CBC

TECHNICAL REQUIREMENTS

Commercial Spots

and Small Items

February, 2015

IP EL CARTEL MEDIA GOLDBACH MEDIA RTL VOX SUPER RTL

n-tv RTL II RTL NITRO RTL CRIME RTL Living passion GEO TELEVISION

Content

General Information

If not stated otherwise in the specifications contained herein, the current recommendations of the EBU are binding.

The Media Group RTL Germany accepts commercial spots / small items both in high definition (HD) and in standard definition (SD).

At present, commercial spots / small items are broadcast in stereo only. In the foreseeable future, however, the technical requirements for a broadcast with multiple sound channels (5.1) will be installed. Therefore, it is already recommended now to deliver commercial spots / small items providing multi-channel sound (5.1) on audio tracks 3 - 8. Of course, the language version has to be the same both in stereo sound and in multi-channel sound (5.1).

Subtitling commercial spots / small items for the hearing impaired is currently not intended.

The broadcasting of programs and commercials / small items will only be performed with loudness control according to EBU Recommendation R 128. All commercials / small items have to be in accordance with EBU Recommendation R 128.

Delivery of Commercial Spots / Small Items in High Definition (HD)

Commercial spots / small items are preferably accepted in HD including multi-channel sound (5.1).

Video Format

Commercial spots / small items delivered in HD have to be recorded in the format 1080i/25 regardless of the carrier medium. In the case of original film material it has to be encoded with 25psF.

Audio Format

Commercials / small items should be preferably produced and delivered in stereo but at least in 2-track-mono. The stereo signal has to be compatible to mono receivers and should therefore not have a negative correlation degree (higher or equal to zero). It must be ensured that at least track 1 and track 2 do include the complete program sound. Additional audio tracks may be used for multi-channel sound (5.1) though at present, commercial spots / small items are still broadcast in stereo only.

Time Code

The carried time code has to have a value of 00:00:00:00, 02:00:00:00 or 10:00:00:00 starting with the first picture (SOM) and has to continue ascending linearly for the whole duration of the spot. All time code tracks possibly existing on one single medium have to contain identical time code values.

Delivery of Commercial Spots / Small Items (HD) as a Media File

The delivery of commercial spots / small items should be realised via online file transfer, wherever possible. A secure web interface is available at:

https://ingest.cbc-service.de/ingest-werbung/ (for commercial spots)

https://ingest.cbc-service.de/ingest-kleinmaterial/ (for small items)

A one-time free registration is necessary in order to be able to deliver spots as a media file

The only wrapper or container format accepted is defined as follows:

MXF container, in which the operational pattern 1a (OP1a) with the encoding algorithm XDCAM HD 422 has to be used. The MXF file has to correspond to SMPTE RDD09-2009 with a video resolution of 1920 x 1080 pixels.

The audio signal must consist of at least two discrete audio tracks in 24 bit resolution. Additional audio tracks for multi-channel sound (5.1) are recommended but at present, commercial spots / small items are still broadcast in stereo only. Multiplexed data in an audio track are not allowed for HD material.

The file has to consist of the **actual complete content** of the commercial spot followed by **additional four frames black/mute only**. A leader is not **allowed and the start frame** has to be the first visible picture or the first audible sound (SOM).

After having consulted the supplier CBC will correct improper finishing of the file at a separate charge.

The audio track allocation of the media file has to follow exactly one of the following schemes, while at present only program tracks 1 and 2 are broadcast:

	1	2	3	4	5	6	7	8
XDCAM HD stereo	Stereo L	Stereo R	-	-	-	-	-	-
XDCAM HD multi-channel sound (5.1)	Stereo L	Stereo R	FL	FR	C	LFE	SL	SR

The use of a Dolby-E-stream within a media file **will not be accepted**.

Delivery of Commercial Spots / Small Items (HD) on a Physical Medium

Commercial spots / small items delivered on a physical medium, which have been approved by CBC, will then be converted into a file format, archived and kept ready for transmission. The physical medium itself will be stored for four weeks and then properly disposed of unless there is a request to return it.

Only the following tape formats will be accepted for commercial spots / small items in HD:

HDCAM and HDCAM-SR and the Professional Disc XDCAM HD

Each physical medium must be accompanied by a media sheet designed according to the “Medienbegleitkarte” in the appendix. Non-detachable labels have to be affixed to the medium as such and to its cover to ensure proper traceability. Labels have to be affixed only in the label field designated by the manufacturer.

The audio track allocation has to follow exactly one of the following schemes depending on the carrier medium used:

	1	2	3	4	5	6	7	8
HDCAM stereo	stereo L	stereo R	-	-				
HDCAM-SR stereo	stereo L	stereo R	-	-	-	-	-	-
HDCAM-SR multi-channel sound (5.1)	stereo L	stereo R	FL	FR	C	LFE	SL	SR
XDCAM-HD stereo	stereo L	stereo R	-	-	-	-	-	-
XDCAM-HD multi-channel sound (5.1)	stereo L	stereo R	FL	FR	C	LFE	SL	SR

In the case of media formats supporting more than four audio tracks, the tracks 3 - 8 should be used with a discrete PCM multi-channel sound (5.1) according to the scheme above. Any unused audio tracks must contain AES-0 (Mute).

When using tapes the pre-roll (at least 60 seconds) and the lead-out (at least 10 seconds) do need a black signal and an audio-mute for synchronisation. The tape has to start with a technical header in the appropriate norm.

If there is more than one commercial spot on a single tape, the following commercial spot always has to start with a SOM at the next full minute of the time code (For example: 10:01:00:00, 10:02:00:00, …).

When using Professional Disc several separate spots may be on one disc. In this case, please refer to “Delivery of commercial spots / small items (HD) as a File”.

Delivery of Commercials / Small Items in Standard Definition (SD)

Commercial spots / small items (SD) have to fulfil the following minimum requirements:

Video Format

Regardless of the transport medium the commercial spots / small items always have to be delivered in 576i/25. The recorded video signal has to correspond to the guidelines for PAL B/G in accordance with ITU-R BT 624-3, which are listed in the appendix.

The video format for the Media Group RTL Germany is 16:9 full frame. According to this, commercial spots / small items are accepted in 16:9 full frame only. (i. e. 4:3 full frame with anamorphic distortion)

Audio Format

Delivered commercial spots / small items should preferably be produced and delivered in stereo but 2-track mono will also be accepted. The stereo signal has to be compatible to mono receivers and must not have a negative correlation (higher than or equal to zero). Furthermore, it must be ensured that at least track 1 and track 2 do include the complete program sound. Additional audio tracks may be used for multi-channel sound (5.1) though at present commercial spots / small items are still broadcast in stereo only.

Time Code

The carried time code has to have a value of 00:00:00:00, 02:00:00:00 or 10:00:00:00 starting with the first picture (SOM) and has to continue ascending linearly for the whole duration of the spot. All time code tracks possibly existing in parallel on one single medium must transport identical time code values.

Delivery of Commercial Spots / Small Items (SD) as a Media File

The delivery of commercial spots / small items should be realised via online file transfer wherever possible. A secure web interface is available at:

https://ingest.cbc-service.de/ingest-werbung/ (for commercial spots)

https://ingest.cbc-service.de/ingest-kleinmaterial/ (for small items)

A one-time free registration is necessary in order to be able to deliver spots as a media file.

The only wrapper or container format accepted for material in SD is defined as follows*:*

The MXF-container in accordance with OP1a has to include a 50 Mbit/s video data stream in IMX-format (D10) according to SMPTE 386M/356M with 50 fields per second and a video resolution of 720 x 608 pixels according to SMPTE RP202.

The related audio must consist either of 4 or 8 data streams multiplexed according to SMPTE 382M or discrete audio tracks with 16 or 24 bit.

The file has to consist of the **actual complete content** of the commercial spot followed by **additional four frames black/mute only**. A leader is not **allowed and the start frame** has to be the first visible picture or the first audible sound (SOM).

After having consulted the supplier CBC will correct improper finishing of the file at a separate charge.

The audio track allocation has to follow exactly one of the following schemes; unused audio tracks must contain AES-0 (mute):

	1	2	3	4	5	6	7	8
MXF-file SD stereo	stereo L	stereo R	-	-	-	-	-	-
MXF-file SD mono	mono	mono	-	-	-	-	-	-
MXF-file SD multi-channel sound (5.1)	stereo L	stereo R	FL	FR	C	LFE	SL	SR

Delivery of Commercial Spots / Small Items (SD) on Tape

Commercial spots / small items on tape are accepted on Digital-Betacam only. Spots which have been approved by CBC will then be converted into a file format, archived and kept ready for transmission. The physical medium itself will be stored for four weeks and then properly disposed of unless there is a request to return it.

The audio track allocation has to correspond exactly to one of the following schemes:

	1	2	3	4
Digital-Betacam stereo	stereo L	stereo R	-	-
Digital-Betacam mono	mono	mono	-	-
Digital-Betacam stereo + Dolby E	stereo L	stereo R	Dolby E	Dolby E

Tracks 3 and 4 may be used for the transport of a Dolby E encoded multi-channel sound (5.1) though at present, commercial spots / small items are still broadcast in stereo only. The cut-in of the Dolby E tracks must have happened at least 5 seconds before the first frame (SOM) of the commercial spot.

When using tape the pre-roll (at least 60 seconds) and the lead-out (at least 10 seconds) do need a black signal and an audio-mute for synchronisation. The tape has to start with a technical header in the appropriate norm.

If there is more than one commercial spot on a single tape, the following commercial spot always has to start with a SOM at the next full minute of the time code (For example: 10:01:00:00, 10:02:00:00, …).

Each tape must be accompanied by a media sheet designed according to the "Medienbegleitkarte" in the appendix. Non-detachable labels have to be affixed to the tape as such and to its cover to ensure proper traceability. Labels have to be affixed only in the label field designated by the manufacturer.

Contact CBC:

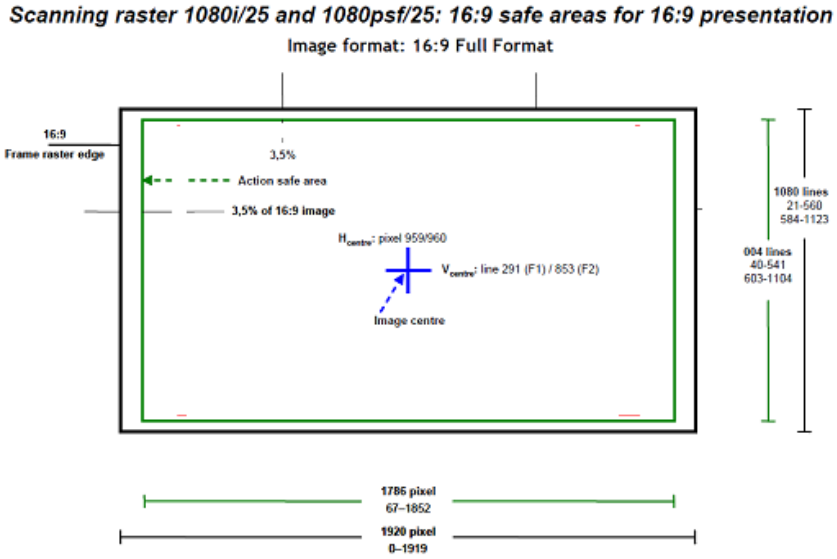
CBC Ingest I +49 221 456-42220 I cbcingest@cbc.de

Appendix

Safe Areas

To ensure adequate display of the important parts of the image on consumer devices, the defined EBU R95 safety margin (action safe area) has to be observed (Fig. 2.1). Modern TV receivers are set up to be pixel-exact. Therefore, objects which are not intended as part of the scene (such as microphone booms) and other extraneous or improper image edges must not be visible.

	Vertikal	Horizontal
Action Safe Margin	3,5 %	3,5 %



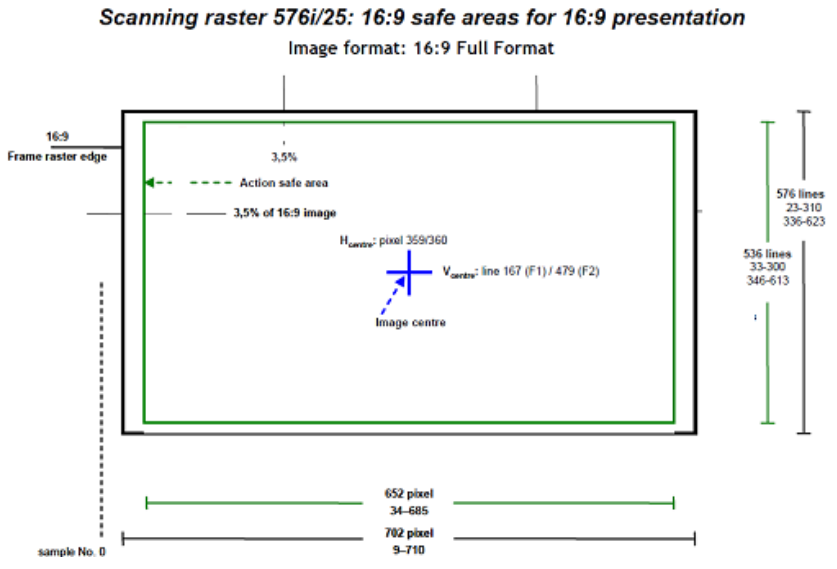


Figure 1: Safe Areas 16:9 Image

Video Signal

During the whole duration of the commercial spot the video signal has to correspond to the PAL B/G standard in accordance with ITU-R 624-3.

The maximum level of the luminance signal must not exceed 100%. This corresponds exactly to 700 mV.

The maximum level of the combined CVB signal should not be higher than 133% and not less than -33%.

An overall level of luminance and chrominance of up to 103% concerning caption generator insertions will be accepted.

The pedestal can be between 0% and 2% (maximum).

Standard PAL-encoding of the spots must still be possible after the conversion for existing analogue transmission. Therefore, no illegal or invalid signal levels are allowed.

Audio Signal

The level control of the audio signals has to have a target level of -23 LUFS and a maximum deviation of +/- 0,5 LU according to EBU Recommendation R 128.

The maximum momentary loudness should not be higher than -15 LUFS (+8 LU). The maximum short-term loudness should not be higher than -20 LUFS (+3 LU). The maximum peak level should not be higher than -1 dBTP. According to „Practical Guidelines“(EBU Tech 3343), Item 10.1 „Commercials (Advertisements) and Trailers“. Detailed information can also be found in the documents EBU Tech 3341 - 3344.

Requirement: Loudness meter with „EBU-Mode“, (hardware or software).

Measuring devices previously used for metering of peak levels (PPM/QPPM) are NOT suitable for loudness metering.

Glossary of Terms

LU (Loudness Units):

Relative measurement unit of loudness: 1LU = 1dBr.

LUFS:

Absolute measurement unit of loudness referring to full scale

(„Loudness Units Full Scale“)

Scales:

1. ‘EBU +9 scale’: -18.0 LU to +9.0 LU (-41.0 LUFS to -14.0 LUFS)
2. ‘EBU +18 scale’:-36.0 LU to +18.0 LU (-59.0 LUFS to -5.0 LUFS)

Applying to both scales: -23.0 LUFS = 0.0 LU

Three Time Scales:

- Momentary “M” (400 ms integration)
- Short term „S“ (3 s integration)
- Integrated “I” (program- or segment-wise from start to stop)

Program Loudness:

The integrated loudness over the duration of a program - Program Loudness Level is the value (in LUFS) of program loudness.

In this context, “program” means a single commercial spot or trailer.

Loudness Range, LRA:

It describes the distribution of loudness within a program.

To control the dynamics of a commercial in a loudness normalized world where the danger of suddenly too high loudness differences does exist, the measure Loudness Range (LRA) is not suitable because the calculation is based on the short-term

loudness values (3 s interval).In the case of very short items there are not enough data points to derive a meaningful number for LRA.

An alternative could be the use of the Maximum Momentary Loudness Level (Max ML – 400 ms) and/or the Maximum Short-term Loudness Level (Max SL – 3 s). Especially for very short items (<30 s), these parameters can be effectively used to limit loudness peaks.

Maximum True Peak Level, MTPL:

The true peak level (TPL) indicates the maximum (positive or negative) value of the signal waveform in the continuous time domain; this value may be higher than the largest sample value in the time-sampled domain.

Those true peaks (unit symbol: dBTP – deciBel referenced to digital Full Scale measured with a true peak meter) can be detected with a 4x oversampling true peak meter compliant to ITU-R BS.1770.

Technical Requirements for Loudness Meter:

- The loudness algorithm has to be compliant to ITU-R BS. 1770
- K-weighting curve according to ITU-R BS. 1770
- Gating:
    - Absolute gate: blocks of audio (“M”-values) below -70 LUFS are excluded for the computation of absolute gated integrated loudness.
    - Relative gate: blocks of audio (“M”-values) that are -10 LU below absolute gated integrated loudness are excluded for the computation of absolute gated integrated loudness.
- True peak measurement with a 4x oversampling

For any further information, consult the following page: http://tech.ebu.ch/loudness

Additional specifications have been published in the following EBU documents:

EBU Tech 3341 Metering specification (‘EBU mode’)
EBU Tech 3342 Loudness Range descriptor
EBU Tech 3343 Practical Guidelines
EBU Tech 3344 Distribution Guidelines

Cue sheet / Media sheet (example)

Picassoplatz 1
D - 50679 Köln / Germany
Tel.: (0221) 456 42490

Medienbegleitkarte

Originaltitel: Kunde KOSCH FABIAN - Film
Status: Sendematerial
Sendetitel Serie/Film: HTC Desire S
Staffel / Episode: HTC 20" Saga
riginaltitel Serie/Film:
Prod.Nr.: #01/11
Sendetitel:
Dateiname:

Trägermaterial	Qualität	Datenrate	Codec
Digi Beta S	SD		

Bildformat	Bildnorm	Timecode	R 128	LRA	
Vollbild	16:9 PAL FHA	LTC & VITC	nein		

TECHNISCHE BEMERKUNGEN

SEGMENTLISTE

Used	Programm	SOM	EOM	DUR
1.	Bars	09:58:30:00	09:59:30:00	00:01:00:00
2.	Black	09:59:30:00	10:00:00:00	00:00:30:00
☑ 3.	Program "HTC 20" Saga 01/11	10:00:00:00	10:00:20:00	00:00:20:00
4.	Black	10:00:20:00	10:01:20:00	00:01:00:00
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
				00:00:20:00

TONSPUREN

Spur	Belegung	Inhalt	Format
1.	Mix links (ST-L)		
2.	Mix rechts (ST-R)		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

SENDUNGSBEMERKUNGEN

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