EBU Technical Recommendation R57-1998
Testing for conformity with ITU-R Recommendations BT.601 and BT.656

EBU Committee	*First Issued*	*Revised*	*Re-issued*
PMC	1989	1998	

Keywords: Measurements/Alignment

The EBU *considers* that:

- conformity tests are required following the widespread introduction of digital video signal processing equipment that is claimed to be operating in accordance with ITU-R Recommendations BT.601[1] and BT.656[2]. These tests should cover both type-acceptance and installation testing.
- ITU-R Recommendation BT.601 is not sufficient to specify fully the performance of digital video equipment. It defines only the essential parameters for the sampling of a video signal. Other factors, not defined in the Recommendation, play an important part in the performance of equipment.

Consequently an EBU Technical Information document, I15, was prepared in 1989. This contains a list of all those parameters which are considered to be necessary to check if operation of "601" equipment is to be assured, and suggests methods by which the checks can be carried out. I15 is limited to consideration of the 4:2:2 level of Rec. 601 and does not cover special tests for specific items of equipment, such as digital VTRs. Details of test signals are given in an appendix.

Recently, the EBU has revised Information I15 [3] but only those parts have been changed which need to be updated following amendments of the Recommendations BT.601 and BT.656. The remainder of the text has been left without modifications because the test methods described are still useful and still in use today. The bibliography has also been updated. The original Appendix 2 “Test instruments for component systems” has been withdrawn because it is out of date and no longer comprehensive.

The EBU has recently published a document, EBU Tech 3283 [4], covering more detailed measurements on Serial Digital Interface, SDI. This is intended for engineers who need to carry out detailed measurements on digital video and audio systems. Such measurements may be necessary for various reasons: planning, acceptance testing, maintenance and checking of signals during programme production and play out. A number of appendices give background explanations on several important measurements concepts and information on test instruments available for digital video signals.

The EBU *recommends*

- that Members wishing to test equipment or systems for conformity with ITU-R Recommendations BT.601 or BT.656, particularly the performance of the A/D and D/A convertors, should base their tests on the parameters and methods contained in EBU Technical Information document I15.
- that Members wanting more detailed guidance on the assessment of the technical performance of television studios which are designed entirely on the basis of digital component technology or which incorporate such technology in conjunction with analogue signals, should consult EBU document Tech 3283.

Bibliography

[1] ITU-R Recommendation BT.601-5: **Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios**

[2] ITU-R Recommendation BT.656-4: **Interfaces for digital component video signals in 525-line and 625-line television systems operating at the 4:2:2 level of Recommendation ITU-R BT.601 (Part A)**

[3] EBU Technical Information I15-1998: **Testing for conformity with ITU-R Recommendations BT.601 and BT.656**

[4] EBU document Tech 3283 (1996): **Measurements in digital component television studios** - 625-line systems at the 4:2:2 and 4:4:4 levels using parallel and serial interfaces (SDI)