

Recommendation 14-1

**PROTECTION OF DEEP SPACE RESEARCH EARTH STATIONS
FROM LINE-OF-SIGHT INTERFERENCE IN THE BANDS
2290-2300 MHz, 8400-8450 MHz AND 31.8-32.3 GHz**

The SFCG,

CONSIDERING

- a) that, for deep space Earth stations, data availability objectives have been used to determine the maximum acceptable performance degradation;
- b) that, based on the maximum acceptable performance degradation for these stations, the maximum allowable interference power at the deep space station receiver has been derived¹ and is:

Table 1: Maximum Allowable Interference Power to Deep Space Earth Station Receivers

Frequency	Maximum allowable interference power spectral density (dB(W/Hz))
2290-2300 (MHz)	-222.5
8400-8450 (MHz)	-220.9
31.8-32.3 (GHz)	-218.0

- c) that, for the purpose of initiating a process of coordination, it is agreed that the corresponding maximum power spectral flux density is:

Table 2: Maximum Interference Power Spectral Flux Density

Frequency	Maximum interference power spectral flux density (dB(W/m Hz))
2290-2300 (MHz)	-257.0
8400-8450 (MHz)	-255.1
31.8-32.3 (GHz)	-251.0

¹ Recommendation ITU-R SA.578

- d) that any source exceeding the maximum allowable interference power is potentially harmful to space research (deep space), whether that interference arises from a source operating in-band or from in-band spectral components arising from a source operating in an adjacent band;
- e) that loss and subsequent reacquisition of deep space earth station receiver synchronization due to momentary interference in a low data rate channel results in a data outage significantly exceeding the duration of the initiating interference event;

NOTING

that a predicted interference potential exceeding the maximum power spectral flux density may be found acceptable on a case-by-case basis;

RECOMMENDS

1. that when a predicted interference potential exceeds the maximum interference power spectral flux density given in Table 2, the provisions of SFCG RES A12-1 shall be applied;
2. that the values given in Table 2 apply for sources whether operating directly in-band or out of band and producing in-band spectral components.