Bit Rate

The funny little digital waveform button)

This mode will help you determine the bit rate of an RTTY station. The length of each bit received is converted into an effective baud rate. The bit lengths are sorted into bins, with the resulting histogram displayed, with a bit of averaging, to get more accurate results and offset the effects of noise. Therefore it takes several seconds to get a good reading.

hese buttons select the shift, as in the RTTY modes.

his button clears the display.

As an example, let's analyze a 75 baud Baudot RTTY signal.

There are three scales on the x-axis to indicate the baud rate of the signal. Why three? Well, imagine how two adjacent bits of the same value (0 or 1) are read by the computer - they appear as one bit which is twice as long. The same thing with three adjacent bits of the same value. So some bits of a 100 baud transmission would appear as 50 baud bits, or even 33.3 baud bits.

In this example, the main peak is at 75 baud, which is what we would expect. Then there are smaller peaks at what would be 37.5 baud (75/2) and 25 baud (75/3). Hence the second and third scales, where these smaller peaks also read as 75 baud.

But what about the other peak around 50 baud? It is due to the stop bits, which are typically 1 1/2 bits long. A stop bit at 75 baud appears like a 50 baud data bit. This also explains the other small peak between the second and third 75 baud peaks - it is the result of a stop bit, with the data bit preceding it having the same value as a stop bit.

The following picture is the analysis of a 75 baud Baudot transmission: