

BurnIT Plus CDR830 COMPACT DISC RECORDER



SERVICE MANUAL ADDENDUM



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OPERATIONAL DESCRIPTION

Additional features of the CDR830 PLUS

- Word clock input
- Balanced digital input
- Balanced digital output
- Balanced analogue inputs with selectable line/microphone gain settings
- Balanced analogue outputs
- Parallel remote input

WORD CLOCK INPUT

In today's digital studio environment, it is becoming more and more important to be able to lock/synchronise all digital equipment to a common sampling frequency or house clock. The effects of 'unlocked' equipment are all too noticeable as signal degradation, crackles and pops as machines 'clock' at different rates.

The CDR830 PLUS automatically detects whether there is a valid word clock signal connected to its word clock BNC input connector and if so, routes all digital outputs via a sample rate converter that is 'locked' to the same sampling frequency as the word clock input signal. If no valid word clock is detected at the input, then digital outputs will be clocked out at the 830's internal clock sampling frequency of 44.1 khz.

Note: When locked to an external word clock source, the digital outputs do not transmit p/q sub-code information.

BALANCED DIGITAL INPUT

The balanced digital input is compatible with both consumer and professional interface protocols. It has the electrical characteristics of a professional balanced interface (110 ohm input impedance).

In order to select the balanced digital input as source, perform the following:

- Set the rear panel switch labelled SW2 to position 1. 'BAL'
- Use the front panel INPUT SELECTOR to select COAXIAL.

BALANCED DIGITAL OUTPUT

The balanced digital output has the electrical characteristics of a professional balanced interface, the format characteristics of a consumer interface and is always active.

BALANCED ANALOGUE INPUTS

It is possible to record balanced line or microphone level analogue inputs.

In order to select a line level balanced analogue input as source, set the rear panel switch labelled SW1 to position 2. 'BAL +4'. Use the front panel INPUT SELECTOR to select ANALOG.

In order to select a mono or stereo microphone as source, set the rear panel switch labelled SW1 to position 3. 'BAL -60'. Use the front panel INPUT SELECTOR to select ANALOG.

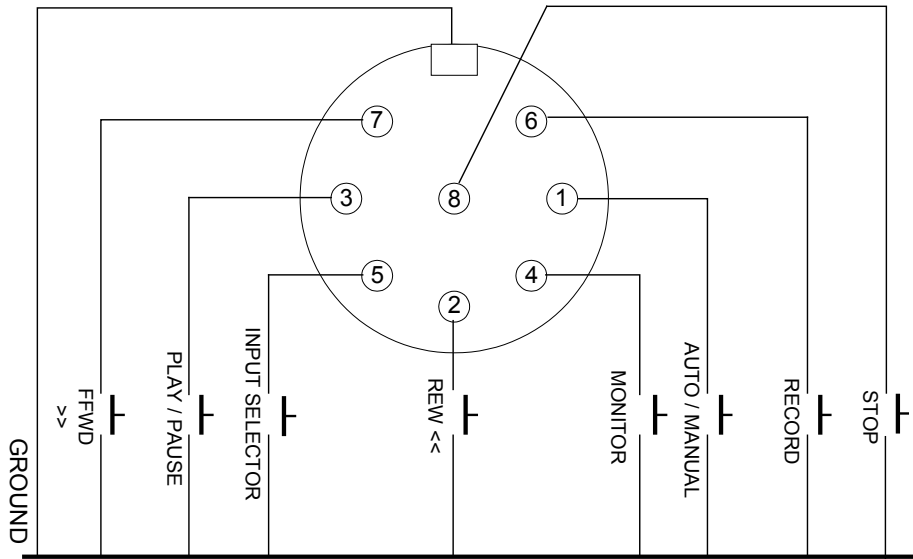
BALANCED ANALOGUE OUTPUTS

The balanced analogue outputs have an output level of +18dBu for OdBFS.

PARALLEL REMOTE INPUT (DIN 8 pin)

By connecting the circuit shown below, remote control operation of this unit is possible with external switches. The parallel remote control has priority over the wireless remote control. When the same buttons are pressed at the same time on both units, operation with the parallel remote control will have priority.

REMOTE CONFIGURATION



SPECIFICATIONS

Balanced Digital Output:

Impedance 110 ohm
Amplitude 4Vp-p 110 ohm load

Balanced Digital Input:

Impedance 110 ohm

Word Clock Input

Operating Frequency 32KHz to 48KHz

Balanced analogue inputs (LINE; +4)

Level required for OdBFS (gain @max) +5dBu +/- 1dB
Frequency response 10hz to 20khz +/-1dB
THD+N <0.01%

Balanced analogue inputs (MIC; -60)

Level required for OdBFS (gain @max) -57dBu +/- 1dB
Frequency response 20hz to 20khz +/-2dB
MIC EIN -119dB 'A' Weighted +/-1dB
THD+N <0.1%

Unbalanced analogue inputs (LINE; -8)

Level required for OdBFS (gain @max) -8dBu +/- 1dB

Balanced analogue outputs

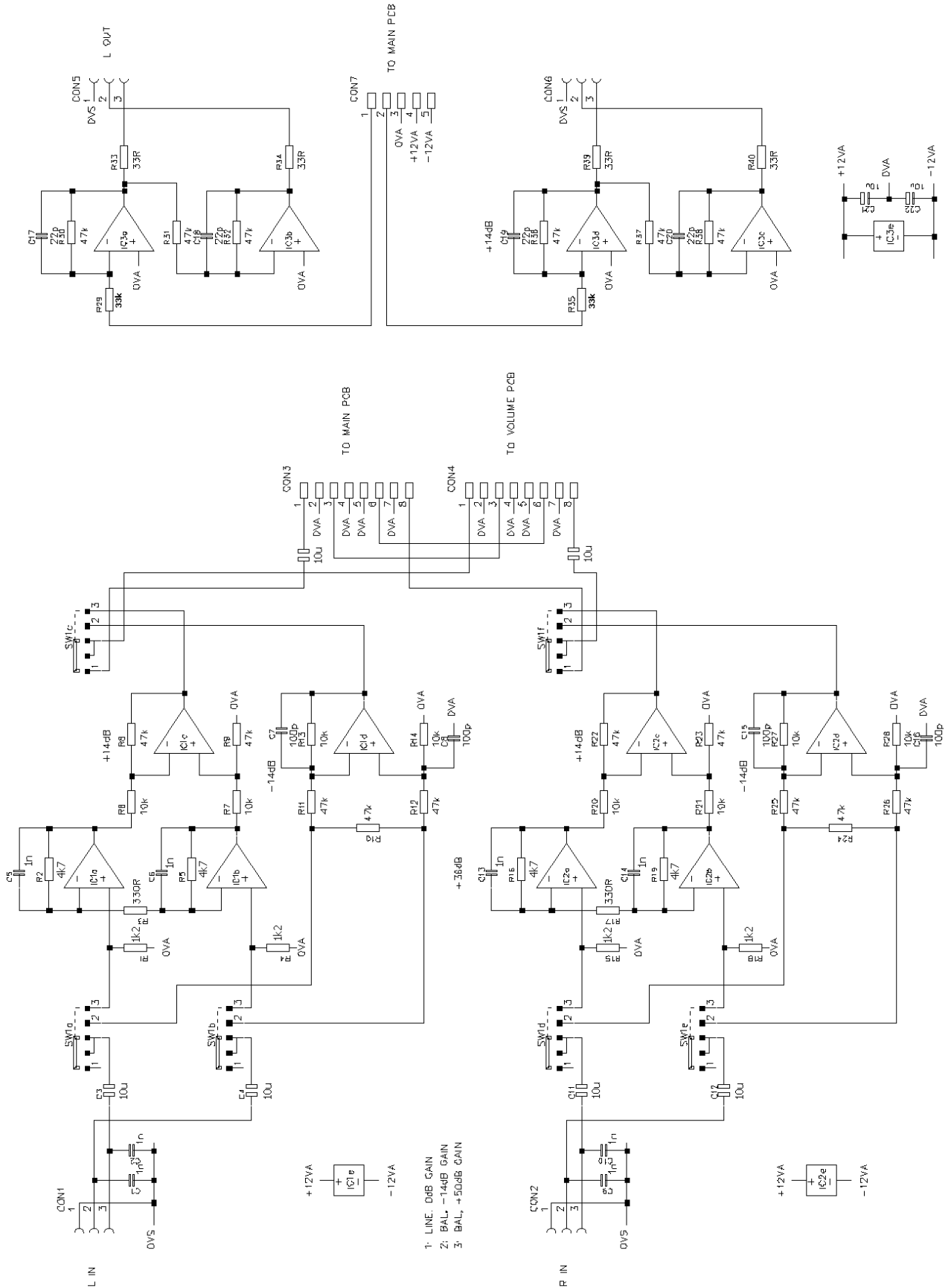
OdBFS gives +18dBu into a 10k load.

Unbalanced analogue outputs

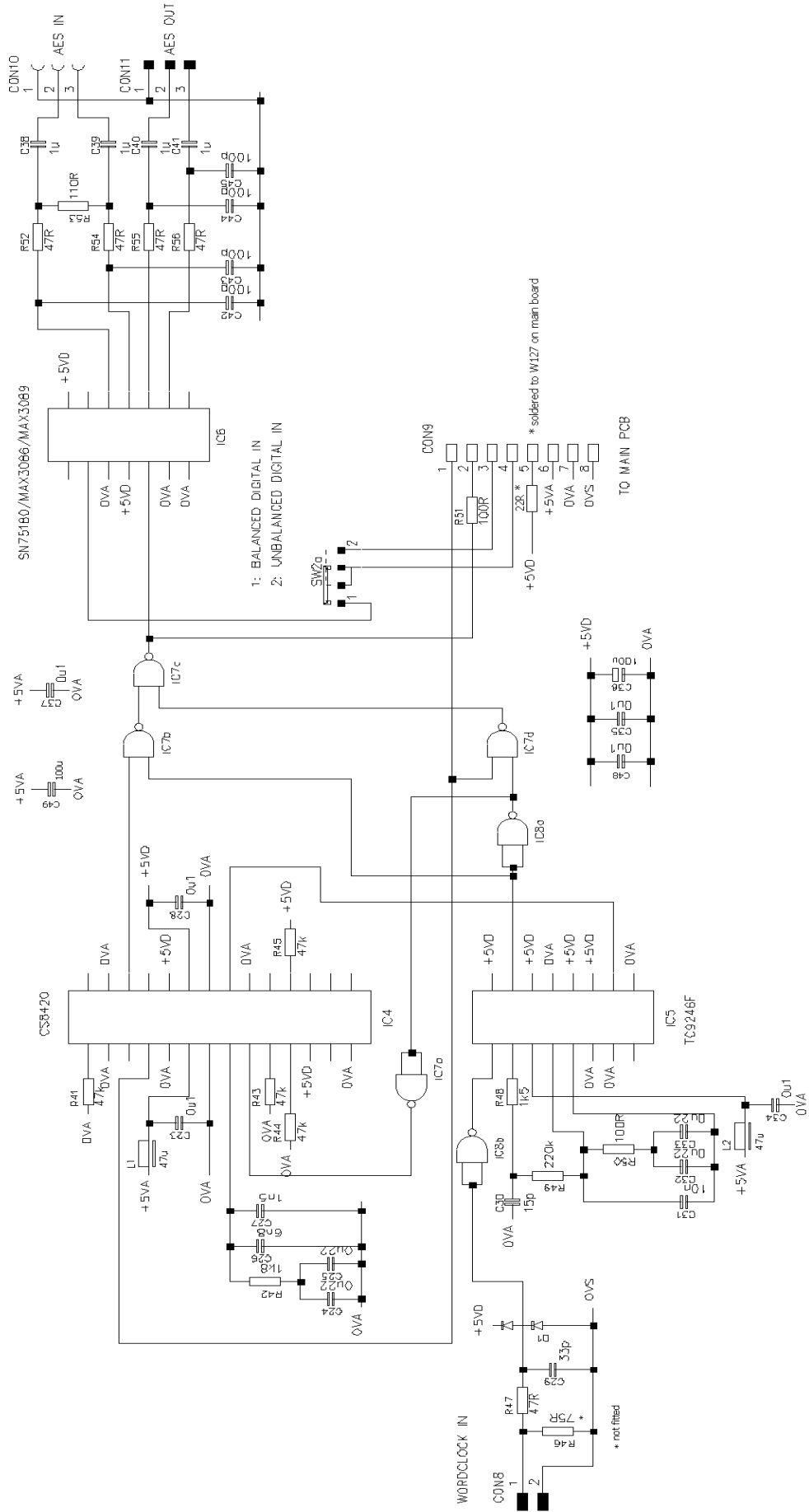
OdBFS gives +8dBu into a 10k load.

NOTE: The specifications and design of this product are subject to change without notice, due to improvements.

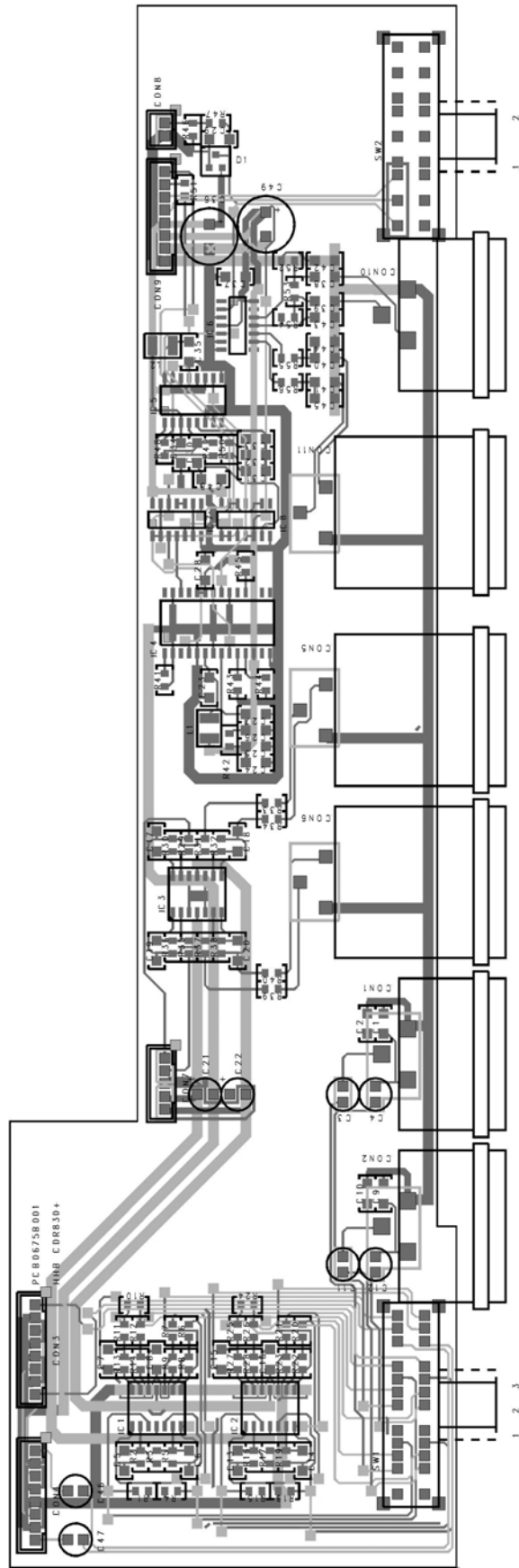
BALANCED ANALOGUE INTERFACE CIRCUIT



WORDCLOCK AND BALANCED DIGITAL INTERFACE CIRCUIT

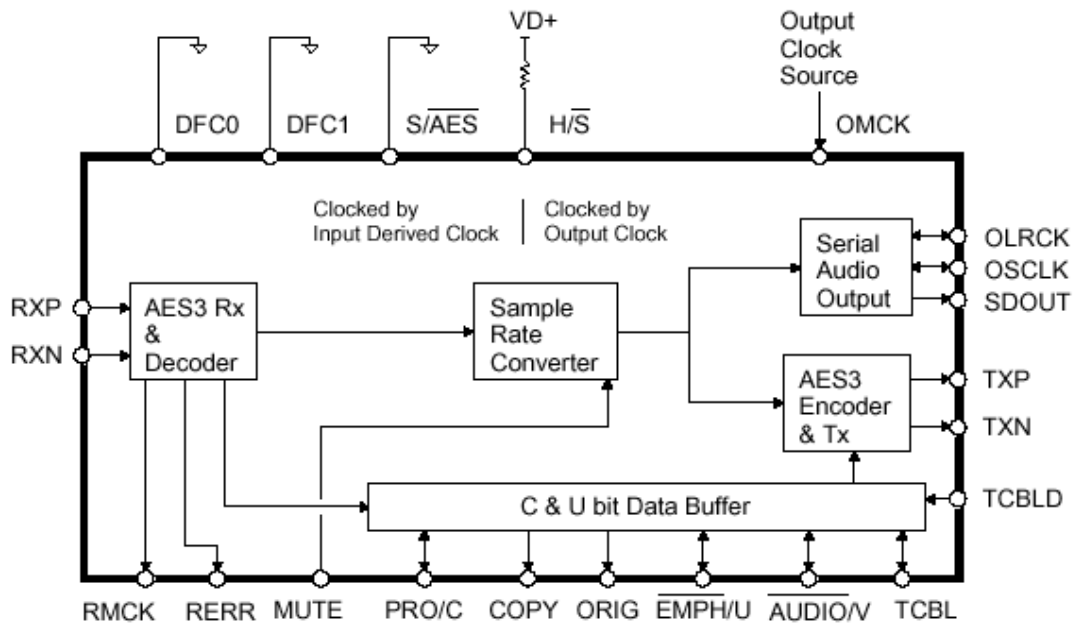


830PLUS PCB LAYOUT



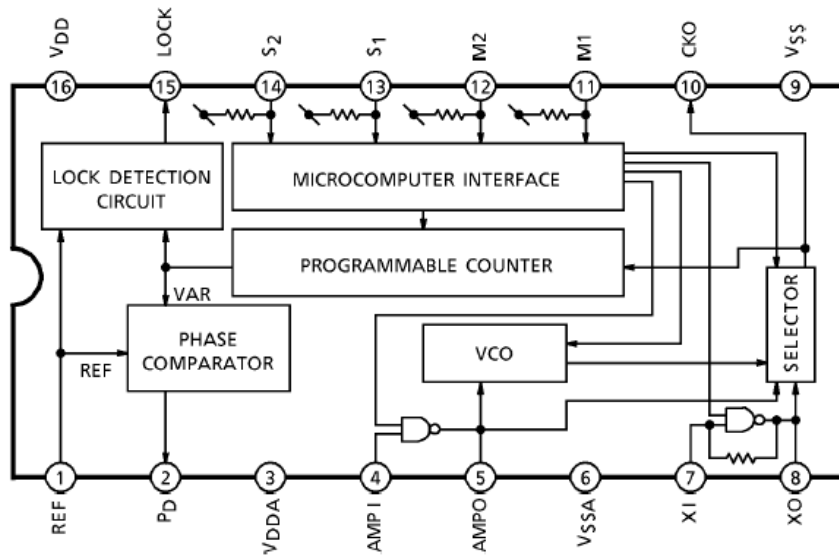
IC DESCRIPTION

CS8420 – IC4


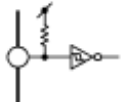
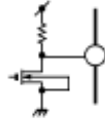


COPY	1+ ●	28	ORIG
DFC0	2	27	DFC1
EMPH/U	3	26	TXP
RXP	4	25	TXN
RXN	5	*24	H/S
VA+	6*	*23	VD+
AGND	7*	*22	DGND
FILT	8*	21	OMCK
RST	9*	20	S/AES
RMCK	10+	19	AUDIO/V
RERR	11+	+18	SDOUT
TCBLD	12	17	OLRCK
PRO/C	13	16	OSCLK
MUTE	14	15	TCBL

TC9246F – IC5



PIN FUNCTION

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARKS
1	REF	I	Reference signal input terminal.	—
2	P _D	O	Phase error signal output terminal.	3-state output.
3	V _D D _A	—	Analog supply voltage terminal.	—
4	AMPI	I	LPF or oscillator 1 operational amplifier input terminal.	—
5	AMPO	O	LPF or oscillator 1 operational amplifier output terminal.	—
6	V _S S _A	—	Analog ground terminal.	—
7	XI	I	Oscillator 3 operational amplifier input terminal.	With feedback resistor.
8	XO	O	Oscillator 3 operational amplifier output terminal.	
9	V _S S	—	Digital ground terminal.	—
10	CKO	O	Oscillated clock signal output terminal.	—
11	M1	I	Mode selection terminal.	Schmitt input.
12	M2	I	Mode selection terminal.	With pull-up resistor.
13	S ₁	I	Parallel mode : division ratio selection terminal. Serial mode : microcomputer data input terminal.	
14	S ₂	I	Parallel mode : division ratio selection terminal. Serial mode : shift clock signal input terminal.	
15	LOCK	O	Lock detection signal output terminal.	Open drain. With pull-up resistor. 
16	V _D D	—	Digital supply voltage terminal.	—

CONNECTION & WIRING INFORMATION

830 PLUS PCB

830 PLUS PCB END	CONNECTED TO: (see FIG 1 and FIG 2)
CON3	CN801 (Audio pcb)
CON4	CN807 (Analogue record level pcb)
CON7 Pin1	C431 negative side (Audio pcb)
CON7 Pin2	C432 negative side (Audio pcb)
CON7 Pin3	W119 (GND) (Audio pcb)
CON7 Pin4	W120 (V+12) (Audio pcb)
CON7 Pin5	W121 (V-12) (Audio pcb)
CON8 Pin1	Pad vacated by R473 (CN401 end) (Underside of Audio pcb)
CON8 Pin2	Pad vacated by R473 (other end) (Underside of Audio pcb)
CON8 Pin3	W108 (JA603 end) (Audio pcb)
CON8 Pin4	W108 (C610 end) (Audio pcb)
CON8 Pin5	W127 via 22 ohm resistor. (Audio pcb)
CON8 Pin6	W122 (V+5A) (Audio pcb)
CON8 Pin7	W119 (GND) (Audio pcb)
CON8 Pin8	W101 (GND) (Audio pcb)

FIG.1

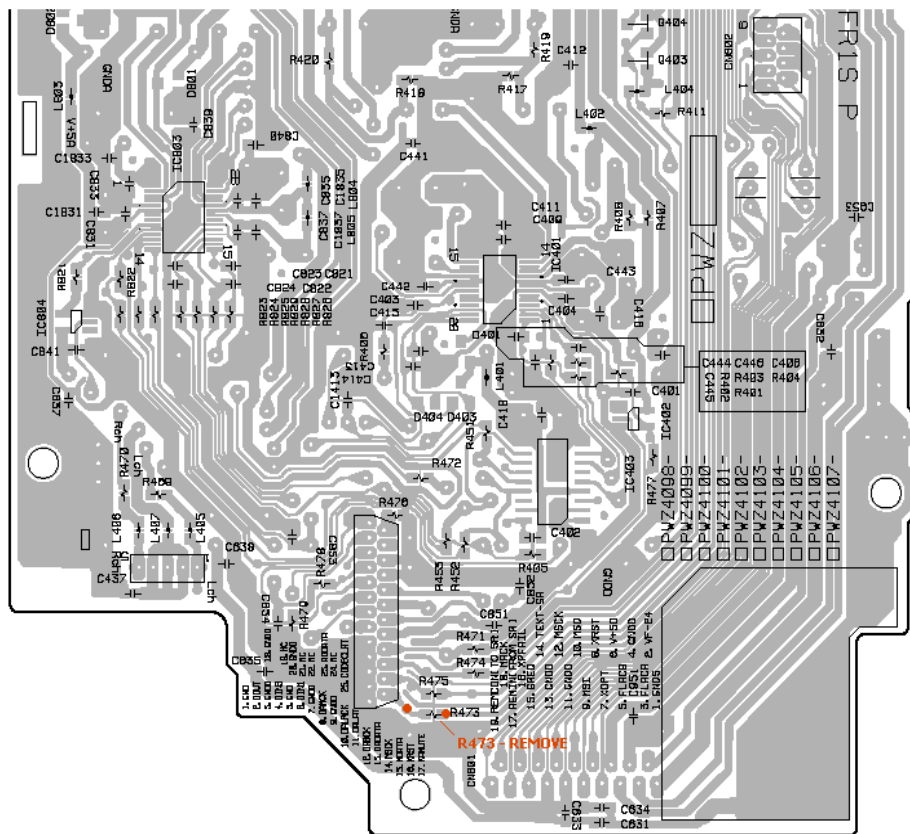
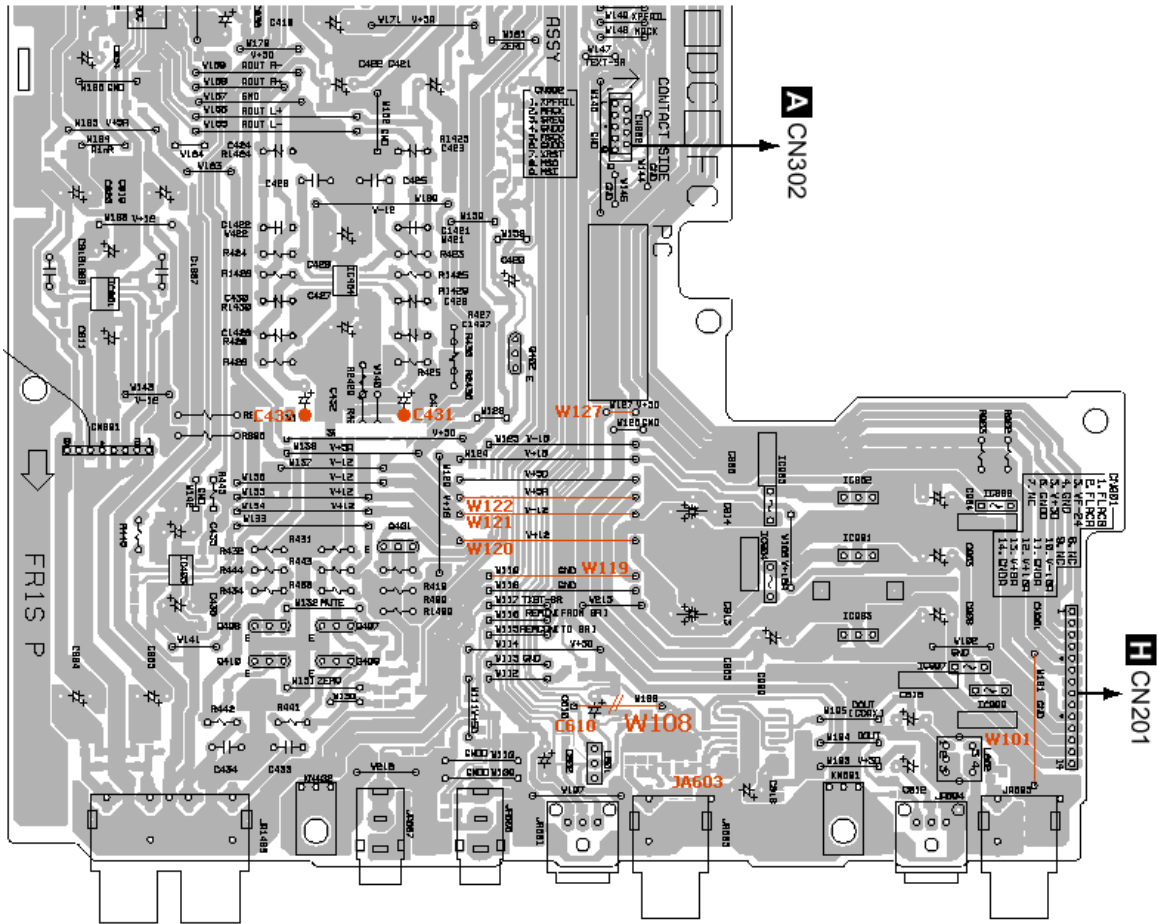
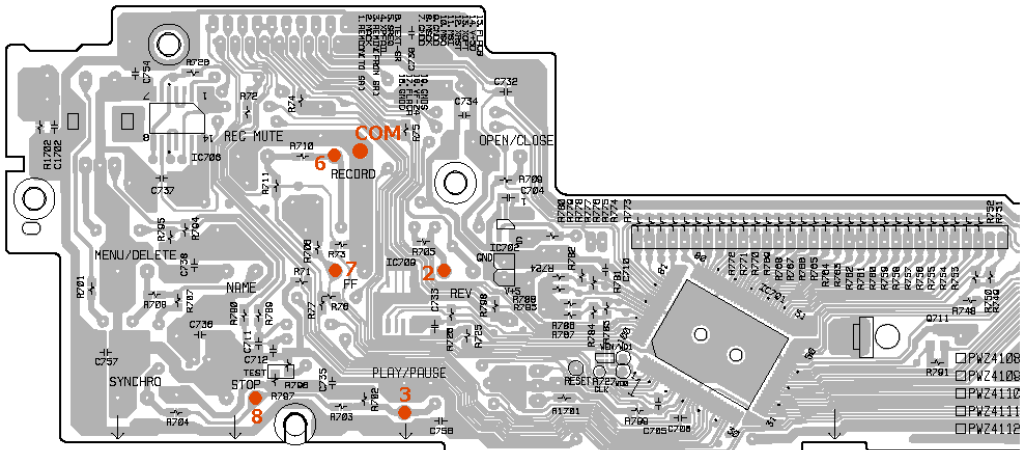
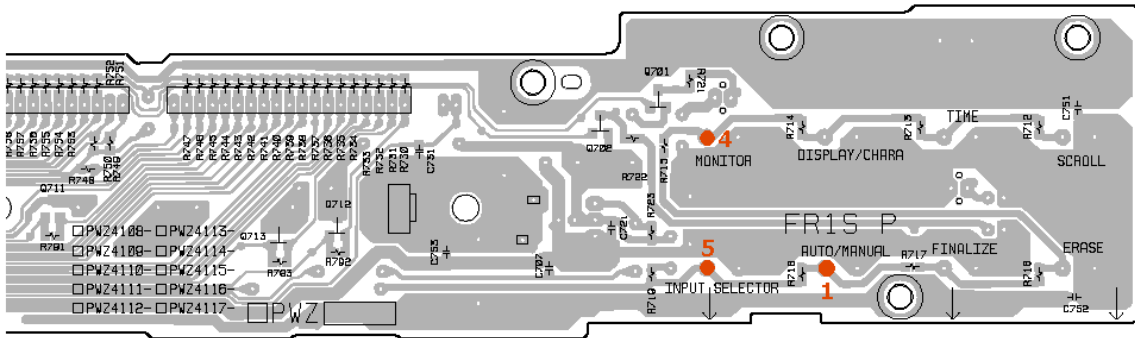
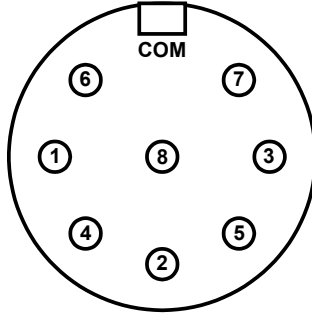


FIG.2

PARALLEL REMOTE WIRING

Parallel Remote 8-pin DIN socket - REAR VIEW



PARTS LIST

COMPONENT NUMBER PART NUMBER

BALANCED ANALOGUE INTERFACE CIRCUIT

SEMICONDUCTORS

IC1, IC2, IC3 MC33079

CAPACITORS

C1, C2, C9, C10, C5, C6, C13, C14 SM1NF
C3, C4, C11, C12, C46, C47 NP10UF
C21, C22 P10UF
C7, C8, C15, C16 SM100PF
C17, C18, C19, C20 SM22PF

RESISTORS

R1, R4, R15, R18 SM1K2
R3, R17 SM330R
R2, R5, R16, R19 SM4K7
R6, R7, R13, R14, R20, R21, R27, R28 SM10K
R11, R12, R25, R26, R8, R9, R22, R23, SM47K
R30, R31, R32, R36, R37, R38
R29, R35 SM33K
R33, R34, R39, R40 SM33R

OTHER

SW1 SW1
CON3 CON3
CON4 CON4
CON7 CON7
CON1, CON2 XLR3-F
CON5, CON6 XLR3-M

WORDCLOCK AND BALANCED DIGITAL INTERFACE

SEMICONDUCTORS

IC4 CS8420
IC5 TC9246F
IC6 SN75LBC180
IC7, IC8 74HCT00

CAPACITORS

C29 SM33PF

C30
C31
C32, C33, C24, C25
C26
C27
C23, C34, C28, C37, C35, C48
C36, C49
C42, C43, C44, C45
C38, C39, C40, C41

SM15PF
SM10NF
SM220NF
SM6N8F
SM1N5F
SM100NF
P100UF
SM100PF
SM1UF

RESISTORS

R47, R52, R54, R55, R56
R41, R43, R44, R45
R42
R48
R49
R50, R51
R53

SM47R
SM47K
SM1K8
SM1K5
SM220K
SM100R
SM110R

OTHER

SW2
CON10
CON11
CON8
CON9
L1, L2
BNC
8-PINDIN

SW2
XLR3-F
XLR3-M
CON8
CON9
SM47UH
BNC
8-PINDIN