Issued:	Enters into force:	Validity:
x.x.xxxx	x.x.xxxx	until further notice

Legal basis:
Section 96(1) and section 97(2) of the Act on Electronic Communications Services (917/2014).

Provisions on sanctions for operations violating this Regulation are laid down in:
Section 348(1) of the Act on Electronic Communications Services (917/2014).

Implemented EU legislation:
The European Commission will be notified of the Regulation in accordance with Directive (EU) 2015/1535.

Modification details:
The amendments made to the previous version are listed as part of the Frequency Allocation Table appended to the Regulation.

This Regulation repeals the previous version (4 AD/2023M) issued on 12 January 2023).

Radio frequency regulation 4 AE/2023M

Section 1 Scope of application

This Regulation applies to the radio frequency spectrum 100 Hz - 400 GHz.

Radio transmitters intended for use on the radio frequencies must meet the requirements of this Regulation for transmitting and receiving frequencies, channel spacing, bandwidth of transmission, duplex separation, transmitted powers and other corresponding radio characteristics (radio interfaces).

Electrical equipment other than radio equipment (ISM equipment), designated to generate radio frequency energy and used for scientific, industrial, medical or other similar purposes may only be used on the radio frequencies and on the conditions determined in this Regulation.

Section 2 Objective of the Regulation

The radio frequencies are used as this Regulation provides to safeguard the fair availability, efficient, appropriate and sufficiently interference-free use of radio frequencies.

Section 3 Definitions

The Frequency Allocation Table, as given in annex, contains provisions on the allocation of radio frequencies, frequency bands and sub-bands for different purposes of use. The radio interface requirements and the frequency bands designated for ISM equipment, and the terms of use of this equipment, referred to in section 1, are also included in the Frequency Allocation Table.

Section 4 Entry into force

This Regulation enters into force on x 202x and will remain in force until further notice.

This Regulation repeals the Regulation bearing the same title (The Finnish Transport and Communications Agency 4 AD/2023M) issued by the Finnish Transport and Communications Agency on 12 January 2023.

Helsinki x 202x

Amendments made to the Radio Frequency Regulation 4AD since 13 January 2023

Mobile service

- ECC/DEC(22)01 has been added to the comments column for the sub-band 452.425 - 456.925 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 703 - 733 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 832 - 862 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 880.100 - 914.900 MHz
- ECC/DEC(20)02 has been added to the comments column for the sub-band 874.400 - 879.900 MHz
- ECC/DEC(20)02 has been added to the comments column for the sub-band 919.400 - 924.900 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 1710.100 - 1784.900 MHz
- ECC/DEC(20)02 has been added to the comments column for the sub-band 1900 - 1910 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 1920 - 1980 MHz
- ECC/DEC(14)02 and ECC/DEC(22)01 have been added to the comments column for the sub-band 2300 - 2320 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 2500 - 2570 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 2570 - 2620 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 3400 - 3800 MHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 24.250 - 25.100 GHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 25.100 - 27.000 GHz
- ECC/DEC(22)01 has been added to the comments column for the sub-band 27.000 - 27.500 GHz
- Comments on channels for short term events concerning the sub-bands 148.28125 – 149.39375 MHz and 152.88125 – 153.99375 MHz have been specified — the channels remain unchanged.
- The sub-band 438 – 440 MHz (control, alarm, telemetry, telecommand, data transmission) has been divided into two sub-bands based on the used channel width (12.5 kHz / 25 kHz): 438.16875 – 439.99375 MHz (channel width 12.5 kHz) and 438.175 – 439.975 MHz (channel width 25 kHz).
- Simplex channels 459.250; 459.275; 459.550; 459.600; 459.625; 459.675; 459.750 and 459.775 MHz for short term events have been added to the comments for the sub-band 459.025 – 460.000 MHz.
- Simplex channels 468.950; 468.975; 469.250; 469.300; 469.325; 469.375; 469.450 and 469.475 MHz for short term events have been added to the comments for the sub-band 468.725 – 469.700 MHz.

Aeronautical mobile (R)

The comment "The user of radio equipment used in aviation must have a radio telephone operators certificate issued by the Finnish Transport and Communications Agency (Traficom)." has been changed to "The user of a radio transmitter shall check the Finnish Transport and Communications Agency’s regulation PEL M2-93 to see whether the special certificate required for aeronautical radiocommunication is needed."

The national common frequency for power-driven flight has been changed from 122.500 MHz to 122.925 MHz.

The national common frequency for flight calibration 122.400 MHz has been removed.

Satellite service

The comments column for the frequency band 148.000 MHz - 150.050 MHz has been updated with information on the fact that the sub-bands include licence-exempt terminal equipment.

Amateur radio

The use of the sub-band 435 - 438 MHz has been changed according to the IARU recommendation so that the allocation for amateur radio communication starts from 436 MHz and wide-band data transmissions are allowed. The allocation for amateur-satellite service remains the same.

Short-range devices

References to the ECC recommendation ECC/REC/(08)01 and to the standard EN 302 571 have been added to the allocation for intelligent transport systems for the frequency band 5855 - 5875 MHz.

Channel width at the most 200 kHz added for low-power FM transmitters.

Military use

Sub-band 230 - 240 MHz has been allocated for military use.

DEFINITIONS

Frequency band. Services in Finland

Frequency band and services in use or intended to be used in this frequency band in Finland. The frequency bands and services are based on the Radio Regulations (RR) and the ERC Report25.

In the Frequency Allocation Table, primary services are written with upper case letters (e.g. MOBILE) and secondary services with lower case letters (e.g. Mobile).

Sub-band, its width and usage

Sub-bands, their width and intended use. In mobile and fixed services, the centre frequencies of the extreme channels are the lower and upper limits of a sub-band. In other radio services, the sub-band limits form the limits for the given usage.

Mode of traffic

Mode of traffic of a sub-band is either simplex (use of one frequency) or duplex (use of two frequencies).

Class of station

Class of station is based on the Radio Regulations (RR). In the land mobile service, for instance, the class of station of a base station is FB.

Direction

Defines the direction of transmission, i.e. whether the frequency is used for transmitting (TX) or receiving (RX) or both (TXRX).

Channel width

States the frequency separation between the centre frequencies of two adjacent channels.

Bandwidth

States the bandwidth allowed for a transmission using the channel (i.e. necessary bandwidth).

Class of emission

Determines, for instance, type of modulation and type of information to be transmitted.

Duplex separation and paired band

The corresponding frequency band (paired band) is situated at the distance given by the duplex separation either on higher frequencies (+) or on lower frequencies (-) than the band given in the table.

Standard type

Gives information on the most essential properties of radio link equipment (e.g. DRS 34/18000= capacity 34 Mbit/s, frequency range 18000 MHz or FM 4/419 = modulation FM, capacity 4speech channels and frequency range 419 MHz).

Radiated power

The sum of the transmitter power and the antenna gain subtracted by the attenuation of the transmission lines is the radio transmitter's radiated power. The maximum radiated power is stated as W ERP units when it is compared to a dipole antenna (gain dBd) or as W EIRP units when it is compared to an isotropic antenna (gain dBi).

Radio Regulations, RR

The mandatory (binding) Annex to the Constitution and Convention of the International Telecommunications Union (ITU Radio Regulations).

Duty cycle

The duty cycle is defined as the ratio of the maximum transmitter "on" time, relative to a one-hour period.

Output power of radio link

If no maximum output power is mentioned for the transmitter of a radio link, the value given in the standard reference is applicable. The standard reference concerning the radiation pattern envelope of a radio link antenna defines the required maximum side lobe attenuation, which can be relaxed depending on the usage environment of the system in question.

References to standards

The standard references are only for informative purposes and they do not set compulsory requirements for placing of equipment on the market. When there are references to standards or other comparable specifications in the Radio Frequency Plan, this implies that they have been used as assumptions for equipment performance in an interference analysis concerning a new frequency assignment or as a technical basis for compatibility studies between different radio communications services or as a technical basis for coordination agreements with other countries. Standard references may in some cases also be used to define a channel access procedure, the use of which is a condition for the use of certain frequency bands.

The standard references do not specify the version of the standard. Reference means the latest version published in the Official Journal of the European Union.

LYHENNELUETTELO / TABELL ÖVER FÖRKORTNINGAR / LIST OF ABBREVIATIONS

ADS-B	Automatic Dependent Surveillance-Broadcast
AVI	Automatic Vehicle Identification
BFWA	Broadband Fixed Wireless Access
CENELEC	European Committee for Electrotechnical Standardization

CEPT	The European Conference of Postal and Telecommunications Administration
DAB	Digital Audio Broadcasting
DEC	Decision
DECT	Digital European Cordless Telecommunication system
DGPS	Differential GPS
DME	Distance Measuring Equipment
DSC	Digital Selective Calling
ECA	European Common Allocation
ECC	Electronic Communications Committee
EIRP	Equivalent Isotropically Radiated Power
EN xxx	European Norm xxx standardit
ENG/OB	Electronic News Gathering/Outside Broadcasting
EPIRB	Emergency Position-Indicating RadioBeacon
ERC	European Radiocommunications Committee
ETSI	European Telecommunications Standards Institute
EY	Euroopan Yhteisö
EU	Euroopan Unioni
FM	Frequency Modulation
FWA	Fixed Wireless Access
FWS	Fixed Wireless Systems
GBAS	Ground Based Augmentation System
GMDSS	Global Maritime Distress and safety System
GPS	Global Positioning System
HEST	High EIRP Satellite Terminals
HDFSS	High Density Fixed Satellite Service
IALA	International Association of Lighthouse Authorities
ILS	Instrument Landing System
IMT-2000	International Mobile Telecommunications
ISM	Industrial, Scientific and Medical applications
ITU-R	International Telecommunication Union, Radiocommunication sector
LA	AM/DSB CB
LEST	Low EIRP Satellite Terminals
LR	Radiolocation Land Station
MLS	Microwave Landing System

MVDS	Multipoint Video Distribution System
MWS	Multimedia Wireless Systems
NDB	Non-Directional Radio Beacon
NMT	Nordic Mobile Telephone
OB	Outside Broadcasting
OR	Off-Route
PMR	Professional / Private Mobile Radio
R	Route
REC	Recommendation
RES	Resolution
RHA68	Tiedote "Harrastuskäyttöön varatut kanavat taajuusalueella 68–71 MHz" Meddelande "för fritidsbruk reserverade kanaler inom frekvensbandet 68–71 MHz" Announcement "Channels in the 68–71 MHz frequency band reserved for hobby usage"
RLAN	Radio Local Area Network
RR	Radio Regulations
RR AP30B	Appendix 30B of the ITU Radio Regulations
RTTT	Road transport and traffic telematics
SAR	Search And Rescue, Synthetic Aperture Radar
SRD	Short Range Devices
SRR	Short Range Radar
SSR	Secondary Surveillance Radar
TETRA	Terrestrial Trunked Radio
TRAFICOM	Liikenne- ja viestintävirasto Traficom / Transport- och kommunikationsverket Traficom / Finnish Transport and Communications Agency (Traficom).
TV	Television
UWB	Ultra Wideband
VDL	VHF Data Link
VIRVE	Finland’s Public Authority Network, emergency services network
VLBI	Very Long Baseline Interferometry
WLAN	Wireless Local Area Network
WLL	Wireless Local Loop
VOR	VHF Omnidirectional Radio Range

Annex to Radio frequency regulation

Inductive equipment, NMR equipment, ultra-wideband equipment (UWB) and wide-band data transmission equipment (WAS/RLAN) 57–71 GHz and Amateur radio transmitters

1. Inductive equipment

The frequency bands in the 100 Hz - 30 MHz frequency range typically assigned for inductive

equipment in Europe are listed in the ECC Recommendation ERC/REC 70-03 on the use of

Short Range Equipment (https://cept.org/eco/). Inductive equipment complying with Recommendation ERC/REC 70-03 and European Commission Implementing Decision (EU) 2022/180 may be used in Finland. The use of other inductive equipment that meet the requirements of standard EN 300 330 or another

similar European harmonised standard on inductive equipment and whose conformity has been verified in accordance with section 255 of the Act on Electronic Communications Services is not restricted in Finland, either. For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15.

2. NMR equipment

Enclosed Nuclear Magnetic Resonance (NMR) equipment in the frequency range 9 kHz - 130 MHz in accordance with Commission Implementing Decision (EU) 2022/180. NMR equipment can be used to investigate the properties of different materials, for example. For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15.

3. Ultra-wideband equipment (UWB) and wide-band data transmission equipment (WAS/RLAN) 57–71 GHz

Ultra-wideband equipment (UWB, Ultra Wide Band) are operated in several sub-bands and, thus, this group of equipment has not been added to the Frequency Allocation Table. The frequency bands and air interfaces assigned for this equipment group are listed below.

Equipment categories: licence-exempt generic UWB equipment, building material analysis and material sensing equipment, tank level probing radars, level probing radars, GPR/WPR equipment subject to licence and wideband data transmission equipment (WAS/RLAN) within the band 57–71 GHz.

GENERIC UWB EQUIPMENT

Frequency band	**Conditions for use**
6.0 - 8.5 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Spectral power density of UWB transmission -41.3 dBm/MHz EIRP. Fixed installed equipment only for indoor use and for use in automotive and railway vehicles. Fixed installed equipment in automotive or railway vehicles must employ low duty cycle (LDC) or transmit power control (TPC), and the spectral power density caused by the equipment must be ≤ -53.3 dBm/MHz EIRP outside these vehicles. ECC Decision ECC/DEC/(06)04. Standard EN 302 065 as applicable. European Commission Decision (EU) 2019/785.
6.0 - 8.5 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Equipment intended for internal data transmission on board aircraft and approved to be used on board aircraft in accordance with Commission Decision (EU) 2019/785. ECC Decision ECC/DEC/(12)03.
3.1 - 4.8 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15.

	Equipment using low duty cycle (LDC) or DAA mitigation technique. Spectral power density of UWB transmission -41.3 dBm/MHz EIRP. Fixed installed equipment only for indoor use and for use in automotive and railway vehicles. In automotive and railway vehicles, fixed installed equipment using DAA mitigation technique must employ transmit power control (TPC). The spectral power density caused by fixed installed equipment in automotive or railway vehicles must be ≤ -53.3 dBm/MHz EIRP outside these vehicles. ECC Decision ECC/DEC/(06)04. Standard EN 302 065 as applicable. European Commission Decision (EU) 2019/785.
4.2 - 4.8 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. New equipment to be taken into use on 31.12.2010 at the latest. Spectral power density of UWB transmission -41.3 dBm/MHz EIRP. Fixed installed equipment only for indoor use and for use in automotive and railway vehicles. In automotive and railway vehicles, fixed installed equipment must employ transmit power control (TPC) or have a maximum spectral power density of -53.3 dBm/MHz EIRP. ECC Decision ECC/DEC/(06)04. Standard EN 302 065. European Commission Decision (EU) 2019/785.
3.8 - 4.2 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Vehicular access systems with applicable mitigation technique. Spectral power density of UWB transmission -41.3 dBm/MHz EIRP. Low duty cycle (LDC). European Commission Decision (EU) 2019/785.
6.0 - 8.5 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Vehicular access systems with applicable mitigation technique. Spectral power density of UWB transmission -41.3 dBm/MHz EIRP. Low duty cycle (LDC) or transmit power control (TPC). European Commission Decision (EU) 2019/785.
8.5 - 9.0 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Equipment using DAA mitigation technique. Spectral power density of UWB transmission -41.3 dBm/MHz EIRP.

	Fixed installed equipment only for indoor use and for use in automotive and railway vehicles. In automotive and railway vehicles, fixed installed equipment using DAA mitigation technique must employ transmit power control (TPC), and the spectral power density caused by the equipment must be ≤ -53.3 dBm/MHz EIRP outside these vehicles. ECC Decision ECC/DEC/(06)04. Standard EN 302 065 as applicable. European Commission Decision (EU) 2019/785.

UWB MATERIAL SENSING EQUIPMENT

Frequency band	**Conditions for use**
2.2 - 9.0 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. UWB material sensing equipment. Standard EN 302 065 as applicable. ECC Decision ECC/DEC/(07)01. European Commission Decision (EU) 2019/785.

TANK LEVEL PROBING RADARS

Frequency band	**Conditions for us**
4.5 - 7.0 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Tank level probing radars. Spectral power density outside the tank ≤ -41.3 dBm/MHz EIRP. Radiated power inside the tank ≤ +24 dBm EIRP. Standard EN 302 372. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
8.5 - 10.6 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Tank level probing radars. Spectral power density outside the tank ≤ -41.3 dBm/MHz EIRP. Radiated power inside the tank ≤ +30 dBm EIRP.

	Standard EN 302 372. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
24.05 - 27.00 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Tank level probing radars. Spectral power density outside the tank ≤ -41.3 dBm/MHz EIRP. Radiated power inside the tank ≤ +43 dBm EIRP. Standard EN 302 372. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
57 - 64 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Tank level probing radars. Spectral power density outside the tank ≤ -41.3 dBm/MHz EIRP. Radiated power inside the tank ≤ +43 dBm EIRP. Standard EN 302 372. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
75 - 85 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Tank level probing radars. Spectral power density outside the tank ≤ -41.3 dBm/MHz EIRP. Radiated power inside the tank ≤ +43 dBm EIRP. Standard EN 302 372. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.

LEVEL PROBING RADARS

Frequency band	**Conditions for use**
6.0 - 8.5 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Level probing radars. Standard EN 302 729. ECC Decision ECC/DEC/(11)02. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
24.05 - 26.50 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Level probing radars.

	Standard EN 302 729. ECC Decision ECC/DEC/(11)02. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
57 - 64 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Level probing radars. Standard EN 302 729. ECC Decision ECC/DEC/(11)02. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
75 - 85 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Level probing radars. Standard EN 302 729. ECC Decision ECC/DEC/(11)02. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.

GPR/WPR EQUIPMENT

Frequency band	**Conditions for use**
30 - 12400 MHz	GPR/WPR equipment intended for professional use in accordance with Decision ECC/DEC/(06)08. For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Standard EN 302 066.

WIDE-BAND DATA TRANSMISSION EQUIPMENT (WAS/RLAN) 57–71 GHz

Frequency band	**Conditions for use**
57 - 71 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Radiated power ≤ 40 dBm EIRP, spectral power density of transmission ≤ 23 dBm/MHz EIRP. Fixed outdoor installations not permitted. Standard EN 302 567.

	European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
57 - 71 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Radiated power ≤ 40 dBm EIRP, spectral power density of transmission ≤ 23 dBm/MHz EIRP and transmit power ≤ 27 dBm. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.
57 - 71 GHz	For licence-exempt equipment, see Finnish Transport and Communications Agency Regulation 15. Radiated power ≤ 55 dBm EIRP, spectral power density of transmission ≤ 38 dBm/MHz EIRP and minimum transmitting antenna gain 30 dBi. Only fixed outdoor installations. European Commission Decision 2006/771/EC, supplemented by Implementing Decision (EU) 2022/180.

4. Amateur radio transmitters

For justified reasons and for experimental purposes, the radio licence may entitle a radio amateur of general class to use higher transmitter power in a frequency band assigned for amateur radio communication than stipulated in the Frequency Allocation Table. The terms of an amateur radio station licence may also contain exceptions as to the provisions on amateur radio transmitters in this Table.

Appendix 1 to Frequency Allocation Table

The standard references are only for informative purposes and they do not set compulsory requirements for placing of equipment on the market. When there are references to standards or other comparable specifications in the Radio Frequency Plan, this implies that they have been used as assumptions for equipment performance in an interference analysis concerning a new frequency assignment or as a technical basis for compatibility studies between different radio communications services or as a technical basis for coordination agreements with other countries. Standard references may in some cases also be used to define a channel access procedure, the use of which is a condition for the use of certain frequency bands.

The standard references do not specify the version of the standard. Reference means the latest version published in the Official Journal of the European Union.

1. Radiotelephone Base Stations only for Analogue Speech Transmission

1.1 Radiotelephone base stations

Standard EN 300 086

Equipment with selectivity call: Standard EN 300 219

1.2 Vehicle-mounted radiotelephones

Standard EN 300 086

Equipment with selectivity call: Standard EN 300 219

1.3 Portable radiotelephones

a) equipment with antenna connector

Standard EN 300 086

Equipment with selectivity call: Standard EN 300 219

b) equipment with integral antenna

Standard EN 300 296

Equipment with selectivity call: Standard EN 300 341

2. Radiotelephones for analogue Speech and/or Data Transmission

2.1 Radiotelephone base stations

a) channel spacing ≥ 25 kHz:

Standard EN 300 394-1

Standard EN 302 561

b) channel spacing 25 kHz or 12.5 kHz:

Standard EN 300 113

c) channel spacing ≤ 10 kHz

Standard EN 301 166

2.2 Vehicle-mounted radiotelephones

a) channel spacing ≥ 25 kHz:

Standard EN 300 394-1

Standard EN 302 561

b) channel spacing 25 kHz or 12.5 kHz:

Standard EN 300 113

c) channel spacing ≤ 10 kHz

Standard EN 301 166

2.3 Portable radiotelephones

a) channel spacing ≥ 25 kHz:

Standard EN 300 394-1

Standard EN 302 561

b) channel spacing 25 kHz or 12.5 kHz:

Equipment with antenna connector: Standard EN 300 113

Equipment with integral antenna: Standard EN 300 390

c) channel spacing ≤ 10 kHz:

Standard EN 301 166

3. Telecommand and Telemetry Equipment and Data Transmission Systems

3.1 Standard EN 300 220 or EN 302 561 with the following specifications:

These standards are applied to equipment with transmission power belov 0.5 W in the frequency bands 29.810 - 29.940 MHz and 161.4125 - 161.4625 MHz and in the sub-bands within the frequency band 406...470 MHz identified by Finnish Transport and Communication Agency for this purpose.

3.2. Standard EN 300 113 or standard EN 302 561 applies to all other frequency ranges than those mentioned above, or to equipment with a transmission power exceeding 0.5 W.

MARITIME CHANNELLING TABLES

Paired radiotelephony channels in the 4 MHz band

	Coast stations		Ships	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency
401	4357	4358,4	4065	4066,4
402	4360	4361,4	4068	4069,4
403	4363	4364,4	4071	4072,4
404	4366	4367,4	4074	4075,4
405	4369	4370,4	4077	4078,4
406	4372	4373,4	4080	4081,4
407	4375	4376,4	4083	4084,4
408	4378	4379,4	4086	4087,4
409	4381	4382,4	4089	4090,4
410	4384	4385,4	4092	4093,4
411	4387	4388,4	4095	4096,4
412	4390	4391,4	4098	4099,4
413	4393	4394,4	4101	4102,4
414	4396	4397,4	4104	4105,4
415	4399	4400,4	4107	4108,4
416	4402	4403,4	4110	4111,4
417	4405	4406,4	4113	4114,4
418	4408	4409,4	4116	4117,4
419	4411	4412,4	4119	4120,4

420	4414	4415,4	4122	4123,4
421	4417*	4418,4*	4125*1)	4126,4*
422	4420	4421,4	4128	4129,4
423	4423	4424,4	4131	4132,4
424	4426	4427,4	4134	4135,4
425	4429	4430,4	4137	4138,4
426	4432	4433,4	4140	4141,4
427	4435	4436,4	4143	4144,4
428	4351	4352,4	-	-
429	4354	4355,4	-	

*) Channel 421 (coast station carrier frequency 4417 kHz and ship station carrier frequency 4125 kHz) is the calling channel in radiotelephony.

1) The ship station TX frequency 4125 kHz of channel 421 is used as the distress and safety frequency in radiotelephony.

Paired radiotelephony channels in the 6 MHz band

	Coast stations		Ships	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency
601	6501	6502,4	6200	6201,4
602	6504	6505,4	6203	6204,4
603	6507	6508,4	6206	6207,4
604	6510	6511,4	6209	6210,4
605	6513	6514,4	6212	6213,4
606	6516*	6517,4*	6215*2)	6216,4*
607	6519	6520,4	6218	6219,4
608	6522	6523,4	6221	6222,4

*) Channel 606 (coast station carrier frequency 6516 kHz and ship station carrier frequency 6215 kHz) is the calling channel in radiotelephony.

2) The ship station TX frequency 6215 kHz of channel 606 is used as the distress and safety frequency in radiotelephony.

Paired radiotelephony channels in the 8 MHz band

	Coast stations		Ships			Coast stations	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency	Channel number	Carrier frequency	Assigned frequency
801	8719	8720,4	8195	8196,4	819	8773	8774,4
802	8722	8723,4	8198	8199,4	820	8776	8777,4
803	8725	8726,4	8201	8202,4	821	8779*	8780,4*
804	8728	8729,4	8204	8205,4	822	8782	8783,4
805	8731	8732,4	8207	8208,4	823	8785	8786,4
806	8734	8735,4	8210	8211,4	824	8788	8789,4
807	8737	8738,4	8213	8214,4	825	8791	8792,4
808	8740	8741,4	8216	8217,4	826	8794	8795,4
809	8743	8744,4	8219	8220,4	827	8797	8798,4
810	8746	8747,4	8222	8223,4	828	8800	8801,4
811	8749	8750,4	8225	8226,4	829	8803	8804,4
812	8752	8753,4	8228	8229,4	830	8806	8807,4

813	8755	8756,4	8231	8232,4	831	8809	8810,4
814	8758	8759,4	8234	8235,4	832	8812	8813,4
815	8761	8762,4	8237	8238,4	833	8291 3)	8292,4
816	8764	8765,4	8240	8241,4	834	8707	8708,4
817	8767	8768,4	8243	8244,4	835	8710	8711,4
818	8770	8771,4	8246	8247,4	836	8713	8714,4
					837	8716	8717,4

*) Channel 821 (coast station carrier frequency 8779 kHz and ship station carrier frequency 8255 kHz) is the calling channel in radiotelephony.

3) The ship station TX frequency 8291 kHz of channel 833 is used as the distress and safety frequency in radiotelephony.

Paired radiotelephony channels in the 12 MHz band

	Coast stations		Ships			Coast stations	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency	Channel number	Carrier frequency	Assigned frequency
1201	13077	13078,4	12230	12231,4	1221	13137*	13138,4*
1202	13080	13081,4	12233	12234,4	1222	13140	13141,4
1203	13083	13084,4	12236	12237,4	1223	13143	13144,4
1204	13086	13087,4	12239	12240,4	1224	13146	13147,4
1205	13089	13090,4	12242	12243,4	1225	13149	13150,4
1206	13092	13093,4	12245	12246,4	1226	13152	13153,4
1207	13095	13096,4	12248	12249,4	1227	13155	13156,4
1208	13098	13099,4	12251	12252,4	1228	13158	13159,4
1209	13101	13102,4	12254	12255,4	1229	13161	13162,4
1210	13104	13117,4	12269	12270,4	1230	13164	13165,4
1211	13107	13105,4	12257	12258,4	1231	13167	13168,4
1212	13110	13108,4	12260	12261,4	1232	13170	13171,4
1213	13113	13111,4	12263	12264,4	1233	13173	13174,4
1214	13116	13114,4	12266	12267,4	1234	13176	13177,4
1215	13119	13120,4	12272	12273,4	1235	13179	13180,4
1216	13122	13123,4	12275	12276,4	1236	13182	13183,4
1217	13125	13126,4	12278	12279,4	1237	13185	13186,4
1218	13128	13129,4	12281	12282,4	1238	13188	13189,4
1219	13131	13132,4	12284	12285,4	1239	13191	13192,4
1220	13134	13135,4	12287	12288,4	1240	13194	13195,4
					1241	13197	13198,4

*) Channel 1221 (coast station carrier frequency 13137 kHz and ship station carrier frequency 12290 kHz) is the calling channel in radiotelephony.

4) The ship station TX frequency 12290 kHz of channel 1221 is used as the distress and safety frequency in radiotelephony.

Paired radiotelephony channels in the 16 MHz band

	Coast stations		Ships			Coast stations	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency	Channel number	Carrier frequency	Assigned frequency
1601	17242	17243,4	16360	16361,4	1631	17332	17333,4
1602	17245	17246,4	16363	16364,4	1632	17335	17336,4
1603	17248	17249,4	16366	16367,4	1633	17338	17339,4

1604	17251	17252,4	16369	16370,4	1634	17341	17342,4
1605	17254	17255,4	16372	16373,4	1635	17344	17345,4
1606	17257	17258,4	16375	16376,4	1636	17347	17348,4
1607	17260	17261,4	16378	16379,4	1637	17350	17351,4
1608	17263	17264,4	16381	16382,4	1638	17353	17354,4
1609	17266	17267,4	16384	16385,4	1639	17356	17357,4
1610	17269	17270,4	16387	16388,4	1640	17359	17360,4
1611	17272	17273,4	16390	16391,4	1641	17362	17363,4
1612	17275	17276,4	16393	16394,4	1642	17365	17366,4
1613	17278	17279,4	16396	16397,4	1643	17368	17369,4
1614	17281	17282,4	16399	16400,4	1644	17371	17372,4
1615	17284	17285,4	16402	16403,4	1645	17374	17375,4
1616	17287	17288,4	16405	16406,4	1646	17377	17378,4
1617	17290	17291,4	16408	16409,4	1647	17380	17381,4
1618	17293	17294,4	16411	16412,4	1648	17383	17384,4
1619	17296	17297,4	16414	16415,4	1649	17386	17387,4
1620	17299	17300,4	16417	16418,4	1650	17389	17390,4
1621	17302*	17303,4*	16420*4)	16421,4*	1651	17392	17393,4
1622	17305	17306,4	16423	16424,4	1652	17395	17396,4
1623	17308	17309,4	16426	16427,4	1653	17398	17399,4
1624	17311	17312,4	16429	16430,4	1654	17401	17402,4
1625	17314	17315,4	16432	16433,4	1655	17404	17405,4
1626	17317	17318,4	16435	16436,4	1656	17407	17408,4
1627	17320	17321,4	16438	16439,4			
1628	17323	17324,4	16441	16442,4			
1629	17326	17327,4	16444	16445,4			
1630	17329	17330,4	16447	16448,4			

*) Channel 1621 (coast station carrier frequency 16302 kHz and ship station carrier frequency 16420 kHz) is the calling channel in radiotelephony.

4) The ship station TX frequency 16420 kHz of channel 1621 is used as the distress and safety frequency in radiotelephony.

Paired radiotelephony channels in the 18/19 MHz band

	Coast stations		Ships	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency
1801	19755	19756,4	18780	18781,4
1802	19758	19759,4	18783	18784,4
1803	19761	19762,4	18786	18787,4
1804	19764	19765,4	18789	18790,4
1805	19767	19768,4	18792	18793,4
1806	19770*	19771,4 *	18795 *	18796,4 *
1807	19773	19774,4	18798	18799,4
1808	19776	19777,4	18801	18802,4
1809	19779	19780,4	18804	18805,4
1810	19782	19783,4	18807	18808,4
1811	19785	19786,4	18810	18811,4
1812	19788	19789,4	18813	18814,4
1813	19791	19792,4	18816	18817,4
1814	19794	19795,4	18819	18820,4
1815	19797	19798,4	18822	18823,4

*) Channel 1806 (coast station carrier frequency 19770 kHz and ship station carrier frequency 18795 kHz) is the calling channel in radiotelephony.

Paired radiotelephony channels in the 22 MHz band

	Coast stations		Ships			Coast stations	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency	Channel number	Carrier frequency	Assigned frequency
2201	22696	22697,4	22000	22001,4	2231	22786	22787,4
2202	22699	22700,4	22003	22004,4	2232	22789	22790,4
2203	22702	22703,4	22006	22007,4	2233	22792	22793,4
2204	22705	22706,4	22009	22010,4	2234	22795	22796,4
2205	22708	22709,4	22012	22013,4	2235	22798	22799,4
2206	22711	22712,4	22015	22016,4	2236	22801	22802,4
2207	22714	22715,4	22018	22019,4	2237	22804	22805,4
2208	22717	22718,4	22021	22022,4	2238	22807	22808,4
2209	22720	22721,4	22024	22025,4	2239	22810	22811,4
2210	22723	22724,4	22027	22028,4	2240	22813	22814,4
2211	22726	22727,4	22030	22031,4	2241	22816	22817,4
2212	22729	22730,4	22033	22034,4	2242	22819	22820,4
2213	22732	22733,4	22036	22037,4	2243	22822	22823,4
2214	22735	22736,4	22039	22040,4	2244	22825	22826,4
2215	22738	22739,4	22042	22043,4	2245	22828	22829,4
2216	22741	22742,4	22045	22046,4	2246	22831	22832,4
2217	22744	22745,4	22048	22049,4	2247	22834	22835,4
2218	22747	22748,4	22051	22052,4	2248	22837	22838,4
2219	22750	22751,4	22054	22055,4	2249	22840	22841,4
2220	22753	22754,4	22057	22058,4	2250	22843	22844,4
2221	22756*	22757,4*	22060*	22061,4*	2251	22846	22847,4
2222	22759	22760,4	22063	22064,4	2252	22849	22850,4
2223	22762	22763,4	22066	22067,4	2253	22852	22853,4
2224	22765	22766,4	22069	22070,4			
2225	22768	22769,4	22072	22073,4			
2226	22771	22772,4	22075	22076,4			
2227	22774	22775,4	22078	22076,4			
2228	22777	22778,4	22081	22082,4			
2229	22780	22781,4	22084	22085,4			
2230	22783	22784,4	22087	22088,4			

*) Channel 2221 (coast station carrier frequency 22756 kHz and ship station carrier frequency 22060 kHz) is the calling channel in radiotelephony.

Paired radiotelephony channels in the 25 MHz band

	Coast stations		Ships	
Channel number	Carrier frequency	Assigned frequency	Carrier frequency	Assigned frequency
2501	26145	26146,4	25070	25071,4
2502	26148	26149,4	25073	25074,4
2503	26151	26152,4	25076	25077,4
2504	26154	26155,4	25079	25080,4
2505	26157	26158,4	25082	25083,4
2506	26160	26161,4	25085	25086,4
2507	26163	26164,4	25088	25089,4
2508	26166	26167,4	25091	25092,4
2509	26169	26170,4	25094	25095,4
2510	26172 *	26173,4 *	25097 *	25098,4

*) Channel 2510 (coast station carrier frequency 26172 kHz and ship station carrier frequency 25097 kHz) is the calling channel in radiotelephony.

Unpaired radiotelephony frequencies (3JE) in bands 4, 6, 8, 12, 16, 18, 22 and 25 MHz

These frequencies are used for ship-to-ship communications. When required, they can be used also for communications between a ship and a coast station.

The frequencies can be used for simplex communicating also by coast station when the transmitting power does not exceed 1 kW.

4 MHz f c	4 MHz f a	6 MHz f c	6 MHz fa	8 MHz fc	8 MHz fa	12 MHz fc	12 MHz fa
4146	4147,4	6224	6225,4	8294	8295,4	12353	12354,4
4149	4150,4	6227	6228,4	8297	8298,4	12356	12357,4
		6230	6231,4			12359	12360,4
						12362	12363,4
						12365	12366,4

16 MHz f c	16 MHz f a	18 MHz fc	18 MHz fa	22 MHz fc	22 MHz fa	25 MHz fc	25 MHz fa
16528	16529,4	18825	18826,4	22159	22160,4	25100	25101,4
16531	16532,4	18828	18829,4	22162	22163,4	25103	25104,4
16534	16535,4	18831	18832,4	22165	22166,4	25106	25107,4
16537	16538,4	18834	18835,4	22168	22169,4	25109	25110,4
16540	16541,4	18837	18838,4	22171	22172,4	25112	25113,4
16543	16544,4	18840	18841,4	22174	22175,4	25115	25116,4
16546	16547,4	18843	18844,4	22177	22178,4	25118	25119,4

f c = carrier frequency
f a = assigned frequency

Additional unpaired frequencies (J3E) shared with fixed service in the 4 and 8 MHz bands

These frequencies are used for ship-to-ship communications. When required, they can be used also for communications between a ship and a coast station.

4 MHz f c	4 MHz f a	4 MHz fc	4 MHz fa	8 MHz fc	8 MHz fa	8 MHz fc	8 MHz fa
4000	4001,3	4033	4034,4	8101	8102,4	8149	8150,4
4003	4004,3	4036	4037,4	8104	8105,4	8152	8153,4
4006	4007,3	4039	4040,4	8107	8108,4	8155	8156,4
4009	4010,3	4042	4043,4	8110	8111,4	8158	8159,4
4012	4013,3	4045	4046,4	8113	8114,4	8161	8162,4
4015	4016,3	4048	4049,4	8116	8117,4	8164	8165,4
4018	4019,3	4051	4052,4	8119	8120,4	8167	8168,4
4021	4022,3	4054	4055,4	8122	8123,4	8170	8171,4
4024	4025,3	4057	4058,4	8125	8126,4	8173	8174,4
4027	4028,3	4060	4061,4	8128	8129,4	8176	8177,4
4030	4031,3			8131	8132,4	8179	8180,4
				8134	8135,4	8182	8183,4
				8137	8138,4	8185	8186,4
				8140	8141,4	8188	8189,4
				8143	8144,4	8191	8192,4
				8146	8147,4		

f c = carrier frequency
f a = assigned frequency

Paired telex frequencies (NBDP) 4 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number	Coast station TX (kHz)	Ship TX (kHz)
1	4210,5	4172,5	11	4177,5 *)	4177,5 *)
2	4211	4173	12	4215,5	4178
3	4211,5	4173,5	13	4216	4178,5
4	4212	4174	14	4216,5	4179
5	4212,5	4174,5	15	4217	4179,5
6	4213	4175	16	4217,5	4180
7	4213,5	4175,5	17	4218	4180,5
8	4214	4176	18	4218,5	4181
9	4214,5	4176,5	19	4219	4185,5
10	4215	4177			

*) 4177,5 kHz is the distress frequency for telex communications.

Paired telex frequencies (NBDP) 6 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number
1	6314,5	6263	14	6320,5	6269,5	27
2	6315	6263,5	15	6321	6270	28
3	6315,5	6264	16	6321,5	6270,5	29
4	6316	6264,5	17	6322	6271	30
5	6316,5	6265	18	6322,5	6271,5	31
6	6317	6265,5	19	6323	6272	32
7	6317,5	6266	20	6323,5	6272,5	33
8	6318	6266,5	21	6324	6273	34
9	6318,5	6267	22	6324,5	6273,5	
10	6319	6267,5	23	6325	6274	
11	6268 *)	6268 *)	24	6325,5	6274,5	
12	6319,5	6268,5	25	6326	6275	
13	6320	6269	26	6326,5	6275,5	

*) 6268,0 kHz is the distress frequency for telex communications.

Paired telex frequencies (NBDP) 8 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number
1	8376,5 *)	8376,5 *)	15	8423,5	8383,5	29
2	8417	8377	16	8424	8384	30
3	8417,5	8377,5	17	8424,5	8384,5	31
4	8418	8378	18	8425	8385	32
5	8418,5	8378,5	19	8425,5	8385,5	33
6	8419	8379	20	8426	8386	34
7	8419,5	8379,5	21	8426,5	8386,5	35
8	8420	8380	22	8427	8387	36
9	8420,5	8380,5	23	8427,5	8387,5	37
10	8421	8381	24	8428	8388	38
11	8421,5	8381,5	25	8428,5	8388,5	39
12	8422	8382	26	8429	8389	40
13	8422,5	8382,5	27	8429,5	8389,5	
14	8423	8383	28	8430	8390	

*) 8376,5 kHz is the distress frequency for telex communications.

Paired telex frequencies (NBDP) 12 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number
1	12579,5	12477	61	12609,5	12507	121
2	12580	12477,5	62	12610	12507,5	122
3	12580,5	12478	63	12610,5	12508	123
4	12581	12478,5	64	12611	12508,5	124
5	12581,5	12479	65	12611,5	12509	125
6	12582	12479,5	66	12612	12509,5	126
7	12582,5	12480	67	12612,5	12510	127
8	12583	12480,5	68	12613	12510,5	128
9	12583,5	12481	69	12613,5	12511	129
10	12584	12481,5	70	12614	12511,5	130
11	12584,5	12482	71	12614,5	12512	131
12	12585	12482,5	72	12615	12512,5	132
13	12585,5	12483	73	12615,5	12513	133
14	12586	12483,5	74	12616	12513,5	134
15	12586,5	12484	75	12616,5	12514	135
16	12587	12484,5	76	12617	12514,5	136
17	12587,5	12485	77	12617,5	12515	137
18	12588	12485,5	78	12618	12515,5	138
19	12588,5	12486	79	12618,5	12516	139
20	12589	12486,5	80	12619	12516,5	140
21	12589,5	12487	81	12619,5	12517	141
22	12590	12487,5	82	12620	12517,5	142
23	12590,5	12488	83	12620,5	12518	143
24	12591	12488,5	84	12621	12518,5	144
25	12591,5	12489	85	12621,5	12519	145
26	12592	12489,5	86	12622	12519,5	146
27	12592,5	12490	87	12520 *)	12520 *)	147
28	12593	12490,5	88	12622,5	12520,5	148
29	12593,5	12491	89	12623	12521	149
30	12594	12491,5	90	12623,5	12521,5	150

31	12594,5	12492	91	12624	12522	151
32	12595	12492,5	92	12624,5	12522,5	152
33	12595,5	12493	93	12625	12523	153
34	12596	12493,5	94	12625,5	12523,5	154
35	12596,5	12494	95	12626	12524	155
36	12597	12494,5	96	12626,5	12524,5	156
37	12597,5	12495	97	12627	12525	
38	12598	12495,5	98	12627,5	12525,5	
39	12598,5	12496	99	12628	12526	
40	12599	12496,5	100	12628,5	12526,5	
41	12599,5	12497	101	12629	12527	
42	12600	12497,5	102	12629,5	12527,5	
43	12600,5	12498	103	12630	12528	
44	12601	12498,5	104	12630,5	12528,5	
45	12601,5	12499	105	12631	12529	
46	12602	12499,5	106	12631,5	12529,5	
47	12602,5	12500	107	12632	12530	
48	12603	12500,5	108	12632,5	12530,5	
49	12603,5	12501	109	12633	12531	
50	12604	12501,5	110	12633,5	12531,5	
51	12604,5	12502	111	12634	12532	
52	12605	12502,5	112	12634,5	12532,5	
53	12605,5	12503	113	12635	12533	
54	12606	12503,5	114	12635,5	12533,5	
55	12606,5	12504	115	12636	12534	
56	12607	12504,5	116	12636,5	12534,5	
57	12607,5	12505	117	12637	12535	
58	12608	12505,5	118	12637,5	12535,5	
59	12608,5	12506	119	12638	12536	
60	12609	12506,5	120	12638,5	12536,5	

*) 12520,0 kHz is the distress frequency for telex communications.

Paired telex frequencies (NBDP) 16 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number
1	16807	16683,5	61	16836,5	16713,5	121
2	16807,5	16684	62	16837	16714	122
3	16808	16684,5	63	16837,5	16714,5	123
4	16808,5	16685	64	16838	16715	124
5	16809	16685,5	65	16838,5	16715,5	125
6	16809,5	16686	66	16839	16716	126
7	16810	16686,5	67	19839,5	16716,5	127
8	16810,5	16687	68	16840	16717	128
9	16811	16687,5	69	16840,5	16717,5	129
10	16811,5	16688	70	16841	16718	130
11	16812	16688,5	71	16841,5	16718,5	131
12	16812,5	16689	72	16842	16719	132
13	16813	16689,5	73	16842,5	16719,5	133
14	16813,5	16690	74	16843	16720	134
15	16814	16690,5	75	16843,5	16720,5	135
16	16814,5	16691	76	16844	16721	136
17	16815	16691,5	77	16844,5	16721,5	137
18	16815,5	16692	78	16845	16722	138
19	16816	16692,5	79	16845,5	16722,5	139

20	16816,5	16693	80	16846	16723	140
21	16817	16693,5	81	16846,5	16723,5	141
22	16817,5	16694	82	16847	16724	142
23	16818	16694,5	83	16847,5	16724,5	143
24	16695 *)	16695 *)	84	16848	16725	144
25	16818,5	16695,5	85	16848,5	16725,5	145
26	16819	16696	86	16849	16726	146
27	16819,5	16696,5	87	16849,5	16726,5	147
28	16820	16697	88	16850	16727	148
29	16820,5	16697,5	89	16850,5	16727,5	149
30	16821	16698	90	16851	16728	150
31	16821,5	16698,5	91	16851,5	16728,5	151
32	16822	16699	92	16852	16729	152
33	16822,5	16699,5	93	16852,5	16729,5	153
34	16823	16700	94	16853	16730	154
35	16823,5	16700,5	95	16853,5	16730,5	155
36	16824	16701	96	16854	16731	156
37	16824,5	16701,5	97	16854,5	16731,5	157
38	16825	16702	98	16855	16732	158
39	16825,5	16702,5	99	16855,5	16732,5	159
40	16826	16703	100	16856	16733	160
41	16826,5	16703,5	101	16856,5	16733,5	161
42	16827	16704	102	16857	16739	162
44	16828	16705	104	16858	16740	164
45	16828,5	16705,5	105	16858,5	16740,5	165
46	16829	16706	106	16859	16741	166
47	16829,5	16706,5	107	16859,5	16741,5	167
48	16830	16707	108	16860	16742	168
49	16830,5	16707,5	109	16860,5	16742,5	169
50	16831	16708	110	16861	16743	170
51	16831,5	16708,5	111	16861,5	16743,5	171
52	16832	16709	112	16862	16744	172
53	16832,5	16709,5	113	16862,5	16744,5	173
54	16833	16710	114	16863	16745	174
55	16833,5	16710,5	115	16863,5	16745,5	175
56	16834	16711	116	16864	16746	176
57	16834,5	16711,5	117	16864,5	16746,5	177
58	16835	16712	118	16865	16747	178
59	16835,5	16712,5	119	16865,5	16747,5	179
60	16836	16713	120	16866	16748	180

(to be continued)

Paired telex frequencies (NBDP) 16 MHz

(continued from previous page)

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)
181	16896,5	16778,5
182	16897	16779
183	16897,5	16779,5
184	16898	16780

185	16898,5	16780,5
186	16899	16781
187	16899,5	16781,5
188	16900	16782
189	16900,5	16782,5
190	16901	16783
191	16901,5	16783,5
192	16902	16784
193	16902,5	16784,5

*) 16695,0 kHz is the distress frequency for telex communications.

Paired telex frequencies (NBDP) 18/19 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)	Channel number	Coast station TX (kHz)	Ship TX (kHz)
1	19681	18870,5	31	19696	18885,5
2	19681,5	18871	32	19696,5	18886
3	19682	18871,5	33	19670	18886,5
4	19682,5	18872	34	19670,5	18887
5	19683	18872,5	35	19671	18887,5
6	19683,5	18873	36	19671,5	18888
7	19684	18873,5	37	19672	18888,5
8	19684,5	18874	38	19672,5	18889
9	19685	18874,5	39	19673	18889,5
10	19685,5	18875	40	19673,5	18890
11	19686	18875,5	41	19701	18890,5
12	19686,5	18876	42	19701,5	18891
13	19687	18876,5	43	19702	18891,5
14	19687,5	18877	44	19702,5	18892
15	19688	18877,5	45	19703	18892,5
16	19688,5	18878			
17	19689	18878,5			
18	19689,5	18879			
19	19690	18879,5			
20	19690,5	18880			
21	19691	18880,5			
22	19691,5	18881			
23	19692	18881,5			
24	19692,5	18882			
25	19693	18882,5			
26	19693,5	18883			
27	19694	18883,5			
28	19694,5	18884			
29	19695	18884,5			
30	19695,5	18885			

Paired telex frequencies (NBDP) 22 MHz

All frequencies are assigned frequencies

Channel	Coast sta-	Ship	Channel	Coast sta-	Ship	Channel

number	tion TX (kHz)	TX (kHz)	number	tion TX (kHz)	TX (kHz)	number
1	22376,5	22284,5	61	22406,5	22314,5	121
2	22377	22285	62	22407	22315	122
3	22377,5	22285,5	63	22407,5	22315,5	123
4	22378	22286	64	22408	22316	124
5	22378,5	22286,5	65	22408,5	22316,5	125
6	22379	22287	66	22409	22317	126
7	22379,5	22287,5	67	22409,5	22317,5	127
8	22380	22288	68	22410	22318	128
9	22380,5	22288,5	69	22410,5	22318,5	129
10	22381	22289	70	22411	22319	130
11	22381,5	22289,5	71	22411,5	22319,5	131
12	22382	22290	72	22412	22320	132
13	22382,5	22290,5	73	22412,5	22320,5	133
14	22383	22291	74	22413	22321	134
15	22383,5	22291,5	75	22413,5	22321,5	135
16	22384	22292	76	22414	22322	
17	22384,5	22292,5	77	22414,5	22322,5	
18	22385	22293	78	22415	22323	
19	22385,5	22293,5	79	22415,5	22323,5	
20	22386	22294	80	22416	22324	
21	22386,5	22294,5	81	22416,5	22324,5	
22	22387	22295	82	22417	22325	
23	22387,5	22295,5	83	22417,5	22325,5	
24	22388	22296	84	22418	22326	
25	22388,5	22296,5	85	22418,5	22326,5	
26	22389	22297	86	22419	22327	
27	22389,5	22297,5	87	22419,5	22327,5	
28	22390	22298	88	22420	22328	
29	22390,5	22298,5	89	22420,5	22328,5	
30	22391	22299	90	22421	22329	
31	22391,5	22299,5	91	22421,5	22329,5	
32	22392	22300	92	22422	22330	
33	22392,5	22300,5	93	22422,5	22330,5	
34	22393	22301	94	22423	22331	
35	22393,5	22301,5	95	22423,5	22331,5	
36	22394	22302	96	22424	22332	
37	22394,5	22302,5	97	22424,5	22332,5	
38	22395	22303	98	22425	22333	
39	22395,5	22303,5	99	22425,5	22333,5	
40	22396	22304	100	22426	22334	
41	22396,5	22304,5	101	22426,5	22334,5	
42	22397	22305	102	22427	22335	
43	22397,5	22305,5	103	22427,5	22335,5	
44	22398	22306	104	22428	22336	
45	22398,5	22306,5	105	22428,5	22336,5	
46	22399	22307	106	22429	22337	
47	22399,5	22307,5	107	22429,5	22337,5	
48	22400	22308	108	22430	22338	
49	22400,5	22308,5	109	22430,5	22338,5	
50	22401	22309	110	22431	22339	
51	22401,5	22309,5	111	22431,5	22339,5	
52	22402	22310	112	22432	22340	
53	22402,5	22310,5	113	22432,5	22340,5	
54	22403	22311	114	22433	22341	
55	22403,5	22311,5	115	22433,5	22341,5	
56	22404	22312	116	22434	22342	
57	22404,5	22312,5	117	22434,5	22342,5	

58	22405	22313	118	22435	22343
59	22405,5	22313,5	119	22435,5	22343,5
60	22406	22314	120	22436	22344

Paired telex frequencies (NBDP) 25/26 MHz

All frequencies are assigned frequencies

Channel number	Coast station TX (kHz)	Ship TX (kHz)
1	26101	25173
2	26101,5	25173,5
3	26102	25174
4	26102,5	25174,5
5	26103	25175
6	26103,5	25175,5
7	26104	25176
8	26104,5	25176,5
9	26105	25177
10	26105,5	25177,5
11	26106	25178
12	26106,5	25178,5
13	26107	25179
14	26107,5	25179,5
15	26108	25180
16	26108,5	25180,5
17	26109	25181
18	26109,5	25181,5
19	26110	25182
20	26110,5	25182,5
21	26111	25183
22	26111,5	25183,5
23	26112	25184
24	26112,5	25184,5
25	26113	25185
26	26113,5	25185,5
27	26114	25186
28	26114,5	25186,5
29	26115	25187
30	26115,5	25187,5
31	26116	25188
32	26116,5	25188,5
33	26117	25189
34	26117,5	25189,5
35	26118	25190
36	26118,5	25190,5
37	26119	25191
38	26119,5	25191,5
39	26120	25192
40	26120,5	25192,5

Unpaired telex frequencies (NBDP) 4, 6, 8, 12, 16, 18, 22 and 25 MHz

All frequencies are assigned frequencies.

In addition to telex traffic these frequencies can be used for morse telegraphy working (AIA). The frequencies are intended primarily for ship-to-ship communications. They can also be used as ship station TX frequencies in
ship-to-shore communications.

Channel number	Ship TX (kHz)	Ship TX (kHz)	Ship TX (kHz)	Ship TX (kHz)	Ship TX (kHz)	Ship TX (kHz)	Ship TX (kHz)	Ship TX (kHz)
1	4202,5	6300,5	8396,5	12560	16785	18893	22352	25193
2	4203	6301	8397	12560,5	16785,5	18893,5	22352,5	25193,5
3	4203,5	6301,5	8397,5	12561	16786	18894	22353	25194
4	4204	6302	8398	12561,5	16786,5	18894,5	22353,5	25194,5
5	4204,5	6302,5	8398,5	12562	16787	18895	22354	25195
6	4205	6303	8399	12562,5	16787,5	18895,5	22354,5	25195,5
7	4205,5	6303,5	8399,5	12563	16788	18896	22355	25196
8	4206	6304	8400	12563,5	16788,5	18896,5	22355,5	25196,5
9	4206,5	6304,5	8400,5	12564	16789	18897	22356	25197
10	4207	6305	8401	12564,5	16789,5	18897,5	22356,5	25197,5
11		6305,5	8401,5	12565	16790	18898	22357	25198
12		6306	8402	12565,5	16790,5		22357,5	25198,5
13		6306,5	8402,5	12566	16791		22358	25199
14		6307	8403	12566,5	16791,5		22358,5	25199,5
15		6307,5	8403,5	12567	16792		22359	25200
16		6308	8404	12567,5	16792,5		22359,5	25200,5
17		6308,5	8404,5	12568	16793		22360	25201
18		6309	8405	12568,5	16793,5		22360,5	25201,5
19		6309,5	8405,5	12569	16794		22361	25202
20		6310	8406	12569,5	16794,5		22361,5	25202,5
21		6310,5	8406,5	12570	16795		22362	25203
22		6311	8407	12570,5	16795,5		22362,5	25203,5
23		6311,5	8407,5	12571	16796		22363	25204
24			8408	12571,5	16796,5		22363,5	25204,5
25			8408,5	12572	16797		22364	25205
26			8409	12572,5	16797,5		22364,5	25205,5
27			8409,5	12573	16798		22365	25206
28			8410	12573,5	16798,5		22365,5	25206,5
29			8410,5	12574	16799		22366	25207
30			8411	12574,5	16799,5		22366,5	25207,5
31			8411,5	12575	16800		22367	25208
32			8412	12575,5	16800,5		22367,5	
33			8412,5	12576	16801		22368	
34			8413	12576,5	16801,5		22368,5	
35			8413,5		16802		22369	
36			8414		16802,5		22369,5	
37					16803		22370	
38					16803,5		22370,5	
39					16804		22371	
40							22371,5	
41							22372	
42							22372,5	
43							22373	
44							22373,5	
45							22374	