Radio Spectrum Guidelines

Maritime Radio Systems

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Document History

Release	Date
1.0 (Active)	June 2021

1 Scope

This document provides the regulatory guidelines and technical limitations for using Maritime Radio Systems.

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.

2 Definitions

The terms, words and expressions used in this document 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:

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

NTRA: National authority regulating the telecommunication sector established pursuant to the provisions of the Egyptian telecommunication law no. 10 of 2003.

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

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

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

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.

ITU: The International Telecommunication Union, a leading United Nations agency for information and communication technologies.

Radio Regulations (RR): A publication issued by the ITU, adopted by the World Radiocommunication Conference and ratified by Egypt.

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

GMDSS: The Global Maritime Distress and Safety System.

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

NAVTEX: 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.

DSC: 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.

AIS: 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.

EPIRB: 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.

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

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

Radar: Radio Detection and Ranging.

Radar Beacon (RACON): 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.

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

SOLAS: The International Convention for the Safety of Life at Sea of 1974 as amended.

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

3 Legal Considerations

3.1 The guidelines contained in this document are issued by NTRA according to articles of the Telecommunications Regulatory law No. (10) of 2003 and subsequent ministerial decisions.

3.2 NTRA has the right to modify any of the guidelines contained in this document.

4 Scope of Implementation

The guidelines contained in this document:

4.1 indicate the regulatory measures and technical conditions for licensing Maritime Radio systems in the Arab Republic of Egypt;

4.2 are meant be implemented in conjunction with other guidelines issued by NTRA for the use of the frequency spectrum, including:

4.2.1 National Frequency Allocations Table,

4.2.2 Other Radio Spectrum guidelines;

5 Usage of Maritime radio systems

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

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

5.1.2 Inter ship communications / On board communications.

5.1.3 Distress, safety and calling channels.

5.1.4 Search and rescue.

5.1.5 VDES including Automatic Identification System (AIS).

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

5.2 Vessels covered by this guidelines 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:

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

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

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

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

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

5.2.6 Drilling unit: Marine unit that is capable of engaging in drilling operations for the exploration or for exploitation of resources beneath the sea.

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

5.4 In case Short-range Devices are installed, NTRA guidelines for Short-Range Devices shall apply.

5.5 Applicant shall apply for PMR license, NTRA guidelines for Private Mobile Radio shall apply for the following:

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

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

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

5.6 The aids-to-navigation authorization is issued for buoys or AIS stations.

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

6 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 application and their usage conditions:

Frequency Range	Usage	Regulatory requirement
283.5 – 315.5 kHz	Maritime radionavigation (**Maritime Radio Beacons**)	The radiated power shall be the minimum value necessary to give the desired field strength at the service range, not exceeding 50 µV/m (ITU-R M.823)
415 – 526.5 kHz	MF Maritime Mobile (**main use**) Digital Selective Calling (**DSC**) 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	MF/HF Maritime Mobile (**main use**) Narrow Band Direct Printing (**NBPD**) Maritime Safety Information (**NAVTEX**) Digital Selective Calling (**DSC**)	Use shall be in accordance with ITU GE-85 Plan GE85-R1-MAR Channel plans based on RR Appendices 17 and 25
156 – 162.5 MHz	Maritime Mobile (shore to ship) VHF Radio	RR Appendix 18 with 25 kHz channel spacings
406 – 406.1 MHz	Emergency Position-Indicating Radio Beacons (**406-EPIRBs**) Personal Locator Beacon (**PLB**)	RR Appendix 15
1540 – 1545 MHz 1626.5 – 1646.5 MHz	Maritime Mobile-satellite Terminals (**GMDSS**)	
2900 – 3100 MHz	Maritime radionavigation Radar Beacon (**RACON**)	ITU-R M.824
9200 – 9500 MHz	Maritime radionavigation Radar Beacon (**RACON**) Radar transponders for search and rescue (**SART**)	ITU-R M.824 ITU-R M.628

7 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 with section 6 of this document. For licensing maritime radio devices either in cost stations or in vessels, the applicant has to submit a complete request through NTRA E-services portal.

8 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	x	x	x	x	x

Equipment	AI	A2	A3 Inmarsat solution	A3 HF solution	A4
equipment (regulation IV/6.5). This also applies for cargo ships from 01.07.02 (chapter IV, new regulation 18)					
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.

9 Additional Operational Terms and conditions for marine radio devices

9.1 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) and,
- fishing vessels and boats of less than 150 gross tonnages (on a case-by-case basis).

With conditions:

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

9.2 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.
- service vessels and tug boats.

- passenger vessels engaged on international voyages.
- services and marine vessels belonging to the port authorities.

With conditions:

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