gsbtune.pl / tune.pl

Decimate mode (Digital sub band selection) :

In case of line observations we need to set the digital sub band number and custom LO5/LO4. For this, one can use the script gsbtune.pl / tune.pl from any astro or gtac machines.

COMMAND LINE INPUTS :

bash-3.2$:   /astro/Linux/bin/gsbtune.pl \<line freq\> \<L/H\>

    arg 1 is line freq (RF in MHz).
    arg 2 is LO1 is higher or lower than RF.

   Example

   /astro/Linux/bin/gsbtune.pl 608.5 L

   For help say **/astro/Linux/bin/gsbtune.pl –help**

GUI INPUTS :

1. Line Freq
2. Max. channels
3. IF band width
3. ACQ-BW and final BW
4. digital sub band [step #]

#	IFBW	ACQ BW	Final BW	Sub Band [step#]	Type
1.	32	33.33	33.33/OFF	n=0/OFF	Continuum
2.	16	16.66	16.66/OFF	n=0/OFF	Continuum
3.	16/6	16.66	4.16	n=0...3	Line/Decimate
4.	16/6	16.66	2.08	n=0...7	Line/Decimate
5.	16/6	16.66	1.04	n=0...15	Line/Decimate
6.	16/6	16.66	0.52	n=0...31	Line/Decimate
7.	16/6	16.66	0.26	n=0...63	Line/Decimate
8.	16/6	16.66	0.13	n=0...127	Line/Decimate

5. LO1 Freq.
6. LO5 Freq.
7. Freq display at each ch #
8. <<| or |>> automatically set the line at any digital sub band.
9. SAVE , save the setup in to text file "gsb_line_setup.txt"
10. PLOT is for refresh the plot.

PLOTS

   a) plot # 1
     this plot shows RF band range in red color, green color
     indicates the IF-BW (filter), blue color line is the line freq.
     blue line should be present at the middle of IF filter
     it can be adjusted by moving LO1 freq.

   b) plot # 2
     this plot show the GSB-ACQ window, red color is indicates the
     data signal data, pink line indicates selected sub band, green
     line indicates the digital sub band borders and blue one is line
     freq. Yellow line indicates the no data OR band overlap.

c) plot # 3
   this plot shows the correlator band shape and it should show the
   blue line at the middle of the plot, all band should be covered by red
   plot which is data. There should not be any yellow line, yellow line
   indicates that there is no data or data is overlapped.

d) use auto mode (<<| or |>>) to choose the USEABLE step#
   the step which does not show any yellow line in plot2 and plot3
   then that step is USABEL for the observation. One can find one
   or may steps, then tray to choose the middle step but all steps
   are equal.

   The saved file looks like as follows

GSB line observation setup
RF band= 610 (560 - 670)
LO1= 540 (lower)
IFBW= 6
GSB [ACQ] BW= 16.6666
Total Channel= 512

Line/Center Frequency= 610.4745
CH#[0]= 612.5578
CH#[512]= 608.3912
BW= -4.1666
CW= 8.14 (KHz.)

Digital SubBand/step#= 1 is USEABLE ###
GSB_CONFIG LO5= 135.7754 169.2246
LTA_FILE   L05= 127.4422 177.5578
BASE_BAND LO4= 64.2246 64.2246
tpa 604.2246 604.2246 540 540 64.2246 64.2246

NOTES.

1.
    LO1 freqs 0 to 355 can be changed in steps of 1 MHz.
    LO1 freqs 355 to 1500 can be changed in steps of 5 MHz.
    LO4 freqs 50 to 90 MHz. can be changed in steps of 100 Hz.

2.   IF band width should not be more than ACQ-BW.

For any help please contact to control-room.

(Last update 13mar2012)