M115B Multi Effects II

FUNCTION DESCRIPTION

The M115B Multi effects module is based on a DSP module used in the 90's. CRATE Electric guitar amplifiers manufacturer produced many amplifiers with installed DSP effect modules. The GFX30 guitar amplifier is one of them. It's a DSP based Effects Board made primarily for electric guitar uses.

It contains 10 presets listed here:

- DELAY (SLOW-FAST)
- FLANGER (SLOW-FAST)
- CHORUS (SLOW-FAST)
- REVERB-CHORUS (SLOW-FAST)
- REVERB (SLOW-FAST)

The 10 presets can be selected using the PRESET potentiometer shown here.

The final preset can be mixed with its clean or DRY incoming sound.

The printed circuit board

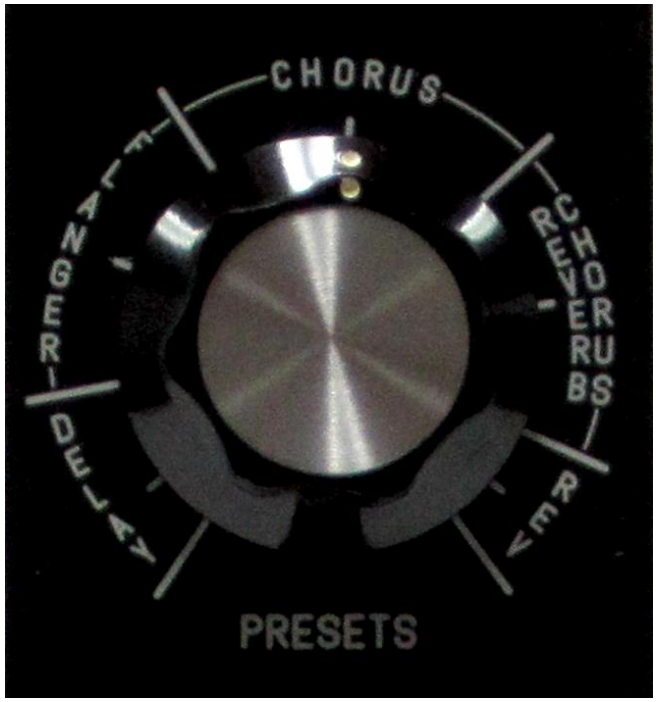
The PCB has been designed to fit behind a 1U Moog style front panel. It is a double side board 5.5" X 2.6" and is mounted using 4-40 0.25" round standoffs. All the parts are through hole types. Power is connected by use of a 6 pins 0.156" Molex type connector. The PCB has 4 mounting holes, one on each corner.

The circuit description (DSP board)

The **DSP module** main board is mounted over the main M115B board using four 4-40 0.25" round standoffs to keep it from touching the mother board parts and connections. The DSP board has a 7 pins connector for +5vdc power, the presets selection potentiometer and the audio input/output.

DSP digital board

Playing with the front 1Meg linear potentiometer brings up to 10 effects presets.



Selection is made by rotating the pot to the needed effect section shown on the front panel. The 7 wires connector is connected to the M115B main board using a small cable harness.

The circuit description (M115B main board)

U1A receives the external audio signal from J1 **INPUT** jack and put it available through J2 **OUT DRY** jack. It then feeds the **DSP module** input through H2 pin#2. The DSP output signal (H2 pin#1) is connected to the **FX LEVEL** potentiometer. Both FX level and DRY signal are mixed by the **U1B** mixer opamp.
The final mix is then wired to J3 **OUT MIX.**

Connector H2 pins 5,7 are connected to a 1 Meg linear potentiometer that selects the 10 possible presets from the DSP board using the preset names written on the front panel.

April, 2021
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ELECTRONIC SPECIFICATIONS

POWER CONNECTOR PIN ASSIGNMENTS

1	-15V
2	A GND
3	A GND
4	+15V
5	D GND
6	+5V

Panel Size: Single width 2.125”w x 8.75”h.

Controls:

FX Level: Mix of both DRY and FX signals

Waveform input levels: 10Vpeak to peak
Waveform output levels: 10Vpeak to peak

Intput impedance: 100k ohms, nom.
All output impedances: 1000 ohms, nom.

Waveform outputs:
DRY, OUT MIX

Power:
+15V @ 59..75mA,
-15V @ 3.5mA,
+5V @ 0mA.