(2) Although it is not practicable to specify the intensity of r.f. fields which may be encountered, attention is drawn to the need for screening and filtering to protect semiconductor devices from damage due to r.f. energy.

Part II(B)

Radiotelephone Alarm-signal Automatic Receiving Device (Audio-frequency)—1. Scope of Specification—This specification covers the minimum performance of a radiotelephone alarm-signal automatic receiving device (audio-frequency) and an associated audible alarm system for use in ships.

2. General—(1) The function of the radiotelephone alarm-signal automatic receiving device (audio-frequency), when connected to the low impedance loudspeaker output terminals of a suitable radio receiver tuned to 2182 kHz, is to actuate the audible alarms in response to the radiotelephone alarm signal.

(2) A device which is an integral part of a radiotelephone equipment shall—

(a) Comply with the climatic and durability requirements laid down for that equipment; and

(b) Meet the requirements of this specification over the variations of supply voltage applicable to that equipment.

(3) A device which is not an integral part of a radiotelephone equipment shall—

(a) Comply with "Climatic and Durability Testing of Marine Radio Equipment" for Class B equipment; and

(b) When operated from a battery of secondary cells, meet the requirement of this specification for a variation in supply voltage of between plus 5 and minus 10 percent relative to the nominal battery supply voltage; and

(c) When operated from a ship's main supply, meet the requirements of this specification for a variation in supply voltage of between plus and minus 10 percent relative to the nominal mains supply voltage.

(4) The audible alarm system shall comply with the climatic and durability requirements appropriate to the device with which it is associated.

(5) *Controls* (a) Controls available at the exterior of the device shall be such as to permit normal operations being carried out by a person wearing thick gloves:

(b) Timing controls and tone selection controls, where provided, shall be preset controls not adjustable from the exterior of the device.

(6) *Operating Facilities*—In an installation, the associated radioelephone receiver shall be provided with a switch for the purpose of substituting its loudspeaker by a 5 ohm resistor, across which the device is to be connected when in operation.

(7) *Testing Facilities*—Facilities shall be provided to enable the device to be tested, either—

(a) With a generator, forming an integral part of the device,capable of producing a test signal of voltage between 0.16 and 1.6, and otherwise within the limits specified in sub-clause 3 (2) of this Part of this Schedule:

(b) With a radiotelephone alarm-signal generating device (audio-frequency).

It is recognised that certain equipment designs may make it necessary for either of the foregoing test facilities to be set up without the connection of the 5 ohm resistor specified in subclause (6) of this clause.

3. Performance—(1) For the purposes of type-testing, all signals required to be injected into the device in accordance with the following subclauses of this clause shall be at the specified levels as measured in a resistive load of 5 ohm, across which the device is connected.

(2) For the purposes of subclause (3) of this clause, the device shall be tested with a signal which consists of two tones sent alternately, notwithstanding any variation in the elements of the test signal within the following limits:

(a) Tone Frequencies—

Frequencies within ± 2 percent of 2200 Hz for one tone; and Frequencies within ± 2 percent of 1300 Hz for the other tone.

(b) Tone Duration-—

From 180 to 320 milliseconds for each tone.

(c) Spaces between the Tones—

Up to 70 milliseconds.

The ratio of the power of the stronger tone to that of the weaker tone shall lie within the range one to four.

(3) *Operation in the Absence of Noise and Interference*—In the absence of noise and interference, the device shall actuate the audible alarms within a period of not more than 15 seconds from the application of any signal within the limits specified in subclause (2) of this clause above and at a level between 5 and 500 mWs.

(4) *Test Signal*—The test signal for the purposes of subclauses (5) to (8) of this clause shall consist of two tones sent alternately for the required period and having the following characteristics:

(a) Tone Frequencies—

Frequencies of 2200 Hz for one tone and 1300 Hz for the other tone.

(b) Tone Duration—

Each tone of 250 milliseconds duration.

(c) Spaces Between the Tones—

No space between tones.

(d) Levels of Tones—

Equal.

(5) *Operation with Test Signal in the Absence of Noise and Interference*—In the absence of noise and interference, the device shall actuate the audible alarms in a period of not less than four and not more than six seconds from the application of the test signal specified in subclause (4) of this clause.

The tone level shall be within the range 5 to 500 mW.

(6) *Operation in the Presence of Noise*—In the presence of noise, the device shall actuate the audible alarms within 10 seconds of the application of the test signal specified in subclause (4) of this clause. The tone level shall be within the range 5 to 500 mW, and for this test noise shall be added to the test signal so as to give a signal-to-noise ratio of 6 dB measured in the frequency band 250 to 3000 Hz.

(7)*Operation in the Presence of Interference*—In the presence of interference, the device shall actuate the audible alarms within a period of 15 seconds of the application of the test signal specified in subclause (4) of this clause. The interference shall consist of a standard recording of the output of a radio receiver tuned to a frequency of 2182 kHz, taken in an area where signal interference on that frequency is known to be severe. The peak level of the interference applied to the device shall exceed 6 dB relative to the peak level of the test signal. The test signal shall be applied at any tone level within the range 5 to 100 mW. Not less than three and not more than six such peaks of interference shall occur in any 15-second period for which the test is applied.

(8) *Operation with an Intermittent—Test Signal*—The test signal specified in subclause (4) of this clause shall be applied at a level of 50 mW in the repetition sequence: two seconds on, two seconds off. The device shall actuate the audible alarms within 20 seconds of the first applicatiozi of the signal.

(9) *Overload Test*—The device shall withstand, without damage or deterioration in its performance, a tone-input applied for a period of 10 minutes at any audio-frequency (chosen by the testing Officer) at a level of 5 watts.