DBBC3 Control Software Commands DDC_U mode

Version 125 – 16.06.2020

dbbcif(a|b|c|d|e|f|g|h)=[input[,attenuation[,filter[,target_agc]]]]

Sets configuration for (G)CoMo-IF modules. Parameters:

input: IF input 1 (no downconversion, for direct 0-4 GHz input) (1)
or IF input 2 (with downconversion) (2)
selecting input 1 will disable the Synthesizer tone for the downconversion LO
attenuation: *agc* for automatic gain control
man for manual gain control, retaining last agc value
value between and 0 (0 dB) and 63 (31.5 dB) in stepsize of 0.5 dB
filter: no function for DBBC3, deprecated
target_agc: target power level for agc mode

dbbc(nn)[=freq[,if[,[bw[,tpint]]]]

nn → selection of bbc, from 01 to 128
freq → selection of bbc-frequency, from 0.0 to 4096.0
if → setting of corresponding IF to bbc, only informative value
bw → selection of bandwidth of both sidebands (values: 2, 4, 8, 16, 32, 64, 128)
tpint → total power integration time, from 1 to 60 seconds

The dbbcxx command without parameters gives information about the selected bbc:
DBBCnn/freq,IF,bwd,tpint,gainctrl,gainU,gainL,tpU/calon,tpL/calon,tpUcaloff,tpLcaloff

dbbcgain=bbc[,param1,param2]

bbc → selection of bbc, from 01 to 128, or „all“ to set settings for all bbcs.
param1 → either „agc“ for automatic gain control, „man“ to freeze the current gain settings or gainU (0-255) to set gain for upper sideband to a fixed value
param2 → agc target if agc-mode is selected in param1, gainL (0-255) if gainU is set in param1, left out if manual mode is selected

dbbcgain=bbc gives information about the current settings.

cont_cal[=on/off[,polarity[,freq[,option]]]]

Turns continuous calibration mode on or off.
polarity → 0 | 1 | 2 | 3, hardware level for noise diode ‘on’
0: no polarity change and no display swap
1: polarity change and no display swap
2: no polarity change and display swap
3: polarity change and display swap
freq → rate of noise diode switching (in a range of about 8Hz - 300KHz)
option → 0 = pulsed, 1 = output always ON

dbbctp(a|b|c|d|e|f|g|h)

Prints out DSC total power values to test cont_cal mode:
DSC total power, DSC total power off, DSC total power on

core3hstats=board

Gives information about DSC total power, bit statistics and phase correlation values for specified board.

dsc_tp=board

Prints out DSC total power values of selected board of all four samplers.

dsc_corr=board

Prints out DSC correlation values of selected board to check correct phase of the samplers.

dsc_bstat=board,sampler

Prints out DSC-Statistics of selected board and sampler

mag_thr=bbc[,value]

Sets the threshold factor for the continuous threshold calibration of selected bbc.
Default is 2.8

time

Prints out time stamps from all Core3H to check for correct time synchronization

pps_sync

Synchronizes bbcs with pps. Should be used with care! pps_synchronization is done automatically at the start of the control software, should be done only directly after a reinitialization of all cores if done manually. Restarting the control software without rewriting the Core3H-Firmware is the safer approach.

pps_delay[=board]

Gives information about the pps delay of the first block of each Core3H module (in ns). Called with a board-number it gives the pps-delay of all four blocks of the specified board.

checkphase[=board]

Checks the delay-phase calibration of each ADB3L sampler board. If a board number is specified, only this board will be checked.

exit

Exit client program

reconfigure

Reconfigures Core3H, than reinitializes ADB3L and Core3H and does a PPS sync.

core3hread=board,block,bbc,register

Reads out register value from selected board, block, bbc and register.

core3hwrite=board,block,bbc,register,value

Writes value to selected register in selected board, block and bbc.

cal_offset=board

Calibrates the offset for selected ADB3L. The GCoMo connected to this ADB3L should be set to an attenuation with 5-10k powerlevel to get optimal calibration.

cal_gain=board

Calibrates the gain for selected ADB3L. The CoMo connected to this ADB3L should be set to default attenuation (32k power level) to get optimal calibration.

cal_delay=board

Calibrates the delay for selected ADB3L. The CoMo connected to this ADB3L should be set to low attenuation (32k power level) to get optimal calibration.

adb3l=command

Sends specified command to adb3l, selection of ADB3L is included in the command

core3h=board,command

sends specified command to selected Core3H

synth=board,command

sends specified command to selected GCoMo Synthesizer (1-4)

adb3linit

reinitializes all ADB3L from ADB3L config file

core3hinit=[board]

Reinitializes selected Core3H (starting with 1) from Core3H config files or all Core3H if board parameter 0 is specified.

synthinit

Initializes Valon synthesizers if GCoMo is present, using values from the config file.

dbbcdpfu=#bbc/all[,dpfu_usb,dpfu_lsb]

Set DPFU value for SEFD measurement. Can be set for an individual BBC(1-128) or for all BBCs (all). Value is in (K/Jy). Seperate values for USB and LSB can be set. If only the bbc is specified, the current DPFU values are returned.

dbbctp0=#bbc/all[,tp0]

Set TP0 value for Tsys measurement. Can be set for a single BBC(1-128) or for all BBCs at once. TP0 Value has same dimension as the total power values given by dbbcXX commands. If only the bbc number is specified, the current values are returned.

dbbctdiode=#bbc/all[,Tdiode_usb,Tdiode_lsb]

Set T_Diode values for Tsys measurement. Can be set for a single BBC(1-128) or for all BBCs at once. Seperate Values for USB and LSB can be set. Value is in (K). If only the bbc number is specified, the current values are returned.