Technote # 109

Rev. 12/29/2019

Using your WN-2(d) to Monitor External Voltages

Rev.1

BRIEF:

The WN-2 and WN-2d control boxes have a ribbon connector on the rear panel to allow the user to monitor analog inputs such as external battery voltages, power supplies etc. There are four analog inputs that are updated 15 times per second, and they can be viewed on the Aux #1 software view. For monitoring 0-20 volt DC range, direct connection to the connector is allowed. For DC voltages higher than 20 volts, an external resistor divider is required.

DETAILS:

Figure #1 below shows that analog input #1 has been configured to monitor a +12 Volt supply on a 0-50 volt scale. A 12 volt power supply is connected to Analog Input #1 on pin 6 of the ribbon connector on a WN-2d. Refer to Figure #3 for the I/O connector pin assignments on the model WN-2. Refer to the Help document (located on the software menu bar) for the pin assignments on the I/O ribbon cable connector.

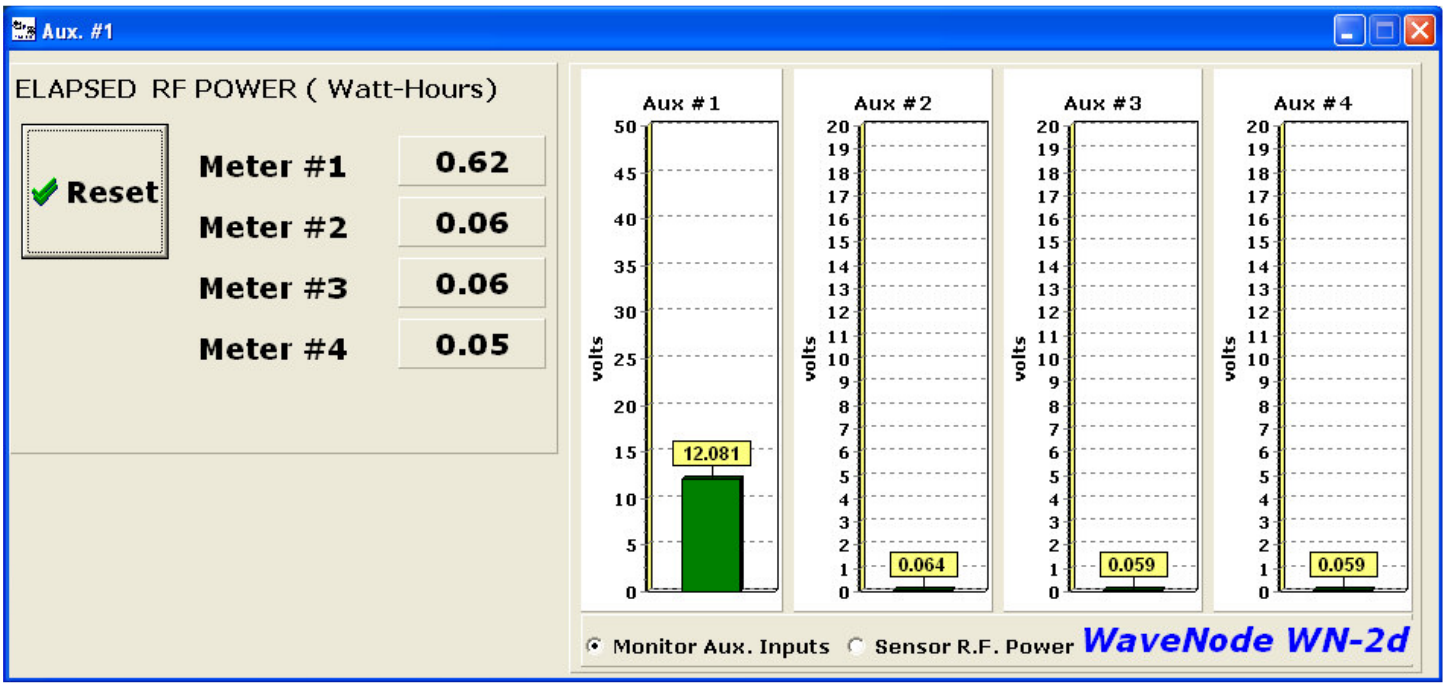

Figure # 1

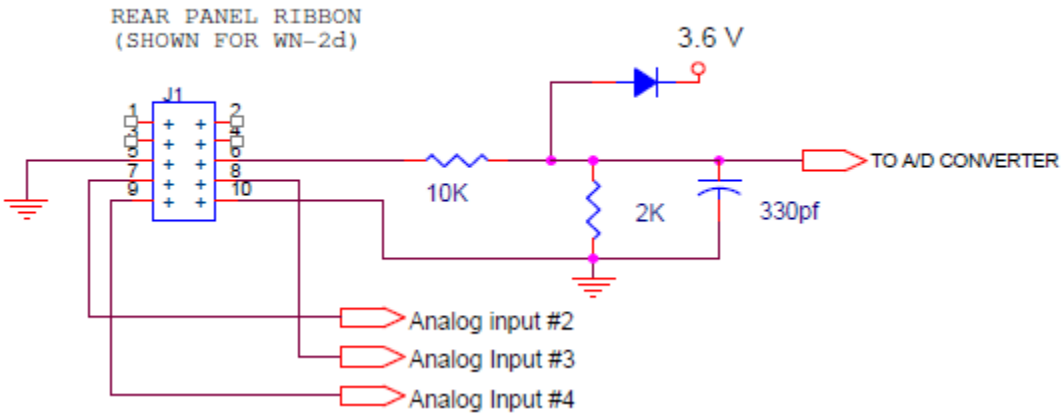

Figure # 2

Figure #2 above shows the input circuit inside the WN-2(d) for analog input #1 (Pin 6 of WN-2d I/O connector). The remaining three inputs are the same.

The analog voltage applied on pins 6, 7 8, 9 must not exceed 20 volts!

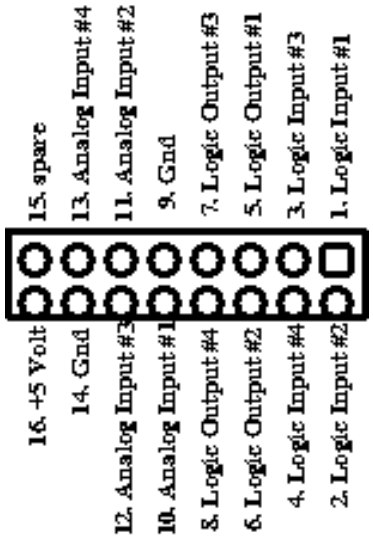

Fig. #3

This view is looking at the WN-2 connector from the rear panel. Note that pin 1 is at the upper-right.

Figure #3 above shows the I/O connector on the WN-2. The four analog inputs are pins 10, 11, 12, 13. The connector is a standard 0.10 inch grid ribbon connector.

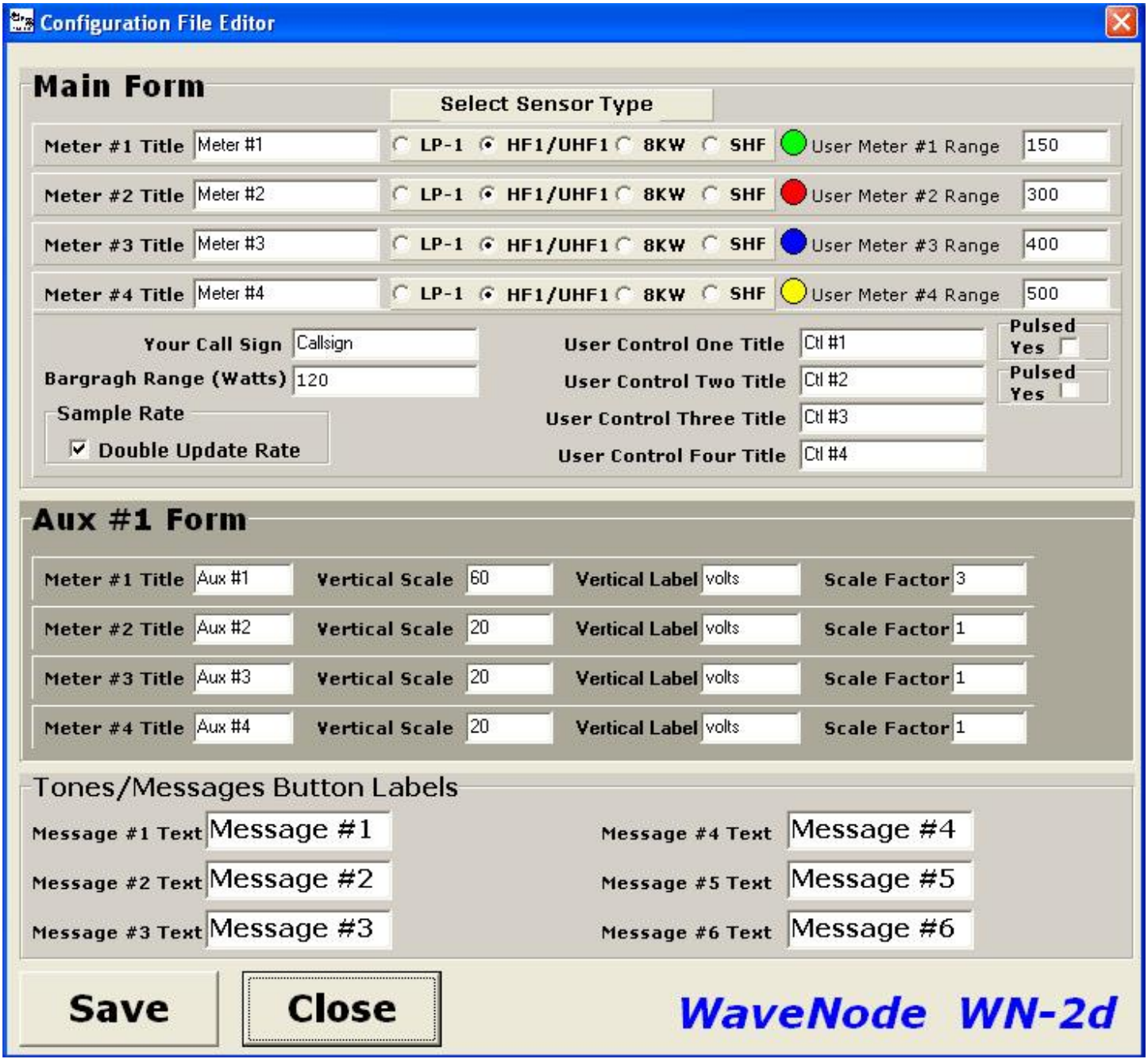

Figure #4

Figure #4 above shows how to configure analog channel #1 for a vertical scale of 0-60 volts and a scale factor of 3.

In our example for a 0-60 V input range, use two resistors to make the divider shown in Figure #5. Notice that the user voltage will be divided by 3 at pin 6 on our WN-2d (or Pin 10 on our WN-2). Don't forget the contribution of the 12K input resistance in the control box. This divided-by-three voltage will be multiplied by the Scale Factor to display the correct voltage of 48 volts on the screen view.

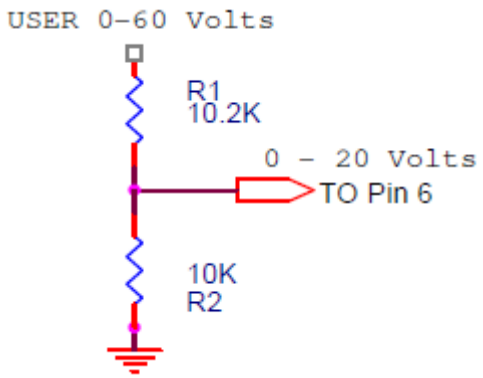

Figure #5

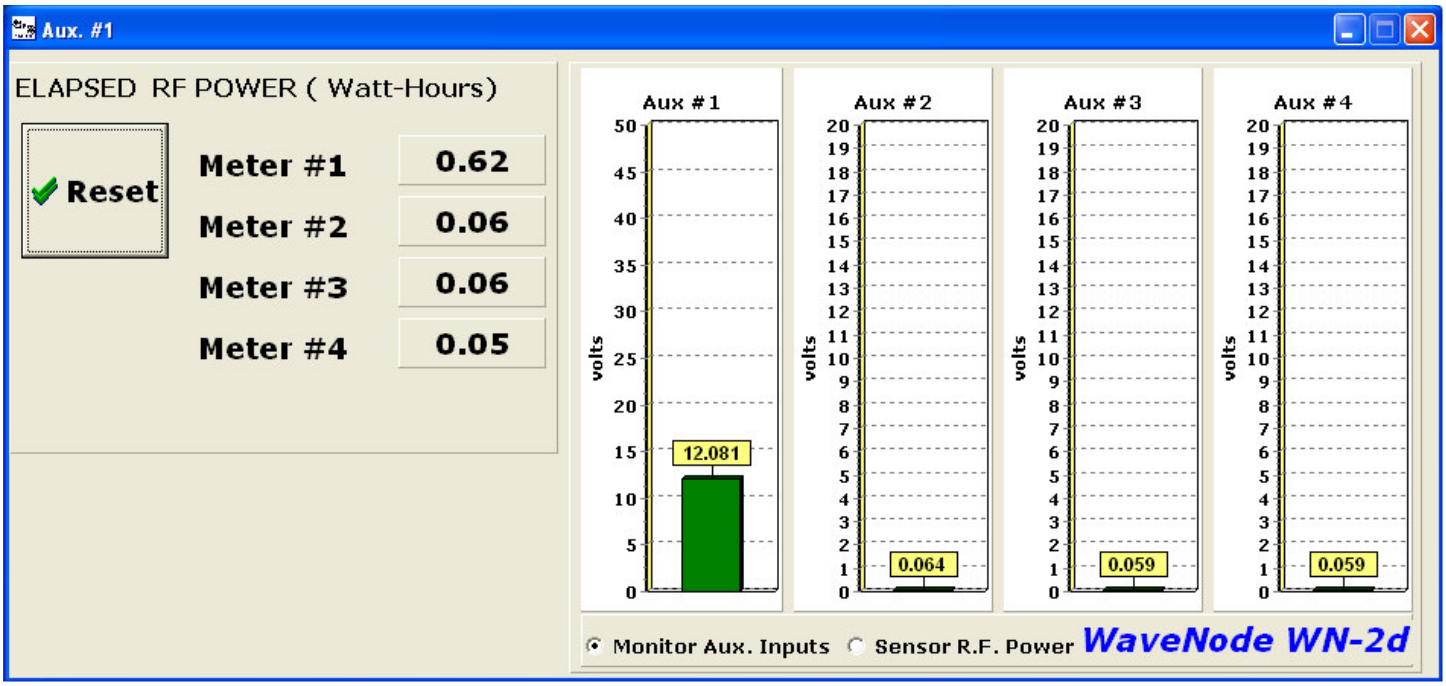

Figure #6

Figure #6 shows how the Auxiliary view #1 will look when configured for a 0-50 volt scale and monitoring a +12 volt power supply.

By making a suitable external divider, and setting the scale factor to the same divider factor, the user can monitor voltages of several hundred volts. This is very useful for monitoring remote repeater and radio site supply voltages and batteries.