

WALKMAN MOTOR CONTROL

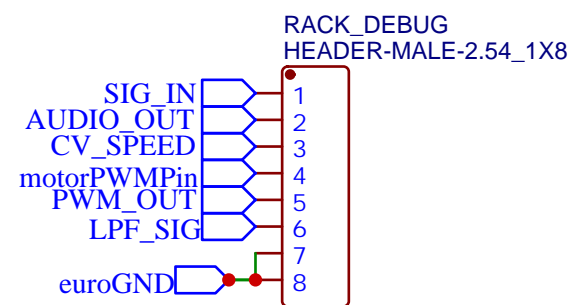
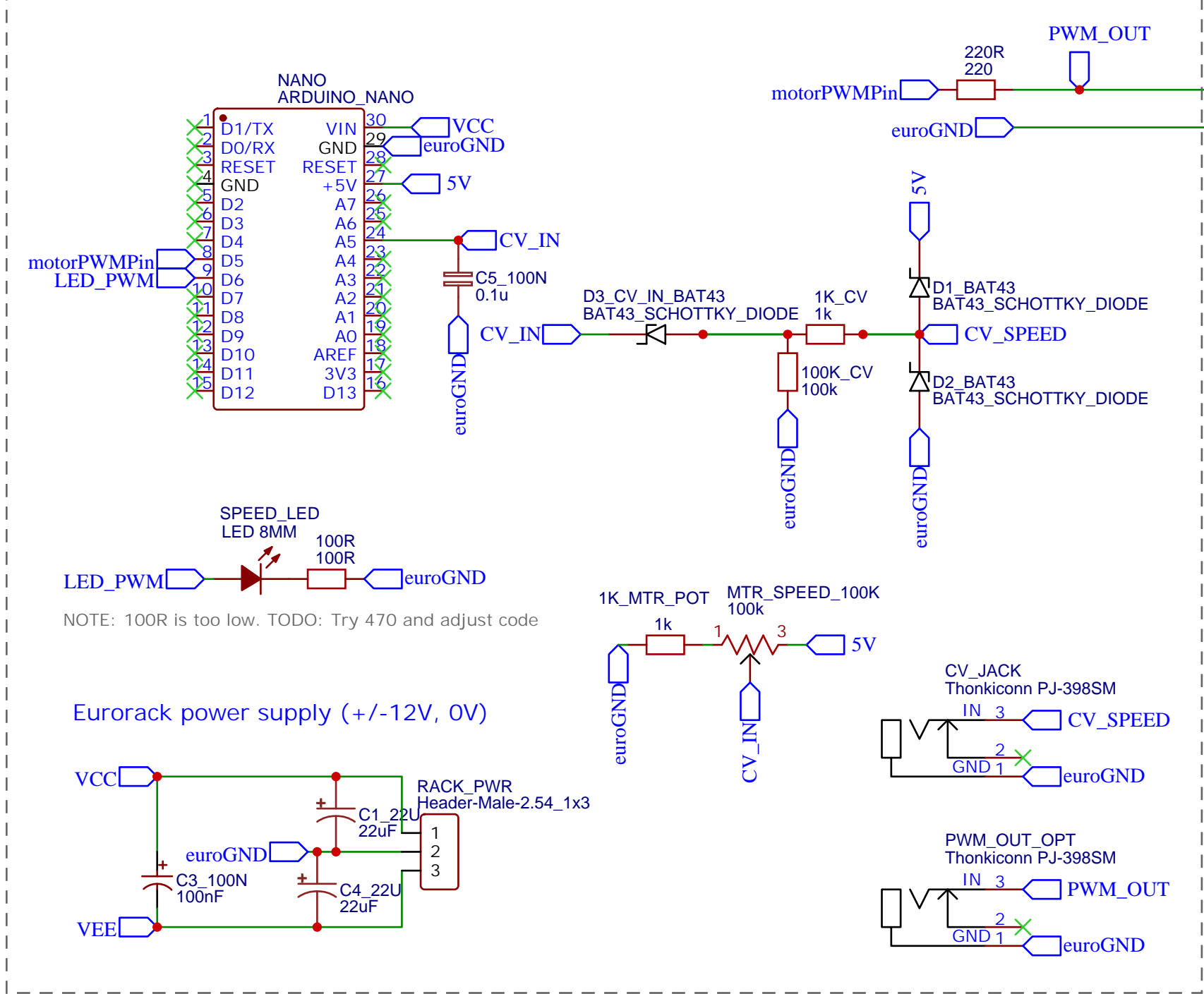
Converts eurorack control voltage (CV) in, to PWM out for motor speed control
A potentiometer for a speed knob sets base speed.

The diagram illustrates the Walkman Motor Control circuit. It features an Arduino Nano (labeled NANO ARDUINO_NANO) connected to a motor, a CV input, a speed knob, and various LEDs. The circuit includes a 5V regulator, a CV input filter, a speed knob, and a motor driver. The Arduino Nano is connected to a motor, a CV input, a speed knob, and various LEDs. The circuit includes a 5V regulator, a CV input filter, a speed knob, and a motor driver.

Components and Connections:

- Arduino Nano:** VIN to VCC, GND to euroGND, RESET to RESET, +5V to 5V, D1/TX to LED_PWM, D0/RX to LED_PWM, D2 to LED_PWM, D3 to LED_PWM, D4 to LED_PWM, D5 to LED_PWM, D6 to LED_PWM, D7 to LED_PWM, D8 to LED_PWM, D9 to LED_PWM, D10 to LED_PWM, D11 to LED_PWM, D12 to LED_PWM.
- Motor:** motorPWMPin to LED_PWM, euroGND to euroGND.
- CV Input:** CV_IN to A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A61, A62, A63, A64, A65, A66, A67, A68, A69, A70, A71, A72, A73, A74, A75, A76, A77, A78, A79, A80, A81, A82, A83, A84, A85, A86, A87, A88, A89, A90, A91, A92, A93, A94, A95, A96, A97, A98, A99, A100, A101, A102, A103, A104, A105, A106, A107, A108, A109, A110, A111, A112, A113, A114, A115, A116, A117, A118, A119, A120, A121, A122, A123, A124, A125, A126, A127, A128, A129, A130, A131, A132, A133, A134, A135, A136, A137, A138, A139, A140, A141, A142, A143, A144, A145, A146, A147, A148, A149, A150, A151, A152, A153, A154, A155, A156, A157, A158, A159, A160, A161, A162, A163, A164, A165, A166, A167, A168, A169, A170, A171, A172, A173, A174, A175, A176, A177, A178, A179, A180, A181, A182, A183, A184, A185, A186, A187, A188, A189, A190, A191, A192, A193, A194, A195, A196, A197, A198, A199, A200, A201, A202, A203, A204, A205, A206, A207, A208, A209, A210, A211, A212, A213, A214, A215, A216, A217, A218, A219, A220, A221, A222, A223, A224, A225, A226, A227, A228, A229, A230, A231, A232, A233, A234, A235, A236, A237, A238, A239, A240, A241, A242, A243, A244, A245, A246, A247, A248, A249, A250, A251, A252, A253, A254, A255, A256, A257, A258, A259, A260, A261, A262, A263, A264, A265, A266, A267, A268, A269, A270, A271, A272, A273, A274, A275, A276, A277, A278, A279, A280, A281, A282, A283, A284, A285, A286, A287, A288, A289, A290, A291, A292, A293, A294, A295, A296, A297, A298, A299, A300, A301, A302, A303, A304, A305, A306, A307, A308, A309, A310, A311, A312, A313, A314, A315, A316, A317, A318, A319, A320, A321, A322, A323, A324, A325, A326, A327, A328, A329, A330, A331, A332, A333, A334, A335, A336, A337, A338, A339, A340, A341, A342, A343, A344, A345, A346, A347, A348, A349, A350, A351, A352, A353, A354, A355, A356, A357, A358, A359, A360, A361, A362, A363, A364, A365, A366, A367, A368, A369, A370, A371, A372, A373, A374, A375, A376, A377, A378, A379, A380, A381, A382, A383, A384, A385, A386, A387, A388, A389, A390, A391, A392, A393, A394, A395, A396, A397, A398, A399, A400, A401, A402, A403, A404, A405, A406, A407, A408, A409, A410, A411, A412, A413, A414, A415, A416, A417, A418, A419, A420, A421, A422, A423, A424, A425, A426, A427, A428, A429, A430, A431, A432, A433, A434, A435, A436, A437, A438, A439, A440, A441, A442, A443, A444, A445, A446, A447, A448, A449, A450, A451, A452, A453, A454, A455, A456, A457, A458, A459, A460, A461, A462, A463, A464, A465, A466, A467, A468, A469, A470, A471, A472, A473, A474, A475, A476, A477, A478, A479, A480, A481, A482, A483, A484, A485, A486, A487, A488, A489, A490, A491, A492, A493, A494, A495, A496, A497, A498, A499, A500, A501, A502, A503, A504, A505, A506, A507, A508, A509, A510, A511, A512, A513, A514, A515, A516, A517, A518, A519, A520, A521, A522, A523, A524, A525, A526, A527, A528, A529, A530, A531, A532, A533, A534, A535, A536, A537, A538, A539, A540, A541, A542, A543, A544, A545, A546, A547, A548, A549, A550, A551, A552, A553, A554, A555, A556, A557, A558, A559, A560, A561, A562, A563, A564, A565, A566, A567, A568, A569, A570, A571, A572, A573, A574, A575, A576, A577, A578, A579, A580, A581, A582, A583, A584, A585, A586, A587, A588, A589, A590, A591, A592, A593, A594, A595, A596, A597, A598, A599, A600, A601, A602, A603, A604, A605, A606, A607, A608, A609, A610, A611, A612, A613, A614, A615, A616, A617, A618, A619, A620, A621, A622, A623, A624, A625, A626, A627, A628, A629, A630, A631, A632, A633, A634, A635, A636, A637, A638, A639, A640, A641, A642, A643, A644, A645, A646, A647, A648, A649, A650, A651, A652, A653, A654, A655, A656, A657, A658, A659, A660, A661, A662, A663, A664, A665, A666, A667, A668, A669, A670, A671, A672, A673, A674, A675, A676, A677, A678, A679, A680, A681, A682, A683, A684, A685, A686, A687, A688, A689, A690, A691, A692, A693, A694, A695, A696, A697, A698, A699, A700, A701, A702, A703, A704, A705, A706, A707, A708, A709, A710, A711, A712, A713, A714, A715, A716, A717, A718, A719, A720, A721, A722, A723, A724, A725, A726, A727, A728, A729, A730, A731, A732, A733, A734, A735, A736, A737, A738, A739, A740, A741, A742, A743, A744, A745, A746, A747, A748, A749, A750, A751, A752, A753, A754,

- Converts eurorack control voltage (CV) in, to PWM out for motor speed control
- A potentiometer for a speed knob sets base speed.



WALKMAN MOTOR DRIVER

Galvanically separated from the rest of the circuit

PTOCOUPLER
FH617A-4X016

3.3V

MTR_DRV

TAPE_MOTOR
210S-1*2P L=11.6MM Gold-plated black

toMotorGND
fromMotorNegative

From Optocoupler

1K_MTR

MTR_DRV
TIP120

toMotorGND

GND

9V_DC_IN
210S-1*2P L=11.6MM Gold-plated black

9V

GND

REG3.3V
LD1117V33C

ADJ/GND
VOUT
VIN

3.3V

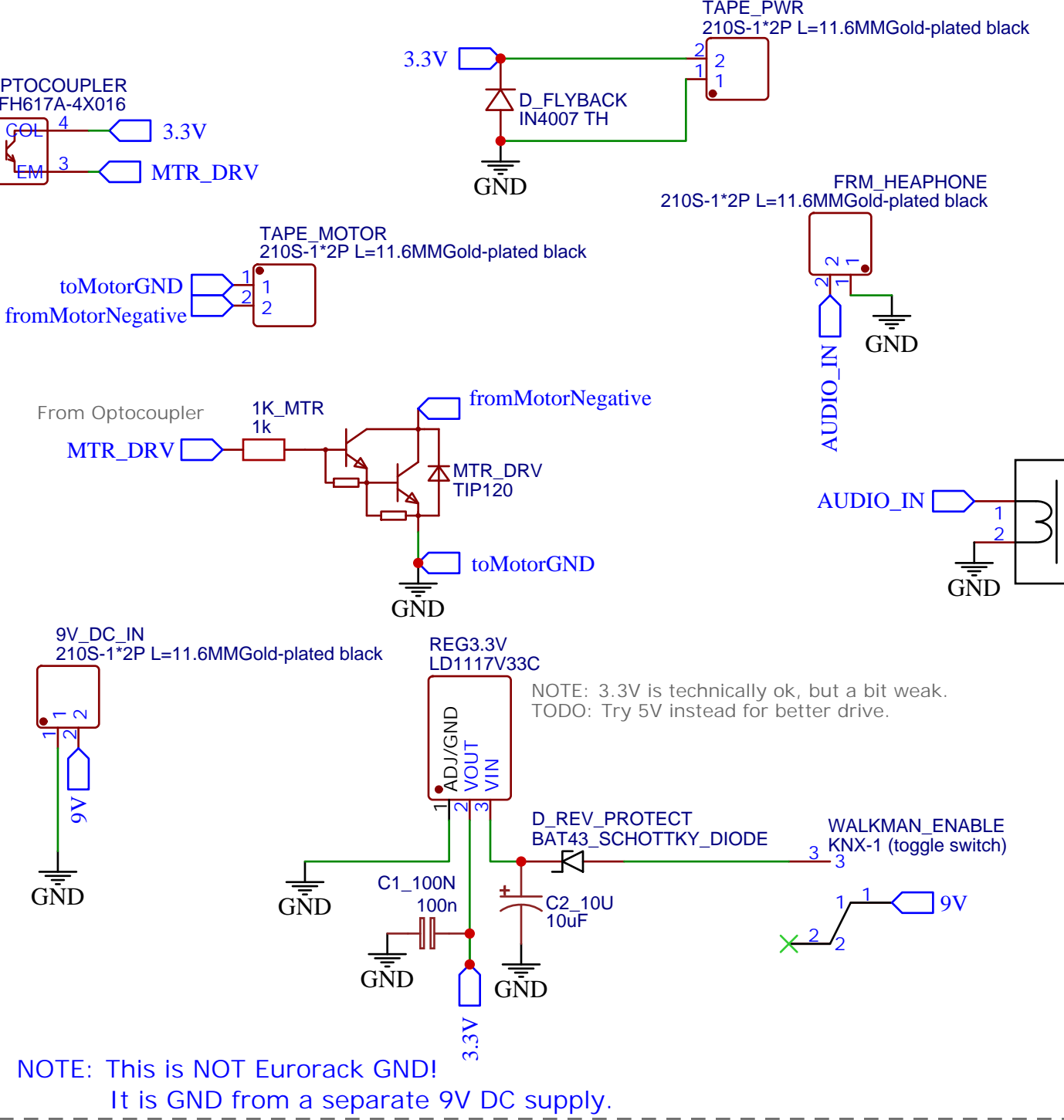
D_REV_PROTECT
BAT43_SCHOTTKY_DIODE

WALKMAN_ENABLE
KNX-1 (toggle switch)

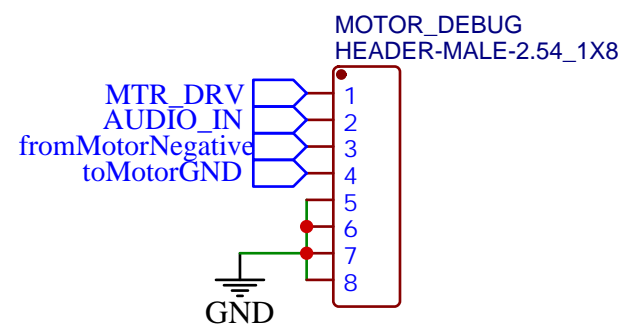
9V

NOTE: This is NOT Eurorack GND!
It is GND from a separate 9V DC supply.

Galvanically separated from the rest of the circuit



NOTE: This is NOT Eurorack GND! ³
It is GND from a separate 9V DC supply.



AUDIO GAIN STAGE

Brings headphone level (~1Vpp) to Eurorack level (~10Vpp).

Amplify to Eurorack levels.

AUDIO_OUT

OUT_JACK
Thonkiconn PJ-398SM

AUDIO_OUT

210S-1*2P L=11.6MM Gold-plated black
SIGNAL_OUT

Lowpass to get rid of spikes. Cutoff ~15.9kHz.

SIG_IN

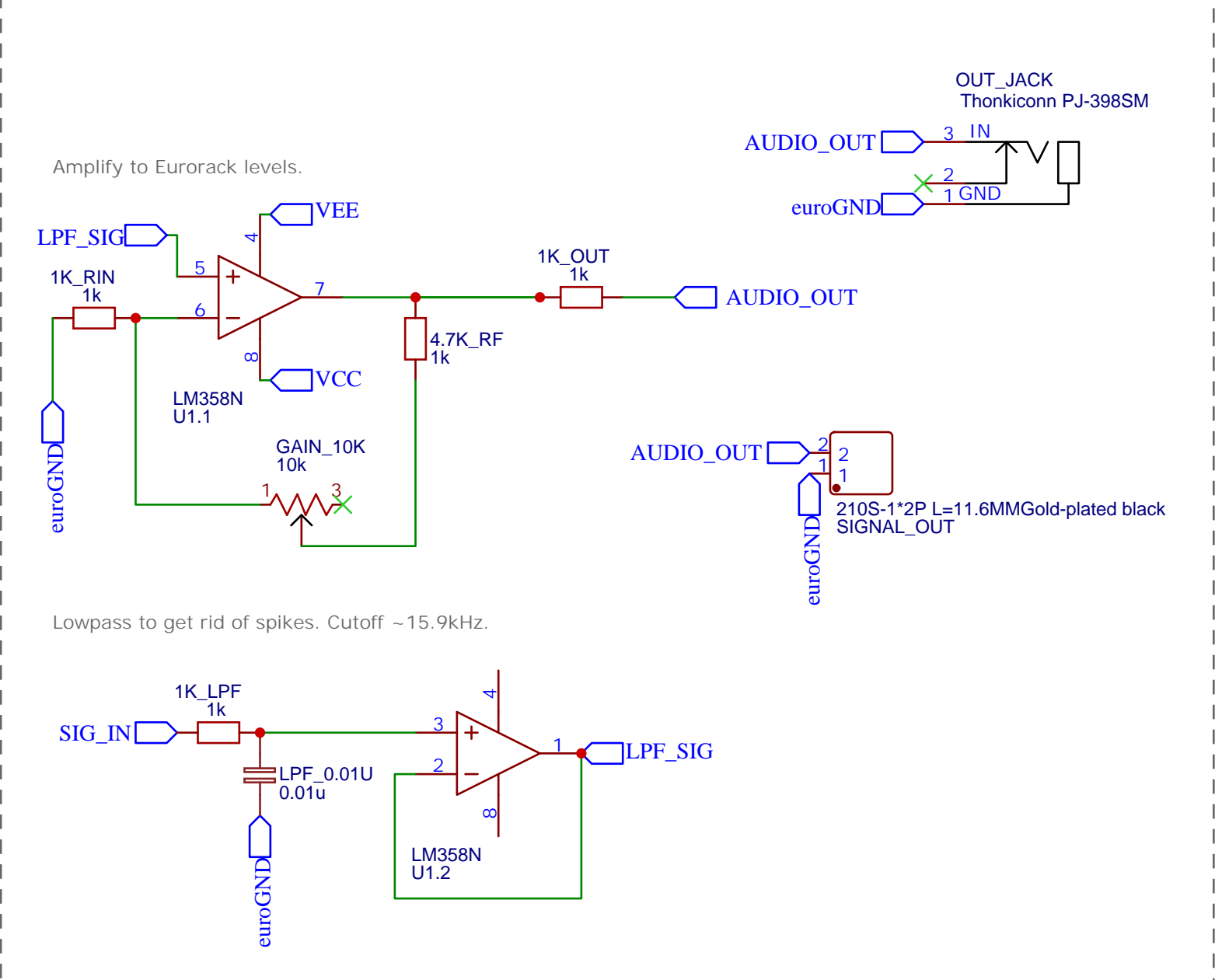
1K_LPF
1k

LPF_0.01U
0.01u

LPF_SIG

LM358N
U1.2

- Brings headphone level ($\sim 1\text{Vpp}$) to Eurorack level ($\sim 10\text{Vpp}$).



Lowpass to get rid of spikes. Cutoff $\sim 15.9\text{kHz}$.

TITLE: Walkman Motor		REV: 2.0.0
	Company: Expressive Circuits	Sheet: 1/1
	Date: 2022-08-23 Drawn By: aweijnitz	