

#### Schematic Notes:

The MCD-527 LDRs (Light Dependent Resistors):

TRD101 and TRD102, are split into 2 parts each. These parts are the LED light source (Part B - Highlighted Green) and the Photoresistor (Part A - Highlighted Red).

#### Signal Flow:

Audio enters from the piezo pickups at the upper left and is highlighted in yellow all the way to the buffer amplifiers where it is split into unbalanced high and balanced low impedance stereo signals. The left high impedance signal is highlighted in red while the right high impedance signal is highlighted in green. The left low impedance signal is highlighted in purple while the right low impedance signal is highlighted in pink.

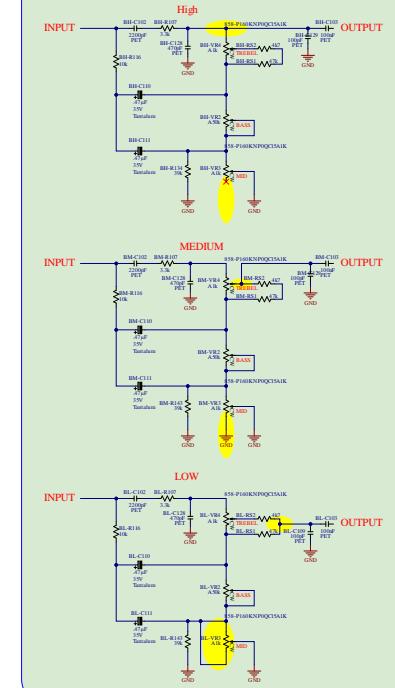
The tone brilliance signals are detailed on the far right, external controls are labeled in bold red, and adjustment pots are highlighted in bright green boxes.

Clicking on any component in the PDF file will show the original part number, part specifications, and notes on replacement parts.

Using the PDF file bookmarks, you can jump to any specific part or net.

#### TONE BRILLIANCE LEVEL BREAKDOWN

Below is a breakdown of the tone circuit and Brilliance Switch. The circuits are drawn with the switch in each of its 3 positions (High, Medium, and Low). This allows for easier diagnostics and modification. In the TINA spice graphs which I have exported as BMPs, you can get a better idea of what each position does. The yellow highlights are the changes from one position to another.



Part	Name	Description	Designator	Quantity	Manufacturer	Manufacturer Part Number	Supplier	Supplier Part Number
IN4148	SiN Diode	SiN Diode, 300mA, 40V (PN#4)	C002	1	Onsemi	IN4148	DigiKey	DN4148SND
IN5219TR	Zener Diode	Replacing an IN5219 can find the original, a PN#4148 should be fine Zener Diode 1N5219 30mW 1% 100V	D101, D102	2	Microchip	IN5219TR	Mouser	404-IN5219TR
IN5448	Zener Diode	Replacing an IN5448 can find the original, a PN#4148 should be fine Zener Diode 1N5448 30mW 1% 100V	C001	1	Onsemi	IN5448	DigiKey	DN5448TR1ND
1029P900M	Capacitor	1uf .5% 20% Electrolytic If noise need replacement, just use a low ESR 1uf .5% 10% or 20% Electrolytic that is the correct size and value.	C107, C108, C114, C121, C122	4	Omni-Dublizer	1029P900M	DigiKey	1059P900MND
112AX	Capacitor	0.01uF 100V 0.05% 1% Mono Ceramic, 10x10x3mm Replacing, replace with same high quality	J1, J2, J3, J4	4	Balchcraft	112AX	DigiKey	SC1316-ND
228P9250M	Capacitor	If these are replaced, be sure to use BiPolar Electrolytic. I would go with ±10% tolerance and a maximum 25V. And make sure they physically are the correct size. 0.022uf 25V BiPolar Electrolytic	C204, C207	2	Omni-Dublizer	228P9250M	DigiKey	2089P9250MND
238W1-10ZF	Capacitor	If replacing, use a 14V normal multi turn with 10% tolerance as they are much better. Find a physical duoblock works... I will do more research on these as it would also (personally) use maximum part if i can find one that fits.	W02	1	Bourns	238W1-10ZF	DigiKey	208W1-10ZFND
238W1-104ZF	Capacitor	If replacing, use a 14V normal multi turn with 10% tolerance as they are much better. Find a physical duoblock works... I will do more research on these as it would also (personally) use maximum part if i can find one that fits. Original was 20W user 20% 20V ceramic Adjustable Resistor - Trimmer	W01, W02, W03, W04	4	Bourns	238W1-104ZF	DigiKey	208W1-104ZFND
238W1-125ZF	Capacitor	If replacing, use a 14V normal multi turn with 10% tolerance as they are much better. Find a physical duoblock works... I will do more research on these as it would also (personally) use maximum part if i can find one that fits. Original was 20W user 20% 20V ceramic Adjustable Resistor - Trimmer	W01	1	Bourns	238W1-125ZF	DigiKey	208W1-125ZFND
238W1L1223E000	Capacitor	225uF 125VDC or higher PET Capacitor These were originally Mylar Film (PET) but suggest replacing with metallized polyimide (MPIM). Just ensure a proper lead spacing/timing	H1C02, H1C12, H1C12, H1C12, C002	4	EPICOS	238W1L1223E000	DigiKey	405-328-ND
RC485TA	Transceiver	Serial Serial Bipolar Transceiver, 400-Base-T, 100Mbps, 2211T, Fairchild, NPN, Silicon, TQ-28 If replacing, a 1000BASE-T equivalent will work fine. These are just for turning on the LEDs in the PCB.	T001, T002, T003	3	Sensortec	RC485TA	DigiKey	BS485TACT-ND
1029P10-1uf	Capacitor	1029P10-1uf 1029P10-1uf (higher PET) Capacitor	H1C03, H1C13, H1C13, H1C13, C003, C008	4	Panasonic	ED1029V10A1A	DigiKey	10ED1029V10A1AND
ED1029V10A1A	Capacitor	These were originally Mylar Film (PET) but suggest replacing with metallized polyimide (MPIM). Just ensure a proper lead spacing/timing	C001	1	Panasonic	ED1029V10A1A	DigiKey	10ED1029V10A1AND
1029P1025	Capacitor	1029P1025 - I need to put these in themselves to find the correct size.	C111, L12	2	Microelectronics	1029P1025	DigiKey	407-144-5-ND
29124B	Capacitor	Original 4.7PF/100V ceramic Varactor Diode, 1 Output 1.5A TO-126 Replacing, needs a varistor for pin compatibility devices	C201	1	Microelectronics	29124B	DigiKey	407-144-5-ND
1029P1025-1K	Capacitor	If replacing, needs a varistor for pin compatibility devices Original 4.7PF/100V ceramic Varactor Diode, 1 Output 1.5A TO-126	R02, R03	2	Telegärtner	1029P1025-1K	DigiKey	104MF-29P1025-1K-ND
1029P1025-1K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02	1	Telegärtner	1029P1025-1K0	DigiKey	104MF-29P1025-1K0-ND
1029P1025-1K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02	1	Telegärtner	1029P1025-1K0	DigiKey	104MF-29P1025-1K0-ND
1029P1025-2K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02, R20, R151, R153, R04, R05	4	Telegärtner	1029P1025-2K0	DigiKey	104MF-29P1025-2K0-ND
1029P1025-3K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02, R20	2	Telegärtner	1029P1025-3K0	DigiKey	104MF-29P1025-3K0-ND
1029P1025-3K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02, R20	2	Telegärtner	1029P1025-3K0	DigiKey	104MF-29P1025-3K0-ND
1029P1025-4K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02, R20, R28, R028, R2	4	Telegärtner	1029P1025-4K0	DigiKey	104MF-29P1025-4K0-ND
1029P1025-4K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02, R20, R28, R028, R101, R028	5	Telegärtner	1029P1025-4K0	DigiKey	104MF-29P1025-4K0-ND
1029P1025-4K0	Capacitor	All resistors are 10% 1/4W Watt. I suggest any replacement use 1% 1/4Watt metal film.	R02	1	Telegärtner	1029P1025-4K0	DigiKey	104MF-29P1025-4K0-ND
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