

PCC.II/RES. 2 (I-03)¹

**POWER FLUX-DENSITY (PFD) LIMITS IN THE BANDS 37.5-40 GHz FOR THE
FIXED-SATELLITE SERVICE**

The I Meeting of the Permanent Consultative Committee II: Radiocommunications including Broadcasting;

CONSIDERING:

- a) That WRC-2000 established provisional pfd limits for the fixed-satellite service (FSS) (space-to-Earth), the mobile-satellite service (space-to-Earth) and the broadcasting-satellite service (BSS) in the bands 37.5-40 GHz and 40.5-42.5 GHz;
- b) That Resolution **84** (WRC-2000) identified the need to protect certain high-density fixed service (FS) systems in the band 37.5-40 GHz in Region 2 by resolving that before an Administration brings into use in Region 2 a frequency assignment for a GSO FSS network in the band 37.5-40 GHz, it shall seek agreement of any Administration in Region 2 on whose territory the pfd levels exceed the Table **21-4** values minus 12 dB;
- c) That Resolution **84** (WRC-2000) invited the ITU-R to study:
 - 1) the adequacy of the pfd limits to protect the FS in the bands 37.5-40 GHz and 40.5-42.5 GHz from FSS and MSS space-to-Earth transmissions;
 - 2) the technical and operational characteristics and pfd values for the BSS in the range 40.5-42.5 GHz, and
 - 3) in the bands 37.5-40 GHz and 42-42.5 GHz, the nominal clear-sky pfd levels, and the percentage of time during which the pfd may be exceeded to overcome fading conditions between the satellite and one or more geographically separated Earth stations in order to protect the FS while permitting operation of FSS Earth stations using, for example, coordinated large antennas;
- d) That ITU-R has confirmed the technical characteristics of the BSS and MSS satellites in the 40 GHz range are understood to be sufficiently similar to those of FSS satellites as to permit the analyses and pfd results applicable to FSS/FS sharing to apply as well to the BSS and MSS sharing cases;
- e) That ITU-R has confirmed the provisional pfd limits established by WRC-2000 in Table **21-4** for the FSS, MSS and BSS but notes that some administrations in Region 2 have determined that it will be necessary for a GSO FSS satellite providing services within their territory to reduce the pfd levels that are produced during clear-sky operation by 12 dB from the levels in Table **21-4** in order to adequately protect certain broadband wireless access FS deployments in the band 37.5-40 GHz, and
- f) That it is desirable to provide guidance to the Member States of CITEL on principles governing the use of the band 37.5-40 GHz in Region 2,

TAKING INTO ACCOUNT:

¹ Document CCP.II-RADIO/doc. 182/03 cor.1

- a) That the use of downlink fade compensation techniques by FSS systems may affect the performance of FS and FSS links operating in unfaded conditions in the same frequency band;
- b) That the use of downlink fade compensation techniques affects the design of FSS links, and
- c) That the pfd from any FSS satellite should be at the level required to meet the designed FSS link availability and performance objectives, recognizing the sharing conditions with the FS,

RESOLVES:

That the Annex be utilised as guidance in establishing principles to govern the use of the band 37.5-40 GHz by the fixed and fixed-satellite services,

INVITES MEMBER STATES OF CITEL:

To participate in studies to determine the appropriate value of downlink power control by the FSS in the band 37.5-40 GHz in Region 2,

INSTRUCTS THE EXECUTIVE SECRETARY:

To send this Resolution to the Member Administrations of CITEL.

ANNEX

**PRINCIPLES TO GOVERN THE USE OF THE BAND 37.5-40 GHz
BY THE MEMBER STATES OF CITEL**

CITEL Member States:

- (1) will obtain concurrence of affected Administrations before authorizing a frequency assignment for an FSS network in the 37.5-40 GHz band if such an FSS network would produce a power flux-density in excess of the values in Table **21-4** minus 12 dB in the affected country's territory, noting that the -12 dB value is subject to review as per item (3) below;
- (2) will consider the results of technical studies with regard to the appropriate value of downlink power control and adjust the criteria in item (1) above if warranted and agreed upon;
- (3) will take steps to reflect these principles in their respective domestic policies to ensure that operators of satellite systems wishing to implement services will be aware of their responsibilities and requirements;
- (4) recognize that each Administration is free to declare that it is under no obligation to accept the provision of FSS within its territory if it believes that emissions from satellites providing services in

its territory would cause unacceptable interference to its terrestrial services in the bands 37.5-40 GHz;

- (5) recognize that these principles are subject to review at any time at the request of any CITEL Member State.