BVT-8/16/32/99/99 Plus

BVT-Series

MULTI-SOUND EFFECT MODULE with PARAMETER CONTROL

Applications

For mixer/ guitar amp/ Dj equipment and other devices which need sound effects.

Theory of Operation

The Module is atiny daughter card assembly that can be installed on main boards in products such as guitar amplifiers and mixers. Connection to the BVT-16 is simple. It has two analog input pins and two analog output pins for easy stereo in and stereo out connection Four digital input pins are used to select each of DSP programs. The additional analogue inputs (digital inputs) are used for program parameter adjustment. You can also add an external Double 7 segment LED for the program display.

Features

- True stereo performance sound quality
- 8/16/32/99/ more than 99 programs of acoustic effects can reedit form customers such as reverbs, echo, phaser, chorus, flanger, etc. (can support Tap delay / mute)
- Integrated the major components, control interfaces, and strengthen the electronic circuit design, also with the display circuit, for example: **7-segment LED**and **LCM 16*12**, that can save your bom cost
- 20/27 bit digital signal processing with 24 bit AD/DA converters 192kHz Sample Rates Supports
- Programs run at 128 instructions per world clock. (6 MIPS @ 48 khz sampling frequency)
- 32k location Static Ram provides over 0.68 sec of delay at 48 kHz sampling frequency
- 2 input and 2 output
- Customization service provided
- Low power 5V operation
- Competitive price
- ROHS compliant (PB-free)

Specification

Analog input	2
Input level	2.8Vp-p Max
Analog output	2
Output level	2.8Vp-p Max
DSP arithmetic	20 bit/27 bit
AD/DA conversion	24 bit/48kHz
S/N ratio (A-weighting)	>95dB
THD+N	0.08%
Frequency response (Fs=48 KHz)	20 Hz - 20 KHz (+/- 1 dB)
Power supply	5V 90mA (without display)

www.trigaudio.com

TRIGAUDIO

4F., NO.8, Lane 345, Yang Kung St., Taipei, Taiwan
E-mail: info@trigaudio.com Tel: +886-2-2799-5586 ext.21~25 Fax: +886-2-2799-5629

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BinaryCode and Program Chart

1111	1.	Small Hall	0111	9.	Analog Delay
1110	2.	Large Hall	0110	10.	Chorus Verb
1101	3.	Small Room	0101	11.	Stereo Chorus
1100	4.	Bright Room	0100	12.	Flanger
1011	5.	Thin Plate	0011	13.	Phaser
1010	6.	Large Plate	0010	14.	Gated Reverb
1001	7.	Spring Reverb	0001	15.	FlangeVerb
1000	8.	Multi-tap Delay	0000	16.	Vocal Echo

Program Table

For mixer

Prg #	Description	Parameter 1		Parameter 2	
1.	Small Hall	Rev Time	0.9sec~3.5sec	Hi-boost	
2.	Large Hall	Rev Time	1.5sec~8.6sec	Hi-boost	
3.	Small Room	Rev Time	0.28sec~0.82sec	Hi-boost	
4.	Bright Room	Rev Time	0.36sec~1.38sec	Hi-boost	
5.	Thin Plate	Rev Time	0.44sec~1.54sec	Hi-boost	
6.	Large Plate	Rev Time	0.72sec~10sec	Hi-boost	
7.	Spring Reverb	Rev Time	0.4sec~2.3sec	Hi-boost	
8.	Multi-tap Delay	Delay Time	0~680ms	Repeat	0%~50%
9.	Analog Delay	Delay Time	0~680ms	Repeat	0%~50%
10.	Chorus Verb	Rev Time	0.56sec~3.5sec	Chorus Rate	0.58Hz~6Hz
11.	Stereo Chorus	Rate	0.58Hz~6Hz	Hi-boost	
12.	Flanger	Rate	0.58Hz~4.35Hz	Feedback	0~100%
13.	Phaser	Rate	0.58Hz~11Hz	Feedback	0~100%
14.	Gated Reverb	Gate Time	0.25sec~0.78sec	Predelay	0~200ms
15.	Flange Verb	Rev Time	0.34sec~2sec	Rate	0.58Hz~4.35Hz
16.	Vocal Echo	Delay Time	0~400ms	Repeat	0%~50%

For Guitar

Prg #	Prog	Parameter 1
1.	Chorus	Rate
2.	Flanger	Rate
3.	Phaser	Rate
4.	Tremolo	Rate
5.	Spring	Rev Time
6.	Plate	Rev Time
7.	Hall	Rev Time
8.	Room	Rev Time
9.	Gate	Rev Time
10.	Modulate	Rev Time
11.	Auto-Wah	Rate
12.	Phase-Wah	Rate
13.	Auto-Filter	Rate
14.	Delay	Delay Time
15.	Octave-Down	octave level
16.	Octave-Up	octave level

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For Dj

Prg #	Description	Parameter 1	Parameter 2
1.	Flanger	Rate	feedback
2.	Flange-Verb	Rev Time	Flange Rate
3.	Phaser	Rate	feedback
4.	Robot-Flange	Rate	deep feedback
5.	Random-Pitch	Pitch up	Pitch down
6.	Soft Scratch	Character1	Character2
7.	Delay	Delay Time	Repeat
8.	Trans	Rate	Depth
9.	Phase-Wah	Rate	Feedback
10.	Filter	Rate	Feedback
11.	Auto-Wah	Rate	Feedback
12.	Small Hall	Rev Time	bottom boost
13.	Thin Plate	Rev Time	bottom boost
14.	Plate	Rev Time	bottom boost
15.	SpringVerb	Rev Time	bottom boost
16.	Gate Reverb	Gate Time	tone

Input Circuit

With internal op-amp input buffer, the AC-coupling capacitor is not required when connecting the BVO-16 module. Just connect the analog input directly to the module. The input analog signal can be up to a maximum of 2.8 Vp-p before clipping occurs. For applications that require a single channel, connect the input signal to both the Left and Right Analog Input pins. Otherwise, 6 dB of signal will be lost on DSP programs that expect a stereo input and sum the two inputs to mono.

Output Circuit

Interfacing to the analog output of the module is also very simple. There's built in output RC filter for unwanted high frequency filtering and also an output opamp buffer .The output of the module must drive a load greater than 1 kohm. For applications that use only a single channel, connect only to the Left Analog Output.

Power Supply

The module has internal LDO for +3.3V power supply to achieve rated performance. Separate Analog and Digital Ground pins are provided to reduce the possibility of digital interference in the analog signal.

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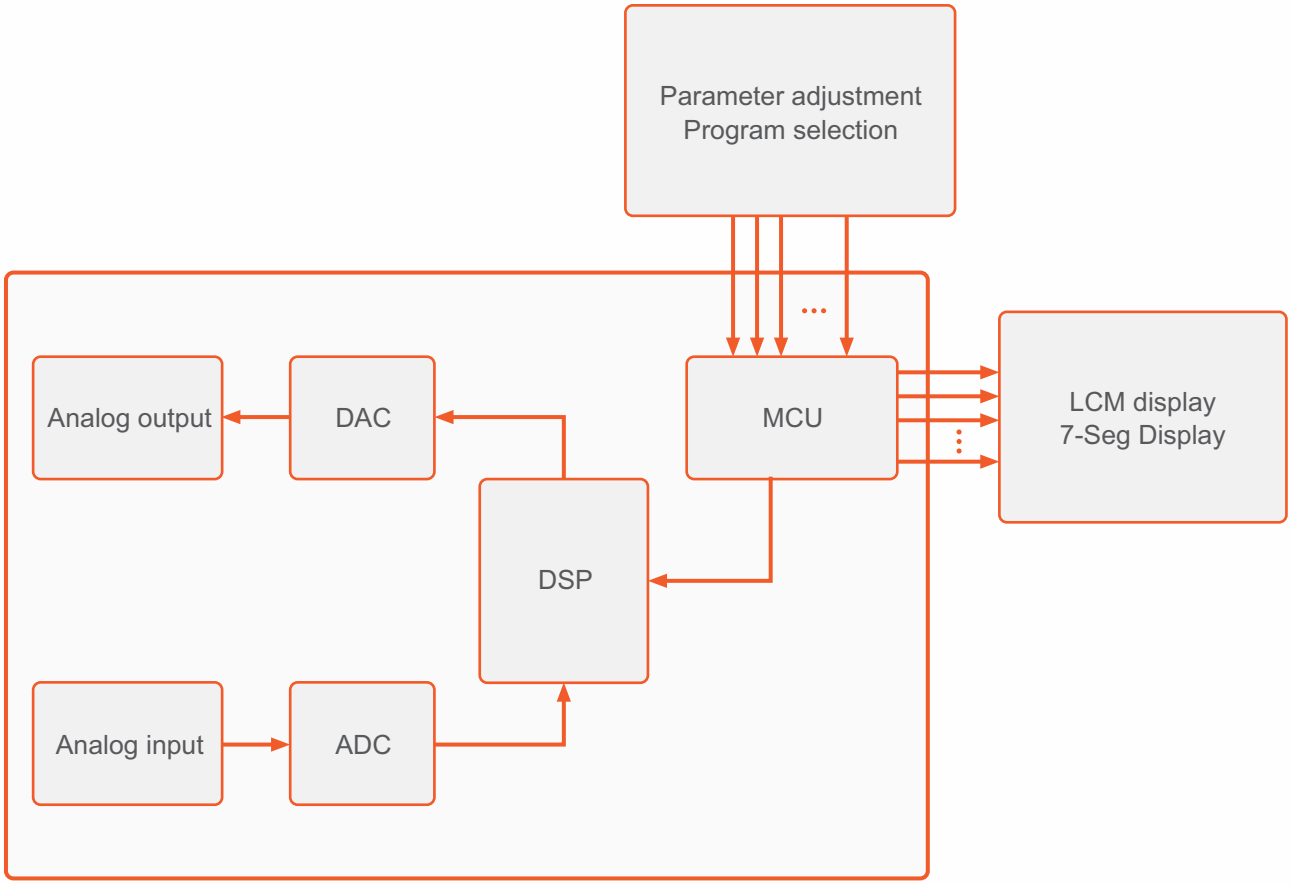
Module Block Diagram



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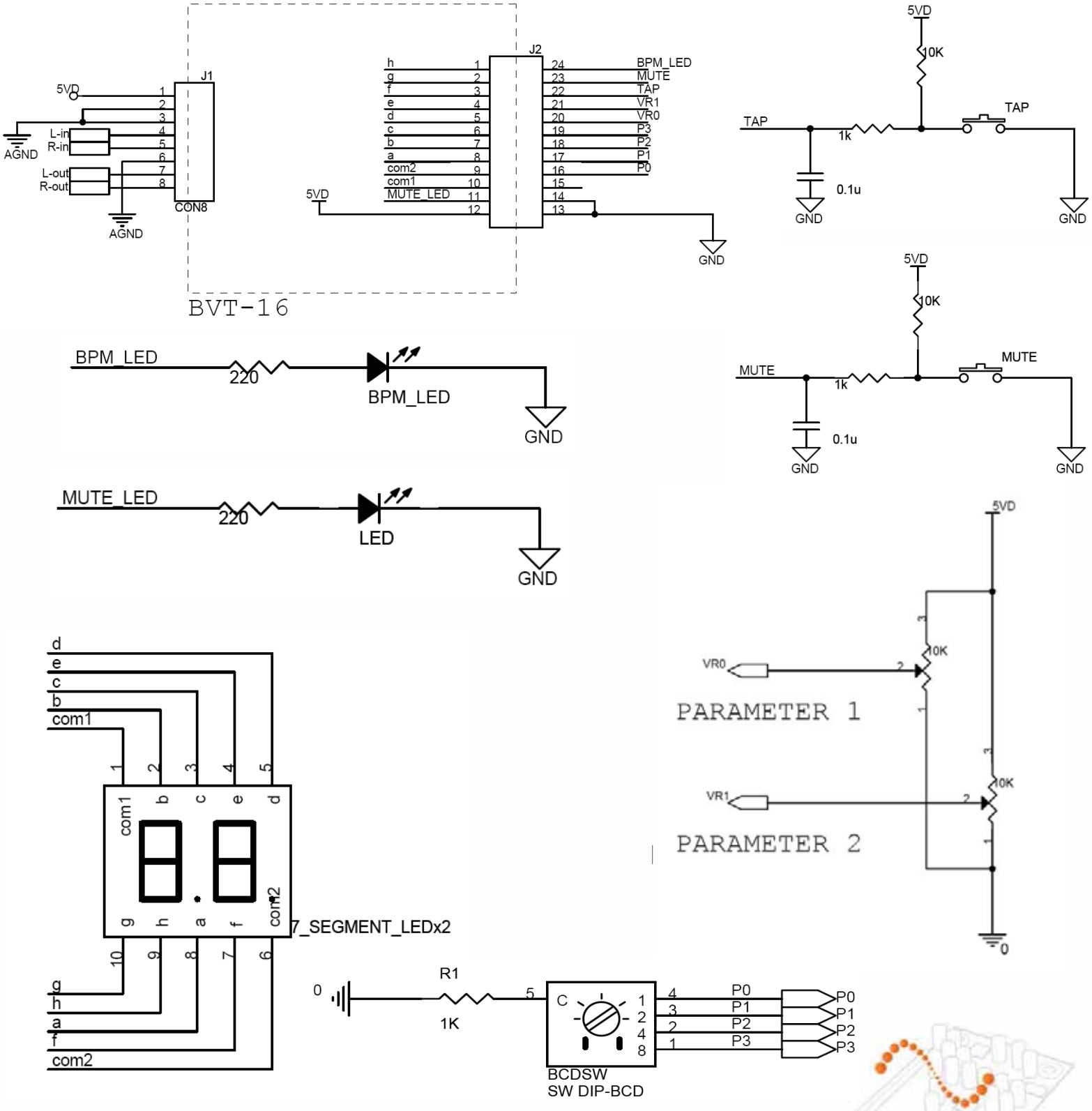
Connection Diagram-1 (BVT-16)



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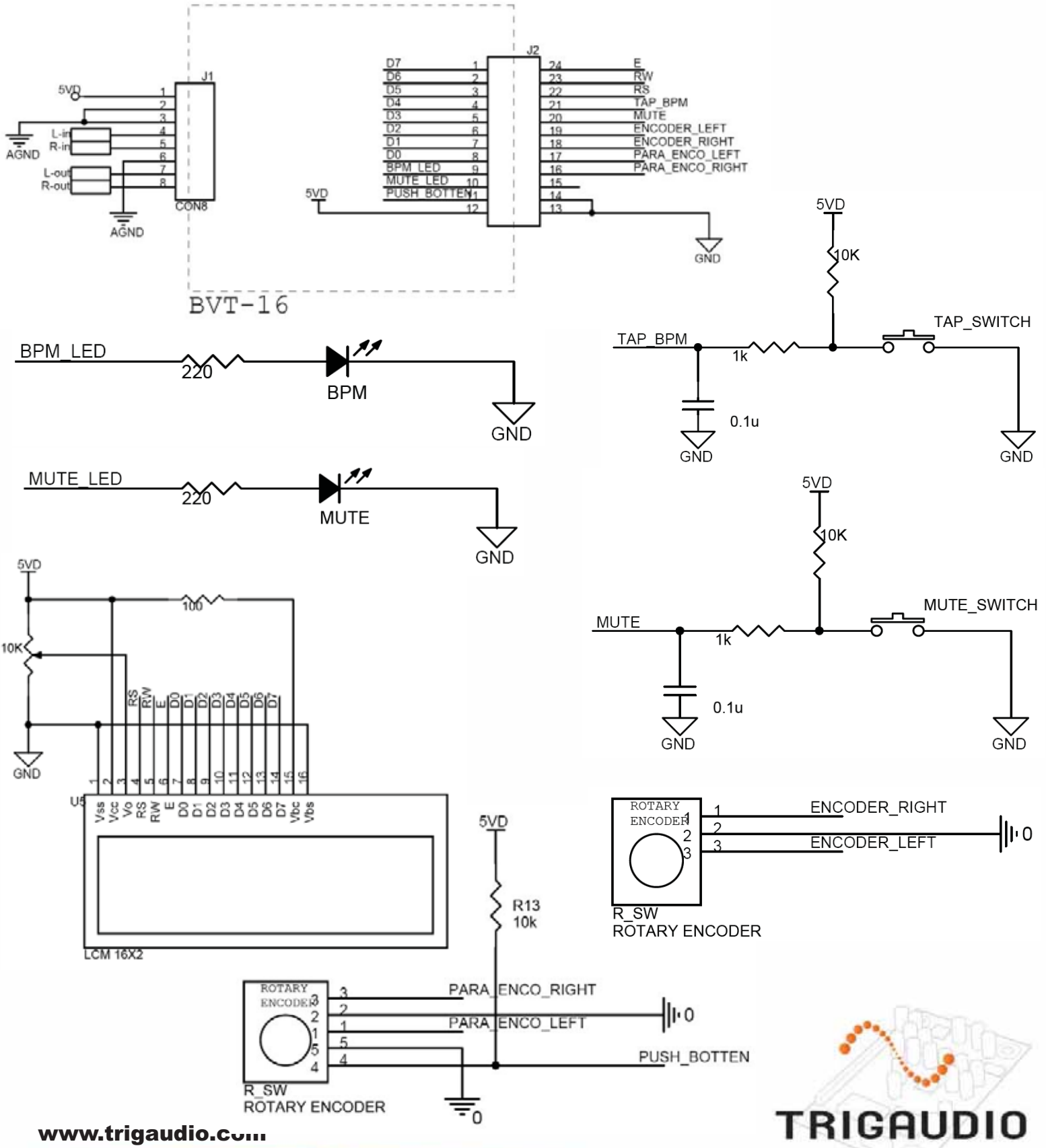
Connection Diagram-2 (BVT-16)



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BVT-Series Module Dimensions-Horizontal Connector Type