

## Marantz CD57 modifications

### Power supply

Part:	Org. value:	Replace by:	Brand:	Farnell:	Remark:
C801/802	22/47n cer.	47n MKT	BC	568-247	
C803/804	470u/35V	6800u/35V	Panasonic TSHA	578-915	+2u2 MKT
C805/806	470u/16V	2200u/25V	Rubycon ZLH	812-6445	+100n PPS
C811/812	22/47n cer.	47n MKT	BC	568-247	
C813	4700u/16V	4700u/16V	Panasonic FC	303-6212	+1u MKT
C815	3300u/6,3V	4700u/10V	Rubycon ZLH	812-6224	+100n PPS
C871	47u/16V	1500u/10V	Rubycon ZL	769-071	+100n PPS
D801...804	S5688G	BYV95B	Philips	367-424	
D811/812	S5688G	BYV95B	Philips	367-424	
DN01/02	S5688G	BYV95B	Philips	367-424	
Q801	JRC78M12	LM317	National	948-9398	* see below
Q802	JRC79M12	LM337	National	948-9401	* see below
Q811/871	JRC7805A	MC7805ACT	ONsemi	300-4831	

### HDAM & OPAMPS (Q605/606)

C611...614	100u/25V	220u/16V	Rubycon Black Gate Std.	(or use others +100n PPS)	
C655...658	220u/16V	wire jumper		measure offset first!	
C659/660	100p	remove			
R613...616	27R	220uH/3R3	Epcos	511-651	+2 ferrites
R617/618 #	470R	remove			
R651...654 #	27R	remove			
R655/656	10k	remove			
R657/658	100R	wire jumper			
R659/660	100R	47R			
QN05...08	2SC2878	remove			
Q605/606 **	NJM2114D	AD827/LM6172/LT1361....		experiment!	** see below
- insert extra 220n/PPS between pins 4 and 8			Panasonic	383-5492	SMD

### OUTPUT FILTER

C601...604	120p	120p/1%	KP/Mica	867-901	
C605/606	1000p	560p/1%	KP/Styroflex	304-0021	Bessel filter
C607/608	100p	100p/1%	KP/Styroflex	303-9894	
CD21...24	120p	120p/1%	KP/Mica	867-901	
R601...604	27k	27k/0,1%	BC	308-6288	
R607/608	18k	18k/0,1%	BC	308-6240	
R609/610	22k	22k/0,1%	BC	308-6264	
R605/606/611/612	10k	10k/0,1%	BC	308-6185	
RD21...28	10k	10k/0,1%	BC	308-6185	

### DAC (QD01, SM5872BS)

CD04	220u/10V	remove			
CD05	47n cer.	390u/35V	Rubycon ZLH	812-6739	+100n PPS
CD06	47n cer.	390u/35V	Rubycon ZLH	812-6739	+100n PPS
CD07	220u/10V	remove			
CD12/13	47n cer.	100n PPS	Panasonic	383-5418	SMD
CD15/16	470u/10V	680u/35V	Rubycon ZLH	812-6771	+100n PPS
RD01/04	4,7R	220uH/3R3	Epcos	511-651	+2 ferrites

## **Decoder (Q102, SAA7372GP)**

C108	100n cer.	100n MKT	BC	567-450	
C109	22n cer.	100n MKT	BC	567-450	
C110	47p cer.	47p PS	LCR	105-058	
C114	47u/16V	remove? 220u/16V?			
C115	47n cer.	100n PPS	Panasonic	383-5418	
C116	47n cer.	220u/16V	Rubycon ZLH	812-6305	+100n PPS
C117...119	47n cer.	100n PPS	Panasonic	383-5418	SMD
C120	47u/16V	220u/16V	Rubycon ZLH	812-6305	
C125	1n cer.	1n PS			
R117/118	4,7R	220uH/3R3	Epcos	511-651	+2 ferrites

## **Drivers (Q106/107/108, TDA7073A)**

C156	47u/16V	220u/16V	Rubycon ZLH	812-6305	
C132/157/159	47n cer.	100n X7R	Siemens	on bottom-side, directly between pin 5 and ground.	

## **µCONTROLLER (QF01, MN187164)**

CF02	47u/16V	remove			
CF01	47n cer.	220u/16V	Rubycon ZLH	812-6305	+100n PPS
RF01/R11	4,7R	220uH/3R3	Epcos	511-651	+2 ferrites

- insert extra 100n X7R between pins 35 and 36 of JF01

## **SERVO PCB**

C121/124	47n cer.	100n PPS	Panasonic	383-5418	
C122	47n cer.	100n MKT	BC	567-450	
C126	47u/16V	220u/16V	Rubycon ZLH	812-6305	+100n PPS

- suitable ferrite beads: Farnell type 242-500.

## **More mod's...**

There's more...

To clean up the +/- 12V supply that's used for the opamps, disable all other circuits that use it:

- Disable headphone circuit: remove C901/902 (signal) and jumpers U139/140 (+/- 12V).
- Disable muting circuit: remove QN24/25/91/92 and RN27/28 (disables analog -12V supply to muting circuit).

Some noise reduction...

- Replace fixed powerchord by an IEC socket and connect ground wire to chassis at the output socket. Use high quality steel braid shielded power cable to connect player to mains.
- Place varistor S20K250 directly on mains pins of IEC socket or on mains terminals on the PCB.
- Insert common-mode filter (Farnell 353-2331 or 322-7509). Remove U243/245 and insert filter instead. Place one class X capacitor 4,7n/250Vac across mains before and after filter.
- Insert a 100n film capacitor and a 22R resistor across the sled motor, similar to R161 and C162 for the disc motor. There are empty places for these components located near JM01.

## And these are for the die-hard's...

- Insert one or two new muting relays to restore muting function: replace RN30/31 with 2k2 (from RN15/16), jumper base and collector pins of QN24/25 and use muting-lines to drive one or two BC547's with relays: emitters to GND, relay in collector circuit. Tap power from collector of QN02 (approx. 12VDC). Connect NC contacts to empty collector and emitter pins of QN07/08. Make sure RN27/28 are removed.
- Remove internal DAC-clock and connect a low jitter external clock module to pin 28 of DAC.
- Feed the digital (DVDD) and analog supply pins (AVDD1...4) of the DAC separately, through their own inductors. Remove U203. Place the RD04 inductor in the empty "+" hole of CD07 and in the hole of U203 that connects it to U200, together with a new 220uH inductor (+ 2 ferrites) that replaces U203. The digital and analog +5V of the DAC are now separated.

**OR (the deluxe version):** insert a separate 5V voltage regulator for the analog AVDD pins of the DAC. Remove U203 and U202. This trace is no longer used since C901 is removed. Place RD04 in the empty "+" hole of CD07 and in the empty hole of U203 that connects it to U200. Place a new inductor (+ 2 ferrites) in the other hole of U203 and the hole of U202 that leads to C901. Place your favorite voltage regulator on the back of the PCB, near C813. Tap power from U267 (-) and U268 (+). Place a small cap at the output of the regulator and connect it with a short wire to the empty "+" pin of C901, that leads to our new inductor.

- To separate the +/- 12V circuit for the opamps even more: modify the power-transformer and separate the common 5V / 12V center-tap. Remove the transformer from the PCB. Carefully desolder the two thickest wires connected to pin 4 of the transformer. These are the 5V center-tap wires. Wrap them together a bit and solder a small piece of wire on them. Remove U239. Insert a wire between the two un-named holes in line with U239. This will connect the now separate 12V center-tap to the 12V section. Put the transformer back on the PCB and connect the free 5V center-tap wires to the empty hole of U239 that's closest to U241.

## REMARKS

\* replace Q801/802 with low-noise regulators or LM317/337 on small PCB's. Use experimentingboard or PCB's found at <http://eddie.dyec.com.tw/diy-products/vrm/vrm.htm> for example. Fit LM337's by carefully cross-bending the input and output pins and reversing the diodes and caps. Use tantalum decoupling caps.

\*\* for best results: use single opamps, each fit for their task. Example: OPA602 + THS4011 or AD8610 + AD8510 for post-DAC + filter on SMD adapters (BrownDog or eq.). Experiment and listen!

# the HDAM-circuit looks nice, but when moving up to better opamps and interconnects this circuit starts to interfere and degrades the sound quality. To disable HDAM: remove R651...654 (+/- 12V), R617/618 and RH23/24 (only if C655...658 are left in place). Insert wire jumper at R619/620, or connect directly from U126/127 with wire if C655...C658 are removed.

A lot of information and tips came from various articles and forums I found on the internet:

- many thanks to Thorsten Loesch for his article at <http://www.tnt-audio.com/clinica/cd67.html>
- and credits to the members of diyAudio.com that contributed through the forum, although they are probably not aware of that (they'll know who they are if they recognize their idea here...).

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