

Hi-quality with Powerful Parity Multi- effect and signal processor DSP Module

D202C -a complete and powerful multi-effect DSP Board from Trigaudio, providing various application such as Mixer/DJ Mixer/Karaoke/Power amp/wireless Microphone/GT/Bass amp and Dynamic processor. D202C achieves any effects you want and have full confidence to deliver a high-quality effect level like the world's famous brands' sound . Expect for high quality DSP algorithm that suitable for each applications , we also integrate varieties of powerful user interface into the module .In addition, Trigaudio can provide control panel board with multi-function display and hardware user interface to support you quick evaluate the module .

D202C Features

- Premium application for Guitar/Bass amp/ Guitar/Bass pre amp or pedal effects/ Dj-mixer /mixer/dynamic processor...
- 24 bit digital signal processing with 24 bit AD/DA converters, supports up to 96KHz sampling rate
- Provide over 1.34 sec of delay at 48 kHz sampling frequency(SDRAM needed)
- Convenience with diverse and applicative Operation with multi-function control board (include LED/LCD panel) for quick evaluation and making a maximal creativity
- Specialized Dedicated guitar/bass amp molding effects and Over 30 classical tones, to endows your guitars/ bass effects a more realistic performance both in the studio and on stage
- Acoustic effects can reedit from customers such as reverbs, echo, phaser, chorus, flanger, delay(enhance tap delay function), vocoder... etc.
- Authentic DJ-mixer beat effects and AUTO BPM functions with dedicated DJ powerful effects
- High-resolution equalizer and dynamic processor can match for professional wireless mic receiver and support user-friendly control with display
- Vintage dynamic processor for power amplifier applications
- ROHS compliant (PB-free) is provided in all of our products

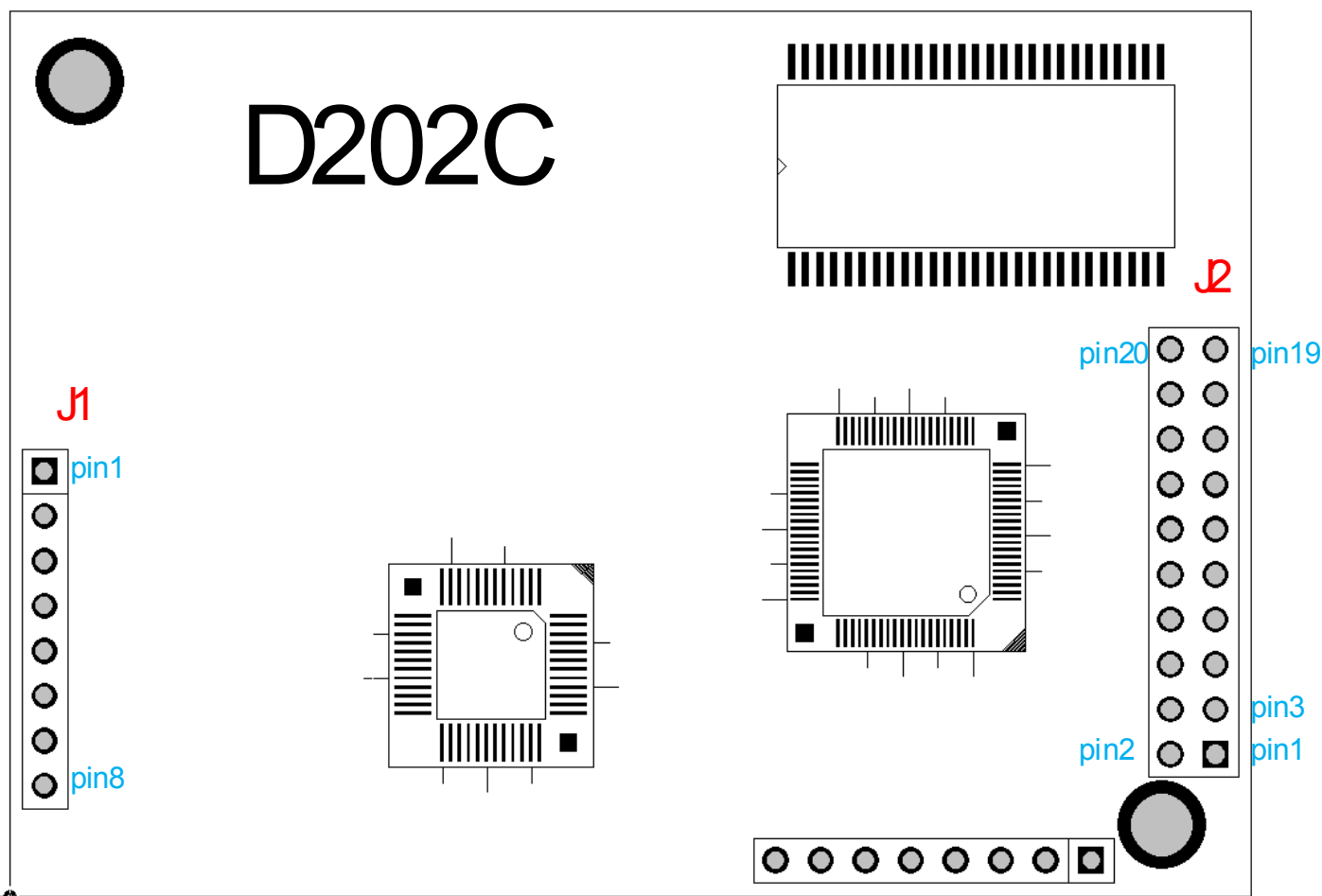
D202C Specification

Analog input signal	2ch
Input impedance	100k Ω
Maximum input level	0dBu or 2.8Vp-p
Maximum output level	0dBu or 2.8Vp-p
Nominal Level:	0dB
Analog sutput signal	2ch
Output impedance	470 Ω
DSP arithmetic	24x32 bit for filtering process
AD/DA conversion	24bit/48kHz
S/N ratio	> 100dB
THD+N	0.015%@1kHz 0dB
Frequency response	20Hz - 20kHz +/- 0.5 dB
Power supply	DC +6V, 160mA (Without display & controls)
Consumption	150 mA

www.trigaudio.com



Module Connector Pin outs



J1: power & signal connector

description	name	J1
DC power in +6V	DC-in	1
Analog ground	AGND	2
Analog ground	AGND	3
Analog audio signal left input	L-in	4
Analog audio signal right input	R-in	5
Analog ground	AGND	6
Analog audio signal left output	L-out	7
Analog audio signal right output	R-out	8

J2: display & control connector

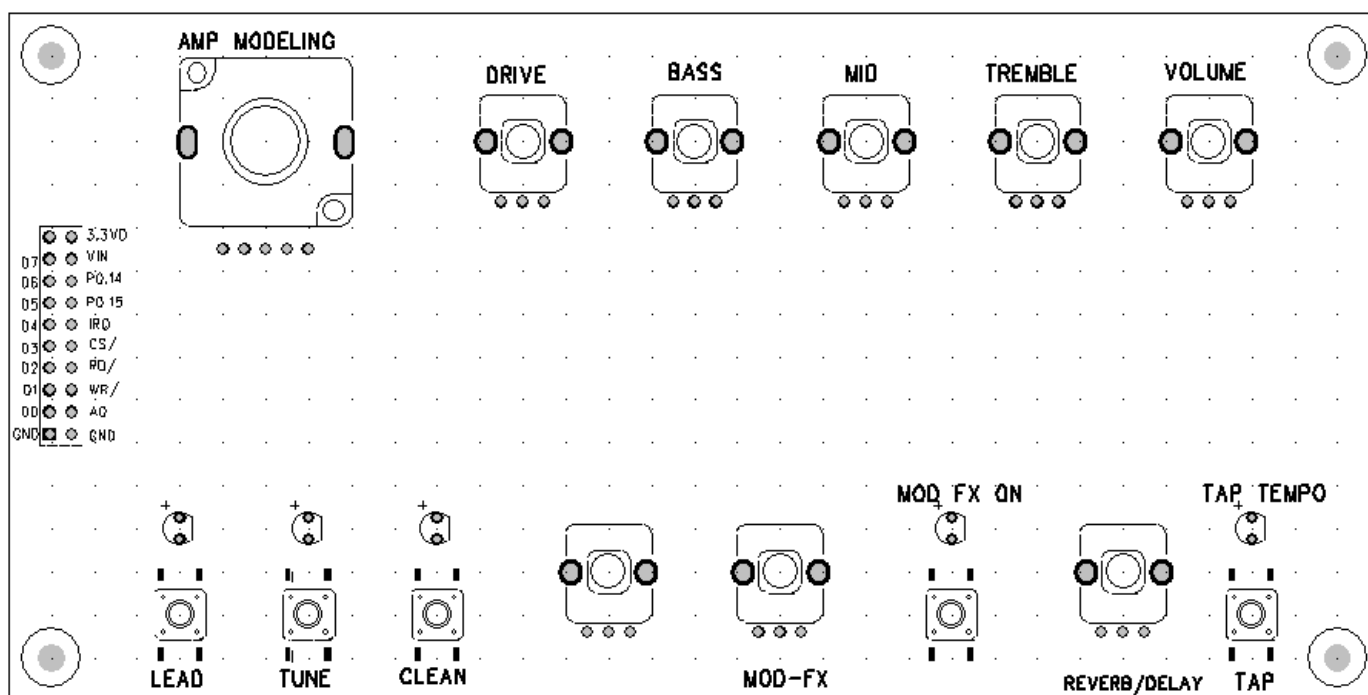
description	name	J2		name	description
Voltage supply for ext. connection	Vdd	20	19	Vdd	Voltage supply for ext. connection
Analog input for potential meter ^{*NOTE1}	Vin	18	17	D7	Digital I/O 7
Digital I/O 14	P0.14	16	15	D6	Digital I/O 6
Digital I/O 13	P0.15	14	13	D5	Digital I/O 5
Digital I/O 12	IRQ	12	11	D4	Digital I/O 4
Digital I/O 11	CS/	10	9	D3	Digital I/O 3
Digital I/O 10	RD/	8	7	D2	Digital I/O 2
Digital I/O 9	WR/	6	5	D1	Digital I/O 1
Digital I/O 8	A0	4	3	D0	Digital I/O 0
Digital ground for ext. connection	DGND	2	1	DGND	Digital ground for ext. connection

*NOTE1: not used in every application

APPLICATIONS

Amp Modeling with Effect for Guitar or Bass Amp

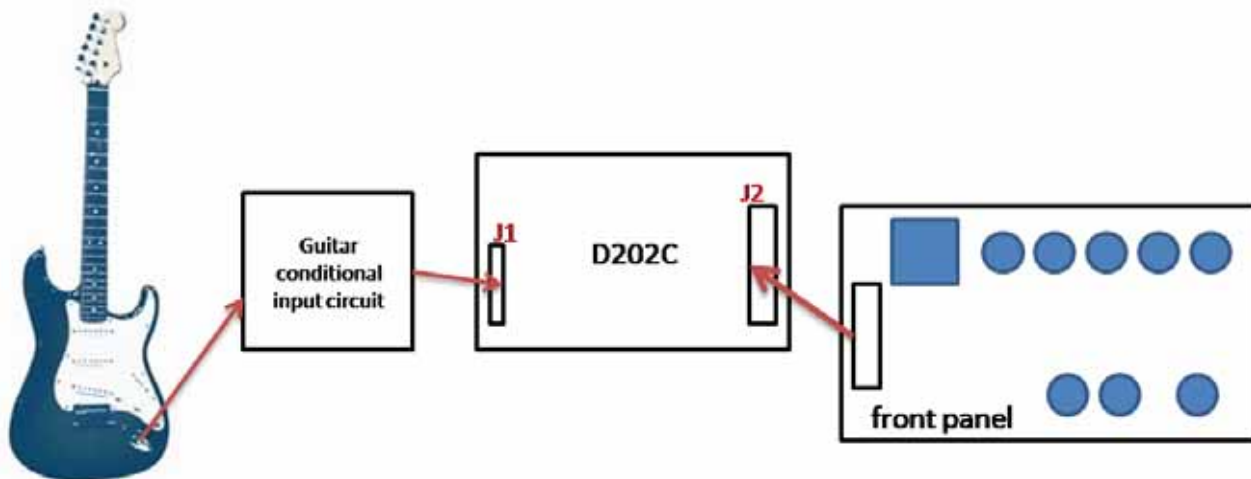
1.OVERVIEW



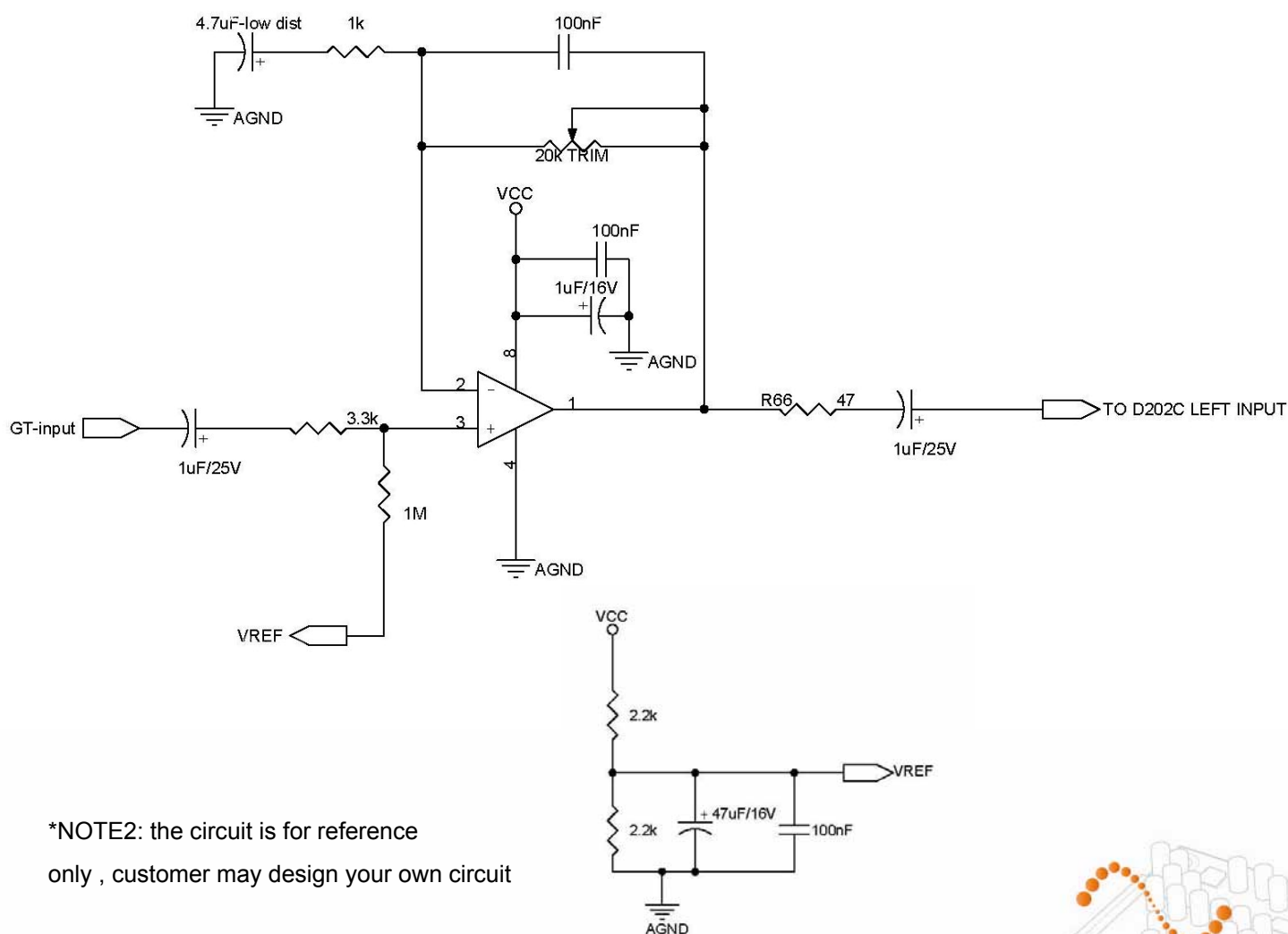
- Amp Modeling or Octave and Auto Wah effect (see the program chart below) could assign on the 16 position binary encoder with 1 separate clean channel(optional)
- Each Amp Modeling with Drive ,Volume & 3-band EQ control
- Clean & Lead channel selection switch with led indicator
- Chorus, Flanger, Phaser, Tremolo effect with parameter control on 1 MOD-FX potential meter
- Reverb, Delay with parameter control on 1 REVERB/DELAY potential meter
- MOD-FX and Reverb/Delay can run at the same time (serial)
- Delay with TAP TEMPO function with TAP TEMPO led that synchronize with delay repeats
- Guitar tuner function(combined with binary encoder for each string tune selection)
- Trigaudio's engineer is ready for additional customize function

2. Interfacing with D202C module

2.1 Block Diagram

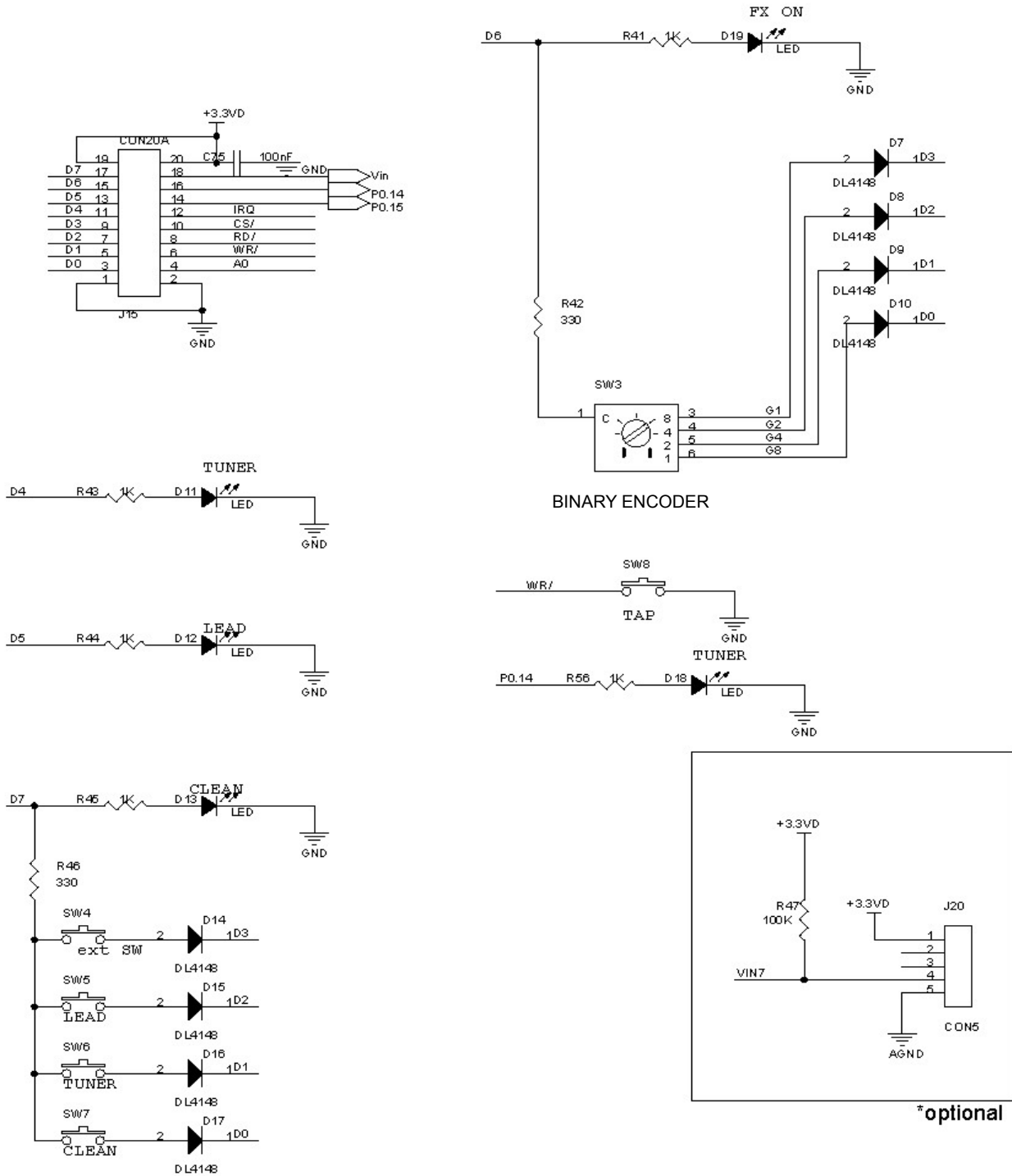


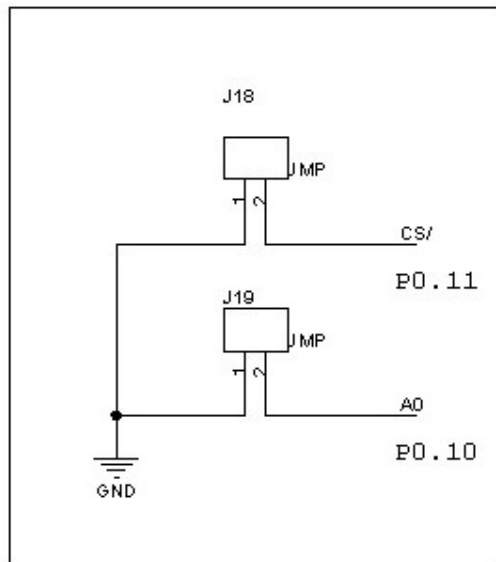
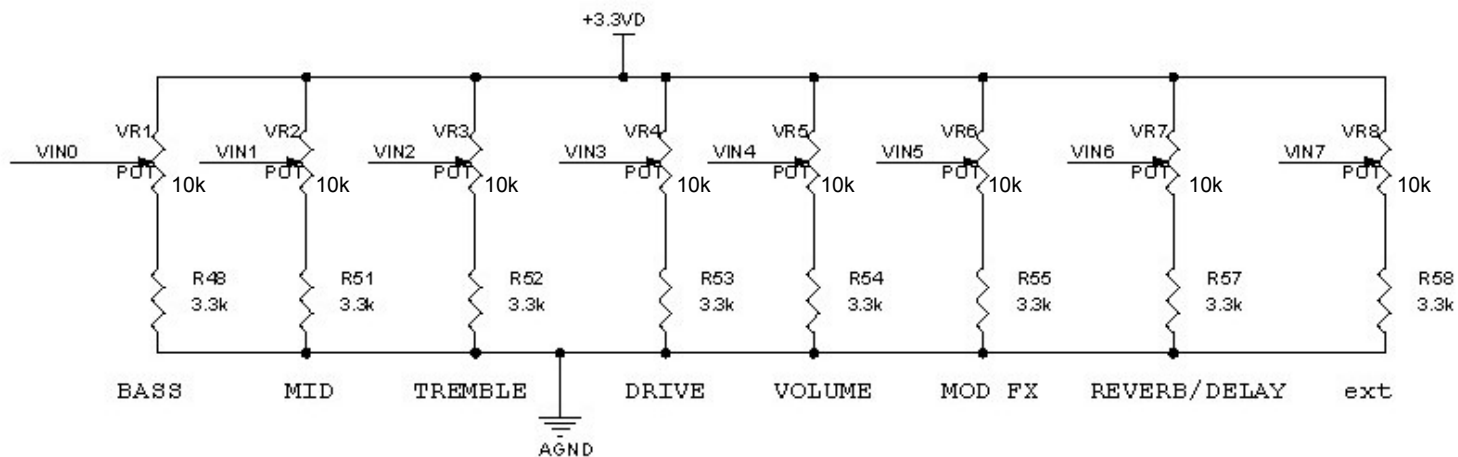
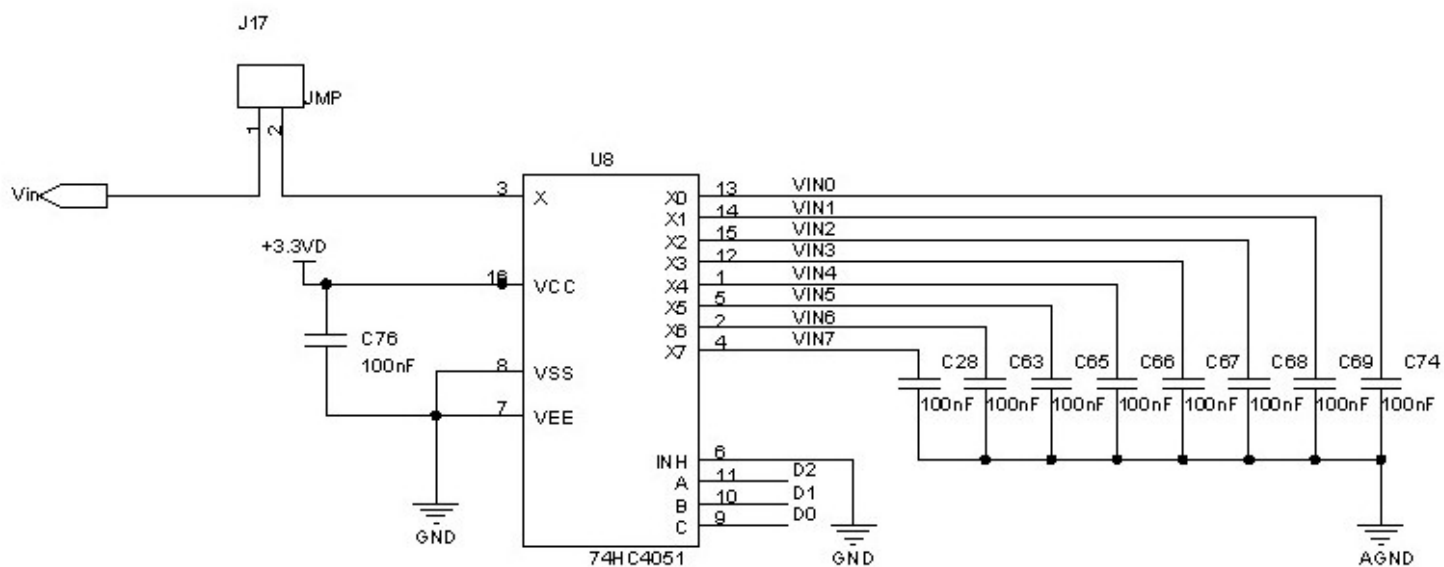
2.2 Suggested Guitar input circuit: *NOTE2



*NOTE2: the circuit is for reference only , customer may design your own circuit

2.3 Front panel circuit





3. AMP models & Effects can be assign on the 16 position binary Encoder

1	JC clean	Based on the Roland JC-120 Jazz Chorus amp
2	Hot Rod	Based on the Mesa Boogie Mark II C
3	R-Fier	Based on the Mesa Boogie Rectifier
4	Black Panel	Based on the Fender Twin Reverb amp
5	Brit Combo	Based on the VOX-AC 30TB
6	Tweed	Based on the Tweed Fender Bassman Combo
7	Stack Classic	Based on the Marshall JMP1987
8	Dyna Amp	Dynamic amp sound depend on guitarist's picking
9	Acoustic	Simulate acoustic guitar sound
10	Funk	Best amp sound for Funk style
11	Metal	Best amp sound for Metal, Grunge
12	Crunch	Sweet middle crunch tone
13	Drive	Sweet Drive amp
14	Lead	Best tone for solo
15	HiGain	Deep higain tone
16	BDS	Model from the BOSS DS-1 distortion
17	DD250	Model from the DOD 250 distortion
18	BMZ	Model from the BOSS Metal Zone distortion
19	RAT	Model from the ProCo Rat distortion
20	Warm Drive	Model from the Ibanez TS-9 overdrive
21	FFace	Model from the Fuzz Face pedal
22	Muff pi	Model from the EHX big muff pi
23	Modern	Base on the SWR bass amp with horn
24	Rock	Base on the Ampeg bass amp
25	British	Base on the Trace Elliot bass amp
26	Fat Tube	Fat, warm tube amp sound
27	Bassman Style	Classic Bassman Amp sound
28	SVT style	Based on the Ampeg SVT 350
29	King's X	Dirty King's X stlye
30	Solo	Great solo tone for bass
31	Full Range Clean	Wide clean tone range suitable even peizo pick up
32	Slap	Best tone for slapping style playing
33	Reggae	Best tone for Reggae music
34	Muff	Bass Fuzz tone, bass on EHX bass big Muff
35	Octave Bass(UP)	Add your bass sound with one octave up
36	Octave Bass(down)	Add your bass sound with one octave down
37	AutoWah 1	LPF type AutoWah effect
38	AutoWah 2	BPF type AutoWah effect

Guitar Amp modeling
 Suitable tone playing style

For Bass Amp
 Distortion/Overdrive Modeling



4. Effects could be assign on the Mod-Fx and Rev/Delay pot

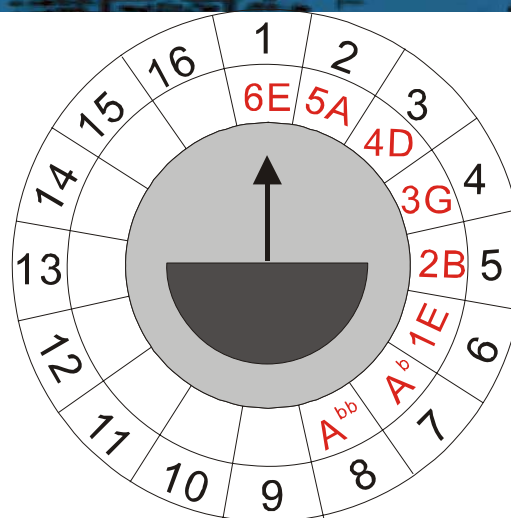
	Mod-FX	REV/Delay
1	Chours	Reverb(Hall,Room,Plate)
2	Flanger	Long Delay
3	Phaser	
4	Tremolo	

5.Pre Loaded AMP Modeling and Effect Combination

Guitar Amp 1

	AMP MODELING(16 BINARY ENCODER)	MOD-FX	REV/Delay
1	Acoustic	Chorus	Reverb
2	Funk	Flanger	Long Delay
3	Hot Rod	Phaser	
4	Black Panel	Tremolo	
5	Brit Combo		
6	Tweed		
7	Stack Classic		
8	Metal		
9	R-Fier		
10	Dyna Amp		
11	Crunch		
12	Drive		
13	Lead		
14	HiGain		
15	AutoWah 1		
16	AutoWah 2		
	JC Clean (on clean channel)		

5. 16 position binary encoder with program and Tuner corresponding



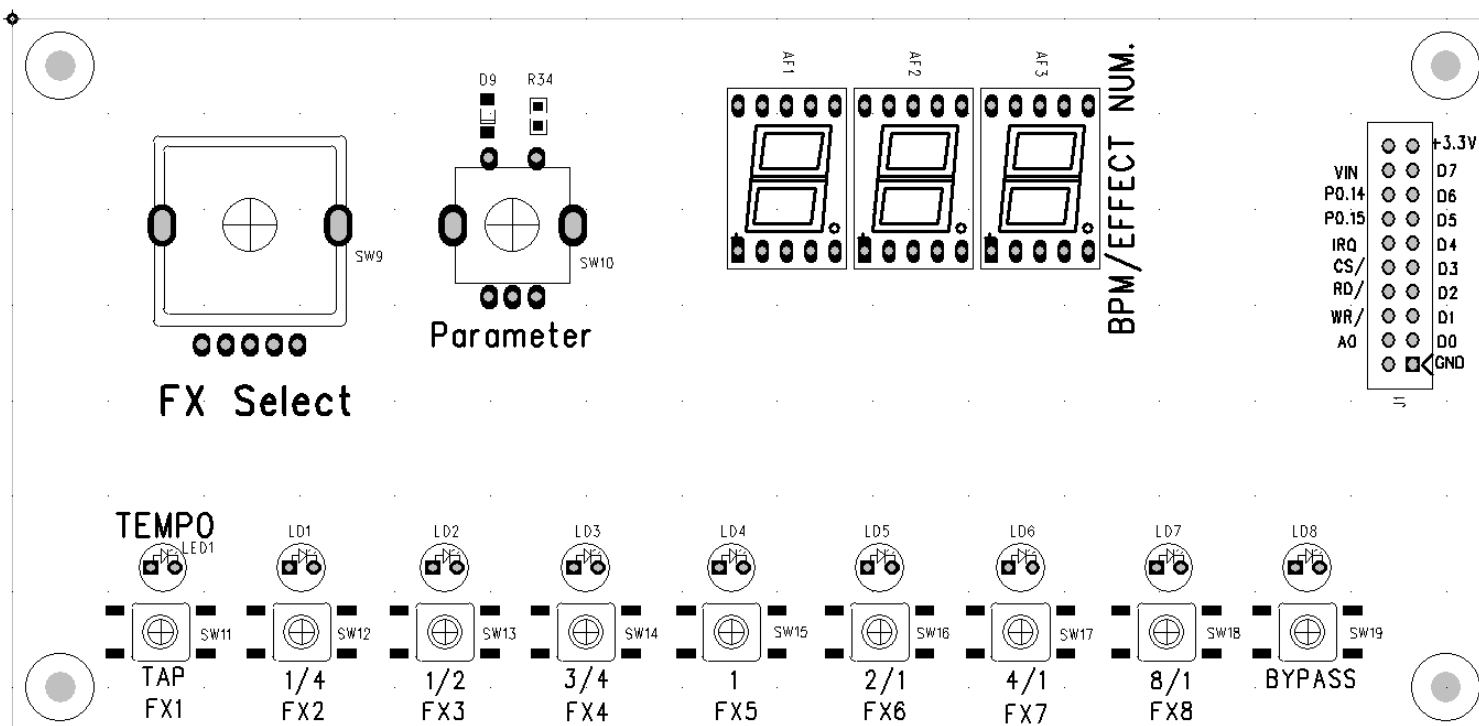
Guitar Amp 2

	AMP MODELING(16 BINARY ENCODER)	MOD-FX	REV/Delay
1	Hot Rod	Chorus	Reverb
2	R-Fier	Flanger	Long Delay
3	Acoustic	Phaser	
4	Black Panel	Tremolo	
5	Brit Combo		
6	Tweed		
7	Stack Classic		
8	Dyna Amp		
9	BDS		
10	DD250		
11	BMZ		
12	RAT		
13	Warm Drive		
14	FFace		
15	Muff pi		
16	AutoWah2		
	JC Clean (on clean channel)		

Bass Amp

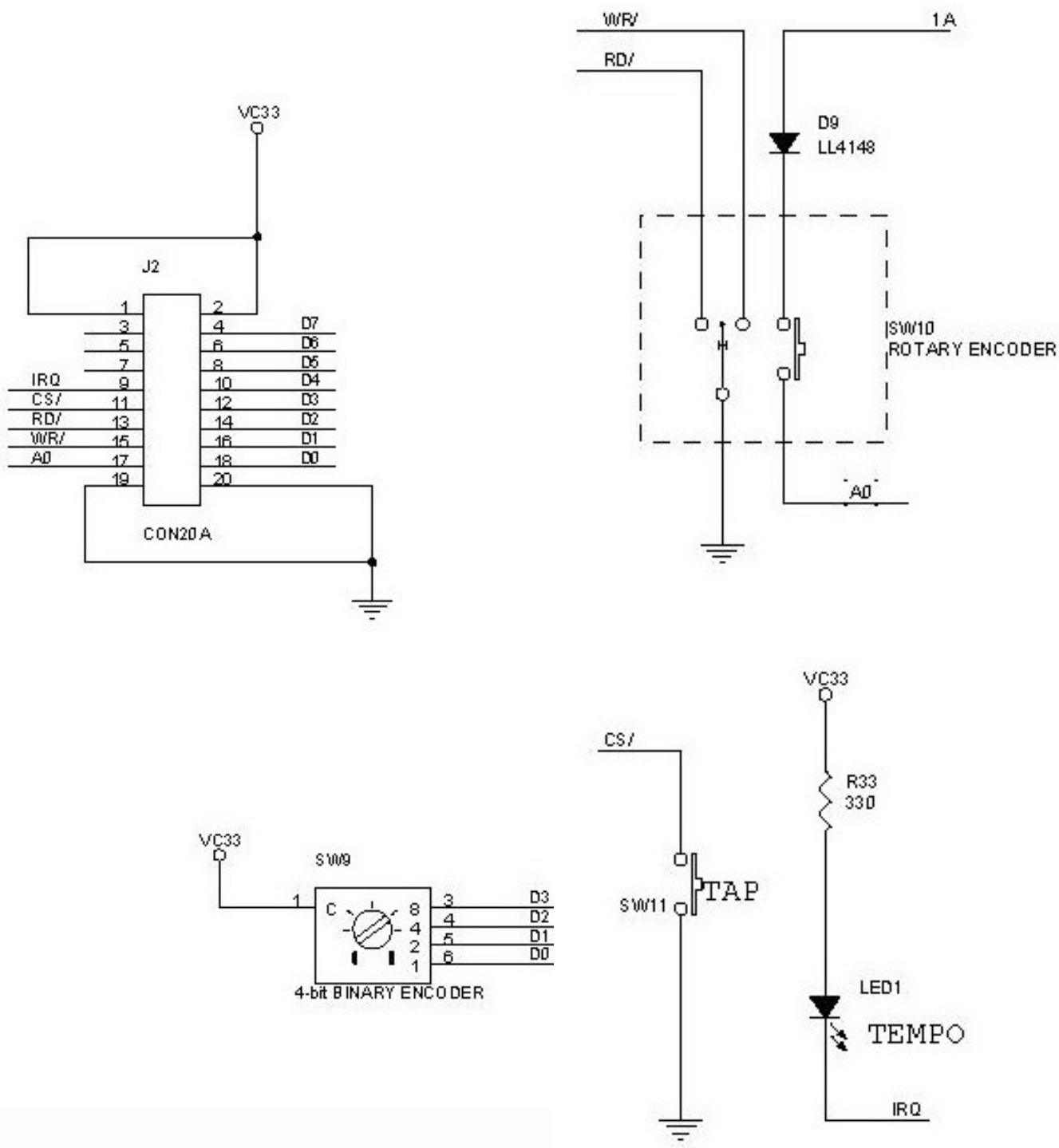
	AMP MODELING(16 BINARY ENCODER)	MOD-FX	REV/Delay
1	Modern	Bass Chorus	Reverb
2	Rock	Bass Flanger	
3	British	Phaser	
4	Fat Tube		
5	Bassman style		
6	SVT style		
7	King's X		
8	Solo		
9	Full Range Clean		
10	Slap		
11	Reggae		
12	Muff		
13	Octave Bass up		
14	Octave Bass down		
15	AutoWah1		
16	AutoWah2		

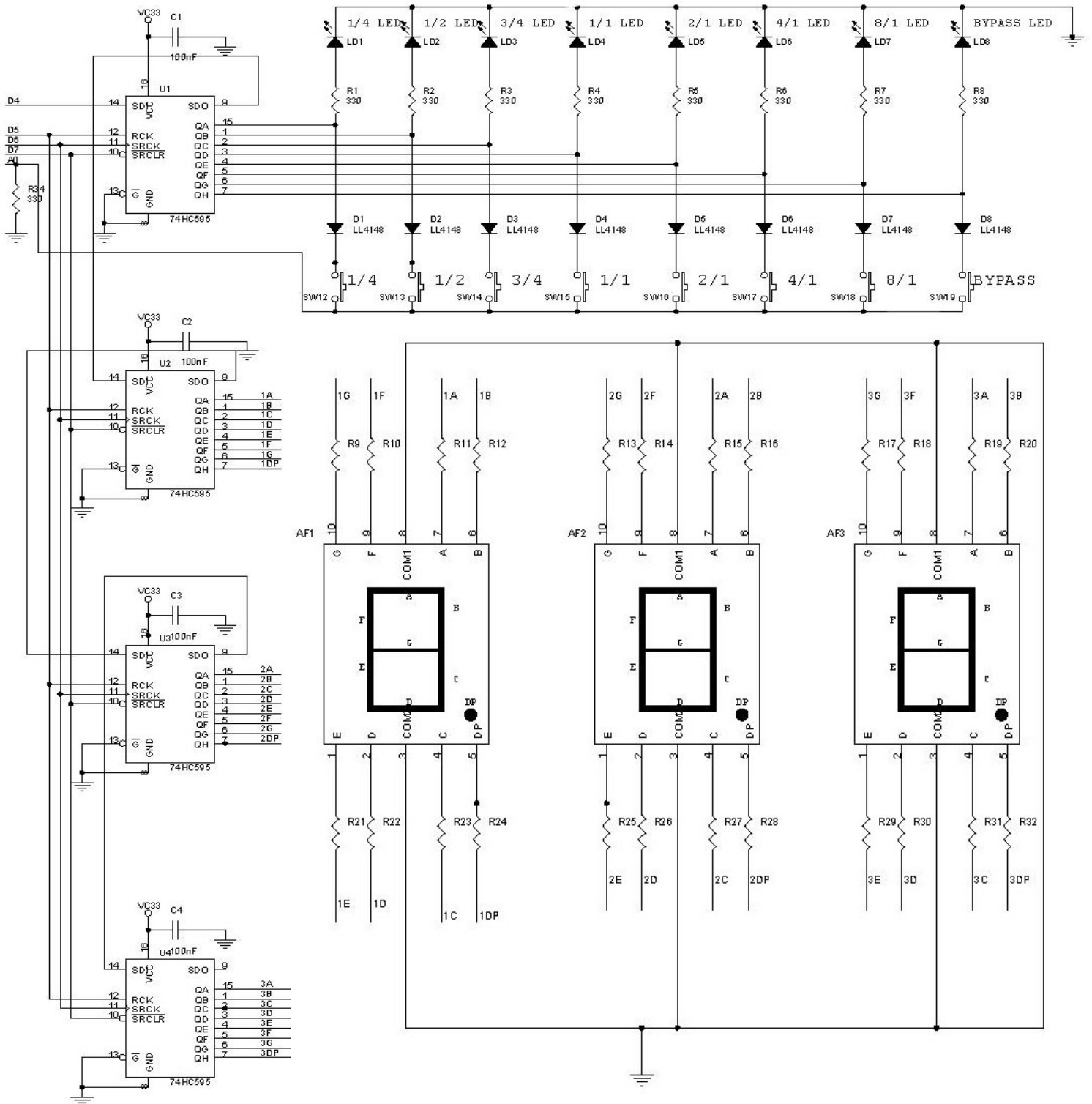
DJ Mixer beat effect



- 16 essential DJ beat effect for DJ mixer/effector on 16 position binary encoder
- Each effect with two parameter editing from one rotary encoder
- Auto BPM function also can be controlled by TAP switch manually ,there is a TEMPO led indicate the present beat
- 3-digit 7 segment led for BPM/parameter display
- 7 beat divider switch (1/4, 1/2, 3/4, 1/1, 2/1, 4/1 ,8/1 beats) that can sync with effect which is useful for more accurate effect parameter control.
- Effect bypass switch on board

Front Panel Schematic





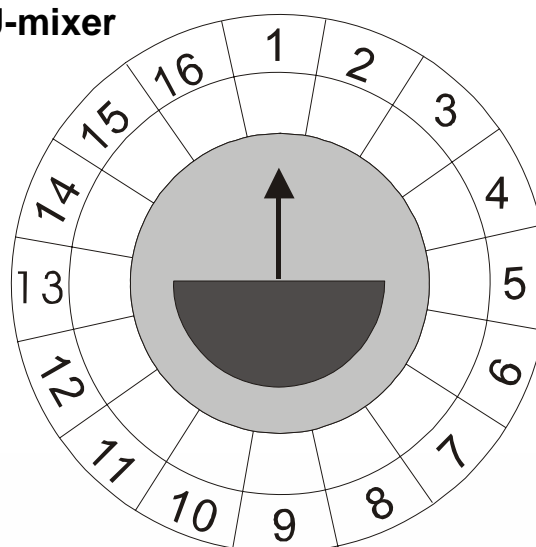
R9 to R32 are 220

AF1~AF3 : Common Cathode 7 segment led

Effect Chart

	Effect name	Parameter 1	Parameter 2	Beat Divide function?
1	Delay	Delay time	Dry/Wet level	Yes
2	Echo	Delay time	Dry/Wet level	Yes
3	Reverb	Reverb time	Dry/Wet level	
4	Auto Filter(BP)	Rate	Depth	Yes
5	Manual Filter(BP)	Cutoff Freq.	Resonance	
6	Auto Filter(HP)	Rate	Depth	Yes
7	Manual Filter(HP)	Cutoff Freq.	Resonance	
8	Auto Filter(LP)	Rate	Depth	Yes
9	Manual Filter(LP)	Cutoff Freq.	Resonance	
10	Phaser	Rate	Depth	Yes
11	Flanger	Rate	Depth	Yes
12	Auto Pan	Rate	Depth	Yes
13	Vocal Cancel	Central Cut Freq	Width	
14	Vocoder	Carrier Freq	Dry/Wet level	
15	Ring Modulator	OSC Freq	Dry/Wet level	
16	Pitch shifter			

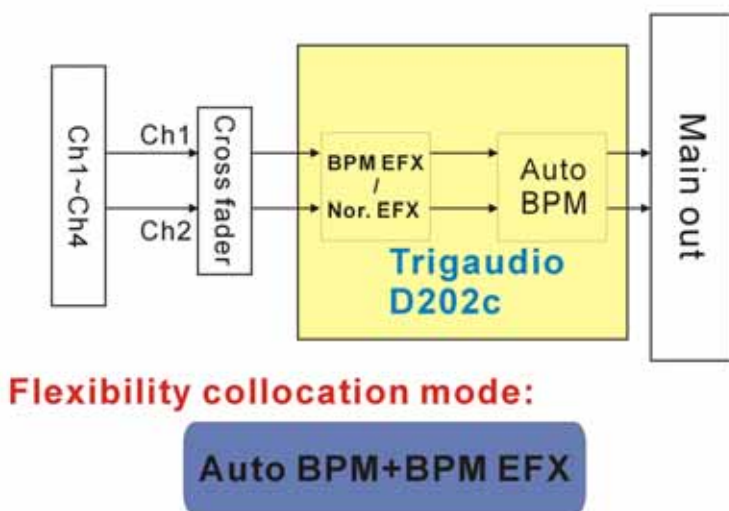
1.1 16 position binary encoder with DJ-mixer Program corresponding



DJ-mixer with other product Block Diagram

1.1 DJ-mixer block diagram

D202c for High-performance DJ-Mixer application block diagram



1.2 Wireless Microphone receiver block diagram

D202c for High-Resolution Wireless Mic-Receiver application block diagram

