rspctl

Help Listing

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[user9@DE601C StationConfigs]$ rspctl --help
rspctl usage:

--- RCU control ------------------------------------------
------------------------------------------------
rspctl --rcu                          [--select=<set>]  #
show current rcu control setting
rspctl --rcu=0x00000000               [--select=<set>]  # set
the rcu control registers
  mask       value
  0x0000007F INPUT_DELAY  Sample delay for the data from
the RCU.
  0x00000080 INPUT_ENABLE Enable RCU input.

  0x00000100 LBL-EN       supply LBL antenna on (1) or off
(0)
  0x00000200 LBH-EN       sypply LBH antenna on (1) or off
(0)
  0x00000400 HB-EN        supply HB on (1) or off (0)
  0x00000800 BANDSEL      low band (1) or high band (0)
  0x00001000 HB-SEL-0     HBA filter selection
  0x00002000 HB-SEL-1     HBA filter selection
                Options : HBA-SEL-0 HBA-SEL-1 Function
                            0          0      210-270 MHz
                            0          1      170-230 MHz
                            1          0      110-190 MHz
                            1          1      all off
  0x00004000 VL-EN        low band supply on (1) or off (0)
  0x00008000 VH-EN        high band supply on (1) or off
(0)

  0x00010000 VDIG-EN      ADC supply on (1) or off (0)
  0x00020000 LBL-LBH-SEL  LB input selection 0=LBL, 1=LBH
  0x00040000 LB-FILTER    LB filter selection
                           0    10-90 MHz
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                            1    30-80 MHz
  0x00080000 ATT-CNT-4    on (1) is  1dB attenuation
  0x00100000 ATT-CNT-3    on (1) is  2dB attenuation
  0x00200000 ATT-CNT-2    on (1) is  4dB attenuation
  0x00300000 ATT-CNT-1    on (1) is  8dB attenuation
  0x00800000 ATT-CNT-0    on (1) is 16dB attenuation

  0x01000000 PRSG         pseudo random sequence generator
on (1), off (0)
  0x02000000 RESET        on (1) hold board in reset
  0x04000000 SPEC_INV     Enable spectral inversion (1) if
needed. see --specinv
  0x08000000 TBD          reserved
  0xF0000000 RCU VERSION  RCU version, read-only

rspctl [ --rcumode        |
         --rcuprsg        |
         --rcureset       |
         --rcuattenuation |
         --rcudelay       |
         --rcuenable      |
       ]+ [--select=<set>] # control RCU by combining one
or more of these options with RCU selection

       --rcumode=[0..7] # set the RCU in a specific mode
         Possible values: 0 = OFF
                          1 = LBL 10MHz HPF 0x00017900
                          2 = LBL 30MHz HPF 0x00057900
                          3 = LBH 10MHz HPF 0x00037A00
                          4 = LBH 30MHz HPF 0x00077A00
                          5 = HB 110-190MHz 0x0007A400
                          6 = HB 170-230MHz 0x00079400
                          7 = HB 210-270MHz 0x00078400
       --rcuprsg[=0]              # turn psrg on (or off)
       --rcureset[=0]             # hold rcu in reset (or
take out of reset)
       --rcuattenuation=[0..31]  # set the RCU attenuation
(steps of 0.25dB)
       --rcudelay=[0..127]       # set the delay for rcu's
(steps of 5ns or 6.25ns)
       --rcuenable[=0]           # enable (or disable)
input from RCU's
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rspctl --specinv[=0] [--select=<set>] # enable (or disable)
spectral inversion

--- Signalprocessing ----------------------------------
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rspctl --weights                    [--select=<set>]  # get
weights as complex values
  Example --weights --select=1,2,4:7 or --select=1:3,5:7
rspctl --weights=value.re[,value.im][--select=<set>][--
beamlets=<set>] # set weights as complex value
rspctl --aweights                   [--select=<set>]  # get
weights as power and angle (in degrees)
rspctl --aweights=amplitude[,angle] [--select=<set>]  # set
weights as amplitude and angle (in degrees)
rspctl --subbands                   [--select=<set>]  # get
subband selection
rspctl --subbands=<set>             [--select=<set>]  # set
subband selection
  Example --subbands sets: --subbands=0:39 or --
select=0:19,40:59
rspctl --xcsubband                                    # get
the subband selection for cross correlation
rspctl --xcsubband=<int>                              # set
the subband to cross correlate
rspctl --wg                         [--select=<set>]  # get
waveform generator settings
rspctl --wg=freq [--phase=..] [--amplitude=..] [--
select=<set>]  # set waveform generator settings

--- Status info ---------------------------------------
-------------------------------------------------
rspctl --version             [--select=<set>]  # get
version information
rspctl --status              [--select=<set>]  # get status
of RSP boards
rspctl --tdstatus            [--select=<set>]  # get status
of TDS boards
rspctl --spustatus           [--select=<set>]  # get status
of SPU board
rspctl --realdelays[=<list>] [--select=<set>]  # get the
installed 16 delays of one or more HBA's
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rspctl --regstate                                  # show
update status of all registers once every second
rspctl --latency                                   # show
latency of ring and all lanes

--- Statistics -------------------------------------------
--------------------------------------------------
rspctl --statistics[=(subband|beamlet)]        # get
subband (default) or beamlet statistics
             [--select=<set>]                  #
             [--duration=<seconds>]            #
             [--integration=<seconds>]         #
             [--directory=<directory>]         #
rspctl [--xcangle] --xcstatistics  [--select=first,second]
# get crosscorrelation statistics (of pair of RSP boards)
             [--duration=<seconds>]            #
             [--integration=<seconds>]         #
             [--directory=<directory>]         #

--- Miscellaneous ----------------------------------------
--------------------------------------------------
rspctl --clock[=<int>]                             # get or set
the clock frequency of clocks in MHz
rspctl --rspclear           [--select=<set>]   # clear FPGA
registers on RSPboard
rspctl --hbadelays[=<list>] [--select=<set>]   # set or get
the 16 delays of one or more HBA's
rspctl --tbbmode[=transient | =subbands,<set>] # set or get
TBB mode, 'transient' or 'subbands', if subbands then
specify subband set
rspctl --splitter[=0|1]                            # set or get
the status of the Serdes splitter
rspctl --datastream[=0|1|2|3]                      # set or get
the status of data stream to cep
rspctl --swapxy[=0|1] [--select=<set>]         # set or get
the status of xy swap, 0=normal, 1=swapped
rspctl --bitmode[=4|8|16]                          # set or get
the number of bits per sample
```