# MB-606RE

## Introduction

The MB-606RE is a re-edit of CYM/HH and BD/SD drum parts of the Roland TR-606 to be controlled via MIDI (midibox) or CV through analog-Sequencers , in a a Eurorack-designed panel.
Well known Circuit Mods from around Web & time are included by default.

## FrontPanel

On Re-design

**First Version**:




- Drilling + Engraving + SmashTV Core32 Layout

## General Design

The MB-606re is part of the EuroLand Group... (606, 808, 909)
It can be used in 2 Cases:
Midi /CV+Trig
**1. Midi:** Use the MB-Modulbox Standartmodules, for Digital UI and CV+Trig-Generation

**2. CV+Trig:** Just Plug CV or Trig Jacks into the Analog Modules…without Midibox.

## Use with Midi

### MB-Modulbox Main PCB UI

- **Access** to System-Settings, Channel, NoteNumbers
- **CV+Trig Out-Jacks** for Euroland Drum Modules

### MB-Modulbox 8xPotentiometer Module

When using the Euroland Modules via Midi, then there are some Performance Parameters aviable: accessable via MB-Modulbox 8xPot - PCB. Have to be activated via Software. (Menue Point)

- **Velocity Offset** (-+64 > with Center Postiton = normal) - 10K lin
- **Random Kill** (0=full Kill, 127 no Kill, Normal Position > 127) - 10K lin
- **Velocity 2 TriggerLength** (-+64 > with Center Position = normal 10ms, turn right:time inc by velocity in%, turn left:decrease%) - 10K lin
- **Velocity Kill depending Note Kill** (-+64 > with Center Position = normal > Full Spectrum) - 10K lin
- **Global Accent:** (0-127-normal 127) - 10K lin

### MB-Modulbox 8x8 LED-Button-Matrix

Set CV + Trig Routing (some kind of trigger matrix), standard is 1:1 routing, so no need for this if fixed setup.

## Use with Midi or with Analog CV+Trig

Here are only the Analog-Drum-PCB discussed, since all other Digital UI is based on MB-Modulbox Standart Modules, the MB-Modulbox Main PCB2 is special Variant, described here.

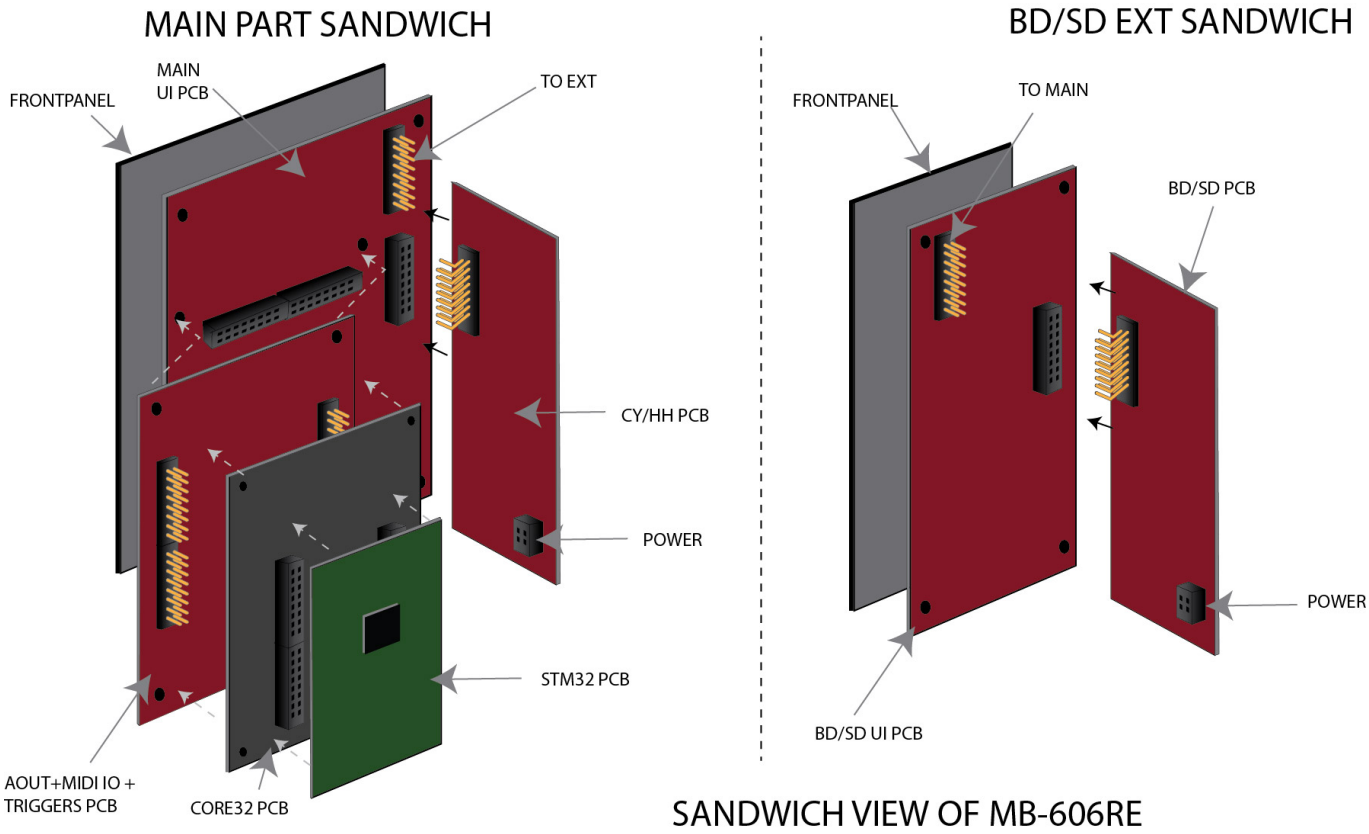
### 606 BD+SD, 606 HH+CY

To spare Space: **we sandwich in 2 layers**

- **1st PCB** : BD+SD UI-PCB / HH+CY UI-PCB »> Breakoutboard+Potentiometer Boards
- **2nd PCB** : Analog Circuits

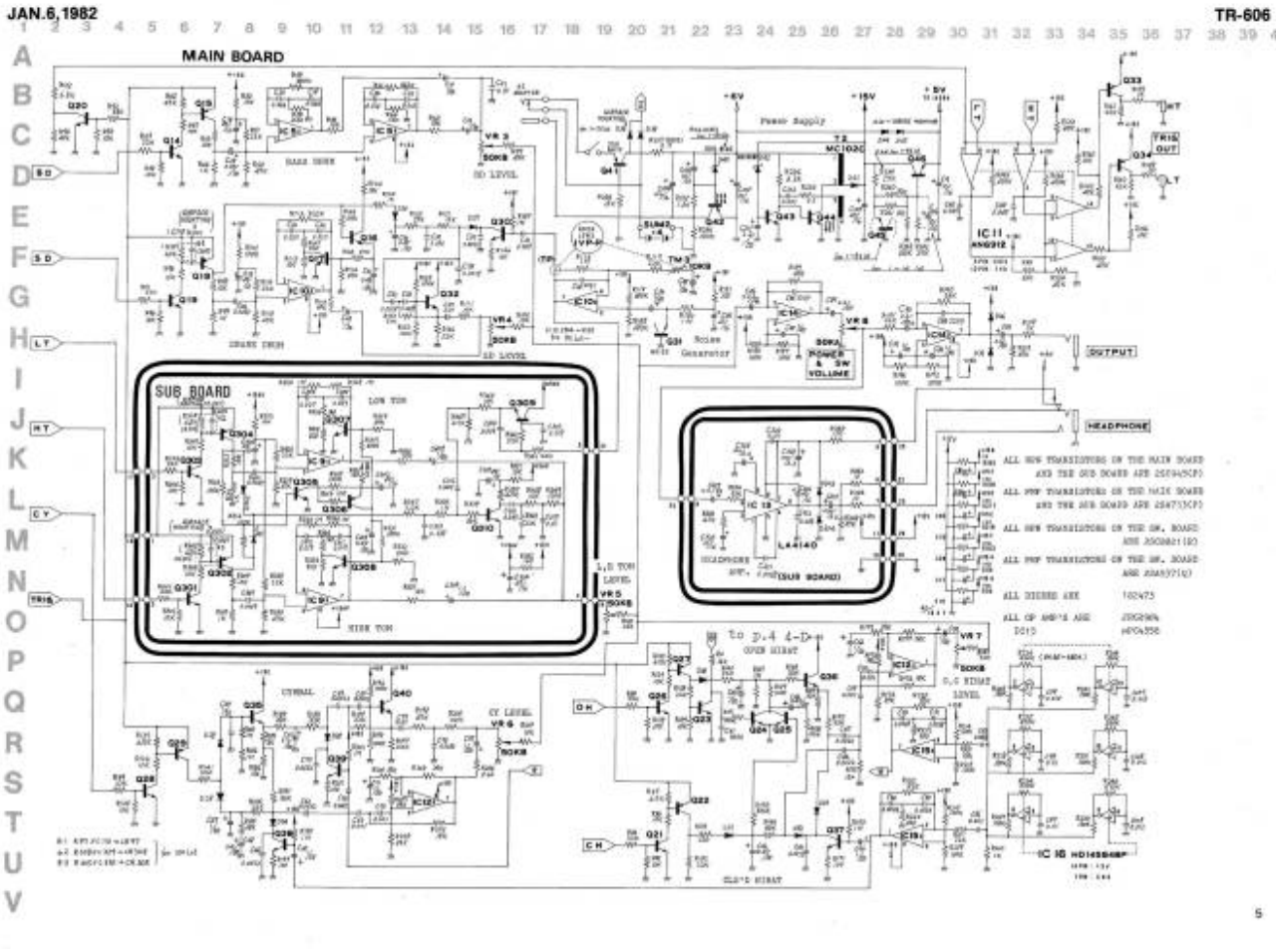
2n PCB: We get the two Analog Circuits (BD+SD / CY/HH) mounted 90° angled with vertical female socket and angled DIL Pinheaders for better heat dissipation

## Sandwich view

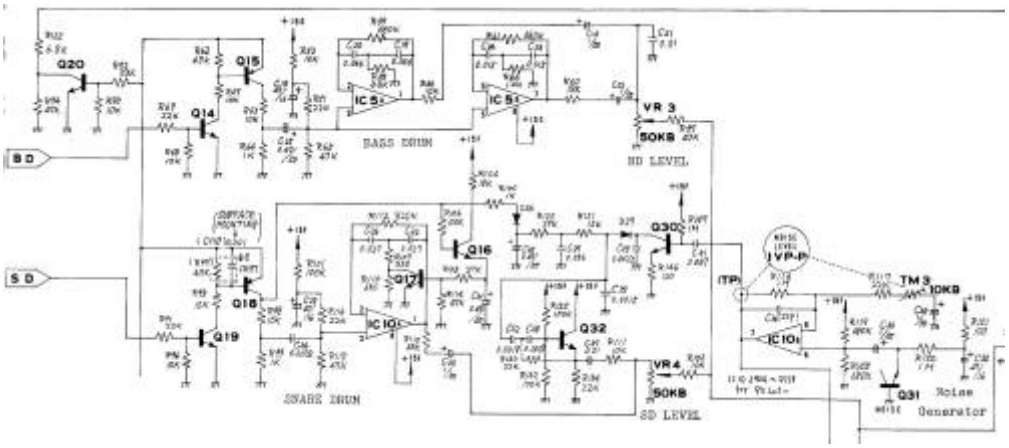



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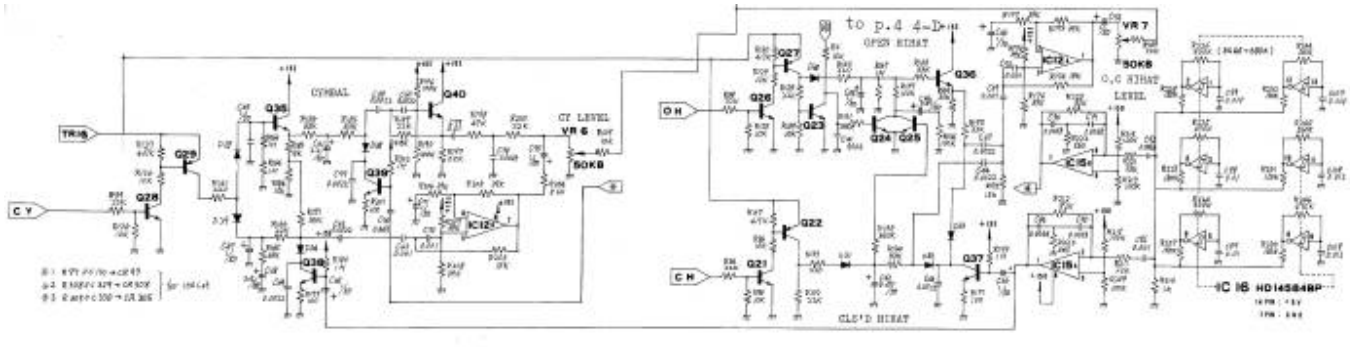
# Original Schematics


JAN.6,1982
TR-606
MAIN BOARD
SUB BOARD
BASS DRUM
SNARE DRUM
LOW TOM
MID TOM
CYMBAL
OPEN HIHAT
CLOSED HIHAT
Power Supply
OUTPUT
HEADPHONE
VOLUME
BD LEVEL
SD LEVEL
LT LEVEL
MT LEVEL
HT LEVEL
CY LEVEL
OH LEVEL
CH LEVEL
Noise Generator

## BD / SD


BASS DRUM
BD LEVEL
SNARE DRUM
SD LEVEL
Noise Generator

## CY / HH



# Mods

### Mod Sources

- Geoff Waterston
- confusedmachines
- amazona-workshop

### Analog Mods

- **HH Noise:** 10K or 50K lin or log,have to check , orginally 10K trimpot, only change volume not to absolutely silence.
- **6OSC-Gain:** 50K log (not sure)
- **CY-HH Ext:** 50K lin
- **CY-HH BPF-Resonance:** 100K Stereo lin
- **CY-HH BPF1:** 5K lin
- **CY-HH BPF2:** 5K lin
- **CY-HPF:** : 50K log
- **HH-HPF:**50K log
- **OH Decay:** 1M lin
- **CH Decay:** 1M lin
- **CY Decay:** 2M lin (internet) Phats machine has a 4M log

- **BD Tune:** 50K Log
- **BD Decay:** 2M lin
- **BD Tone:** 100K lin
- **Noise:** 50K log
- **SD Snappy:** 100K lin
- **SD Decay:** 500K lin
- **SD Tune:** 1M lin

# On-Going

## 1. UI Parts Listing

### Frontpanel

- Jacks 3.5mm @ Thonk
- SPDT Switch ON-OFF-ON @ Rs-components
- Mini DIN 4 poles @ Rs-components

| Value | Type | Qty |
|---|---|---|
| 3.5mm Jack | Vertical PCB-Mount | 13 |
| Switch | SPDT Vertical PCB-Mount ON-OFF-ON | 1 |

### Pots / Knobs

- Alps RK11K Series
- Alpha Pots @ Thonk
- Knobs Suppliers

| Value | Type | Qty |
|---|---|---|
| 5K | Linear | 2 |
| 10K | Linear | 6 |
| 50K | Linear | 6 |
| 50K | Logarithmic | 6 |
| 100K | Linear | 2 |
| 1M | Linear | 3 |
| 2M? | Linear | 2 |
| Knobs | Soft/Plastic/Alu | 31 |

## 2. BD/SD - CYM/HH Parts Listing

### Modded BD

| Value | Type | Qty | Original Designation |
|---|---|---|---|
| 2SA733/BC547 | Transistor | 1 | Q15 |
| 2SC945/BC557 | Transistor | 2 | Q14,Q20 |
| JRC2904/LM2904 | OpAmp | 1 | IC5 |
| 50KΩ | Pot Log | 2 | Level, ModTune |
| 100KΩ | Pot Linear | 1 | ModTone |
| 2MΩ | Pot Linear | 1 | ModDecay |
| 0,47µF/50V | Capa Elec | 1 | C25 |
| 1µF/50V | Capa Elec | 1 | C22 |
| 33µF/16V | Capa Elec | 1 | C19 |
| 47µF/16V | Capa Elec | 1 | C18 |
| 0,015µF | Capa Ceram | 2 | C23,C24 |
| 0,01µF | Capa Ceram | 1 | C21 |
| 1KΩ | Res 1/4W | 1 | R64 |
| 3,3KΩ | Res 1/4W | 1 | R58 |
| 4,7KΩ | Res 1/4W | 1 | R62 |
| 6,8KΩ | Res 1/4W | 1 | R122 |

| Value | Type | Qty | Original Designation |
|---|---|---|---|
| 10KΩ | Res 1/4W | 5 | R52,R56Mod/R67/R68/R93 |
| 22KΩ | Res 1/4W | 2 | R51,R69 |
| 33KΩ | Res 1/4W | 1 | R92 |
| 47KΩ | Res 1/4W | 3 | R59,R65,R94 |
| 100KΩ | Res 1/4W | 1 | R57 |
| 470KΩ | Res 1/4W | 1 | R56 |
| 560KΩ | Res 1/4W | 1 | R61 |

### Modded Noise/SD

| Value | Type | Qty | Original Designation |
|---|---|---|---|
| 2SA733/BC547 | Transistor | 1 | Q18 |
| 2SC945/BC557 | Transistor | 6 | Q19,Q17,Q16,Q30,Q31,Q32 |
| JRC4558/NJM4558D | OpAmp | 1 | IC10 |
| 50KΩ | Pot Log | 2 | Level,Noise |
| 100KΩ | Pot Linear | 1 | ModSnappy |
| 500KΩ | Pot Linear | 1 | ModDecay |
| 1MΩ | Pot Linear | 1 | ModTune |
| 1N4148 | Diode | 2 | D26,D27 |
| 22pF | Capa Ceram | 1 | C36Mod |
| 0,001µF | Capa Ceram | 1 | C97 |
| 0,0015µF | Capa Ceram | 1 | C38 |
| 0,0018µF | Capa Ceram | 2 | C52,C58 |
| 0,0033µF | Capa Ceram | 1 | C34 |
| 0,01µF | Capa Ceram | 1 | C57 |
| 0,027µF | Capa Ceram | 2 | C32,C33 |
| 0,047µF | Capa Ceram | 1 | C51 |
| 0,055µF | Capa Ceram | 1 | C37 |
| 2,2µF | Capa Ceram | 1 | C35Mod |
| 0,47µF/50V | Capa Elec | 2 | C31,C35 |
| 1µF/50V | Capa Elec | 2 | C30,C53 |
| 47µF/16V | Capa Elec | 2 | C28,C54 |
| 100Ω | Res 1/4W | 2 | R146,R151 |
| 330Ω | Res 1/4W | 2 | R107,R153 |
| 680Ω | Res 1/4W | 1 | R115 |
| 1KΩ | Res 1/4W | 2 | R99,R100 |
| 2,2KΩ | Res 1/4W | 1 | R91Mod |
| 4,7KΩ | Res 1/4W | 1 | R97 |
| 5,6KΩ | Res 1/4W | 1 | RDecayMod |
| 10KΩ | Res 1/4W | 5 | R95,R96,R98,R102,R111 |
| 15KΩ | Res 1/4W | 1 | R121 |
| 18KΩ | Res 1/4W | 1 | R104 |
| 22KΩ | Res 1/4W | 2 | R113,R154 |
| 27KΩ | Res 1/4W | 2 | R105,R120 |
| 47KΩ | Res 1/4W | 2 | R114,R118 |

| Value | Type | Qty | Original Designation |
|---|---|---|---|
| 68KΩ | Res 1/4W | 2 | R110,R148 |
| 100KΩ | Res 1/4W | 4 | R101,R106,R152,R155 |
| 470KΩ | Res 1/4W | 1 | R112Mod |
| 680KΩ | Res 1/4W | 1 | R119 |
| 1MΩ | Res 1/4W | 3 | R116,R147,R150 |

**Modded CY**

| Value | Type | Qty | Original Designation |
|---|---|---|---|

**Modded HH**

| Value | Type | Qty | Original Designation |
|---|---|---|---|

## 3.MB-Modulbox-Main2-PCB > 4xAOUT_LC + 8xTrigger In PCB Parts Listing

Integrate CV Scaling circuit

| Value | Type | Qty | Original Designation |
|---|---|---|---|

## 4.Footprints List

- ALPS Pots
- Alpha Pots
- 3,5mm Jack
- Switch

## 5. Schematics in KiCAD

KiCad Pre-Project MAIN by Phatline » shematics have to be overworked

1. Analog drums PCBs
2. UI PCBs
3. Special MB-Modulbox-Main2 PCB (4xAOUT-LC+8xTrigger out)

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