

7.9 Other terminal equipments

Recommendation G.791

GENERAL CONSIDERATIONS ON TRANSMULTIPLEXING EQUIPMENTS

(Geneva, 1980; further amended)

The CCITT,

considering

the advantages offered in some cases by direct through-connection (without voice-frequency interfaces) from FDM signals to TDM signals and vice versa,

recommends in such cases

- (1) the use of the transmultiplexing equipment described in Definition 4020 of Recommendation G.701;
- (2) Recommendation G.792 which contains the characteristics common to all transmultiplexing equipment;
- (3) Recommendation G.793 which concerns 60-channel transmultiplexers providing 2048 kbit/s signals and using A-law encoding;
- (4) Recommendation G.794 which concerns 24-channel transmultiplexers providing 1544 kbit/s signals and using μ -law encoding.

1 Complementary definitions

1.1 type P transmultiplexer (TMUX-P)

A transmultiplexing equipment in which the analogue interface is made up of several groups.

1.2 type S transmultiplexer (TMUX-S)

A transmultiplexing equipment in which the analogue interface is made up of one or more supergroups.

1.3 hierarchical transmultiplexer

A transmultiplexer in which the digital interfaces satisfy the provisions of Recommendations G.703 and G.704 and the analogue interfaces those of Recommendation G.233 [1].

1.4 transmultiplexer channel

A frequency band of 4000 Hz on the analogue side, corresponding to a bit rate of 64 kbit/s on the digital side, which permits the transmission of a signal limited to the telephone band 300-3400 Hz. Access may be gained to a given channel:

- either at the level of the time slot associated with the relevant channel of the TDM signal;
- or at the level of the frequency band ($f_p, f_p \pm 4000$ Hz) of the FDM signal, f_p being the virtual carrier frequency associated with the channel concerned. The + sign corresponds to the case of the base supergroup, the - sign to the case of the base group.

Note — Correspondence between out-of-band signalling on the analogue side and channel associated signalling on the digital side will be covered in the Recommendations specific to the various transmultiplexers.

2 Transmultiplexer application

The application on transmultiplexers for the interconnection of digital and analogue networks is illustrated in Supplement No. 28.

Reference

- [1] CCITT Recommendation *Recommendations concerning translating equipments*, Vol. III, Rec. G.233.

Recommendation G.792

CHARACTERISTICS COMMON TO ALL TRANSMULTIPLEXING EQUIPMENTS

(Geneva, 1980; further amended)

The CCITT,

recommends

that the characteristics below be respected by all the transmultiplexing equipments defined in Recommendation G.791.

Recommendation O.133 contains information about test equipment. Account should be taken of the measurement accuracy provided by test equipment designed in accordance with that Recommendation.

The following specifications are based on ideal measuring equipment. Therefore, they do not include any margin for measurement errors.

To avoid level errors produced as a result of the use of test frequencies which are sub-multiples of the PCM sampling rate, the use of integer sub-multiples of 8 kHz should be avoided.

Where a nominal reference frequency of 1020 Hz is indicated (measurement of attenuation/frequency distortion and adjustment of relative levels), the actual frequency should be 1020, +2 to -7 Hz in accordance with Recommendation O.6 [18].

1 Coding law

Transmultiplexers should satisfy Recommendation G.711, § 3.

2 Sampling rate of PCM channels

The nominal sampling rate of PCM channels is $8000 \text{ Hz} \pm 50 \cdot 10^{-6}$ according to Recommendation G.711, § 2.

3 Amplitude limitation of PCM channels

In accordance with Recommendation G.711, § 4, the theoretical load capacity of PCM channel is +3.14 dBm0 for the A-law and +3.17 dBm0 for the μ -law.

4 Accuracy of the analogue virtual carriers

The analogue virtual carriers should satisfy the Recommendation cited in [1].

5 Saturation level at the input of the analogue group

The transmultiplexers should be able to accept at their analogue inputs, levels corresponding to the equivalent peak powers defined in Table 3/G.223 [5] (for example, +19 dBm0 for a group and +20.8 dBm0 for a supergroup).