

EUROPEAN RADIOCOMMUNICATIONS COMMITTEE

ERC Decision
of 20 March 1998
on the adoption of approval regulations
for equipment to be used for radio relay systems
operating in the fixed service for the transmission
of digital signals and analogue video signals
operating between 21.2 GHz and 23.6 GHz
based on the European Standard
(Telecommunications series) EN 300 198 V1.2.1
(ERC/DEC/(98)09)



WITHDRAWN

EXPLANATORY MEMORANDUM

1 INTRODUCTION

The free movement of radiocommunications goods and the provision of Europe-wide services for radiocommunications are only achievable if there exist common regulations throughout Europe regarding availability of frequency bands, approval requirements and border crossing procedures. A basic requirement to fulfil these objectives is the Europe-wide implementation of national regulations based on the European Standards (Telecommunication series) (ENs) developed by the European Telecommunications Standards Institute (ETSI).

This Decision (ERC/DEC/(98)09) provides the necessary mechanism for CEPT Administrations to commit themselves to implement, within their national regimes, European Telecommunications Standard 300 198¹ and withdraw any conflicting national standard.

2 BACKGROUND

Both the ERC and ETSI are involved in the development of common regulations, as described in (1) above. The Memorandum of Understanding between ERC and ETSI explains the respective responsibilities of the two organisations and its annex describes the principles of co-operation. The ERC, for its part, should, *inter alia*, adopt Decisions on the introduction of ETSI standards into approval regimes.

EN 300 198 V1.2.1 has been prepared by the Transmission and Multiplexing (TM) Technical Committee of ETSI. The standard has undergone the ETSI standards approval procedure and is now published as an EN.

The EN is based on CEPT Recommendation T/R 13-02.

The use of the frequency range (21.2 to 23.6 GHz) covered by EN 300 198 V1.2.1 is not harmonised within CEPT. Administrations have adopted different arrangements, to meet national requirements, for frequency bands and channel separations (3.5, 7, 14, 28, 56 and 112 MHz). Further, the equipment used in this frequency range is subject to national licensing and frequency planning which requires specification of, *inter alia*, frequency of operation and equivalent isotropically radiated power (e.i.r.p.).

Nevertheless, there are a number of parameters, in particular those considered by the ERC as essential for spectrum management purposes², which can be harmonised by adopting within approval regulations the limit values and measurement methods provided in EN 300 198 V1.2.1.

In the European Table of Frequency allocations for the year 2008 (ERC Report 25), the fixed service has been removed from the band 21.4 GHz - 22.0 GHz, reflecting the WARC-92 decision on the Broadcasting-Satellite Service (BSS) for High Definition Television (HDTV).

3 REQUIREMENT FOR AN ERC DECISION

The allocation and assignment of radio frequencies and the complementary equipment approval regimes in CEPT Member countries are laid down by law, regulation or administrative action. The ERC recognises that for harmonised fixed and mobile radio services to be introduced successfully throughout Europe, manufacturers and operators must be given the confidence to make the necessary investment in the development and procurement of new systems. Commitment by CEPT Administrations to implement this ERC Decision will provide a clear indication that equipment conforming to approval regulations based on EN 300 198 V1.2.1 will have the benefit of a Europe-wide market.

¹ EN 300 198 V1.2.1: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Parameters for DRRS for the transmission of digital signals and analogue video signals operating at 23 GHz"

² See Annex 1 of the Decision

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(ERC/DEC(98)09)

The European Conference of Postal and Telecommunications Administrations,

considering:

- a) that CEPT has a long term objective to harmonise the use of frequencies and the related regulatory regimes;
- b) that such harmonisation will benefit administrations, manufacturers, operators and users;
- c) that ETSI has published EN 300 198 V1.2.1 for radio relay systems operating in the 21.2 to 23.6 GHz frequency range with channel separations of 3.5, 7, 14, 28, 56 and 112 MHz;
- d) that EN 300 198 V1.2.1 supersedes ETS 300 198 and that, in due course, the ERC will abrogate its Decision, (ERC/DEC(96)09) associated with ETS 300 198;
- e) that, for the foreseeable future, there will continue to be widespread use of radio relay systems in the fixed service having the technical characteristics described in (c) above;
- f) that the European Table of Frequency Allocations (ERC Report 25) has identified the Broadcasting Satellite Service as the only primary service in the band 21.4 GHz - 22.0 GHz;
- g) that, in accordance with the Memorandum of Understanding between ERC and ETSI, the ERC shall adopt ERC Decisions on the introduction of ETSS and ENs into approval regimes;
- h) that the use of radio equipment is subject to national licensing and frequency planning requirements, in particular for frequency of operation and e.i.r.p.;
- i) that suitable transitional arrangements are given in CEPT Recommendation T/R 01-05.

DECIDES

1. to adopt approval regulations for equipment to be used for radio relay systems operating in the frequency bands 21.2 GHz - 21.4 GHz and 22.0 GHz - 23.6 GHz with power levels of up to 1W, based on the limit values and measurement methods for spectrum management parameters contained in EN 300 198 V1.2.1, with the exclusion by national choice of those parameters which are subject to national licensing requirements³. A list of the spectrum management parameters to be included in approval regulations is given in Annex 1;
2. to withdraw any conflicting national approval regulation(s);
3. that this Decision shall enter into force on 1 April 1998;
4. that CEPT Member Administrations shall communicate the national measures implementing this Decision to the ERC Chairman and the ERO when the Decision is nationally implemented.

Note:

Please check the ERO web site (www.ero.dk) under "Documentation / Implementation" for the up to date position on the implementation of this and other ERC Decisions.

³ Annex 2 and 3 are provided for information to show which options have been adopted by each administration in those cases where EN 300 198 V1.2.1 offers a choice

ANNEX 1

Parameters from EN 300 198 V1.2.1 to be included in approval regulations:

EN 300 198 V1.2.1	Section	Comments
Limits for parameters⁴ of digital systems (section 5)		
Transmission capacity	5.1	Options for transmission capacity with the appropriate channel spacings 3.5, 7, 14, 28, 56 and 112 MHz. Manufacturers declaration
Baseband parameters	5.2	
Transmitter characteristics	5.3	Options for channel spacings 3.5, 7, 14, 28, 56 and 112 MHz
Transmitter power range	5.3.1	
Transmitter output power tolerance	5.3.3	
RF spectrum mask	5.3.5	
Spurious emissions	5.3.7	
RF frequency tolerance	5.3.8	
Receiver characteristics	5.4	
Spurious emissions	5.4.3	
System performance	5.5	Options for channel spacings 3.5, 7, 14, 28, 56 and 112 MHz
BER performance	5.5.1	
Interference sensitivity	5.5.3	
co-channel interference	5.5.3.1	
adjacent channel interference	5.5.3.2	
CW spurious interference	5.5.3.3	
Limits for parameters⁴ of wide band analogue systems (section 6)		
Transmit/receive capacity	6.1	Options for transmission capacity with the appropriate channel spacings 28 and 56 MHz. Manufacturers declaration
Baseband parameters	6.3	
Transmitter characteristics	6.4	Options for channel spacings 28 and 56 MHz
TX power range	6.4.1	
TX output power tolerance	6.4.2	
Spectrum mask	6.4.3.1	
Spurious emissions	6.4.4	
RF frequency tolerance	6.4.5	
Receiver characteristics	6.5	
Spurious emissions	6.5.2	
Transmit/receive performance	6.6	
Receiver threshold	6.6.1	
co-channel interference	6.6.2.a	
adjacent channel interference	6.6.2.b	
CW spurious interference	6.6.2.c	

⁴ In some countries the spurious emissions and spurious radiations of transmitters and receivers are not considered as approval requirements but are essential requirements of the EMC Directive 89/336 EC for which alternative procedures apply.

ANNEX 2

Adoption of the digital elements of EN 300 198 V1.2.1: National variations

Administration	Adoption of channel spacing options	Adoption of options for environmental conditions
Albania		
Andorra		
Austria	6, 7, 8, 10 to 14, 16 to 20	22, 27
Belgium		
Bosnia and Herzegovina		
Bulgaria		
Croatia		
Cyprus		
Czech Republic	1 to 4, 6, 7, 8, 10 to 14, 16 to 20	22 to 28
Denmark		
Estonia	6 to 8, 10 to 16, 20	22 to 28
Finland	10 to 21	22 to 28
France		
Germany		
Greece		
Hungary		
Iceland		
Ireland	1, 6, 7, 8, 10 to 14, 16 to 21	
Italy		
Latvia	1 to 4, 6, 7, 8, 10 to 14, 16 to 20	18 to 24
Liechtenstein		
Lithuania	6 to 21	22 to 28
Luxembourg		
Malta		
Moldova		
Monaco		
Netherlands		
Norway		
Poland		
Portugal	7, 8, 12, 14, 15, 17, 20, 21	22 to 27
Romania		
Russian Federation		
San Marino		
Slovak Republic	6, 7, 8, 10 to 14, 16, 17, 18	
Slovenia		
Spain		
Sweden		
Switzerland		
The Former Yugoslav Republic of Macedonia		
Turkey		
Ukraine		
United Kingdom		
Vatican City		

Key:

Channel spacing options

Option	Spectrum efficiency class	Bit-rate (Mbit/s)	Channel Spacing (MHz)	System grade
1	1	2	3.5	A
2	1	2	7	A
3	1	2x2	7	A
4	1	8	14	A
5	1	34	56	A
6	2	2x2	3.5	A
7	2	8	7	A
8	2	34	28	A
9	2	140 or 155	112	A
10	2	2	3.5	B
11	2	2x2	3.5	B
12	2	8	7	B
13	2	2x8	14	B
14	2	34	28	B
15	2	51	56	B
16	3	8	3.5	B
17	3	2x8	7	B
18	3	34	14	B
19	3	51	14	B
20	3	51	28	B
21	3	140 or 155	56	B

Class 1: equipment performance based on typically 2-state modulation scheme (e.g. 2-FSK (Frequency Shift Keying), Gaussian Minimum Shift Keying (GMSK) with discriminator detection, or equivalent);

Class 2: equipment performances based on typically 4-state modulation scheme (e.g. 4-FSK, 4- QAM (Quadrature Amplitude Modulation), or equivalent);

Class 3: equipment performances based on typically 16-state modulation scheme (e.g. 16- QAM, or equivalent).

Some equipment types, may benefit from some performance improvement due to the technology gap, for this reason two grades of system performance, grade A and grade B are provided.

Environmental condition options

22 = Class 3.1

23 = Class 3.2

24 = Class 3.3

25 = Class 3.4

26 = Class 3.5

27 = Class 4.1

28 = Class 4.1E

Some countries may require a more stringent temperature range than is currently covered in this EN.

ANNEX 3

Adoption of the analogue elements of EN 300 198 V1.2.1: National variations

Administration	Adoption of channel spacing options	Adoption of options for environmental conditions
Albania		
Andorra		
Austria	1	5, 10
Belgium		
Bosnia and Herzegovina		
Bulgaria		
Croatia		
Cyprus		
Czech Republic	1 to 4	5 to 11
Denmark		
Estonia		
Finland	1 to 4	5 to 11
France		
Germany		
Greece		
Hungary		
Iceland		
Ireland		
Italy		
Latvia	1 to 4	5 to 11
Liechtenstein		
Lithuania	1 to 4	5 to 11
Luxembourg		
Malta		
Moldova		
Monaco		
Netherlands		
Norway		
Poland		
Portugal	-	-
Romania		
Russian Federation		
San Marino		
Slovak Republic		
Slovenia		
Spain		
Sweden		
Switzerland		
The Former Yugoslav Republic of Macedonia		
Turkey		
Ukraine		
United Kingdom		
Vatican City		

Key: Channel spacing

1 = <3.5 MHz Video bandwidth in a 28 MHz Channel

2 = <6 MHz Video bandwidth in a 56 MHz Channel

3 = <10 MHz Video bandwidth in a 56 MHz Channel

4 = <14 MHz Video bandwidth in a 56 MHz Channel

Environmental conditions

5 = Class 3.1

6 = Class 3.2

7 = Class 3.3

8 = Class 3.4

9 = Class 3.5

10 = Class 4.1

11 = Class 4.1