

RECOMMENDATION ITU-R S.1426

**AGGREGATE POWER FLUX-DENSITY LIMITS, AT THE FSS SATELLITE ORBIT
FOR RADIO LOCAL AREA NETWORK (RLAN)* TRANSMITTERS
OPERATING IN THE 5 150-5 250 MHz BAND SHARING
FREQUENCIES WITH THE FSS (RR No. S5.447A)**

(Questions ITU-R 244/4 and ITU-R 32/4)

(2000)

The ITU Radiocommunication Assembly,

considering

- a) that the band 5 150-5 250 MHz is allocated worldwide to FSS (Earth-to-space) for use by non-GSO MSS feeder links on a co-primary basis without restrictions in time as per RR No. S5.447A;
- b) that the band 5 150-5 250 MHz is allocated via RR No. S5.447 to the mobile service in a number of countries subject to coordination under RR No. S9.21;
- c) that RLANs would be widely deployed possibly without the benefit of coordination among administrations or system operators;
- d) that interference from the proposed RLANs would degrade the performance of a non-GSO satellite system relative to its performance in the absence of sharing with these networks;
- e) that wideband interference from RLAN to FSS has an effect on communications carriers similar to that of additional thermal noise;
- f) that it is necessary to determine the maximum allowable interfering RF power in a satellite system to establish the maximum transmitter power and maximum transmitted power density of RLAN devices,

recommends

1 that RLANs sharing the same frequency bands with non-GSO feeder links in the FSS be designed in such a manner that their aggregate RLAN power flux-density be limited to $-124 - 20 \log_{10}(h_{SAT}/1\,414)$ dB(W/(m² · 1 MHz)) equivalently $-148 - 20 \log_{10}(h_{SAT}/1\,414)$ dB(W/(m² · 4 kHz)), (where h_{SAT} is the altitude of the satellite (km)), at the FSS satellite orbit for spacecraft using full earth coverage receive antennas.

NOTE 1 – By the term “aggregate” it is meant that the interference to the satellite receiving beam is to be calculated from all of the RLANs within the field of view of the NGSO satellite receiving beam.

NOTE 2 – Further studies are required for NGSO spacecraft with multiple narrow spot beams.

* In this Recommendation RLAN is to mean radio local area network, or any other transportable or fixed devices offering local network connectivity (e.g. high performance RLANs (HIPERLANs), U-NII, wireless local area network (WLAN), or others; see also Recommendation ITU-R F.1244).