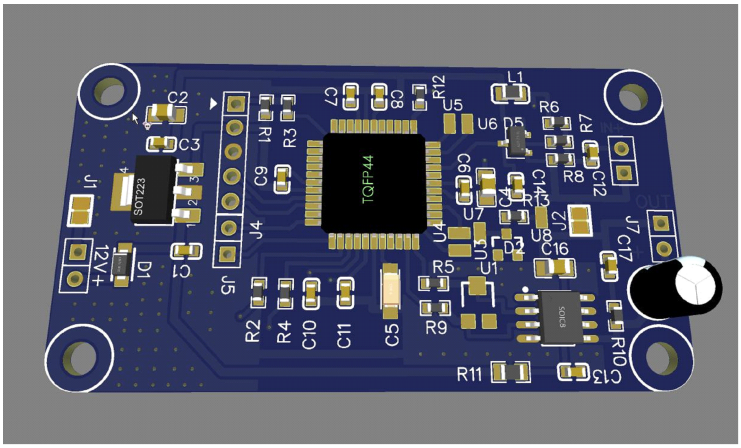
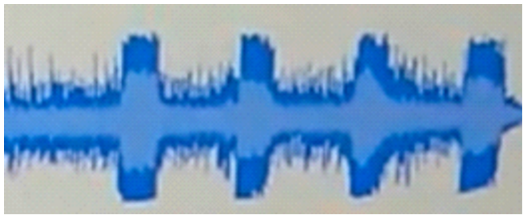
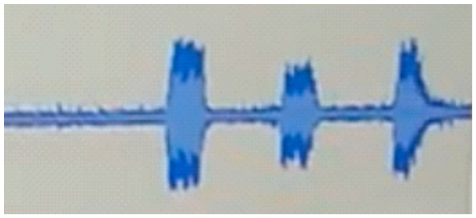
BLUEDSP Audio/Noise Reduction Filter Kit



The BLUEDSP filter project is a uniquely designed digital audio filter incorporating three user selectable bandwidths *combined* with a digital noise reduction filter offering four user selectable levels. The noise reduction filter is an adaptive filter, constantly sampling and storing the noise spectrum every 10 msec when no voice is present. The filter processes the received signal and differentiates noise from voice and attenuates the unwanted noise.



Signal before noise reduction processing



Signal after processing

The audio and noise reduction filters are controlled through two momentary switches and the status On/Off of filters can is displayed by 2 LEDs. See “OPERATION” for details.

The BLUEDSP is shipped as a fully functional unit. It is described as a ‘KIT’ because the users must decide the best method of installing the filter for their particular use and set up the installation accordingly. See “INSTALLATION” for options.

SPECIFICATIONS:

Voltage: 6-12.8VDC @ 100mA

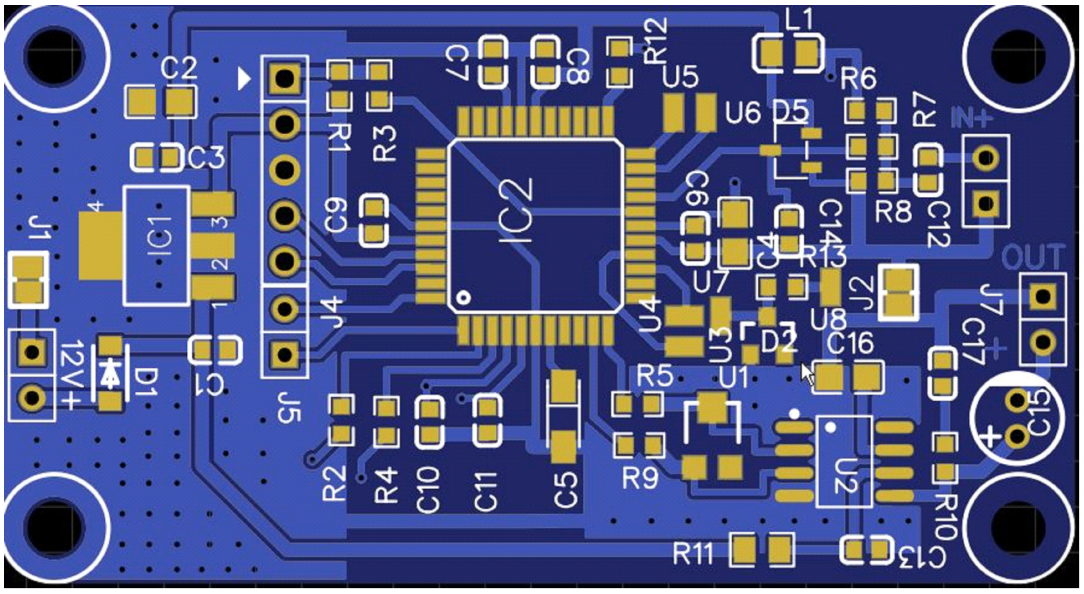
Audio Input Impedance: 4 KΩ

Audio Output Typ 700 mW (VS = 9 V, RL = 8 Ω, THD = 10%)

Audio Filters: 3
{ 300/2400 , 300/1800, 550/850 } Hz

Noise Reduction Filter Levels: 4
{11, 15, 17, 20} (Values in dB)

INSTALLATION:
The printed circuit board of the filter has been designed to allow for a custom installation based on how the filter is to be enclosed. The pcb, as delivered, measures 33 X 60 mm.



The output of the filter does NOT require amplification. It can be connected to headphones or loudspeaker (impedance beetween 4 and 32 Ohm)

Connections are 3:
Power supply on the left (12V+)
Input Signal on the rigth UP
Output Signal on the rigth Center

HOLES:

On the website you can download a pdf that maps the holes for the face of a box.
Print it in A4 format, put it on the face of your box and drill it.

OPERATION:

THE LEDs
The LED display has 3 colored LEDs:
Green represents the On/Off state of noise reduction;
Amber represents the On/Off state of bandpass filter;
Red represents the overload of the input.

THE SWITCHES
Two momentary switches control which function is active and the selected level of that function.
A short press on the right switch (Filter) increases the selected filter level till 3 and then reset to off.
A short press on the left switch (NR) increases the selected noise reduction level till 4 and then reset to off.
A long press (2 or more seconds) on the left switch changes the On/Off state of SQUELCH (red LED will flash shortly)

AUDIO LEVEL ADJUSTMENT:

Connect the dsp to your radio headphone plug.
For optimal performances:
audio input level should be increased till the overload LED blinks and then reduced to switch off the LED;
IF experienced audio distorsions at output or to reduce the output level (ie with headphones), you can adjust the level by trimmer U1 (corner rigth down of previous figure)

For further information of the BLUEDSP , visit the website at
http://jackdev23.wixsite.com/iw2ndh-dsp