

MARANTZ CD-63 KI UPGRADES 2005-2011

BY BRENTON ROWE

- * **2X** C2 PREMIUM CLOCKS
- * **25X** LOW NOISE REGULATORS
- * **10X** TOROID TRANSFORMERS
- * **272VA** TOTAL VA (112VA internally)
- * **11.64Kg** TOTAL WEIGHT

2X C2 CLOCK
25X SPOWER

2X BOTTOM PLATE

TX INFO

AUDIO OUTPUT	160VA 18V	TO DISCRETE OUTPUT
DRIVER ICs	60VA 12V	LASER & MOTOR DRIVE
CLOCK 1 16.934Mhz	7VA 18V	DAC
CLOCK 2 8.467Mhz	7VA 18V	SERVO
DAC	15VA 9V	ANALOGUE & DIGITAL
DECODER	7VA 9V	ANALOGUE & DIGITAL
SERVO	7VA 9V	ANALOGUE & DIGITAL
HF & RF	7VA 9V	
DISPLAY	1.6VA 12V	

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OUTPUT SECTION

CUSTOM EXTERNAL PSU	20V +/- DC
1X 160VA 18V NUVOTEM TX	
8X HEXFRED HFA04TB60	
2X FIDELITY AUDIO SI CAPACITORS	25V 22000uF
2X 35V 2200uF BLACK GATE FK	
4X WIMA 0.1uF	
1X SPOWER +20V	
1X SPOWER -20V	

CUSTOM DISCRETE PCB	
2X S POWER +15V LOW NOISE REGS	
2X S POWER -15V LOW NOISE REGS	
4X CAPACITORS	25V 220uF BLACK GATE FK

RUSS ANDREWS 'AGSS' HYPER PURE SILVER	FROM DAC TO DISCRETE AND DISCRETE TO RCA
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GROUND WIRES RUN TO STAR EARTH

TWIN RELAY MUTING CIRCUIT

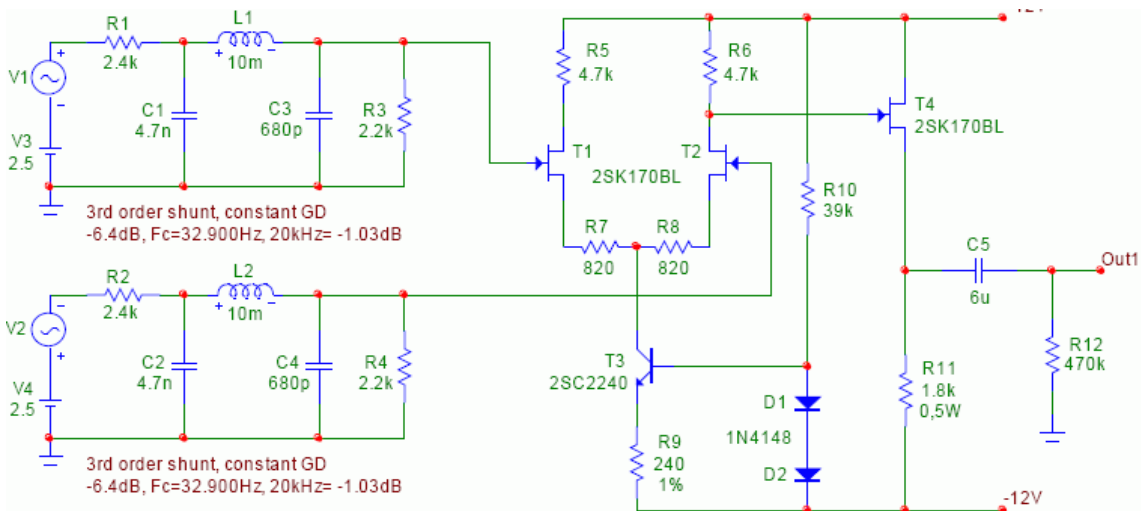
A RELAY FOR EACH CHANNEL

CMC pure silver RCA socket

NOTE: OPAMPS HDAM BYPASSED

DISCRETE OUTPUT PCB

4X 2.2K	0.1% TOL RESISTOR
4X 2.4K	0.1% TOL RESISTOR
4X 4.7K	0.1% TOL RESISTOR
4X 820 OHM	0.1% TOL RESISTOR
2X 39K	0.1% TOL RESISTOR
2X 255 OHM	0.1% TOL RESISTOR
2X 1.8K	0.1% TOL RESISTOR
2X 470K	0.1% TOL RESISTOR
4X 10mH INDUCTOR	
4X 4.7nF	PLASTIC CAP
4X 680pF	SILVER MICA CAP
4X 1N4148	DIODE
6X 2SK170GR	FET
2X 2SC2240	TRANSISTOR
DC BLOCKING	1200V 2.2uF MUNDORF SUPREME SILVER / OIL
OUTPUT SOCKETS	CMC pure silver RCA socket



DAC SECTION

ANALOGUE

- 1X NUVOTEM TOROIDAL TX (7VA 1X 9V AC)
- 4X SCHOTTKY DIODES
- 1X 16V 3300uF BLACK GATE **STD**
- 1X **SPOWER** REG +5V Left channel VCC
- 1X **SPOWER** REG +5V Right channel VCC
- 1X 16V 220uF BLACK GATE **STD**
- 1X 16V 220uF BLACK GATE **STD**

THIS SUPPLIES DAC 5V ON THE ANALOGUE RAILS (U199)

DIGITAL

1X NUVOTEM TOROIDAL TX (7VA 1X 9V AC) THIS SUPPLIES DAC 5V ON THE DIGITAL
4X SCHOTTKY DIODES RAILS (R511)
1X 16V 3300uF BLACK GATE **STD**
1X 16V 100uF BLACK GATE **FK**
1X **SPOWER** REG +5V
1X 16V 1000uF BLACK GATE CAP **STD**

DAC CLOCK V

VCC FROM RAW 16V THIS SUPPLIES THE XTAL 5V REF ON THE DAC
1X **SPOWER** REG +5V PIN 27 (RD01) FROM THE 30VA 12V TX
1x 16V 1000uF BLACK GATE **STD**

DAC CLOCK

1X NUVOTEM TOROIDAL (7VA 18V TX)
4x SCHOTTKY DIODES
1X 35V 22000uF MUNDORF HC
1X SERCAL **S POWER** LOW NOISE REG +15V
FIDELITY AUDIO **C2** PREMIUM CLOCK 16.934Mhz **TWEAKED!**
1x Wima 16V 22uF

OTHER

FITTED 0.01uF X7R CAP ACROSS PIN 2 AND 7 OF DAC ON CLOCK REF RAIL
REMOVED LARGE TRACK BETWEEN PIN 2 OF DAC AND CD04 - TO STOP TRACE PICKUP

GROUNDINGS FOR DAC

PIN2 = XVSS - USED U203 AND RUN TO STAR
PIN15 = DVSS - CUT TRACK NEAR PIN15 + CD06 ISOLATING IT AND RUN TO STAR
PIN19 + 24 = AVSS - U197 -198 RUN TO STAR

DECODER

DIGITAL

1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC) THIS SUPPLIES DECODER DIGITAL
4X SCHOTTKY DIODES
1X 16V 470uF BLACK GATE **STD**
1X SERCAL **SPOWER** REG +5V

ANALOGUE

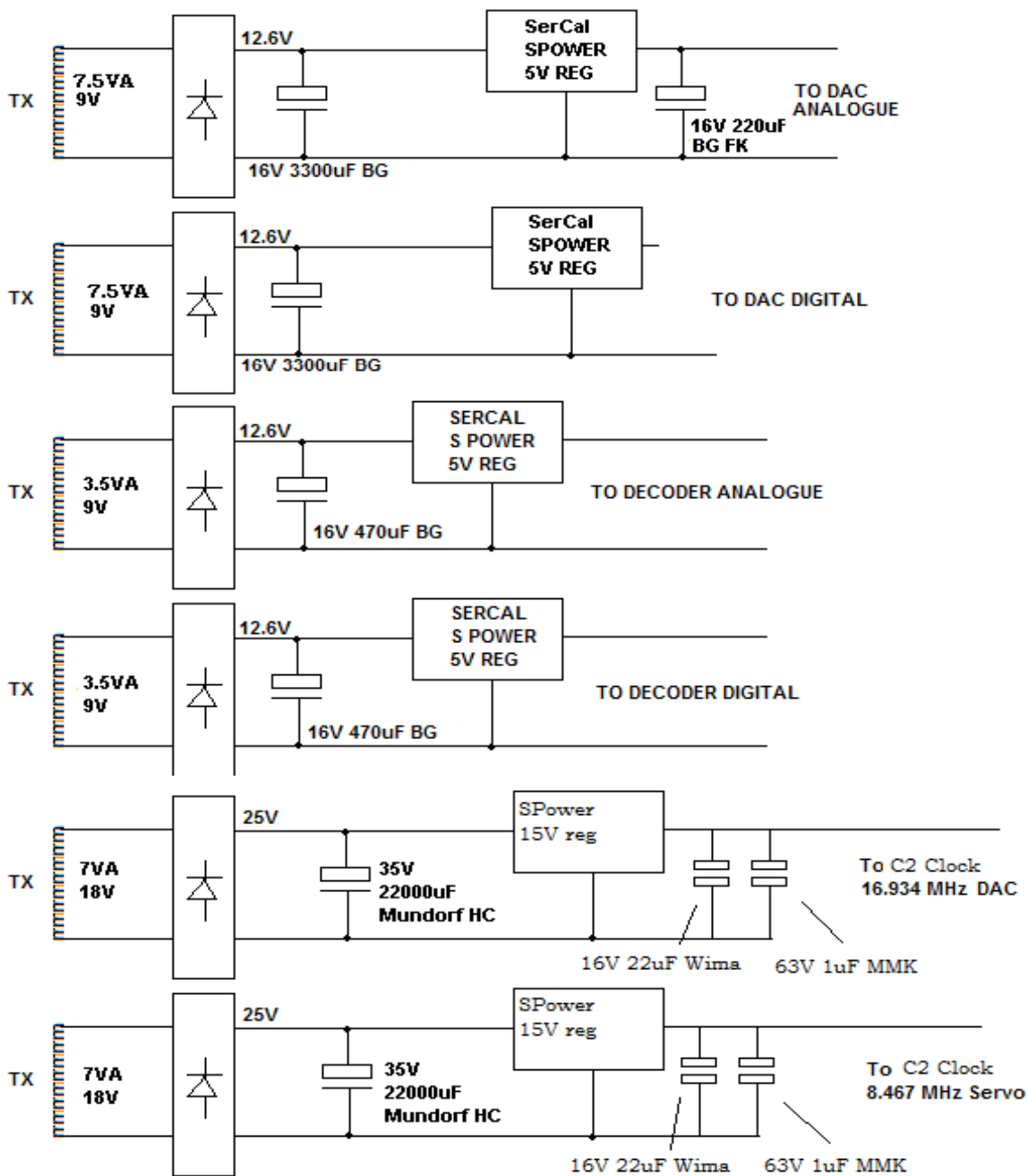
1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC) THIS SUPPLIES DECODER ANALOGUE
4X SCHOTTKY DIODES
1X 16V 470uF BLACK GATE **STD**
1X SERCAL **SPOWER** REG +5V

DECODER IC MOD

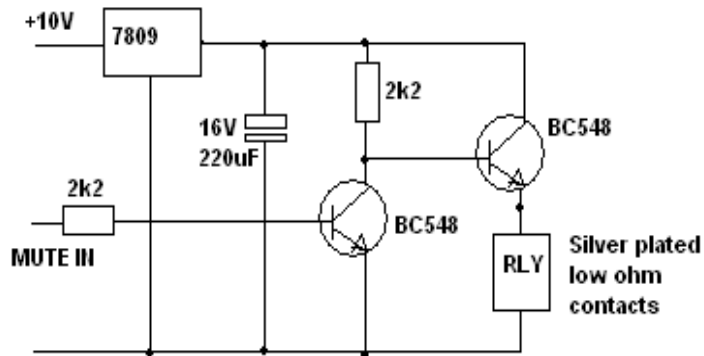
PIN12 = VSSA - CUT TRACK ISOLATING IT BETWEEN PIN 11 & 12, WIRE TO STAR

PIN34 - 43 + 16 = VSS/VSS2 - USE TRACK BETWEEN PIN22 + 23 FOR GND TO STAR

CIRCUIT DIAGRAMS

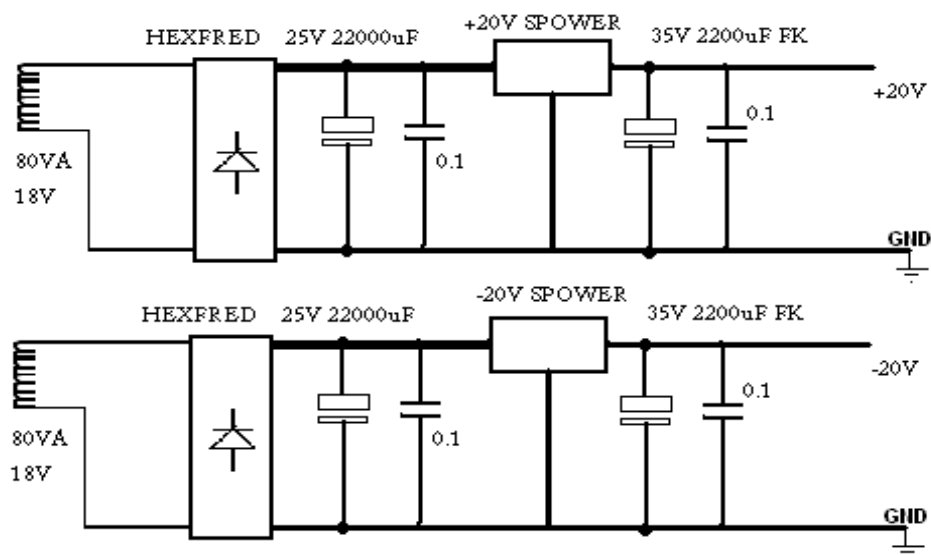


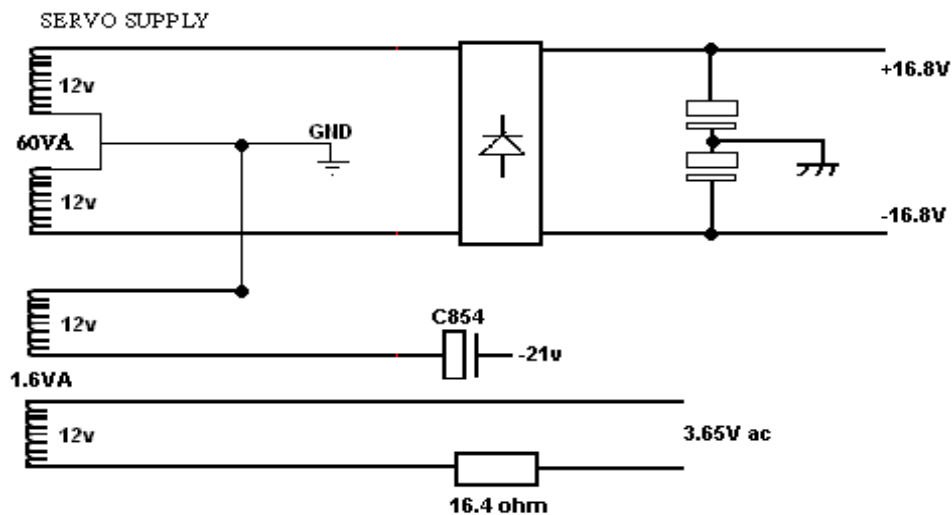
MUTING



CUSTOM TX DIAGRAM

EXTERNAL PSU FOR DOS





SERVO

DIGITAL

1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC)
 1X SERCAL [SPOWER](#) REG +5V
 1X 470uF 16V RUBYCON ZA
 4X SCHOTTKY DIODES (1X BRIDGE)

THIS SUPPLIES 1X 5V TO SERVO DIGITAL

ANALOGUE

1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC)
 1X SERCAL [SPOWER](#) REG +5V
 1X 470uF 16V RUBYCON ZA
 4X SCHOTTKY DIODES (1X BRIDGE)

THIS SUPPLIES 1X 5V TO SERVO ANALOGUE

SERVO RF

1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC)
 1X SERCAL [SPOWER](#) REG +5V
 1X 220uF 16V BLACKGATE FK
 4X SCHOTTKY DIODES (1X BRIDGE)

THIS SUPPLIES 1X 5V TO SERVO RF

SERVO HF

1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC)
1X SERCAL **SPOWER** REG +5V
1X 470uF 16V RUBYCON ZA
4X SCHOTTKY DIODES (1X BRIDGE)

THIS SUPPLIES 1X 5V TO SERVO HF

SERVO CLOCK

1X 18V TX (7VA 1X 9V AC)
4x SCHOTTKY DIODES
1X 35V 22000uF MUNDORF HC
1X SERCAL **S POWER** LOW NOISE REGS +12V
AUDIOUPGRADES **C2** PREMIUM CLOCK 8.46Mhz
WIMA 16V 22uF

TWEAKED

SERVO COMPONENTS

D811 - D814	HEXFRED HFA08TB60	
C120-122	SERVO	2X 16V 470uF BLACKGATE STD
C153-154	MOTOR DRIVER	16V 220uF SILMIC
C124	V REF	16V 10uF BLACK GATE STD
C111-116	SERVO	220pF SILVER MICA 1% TOL
C117	SERVO	1500pF SILVER MICA 1% TOL
C118	SERVO	560pF SILVER MICA 1% TOL
R114-119	SERVO	10K 0.1% PRECISION
R122-123	SERVO	REMOVED FOR REG I/P
C507	HF AMP	47pF SILVER MICA 1% TOL
C505	HF AMP	2200pF SILVER MICA 1% TOL
C502	HF AMP	390pF SILVER MICA 1% TOL
C501	HF AMP	150pF SILVER MICA 1% TOL
C504	HF AMP	16V 220uF SILMIC
R501-502	HF AMP	470 ohm 0.1% PRECISION
R504	HF AMP	1.8K 0.1% PRECISION
R506	HF AMP	2.7K 0.1% PRECISION
R507	HF AMP	3.3K 0.1% PRECISION
R509	HF AMP	2.2K 0.1% PRECISION
R503	HF AMP	8.2K 0.1% PRECISION
R505	HF AMP	REMOVED FOR REG I/P
R110	RF AMP	470ohm 0.1% PRECISION
R109	RF AMP	100ohm 0.1% PRECISION
R103	RF AMP	330K 0.1% PRECISION
R102	RF AMP	33K 0.1% PRECISION
R108	RF AMP	1K 0.1% PRECISION
R106	RF AMP	100ohm 0.1% PRECISION
R105	RF AMP	1K 0.1% PRECISION
R104	RF AMP	39K 0.1% PRECISION

R111-112	RF AMP	120K 0.1% PRECISION
R113	RF AMP	56K 0.1% PRECISION
R107	RF AMP	330ohm 0.1% PRECISION
C101	RF AMP	100pF SILVER MICA 1%
C102-103	RF AMP	47pF SILVER MICA 1% TOL
C105	RF AMP	150pF SILVER MICA 1% TOL
C108-109	RF AMP	150pF SILVER MICA 1% TOL
C104	RF AMP	18pF SILVER MICA 1% TOL
C110	RF AMP	330pF SILVER MICA 1% TOL
C106	RF AMP	10uF 50V BLACKGATE STD

R107 CONNECTED DIRECT TO REG

HARD WIRED RIBBON BETWEEN RF PCB AND MAIN PCB

LASER & MOTOR DRIVE

1X NUVOTEM TOROIDAL (30VA 2X 12V TX)	THIS IS TO SUPPLY THE LASER & MOTOR DRIVER REGS + CPU
C814	NEG 16V RAIL (RAW 10V) 16V 3300uF BLACK GATE STD
C813 - 26,700uF	POS 16V RAIL (RAW 10V) 16V 4700uF BLACK GATE STD
	MUNDORF HC 25V 22000uF across C813

1X S POWER +12V LOW NOISE REG	FOR LASER DRIVE IC Q106
1X S POWER -12V LOW NOISE REG	
2X 470uF 16V BLACK GATE STD	

2X S POWER +12V LOW NOISE REG	FOR DRIVER IC QM01 Q105
2X S POWER -12V LOW NOISE REG	
4X 16V 470uF ZLH	FITTED TO SPOWER

OTHER

1X S POWER +5V LOW NOISE REG	MAIN 5V REG	VARIOUS 5V VREFS USE THIS RAIL
1x OSCON SEPC 6.3V 470uF	STD 5V RAIL	
1X 7805 + OSCON SEPC 6.3V 470uF	CPU	ISOLATED CPU 5V
C815	7805 O/P	6.3V 10000uF PANA FC
C805	12V O/P	REMOVED - NO LONGER NEEDED
C806	12V O/P	REMOVED - NO LONGER NEEDED
Q801	12V O/P	REMOVED - NO LONGER NEEDED
Q802	12V O/P	REMOVED - NO LONGER NEEDED
Q851	7912	DIMMER DISPLAY
D852	BYPASSED	DIMMED FURTHER

COAX MOD

REPLACED RF AND DIGITAL LINES AND REPLACED WITH COAX

KIMBER V21

KIMBER V21 USED FOR INTERNAL COAX



U100 CONNECTED TO R501

U193 CONNECTED TO C521

U132 CONNECTED TO U188 AND THEN U171

U131 CONNECTED TO U189 AND THEN U172

RF TO HF

DAC CLOCK OUT TO DECODER CLOCK IN

SIDA DATA

SICK DATA

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GROUNDS TO STAR

ALL CUSTOM REG GROUNDS NOW GO TO A COMMON STAR GROUND NEAR IEC SOCKET AND CONNECTED TO EARTH VIA A 27Ω RESISTOR

MORE

TX FITTED FOR DISPLAY VOLTAGES

3X TRANSORB DIODES ACROSS LN LE NE

ALL RIBBONS AND ICS SHEILDDED AND GROUNDED

STRUT BAR FITTED WITH DAMPING MATERIAL ON BOTH SIDES

CABINET FITTED WITH TONNES OF DAMPING MATERIAL

RUSS ANDREWS 'REFERENCE' MAINS LEAD

BONDED BOTTOM PLATE WITH ALUMINIUM PASTE

2ND BASE PLATE FITTED SANDWICHING BITUMIN

GREEN / BLUE LEDS ON MECH

HARD WIRED HF PCB TO MAIN PCB

R160 NOW 9.64K BY ADDING 27K ACROSS 15K

R161 NOW 8.72K BY ADDING 68K ACROSS 10K

UPRATED DISC CLAMP WITH DAMPING

Tracking gears swapped for 12.4 / 12.5 versions

DUE TO REMOVAL OF KI TX

WITH 350i WATTGATE

BLING FACTOR

QM01 OUTPUT BIASED TO -1V

TRAY EJECTS SLOWER AND LOADS QUICKER

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