

APPENDIX F – REVIEW Q330 SOH and WAVEFORM CHANNELS

	Channel Name	Conversion	Description	others
STATE OF HEALTH CHANNELS	<i>ACE</i>	<i>miniseed; not a time series</i>	<i>VCO quality expressed as SEED timing blockette 500</i>	
	<i>LCE</i>	<i>1 microsecond / count</i>	<i>Absolute clock phase error</i>	
	<i>LCQ</i>	<i>1 % / count</i>	<i>Clock quality</i>	<i>GPS lock interval (pql –m filename)</i>
	<i>LOG</i>	<i>miniseed; not a time series</i>	<i>State of health expressed as ASCII miniseed records</i>	<i>Largest time jump after initial lock/adjustment (qlog logfilename grep –i jump)</i>
	<i>OCF</i>	<i>miniseed; not a time series</i>	<i>Q330 configuration parameters expressed as opaque data records (B2000)</i>	
	<i>VCO</i>	<i>Count / count</i>	<i>VCO control voltage</i>	
	<i>VEA</i>	<i>1 milliamp / count</i>	<i>GPS antenna current</i>	
	<i>VEC</i>	<i>1 milliamp / count</i>	<i>Q330 system current</i>	
	<i>VEP</i>	<i>150 millivolt / count</i>	<i>Input (system) voltage</i>	
	<i>VKI</i>	<i>1 celsius / count</i>	<i>Q330 system temperature</i>	
	<i>VMU</i>	<i>100 millivolt / count</i>	<i>Boom position of Z or U component</i>	
	<i>VMV</i>	<i>100 millivolt / count</i>	<i>Boom position of N or V component</i>	
	<i>VMW</i>	<i>100 millivolt / count</i>	<i>Boom position of E or W component</i>	
	<i>VPB</i>	<i>0.1 % / count</i>	<i>Q330 buffer usage</i>	<i>Baler dump % or time interval (pql –m filename)</i>
Waveform channels	<i>?H?</i>	<i>Trace sample rates : (mseedhdr filename grep sps) ; Station name in trace headers (sdrsplt –C filename) Network code in trace headers (sdrsplt –C filename) ; Channel name in trace headers (sdrsplt –C filename) Location code in trace headers (sdrsplt –C filename)</i>		
	<i>?H? & LOG</i>	<i>Unexplained gaps (mseedgap –r samprate –f filename and qlog logfilename grep –i “last boot”; qlog logfilename grep –i jump) **</i>		

TABLE 1 – Q330 State of health channels and waveform channels – what they mean and how to look at them

CHECK	What -specifics	How to identify the problem	How to fix it	Other suggestions?
Timing issues	Timing errors larger than half the sample rate.	Use the pql to chec clock quality SOH channels on Q330 (*LC*) <my_cpu> pql -m *LC*	Send us an e-mail: passcal@passcal.nmt.edu or data_group@passcal.nmt.edu . Describe the problem: send an example, log files, any information that can help to identify the problem and find a solution.	
	No GPSLOCK, Timing questionable	Looking at the % of data quality in the log files <60% questionable	With <i>fixhdr</i> you can set up flags to the specific time. Please read the help for fixhdr, and identify time spans with questionable timing.	
Check for power problems and system reboots	Is the voltage dropping down in time?	Use pql to view the station’s current, voltage, and temperature channels. <my_cpu> pql -m *.VE?* *.VKI*	This helps mainly to keep in mind for further services. Feel free to e-mail us at: passcal@passcal.nmt.edu or data_group@passcal.nmt.edu	
	How many reboots do you see in the logs? What are they related to?	Use qlog to search for System Reboots. <my_cpu> qlog *LOG* grep -i "last boot" more	Please speak up if you have any questions.	
Geographic location	Just to know the location from the log files	Use qlog to identify location as follows: <my_cpu> qlog *LOG* grep "(Latitude: Longitude: Height:)" more		
Averaging geographical location		Using gpsq330locate (contributed antelope software from Gary Pavlis) <my_cpu> man gpsq330locate q330gpslocate - estimates station location from Q330 log file		
Endianess	Everything should be BIG endian	Using fixhdr, build a db and check Endianess. If BIG endian, data are OK. If not BIG, please convert from little to big endian. You may run into this issue if you processed your data on a linux machine.		

TABLE 2 – Q330 channels - What to look at from the state of health channels and waveforms.

When evaluating the quality of your data, you may find that you lack GPS information partly or completely for one or multiple stations in your network.