

## Technical Parameters for a General Purpose Maritime Radar Beacon (Racon)

**TABLE 1**

ITEM	CHARACTERISTICS	SPECIFICATIONS
1. Antenna	1 Polarization	In the 9 Ghz band, suitable for responding to radars using horizontal polarization; In the 3 Ghz band, suitable for responding to radars using horizontal or vertical polarization.
2. Receiver	1 Frequency band	9 320 (9300 from 1 January 2001) - 9 500 MHz and/or 2 900-3100 MHz.
	2 Blocking period	Not more than 100 $\mu$ s after end of response.
	3 Primary radar pulse length	0.05 $\mu$ s.
3. Transmitter	1 Frequency	Transmission should occur either on the frequency of the interrogating signal with a frequency tolerance of $\pm 5$ MHz, for interrogating pulses with a duration of less than 200 ns, or with a frequency tolerance of $\pm 2.5$ MHz for pulses with a duration equal to more than 200 ns, or by a series of sweeps covering the entire frequency band of the receiver in which the signal was received. Where the transmission consists of a series of sweeps, the form of a sweep shall be sawtooth and should have a slew rate of between 60s and 120s per 200MHz.
4. Response	1 Delay after reception of interrogation	Normally not more than 0.7 $\mu$ s.
	2 Form of identification	Identification coding should normally be in the form of a Morse letter. The identification coding should be as described in appropriate navigational publications. The identification coding should comprise the full length of the radar beacon response and, where a Morse letter is used, the response should be divided with a ratio of 1 dash equal to 3 dots equal to 1 space. The coding should normally commence with a dash.
	3 Duration	The duration of the response should be approximately 20% of the maximum range requirement of the particular radar beacon, or should not exceed five miles, whichever is the lower value. In certain cases, the duration of the response may be adjusted to suit the operational requirements for the particular radar beacon (See note 1).

*Note 1 - Characteristics for antenna aperture and gain, receiver sensitivity, transmitter power, racon response duration, frequency agile racon on/off time, and side-lobe suppression should be determined by administrations.*

**TABLE 2**

### Command Protocol of Interrogation p.r.i.'s for ITOFAR Systems

PARAMETERS	SPECIFICATIONS
1 Interrogating signal	A series of pulses with an interval between each pulse (or pri.) of: $[747,000 + (n \times 8/3)] \mu\text{s} \pm 0.1 \mu\text{s}$ where n = a number between 0 and 7 inclusive, selected at random for each pulse, except no two consecutive pulses should use the same number.
2 Response	a. Delay after receipt of interrogating signal
	b. Form of identification

*Note: Time offset response may be used to meet other operational requirements by varying the pri of the interrogating signal as follows:  $\text{pri} = [747,000 + m/3 + (n \times 8/3)] \mu\text{s} \pm 0.1 \mu\text{s}$ .*

*Where m = a number from 1 to 7 allocated for the particular operational requirement, n = a number between 0 and 7 inclusive, selected at random for each pulse, except that no two consecutive pulses should use the same number.*