The Stanford University ELF/VLF Receiver

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Narrowband transmitter guide
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The following document shows a list of narrowband transmitters commonly recorded by AWESOME, though it should be noted that transmitters do, so this list may change.

LAT	LON	FREQ	SIGN	LOCATION	FORMAT	kW
50.07	135.6	11905Hz	RA1	Komsomolsk-na-Amur, Russia	CW	
45.40	38.18	12649Hz	RA2	Krasnodar, Russia	CW	
55.76	84.45	14881Hz	RA3	Novosibirsk, Russia	CW	
59.91	10.52	16400Hz	JXN	Kolsas, Norway (NATO)	FSK On/Off	45
8.47	77.40	18200Hz	VTX	Katabomman, India	FSK	
40.70	1.25	18300Hz	HWU	Rosnay, France	MSK	400
52.71	-3.07	19600Hz	GBZ	Anthorn, Great Britain (NATO)	FSK	30
-21.80	114.20	19800Hz	NWC	North West Cape, Australia (USA)	MSK	1000
40.88	9.68	20270Hz	ICV	Isola di Tavolara, Italy (NATO)	MSK	20
25.03	111.67	20600Hz	3SA	Changde, China	FSK	
39.60	103.33	20600Hz	3SB	Datong, China	FSK	
40.70	1.25	20900Hz	HWU	Rosnay, France	MSK	400
20.40	-158.20	21400Hz	NPM	Lualualei, Hawaii, USA	MSK	424
40.70	1.25	21750Hz	HWV	Le Blanc, France (NATO)	MSK	200
52.40	-1.20	22100Hz	GQD	Anthorn, Great Britain (NATO)	FSK	
32.04	130.81	22200Hz	JJI	Ebino, Japan	FSK	200
53.10	7.60	23400Hz	DHO	Rhauderfehn, Germany (DHO)	FSK	800
44.65	-67.30	24000Hz	NAA	Cutler, Maine, USA	MSK	1000
48.20	-121.90	24800Hz	NLK	Jim Creek, Washington, USA	MSK	192
46.35	-98.33	25200Hz	NLM	LaMoure, North Dakota, USA	MSK	
37.43	27.55	26700Hz	TBB	Bafa, Turkey	MSK	
65.00	-18.00	37500Hz	NRK	Grindavik, Iceland (USA)	MSK	
18.00	-67.00	40750Hz	NAU	Aguado, Puerto Rico (USA)	MSK	100
38.00	13.50	45900Hz	NSC	Sicily, Italy (USA)	MSK	

The three RA transmitters are in fact navigation beacons operated by Russia, are powerful enough to be seen nearly anywhere in the world. The three locations alternate between the three frequencies, so if monitoring a single frequency, you are actually monitoring three different locations according to some pattern. The pattern is described here by Trond Jacobsen http://www.vlf.it/alphatrond/alpha.htm.

JXN is a pulsed transmitter, turning off and on with long periods.

HWU operates at two different frequencies at different times, but the 20.9 kHz appears to be more common

The Chinese transmitters at 20.6 kHz appear to alternate between the two locations.

Here is a map showing the location of these transmitters, worldwide.