

WUN - WORLDWIDE UTILITY NEWS - ELF and VLF Guide

Version 1.0 - updated 15 November 2001

The target of focus for this ELF and VLF guide, is man made signals in the range from DC to 30 kHz. For the multitude of natural signals, in the ELF and VLF range of the electromagnetic spectrum, go to the link section at the end of this paper.

CONTENT OF THIS ELF AND VLF GUIDE

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 - RADIO-SIGNALS BELOW 10 kHz
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 - RADIO-SIGNALS IN THE RANGE; 25 - 30 kHz
- * LIST OF CALL-SIGNS AND THEIR LOCATIONS
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FORMAT FOR THIS ELF AND VLF GUIDE

FREQUENCY:CALLSIGN or ID:STATION and LOCATION:MODE

STATUS:

DETAILS:

When mode is not known or unidentified, it is listed as: unid

Example

00018.2:VTX3:INS Katabomman, South Vijayanarayanam village,INDIA:A1A,MSK
ACTIVE

The transmitter site is (just opposite the Indian Naval Station Katabomman) at South Vijayanarayanam (Vijaya Niríyanam) village, 8°25'59.88"N 77°48'00"E, reported as some 30 km's from Turunelveli on the Kanyakumari highway. In some lists VTX3 is incorrectly located at Vishakapatnam Radio, the HQ of the Indian Coast Guard, East Coast District.VTX3 has been monitored using very high speed A1A, morse.

LIST OF RADIO-SIGNALS

RADIO-SIGNALS; BELOW 10 kHz

00000.0025:unid/none:unid:NON

ACTIVE

Presumed, but not yet verified as a man-made signal. Detected at various locations worldwide. With amateur equipment, it is not easy to determine eventual frequency shifts, so signal is listed as a 2.5 Hz carrier. So far the signal is not connected with any known geophysical events. Most likely not originating from HAARP - Gakona in Alaska USA. They have little success, with the generation of ELF signals of reasonable strength, over anything then relative short distances.

00000.0006 -

00000.012:unid:none:experimental ULF transmitter, Kola peninsula, Russia:(NON/PON ?)

ACTIVE, but no recent info

Designed and operated by RIPR (Russian Institute of Powerful Radio- structures) in St. Petersburg, Russia. As the Russians call it; the first "easy flexible ULF facility for geophysical applications" As a feedline for the grounded dipole antenna, is used a 108 km length of a HV powerline, owned by Kola Peninsula Powerline Company. The HV line goes from their hydroelectric powerplant, near Serbryansky at the Varonya river, to Kola-Kildinstroy south of Murmansk. The portable 50 kW transmitter supplies 60-100 A in the line at these frequencies; 0.6 - 12 Hz band, 2-3 Hz band, and single frequency tests at 4, 8, 10 and 12 Hz.

00000.076:unid:US NAVY ELF communication facility, Republic Michigan, USA:MSK

00000.076:unid:US NAVY ELF communication facility, Clam Lake Wisconsin, USA:MSK
BOTH ACTIVE

76 Hz centre frequency, 4Hz shift, 80 Hz for "1", 72 Hz for"0". For maximum signal coverage, the two stations operate simultaneously. Secondary frequency is reported as 00000.045 kHz. Other operational frequencies are technically possible, but so far not reported. The special - AC deep grounding system, in use for the ELF antenna, was designed and installed by LORESCO International. The boreholes for the deep grounding system is 3.2 km (2 US miles) deep.

The US Navy ELF transmitter facilities are believed to have a input power of 3 MW. As the efficiency of the antenna system is rather low, the predicted ERP is only 3 Watt (!).

00000.082:unid:Russian Navy ELF communication facility, Kola Peninsula, RUSSIA:MSK
ACTIVE

Transmission format: 82 Hz NON and (multichannel ?)MSK. Prior to message is a supposed "bellringer" or message follows signal: 0.4 Hz shift down to 81.6 Hz for 8 minutes, then up to 82.7 Hz for 4 minutes. This initial sequence, is directly followed by a downshift to 81 Hz for 38 seconds and a upshift to 83.3 Hz for 22 seconds. After this comes the message, using these shifts, for a total of 16 minutes. A complete message sequence last for 29 minutes.

"Zeus" is reported to have an operational frequency range of 00000.031 to 00000.166 kHz. This Russian ELF transmitter is nicknamed "ZEVS".

RADIOSIGNALS IN THE RANGE; 10 - 15 kHz

00011.904761:none:RSDN-20 F1, masterstation Novosibirsk 55N84E26 RUSSIA:PON
ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location: 55:45:22.0 N 84:26:52.4 E. The Russian RSDN-20 stations are nicknamed ALPHA

00011.904761:none:RSDN-20 F1, Krasnodar, 45N24 38E09, RUSSIA:PON
ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location: 45:24:17.9 N 38:09:29.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00011.904761:none:RSDN-20 F1, Komsomolsk na Amur, 50N04 135E36, RUSSIA:PON
ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location is the village of El'Ban 50:04:23.9 N 136:36:24.1 E. The Russian RSDN-20 stations are nicknamed ALPHA

00011.904761:none:RSDN-20 F1, Revda, 68N02 24E41, RUSSIA:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) The Revda RSDN-20 transmitter site, located on the Kola peninsula, is presumed shut down. Exact location: 68:02:07.8 N 34:41:00.0 E The Russian RSDN-20 stations are nicknamed ALPHA

00011.904761:none:RSDN-20 F1, Seyda, 39N28 62E43, Turkmenistan:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) The Seyda RSDN-20 transmitter site, is presumed shut down. Exact location: 39:28:16.0 N 62:43:07.3 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.044270:none:RSDN-20 F5, Seyda, 39N28 62E43, Turkmenistan:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) The Seyda RSDN-20 transmitter site, is presumed shut down. This frequency is / was a Seyda exclusive. Exact location: 39:28:16.0 N 62:43:07.3 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.09773:none:RSDN-20 F4, Revda, 68N02 24E41, RUSSIA:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) The Revda RSDN-20 transmitter site, located on the Kola peninsula, is presumed shut down. This frequency is / was a Revda exclusive. Exact location: 68:02:07.8 N 34:41:00.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.500:none:RSDN-20 secondary frequency:P0N

NOT ACTIVE / No recent info

Secondary frequency in use by all RSDN-20 transmitter sites. The Russian RSDN-20 stations are nicknamed ALPHA

00012.648809:none:RSDN-20 F2, master station Novosibirsk 55N84E26 RUSSIA:P0N

ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location: 55:45:22.0 N 84:26:52.4 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.648809:none:RSDN-20 F2, Krasnodar, 45N24 38E09, RUSSIA:P0N

ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location: 45:24:17.9 N 38:09:29.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.648809:none:RSDN-20 F2, Komsomolsk na Amur, 50N04 135E36, RUSSIA:P0N

ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location is the village of El'Ban 50:04:23.9 N 136:36:24.1 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.648809:none:RSDN-20 F2, Revda, 68N02 24E41, RUSSIA:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) The Revda RSDN-20 transmitter site, located on the Kola peninsula, is presumed shut down. Exact location: 68:02:07.8 N 34:41:00.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00012.648809:none:RSDN-20 F2, Seyda, 39N28 62E43, Turkmenistan:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii). The Seyda RSDN-20 transmitter site, is presumed shut down. Exact location: 39:28:16.0 N 62:43:07.3 E. The Russian RSDN-20 stations are nicknamed ALPHA

00013.0:VL3DEF: Royal Australian Navy Gippsland, Woodside, AUSTRALIA: F1B

ACTIVE, but no recent info

Ex-Omega G. The world highest VLF antenna, 427 meter.

00013.28125:none:RSDN-20 secondary frequency:P0N

NOT ACTIVE / No recent info

Secondary frequency, in use by all RSDN-20 transmitter sites. The Russian RSDN-20 stations are nicknamed ALPHA

00014.1:NAA:US NAVY NCTS Cutler Maine USA:MSK

NOT ACTIVE

NAA is currently only active at; 00024.0 kHz (see this)

00014.29:SOA21:Warsaw POLAND:unid

NOT ACTIVE

SOA21 is shut down

00014.3:UBE2/unid/unid:Russian Navy various sites RUSSIA:unid

NOT ACTIVE, but no recent info

UBE2 is located at Petropavlovsk 53N01 158E39

UNID's at Piltun 52N51 143E18 and Preobrazhenskoye in either Kyrgyzstan or Kazakhstan

00014.5:HWU:French Navy Le Blanc FRANCE:unid

NOT ACTIVE

00014.6:UVA:Russian Navy Black Sea fleet Batumi GEORGIA:unid

NOT ACTIVE

00014.7:NHB:US Navy Kodiak Alaska USA:unid

NOT ACTIVE

NHB is shut down

00014.880952:none:RSDN-20 F3, master station Novosibirsk 55N84E26 RUSSIA:P0N

ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location: 55:45:22.0 N 84:26:52.4 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.880952:none:RSDN-20 F3, Krasnodar, 45N24 38E09, RUSSIA:P0N

ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location: 45:24:17.9 N 38:09:29.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.880952:none:RSDN-20 F3, Komsomolsk na Amur, 50N04 135E36, RUSSIA:P0N

ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoiy Navigatsii) Exact location is the village of El'Ban 50:04:23.9 N 136:36:24.1 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.880952:none:RSDN-20 F3, Revda, 68N02 24E41, RUSSIA:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoioy Navigatsii) The Revda RSDN-20 transmitter site, located on the Kola peninsula, is presumed shut down. Exact location: 68:02:07.8 N 34:41:00.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.880952:none:RSDN-20 F3, Seyda, 39N28 62E43, Turkmenistan:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoioy Navigatsii) The Seyda RSDN-20 transmitter site, is presumed shut down. Exact location: 39:28:16.0 N 62:43:07.3 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.881091:none:RSDN-20 F3p, master station Novosibirsk 55N84E26 RUSSIA:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoioy Navigatsii) Exact location: 55:45:22.0 N 84:26:52.4 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.881091:none:RSDN-20 F3p, Revda, 68N02 24E41, RUSSIA:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoioy Navigatsii) The Revda RSDN-20 transmitter site, located on the Kola peninsula, is presumed shut down. Exact location: 68:02:07.8 N 34:41:00.0 E. The Russian RSDN-20 stations are nicknamed ALPHA

00014.881091:none:RSDN-20 F3p, Seyda, 39N28 62E43, Turkmenistan:P0N

NOT ACTIVE

Russian hyperbolic radio navigation system RSDN-20 (Radiotekhnicheskaya Systema Dalyokoioy Navigatsii) The Seyda RSDN-20 transmitter site, is presumed shut down. Exact location: 39:28:16.0 N 62:43:07.3 E. The Russian RSDN-20 stations are nicknamed ALPHA

RADIOSIGNALS IN THE RANGE; 15 - 20 kHz

00015.0:UIK:Russian Navy, Vladivostok 43N09 131E53 RUSSIA:unid

NOT ACTIVE, but no recent info

Main port and HQ of the Russian Pacific Fleet.

00015.1:FUO/HWU:French Navy various locations FRANCE:MSK

NOT ACTIVE, but sporadic transmissions

The frequency is listed as being in use by:

FUO Croix, FUO Bordeaux, HWU Rosnay and HWU Le Blanc

00015.1:VTI:Indian Navy Mumbai INDIA:A1A/unid

NOT ACTIVE

VTI is presumed shut down

00015.3:NHB/NPN/NPM/NLK/NEJ:US NAVY various locations USA:(A1A/F1B/MSK)/unid

NOT ACTIVE

All stations except NPM NRTF Lualualei Hawaii and NLK Jim Creek is shut down.

NPM is currently only active at; 00021.4 kHz (see this)

NLK is currently only active at; 00024.8 kHz (see this)

00015.3:EVT3:Russian Navy, Dikson Ostrov, RUSSIA:unid
NOT ACTIVE, but no recent info
(But; reports by western engineers, who has been working up there, says the facilities are in bad shape and/or possibly shut down.)

00015.5:NWC/NPM/NAA/NSS:US Navy various locations USA / AUSTRALIA:MSK
NOT ACTIVE
NSS Annapolis is shut down, demolished and the antennas down
NWC is currently only active at; 00018.9 kHz (see this)
NPM is currently only active at; 00021.4 kHz (see this)
NAA is currently only active at; 00024.0 kHz (see this)

00015.6:EWB/UVA202:Russian Navy Odessa UKRAINA:unid
NOT ACTIVE
EWB and UVA202 are presumed shut down

00015.625:none:RSDN-20 secondary frequency:P0N
NOT ACTIVE / No recent info
Secondary frequency in use by all RSDN-20 transmitter sites. The Russian RSDN-20 stations are nicknamed ALPHA
Not be mixed up with the TV line scan fundamental frequency of 00015.625 kHz !

00015.7:NPM/NSS/NAK/NPL/NPG US NAVY various locations USA:(A1A/F1B/MSK)/unid
NOT ACTIVE
All stations except NPM NRTF Lualualei Hawaii is shut down.
NPM is currently only active at; 00021.4 kHz (see this)

00016.0:GBR:Royal Navy Rugby Radio Hillmorton 52N22 001W11 UK:(A1A)/MSK
ACTIVE
By use of RDF, other UK transmitters also found active on this frequency

00016.1:unid:Russian Navy Algazy (Ostrov)46:34:60 N 79:46:60 E RUSSIA:unid
NOT ACTIVE, but no recent info
The facility is presumed shut-down or reallocated

00016.2:UGK/UMS/RPS:Russian Navy various sites RUSSIA:unid
NOT ACTIVE, but no recent info
UGK Kaliningrad 54N42 20E30
UMS Petropavlovsk Kamchatskiy 53N03 158E43
UMS also listed as Gorki, - since 1993, the city of Nizhniy Novgorod,.
RPS listed as "eastern Siberia" 43N00 145E00

00016.3:VTX1:INS Katabomman, South Vijayanarayanam village,INDIA:A1A
NOT ACTIVE
The transmitter site is (just opposite the Indian Naval Station (INS) Katabomman) at South Vijayanarayanam (Vijaya Nīrīyanam) village, 8°25'59.88"N 77°48'00"E, reported as some 30 km's from Turunelveli on the Kanyakumari highway. In some lists VTX1 is incorrectly located at Vishakapatnam Radio, the HQ of the Indian Coast Guard, East Coast District.

00016.4:JXN:NATO VLF transmitter facility Novik(en), NORWAY:MSK
ACTIVE
Operated on behalf of NATO by NODECA. Norwegian Navy is using the facility for national submarine communication. JXN is often listed as Helgeland. This station is also listed as JXZ, a former call of ex-NATO North Command at Kolsås, outside Oslo in Norway. NATO has moved to Jåtta, outside Stavanger.

00016.5:SOA30:Warsaw POLAND:unid
NOT ACTIVE
SOA30 is shut down

00016.6:NPM/NSS/NAK:US NAVY various locations USA:(A1A/F1B/MSK)/unid
NOT ACTIVE
All stations except NPM NRTF Lualualei Hawaii is shut down.
NPM is currently only active at; 00021.4 kHz (see this)

00016.8:FTA/FTA2:St Assise FRANCE:unid
NOT ACTIVE, but no recent info

00016.9:3SA:Chinese Navy Changde PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00017.0:VTX2:INS Katabomman, South Vijayanarayanam village,INDIA:A1A
NOT ACTIVE, but has been monitored with A1A
The transmitter site is (just opposite the Indian Naval Station (INS)
Katabomman) at South Vijayanarayanam (Vijaya Niríyanam) village,
8°25'59.88"N 77°48'00"E, reported as some 30 km's from Turunelveli
on the Kanyakumari highway. In some lists VTX2 is incorrectly located at
Vishakapatnam Radio, the HQ of the Indian Coast Guard, East Coast District.

00017.0:ROR:Russian Navy "Gorki". Since 1993, the city of Nizhniy Novgorod
RUSSIA:A1A
NOT ACTIVE
This is the antenna system of the German WW2 transmitter GOLIATH, wich was
located north-east of Calbe, by the river Elbe in Germany. Due to shortage
of copper during WW2 the antenna wires was made of steel. No recent info of
the whereabouts of this historic very interesting facility.

00017.1:UMS:Russian Navy Moskva RUSSIA:unid
NOT ACTIVE, but no recent info
UMS is presumed shut down or reallocated

00017.2:SAQ:Grimeton Radio Varberg SWEDEN:A1A
SPORADIC ACTIVE
Historic transmitter constructed by Ernst F.W.Alexanderson. The inventor of
the Alexanderson Alternator. www.alexander.n.se

00017.4:NDT:US Navy Yosamai/Yokosukaichi JAPAN:unid
NOT ACTIVE
NDT is shut down

00017.5:unid:unid:NON/F1B
NOT ACTIVE
this frequency was reported with F1B and NON, April 2000

00017.55:HWU:French Navy Le Blanc FRANCE:unid
NOT ACTIVE

00017.55:unid:RDF'ed as a UK facility, possible Rugby or Criggion:F1B MSK 50Hz
NOT ACTIVE
Monitored only once, 25/June/2001 from 1109-1155UTC with 5 separate message's

00017.6:SOA401:Warsaw, POLAND:unid
NOT ACTIVE
SOA401 is shut down

00017.6:JXN:secondary frequency of NATO VLF transmitter facility
Novik(en)NORWAY:MSK
NOT ACTIVE
Operated on behalf of NATO by NODECA. Norwegian Navy is using the facility for national submarine communication. JXN is often listed as Helgeland. This station is also listed as JXZ, a former call of ex-NATO North Command, at Kolsås, outside Oslo in Norway. NATO has moved to Jåtta, outside Stavanger.

00017.8:NPM/NAA/NSS:US Navy various locations USA:MSK
NOT ACTIVE
NSS Annapolis is shut down, demolished and the antennas down
NPM is currently only active at; 00021.4 kHz (see this)
NAA is currently only active at; 00024.0 kHz (see this)

00017.9:UBE(2)/unid:Russian Navy various sites RUSSIA/UZBEKISTAN:unid
NOT ACTIVE
UBE(2) Petrolovsk 52N59 158E59
unid Salar, Uzbekistan 41N22 69N22

00017.9:RDL(?):CIS MIL HQ Moskva VLF network,RUSSIA /UNID:NON/A1A/F1B-T600
ACTIVE
None of the transmitter sites, in this new net, are so far identified.

00017.9:unid:US NAVY TACAMO mobile worldwide:F1B-50Hz and 190Hz/MSK 400Hz and 800Hz
BW
ACTIVE
This particular TACAMO frequency is nicknamed "Channel One"
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00018.0:unid:US NAVY TACAMO mobile worldwide:F1B-50Hz and 190Hz/MSK 400Hz and 800Hz
BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00018.0:NBA/NPL/NPG/NLK:US NAVY various locations USA:(A1A/F1B/MSK)/unid
NOT ACTIVE
All stations except NLK NRTEF Jim Creek is shut down.
NLK is currently only active at; 00024.8 kHz (see this)

00018.1:RDL/RLO/RKS:CIS MIL HQ Moskva, VLF network,RUSSIA/OTHER:N0N/A1A/F1B-T600 75 Hz
ACTIVE
RDL is active from a number of transmitter sites, of which these are identified;
RDL Krasnodar 45N24 38E09
RDL Nizhniy Novgorod 56N11 43E58
RDL Arkhangelsk 64N24 41E32
RDL Tashkent, Uzbekistan 41N19 69E15
RDL Molodechno, Belarus 54N26 26E48, is presumed shut down
RDL (Kaliningrad ? 54N45 20E30,coordinates and location according to preliminary RDF)
RLO (Ryazan ?)54N60 39E71
RKS (Murmansk ?)68N58 33E04

Current, 24h transmission schedule: hh:28 - hh:38 - hh:48 - hh:49 - hh:58,
with frequent, flash-override messages, in between using; A1A morse, FSK morse and F1B T600 75 Hz. This VLF net was recently, for some days, 24h continuously on air, with T600 idle between all scheduled messages.

00018.1:UFQE/RAU8/UPD/UPD8/UPP:Russian Navy various sites RUSSIA:unid
NOT ACTIVE
UFQE/RAU8, located near the nuclear test site, at Matotchkin Shar on Novaya Zemlya,are both presumed shut down or reallocated.
UPD/UPD8/UPP; all located in the Murmansk area, on the Kola-peninsula, is presumed shut down or reallocated.

00018.2:VTX3:INS Katabomman, South Vijayanarayanam village,INDIA:A1A,MSK
ACTIVE
The transmitter site is (just opposite the Indian Naval Station Katabomman) at South Vijayanarayanam (Vijaya Niriyanam) village, 8°25'59.88"N 77°48'00"E, reported as some 30 km's from Turunelveli on the Kanyakumari highway. In some lists VTX3 is incorrectly located at Vishakapatnam Radio, the HQ of the Indian Coast Guard, East Coast District. VTX3 has been monitored using very high speed A1A, morse.

00018.2:NSS:US Navy Annapolis USA:unid
NOT ACTIVE
NSS is shut down

00018.2:JJH:Japanese Navy, Kure, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz(see this)is currently reported with traffic

00018.3:HWU:French Navy, Le Blanc, FRANCE:MSK
ACTIVE
After a long period of silence, this frequency has since 15/Nov/2001 been monitored with MSK 200Hz BW.

00018.4:NAD/NAH:US Navy Boston/New York USA:unid
NOT ACTIVE
NAD and NAH are both shut down

00018.5:DHO(35?):German Navy Ramsloh GERMANY:MSK
NOT ACTIVE
This location is known also as Rhauderfehn and Burlage
On VLF the German Navy is currently only to be found at 00023.4 kHz (see this)

00018.5:NAA:US Navy NCTS Cutler Maine USA:MSK
NOT ACTIVE
NAA is currently only active at; 00024.0 kHz (see this)

00018.6:NAA/NHB/NPN/NPM/NLK/NPG/NEJ: US Navy various sites USA:unid
NOT ACTIVE
NHB/NPN/NPG/NEJ are all shut down
NWC is currently only active at; 00018.9 kHz (see this)
NPM is currently only active at; 00021.4 kHz (see this)
NAA is currently only active at; 00024.0 kHz (see this)

00018.6:unid:US NAVY TACAMO mobile worldwide:F1B-50Hz and 190Hz/MSK 400Hz and 800Hz
BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00018.7:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00018.8:NAD/NAH:US Navy Boston/New York USA:unid
NOT ACTIVE
NAD and NAH are both shut down

00018.9:UMB:Russian Navy Rostov RUSSIA:unid
PRESUMED NOT ACTIVE
UMB Rostov 57N14 039E48, not to be mixed up with Rostov na Donu
Possible reallocation of this facility for the CIS MIL HQ Moskva VLF network, (see 00018.9)

00018.9:(RDL)/unid:CIS MIL HQ Moskva VLF network,RUSSIA /UNID:NON/F1B-T600
ACTIVE
None of the transmitter sites, on this new net frequency, so far indentified

00018.9:RKS:CIS MIL HQ Moskva VLF network, possibly Murmansk, RUSSIA :A1A/F1B-T600
SPORADIC ACTIVE
Monitored with both F1B T600 and with strategic code messages, using A1A morse.
Example;
xxx xxx rks rks 85668 ciklizaciý 8738 8953

00018.98:PKX:Jakarta Radio, Indonesia:unid
NOT ACTIVE, NO FURTHER INFO

00019.0:GQD:NATO VLF transmitter facility Anthorn, Cumbria UK:MSK
NOT ACTIVE
GQD is currently only operating on 00019.6 kHz (see this)
00019.0 is also found listed as GBR Rugby Radio, not verified

00019.0:NPM/NSS:US navy NRTF Lualualei Hawaii and Annapolis, USA:unid
NOT ACTIVE
NSS is shut down
NPM is currently only active at; 00021.4 kHz (see this)

00019.1:JJI2:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00019.2:VTX4:INS Katabomman, South Vijayanarayanan village, INDIA:A1A
NOT ACTIVE

The transmitter site is (just opposite the Indian Naval Station Katabomman) at South Vijayanarayanan (Vijaya Niriyanam) village, 8°25'59.88"N 77°48'00"E, reported as some 30 km's from Turunelveli on the Kanyakumari highway. In some lists VTX4 is incorrectly located at Vishakapatnam Radio, the HQ of the Indian Coast Guard, East Coast District.

00019.2:SOA50:Warsaw POLAND:unid

NOT ACTIVE

SOA50 is shut down

00019.3:unid:US NAVY TACAMO mobile worldwide:F1B-50Hz and 190Hz/MSK 400Hz and 800Hz
BW

NO INFO

TACAMO is an acronym for; **TA**ke **Ch**arge **And** **M**ove **O**ut

00019.3:ULK:Russian Navy, Panfilov, KAZAKHSTAN:unid

NOT ACTIVE, no recent info

ULK Panfilov, 43N22 77E07, is presumed shut down or reallocated.

00019.3:RFP8:Russian Navy, Povorochnyy RUSSIA:unid

NOT ACTIVE, no recent info

RFP8 Povorochnyy is presumed shut down or reallocated.

00019.3:UZX215:Russian Navy, Pereyezdnoye, UKRAINA:unid

NOT ACTIVE, no recent info

UZX215 Pereyezdnoye, 48N46 38E04, is presumed shut down or reallocated.

00019.4:UGE:Russian Navy, Arkhangelsk, RUSSIA:unid

NOT ACTIVE

UGE Arkhangelsk 64N63 40E48 is presumed shut down or reallocated.

00019.5:3SA:Chinese Navy, Changde, PEOPLES REPUBLIC of CHINA:A1A/unid

PRESUMED NOT ACTIVE

Of the 22 listed VLF frequencies for the Chinese Navy, only 00020.6 kHz, in use by 3SA Changde / 3SB Datong, is recently reported with traffic.

00019.6:GQD/(GBR/GBZ):NATO VLF transmitter facility Anthorn, Cumbria UK:MSK

ACTIVE

Currently only active frequency of GQD.

By use of RDF, other UK transmitters also found active on this frequency

00019.7:UGE:Russian Navy, Arkhangelsk, RUSSIA:unid

NOT ACTIVE

UGE Arkhangelsk 64N63 40E48 is presumed shut down or reallocated

00019.8:NWC:US Navy NCS Harold E. Holt, North West Cape, AUSTRALIA:MSK

ACTIVE

Operated on behalf of US Navy by RAN. Royal Australian Navy is reported to be using the facility for national submarine communication.

NISBS capable (NATO Interoperable Submarine Broadcast System)

00019.8:NPM/NLK/NPL/NPG:US NAVY various locations USA:MSK

NOT ACTIVE

All stations except NPM NRTF Lualualei Hawaii and NLK NRTF Jim Creek is shut down.
NPM is currently only active at; 00021.4 kHz (see this)
NLK is currently only active at; 00024.8 kHz (see this)

00019.8:TBA:Turkish Navy, Antalya 36N53 030E43, TURKEY:MSK

NOT ACTIVE

All TN traffic using VLF, most likely from TBB Bafa on 00026.7 kHz (see this)

00019.9:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid

PRESUMED NOT ACTIVE

Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00019.9:WWVL:Standard frequency transmission, Ft. Collins, Colorado, USA:

NOT ACTIVE

WWVL Ft. Collins is shut down and their VLF time-signal service discontinued since July 1972.

RADIOSIGNALS IN THE RANGE; 20 - 25 kHz

00020.0:WWVL:Standard frequency transmission, Ft. Collins, Colorado, USA:

NOT ACTIVE

WWVL Ft. Collins is shut down and their VLF time-signal service discontinued since July 1972.

00020.0:unid/(none?):VLF beacon, Amundsen/Scott South Pole base, ANTARCTIC:NON/unid
ACTIVE

VLF beacon transmitter, located close to the south pole, run by STARLAB - Stanford University USA. Some of the equipment is from the, now off-air, beacon at Siple.

http://www-star.stanford.edu/~vlf/south_pole/south%20pole.htm

00020.2:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid

PRESUMED NOT ACTIVE

Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00020.27:ICV:NATO VLF transmitter facility, Isola di Tavolara, Sardegna, ITALY:MSK

ACTIVE

00020.3:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid

PRESUMED NOT ACTIVE

Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00020.5:3SA/3SB:Chinese Navy, Changde/Datong, PEOPLES REPUBLIC of CHINA:A1A/unid

PRESUMED NOT ACTIVE

Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use by 3SA Changde / 3SB Datong, is recently reported with traffic.

00020.5:RJH63/RJH66/RJH69/RJH77/RJH99/RAB99:Russian VLF TS, various loc.:NON/F1B
ACTIVE
RJH63 Krasnodar 45N24 38E09 RUSSIA,
winter 1131-1140 / summer 1031-1040
No operation on the 3.-13.-23. of each month

RJH66 Bishkek 43N04 73E39 KYRGYZSTAN,
winter (0441-0447),1041-1047 / summer 0341-0347, 0941-0947
No operation on the 6.-16.-26. of each month

RJH69 Molodechno 54N26 26E48 BELARUS
winter 0741-0747 / summer 0641-0647
No operation on the 2.-12.-22. of each month

RJH77 Arkhangelsk 64N24 41E32 RUSSIA
winter 0941-0947 / summer 0841-0847
No operation on the 4.-14.-24. of each month

RJH99 Nizhniy Novgorod 56N11 43E58 RUSSIA
winter 0541-0547 / summer 0441-0447
No operation on the 8.-18.-28. of each month

RAB99 Khabarovsk 48N30 143E51 RUSSIA
winter NOT VERIFIED / summer NOT VERIFIED
No operation on the 10.-20.-30. of each month

At 00020.5 kHz the TS station RJH63 Krasnodar, is using a frequency and station exclusive, transmission sequence, ending with F1B (unid system) at hh:36 - hh:40.

All transmission times in UTC. These TS stations are nicknamed BETA.

00020.6:3SA/3SB:Chinese Navy, Changde/Datong, PEOPLES REPUBLIC of CHINA:A1A/F1B
50Hz/unid
ACTIVE
3SA Changde, 25N02 111E40, is monitored using A1A morse.
3SB Datong, 39N36 103E20, no recent info.
Frequency also active with F1B 50 Hz.

00020.76:ICV:NATO VLF transmitter facility, Isola di Tavolara,Sardegna,ITALY:MSK
SPORADIC ACTIVE

00020.9:HWU:French Navy, Rosnay, FRANCE:MSK
ACTIVE

00021.0:3SA:Chinese Navy, Changde, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00021.05:HWU:French Navy, Rosnay, FRANCE:MSK
NO INFO

00021.1:RDL:CIS MIL HQ Moskva VLF network,RUSSIA/OTHER:NON/A1A/F1B-T600 75 Hz
ACTIVE

Similar to the more active frequency 00018.1 kHz, are RDL at 00021.1 kHz operating from a number of transmitter sites, of which these are identified;
RDL Krasnodar 45N24 38E09
RDL Tashkent, Uzbekistan 41N19 69E15
Currently no apparent transmission schedules.

Some lists report that RDL at 00021.1 kHz is located at Smolensk, 54:46:54N 32:02:24E, Russia. This is not verified and is possibly a mix-up with the HF activity of RDL.

00021.1:RJS:Russian Pacific Fleet HQ, Vladivostok, RUSSIA:A1A/F1B
PRESUMED ACTIVE, but no recent info
RJS Vladivostok 43N08 131E54, was as late as June 2001 monitored in Japan.

00021.1:3SB:Chinese Navy, Datong, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use by 3SA Changde / 3SB Datong, is recently reported with traffic.

00021.2:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00021.22:GBR/GBZ/GQD:Royal Navy, various sites, UK:MSK
NOT ACTIVE
GBR Rugby Radio 52N22 001W11
GBZ Criggion 52N43 003W02 Powys, WALES, UK
GQD NATO Anthorn 54N53 003W17

00021.4:NPM:US Navy NRTF Lualualei, Hawaii, USA:MSK
ACTIVE
NPM NRTF Lualualei is located near the west coast of the island of Ohau. This VLF facility, is also found in various lists, as NPM Pearl Harbour. 00021.4 kHz is currently the only frequency in use by NPM

00021.4:NAA/NSS:US Navy Cutler/Annapolis USA:MSK
NOT ACTIVE
NSS is shut down
NAA is currently only active at; 00024.0 kHz (see this)

00021.6:3SB:Chinese Navy, Datong, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use by 3SA Changde / 3SB Datong, is recently reported with traffic.

00021.75:HWU:French Navy Le Blanc FRANCE:MSK
ACTIVE

00021.8:TBB:Turkish Navy, Antalya 36N53 030E43, TURKEY:MSK
NOT ACTIVE
All TN traffic most likely from TBB Bafa on 00026.7 kHz (see this)

00021.9:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00022.0:3SA:Chinese Navy, Changde, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00022.2:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
ACTIVE

00022.3:NWC/NAA/NLK/NPC/NSS/NPM:US Navy various sites,USA:MSK
NOT ACTIVE
NPC/NSS are both shut down
NWC is currently only active at; 00019.8 kHz (see this)
NPM is currently only active at; 00021.4 kHz (see this)
NAA is currently only active at; 00024.0 kHz (see this)
NLK is currently only active at; 00024.8 kHz (see this)

00022.5:unid:Chinese Navy, Ya Xian, PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00022.6:unid:US NAVY TACAMO mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00022.6:HWU:HWU:French Navy Le Blanc FRANCE:MSK
NOT ACTIVE

00022.7:unid:Pakistani Navy, Karachi, PAKISTAN:unid
NO RECENT INFO

00022.7:unid:Bangladesh'ian Navy, Chittagong, BANGLADESH:unid
NO RECENT INFO

00022.8:NWC:US Navy NCS Harold E. Holt, North West Cape, AUSTRALIA:MSK
NOT ACTIVE
NWC is currently only active at; 00019.8 kHz (see this)
Operated on behalf of US Navy by RAN. Royal Australian Navy is reported to be
using the facility for national submarine communication.
NISBS capable (NATO Interoperable Submarine Broadcast System)

00022.9:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is
currently reported with traffic

00023.0:RJH63/RJH66/RJH69/RJH77/RJH99/RAB99:Russian VLF TS, various locations.:NON ACTIVE
RJH63 Krasnodar 45N24 38E09 RUSSIA,
winter 1126-1131 / summer 1026-1031
No operation on the 3.-13.-23. of each month

RJH66 Bishkek 43N04 73E39 KYRGYZSTAN,
winter (0435-0441),1035-1041 / summer 0335-0341, 0935-0941

RJH69 Molodechno 54N26 26E48 BELARUS
winter 0735-0741 / summer 0635-0641
No operation on the 2.-12.-22. of each month

RJH77 Arkhangelsk 64N24 41E32 RUSSIA
winter 0935-0941 / summer 0835-0841
No operation on the 4.-14.-24. of each month

RJH99 Nizhniy Novgorod 56N11 43E58 RUSSIA
winter 0535-0541 / summer 0435-0441
No operation on the 8.-18.-28. of each month

RAB99 Khabarovsk 48N30 143E51 RUSSIA
winter NOT VERIFIED / summer NOT VERIFIED
No operation on the 10.-20.-30. of each month

All transmission times in UTC. These TS stations are nicknamed BETA

00023.0:UFQE/unid:Russian Navy various sites RUSSIA:unid
NOT ACTIVE
UFQE located near the nuclear test site, at Matotchkin Shar on Novaya Zemlya,
is presumed shut down.
unid Millerovo, located north-west of Krasnodar, is presumed shut down or
reallocated.

00023.1:unid:US NAVY TACAMO mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00023.2:unid:Russian Navy,Millerovo,RUSSIA:unid
NOT ACTIVE
Millerovo, located north-west of Krasnodar, is presumed shut down or reallocated.

00023.3:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz(see this)is
currently reported with traffic

00023.4:DHO38:NATO VLF transmitter facility, Rhauderfehn, GERMANY:(A1A)/MSK
ACTIVE
This location is known also as Saterland-Ramsloh and Burlage
Operated on behalf of NATO by the German Navy (Bundesmarine). The German Navy
are presumed to be using the facility, for national submarine communication. DHO38
was during autumn 2001, observed using A1A morse.

00023.4:NPM:US Navy NRTF Lualualei, Hawaii, USA:MSK
NOT ACTIVE
NPM NRTF Lualualei is located, near the west coast of the island of Ohau.
This transmitter facility, is also found in various lists, as NPM Pearl Harbour.
NPM is currently only active at; 00021.4 kHz (see this)

00023.4:JJI:Japanese Navy, Ebino, Japan:F1B 50Hz/unid
PRESUMED NOT ACTIVE
Of the VLF frequencies allocated to the Japanese Navy, only 00022.2 kHz (see this) is currently reported with traffic

00023.6:LPZ:Trelew Radio, Patagonia, Argentina:unid
NOT ACTIVE
This was most likely the pre-Omega F site, at Golfo Nuevo, 40 km outside Trelew. Very interesting images of the demolition of the Omega F tower in 1998, is found here: <http://www.controlled-demolition.com/cdi.html>

0024.0:NAA:US NAVY NCTS Cutler, Maine, USA:MSK
ACTIVE
00024.0 kHz is currently the only frequency in use by NAA Cutler.
NISBS capable (NATO Interoperable Submarine Broadcast System)

00024.0:NPM/NBA/NSS/NLK:US Navy various sites,USA:MSK
NOT ACTIVE
NBA/NSS are both shut down
NPM is currently only active at; 00021.4 kHz (see this)
NLK is currently only active at; 00024.8 kHz (see this)

00024.3:RTF6:Russian Navy, Sarpa, GEORGIA:unid
NOT ACTIVE
RTF6 Sarpa, 47N04 45E30, (located in the Abkhaz territory, very close to the Turkish border) is presumed shut down or reallocated.

00024.5:unid:Chinese Navy, Qingdao, PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use by 3SA Changde / 3SB Datong, is recently reported with traffic.

00024.8:NLK:US NAVY NRTF Jim Creek, Arlington, Washington USA:MSK
ACTIVE
00024.8 kHz is currently the only frequency in use by NLK. This VLF facility, is also found in various lists, as NPM Oso, Washington.
TX by Continental Electronics Corp.

RADIOSIGNALS IN THE RANGE; 25 - 30 kHz

00025.0:RJH63/RJH66/RJH69/RJH77/RJH99/RAB99:Russian VLF TS, various loc.:NON/A1A/A9
ACTIVE

RJH63 Krasnodar 45N24 38E09 RUSSIA,
winter 1100-1120 / summer 1000-1020
ID using A1A morse at 1106 /1006
No operation on the 3.-13.-23. of each month

RJH66 Bishkek 43N04 73E39 KYRGYZSTAN,
winter (0400-0425),1000-1025 / summer 0300-0325, 0900-0925
ID using A1A morse at 0406,1006/0306,0906
No operation on the 6.-16.-26. of each month

RJH69 Molodechno 54N26 26E48 BELARUS
winter 0700-0725 / summer 0600-0625
ID using A1A morse at 0706/0606
No operation on the 2.-12.-22. of each month

RJH77 Arkhangelsk 64N24 41E32 RUSSIA
winter 0900-0925 / summer 0800-0825
ID using A1A morse at 0906/0806
No operation on the 4.-14.-24. of each month

RJH99 Nizhniy Novgorod 56N11 43E58 RUSSIA
winter 0500-0525 / summer 0400-0425
ID using A1A morse at 0506/0406
No operation on the 8.-18.-28. of each month

RAB99 Khabarovsk 48N30 143E51 RUSSIA
winter NOT VERIFIED / summer NOT VERIFIED
ID using A1A morse at XX06
No operation on the 10.-20.-30. of each month

All transmission times in UTC. These TS stations are nicknamed BETA

00025.0:PWB:Brazilian Navy, Belem Radio, Belem, BRAZIL:unid
REPORTED AS ACTIVE, but no on-air verification

00025.1:RJH63/RJH66/RJH69/RJH77/RJH99/RAB99:Russian VLF TS, various loc.:NON/A1A
ACTIVE
RJH63 Krasnodar 45N24 38E09 RUSSIA,
winter 1120-1123 / summer 1020-1023
No operation on the 3.-13.-23. of each month

RJH66 Bishkek 43N04 73E39 KYRGYZSTAN,
winter (0425-0430),1025-1030 / summer 0325-0330, 0925-0930
No operation on the 6.-16.-26. of each month

RJH69 Molodechno 54N26 26E48 BELARUS
winter 0725-0730 / summer 0625-0630
No operation on the 2.-12.-22. of each month

RJH77 Arkhangelsk 64N24 41E32 RUSSIA
winter 0925-0930 / summer 0825-0830
No operation on the 4.-14.-24. of each month

RJH99 Nizhniy Novgorod 56N11 43E58 RUSSIA
winter 0525-0530 / summer 0425-0430
No operation on the 8.-18.-28. of each month

RAB99 Khabarovsk 48N30 143E51 RUSSIA
winter NOT VERIFIED / summer NOT VERIFIED
No operation on the 10.-20.-30. of each month

All transmission times in UTC. These TS stations are nicknamed BETA

00025.2:NML4:US Navy LaMoure, North Dakota, USA:MSK
ACTIVE
LaMoure is located in LaMoure County, south of Jamestown, between Edgeley
and Verona on Highway 13, on the banks of James River near Lake LaMoure Recreation
Area. Ex-Omega D. NISBS capable (NATO Interoperable Submarine Broadcast System)

00025.2:NOV:US NAVY TACAMO LANT, mobile Atlantic Ocean:F1B-50Hz/190Hz/MSK
400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00025.3:NAA:US NAVY NCTS Cutler, Maine, USA:MSK
NOT ACTIVE
NAA is currently only active at; 00024.0 kHz (see this)
NISBS capable (NATO Interoperable Submarine Broadcast System)

00025.5:3SB:Chinese Navy, Datong, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00025.5:RJH63/RJH66/RJH69/RJH77/RJH99/RAB99:Russian VLF TS, various locations.:NON/A1A
ACTIVE

RJH63 Krasnodar 45N24 38E09 RUSSIA,
winter 1123-1126 / summer 1023-1026
No operation on the 3.-13.-23. of each month

RJH66 Bishkek 43N04 73E39 KYRGYZSTAN,
winter (0430-0435),1030-1035 / summer 0330-0335, 0930-0935
No operation on the 6.-16.-26. of each month

RJH69 Molodechno 54N26 26E48 BELARUS
winter 0730-0735 / summer 0630-0635
No operation on the 2.-12.-22. of each month

RJH77 Arkhangelsk 64N24 41E32 RUSSIA
winter 0930-0935 / summer 0830-0835
No operation on the 4.-14.-24. of each month

RJH99 Nizhniy Novgorod 56N11 43E58 RUSSIA
winter 0530-0535 / summer 0430-0435
No operation on the 8.-18.-28. of each month

RAB99 Khabarovsk 48N30 143E51 RUSSIA
winter NOT VERIFIED / summer NOT VERIFIED
No operation on the 10.-20.-30. of each month

All transmission times in UTC. These TS stations are nicknamed BETA

00025.6:NOV:US NAVY TACAMO LANT, mobile Atlantic Ocean:F1B-50Hz/190Hz/MSK
400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00025.7:RFR6:Russian Navy, Pioneer Sovkhoz, RUSSIA:unid
NOT ACTIVE
RFR6 Pioneer Sovkhoz 53N11 49E46 is presumed shut down or reused
Pioneer Sovkhoz is located near the small town Musorka, 20 km NW of Samara.
(not far from the NDB site Smyshlayevka, - ND 190 kHz)
A "sovchoz", pronounce "Sovkhoz" is derived from SOVietskoye CHOZiainstvo, -
a state owned farm.

00025.8:NAA/NSS: US Navy, NCTS Cutler/Annapolis, USA:MSK
NOT ACTIVE
NSS is shut down
NAA is currently only active at; 00024.0 kHz (see this)

00026.1:NPM/NLK/NPG/NEJ:US Navy various sites,USA:MSK
NOT ACTIVE
NPG/NEJ are both shut down
NPM is currently only active at; 00021.4 kHz (see this)
NLK is currently only active at; 00024.8 kHz (see this)

00026.2:NJB:US NAVY TACAMO PAC, mobile Pacific Ocean:F1B-50Hz/190Hz/MSK 400Hz/800Hz
BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00026.2:NOV:US NAVY TACAMO LANT, mobile Atlantic Ocean:F1B-50Hz/190Hz/MSK
400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **Ch**arge **And** **M**ove **O**ut

00026.3:NJB:US NAVY TACAMO PAC, mobile Pacific Ocean:F1B-50Hz/190Hz/MSK 400Hz/800Hz
BW
NO INFO
TACAMO is an acronym for; **TA**ke **Ch**arge **And** **M**ove **O**ut

00026.5:3SR:Chinese Navy, Fuzhou, PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00026.6:CAA2A:Chilean Navy, Santiago /(Punta Arenas ?), CHILE:unid
NO RECENT INFO

00026.7:TBB:Turkish Navy, Bafa 37N25 27E33, TURKEY:MSK
ACTIVE

00026.8:NAU:US Navy NRTE Aguada, Puerto Rico, USA:MSK
NOT ACTIVE
NAU NRTE Aguada, is shut down on VLF. Operational at LF, 00040.75 kHz

00026.9:NOV:US NAVY TACAMO LANT, mobile Atlantic Ocean:F1B-50Hz/190Hz/MSK
400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **Ch**arge **And** **M**ove **O**ut

00027.0:RCV:Russian Navy, Rostov na Donu, RUSSIA:unid
NOT ACTIVE
RCV Rostov na Donu 47N18 39E48 is presumed shut down or reused

00027.0:NAU/NWC:US Navy Aguada/Harold E. Holt, USA/AUSTRALIA:MSK
NOT ACTIVE
NAU NRTE Aguada, is shut down on VLF. Operational at LF, 00040.75 kHz
NWC is currently only active at; 00019.8 kHz (see this)

00027.0:unid:US NAVY TACAMO, mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **Ch**arge **And** **M**ove **O**ut

00027.0:KS2XAL:TCOM L.P, Elizabeth City, North Carolina, USA:unid
NO RECENT INFO
TCOM performed VLF longwire-antenna tests, at the former Weeksville Naval Air
Station, using a tethered balloon.

00027.0:FTA27: St Assise, FRANCE
NO RECENT INFO

00027.2:unid:US NAVY TACAMO, mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **Ch**arge **And** **M**ove **O**ut

00027.3:RDL:CIS MIL HQ Moskva VLF network,RUSSIA:N0N/A1A/F1B-T600 75 Hz
PRESUMED ACTIVE, but no recent info
This RDL station is presumed located in the far-east or Arctic RUSSIA.
The station was previously using a hh:09 - hh:19 - hh:29 - hh:59 schedule. No
regular transmissions at hh:39 and hh:49. Frequent flash-override messages, in-
between the scheduled transmission times, using FSK 75Hz morse.

00027.5:NAU:US Navy NRTF Aguada, Puerto Rico, USA:MSK
NOT ACTIVE
NAU NRTF Aguada, is shut down on VLF. Operational at LF, 00040.75 kHz

00027.5:unid:US NAVY TACAMO, mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00027.5:EWC4:Russian Navy, Vladivostok, RUSSIA:unid
NOT ACTIVE
EWC4 Vladivostok 43N08 131E54 is presumed shut down or reused

00027.6:NOV:US NAVY TACAMO LANT, mobile Atlantic Ocean:F1B-50Hz/190Hz/MSK
400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00027.7:3SB:Chinese Navy, Datong, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00027.7:unid:US NAVY TACAMO, mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00027.9:NJB:US NAVY TACAMO PAC, mobile Pacific Ocean:F1B-50Hz/190Hz/MSK 400Hz/800Hz
BW
NO INFO
TACAMO is an acronym for; **TA**ke **C**harge **A**nd **M**ove **O**ut

00028.0:DHO:German Navy Burlage GERMANY:MSK
NOT ACTIVE
This location is known also as Rhauderfehn and (Satherland)- Ramsloh
On VLF the German Navy is currently only to be found at 00023.4 kHz (see this)

00028.0:3SB/3SQ:Chinese Navy, Datong/Ningbo,PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00028.0:unid/unid:Chinese Navy,Zhanjiang/Qingdao,PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00028.5:NAU/NPN/NPL:US Navy various sites, USA:unid
NOT ACTIVE
NPN and NPL are boyj shut down
NAU NRTF Aguada, is shut down on VLF. Operational at LF, 00040.75 kHz

00028.6(4):RAM:Russian Navy, Moskva, RUSSIA:unid
NOT ACTIVE
RAM Moskva 55N49 37E18 is presumed shut down or reallocated

00029.0:3SA:Chinese Navy, Changde, PEOPLES REPUBLIC of CHINA:A1A/unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00029.0:HWU:French Navy, Rosnay 46N4213 001E1525, FRANCE:MSK
NOT ACTIVE, BUT SPORADIC ACTIVITY

00029.3:NOV:US NAVY TACAMO LANT, mobile Atlantic Ocean:F1B-50Hz/190Hz/MSK
400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke Charge **And** **M**ove **O**ut

00029.4:NJB:US NAVY TACAMO PAC, mobile Pacific Ocean:F1B-50Hz/190Hz/MSK 400Hz/800Hz
BW
NO INFO
TACAMO is an acronym for; **TA**ke Charge **And** **M**ove **O**ut

00029.5:unid:Chinese Navy,Zhanjiang,PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00029.6:NJB:US NAVY TACAMO, mobile worldwide:F1B-50Hz/190Hz/MSK 400Hz/800Hz BW
NO INFO
TACAMO is an acronym for; **TA**ke Charge **And** **M**ove **O**ut

00030.0:UNW/(UNW3?)/UGK2/RRN21:Russian Navy, Kaliningrad, RUSSIA:unid
NOT ACTIVE
UNW/(UNW3?)/UGK2/RRN21 Kaliningrad 54N45 020E30, is presumed shut down or
reallocated

00030.0:3SQ:Chinese Navy, Ningbo,PEOPLES REPUBLIC of CHINA:unid
PRESUMED NOT ACTIVE
Of the 22 listed VLF frequencies for the Chinese Navy, only 20.6 kHz, in use
by 3SA Changde / 3SB Datong, is recently reported with traffic.

00030.0:PWI:Brazilian Navy, Recife, BRAZIL:unid
REPORTED AS ACTIVE, but no on-air verification

LIST OF CALL-SIGNS AND THEIR LOCATIONS

ID:LOCATION with COORDINATES using DEG:MIN:SEC

None: RSDN-20 Komsomolsk na Amur, El'Ban, Russia 50:04:23.9 N 136:36:24.1 E.
None: RSDN-20 Krasnodar, Russia 45:24:17.9 N 038:09:29.0 E.
None: RSDN-20 Novosibirsk Russia 55:45:22.0 N 084:26:52.4 E.
None: RSDN-20 Seyda, Turkmenistan 39:28:16.0 N 062:43:07.3 E.
None: RSDN-20 Revda, Russia 68:02:07.8 N 034:41:00.0 E.

3SA: Changde, Peoples Republic of China 25:02N 111:40E
3SB: Datong, Peoples Republic of China 39:36N 103:20E
3SQ: Ningbo, Peoples Republic of China 29:52N 121:33E
3SR: Fuzhou, Peoples Republic of China 27:59N 116:21E

CAA2A: Santiago, Chile 33:27S 70:40W
DHO: Burlage, Germany 53:05N 007:37E
DHO35: Rhauderfehn, Germany 53:05N 007:37E
DHO35: Burlage, Germany 53:05N 007:37E
DHO38: Rhauderfehn, Germany 53:10N 007:58E
DHO38: Saterland-Ramsloh, Germany 53:05N 007:40E
EVT3: Dikson Ostrov, Russia 73:30N 080:10E
EWC4: Vladivostok, Russia 43:09N 131:53E
FTA: St Assisi, France 48:32N 002:34E
FTA2: St Assisi, France 48:32N 002:34E
FTA27: St. Assisi, France 48:32N 002:34E
FUO: Bordeaux, France (four possible, close locations, no coordinates)
FUO: Croix, France 44:45N 000:48W
GBR: Rugby, UK 52:22N 001:15W
GBZ: Criggion, Powys, Wales, UK 52:43N 003:03W
GQD: Anthorn, Cumbria, UK 54:54n 003:18W
HWU: Le Blanc, France 46:37N 001:05E
HWU: Rosnay, France 46:42:13N 001:15:25E
ICV: Tavolara, (Isola di Tavolara), Sardegna, Italy 40:55N 009:45E
JAP: Yosami, Japan 34:58N 137:01E
JHH: Kure, Japan 34:14N 132:34E
JJI: Ebino, Japan 32:05N 131:51E
JJI2: Ebino, Japan 32:05N 131:51E
JXN: Novik(en), Norway 66:58N 013:54E
JXZ: Novik(en), Norway 66:58N 013:54E
KS2XAL: TCOM Elisabeth City, North Carolina, USA
(Former Weeksville Naval Air Station)
NAA: Cutler, Maine, USA 44:39N 067:17W
NAD: US NAVY yard, Boston, USA (no coordinates)
NAH: US NAVY yard, Brooklyn, New York, USA (no coordinates)
NAK: Annapolis, USA 38:59N 076:27W
NAU: Aguada, Puerto Rico, USA 18:23N 067:11W
NBA: Balboa, (channel zone) Panama 9:04N 079:39W
NDT: Yokosukaichi, Japan
NDT: Yosami, Japan 34:58N 137:01E
NEJ: Seattle, USA 47:41N 122:15W
NHB: Kodiak, Alaska, USA 57:45N 152:30W
NJB: mobile
NLK: Jim Creek, Oso, Arlington, Washington, USA 48:12N 121:00W
NML4: LaMoure, North Dakota, USA 46:22N 098:20W
NOV: mobile
NPG: San Francisco, California, USA 38:06N 122:16W
NPL: San Diego, California, USA 32:44N 117:05W
NPM: Pearl Harbour, Hawaii, USA 21:25N 158:09W

NPM: Lualualei, Hawaii, USA 21:25N 158:09W
NPN: Guam, Guam 13:34N 144:50E
NSS: Annapolis, USA 38:59N 076:27W
NWC: North West Cape, Exmouth, Australia 21:47S 114:09E
PWB: Belem, Brazil 18:54S 41:37W
PWI: Recife, Brazil (four possible locations; 1S 46W, 11S 41W, 6S 71W, 8S 34W)
RAB99: Khabarovsk, Russia 48:30N 143:51E
RAM: Moskva, Russia 55:49N 037:18E
RDL: Arkhangelsk, Russia 64:24N 41:32E
RDL: Kaliningrad, Kaliningrad oblast, Russia
RDL: Krasnodar Russia 45:24N 38:09E
RDL: Nizhniy Novgorod Russia 56:11N 43:58E
RDL: Molodechno, Belarus 54:26N 26:48E
RDL: Smolensk (?) 54:46:54N 32:02:24E
RDL: Tashkent, Uzbekistan 41:19N 69:15E
RFP8: Povorochnyy, Russia 53:09N 158:27E ?
 Povorochnyy Ostrov, Russia 51:48N 120:22E ?
RFR6: Pioner Sovkhoz, Russia 53N11 049E46
RJH63: Krasnodar, Russia 45:24N 038:09E
RJH66: Bishkek, Kyrgyzstan 43:04N 073:39E
RJH69: Molodechno, Belarus 54:26N 026:48E
RJH77: Arkhangelsk, Russia 64:24N 041:32E
RJH99: Nizhniy Novgorod, Russia 56:11N 043:58E
RJS: Vladivostok 43N08 131E54
RKS: Murmansk, Russia 68:58N 033:05E
RLO: Ryazan, Russia 54.60N 039.71E
ROR: Gorki, Russia 56:11N 43:58E (since 1993; Nizhniy Novgorod)
 Interesting detail: ROR's original location given as 55:22N 040:48E,
 this is midway between Moskva and Gorki, since 1993; Nizhniy Novgorod.
RRN21: Kaliningrad, Kaliningrad oblast, Russia 54:45N 020:30E
SAQ: Grimeton, Varberg, Sweden
SOA21: Warszawa, Poland 52:15N 021:00E
SOA30: Warszawa, Poland 52:15N 021:00E
SOA40: Warszawa, Poland 52:15N 021:00E
SOA50: Warszawa, Poland 52:15N 021:00E
TBA: Antalya, Turkey 36:53N 030:43E
TBB: Bafa, Turkey 37:26N 027:33E
UBE2: Petropavlovsk, Russia 53:01N 158:39E
UBE(2): Petrolovsk, Russia 52:59N 158:39E
UFQE: Matotchkin Shar, Novaya Zemlya, Russia
UGE: Arkhangelsk, Russia 64:63N 040:48E
UGK: Kaliningrad, Kaliningrad Oblast, Russia
UGK2: Kaliningrad, Kaliningrad oblast, Russia 54:45N 020:30E
UIK: Vladivostok, Russia 43:09N 131:53E
ULK: Panfilov, Kazakhstan 43:23N 077:07E
UMB: Rostov, Russia 57:14N 039:48E
UMS: Gorki, Russia 56:11N 43:58E (since 1993; Nizhniy Novgorod)
UMS: Moskva, Russia 55:49 037:18E
UZX215: Pereiezdnoye, Russia 48:47N 038:04E
UNID: Algazy, Russia 46:35N 079:47E
UNID: Chittagong, Bangladesh 22:20N 91:50E
UNID: Ebino Huyshu, Japan 32:05N 131:51E
UNID: Karachi Manora, Pakistan 24:48N 66:59E
UNID: Millerovo, Russia (Eight possible locations, to the north-west of
 Krasnodar, all in the vicinity of Millerovo-162, 48:56N 040:24E)
UNID: Panfilov, Kazakhstan 43:23N 077:07E
UNID: Pereiezdnaia, Ukraine 48:47N 038:04E
UNID: Piltun, Russia 52:51N 143:18E
UNID: Povorochnyy, Russia 53:09N 158:27E

Povorothnyy Ostrov, Russia 51:48N 120:22E
UNID: Preobrazhenskoye, Kyrgyzstan 42:45N 078:19E
Preobrazhenskoye, Kazakhstan 50:53N 071:20E / 48:52N 082:42E
UNID: Qingdao, Peoples Republic of China, no coordinates
UNID: Salar, Uzbekistan 41:22N 69:22E
UNID: Sarpa, Georgia 47:04N 45:30E
UNID: Zhanjiang, Peoples Republic of China 21:11N 110:22E
UNW: Kaliningrad, Kaliningrad oblast, Russia 54:45N 020:30E
UNW3: Kaliningrad, Kaliningrad oblast, Russia 54:45N 020:30E
UPD: Murmansk, Russia 68:59N 033:08E
UPD8: Murmansk, Russia 68:59N 033:08E
UVA, Batumi, Georgia 41:38N 41:37E
VL3DEF: Woodside, Gippsland, Australia 37:47:13S 144:57:25E
VTI: Mumbai, India 18:58N 72:49E
VTX1: South Vijayanarayanam village, India 8:25:59.88"N 77:48:00"E
VTX2: South Vijayanarayanam village, India 8:25:59.88"N 77:48:00"E
VTX3: South Vijayanarayanam village, India 8:25:59.88"N 77:48:00"E
VTX4: South Vijayanarayanam village, India 8:25:59.88"N 77:48:00"E
WWVL: Ft. Collins, Colorado USA (no coordinates)

THE BACKGROUND FOR THIS ELF and VLF GUIDE

Monitoring utility transmissions in the ELF and VLF range, are gaining increased popularity. And contrary to common belief, it is also quite easy. Unlike the enormous antennas needed on the transmitter side, the VLF monitor, will get very good results with an E-field probe, a simple wideband loop antenna or just a piece of antenna-wire.

Detecting ELF transmissions are a bit more tricky. To do so, you need either a special ELF E-field probe, an induction coil with 1k++ turn, - or a large piece of land, where it is possible to install a ground dipole.

The receivers used for VLF monitoring, reflects human creativity. As 2/3 of the VLF signals, actually are within the range of audio equipment, numerous mic and RIAA preamps, has been converted for VLF radio-reception. Others has taken the more technical step and are using Frequency Selective Level Meters as "longwave" receivers, with excellent results. And of course we have the various commercial receivers with tuning range down to 10 kHz. But if your main interests are in the VLF range, you will have much better value for money investing in DSP filters and a good loop antenna.

The use of soundcards and PC's, make it even easier to monitor, the various utility transmissions below 30 kHz. For details on how to make yourself a "soft" VLF receiver, see the chapter; A SOFT RECEIVER FOR VLF USE, at the end of this paper.

The majority of the transmissions, you can pick up in the VLF range, are of military origin. Most of them are intended for surface and subsurface naval forces. As the radio-signals in the VLF range penetrate water, they are very useful as one-way control and command links, for submarine forces. US NAVY stations like NAA NCTS Cutler and NWC NCS Harold E. Holt, as well as VTX3, the Indian Navy station INS Katabomman, has almost global surface coverage.

As most of these stations use encrypted transmissions, it can be hard to identify what you have tuned into. Almost no ID's are given and in most cases, you must identify the station, by its transmission pattern mode and use of frequency.

To help with this identification, also non-active stations are listed. At least you

know what you NOT has tuned in on. Joke aside, during periods with high naval activity, it is not uncommon to receive transmissions at frequencies, not normally carrying traffic. Several of the VLF stations around the globe, are also at irregular times performing tests, on other frequencies, then their normal frequency of operation.

A SOFT RECEIVER FOR VLF USE

First of all, you must have a soundcard installed in your computer. Then you need some spectrum analysis software, to record and view the radio signals from the antenna. For this task you have a selection of several programs, available free for download. One of the most used is GRAM and Spectran. A quick search on the web, will give you several URL's for download of the software. (No one mentioned, no one favoured)

Install the software. Read the instructions. Now you have a very simple yet sensitive VLF receiver in your computer. Open up and run your soundcard software. Choose mic input, experiment later with the gain boost select. Open up and run the analysis tool, you selected to download and install.

If you use one of the GRAM versions (the newest version of GRAM has time- limited operation before registration)

Go to the file menu:

select Scan Input or use (F3), at the Scan Input menu, first you go to the Sample Characteristics and select: 44 kHz sample rate, then go to Display Characteristics and select: Display type / Scroll, Scale dB / 90, Palette / CB, Scroll Mem / On, Time Scale (msec) / 10 then you go to Frequency Analysis and select: Freq scale / Linear, FFT Size (Points) 1024, keep the Freq Resolution (Hz) at 43.1, Band (Hz) move with left mouse button to read 11020 - 22045 (which is Hz), Spectrum average / 1, Pitch Detector / Off.

If you would like to save the transmission direct to your HD, select: Recording Enable / On

then press OK.

Now you have GRAM up and running, giving you a visual display of a 1/3 of the VLF band, from 11.020 kHz to 22.045 kHz. But as the input is yet unconnected, you should see nothing, but some internal noise from the soundcard. Now it is the time of truth, - take the coax from your ordinary HF antenna, preferably an vertical antenna, - or any kind of "longwire" construction, and hook up the antenna via a suitable adaptor to the mic- input of your soundcard.

VLF monitors in Europa and US east coast will now see spectral lines from FSK transmissions at 16 kHz (GBR in UK) 16.4 kHz (JXN, NATO COMSUBLANT in Norway) 18.1 kHz (RDL CIS MIL at hh:28-38-48-58, often with the CIS version of "EAM's" / Strategic Code Messages, using morse in between) 18.2 kHz VTX3 Indian Navy with A1A morse and 20.9 kHz (HWU, French Navy) In other places on the Globe there will be other stations like NWC in Australia at 19.8 kHz and 3SB in China at 20.6 kHz. Also more sporadic ICV NATO at 20.27 kHz from Isola di Tavolara at Sardegna in Italia. And you will "receive" a lot of sferics, - and if you are in a "manmade radio quiet" location, also other natural radio phenomena. And of course the 15.625 kHz spectral line from both your own and the neighbourhoods TV sets.

If you are suffering from strong electrostatic fields, blanking the input, try an capacitor in series with the antenna lead. If you are suffering interference or intermodulation from strong or nearby BC stations, try an inductor in series with the antenna lead (if you like, - up to 10 mH !)

Remember that outside mounted antennas, might pick up **VERY HIGH VOLTAGES**, capable of killing both you, - and your electronic equipment, during all stages of a thunderstorm. So for your own safety take precautions to protect yourself, your computer and soundcard interface.

Play around with the settings on both your analysis tool and your soundcard, to get the best performance out of this simple, yet effective VLF receiver.

VLF radio signals are following the earth - ionosphere waveguide and are not limited by the "normal" propagation conditions. As always, I have right now, one of these "receivers" up and running with an 8 meter vertical, 8 meters above the roof. On the GRAM display is the weak, but visible spectral lines of the MSK transmission from NWC US NAVY NCS Harold E. Holt at Exmouth in Australia, a distance of impressing 12700 km.

AN UPDATE TO THIS INITIAL DESCRIPTION OF A SOFT VLF RECEIVER

It has come to my attention, that several WUN'ers, has experienced problems to find suitable and not time-limited versions of sound-analysis software.

Wolf DL4YHF, the creator of Spectrum Lab, has June 15th 2001, updated his latest release (v1.65) of this highly recommendable software for radio use. This most interesting software program, has even a special setting for use of the analysis tool, as a "Soft RX" for VLF use. There is even a pre-programmed setting for SAQ, Grimeton Radio, as well as other VLF and LF stations.

Go to Wolf's homepage for details and download of the program:
<http://www.qsl.net/dl4yhf> with a US mirror site at: www.members.aol.com/dl4yhf

Read also Wolf's own article " Using a PC with soundcard, as a VLF receiver" at:
http://www.qsl.net/dl4yhf/vlf_rcvr.html

LINKS TO FURTHER INFO

THE RDF PROJECT. Radio Direction Finding of VLF and LF transmissions
http://www-user.uni-bremen.de/~ews2/RDF_project.htm

Klaus' Radio Page
<http://longwave.bei.t-online.de/>

Where you also find a very useful RDF calculator
<http://longwave.bei.t-online.de/rdf.html>

The world below 535kHz, by Costas Krallis SV1XV
<http://www.qsl.net/sv1xv/index.html>

LWCA, Longwave Club of America, The Longwave Homepage
<http://lwca.org>

Tony Field's azimuth map v3.2
<http://members.shaw.ca/ve6yp/>
mirror at: <http://www.qsl.net/ve6yp/>

Sheldon C. Shallon's (W6EL) propagation and azimuth map program, W6ELProp v2.02.
The map section is very useful for building up a library of VLF bearings:
<http://www.qsl.net/w6elprop/>

Mother Nature's own cacophony of signals and noise in the VLF range. Stephen P. McGreevy, VLF sounds and samples:
<http://www-pw.physics.uiowa.edu/mcgreevy/>

NASA's online VLF receiver:
<http://spaceweather.com/glossary/inspire.html>
http://science.nasa.gov/headlines/y2001/ast19jan_1.htm

Larry's VLF site, sounds, schematics and much more:
<http://home.pon.net/785/>

THE OPEN LAB, Radio below 22 kHz, Renato Romero's much recommendable site, for experimentation, research and information, in the ELF and VLF frequency range:
<http://www.vlf.it>

The use of Frequency Selective Voltmeters as VLF receivers, by Don Moman:
<http://members.home.net/rnewll/fsvm.htm>

For construction of ground dipoles:
<http://www.elfrad.com>
<http://www.elfrad.org>
<http://www.da4e.nl/elfspecial.html>

For construction of induction coil antennas and ELF receivers:
<http://wavelab.homestead.com/>

For various ELF /ULF research, including spectrograms of the 2.5 Hz signal:
http://members.home.net/sidereall7/elfulf_research_in_arizona.htm

Loop antennas for VLF and below:
<http://home.t-online.de/home/Peter.Schmalkoke/>

Maps and coordinates, worldwide:
<http://www.calle.com/world>
<http://new2calle.com/world>

WUN
<http://www.wunclub.com>

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