

## **EBU Technical Recommendation R49-1999**

### **Tape alignment leader for the exchange of television programmes**

<i>EBU Committee</i>	<i>First issued</i>	<i>Revised</i>	<i>Re-issued</i>
PMC	1988	1993	1999

**Keywords: Video recording – B/C**

An alignment leader for use on tapes for the exchange of television programmes with monophonic sound is described in ITU-R Recommendation BR.469, Table 2 [1] and ITU-R Recommendation BR.778, Table 1 [2].

An alignment leader for use on tapes for the exchange of television programmes with stereophonic sound is described in ITU-R Recommendation BR.469, Table 3 and ITU-R Recommendation BR.778, Table 2.

The sound signals on this leader have the following features:

- By the use of 3 s of continuous tone, the level of each recorded track can be aligned using normal PPM or VU meters.
- The use of interrupted tone on the left track of a stereo pair allows the easy identification of stereophonic programmes from monophonic ones.
- The use of coherent tone on both tracks of a stereo pair allows easy checking of the mutual phase.
- The signals can be generated manually if only needed occasionally.

The EBU recommends that Members use the appropriate leader described in these ITU-R documents on tapes for the exchange of television programmes containing monophonic and stereophonic sound.

For completeness, the information on the is given in appendix 1 of this document.

Newer formats of television recorders have more than two audio tracks and it is recognised that many organizations may chose to use the extra tracks or track pairs for special purposes, e.g. multiple languages [3][4]. Because of the varied requirements, it is not possible to lay down a detailed recommendation covering these uses. However in these cases it is permitted to use tones of different frequencies to identify either the different monophonic tracks or stereo pairs used for different purposes. For the MAIN programme track, if monophonic, or tracks, if stereophonic, the frequency of 1 kHz should always be used. When a programme tape is exchanged, it is very important that details of such use is included on the accompanying documentation.

### **Bibliography**

- [1] ITU-R Recommendation BR.469-6: **Analogue composite television tape recording. Standards for the international exchange of television programmes on magnetic tape**
- [2] ITU-R Recommendation BR.778: **Analogue component television tape recording. Standards for the international exchange of television programmes on magnetic tape**
- [3] EBU Technical Recommendation R38-1992: **Allocation of audio channels in analogue tape recording formats for international exchange of programmes**
- [4] EBU Technical Recommendation R48-1996: **Allocation of audio channels on digital television recorders (formats D-1, D-2, D-3, D-5 and Digital Betacam)**

## Appendix

### Tape leaders for the exchange of television programmes

**Table 1 – Alignment leader for the exchange of recorded television programmes with monophonic sound (from ITU-R Recommendation BR.469-4)**

Tape section		Duration (s)	Picture	Sound (on any channel carrying programme sound)	Control track signal
Leader	Protection leader	10 (minimum)	Blank tape		
	Alignment leader	60 (minimum)	Alignment signal (Note 1)	1000 Hz at reference level (Note 2)	Uninterrupted
	Optional	5 (maximum)	Blank tape		
	Identification leader	15 (maximum)	Programme identification	Spoken identification preferred, or silences	Uninterrupted
	Cue-up leader	8	Black or cue (Note 4)	Silence or cue	
2		Black (Note 4)	Silence		
Programme (Note 3)	Playing time of programme	Programme			Uninterrupted
Run-out trailer	30 (minimum)	Black (Note 4)	Silence		

*Notes:*

- (1) Examples of suitable alignment signals for transverse-track recordings in 625-lines/50 field/s systems are given in ITU-R Recommendation BR.778.
- (2) See ITU-R Recommendation BR.469-6, Section 3.1
- (3) When the time-and-control code is recorded on the assigned longitudinal track, the time indication of the start of the programme should be shown on the label and documentation accompanying the tape.
- (4) In the case of colour recordings the black signal should be colour black. For composite recordings, it is highly desirable that the colour field sequence (8 fields in PAL, 4 fields in SECAM) is uninterrupted over the programme recording and the leader and run-out sections.

**Table 2 – Alignment leader for the exchange of recorded television programmes with stereophonic sound**

Tape section		Duration (s)	Picture	Sound track 1	Sound track 2	Control track signal
Leader	Protection leader	10 (minimum)	Blank tape			
	Alignment leader	60 (minimum)	Alignment signal (Note 1)	1000 Hz interrupted at reference level (Notes 2,3)	1000 Hz at reference level (Note 3)	Uninterrupted
	Optional	5 (maximum)	Blank Tape			
	Identification leader	15 (maximum)	Programme identification	Spoken identification preferred, or silence	Spoken identification preferred, or silence	Uninterrupted
	Cue-up leader	8	Black or cue (Note 4)	Silence or cue	Silence or cue	
2		Black (Note 4)	Silence	Silence		
Programme (Note 5)	Playing time of programme	Programme				Uninterrupted
Run-out trailer	30 (minimum)	Black (Note 4)	Silence	Silence		

*Notes:*

- (1) Examples of suitable alignment signals for transverse-track recordings in 625-lines/50 field/s systems are given in ITU-R Recommendation BR.778.
- (2) The tone should be interrupted for 0.25 s every 3 s to enable the identification of stereophonic recordings. Organizations that only very occasionally need to interchange stereophonic video tape recordings may make the interruption without using automatic equipment. Under these circumstances it is recognised that the specified interruption duration and period will not be strictly adhered to.
- (3) See ITU-R Recommendation BR.469-6, Section 3.1. The tone signals on both tracks must be coherent (i.e. from the same source) and in phase.
- (4) In the case of colour recordings the black signal should be colour black. For composite recordings, it is desirable that the colour field sequence (8 fields in PAL, 4 fields in SECAM) is uninterrupted over the programme recording and the leader and run-out sections.
- (5) When the time-and-control code is recorded on the assigned longitudinal track, the time indication of the start of the programme should be shown on the label and documentation accompanying the tape.