

Technical conditions for broadcasting adverts at Czech Television

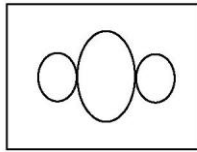
These technical conditions for broadcasting adverts at Czech Television are issued for the purpose of assuring the optimum technical quality of television broadcasting, which must fulfil the following technical conditions, in compliance with valid standards:

1. Recording in **Digital Betacam** or **XDCam** format using MPEG-2/TMX **50** or **30** Mbit/s codec (I-frame only, 422P@ML) for SD and MPEG-2 **50** Mbit/s (Long GOP, 422P@HL) for FULL HD (both formats are compatible with Sony XDCAM series equipment).
2. **FULL HD (1920 x 1080i 25)** or **SD (720 x 576i 25)** format is assumed, sound in **24 bit / 48 kHz** coding.
3. The recorded video and audio signal will be checked in the PAL system (down-converted in the case of HD) and must comply with international recommendation **ITU-R BT.601** for video and **EBU R128** for sound.
4. The audio signal is always uncompressed, in mono versions both CHI and CH2 tracks must be identical. Modulation in CH1 and CH2 must not be in mutual counter-phase. Sound modulation generated in stereophone version must adhere to the principle of CH1 = L, CH2 = R.
Characteristics of sound for the advert:
 - a) advert volume is standardised to a target level of **-23 LUFS**, with maximum deviation of +/- 1 LU and
 - b) the maximum permitted actual advert peak volume is **-3 dBTP** (dB actual peak) when metering using a metering instrument complying with Recommendation by the International Telecommunication Union ITU-R BS. 1770-2 "Algorithms for metering volume of sound programmes and actual peak volumes" March 2011 and Technical Document by the European Broadcasting Union EBU Tech Doc 3341 "Metering volume: metering in "EBU regime" for supplementing volume standardisation in compliance with EBU-R 128" Geneva, August 2011.
5. The time sort code is recorded on the TC track while utilising VITC.
6. The beginning of the cassette must include the following signals:

0'00"-0'10"	black PAL
0'10" -1 '30"	PAL colour bars 100/0/75/0 and sound references CHI/ CH2 1 kHz at a level of -18 dB_{FS}
1'30" - 2 '00"	black PAL and without sound
2'00"	beginning of the first shot on the cassette

At least 10" PAL colour bars and a 1 kHz signal on the CHI and CH2 channels at a level of 0 dB (0.775 V) before each additional recording. The video and sound levels of the test and the following recording must correspond.
Each section on the XDCam carrier must be identified as an individual "CLIP", the beginning of the CLIP in the programme section must be identified by 5 shots (5i) before the video begins and the end identified by 5 shots (5f) after the video ends.
7. All synchronisation impulses, particularly H and burst and the chrominance signal, must remain in fixed relationship from the aspect of time and phase.
8. The full video signal level must not exceed the value of 133%, i.e. 931 mV, and the value of -33%, i.e. -234 mV, compared to the black level. No colour should exceed the values of the limit signals given in the table and in the picture.
9. Video outages, particularly drop-outs and missing individual rows, must not appear subjectively disruptive. The level of disrupting signals such as noise must not be higher than -40 dB, i.e. 1% of the white level in the luminance and chrominance channel.
10. Video sharpness and gradation must correspond to the aspects of a professional BTV signal and shall be assessed subjectively by comparison with another quality signal.
11. We require that all advert recordings be supplied exclusively in 16:9 format in anamorphic mode (Full Height Anamorphic) when using SD format and 16:9 Full HD format. Any deformation of the shape as a result of conversion of formats is not permissible.

SD 16:9 anamorphic format video:



Full HD 16:9: format video

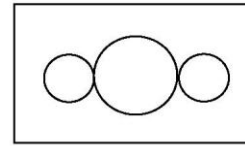
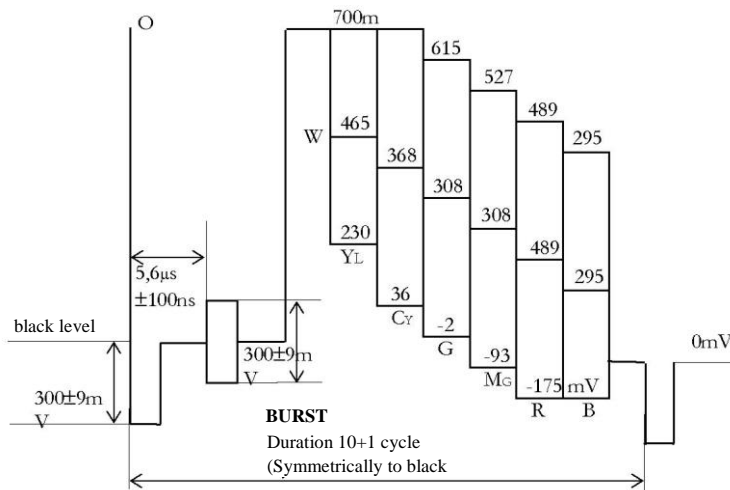


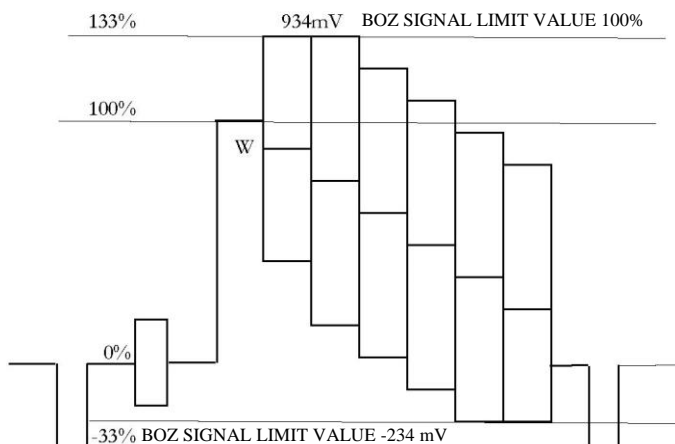
Table of values of PAL 100/0/75/0 colour bars

Bar colour	Luminance level (mV)	Chrominance			
		amplitude (mV)	angle in degrees		
			row n	row n+1	
W white	700	0	*	*	
YL yellow	465	470	167.0	193.0	
CY cyan	368	664	283.5	76.5	
G green	308	620	240.5	119.5	
MG magenta	217	620	60.5	299.5	
R red	157	664	103.5	256.5	
B blue	60	470	347.0	13.0	
SIB burst	0	300	135.0	225.0	

Full PAL signal - 100/0/75/0 colour bars



Full PAL signal - 100/0/100/10 colour bars – limit signals





Technical data is based on CCIR Report No.624

The technical conditions for broadcasting adverts at Czech Television are effective from 01/02/2016.