

RECOMMENDATION 792*

**INTERFERENCE PROTECTION RATIOS FOR THE
BROADCASTING-SATELLITE SERVICE (TELEVISION)
IN THE 12 GHz BAND**

(Questions 83/11, 87/11, 88/11 and 91/11)

(1992)

The CCIR,

considering

- a) that the interference protection ratio is a primary parameter for the broadcasting-satellite service (BSS) (television);
- b) that certain values of protection ratios for television signals have already been used for planning purposes by the WARC-BS-77 and RARC SAT-83;
- c) that more accurate values of protection ratio required for frequency modulated television systems, using time domain multiplex for the video components, and digital techniques for associated sound and data, are now well established;
- d) that the existing Plans for the BSS in the 12 GHz band may be reconsidered in the future and that the planning will require protection ratio data for the types of wanted and interfering signals involved;
- e) that the selectivity characteristics of receiving equipment for the BSS (television) are designed taking into account these values,

recommends

1. that the protection ratio templates given in Annex 1 should be used for the planning of broadcasting-satellite systems using conventional frequency modulated TV signals;
2. that for satellite broadcasting using conventional frequency modulated TV and the channel spacings specified in Appendix 30 of the Radio Regulations, but with a different frequency deviation, the formulae given in Annex 2 could be used to obtain an estimation of the co-channel protection ratio PR_0 measured under the reference conditions described in Recommendation 600. In these formulae, it is assumed that the modulation parameters of the wanted and unwanted signals are the same;
3. that to facilitate the coordination of MAC systems in the 12 GHz band, the values shown in Table 1 (D2-MAC), Table 2 (D-MAC) and Tables 3, 4 and 5 (B-MAC) of Annex 3 could be used as protection ratios.

Note 1 – Data applicable to new systems (for example HDTV analogue or digital) are not yet available, but will be included in future revisions of this Recommendation.

* *Note from the Director, CCIR* – Report 634-4 was used in preparing this Recommendation.

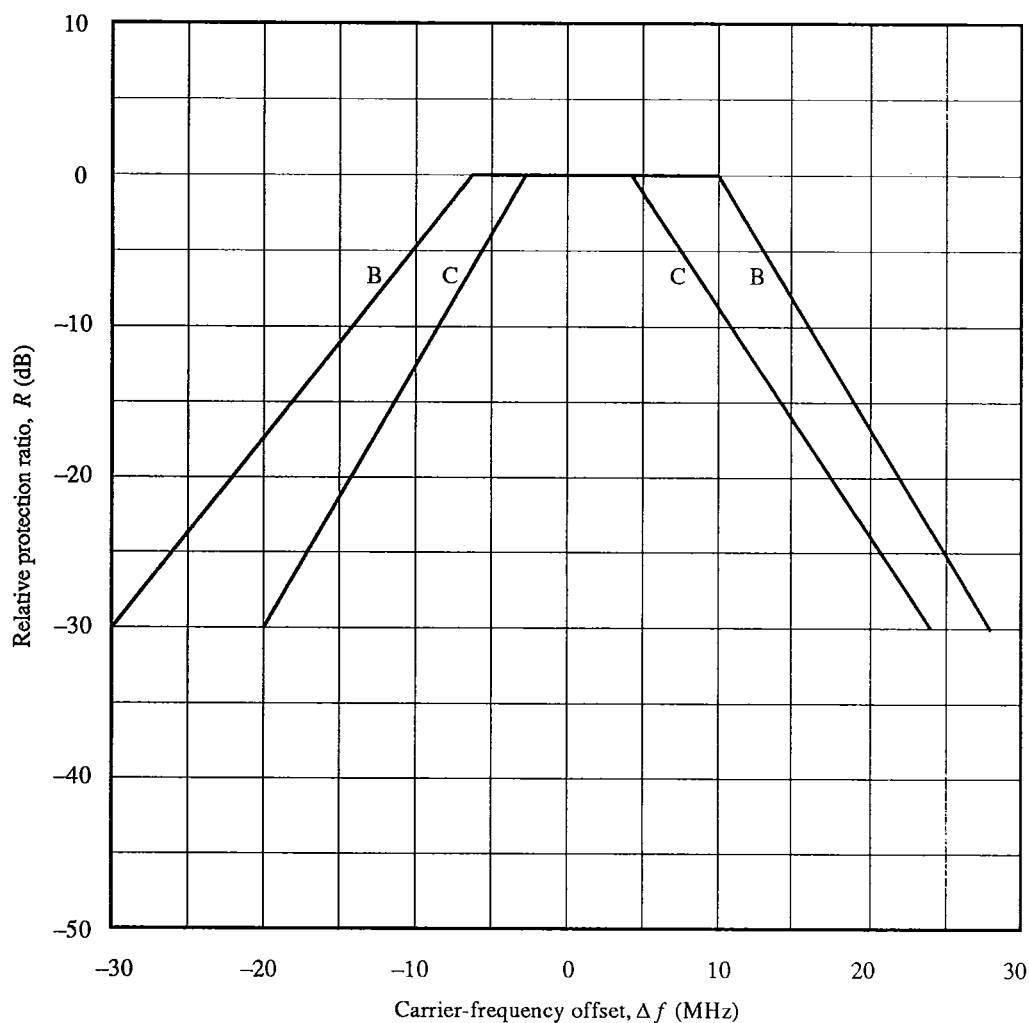
ANNEX 1

**Protection ratios for satellite broadcasting of conventional
frequency modulated television signals**

1. For systems SECAM, PAL and NTSC (Regions 1 and 3) with deviation sensitivity 13.5 MHz and pre-emphasis for 625 lines (Region 1) and 525 lines (Region 3), use Fig. 1a.
2. For system NTSC (Region 2) with deviation sensitivity 12 MHz, and pre-emphasis for 525 lines, use Fig. 1b.

FIGURE 1a

Reference case protection ratios relative to co-channel values



$$\Delta f = (f_{\text{interfering}} - f_{\text{wanted}})$$

Curves A: not used

- B: television/frequency modulation-wanted, television/frequency modulation interfering, co-channel value: 30 dB (Regions 1 and 3)
- C: television/frequency modulation-wanted, television/vestigial sideband modulation interfering, co-channel value: 30 dB (Regions 1, 2 and 3)