



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

J.85

(ex CMTT.604)

(06/90)

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

TELEVISION AND SOUND TRANSMISSION

**DIGITAL TELEVISION TRANSMISSION OVER
LONG DISTANCES – GENERAL PRINCIPLES**

ITU-T Recommendation J.85

(Formerly Recommendation ITU-R CMTT.604)

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation J.85 (formerly Recommendation ITU-R CMTT.604) was elaborated by the former ITU-R Study Group CMTT. See Note 1 below.

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector (ITU-R).

Conforming to a joint decision by the World Telecommunication Standardization Conference (Helsinki, March 1993) and the Radiocommunication Assembly (Geneva, November 1993), the ITU-R Study Group CMTT was transferred to ITU-T as Study Group 9, except for the satellite news gathering (SNG) study area which was transferred to ITU-R Study Group 4.

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Recommendation J.85¹⁾

**DIGITAL TELEVISION TRANSMISSION OVER
LONG DISTANCES – GENERAL PRINCIPLES**

(1982; revised 1986, 1990)

The CCIR,

CONSIDERING

- (a) that a Recommendation 601 on digital coding in television studios based on a family of component codes has been adopted for 525-line and 625-line standards;
- (b) that it is desirable to transmit digital component signals through digital circuits;
- (c) that there will be different applications for long distance digital television transmission, for example:
 - *contribution*: to carry signals to production centres where post-production processing may take place;
 - *distribution*: to carry television programmes when no further post-production processing is expected (see Note 1);
- (d) that it is highly desirable to facilitate the international exchange of television programmes by making digital television transmission circuits throughout the world transparent to television signals to the same or a higher degree than is possible with analogue circuits;
- (e) that when establishing a digital transmission circuit on a global basis, account should be taken of the different digital transmission hierarchies and the H-channel rates and interfaces for ISDN recommended by the CCITT;
- (f) that bit-rate reduction techniques can be effective for reducing transmission costs,

UNANIMOUSLY RECOMMENDS

1. that, when carrying a television signal originated in digital form, entirely digital transmission circuits should be preferred. For these circuits the principles given in this Recommendation should be followed;
2. that the signals from digital television studios as described in Recommendation 601 should be preserved in their component coded form and should be the basis for signals transmitted over digital links;
 - Note 1* – In the present Recommendation and in the texts of CMTT concerning Question 14/CMTT, the term “distribution” refers to primary distribution (for example the transmission to the input of broadcast transmitters) and not to secondary distribution (delivery to the television consumer). It should be noted that the quality objectives in the two cases may be different.
 - Note 2* – Depending on various applications, for which examples are given in CONSIDERING (c), the coding techniques (which are under study according to Study Programme 14A/CMTT) have to take into account the corresponding post-production processing requirements and quality requirements defined by Study Group 11.
3. that for each application, for which examples are given in CONSIDERING (c), a single transmission coding technique (see Note 2) should be used for each of the 525-line and 625-line television signals;
4. that for each application, for which examples are given in CONSIDERING (c), a single transmission multiplexing structure for video, sound and ancillary signals should be used for each of the 525-line and 625-line standards, and, if possible, for both standards;
5. that the bit-rate of each multiplex structure should be compatible with an appropriate level of the digital transmission hierarchy or of the H-channel rates for ISDN recommended by the CCITT.

¹⁾ Formerly Recommendation ITU-R CMTT.604.