

Recommendation T/R 25-07 (Lecce 1989, revised in Athens 1990 and in Madrid 1992)

FREQUENCY COORDINATION FOR THE EUROPEAN RADIO MESSAGE SYSTEM (ERMES)

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

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

"The European Conference of Postal and Telecommunications Administrations,

considering

- a) that the ERMES system being developed by ETSI will require frequency spectrum for the implementation of the system by 1993, and also for the expected expansion of the system,
- b) that the frequency band 169.4125-169.8125 MHz (band edges) has been chosen as the band from which frequencies are selected for the implementation and expansion of the system,
- c) that the frequency band in question is heavily used by other land mobile services in all the CEPT Member countries and in neighbouring countries outside CEPT, particularly in the lower 200 kHz range,
- d) that the channel requirement for the implementation and expansion of the system will differ between countries,
- e) that in border areas between more than two countries and in the most congested areas the traffic load will probably require up to 16 channels,

noting

1. that the ERMES system will be developed based on frequency agile receivers. For this reason and in order to cater for more than one service provider in some countries, it is no longer necessary to provide common European channels,
2. that in the light of the e.r.p. and protection required for the ERMES system compared with the parameters for other land mobile applications in the same band, special coordination arrangements are necessary,
3. that in parts of Europe where border coordination for ERMES channels is very difficult, the establishment of a multilateral channel plan will ease the implementation and expansion of the ERMES system,
4. that in some countries only the band 169.6125 to 169.8125 MHz will be used for the introduction of the ERMES system in accordance with market demands,
5. that in certain parts of Europe the utilisation of the ERMES channels is based on the multilateral channel plan attached in Annex 5, unless otherwise bilaterally agreed between the Administrations concerned,

recommends

1. as from 1.1.1993 frequencies from the band between 169.4125 and 169.8125 MHz shall be made available for the introduction of the ERMES system in CEPT countries,
2. for the ease of frequency coordination between neighbouring countries the ERMES channels shall be categorised in the border region of a country as follows:
 - category a) ERMES channels which are usable on a preferential basis one year after the neighbouring countries have been informed:
These channels only need coordination if the field strength from ERMES to neighbouring countries exceeds at the border line:
+ 52 dB μ V/m (50% of locations/50% of time. 3 m antenna height)
or + 12 dB μ V/m (50% of locations/10% of time. 3 m antenna height) in case that the introduction shall take place within one year of the concerned Administrations being informed,

category b) ERMES channels which are usable on a preferential basis two years after the neighbouring countries have been informed:

These channels only need coordination if the interfering field strength from ERMES to neighbouring countries concerned exceeds at the border line:

+ 52 dB μ V/m (50% of locations/50% of time. 3 m antenna height)

or + 12 dB μ V/m (50% of locations/10% of time. 3 m antenna height) in case that the introduction shall take place within two years of the concerned Administrations being informed,

category c) ERMES channels which are not usable on a preferential basis in border regions of a country:

These channels need coordination if the interfering field strength from ERMES to neighbouring countries concerned exceeds at the border line:

+ 32 dB μ V/m (50% of locations/10% of time. 3 m antenna height) to countries where the channel

is used by ERMES +12 dB μ V/m (50% of locations/10% of time. 3 m antenna height) to countries where the channel is used by other land mobile applications than ERMES,

3. that Administrations may agree on a bilateral basis on other introduction procedures for ERMES channels,

4. that propagation criteria as described in Annex 2 are used for calculating the field strength,

5. that in coordinating frequencies for the ERMES system the technical criteria as given in Annex 1 are used and that the following procedure is applied:

5.1. when requesting coordination the relevant characteristics of the base station (see Annex 3) shall be forwarded to the Administration affected,

5.2. the Administration affected shall evaluate the request for coordination and shall within 30 days notify the result of the evaluation to the Administration requesting coordination,

5.3. if in the course of the coordination procedure the Administration affected requires additional information it may request such information,

5.4. if no reply is received by the Administration requesting coordination within 30 days it may send a reminder to the Administration affected. An Administration not having responded within 30 days shall be deemed to have given its consent, and the frequency may be put into use with characteristics given in the request for coordination,

5.5. the periods mentioned above may be extended by common consent."

Annex 1

TECHNICAL PARAMETER FOR COORDINATION OF ERMES STATIONS

1. Carrier spacing: 25 kHz
2. Centre frequency of each channel:
169.425 MHz + n225 kHz
(n = 0,1 ... 15)
3. Minimum field strength to be protected:
52 dB(μ V/m) (50% of locations, 50% of time) *
4. Protection ratio: 20 dB
5. Propagation curve: see Annex 2
6. Antenna height for receiving stations: 3 m above ground

* For a frequency offset between wanted and interfering signal the field strength value will be increased according to the table contained in Annex 4.
Edition of March 1, 1993

Annex 2

PROPAGATION CRITERIA FOR CALCULATING INTERFACING FIELD STRENGTH

Propagation curves

The curves attached to this annex should be used to determine the field strength. For special cases including sea path propagation, Administrations may agree upon other curves.

Effective antenna height

The effective antenna height used to determine interfering field strength is the difference between the physical height of the antenna and the average height of the terrain.

The evaluation of the average height of the terrain may be subject to agreement.

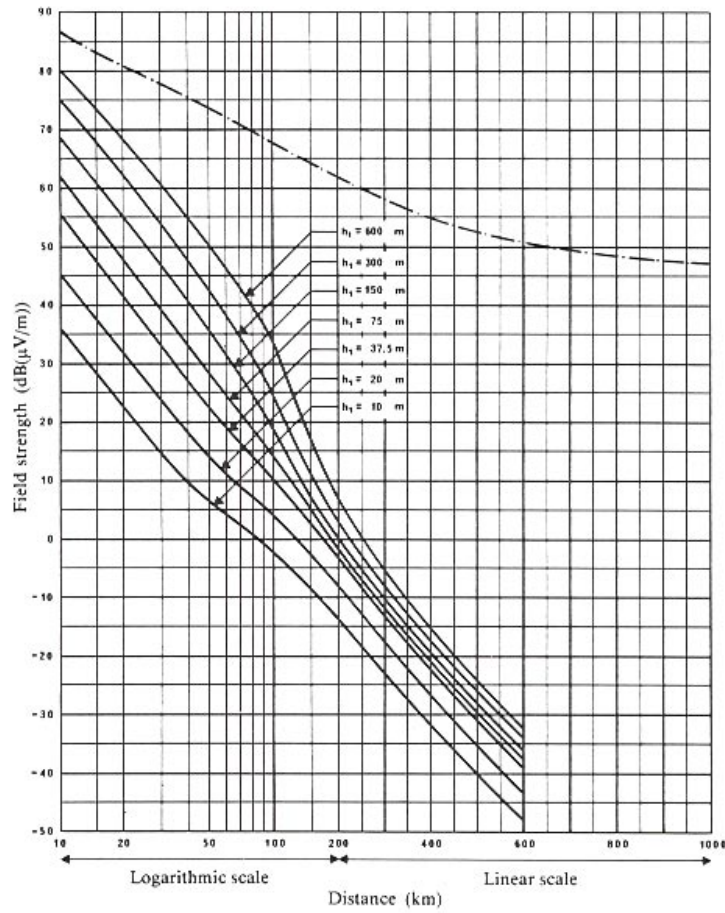


Figure 1 (T/R 25-07 E). Field strength (dB(μV/m)) for 1 kW e.r.p.
Frequency = 150 MHz, land, rural, 50% of the time; 50% of the locations; antenna height = 3 m

----- Free space

Source: CCIR Rep. 567-4

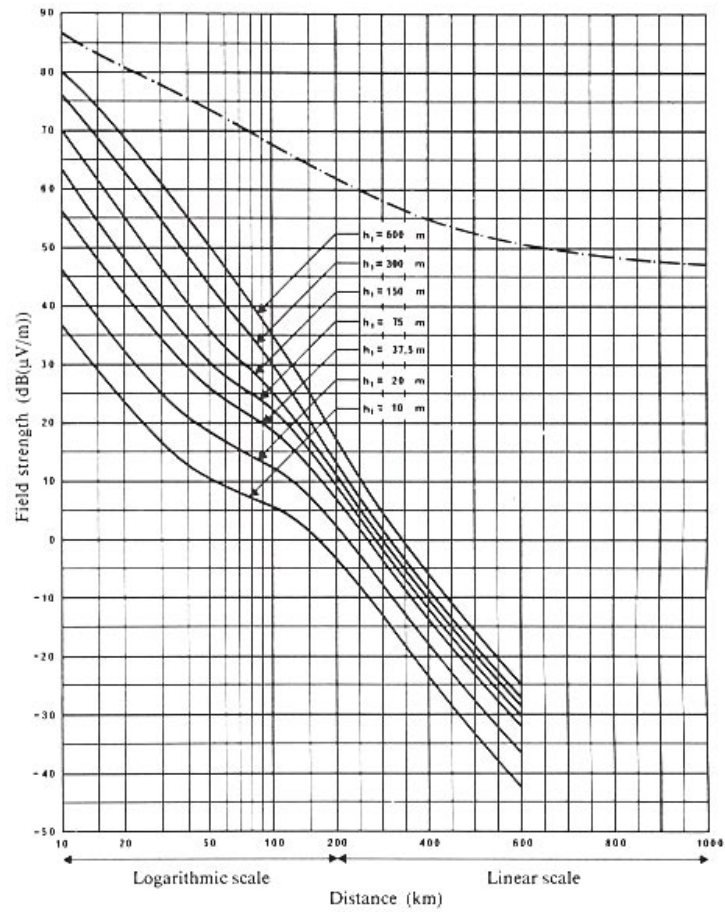


Figure 2 (T/R 25-07 E). Field strength (dB(μV/m)) for 1 kW e.r.p.
Frequency = 150 MHz, land, rural, 10% of the time; 50% of the locations; antenna height = 3 m

— · — · — Free space
Source: CCIR Rep. 567-4

Annex 3

**COORDINATION OF FREQUENCY ASSIGNMENTS
FOR STATIONS IN THE VHF/UHF LAND MOBILE SERVICE**

Column

1A	Assigned frequency (kHz, MHz or GHz)
1Z	Frequency category
6A	Class of station, see table 6A11 ¹
6B	Type of service, see table 6B1 ¹
6Z	Category of use
2C	Date of entry into service
2Z	Date of coordination completed
4A	Name of transmitter station or utilization zone1 (LCL is forbidden)
4B	Country, see table 4A11
4C	Geographical coordinates (longitude and latitude in degrees, minutes and seconds) of - the transmitter station - the centre of emissions
4D	Radius of zone of coverage (km)
4Z	Height above sea level (m)
7A	Designation of emission, see art. 4 and App. 6 ²
8B1	Effective radiated power, e.r.p. (dBW) of the base station
8B2	Effective radiated power, e.r.p. (dBW) of the mobile station
10B	Operation hours (the following abbreviations should be used: HJ, HN, HT, HX)
9A	Azimuth (ND if omnidirectional)
9Z	Maximum equivalent height (m) according to agreement between Administrations, and azimuth in the direction to the neighbouring country affected, (12 different equivalent heights within 12 predetermined directions, 0°, 30°, 60°, etc.)
9D	Polarization (see table 9D11) (without code L999)
9G	Gain in main direction (dB)
9Y	Height above ground level (m)
9X	Type of antenna
5A	Name of the receiving station or utilization zone, see column 4A
5C	Geographical coordinates (longitude and latitude in degrees, minutes and seconds) of - the receiving station - the centre of utilization zone
5F	Radius of zone of reception (km), obligatory for a mobile receiving station
1Y	Reception frequency (kHz, MHz or GHz)
13Z	Remarks
13Y	Status of the coordination

The notes are referring to:

¹ The preface of the International Frequency List (IFL).

² The Radio Regulations.

FORM FOR THE COORDINATION OF FREQUENCY ASSIGNMENTS

Administration	<input type="checkbox"/>	New request	<input type="checkbox"/>	Modification	<input type="checkbox"/>	Cancellation	<input type="checkbox"/>	Notifying Administration	<input type="checkbox"/>
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CHARACTERISTICS OF THE ASSIGNMENT

1A	17	1Y	2C	2Z	6A	68	6Z
k M G	k M G	k M G	k M G	k M G	k M G	k M G	k M G

13Y

GEOGRAPHICAL CHARACTERISTICS OF TRANSMITTING BASE STATION	GEOGRAPHICAL CHARACTERISTICS OF TRANSMITTING MOBILE STATION
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4A	4C
M 4A	E 4C
4B	4D
4Z	

4B 4C 4D 4Z

TECHNICAL CHARACTERISTICS OF TRANSMITTING STATION	TECHNICAL CHARACTERISTICS OF RECEIVING MOBILE STATION
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7A	97
E 7A	E 97
8B1	99
E 8B1	E 99
8B2	9X
E 8B2	E 9X
9A	9Y
E 9A	E 9Y
9B	9Z
E 9B	E 9Z

9A 9B 9C 9D 9E 9F 9G 9H 9I 9J 9K 9L 9M 9N 9O 9P 9Q 9R 9S 9T 9U 9V 9W 9X 9Y 9Z

12 in total

GEOGRAPHICAL CHARACTERISTICS OF RECEIVING BASE STATION	GEOGRAPHICAL CHARACTERISTICS OF RECEIVING MOBILE STATION
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5A	5C
E 5A	E 5C
5B	5D
E 5B	E 5D
5E	5F
E 5E	E 5F

5A 5B 5C 5D 5E 5F

OBSERVATIONS

13Z

Modification: M at the left hand side of data which is being modified.
 Suppression: S at the left hand side of data which is being modified.
 Addition: A at the left hand side of data which is being modified.

Annex 4

INCREASE OF PERMITTED INTERFERENCE FIELD STRENGTH AT DIFFERING NOMINAL
FREQUENCIES, CHANNEL SPACING OF INTERFERING TRANSMITTER

○: 12.5 kHz +: 20 kHz ★: 25 kHz

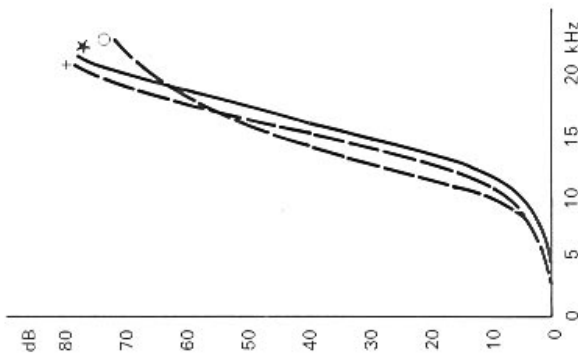


Figure 3 (T/R 25-07) E
Channel spacing of receiver
25 kHz

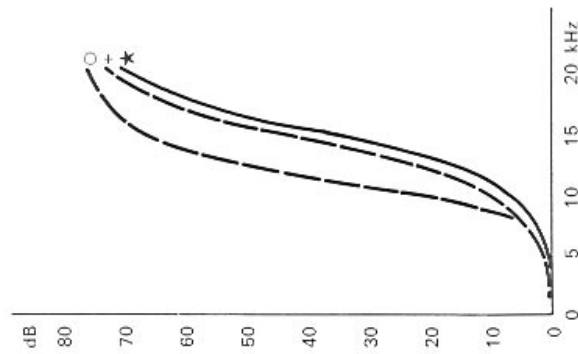


Figure 2 (T/R 25-07) E
Channel spacing of receiver
20 kHz

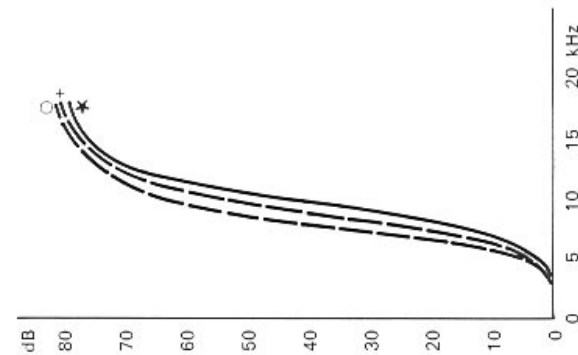


Figure 1 (T/R 25-07) E
Channel spacing of receiver
12.5 kHz

Annex 5

MULTILATERAL CHANNEL AGREEMENT

The following Administrations have formally agreed by September 1992:

Austria

Belgium

Cyprus

Czech and Slovak Federal Republic

France

Germany

Hungary

Italy

Luxembourg

Netherlands

Romania

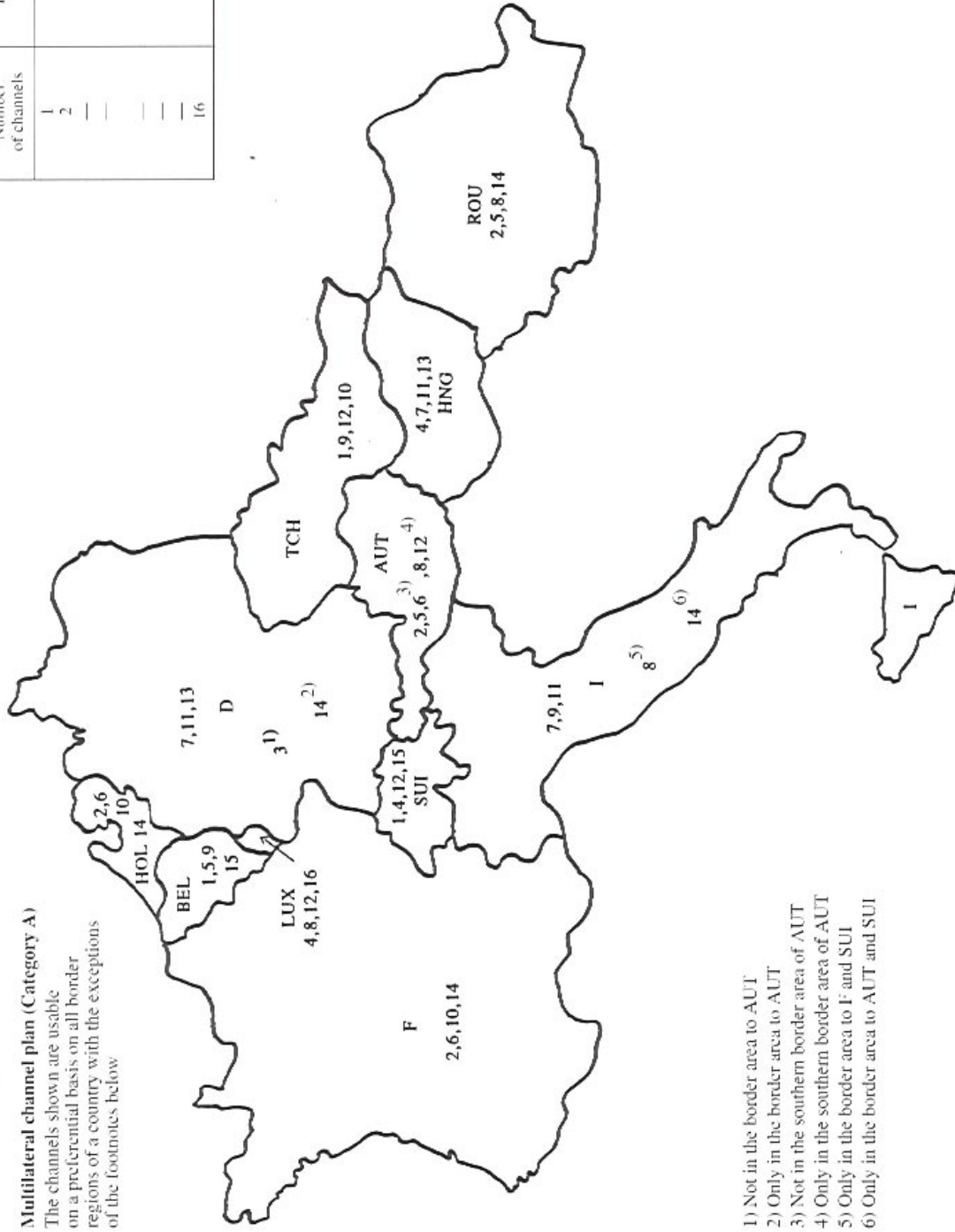
Switzerland

Number of channels	Frequency (MHz)
1	169,425
2	169,450
—	—
—	—
—	—
16	169,800

Annex 5 (continued)

Multilateral channel plan (Category A)

The channels shown are usable on a preferential basis on all border regions of a country with the exceptions of the footnotes below



- 1) Not in the border area to AUT
- 2) Only in the border area to AUT
- 3) Not in the southern border area of AUT
- 4) Only in the southern border area of AUT
- 5) Only in the border area to F and SUI
- 6) Only in the border area to AUT and SUI

8,10
CYP 12,14

Annex 5 (continued)

Multilateral channel plan (Category B)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AUT/D/SUI			AUT						D	SUI						
AUT/D/TCH			AUT	D												TCH
AUT/HNG/TCH			AUT										HNG	TCH		
AUT/HNG								HNG			AUT					
AUT/SUI			AUT							SUI				I		
AUT/I*												AUT		I		
BEL/D/HOL				D				HOL				BEL				
D/F/SUI					SUI			F	D							
HNG/ROU*									ROU			HNG				
AUT/D		D		AUT					D	AUT		D		D	AUT	AUT
AUT/HNG		AUT		AUT					HNG	AUT		AUT		HNG	HNG	HNG
AUT/I		AUT		AUT	AUT					I		AUT		I		I
AUT/SUI				AUT			AUT		AUT	SUI	SUI		SUI	SUI		AUT
AUT/TCH				AUT	AUT		AUT				TCH		TCH	TCH	TCH	AUT
AUT*				AUT			AUT		AUT							AUT
BEL/D		BEL		D		D		D		BEL		BEL		D		BEL
BEL/F			BEL	F		BEL	F			BEL	F	BEL				F
BEL/HOL			BEL	HOL		BEL	HOL			BEL	HOL	BEL				HOL
D/F		D		F	D			F	D			F		D		F
D/HOL		D		HOL	D			HOL	D			HOL		D		HOL
D/SUI			D		D	SUI		SUI	D	SUI				D		SUI
D/TCH			TCH		D	TCH		TCH						D	D	TCH
F/I		F		I	F	I						F	I		I	F
F/SUI			F		SUI	SUI		F	F		SUI		SUI			F
HNG/ROU		ROU		HNG		HNG			ROU	ROU		HNG			HNG	ROU
HNG/TCH			HNG	HNG		TCH	TCH		HNG					HNG	TCH	TCH
I/SUI			SUI	I		SUI	SUI			SUI				I	I	I

Trilateral border areas

Bilateral border areas

* Plus neighbouring territory not yet covered by multilateral channel agreement.

