

EBU Technical Recommendation R92-1999

Active picture area and picture centring in analogue and digital 625/50 television systems

<i>EBU Committee</i>	<i>First Issued</i>	<i>Revised</i>	<i>Re-issued</i>
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The EBU is aware of a certain amount of confusion about the active picture area in the implementation and use of digital signals conforming to the ITU-R Recommendation BT.601 [1].

Recommendation BT.601 specifies a line length of 720 luminance pixels (13.5 MHz sampling). ITU-R Recommendation BT.470[2], specifies a line length of 52 μ s for 625 line analogue signals. This corresponds to 702 luminance pixels.

This apparent difference can lead to difficulties in conversion, especially if users wish to maintain the correct aspect ratio of the pictures.

Recommendation BT.601 accommodates modest variations in the position and length of analogue blanking which arise before a signal is digitised or when digital signals pass through any subsequent analogue process.

The EBU *recommends* that:

- In 625-line television systems sampled to ITU-R Rec. BT.601 part A, only the central 702 luminance samples of the digital active line (samples 9-710 inclusive) and their associated chrominance samples should be used to carry the active picture. The remaining 18 luminance samples and their associated chrominance samples may be used to carry picture information only but for no other purpose. It cannot be guaranteed that picture information in these samples will be displayed in either 4:3 or 16:9 aspect ratio images.
- The centre of the picture should retain its position throughout all production processes unless there are creative reasons to deliberately do otherwise.

Notes:

- *The centre of the image is located between pixels 359 and 360 in the horizontal direction.*
- *The centre of the image is located and midway between line 479 (field II) and line 167 (field I) in a 625-line interlaced raster in the vertical direction. (The vertical centre would be located between lines 332 and 333 in a notional progressively scanned raster.)[3]*

Bibliography

- [1] ITU-R Recommendation BT.601-5: **Studio encoding parameters of digital television for standard 4:3 and widescreen 16:9 aspect ratios**
- [2] ITU-R Recommendation BT.470-3: **Conventional television systems**
- [3] ITU-R Recommendation BT.1358: **Studio parameters of 625 and 525 line progressive scan television systems**