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Required Signal-to-Noise Ratios for HF Communication Systems

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Table 2. Required Signal-to-Noise-Density Ratios for Various Voice Communication Systems

Type of Service		Required Signal-to-Noise-Density Ratio (dB)					
Emission designation	Description	Just usable quality			Good commercial quality		
		Stable condition	Fading condition		Stable condition	Fading condition	
			No diversity	Dual diversity		No diversity	Dual diversity
6A3	DSB-AM	50	51	48	67	75	70
3A3A	SSB-AM reduced carrier*	48	49	46	65	73	68
3A3J	SSB-AM suppressed carrier	47	48	45	64	72	67
6A3B	ISB-AM two voice channels	49	50	47	66	74	69
9A3B	ISB-AM three voice channels	49	50	47	66	74	69
12A3B	ISB-AM four voice channels	50	51	48	67	75	70

Signal-to-noise-density ratio is the ratio of carrier power to average noise power contained in a 1-Hz bandwidth for 6A3 emissions and is the ratio of signal peak envelope power to average noise power in a 1-Hz bandwidth for other types of emissions. For fading conditions carrier and signal peak envelope powers should be interpreted as median values.

*Carrier emitted at a level 20 dB below the peak envelope power.