

EXHIBIT 1

FREQUENCY kHz	POWER			EMISSION	MODULATING SIGNAL	NECESSARY BANDWIDTH kHz
(A)	(B)	(C)	(D)	(E)	(F)	(G)
4800.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
4830.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
6780.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
7380.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
7820.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
9150.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
9180.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
10150.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
10180.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
12050.00000-						
12230.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
13380.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
13440.00000-						
13600.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
13800.00000-						
14000.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
14530.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
14560.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
14590.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
16590.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
16620.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
18120.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
18150.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
21770.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
21800.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
22800.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
25200.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
25260.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
27600.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
27630.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
27660.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
29720.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
29750.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200
29780.00000	300W	300 W	PEAK	200KM1N	PULSED/PHASE	200

Project Description

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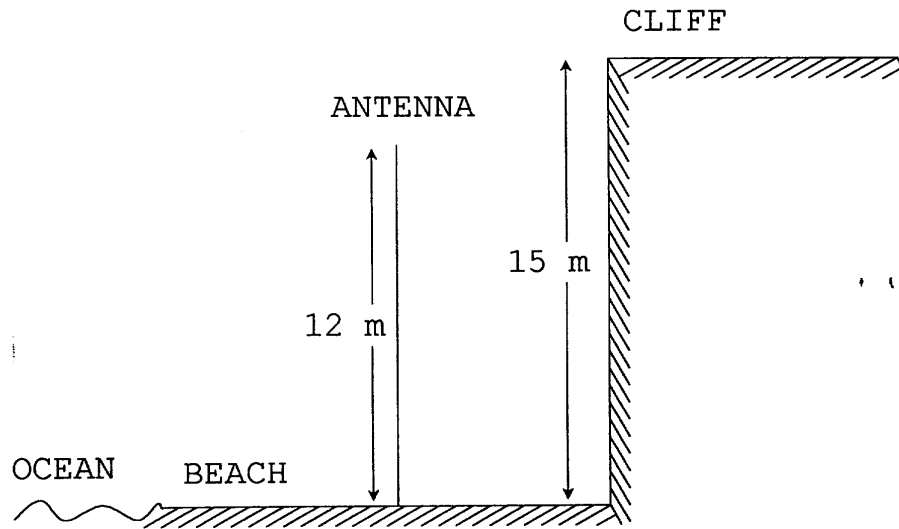
STTR Phase 2: Program Topic N97-T004

Program Number: Contract # N00014-98-C-0254

HiFAR provides synoptic monitoring (i.e. simultaneous measurements in all of its coverage cells) of sea conditions over large areas of the littoral zone. The system consists of two shore sites that simultaneously view a common sector of the littoral zone. They produce output maps providing quantitative measurements of currents (speed and direction), wave height, wave directional spectra, and wind direction.

Key applications include oceanographic research, harbor surveillance, and environmental monitoring. Potential military use includes over-the-horizon detection of stealthy low-altitude anti-surface missiles, although the system parameters would have to be modified to provide best performance in that application.

ANTENNA DRAWING



SANTA CRUZ, CA INSTALLATION (TYPICAL)