IEEE P802.11
Wireless LANs

PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R M. [8A-9B-T5/AA]

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JRG 8A-9B

PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R M.[8A-9B-T5/AA]

E.I.R.P. DENSITY LIMIT AND OPERATIONAL RESTRICTIONS FOR RLANS[1] OR OTHER WIRELESS ACCESS TRANSMITTERS OPERATING UNDER RR S5.447 IN ORDER TO ENSURE THE PROTECTION OF NGSO MSS FEEDER LINKS IN THE FREQUENCY BAND 5 150 - 5 250 MHz

The Joint Rapporteur Group 8A-9B (JRG 8A-9B) has prepared the preliminary draft Recommendation in Attachment 1, which is included here for information of Working Party 8A. This has been a controversial topic within JRG 8A-9B and the document needs further work. In particular, it is expected that it will be considered at the meeting of Working Party 4A in April 1999. The preliminary draft Recommendation would then be finalized at a meeting of JRG 8A-9B. Since Working Party 8A does not plan to meet before the meeting of Study Group 8 in November 1999, where the draft Recommendation would be considered for adoption, in order to be able to submit it to Study Group 8, the JRG 8A-9B would like Working Party 8A to consider these options:

1. Give permission to JRG 8A-9B to submit directly to Study Group 8 (through the Chairman of Working Party 8A).
2. Convene a special half day meeting of Working Party 8A, just prior to the meeting of Study Group 8, to consider adoption of the draft Recommendation for submission to Study Group 8.

[1] In this Recommendation RLAN means Radio Local Area Network, or any other portable or fixed devices offering local network connectivity (WLAN or others; see also Recommendation ITU-R F.1244 and PDNR 8A-9B/TEMP/20).

Attachment: PDNR [Doc. 8A-9B/TEMP/22(Rev.1)]

JRG 8A-9B

PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R M.[8A-9B-T5/AA]*, **

E.I.R.P. DENSITY LIMIT AND OPERATIONAL RESTRICTIONS FOR RLANS[2] OR OTHER WIRELESS ACCESS TRANSMITTERS OPERATING UNDER RR S5.447 IN ORDER TO ENSURE THE PROTECTION OF NGSO MSS FEEDER LINKS IN THE FREQUENCY BAND 5 150 - 5 250 MHz

(Questions ITU-R 212/8 and ITU-R 142/9)

The ITU Radiocommunication Assembly,

considering

a) that the band 5 150 - 5 250 MHz is allocated worldwide to the FSS (Earth-to-space) for use by NGSO MSS feeder links on a primary basis without restriction in time as per S5.447A;

b) that the band 5 150 - 5 250 MHz is also allocated on a worldwide primary basis to the Aeronautical Radio Navigation Service (ARNS) under Article S.5;

c) that the band 5 150 - 5 216 MHz is allocated to the FSS (space-to-Earth) under S5.447B and under the provisions of Resolution 46(Rev.WRC-97)/No. S9.11A for the use of NGSO MSS feeder links on a worldwide basis;

d) that the band 5 150 - 5 216 MHz is also allocated to the feeder links of radiodetermination satellite service (RDSS space-to-Earth) subject to footnote S5.446;

e) that the band 5 150 - 5 250 MHz is also allocated via footnote S5.447 to the mobile service on a co-primary basis in a limited number of countries and subject to coordination under S9.21;

f) that some administrations are considering the introduction of RLANs in respect of the mobile service footnote S5.447 in the band 5 150 - 5 250 MHz on a national basis under an unlicensed regime and un-coordinated basis;

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* This Recommendation was jointly developed by experts of ITU-R Study Groups 8 and 9, and future revisions should be undertaken jointly (JRG 8A-9B).

** This Recommendation should be brought to the attention of ITU-R Study Group 4 (WP 4A).

2 In this Recommendation RLAN means Radio Local Area Network, or any other portable or fixed devices offering local network connectivity (WLAN or others; see also Recommendation ITU-R F.1244 and PDNR 8A-9B/TEMP/20).

g) that the potential large scale deployment of RLAN transmitters and other wireless portable transmitters in the band 5 150 - 5 250 MHz within the above allocation (S5.447) may cause unacceptable levels of interference and reduction in satellite capacity to NGSO MSS satellite receivers operating their feeder-uplinks in this band under S5.447A and that therefore the medium- to long-term sharing may not be feasible;
h) that there is a need to protect different types of satellite, including those being developed, employing various modulation and access schemes (e.g. narrow-band TDMA-FDMA and wideband CDMA-FDMA);
j) that there is a need to protect the long-term use of the 5 150 - 5 250 MHz band by the NGSO MSS feeder uplinks (Earth-to-space) S5.447 (e.g. non-regenerative and regenerative satellite systems);
k) that there is a need to specify appropriate restrictions to e.i.r.p. density limit for RLAN and other wireless access transmitters in this band in order to protect non-GSO MSS feeder-links;
l) that the deployment of RLAN applications in this band is intended mainly for indoor use;
m) that for the purpose of the sharing studies it has been assumed that 99% of the RLANs are expected to operate indoor if a restriction to indoor use is imposed;
n) that the excess path loss provided by indoor to outdoor propagation environment can be considered beneficial to the sharing between NGSO MSS and RLANs,

recommends

1 that administrations should ensure that the mean[3] e.i.r.p. density limit of RLAN or other wireless access transmitter devices operating in the band 5 150 - 5 250 MHz under RR S5.447 should be no greater than 10 mW in any 1 MHz (or equivalently 0.04 mW in any 4 kHz) per transmitter, in conjunction with an overall mean e.i.r.p. of 200 mW per transmitting device (NOTE 1, NOTE 2);
2 that administrations should take measures, as far as practicable, to ensure that RLAN or other wireless access transmitters are operated indoors in the bands 5 150 - 5 250 MHz under S5.447;
[3a that for protection of MSS feeder links, power flux-density limit of total RLAN interference observed at the victim satellite receiver should be no greater than X dB(W/m^2 per MHz) or Y dB(W/m^2 per 4 kHz);]
One administration and one Sector Member alternatively proposed:
[3b that RLANs could be newly deployed in the 5 150 - 5 250 MHz under footnote S5.447 on a short-term interim time-frame (until year - time to be determined)];

NOTE 1 - The values of e.i.r.p. and e.i.r.p. spectral density limits in *recommends* 1 are basically derived from the RLAN operational condition stated in *recommends* 2. These limits will be reviewed in the sharing studies to be conducted by Study Group 4 (Working Party 4A).

[3] The "mean" power refers here to the e.i.r.p. radiated during the transmission burst at the power control protocol which corresponds to the highest power, if power control is implemented.

[NOTE 2a - For a particular type of RLANs standard (HIPERLANs Type 1), the mean e.i.r.p. limit defined in *recommends* 1 should apply, while the e.i.r.p. density limit should apply only during the payload transmission. This is permitted due to the limited market expected for these specific devices and to the late phase of their development.]

[NOTE 2b - Due to the imminent market deployment by some administrations of a particular type of RLAN standard (HIPERLAN type 1), the e.i.r.p. density limit of up to 40 mW/1 MHz may be allowed in order to take into account for the low bit rate (1.4 Mbps) GMSK transmissions of the HIPERLAN type 1 standard. Such an upper limit has been agreed to apply only on a interim time basis (i.e. until 2002), after which it is assumed that other more efficient types of RLAN standards have been developed and this whole note will not be applicable.]