28 Freepoint Service

Warning!

The warrior panel supports motorized and non-motorized frepoint tools depending on a combination of panel type and installed boards. Before importing a freepoint service check the panel type in the warrior control panel.
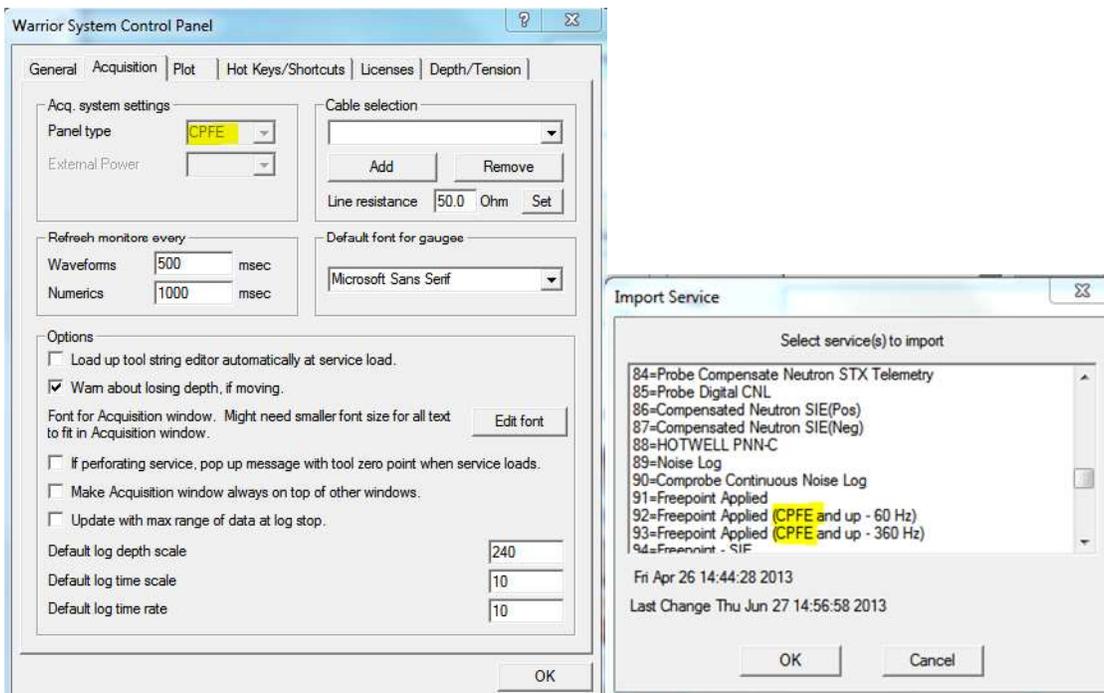
FIG:28.1 Frepoint Service must match Panel Type

28.1 FREEPOINT Service CPFE and newer panels.

The current warrior system uses a combination of TELA board and the DSP for the freepoint service. Currently there is a 500ma limit for setting the tool, if your freepoint tool requires more current to set it, you will require an external panel. Supported tools include Applied Electronics Bowspring and Magnetic tools

and Homco tools. Other models of Freepoint tools could also be setup in the Warrior system if the frequency of the transponder is known.

When the Freepoint service is first started, the window show below will appear. This is the Freepoint service control panel. It shows a graphical representation of the Freepoint output and a text output. It has selection buttons that allow one to select whether the next station is to be run is to be torque or stretch. There are three large buttons that control the Freepoint tool setup, starting and stopping time log passes, and station manager access.

28.1.1   FREEPOINT CONTROL PANEL
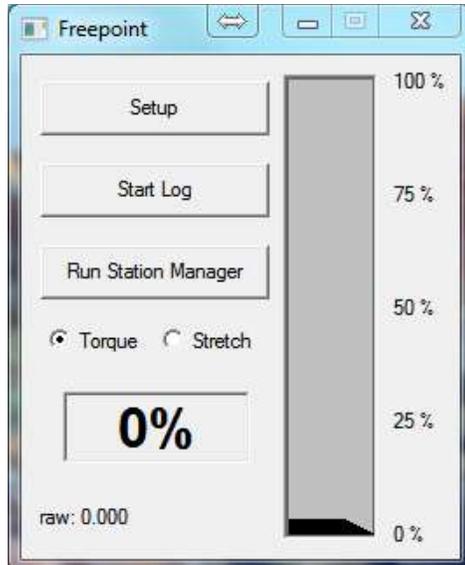
FIG: 28.2 Freepoint Control panel

28.1.2   FREEPOINT TOOL SETUP
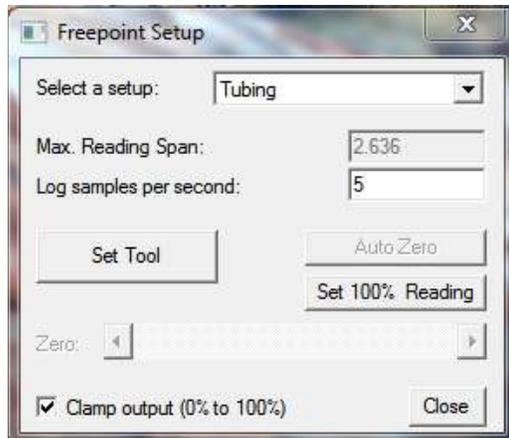
FIG: 28.3 Freepoint Setup

When the **Setup** button on the Freepoint control panel is pressed, the window shown below will appear. This is the Freepoint setup control panel. Up to five different setups may be saved. Which setup is used may be selected by clicking on the dropdown box and choosing from Heavy Drill Pipe, Drill Pipe, Large

Casing, Small Casing, and Tubing. Any changes made to the log sample rate or reading for 100% movement will be saved to the setup that has been selected.

A normal sample rate for the log should be set to 5 to 10 samples per second.

The 100% movement box is used to control the sensitivity of the response similar to the gain knob on an analog panel. Note that the lower the number the more sensitive the response will become. This does not have to be a whole number and may contain a decimal point (2.75 would be valid).

The Set Tool button engages power supply in the interface panel and temporarily applies a DC voltage to the line to set the Freepoint tool. Note that the tool power switch on the interface panel must be on and the 'Neg, Auto, Pos" switch must be in Auto position.

The Zero slide bar is used to set the zero position of the output before the log pass is started and torque or stretch is applied to the casing.

There is an optional check box to clamp the Freepoint output to 0% to 100% so that it does not go off of the page on the log.

28.1.3 Running the Service

Once the Freepoint service has been selected and the tool lowered into the well to a depth where the casing is known to be free, the tool should be set and the output zeroed. Stretch or torque should be put on the casing and the 100% movement number adjusted to get near a 100% output reading.

This should be repeated until you are satisfied that the equipment is responding correctly in free pipe. Once satisfied, the 100% Movement number should not be changed while recording stations.

You are now ready to record the first station. Click the Start Log button on the Freepoint Control panel. The system will start recording on time. Have the rig apply torque or stretch and the output will be recorded. When you have seen the tool response, click the Stop Log button to stop the pass. The minimum and maximum Freepoint readings will be entered into the Station Manager table at the encoder depth (note that since the encoder depth is used. You can only simulate a log by using the encoder and resetting the depth before each pass).

Drop down the well to the depth that you wish to make the next pass and repeat the process. Make as many passes as desired to determine the Freepoint location in the well. Each pass will have the maximum output entered into the station manager table.

The depths at which you run the stations do not have to be in descending order. You would normally start at the top of the well, and start doing stations going down. Once stuck pipe is found, you can come back up to a depth between there and your last free pipe station to refine the stuck depth. Whatever order the stations are run, they will be entered into the Station Manager table in descending order.

28.1.4 Station Manager

FIG: 28.4 Freepoint Table

As each station is run, the minimum and maximum values are placed into the station manager table. Notice that the stations can be done in any order but are placed into the table in descending order.

Once a station has been entered into the table. It can be viewed and edited. Any field except the station # can be edited. This can be useful to make your final presentation more acceptable. There is a check box to disable the station so that it will not be included in the final log presentation in the event that the tool slipped or something else occurred to make the station invalid.

When all of the stations have been edited as desired, the final log presentation can be made by clicking the **Generate** button, and then click the **Depth Log** button.
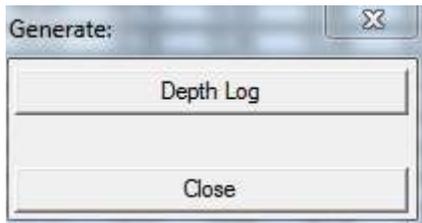
FIG: 28.5 Generate
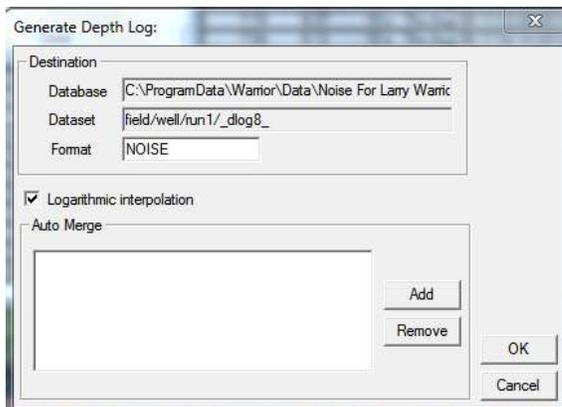
FIG: 28.6 Generate Depth

There is a check box for Logarithmic Interpolation that will produce a slight smoothing effect to the output curves. Additional curves from the same database, such as a CCL or gamma ray, can be auto merged into the output. When the **OK** button is clicked, the interactive plot will be presented on a ½" /100' scale.

Using the Plot Job Editor, a presentation can now be made for the customer. This will normally include a heading, the Freepoint survey table, the generated depth log. The individual station passes could also be included and a tool string diagram if desired.

28.2 FREEPOINT With CPFD and older panels.

The main difference between the CPFD and CPFE panels with reguards to the freepoint service is the CPFD has an auxiliary transformer and a Freepoint board. The auxiliary transformer can supply up to 1000ma to set the tool. The operation is the same except that the tool power supply does not need to be turned on to set the tool since the auxiliary transformer produced the set current and is enabled by a software controlled relay.
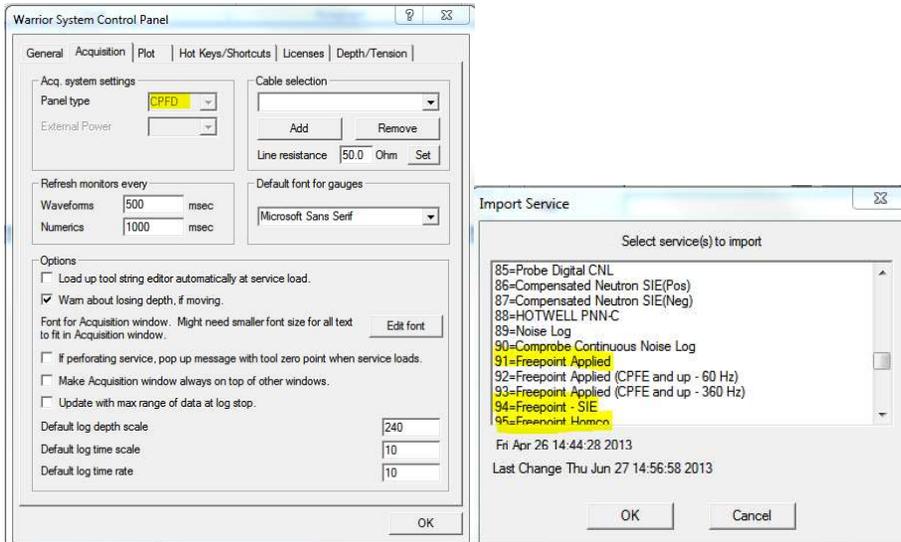
FIG:28.7 Frepoint Service must match Panel Type

28.2.1   Running the Service

The logging operation of the service is the same as earlier Freepoint services.
See section 28.1.3

28.3 Freepoint Service Homco-GO

The Warrior system supports Freepoint tools that require minimum DC voltage for motorized deployment. This includes Applied Electronics Bowspring and Magnetic tools, and Homco tools. Other models of Freepoint tools could also be setup in the Warrior system if the frequency of the transponder is known.

28.3.1   FREEPOINT CONTROL PANEL
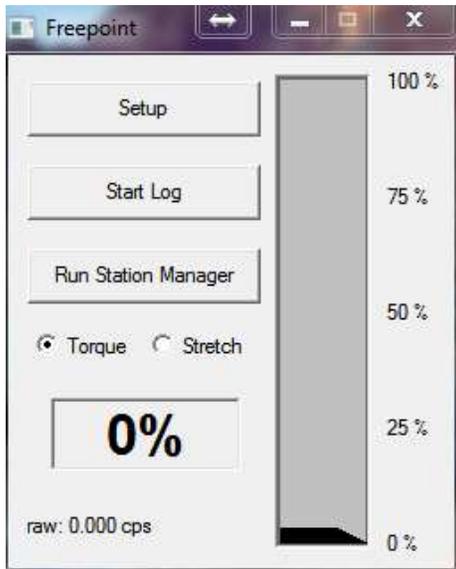
FIG: 28.8 Freepoint Control panel

The Freepoint control panel appears the same as the control panel used for other freepoint tools. The difference is when you select the setup button you have an added slider for the 100% reading.

28.3.2 FREEPOINT TOOL SETUP
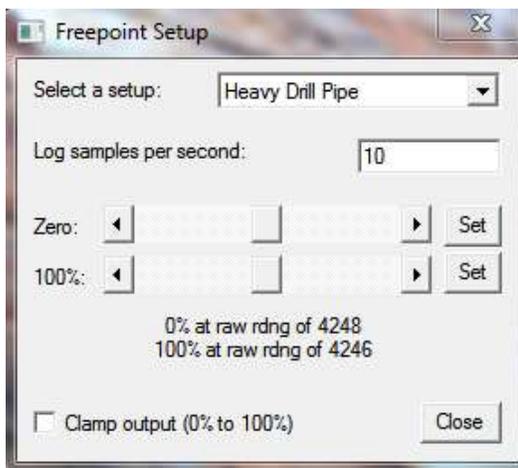
FIG: 28.9 Freepoint Setup

When the **Setup** button on the Freepoint control panel is pressed, the window shown below will appear. This is the Freepoint setup control panel. Up to six different setups may be saved. Which setup is used may be selected by clicking on the dropdown box and choosing from Heavy Drill Pipe, Drill Pipe, Large Casing, Small Casing, collars, and Tubing. Any changes made to the log sample rate or reading for 100% movement will be saved to the setup that has been selected.

A normal sample rate for the log should be set to 5 to 10 samples per second.

The Zero slider bar is used to set the frequency for when no torque or stretch is applied. The 100% slider bar is used to set the frequency for the maximum Torque or Stretch to be used.

There is an optional check box to clamp the Freepoint output to 0% to 100% so that it does not go off of the page on the log.
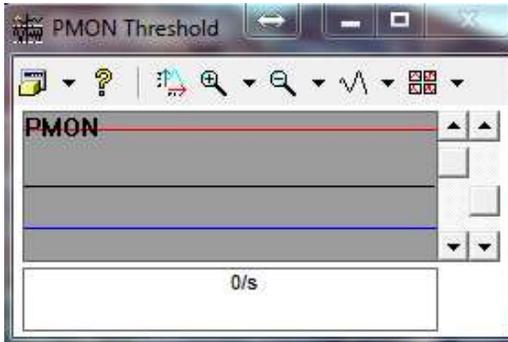
FIG: 28.10 Freepoint PMON Threshold

Remember that the signals in the PMON (pulse monitor) window need to be discriminated properly, similar to a gamma/ neutron service.

28.3.4   Running the Service

The logging operation of the service is the same as earlier Freepoint services.
See section 28.1.3