmission of MPEG and AC-3 audio is 20 dB below clipping level, in accordance with SMPTE RP 155.

4 Parameter values for audio coding schemes

Core metadata values specified below are applied by Australian television broadcasters within their transmission systems.

The metadata parameters implemented in Australian terrestrial television transmissions AC-3 audio bit streams include:

4.1 Core values

Parameter	Value
dialnorm	-24LKFS
acmod	3/2 + LFE 111
drc profile	Line: Film Std; RF: Film Std
Surr 3dB Attenuation	Disabled
Preferred Downmix	Lt Rt
Downmix Co-efficients; C/Surr	0.707 (-3dB)

4.2 Non-core value

Parameter	Value
RF Over Protect	Disabled
Dolby Srnd EX	Not Indicated
DC Filter	Enabled
Lowpass Filter	Enabled
LFE Filter	Enabled
Srnd Ph Shift	Enabled

5. References:

SMPTE RP 155 Audio Levels for Digital Audio Records on Digital Television Tape Recorders, White Plains, Society of Motion Picture and Television Engineers, 1997.

Recommendation ITU-R BS.1196 Audio coding for digital broadcasting

ATSC standard A/52 2012: Digital Audio Compression (AC-3) (E-AC-3) Standard -

ISO/IEC 14496 Part 3 Information technology — Coding of audio-visual objects — Part 3: Audio

ISO/IEC 13818 Part 7 Information technology -- Generic coding of moving pictures and associated audio information -- Part 7: Advanced Audio Coding (AAC).