

4. GENERAL REQUIREMENTS

4.1 Communications system characteristics. The parameters defined in this military standard (MIL-STD) provide for the interoperability and performance of land-based, surface ship, aircraft, and submarine ultra high frequency (UHF) terminals that use nonprocessed 5- and 25-kHz channels. The 5-kHz nominal bandwidth channels are referred to as narrowband; the 25-kHz nominal bandwidth channels are referred to as wideband. The parameters defined herein provide efficient use of the satellite channels, minimize interference among satellite users, and ensure that an interoperable mode exists for all users. Optional capabilities that are implemented shall be in accordance with this MIL-STD. Interoperable access modes shall be single access on a satellite channel. The interoperable modes and data rates are shown in Table I.

TABLE I. Interoperability data rates.

Operating Modes	Narrowband Mode PSK Rates (bps)	Wideband Mode	
		FSK Rates (kbps)	PSK Rates (kbps)
Voice (Mandatory)	2400	16	
Voice (Optional)	4800		
Data (Mandatory)	1200/2400	16	
Data (Optional)	75/300/600/ 4800/6000		9.6/16/19.2/ 32/38.4

4.2 General waveform structure4.2.1 Operating modes. There are two operating modes.

a. Narrowband mode. Operation shall be limited to a 5-kHz bandwidth (a single 5-kHz channel, or a 5-kHz bandwidth of a 25-kHz or 500-kHz channel, as they are defined in Appendix D), in accordance with 5.1 through 5.2.8.

b. Wideband mode. Operation shall be limited to a 25-kHz bandwidth (a single 25-kHz channel, or a 25-kHz bandwidth of a 500-kHz channel, as they are defined in Appendix D), in accordance with 5.2 through 5.2.7.

4.2.2 Synchronization. For coherent demodulation (narrowband mode), the terminal shall transmit a preamble to allow demodulator synchronization before the communications security (COMSEC) synchronization preamble is transmitted. A preamble shall not be used for FSK modulation in the wideband mode. Note: Mode is not synonymous with channel.

4.2.3 Communications security waveform. Communications security is provided in accordance with 5.1.7 and 5.2.7. Hardware implementation of the terminals with embedded COMSEC shall include provisions for future implementation of Over the Air Rekeying (OTAR).

4.2.4 Satellite interface. The waveform shall interface with maritime satellite (MARISAT) (also known as Gapfiller), fleet satellite communications (FLTSATCOM), leased satellite (LEASAT), and UHF follow-on (UFO) satellites, which are described in FSCS-200-83-1, Navy UHF Satellite Communication System Description, 31 December 1991. Frequency plans for LEASAT, FLTSATCOM, MARISAT, and UFO are shown in Appendix D.