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Commands:
ACAL ..... Starts Auto Calibration
ACQADC ..... Writes to the FPGA ACQADC register
CEEWRER ..... Clears the Write EEPROM error
CLRCAL ..... Clear Calibration Data from EEPROM, Energy Specific
CLRALLCAL ..... Clear All Calibration Data for All Energies from EEPROM
CLRIONRAW ..... Clear the Ion raw data buffer
EXQP n ..... Trip EXQ After 'n' Beam Pulses. 'n' MIN = 1, MAX = 32767
EXQT n ..... Trip EXQ After Elapsed Time. 'n' = (n * 100ms), MIN = 1, MAX = 1000
FON ..... Force ON, Commands Auto-Cal to use 1V Targets, Energy Specific
FOFF ..... Force OFF, Turns Force 1V Targets OFF, Energy Specific
RDAVGION ..... Reads Ion Diff, Ion A, and Ion B and averages
RDBCD ..... Reads the BCD, HDTSE code
RDBDID ..... Reads the EEPROM and FPGA Board ID
RDCAL ..... Reads Calibration Ion Data
RDCB ..... Reads Calibration Button State
RDDAC ..... Reads the EXQ and STRG DAC prog value
RDEC BcdHdtse .... Reads calib data from the EEPROM for energy index=BcdHdtse
RDEE2 addr ..... Reads a 16-bit data from EEPROM at addr
RDEEALL ..... Reads all data from EEPROM
RDEEPG n ..... Reads 10 EEPROM Pages starting at 'n', MIN = 1, MAX = 512, 1 Page = 64 bytes
RDEXQ ..... Reads the EXQ error structure
RDFG ..... Reads the Selected Energy's Filter-Gain Start Value
RDFPGA addr ..... Reads FPGA at addr
RDHVON ..... Reads HVON status
RDINTCNT ..... Reads the FPGA INTRLKPRCNT register
RDIONA n ..... Reads the FPGA ADC12ALB and ADC12AHB registers, 'n' = number of times to average, 1 to 100
RDIONB n ..... Reads the FPGA ADC12BLB and ADC12BHB registers, 'n' = number of times to average, 1 to 100
RDIONDIFF n ..... Reads the FPGA ADC16LB and ADC16HB registers, 'n' = number of times to average, 1 to 100
RDIONEE L,S ..... Reads the EE Raw Ion Data Buffer, L = LOG, 1 to 3. 1 = Most Recent. S = Scale Ion Diff, 1 = Scaling, 0 = NO Scaling
RDIONRAW n,S ..... Reads the last N entries of the raw Ion data buffer. S = Scale Ion Diff, 1 = Scaling, 0 = NO Scaling
RDLIM ..... Reads and Displays Auto-Cal Window Limit Data
RDLOG n ..... Reads the last N error log entries
RDPGA ..... Read the PGA Gain
RDQUAD n ..... Read the Quad ADC per the requested channel
RDRLY ..... Reads the Relay input and output
RDRS ..... Reads the Last Command sent to the writeRelay Function
RDSYMM ..... Reads the Symmetry output
RDTIME ..... Read the timestamp from RTCC and the EEPROM

RDWNTRIP ..... Reads the Symmetry Value and Ion Diff Value at the time of Window Trip
RDW1 ..... Reads the state of the W1 jumper input
RDW3 ..... Reads the state of the W3 jumper input
RECAL ..... Reads Engineering Data From the Most Recent Calibration
RESET ..... Resets the Firmware
SELPGA n ..... Select Programmable Gain index (0-7)
SKIP n..... Skip 'n' number of beam pulses between logged beam pulse data, Max 500
SLEW n..... 1=Slew Positive, -1=Slew Negative, or 'n' can be any value betwee -6000 to 6000 inclusive, in mV
VER ..... Reads the firmware and FPGA version and code CRC
WAIT n ..... Wait 'n' number of beam pulses from Beam On before logging beam pulse data, MAX 32767
WRBDID ..... Write the board ID (INTRLKPRCNT D4) to EEPROM
WREXQDAC mvolts .. Writes data to EXQ DAC to generate millivolts output
WRFG n ..... Sets the Initial Steering DAC value 'n' for finding 0V Symmetry, 'n' range 1mV to 10mV in 1mV steps
WRLED3 ..... Write LED3, 1=ON, 0=OFF
WRLED4 ..... Write LED4, 1=ON, 0=OFF
WROFST n ..... Write Ion Diff Offset to EEPROM, n = Offset, range -32768 to 32767, Energy Specific
WRRLY 1=ON, 0=OFF Turn on/off the relay
WRSTDAC mvolts ... Writes data to Steering DAC to generate millivolts output with 76uV precision and A In»X+‹command

Angle Steering Interlock PCB

Data not valid if CALIBRATION in progress.

BCD / HDTSE ..... = 0x02

Ion A ..... = 268 mV
Ion B ..... = 269 mV
ABsum ..... = 537 mV
Iondiff Scaled ..... = -291 rc
IonDiff raw ..... = -239 rc
IonDiff offset ..... = 15 rc
IonDiff minus offset = -254 rc