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SERIES H: TRANSMISSION OF NON-TELEPHONE
SIGNALS

Characteristics of data signals

**Transmission of wide-spectrum signals (data,
facsimile, etc.) on wideband group links**

ITU-T Recommendation H.52

Extract of **Red Book Fascicle III.4 (1984)**

NOTES

- 1 ITU-T Recommendation H.52 was published in Fascicle III.4 of the *Red Book*. This file is an extract from the *Red Book*. While the presentation and layout of the text might be slightly different from the *Red Book* version, the contents of the file are identical to the *Red Book* version and copyright conditions remain unchanged (see below).
- 2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

TRANSMISSION OF WIDE-SPECTRUM SIGNALS (DATA, FACSIMILE, ETC.) ON WIDEBAND GROUP LINKS

(Mar del Plata, 1968; amended at Geneva, 1972, 1976 and 1980)

Links meeting the provisions of Recommendation H.14 should be used.

1 Power level

1.1 The mean power level of the wideband signal over the range 60-108 kHz should not exceed $-15 + 10 \log_{10} 12 = -4$ dBm0.

1.2 In order to limit cross-modulation effects in wideband systems, the power level of any individual spectral component in the band 60-108 kHz should not exceed -10 dBm0 except for spectral components which are at multiples of 4 kHz (see the Recommendation cited in [1]).

With regard to its effect on non-telephone type signals, a discrete component is defined as a signal of sinusoidal form with a minimum duration of about 100 ms.

1.3 To protect the group or supergroup link pilots (used to establish wideband circuits) against other wide-spectrum signals (data, facsimile, etc.), it is recommended that the power spectrum emitted about the pilot frequency be limited in the equipment which transmits these signals (see Figure 1/H.52).

For continuous spectrum signals, the spectral density in the band $f_0 \pm 25$ Hz should not exceed 70 dBm0/Hz.

Other indications are given in the Recommendation cited in [2].

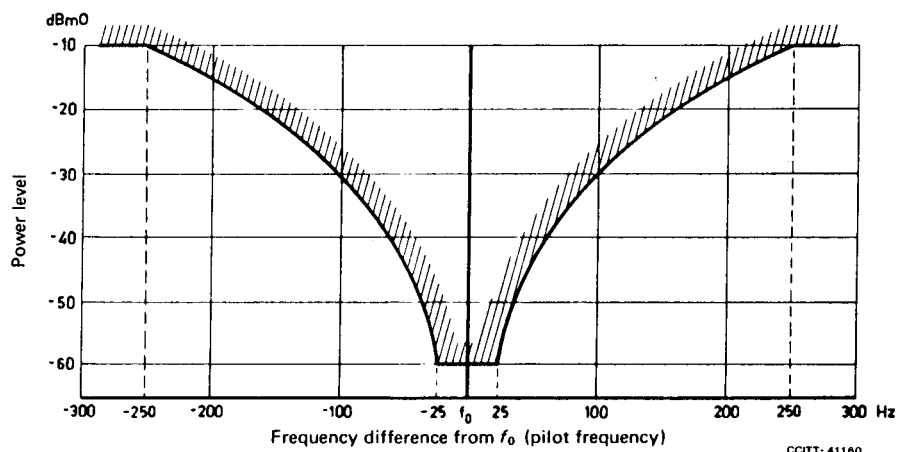


FIGURE 1/H.52

Maximum permissible level of discrete frequency components of wide-spectrum signals
(group and supergroup signals) in the vicinity of group and supergroup pilot frequencies

2 Limitation of the power spectrum outside the band 60-108 kHz

The power level produced by the terminal equipment connected to the wideband group link shall not exceed -73 dBm_{0p} in any 4-kHz band outside the range 60-108 kHz.

However, for the frequencies 48 and 56 kHz, with a precision of ± 1 Hz, an unweighted value of -50 dBm₀ is permitted.

If the terminal equipment itself does not meet these conditions (e.g. a modem which just complies with the provisions of Recommendation V.35 [3]), an additional filter must be applied before the point of connection to the leased group link.

References

- [1] CCITT Recommendation *Overall recommendations relating to carrier-transmission systems*, Vol. III, Rec. G.221, § 2.2.
- [2] CCITT Recommendation *Pilots on groups, supergroups, etc.*, Vol. III, Rec. G.241, § 7.
- [3] CCITT Recommendation *Data transmission at 48 kilobits per second using 60-108 kHz group band circuits*, Vol. VIII, Rec. V.35.