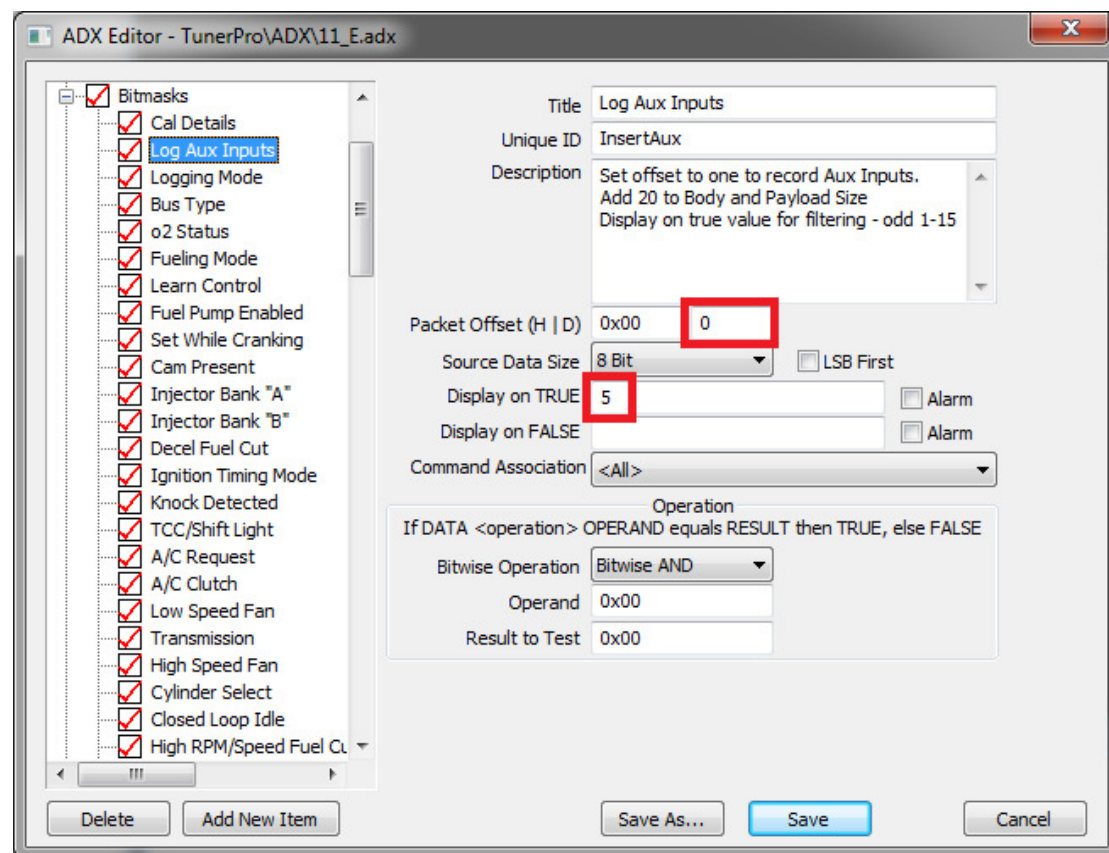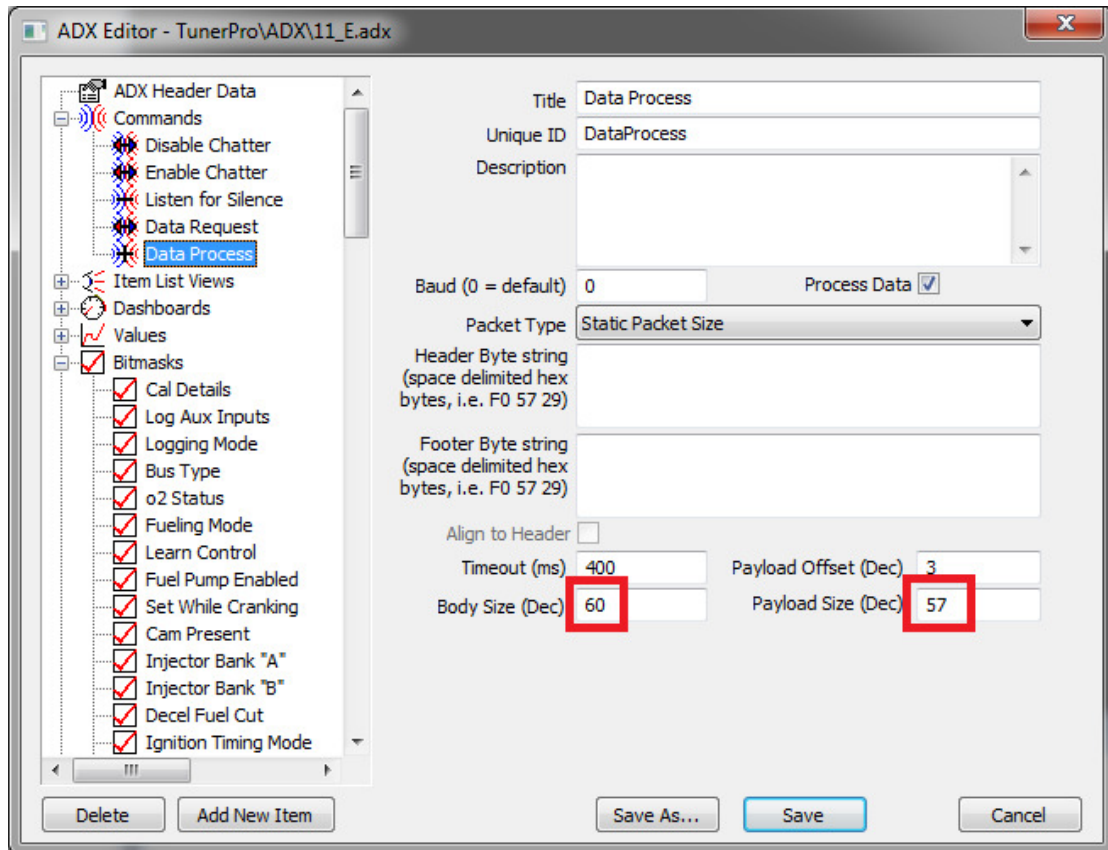# Setting up an aux input for use with a wideband

Then ALDL logger provides 6 analog inputs. In this example analog input 1 is used to log the wideband AFR from a 0-5v output of a Innovate Motorsports wideband controller.
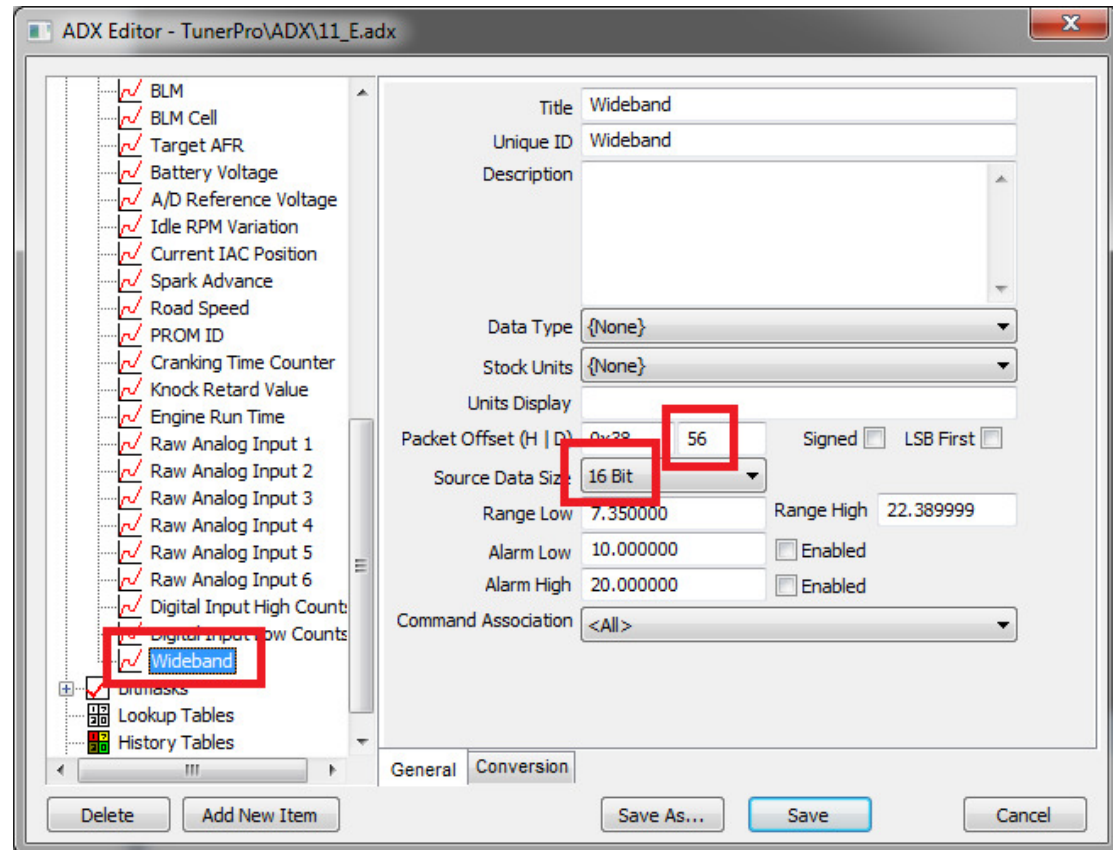
1) The ADX used by the logger needs to be modified. A $11 ADX is used in this example. There are bitmasks to specify options for the logger, the 'Log Aux Inputs' bitmask needs to have the Packet Offset changed from 0 to 1. The 'Display on TRUE' item defines the filtering of the input, the number can be any odd number from 1-15 with 1 being no filtering and 15 being maximum.

2) The packet size will now be much larger due to the ALDL logger adding extra bytes to the data frame. To let TunerPro know how large the frame is the packet and body size must be increased by 20 bytes. In this example the values would be changed to 80 and 77.

.

3) The final step is to define where in packet the data should be taken from and how TP should display your wideband AFR. A new item can be created, in this case called Wideband. It should use the data from analog input 1 – in this case, and it will vary from vehicle to vehicle, Packet Offset of 56 and Source Data Size 16bits. Any of the 6 inputs can be used, just use the offset from the desired input.

The conversion will be wideband specific. For the standard Innovate motorsports products the 0-5V analog output relates to 7.35 to 22.39 AFR. The logger represents 0-5V over a 0-1023 count range.

So in TunerPro the equation to display the AFR would be –
$((22.39 – 7.35) * (X/1024)) + 7.35$

This can be simplified for LCD display to: $X / 68.085 + 7.35$