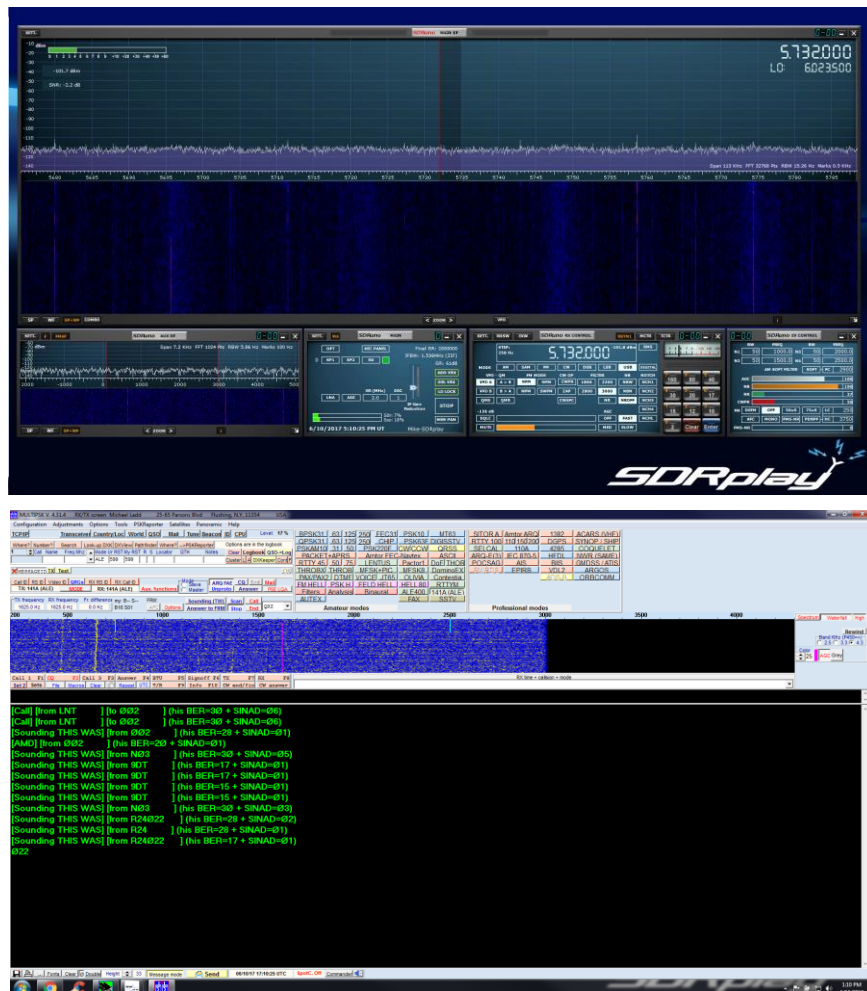# Decoding MIL-ALE using SDRuno and MultiPSK

6/18/2017

Automatic Link Establishment is the worldwide de facto standard for digitally initiating and sustaining HF radio communications. [1] ALE is a feature in an HF communications radio transceiver system that enables the radio station to make contact, or initiate a circuit, between itself and another HF radio station or network of stations. The purpose is to provide a reliable rapid method of calling and connecting during constantly changing HF ionospheric propagation, reception interference, and shared spectrum use of busy or congested HF channels.

You will need either VB-Cable or VAC installed and configured. This will allow you to pipe the audio out of SDRuno into the MultiPSK decoder.

http://vb-audio.pagesperso-orange.fr/Cable/   **http://software.muzychenko.net/eng/vac.htm**

Finding ALE Networks you can monitor & decode.
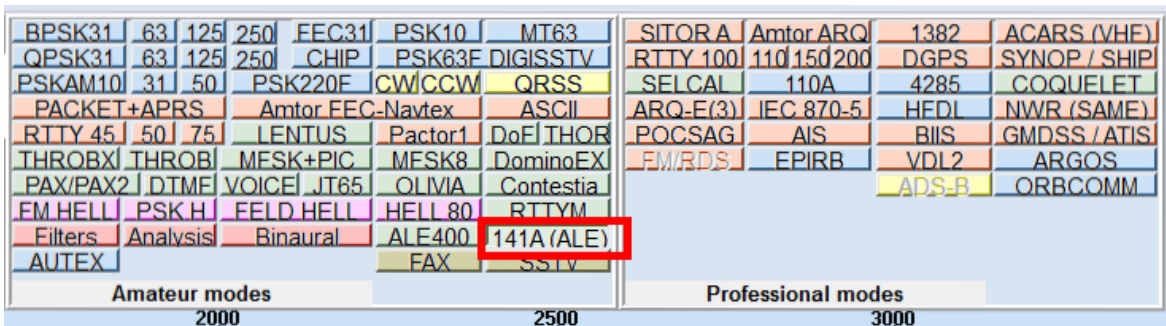
* Visit Radio Reference for ALE network information and frequencies.
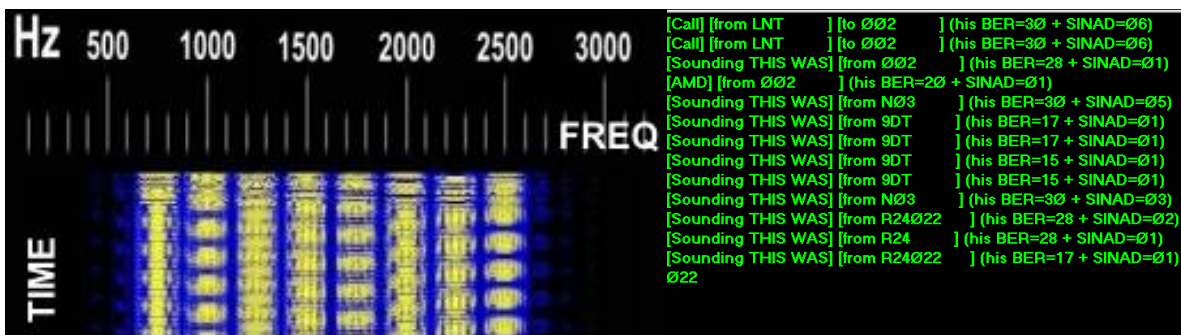http://wiki.radioreference.com/index.php/ALE_Networks

* Launch SDRuno and select the network you want to monitor (note the frequency). The Mode is SDRuno is USB with a filter set at 3.0k.

* Launch MultiPSK and select 141A (ALE)

* Wait for the distinct ALE burst and watch the lower decoder section of MultiPSK.

HF-ALE Networks to get started.

U0S Air Force GHFS ALE Network

```
ALE Address and Frequency Chart
Station        ALE      Frequency
               Address  3137 4721 5708 6721 9025 11226 13215 15043 18003 23337
------------------------------------------------------------------------------
Andrews        ADW       x    x    x    x    x    x     x     x     x     x
Ascension      HAW       x    x         x    x    x     x     x     x     x
Croughton      CRO       x    x         x    x    x     x     x     x     x
Diego Garcia   JDG       x    x    x    x    x    x     x     x     x     x
Elmendorf      AED       x    x    x    x    x    x     x     x     x     x
Guam           GUA       x    x    x    x    x    x     x     x     x     x
Hawaii         HIK       x    x         x    x    x     x     x     x     x
Keflavik       IKF       x    x    x    x    x    x     x     x     x     x
Lajes          PLA       x    x    x    x    x    x     x     x     x     x
McClellan      MCC       x    x    x    x    x    x     x     x     x     x
Offutt         OFF       x    x    x    x    x    x     x     x     x     x
Salinas        JNR       x    x    x    x    x    x     x     x     x     x
Sigonella      ICZ       x    x    x    x    x    x     x     x     x
S Atlantic     MPA       x    x    x    x    x    x     x     x     x     x
West Coast     MCC       x    x    x    x    x    x     x     x     x     x
Yokota         JTY       x    x         x    x    x     x     x     x     x
```

US Air Force SIPRNET ALE Network

```
5702.0
5708.0
6715.0
8968.0
11181.0
17976.0
27870.0
```

US Air Force NIPRNET ALE Network

```
3068.0
4745.0
5684.0
8965.0
11199.0
13242.0
17973.0
20631.0
```

US Army Flight Watch Service (Southern Command)

All Frequencies USB

```
8065
8972
12022
16144.5
19103.5
```

US Army National Guard

```
4882.0
4924.5
5202.0
8047.0
10816.5
14653.0
16338.5
17458.5
```

CBP / DHS COTHEN Network

```
5732.0
7527.0
8912.0
10242.0
11494.0
13907.0
15867.0
18594.0
20890.0
23214.0
25350.0
```