

# Brief description of Linrad configuration for AFE822x / AFEDRI SDR-Net use through USB connection

```
32bit Linrad-04.14a
32bit Linrad-04.14a Soundcard Afedri USB

A=Book signal CPU          1=Process first file named in 'adfile'
B=Normal CPU              2=Process first file named in 'adpau'
C=Meteor scatter CPU      3=select file from 'adfile'
D=SSB                     4=select file from 'adpau'
E=FM                      5=File converter raw to .wav
F=AM                      T=Toggle network output
G=HDSS CPU
H=TX TEST
I=SOUNDCARD TEST MODE
K=AAAAA

M=init moon tracking and EME database
N=Network set up
S=Global params set up
U=B/D and D/B set up for RX
P=Save current parameters in par_user.int
!?=Emergency !loop
F1 or !?=Show keyboard commands (HELP)

The DLL package (2) is installed, (5) or later is recommended)
The latest Linrad dll package is available here:
http://srd822.com/dll.dll
```

*Choose option "U" to configure hardware*

```
32bit Linrad-04.14a
CURRENT B/D and D/B SETUP FOR RX

Linrad RX input from: SOUNDCARD device = Line (105 - AFEDRI-SDR-Net Audio)
                      device number   = 0, native MME
                      associated radio = Afedri USB
                      sample rate     = 96000
                      no of input bytes = 2 (16 bits)
                      radio interface  = One RX channel, two audio channels
                                      (direct conversion, time shift=0)

Linrad RX output to: SOUNDCARD device = Speakers (High Definition Audio)
                      device number   = 0, native MME
                      D/B sample rate = 8000 to 96000
                      D/B bytes       = 1 or 2
                      D/B channels    = 1 or 2

DPR rate min=30 max=300

A = Change input settings and reset all other soundcard settings
  if a soundcard is selected as input.
B = Change the output soundcard settings.
C = Change min/max dpr rates.
D = Set parameters for soundcard radio hardware.
E = Enable/disable frequency converter and set LO.
Z = Disable the output soundcard.
X = To main menu.
```

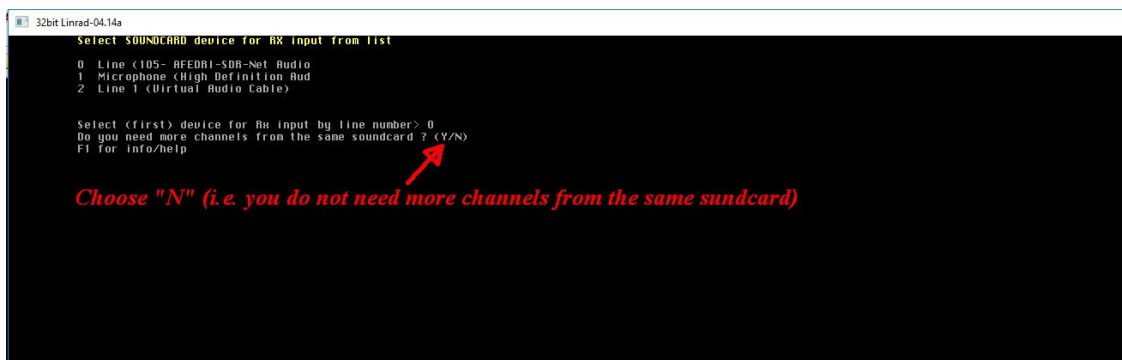
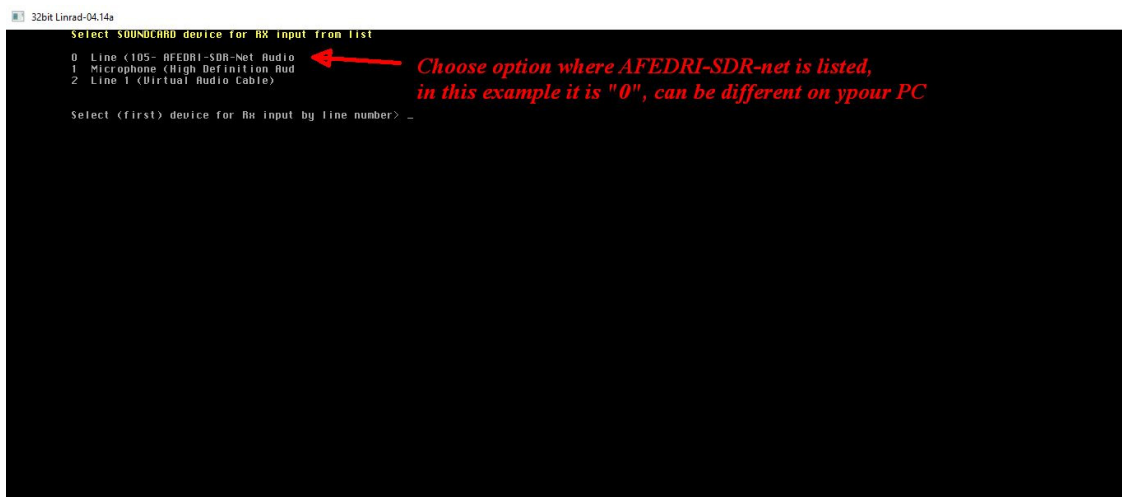
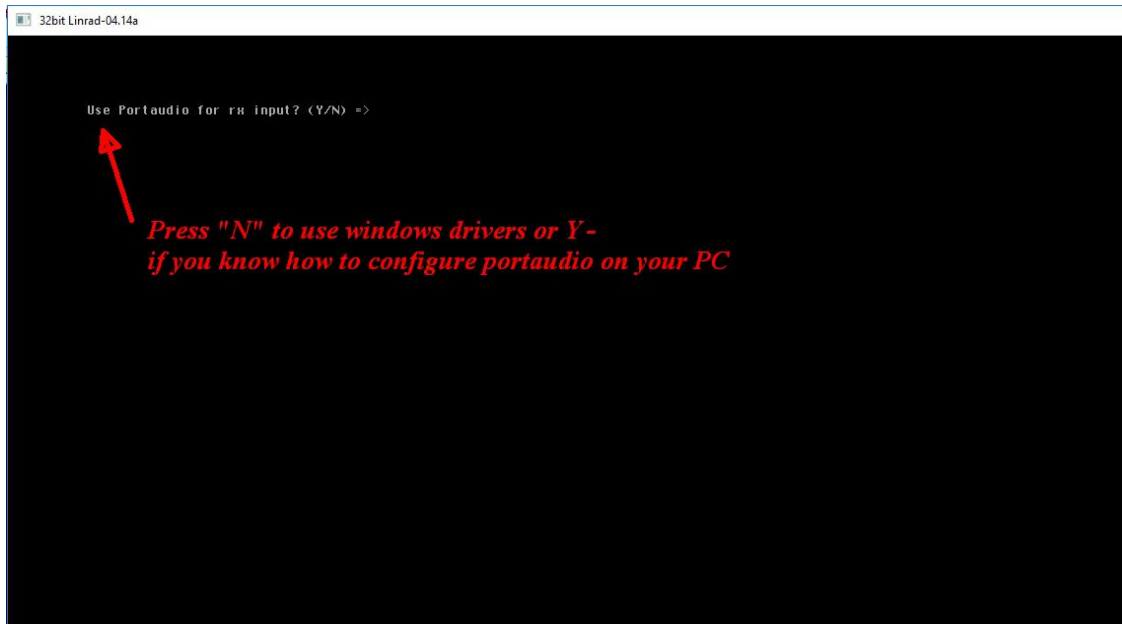
*Choose option "A" to configure RX hardware*

SELECT HARDWARE FOR RX

- A = Soundcard
- B = SDR-14 or SDR-1Q
- C = Perseus
- D = SDR-1P
- E = Excalibur
- F = libEtt10 hardwares
- H = RTL2832 USB dongle
- I = SDRplay or Mirics USB dongle
- J = bladeRF
- K = PCIe 9842
- L = OpenHPSDR
- M = Afedr i-NET
- O = Airspy
- P = CloudIQ
- Q = Airspy HF+
- Y = Network
- Z = Disable (Disk input allowed)

*Choose option "A" to configure Soundcard*





```
32bit Linrad-04,14a
Select SOUND CARD device for RX input from list
0 Line (105- AFEDRI-SDR-Net Audio
1 Microphone (High Definition Aud
2 Line 1 (Virtual Audio Cable)

Select (first) device for RX input by line number> 0
Do you need more channels from the same soundcard ? (Y/N)
F1 for info/help
Linrad can not query hardware because Windows will report that
everything is possible. Windows will silently resample and provide
data that would be meaningless in an SDR context.
Therefore, make sure you enter data that is compatible with the
native capabilities of your soundcard hardware. (And make sure that
the soundcard really is set to the speed you have selected.)

Use extended format (WAVEFORMATEXTENSIBLE) ? (Y/N)
F1 for info/help
```

*Choose "Y" - to use extended format*

```
32bit Linrad-04,14a
Select SOUND CARD device for RX input from list
0 Line (105- AFEDRI-SDR-Net Audio
1 Microphone (High Definition Aud
2 Line 1 (Virtual Audio Cable)

Select (first) device for RX input by line number> 0
Do you need more channels from the same soundcard ? (Y/N)
F1 for info/help
Linrad can not query hardware because Windows will report that
everything is possible. Windows will silently resample and provide
data that would be meaningless in an SDR context.
Therefore, make sure you enter data that is compatible with the
native capabilities of your soundcard hardware. (And make sure that
the soundcard really is set to the speed you have selected.)

Use extended format (WAVEFORMATEXTENSIBLE) ? (Y/N)
Sampling speed (Hz)> 96000_
```

*Insert here desired sample rate - 96000 Hz*

```
32bit Linrad-04,14a
Select SOUND CARD device for RX input from list
0 Line (105- AFEDRI-SDR-Net Audio)
1 Microphone (High Definition Aud
2 Line 1 (Virtual Audio Cable)

Select (first) device for Rx input by line number> 0
Do you need more channels from the same soundcard ? (Y/N)
F1 for info/help
Linrad can not query hardware because Windows will report that
everything is possible. Windows will silently resample and provide
data that would be meaningless in an SDR context.
Therefore, make sure you enter data that is compatible with the
native capabilities of your soundcardhardware. (And make sure that
the soundcard really is set to the speed you have selected.)

Use extended format (WAVEFORMATEXTENSIBLE) ? (Y/N)
Sampling speed (Hz)> 96000    No of bits (16/24): 16
```

*Insert here desired bits number - 16*

```
32bit Linrad-04,14a
Select radio interface>
1: One RF, one audio channel (normal audio)
2: One RF, two audio channels (direct conversion)
3: Two RF, two audio channels (normal audio, adaptive polarization)
4: Two RF, four audio channels (direct conversion, adaptive polarization)
F1 for help/info
```

*For a Dual channel SDR choose option 4:  
Two RF, four audio channels  
For a Single Channel SDR choose option 2:  
One RF, two audio channels*

```
32bit Linrad-04.14a
Select receiver hardware to use with soundcard.

0  Undef
1  Undef reversed
2  WSE
3  S1570
4  Soft66
5  Elektor
6  FCD Pro Plus
7  Afedri USB ← Choose option "7" AFEDRI USB

Select by line number=> _
```

```
32bit Linrad-04.14a
CURRENT A/D and D/A SETUP FOR RX

Linrad RX input from: SOUND CARD device = Line (105- AFEDRI-SDR-Net Audio
                      device number    = 0, native MME
                      associated radio   = Afedri USB
                      sample rate       = 96000
                      no of input bytes = 2 (16 bits)
                      radio interface    = Two RX channels, four audio channels
                                           (direct conversion, adaptive polarization)

Linrad RX output to: NOT YET SELECTED: (Select Menu Option 'B')

DMA rate  min=30  max=300

A = Change input settings and reset all other soundcard settings
    if a soundcard is selected as input.
B = Change the output soundcard settings. ← Choose option "B" for output sound card choice
C = Change min/max dma rate.
D = Set parameters for soundcard radio hardware.
E = Enable/Disable frequency converter and set LO.
Z = Disable the output soundcard.
X = To main menu.
```

```
32bit Linrad-04.14a
Select SOUND CARD device for RX output
0 Speakers (High Definition Audio)
1 Line 1 (Virtual Audio Cable)
Select device for RX output by line number> _
```

*Choose desired output sound card in my case it is option "0", your case can be different*

```
32bit Linrad-04.14a
CURRENT A/D and D/A SETUP FOR RX
Linrad RX input from: SOUND CARD device = Line (105- AFEDRI-SDR-Net Audio
device number = 0, native MME
associated Radio = Afedri USB
sample rate = 96000
no of input bytes = 2 (16 bits)
radio interface = Two RX channels, four audio channels
(direct conversion, adaptive polarization)
Linrad RX output to: SOUND CARD device = Speakers (High Definition Audio
device number = 0, native MME
D/A sample rate = 8000 to 96000
D/A bytes = 1 or 2
D/A channels = 1 or 2
DMA rate min=30 max=300
A = Change input settings and reset all other soundcard settings
if a soundcard is selected as input.
B = Change the output soundcard settings.
C = Change min/max dma rate.
D = Set parameters for soundcard radio hardware.
E = Enable/Disable frequency converter and set LO.
Z = Disable the output soundcard.
X = To main menu.
```

*Choose option "D" to setup parameters of radio hardware*

```
32bit Linrad-04.14a
Use SDR_Control under Windows to set Diversity Mode (dual channel)
and save RX mode if your dual channel Afedri shows only one RF channel
0: Product AFEDRI-SDR-Net Audio Type: 255d 0002 Serial: B446A7473436
Unit autoselected.
0: AD8330
1: AD8369
Select DGA type by line number. 1
```

*Choose option "1" for all modern AFEDRi SDR and AFE822x SDR models*

```
32bit Linrad-04.14a

Use SDR_Control under Windows to set Diversity Mode (dual channel)
and save RX mode if your dual channel Afedri shows only one RF channel

0: Product AFEDRI-SDR-Net Audio Type: 255d 0002 Serial: B446A7473436

Unit autoselected.

0: AD8330
1: AD8369

Select UGA type by line number. 1

LO frequency error in ppb => 0_
```

*Choose LO frequency error compensation,  
in the beginning it will be good to use 0ppm*

```
32bit Linrad-04.14a

CURRENT A/D and D/A SETUP FOR RX

Linrad RX input from: $SOUNDCARD device = Line (105- AFEDRI-SDR-Net Audio
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associated radio = Afedri USB
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Linrad RX output to: $SOUNDCARD device = Speakers (High Definition Audio
device number = 0, native MME
D/A sample rate = 8000 to 96000
D/A bytes = 1 or 2
D/A channels = 1 or 2

DMA rate min=30 max=300

A = Change input settings and reset all other soundcard settings
    if a soundcard is selected as input.
B = Change the output soundcard settings.
C = Change min/max dma rate.
D = Set parameters for soundcard radio hardware.
E = Enable/Disable frequency converter and set LO.
Z = Disable the output soundcard.
X = To main menu.
```

*Press "X" to return to the main menu*



```
32bit Linrad-04.14a
32bit Linrad-04.14a Soundcard Afedr i USB

A=Weak signal CW          1=Process first file named in 'adfile'
B=Normal CW              2=Process first file named in 'adwav'
C=Meteor scatter CW      3=Select file from 'adfile'
D=SSB                    4=Select file from 'adwav'
E=FM                      5=File converter .raw to .wav
F=AM                      T=Toggle network output
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
K=RADAR

M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/B and D/A set up for RX
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)

User interface setup saved
uga mode [12]                Screen width (%) [80]
Screen height (%) [80]      font scale [2]
mouse speed [8]             Max DMA rate [300]
Process priority [0]        Native ALSA [256]
RX input mode [6]           RX rf channels [2]
RX ad channels [4]          RX ad speed [96000]
RX ad device no [0]         RX ad mode [0]
RX da mode [0]              RX da device no [0]
RX min da speed [8000]      RX max da speed [96000]
RX max da channels [2]      RX max da bytes [2]
RX min da channels [1]      RX min da bytes [1]
RX soundcard radio [7]      Converter Hz [0]
Converter MHz [0]           Converter mode [0]
network flag [0]            TX ad speed [0]
TX da speed [0]             TX ad device no [-1]
TX da device no [-1]        TX da channels [0]
TX ad channels [0]          TX da bytes [0]
TX ad bytes [0]            TX enable [0]
TX pilot tone dB [0]        TX pilot microsec. [0]
TX soundcard radio [0]      Operator skill [2]
Max blocked CPUs [0]        Timer resolution [0]
Autostart [0]               RX ad latency [0]
RX da latency [0]           TX ad latency [0]
TX da latency [0]           Sample shift [0]
Min DMA rate [30]           Use ExtIO [0]
ExtIO type [0]              Transceiver mode [0]
PTT control [0]             check [2230408]
```

*Please do not forget to Press "W" option  
to save your configuration!*

