



Exploration & Production

GENERAL SPECIFICATION

Telecommunications

GS EP TEL 130

Marine and Air/ground Radio Links

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1. Scope

This General Specification applies to the short and medium range radio links of the maritime and aeronautical mobile service, using HF, VHF and UHF frequency range.

The General Specifications for Tetra network is described in the **GS EP TEL 133**.

For Marine service, the scope concerns the:

- Links between an onshore production installation and ships,
- Links between an offshore production installation or a mobile drilling unit and ships on the one hand and shore stations on the other hand.

It does not concern the radiotelephone installations of rescue vessels attending the offshore production installations or drilling units.

For Aero service, the scope concerns the:

- Links between an offshore or an onshore installation and the helicopters and aircrafts providing the air link with the installation.

2. Reference documents

The reference documents listed below **form an integral part of this General Specification**. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
IEC Publication 60244	Measurement methods applicable to radio transmitters
IEC Publication 60489	Measurement methods applicable to radio equipment used in mobile services
IEC Publication 60533	Electromagnetic compatibility of electrical and electronic installations aboard ships
IEC Publication 60657	Non-ionizing radiation hazards in the frequency range from 10 MHz to 300 000 MHz
IEC Publication 60315	Measurement methods for radio receivers of different classes of emission
IEC Publication 61162-1 July 2000 2nd Ed	Maritime navigation and radiocommunication equipment and systems – Digital interfaces
NF C 93-550	HF coaxial cables with metallic braid
ISO/IEC Directives, Part 2	Rules for the structure and drafting of International Standards
EN 300 676	Electromagnetic compatibility and Radio spectrum Matters (ERM); Ground-based VHF hand-held, mobile and fixed radio transmitters, receivers and transceivers for the VHF aeronautical mobile service using amplitude modulation; Technical characteristics and methods of measurement

Reference	Title
EN 300 067	Radio Equipment and Systems (RES); Radiotelex equipment operating in the maritime MF/HF service; Technical Characteristics and methods of measurement
EN 300 162	Electromagnetic compatibility and Radio spectrum Matters (ERM); Radiotelephone transmitters and receivers for the maritime mobile service operating in VHF bands; Part 1: Technical characteristics and methods of measurement
EN 300 225 December 2004 V1.4.1	Technical characteristics and methods of measurement for survival craft portable VHF radiotelephone apparatus
EN 300 338 April 1999 V1.2.1	ETSI Telecommunications Standard – Radio Equipment and Systems (RES); Technical characteristics and methods of measurement for equipment for generation, transmission and reception of Digital Selective Calling (DSC) in the maritime MF, MF/HF and/or VHF mobile service
EN 300 373 -1 October 2002 V1.2.1	ETSI Telecommunication Standard – Radio Equipment and Systems (RES); Technical characteristics and methods of measurement for maritime mobile transmitters and receivers for use in the MF and HF bands
EN 300 698	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Radio Telephone Transmitters and Receivers for the Maritime Mobile Service Operating in the VHF Bands Used on Inland Waterways
EN 300 720	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Ultra-High Frequency (UHF) On-Board Communications Systems and Equipment
EN 300 086	Radio Equipment and Systems Land mobile service Technical characteristics and test conditions for radio equipment with an internal or external RF connector intended primarily for analogue speech
EN 300 828 March 1998 V1.1.1	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) for Radiotelephone Transmitters and Receivers for the Maritime Mobile Service Operating in the VHF Bands
EN 301 033 December 2005 V1.2.1	Electromagnetic compatibility and Radio spectrum Matters (ERM) - Technical characteristics and methods of measurement for shipborne watchkeeping receivers for reception of Digital Selective Calling (DSC) in the maritime MF, MF/HF and VHF bands
EN 301 925 September 2002 V1.1.1	Radiotelephone transmitters and receivers for the maritime mobile service operating in VHF bands; Technical characteristics and methods of measurement
EN 60079	Electrical apparatus for explosive gas atmospheres

Reference	Title
EN 60945 October 2002 Edition 4	Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results
EN 60950-1 (ed.1)	Safety of information technology equipment
ITU-R M.257-3	Sequential Single Frequency selective-calling system for use in the maritime mobile service
ITU-R M.493-13	Recommendation on digital selective calling system for use in the maritime mobile service and MMSI numbering systems for hand held VHF DSC radios
ITU-R P.368-9	Ground-wave propagation curves for frequencies between 10 kHz and 30 MHz
ITU-R M.478-5	Technical characteristics of equipment and principles governing the allocation of frequency channels between 25 and 3000 MHz for the FM Land Mobile service
ITU-R P.525-2	Calculation of free-space attenuation
ITU-R P.526-6	Propagation by Diffraction (ex CCIR 526, Report 715-2)
ITU-R M.1082-1 October 1997	International maritime MF/HF radiotelephone system with automatic facilities based on DSC signalling format
ITU-R M.476-5 October 1995	Direct-printing telegraph equipment in the maritime mobile service
ITU-R M 489-2 October 1995	Technical characteristics of VHF radiotelephone equipment operating in the maritime mobile service in channels spaced by 25 kHz
ITU-R M.491-1 July 1986	Translation between an identity number and identities for direct-printing telegraphy in the maritime mobile service
ITU-R M.492-6 October 1995	Operational procedures for the use of direct-printing telegraph equipment in the maritime mobile service
ITU-R M.493-11 May 2004	Digital selective-calling system for use in the maritime mobile service
ITU-R M.541-9 May 2004	Operational procedures for the use of digital selective-calling equipment in the maritime mobile service
ITU-R M.625-3 October 1995	Direct-printing telegraph equipment employing automatic identification in the maritime mobile service
ITU-R M.1173 October 1995	Technical characteristics of singlesideband transmitters used in the maritime mobile service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz and between 4 000 kHz and 27 500 kHz



Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
EC Directive 1999/5/EC	Directive on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity
IMO - SOLAS 74	International Convention of 1974 on the Safety of Life at Sea (Incorporated in SOLAS Consolidated Edition, 2001 - IMO)
IMO - MODU Code	The Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code) was adopted by Resolution A.1023(26).
IMO A.334	Recommendation on operational standards for radiotelephone transmitters and receivers
IMO A.336	Recommendation on the carriage of VHF radiotelephone stations
IMO A.385(X)	Recommendation on operational standards for VHF radiotelephone stations
IMO A.524(13)	Performance standards for VHF multiple watch facility
IMO A.694(17) 1991	General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids
IMO A.803(19) 1995	Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling
IMO A.806(19) 1995	Performance standards for shipborne MF/HF radio installations capable of voice communication, narrow-band direct-printing and DSC
IMO MSC Resolution 36(63) May 1994	Adoption of the international code of safety for high-speed craft
IMO MSC Resolution 68(68)/A3 1997	Adoption of amendments to performance standards for shipborne radiocommunication equipment
IMO MSC Resolution 149 (77) June 2003	Adoption of the revised performance standards for survival craft portable two-way VHF radiotelephone
IMO MSC Resolution Cir. 862 1998	Clarifications of certain requirements in IMO performance standards for GMDSS equipment
ICAO	The Convention on International Civil Aviation (Annex 10, "Aeronautical Telecommunications"), published by the International Civil Aviation Organization (ICAO),



Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
INCOSE Symposium	Characteristics of good requirements Working Group of the International Council on Systems Engineering

Total General Specifications

Reference	Title
GS EP TEL 133	Design of a TETRA network
GS EP TEL 410	Installation rules
GS EP TEL 700	Telecommunications Engineering services

3. General rules

3.1 Marine radio link

3.1.1 Choice of type of link

The offshore production installations and mobile drilling units shall be equipped with radiotelephone and radiotelegraph stations and auto-alarms as stipulated in the international conventions of the IMO codes.

The COMPANY preferences regarding the choice of link types are as follows:

- Radiotelephone and/or radiotelegraph links with shore stations:
 - INMARSAT satellite link,
 - Decametric wave (HF) link,
 - Metric wave (VHF) links.
- Radiotelephone links with ships:
 - Metric wave (VHF) links,
 - Hectometric wave (MF) links,
 - Decametric wave (HF) links,
 - Decimetric wave (UHF) links.