

**Regulation**  
**ON COLLECTIVE FREQUENCIES FOR CERTAIN**  
**RADIO TRANSMITTERS AND THEIR USE**

Issued in Helsinki on 12 January 2001

---

The Telecommunications Administration Centre has, under section 4, paragraph 4 of the Radio Act of 10 June 1988 (517/1988), in the form in which it appears in Act 677/1992, and under section 9 of the Radio Act, prescribed as follows:

**General stipulations**

Section 1

**Scope of application**

This regulation shall apply to the following radio equipment whose conformity with requirements has been attested in such a way as mentioned in section 8, paragraph 1 of the Radio Act (TAC Regulation on the conformity assessment and marking of radio equipment and telecommunications terminal equipment (THK 1 A/2000 M), and which shall operate on the collective frequencies assigned in the Annex:

- 1) cordless telephones and DECT equipment,
- 2) mobile terminals and other NMT 450, GSM 900 and GSM 1800 terminals,
- 3) LA telephones (national Citizen Band equipment),
- 4) PR 27 telephones,
- 4A) CB telephones
- 5) non-specific short range devices,
- 6) telecommand equipment for use with scale model aircraft,
- 7) equipment for automatic vehicle identification for railways (AVI),
- 8) RLAN and HIPERLAN equipment,
- 9) low-power alarms for security and safety and social alarms,
- 10) equipment for detecting movement and equipment for alert,
- 11) radio frequency identification devices (RFID),
- 12) on-site paging systems,
- 13) wireless loudspeakers, equipment for in-ear monitoring, headphones, hearing

aids, helmet radio telephones and radio microphones,

- 14) ultra low-power medical implants,
- 15) satellite telephones,
- 16) Inmarsat B, Inmarsat C, Inmarsat D, Inmarsat M, Inmarsat M4 (also called GAN, Global Area Network), Inmarsat phone (also called Inmarsat Mini-M), EMS MSSAT and EMS PRODAT stations except stations aboard vessels in international traffic,
- 17) Arcanet stations and OmniTRACS stations within the EUTELTRACS system,
- 18) subscriber equipment of radio systems of fixed wireless access networks,
- 19) mobile terminals belonging to the VIRVE emergency services network,
- 20) PMR 446 telephones,
- 21) road transport and traffic telematics, and
- 22) VSAT, SIT and SUT satellite terminals.

## Section 2

### **Possession and use of radio equipment**

No such licence as mentioned in section 4 of the Radio Act is required for the possession and use of the radio equipment mentioned in section 1 above, when the provisions mentioned below are obeyed in the use of this equipment.

### **Special provisions on use**

## Section 3

### **Cordless telephones, DECT, RLAN and HIPERLAN equipment**

1. To the equipment may be connected only that type of antenna with which it is type approved, or it has to be attested in some other way that the equipment meets the requirements. However, to DECT equipment it is permitted to connect an antenna with a maximum gain of 12 dBi.
2. No amplifier shall be connected between the equipment and the antenna or the base station and the antenna.

## Section 4

**Mobile terminals, NMT 450, GSM 900 and GSM 1800 terminals, satellite tele-  
phones, Inmarsat B, Inmarsat C, Inmarsat D, Inmarsat M, Inmarsat M-4  
(GAN), Inmarsat phone (also called Inmarsat Mini-M), EMS MSSAT,  
EMS PRODAT, Arcanet and OmniTRACS stations and  
VSAT, SIT and SUT satellite terminals**

1. These terminals shall not be used on board airborne aircraft or in some other equipment used in aviation.
2. VSAT, SIT and SUT satellite terminals shall not be used closer than at 500 m distance from airfield areas (from the protective fence).

## Section 5

**Mobile terminals belonging to the VIRVE emergency services network**

1. Terminals may also be used on board airborne aircraft or in some other equipment used in aviation.

## Section 6

**LA radio telephones, PR 27 telephones and CB telephones**

1. These telephones shall not be used on board airborne aircraft or in some other equipment used in aviation.
2. No amplifier shall be connected between the telephone and its antenna.
3. With these telephones a separate antenna with a gain that is less than 3 dB larger than that of a halfwave dipole may be used.

## Section 7

**Other radio equipment to which this regulation shall apply**

1. A radio transmitter shall not be used on board airborne aircraft or in some other equipment used in aviation.
2. No amplifier shall be connected between the radio equipment and its antenna.

## **Miscellaneous provisions**

### Section 8

#### **Restrictions in the use of LA radio telephones**

The frequencies confirmed in chapter 3 of the Annex to this Regulation are collective frequencies only for such LA radio telephones as have been approved according to the regulations of 25 March 1981 by the General Directorate of Posts and Telecommunications and taken into use on 31 December 1992 at the latest.

### Section 9

#### **Restrictions in the use of social alarms**

The frequency band 230.000 - 231.000 MHz confirmed in chapter 5 of the Annex to this Regulation is the collective frequency range intended only for social alarms whose conformity with requirements has been attested based on an application that has arrived before 1 August 1997, and which have been taken into use before 30 June 1998.

### Section 10

#### **Restrictions in the use of equipment for control, alarm, telemetry, telecommand and data transmission**

The frequency band 230.000 - 231.000 MHz confirmed in chapter 5 of the Annex to this Regulation is the collective frequency range intended only for such equipment for control, alarm, telemetry, telecommand and data transmission as has been found to correspond to requirements based on an application that has arrived before 31 December 1997. The equipment must have been taken into use before 31 December 1998.

In the frequency band 868.150 - 868.650 MHz which has been confirmed in chapter 5 of the Annex to this Regulation, the maximum transmitter power and radiated power (ERP) may be 500 mW in such equipment for control, alarm, telemetry, telecommand and data transmission as has been found to correspond to requirements based on an application that has arrived before 31 July 1998. The equipment must have been taken into use before 31 December 1998.

### Section 11

#### **Restrictions in the use of equipment for detecting movement and equipment for alert**

The sub-band 10.50 - 10.55 GHz of the frequency band 10.45 - 10.55 GHz confirmed in chapter 10 of the Annex to this Regulation is the collective frequency range in-

tended only for such equipment for detecting movement and equipment for alert as has been found to correspond to requirements based on an application that has arrived before 31 December 1997. The equipment must have been taken into use before 31 December 1998.

In the frequency bands 9500 - 9975 MHz and 24.00 - 24.25 GHz which have been confirmed in chapter 10 of the Annex to this Regulation the maximum radiated power may be 500 mW EIRP in such equipment for detecting movement and equipment for alert as have been found to correspond to requirements based on an application that has arrived before 31 December 1998. The equipment must have been taken into use before 31 December 1999.

#### Section 12

##### **Restrictions in the use of on-site paging systems**

The frequencies 26.965 MHz, 27.075 MHz, 27.255 MHz and 27.400 MHz confirmed in chapter 12 of the Annex to this Regulation are collective frequencies for on-site paging systems up to and including 31 December 2004. The frequencies 27.450 MHz and 27.490 MHz are collective frequencies only for such on-site paging systems as have been taken into use on 1 January 1989 at the latest.

#### Section 13

##### **Period of validity**

This Regulation shall enter into force on 12 January 2001 and remain valid until further notice.

It sets aside the Regulation on collective frequencies for certain radio transmitters and their use (THK 15 O/2000 M) issued by the Telecommunications Administration Centre on 5 June 2000.

Section 14  
**Information and publication**

This Regulation is included in the Series of Regulations issued by the Telecommunications Administration Centre and it can be obtained from the Customer Service Office of the TAC:

Visiting address	Itämerenkatu 3 A, HELSINKI
Postal address	PO Box 313 FIN-00181 HELSINKI FINLAND
Telephone	+ 358 9 6966 500
Telefax	+ 358 9 6966 410
Website	<a href="http://www.thk.fi/">http://www.thk.fi/</a>

Helsinki 12 January 2001

Chief Executive Officer	<i>Reijo Svensson</i> Reijo Svensson
-------------------------	---

Director	<i>Kari Koho</i> Kari Koho
----------	-------------------------------

**COLLECTIVE FREQUENCIES ASSIGNED BY THE TELECOMMUNICATIONS ADMINISTRATION CENTRE FOR CERTAIN RADIO TRANSMITTERS WHOSE CONFORMITY WITH REQUIREMENTS HAS BEEN ATTESTED AS MENTIONED IN SECTION 8, PARAGRAPH 1 OF THE RADIO ACT**

**1 CORDLESS TELEPHONES AND DECT EQUIPMENT**

- |    |                         |                                    |
|----|-------------------------|------------------------------------|
| 1) | CT 1 phones, fixed part | 959.0125 MHz + (0...39) x 25 kHz   |
|    | ", portable part        | 914.0125 MHz + (0...39) x 25 kHz   |
| 2) | CT 2 phones             | 864.150 MHz + (0...39) x 100 kHz   |
| 3) | DECT equipment          | 1881.792 MHz + (0...9) x 1.728 MHz |

**2 MOBILE TERMINALS AND OTHER NMT 450, GSM 900 AND GSM 1800 TERMINALS**

- |    |   |                                     |
|----|---|-------------------------------------|
| 1) | ARP and MOBITEK data transmission equipment | 153.300 MHz + (0...31) x 25 kHz     |
| 2) | NMT 450                                     | 453.000 MHz + (0...179) x 25 kHz    |
| 3) | Autonet                                     | 440.0125 MHz + (0...199) x 12.5 kHz |
| 4) | GSM 900                                     | 880.200 MHz + (0...173) x 200 kHz   |
| 5) | GSM 1800                                    | 1710.200 MHz + (0...373) x 200 kHz  |

### 3 LA TELEPHONES (NATIONAL CITIZEN BAND EQUIPMENT)

The restrictions for the use of LA radio telephones are mentioned in Section 8 of this Regulation.

Channel	Frequency	Channel	Frequency	Channel	Frequency
1	26.965 MHz	9	27.065 MHz	16	27.155 MHz
2	26.975 "	10	27.075 "	17	27.165 "
3	26.985 "	11	27.085 "	18	27.175 "
4	27.005 "	11A	27.095 "	19	27.185 "
5	27.015 "	12	27.105 "	20	27.205 "
6	27.025 "	13	27.115 "	21	27.215 "
7	27.035 "	14	27.125 "	22	27.225 "
8	27.055 "	15	27.135 "		

The power of an LA (CB) transmitter must not exceed 5 W.

The radiated power (ERP) of a transmitter equipped with an antenna built in connection with the transmitter (integral antenna) must not exceed 1 W.

### 4 PR 27 TELEPHONES

Channel	Frequency	Channel	Frequency	Channel	Frequency
1	26.965 MHz	14	27.125 MHz	27	27.275 MHz
2	26.975 "	15	27.135 "	28	27.285 "
3	26.985 "	16	27.155 "	29	27.295 "
4	27.005 "	17	27.165 "	30	27.305 "
5	27.015 "	18	27.175 "	31	27.315 "
6	27.025 "	19	27.185 "	32	27.325 "
7	27.035 "	20	27.205 "	33	27.335 "
8	27.055 "	21	27.215 "	34	27.345 "
9	27.065 "	22	27.225 "	35	27.355 "
10	27.075 "	23	27.255 "	36	27.365 "
11	27.085 "	24	27.235 "	37	27.375 "
12	27.105 "	25	27.245 "	38	27.385 "
13	27.115 "	26	27.265 "	39	27.395 "
				40	27.405 "

The power of a PR 27 transmitter (with integral antenna ERP) must not exceed 4 W.

Only frequency modulation is allowed in PR 27 transmitters (FM, G3E).



**4A CB TELEPHONES**

Chan- nel	Frequency	Chan- nel	Frequency	Chan- nel	Frequency
1	26.965 MHz	14	27.125 MHz	27	27.275 MHz
2	26.975 "	15	27.135 "	28	27.285 "
3	26.985 "	16	27.155 "	29	27.295 "
4	27.005 "	17	27.165 "	30	27.305 "
5	27.015 "	18	27.175 "	31	27.315 "
6	27.025 "	19	27.185 "	32	27.325 "
7	27.035 "	20	27.205 "	33	27.335 "
8	27.055 "	21	27.215 "	34	27.345 "
9	27.065 "	22	27.225 "	35	27.355 "
10	27.075 "	23	27.255 "	36	27.365 "
11	27.085 "	24	27.235 "	37	27.375 "
12	27.105 "	25	27.245 "	38	27.385 "
13	27.115 "	26	27.265 "	39	27.395 "
				40	27.405 "

The maximum power allowed of the CB transmitter (with integral antenna ERP):  
 using frequency modulation (FM, G3E) 4 W,  
 using double-sideband modulation (AM DSB, A3E) carrier power 1 W and  
 using single-sideband modulation (SSB, J3E and R3E) modulation peak power 4 W

**5 NON-SPECIFIC SHORT RANGE DEVICES <sup>(1)</sup>**

(Short range devices, ERC Recommendation CEPT/ERC/REC 70-03, applicable parts of Annexes 1 and 8)

26.825 MHz	40.665 MHz	27 MHz and 40 MHz transmitters:
26.845 "	40.675 "	Transmitter power max. 500 mW.
26.865 "	40.685 "	radiated power max. 100 mW ERP.
26.885 "	40.695 "	
26.905 "	40.705 "	
26.925 "	40.715 "	
26.935 "	40.725 "	
26.945 "	40.735 "	
26.995 "	40.745 "	

## THK 15 P/2001 M

## ANNEX

27.045 "	40.765 "
27.095 "	40.785 "
27.145 "	
27.195 "	
27.255 "	
138.200 - 138.450 MHz	Radiated power max. 50 mW ERP. Other radio transmitters in this band may cause interference in short range devices using this band. Duty cycle < 1%. <sup>(3)</sup>
433.050 - 434.790 MHz	Radiated power max. 25 mW ERP. High power amateur transmitters may cause interference in other radio equipment that uses this frequency band. Duty cycle < 10% enters into force on 8 April 2001. <sup>(3)</sup>
468.200 MHz	Transmitter power and radiated power (ERP) max. 500 mW.
868.000 - 868.600 MHz	Radiated power max. 25 mW ERP. Duty cycle < 1%. <sup>(3)</sup>
868.700 - 869.200 MHz	Radiated power max. 25 mW ERP. Duty cycle < 0.1%. <sup>(3)</sup>
869.400 - 869.650 MHz	Radiated power max. 500 mW ERP. Channel spacing 25 kHz <sup>(2)</sup> . The frequency band may be used as 1 channel for high speed data transmission. Duty cycle < 10%. <sup>(3)</sup>
869.700 - 870.000 MHz	Radiated power max. 5 mW ERP.
2400.000 - 2483.500 MHz	Radiated power max. 10 mW EIRP.
5725 - 5875 MHz	Radiated power max. 25 mW EIRP.
24.00 - 24.25 GHz	Radiated power max. 100 mW EIRP.
61.00 - 61.50 GHz	Radiated power max. 100 mW EIRP.
122 - 123 GHz	Radiated power max. 100 mW EIRP.
244 - 246 GHz	Radiated power max. 100 mW EIRP.

<sup>1</sup> Voice applications and other short range audio applications and video applications are allowed only on frequencies above 2.4 GHz.

<sup>2</sup> In the frequency bands where channel spacing is defined the centre frequency of the first channel is at a distance of *channel spacing/2* from the lower frequency band edge.

<sup>3</sup> The duty cycle is defined as the ratio, expressed as a percentage, of the maximum transmitter "on" time, relative to a one hour period. If not otherwise stated, the greatest duty cycle allowed is 100%.

**The following frequency bands are collective frequency bands only for such equipment as was taken into use on 31 December 1998 or before:**

230.000 - 231.000 MHz Transmitter power and radiated power (ERP) max. 500 mW. The restrictions of Sections 9 and 10 of this Regulation in the use of radio equipment shall be obeyed concerning this frequency band.

868.150 - 868.650 MHz Transmitter power and radiated power (ERP) max. 500 mW.  
The restrictions of Section 10 of this Regulation in the use of radio equipment shall be obeyed concerning this frequency band.

## **6 TELECOMMAND EQUIPMENT FOR USE WITH SCALE MODEL AIRCRAFT**

(Short range devices, ERC Recommendation CEPT/ERC/REC 70-03, applicable parts of Annex 8)

35.000 MHz	35.080 MHz	35.160 MHz
35.010 "	35.090 "	35.170 "
35.020 "	35.100 "	35.180 "
35.030 "	35.110 "	35.190 "
35.040 "	35.120 "	35.200 "
35.050 "	35.130 "	35.210 "
35.060 "	35.140 "	35.220 "

THK 15 P/2001 M

ANNEX

35.070 "

35.150 "

Radiated power max. 100 mW ERP.



869.250 - 869.300 MHz	Radiated power max. 10 mW ERP. Channel spacing 25 kHz <sup>(1)</sup> . Duty cycle < 0.1%. <sup>(2)</sup>
869.650 - 869.700 MHz	Radiated power max. 25 mW ERP. Channel spacing 25 kHz <sup>(1)</sup> . Duty cycle < 10%. <sup>(2)</sup>
869.200 - 869.250 MHz	Only for social alarms. Radiated power max. 10 mW ERP. Channel spacing 25 kHz <sup>(1)</sup> . Duty cycle < 0.1%. <sup>(2)</sup>

<sup>1</sup> In the frequency bands where channel spacing is defined the centre frequency of the first channel is at a distance of *channel spacing*/2 from the lower frequency band edge.

<sup>2</sup> The duty cycle is defined as the ratio, expressed as a percentage, of the maximum transmitter "on" time, relative to a one hour period. If not otherwise stated, the greatest duty cycle allowed is 100%.

## 10 EQUIPMENT FOR DETECTING MOVEMENT AND EQUIPMENT FOR ALERT

(Short range devices, ERC Recommendation CEPT/ERC/REC 70-03, applicable parts of Annex 6)

2400.000 - 2483.500 MHz	Radiated power max. 25 mW EIRP.
9500 - 9975 MHz	Radiated power max. 25 mW EIRP.
10.45 - 10.50 GHz <sup>(1)</sup>	Radiated power max. 500 mW EIRP.
13.40 - 14.00 GHz	Radiated power max. 25 mW EIRP.
24.00 - 24.25 GHz	Radiated power max. 100 mW EIRP.

**The following frequency bands are collective frequency bands only for such equipment as has been taken into use on 31 December 1998 or before:**

10.50 - 10.55 GHz	Radiated power max. 500 mW EIRP.  The restrictions of Section 11 of this Regulation in the use of radio equipment shall be obeyed concerning this frequency band.
-------------------	---

**The following frequency bands are collective frequency bands only for such equipment as has been taken into use on 31 December 1999 or before:**

9500 - 9975 MHz	Radiated power max. 500 mW EIRP. The restrictions of Section 11 of this Regulation in the use of radio equipment shall be obeyed concerning this frequency band.
-----------------	---

24.00 - 24.25 GHz	Radiated power max. 500 mW EIRP. The restrictions of Section 11 of this Regulation in the use of radio equipment shall be obeyed concerning this frequency band.
-------------------	---

#### **11 RADIO FREQUENCY IDENTIFICATION DEVICES (RFID)**

2446.0 - 2454.0 MHz	Radiated power max. 100 mW EIRP.
---------------------	----------------------------------

#### **12 ON-SITE PAGING SYSTEMS**

27.720 MHz	27.820 MHz	27.920 MHz
27.740 "	27.840 "	27.940 "
27.760 "	27.860 "	30.300 "
27.780 "	27.880 "	40.680 "
27.800 "	27.900 "	

**The following frequencies are collective frequencies for on-site paging systems up to and including 31 December 2004, the restrictions on use are mentioned in Section 12 of this Regulation.**

26.965 MHz  
27.075 "  
27.255 "  
27.400 "

**The following frequencies are collective frequencies only for such on-site paging systems as have been taken into use on 1 January 1989 or before, the restrictions on use are mentioned in Section 12 of this Regulation.**

27.450 MHz

27.490 "

The transmitter power of pagers (with integral antenna ERP) must not exceed 5 W.

**13 WIRELESS LOUDSPEAKERS. EQUIPMENT FOR IN-EAR MONITORING. HEADPHONES. HEARING AIDS. HELMET RADIO TELEPHONES AND RADIO MICROPHONES**

(Short range devices, ERC Recommendation CEPT/ERC/REC 70-03, applicable parts of Annexes 10 and 13)

31.100 MHz	33.500 MHz	Radiated power max. 10 mW ERP.
32.100 "	36.700 "	The total bandwidth of the emission max. 200 kHz.
32.900 MHz	37.100 "	
42.400 - 43.600 MHz		

863.000 - 865.000 MHz	Radiated power max. 10 mW ERP. The total bandwidth of the emission max. 300 kHz. For radio microphones total bandwidth 200 kHz and for other equipment 300 kHz. Channel spacing max. 300 kHz. The centre frequency of the first channel shall be at a distance of <i>channel spacing/2</i> from the lower frequency band edge.
-----------------------	--

**14 ULTRA LOW-POWER MEDICAL IMPLANTS**

(Short range devices, ERC Recommendation CEPT/ERC/REC 70-03, Annex 12).



402 - 405 MHz Radiated power max. 25  $\mu$ W ERP.  
 Channel spacing max. 25 kHz. The centre  
 frequency of the first channel is at a distance  
 of *channel spacing/2* from the lower  
 frequency band edge.

## **15 SATELLITE TELEPHONES**

Globalstar 1610.0 - 1621.35 MHz

Iridium 1621.35 - 1626.5 MHz

## **16 INMARSAT B, INMARSAT C, INMARSAT D, INMARSAT M, INMARSAT M4 (GAN), INMARSAT-PHONE (also called Inmarsat Mini-M), EMS MSSAT AND EMS PRODAT STATIONS**

1626.5 - 1645.5 MHz

1646.5 - 1660.5 MHz

## **17 ARCANET STATIONS AND OMNITRACS STATIONS WITHIN THE EUTELTRACS SYSTEM**

14.00 - 14.25 GHz

## **18 SUBSCRIBER EQUIPMENT OF RADIO SYSTEMS OF FIXED WIRELESS ACCESS NETWORKS <sup>(1)</sup>**

3400 - 3600 MHz

10.15- 10.30 GHz / 10.50 - 10.65 GHz

24.50 - 26.50 GHz

<sup>1</sup> This Regulation applies only to such subscriber equipment that is connected to such a central station of a fixed access network to which the Telecommunications Administration Centre has granted a licence referred to in Section 4 of the Radio Act.

## **19 MOBILE TERMINALS BELONGING TO THE VIRVE EMERGENCY SERVICES NETWORK**

380.0125 MHz + (0...199) x 25 kHz

## 20 PMR 446 TELEPHONES

(ERC Decisions CEPT/ERC/DEC(98)/25 and CEPT/ERC/DEC(98)/26)

446.00625 MHz	446.01875 MHz	446.03125 MHz
446.04375 MHz	446.05625 MHz	446.06875 MHz
446.08125 MHz	446.09375 MHz	

Radiated power max. 500 mW ERP.

Total bandwidth of the emission 12.5 kHz.

## 21 ROAD TRANSPORT AND TRAFFIC TELEMATICS

(Short range devices. ERC Recommendation CEPT/ERC/REC 70-03. applicable parts of Annex 5)

76.00 - 77.00 GHz

For vehicle radars only.

Maximum radiated power:

Peak power 316 W EIRP.

average power 100 W EIRP

average power for pulsed

radars 225 mW EIRP

## 22 VSAT. SIT AND SUT SATELLITE TERMINALS

VSAT 14.0 - 14.25 GHz

SIT and SUT 29.5 - 30.00 GHz

Transmitter power max. 2 W.

Radiated power max. 50 dBW

EIRP. The restrictions in the use of radio equipment as stated in

THK 15 P/2001 M

ANNEX

Section 4 of this Regulation shall be followed concerning these frequency bands.

- \* -