

# MARANTZ CD-63 KI UPGRADES 2005-2009

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- \* **2X** C2 PREMIUM CLOCKS
- \* **23X** LOW NOISE REGULATORS
- \* **9X** TOROID TRANSFORMERS
- \* **112VA** TOTAL VA
- \* **11.64Kg** TOTAL WEIGHT
- \* **44.6 C** AMBIENT TEMP
- \* **38.5 C** AMBIENT TEMP

[2X C2 CLOCK](#)  
[23X SPOWER](#)

2X BOTTOM PLATE  
PLAY  
STOP



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LASER & MOTOR DRIVE + COAX MODS  
MISC

## TX INFO

AUDIO OUTPUT  
DRIVER ICs  
CLOCK 1 16.934Mhz  
CLOCK 2 8.467Mhz  
DAC  
DECODER  
SERVO  
HF & RF  
DISPLAY

30VA 18V TO DISCRETE OUTPUT  
30VA 12V LASER & MOTOR DRIVE  
7VA 18V DAC  
7VA 18V SERVO  
15VA 9V ANALOGUE & DIGITAL  
7VA 9V ANALOGUE & DIGITAL  
7VA 9V ANALOGUE & DIGITAL  
7VA 9V  
1.6VA 12V

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**OUTPUT SECTION**

NUVOTEM 30VA 2X18V TOROIDAL

D801 D802 D803 D804

C803 C804

CUSTOM DISCRETE PCB

2X S POWER +15V LOW NOISE REGS

2X S POWER -15V LOW NOISE REGS

4X CAPACITORS

26V +/- DC - REPLACES KI TX

HEXFRED HFA08TB60

4X 35V 2200uF BLACK GATE FK (4400uF per rail)

25V 220uF BLACK GATE FK

RUSS ANDREWS 'AGSS' HYPER PURE SILVER

FROM DAC TO DISCRETE AND DISCRETE TO RCA

GROUND WIRES RUN TO STAR EARTH

A RELAY FOR EACH CHANNEL

TWIN RELAY MUTING CIRCUIT

CMC pure silver RCA socket

NOTE: OPAMPS HDAM BYPASSED

**DISCRETE PCB - HERE**

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

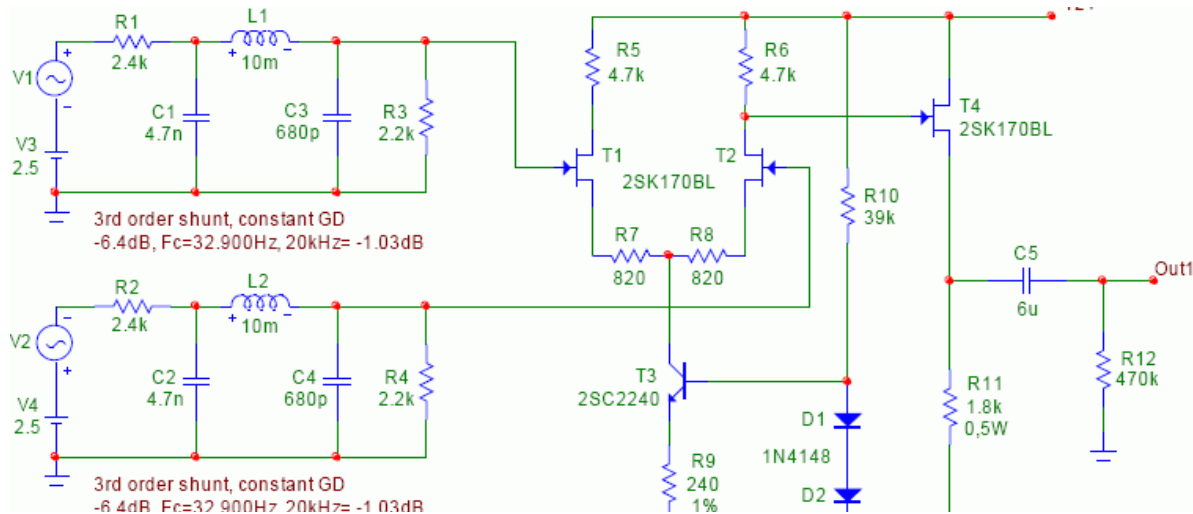
1200V 2.2uF MUNDORF SUPREME SILVER / GOLD

DC BLOCKING

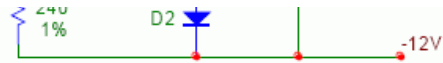
800V 2.2uF MUNDORF SUPREME bypass

OUTPUT SOCKETS

CMC pure silver RCA socket



3rd order filter, constant QD  
-6.4dB, Fc=32.900Hz, 20kHz= -1.03dB



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## 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)  
4X SCHOTTKY DIODES  
1X 16V 3300uF BLACK GATE **STD**  
1X 16V 100uF BLACK GATE **FK**  
1X SPOWER REG +5V  
1X 16V 1000uF BLACK GATE CAP **STD**

THIS SUPPLIES DAC 5V ON THE DIGITAL  
RAILS (R511)

### DAC CLOCK V

VCC FROM RAW 16V  
1X SPOWER REG +5V  
1x 16V 1000uF BLACK GATE **STD**

THIS SUPPLIES THE XTAL 5V REF ON THE DAC  
PIN 27 (RD01) FROM THE 30VA 12V TX

### DAC CLOCK

1X NUVOTEM TOROIDAL (7VA 18V TX)  
4x SCHOTTKY DIODES  
1X 35V 22000uF MUNDORF HC  
1X SERCAL S POWER LOW NOISE REG +15V  
AUDIOUPGRADES **C2** PREMIUM CLOCK

EQUIVALENT TO SERCAL PSU2

16.934Mhz

### 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

### GROUNDING 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

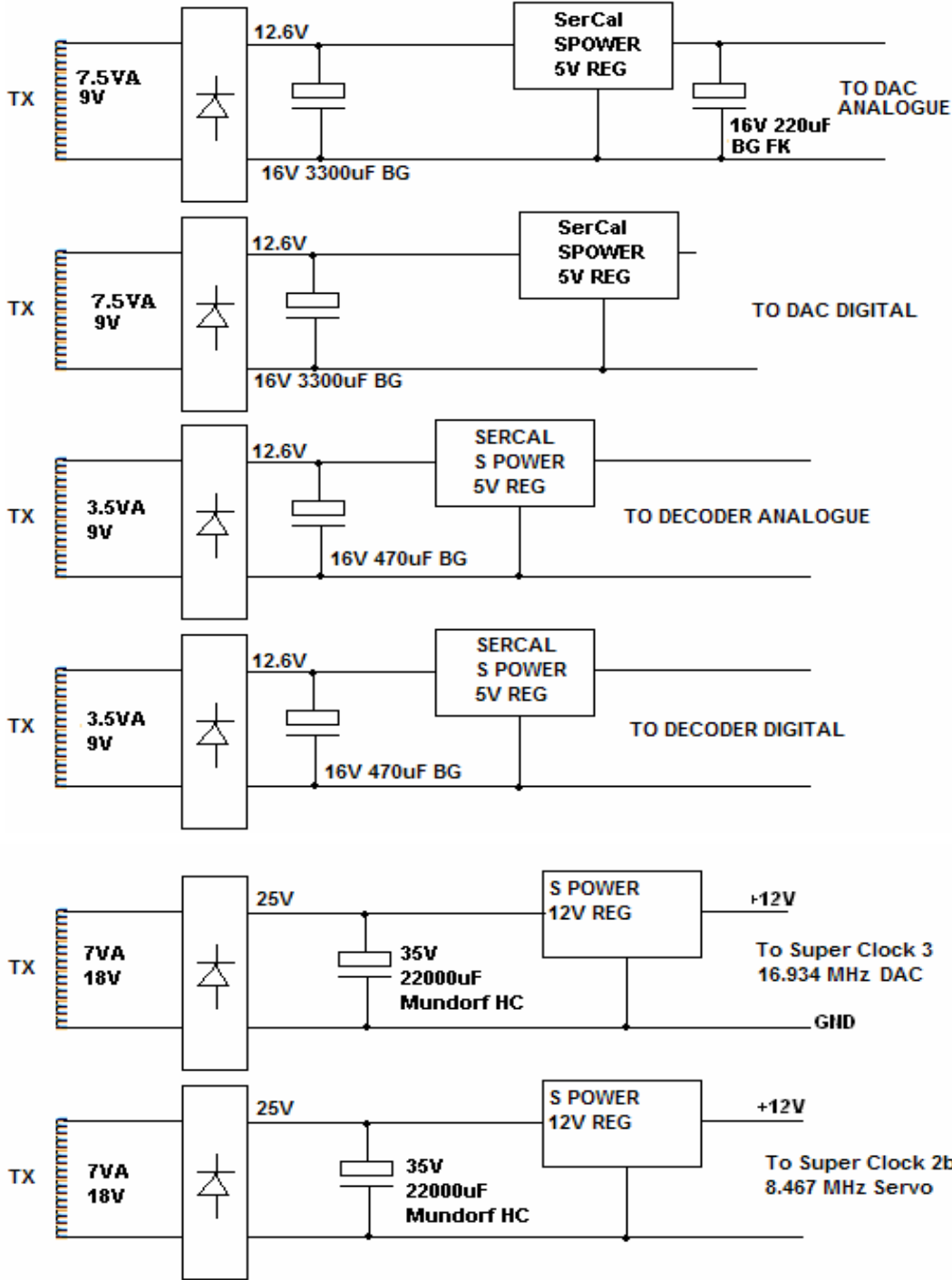
1X NUVOTEM TOROIDAL TX (3.5VA 1X 9V AC)      THIS SUPPLIES DECODER ANALOGUE  
4X SCHOTTKY DIODES  
1X 16V 470uF BLACK GATE **STD**  
1X SERCAL [SPOWER](#) REG +5V

C510-511      2X 16V 220uF BLACK GATE **STD**

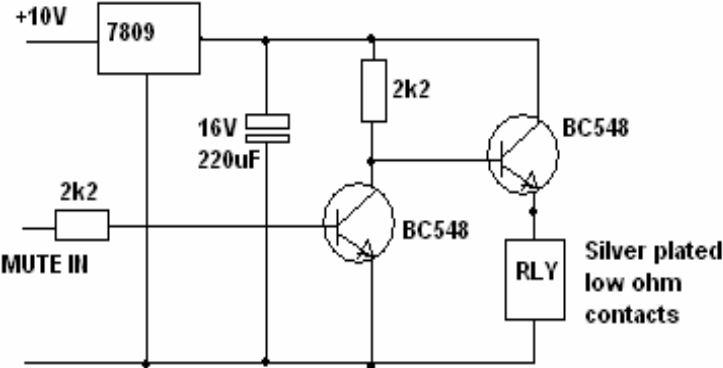
### DECODER IC MOD

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

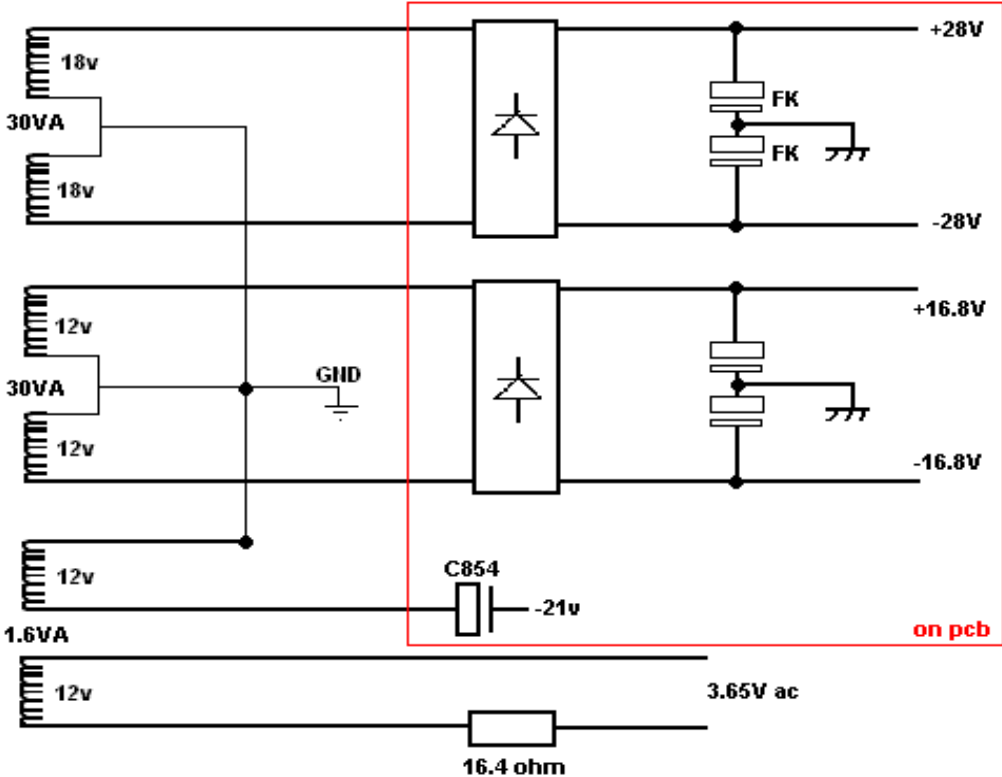
CIRCUIT DIAGRAMS



MUTING



CUSTOM TX DIAGRAM



## SERVO

### DIGITAL

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

### ANALOGUE

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

### SERVO RF

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

### SERVO HF

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

### 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      8.467Mhz

## SERVO COMPONENTS

D811 - D814	HEXFRED HFA08TB60	
C120-122	SERVO	2X 16V 470uF BLACKGATE <b>STD</b>
C153-154	MOTOR DRIVER	16V 220uF SILMIC
C124	V REF	16V 10uF BLACK GATE <b>STD</b>
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 <b>STD</b>

R107 CONNECTED DIRECT TO REG

HARD WIRED RIBBON BETWEEN RF PCB AND MAIN PCB

**LASER & MOTOR DRIVE**

1X NUVOTEM TOROIDAL (30VA 2X 12V TX)  
C814  
C813 - 26,700uF

THIS IS TO SUPPLY THE LASER & MOTOR DRIVER REGS + CPU  
NEG 16V RAIL (RAW 10V) 16V 3300uF BLACK GATE **STD**  
POS 16V RAIL (RAW 10V) 16V 4700uF BLACK GATE **STD**  
MUNDORF HC 25V 22000uF across C813

1X S POWER +12V LOW NOISE REG  
1X S POWER -12V LOW NOISE REG  
2X 470uF 16V BLACK GATE **STD**

FOR LASER DRIVE IC Q106

2X S POWER +12V LOW NOISE REG  
2X S POWER -12V LOW NOISE REG  
4X 16V 470uF ZLH

FOR DRIVER IC QM01 Q105

FITTED TO SPOWER

**OTHER**

1X S POWER +5V LOW NOISE REG  
1x OSCON SEPC 6.3V 470uF  
1X 7805 + OSCON SEPC 6.3V 470uF  
C815  
C805  
C806  
Q801  
Q802  
Q851  
D852

MAIN 5V REG  
STD 5V RAIL  
CPU  
7805 O/P  
12V O/P  
12V O/P  
12V O/P  
12V O/P  
7912  
BYPASSED

VARIOUS 5V TAPS TAKEN OFF THIS RAIL  
  
ISOLATED CPU 5V  
6.3V 10000uF PANA FC  
REMOVED - NO LONGER NEEDED  
REMOVED - NO LONGER NEEDED  
REMOVED - NO LONGER NEEDED  
REMOVED - NO LONGER NEEDED  
DIMMER DISPLAY  
DIMMED FURTHER

**COAX MOD**

REPLACED RF AND DIGITAL LINES AND REPLACED WITH COAX

**KIMBER V21**

KIMBER V21 USED FOR 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 SHEILDED 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

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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