

**SPECIFICATION OF A SIGNAL FOR MEASUREMENT
OF THE CONTRAST RATIO OF DISPLAYS**

(Question ITU-R 211/11)

(1992-1994)

The ITU Radiocommunication Assembly,

considering

- a) that a reliable method to measure the contrast ratio of various displays is required;
- b) that the use of different signals can lead to different results;
- c) that the measurement of the contrast ratio should be carried out using a signal with an average picture level (APL) as close as possible to normal programme pictures,

recommends

- 1. that the test signal and method of measurement shown in Annex 1 should be employed to facilitate the consistent measurement of contrast ratio.

ANNEX 1

The test signal and method of measurement

The test signal (see Fig. 1) consists of a peak white level patch surrounded by four black level patches, all set against a background of grey. The grey level of the waveform is at 50% of the peak signal. The digital references to these levels are shown in Fig. 1. The luminance values of the peak white level patch, and of the four black level patches, are measured using a photometer.

The ratio R of the luminance of the black level, to that of the peak white, is expressed in the following formula, the inverse of which is the contrast ratio:

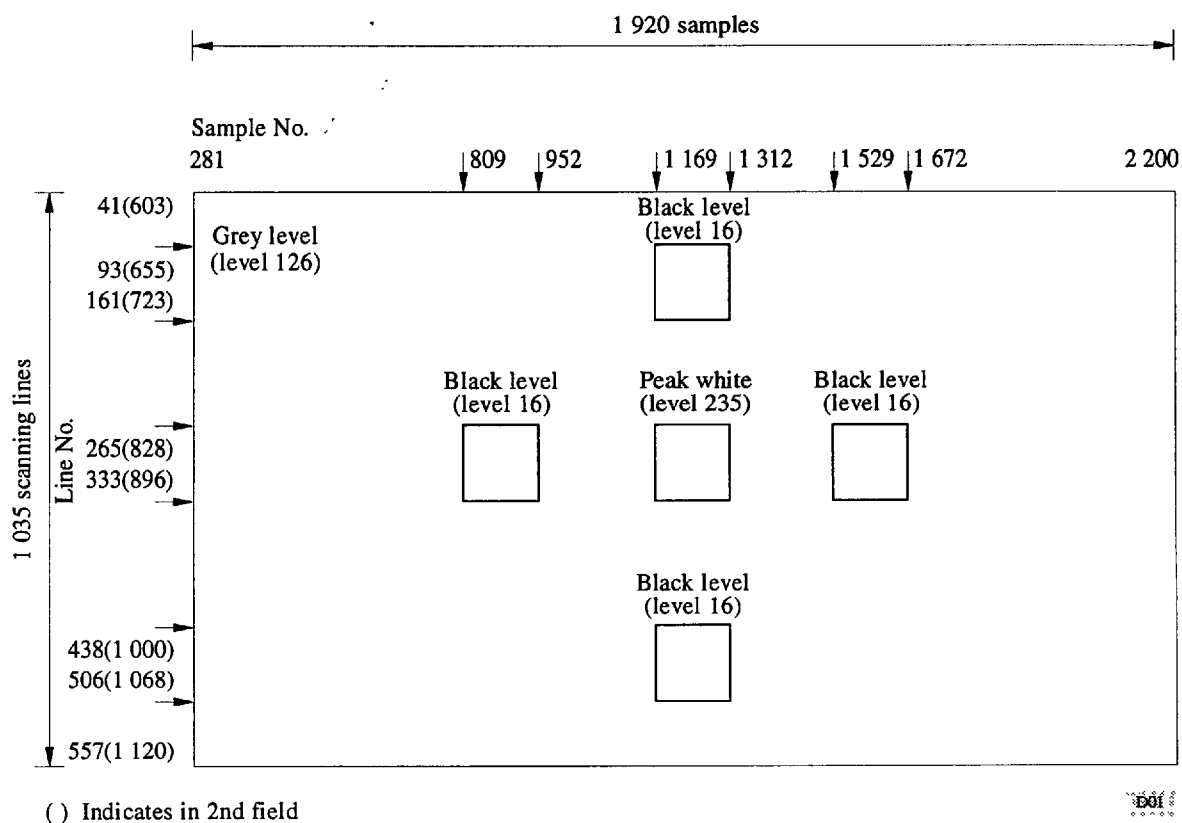
$$R = (L_{b1} + L_{b2} + L_{b3} + L_{b4}) / (4 \times L_w)$$

where:

L_w : measured luminance of peak white

L_{b1} to L_{b4} : measured luminance of black in the four areas.

FIGURE 1
Signal for measuring the contrast ratio



Sample and line positions shown are for a 16:9 1125/60 system. Equivalent positions should be derived for other 16:9 and 4:3 systems.