Radio Spectrum Guidelines

Maritime Radio Systems

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Introduction

Maritime equipment is required to support the safe navigation of vessels and to make distress calls from coast stations/vessels in emergency situations. It enables communication between vessels and coast stations, port/harbor authorities and with other vessels as well.

Definitions

The terms, words and expressions used in this regulatory document shall have the defined meaning clarified in the Telecommunications Regulatory Law No. (10) of 2003. In addition, this document provides terms and phrases that are defined as follows:

1.1 The State: The Arab Republic of Egypt, including its geographical borders, territorial waters and airspace.

1.2 NTRA: Means National Telecommunication Regulatory Authority regulating the telecommunication sector in Egypt pursuant to the provisions of the Egyptian telecommunication law No. (10) of 2003.

1.3 Applicant: Means any person who can apply for a frequency license in accordance with the Telecom Law No. (10) of 2003.

1.4 Radio: A general term applied to the use of radio waves.

1.5 Station: Means one or more radiocommunication transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment.

1.6 Assignment (of a radio frequency or radio frequency channel): Authorization granted by NTRA to an applicant to use radio station or to use a radio frequency or radio frequency channel under specified conditions.

1.7 Maritime Mobile Service: A mobile service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations.

1.8 Port Operation Service: A maritime mobile service in or near a port, between coast station and ship station, or between ship stations, in which messages are restricted to those relating to the operational handling the movement and safety of ships and, in emergency, to the safety of persons.

1.9 GMDSS: Means the Global Maritime Distress and Safety System.

1.10 NBDP: Means Narrow Band Direct Printing which is a maritime teletype service as defined in Recommendation ITU-R M.688.

1.11 **NAVTEX:** Means Navigational Telex which is an international automated medium frequency direct-printing service for delivery of navigational and meteorological warnings and forecasts, as well as urgent maritime safety information to ship.

1.12 **MMSI**: Means Maritime Mobile Service Identity which is a nine-digit number, to uniquely identify ship (and other maritime radio) stations and DSC radio equipment.

1.13 **DSC:** Means Digital Selective Call which is primarily intended to identify ship-to-ship, ship-to-shore and shore-to-ship radiotelephone and radio telex calls. DSC calls can also be made to individual stations, groups of stations, or all reachable stations.

1.14 **AIS**: Means Automatic Identification System which is the automatic tracking system based on recommendation ITU-R M.1371 used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations, and satellites.

1.15 **EPIRB**: Means Emergency Position-Indicating Radio Beacon which is the Station in the maritime mobile service, the emission of which is intended to facilitate search and rescue operations.

1.16 **Earth Station On-Board Vessels (ESV)**: Means Earth Station operated on-board ships in accordance with ITU-R Resolution 902.

1.17 **Earth Station in Motion (ESIM)**: Means Earth Station that is operated in accordance with ITU-R Resolution 156 (WRC-15).

1.18 **Radar:** Means Radio Detection and Ranging.

1.19 **Radar Beacon (RACON):** Means a transmitter-receiver associated with a fixed navigational mark which, when triggered by a radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information.

1.20 **Search and Rescue or (SAR):** Means the activities of the search for and provision of aid to people who are in distress or imminent danger.

1.21 **SOLAS:** Means the International Convention for the Safety of Life at Sea of 1974 as amended.

1.22 **VDES:** Means VHF Data Exchange System according to ITU-R M.2092.

Legal reference

1.23 This document is issued by the National Telecommunications Regulatory Authority in accordance with the Articles of the Telecommunications Regulatory Law No. (10) of 2003 and subsequent ministerial decisions.

3.1 According to Article (49) of the Telecommunications Regulatory Law No. (10) of 2003, the NTRA is the authority responsible for organizing and managing all affairs related to the use of the frequency spectrum in accordance with the provisions of the law.

3.2 According to Article (51) of the Telecommunications Regulatory Law No. (10) of 2003, it is not permissible to use a frequency or frequencies without having a license issued from the NTRA, and the NTRA sets the conditions and rules necessary for granting this license.

3.3 According to Article (55) of the Telecommunications Regulatory Law No. (10) of 2003, the NTRA has the right to detect unauthorized uses of frequencies, and verify the licensee's compliance with the license conditions.

Scope of implementation

4.1 This document comprises radio spectrum requirements and the technical conditions for licensing Maritime Radio systems in Egypt. It shall be read in conjunction with the following documents:

4.1.1 National Frequency Allocations Table.

4.1.2 Spectrum Fees Regulations.

Usage of maritime radio systems

5.1 Maritime Radio Systems (not limited to the following):

5.2 Shore-to-ship/Ship-to-Shore (port operations, coast station public correspondence, private agencies).

5.2.1 Inter ship communications / On board communications.

5.2.2 Distress, safety and calling channels.

5.2.3 Search and rescue.

5.2.4 VDES including Automatic Identification System (AIS).

5.2.5 Maritime Radar including Radar Beacons (RACON) and Search And Rescue Transponders (SART).

5.3 Vessels covered by this regulation could operate, subject to the navigation licenses issued by the Egyptian Authority for Maritime Safety, within an Egyptian port, territorial or international waters. Such vessels have been classified into the following categories:

5.3.1 Passenger ships: Ships that carry more than 12 passengers.

5.3.2 Fishing vessels: Vessels used commercially for catching fish or other living resources of the sea.

5.3.3 Private pleasure yachts: That are not authorized to do business.

5.3.4 Serving vessels: Vessels or marine units that work in tugging and supplies of ships services.

5.3.5 Cargo ships: Ships that are designed primarily for the carriage of general cargo.

5.3.6 Drilling units: Marine units that capable of engaging in drilling operations for the exploration or for exploitation of resources beneath the sea. The working area shall be determined and approved by the Egyptian Ministry of Petroleum and Mineral Resources.

5.4 In case a satellite Earth Station On-Board Vessels (ESV) and/or an Earth Station in Motion (ESIM) is installed, NTRA Regulations for Earth Stations shall apply.

5.5 In case short-range devices are installed, NTRA Regulations Short-Range Devices shall apply.

5.6 Applicant shall apply for PMR license, NTRA regulations for Private Mobile Radio shall apply for the following:

5.6.1 Land Mobile (Ground-to-Ground) systems at ports.

5.6.2 Maritime Mobile (Shore-to-Ship) stations.

5.6.3 Maritime Mobile on-board communication as per RR 5.287, using radiated power of more than 2 W.

5.7 The “aids-to-navigation authorization” is issued for buoys or AIS stations.

5.8 Broadcasting station on board vessels shall not be allowed (RR 51.5A).

Spectrum usage and regulatory requirements

6.1 The Maritime radio equipment shall operate in accordance with the provisions of the Radio Regulations and relevant ITU-R Recommendations.

6.2 The following table lists the designated frequency bands for Maritime radio applications:

Frequency Range	Usage	Regulatory requirement
283.5 – 325 kHz	Maritime Radio Beacons	RR 5.73 shall be applied
415 – 526.5 kHz	MF telegraphy (main use) Narrow Band Direct Printing (NBPD) Maritime Safety Information NAVTEX	Use shall be in accordance with ITU GE-85 Plan GE85-R1-MAR
1606.5 – 27500 kHz	Maritime Mobile (shore to ship) Narrow Band Direct Printing (NBPD) Maritime Safety Information NAVTEX Digital Selective Calling (DSC)	Channel plan based on RR Appendix 15, Appendix 17 and Appendix 25
156 – 162.5 MHz	Maritime Mobile (shore to ship) VHF Radio	RR Appendix 18
406 – 406.1 MHz	Emergency Position-Indicating Radio Beacons (406-EPIRBs) Personal Locator Beacon (PLB)	RR Article 31
1540 – 1545 MHz 1626.5 – 1646.5 MHz	Maritime mobile-satellite service (GMDSS)	RR Appendix 15
2900 – 3100 MHz	Maritime radionavigation Radar Radar Beacon (RACON)	ITU-R M.629 ITU-R M.1460
5470 – 5650 MHz	Navigation Shipborne Radar	ITU-R M.629
9200 – 9500 MHz	Maritime radionavigation Radar Radar Beacon (RACON) Radar transponders for search and rescue (SART)	ITU-R M.628

Application process for licensing maritime radio devices

For coast stations operating on either the frequency bands 415 – 526.5 kHz or 1606.5 - 27500 kHz, specific channels could be assigned in accordance to the relevant ITU Frequency Plans. For licensing maritime radio devices either in cost stations or in vessels, the applicant has to submit a complete request through the NTRA website E-services portal.

Assignment of Maritime Mobile Service Identities (MMSI) :

[NTRA assigns the Maritime Mobile Service Identities (MMSIs) according to the most recent version of Recommendation ITU-R M.585. The MMSI should be assigned for ship stations, coast stations and other safety-related communications, automatic identification system (AIS) aids to navigation, and craft associated with a parent ship. Annex 1 of Recommendation ITU-R M.585-9 provides information on formats.

MMSI is a nine-digit number that contains three digits which represent the maritime identification digits (MID), for Egypt (MID) is 622

The following table defines the MMSI formats for such stations

Type of station	MMSI format [1]
Ship station	622XXXXXX
Coast station	00622XXXX

Regarding other maritime devices that have been used for special purposes, the Maritime identities designated for it should be in accordance with Annex 2 of Recommendation ITU-R M.585-9.

[1] X may be any number from 0 to 9

The following table defines the Maritime identities formats for such devices

Type of device	Maritime identities format [2]
AIS-SART	970XXYYYY
EPIRB-AIS	974XXYYYY

Terms and conditions for marine radio devices

1.24 Marine Radars for:

- Commercial vessels of 300 gross tonnages and above.
- Vessels and boats of gross tonnages less than 300 tons (using 9 GHz band).
- Fishing vessels and boats of less than 150 gross tonnages (on a case-by-case basis).

Under the following conditions:

- Marine radars should not be connected with any network or telecommunication medium.
- Marine radars should not be connected with any on-board navigation system.

1.25 Automatic Identification System (AIS) for:

- All vessels of 300 gross tonnage and above.
- Passenger vessels irrespective of size.
- Fishing boats sailing along Suez Canal of 15 meters and above.
- The service vessels and Tug Boats.
- Passenger vessels engaged on International voyages.
- Services and marine vessels belonging to the port authorities.

Under the following conditions:

- AIS should not be connected with the on-board marine navigation Radars or any network or telecommunication medium.
- All licensees should take all necessary procedures to secure and protect the maritime information network data.

[2] For VHF transceiver with DSC, X may be any number from 0 to 9
For others, X (manufacturer ID) and Y (sequence number) may be also any number from 0 to 9

- AIS is not allowed to be used in fixed places unless a case-by-case approval has been obtained.

Maritime equipment requirements in sea areas

GMDSS equipment requirements in force for all passenger ships in international trade as well as cargo ships of 300 gt and upwards in international trade according to SOLAS 1974 and its amendments.

Equipment	Al	A2	A3 Inmarsat solution	A3 HF solution	A4
VHF with DSC	x	x	x	x	x
DSC watch receiver channel 70	x	x	x	x	x
MF telephony with MF DSC		x	x		
DSC watch receiver MF 2187.5 kHz		x	x		
Inmarsat ship earth station with EGC receiver			x		
MF/HF telephony with DSC and NBDP				x	x
DSC watch receiver MF/HF				x	x
Duplicated VHF with DSC			x	x	x
Duplicated Inmarsat SES			x	x	
Duplicated MF/HF telephony with DSC and NBDP					x
NAVTEX receiver 518 kHz	x	x	x	x	x
EGC receiver	x[1]	x[1]		x	x
Float-free satellite EPIRB	x	x	x	x	x[4]
Radar transponder (SART)	x[2]	x[2]	x[2]	x[2]	x[2]
Hand-held GMDSS VHF transceivers	x[3]	x[3]	x[3]	x[3]	x[3]
For passenger ships the following applies from 01.07.97					
"Distress panel" (SOLAS regulations IV/6.4 and 6.6)	x	x	x	x	x
Automatic updating of position to all relevant radiocommunication equipment (regulation IV/6.5). This also applies for cargo ships from 01.07.02 (chapter IV, new regulation 18)	x	x	x	x	x

Equipment	Al	A2	A3 Inmarsat solution	A3 HF solution	A4
Two-way on-scene radio communication on 121.5 and 123.1 MHz from the navigating bridge (SOLAS regulation IV/7.5)	x	x	x	x	x

1 Outside NAVTEX coverage area.

2 Cargo ships between 300 and 500 gt: I set. Cargo ships of 500 gt and upwards and passenger Ship:2 sets.

3 Cargo ships between 300 and 500 gt: 2 sets. Cargo ships of 500 gt and upwards and passenger ships:3 sets

4 Inmarsat-E EPIRB cannot be utilized in sea area A4.