

Tuning Furuno Sounders for optimal performance

Furuno sounders have been designed with the best in processing technology, meaning even the weakest signals are able to be displayed giving users real control on the picture quality in all depths the sounder is capable of. With over 50 years experience in building commercial grade performance and reliability into sounders and sonars, we will now show you how to make the most of it.

Firstly the sounder will have to be taken out of Auto mode, as we want to now control the gain, clutter and other processing features available. Here is a list of the features and a short description of their purpose that will be used to provide the best picture.

Range

- Range and Shift are the tools required to see depths on the screen. Essentially as depth changes the range must be increased or decreased to suit. Shift will allow movement within selected range scales. As with Furuno sounders range scales are adjustable, it is preferable to change them if necessary to suit common bottom fishing depths.

Gain

- This is the primary adjustment for sensitivity of the receiver. As a general rule the greater the depth the higher the gain setting and visa versa for shallower depths. If gain is set too low targets will be missed; too high and the screen will be cluttered and illegible. It is important to note that increasing gain will not generally increase output power to the transducer. Most sounders output the same power regardless of depth.

Clutter

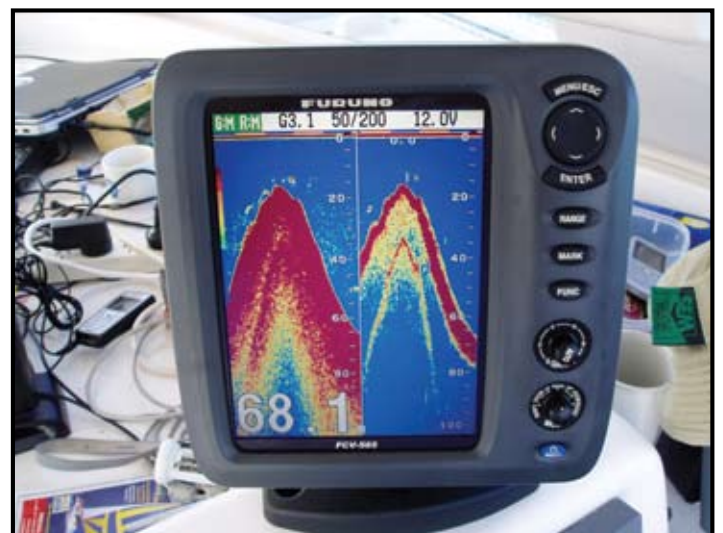
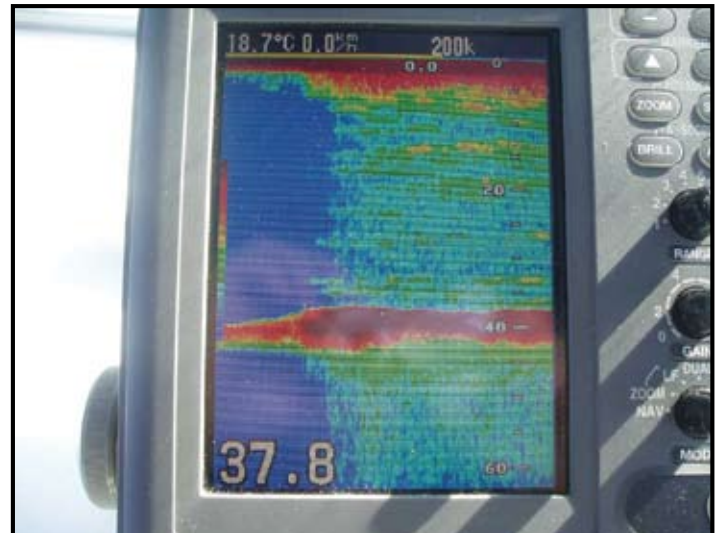
- Found in the menu, clutter will make the most of Gain settings by eliminating the blue/yellow interference on the screen caused by our dense salty waters and turbid estuaries. It allows Furuno sounders to increase gain well past that of its competitors whilst maintaining a clean crisp screen with the best ability to show fish. The higher the number, the higher the degree of suppression.

Colour Erase

- Depending on the model this will be in the menu for Greyscale, FCV-620 and FCV-585 models and on the keypad for FCV-600L and FCV-582L models. Similar in effect to clutter however it removes a level of signal from the processor so it is not displayed. Particularly useful for erasing weak echoes that are not required, Colour sounders have 16 or 8 levels depending on Hue choice whilst Greyscale have 4.

TVG (Time Varied Gain)

- In Greyscale sounders this is referred to as Deep Gain, and is under the menu key. FCV-600L and FCV-582L sounders have the TVG adjustment in the setup menu, whilst the FCV-1100L has it via the rotary knob on the keypad. The plotter/sounder combo's have it in the sounder setup menu's. TVG compensates for propagation attenuation of the sound waves reflected. Essentially it will equalize echo presentation throughout the water column so that targets of the same size appear in the same density in both shallow and deep water. It also reduces the effects of surface noise on the screen.





Tuning Guidelines

So how do the Commercial/Charter and Sport fishing communities get the best out of their Furuno sounders, we will give up the process involved keeping in mind it is applicable to all Furuno sounders.

1. Travel out to a common fishing ground and once drifting or anchored take the unit out of AUTO mode and have the display in Normal mode on 200 kHz. Now adjust range scale to get the bottom echo in the lower 2/3rds of the screen. As discussed if this is not possible due to the gap in a preset ranges adjust them to suit. Settings will more than likely be less than appropriate so don't worry too much about the picture quality.
2. Now bring the Clutter and Signal level/Colour Erase back to their lowest setting or OFF for the Greyscale units. Notice the picture is still viewable on the right hand side of the screen to observe adjustments. At this point the advantages of Clutter and Signal level/Colour Erase are not being employed and essentially the quality of picture is directly related to the Gain level selected.
3. Adjust gain now back to its lowest setting and notice how weak the picture is (Even a powerful 600W RMS unit will demonstrate just how much amplification is involved in producing an ideal picture)! Increase it now to the point where clutter begins to occupy the screen. This is the point we want to focus on tuning, NOT reducing the Gain as with our competitors. Furuno's processing technology will now remove the unwanted interference whilst providing superior target detection and deep water performance with the next steps.
4. Access CLUTTER through the menu and increase it incrementally observing changes in the picture on the right of screen. For the majority of bottom fisherman the point at which to stop is when the interference is all but cleared except for a light scattering of the weakest levels of signal.
5. Now increase the SIGNAL LEVEL/COLOUR ERASE in the same manner to clear the light scattering of interference and produce a perfectly tuned picture for that depth. Note: Increasing signal level/Colour Erase will make detection of prawn/cuttlefish etc difficult as they fall in the weaker signal groups.
6. So with the tuning done it is simply a case of changing range scales and increasing or decreasing gain to suit depth. Now that fish and fish schools are easy to identify experiment with the TVG or DEEP GAIN settings increasing them to observe changes in the upper water column on the screen.

The Furuno colour LCD sounders will respond best to tuning however good results can be achieved with the Greyscale range. Especially when operating at the limits of their respective fish finding ranges this process will show more targets and allow deeper performance capability.

Combined with Furuno's SALT water designed transmit/receive circuitry and ability to sustain RMS output power in deep water this is why Furuno have won more awards for sounders and sonar than any other company in the market place today.

Shane Beardmore