EME

FCDP+

LINRAD

MAP65

WSJT-X

TRAKBOX

IBERRADIO ÁVILA 2017 - EA4CYQ

Juan Antonio Fernández Montaña

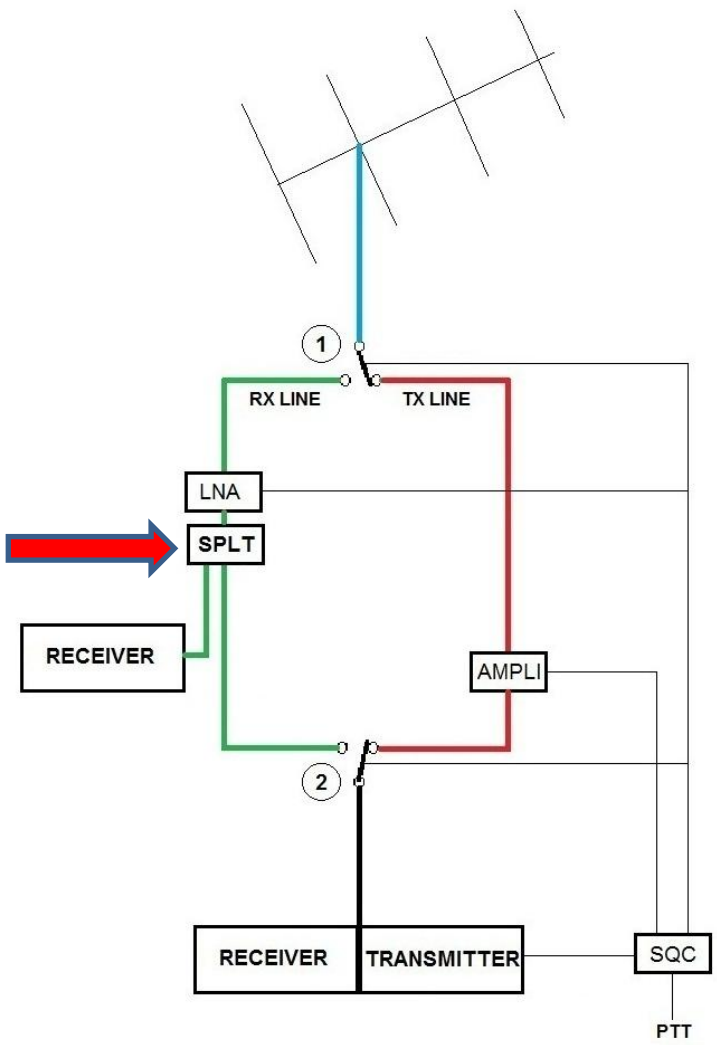
ÍNDICE

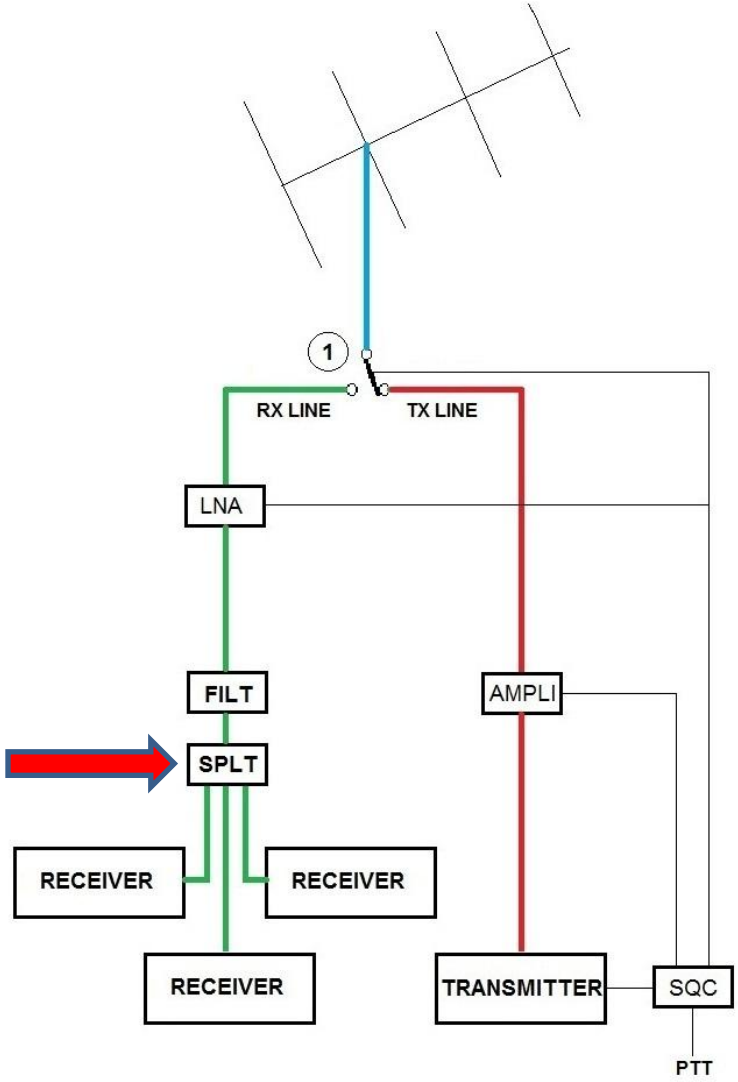
ÍNDICE

1.- PORQUÉ UN SDR EN EME

- VISUALIZACIÓN COMPLETA DEL ESPECTRO ASIGANADO A EME
- IDENTIFICACIÓN DE TODOS LOS RUIDOS
- FÁCIL PARA ENCONTRAR FRECUENCIAS LIBRES
- FILTROS DIGITALES CONFIGURABLES Y EFECTIVOS
- SE PUEDE DETERMINAR EL MOVIMIENTO DE LAS INTERFERENCIAS
- SE DECODIFICA SIMULTÁNEAMENTE TODA LA ACTIVIDAD ON-LINE
- ¡¡¡¡¡¡ NO SE NOS ESCAPA NADA !!!!!!

2.- QUE INSTALAR ANTES DE UN SDR



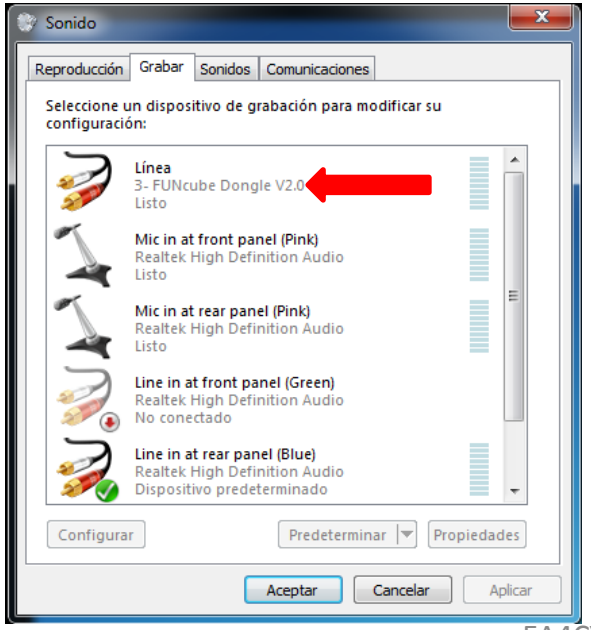


3.- COMO CONFIGURAR EL FCDP+

CON MAP65 (LO MAS SENCILLO)

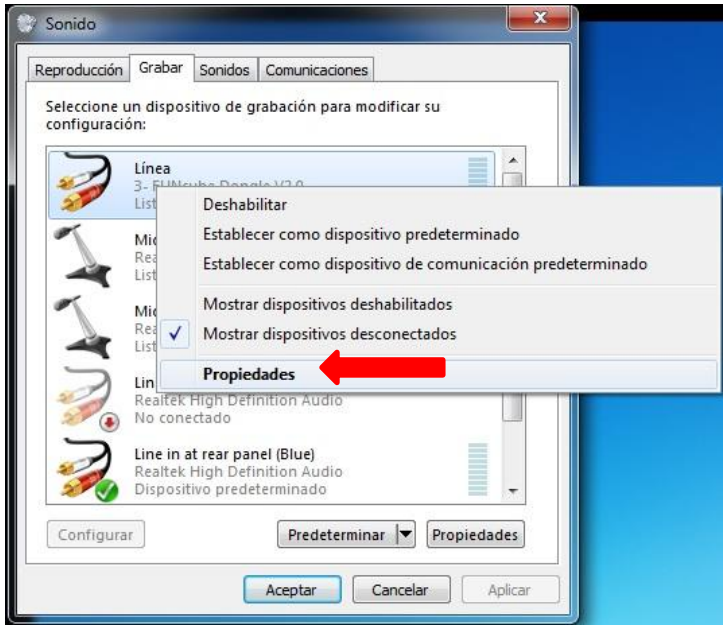
3.1.- INSTALACIÓN DEL FCDP+ (FCH12)

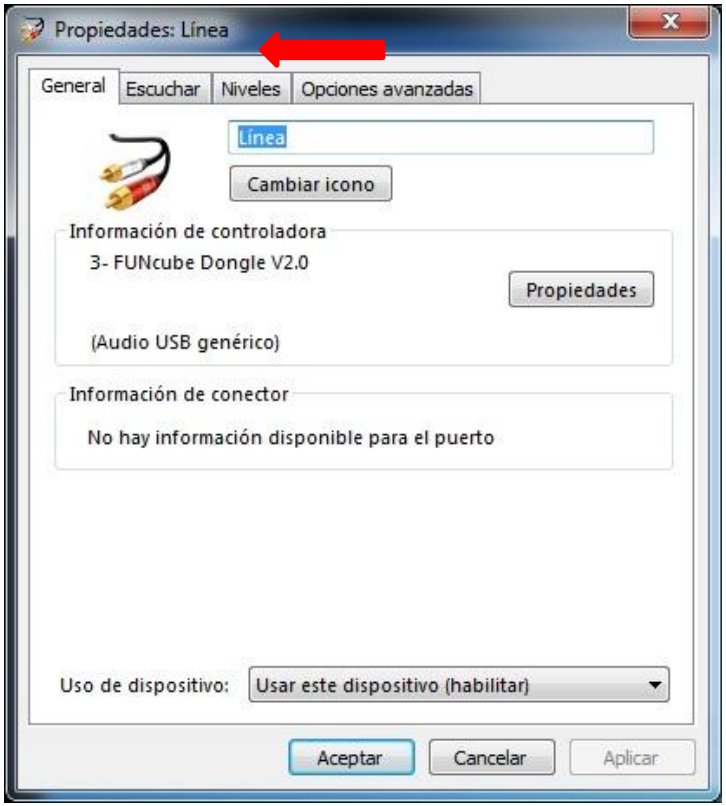
- LA PRIMERA VEZ QUE SE CONECTA AL USB SE INSTALA SU DRIVER
- SI CAMBIAS DE PUERTO USB SE VUELVA A INSTALAR, CONVIENE CONECTARLO SIEMPRE AL MISMO PUERTO USB
- CONVIENE CONECTARLO CON UN PROLONGADOR USB
- EL ORDENADOR LO INTERPRETA COMO UNA ENTRADA DE LÍNEA DE UNA TARJETA DE SONIDO

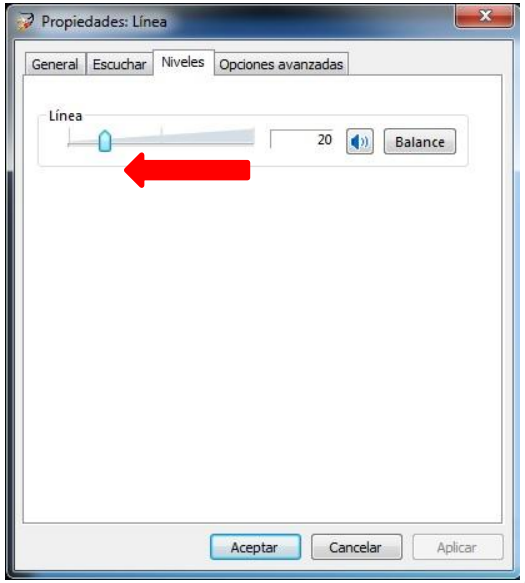


- RECOMIENDO UTILIZARLO CON EL SDRDHARP PARA FAMILIARIZARSE CON SU FUNCIONAMIENTO ANTES DE CONECTARLO A MAP65

- ES IMPORTANTE AJUSTAR EL NIVEL DE AUDIO

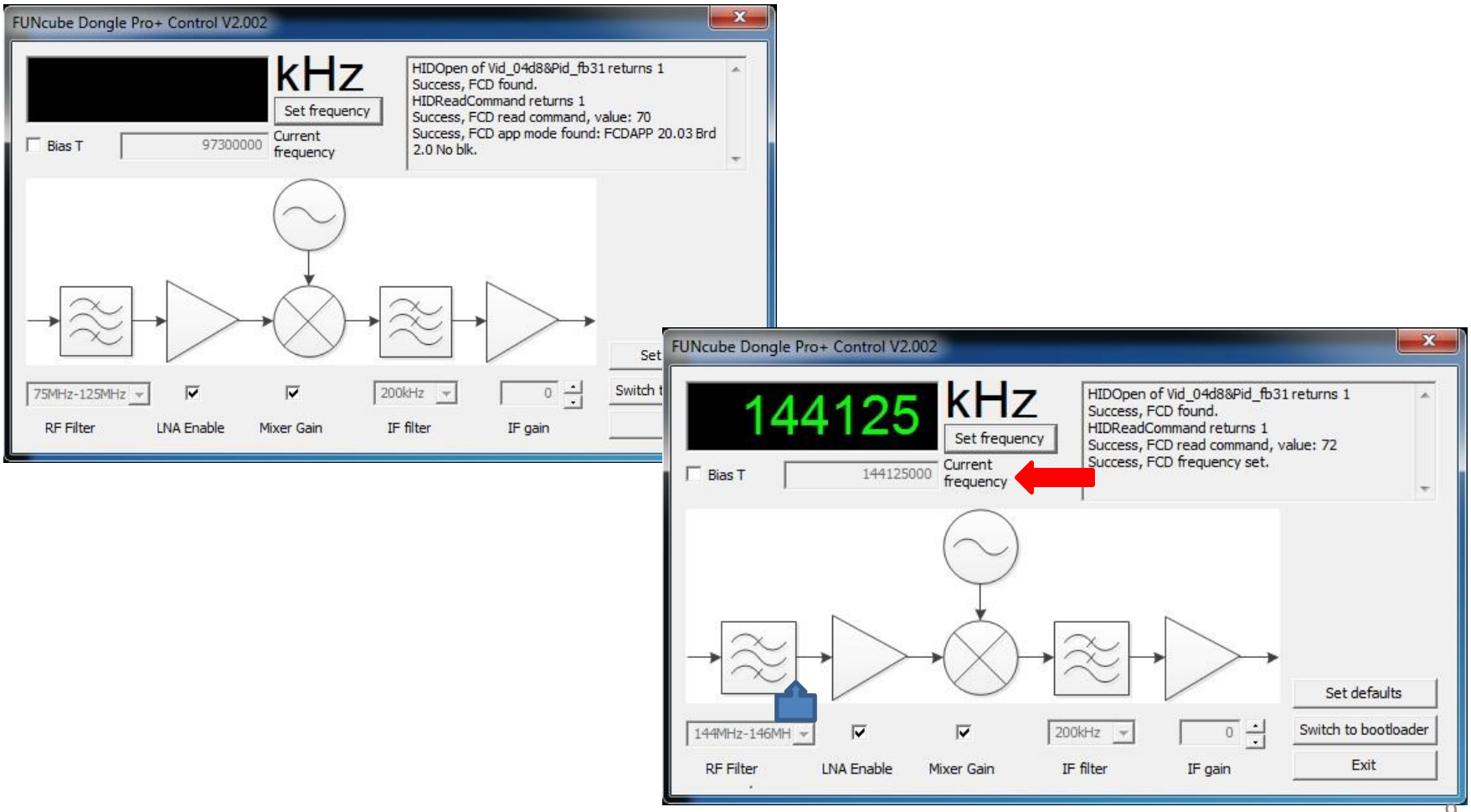




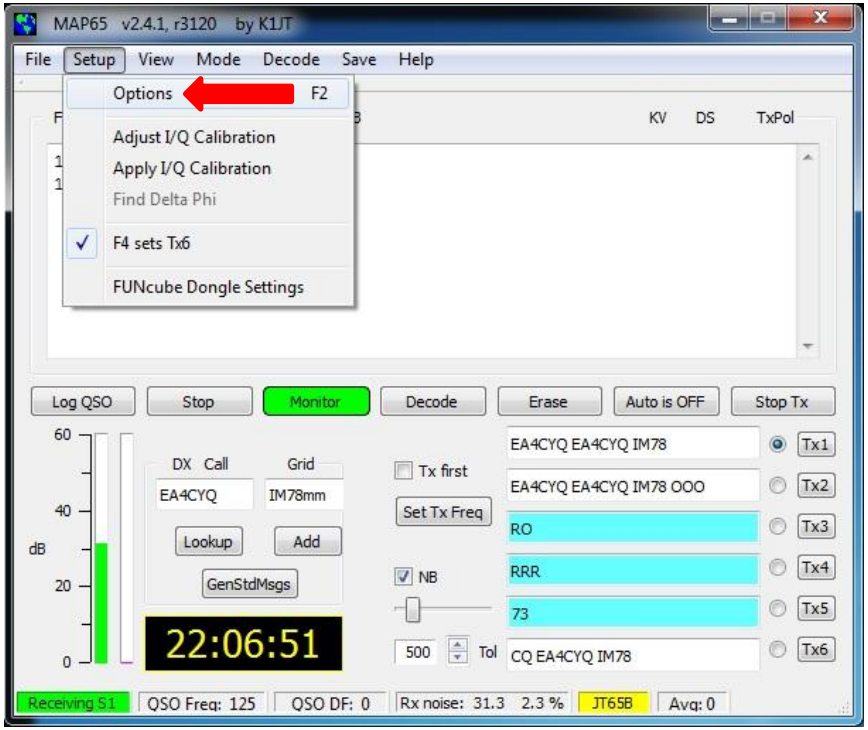


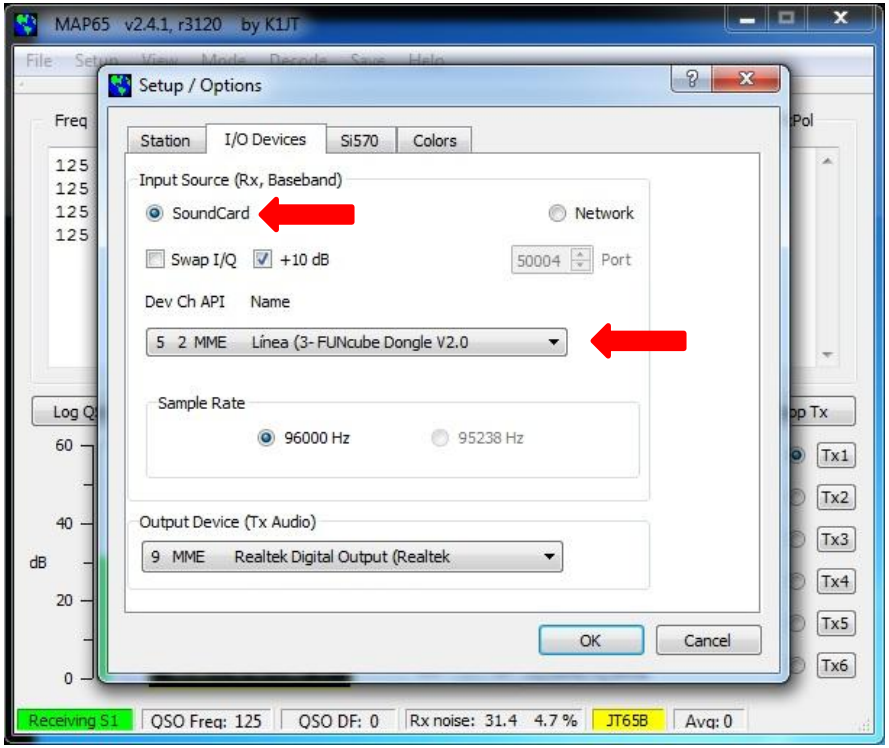
- ASÍ EL SOFTWARE UTILIZADO PARA ESCUCHAR FUNCIONARÁ CORRECTAMENTE

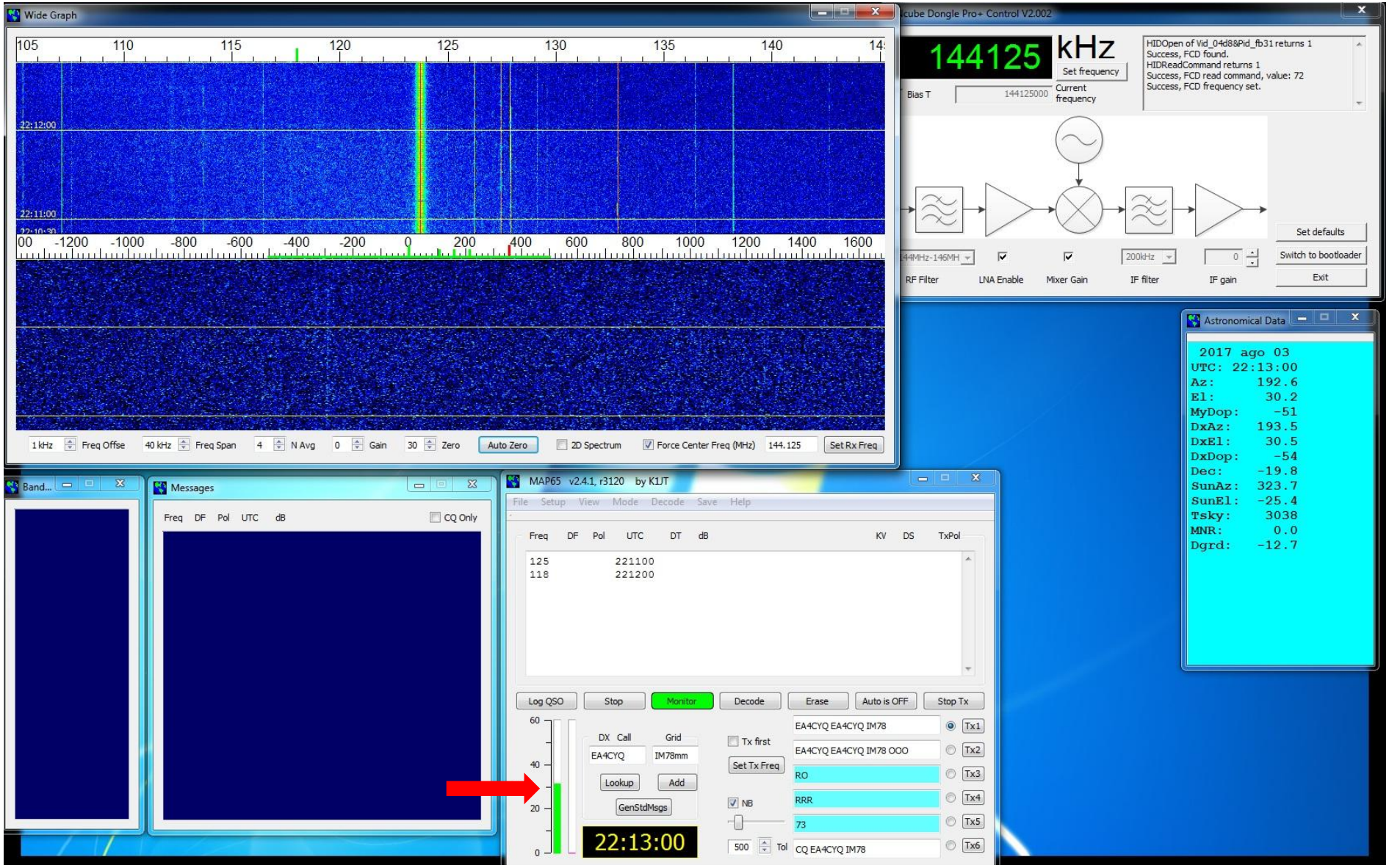
- MAP65 NO PUEDE CONTROLAR EL FCDP+
- NECESITAMOS FCHI2 PARA PONER LA FRECUENCIA CENTRAL QUE UTILIZAREMOS EN EL ESPECTRO DE EME EN MAP65



3.2.- CONFIGURACIÓN DE MAP65







- AJUSTAR EL NIVEL DE AUDIO PARA QUE MARQUE ENTRE 30 Y 40 DB

4.- QUE ES LINRAD,

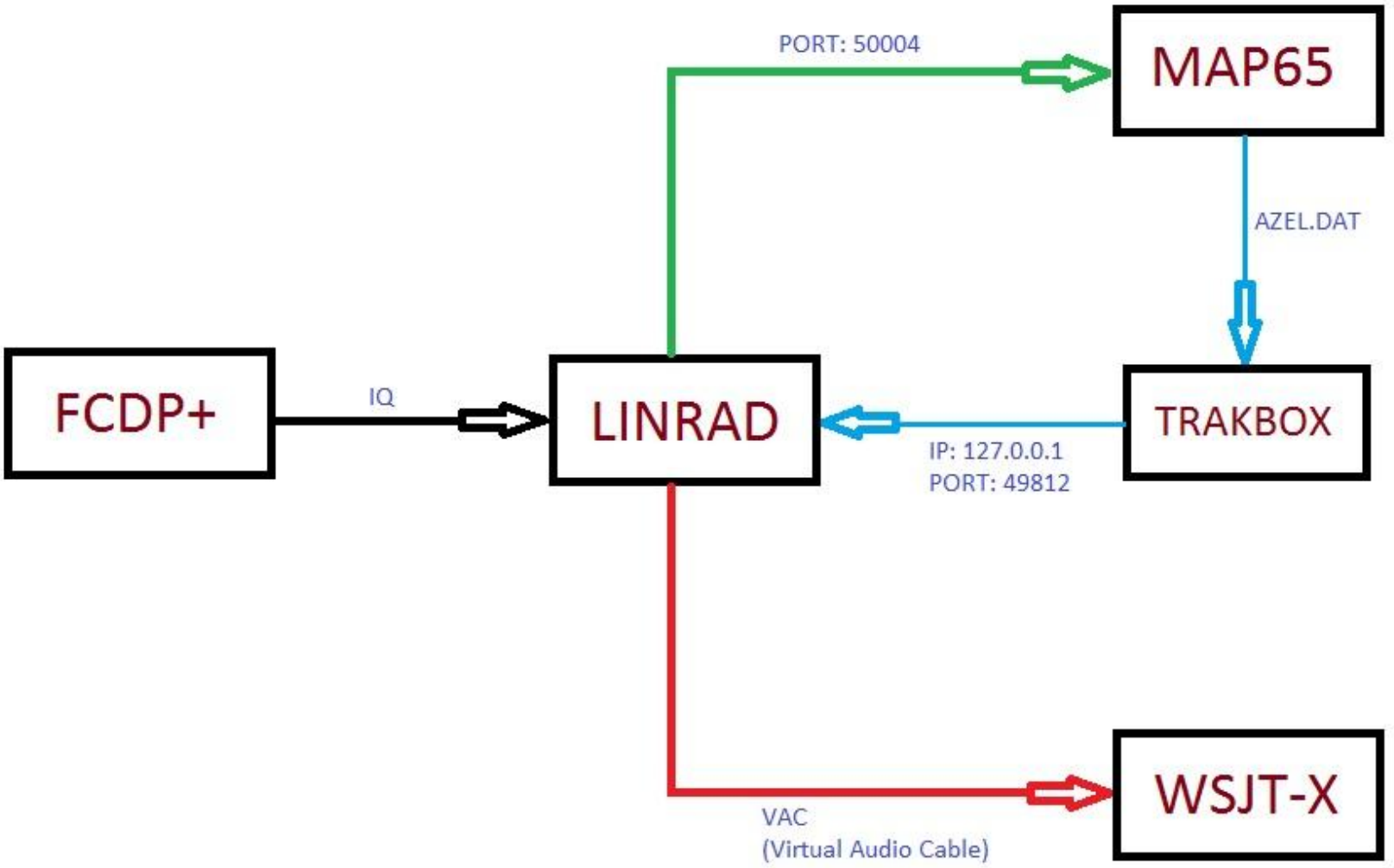
QUE PRETENDEMOS CONSEGUIR

- ES UN SOFTWARE CREADO POR SM5BSZ LEIF
- SE CONFIGURA PARA RECIBIR SEÑALES, QUE PUEDEN SER DE AUDIO O TIPO IQ
- TRATA ESTAS SEÑALES MEDIANTE FILTROS DIGITALES
- UNA VEZ TRATADAS SE DIRIGEN GENERALMENTE A OTRO SOFTWARE

  PARA ESCUCHARLAS, DECODIFICARLAS, ETC.

http://www.sm5bsz.com/linuxdsp/linrad.htm

4.1.- ESQUEMA DE BLOQUE PROPUESTO



5.- CONFIGURACIÓN DE VAC + WSJT

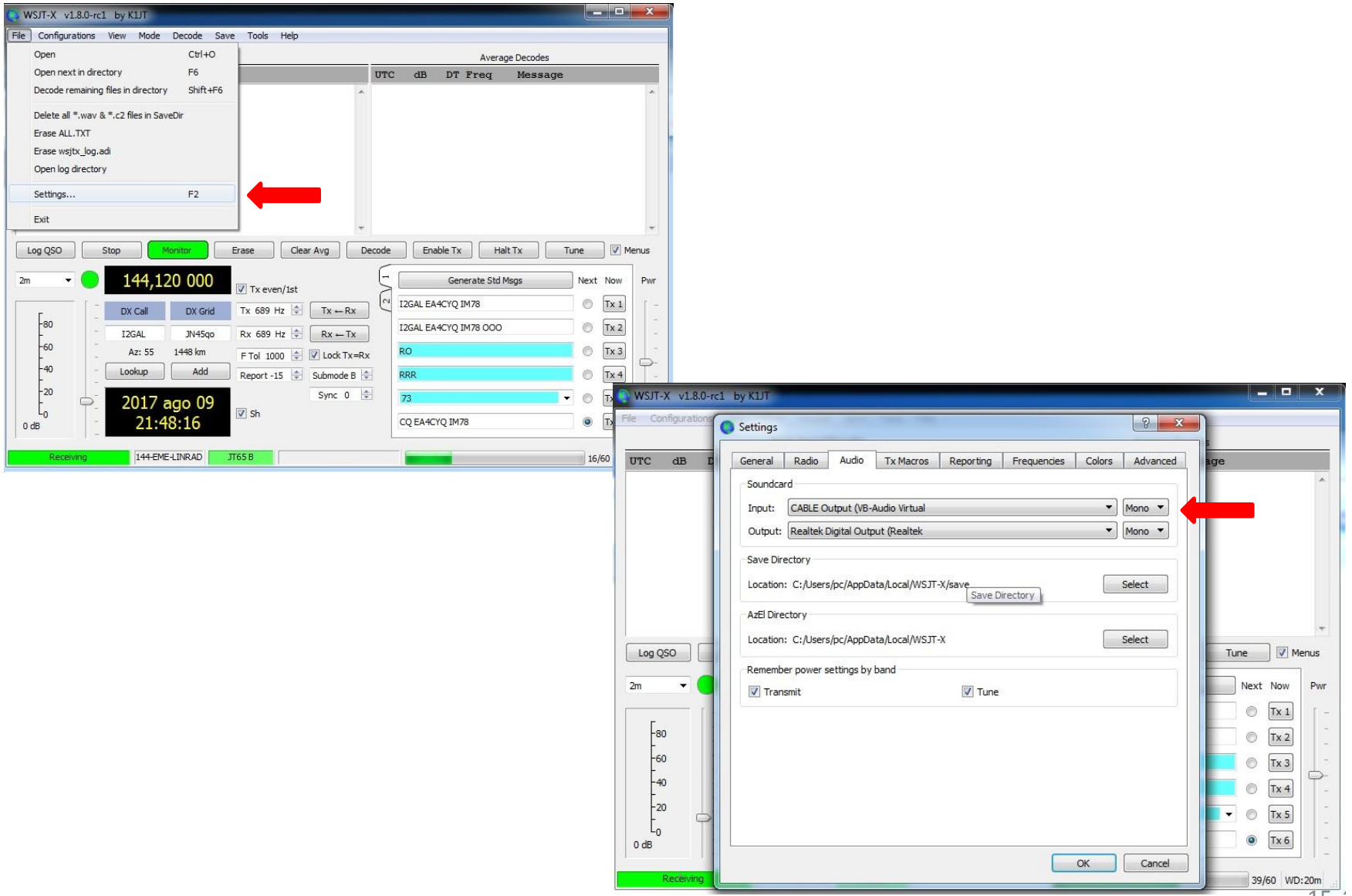
- VAC (VIRTUAL AUDIO CABLE) ES UN SOFTWARE QUE ENLAZA EL AUDIO ENTRE DOS APLICACIONES.

- SE PRETENDE COGER EL AUDIO DE LINRAD Y ENVIARLO AL WSJT

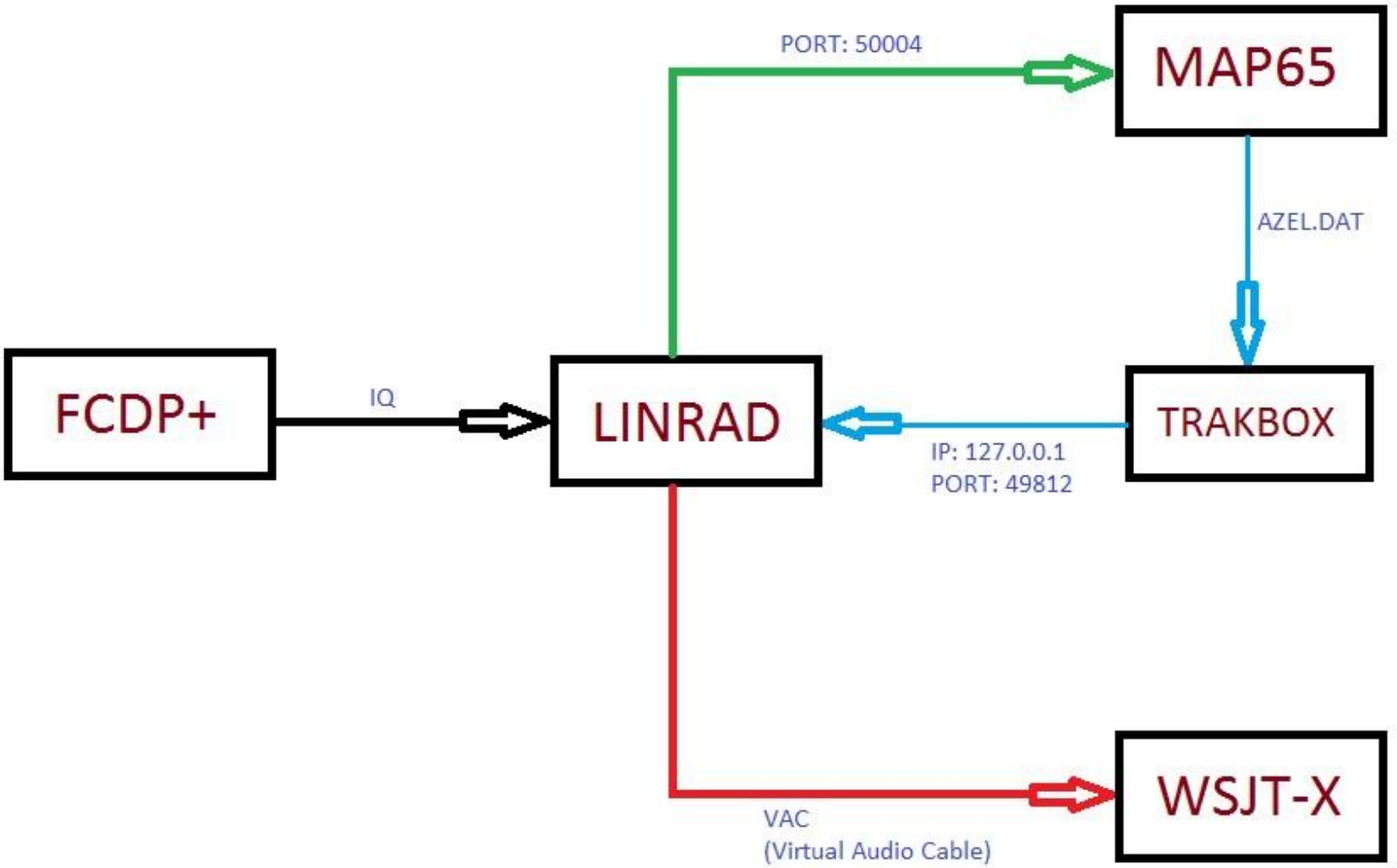
- SE PUEDE ENCONTRAR GRATIS EN INTERNET

- PARA CONFIGURARLO SOLO HAY QUE ELEGIR EN OPCIONES LA VELOCIDAD DE SAMPLEO DE 96000 HZ

- WSJT-X ELEGIR EN OPCIONES COMO ENTRADA DE AUDIO EL VAC



6.- CONFIGURACIÓN DE MAP65



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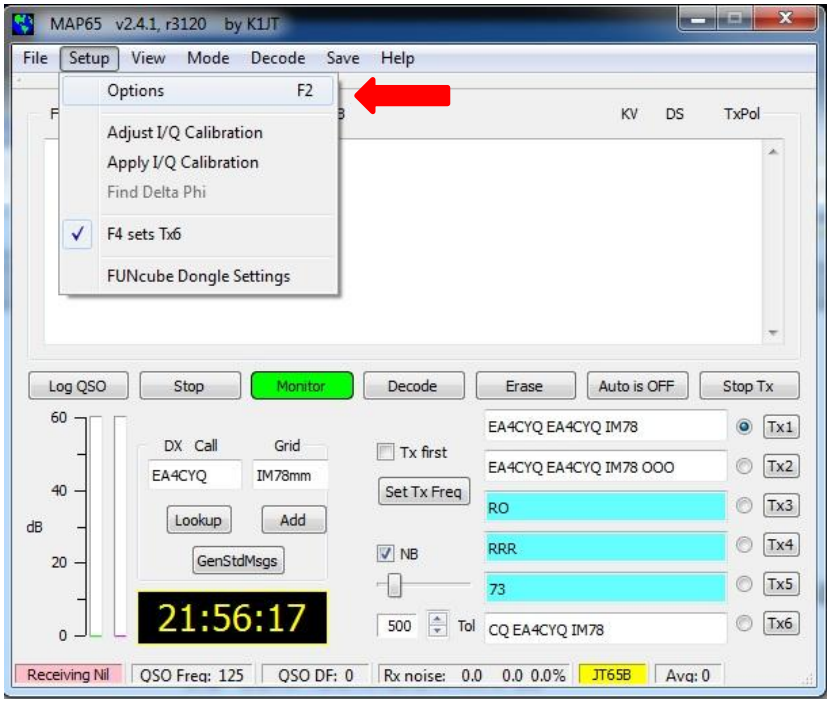
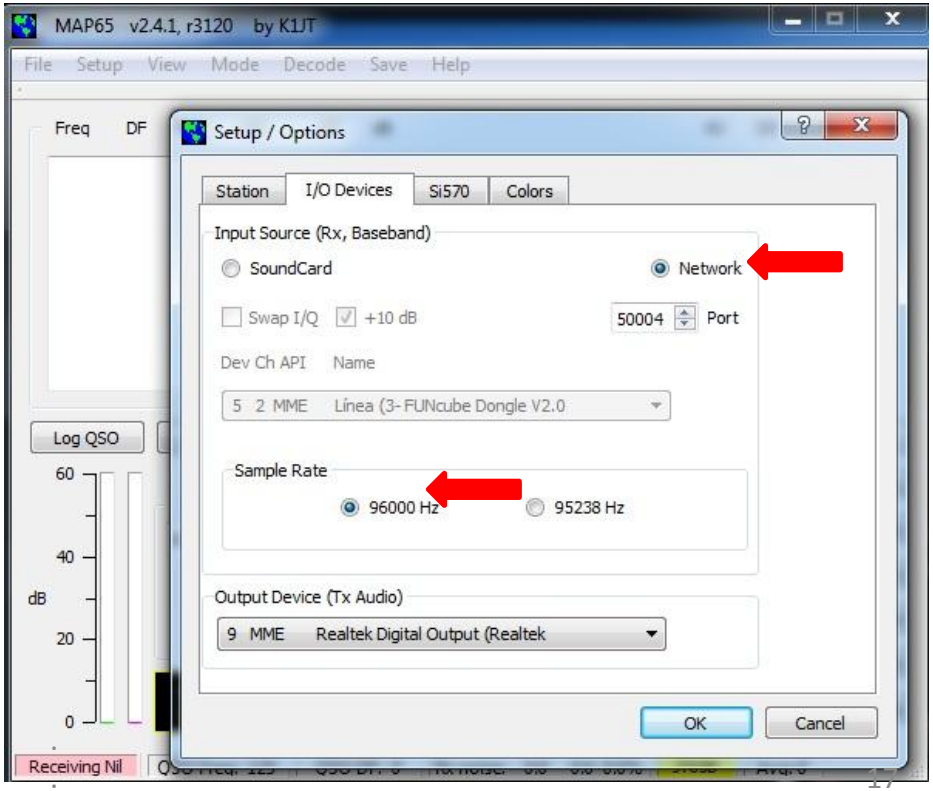


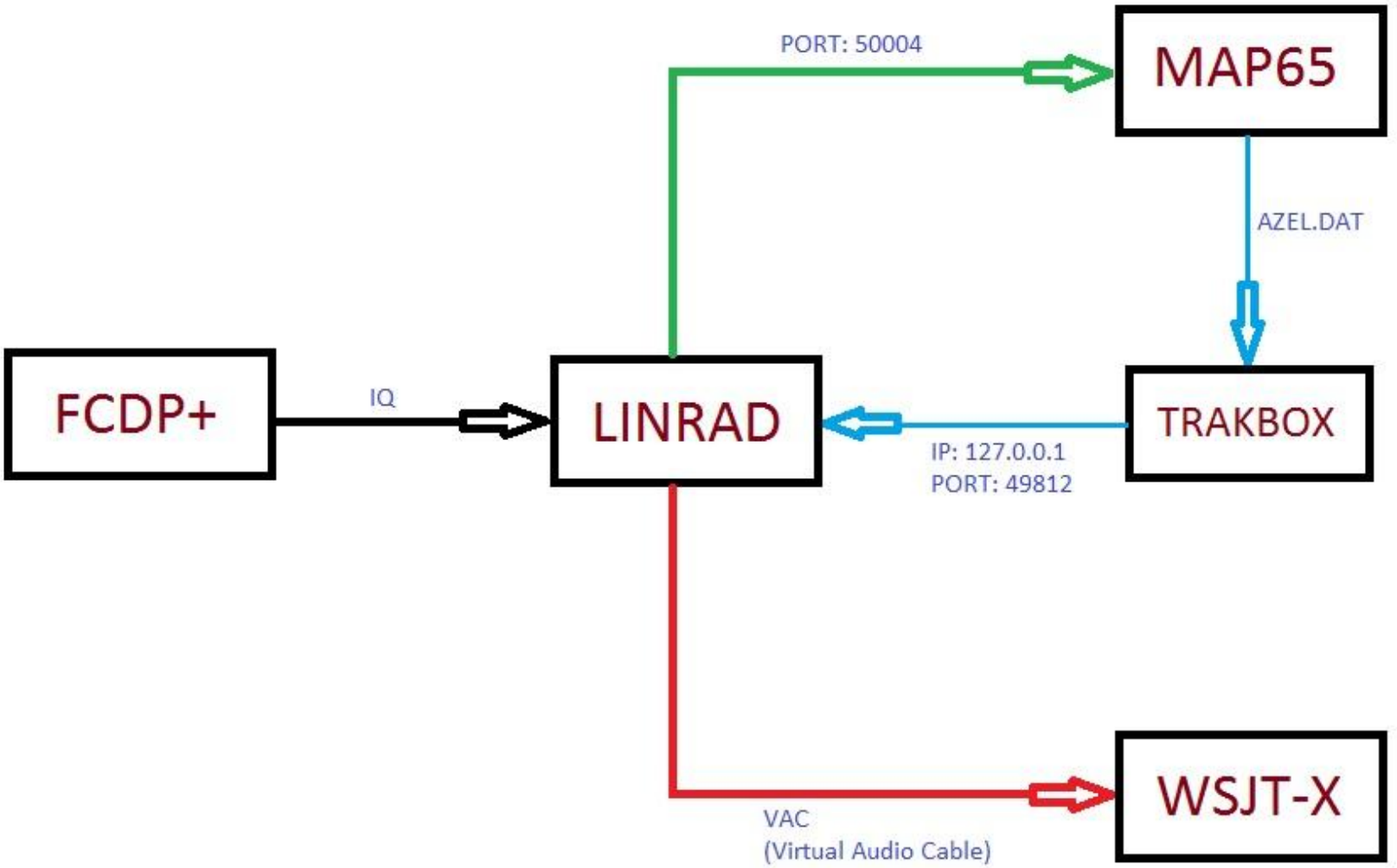
- SETUP – OPTIONS – I/O DEVICES

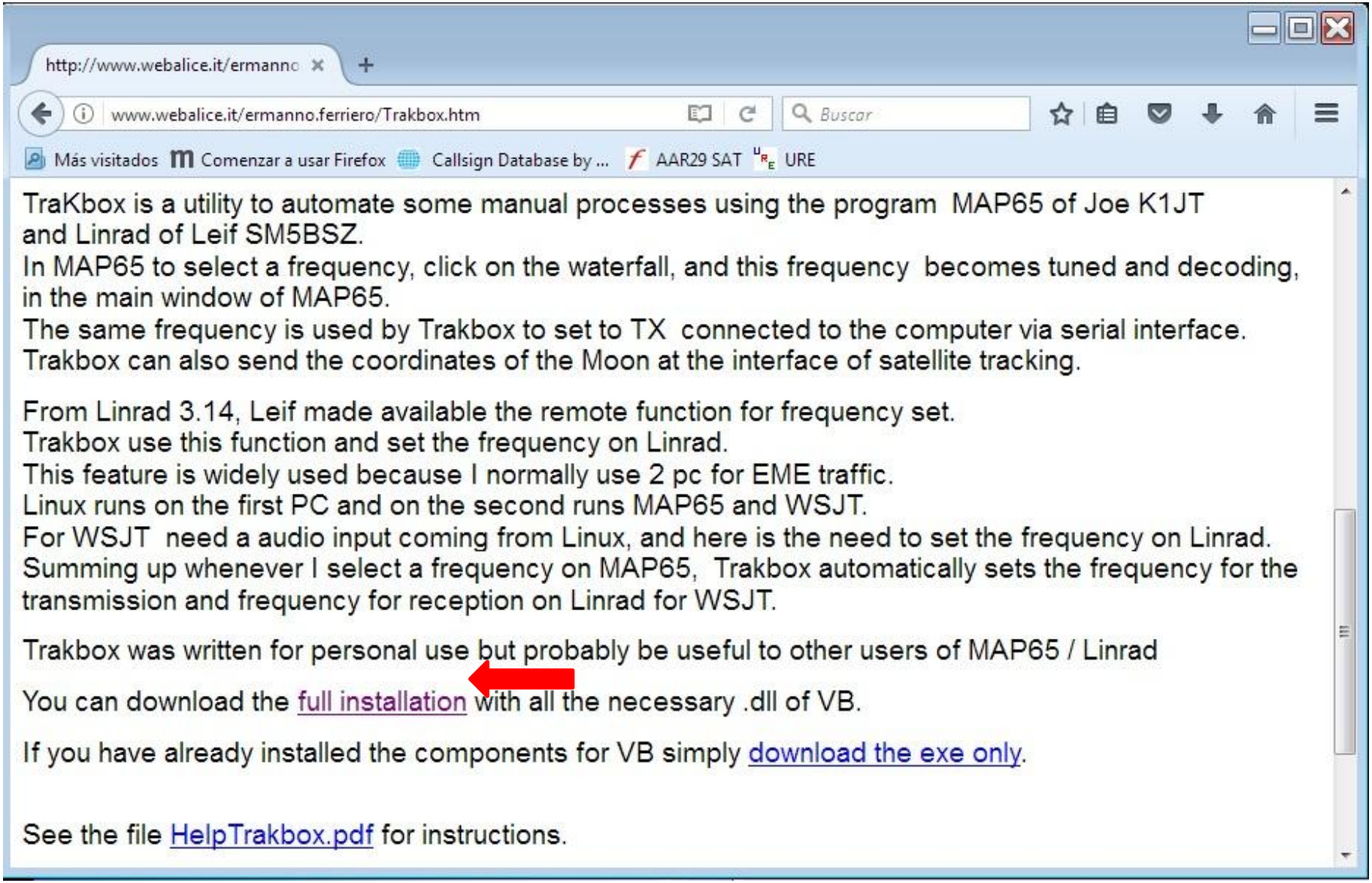
- NETWORK PORT: 50004

- SAMPLE RATE 96000 HZ



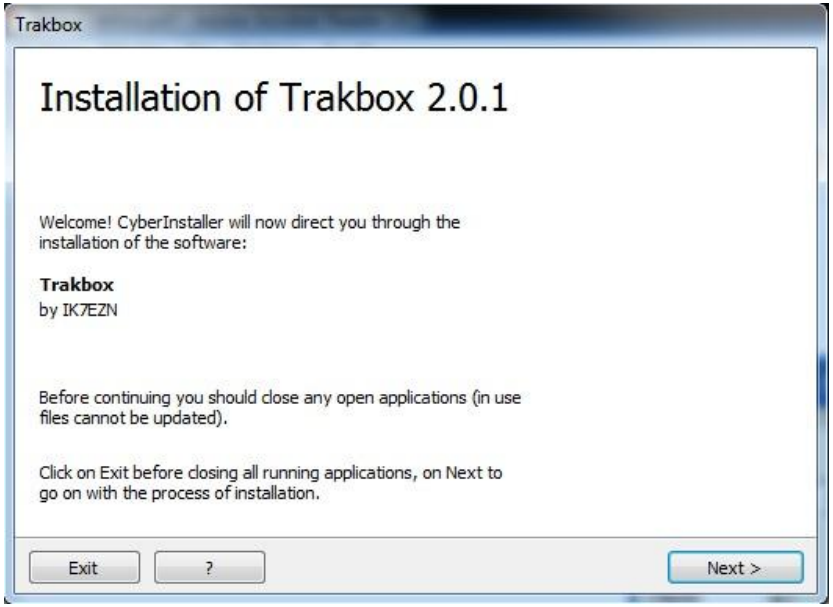
7.- CONFIGURACIÓN DE TRAKBOX



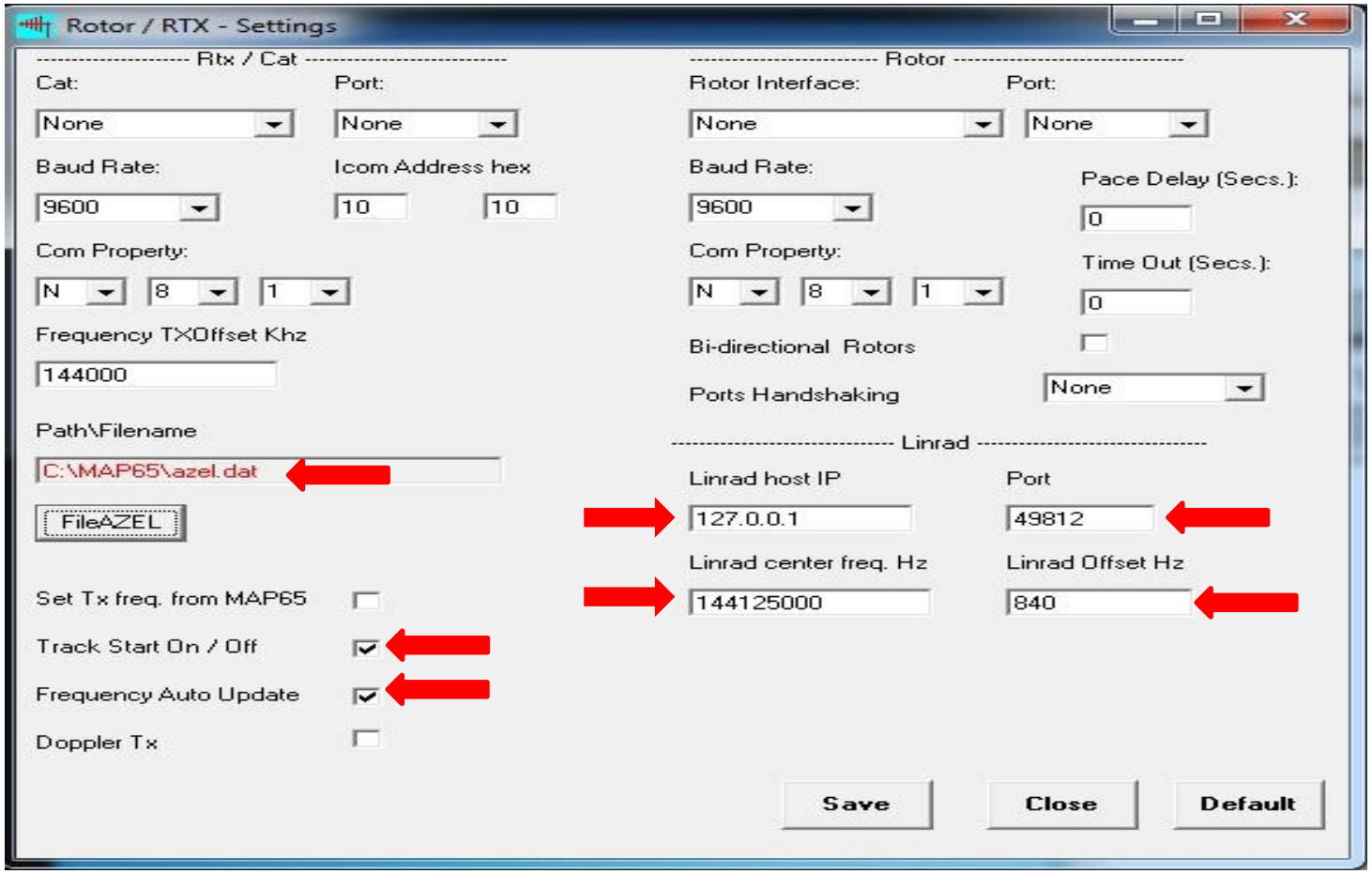


– SELECCIONAMOS EN LA WEB DE WEBALICE.IT "FULL INSTALATION"

- *LO DESCARGAMOS E INSTALAMOS EN CUALQUIER DIRECTORIO*

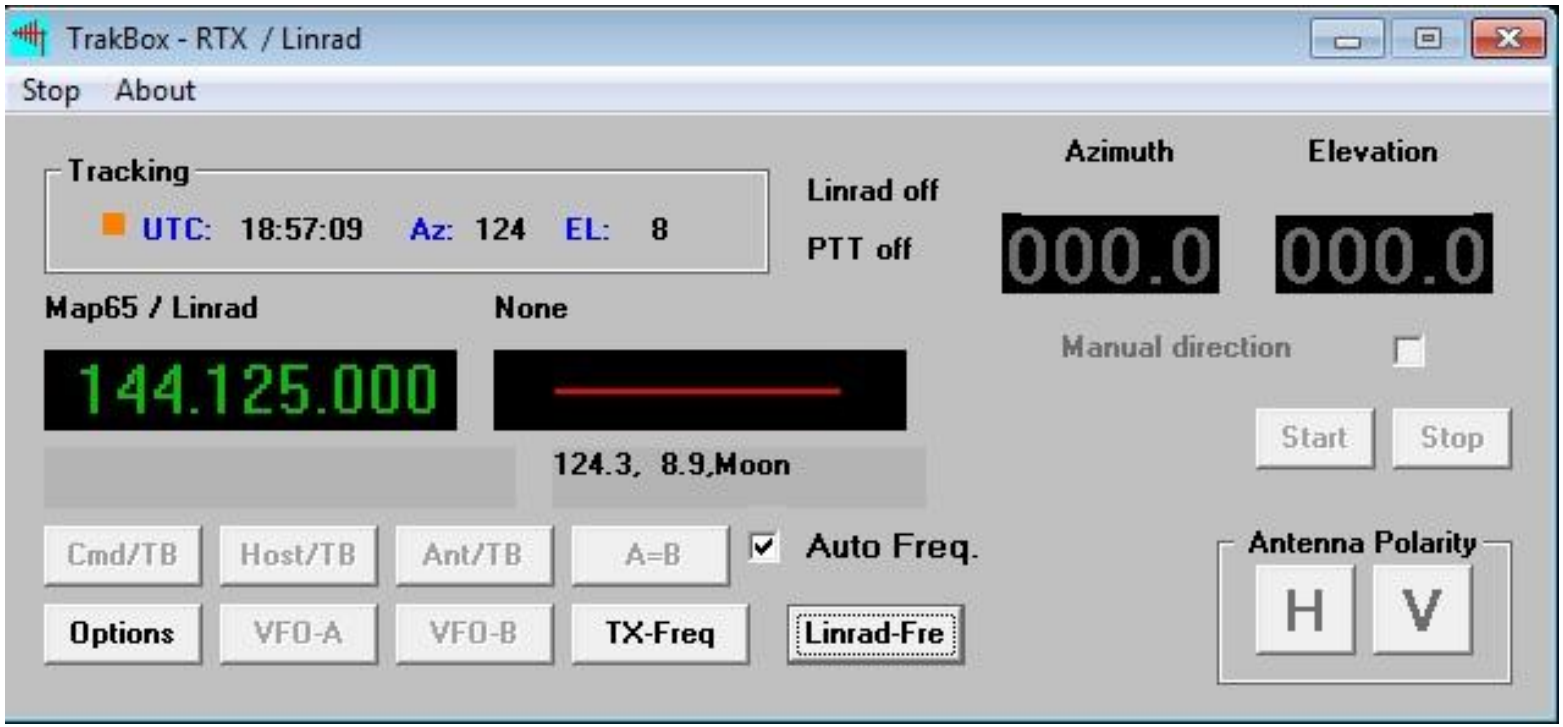


- *SELECCIONAMOS «OPTIONS»*

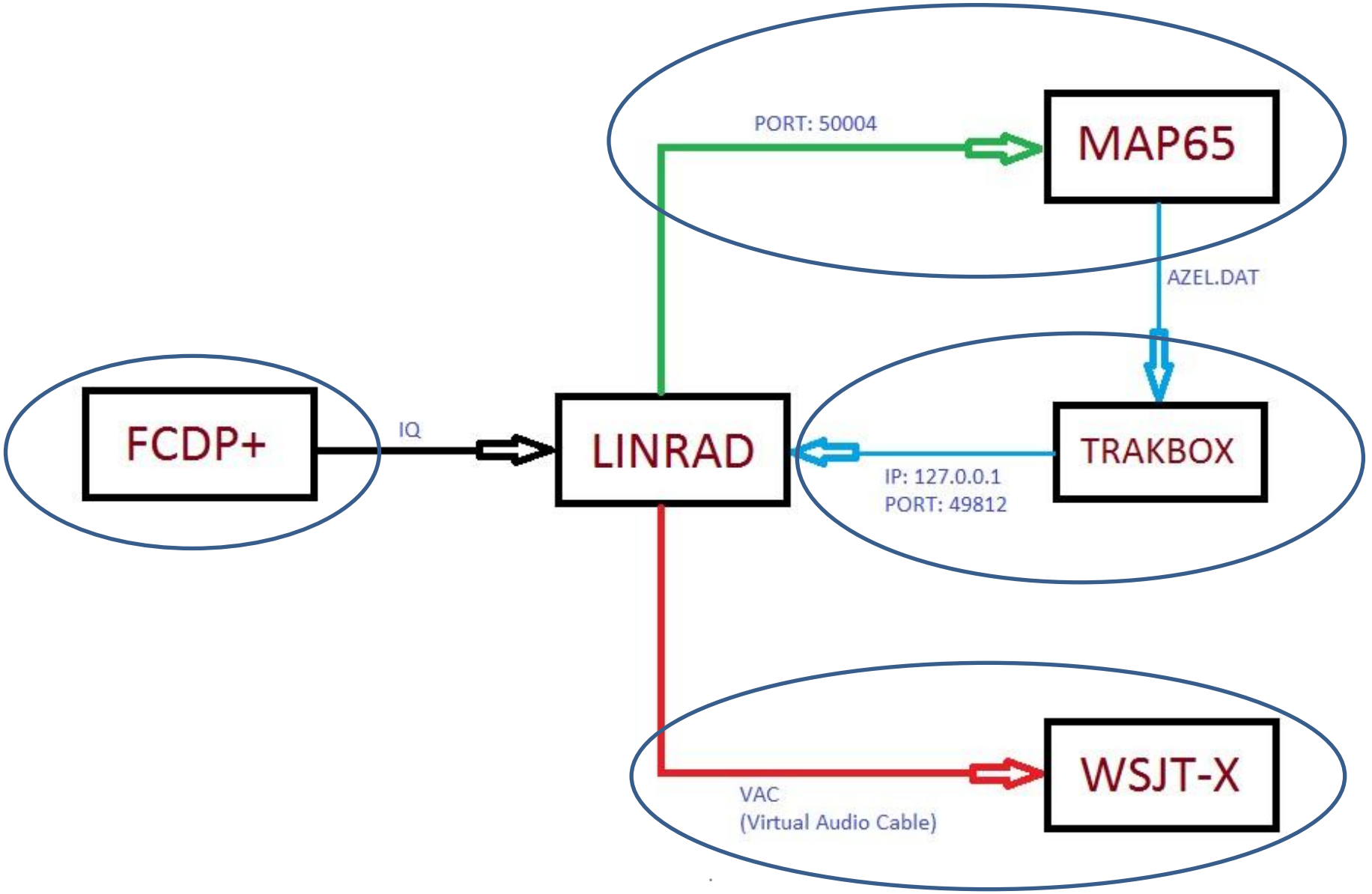


- PATH/FILENAME: INDICAR LA CARPETA DE MAP65 DONDE SE ENCUENTRE EL ARCHIVO «AZEL.DAT»
- LINRAD HOST IP: 127.0.0.1
- PORT: 49812
- LINRAD CENTER FREQ.: 144125000
- LINRAD OFFSET: AJUSTAR PARA CADA EQUIPO

- UNA VEZ CONFIGURADO AL ARRANCARLO TENDRÁ ESTA APARIENCIA



- UNA VEZ CONFIGURADO SERÁ TRANSPARENTE, O SEA, SE ARRANCA, SE MINIMIZA Y A FUNCIONAR.


PORT: 50004
MAP65
AZEL.DAT
FCDP+
IQ
LINRAD
TRAKBOX
IP: 127.0.0.1
PORT: 49812
WSJT-X
VAC
(Virtual Audio Cable)

8.- CONFIGURACIÓN DE LINRAD

8.1- MENÚ DE CONFIGURACIÓN GENERAL

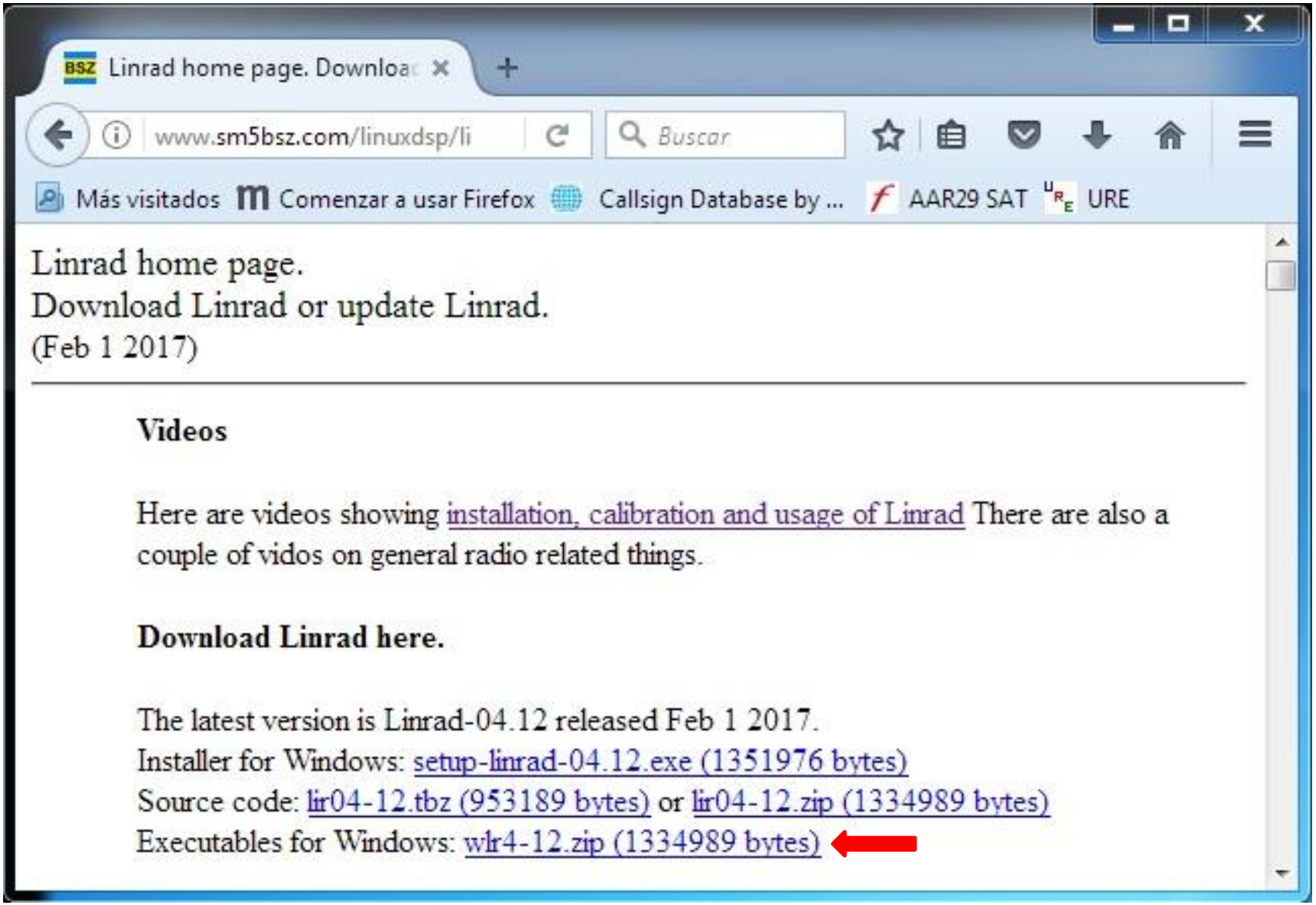
8.2.- CONFIGURACIÓN DE SEÑAL DE ENTRADA IQ

8.3.- CONFIGURACIÓN SALIDA DE AUDIO A WSJT-X

8.4.- CONFIGURACIÓN SALIDA NETSEND POR PUERTO 50004

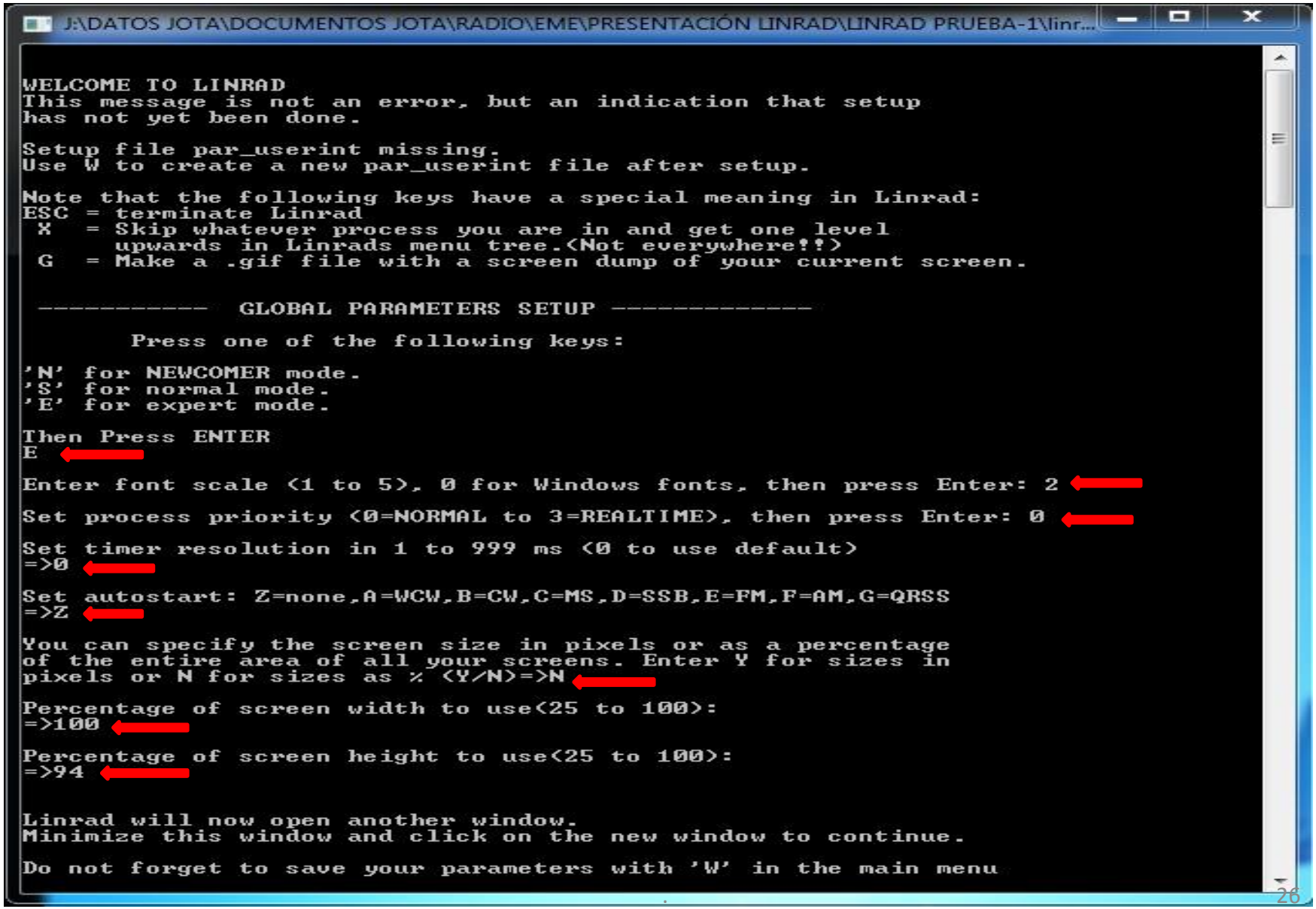
8.5.- CONFIGURACIÓN PARA SSB

8.6.- CONTROLES DE LA PANTALLA PRINCIPAL



– SE PUEDE BAJAR COMO EJECUTABLE Y NO NECESITA INSTALACIÓN

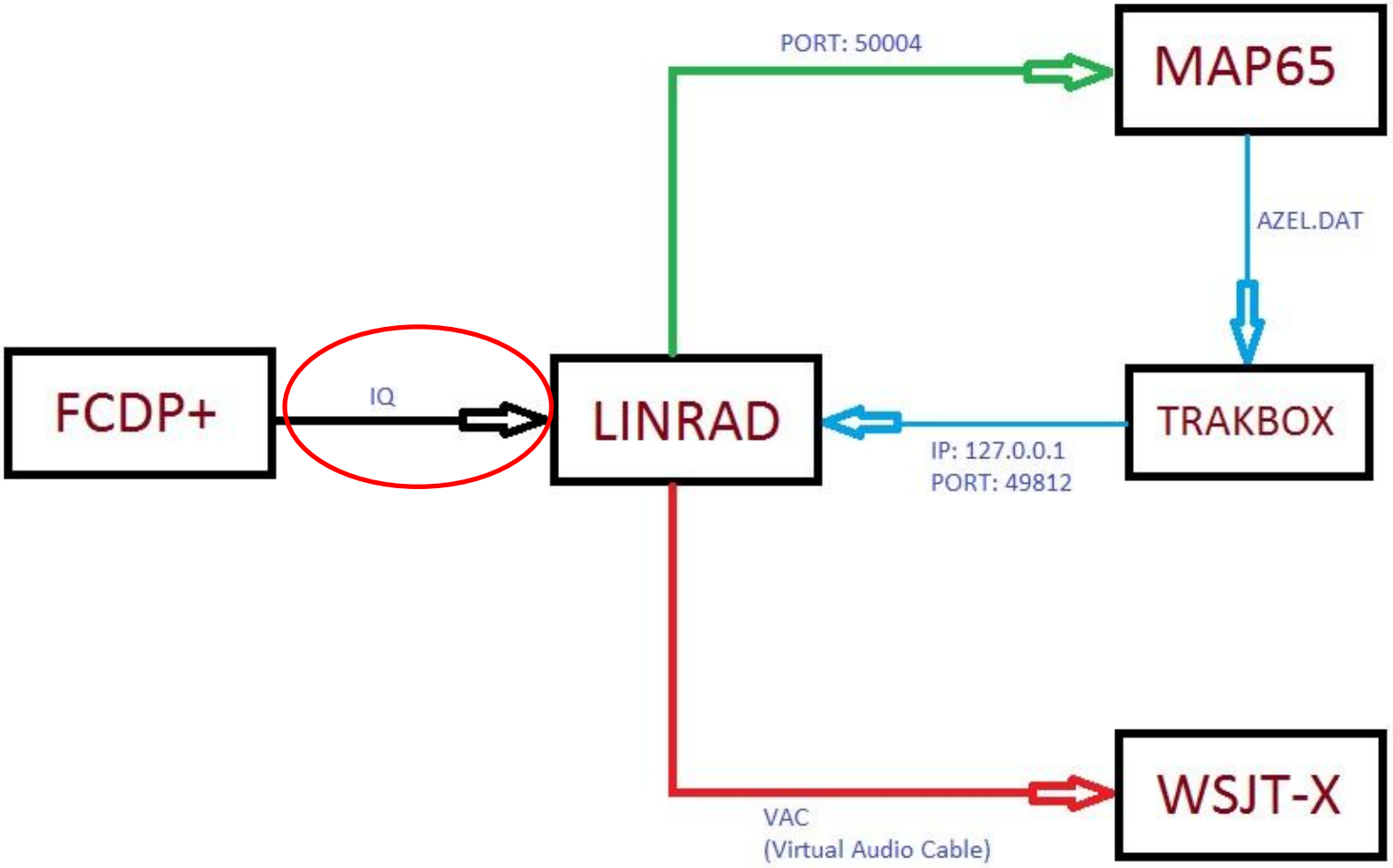
8.1- MENÚ DE CONFIGURACIÓN GENERAL



CONFIGURACIÓN "GLOBAL PARAMETERS" ,"S" MENU

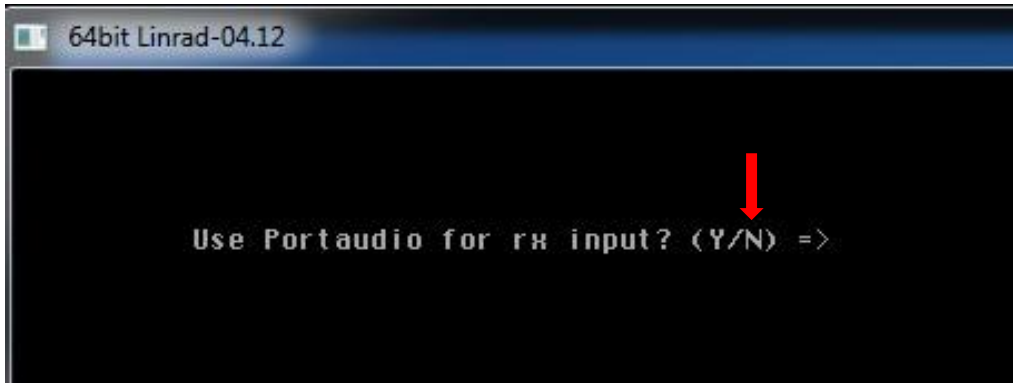
- E+ ENTER	EXPERT MODE
- 2 + ENTER	FONT SCALE
- 0 + ENTER	SET PROCESS PRIORITY
- 0 + ENTER	TIMER RESOLUTION – DEFAULT
- Z + ENTER	SET AUTOSTART – NONE
- N + ENTER	% SCREEN SIZE
- 100 + ENTER	PERCENTAGE OF SCREEN WIDTH
- 94 + ENTER	PERCENTAGE OF SCREEN HEIGHT
- W	SAVE CURRENT PARAMETERS

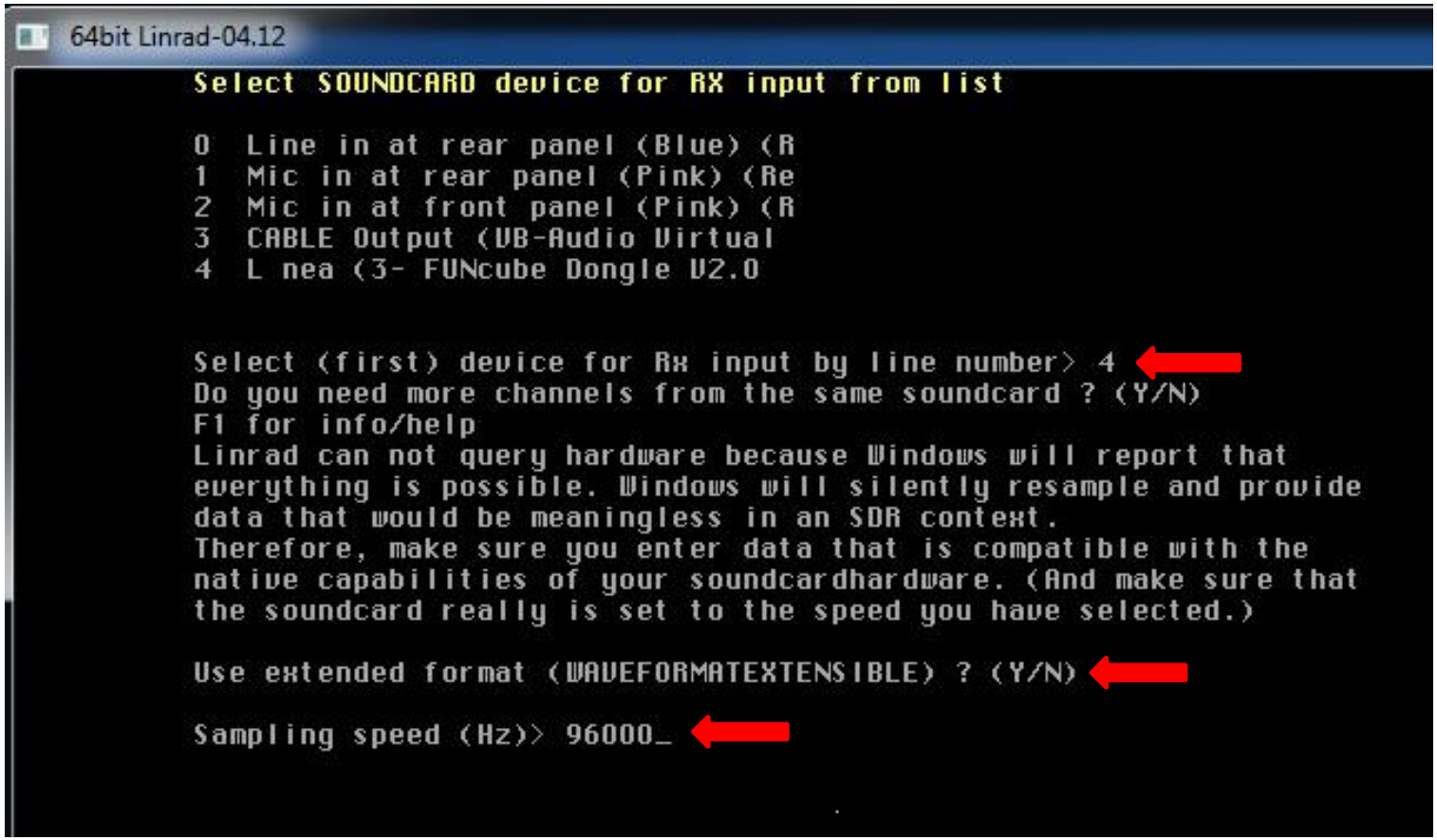
8.2.- CONFIGURACIÓN DE ENTRADA IQ

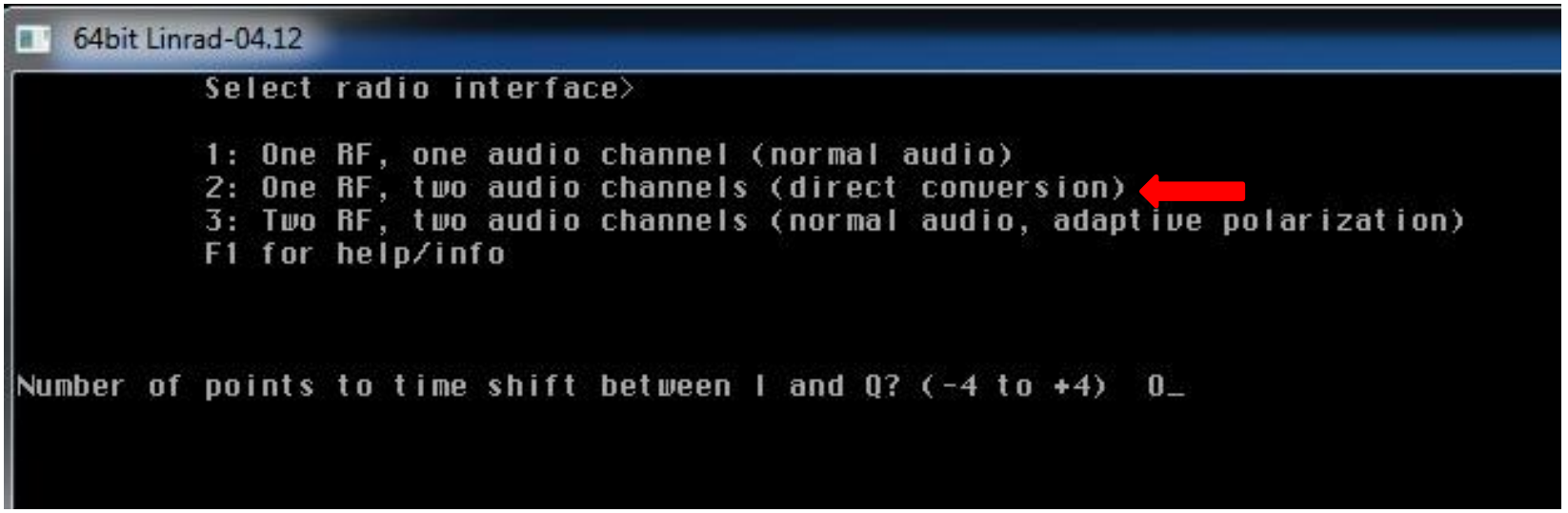


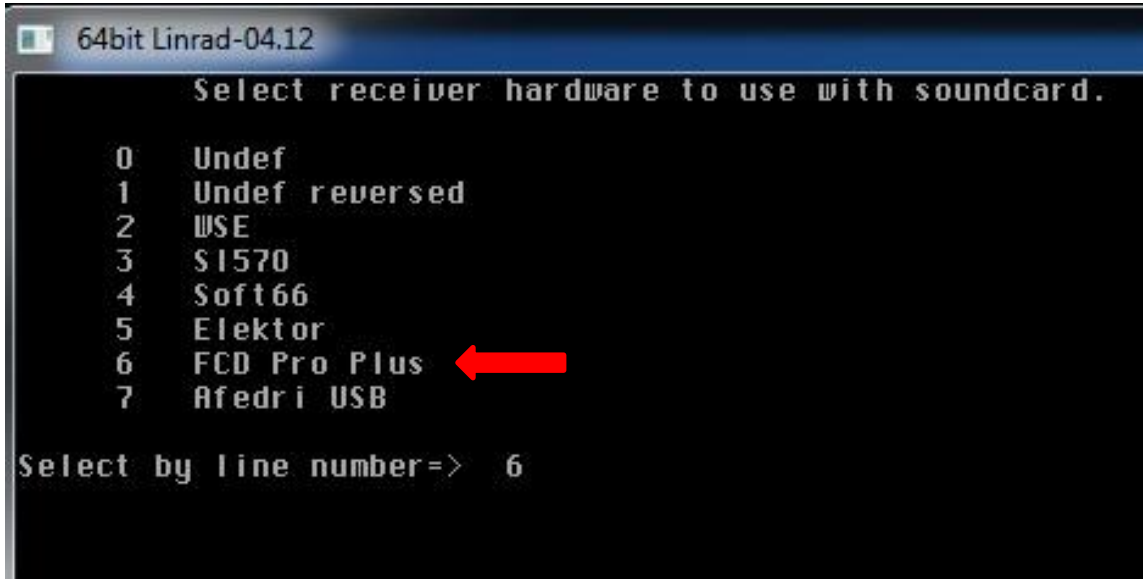

64bit Linrad-04.12
CURRENT A/D and D/A SETUP FOR RX
Linrad RX input from: NOT YET SELECTED (Select Menu Option 'A')
Linrad RX output to: NOT YET SELECTED: (Select input first.)
DMA rate min=30 max=300
A = Change input settings and reset all other soundcard settings
if a soundcard is selected as input.
B = Change the output soundcard settings.
C = Change min/max dma rate.
E = Enable/Disable frequency converter and set LO.
Z = Disable the output soundcard.
X = To main menu.


64bit Linrad-04.12
SELECT HARDWARE FOR RX
A = Soundcard
B = SDR-14 or SDR-IQ
C = Perseus
D = SDR-IP
E = Excalibur
F = libExtIO hardwares
H = RTL2832 USB dongle
I = SDRplay or Mirics USB dongle
J = bladeRF
K = PCIe 9842
L = OpenHPSDR
M = Afedri-NET
O = Airspy
P = CloudIQ
Y = Network
Z = Disable (Disk input allowed)


64bit Linrad-04.12
Use Portaudio for rx input? (Y/N) =>


64bit Linrad-04.12
Select SOUNDCARD device for RX input from list
0 Line in at rear panel (Blue) (R
1 Mic in at rear panel (Pink) (Re
2 Mic in at front panel (Pink) (R
3 CABLE Output (VB-Audio Virtual
4 L nea (3- FUNcube Dongle V2.0
Select (first) device for Rx input by line number> 4
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_


64bit Linrad-04.12
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)
F1 for help/info
Number of points to time shift between I and Q? (-4 to +4) 0_


64bit Linrad-04.12
Select receiver hardware to use with soundcard.
0 Undef
1 Undef reversed
2 WSE
3 SI570
4 Soft66
5 Elektor
6 FCD Pro Plus
7 Afedri USB
Select by line number=> 6

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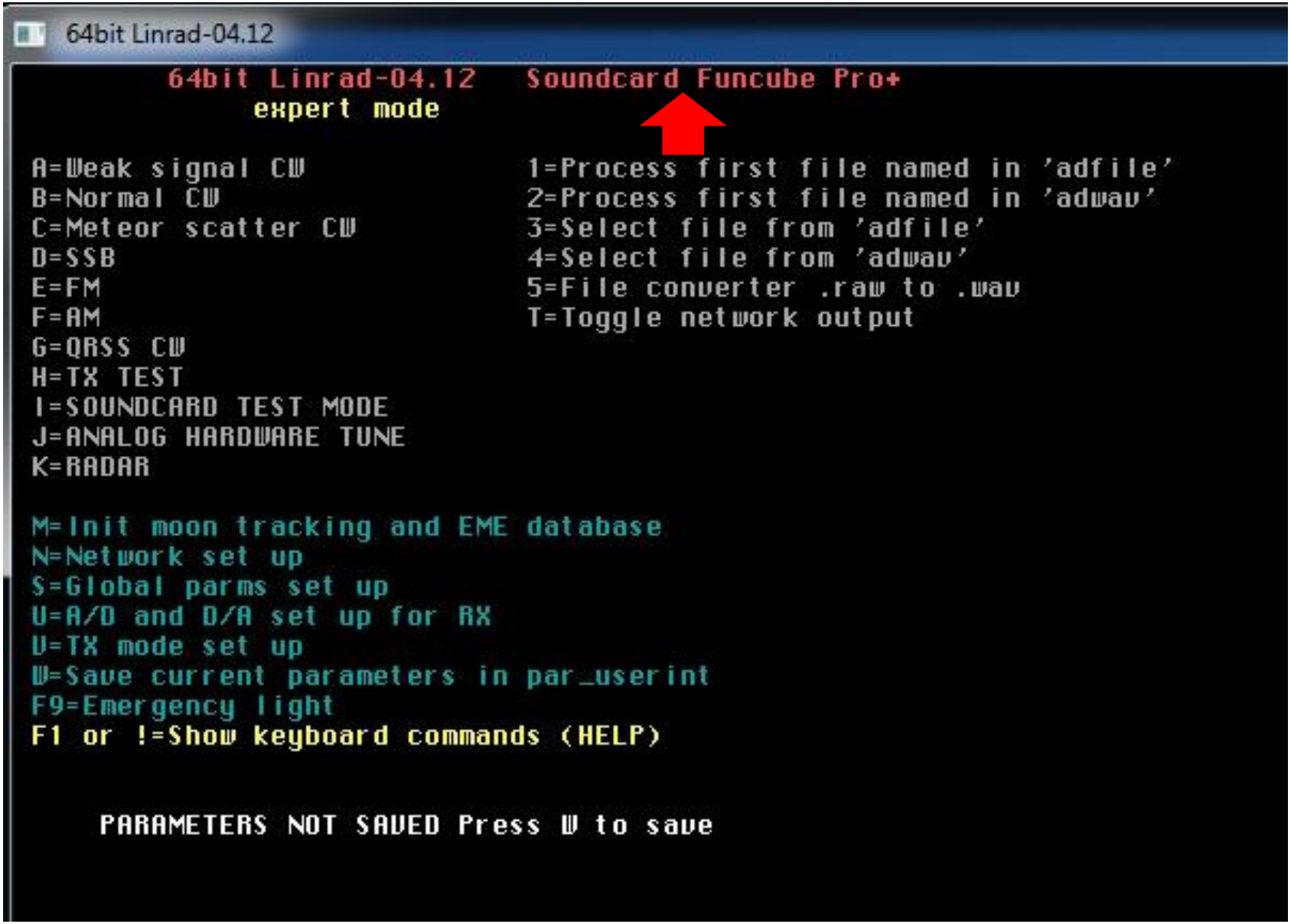
64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save

CONFIGURACIÓN DE SEÑAL DE ENTRADA IQ "U" MENU

- U	A/D AND D/A SETUP FOR RX
- A	CHANGE INPUT SETTINGS OF SOUNDCARD
- A	SOUNDCARD
- N	USE PORT AUDIO FOR RX INPUT
- 4 + ENTER	LINE (3-FUNCUBE DONGLE V2.0) - TIENE QUE ESTAR FCDP+ CONECTADO
- N	DO YOU NEED MORE CHANNELS FROM THE SAME SOUND CARD
- N	USE EXTENDED FORMAT (WAVEFORMEXTENSIBLE)
- 96000+ ENTER	SAMPLE SPEED (Hz), HACER COINCIDIR CON LA CONF. DE LA SOUNDCARD
- 2	1: One RF, two audio channel (normal audio)O
- O + ENTER	NUMBER OF POINTS TO TIME BETWEEN I AND Q
- 6 + ENTER	6: FCD PRO PLUS

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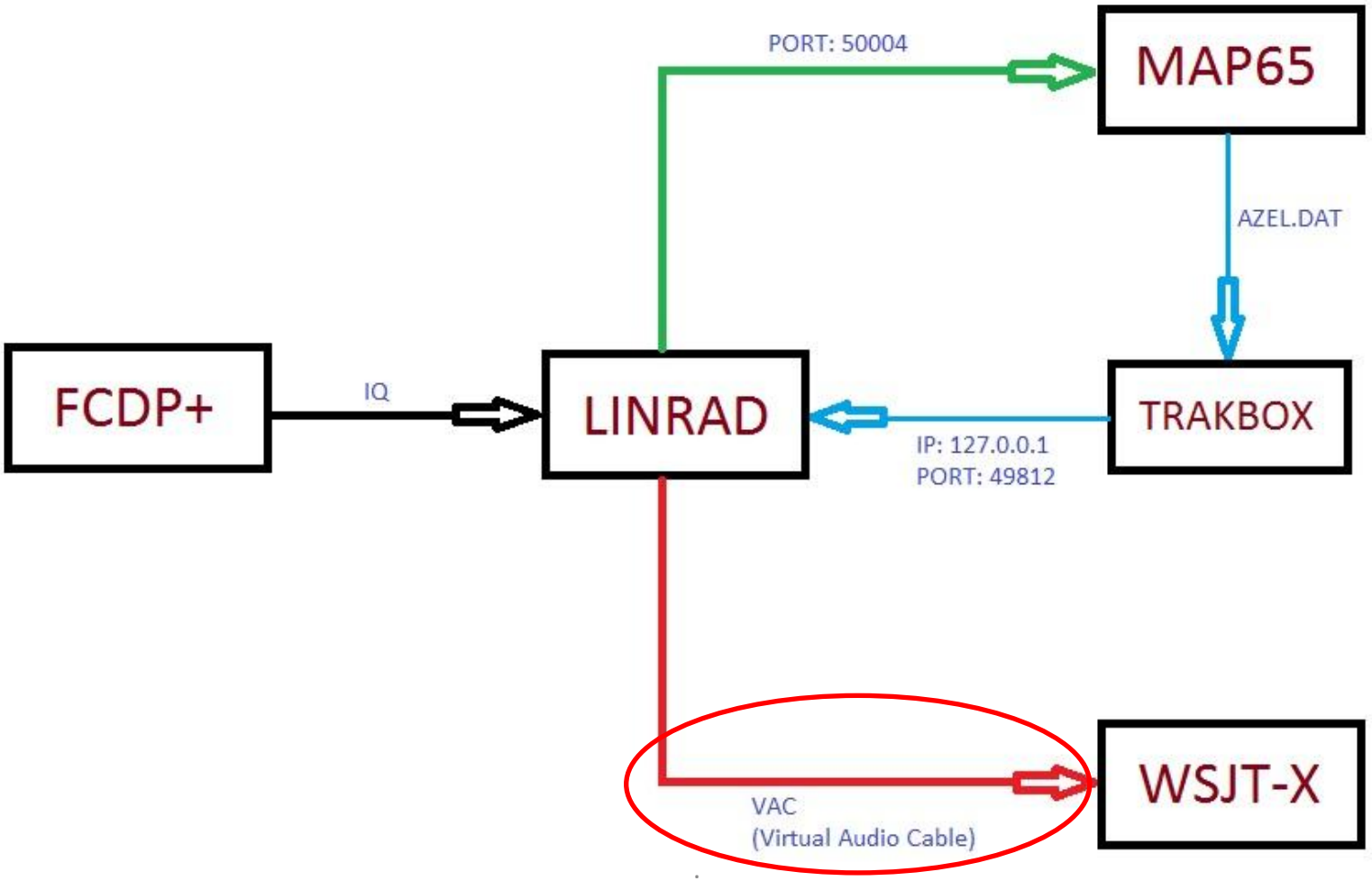
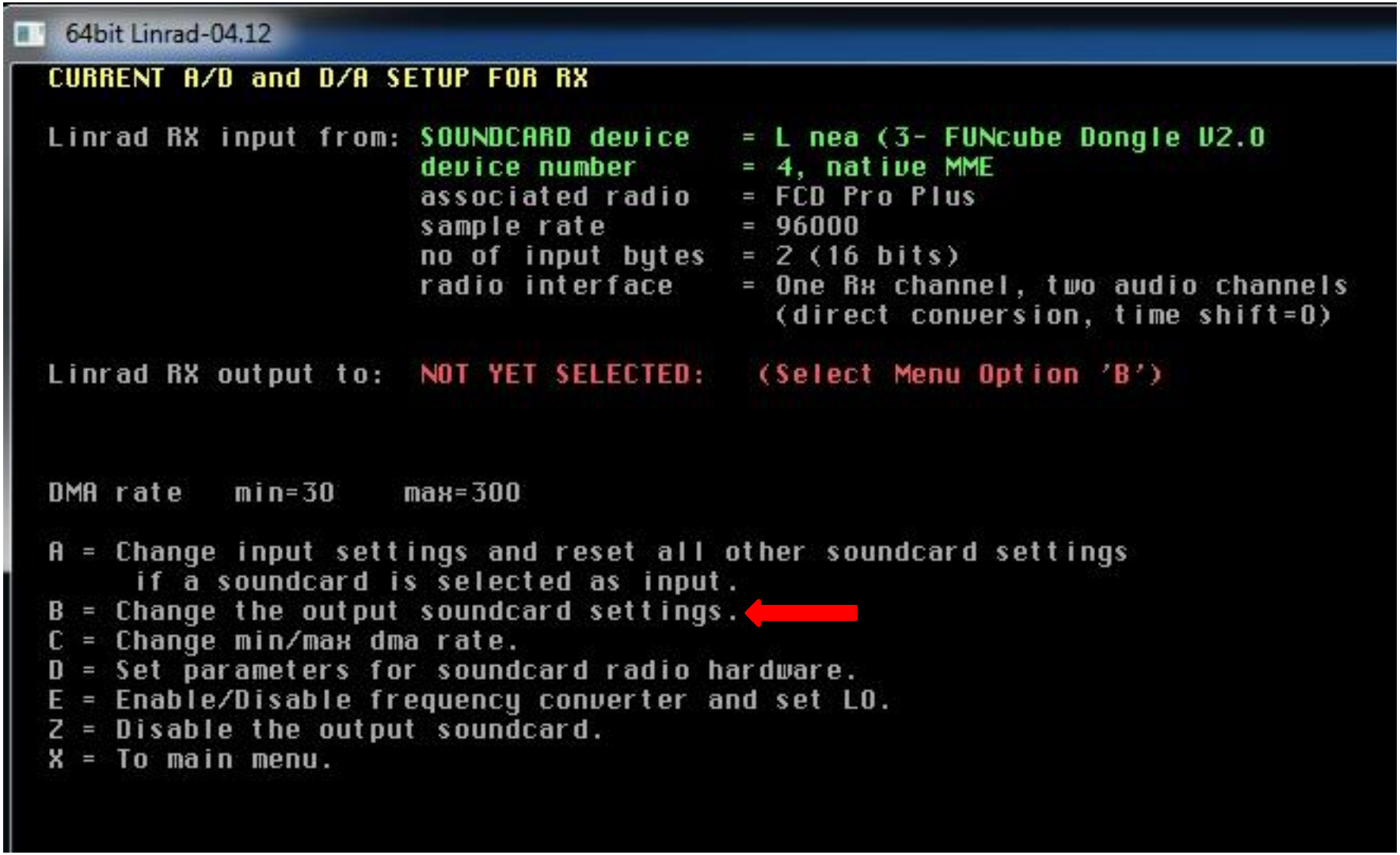
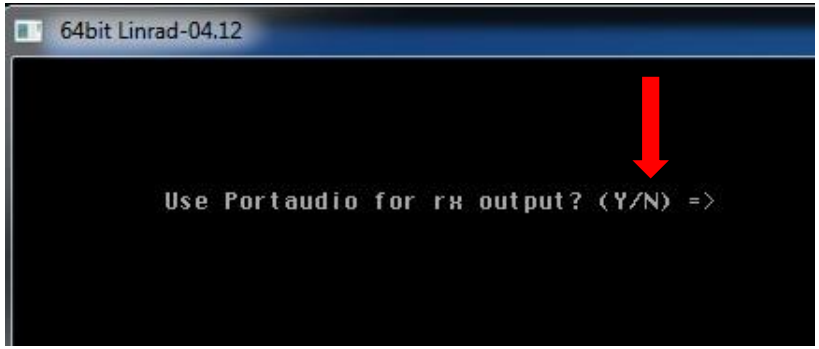
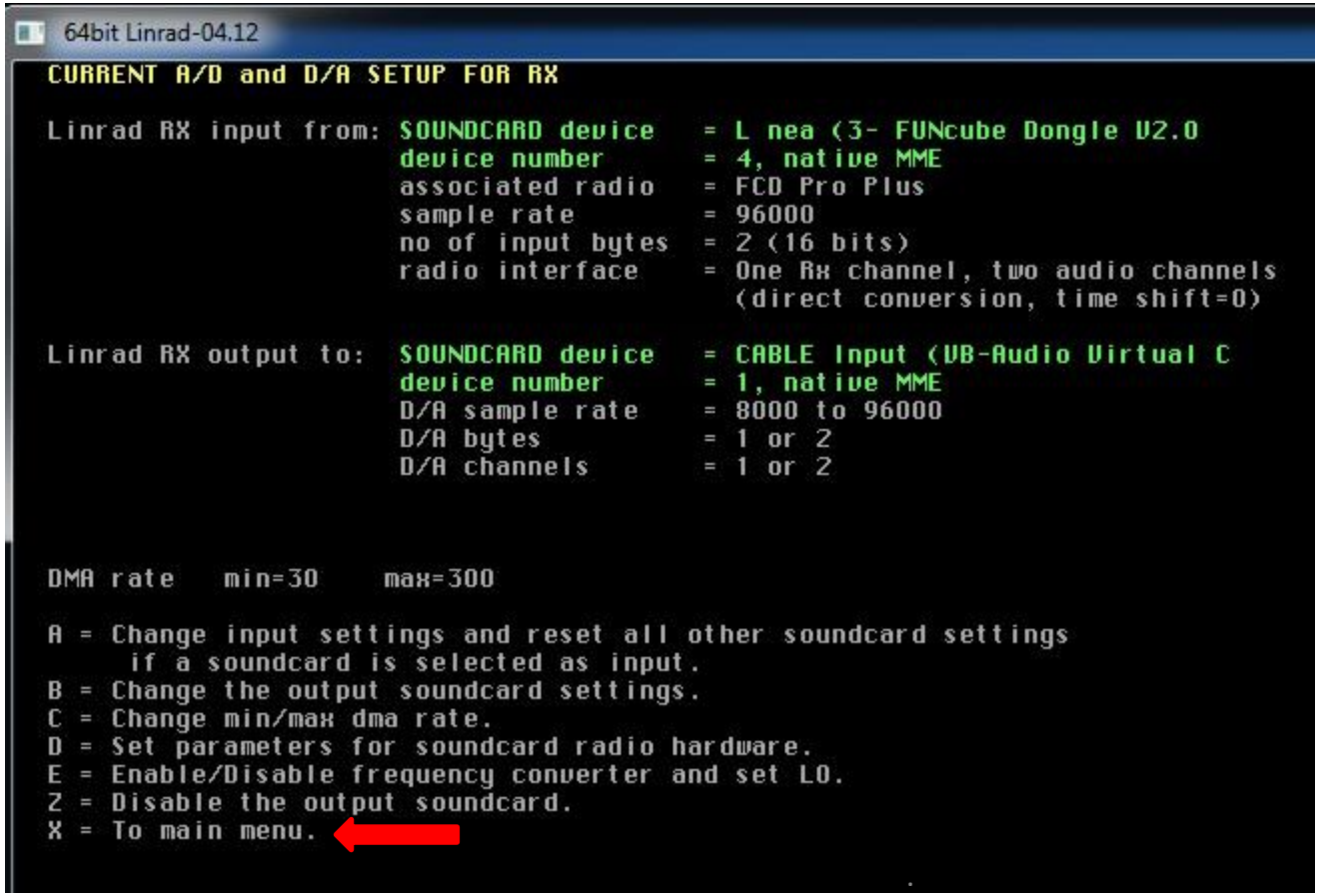
8.3.- CONFIGURACIÓN SALIDA DE AUDIO A WSJT-X




64bit Linrad-04.12
CURRENT A/D and D/A SETUP FOR RX
Linrad RX input from: SOUNDCARD device = L nea (3- FUNcube Dongle V2.0
device number = 4, native MME
associated radio = FCD Pro Plus
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: 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.
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.


64bit Linrad-04.12
Use Portaudio for rx output? (Y/N) =>


64bit Linrad-04.12
Select SOUNDCARD device for Rx output
0 Altavoces (Realtek High Definit
1 CABLE Input (VB-Audio Virtual C
2 Realtek Digital Output (Realtek
Select device for Rx output by line number> 1_


64bit Linrad-04.12
CURRENT A/D and D/A SETUP FOR RX
Linrad RX input from: SOUNDCARD device = L nea (3- FUNcube Dongle V2.0
device number = 4, native MME
associated radio = FCD Pro Plus
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 = CABLE Input (VB-Audio Virtual C
device number = 1, 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.
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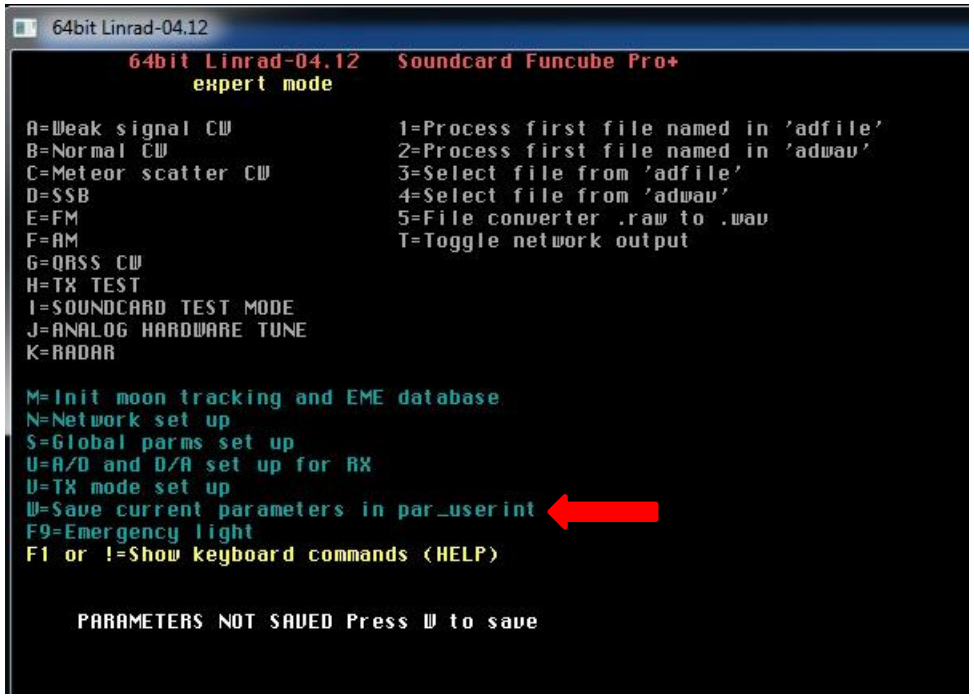
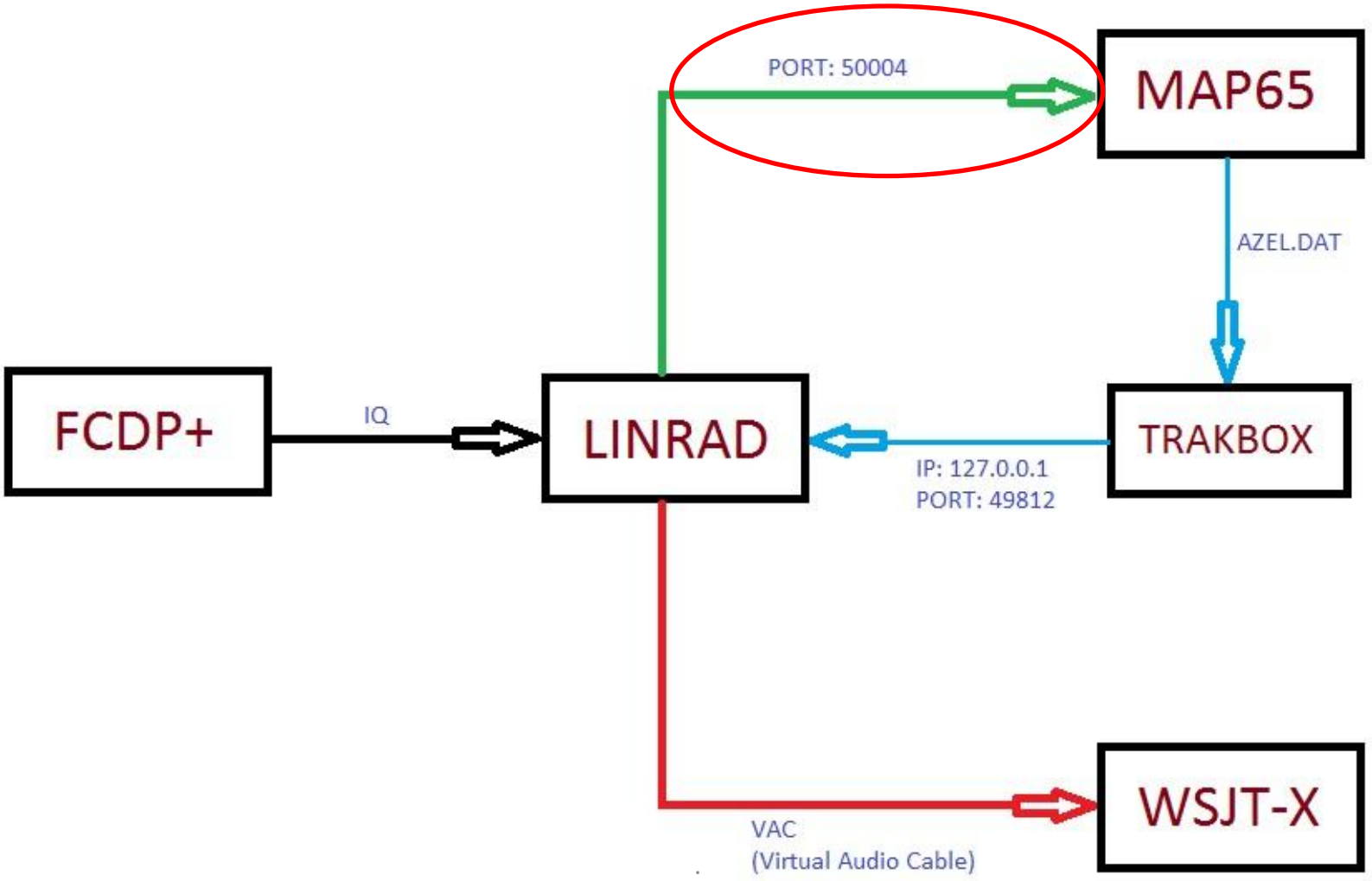

64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save

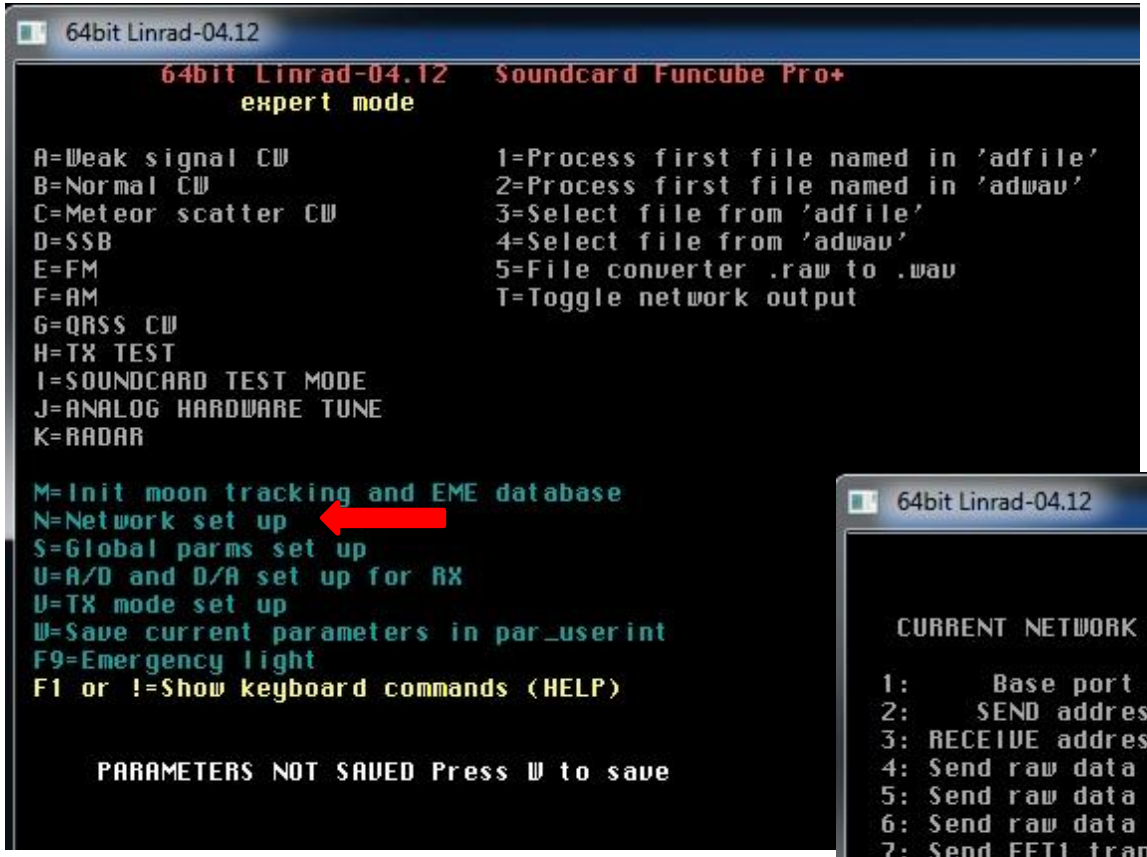

64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
User interface setup saved
vga mode [12]
Screen height (%) [94]
mouse speed [8]
Process priority [0]
Rx input mode [4]
Rx ad channels [2]
Rx ad device no [4]
Rx da mode [0]
Rx min da speed [8000]
Rx max da channels [2]
Rx min da channels [1]
Rx soundcard radio [6]
Converter MHz [0]
network flag [0]
Tx da speed [0]
Tx da device no [-1]
Tx ad channels [0]
Tx ad bytes [0]
Tx pilot tone dB [0]
Tx soundcard radio [0]
Max blocked CPUs [0]
Autostart [0]
Rx da latency [0]
Tx da latency [0]
Min DMA rate [30]
ExtIO type [0]
PTT control [0]
Screen width (%) [100]
font scale [2]
Max DMA rate [300]
Native ALSA [0]
Rx rf channels [1]
Rx ad speed [96000]
Rx ad mode [0]
Rx da device no [1]
Rx max da speed [96000]
Rx max da bytes [2]
Rx min da bytes [1]
Converter Hz [0]
Converter mode [0]
Tx ad speed [0]
Tx ad device no [-1]
Tx da channels [0]
Tx da bytes [0]
Tx enable [0]
Tx pilot microsec. [0]
Operator skil [3]
Timer resolution [0]
Rx ad latency [0]
Tx ad latency [0]
Sample shift [0]
Use ExtIO [0]
Transceiver mode [0]
check [2230408]

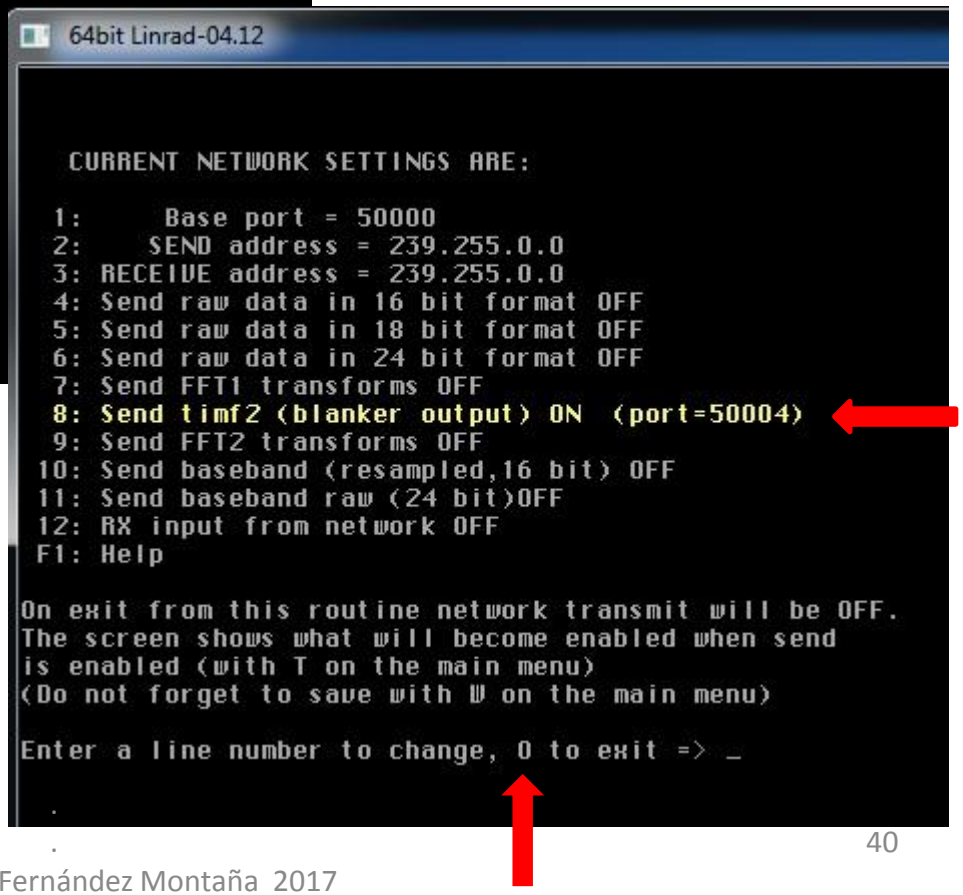
CONFIGURACIÓN DE SALIDA DE AUDIO "U" MENU

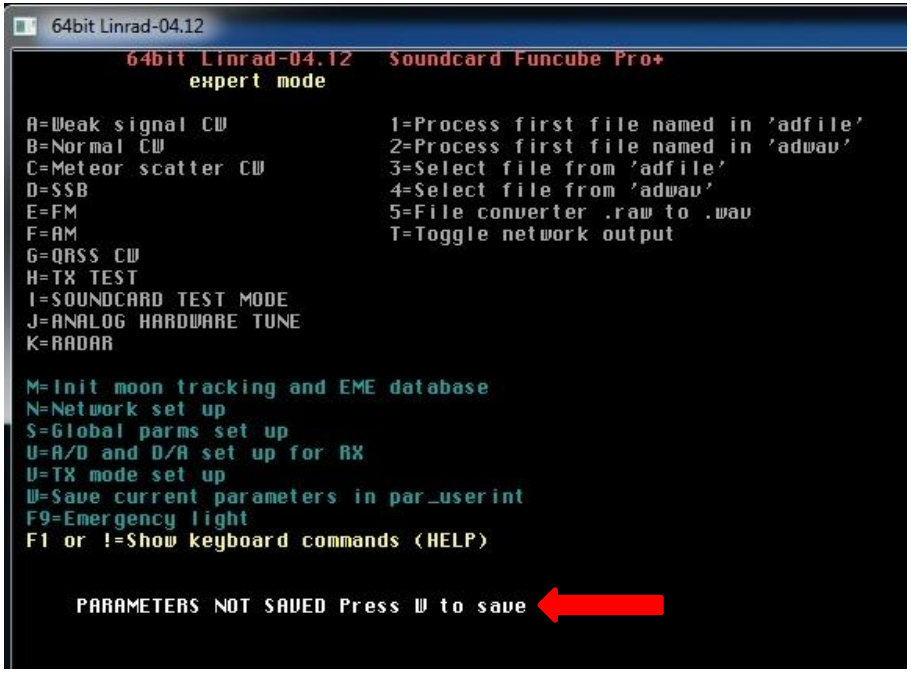
- B	CHANGE THE OUTPUT SOUNDCARD SETTINGS
- N + ENTER	USE PORT AUDIO FOR RX INPUT
- 1 + ENTER	CABLE INPUT (VB-AUDIO VIRTUAL CABLE) (SOUND CARD DEVICE FOR RX OUTPUT)
- X	PARA VOLVER AL MENÚ PRINCIPAL PRESS ANY KEY
- W	SAVE CURRENT PARAMETERS

8.4.- CONFIGURACIÓN SALIDA NETSEND P:50004 A MAP65




64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save


64bit Linrad-04.12
CURRENT NETWORK SETTINGS ARE:
1: Base port = 50000
2: SEND address = 239.255.0.0
3: RECEIVE address = 239.255.0.0
4: Send raw data in 16 bit format OFF
5: Send raw data in 18 bit format OFF
6: Send raw data in 24 bit format OFF
7: Send FFT1 transforms OFF
8: Send timf2 (blanker output) ON (port=50004)
9: Send FFT2 transforms OFF
10: Send baseband (resampled,16 bit) OFF
11: Send baseband raw (24 bit)OFF
12: RX input from network OFF
F1: Help
On exit from this routine network transmit will be OFF.
The screen shows what will become enabled when send
is enabled (with T on the main menu)
(Do not forget to save with W on the main menu)
Enter a line number to change, 0 to exit => _


64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
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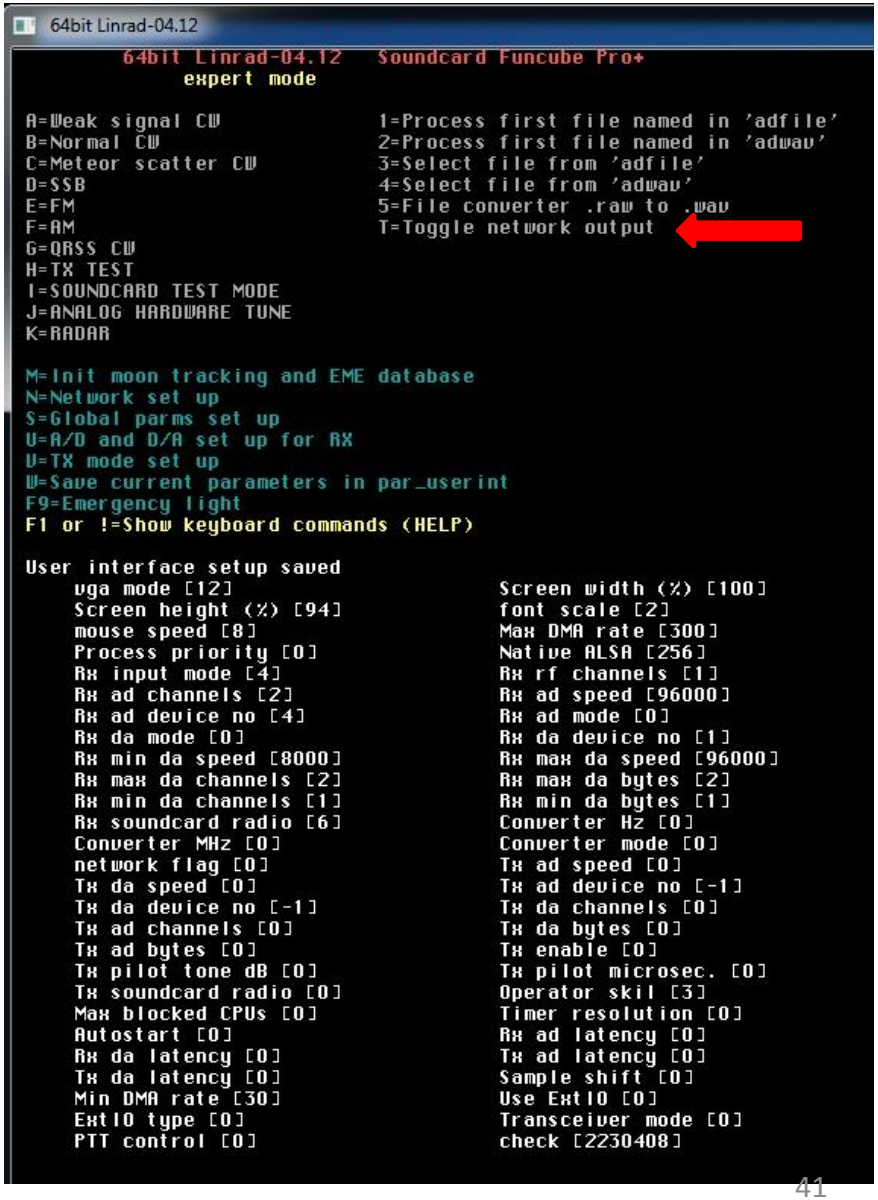
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save


64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
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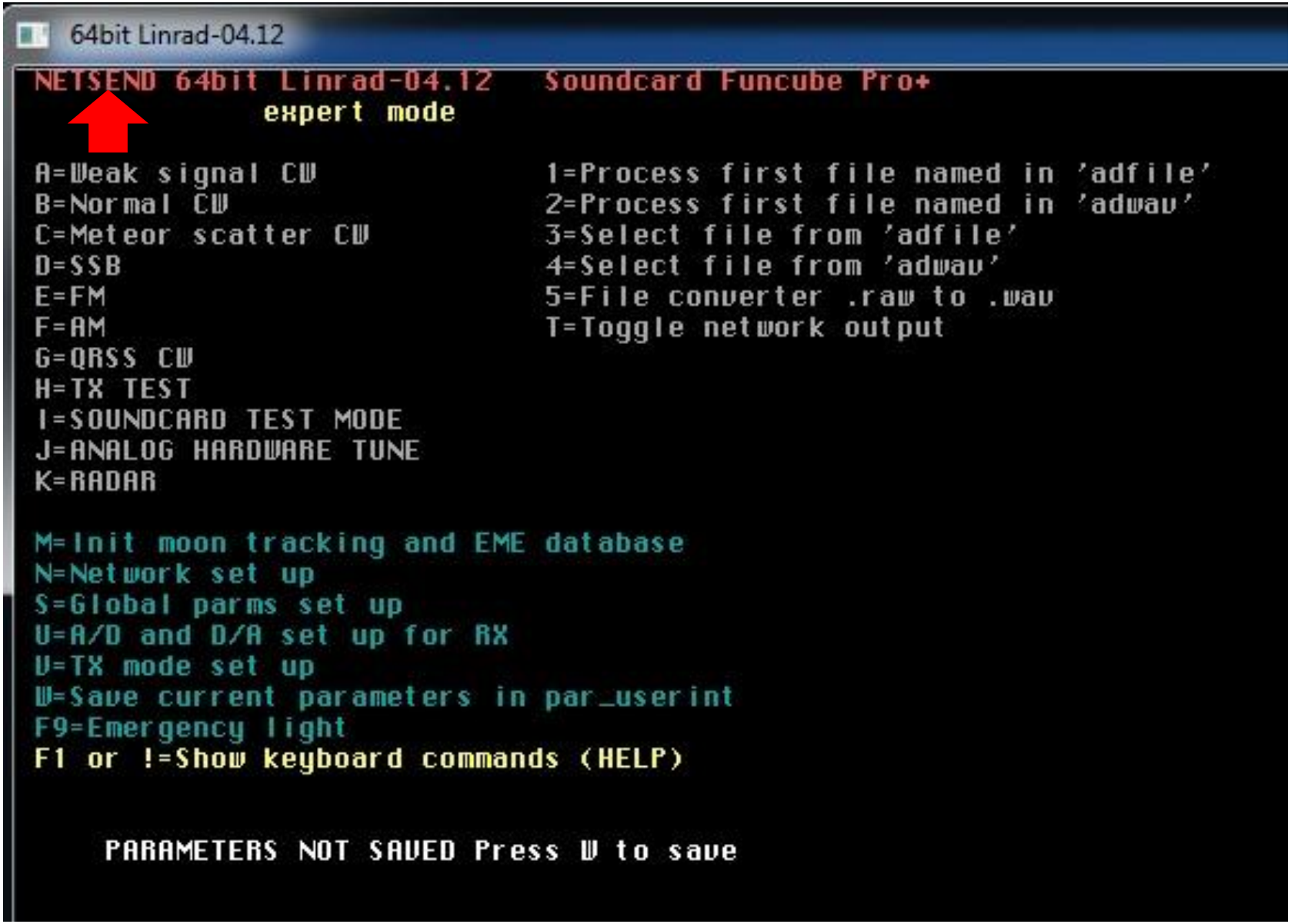
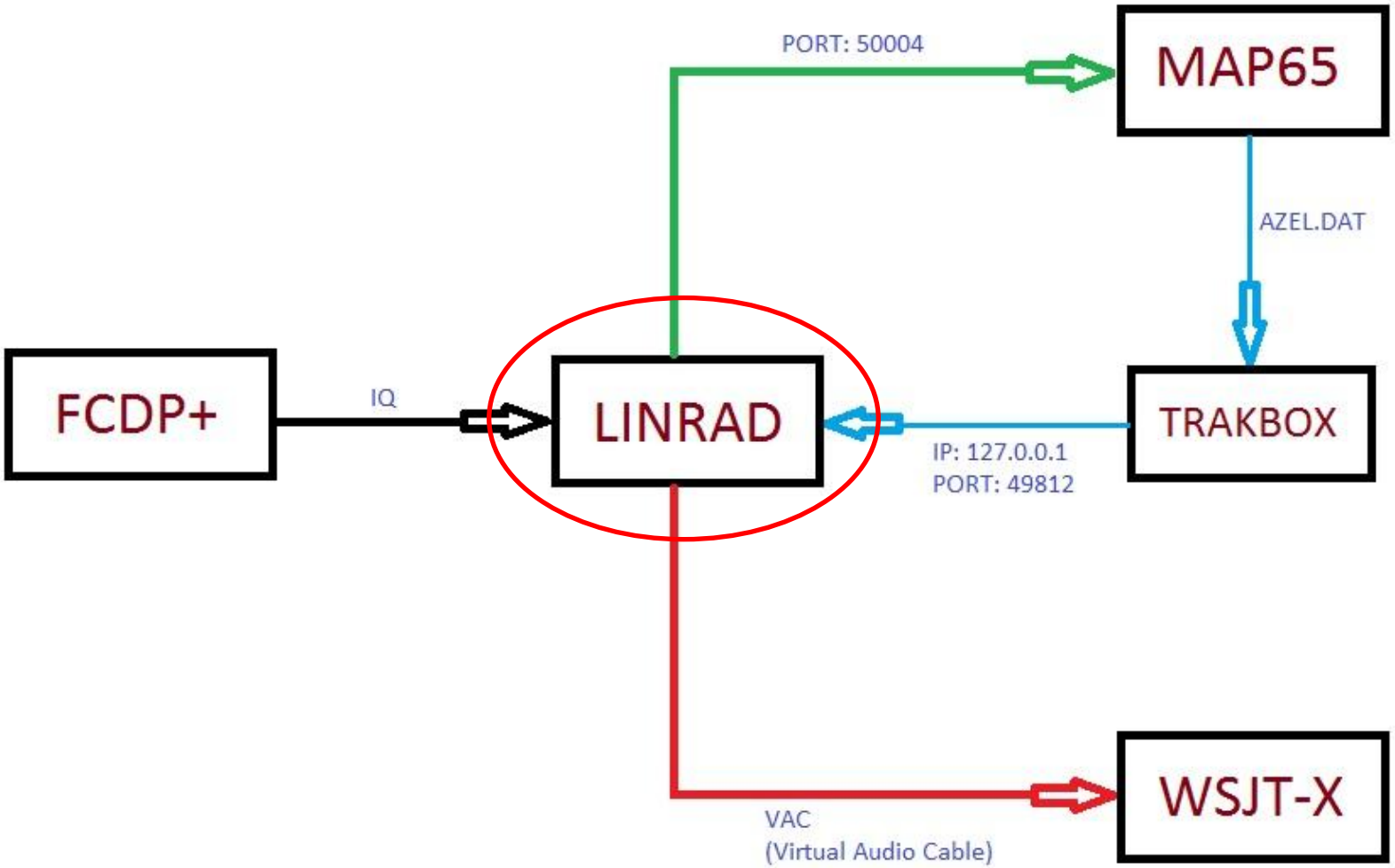
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
User interface setup saved
vga mode [12]
Screen height (%) [94]
mouse speed [8]
Process priority [0]
Rx input mode [4]
Rx ad channels [2]
Rx ad device no [4]
Rx da mode [0]
Rx min da speed [8000]
Rx max da channels [2]
Rx min da channels [1]
Rx soundcard radio [6]
Converter MHz [0]
network flag [0]
Tx da speed [0]
Tx da device no [-1]
Tx ad channels [0]
Tx ad bytes [0]
Tx pilot tone dB [0]
Tx soundcard radio [0]
Max blocked CPUs [0]
Autostart [0]
Rx da latency [0]
Tx da latency [0]
Min DMA rate [30]
ExtIO type [0]
PTT control [0]
Screen width (%) [100]
font scale [2]
Max DMA rate [300]
Native ALSA [256]
Rx rf channels [1]
Rx ad speed [96000]
Rx ad mode [0]
Rx da device no [1]
Rx max da speed [96000]
Rx max da bytes [2]
Rx min da bytes [1]
Converter Hz [0]
Converter mode [0]
Tx ad speed [0]
Tx ad device no [-1]
Tx da channels [0]
Tx da bytes [0]
Tx enable [0]
Tx pilot microsec. [0]
Operator skil [3]
Timer resolution [0]
Rx ad latency [0]
Tx ad latency [0]
Sample shift [0]
Use ExtIO [0]
Transceiver mode [0]
check [2230408]

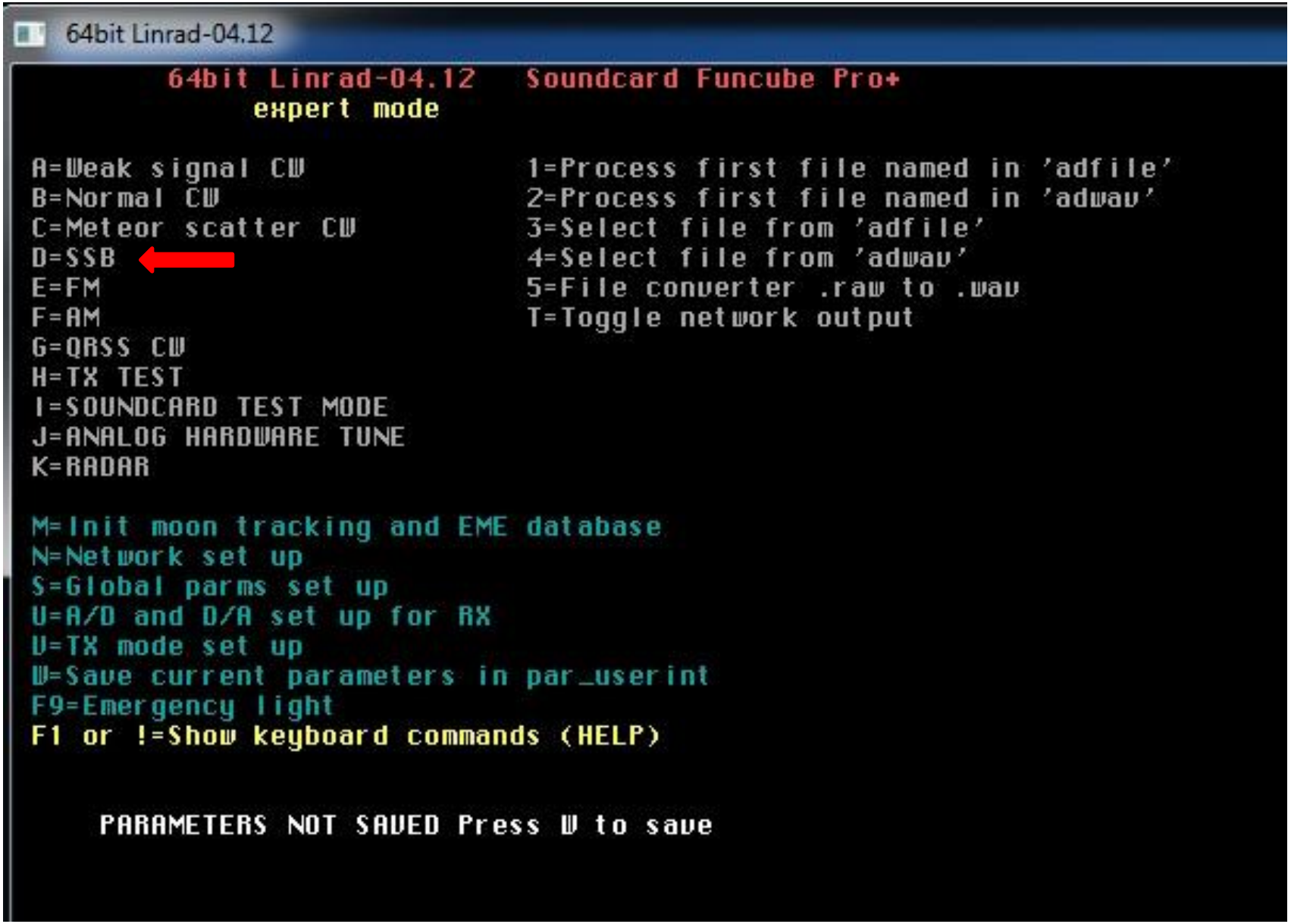

64bit Linrad-04.12
NETSEND 64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save

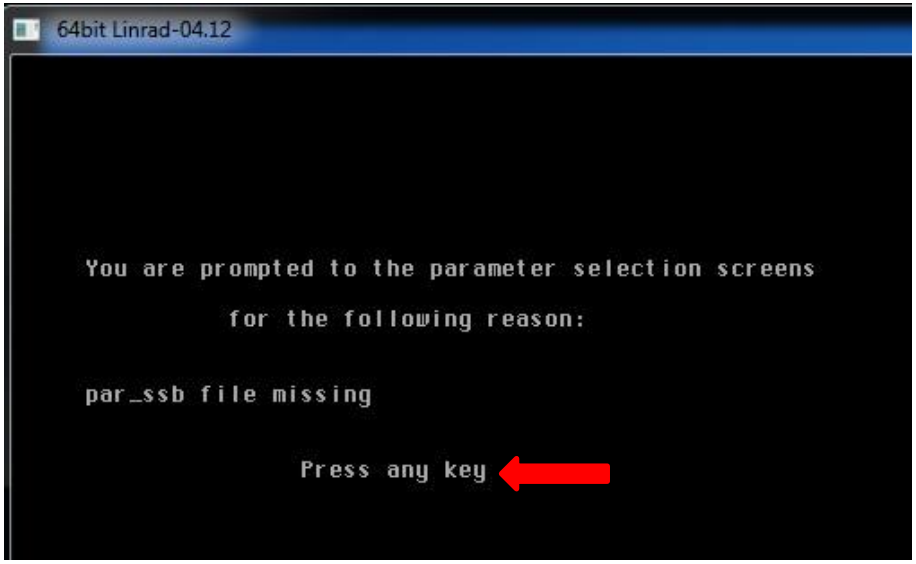
CONFIGURACIÓN SALIDA NETSEND POR PUERTO 50004

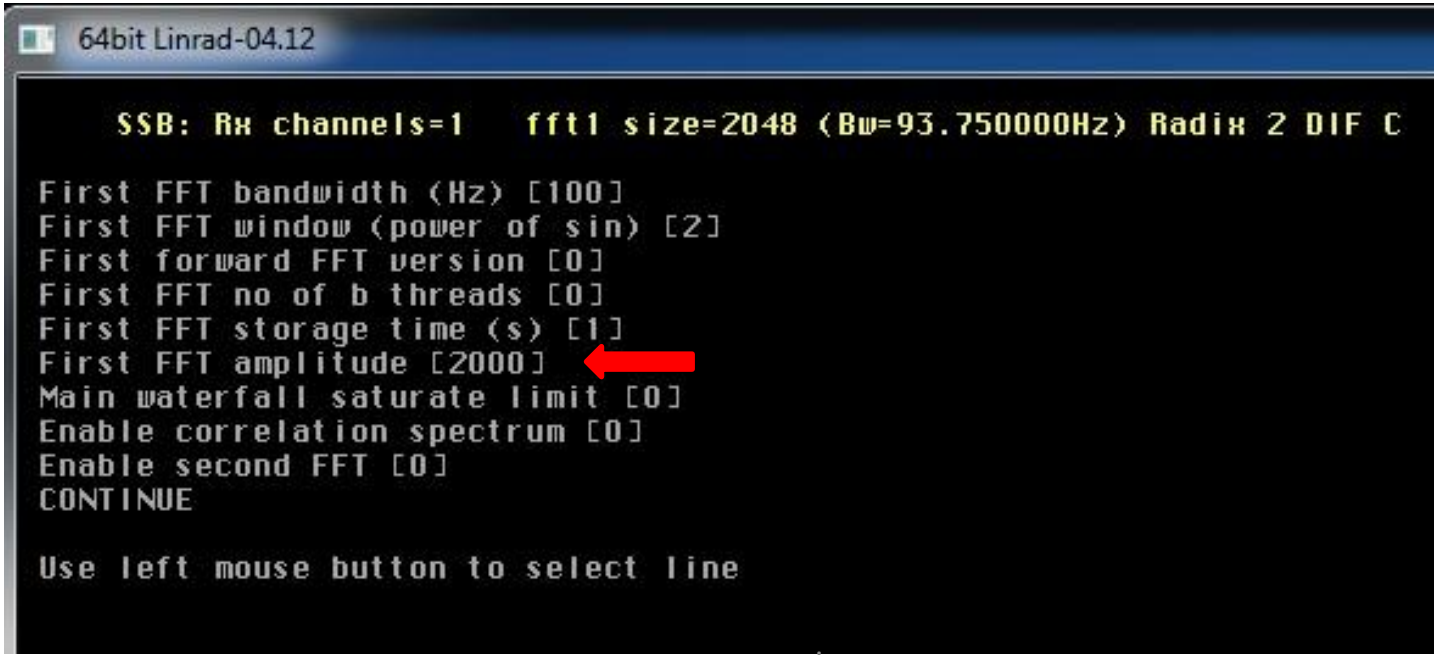
- N	NETWORK SETUP
- 8 + ENTER	PARA HABILITAR ENVÍO DE DATOS A MAP65 A TRAVÉS DEL PUERTO 50004
- O + ENTER	PARA SALIR DEL MENÚ
- W	GRABAR PARÁMETROS
- T	PARA HABILITAR EL ENVÍO DE DATOS

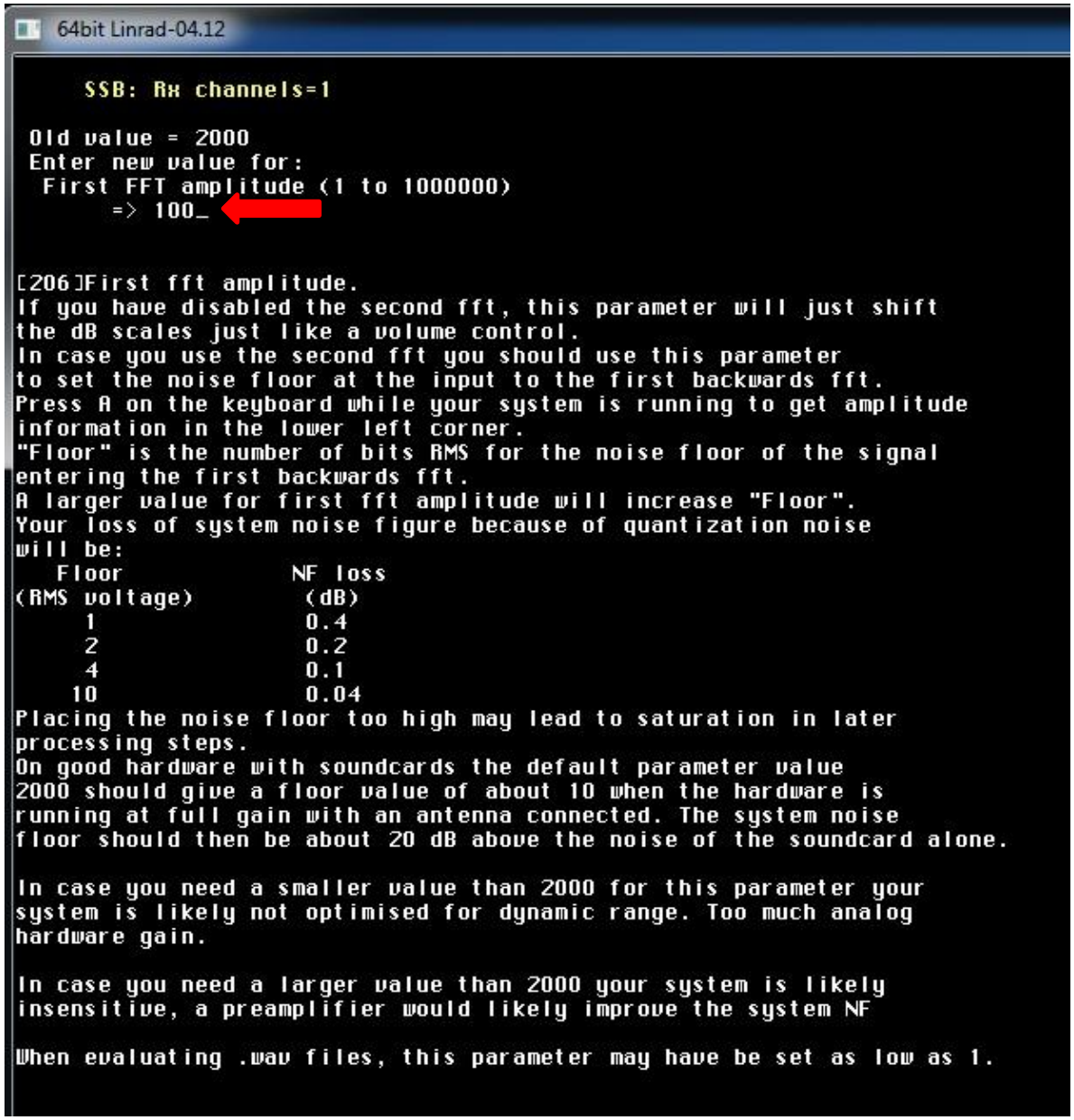
8.5.- CONFIGURACIÓN PARA SSB

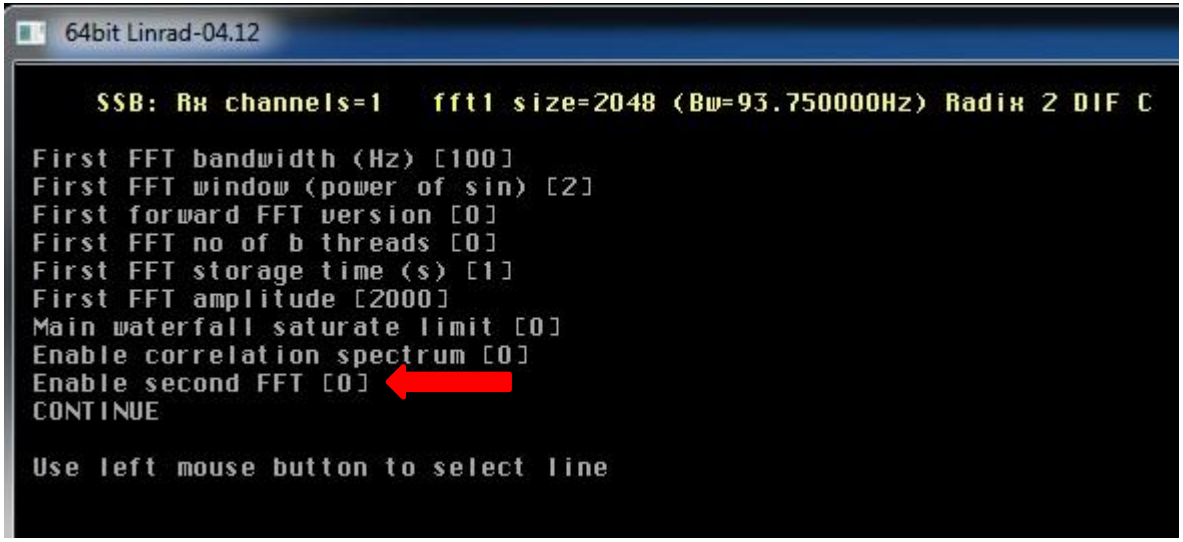


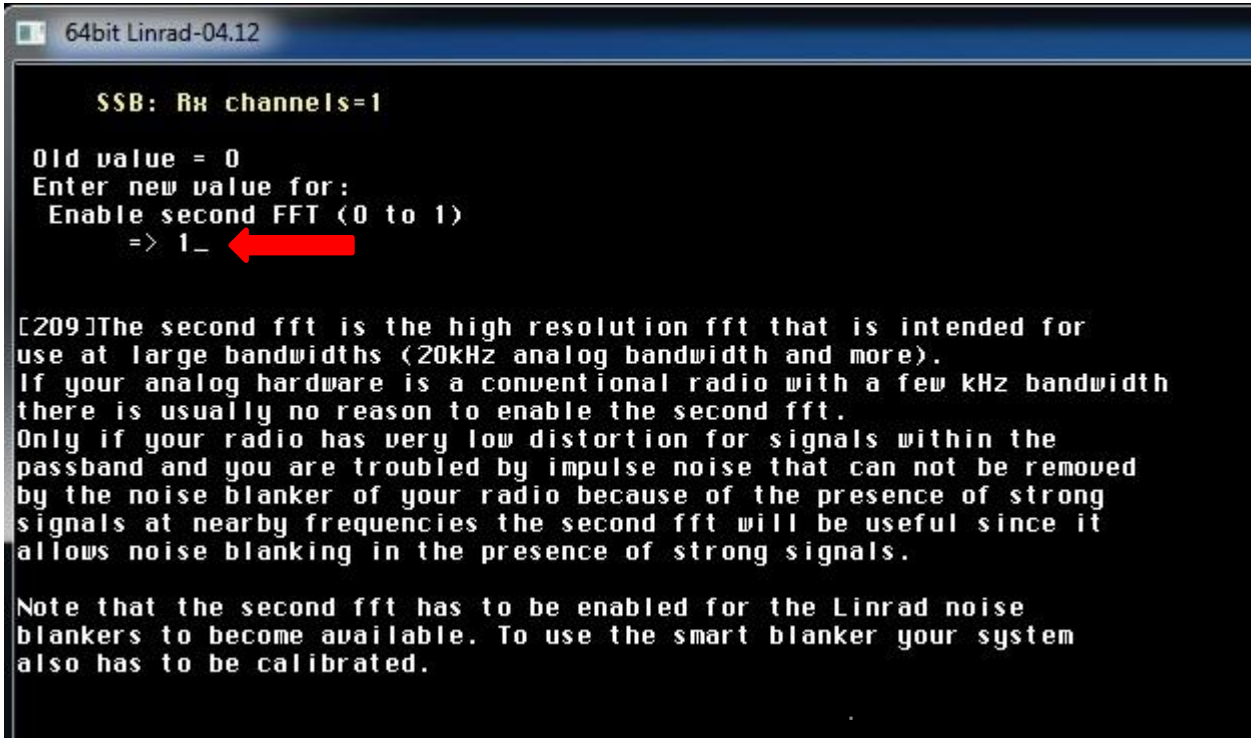

64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
J=ANALOG HARDWARE TUNE
K=RADAR
1=Process first file named in 'adfile'
2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or !=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save

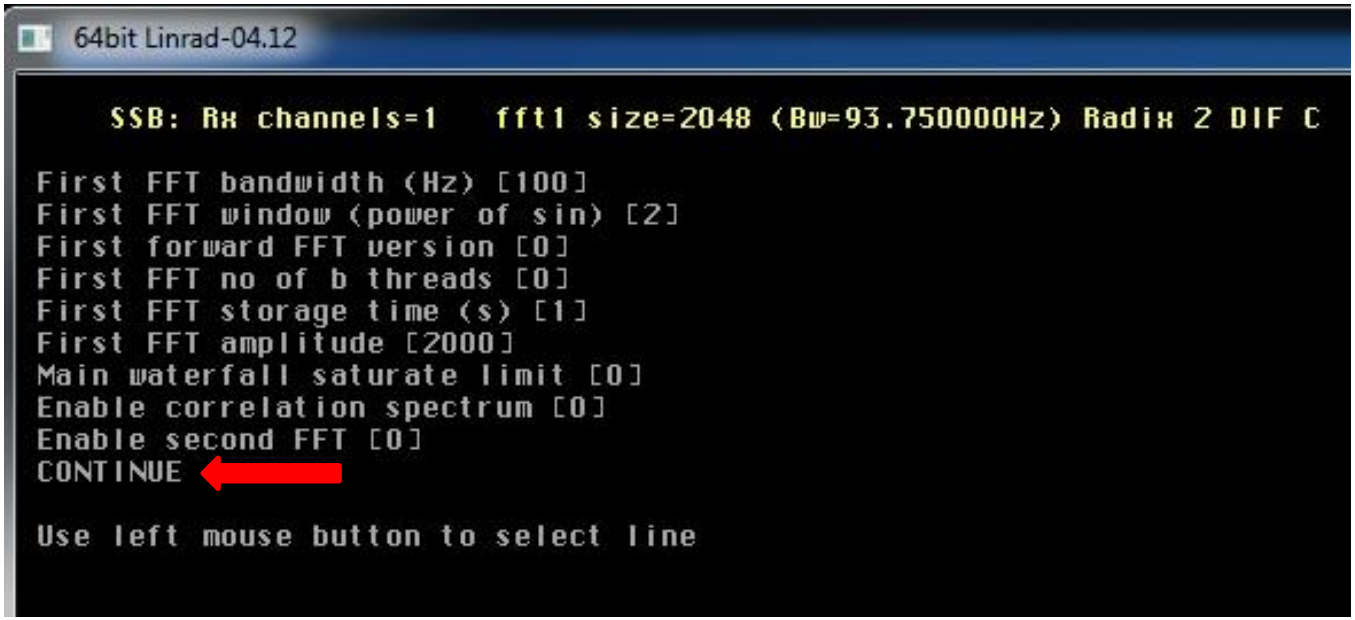

64bit Linrad-04.12
You are prompted to the parameter selection screens
for the following reason:
par_ssb file missing
Press any key


64bit Linrad-04.12
SSB: Rx channels=1 fft1 size=2048 (Bw=93.750000Hz) Radix 2 DIF C
First FFT bandwidth (Hz) [100]
First FFT window (power of sin) [2]
First forward FFT version [0]
First FFT no of b threads [0]
First FFT storage time (s) [1]
First FFT amplitude [2000]
Main waterfall saturate limit [0]
Enable correlation spectrum [0]
Enable second FFT [0]
CONTINUE
Use left mouse button to select line

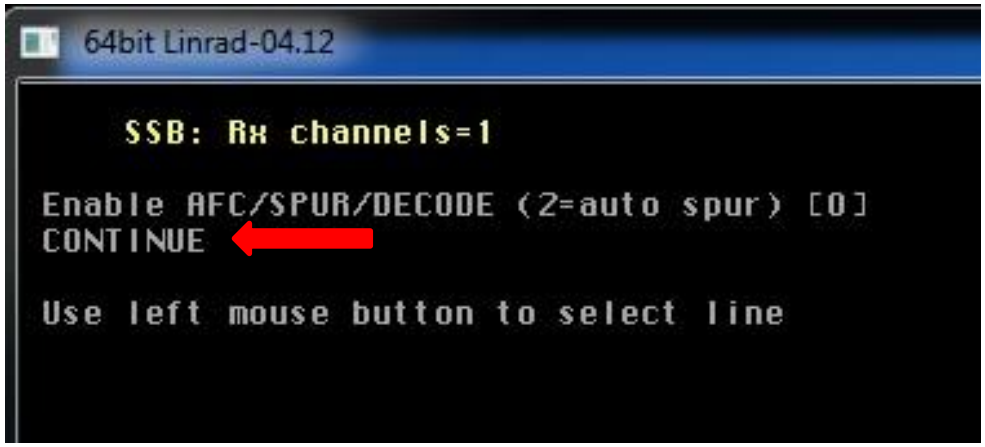

64bit Linrad-04.12
SSB: Rx channels=1
Old value = 2000
Enter new value for:
First FFT amplitude (1 to 1000000)
=> 100_
[206]First fft amplitude.
If you have disabled the second fft, this parameter will just shift
the dB scales just like a volume control.
In case you use the second fft you should use this parameter
to set the noise floor at the input to the first backwards fft.
Press A on the keyboard while your system is running to get amplitude
information in the lower left corner.
"Floor" is the number of bits RMS for the noise floor of the signal
entering the first backwards fft.
A larger value for first fft amplitude will increase "Floor".
Your loss of system noise figure because of quantization noise
will be:
Floor NF loss
(RMS voltage) (dB)
1 0.4
2 0.2
4 0.1
10 0.04
Placing the noise floor too high may lead to saturation in later
processing steps.
On good hardware with soundcards the default parameter value
2000 should give a floor value of about 10 when the hardware is
running at full gain with an antenna connected. The system noise
floor should then be about 20 dB above the noise of the soundcard alone.
In case you need a smaller value than 2000 for this parameter your
system is likely not optimised for dynamic range. Too much analog
hardware gain.
In case you need a larger value than 2000 your system is likely
insensitive, a preamplifier would likely improve the system NF
When evaluating .wav files, this parameter may have be set as low as 1.

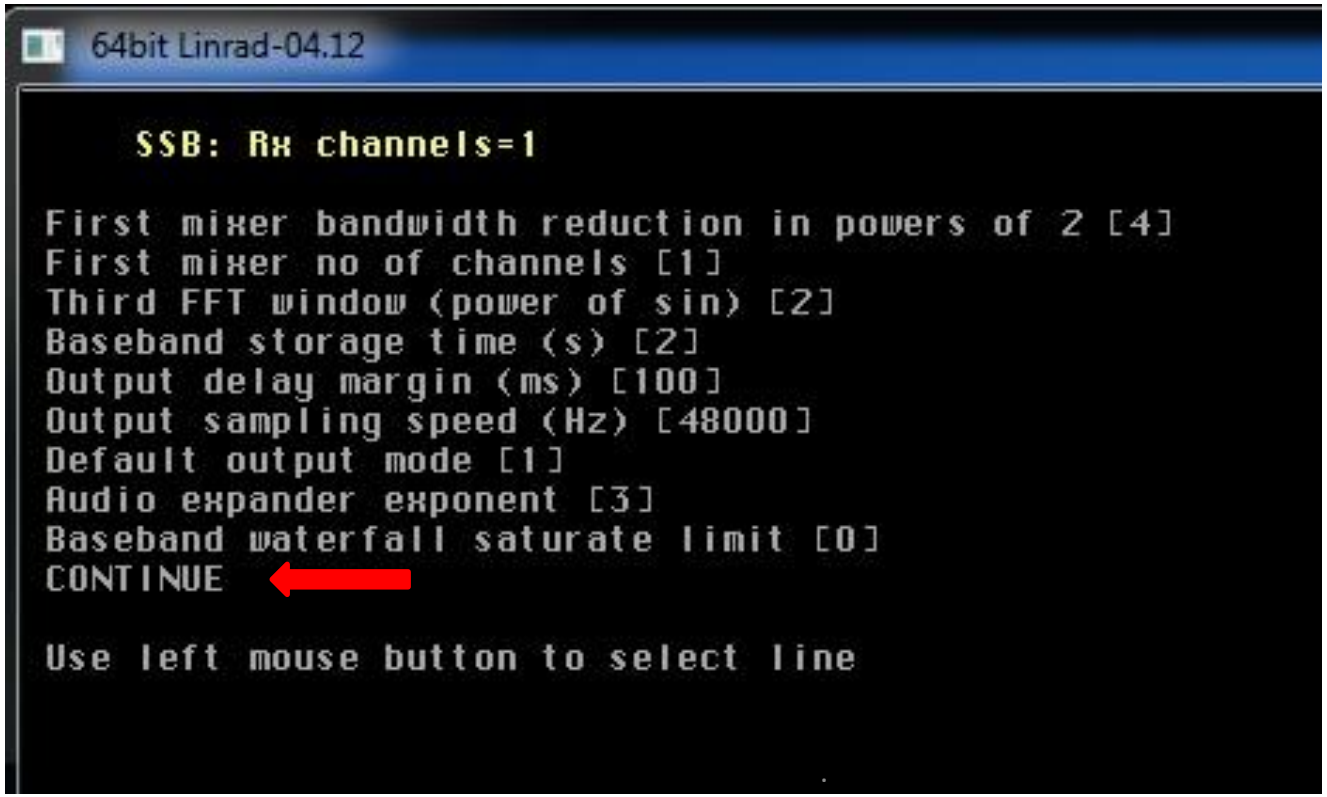

64bit Linrad-04.12
SSB: Rx channels=1 fft1 size=2048 (Bw=93.750000Hz) Radix 2 DIF C
First FFT bandwidth (Hz) [100]
First FFT window (power of sin) [2]
First forward FFT version [0]
First FFT no of b threads [0]
First FFT storage time (s) [1]
First FFT amplitude [2000]
Main waterfall saturate limit [0]
Enable correlation spectrum [0]
Enable second FFT [0]
CONTINUE
Use left mouse button to select line

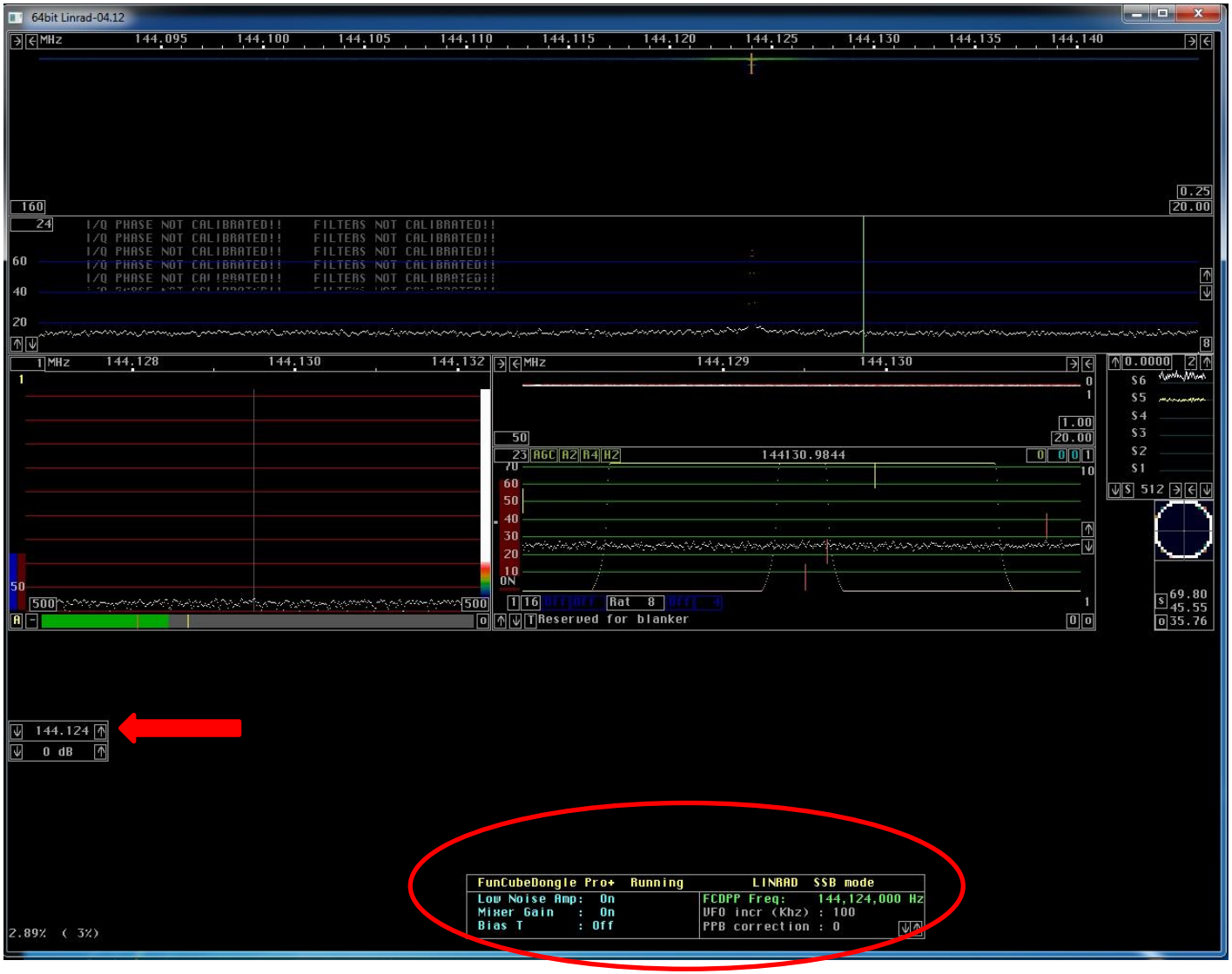

64bit Linrad-04.12
SSB: Rx channels=1
Old value = 0
Enter new value for:
Enable second FFT (0 to 1)
=> 1_
[209]The second fft is the high resolution fft that is intended for
use at large bandwidths (20kHz analog bandwidth and more).
If your analog hardware is a conventional radio with a few kHz bandwidth
there is usually no reason to enable the second fft.
Only if your radio has very low distortion for signals within the
passband and you are troubled by impulse noise that can not be removed
by the noise blanker of your radio because of the presence of strong
signals at nearby frequencies the second fft will be useful since it
allows noise blanking in the presence of strong signals.
Note that the second fft has to be enabled for the Linrad noise
blankers to become available. To use the smart blanker your system
also has to be calibrated.


64bit Linrad-04.12
SSB: Rx channels=1 fft1 size=2048 (Bw=93.750000Hz) Radix 2 DIF C
First FFT bandwidth (Hz) [100]
First FFT window (power of sin) [2]
First forward FFT version [0]
First FFT no of b threads [0]
First FFT storage time (s) [1]
First FFT amplitude [2000]
Main waterfall saturate limit [0]
Enable correlation spectrum [0]
Enable second FFT [0]
CONTINUE
Use left mouse button to select line


64bit Linrad-04.12
SSB: Rx channels=1 fft2 size=8192 (Bw=23.437500Hz)
First backward FFT version [0]
Sellim maxlevel [6000]
First backward FFT att. N [6]
Second FFT bandwidth factor in powers of 2 [2]
Second FFT window (power of sin) [2]
Second forward FFT version [0]
Second forward FFT att. N [7]
Second FFT storage time (s) [5]
CONTINUE
Use left mouse button to select line

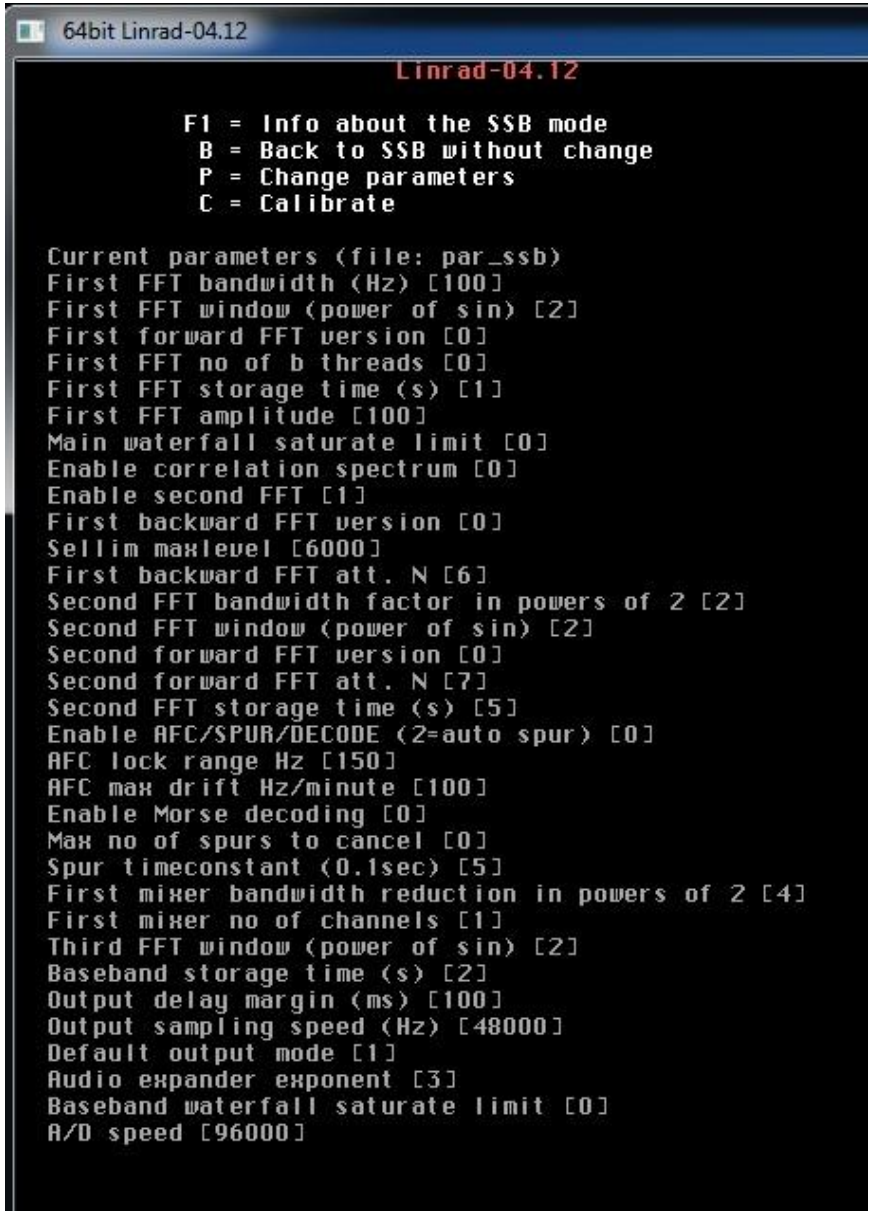

64bit Linrad-04.12
SSB: Rx channels=1
Enable AFC/SPUR/DECODE (2=auto spur) [0]
CONTINUE
Use left mouse button to select line


64bit Linrad-04.12
SSB: Rx channels=1
First mixer bandwidth reduction in powers of 2 [4]
First mixer no of channels [1]
Third FFT window (power of sin) [2]
Baseband storage time (s) [2]
Output delay margin (ms) [100]
Output sampling speed (Hz) [48000]
Default output mode [1]
Audio expander exponent [3]
Baseband waterfall saturate limit [0]
CONTINUE
Use left mouse button to select line

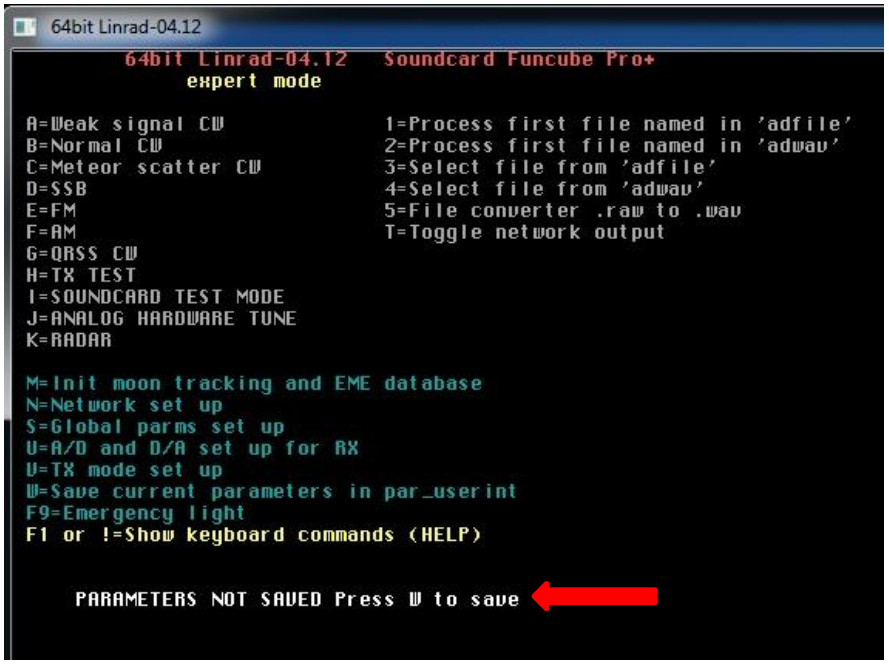


- PONER FRECUENCIA AL FCDP+

- PULSAR «X» PARA VOLVER AL MENÚ PRINCIPAL



– PULSAR «X» PARA VOLVER AL MENÚ PRINCIPAL


64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
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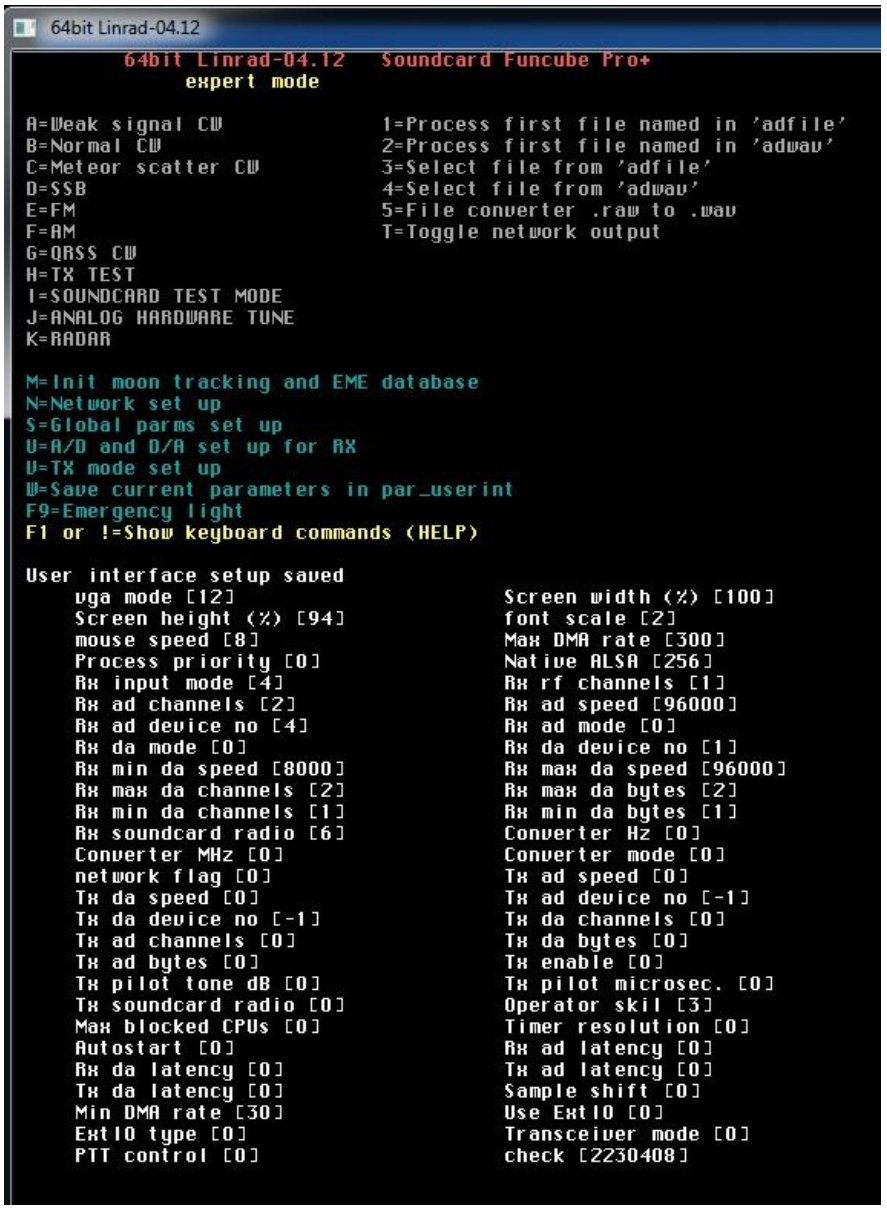
4=Select file from 'adwav'
5=File converter .raw to .wav
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or ?=Show keyboard commands (HELP)
PARAMETERS NOT SAVED Press W to save


64bit Linrad-04.12
64bit Linrad-04.12 Soundcard Funcube Pro+
expert mode
A=Weak signal CW
B=Normal CW
C=Meteor scatter CW
D=SSB
E=FM
F=AM
G=QRSS CW
H=TX TEST
I=SOUNDCARD TEST MODE
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2=Process first file named in 'adwav'
3=Select file from 'adfile'
4=Select file from 'adwav'
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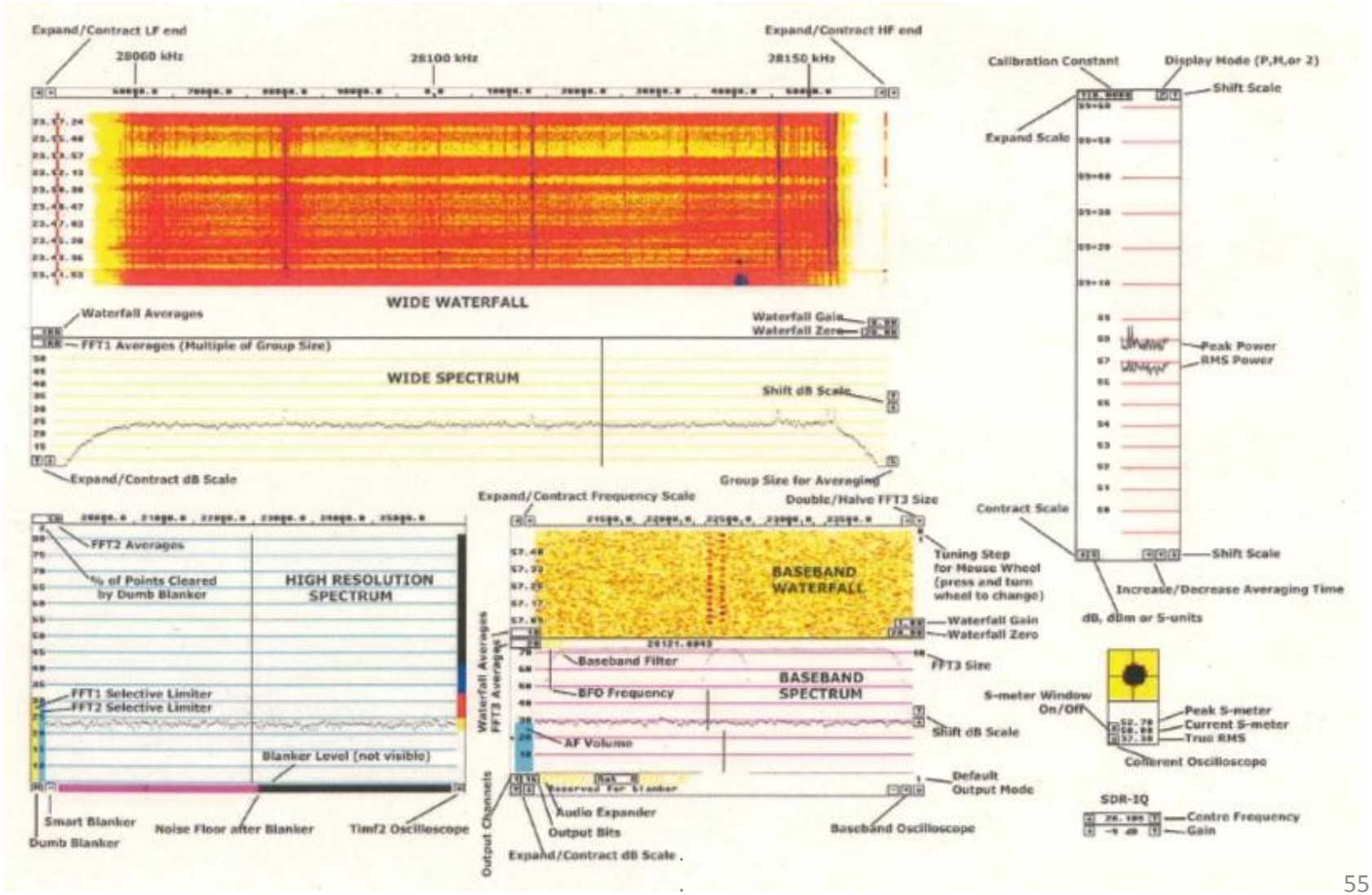
T=Toggle network output
M=Init moon tracking and EME database
N=Network set up
S=Global parms set up
U=A/D and D/A set up for RX
V=TX mode set up
W=Save current parameters in par_userint
F9=Emergency light
F1 or ?=Show keyboard commands (HELP)
User interface setup saved
vga mode [12]
Screen height (%) [94]
mouse speed [8]
Process priority [0]
Rx input mode [4]
Rx ad channels [2]
Rx ad device no [4]
Rx da mode [0]
Rx min da speed [8000]
Rx max da channels [2]
Rx min da channels [1]
Rx soundcard radio [6]
Converter MHz [0]
network flag [0]
Tx da speed [0]
Tx da device no [-1]
Tx ad channels [0]
Tx ad bytes [0]
Tx pilot tone dB [0]
Tx soundcard radio [0]
Max blocked CPUs [0]
Autostart [0]
Rx da latency [0]
Tx da latency [0]
Min DMA rate [30]
ExtIO type [0]
PTT control [0]
Screen width (%) [100]
font scale [2]
Max DMA rate [300]
Native ALSA [256]
Rx rf channels [1]
Rx ad speed [96000]
Rx ad mode [0]
Rx da device no [1]
Rx max da speed [96000]
Rx max da bytes [2]
Rx min da bytes [1]
Converter Hz [0]
Converter mode [0]
Tx ad speed [0]
Tx ad device no [-1]
Tx da channels [0]
Tx da bytes [0]
Tx enable [0]
Tx pilot microsec. [0]
Operator skil [3]
Timer resolution [0]
Rx ad latency [0]
Tx ad latency [0]
Sample shift [0]
Use ExtIO [0]
Transceiver mode [0]
check [2230408]

.
.

SSB MODE (PAR SSB FILE)

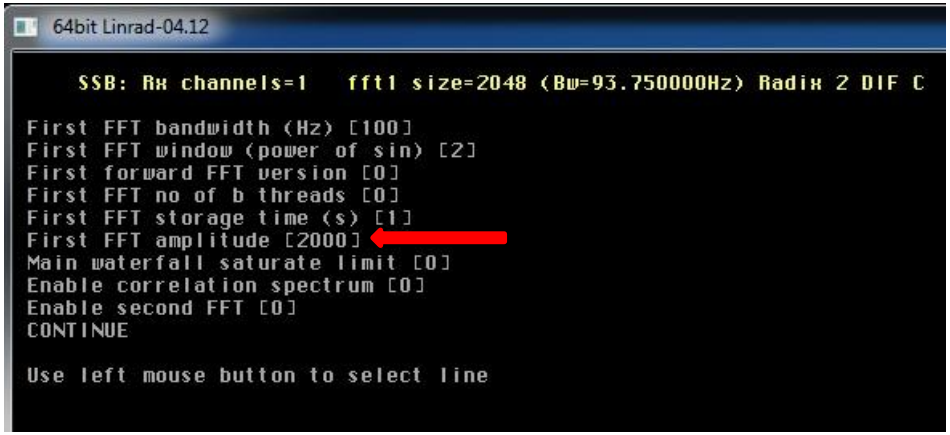
- D = SSB	SI ES LA PRIMERA VEZ PULSAR CUALQUIER TECLA PULSAR CON BOTÓN IZQUIERDO DEL RATÓN SOBRE LA LÍNA A MODIFICAR
- FIRST FFT AMPLITUDE	100 + ENTER
- ENABLE SECOND FTT [0]	[1] + ENTER PARA HABILITAR EL NB
- CONTINUE	PULSAR CON BOTÓN IZQUIERDO DEL RATÓN
- CONTINUE	
- CONTINUE	
- CONTINUE	
- X	PARA VOLVER A LA PANTALLA DE CONFIGURACIÓN DEL SSB
- W	GRABAR PARÁMETROS

8.6.- CONTROLES DE LA PANTALLA PRINCIPAL



NIVELES DE SALIDA DE SEÑAL A MAP65

- EN LA CONFIGURACIÓN DE SSB AFECTA A LA GANANCIA TOTAL DEL SISTEMA

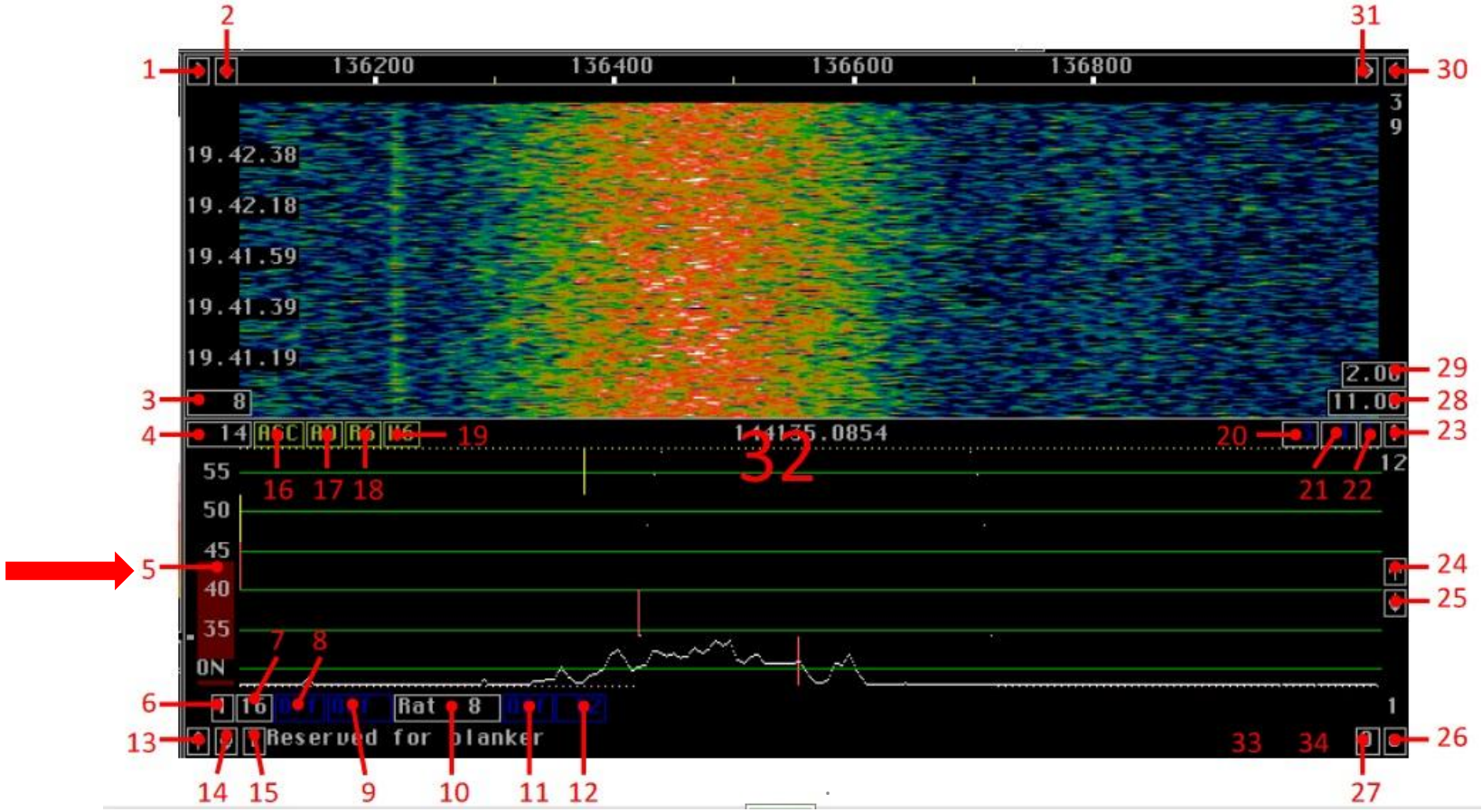


- EN LA GANANCIA GLOBAL

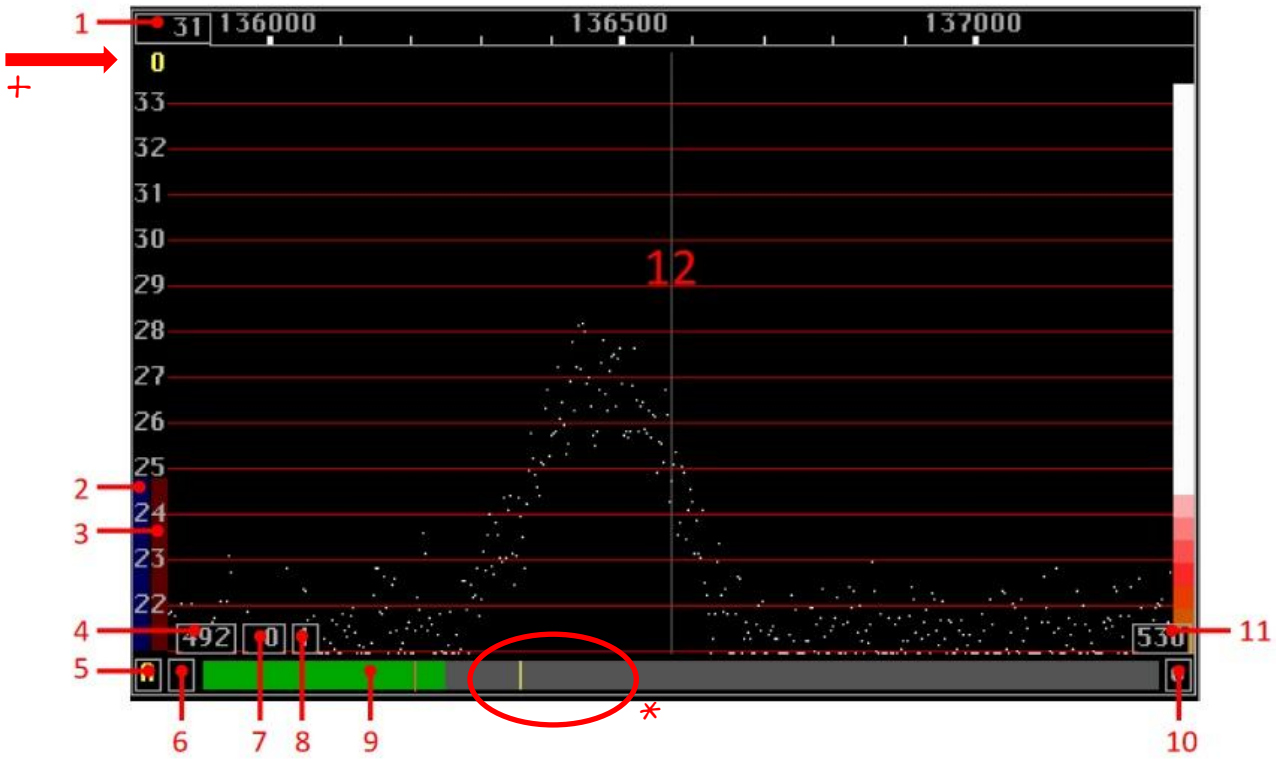
- EN EL ATENUADOR DEL HIGH RESOLUTION SPECTRUM

NIVELES DE SALIDA DE SEÑAL A WSJT-X

5- ARRASTRANDO LA COLUMNA ROJA EN EL «BASEBAND WATERFALL»



NIVELES DEL FILTRO NB



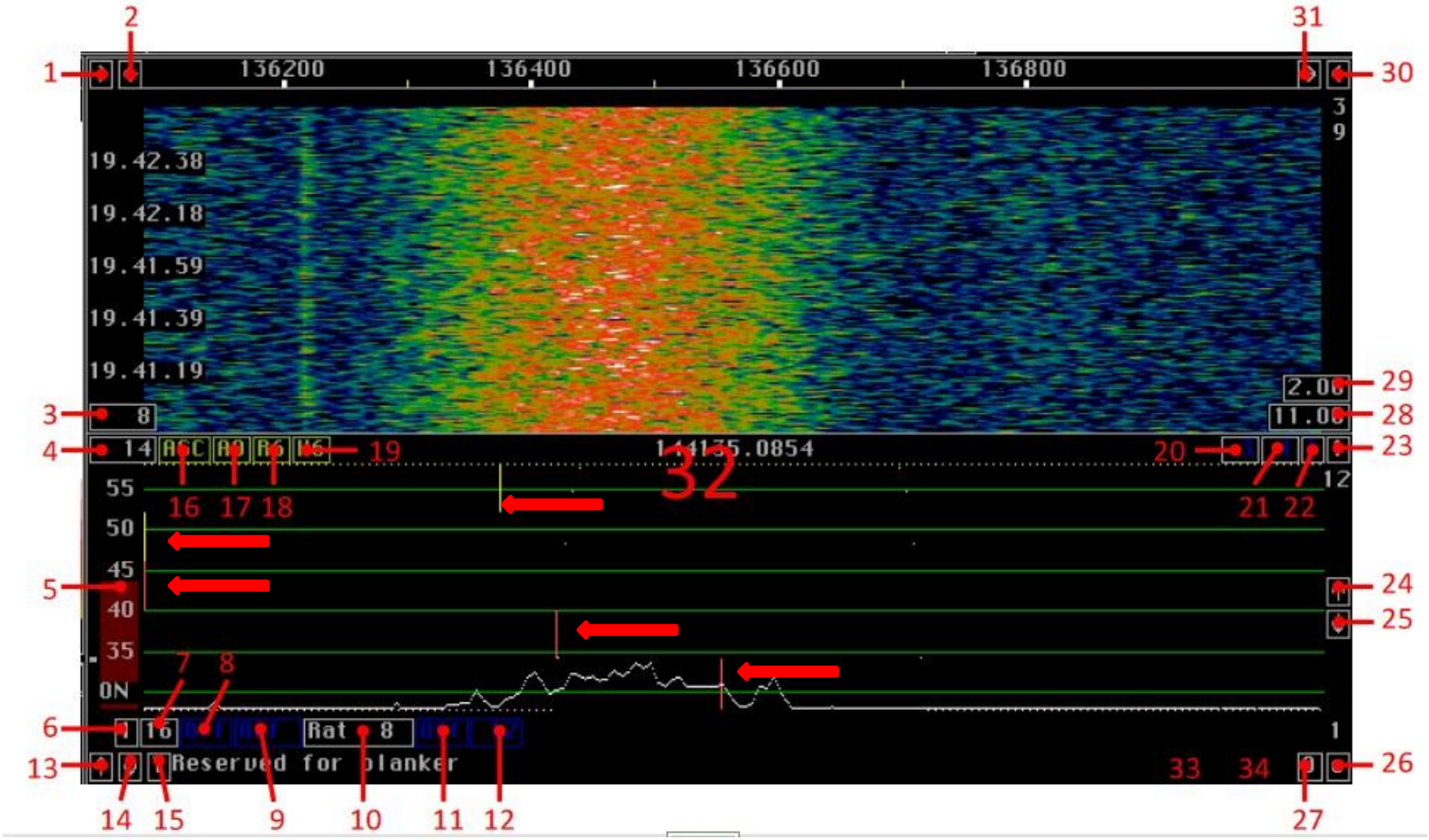
5- PULSANDO CAMBIA ENTRE A/M/-, DEJAR EN «A»

9- LA SEÑAL DEL SISTEMA (VERDE) SIEMPRE TIENE SUPERAR LA BARRA

* - DESPLAZANDO LA BARRA AMARILLA SE ELIGE EL NIVEL DEL NB

+ - EL NIVEL DEL NB DEBE ESTAR ENTRE 1 Y 2, NUNCA SUPERAR 5 Ó 6

AJUSTE FILTRO 3KHZ HACIA WSJT-X



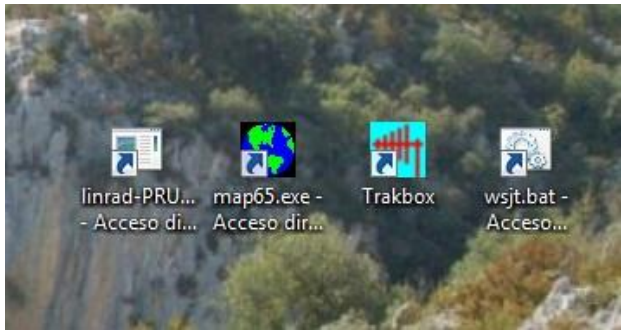
- MOVIENDO LAS BARRAS SE AJUSTA EL PASABANDA DE AUDIO HACIA LA INSTANACIA DE WSJT-X QUE TENEMOS CONECTADA MEDIANTE EL VAC

MI PANTALLA DE LINRAD

- GUÍA DE USUARIO DE ON4KHG

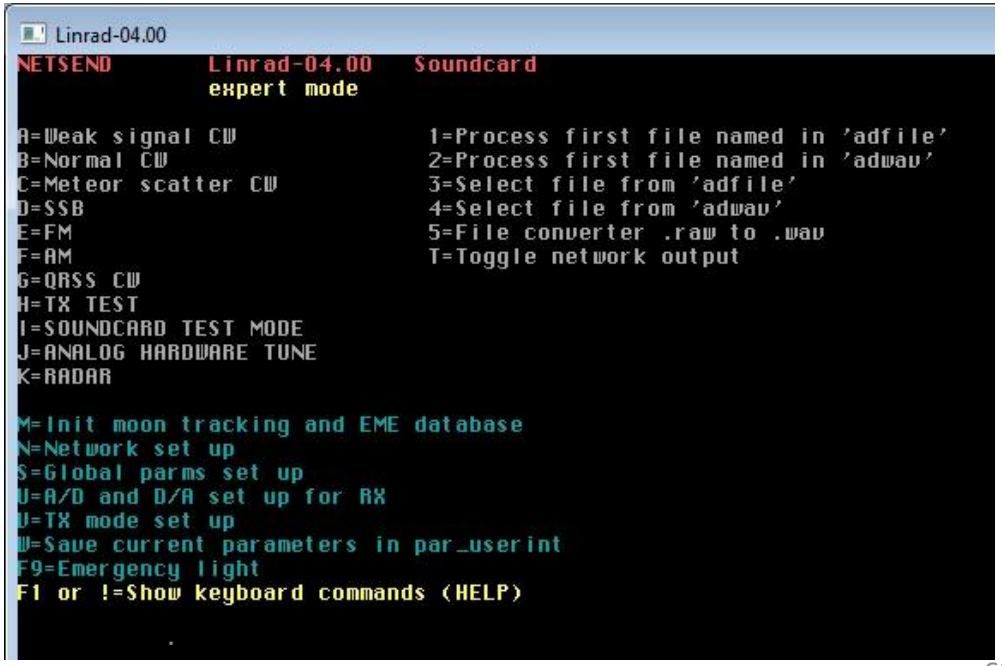
- ESTA ES LA GUÍA MAS COMPLETA PERO ES GENÉRICA Y LINRAD TIENE INFINIDAD DE APLICACIONES

9.- COMO ARRANCAR UNA VEZ TODO CONFIGURADO

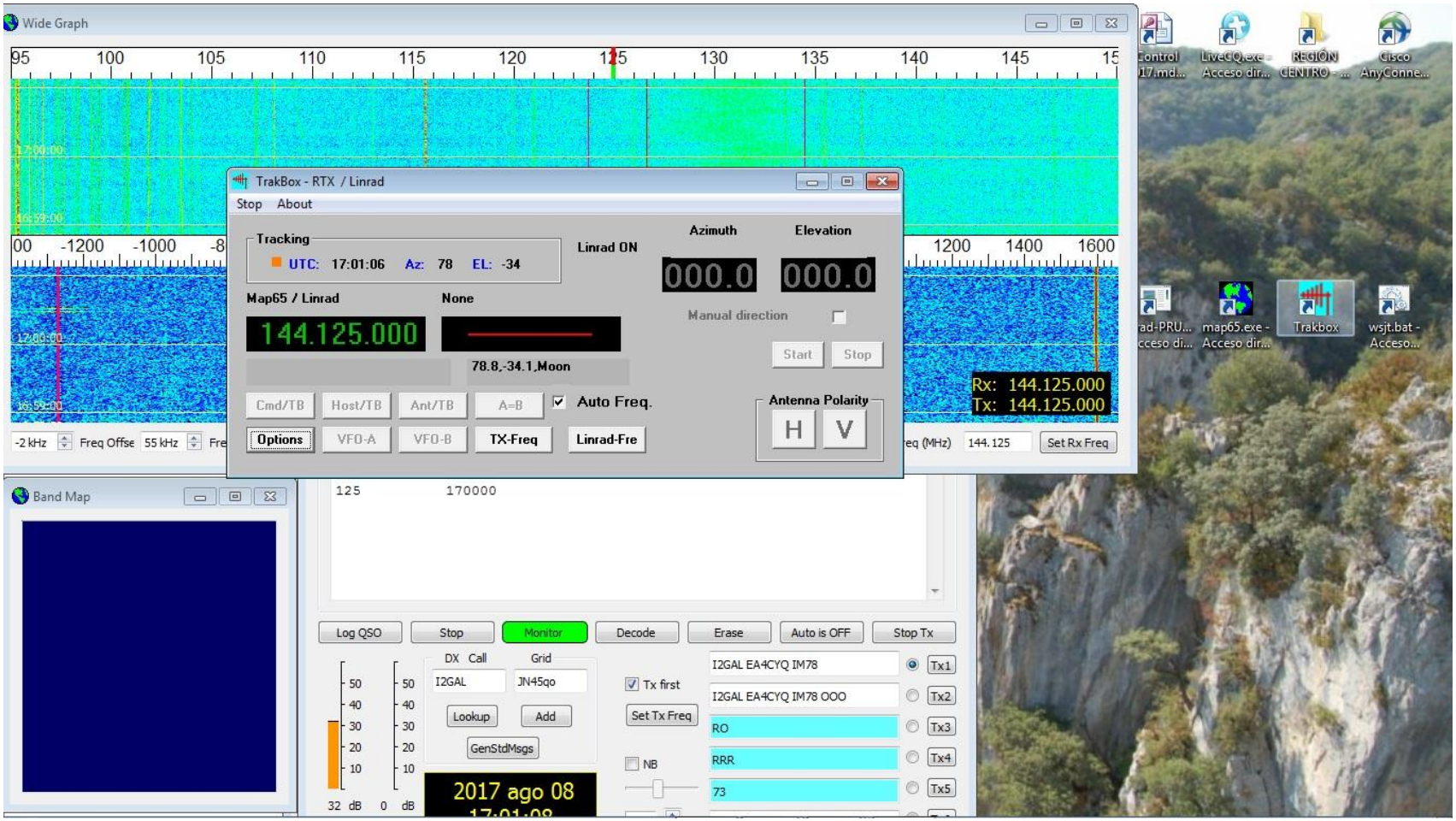


- ARRANCO LINRAD

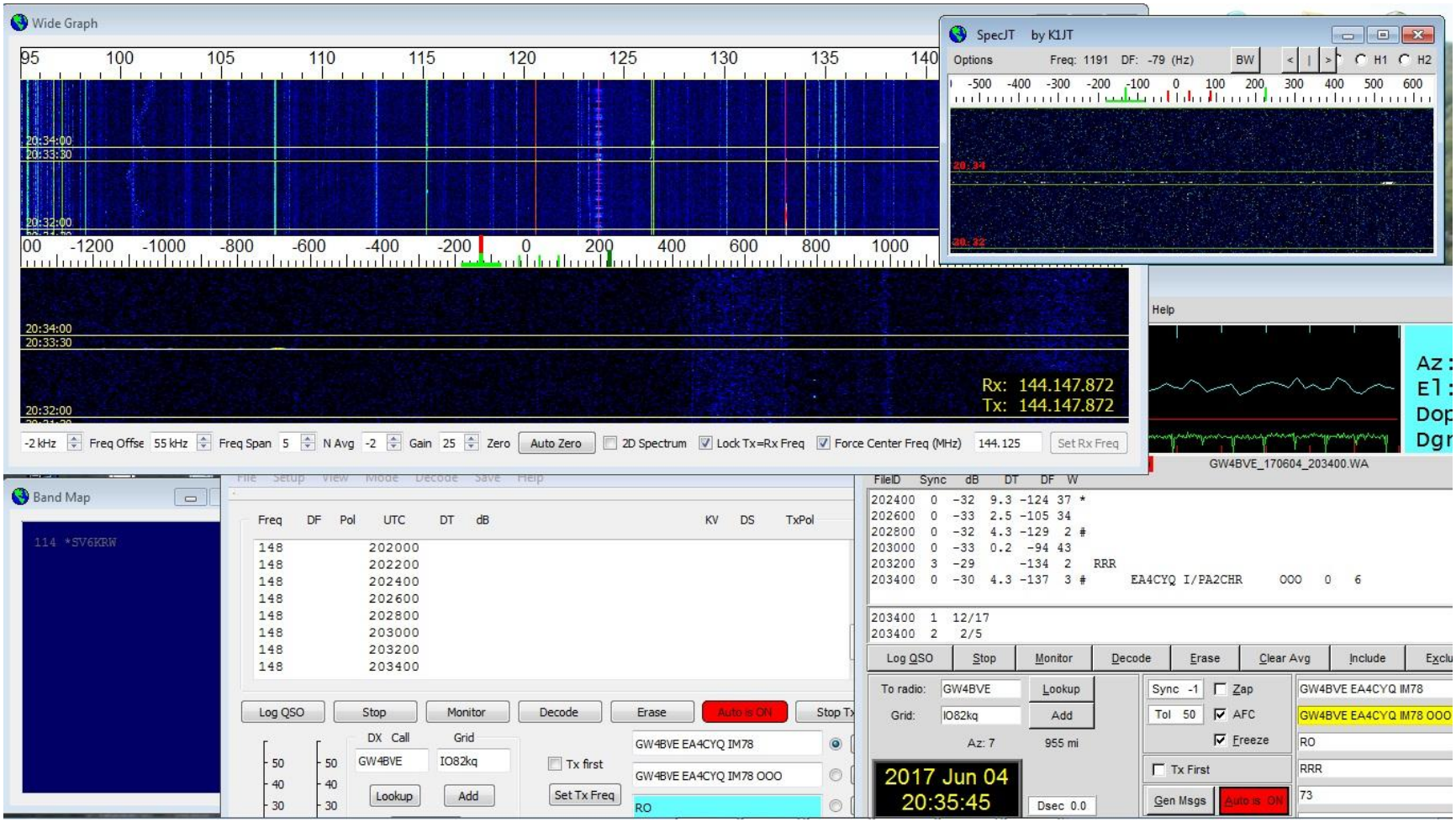
- PULSO «D»



- AJUSTO LA GANANCIA GENERAL DEL SISTEMA
- AJUSTO EL NIVEL DE FILTRO DE NB, QUE DEPENDE DE LA SEÑAL DEL RUIDO
- MINIMIZO LINRAD

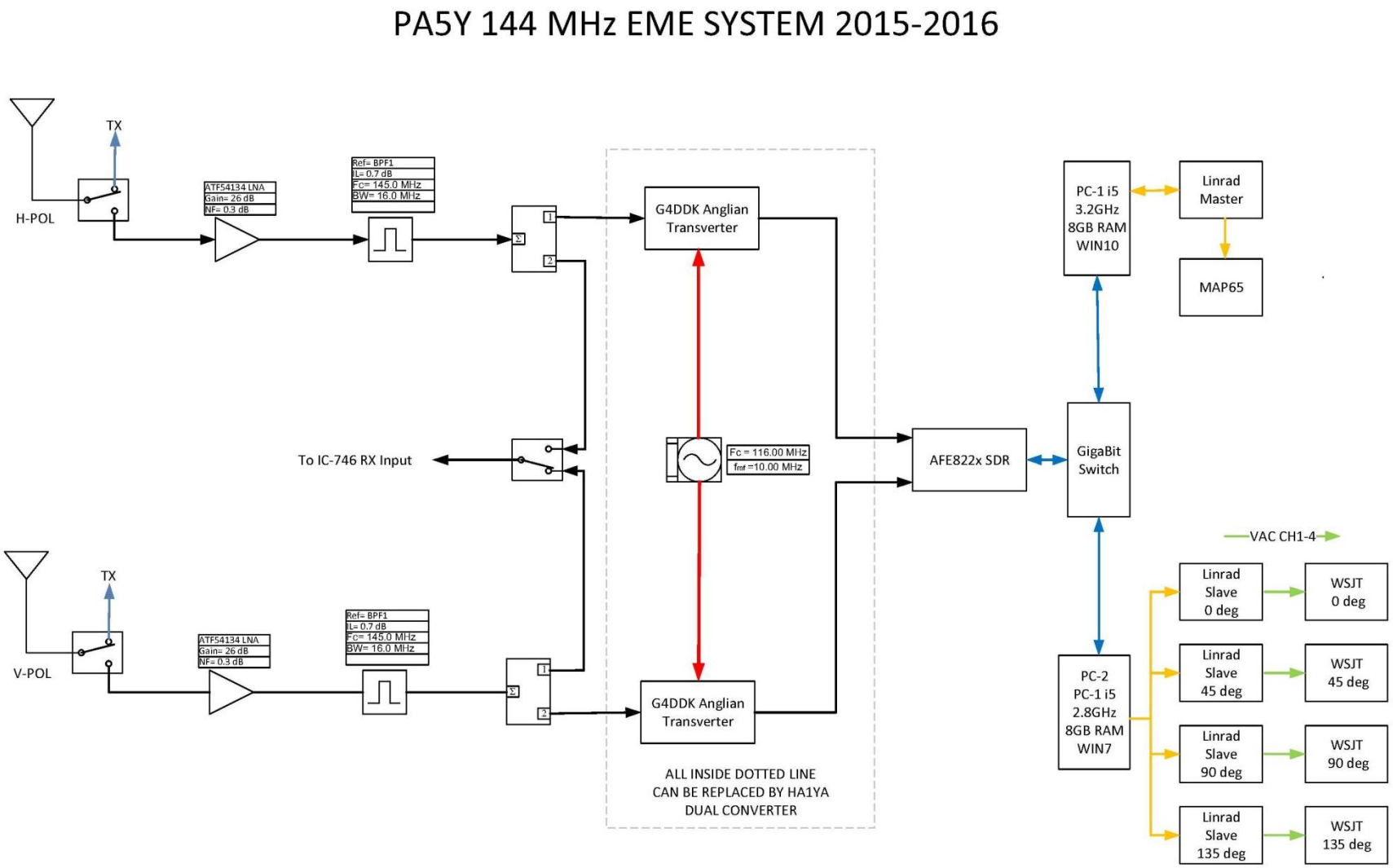


- ARRANCO MAP65
- ARRANCO TRAKBOX Y LO MINIMIZO



- SE ARRANCA WSJT-X Y A FUNCIONAR

10.- INSTALACIÓN DE PA5Y



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Juan Antonio Fernández Montaña