

Recommendation T/R 01-04 (Oslo 1991, revised in Madrid 1992)

**USE OF LOW POWER DEVICES (LPD) USING INTEGRAL ANTENNAS
AND OPERATING IN HARMONIZED FREQUENCY BANDS**

Recommendation proposed by the "Frequency Management" Working Group (FM)

Text of the Recommendation adopted by the "European Radiocommunications Committee" (ERC):

"The European Conference of Postal and Telecommunications Administrations,

considering

- a) that it is necessary to develop a clear and simple definition for LOW POWER DEVICES,
- b) that there is increasing interest in the use of LOW POWER DEVICES in harmonised frequency bands for an increasing number of applications,
- c) that in general these applications do not require protection or detailed frequency planning,
- d) that applications requiring protection are covered by other CEPT Recommendations,
- e) that the technical characteristics for such equipment are covered by ETSI standards,
- f) that the maximum level of spurious emissions from such equipment is currently under study within CCIR and consequently CEPT will revisit this question at an appropriate point in the future,

noting

that studies are in progress within CEPT, CCIR and CISPR to establish appropriate limit values for spurious emission from radio communication and other equipment,

recommends

1. to adopt for LOW POWER DEVICES the following definition: non-public radio devices with integral antenna which radiate in the frequency bands and up to a power level or produce the equivalent field strength as given in Table 1, working on a non-interference and non-protected basis and which do not require frequency planning,
2. that LPDs shall be type approved according to ETS [801 A] and shall be marked "CEPT-LPD" in accord with Recommendation T/R 71 03 E,
3. that LPDs shall conform to power limits and operate in the frequency bands listed in Table 1,
4. that LPDs shall be exempted from licensing or shall be subject to a general licence depending on national regulations,
5. that the preliminary maximum level of spurious emission of the transmitters outside the assigned frequency bands and the radiation levels of the receivers in all bands are as given in Table 2.
6. that all the CEPT regulatory Authorities shall permit the free circulation for use of radio equipment provided that the equipment is type approved and bears a mark in accordance with recommends 2."

Table 1 (T/R 01-04 E)

Frequency bands	LOW POWER DEVICES Power/Field strength limits
6.765-6.795 MHz	65 dB μ V/m (30m)
13.553-13.567 MHz	65 dB μ V/m (30m)
26.957-27.283 MHz	10 mW e.r.p.
40.660-40.700 MHz	10 mW e.r.p.
433.05-434.79 MHz	10 mW e.r.p.
2.400-2.500 MHz	10 mW e.i.r.p.
5.725-5.875 MHz	25 mW e.i.r.p.
24.00-24.25 GHz	100 mW e.i.r.p.
61.00-61.50 GHz	100 mW e.i.r.p.
122-123 GHz	100 mW e.i.r.p.
244-246 GHz	100 mW e.i.r.p.

Field strength limits are the maximum values within the assigned frequency band.
Power limits are the total values within the assigned frequency band.

Table 2 (T/R 01-04 E)

Spurious emissions and radiations outside the operating frequency bands

Frequency bands	Power/Field strength limits/ Measurement bandwidth
15-135 kHz	65 dB μ V/m (30m)/200 Hz
135 kHz-30 MHz	34 dB μ V/m (30m)/9 kHz
47-74 MHz	4 nW operating /120 kHz
87.5-108 MHz	2 nW standby /120 kHz
108-118 MHz	2 nW standby /120 kHz
174-230 MHz	2 nW receiver /120 kHz
470-862 MHz	2 nW receiver /120 kHz
Other frequencies below 1000 MHz	250 nW operating /120 kHz 2 nW standby /120 kHz 2 nW receiver /120 kHz
Frequencies above 1000 MHz	1 μ W operating /1 MHz 20 nW standby /1 MHz 20 nW receiver /1 MHz