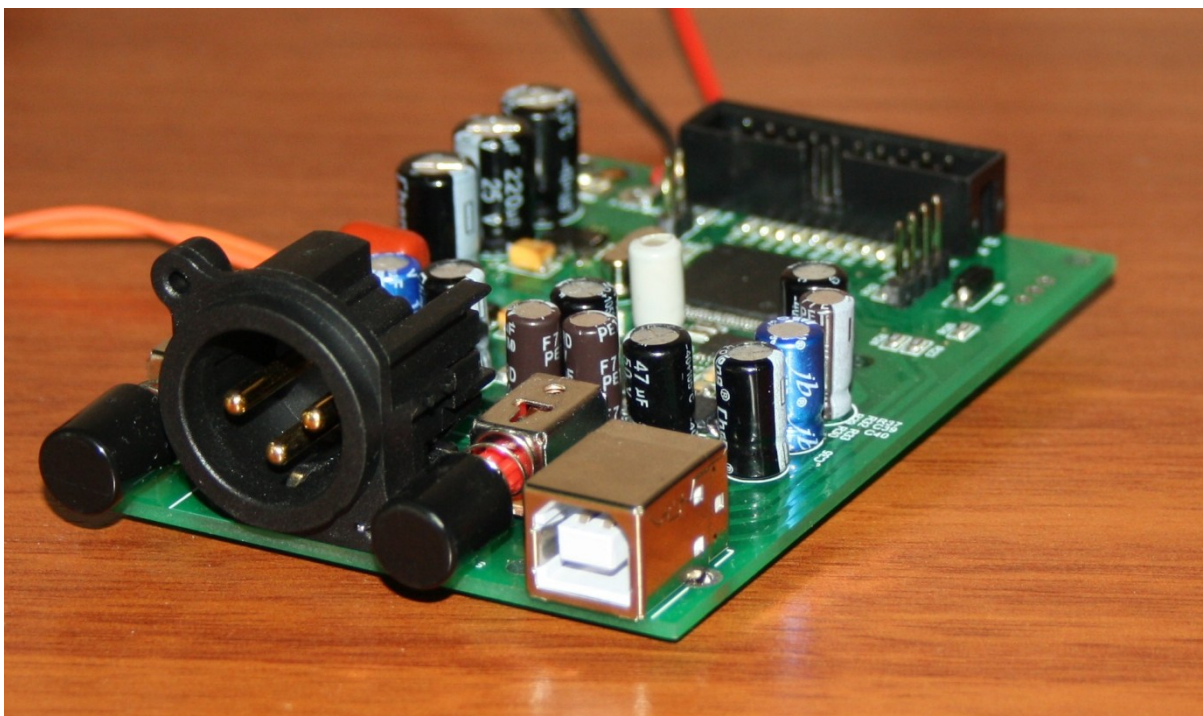# AMP:IR – IMPULSE RESPONSE SPEAKER SIMULATOR MODULE

AMP:IR – Easy install impulse response speaker simulator module for guitar amps, preamps, stompboxes, reactive\passive loads etc.
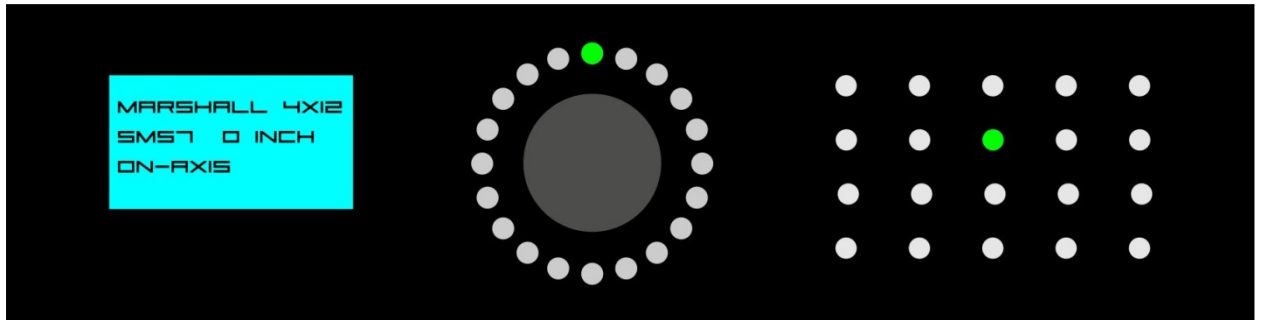
Technical details:

- *Power supply*: 7-12V
- *Input*: 1V
- *Output*: Balanced 0dB with PAD -20dB, with GND lift
- *Latency*: 1.2 msec
- *Impulse length:* 200 msec
- *Impulse count*: from 20pcs with 200msec length to 100 pcs with 49msec length
- *Control:* Encoder, 3 bits, serial port and their combination
- *Indication:* 3 variants: no indication, LED 4x5 Matrix, OLED LCD
- *Connection :* USB port for IR loading
- *Codec :* 114 dB dynamic range, -100 dB THD+N
- *Impulse format :* up to 32 bit, 44100, PCM 1, Mono
- *Dimension :* 64x90mm

CONFIGURATIONS

Indication

OLED screen or LED Matrix 4x5 (LED matrix shown in two variants – circle and matrix)

Control

By default switching IR makes with 20 positions Encoder. But possibly to configure one of next variants:

- Encoder
- 3 bits
- Serial Port Only
- Encoder + Serial Port
- 3 Bits + Serial Port

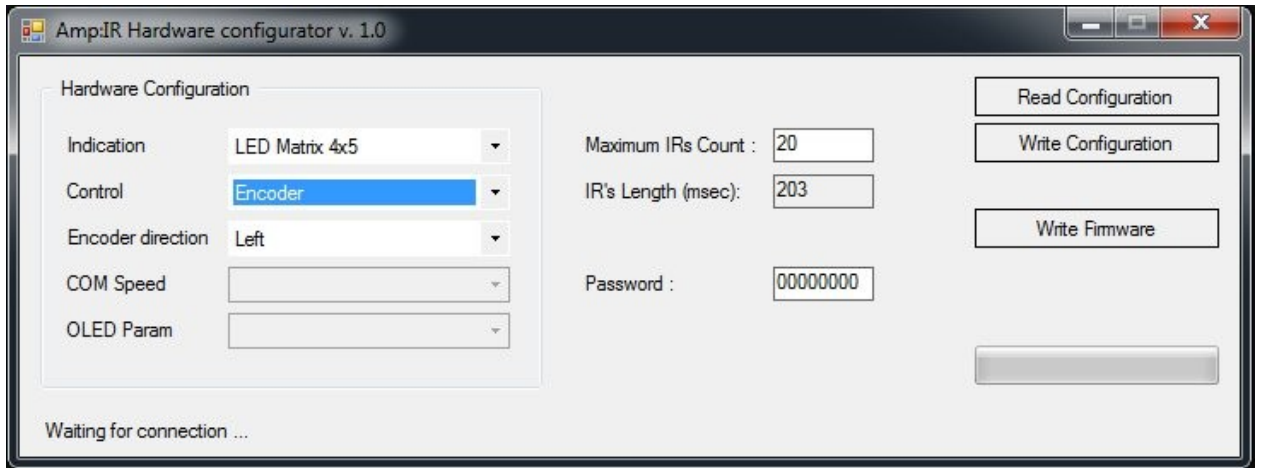***Encoder mode :*** IR switched only by encoder

3 bits : in this mode possibly to switch up to 8 IR – for example use 1-3 on-off switches

Serial Port – IR switched only by serial port, command is MIDI compatible PC (Program Change) command.

Encoder + Serial Port – combination Encoder and Serial port mode

3 Bits + Serial Port – combination Encoder and 3 bit mode

All hardware configurations makes by special software for developer

HARDWARE

Input

Variants of input schematics (figure 1)

1) Switch Line\Amp – for external device
2) The same as 1) but switching by Jack
3) Schematic for connection to inside guitar amp
4) Basic simple schematic

Clip indicator : Red+Green Led – Both for input and output signals

Main connector

GND	2	1	+3.3V
CLIP LED GREEN ANODE	4	3	CLIP LED RED ANODE
ENCODER RIGHT PIN	6	5	GND
ENCODER LEFT PIN	8	7	ENCODER SWITCH PIN
RESERVED	10	9	COLUMN1 LED MATRIX
SERIAL PORT TX (N\A)	12	11	SERIAL PORT RX
COLUMN2 LED MATRIX	14	13	COLUMN3 LED MATRIX
COLUMN4 LED MATRIX	16	15	ROW 5
OLED RES | ROW 4	18	17	OLED MOSI | ROW 3
OLED DC | ROW2	20	19	OLED SCK | ROW 1
+5V	22	21	GND
GND	24	23	GND

Serial Port

Supported speeds 9600, 31250 (MIDI), 38400, 57600, 115200. In this mode device can be controlled by external controller, or can be connected to Bluetooth module etc. All command is MIDI PC command compatibly.
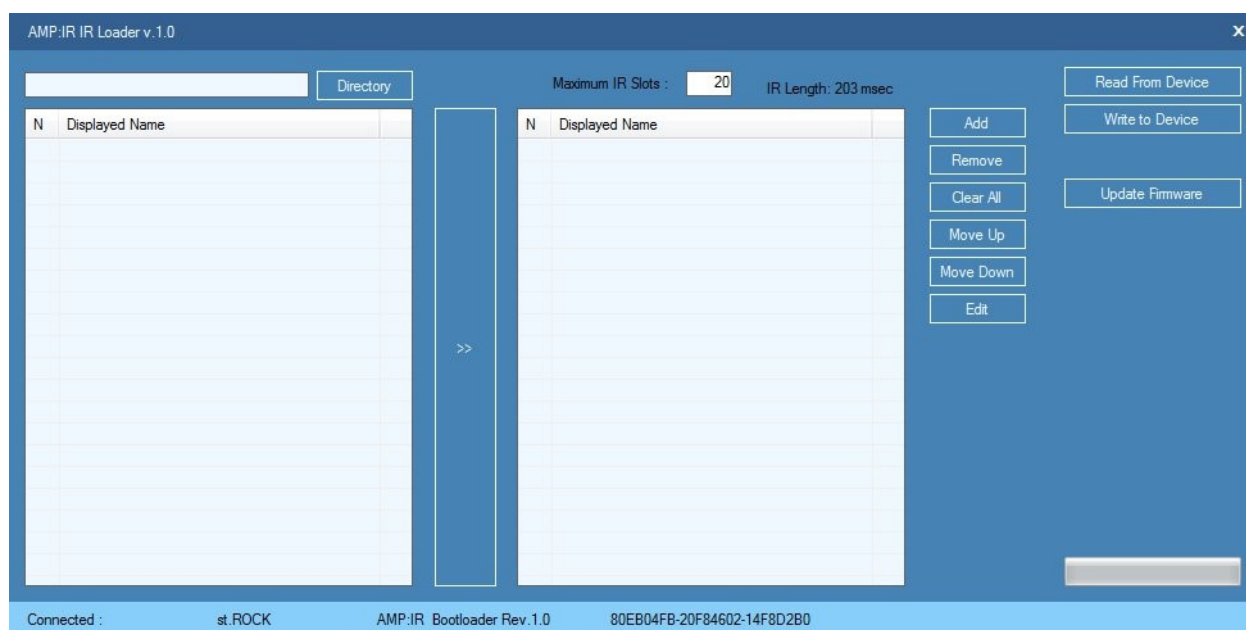
3 bits control mode

For this mode uses pins for encoder :

- – Left pin for bit 0
- – Right pin for bit1
- – Switch pin for bit2

SOFTWARE

AMP:IR IR Loader software for uploading IRs to module

Every care has been taken to ensure the correctness of the information contained in this publication but no liability can be accepted for any errors or omissions. We reserve the right to make technical changes.

We can make any changes according to your requirements.
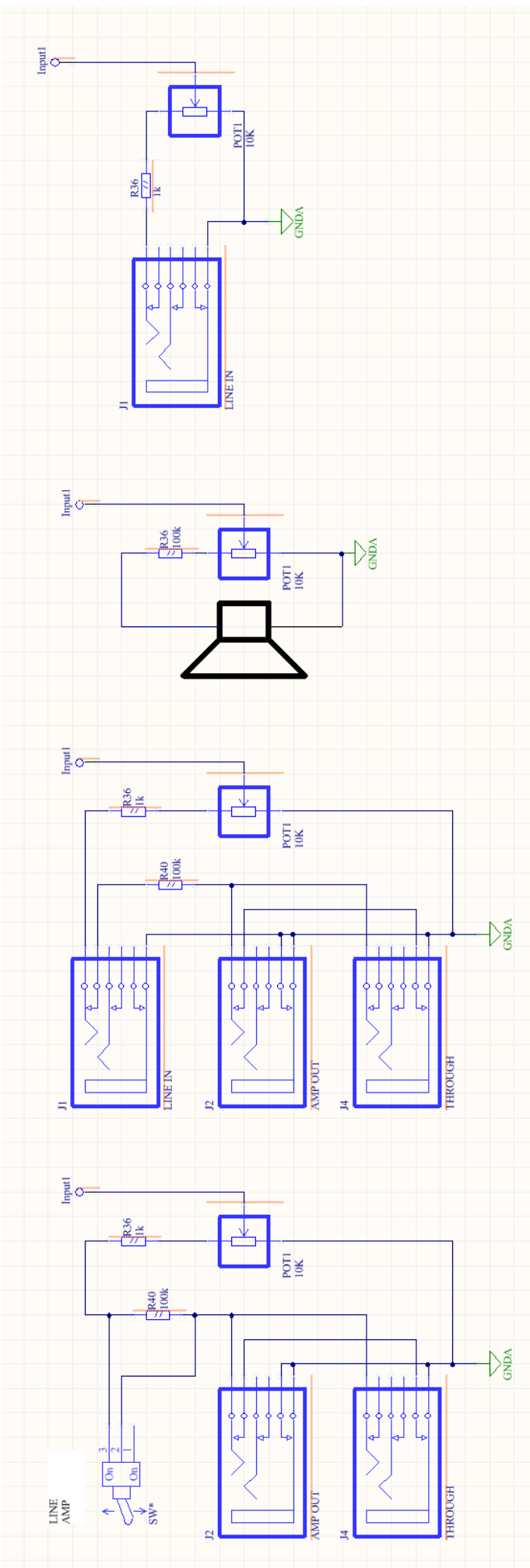
Contact info: vasilius.engineer@gmail.com

Figure 1 :

1) Switch Line\Amp – for external device
2) The same as 1) but switching by Jack
3) Schematic for connection to inside guitar amp
4) Basic schematic