

Recommendation T/R 10-01 (Oslo 1991, revised in Madrid 1992)

**WIDE BAND DATA TRANSMISSION SYSTEMS
USING SPREAD-SPECTRUM TECHNOLOGY IN THE 2.5 GHz BAND**

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

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

INTRODUCTION

In 1991 the European Radiocommunications Committee published ERC Report 1 on the harmonisation of frequency bands for Radio Local Area Networks (RLANs). Subsequently it was recognised that it would be preferable to identify the frequency bands to be used for Wide Band Data Transmission Systems such as RLANs before ETSI started to develop the relevant ETSS.

In order to enable the rapid deployment of the market a general requirement was identified for a regulatory regime requiring little or no frequency coordination for individual systems.

One possibility would be to accommodate Wide Band Data Transmission Systems in ISM frequency bands. The sharing conditions in most ISM frequency bands are not ideal due to the use of these bands for other low power devices as well as for ISM applications. However, the methodologies developed for assessing compatibility between spread-spectrum and narrow band systems show that satisfactory and reliable operation for Wide Band Data Transmission Systems is possible in an ISM environment.

It is considered that the ISM frequency band 2400-2500 MHz offers the best possibility for meeting this requirement which is the lowest ISM band available in Europe offering sufficient bandwidth whilst still providing sufficient in-building penetration to facilitate cost effective and flexible system applications.

However, it is recognised that the future ETSI HIPERLAN standard, requiring higher data rates, will necessitate a more predictable sharing environment. Therefore, CEPT is in the process of developing a separate Recommendation for HIPERLANs operating in the 5 GHz range and in the band 17.1-17.3 GHz. The DECT system developed by ETSI also provides RLAN facilities.

The following Recommendation is therefore agreed by CEPT:

“The European Conference of Postal and Telecommunications Administrations,

considering that

- (a) CEPT has a long-term objective to harmonise the use of radio frequencies throughout Europe,
- (b) there is an emerging requirement for Wide Band Data Transmission Systems using radio, thus offering increased flexibility,
- (c) ETSI will be developing an appropriate standard for such applications,
- (d) the 2.5 GHz ISM allocation provides the best means of meeting the requirement in terms of spectrum availability, bandwidth and good in-building penetration,
- (e) there is a general requirement for a regulatory regime which enables the rapid deployment of Wide Band Data Transmission Systems with minimal frequency planning,
- (f) some countries outside Europe have already designated frequency spectrum in the 915 MHz and 2450 MHz ISM frequency bands for such systems using spread-spectrum technology,
- (g) the 915 MHz frequency band is designated within CEPT countries for GSM and other mobile radio services in accordance with CEPT Recommendation T/R 75-02 E and is therefore not available for any Wide Band Data Transmission Systems within CEPT countries,
- (h) compatibility studies have shown that Wide Band Data Transmission Systems using spread-spectrum technology, due to their low spectral power density and their high immunity against interference, could share with some narrow band radio systems,

noting that

there is also a requirement for RLAN Systems operating in a predictable sharing environment and enabling medium and high capacity data transfer rates with good frequency re-use capability which could be met in frequency bands around 5 GHz and in the band 17.1-17.3 GHz for which ETSI has decided to develop a standard for a "High Performance European Radio LAN (HIPERLAN)" and for which CEPT is intending to develop a Recommendation in 1992,

recommends that

1. the band 2400-2500 MHz be used on a non-interference and non-protected basis for Wide Band Data Transmission Systems using spread-spectrum technology with a minimum aggregate bit rate of 250 kbit/s. The total power in this frequency range shall not exceed -10 dBW e.i.r.p. For systems using direct sequence spread-spectrum technology, the peak e.i.r.p. spectral density shall not exceed -20 dBW/MHz; for systems using frequency hopping spread-spectrum technology, the peak e.i.r.p. shall not exceed -10 dBW measured in a 100 kHz bandwidth,
2. Wide Band Data Transmission Systems using spread-spectrum technology have to be type approved according to the ETSI Standard [XXX] and have to be marked "CEPT-RLAN Y" according to the Recommendation T/R 71-03 E,
3. CEPT Member countries shall not require an individual licence for the use of Wide Band Data Transmission Systems using spread-spectrum technology terminals.”