

Service Manual

74 DD-92/01G/02G/05G/07G

74 DD-82/01B/02B/05B/07B

Digital compact cassette recorder

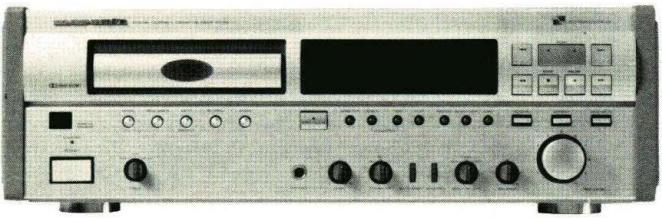


TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS	2
CONNECTIONS AND CONTROLS	3
SERVICE HINTS	4
DISASSEMBLY	5
SERVICE MODES / FACTORY MODES	6
MICROPROCESSOR I/O PINS AND THEIR FUNCTIONS	8
BLOCK DIAGRAM	10
DESCRIPTION OF SIGNAL NAMES	12
VOLTAGE CHARTS	19
WIRING DIAGRAM	25
SCHEMATIC DIAGRAM AND PARTS LOCATIONS	28
MAIN PCB (PG03) / POWER SUPPLY PCB (PP03) / DC SUPPLY PCB (PS03) / POWER TRANSFORMER TERMINAL PCB (PP63)	28
POWER SUPPLY CIRCUIT (PP03) /POWER TRANSFORMER TERMINAL CIRCUIT (PP63) / POWER CIRCUIT (PG03-1/6) DC SUPPLY CIRCUIT (PS03)	32
μ-COM CIRCUIT (PG03-2/6)	35
MECHA CIRCUIT (PG03-3/6)	38
ANALOG IN, DIGITAL IN/OUT CIRCUIT (PG03-4/6) / REC/BALANCE VOLUME CIRCUIT (PV03)	41
REC/BALANCE VOLUME PCB (PV03)	43
DOLBY, MUTE, ANALOG OUT CIRCUIT (PG03-5/6)	44
HEADPHONE, QMS CIRCUIT (PG03-6/6) / HEADPHONE CIRCUIT (PH03-1/2) / (PH03-2/2)	47
HEADPHONE PCB (PH03)	49
DIGITAL CIRCUIT (PZ03-1/2)	50
DIGITAL CIRCUIT (PZ03-2/2)	53
DIGITAL PCB A/B SIDE (PZ03)	56
READ/WRITE PCB A SIDE (PW03)	60
READ AMP CIRCUIT (PW03-1/2)	61
WRITE AMP CIRCUIT (PW03-2/2)	64
READ/WRITE PCB B SIDE (PW03)	66
A/D CONVERTER CIRCUIT (PA03-1/2)	67
AD/DA PCB (PA03)	70
AD/DA PCB (PA03)	71
D/A CONVERTER CIRCUIT (PA03-2/2)	72
TRAY WIRE CONNECTIVE, SERVO CIRCUIT (PM03)	75
TRAY WIRE CONNECTIVE, SERVO PCB (PM03)	78
FRONT PCB (PD03)	80
FRONT CIRCUIT (PD03)	82
HEAD, DECK MECHANISM AND THEIR INTERFACES	85
ELECTRICAL MEASUREMENTS AND ADJUSTMENT	89
SET EXPLODED VIEW AND PARTS LIST	91
DECK EXPLODED VIEW AND PARTS LIST	94
ELECTRICAL PARTS LIST	97

marantz®

model DD-92/DD-82

First issue : 1992
4822 725 50979

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.

Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered or advice can be given at the following addresses:

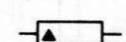
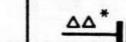
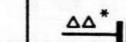
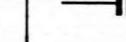
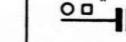
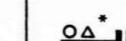
AUSTRIA MARANTZ Hietzinger Kai 137a 1130 Wien	FRANCE MARANTZ FRANCE 4 Rue Bernard Palissy 92600 Asnières France Telex: 611651	GREAT BRITAIN MARANTZ HiFi U.K. Ltd. Kingsbridge House Padbury oaks 575-583 Bath Road Long ford Middlesex UB7 OEH Faxnr.: 0753 680 428	ITALY MARANTZ ITALIANA S.p.A. Via Chiese, 74 20126 Milano Italy	SWITZERLAND MARANTZ Technischer Service Duenstraße 3 3186 Düringen Switzerland
BELGIUM MARANTZ EUROPE B.V. Div. Benelux P.O. Box 218 Building HCM9 5600 MD Eindhoven The Netherlands Fax: 11 01 11	GERMANY MARANTZ GERMANY GmbH Alexanderstraße 1 2000 Hamburg Germany	GREECE SHERTON ELECTRONICS S.A. P.O.Box 21025 Hippocrates Street 188 Athens 11471 Greece Telex: 216.795	SAUDI ARABIA AL ALAMIAH ELECTRONICS P.O.Box 5954 University Street Riyadh 11432 Saudi Arabia Telex: 401530	TURKEY DOGRUOL Ltd. I.M.C. 6 Blok N°6310 Unkapani Istanbul Turkey Telex: 22085
CHILE MARANTZ DIVISION OF PHILIPS S.A. AV. Santa Maria, 0760 Casilla 2687 Santiago Telex: 240.239	THE NETHERLANDS MARANTZ EUROPE B.V. Div. Benelux P.O. Box 218 Building HCM9 5600 MD Eindhoven The Netherlands Fax: 040 - 75 52 66	JAPAN MARANTZ JAPAN, Inc. 35-1, 7-chome, Sagamiono Sagamihara-shi, Kanagawa Japan	SOUTH AFRICA MARANTZ DIVISION OF PHILIPS S.A. Main Road Martindale P.O.Box 58088 Newville 21114 South Africa Telex: 1682	MALTA CACHIA & GALEA Republic Street, 68D Valetta Telex: 1682
DENMARK MARANTZ Horsvænget 5 2630 Taastrup	SWEDEN MARANTZ Box 1324 171 25 Solna	KUWAIT AL ALAMIAH ELECTRONICS Ussama Building Fahd al Saleem Street P.O.Box 23781 Safat-Kuwait Telex: 22694	SPAIN Euroservice S.A. Bernardo obregón, 26 28012 Madrid Faxnr.: 3412 306 198	PORTUGAL MARANTZ Divisao Philips S.A. service Outurela-carnaxide 2795 LinDA-A-VELHA Telex: 43906
NORWAY MARANTZ Postboks 7034 Assiden 3007 Drammen				

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

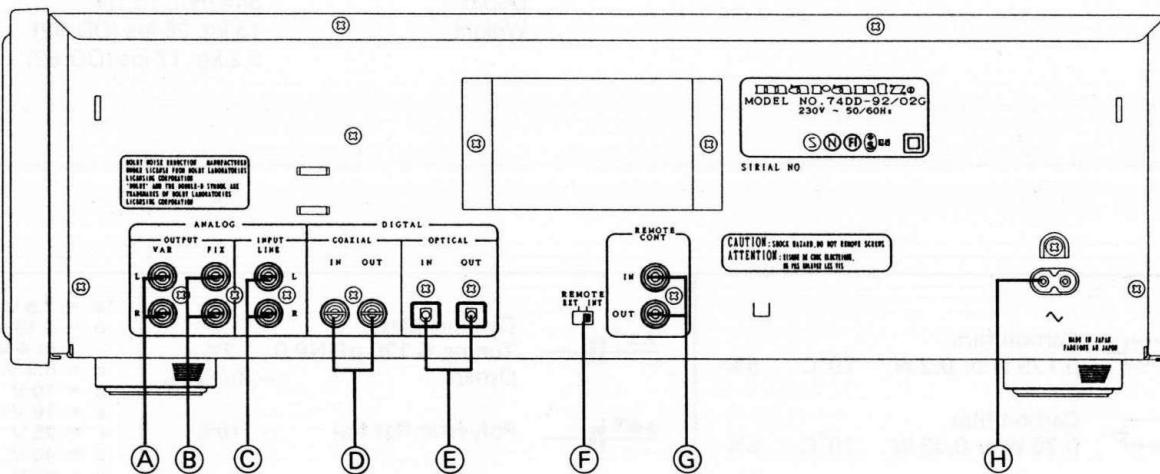
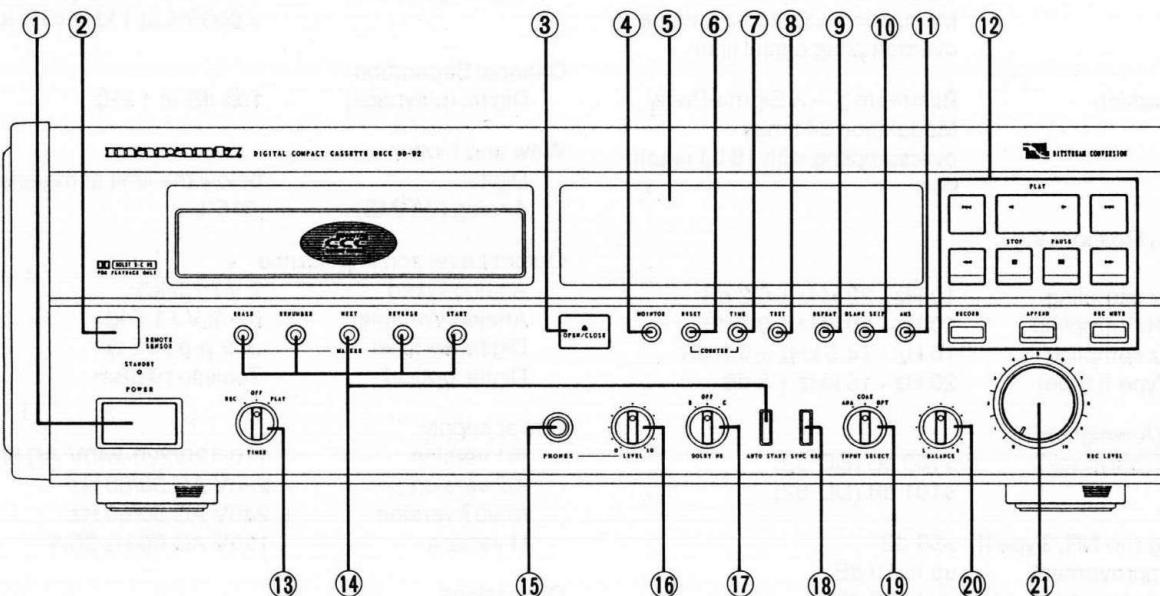
In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

TECHNICAL SPECIFICATIONS

D/A Conversion	Bitstream DAC-7 Differential Mode 1 Bit Pulse Density Modulation with 20 bit 8 times oversampling digital filter	Total Harmonic Distortion Digital (playback)	<.003% at 1 kHz (DD-92) <.0035% at 1 kHz (DD-82)
A/D Conversion	Bitstream Σ - Δ Sigma-Delta Modulation 64 times oversampling with 18 bit resolution	Channel Separation Digital (playback)	100 dB at 1 kHz
Frequency Response: Digital	48 kHz sampling 44.1kHz sampling 32 kHz sampling Analog (Type II tape)	Wow and Flutter Digital Analog (WRMS)	below the limit of measurement .015%
	10 Hz - 22 kHz ± 0.2 dB 10 Hz - 20 kHz ± 0.2 dB 10 Hz - 14.5 kHz ± 0.2 dB 20 Hz - 18 kHz ± 3 dB	Output Level and impedance	2 V / 1.5 kΩ 0 ~ 2 V / 1.5 kΩ .5 V p-p / 75 Ω Toslink-19 dBm
S/N ratio (A-weighted)	Digital (playback)	Power supply	/01 version /02 version /05/07 version U version
	>103 dB (DD-92) >101 dB (DD-82)		110-120/220-240V AC 50/60 Hz 230V AC 50/60 Hz 240V AC 50/60 Hz 120V AC 60 Hz 35W
Analog (no NR, Type II)	>59 dB	Dimensions	Width
Dolby B improvement	up to 10 dB		456 mm, 17 7/8" (including side panels)(DD-92)
Dolby C improvement	up to 20 dB		420 mm, 16 1/2" (DD-82)
Dynamic range Digital (playback)	>100 dB	Height	132 mm, 5 3/4"
		Depth	344 mm, 15 1/4"
		Weight	13 kg, 26 lbs (DD-92) 8.2 kg, 17 lbs (DD-82)

 Carbon film 0.125 W or 0.2 W	70°C	5%	 Ceramic plate Tuning < 120 pF NP.0	2%	*a = 2.5 V b = 3.15 V or 4 V c = 6.3 V d = 10 V e = 16 V f = 25 V g = 40 V h = 63 V i = 100 V l = 125 V m = 150 V n = 160 V q = 200 V r = 250 V s = 300 V t = 350 V u = 400 V v = 500 V w = 630 V x = 1000 V A = 1.6 V B = 6 V C = 12 V D = 15 V E = 20 V F = 35 V G = 50 V H = 75 V I = 80 V
 Polyester flat foil	10%				
 Metalized polyester flat film	10%				
 Polyester flat foil small size (Mylar)	10%				
 Polysterene film/foil	1%				
 Tubular ceramic					
 Miniature single					
 Subminiature tantalum	± 20%				
(C) Chip component					

CONNECTIONS AND CONTROLS



- | | | | |
|-------------------------------------|--|--------------------------|----------|
| ① Power (standby) switch | S851 | ⑯ Phones | JH02 |
| ② Remote sensor | QD02 | ⑰ Phones level control | RH01 |
| ③ Open/close switch | SD17 | ⑱ Dolby NR switch | SD32 |
| ④ Monitor switch | SD25 | ⑲ Sync rec switch | SD22 |
| ⑤ Display | VD01 | ⑳ Input select switch | SD33 |
| ⑥ Counter reset switch | SD19 | ㉑ Rec balance control | RV02 |
| ⑦ Time switch | SD21 | ㉒ Rec level control | RV01 |
| ⑧ Text switch | SD20 | Ⓐ Variable out | J741 |
| ⑨ Repeat switch | SD01 | Ⓑ Fixed out | J740 |
| ⑩ Blank skip switch | SD27 | Ⓒ Line in | J742 |
| ⑪ AMS switch | SD26 | Ⓓ Digital coaxial in/out | JA03 |
| ⑫ Recording/playback control switch | SD03~06, 08, 09,
SD15, 16, 24, 28, 29 | Ⓔ Optical in/out | JA01, 02 |
| ⑬ Timer play/off/rec switch | SD31 | ㉓ Remote ext/int switch | SR01 |
| ⑭ Marker control switch | SD10~14, 23 | ㉔ Remote cont. d-bus | JR01 |
| | | ㉕ Main socket | J093 |

SERVICE HINTS

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti i IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cautela alla loro manipolazione. Durante le riparazioni occorre quindi essere collegati allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

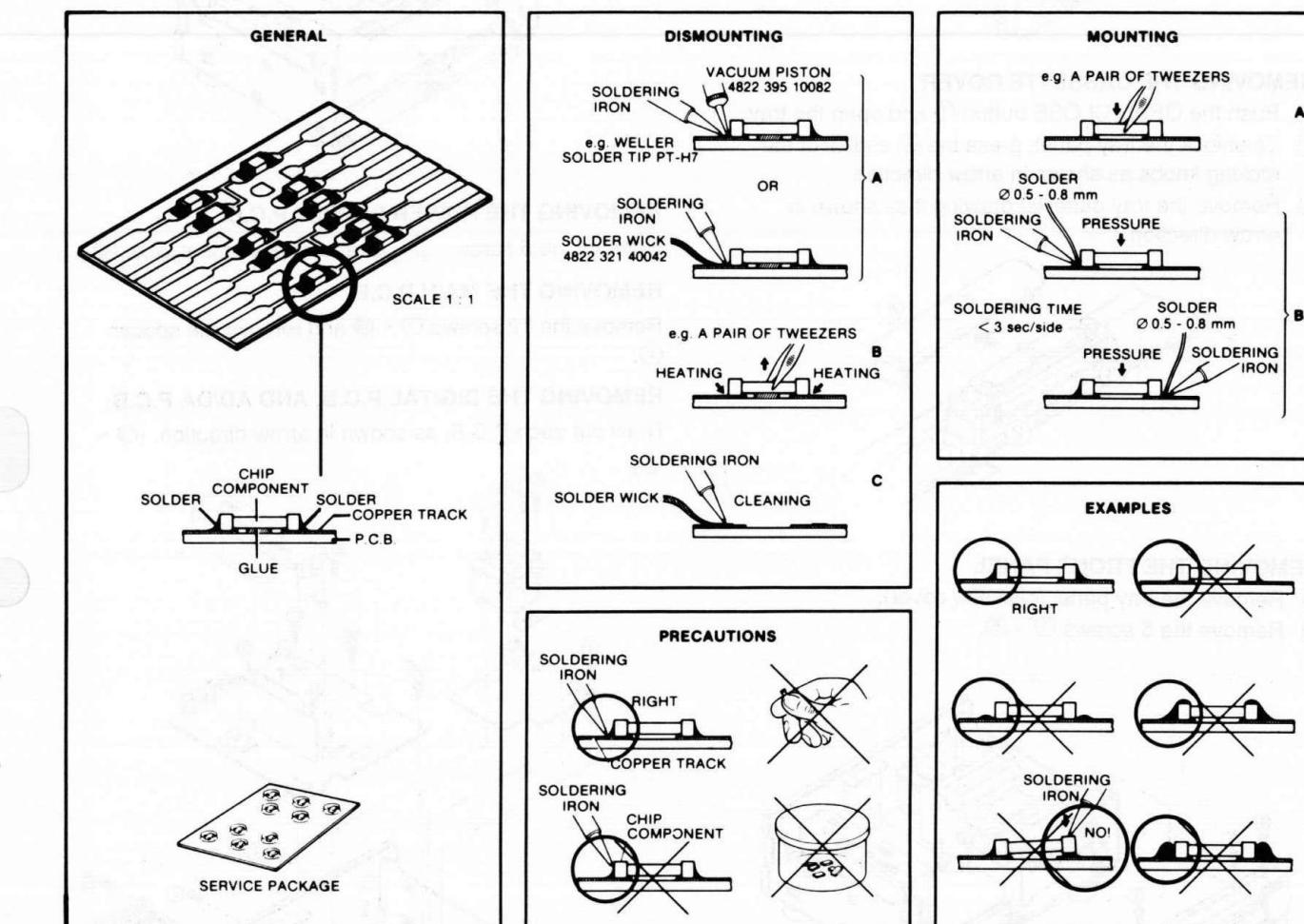
F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet servi d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

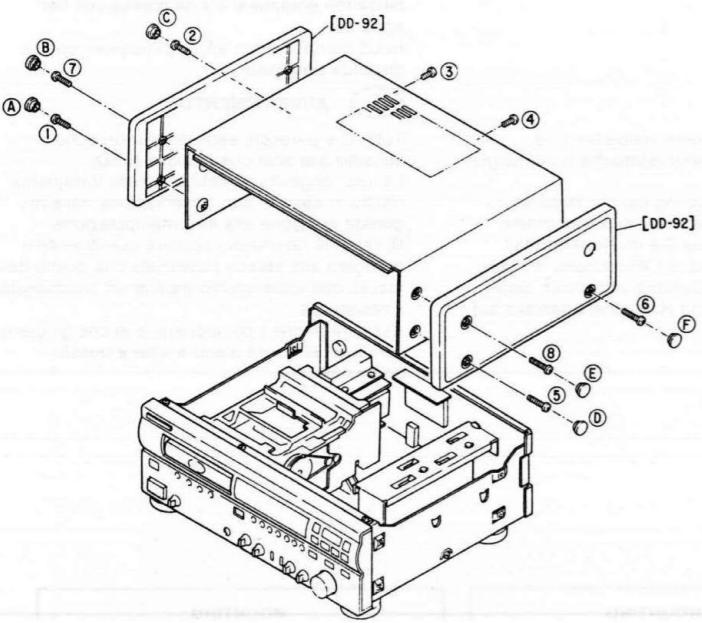
Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen Sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

HANDLING CHIP COMPONENTS

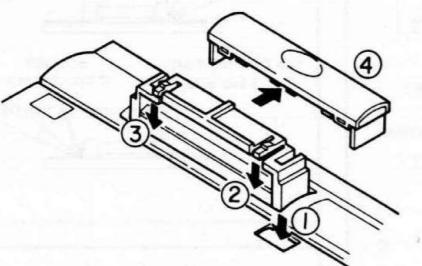


DISASSEMBLY**REMOVING THE TOP COVER**

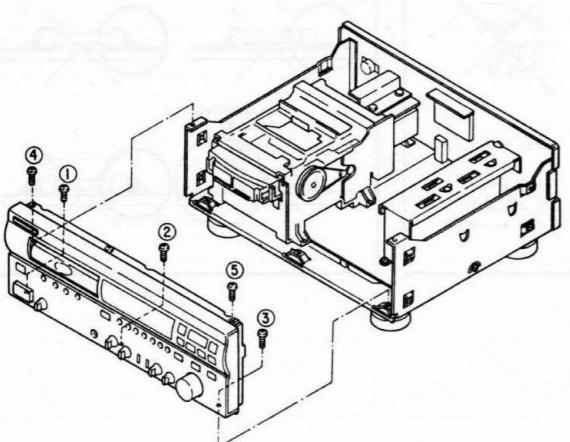
- DD-92 Remove the 6 caps ① ~ ⑥ and remove the 8 screws ① ~ ⑧.
 DD-82 Remove the 8 screws ① ~ ⑧.

**REMOVING THE CASSETTE COVER**

- Push the OPEN/CLOSE button ① and open the tray.
- To unlock the tray panel, press the ② and ③ of the rocking knobs as shown in arrow direction.
- Remove the tray panel ④ drawing it as shown in arrow direction.

**REMOVING THE FRONT PANEL**

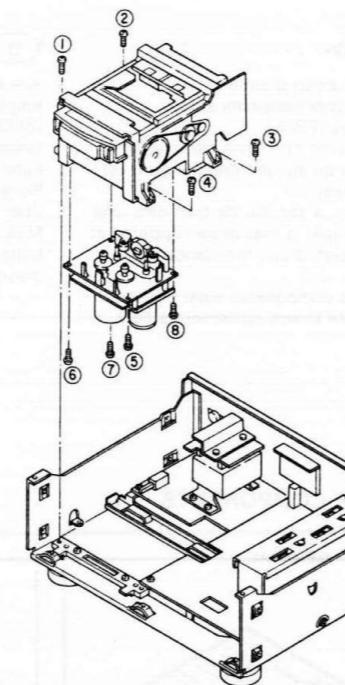
- Remove the tray panel (cassette cover).
- Remove the 5 screws ① ~ ⑤.

**REMOVING THE LOADER (TRAY MECHANISM)**

Remove the 4 screws ① ~ ④.

REMOVING THE DECK MECHANISM

- Remove the 4 screws ① ~ ④.
- Remove the 4 screws ⑤ ~ ⑧.

**REMOVING THE POWER SUPPLY P.C.B.**

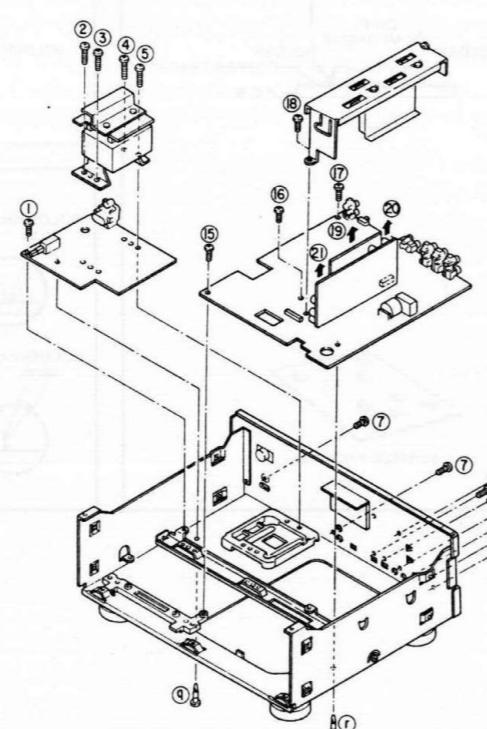
Remove the 5 screw ① ~ ⑤ and remove the spacer ⑨.

REMOVING THE MAIN P.C.B.

Remove the 12 screws ⑦ ~ ⑯ and remove the spacer ⑮.

REMOVING THE DIGITAL P.C.B. AND AD/DA P.C.B.

Draw out each P.C.B. as shown in arrow direction. (⑯ ~ ㉑)

**SERVICE MODE****1. START service mode :**

Press PLAY (▶) key and STOP (■) key together and then POWER-ON.

2. Functions available (select with TIME key) :

- 0 scrolling list of available display characters
(This performs as soon as turning POWER-ON.)
- 1 all display elements on
- 2 all display elements off one by one
- 3 display eye channel on oscilloscope
(select channel by using remote controls 0...8)
TIME key : **SET EYE CH**
STOP mode : **GO PLAY MODE**
PLAY mode : **EYE CH NO, □**
- 4 display system error rate for chosen channel
TIME key : **SYS ERR RATE**
STOP mode : **GO PLAY MODE**
PLAY mode : **ERR SYS □□□**
- 5 display aux error rate
TIME key : **AUX ERR RATE**
STOP mode : **GO PLAY MODE**
PLAY mode : **ERR AUX □□□**
- 6 display main error rate
TIME key : **MAIN DATA**
STOP mode : **GO PLAY MODE**
PLAY mode : **MAIN □ CH □□□**
- 7 display all error rate average
TIME key : **ALL ERR RATE**
STOP mode : **GO PLAY MODE**
PLAY mode : **SA 0 1 2 3 4 5 6 7**
immediately PLAY MODE : **□□□□□□□□□□**
changed each 0 ~ F
- 8 display all error rate real time
TIME key : **ALL ERR DISP**
STOP mode : **GO PLAY MODE**
PLAY mode : **□□□□□□□□□□**
It is OK, if the display is stable between 0 and 2.

- 9 back to function 0
STOP mode : **0 PLAY MODE**

Displayed information is directly coming from DEQ and DDSP.
However, the test 3 is not available on this model.

3. END :

Press COUNTER RESET key.

FACTORY MODE**START Factory mode :**

Press STOP (■) key and BACKWARD (◀) key together and then POWER-ON.

- All of display elements on after several seconds of
DISPLAY : **FACTORY MODE**,
and "PLAY", "REC" and "STAND BY" LEDs lights.

2. Press TIME key once.

- The modes on TIMER SW are displayed.
PLAY mode : **□ TIMER □ PLAY**
OFF mode : **□ TIMER □ OFF**
REC mode : **□ TIMER □ REC**

The numerals in paragraph
2-2 are displayed.

- Make sure the length of DCC cassette, and SW (SW mechanism).

Display	LENGTH Run time of cassette tape			TIME min.
	0	1	2	
0	OFF	OFF	OFF	OFF No Protect (REC is able.)
1	ON	OFF	OFF	
2	OFF	ON	OFF	
3	ON	ON	OFF	
4	OFF	OFF	ON	
5	ON	OFF	ON	
6	ON	ON	ON	
7	ON	ON	ON	
8	OFF	OFF	OFF	
9	ON	OFF	OFF	
A	OFF	ON	OFF	ON Protect (REC is inable.)
B	ON	ON	OFF	75
C	OFF	OFF	ON	90
D	ON	OFF	ON	105
E	ON	ON	ON	120
F	ON	ON	ON	

SWITCH side : TAPE side

*1 When no cassette
is installed.

OFF (Open) : With hole

*2 When music tape
is installed.

- When each MARKER key is pressed, display is changed to numeral mode.

When each MARKER key is pressed, numeral display is changed.

AUTO key	: 1 □ TIMER □ □□□	Refer to paragraph 2-1 for the display.
WRITE key	: 2 □ TIMER □ □□□	
RENUMBER key	: 3 □ TIMER □ □□□	
NEXT key	: 4 □ TIMER □ □□□	
REV key	: 5 □ TIMER □ □□□	
ERASE key	: 6 □ TIMER □ □□□	

- Press TIME key once.

- In this case, Ageing mode (Also OK in Analog compact cassette)

DISPLAY : **□□□ AGEING □□□**
when a cassette is installed.

→ PLAY → STOP → FF(▶) → REW(◀) → OPEN → CLOSE →

Approx. 90 sec.

- Press TIME key once.

- In this case, Direct REC (Just press REC key, then recording starts).

If REW (◀) key is pressed while recording, recording stops after rewinding until start position of the record,
(The marker when stopping to record is not written.)

- Press TIME key once.

- Back to 1.

END :

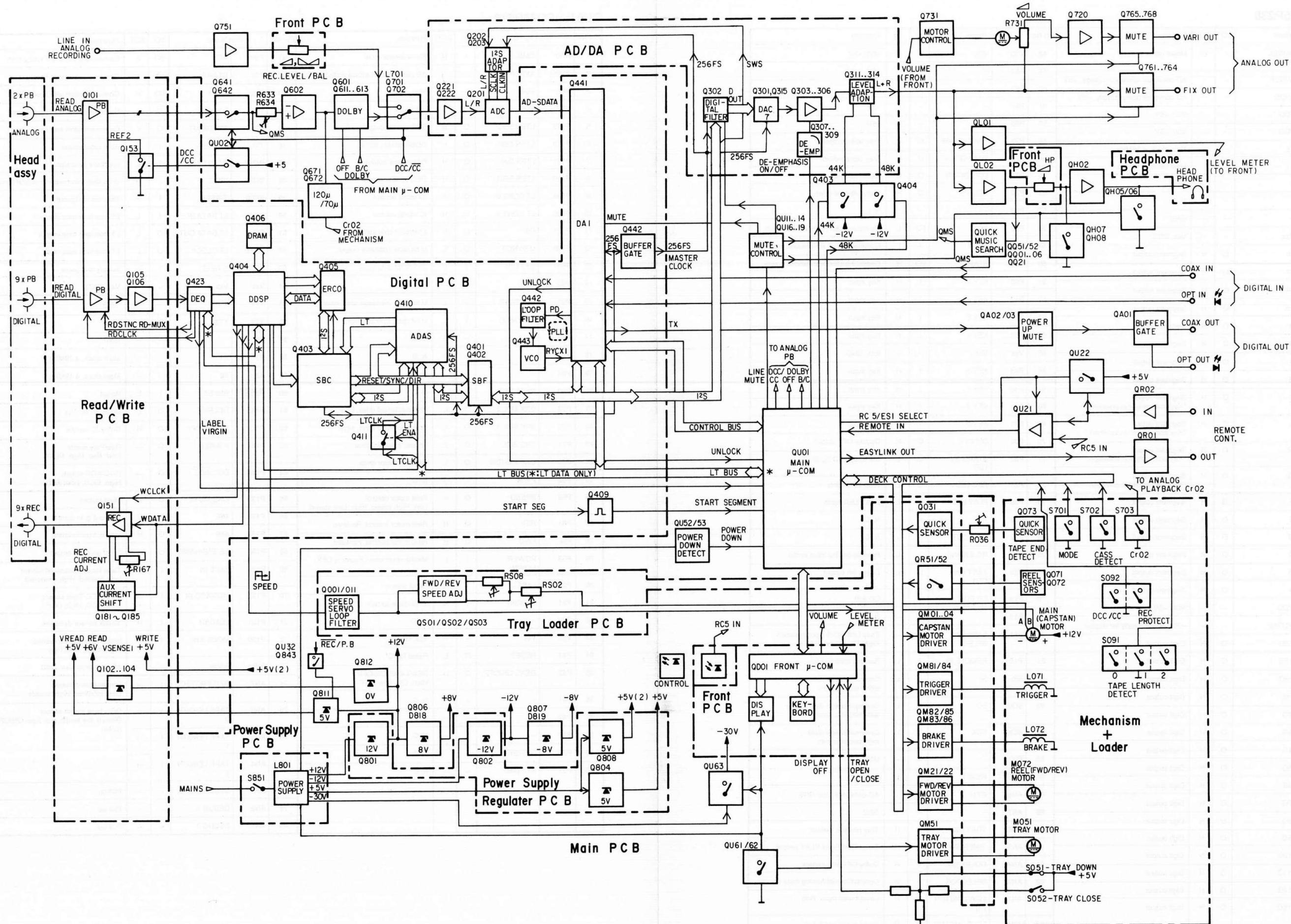
QD01: μPD75P238

Pin No.	Port Name		I/O	Act	Function	Pin No.	Port Name		I/O	Act	Function
1	AN0	MODEL SELECT	I	H	Model name sensor	48	VDD	VDD	-	-	VDD, +5V
2	AVREF	AVREF	-	-	AD converter reference voltage, +5V	49	P83	-	-	-	+5V
3	AVDD	AVDD	-	-	AD converter power supply, +5V	50	P82	-	-	-	+5V
4	VDD	VDD	-	-	VDD, +5V	51	P81	-	-	-	+5V
5	VDD	VDD	-	-	VDD, +5V	52	P80	-	-	-	+5V
6	X2	X2	-	-	Main clock, 4.19MHz	53	P73	TRAY CLOSE	O	H	Tray open output
7	X1	X1	-	-	Main clock, 4.19MHz	54	P72	TRAY OPEN	O	H	Tray close output
8	IC	-	-	-	GND	55	P71	VOL. DOWN	O	H	Motor volume up
9	XT2	-	-	-	N. C.	56	P70	VOL. UP	O	H	Motor volume down
10	XT1	-	-	-	GND	57	P63	-	-	-	N. C.
11	Vss	Vss	-	-	Vss, GND	58	P62	ACK	I/O	L	Communication with Mecha μ-com
12	S16	18	O	H	Segment output	59	P61	REDY	I	L	Communication with Mecha μ-com
13	S17	17	O	H	Segment output	60	P60	START	I/O	H	Communication with Mecha μ-com
14	S18	16	O	H	Segment output	61	P53	KEY 7	I	H	Key input
15	S19	15	O	H	Segment output	62	P52	KEY 6	I	H	Key input
16	S20	N	O	H	Segment output	63	P51	KEY 5	I	H	Key input
17	S21	R	O	H	Segment output	64	P50	KEY 4	I	H	Key input
18	S22	K	O	H	Segment output	65	Vss	Vss	-	-	Vss, GND
19	S23	H	O	H	Segment output	66	P43	KEY 3	I	H	Key input
20	S0	P	O	H	Segment output *Key scan output in common	67	P42	KEY 2	I	H	Key input
21	S1	J	O	H	Segment output *Key scan output in common	68	P41	KEY 1	I	H	Key input
22	S2	M	O	H	Segment output *Key scan output in common	69	P40	KEY 0	I	H	Key input
23	S3	G	O	H	Segment output *Key scan output in common	70	P33	DIS OFF	O	H	Display OFF output
24	S4	F	O	H	Segment output	71	P32	STAND BY LED	O	L	Stand-by LED lights
25	S5	E	O	H	Segment output	72	P31	REC LED	O	L	REC LED lights
26	S6	D	O	H	Segment output	73	P30	PLAY LED	O	L	PLAY LED lights
27	S7	C	O	H	Segment output	74	P23	-	-	-	N. C.
28	S8	B	O	H	Segment output	75	P22	RC-5 OUT	-	-	N. C.
29	S9	A	O	H	Segment output	76	P21	RC-5 MASK	I	L	Remote control input inhibit
30	VDD	VDD	-	-	VDD, +5V	77	P20	EASY LINK OUT	O	L	Easy Link output
31	VLOAD	VLOAD	-	-	-30V power supply for display	78	P13	CD EDIT	-	-	CD edit
32	T15	13G	O	H	Digit output	79	P12	-	-	-	N. C.
33	T14	15G	O	H	Digit output	80	P11	EASY LINK SELECT	I	→	Easy Link/RC-5 input selection High: RC-5, Low: EASY
34	T13	14G	O	H	Digit output	81	P10	REMOTE IN	I	L	Remote control input
35	T12	1G	O	H	Digit output	82	SI0	SI	I	L	Communication data input with mecha μ-com
36	T11	2G	O	H	Digit output	83	SO0	SO	O	L	Communication data output with mecha μ-com
37	T10	3G	O	H	Digit output	84	SCK0	SCK	I	L	Communication clock with mecha μ-com
38	T9	4G	O	H	Digit output	85	P00	-	-	-	GND
39	T8	5G	O	H	Digit output	86	RESET	RESET	I	L	Reset
40	T7	6G	O	H	Digit output	87	AVss	AVss	-	-	AD converter Vss, GND
41	T6	7G	O	H	Digit output	88	AN7	-	-	-	GND
42	T5	8G	O	H	Digit output	89	AN6	TRAY SW	I	H	Tray position sensor
43	T4	9G	O	H	Digit output	90	AN5	TIMER SW	I	H	Timer Rec/Timer PLAY sensor
44	T3	10G	O	H	Digit output	91	AN4	DOLBY SW	I	H	Dolby OFF/B/C sensor
45	T2	11G	O	H	Digit output	92	AN3	SELECTOR	I	H	Optical/Coaxial/Analog input sensor
46	T1	12G	O	H	Digit output	93	AN2	LEVEL METER (R)	I	H	Level meter input, Rch
47	T0	16G	O	H	Digit output	94	AN1	LEVEL METER (L)	I	H	Level meter input, Lch

QU01: μPD75P518

Pin No.	Port Name		I/O	ACT	Function	Pin No.	Port Name		I/O	ACT	Function
1	AN0	QMS	I	H	Blank sensor input	41	P30	ACK	I/O	L	Communication with Front μ-com
2	AVREF	AVREF	-	-	AD converter reference voltage, +5V	42	P23	START	O	L	Communication with Front μ-com
3	VDD	VDD	-	-	VDD, +5V	43	P22	REDY	I/O	H	Communication with Front μ-com
4	VDD	VDD	-	-	VDD, +5V	44	P21	DIS FRT	O	L	Communication with Front μ-com
5	P113	LTEN SBC	O	H	SBC enable output	45	P20	SIO IN/OUT	O	L	Communication with Front μ-com
6	P112	LTEN DSP	O	H	DDSP enable output	46	T10	AUX ENV	I	P	AUX label sensor
7	P111	LTEN DAI	O	H	DAI enable output	47	INT 2	START SEG	I	L	Interface sync signal
8	P110	LTEN EQU	O	H	DEQ enable output	48	INT 1	IRQU	I	H	U bit data information indicator input
9	P103	LT CONT 0	O	H	IC mode control	49	INT 0	T-REEL	I	P	Take-up reel pulse
10	P102	LT CONT 1	O	H	IC mode control	50	SI0	LT DATA IN	I	L	LT interface data input
11	P101	CS	O	H	E ² PROM chip select	51	SO0	LT DATA OUT	O	L	LT interface data output
12	P100	U SYNC I	O	L	U bit data, Indicator output	52	SCK0	LT CLOCK	O	L	LT interface data clock
13	P93	DATA IN	I	P	E ² PROM data input	53	INT4	S-REEL	I	P	Supply reel pulse
14	P92	-	-	-	Pull down	54	Vss	Vss	-	-	Vss, GND
15	P91	IM START	I	L	U bit data, message start input	55	XT1	XT1	-	-	GND
16	P90	U SYNC O	I	L	U bit data, indicator input	56	XT2	XT2	-	-	N. C.
17	P83	-	-	-	GND	57	IC	-	-	-	GND
18	P82	-	-	-	N. C.	58	X1	X1	-	-	Main clock, 4.19MHz
19	P81	-	-	-	N. C.	59	X2	X2	-	-	Main clock, 4.19MHz
20	P80	PWM CAP	-	-	N. C.	60	RESET	RESET	I	L	Reset
21	P73	BRK SOL 2	O	L	Brake solenoid drive, Low	61	P143	DOLBY C	O	L	Dolby IC control
22	P72	BRK SOL 1	O	L	Brake solenoid drive, High	62	P142	DOLBY OFF	O	H	Dolby IC control
23	P71	TRG SOL	O	L	Trigger solenoid drive	63	P141	P.B/REC	O	→	Rec/Play output Low: Rec, High: PLAY
24	P70	CAP MOTOR	O	L	Capstan motor drive	64	P140	DCC/ACC	O	→	DCC/ACC output High: DCC, Low: ACC
25	P63	PWM	-	-	N. C.	65	P133	LINE MUTE	O	H	Mute output
26	P62	SPEED	O	→	Reel motor control Low: High speed, High: Low speed	66	P132	48K	O	H	Line out gain control
27	P61	REV	O	H	Reel motor control, Reverse	67	P131	44K	O	H	Line out gain control
28	P60	FWD	O	H	Reel motor control, Forward	68	P130	DE-EMPHASIS	O	H	Emphasis ON output
29	P53	POWER DOWN	I	L	Mecha reset when Power is OFF	69	P123	TAPE IN	I	→	Tape loaded/unloaded sensor Low: loaded, High: unloaded
30	P52	LABEL	I	H	Label sensor	70	P122	DCC/ACC IN	I	→	ACC/DCC Tape sensor Low: ACC, High: DCC
31	P51	VERGIN	I	H	Virgin tape sensor	71	P121	LEADER	I	H	Quick sensor detection
32	P50	-	-	-	GND	72	P120	MODE SW	I	→	Head base position sensor High: Stop, Low: Play
33	Vss	Vss	-	-	Vss, GND	73	AVss	A Vss	-	-	AD converter Vss, GND
34	P43	RESET	O	L	Reset for IC	74	AN7	REC PROTECT	I	→	Rec enable/inhibited Low: inhibited, High: enable
35	P42	READ ON/OFF	O	→	READ AMP ON/OFF High: ON, Low: OFF	75	AN6	TAPE LENGTH 0	I	→	DCC tape length sensor Detects the length with 3-pin ON/OFF matrix
36	P41	-	-</								

BLOCK DIAGRAM



DESCRIPTION OF SIGNAL NAMES

Description of signal names

Signal name	Signal flow	Function	Explanation
128Fs	SBC → n.c.	clock	Clock output from SBC, 128 x sampling frequency.
256Fs	SBC ↔ DAI SBC → SBF SBC → ADC SBC → DAC SBC → ADAS	system clock	Master clock signal (256 x sampling frequency) for SBF, DAI, ADC, DAC and ADAS. Is generated by SBC with exception of the mode Digital Record. In that case the DAI is the MASTER and supplies 256Fs and all other related signals. For DAB (digital audio broadcast) Fs = 32 kHz/48 kHz. For CD (compact disc) Fs = 44.1 kHz For DCC (own recording) Fs = 48 kHz, 44.1 kHz (analog source)
ADRS0 ADRS1 ADRS2 ADRS3 ADRS4 ADRS5 ADRS6 ADRS7	DDSP → DRAM	address lines	8 address lines to DRAM to locate an address for writing data into or reading data from memory.
ADSDI	DAI ← ADC	analog/digital serial data input	DAI input for serial data from AD converter (see also SDATA).
AENV	DEQ → μC	alternating envelope	Monitors during DCC search mode the start of a track (from auxiliary channel signal).
ATT	dig filter ← μC	attenuation	Data input for digital filter to set its attenuation register.
ATTDAC	SBC → n.c.	attenuate DAC	Control line (output from SBC) connected to DAC attenuation input.
AUX	DEQ → DDSP	auxiliary channel output	Sliced output from DEQ of auxiliary channel data (bit rate 12 kb/s) routed to DDSP input TAUX.

Signal name	Signal flow	Function	Explanation
AZCHK	DDSP → test pin	azimuth check	Monitors the azimuth of channels 0 and 7 (output of DDSP).
BCKI	dig filter ← I ² S	bit clock input	Clock signal input for digital filter according I ² S format (see also SCL).
BCKO	dig filter → DAC	bit clock output	Clock signal output from digital filter according I ² S format to DAC clock input SCKI. See also SCL and SCKI.
CH0 CH1 CH2 CH3 CH4 CH5 CH6 CH7	DEQ → DDSP	channel n	DEQ channel n output to DDSP inputs TCH0..TCH7.
CKI	dig filter ← SBC or DAI	clock input	256Fs (256 x sampling frequency) clock input for digital filter. See also 256Fs.
CKSL	→ dig filter	clock selection	Input for digital filter to discriminate between used clock frequencies. CKSL=0; clock = 256Fs CKSL=1; clock = 384Fs
CLAB	ERCO ↔ SBC	I ² S bit clock	Bit clock I/O from ERCO directly connected to SBC I/O SBCL pin (see also SBCL).
CLK22	SBC → n.c.	22.5792 MHz clock output	
CLK24	SBC → DDSP SBC → DEQ SBC → ADAS	24.576 MHz master clock	Master clock from SBC to DDSP, ADAS and DEQ to determine the length of tape frame and inter frame gap. In case of a digital recording this clock is not synchron with the sampling frequency and its related frequencies, coming from the DAI (see also F24).
DAAB	ERCO ↔ SBC	serial data (I ² S)	Bidirectional I ² S serial data line between ERCO and SBC (see also SBDA).

Signal name	Signal flow	Function	Explanation	Signal name	Signal flow	Function	Explanation
DATA0 DATA1 DATA2 DATA3 DATA4 DATA5 DATA6 DATA7	ERCO ↔ DDSP	data line n	Parallel data lines for symbol transfer between ERCO and DDSP. DDSP is the master.	EFAB	ERCO → SBC	Error flag	I ² S error flag directly connected to SBC input SBEF to give the error status of bytes being transferred during data playback (see also SBEF).
DEEMDAC	SBC ↔ n.c.	deemphasize DAC	Control line for DAC	F24	DDSP ← SBC DEQ ← SBC	24.576 MHz master clock	Master clock from SBC to DDSP and DEQ to determine the length of tape frame and inter frame gap. In case of a digital recording this clock is not synchronized with the sampling frequency and its related frequencies, coming from the DAI (see also CLK24).
DIGEYE	DEQ → test pin	digital eye output	Serial data output signal to obtain digital eye pattern to test equalization performance of the channels. See also VAL.	FDA	SBF ↔ ADAS	filtered data	Bidirectional serial data line between SBF and ADAS.
DIN	dig filter ← I ² S	data input	Serial data input according I ² S format.		SBC ↔ ADAS		Bidirectional serial data line between SBC and ADAS.
DOEN	DAC ← n.c.	data output enable	One-bit digital output enable; when LOW, the one-bit code outputs are made available for further digital processing.				Data transfer in I ² S format, carrying 32 sub-band channels digital audio data (see also FDAF and FDAC). Each SWS period 2x18 bits data are transferred.
DOL	dig filter → DAC	digital output left	Serial data output of digital filter offered to SDI1 input of DAC. See also SDI1.	FDAC	ADAS ↔ SBC	filtered data	Filtered data transfer between ADAS and SBC (see also FDA).
	DAC → DAC		Serial one-bit data	FDAF	ADAS ↔ SBF	filtered data	Filtered data transfer between ADAS and SBF (see also FDA).
DOR	dig filter → DAC	digital output right	Serial data output of digital filter offered to SDI2 input of DAC. See also SDI2.	FDIR	SBC → SBF SBC → ADAS	direction control	Control line output from SBC to SBF and ADAS to indicate the mode of operation. FDIR=1; decoding mode (sub-band synthesis) FDIR=0; encoding mode (sub-band analysis).
ED0 ED1 ED2 ED3 ED4 ED5 ED6 ED7 ED8 ED9	DDSP ↔ ERCO	Erco data line	Bidirectional parallel databus between DDSP and ERCO.	FLAG1 FLAG2	ERCO ↔ DDSP	data bus flag	Data lines for symbol transfers between ERCO and DDSP. DDSP acts as the master (see also ED8 and ED9).
				FRESET	SBC → SBF SBC → ADAS	filter reset	Reset output from SBC to cause a general reset for SBF and ADAS.



Signal name	Signal flow	Function	Explanation	Signal name	Signal flow	Function	Explanation
FSYNC	SBC → SBF SBC → ADAS	filter synchronization	At filter sync, with a repetition rate of Fs/32, the transfer of the 2x32 sub-band samples is started. Fsync ensures each SBF is synchronized with the SBC to permit only transfer of sub-band 0 data during FSYNC.	I ² S-bus		inter IC sound	3-line serial bus consisting of a line for two time-multiplexed audio data channels, a word select line for indication of the channel being transmitted (left or right) and a clock line. The lines are called SD, WS and SCK. The device which generates the SCK and WS is the master. See also SCK, SWS and SDA.
IFL	DDSP → ERCO	imposed flag	During the ERCO encoding mode the IFL line from DDSP is used to force the symbol currently transferred to the ERCO to become a parity symbol during ERCO encoding.	LABEL	DEQ → μC	label	Search mode label detection output of DEQ signals that a label is found in the AUX-channel. When DCC player is in search mode, the tape speed increases. LABEL information is encoded throughout its length. To examine the length of a label, the tape speed must be known. In search mode DEQ assesses the speed of labelled tapes. The microcontroller obtains this information via the LT-interface.
IMSTRT	DAI → μC	information message start	Control line from DAI to main μC to indicate the start of a message transfer.				
INHERCO	DDSP → ERCO	inhibit ERCO	Control line output of DDSP to inhibit the ERCO for settings transfer. These settings determine whether the ERCO should encode or decode (see also SETINH).	LCI	dig filter ← I ² S	L/R clock input	Word clock input for the digital filter, connected to SWS control line of I ² S-interface. Data from DIN (data in) is latched into the left- and right input registers on alternate transitions of the word clock. See also SWS.
INTL+ INTL-	DAC → L-ch	integrator left	Analog output of the DAC (outputs from the left positive and negative switched-capacitor integrator) to the left channel amplifier stage.	LT-Bus	μC → DAI μC → ADAS μC → DEQ μC → DDSP		LT-interface is used for the system control of the digital panel. The LT-interface consists of clock-, data-, control- and enable lines.
INTR+ INTR-	DAC → R-ch	integrator right	Analog output of the DAC (outputs from the right positive and negative switched-capacitor integrator) to the right channel amplifier stage.	LTCLK	μC → DAI μC → ADAS μC → DEQ μC → DDSP	LT-clock	Bit clock line for the LT-interface. Main microcontroller supplies the bit clock and acts as master whilst the other devices perform as slaves.
IOSC	ERCO ← SBC	input oscillator	Oscillator input for ERCO coming from the sub-band coder SBMCLK output. The nominal frequency is 6.144 MHz. See also SBMCLK.	LTCNT0 LTCNT1	μC → DAI μC → ADAS μC → DEQ μC → DDSP	LT control lines	Control lines of the LT-interface output from main microcontroller. LTCNTn determine the type of transfer to occur across the LTDATA serial data line to/from microcontroller.
IRQU	DAI → μC	information request microcontroller	Control line to indicate the main microcontroller information can be read.				

Signal name	Signal flow	Function	Explanation
LTDATA	$\mu\text{C} \rightarrow \text{DAI}$ $\mu\text{C} \rightarrow \text{ADAS}$ $\mu\text{C} \rightarrow \text{DEQ}$ $\mu\text{C} \rightarrow \text{DDSP}$	LT data	Bidirectional serial data line of the LT-interface from/to microcontroller. Direction of data transfer is dependant on the information on LTCNT0 and LTCNT1.
LTENA LT-ADAS	$\mu\text{C} \rightarrow \text{ADAS}$	LT enable ADAS	Activates the LT-interface of the ADAS in case LTENA =1.
LTEN LT-DAI	$\mu\text{C} \rightarrow \text{DAI}$	LT enable DAI	Activates the LT-interface of the DAI in case LTEN (on DAI) =1.
LTEN LT-DDSP	$\mu\text{C} \rightarrow \text{DDSP}$	LT enable DDSP	Activates the LT-interface of the DDSP in case LTEN (on DDSP) =1.
LTNENEQ LT-DEQ	$\mu\text{C} \rightarrow \text{DEQ}$	LT enable DEQ	Activates the LT-interface of the DEQ in case LTNENEQ =1.
LT-Subbus LTCLKC LTCNTOC LTCNT1C LTDATAAC LTENC	ADAS \rightarrow SBC	LT-interface	LT-interface for communication between SBC and ADAS. Here the ADAS is the master.
MCLK	DDSP \rightarrow ERCO	master clock	MCLK line of the DDSP provides the 6.144 MHz master clock signal and is connected to the MCLK input of the ERCO. This clock ($128 \times F_s$) is used for the symbols transfer between DDSP and ERCO.
MODE0 MODE1	DAI \leftarrow μC	mode selection input	Control lines from the microcontroller to select the operation mode of the DAI. DAI operates in μC mode when both lines are at '0' level.
MPCL	DDSP \rightarrow ERCO	clock phase reference	The MPCL output of the DDSP provides the 3.072 MHz ($64 \times F_s$) clock phase reference signal which is connected to the MPCL input of the ERCO.
MSTCK	DAI \leftrightarrow 256Fs	master clock	Bidirectional master clock line. Dependant on CKSEL settings the master clock is at 128Fs or 256 Fs. See also 256Fs.

Signal name	Signal flow	Function	Explanation
MUTE	DAI \leftarrow μC	mute audio	Control line from microcontroller to mute the digital audio interface. The audio output of the DAI is kept zero when the PLL is not locked in the reception mode (see also UNLOCK).
	dig filter \leftarrow μC		Set the internal digital attenuation register to its maximum, causing an infinite attenuation. In this case audio output is muted. On digital filter data sheet the pin is called MLE (mode set latch enable).
MUTEDAC	SBC \rightarrow n.c.	mute DAC	control output line of SBC for D/A converter.
NER0 NER1 NER2	ERCO \rightarrow test connector	number of erasures	The NERx outputs produce an indication of the number of erasures encountered in the code word currently being processed.
OEN	DDSP \rightarrow DRAM	output enable	Output enable for DRAM.
OERDCB	DDSP \rightarrow ERCO	output enable for ERCO	Indication for the ERCO to output data on the data bus lines (DATA1..DATA7, FLAG1 and FLAG2).
PD1 PD2	DAI \rightarrow VCO	phase detector	Phase detector output from DAI for the charge pump of the VCO. The VCO locks to incoming frequencies on digital input. When locked the DAI supplies the 256Fs master clock.
PRGSTAT	DDSP \rightarrow n.c.	program status	DDSP program status output.
RASN	DDSP \rightarrow DRAM	row address strobe negative	row address strobe for DRAM.
RDATA0 RDATA1 RDATA2 RDATA3	DDSP \leftrightarrow DRAM	RAM data bus	Bidirectional data bus between DDSP and DRAM. On DRAM IC these lines are called DQ1..DQ4.

Signal name	Signal flow	Function	Explanation
RDCLK	DEQ \rightarrow read amp	read clock	Data clock (960 kHz) for the read amplifier. The data of 8 data channels and 1 aux channel is transferred during 10 RDCLK periods.
RDMUX	read amp \rightarrow DEQ	read multiplex	Read multiplexer output from read amplifier to DEQ. See also VIN.
RDSYNC	DEQ \rightarrow read amp	read synchronization	Control output of DEQ to read amplifier to synchronize the read amplifier multiplexer and the DEQ demultiplexer.
READB	DDSP \rightarrow ERCO	read enable	Read enable for ERCO. When active the ERCO reads data from DDSP on data bus ED0..ED9.
RESET	\rightarrow ADAS \rightarrow SBC \rightarrow DDSP \rightarrow DAI \rightarrow dig filter	reset	Hardware reset (power up) from +5 voltage supply.
RESETC	DDSP \rightarrow ERCO	reset erco	Control output from DDSP to ERCO to reset ERCO.
RST	RESET \rightarrow dig filter	reset	Hardware reset for digital filter (see also RESET).
RX1	DAI \leftarrow COAX in	receive data	Receive digital data according IEC format digital audio for coaxial input.
RX2	DAI \leftarrow OPT in	receive data	Receive digital data according IEC format digital audio for optical input.
RXCKI	DAI \leftarrow VCO	receive clock input	Input for VCO frequency (256Fs).
RXCKO	DAI \rightarrow VCO	receive clock output	Output for VCO frequency (256Fs).
RXSEL	DAI \leftarrow 0	receiving mode selection	Selection between reception inputs RX1 and RX2.

Signal name	Signal flow	Function	Explanation
SBCL	SBC \leftrightarrow ERCO	sub-band clock	SBCL line is part of the S(ub)-B(and)-I ^S interface and provides the bit clock. See also CLAB.
SBDA	SBC \leftrightarrow ERCO	sub-band data	Sub-band I ^S interface line for serial data transfer between SBC and ERCO.
SBDIR	SBC \leftarrow DDSP	sub-band direction	Control line from DDSP to SBC to indicate the direction of the data flow between ERCO and SBC on SBDA line.
SBEF	SBC \leftarrow ERCO	sub band error flag	I ^S error flag to give the error status of bytes being transferred during data playback to the SBC (see also EFAB).
SBMCLK	SBC \rightarrow ERCO	sub-band master clock	Master clock (6.144 MHz) for ERCO (see also IOSC)
SBWS	SBC \leftrightarrow ERCO SBC \leftrightarrow DDSP	sub-band word select	The SBWS signal indicates the channel of the sample (either left or right) and is equal to the sampling frequency F_s . On the ERCO and DDSP devices the signal is called WS (see also WS).
SCK/BCK	DAI \leftrightarrow I ^S	shift / bit clock	Bidirectional shift/bit clock for audio data connected to I ^S -bus.
SCKI	DAC \leftarrow dig filter	serial clock input	Bit clock input for the serial input interface. Clock is supplied by the digital filter via the BCKO pin (see also BCKO).
SCL	SBC \rightarrow SBF SBC \rightarrow ADAS SBC \leftrightarrow DAI SBC \rightarrow dig filter DAI \rightarrow I ^S adaptation of ADC	serial clock	Bit clock for the I ^S -interface. Clock frequency is 64x sampling frequency. See also BCKI, SCK/BCK and SCLK.
SD/SDI	DAI \leftarrow I ^S -bus	serial data input	Bidirectional serial data line for the I ^S -bus (see also SDA).
SD0	DAI \rightarrow n.c.	serial data output	Serial data output for digital audio data bus.

Signal name	Signal flow	Function	Explanation
SDA	DAI ↔ SBF DAI → DAC (via digital filter) ADC → DAI	serial data	Serial data line of I ² S-bus. The data line carries digital audio (broad band data) according I ² S-format. Two samples (left-and right channel) are transferred during one SWS-period. The ADC outputs broad band data via its SDATA pin, the DAI receives data on its ADSDI pin and outputs data on SDI, the digital filter receives data on DIN and the DAC on SDI1 and SDI2.
SDATA	ADC → DAI	serial data	Serial data output of AD convertor which is transferred to DAI data input ADSDI (see also ADSDI).
SDI1 SDI2	DAC ← dig filter	serial data input	Serial data inputs (broad band digital audio data) for conversion to analog left and right audio. The data comes from the DOL and DOR outputs of the digital filter. See also DOL, DOR and SDA.
SELERFI	DDSP → ERCO	select ERCO/FIFO	Control line output of DDSP to determine the nature of data transferred to ERCO. If SELERFI=1 the transfers are to and from the error correction section. If SELERFI=0 transfers are to and from I ² S-interface section of the ERCO device.
SETDAT	ERCO ← DDSP	settings data register	Data settings line for the settings register of the ERCO. SETDAT determines the operational mode of the ERCO device. See also SETERCO.
SETERCO	DDSP → ERCO	set ERCO	Output of DDSP to transfer control settings of the ERCO (see also SETDAT). These settings determine whether ERCO should encode or decode and it also designates the direction of data transfer for the I ² S-interface.
SETINH	ERCO ← DDSP	settings inhibit	When SETINH is active the ERCO can receive settings data (via SETDAT line) from DDSP for its operation mode (see also INHERCO, SETDAT and SETERCO).

Signal name	Signal flow	Function	Explanation
SETPIN1 SETPIN2	DDSP → n.c.		Microcontroller port expander outputs.
SETSY	DAI ← SBC	settings sync	DAI latches new settings in internal register when SETSY is active. SETSY is sent by SBC which takes care for external clock source synchronization (see also SYNCDAI).
SPEED	DDSP → servo capstan motor	speed control	Pulse width modulated control output of DDSP for phase regulating the speed of the capstan in the tape deck (tape speed).
STMPB	DDSP → ERCO	start error correction program	STMPB initiates the execution of the error correction program, to begin processing a new code word and causes activation of the new settings for both I ² S-interface and the ERCO.
STRTSEG	DDSP → μC	start segment	STARTSEG indicates the start of a new segment. The STRTSEG output from the DDSP is used as a timing reference for transfer of SYSINFO and AUX information between the microcontroller and the DDSP.
SWS	SBC → ADAS SBC → SBF SBC ↔ DAI SBC → ADC SBC → dig filter	word select	Word select line (at sampling frequency) for I ² S interface. SBC acts as the master with the exception of the mode digital recording. In that case DAI is the master. SWS is connected to WS/LRCK of the DAI, to LR of the ADC and to LRCI of digital filter (see also WS/LRCL, LR and LRCI).
SYNCDAI	SBC → DAI	synchronize DAI	With SYNCDAI (identical with SETSY) the settings for the DAI are latched. These settings are transferred via the LT-bus.

Signal name	Signal flow	Function	Explanation
TAUX TCH0 TCH1 TCH2 TCH3 TCH4 TCH5 TCH6 TCH7	DDSP ← DEQ	channel input	Parallel input lines of DDSP receiving sliced (digital) information of DEQ (see also AUX and CH0..CH7).
TX	DAI → digital out	transmit data	Digital data output of DAI according IEC format.
UNLOCK	DAI → VCO	unlock VCO	UNLOCK indicates that VCO frequency is locked/unlocked to received data. As long as VCO is not locked audio is muted (see also MUTE).
URDA	DDSP → SBC	unreliable data	Only during playback URDA indicates that, regardless of all other flag information, all main data, system information or AUX data is unusable. URDA occurs during a mode change from data recording to playback or if the DDSP must resynchronize with the tape signals.
USYNCI	DAI → μC	microcontroller sync input	Indicates to the microcontroller the start of a new data frame when in transmitting mode.
USYNCO	DAI ← μC	microcontroller sync output	Indicates start of a new data frame when in receiving mode.
VAL	DEQ → test pin	validation data	Validation signal output for data bits. To test equalization performance it is possible to output the equalized channels. The DEQ has for this purpose two digital outputs present: DIGEYE and VAL (see also DIGEYE).
VIN	DEQ ← read amp	voltage input	DEQ inputs via VIN time multiplexed data from read amplifier. See also RDMUX.

Signal name	Signal flow	Function	Explanation
VIRGIN	DEQ → μC	virgin detection	Control output of DEQ to inform the microcontroller a blank tape is inserted.
WCKO	dig filter → DAC	word clock output	Control line for DAC to indicate whether data for the left channel is transmitted or data for the right channel. Has the same function as the word select signal of the I ² S-interface. See also SWS, WS and WSI.
WCLK	write amp ← DDSP	write clock	Clock signal for the write amplifier as timing reference (f = 3.072MHz). See also WCLOCK.
WCLOCK	DDSP → write amp	write clock	Write clock for write amplifier coming from DDSP. See also WCLK.
WDATA	DDSP → write amp	write data	Serial data signal of the 8 main channels and AUX channel, directed to the write amplifier.
WEN	DDSP → DRAM	write enable	Write enable of the DRAM.
WS	ERCO ↔ SBC DDSP ↔ SBC	word select	I ² S-interface word selection I/O line. Is connected to SBWS pin of SBC. See also SBWS.
WS/LRCK	DAI ↔ I ² S	word select/left-right clock	Word selection for digital audio data on I ² S-interface. In mode digital record the DAI is master of the I ² S-bus. See also SWS.
WSI	DAC ← dig filter	word select input	See WCKO.
XIN	DAC ← 256Fs	crystal frequency input	Clock input for the DAC, set on 256 x sampling frequency. See also 256Fs, CKI and MSTCK.
XSEL	DAC ← ground	crystal selection	Control input to select between two crystal frequencies. XSEL=1; CLK=384 Fs XSEL=0; CLK=256 Fs

VOLTAGE CHARTS

Measuring condition
STOP condition (no cassette tape)
INPUT terminal : (no connection)
DOLBY SW (switch) : OFF
TIMER SW (switch) : OFF

測定条件
STOP状態 (カセットなし)
入力端子:接続なし
ドルビースイッチ:OFF
タイマースイッチ:OFF

MAIN PCB (PG03)

Q031

Pin No.	1	2	3	4	5	6	7	8
Voltage	-	0V	0V	0V			5.0V	

Q601

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Voltage	0V	0V	0V	0V	-7.1V	0V	0V	0V	0V	-6.7V	-6.7V	0V	-5.8V	-7.1V	
Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Voltage	7.1V	0V	0V	-6.7V	-6.7V	0V	0V	0V	0V	3.2V	0V	0V	0V	0V	0V

Q602

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	-7.1V	0V	0V	0V	7.1V

Q720

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	-12.0V	0V	0V	0V	11.9V

Q731

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	0V	0V	-	5.0V	0V

Q751

Pin No.	1	2	3	4	5	6	7	8
Voltage				-12.0V				11.9V

QA01

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	2.4V	2.4V	2.4V	2.5V	2.4V	2.5V	0V	2.5V	2.5V	0V	0V	0V	5.0V	

QH02

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	-12.0V	0V	0V	0V	11.9V

QL01

Pin No.	1	2	3	4	5	6	7	8	9
Voltage	2.9V			2.0V	0V	2.0V			12.0V

QL02

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	-12.0V	0V	0V	0V	11.9V

Q611

Pin No.	E	C	B
Voltage	4.9V	0V	4.9V

Q612

Pin No.	E	C	B
Voltage	-7.1V	3.2V	-7.1V

Q613

Pin No.	E	C	B
Voltage	3.2V	3.2V	0V

Q641

Pin No.	E	C	B
Voltage	0V	0V	

Q642

Pin No.	E	C	B
Voltage	0V	0V	

Q672

Pin No.	E	C	B
Voltage	0V	0V	2.0V

Q761

Pin No.	E	C	B
Voltage	0V	0V	

Q762

Pin No.	E	C	B
Voltage	0V	0V	

Q764

Pin No.	E	C	B
Voltage	0V	0V	

Q767

Pin No.	E	C	B
Voltage	0V	0V	

Q807

Pin No.	E	C	B
Voltage	-7.1V	-11.9V	-7.6V

Q843

Pin No.	E	C	B
Voltage	0V	3.4V	0V

QA04

Pin No.	E	C	B
Voltage	0V	1.7V	0.7V

QH07

| Pin No. | E | C |<
| --- | --- | --- |

DC POWER SUPPLY (PS03)

Q871

Pin No.	1	2	3	4
Voltage	17.1V	12.0V	0V	4.2V

Q872

Pin No.	1	2	3
Voltage	-19.0V	-12.1V	0V

Q873

Pin No.	1	2	3	4
Voltage	9.8V	5.0V	0V	2.8V

Q874

Pin No.	1	2	3	4
Voltage	9.6V	5.0V	0V	5.0V

DIGITAL PCB (PZ03)

Q401

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Voltage	4.9V	-	-	-	-	-	-	-	0V	-	
Pin No.	12	13	14	15	16	17	18	19	20	21	22
Voltage	-	0V	0V	-	-	0V	-	0.2V	0V	-	-
Pin No.	23	24	25	26	27	28	29	30	31	32	33
Voltage	4.9V	2.5V	-	0V	-	-	0V	2.5V	2.5V	-	
Pin No.	34	35	36	37	38	39	40	41	42	43	44
Voltage	-	0V	-	0V	-	-	-	0V	-		

Q402

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Voltage	4.9V	-	-	-	-	-	-	-	0V	-	
Pin No.	12	13	14	15	16	17	18	19	20	21	22
Voltage	-	4.9V	0V	-	-	0V	-	-	0V	-	-
Pin No.	23	24	25	26	27	28	29	30	31	32	33
Voltage	4.9V	2.5V	-	0V	-	-	0V	2.5V	2.5V	-	
Pin No.	34	35	36	37	38	39	40	41	42	43	44
Voltage	-	0V	-	0V	-	-	-	0V	-		

Q403

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Voltage	4.1V	4.9V	0V	4.9V	4.9V	0V	0V	4.9V	4.9V	0V	-
Pin No.	12	13	14	15	16	17	18	19	20	21	22
Voltage	-	4.9V	-	-	4.9V	0V	0V	0V	0V	0V	0V
Pin No.	23	24	25	26	27	28	29	30	31	32	33
Voltage	-	-	0V	2.5V	2.5V	0V	0V	0V	0V	-	2.5V
Pin No.	34	35	36	37	38	39	40	41	42	43	44
Voltage	0.2V	0V	2.5V	2.5V	2.5V	4.9V	4.9V	2.4V	2.4V	0V	0V

Q404

Pin No.	1	2	3	4	5	6	7	8	9	10
Voltage	4.9V	0V	4.9V	-	-	2.5V	2.0V	0V	2.5V	0V
Pin No.	11	12	13	14	15	16	17	18	19	20
Voltage	-	-	4.9V	0V	-	-	-	0V	3.1V	0V
Pin No.	21	22	23	24	25	26	27	28	29	30
Voltage	2.2V	4.9V	0V	2.1V	2.6V	2.3V	2.5V	2.7V	2.7V	2.9V
Pin No.	31	32	33	34	35	36	37	38	39	40
Voltage	0.9V	4.8V	2.7V	2.7V	3.1V	0V	0V	4.9V	2.5V	-
Pin No.	41	42	43	44	45	46	47	48	49	50
Voltage	2.5V	0V	4.9V	4.6V	4.8V	4.8V	0.5V	3.9V	3.8V	3.5V
Pin No.	51	52	53	54	55	56	57	58	59	60
Voltage	3.1V	3.4V	3.2V	3.2V	3.3V	2.9V	3.1V	2.4V	4.9V	0V
Pin No.	61	62	63	64	65	66	67	68	69	70
Voltage	0V	0V	4.9V	0V	0V	1.5V	4.8V	0V	4.8V	4.9V
Pin No.	71	72	73	74	75	76	77	78	79	80
Voltage	0V	4.6V	2.9V	2.3V	3.8V	3.5V	4.5V	3.9V	4.1V	3.9V

Q405

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Voltage	-	-	0V	0V	-	-	2.4V	-	2.4V	-	0V
Pin No.	12	13	14	15	16	17	18	19	20	21	22
Voltage	-	4.9V	2.4V	2.4V	0V	-	-	0V	0V	0V	0V
Pin No.	23	24	25	26	27	28	29	30	31	32	33
Voltage	0V	0V	0V	0V	0V	0V	2.4V	2.4V	0V	4.9V	4.9V
Pin No.	34	35	36	37	38	39	40	41	42	43	44
Voltage	2.4V	2.4V	0V	0V	0V	0V	0V	0V	-	4.9V	0V

Q406

Pin No.	17	18	1	2
Voltage	1.8V	0V	3.1V	2.8V
Pin No.	3	4	5	6
Voltage	3.0V	4.6V	0.9V	2.9V
Pin No.	8	9	10	11
Voltage	2.5V	4.9V	2.9V	2.3V
Pin No.	12	13	14	15
Voltage	2.6V	2.1V	2.2V	0V

Q409

Pin No.	1	2	3	4	5	6

Q102

Pin No.	E	C	B
Voltage	6.6V	7.9V	7.2V

Q105

Pin No.	E	C	B
Voltage	4.9V	2.8V	4.3V

Q180

Pin No.	E	C	B
Voltage	0V	0V	0V

AD/DA PCB (PA03)

Q201

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	0V	0V	0V	4.9V	-5.0V	0V	0V	-	0V	0V	0V	0V	0V	2.4V
Pin No.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Voltage	2.4V	2.0V	4.8V	4.8V	0V	2.3V	-	2.3V	2.4V	0V	4.8V	0V	0V	-3.6V

Q202

Pin No.	1	2	3	4	5	6	7	8	9	10
Voltage	0V	2.4V	0V							
Pin No.	11	12	13	14	15	16	17	18	19	20
Voltage	2.4V	2.5V	2.4V	4.9V						

Q203

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	2.4V	2.4V	3.6V	3.6V	2.4V	2.4V	0V	2.4V	2.4V	2.4	-	0V	0V	4.9V

Q204

Pin No.	IN	OUT	GND
Voltage	9.0V	5.0V	0V

Q103

Pin No.	E	C	B
Voltage	5.9V	7.9V	6.6V

Q104

Pin No.	E	C	B
Voltage	5.9V	7.9V	6.6V

Q106

Pin No.	E	C	B
Voltage	1.4V	4.3V	2.0V

Q153

Pin No.	E	C	B
Voltage	0V	0.6V	0V

Q301

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Voltage	0V	0V	-	0V	0V	0V	0V	0V	3.9V	0.8V	-
Pin No.	12	13	14	15	16	17	18	19	20	21	22
Voltage	4.8V	0V	2.4V	-	-	0V	4.8V	2.4V	2.4V	0V	2.4V
Pin No.	23	24	25	26	27	28	29	30	31	32	33
Voltage	2.4V	2.4V	0V	2.4V	4.9V	0V	4.9V	2.4V	2.4V	0V	2.4V
Pin No.	34	35	36	37	38	39	40	41	42	43	44
Voltage	2.4V	2.4V	0V	2.4V	4.8V	-	-	2.3V	2.3V	2.3V	2.3V

Q302

Pin No.	1	2	3	4	5	6	7	8	9	10	11
Voltage	0V	2.4V	0V	-	0V	-	-	-	0V	0V	4.9V
Pin No.	12	13	14	15	16	17	18	19	20	21	22
Voltage	0.8V	0V	0V	3.9V	4.9V	-	-	-	2.4V	2.5V	0V

Q303

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	-11.8V	0V	0V	0V	11.8V

Q304

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	0V	0V	-11.8V	0V	0V	0V	11.8V

Q305

Pin No.	1	2	3	4	5	6	7	8
Voltage	-0.1V	-0.1V	-0.1V	-11.8V	-0.1V	0V	0V	11.8V

Q306

Pin No.	1	2	3	4	5	6	7	8
Voltage	-0.1V	-0.1V	-0.1V	-11.8V	-0.1V	0V	0V	11.8V

Q315

Pin No.	1	2	3	4	5	6	7	8
Voltage	0V	4.9V	2.3V	0V	2.3V	5.1V	-3.5V	-4.2V
Pin No.	9	10	11	12	13	14	15	16
Voltage	0V	0V	0V	0V	0V	0V	0V	-4.8V
Pin No.	17	18	19	20	21	22	23	24
Voltage	4.8V	0V	0V	0V	0V	0V	0V	0V
Pin No.	25	26	27	28	29	30	31	32
Voltage	-4.2V	-3.5V	5.1V	2.3V	0V	2.3V	4.9V	-5.0V

Q313

Pin No.	D	G	S
Voltage	0.1V		0V

Q314

Pin No.	D	G	S
Voltage	0.1V		0V

Q317

Pin No.	E	C	B
Voltage	-5.1V	-11.6V	-5.6V

Q318

Pin No.	E	C	B
Voltage	0V	-6.1V	1.1V

Q316

Pin No.	E	C	B
Voltage	5.1V	11.6V	5.6V

Q307

Pin No.	D	G	S
Voltage			0V

Q308

Pin No.	D	G	S
Voltage			0V

Q312

Pin No.	D	G	S
Voltage	0.1V		0V

WIRING DIAGRAM

TRAY WIRE CONNECTION SERVO PCB (PM03)

Q001	Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Voltage	2.5V	2.5V	2.5V	12.4V	2.5V	2.4V	2.4V	1.3V	1.3V	1.3V	1.3V	2.5V	2.5V	2.5V
Q011	Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Voltage	13.3V	13.3V	13.3V	13.3V	12.2V	12.2V	12.2V	0V	13.3V	13.3V	13.3V	0V	0V	13.3V

FRONT PCB (PD03)

QD01	Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Voltage	4.5V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V	5.0V
QS01	Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Voltage	2.5V	2.5V	2.5V	12.4V	2.5V	2.4V	2.4V	1.3V	1.3V	1.3V	1.3V	2.5V	2.5V	2.5V
QS02	Pin No.	E	C	B	A	D	Voltage	0V	12.2V	0.5V					
QS03	Pin No.	E	C	B	A	D	Voltage	0V	12.2V	0.5V					

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

QS02

QS01

QD01

PW03 READ/WRITE

PM03 TRAY WIRE CONNECTIV/SERVO

PP03 POWER SUPPLY

PS03 DC SUPPLY

PP63 POWER TRANSFER TERMINAL

QS03

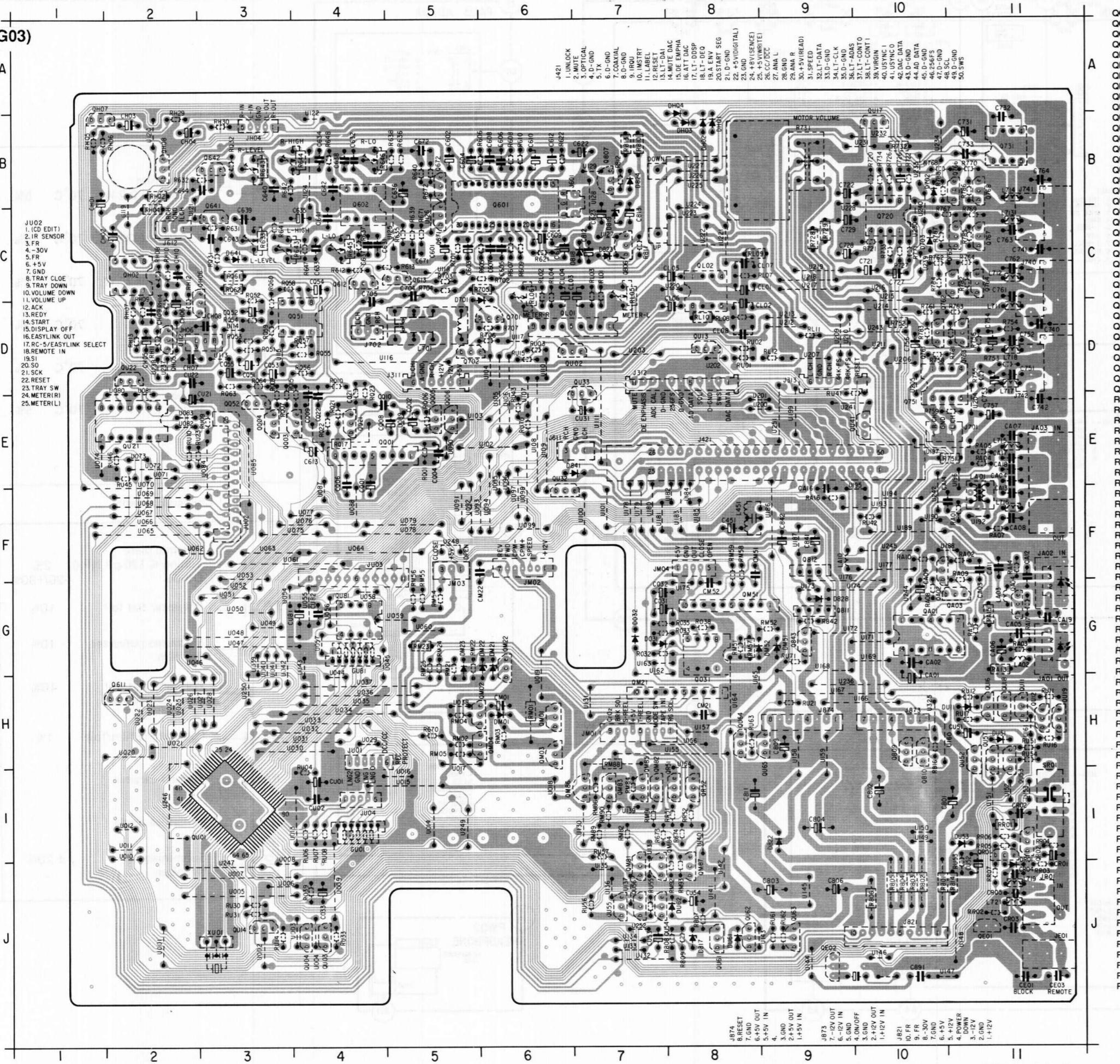
QS02

QS01

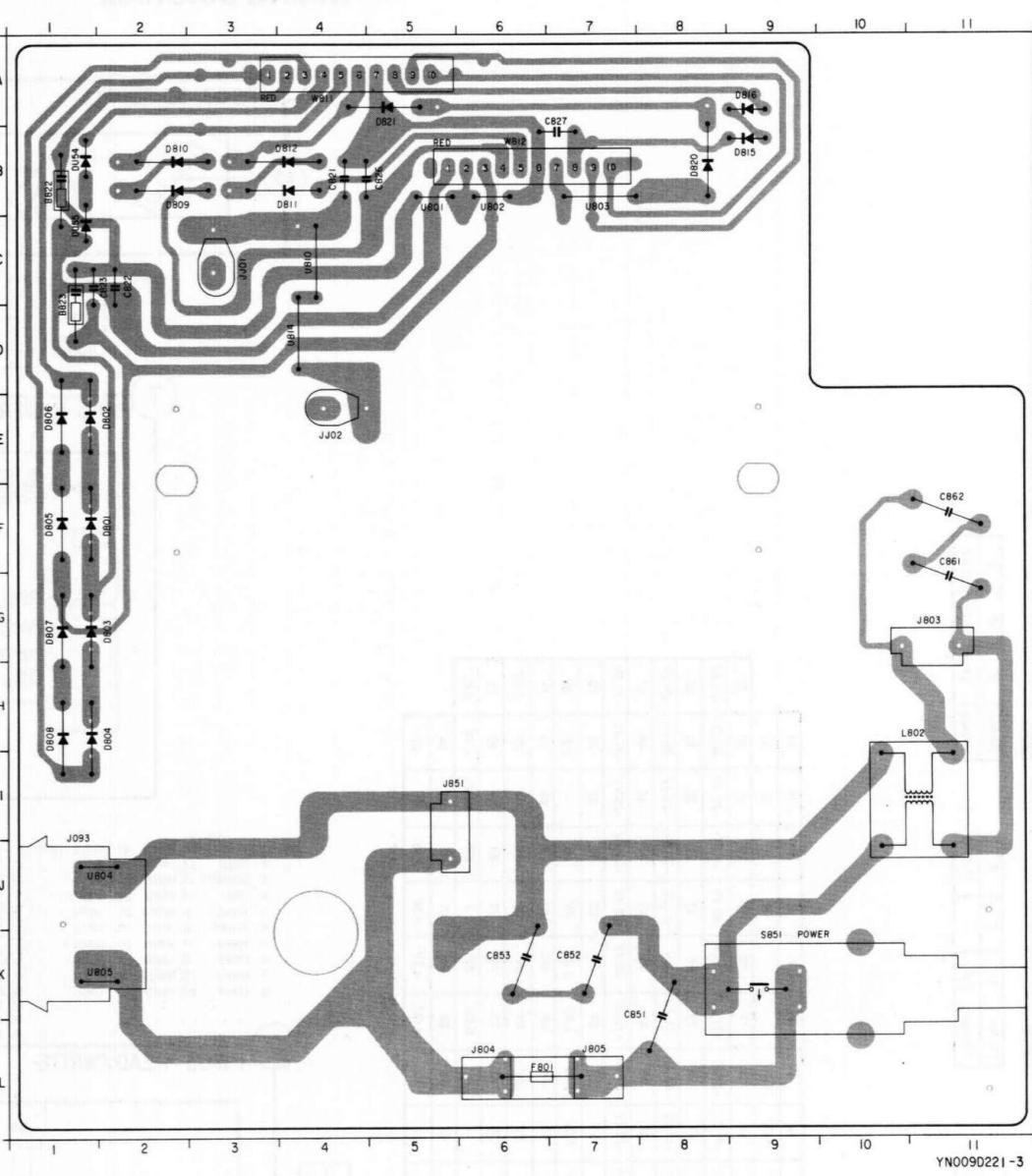
QD01</

SCHEMATIC DIAGRAM AND PARTS LOCATIONS

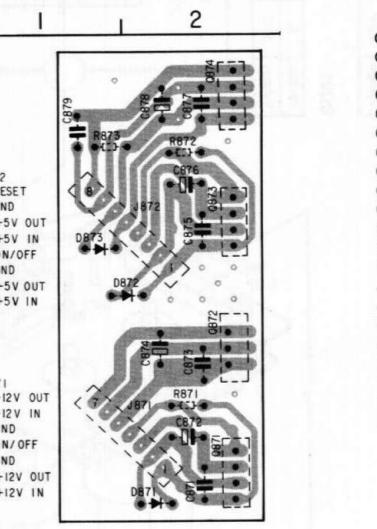
MAIN PCB (PG03)



POWER SUPPLY PCB (PP03)

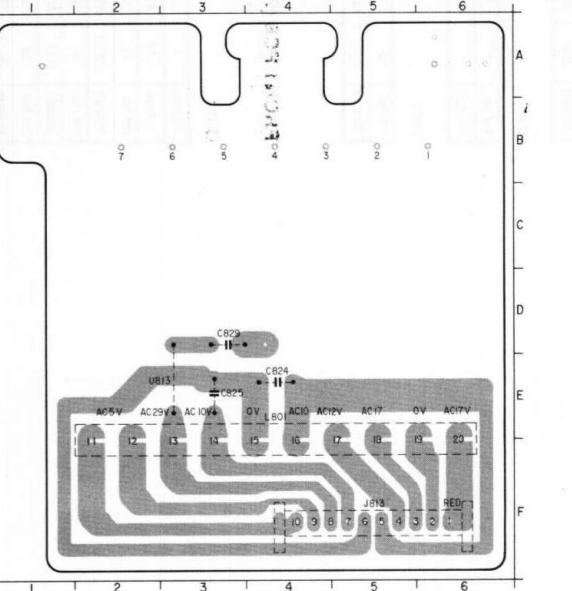


SUPPLY PCB (PS03)

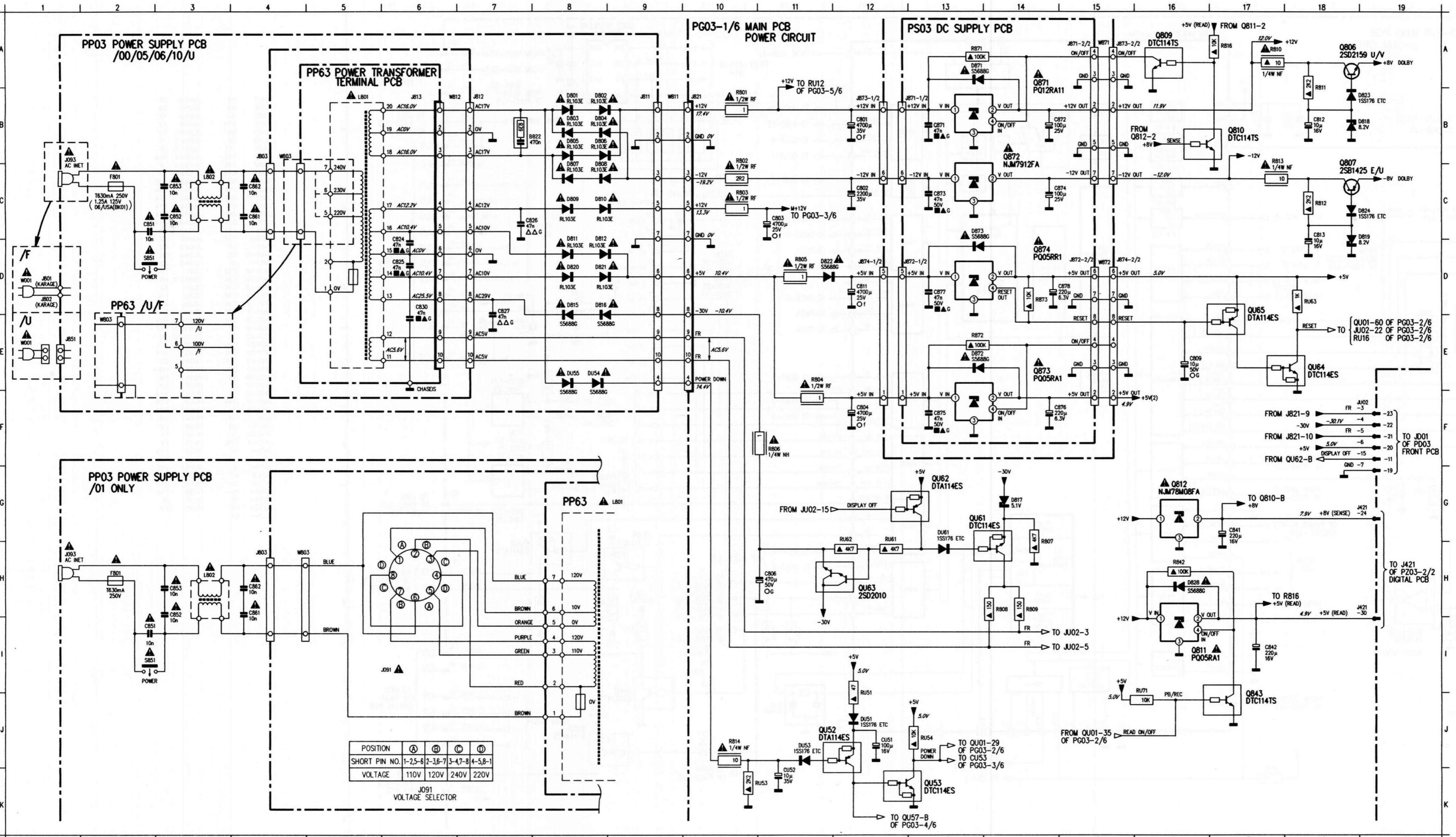


0412-3

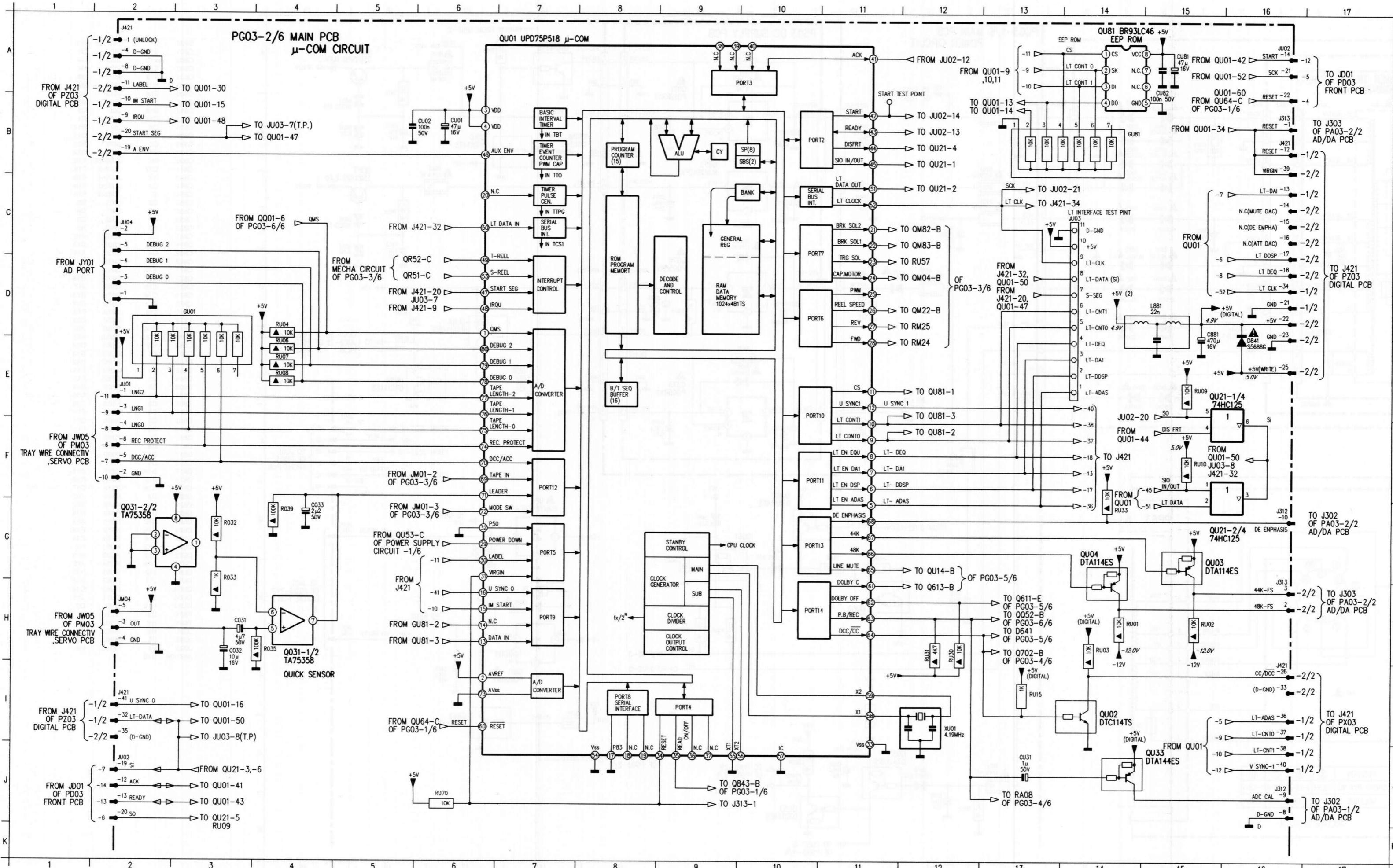
POWER TRANSFORMER TERMINAL PCB (PP63)

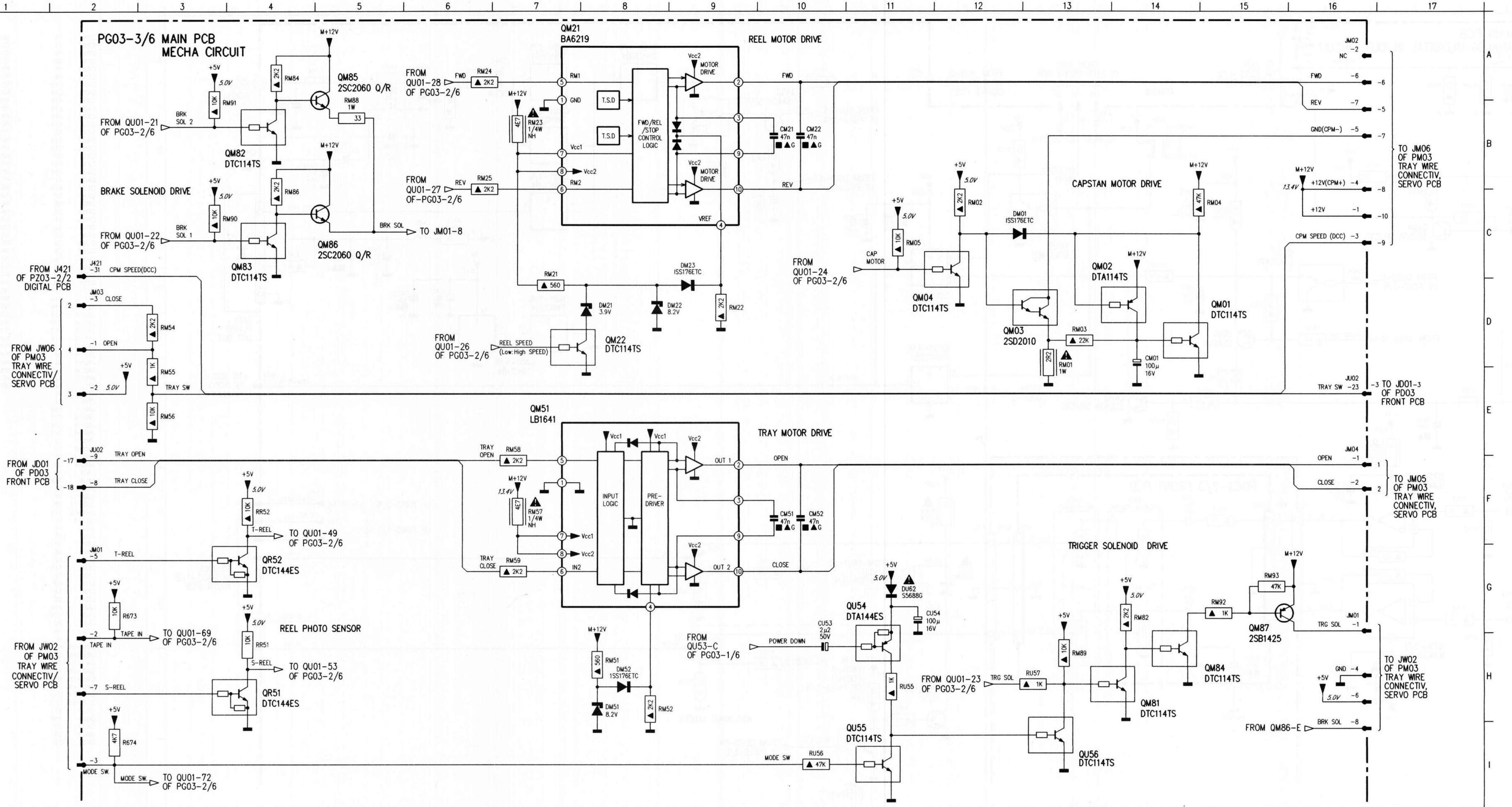


N009D222

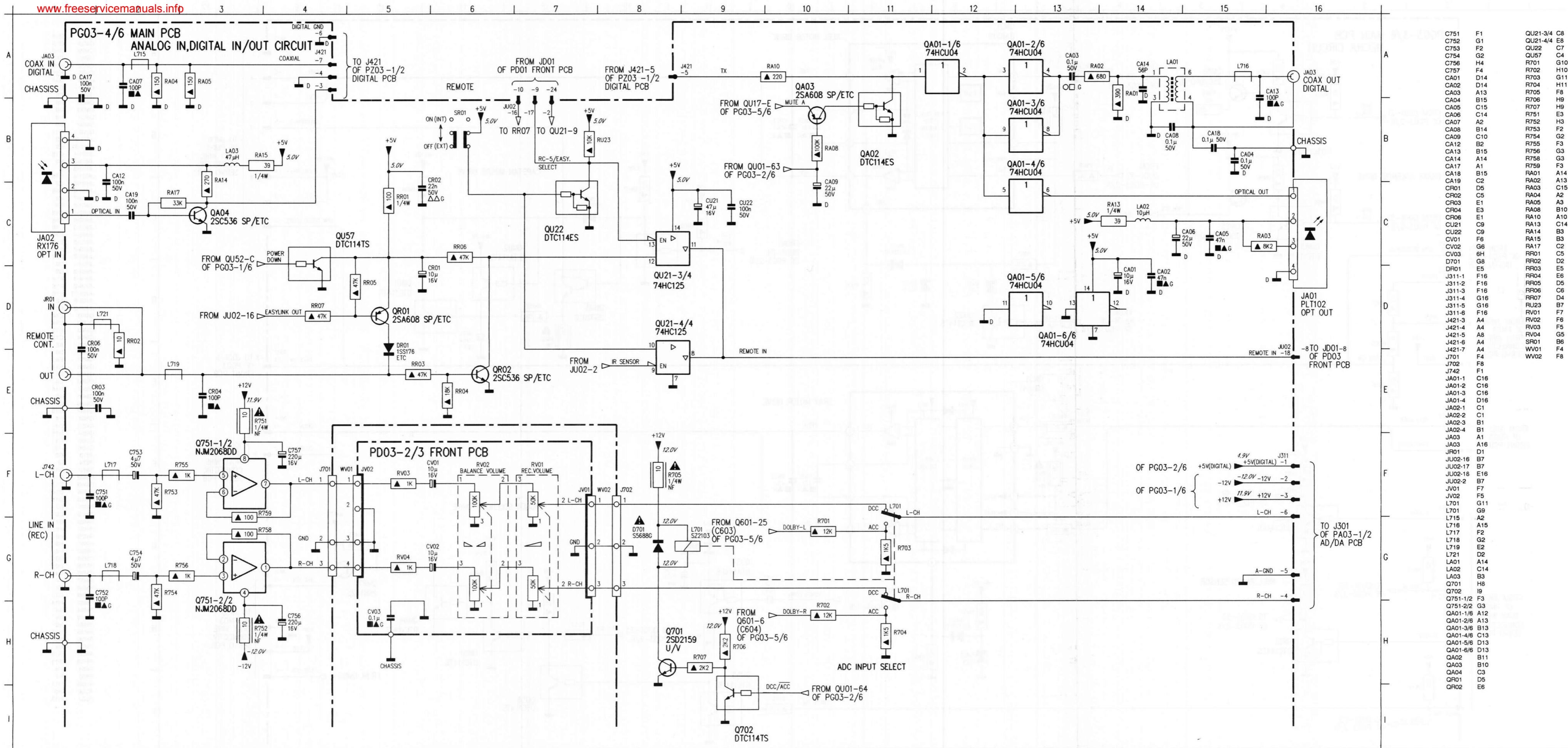


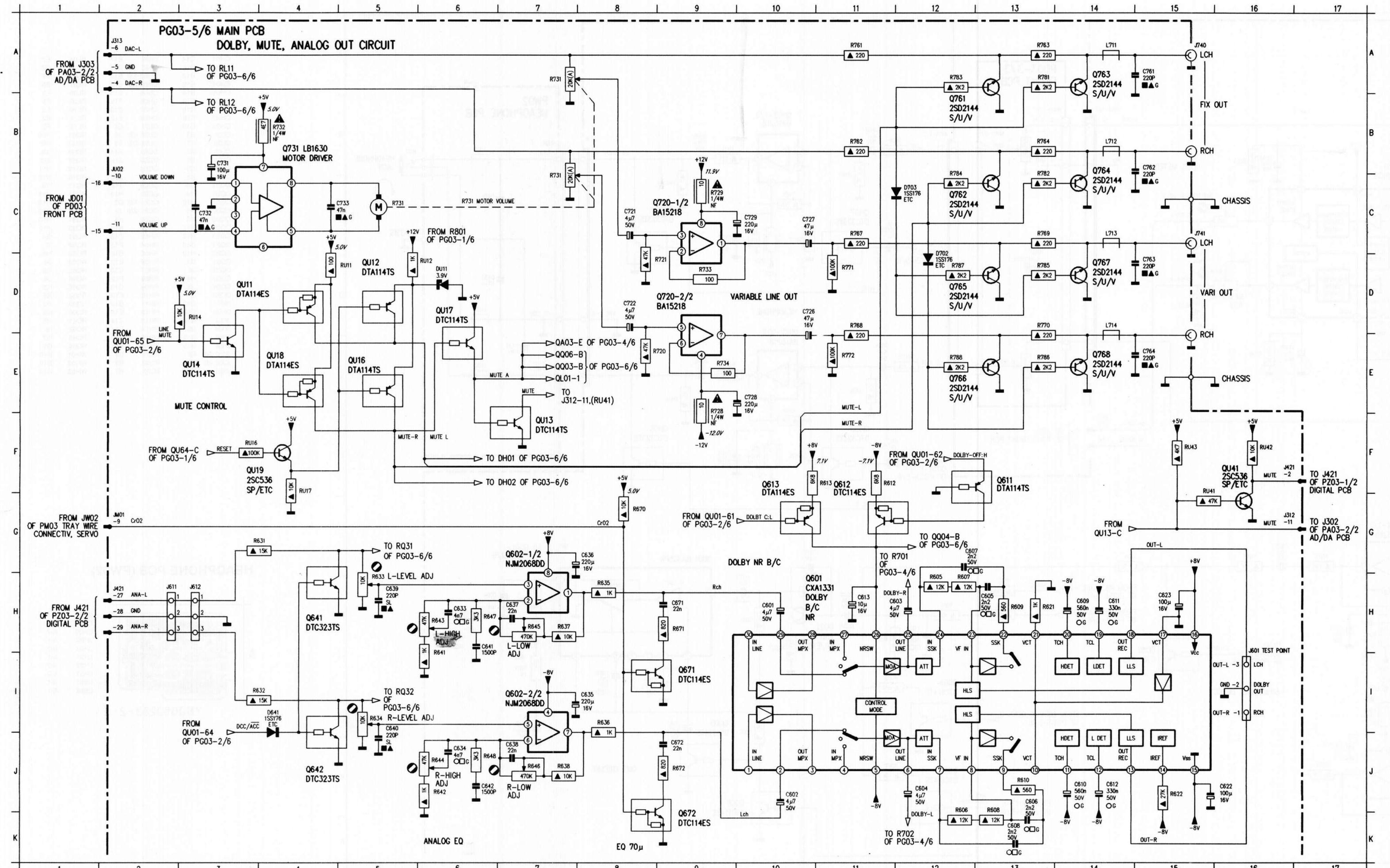
B822	B7	J421-30	I19
C801	B12	J801	D1
C802	C12	J803	C4
C803	C11	J803	H4
C804	F12	J811	B9
C806	H11	J812	B7
C809	E16	J813	B6
C811	D12	J821	B10
C812	B18	J851	C1
C813	C18	J851	H1
C824	D6	J871	B12
C825	D6	J872	D12
C826	C7	J873	B12
C827	E7	J874	D12
C830	E6	JU02-15	F19
C841	I7	JU02-3	F19
C842	I7	JU02-4	F19
C851	I2	JU02-5	F19
C852	C2	JU02-6	F19
C853	H2	L801	B5
C861	C4	L802	C3
C862	C4	L803	H3
C871	B13	Q809	A18
C872	B14	Q809	B16
C873	C13	Q871	G16
C874	C14	Q871	B13
C875	F13	Q872	C13
C876	F14	Q872	F13
C877	D13	Q874	D13
C878	D14	Q874	J12
CU51	J12	Q875	K12
CU52	K11	Q876	G14
D801	B8	Q877	A17
D802	B8	Q878	H14
D803	B8	Q879	A17
D804	B8	Q880	F11
D805	B8	Q881	B10
D806	B8	Q882	C10
D807	C8	Q883	R803
D808	C8	Q884	F11
D809	C8	Q885	D11
D810	C8	Q886	R807
D811	D8	Q887	G14
D812	D8	Q888	H14
D815	D8	Q889	A17
D816	D8	Q890	D18
D817	G14	Q891	B18
D818	B18	Q892	C18
D819	C18	Q893	C17
D820	D8	Q894	J10
D821	D8	Q895	A17
D822	D11	Q896	H16
D823	B18	Q897	A13
D824	C18	Q898	E13
D828	H16	Q899	D14
D871	A13	RI51	I12
D872	E13	RI52	I12
D873	E13	RI53	I12
D874	E13	RI54	I12
D875	E13	RI55	I12
D876	E13	RI56	I12
D877	E13	RI57	I12
D878	E13	RI58	I12
D879	E13	RI59	I12
D880	E13	RI60	I12
D881	E13	RI61	I12
D882	E13	RI62	I12
D883	E13	RI63	I12
D884	E13	RI64	I12
D885	E13	RI65	I12
D886	E13	RI66	I12
D887	E13	RI67	I12
D888	E13	RI68	I12
D889	E13		



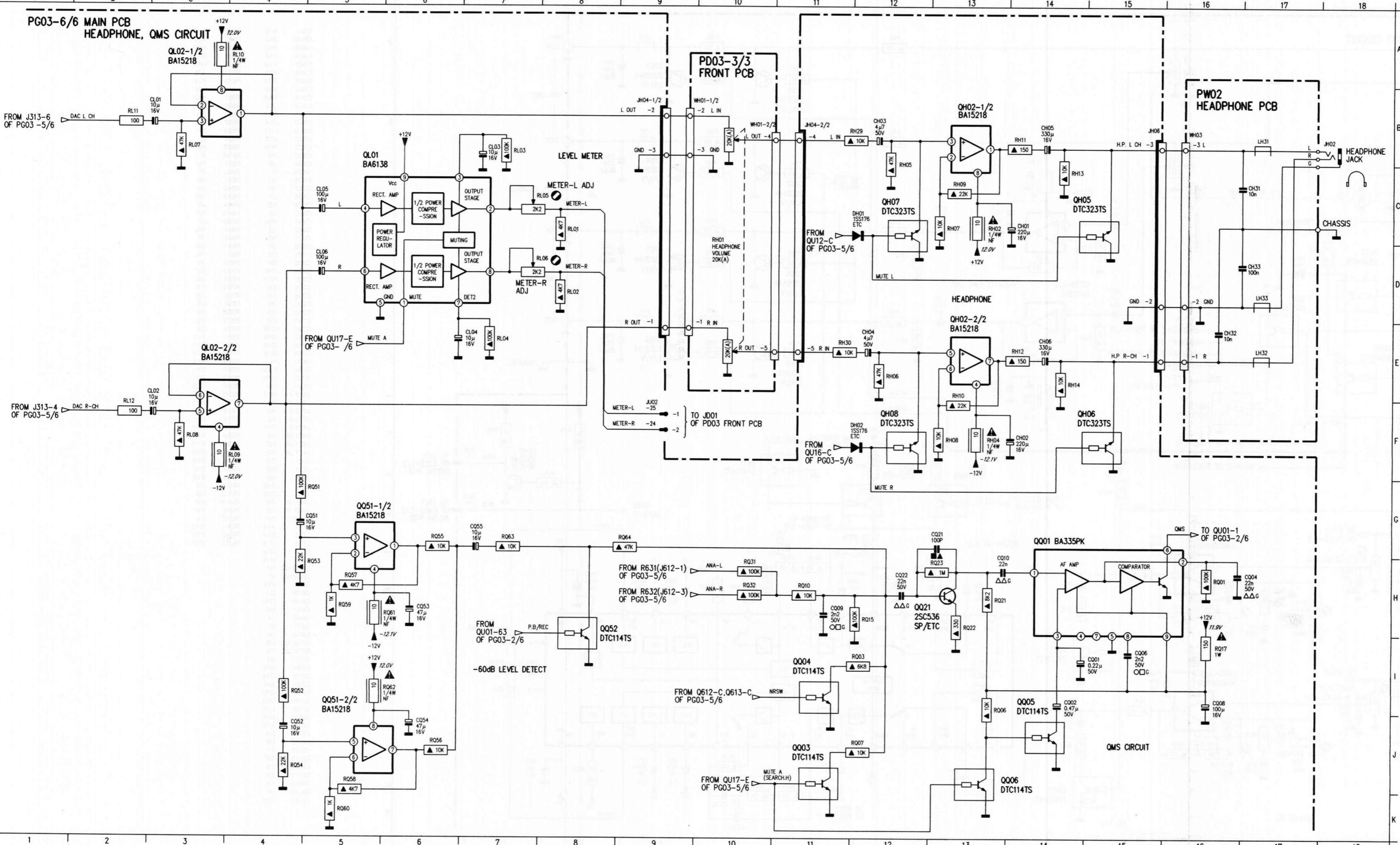


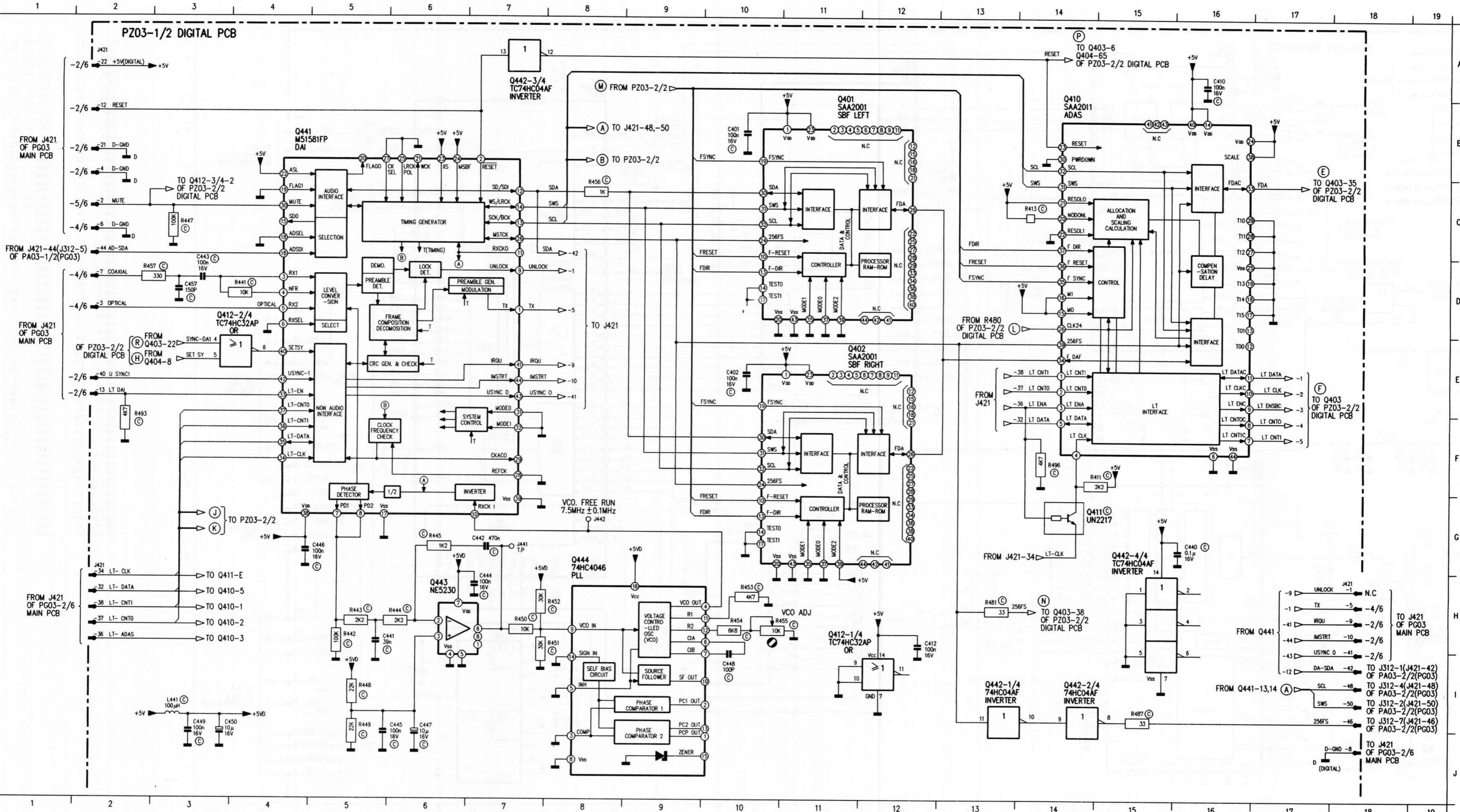
CM01	D14
CM21	B10
CM22	B10
CM51	F10
CM52	H10
CU53	G11
CU54	G11
DM21	C12
DM22	D8
DM23	D8
DM51	H8
DM52	G11
DU62	J421-2
J421-31	E2
JM01-1	C2
JM01-2	H2
JM01-3	I2
JM01-4	H18
JM01-5	G2
JM01-6	H16
JM01-7	H2
JM01-8	I16
JM02-1	C16
JM02-2	A16
JM02-3	C16
JM02-4	B16
JM02-5	B16
JM02-6	A16
JM02-7	B16
JM03-1	D2
JM03-2	D2
JM04-1	F16
JM04-2	F16
JU02-23	E16
JU02-8	F2
JU02-9	F2
QM01	D14
QM02	D14
QM03	D13
QM04	C12
QM21	A8
QM22	D8
QM51	E8
QM81	H14
QM82	B4
QM83	C4
QM84	H14
QM85	A5
QM86	C5
QM87	G15
QR51	H4
QR52	G4
QU54	H11
QU55	I13
QU56	G2
R673	R674
R674	R673
RR51	RR52
RR52	RR51
RU55	RU56
RU56	RU55
RU57	RU58
RU58	RU57
RU59	RU60
RU60	RU59
RU62	RU63
RU63	RU62
RU64	RU65
RU65	RU64
RU66	RU67
RU67	RU66
RU68	RU69
RU69	RU68
RU70	RU71
RU71	RU70
RU72	RU73
RU73	RU72
RU74	RU75
RU75	RU74
RU76	RU77
RU77	RU76
RU78	RU79
RU79	RU78
RU80	RU81
RU81	RU80
RU82	RU83
RU83	RU82
RU84	RU85
RU85	RU84
RU86	RU87
RU87	RU86
RU88	RU89
RU89	RU88
RU90	RU91
RU91	RU90
RU92	RU93
RU93	RU92
RU94	RU95
RU95	RU94
RU96	RU97
RU97	RU96
RU98	RU99
RU99	RU98
RU100	RU101
RU101	RU100
RU102	RU103
RU103	RU102
RU104	RU105
RU105	RU104
RU106	RU107
RU107	RU106
RU108	RU109
RU109	RU108
RU110	RU111
RU111	RU110
RU112	RU113
RU113	RU112
RU114	RU115
RU115	RU114
RU116	RU117
RU117	RU116
RU118	RU119
RU119	RU118
RU120	RU121
RU121	RU120
RU122	RU123
RU123	RU122
RU124	RU125
RU125	RU124
RU126	RU127
RU127	RU126
RU128	RU129
RU129	RU128
RU130	RU131
RU131	RU130
RU132	RU133
RU133	RU132
RU134	RU135
RU135	RU134
RU136	RU137
RU137	RU136
RU138	RU139
RU139	RU138
RU140	RU141
RU141	RU140
RU142	RU143
RU143	RU142
RU144	RU145
RU145	RU144
RU146	RU147
RU147	RU146
RU148	RU149
RU149	RU148
RU150	RU151
RU151	RU150
RU152	RU153
RU153	RU152
RU154	RU155
RU155	RU154
RU156	RU157
RU157	RU156
RU158	RU159
RU159	RU158
RU160	RU161
RU161	RU160
RU162	RU163
RU163	RU162
RU164	RU165
RU165	RU164
RU166	RU167
RU167	RU166
RU168	RU169
RU169	RU168
RU170	RU171
RU171	RU170
RU172	RU173
RU173	RU172
RU174	RU175
RU175	RU174
RU176	RU177
RU177	RU176
RU178	RU179
RU179	RU178
RU180	RU181
RU181	RU180
RU182	RU183
RU183	RU182
RU184	RU185
RU185	RU184
RU186	RU187
RU187	RU186
RU188	RU189
RU189	RU188
RU190	RU191
RU191	RU190
RU192	RU193
RU193	RU192
RU194	RU195
RU195	RU194
RU196	RU197
RU197	RU196
RU198	RU199
RU199	RU198
RU200	RU201
RU201	RU200
RU202	RU203
RU203	RU202
RU204	RU205
RU205	RU204
RU206	RU207
RU207	RU206
RU208	RU209
RU209	RU208
RU210	RU211
RU211	RU210
RU212	RU213
RU213	RU212
RU214	RU215
RU215	RU214
RU216	RU217
RU217	RU216
RU218	RU219
RU219	RU218
RU220	RU221
RU221	RU220
RU222	RU223
RU223	RU222
RU224	RU225
RU225	RU224
RU226	RU227
RU227	RU226
RU228	RU229
RU229	RU228
RU230	RU231
RU231	RU230
RU232	RU233
RU233	RU232
RU234	RU235
RU235	RU234
RU236	RU237
RU237	RU236
RU238	RU239
RU239	RU238
RU240	RU241
RU241	RU240
RU242	RU243
RU243	RU242
RU244	RU245
RU245	RU244
RU246	RU247
RU247	RU246
RU248	RU249
RU249	RU248
RU250	RU251
RU251	RU250
RU252	RU253
RU253	RU252
RU254	RU255
RU255	RU254
RU256	RU257
RU257	RU256
RU258	RU259
RU259	RU258
RU260	RU261
RU261	RU260
RU262	RU263
RU263	RU262
RU264	RU265
RU265	RU264
RU266	RU267
RU267	RU266
RU268	RU269
RU269	RU268
RU270	RU271
RU271	RU270
RU272	RU273
RU273	RU272
RU274	RU275
RU275	RU274
RU276	RU277
RU277	RU276
RU278	RU279
RU279	RU278
RU280	RU281
RU281	RU280
RU282	RU283
RU283	RU282
RU284	RU285
RU285	RU284
RU286	RU287
RU287	RU286
RU288	RU289
RU289	RU288
RU290	RU291
RU291	RU290
RU292	RU293
RU293	RU292
RU294	RU295
RU295	RU294
RU296	RU297
RU297	RU296
RU298	RU299
RU299	RU298
RU200	RU201
RU201	RU200
RU202	RU203
RU203	RU202
RU204	RU205
RU205	RU204
RU206	RU207
RU207	RU206
RU208	RU209
RU209	RU208
RU210	RU211
RU211	RU210
RU212	RU213
RU213	RU212
RU214	RU215
RU215	RU214
RU216	RU217
RU217	RU216
RU218	RU219
RU219	RU218
RU220	RU221
RU221	RU220
RU222	RU223
RU223	RU222
RU224	RU225</

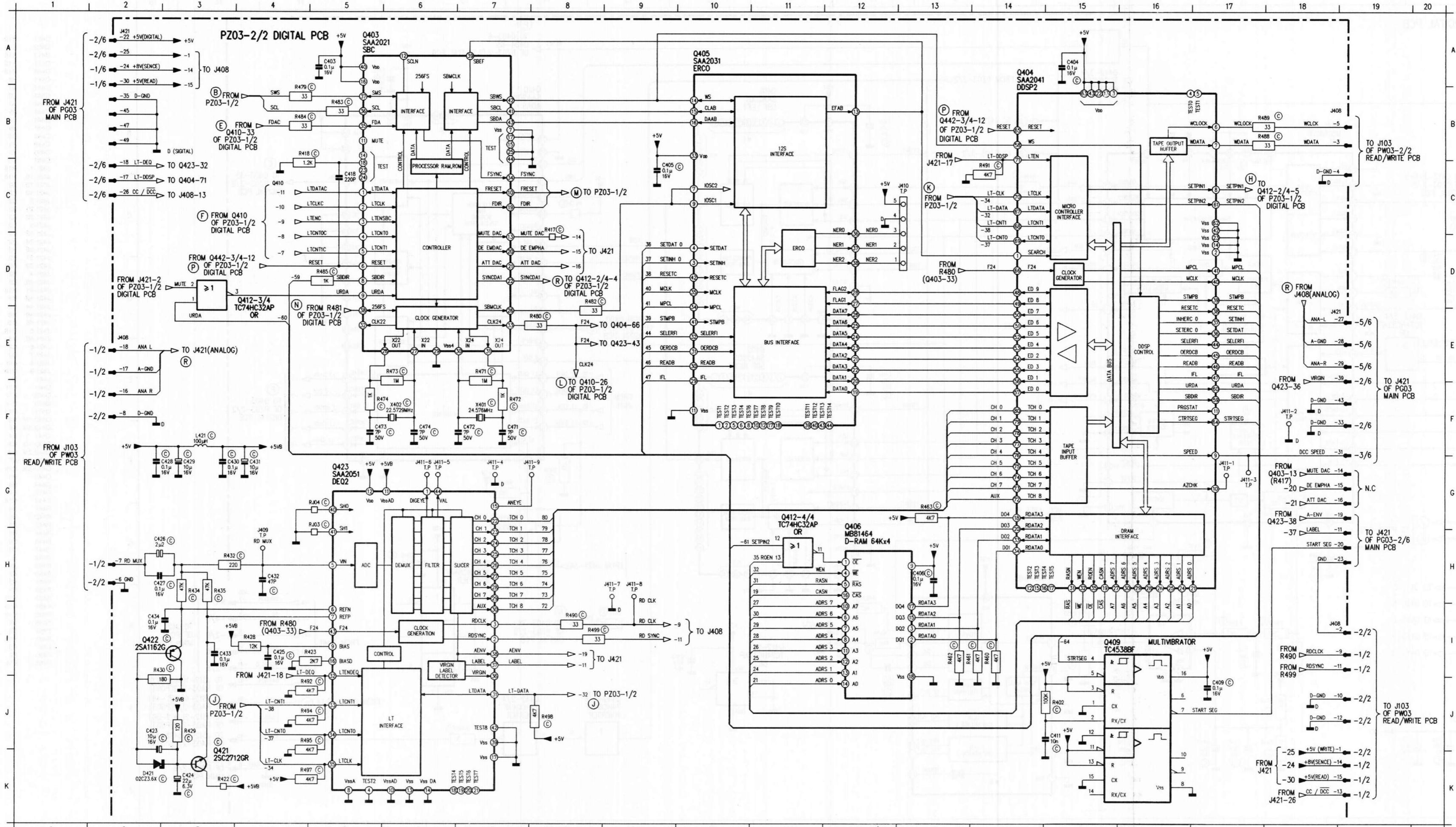




H10	R605	H12
J10	R606	K12
H12	R607	H12
J12	R608	K13
H13	R609	H13
K13	R610	J13
G12	R612	F11
K13	R613	F10
H14	R621	H13
J14	R622	J15
H14	R631	G3
J14	R632	I3
H11	R633	H5
J15	R634	I5
H15	R635	H8
H6	R636	I8
J6	R637	H7
I7	R638	J7
G7	R641	H6
H7	R642	J6
J7	R643	H6
H5	R644	J6
J5	R645	H7
H6	R646	J7
J6	R647	H6
H9	R648	J6
J9	R670	G8
C8	R671	H9
D8	R672	J9
D10	R720	E8
C10	R721	C8
E9	R728	E9
C9	R729	C9
B3	R731	C5
C3	R732	B4
C4	R733	D9
A15	R734	E9
B15	R761	A11
D15	R762	B11
E15	R763	A13
I4	R764	B13
D12	R767	C11
C12	R768	D11
D6	R769	C13
G17	R770	D13
A2	R771	D11
A2	R772	E11
A2	R781	A13
F17	R782	C13
H2	R783	A12
H2	R784	C12
H2	R785	D13
I16	R786	E13
H2	R787	D12
H3	R788	E12
A15	RU11	D4
C15	RU12	D5
G2	RU14	D3
C2	RU16	F3
C2	RU17	F4
A14	RU41	G15
B14	RU42	F16
C14	RU43	G15
D14		
H10		
1/2	H7	
2/2	I7	
F12		
G11		
G10		
H4		
J4		
I8		
J8		
1/2	C9	
2/2	D9	
B4		
A13		
C13		
A14		
C14		
D13		
E13		
D14		
E14		
D4		
D5		
F7		
E3		
E5		
E6		
E4		
F4		
G16		

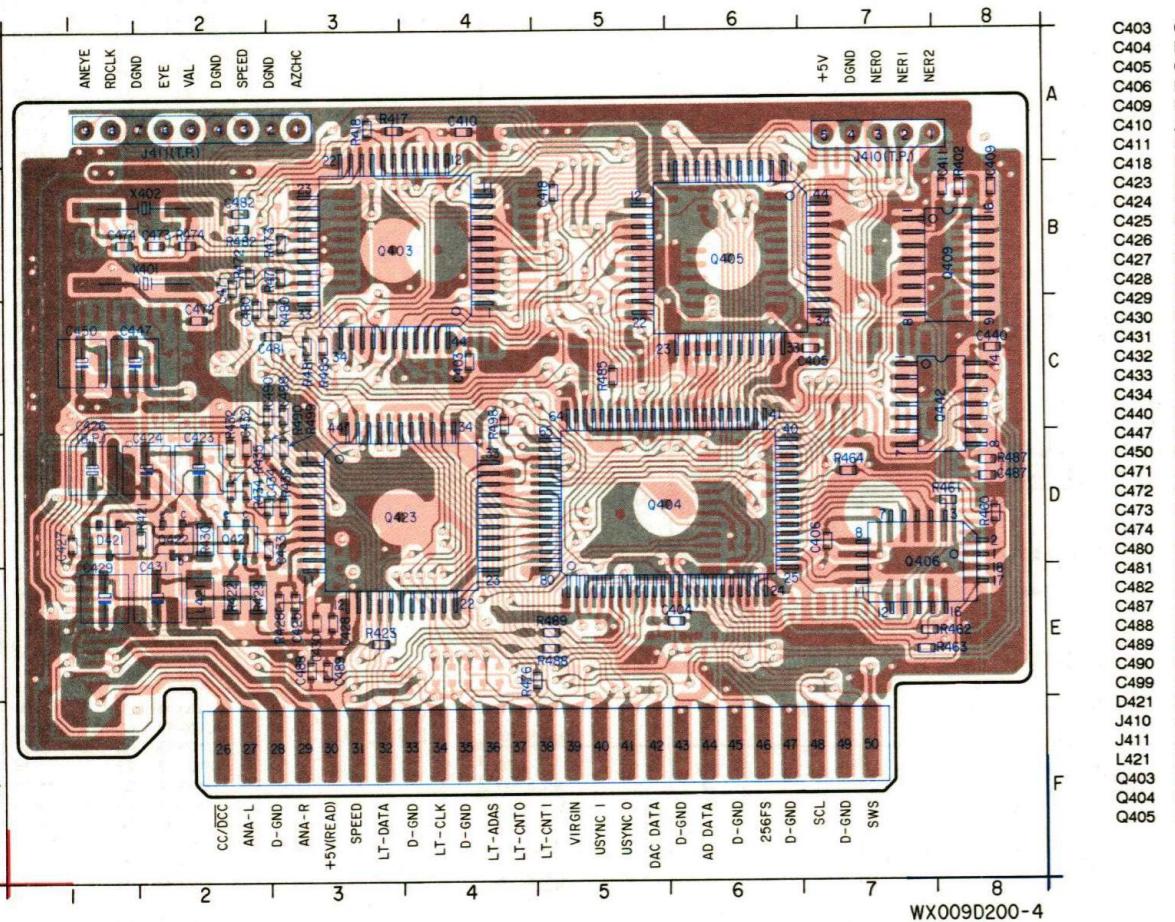
**PG03-6/6 MAIN PCB
HEADPHONE, QMS CIRCUIT**




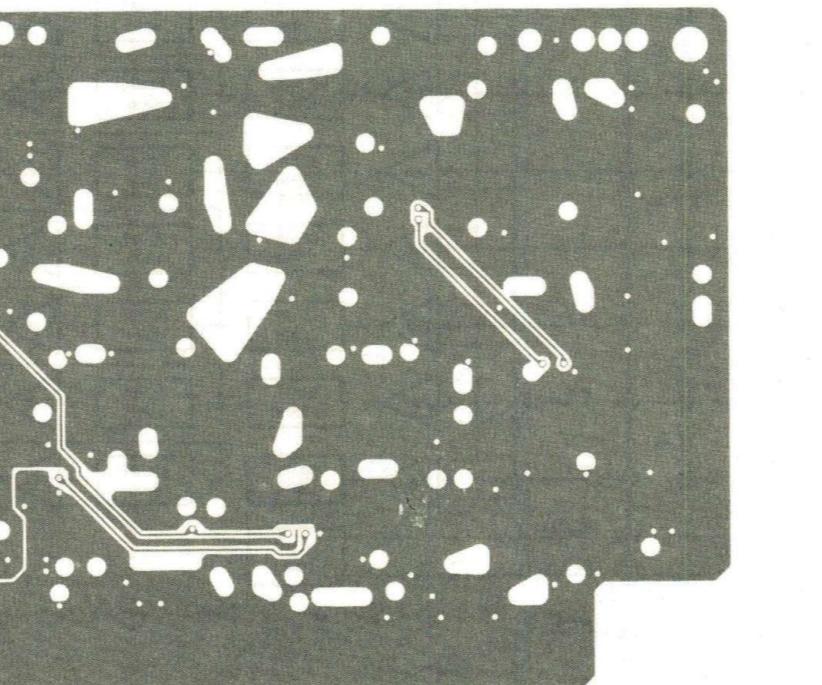


C403	A5	J421-26	C2
C404	A15	J421-27	E19
C405	C9	J421-28	E19
C406	H13	J421-29	E19
C409	J17	J421-30	A2
C411	J15	J421-31	F19
C418	C5	J421-33	F19
C423	J2	J421-35	B2
C424	K3	J421-39	E19
C425	I4	J421-43	F19
C426	H2	J421-45	B2
C427	H2	J421-47	B2
C428	G2	J421-49	B2
C429	G3	J421-8	F2
C430	G3	L421	F3
C431	G4	Q403	A5
C432	H4	Q404	B14
C433	I3	Q405	A10
C434	I3	Q406	H12
C471	F7	Q409	I16
C472	F7	Q412-3/4	D3
C473	F5	Q412-4/4	H11
C474	F6	Q421	K3
D421	K2	Q422	I3
J408-1	K19	Q423	G5
J408-10	J19	R402	J15
J408-13	K19	R417	D8
J408-14	K19	R418	C4
J408-15	K19	R422	K3
J408-17	E2	R423	I5
J408-18	E2	R428	I4
J408-2	I19	R429	J3
J408-3	B19	R432	H3
J408-4	C19	R434	H3
J408-5	B19	R435	H3
J408-6	H2	R460	I14
J408-7	H2	R461	I14
J408-9	I19	R462	I13
J409	H4	R463	G13
J409-11	I19	R471	E7
J409-12	J19	R472	F7
J410	C13	R473	E6
J411-1	G17	R474	F5
J411-2	F18	R476	I8
J411-3	G17	R479	B4
J411-4	G7	R480	E8
J411-5	G6	R482	E8
J411-6	G6	R483	B5
J411-7	H9	R484	B4
J411-8	H9	R485	D5
J411-9	G8	R488	B17
J421-11	H19	R489	B17
J421-14	G19	R490	I8
J421-15	G19	R491	C14
J421-16	F2	R492	J4
J421-16	G19	R494	J4
J421-17	C2	R495	J4
J421-18	C2	R497	K4
J421-19	G19	R498	J8
J421-20	H19	R499	I8
J421-22	A2	RJ03	H5
J421-23	H19	RJ04	G5
J421-24	A2	X401	F7
J421-25	A2	X402	F6

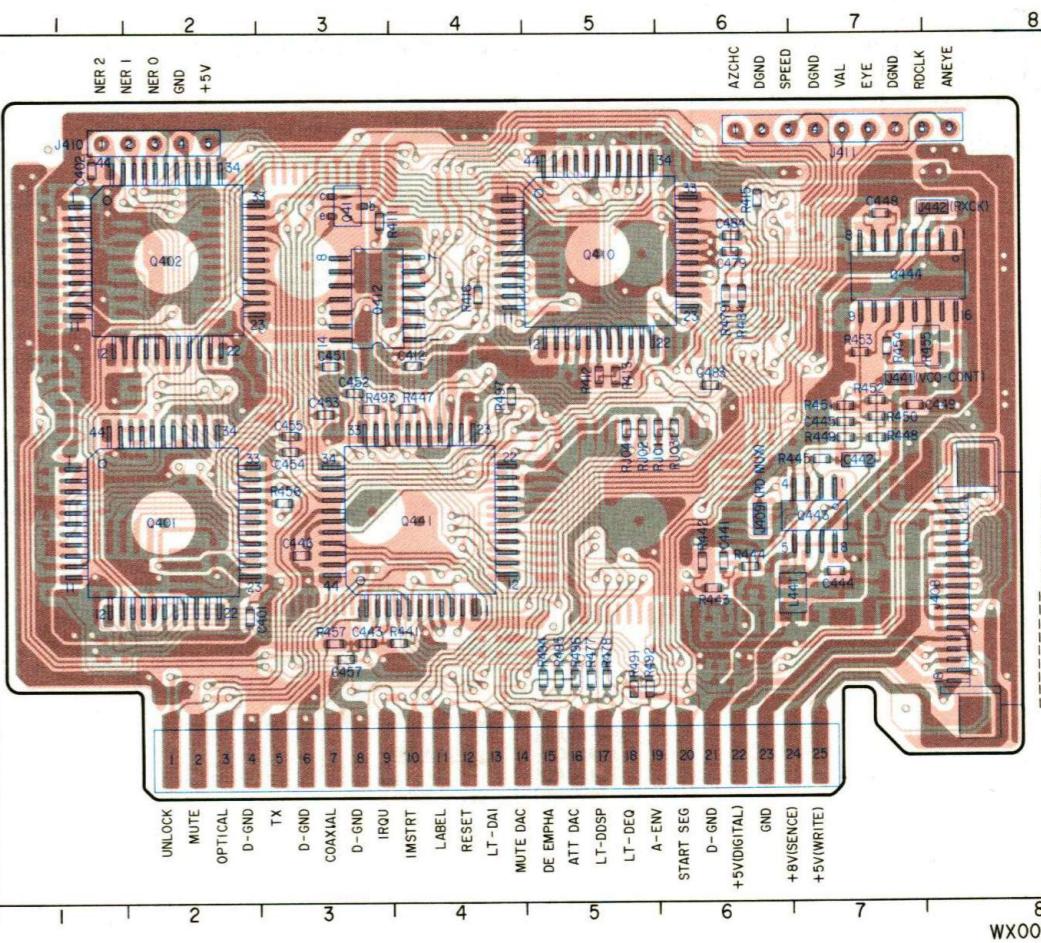
DIGITAL PCB A SIDE (PZ03)



MIDDLE LAYER PATTERN

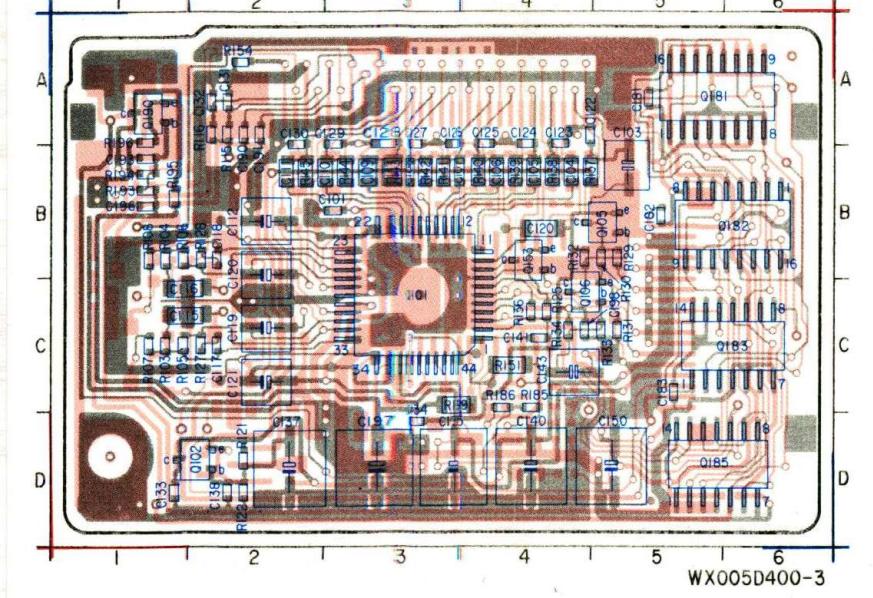


DIGITAL PCB B SIDE (PZ03)

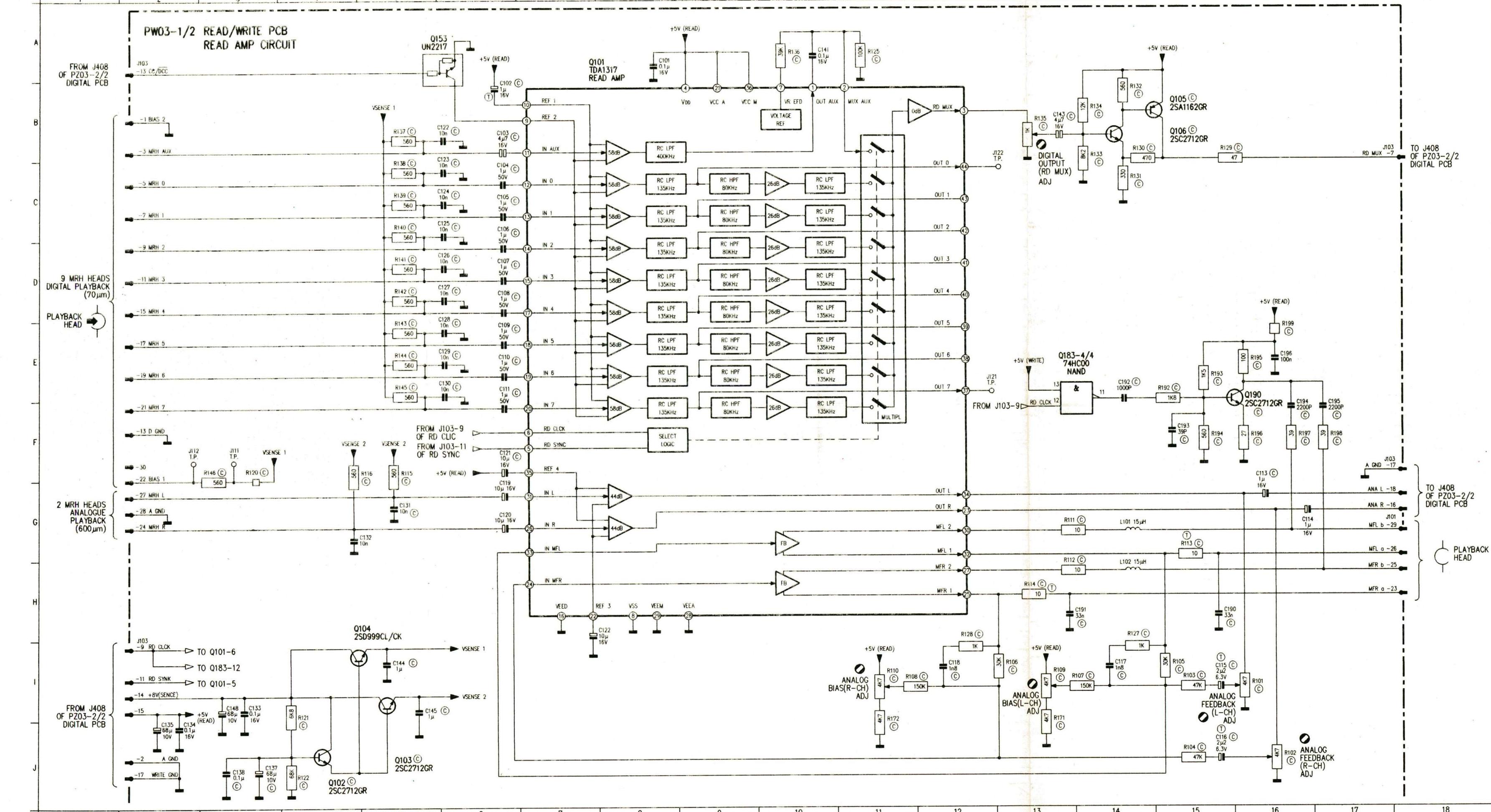


C403	C4	Q406	D7	C401	E2	R411	B3
C404	E6	Q409	B8	C402	A1	R412	C5
C405	C7	Q421	D2	C412	C4	R413	C5
C406	D7	Q422	D2	C441	D6	R415	B6
C409	B8	Q423	D3	C442	D7	R416	B4
C410	A4	Q442	C8	C443	E3	R441	E4
C411	B8	Q402	B8	C444	E7	R442	D6
C418	B5	R417	A3	C445	C7	R443	E6
C423	D2	R418	A3	C446	D3	C444	D6
C424	D2	R421	D2	C448	B7	R445	D7
C425	E3	R422	E2	C449	C7	R447	C4
C426	D1	R423	E3	C450	C3	R450	C7
C427	D1	R428	E3	C451	C3	R451	C7
C428	E3	R429	E2	C452	C3	R452	C7
C429	E1	R430	D2	C453	C3	R453	C7
C430	E3	R432	D2	C454	D3	R454	C7
C431	E2	R434	D2	C455	C3	R455	C7
C432	D2	R435	D2	C457	E3	C479	B6
C433	D2	R460	D8	C458	E3	R456	D3
C434	D2	R461	D8	C459	E7	R457	E3
C440	C8	R462	E7	C460	E7	J408	E5
C447	C1	R463	E7	C461	D8	J409	D6
C450	C1	R464	D7	C462	E7	J479	B6
C471	B2	R465	B3	C463	B2	J410	A2
C472	C2	R471	B3	C464	E5	J411	A7
C473	B2	R472	B2	C465	E5	J441	C7
C474	B1	R473	B3	C466	D5	J442	B8
C480	C2	R474	B2	C467	C3	J443	C3
C481	C3	R476	E5	C468	C3	L441	E6
C482	B2	R480	C3	C469	C3	Q401	D2
C487	D8	R481	C3	C470	C3	Q402	B2
C488	E3	R482	B2	C471	C3	Q403	B3
C489	E3	R483	C3	C472	B2	Q404	D4
C490	C2	R485	C5	C473	B3	Q405	B6
C499	C3	R487	D8	C474	B2	Q406	C5
D421	D1	R488	E5	C475	B2	Q407	C5
J410	A7	R489	E5	C476	D5	Q411	C6
L421	E2	R490	D2	C477	E5	Q412	B3
Q403	B3	R491	B2	C478	E5	Q413	C6
Q404	D5	R492	B2	C479	E5	Q414	D4
Q405	B6	X401	B2	C480	E5	Q415	C6
X402	B2	X402	B2	C481	E5	Q416	C4

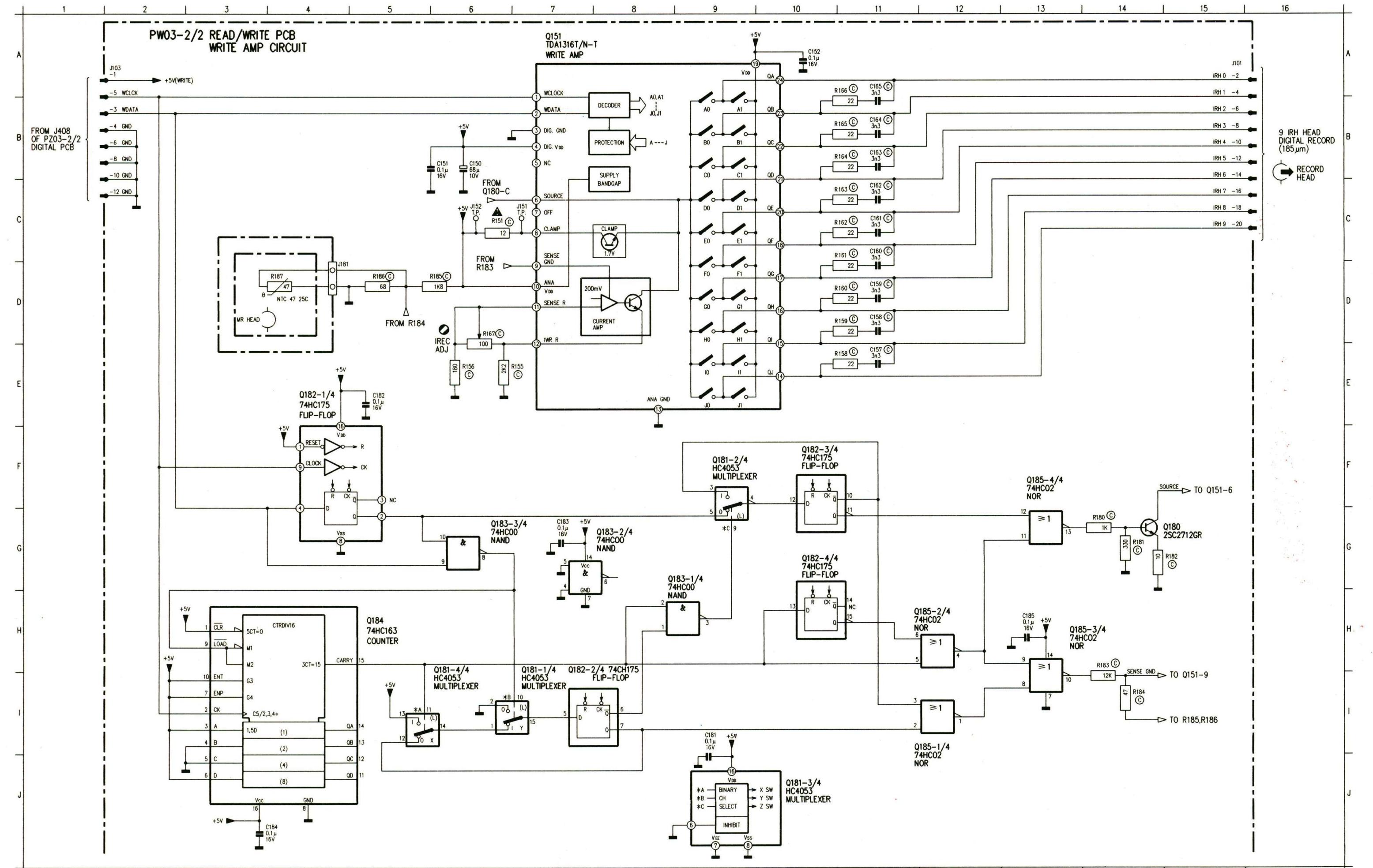
READ WRITE PCB A SIDE (PW03)



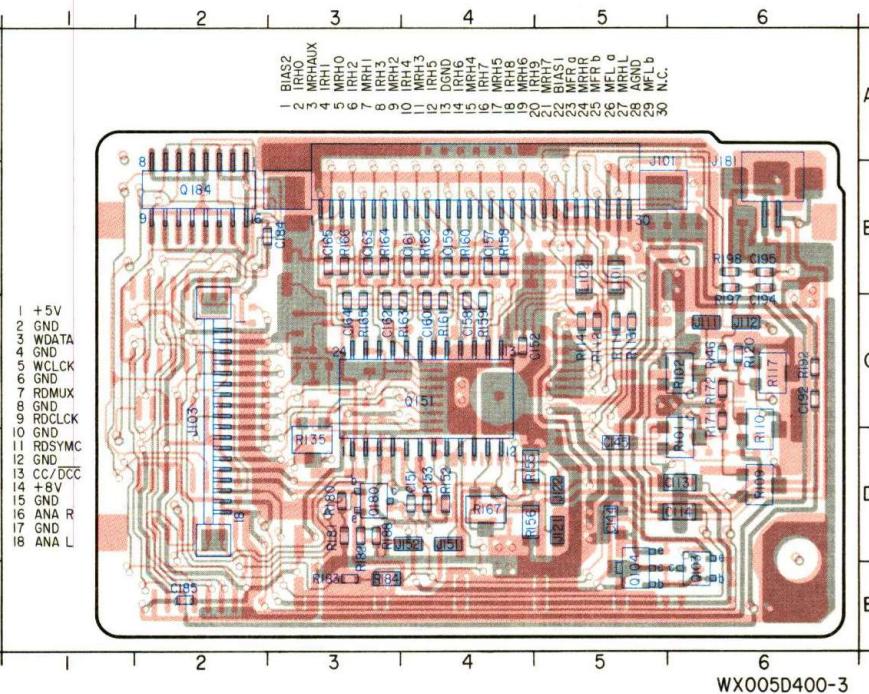
A PW03-1/2 READ/WRITE PC
READ AMP CIRCUIT

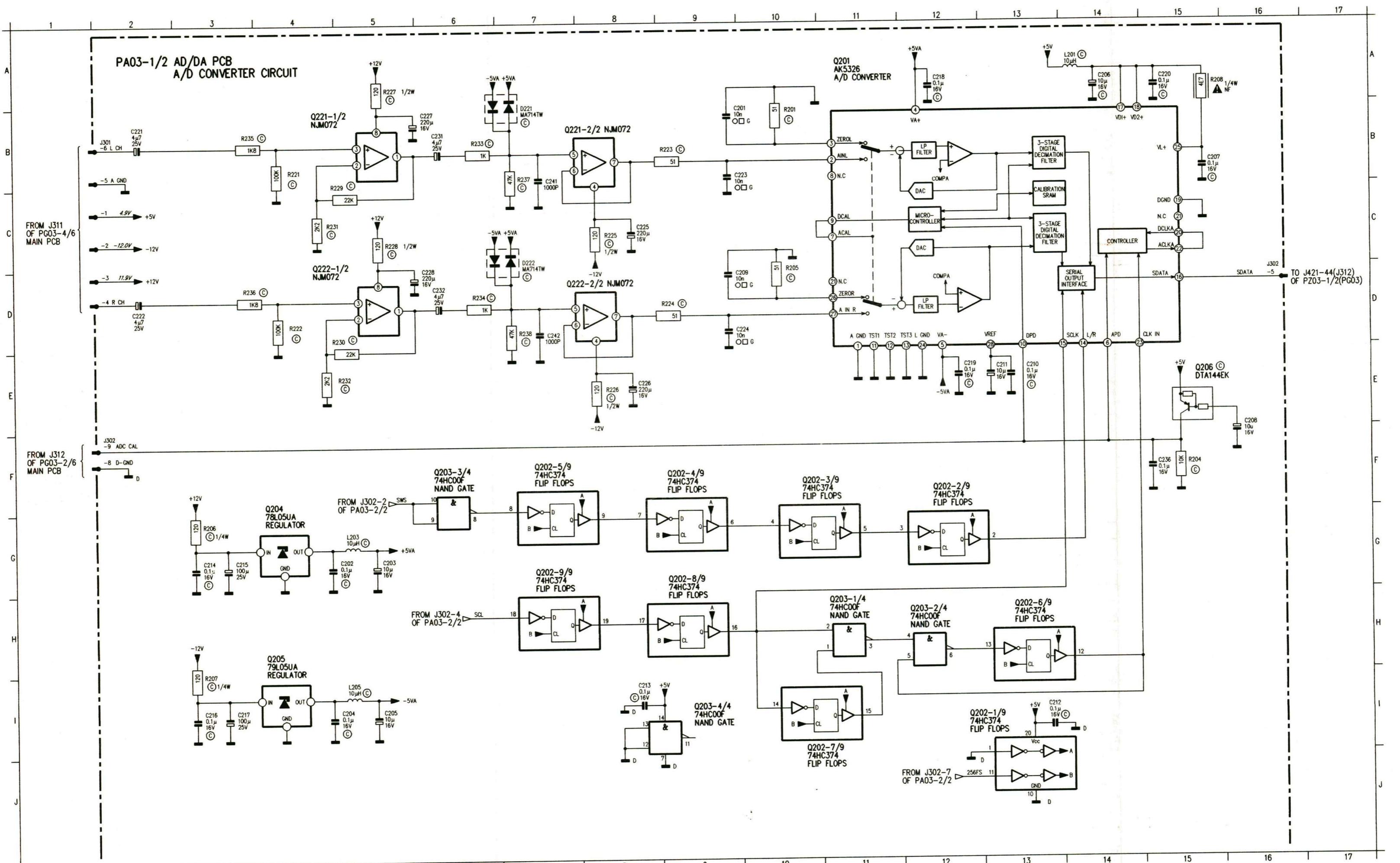


C101	A8	J103-3	B2
C102	B6	J103-30	F2
C103	B6	J103-5	C2
C104	C6	J103-7	B18
C105	C6	J103-7	C2
C106	D6	J103-9	D2
C107	D6	J103-9	I2
C108	D6	J111	F3
C109	E6	J112	F2
C110	E6	J121	E12
C111	E6	J122	C13
C113	G16	L101	G14
C114	G16	L102	H14
C115	I15	Q101	B7
C116	J15	Q102	J4
C117	I14	Q103	I5
C118	I12	Q104	I4
C119	G6	Q105	B15
C120	G6	Q106	B14
C121	F6	Q153	A6
C122	B6	Q183-4/4	E14
C122	H7	Q190	E16
C123	C6	R101	I16
C124	C6	R102	J16
C125	C6	R103	I15
C126	D6	R104	J15
C127	D6	R105	I15
C128	E6	R106	I13
C129	E6	R107	I14
C130	E6	R108	I11
C131	G5	R109	I13
C132	G4	R110	I11
C133	I3	R111	G13
C134	J2	R112	H13
C135	J2	R113	G15
C137	J3	R114	H13
C138	J3	R115	F5
C141	A10	R116	F4
C143	B13	R120	F3
C144	I5	R121	I4
C145	I5	R122	J4
C148	I3	R125	A11
C190	H15	R127	I14
C191	H13	R128	I12
C192	E14	R129	B15
C193	F15	R130	B14
C194	F16	R131	C14
C195	F17	R132	B14
C196	E16	R133	B14
J103-1	B2	R134	B14
J103-11	D2	R135	B13
J103-11	I2	R136	A10
J103-13	A2	R137	B5
J103-13	F2	R138	C5
J103-14	I2	R139	C5
J103-15	D2	R140	C5
J103-15	I2	R141	D5
J103-16	G18	R142	D5
J103-17	E2	R143	E5
J103-17	F18	R144	E5
J103-17	J2	R145	E5
J103-18	G18	R146	F3
J103-19	E2	R171	J13
J103-2	J2	R172	J11
J103-21	F2	R192	E15
J103-22	F2	R193	E15
J103-23	H18	R194	F15
J103-24	G2	R195	E16
J103-25	H18	R196	F16
J103-26	G18	R197	F16
J103-27	G2	R198	F17
J103-28	G2	R199	E16
J103-29	G16		



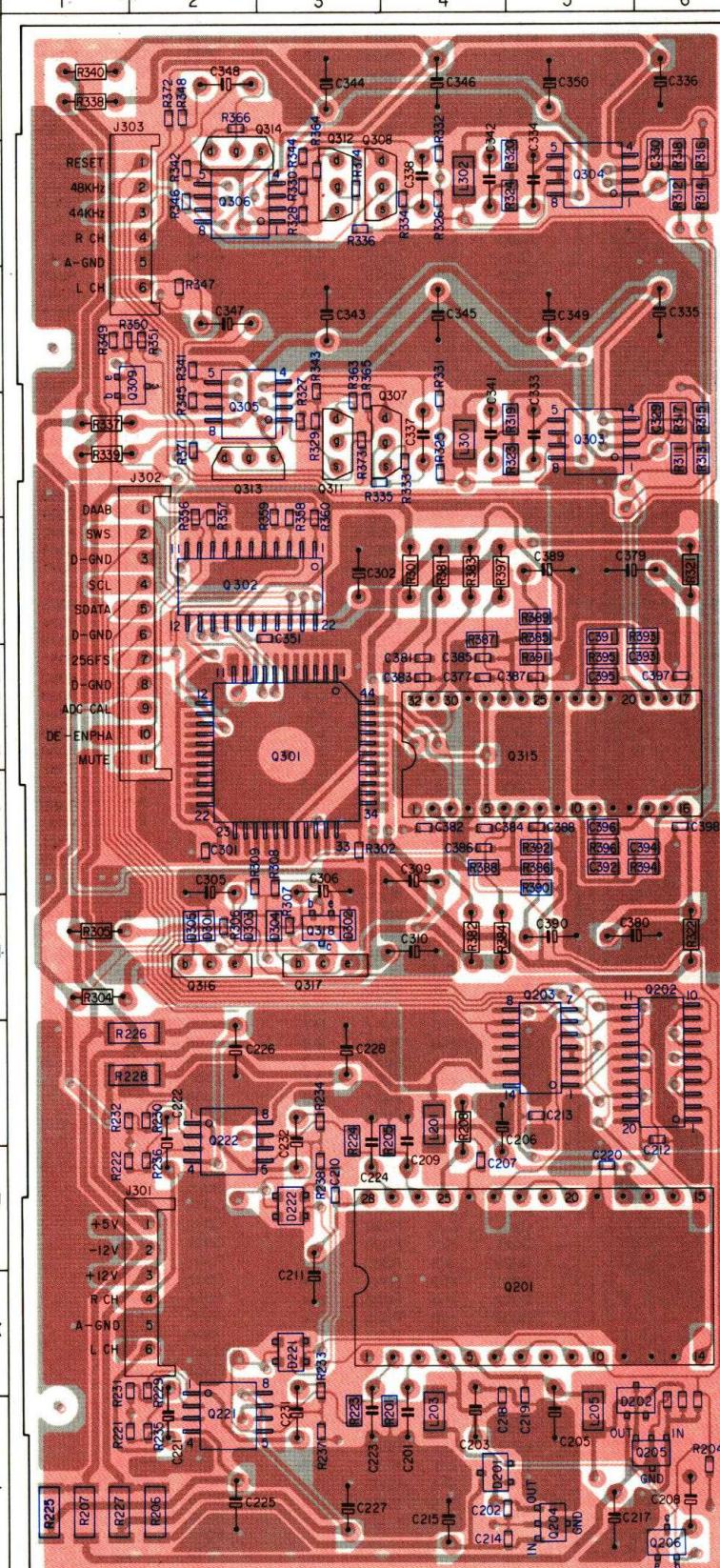
C109	D6	C195	B6	R109	D6	R163	C4
C110	D6	J101	B4	R110	D6	R164	B3
C111	C2	J103	C2	R111	C5	R165	C3
C112	C6	J112	C6	R112	C5	R166	B3
C113	D5	J121	D5	R113	C5	R167	D4
C114	D6	J122	D5	R117	C6	R171	C6
C115	B4	J151	D4	R120	C6	R180	D3
C116	C4	J181	B6	R135	D3	R181	D3
C117	B4	L101	B5	R152	D4	R182	E3
C118	C3	L102	B5	R153	D4	R184	E3
C119	B3	Q103	E6	R155	D4	R188	D3
C120	C3	Q104	E5	R156	D4	R192	C6
C121	B3	Q151	C4	R158	B4	R197	B6
C122	C4	Q180	D3	R159	C4	R198	B6
C123	E2	Q184	B2	R160	B4		
C124	C6	R101	D6	R161	C4		
C125	B6	R102	C6	R162	B4		

READ/WRITE PCB B SIDE (PW03)



C201	B9
C202	G4
C203	G5
C204	I4
C205	I5
C206	A14
C207	B15
C208	F16
C209	D9
C210	E13
C211	E13
C212	I13
C213	I8
C214	G3
C215	G3
C216	I3
C217	I3
C218	A12
C219	E12
C220	A15
C221	B2
C222	D2
C223	B9
C224	D9
C225	C8
C226	E8
C227	B5
C228	D5
C229	C2
C230	D6
C231	F15
C232	B7
C233	D7
C234	C2
C235	D2
C236	B2
C237	D16
C238	J301-1
C239	C2
C240	J301-3
C241	D2
C242	B7
C243	C7
C244	J301-1
C245	C2
C246	J301-3
C247	D2
C248	B2
C249	D16
C250	J302-9
C251	F2
C252	L201
C253	G5
C254	L205
C255	I5
C256	Q201
C257	B11
C258	Q202-1/9
C259	I13
C260	Q202-2/9
C261	G12
C262	Q202-3/9
C263	G10
C264	Q202-4/9
C265	F9
C266	Q202-5/9
C267	F7
C268	Q202-6/9
C269	H13
C270	Q202-7/9
C271	I10
C272	Q202-8/9
C273	H9
C274	Q202-9/9
C275	H7
C276	Q203-1/4
C277	H11
C278	Q203-2/4
C279	H12
C280	Q203-3/4
C281	F6
C282	Q203-4/4
C283	I9
C284	G4
C285	Q204
C286	I4
C287	Q205
C288	E15
C289	Q206
C290	B5
C291	Q221-1/2
C292	B8
C293	Q222-1/2
C294	D5
C295	Q223-1/2
C296	D6
C297	Q224-1/2
C298	D7
C299	Q225-1/2
C300	D8
C301	Q226-1/2
C302	D9
C303	Q227-1/2
C304	D10
C305	Q228-1/2
C306	D11
C307	Q229-1/2
C308	D12
C309	Q230-1/2
C310	D13
C311	Q232-1/2
C312	D14
C313	Q234-1/2
C314	D15
C315	Q236-1/2
C316	D16
C317	Q237-1/2
C318	D17

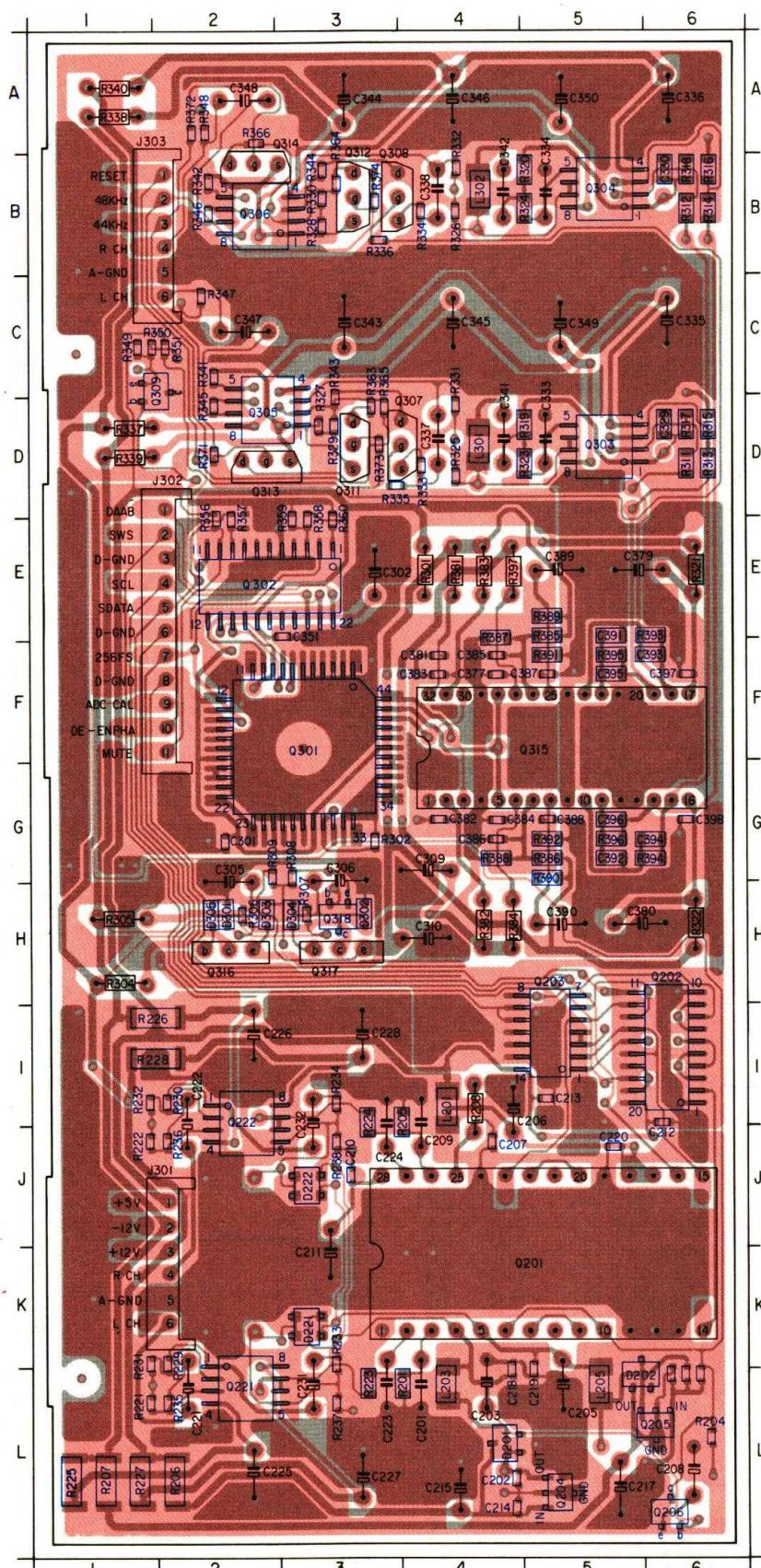
AD/DA PCB (PA03)



WD005D201-4

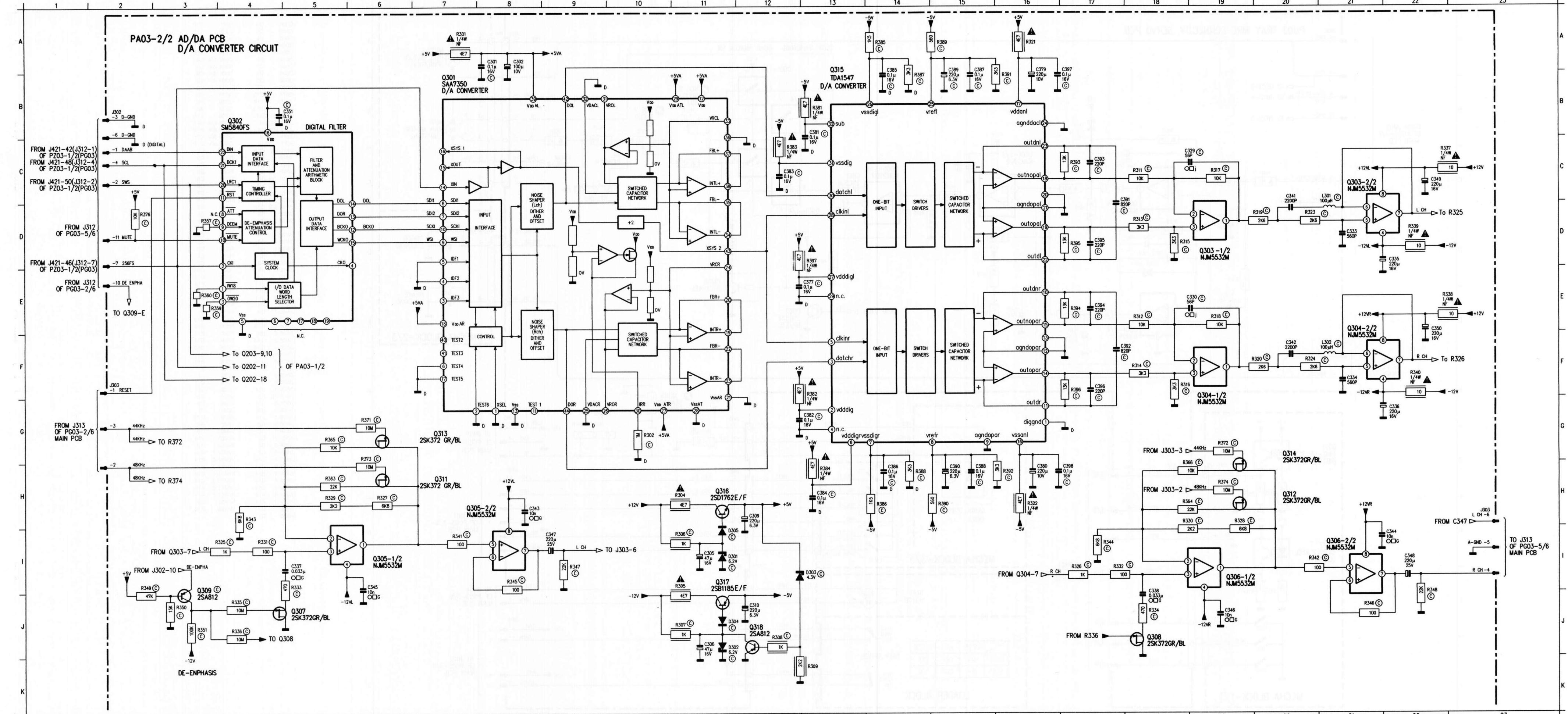
C201	L-4	Q201	K-5	R344	B-3
C202	L-4	Q202	I-6	R345	D-2
C203	L-4	Q203	I-5	R346	B-2
C205	L-5	Q204	L-5	R347	C-2
C206	I-4	Q205	L-6	R348	A-2
C207	J-4	Q206	L-6	R349	C-1
C208	L-6	Q221	L-2	R350	C-1
C209	I-4	Q222	I-2	R351	C-2
C210	J-3	Q301	F-3	R356	E-2
C211	K-3	Q302	E-2	R357	E-2
C212	I-6	Q303	D-5	R358	E-3
C213	I-5	Q304	B-5	R359	E-3
C214	L-4	Q305	D-2	R360	E-3
C215	L-4	Q306	B-2	R363	D-3
C217	L-5	Q307	D-3	R364	B-3
C218	L-4	Q308	B-3	R365	D-3
C219	L-5	Q309	C-2	R366	A-2
C220	J-5	Q311	D-3	R371	D-2
C221	L-2	Q312	B-3	R372	A-2
C222	I-2	Q313	D-2	R373	D-3
C223	L-3	Q314	B-2	R374	B-3
C224	I-3	Q315	F-5	R381	E-4
C225	L-2	Q316	H-2	R382	H-4
C226	I-2	Q317	H-3	R383	E-4
C227	L-3	Q318	H-3	R384	H-4
C228	I-3	R201	L-4	R385	E-5
C231	L-3	R204	L-6	R386	G-5
C232	I-3	R205	I-4	R387	F-4
C301	G-2	R206	L-2	R388	G-4
C302	E-3	R207	L-1	R389	E-5
C305	G-2	R208	I-4	R390	G-5
C306	G-3	R221	L-1	R391	F-5
C309	G-4	R222	J-1	R392	G-5
C310	H-4	R223	L-3	R393	E-6
C329	D-6	R224	I-3	R394	G-6
C330	B-6	R225	L-1	R395	F-5
C333	D-5	R226	I-1	R396	G-5
C334	B-5	R227	L-1	R397	E-4
C335	C-6	R228	I-1		
C336	A-6	R229	K-2		
C338	B-4	R230	I-2		
C341	D-4	R231	K-1		
C342	B-4	R232	I-1		
C343	C-3	R233	K-3		
C344	A-3	R234	I-3		
C345	C-4	R235	L-2		
C346	A-4	R236	I-2		
C347	C-2	R237	L-3		
C348	A-2	R238	J-3		
C349	C-5	R301	E-4		
C350	A-5	R302	G-3		
C351	E-3	R304	H-1		
C377	F-4	R305	H-1		
C379	E-5	R306	H-2		
C380	H-5	R307	H-3		
C381	F-4	R308	G-3		
C382	G-4	R309	G-2		
C383	F-4	R311	D-6		
C384	G-4	R312	B-6		
C385	F-4	R313	D-6		
C386	G-4	R314	B-6		
C387	F-5	R315	D-6		
C388	G-5	R316	B-6		
C389	E-5	R317	D-6		
C390	H-5	R318	B-6		
C391	E-5	R319	D-5		
C392	G-5	R320	B-5		
C393	F-6	R321	E-6		
C394	G-6	R322	H-6		
C395	F-5	R323	D-5		
C396	G-5	R324	B-5		
C397	F-6	R325	D-4		
C398	G-6	R326	B-4		
D201	L-4	R327	D-3		
D202	L-5	R328	B-3		
D221	K-3	R329	D-3		
D222	J-3	R330	B-3		
D301	H-2	R331	D-4		
D302	H-3	R332	B-4		
D303	H-2	R333	D-4		
D304	H-3	R334	B-4		
D305	H-2	R335	D-3		
J301	J-2	R336	B-3		
J302	D-2	R337	D-1		
J303	B-1	R338	A-1		
L201	I-4	R339	D-1		
L203	L-4	R340	A-1		
L205	L-5	R341	C-2		
L301	D-4	R342	B-2		
L302	B-4	R343	D-3		

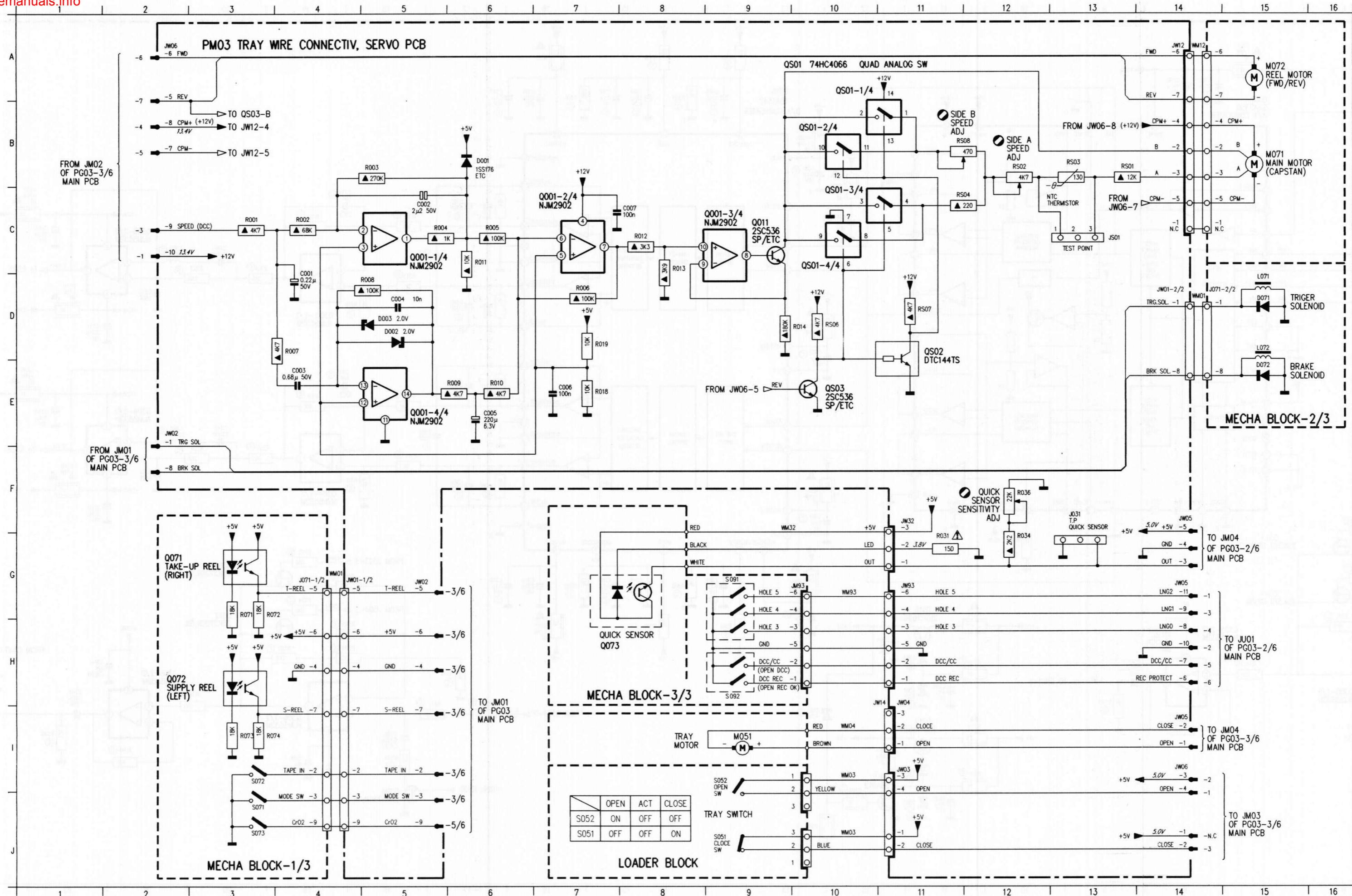
AD/DA PCB (PA03)



C201	L-4	Q201	K-5	C301	B-10	R321	A-16
C202	L-4	Q202	I-6	C302	B-10	R322	H-16
C203	L-4	Q203	I-5	C305	I-11	R323	D-20
C205	L-5	Q204	L-5	C306	J-11	R324	F-20
C206	I-4	Q205	L-6	C309	I-12	R325	I-4
C207	J-4	Q206	L-6	C310	J-12	R326	I-17
C208	L-6	Q222	L-2	C329	C-18	R327	H-6
C209	I-4	Q222	I-2	C330	E-19	R328	I-19
C210	J-3	Q301	F-3	C333	D-21	R329	H-5
C211	K-3	Q302	E-2	C334	F-21	R330	I-19
C212	I-6	Q303	D-5	C335	D-22	R331	I-4
C213	I-5	Q304	B-5	C336	G-22	R332	I-17
C214	L-4	Q305	D-2	C337	I-5	R333	I-5
C215	L-4	Q306	B-2	C338	J-18	R334	J-18
C217	L-5	Q307	D-3	C341	D-20	R335	J-4
C218	L-4	Q308	B-3	C342	F-20	R336	J-4
C219	L-5	Q309	C-2	C343	H-8	R337	C-22
C220	J-5	Q311	D-3	C344	I-21	R338	E-22
C221	L-2	Q312	B-3	C345	I-6	R339	D-22
C222	I-2	Q313	D-2	C346	J-19	R340	F-22
C223	L-3	Q314	B-2	C347	I-9	R341	I-7
C224	I-3	Q315	F-5	C348	I-22	R342	I-20
C225	L-2	Q316	H-2	C349	C-22	R343	H-4
C226	I-2	Q317	H-3	C350	E-22	R344	I-17
C227	L-3	Q318	H-3	C351	B-4	R345	I-8
C228	I-3	R201	L-4	C377	E-12	R346	J-21
C231	L-3	R204	L-6	C379	B-16	R347	I-9
C232	I-3	R205	I-4	C380	H-16	R348	J-22
C301	G-2	R206	L-2	C381	B-13	R349	J-22
C302	E-3	R207	L-1	C382	G-12	R350	J-3
C305	G-2	R208	I-4	C383	C-12	R351	J-3
C306	G-3	R221	L-1	C384	H-13	R352	D-3
C309	G-4	R222	J-1	C385	B-14	R359	E-3
C310	H-4	R223	L-3	C386	H-14	R360	E-3
C329	D-6	R224	I-3	C387	B-15	R363	H-5
C330	B-6	R225	L-1	C388	H-15	R364	H-18
C333	D-5	R226	I-1	C389	B-15	R365	G-5
C334	B-5	R227	L-1	C390	H-15	R366	H-18
C335	C-6	R228	I-1	C391	D-17	R371	G-6
C336	A-6	R229	K-2	C392	F-17	R372	G-19
C338	B-4	R230	I-2	C393	C-17	R373	H-6
C341	D-4	R231	K-1	C394	E-17	R374	H-19
C343	B-4	R232	I-1	C395	D-17	R376	D-2
C344	A-3	R233	K-3	C396	F-17	R381	B-13
C345	C-4	R235	L-2	C398	H-16	R382	F-12
C346	A-4	R236	I-2	D301	I-11	R384	H-13
C347	C-2	R237	L-3	D302	J-11	R385	A-14
C348	A-2	R238	J-3	D303	I-12	R386	H-14
C349	C-5	R301	E-4	D304	J-11	R387	B-14
C350	A-5	R302	G-3	D305	I-11	R388	H-14
C351	E-3	R304	H-1	J302	B-2	R389	A-15
C377	F-4	R305	H-1	J303	F-2	R390	H-15
C379	E-5	R306	H-2	J303	H-23	R391	B-16
C380	H-5	R307	H-3	L301	D-21	R392	H-16
C381	F-4	R308	G-3	L302	F-21	R393	C-17
C382	G-4	R309	G-2	Q301	B-7	R394	E-17
C383	F-4	R311	D-6	Q302	B-4	R395	D-17
C384	G-4	R312	B-6	Q303-1/2	F-19	R396	F-17
C385	F-4	R313	D-6	Q303-2/2	C-21	R397	D-12
C386	G-4	R314	B-6	Q304-2/2	F-21		
C387	F-5	R315	D-6	Q305-1/2	I-6		
C388	G-5	R316	B-6	Q305-2/2	I-8		
C389	E-5	R317	D-6	Q306	I-21		
C390	H-5	R318	B-6	Q306-1/2	I-19		
C391	E-5	R319	D-5	Q307	J-4		
C392	G-5	R320	B-5	Q308	J-18		
C393	F-6	R321	E-6	Q309	J-3		
C394	G-6	R322	H-6	Q311	H-6		
C395	F-5	R323	D-5	Q312	H-19		
C396	G-5	R324	B-5	Q313	G-6		
C397	F-6	R325	D-4	Q314	B-13		
C398	G-6	R326	B-4	Q315	H-11		
D201	L-4	R327	D-3	Q316	H-11		
D202	L-5	R328	B-3	Q317	J-11		
D221	K-3	R329	D-3	Q318	J-12		
D222	J-3	R330	B-3	R301	A-11		
D301	H-2	R331	D-4	R302	G-10		
D302	H-3	R332	B-4	R304	H-11		
D303	H-2	R333	D-4	R305	J-11		
D304	H-3	R334	B-4	R306	I-11		
D305	H-2	R335	D-3	R307	J-11		
J301	J-2	R336	B-3	R308	J-12		
J302	D-2	R337	D-1	R309	I-13		
J303	B-1	R338	A-1	R311	C-18		
L201	I-4	R339	D-1	R312	E-18		
L203	L-4	R340	A-1	R313	D-18		
L205	L-5	R341	C-2	R314	F-18		
L301	D-4	R342	B-2	R315	D-18		
L302	B-4	R343	D-3	R316	F-18		

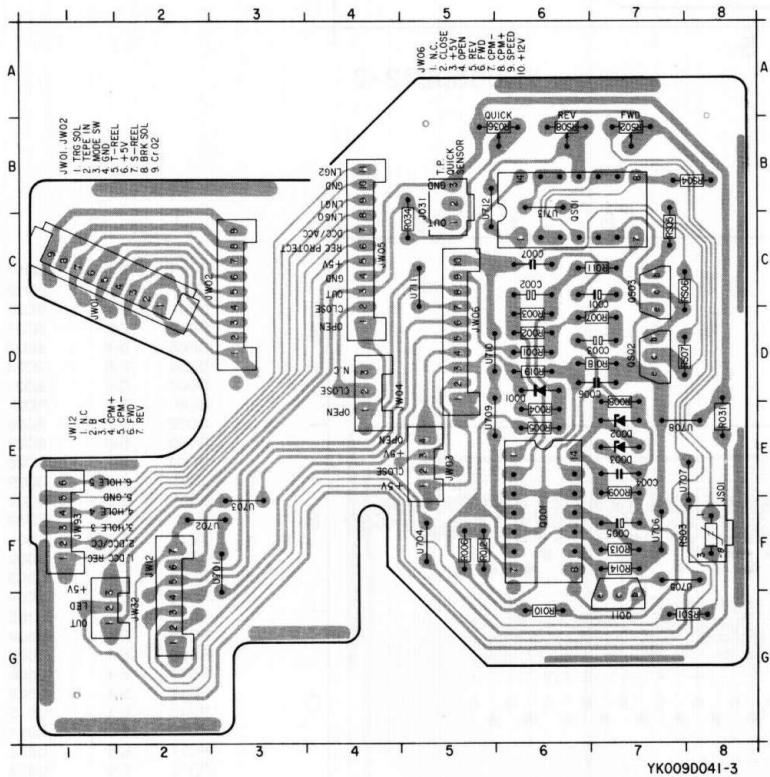
R344	B-3	R356	E-2	R366	A-2	R384	H-4	R392	G-5
R345	D-2	R357	E-2	R371	D-2	R385	E-5	R393	E-6
R346	B-2	R358	E-3	R372	A-2	R386	G-5	R394	G-6
R347	C-2	R359	E-3	R373	D-3	R387	F-4	R395	F-5
R348	A-2	R360	E-3	R374	B-3	R388	G-4	R396	G-5
R349	C-1	R363	D-3	R381	E-4	R389	E-5	R397	E-4
R350	C-1	R364	B-3	R382	H-4	R390	G-5		
R351	C-2	R365	D-3	R383	E-4	R391	F-5		





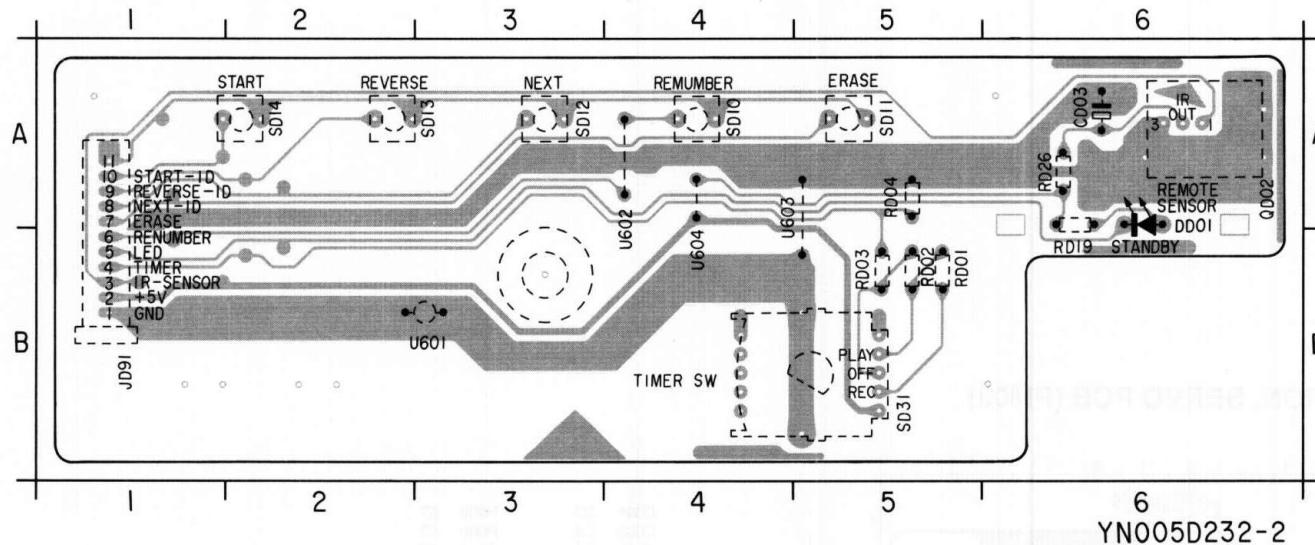
C001	D4	L071	D15
C002	C5	L072	E15
C003	E4	M051	I9
C004	D5	M071	B15
C005	E6	M072	A15
C006	E7	Q001-1/4	C5
C007	C7	Q001-2/4	C7
D001	B6	Q001-3/4	C9
D002	D5	Q001-4/4	E5
D003	D5	Q011	C9
D071	D15	Q071	G3
D072	E15	Q072	H3
J031	G13	J073	G13
J071-1/2	G4	J071-1/2-214	B10
J071-1/2-3/4	J071-1/2-7/4	J071-1/2-9/4	C11
J071-1/2-9/4	J071-2/2	J071-2/2-14	C10
JM93	G10	JS01	C4
JS01	C13	JW01-1/2	G4
JW01-1/2-214	JW01-1/2-3/4	JW01-1/2-7/4	C6
JW01-1/2-9/4	JW01-2/2	JW01-2/2-14	D4
JW02-1	F2	JW02-2	E6
JW02-2	I5	JW02-3	C8
JW02-3	J5	JW02-4	H4
JW02-4	G5	JW02-5	R001
JW02-5	J11	JW02-6	C3
JW02-6	H4	JW02-7	R002
JW02-7	I5	JW02-8	C4
JW02-8	F2	JW02-9	R003
JW02-9	J5	JW02-10	C5
JW03	I11	JW03-1	R005
JW03-1	J11	JW03-2	R006
JW03-2	J11	JW03-3	R007
JW03-3	G3	JW03-4	R008
JW03-4	J11	JW04	R009
JW04	I11	JW05-1	R010
JW05-1	I14	JW05-2	R011
JW05-2	H14	JW05-3	R012
JW05-3	I14	JW05-4	R013
JW05-4	G14	JW05-5	R014
JW05-5	G14	JW05-6	R015
JW05-6	H14	JW05-7	R016
JW05-7	H14	JW05-8	R017
JW05-8	H14	JW05-9	R018
JW05-9	G14	JW06-1	R019
JW06-1	J14	JW06-2	S051
JW06-2	J14	JW06-3	S052
JW06-3	I14	JW06-4	S053
JW06-4	J14	JW06-5	S054
JW06-5	A2	JW06-6	S055
JW06-6	A2	JW06-7	S056
JW06-7	B2	JW06-8	S057
JW06-8	B2	JW06-9	S058
JW06-9	C2	JW12-1	S059
JW12-1	C14	JW12-2	S060
JW12-2	B14	JW12-3	S061
JW12-3	B14	JW12-4	S062
JW12-4	B14	JW12-5	S063
JW12-5	C14	JW12-6	S064
JW12-6	A14	JW12-7	S065
JW12-7	A14	JW32	S066
JW32	G9	JW93	S067
JW93	G11	JW05	S068
JW05	G10	JW06	S069
JW06	G9	JW07	S070
JW07	G9	JW08	S071
JW08	G9	JW09	S072
JW09	G9	JW10	S073
JW10	G9	JW11	S074
JW11	G9	JW12	S075
JW12	G9	JW13	S076
JW13	G9	JW14	S077
JW14	G9	JW15	S078
JW15	G9	JW16	S079

TRAY WIRE CONNECTION, SERVO PCB (PM03)

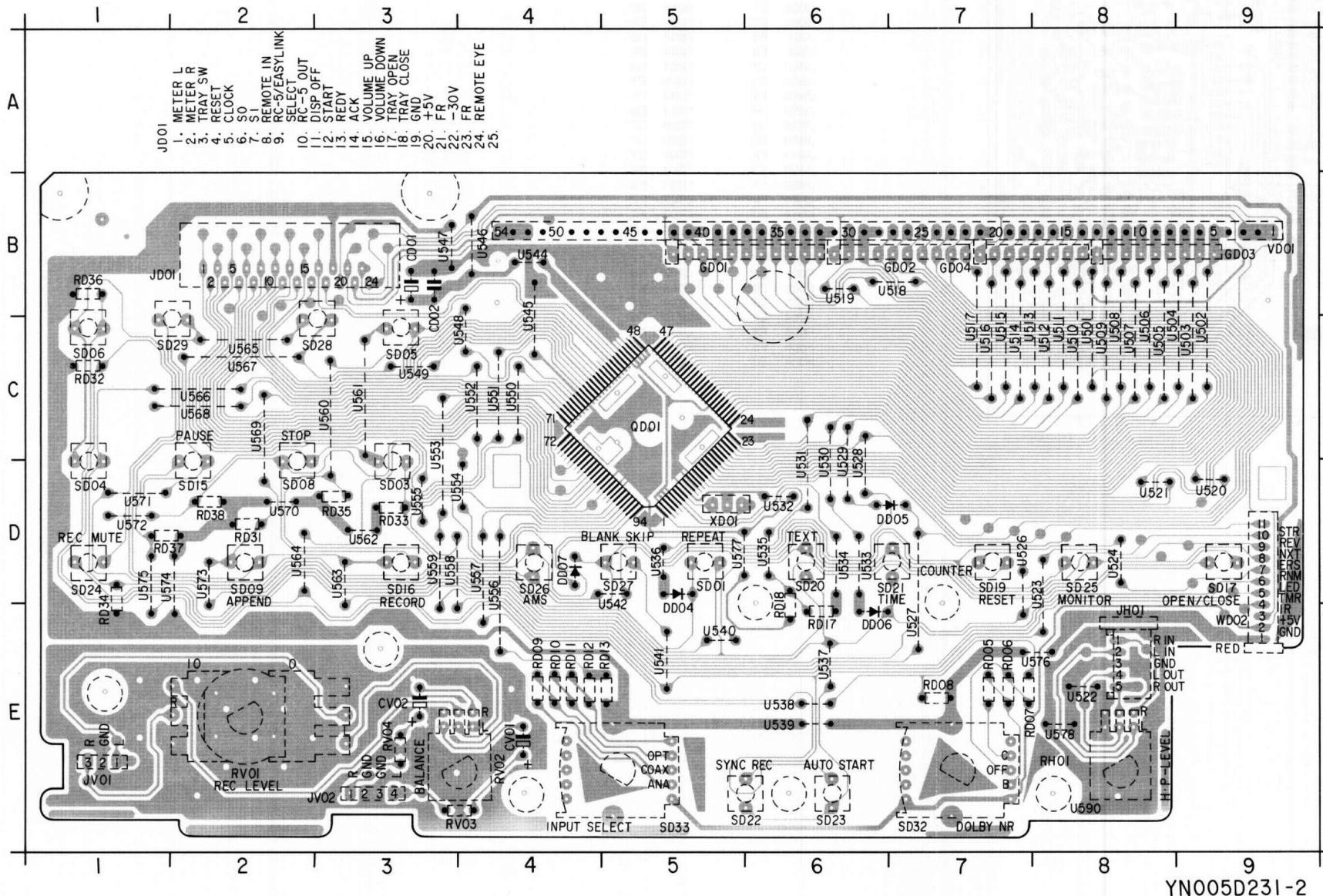


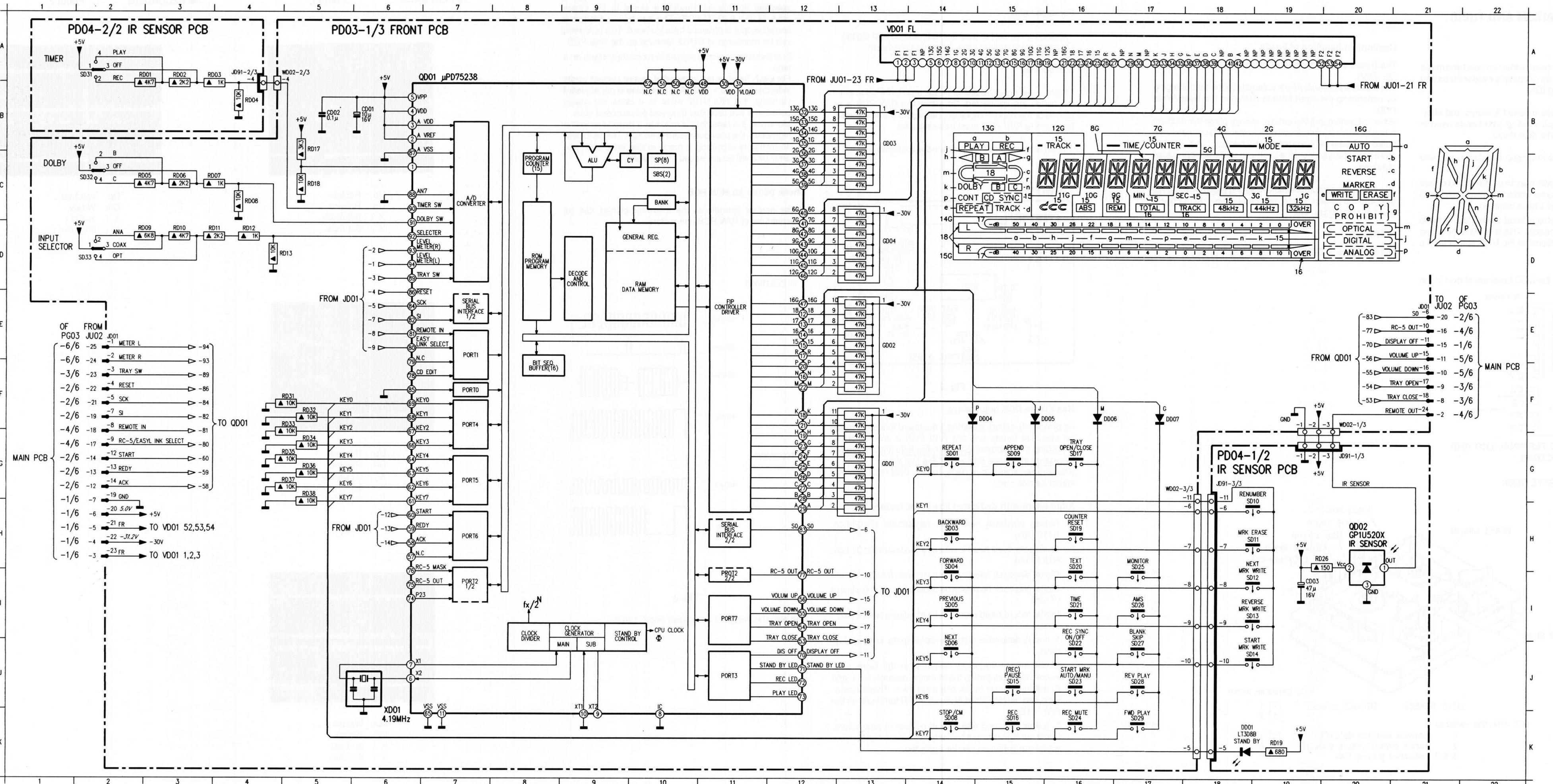
C001	C7	R008	E7
C002	C6	R009	E7
C003	D7	R010	G6
C004	E7	R011	C7
C005	F7	R012	F5
C006	D7	R013	F7
C007	C6	R014	F7
D001	D6	R018	D7
D002	E7	R019	D6
D003	E7	R031	E8
J031	B5	R034	C5
JS01	F8	R036	B6
JW01	C1	RS01	G8
JW02	C3	RS02	B7
JW03	E5	RS03	F8
JW04	D4	RS04	B8
JW05	C4	RS05	C7
JW06	D5	RS06	C7
JW12	F2	RS07	D7
JW32	G1	RS08	B6
JW93	F1	U701	F3
Q001	F6	U702	F2
Q011	G7	U703	F3
QS01	B6	U704	F5
QS02	D7	U705	F7
QS03	C7	U706	F7
R001	D6	U707	E8
R002	D6	U708	E7
R003	D6	U709	E5
R004	E6	U710	D5
R005	E6	U711	C5
R006	F5	U712	B5
R007	D7	U713	B6

IR SENSOR PCB (PD04)



FRONT PCB (PD03)





HEAD, DECK MECHANISM AND THEIR INTERFACES

DCC head

Heads used in the DCC are called a thin film head and made by repeating 20 times or more of multiple evaporation and sputterings as in fabricating ICs.

Accordingly, the heads have different features and characteristics from those of coil winding type heads used in conventional Analog cassette tape decks.

1. Playback head uses a magnetic resistance element (MR element).
2. The MRE needs magnetic bias to obtain its maximum output. So, a bias conductor which is equivalent to a coil to develop the magnetic bias is installed.
3. Moreover, analog playback head needs a magnetic feedback to increase linearity. This is realized by giving a magnetic field proportional to the MRE output from a bias conductor.

Terminals and structure of the DCC head are shown in the Fig. 1.

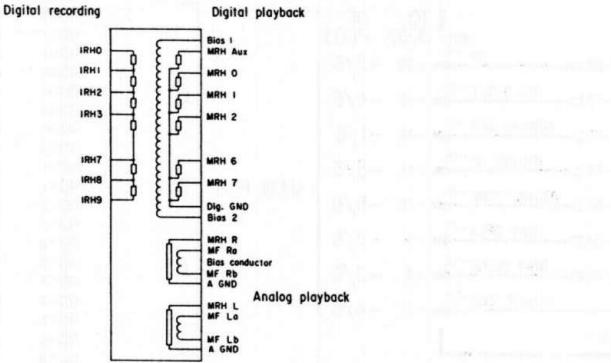
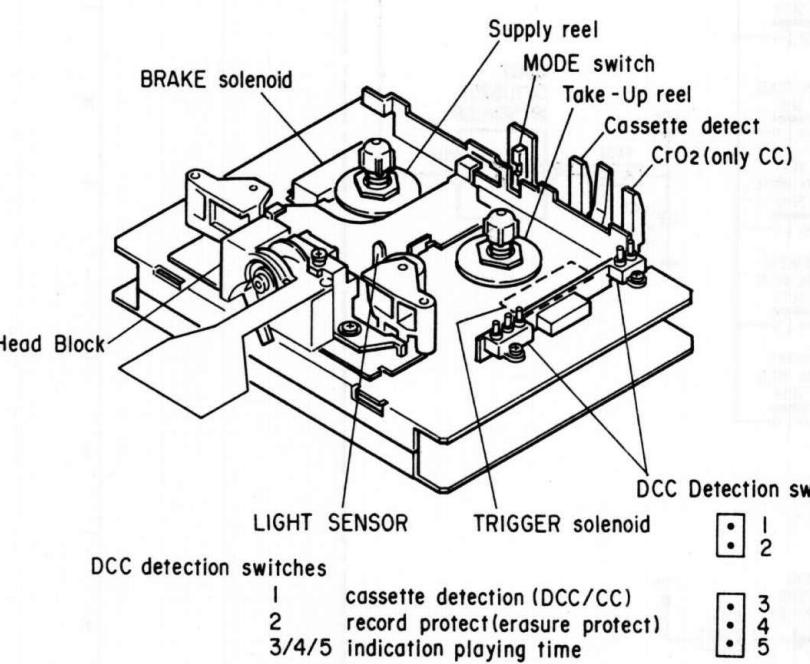


Fig. 1 DCC HEAD TERMINAL LIST AND THE STRUCTURE

AUTOREVERSE CASSETTE DECK



Cautions of handling of heads

The heads are susceptible to electrostatic voltage (about DC150V).

The heads are protected from external electrostatic charging by connecting the head flexible cables to the Read/Write PCB.

When disconnecting the cables, always place the deck on a bench with required electrostatic discharging measures taken and wear an electrostatic discharging band.

Moreover, always mount the short-clip on the flexible cables removed.

The heads are also susceptible to strong external magnetic field and the analog output may be affected. Do not use a head demagnetizer, etc.

WARNING

DO NOT USE A DEMAGNETIZER CASSETTE.

Pairing with Read/Write PCB

For each head,

- setting for amount of bias (for both analog and digital)
- feedback adjustment (only for analog playback)

are required.

That is, a pairing is needed for heads and R/W PCB to which the heads are connected. So, when the R/W PCB is replaced or the head is replaced, potmeters (trimming resistors) on the R/R/ PCB must be readjusted.

The adjustment requires dedicated adjustment jigs.

PW03

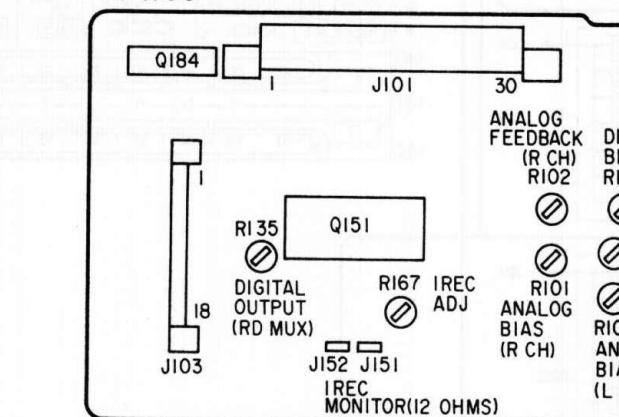


Fig. 2

Read/Write PCB adjustment

As previously stated, a pairing adjustment has been made for specified heads and the R/W PCB in the factory in preceding the shipment. So, following adjustments are not necessary in service stations PCB a first time. (Perform replacement of deck, heads, R/W PCB and tray loader as one unit.)

Adjustment with dedicated jigs in the factory

1. Analog playback head bias adjustment (R109:Lch, R110:Rch)
2. Analog playback head feedback adjustment (R101:Lch, R102:Rch)
3. Digital playback head bias adjustment (R117)
4. Digital playback head playback output level adjustment (R135)
5. Digital record head record current adjustment (R167)

1. and 2. determine distortion value in the analog playback.

2. determines frequency response in the same way. Accordingly, tampering the trimming resistors for 1. and 2. will deteriorate those characteristics. These operations can be monitored at Ana L and R terminals on the R/W PCB.

3. will be replaced with a fixed resistor in near future. Since the digital output has only two values 1 or 0, minor waveform distortion can be accepted.

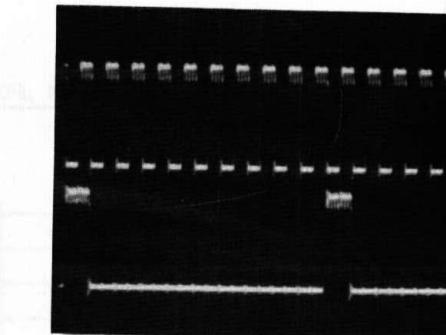
4. is the adjustment for an attenuator to develop a specified voltage for sending a signal to the signal process circuit (DCC PCB). This can be used to test a correct output is obtained from the head. This operation can be monitored at RMUX terminal on the R/W PCB.

5. is required to record signals in a constant depth on a tape.

For each head, a recommended record current exists individually. (140 ~ 180mA) If this value is not adjusted correctly, the RD MUX value in 4 does not match between a self recorded tape and prerecorded tape. Moreover, if a recording is made at a deep layer with a high value, the previous records can not be erased when an overwrite recording is made at that area later, and error rate will be increased at that area.

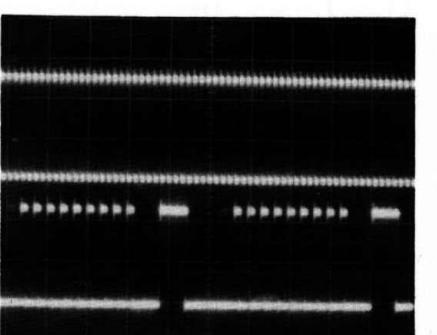
At PLAYBACK

Photo 1



At RECORDING

Photo 2

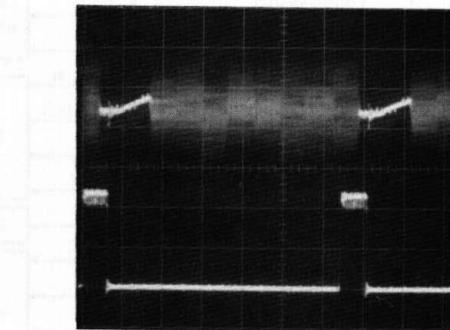
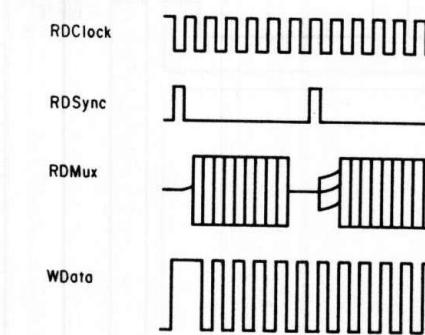


Up: Wdclock
Dn: Wdata
X : 2μS/div
Y : 0.2V/div

Check points for R/W PCB

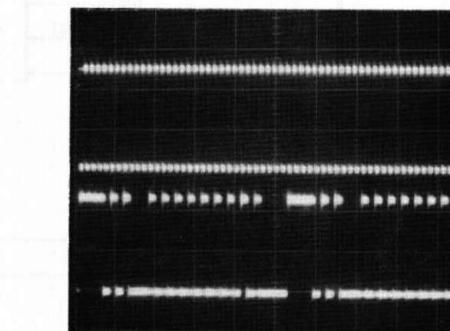
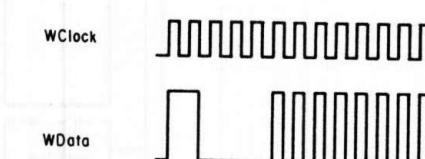
Under normal operations, the following signals can be observed out of R/W PCB connectors.

at PLAYBACK



Up: Rdclock
Dn: Rdsync
X : 0.5μS/div
Y : 50mV/div(Up)
Y : 0.2V/div(Dn)

at RECORDING



Up: Wclock
Dn: Wdata
X : 2μS/div
Y : 0.2V/div

Record:

DDSP IC on the DCC PCB continuously outputs a rectangular waveform of 24kHz, 50% duty. This can be monitored at check point on the PCB, #3 of J411. With this rectangular waveform the capstan motor rotates at a specified speed to record signals on a tape.

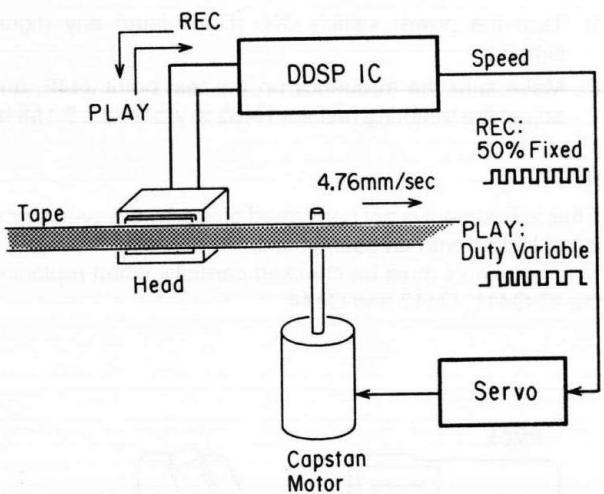
DCC playback:

Digital signal from the head is read, and speed deviation is calculated and output as a variation of duty at the speed terminal. The servo circuit on the tray PCB cycle changes the output into a drive force for the capstan motor, thereby performing the control.

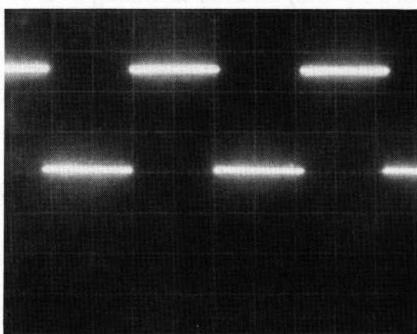
Since the capstan motor is of electronic governor type, it has four terminals, +, -, A, and B.

Analog playback:

Continuously develops a fixed rectangular waveform signal of 24kHz, 50% duty as in the record mode.

**DCC capstan servo system**

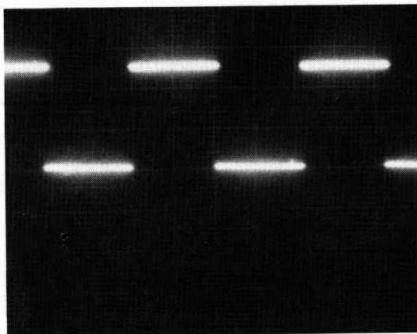
The actual waveforms are shown photo 3.



At RECORDING

X : 10µS/div

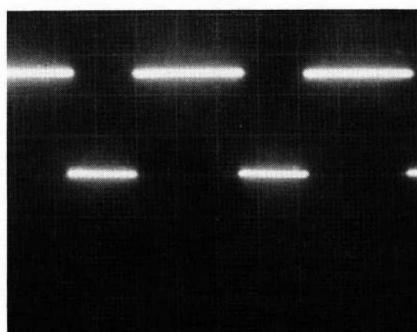
Y : 0.2V/div



At normal PLAYBACK

X : 10µS/div

Y : 0.2V/div



At PLAYBACK with OFFSET

X : 10µS/div

Y : 0.2V/div

ELECTRICAL MEASUREMENTS AND ADJUSTMENTS

Tape speed adjustment (PM03 PCB)

1. Connect frequency counter to analog L- or R-output.
2. Playback on side A 3.15kHz(3kHz) signal from wow & flutter test cassette.
3. Adjust RS02 for frequency reading between 3145Hz(2990Hz) and 3155Hz(3010Hz).
4. Play back 3.15kHz(3kHz) at side B.
5. Adjust RS08 for reading between 3145Hz(2990Hz) and 3155Hz(3010Hz).

NOTE:

If the adjustment of the unit is not made precisely and rotation error higher than a specified value occurs, the servo is not locked during playback of a DCC tape and the signals will be muted. This condition (locked or not locked) can be monitored at speed terminal (#3) of JW06. (Refer to photo.) Under normal locked condition, deflection of the speed signal is less than 0.5mS.

Quick sensor adjustment (PM03 PCB)

1. Connect DC-voltmeter between 3-J031 and ground.
2. Use CC Maxwell UDI90.
(Bad tape with respect to light reflection)
3. Wind tape until leader is passed.
4. Press PLAY.
5. Adjust R036 for DC reading of 1V.
If don't get 1V at the maximum adjustment, leave the maximum point.

Analog playback frequency response adjustment (PG03 PCB)

1. Play back 40Hz, 1kHz, 14kHz signals on test tape TCC 183C (-24dB).
2. Adjust each trimming resistor R645(L) and R646(R) so that 40Hz signal level shows within 0 ~ 1dB from 1kHz reference level.
3. Adjust each trimming resistor R643(L) and R644(R) so that 14kHz signal level shows within 0 ~ 1dB from 1kHz reference level.

Playback output adjustment (Dolby) (PG03 PCB)

1. Connect AC-voltmeter between 1-J601 and 2-J601 for R-channel and 3-J601 and 2-J601 for L-channel.
2. Playback Dolby test cassette.
3. Adjust R633 (L) and R634 (R) for AC reading of 389 mV.

Level meter sensitivity adjustment (PG03 PCB)

1. Connect a 1kHz (-12dB) digital signal (44.1kHz) to the digital terminal.
2. Set unit to REC PAUSE mode.
3. Adjust each trimming resistor RL05(L), and RL06(R) until meter lights up -10dB point then lights down -12dB point.
4. After the above adjustment, playback the Dolby Test Tape, check the meter lights on 0dB point.

NOTE:

If the meter lights on except 0dB point, adjust again from the first step.

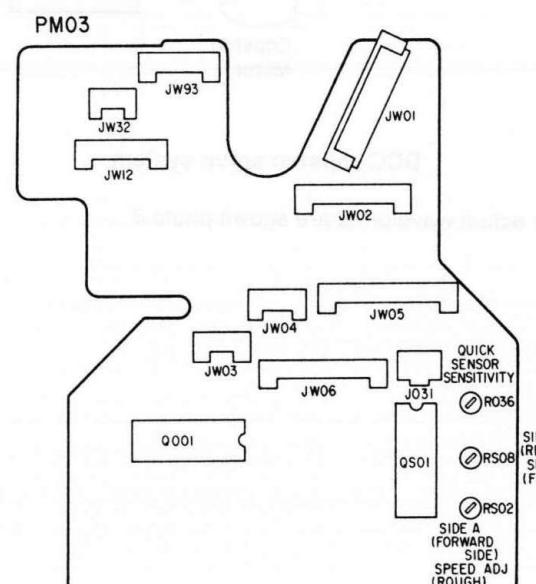
VCO free run frequency adjustment (PZ03 PCB)

1. Turn the power switch ON. (Don't input any digital signal.)
2. Make sure the frequency on the test point J442, and adjust the trimming resistor R455 to $7.5\text{MHz} \pm 0.1\text{MHz}$.

NOTE:

If this adjustment is not performed properly, the sync signal is not locked with an outside one.

This frequency must be checked carefully when replacing the IC Q441, Q443 and Q444.



PG03

LA01

RL05
METER-L

RL06
METER-R

R646
R-LOW

R644
R-HIGH

R645
L-LOW

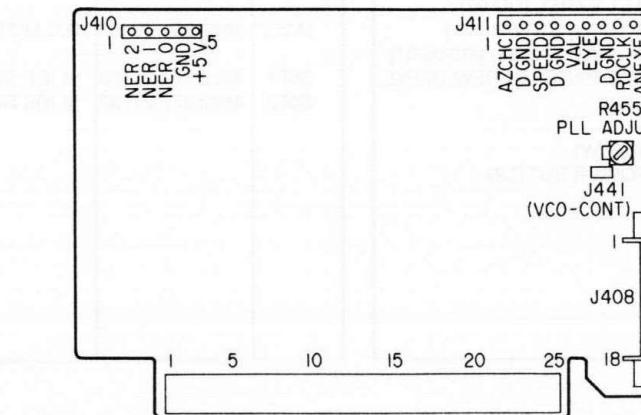
R644
L-HIGH

R643
L-LEVEL

R633
R-LEVEL

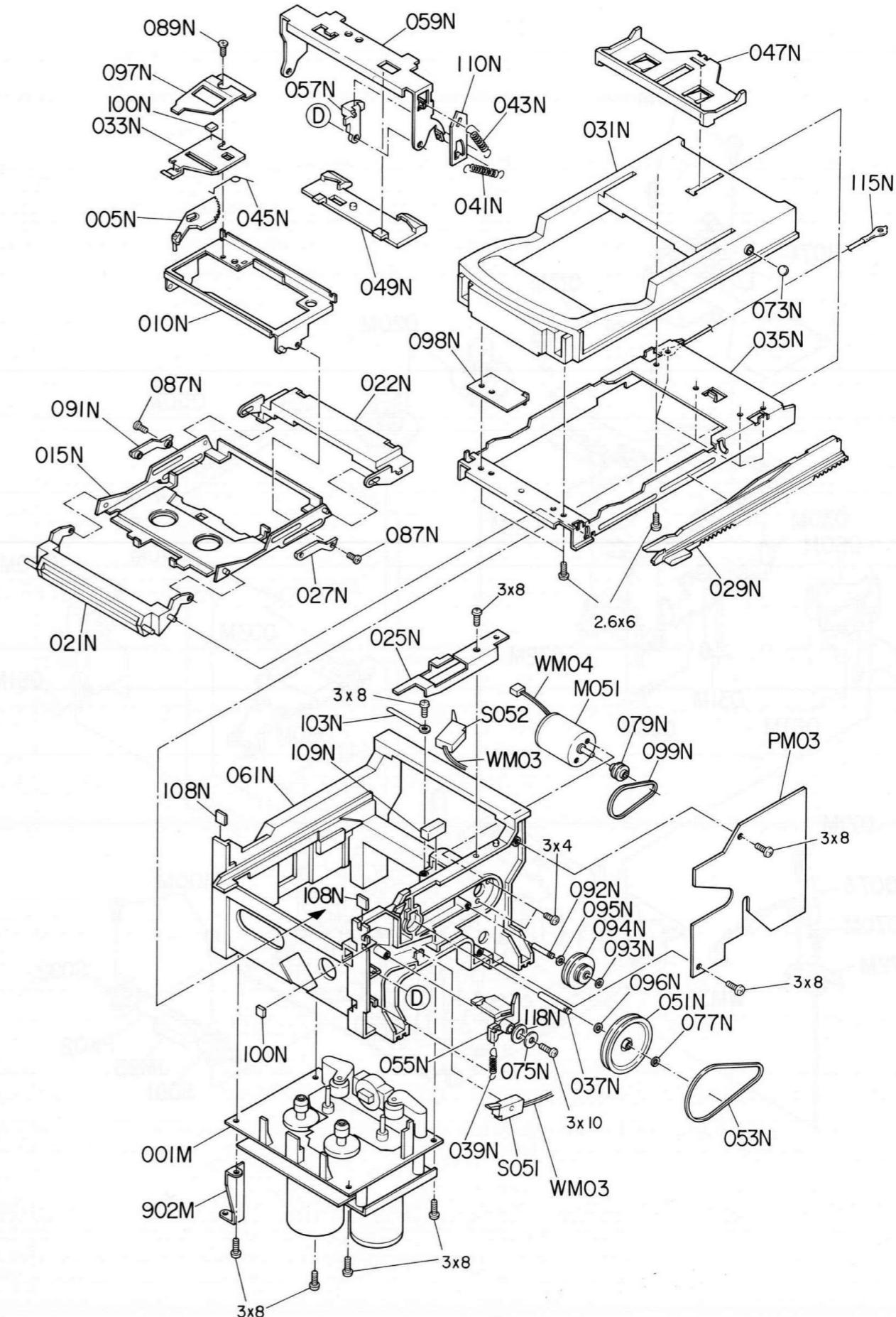
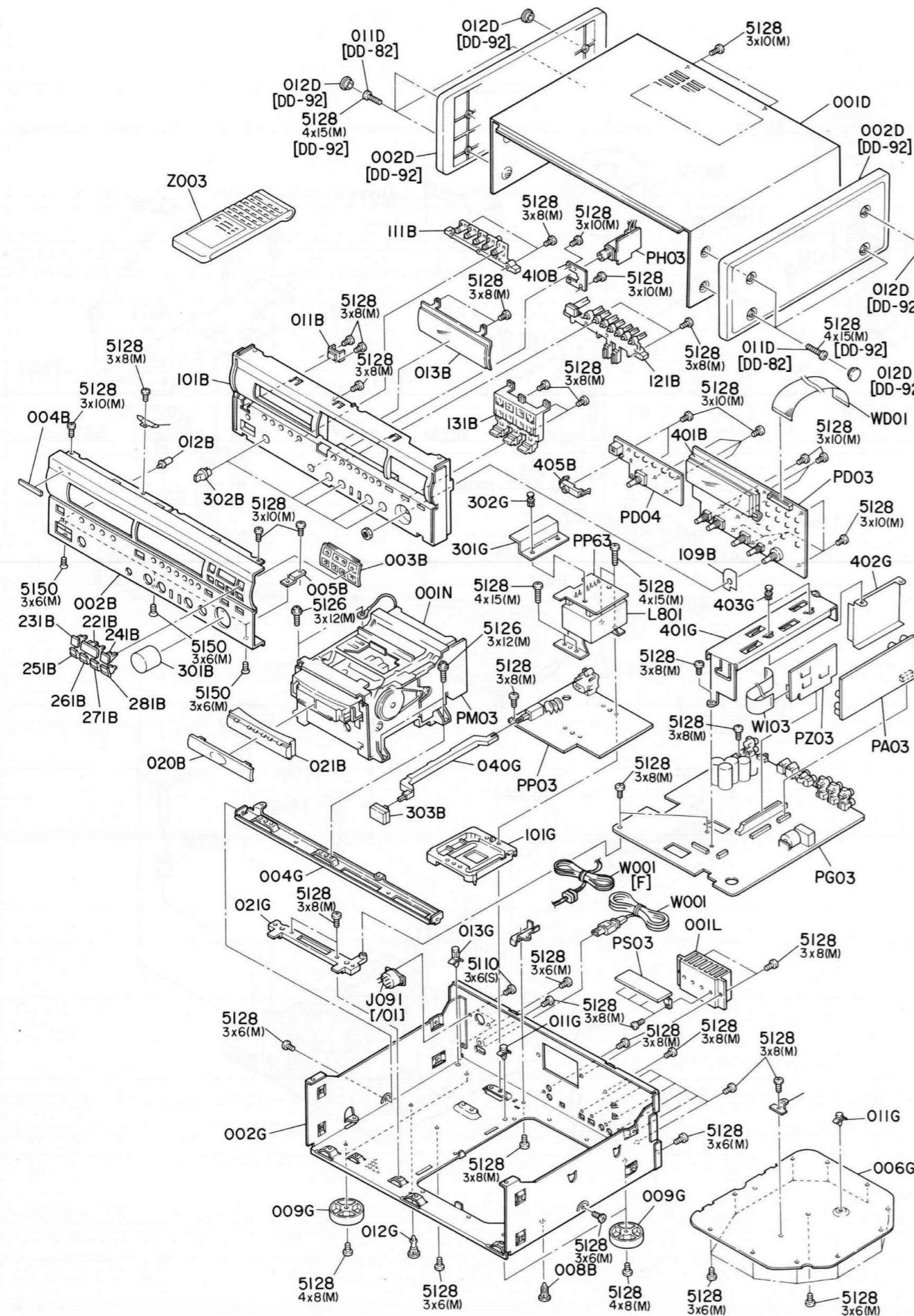
R634
R-LEVEL

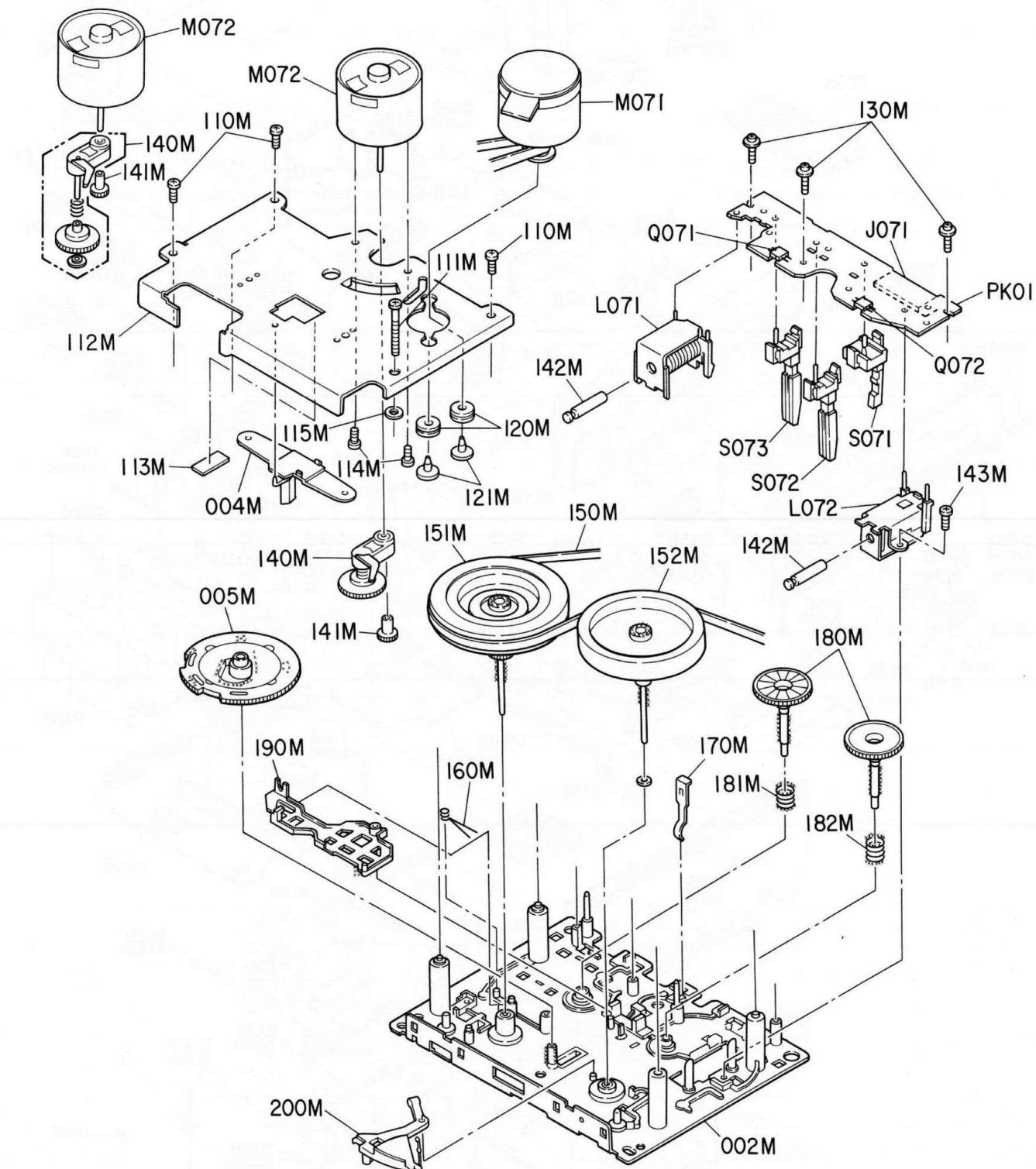
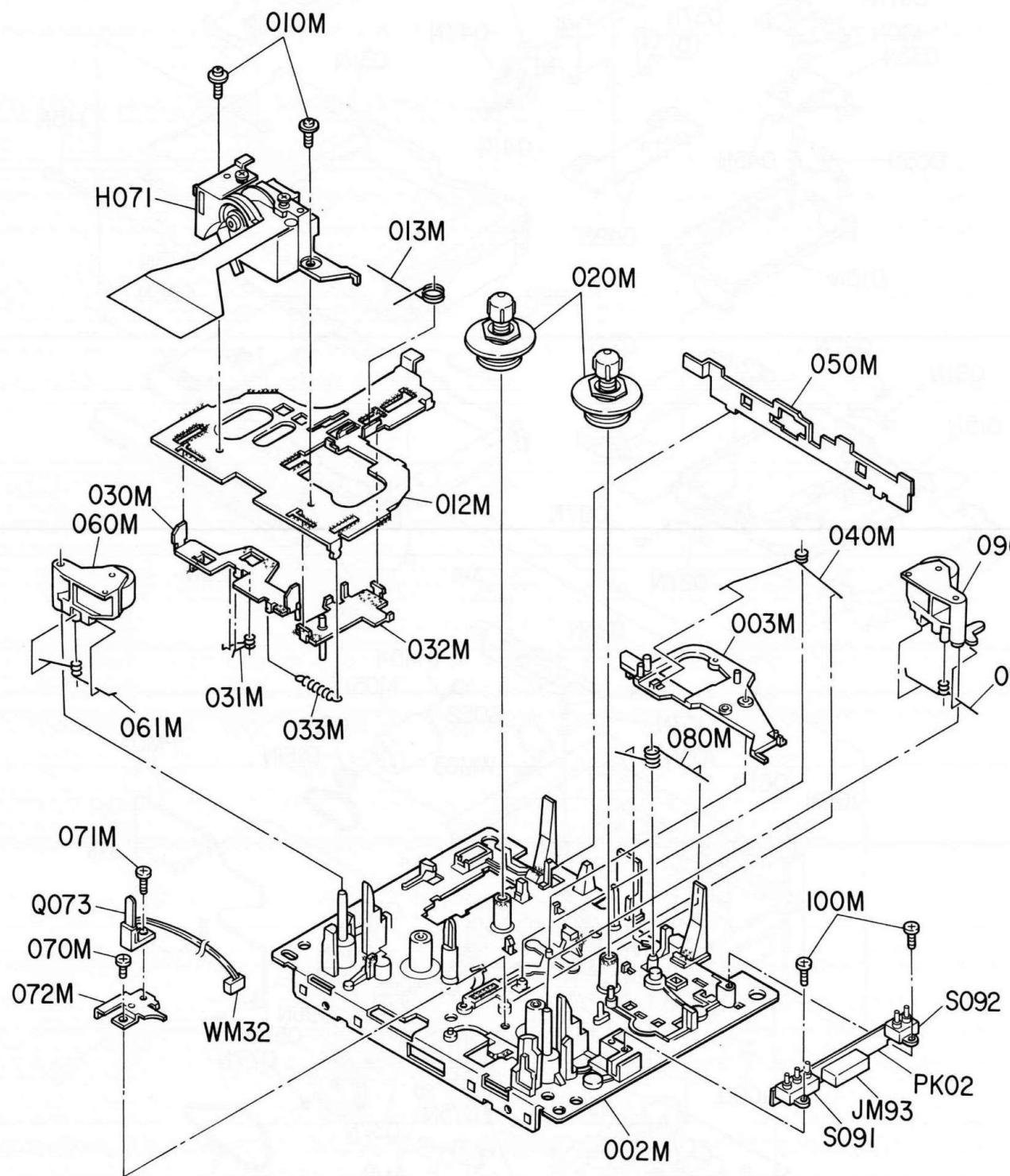
PZ03



SET EXPLODED VIEW AND PARTS LIST

REF. DESIG.	PART NO.	DESCRIPTION	REF. DESIG.	PART NO.	DESCRIPTION
002B	4822 443 41205 4822 443 41206	FRONT PANEL AL(GL) (DD-92) FRONT PANEL AL(BL) (DD-82)	001T	4822 736 21627 4822 736 21628	PACKING USER MANUAL (DD-92) USER MANUAL (DD-82)
003B		BUSHING FOR MECHA BUTTON (DD-92)	Z001	4822 321 22611	RCA CONNECTIVE CORD (GOLD)
		BUSHING FOR MECHA BUTTON (DD-82)	Z003	4822 218 30667	REMOTE COMMANDER (DD-92)
004B	4822 459 10972 4822 459 10943	BADGE FOR MARANTZ(GOLD) (DD-92) BADGE FOR MARANTZ(GOLD) (DD-82)	Z004	4822 218 30668	REMOTE COMMANDER (DD-82)
005B	4822 403 70836	BRACKET FOR FRONT PANEL	Z005	4822 138 10292	BATTERY
011B	4822 381 11381	LENS FOR IR-SENSER		4822 267 31133	JACK, AC ADAPTER [/01]
012B	4822 381 11382	LENS FOR STANDBY	▲W001	4822 321 10932 4822 321 10915 4822 321 10934	A.C. POWER CORD 2.5A 250V [/01/02] A.C. POWER CORD 2.5A 250V [/05] A.C. POWER CORD 2.5A 250V [/07]
013B	4822 450 62012	WINDOW FOR FL DISPLAY			
020B	4822 454 21082 4822 454 21083	ESCUTCHEON FOR TLAY DOOR (DD-92) ESCUTCHEON FOR TLAY DOOR (DD-82)	001N	4822 691 20815 4822 443 63788	TRAY MECHANISM ASSY(GL) (DD-92) TRAY MECHANISM ASSY(BL) (DD-82)
021B	4822 502 21295 4822 502 21296	ADJUSTER FOR TRAY + ESC. (DD-92) ADJUSTER FOR TRAY + ESC. (DD-82)	005N	4822 403 70784	ARM KIT
101B	4822 464 50953 4822 464 50954	FRONT CHASSIS (DD-92) FRONT CHASSIS (DD-82)	021N	4822 403 70781	ARM
111B	4822 410 62432 4822 410 62434	BUTTON ASSY. FOR SUB CODE (DD-92) BUTTON ASSY. FOR SUB CODE (DD-82)	022N	4822 403 70782	ARM
121B	4822 410 62433 4822 410 62435	MODE BUTTON ASSY. (DD-92) MODE BUTTON ASSY. (DD-82)	025N	4822 403 70837	GUIDE
131B	4822 403 70834 4822 403 70835	MOVEMENT ASSY. MECHA BUTTON (DD-92) MOVEMENT ASSY. MECHA BUTTON (DD-82)	027N	4822 401 11486	CLAMPER
221B	4822 462 71899 4822 462 71907	CAP ASSY. (PLAY BUTTON)(DD-92) CAP ASSY. (PLAY BUTTON)(DD-82)	029N	4822 522 33306	GEAR
231B	4822 462 71901 4822 462 71908	CAP ASSY. (PREVIOUS BUTTON) (DD-92) CAP ASSY. (PREVIOUS BUTTON) (DD-82)	031N	4822 443 63817 4822 443 63789	CASE (GL) (DD-92) CASE (BL) (DD-82)
241B	4822 462 71902 4822 462 71909	CAP ASSY. (NEXT BUTTON)(DD-92) CAP ASSY. (NEXT BUTTON)(DD-82)	033N	4822 403 70785	RETAINER
251B	4822 462 71905 4822 462 71913	CAP ASSY. (REWIND BUTTON)(DD-92) CAP ASSY. (REWIND BUTTON)(DD-82)	039N	4822 492 33359	SPRING
261B	4822 462 71903 4822 462 71911	CAP ASSY. (STOP BUTTON)(DD-92) CAP ASSY. (STOP BUTTON)(DD-82)	041N	4822 492 33361	SPRING
271B	4822 462 71904 4822 462 71912	CAP ASSY. (PAUSE BUTTON)(DD-92) CAP ASSY. (PAUSE BUTTON)(DD-82)	043N	4822 492 33362	SPRING
281B	4822 462 71906 4822 462 71914	CAP ASSY. (WIND BUTTON)(DD-92) CAP ASSY. (WIND BUTTON)(DD-82)	045N	4822 492 33363	SPRING
301B	4822 413 41641 4822 413 31572	KNOB FOR REC VR. (DD-92) KNOB FOR REC VR. (DD-82)	047N	4822 443 63791	MOVEMENT
302B	4822 413 41642 4822 413 31573	KNOB FOR BL/SEL/LEV/TIM/DOLBY (DD-92) KNOB FOR BL/SEL/LEV/TIM/DOLBY (DD-82)	049N	4822 403 70787	PAD
303B	4822 410 60358 4822 410 60194	BUTTON FOR POWER SW. (DD-92) BUTTON FOR POWER SW. (DD-82)	051N	4822 528 40349	PULLEY
401B	4822 256 92006	HOLDER FOR FL DISPLAY	053N	4822 358 31232	BELT
402B	4822 454 12431	STICKER	055N	4822 403 70788	LEVER
405B	4822 255 41281	HOLDER FOR SANDBY LED	061N	4822 464 50941	FRAME
002D	4822 447 50121	SIDE DIECAST PANEL (DD-92)	073N	4822 520 40293	BALL
011D	4822 502 12511 4822 501 11008	B.T. SCREW (W/W) (DD-82) [/01] B.T. SCREW (W/W) (DD-82) [/02/05/07]	075N	4822 532 21196	FLAT WASHER, L
012D	4822 444 60607	CAP FOR SIDE PANEL SCREW(DD-92)	077N	4822 462 71886	STOPPER WASHER
009G	4822 462 41993	LEG	079N	4822 528 40352	PULLEY
025G	4822 502 12512	B.T.SCREW (W/W)	087N	4822 502 12245	P.H.M. SCREW
040G	4822 403 70833	LINK FOR POWER BUTTON	089N	4822 502 12526	P.H.M. SCREW
			091N	4822 401 11485	CLAMPER
			093N	4822 462 71886	STOPPER WASHER
			094N	4822 528 40351	PULLEY
			095N	4822 532 12233	WASHER
			096N	4822 532 12233	LEAF SPRING FOR SLIDER OPEN
			097N	4822 492 71237	LEAF SPRING FOR ESD
			098N	4822 492 71236	BELT
			099N	4822 358 31233	PROTECTOR, CASSETTE CLAMPER
			110N	4822 466 62293	SPRING
			118N	4822 532 12205	WASHER FOR LEVER
			001M	4822 691 20777	MECHANISM ASSY
			M051	4822 361 60467	D.C.MOTOR, 8V TRAY
			S051	4822 277 21132	SLIDE SWITCH, CLOSE
			S052	4822 277 21132	SLIDE SWITCH, OPEN





REF. DESIG.	PART NO.	DESCRIPTION	REF. DESIG.	PART NO.	DESCRIPTION
001M	4822 691 20777	MECHANISM ASSY			
002M	4822 464 50942	MECHANISM BASE			
003M	4822 403 70794	BRAKE LEVER			
004M	4822 403 70786	SUSTAINER, THRUST RETAINER			
005M	4822 522 33307	MAIN GEAR			
010M	4822 502 21266	SCREW, HEAD ASSY			
012M	4822 464 50955	HEAD CHASSIS			
013M	4822 492 33364	SPRING, HEAD CHASSIS			
020M	4822 528 10865	REEL, DAI			
030M	4822 403 70839	REVERS LEVER			
031M	4822 492 52341	SPRING, HEAD PRESS			
033M	4822 492 33365	LEVER SPRING			
040M	4822 492 33366	SPRING, BRAKE LEVER			
060M	4822 528 81484	PINCHROLLEA ASSY(R)			
061M	4822 492 71233	SPRING, FOR PINCHROLLEA(R)			
070M	4822 502 21267	SPRING, FOR SENSOR RETAINOR			
071M	4822 502 21268	SPRING, FOR END SENSOR			
080M	4822 492 33367	SPRING, HEAD CHASSIS			
090M	4822 528 81485	PINCH ROLLER ASSY(F)			
091M	4822 492 71234	SPRING FOR PINCHROLLEA(F)			
100M	4822 502 21269	SPRING, FOR DCC SENSOR SW			
110M	4822 502 21271	SPRING, FOR MOTOR BASE			
111M	4822 502 21272	SPRING, FOR MOTOR BASE			
112M	4822 403 70838	MOTOR BRACKET			
113M	4822 532 12232	SPACER			
114M	4822 502 21273	SPRING, FOR REEL MOTOR			
115M	4822 532 12206	WASHER			
120M	4822 462 71885	BUFFER FOR DC MOTOR			
121M	4822 502 21274	SCREW FOR DC MOTOR			
130M	4822 502 21275	SCREW FOR SWITCH PCB			
140M	4822 522 33308	IDOL GEAR			
141M	4822 522 33309	REEL MOTOR GEAR			
143M	4822 502 21265	SCREW FOR BRAKE SOLENOID			
150M	4822 358 31234	CAPSTAN BELT			
151M	4822 528 60402	FLY WHEEL(F)			
152M	4822 528 60403	FLY WHEEL(R)			
160M	4822 492 71235	SPRING			
170M	4822 492 71302	LEAF SPRING			
180M	4822 522 33311	GEAR			
181M	4822 492 33368	SPRING			
182M	4822 492 33369	SPRING			
190M	4822 403 70791	LEVER			
200M	4822 403 70792	LEVER			
D071	4822 130 32778	DIODE TRIGER 1SS133TA			
D072	4822 130 32778	DIODE TRIGER 1SS133TA			
H071	4822 403 70793	HEAD ASSY (HEAD BLOCK)			
H702	4822 249 10474	REC/PLAY DCC 20CH HEAD			
L071	4822 281 50177	SOLENOID COIL, TRIGER			
L072	4822 281 50176	SOLENOID COIL, BRAKE			
M071	4822 361 21589	D.C.MOTOR, 12V MAIN (CAPSTAN)			
M072	4822 361 21588	D.C.MOTOR, 8V REEL (FWD/REV)			
Q071	4822 130 83233	PHOTO UNIT TAKE-UP GP2S06BC			
Q072	4822 130 83233	PHOTO UNIT SUPPLY GP2S06BC			
Q073	4822 130 83232	PHOTO UNIT QUICK SENSOR			
		SPI1-306-03			
S071	4822 271 30789	MINI SWITCH MODE			
S072	4822 271 30791	MINI SWITCH TAPE IN			
S073	4822 271 30791	MINI SWITCH CrO2			
S091	4822 276 13345	PUSH SWITCH LENGTH			
S092	4822 176 13344	PUSH SWITCH DCC			

ELECTRICAL PARTS LIST**ASSIGNMENT OF COMMON PARTS CODES.**

RESISTOR

(1) GD05---140, Carbon film fixed resistor, $\pm 5\%$, 1/4W
(2) GD05---160, Carbon film fixed resistor, $\pm 5\%$, 1/6W

① — Resistance value

Examples

①	Resistance value
0.1Ω ... 001	10Ω ... 100
0.5Ω ... 005	18Ω ... 180
1Ω ... 010	100Ω ... 101
6.8Ω ... 068	390Ω ... 391
1kΩ ... 102	2.7kΩ ... 272
10kΩ ... 103	680kΩ ... 684
1MΩ ... 105	1MΩ ... 105
22kΩ ... 223	4.7MΩ ... 475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*: CERAMIC CAP.**(1) DD1---370, Ceramic condenser
Disc type
①② Temp. coeff. P350 — N1000, 50V
Capacity value
Tolerance

Examples ① Tolerance (Capacity deviation)

 $\pm 0.25\text{pF}$... 0
 $\pm 0.5\text{pF}$... 1
 $\pm 5\%$... 5

* Tolerance of COMMON PARTS handled here are as follows.

0.5pF ~ 5pF ... $\pm 0.25\text{pF}$
6pF ~ 10pF ... $\pm 0.5\text{pF}$
12pF ~ 560pF ... $\pm 5\text{pF}$
② Capacity value
0.5pF ... 005 3pF ... 030 100pF ... 101
1pF ... 010 10pF ... 100 220pF ... 221
1.5pF ... 015 47pF ... 470 560pF ... 561**C***: CERAMIC CAP.**
(1) DK16---300, High dielectric constant ceramic condenser
Disc type
① Temp. chara. 2B4, 50V
Capacity valueExamples ② Capacity value
100pF ... 101 1000pF ... 102 10000pF ... 103
470pF ... 471 2200pF ... 222**C***: ELECTROLY CAP. ($\frac{1}{2}$), FILM CAP. ($\frac{1}{2}$)
(1) EA---10, Electrolytic condenser
One-way lead type, Tolerance $\pm 20\%$** ①② Dielectric strength
Capacity valueExamples ① Capacity value
0.1μF ... 104 4.7μF ... 475 100μF ... 107
0.33μF ... 334 10μF ... 106 330μF ... 337
1μF ... 105 22μF ... 226 1100μF ... 108
2200μF ... 228② Working voltage
6.3V ... 006 25V ... 025
10V ... 010 35V ... 035
16V ... 016 50V ... 050(2) DF15---350, Plastic film condenser
One-way type, Mylar $\pm 5\% 50V$
① Capacity valueExamples ① Capacity value
0.001μF (1000pF) ... 102 0.1μF ... 104
0.0018μF 182 0.56μF ... 564
0.01μF 103 1μF ... 105
0.015μF 153

REF. DESIG.	PART NO.	DESCRIPTION
PA03-AD/DA CIRCUIT BOARD		
PA03-CAPACITORS		
C202	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C203	4822 124 22237	ELECT 10μF 16V
C204	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C205	4822 124 22237	ELECT 10μF 16V
C206	4822 124 22237	ELECT 10μF 16V
C207	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C208	4822 124 90352	ELECT 10μF 16V
C210	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C211	4822 124 22237	ELECT 10μF 16V
C212	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C214	4822 124 23511	ELECT 100μF 25V
C215	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C216	4822 124 23511	ELECT 100μF 25V
C217	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C218	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C220	4822 124 90389	ELECT 4.7μF 25V
C221	4822 124 90389	ELECT 4.7μF 25V
C222	4822 124 90389	ELECT 4.7μF 25V
C225	4822 126 11728	ELECT 220μF 16V
C228	4822 124 90389	ELECT 4.7μF 25V
C231	4822 124 90389	ELECT 4.7μF 25V
C232	4822 124 90389	ELECT 4.7μF 25V
C236	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C301	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C302	4822 124 41537	ELECT 220μF 6.3V
C305	4822 124 41539	ELECT 47μF 16V
C306	4822 124 41539	ELECT 47μF 16V
C309	4822 124 41537	ELECT 220μF 6.3V
C310	4822 124 41537	ELECT 220μF 6.3V
C329	4822 126 12523	CERAMIC 56PF $\pm 5\%$ CHIP
C330	4822 126 12523	CERAMIC 56PF $\pm 5\%$ CHIP
C333	5322 122 32336	FILM 560PF $\pm 5\%$ 50V
C334	5322 122 32336	FILM 560PF $\pm 5\%$ 50V
C335	4822 126 11728	ELECT 220μF 16V
C336	4822 126 11728	ELECT 220μF 16V
C343	4822 121 41857	FILM 0.01μF $\pm 10\%$
C346	4822 124 90364	ELECT 220μF 16V
C347	4822 124 90364	ELECT 220μF 16V
C348	4822 124 90364	ELECT 220μF 16V
C349	4822 126 11728	ELECT 220μF 16V
C350	4822 126 11728	ELECT 220μF 16V
C351	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C377	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C379	4822 124 41537	ELECT 220μF 6.3V
C380	4822 124 41537	ELECT 220μF 6.3V
C381	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C388	4822 124 41537	ELECT 220μF 6.3V
C389	4822 124 41537	ELECT 220μF 6.3V
C390	4822 124 41537	ELECT 220μF 6.3V
C391	4822 126 12524	CERAMIC 820PF $\pm 5\%$ CHIP
C392	4822 126 12524	CERAMIC 820PF $\pm 5\%$ CHIP
C393	4822 122 32786	CERAMIC 220PF $\pm 5\%$ CHIP
C396	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
C397	4822 126 11687	CERAMIC 0.1μF +80% -20% CHIP
R201	4822 117 10148	PA03-RESISTORS
R204	4822 051 30103	51Ω $\pm 1\%$ 1/10W, CHIP
R205	4822 117 10148	10KΩ $\pm 5\%$ 1/16W, CHIP
R206	4822 117 10149	51Ω $\pm 1\%$ 1/10W, CHIP
R207	4822 117 10149	120Ω $\pm 5\%$ 1/2W, CHIP
▲R208	4822 111 90967	4.7Ω $\pm 5\%$ 1/4W, FUSE
R221	4822 051 30104	100KΩ $\pm 5\%$ 1/16W, CHIP
R222	4822 051 30104	100KΩ $\pm 5\%$ 1/16W, CHIP
R223	4822 117 10148	51Ω $\pm 1\%$ 1/10W, CHIP
R224	4822 117 10148	51Ω $\pm 1\%$ 1/10W, CHIP
R225	4822 117 10149	120Ω $\pm 5\%$ 1/2W, CHIP
R228	4822 117 10149	120Ω $\pm 5\%$ 1/2W, CHIP
R229	4822 051 30223	22KΩ $\pm 5\%$ 1/16W, CHIP
R230	4822 051 30223	22KΩ $\pm 5\%$ 1/16W, CHIP
R231	4822 051 30222	2.2KΩ $\pm 5\%$ 1/16W, CHIP
R232	4822 051 30222	2.2KΩ $\pm 5\%$ 1/16W, CHIP
R233	4822 051 30102	1KΩ $\pm 5\%$ 1/16W, CHIP
R234	4822 051 30102	1KΩ $\pm 5\%$ 1/16W, CHIP
R235	4822 116 83211	1.8KΩ $\pm 5\%$ 1/16W, CHIP
R236	4822 116 83211	1.8KΩ $\pm 5\%$ 1/16W, CHIP
R237	4822 051 30473	47KΩ $\pm 5\%$ 1/16W, CHIP
R238	4822 051 30473	47KΩ $\pm 5\%$ 1/16W, CHIP
▲R301	4822 111 90967	4.7Ω $\pm 5\%$ 1/4W, FUSE
R302	4822 051 30105	1MΩ $\pm 5\%$ 1/16W, CHIP
▲R304	4822 111 90967	4.7Ω $\pm 5\%$ 1/4W, FUSE
▲R305	4822 111 90967	4.7Ω $\pm 5\%$ 1/4W, FUSE
R306	4822 051 30102	1KΩ $\pm 5\%$ 1/16W, CHIP
R308	4822 051 30222	2.2KΩ $\pm 5\%$ 1/16W, CHIP
R309	4822 111 90883	10KΩ $\pm 1\%$ 1/10W, CHIP
R311	4822 111 90883	10KΩ $\pm 1\%$ 1/10W, CHIP
R312	4822 111 90883	10KΩ $\pm 1\%$ 1/10W, CHIP
R313	4822 116 83255	3.3KΩ $\pm 1\%$ 1/10W, CHIP
R316	4822 111 90883	10KΩ $\pm 1\%$ 1/10W, CHIP
R317	4822 111 90883	10KΩ $\pm 1\%$ 1/10W, CHIP
R318	4822 111 90883	2.6KΩ $\pm 1\%$ 1/10W, CHIP
R319	4822 117 10183	2.6KΩ $\pm 1\%$ 1/10W, CHIP
R320	4822 117 10183	2.6KΩ $\pm 1\%$ 1/10W, CHIP
▲R321	4822 111 90967	4.7Ω $\pm 5\%$ 1/4W, FUSE
▲R322	4822 111 90967	4.7Ω $\pm 5\%$ 1/4W, FUSE
R323	4822 117 10183	2.6KΩ $\pm 1\%$ 1/10W, CHIP
R324	4822 117 10183	2.6KΩ $\pm 1\%$ 1/10W, CHIP
R325	4822 051 30102	1KΩ $\pm 5\%$ 1/16W, CHIP
R326	4822 051 30102	1KΩ $\pm 5\%$ 1/16W, CHIP
R327	4822 051 30682	6.8KΩ $\pm 5\%$ 1/16W, CHIP
R328	4	

REF. DESIG.	PART NO.	DESCRIPTION
		PD03-FRONT FLD/KEY SW CIRCUIT BOARD
		PD03-CAPACITORS
CD01	4822 124 22318	ELECT 10μF 16V
CD02	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CV01	4822 124 22318	ELECT 10μF 16V
CV02	4822 124 22318	ELECT 10μF 16V
		PD03-RESISTORS
GD01	4822 111 92126	47KΩ X 10 COMPO.
GD02	4822 111 92125	47KΩ X 9 COMPO.
GD03	4822 111 92124	47KΩ X 8 COMPO.
GD04	4822 111 92123	47KΩ X 7 COMPO.
RH01	4822 100 11967	20KΩ X2 VARIABLE HEAD PHONE VR.
RV01	4822 100 11947	50KΩ X2 VARIABLE REC VR.
RV02	4822 100 11966	100KΩ X2 VARIABLE VALANCE VR.
		PD03-SEMICONDUCTORS
DD04	4822 130 33305	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DD07		
QD01	4822 209 31937	MICROPROCESSOR, FRONT μPD75238 CHIP
		PD03-MISCELLANEOUS
JD01	4822 265 31036	JACK, CARD FIT TYPE CONNECTOR 25P
SD01	4822 276 20508	PUSH SWITCH
SD03	4822 276 20508	PUSH SWITCH
SD06	4822 276 20508	PUSH SWITCH
SD08	4822 276 20508	PUSH SWITCH
SD09	4822 276 20508	PUSH SWITCH
SD15	4822 276 20508	PUSH SWITCH
SD17		
SD19	4822 276 20508	PUSH SWITCH
SD29		
SD32	4822 273 10263	ROTARY SWITCH DOLBY SW.
SD33	4822 273 10263	ROTARY SWITCH INPUT SELECTOR
VD01	4822 130 91212	FL DISPLAY UNIT FIP16BM7R
WD01	4822 321 61852	JUMPER LEAD, 25P CARD TYPE
XD01	4822 242 72194	CERAMIC VIB. 4.19MHZ
		PD04-IR-SENSOR/KEY SW CIRCUIT BOARD
CD03	4822 124 80397	PD04-CAPACITOR ELECT 47μF 16V
		PD04-SEMICONDUCTORS
DD01	4822 130 80326	L.E.D. LT3D8B RED
QD02	4822 130 81254	PHOTO UNIT, GP1U520X 36.0KHZ
		PD04-MISCELLANEOUS
SD10	4822 276 20508	PUSH SWITCH
SD14	4822 273 10258	ROTARY SWITCH TIMER

REF. DESIG.	PART NO.	DESCRIPTION
		PG03-MAIN CIRCUIT BOARD
		PG03-CAPACITROS
CA01	4822 124 90352	ELECT 10μF 16V
CA02	4822 122 40589	CERAMIC 0.047μF ± 5% 50V
CA04	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CA05	4822 122 40589	CERAMIC 0.047μF ± 5% 50V
CA06	4822 124 90362	ELECT 22μF 50V
CA07	4822 126 10364	CERAMIC 100PF ± 10%
CA08	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CA09	4822 124 90362	ELECT 22μF 50V
CA12	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CA13	4822 126 10364	CERAMIC 100PF ± 10%
CA17	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CA19		
CH01	4822 124 90364	ELECT 220μF 16V
CH02	4822 124 90364	ELECT 220μF 16V
CH03	4822 124 22274	ELECT 4.7μF 50V
CH04	4822 124 22274	ELECT 4.7μF 50V
CL01	4822 124 90352	ELECT 10μF 16V
CL04		
CL05	4822 124 90354	ELECT 100μF 16V
CL06	4822 124 90354	ELECT 100μF 16V
CM01	4822 124 90354	ELECT 100μF 16V
CM21	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
CM22	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
CM51	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
CM52	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
CQ01	4822 124 22703	ELECT 0.22μF 50V
CQ02	4822 124 22273	ELECT 0.47μF 50V
CQ04	4822 122 30103	CERAMIC 0.022μF +80% -20% 50V
CQ08	4822 124 90354	ELECT 100μF 16V
CQ10	4822 122 40588	CERAMIC 0.022μF ± 20% 50V
CQ21	4822 126 10364	CERAMIC 100PF ± 10%
CQ22	4822 122 30103	CERAMIC 0.022μF +80% -20% 50V
CQ51	4822 124 90352	ELECT 10μF 16V
CQ52	4822 124 90352	ELECT 10μF 16V
CQ53	4822 124 41539	ELECT 47μF 16V
CQ54	4822 124 41539	ELECT 47μF 16V
CQ55	4822 124 90352	ELECT 10μF 16V
CR01	4822 124 90352	ELECT 10μF 16V
CR02	4822 122 30103	CERAMIC 0.022μF +80% -20% 50V
CR03	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CR04	4822 126 10364	CERAMIC 100PF ± 10%
CR06	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CU01	4822 124 41539	ELECT 47μF 16V
CU02	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CU21	4822 124 41539	ELECT 47μF 16V
CU22	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
CU31	4822 124 41543	ELECT 1μF 50V
CU51	4822 124 90354	ELECT 100μF 16V
CU52	4822 124 22571	ELECT 10μF 50V
CU53	4822 124 90357	ELECT 2.2μF 50V
CU54	4822 124 90354	ELECT 100μF 16V
CU81	4822 124 41539	ELECT 47μF 6V
CU82	4822 122 40617	CERAMIC 0.1μF +80% -20% 50V
C031	4822 124 22274	ELECT 4.7μF 50V
C032	4822 124 90352	ELECT 10μF 16V
C033	4822 124 90357	ELECT 2.2μF 50V
C451	4822 124 22277	ELECT 470μF 16V
C601	4822 124 22274	ELECT 4.7μF 50V
C604		

REF. DESIG.	PART NO.	DESCRIPTION
C609	4822 124 23445	ELECT 0.56μF 50V
C610	4822 124 23445	ELECT 0.56μF 50V
C613	4822 124 23112	ELECT 10μF 16V
C622	4822 124 90354	ELECT 100μF 16V
C623	4822 124 90364	ELECT 100μF 16V
C635	4822 124 90364	ELECT 220μF 16V
C636	4822 124 90364	ELECT 220μF 16V
C639	4822 126 10408	CERAMIC 220PF ± 10%
C640	4822 126 10408	CERAMIC 220PF ± 10%
C721	4822 124 22274	ELECT 4.7μF 50V
C722	4822 124 22274	ELECT 4.7μF 50V
C726	4822 124 41539	ELECT 47μF 16V
C727	4822 124 41539	ELECT 47μF 16V
C728	4822 124 90364	ELECT 220μF 16V
C729	4822 124 90364	ELECT 220μF 16V
C731	4822 124 90354	ELECT 100μF 16V
C732	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
C733	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
C751	4822 126 10364	CERAMIC 100PF ± 10%
C752	4822 126 10364	CERAMIC 100PF ± 10%
C753	4822 124 22274	ELECT 4.7μF 50V
C754	4822 124 22274	ELECT 4.7μF 50V
C756	4822 124 90364	ELECT 220μF 16V
C757	4822 124 90364	ELECT 220μF 16V
C761	4822 126 10408	CERAMIC 220PF ± 10%
C764		
C801	4822 124 23518	ELECT 4700μF 35V
C802	4822 124 23518	ELECT 2200μF 35V
C809	4822 124 22571	ELECT 10μF 50V
C810	4822 122 40589	CERAMIC 0.047μF ± 20% 50V
C812	4822 124 90352	ELECT 10μF 16V
C813	4822 124 90352	ELECT 10μF 16V
C841	4822 124 90364	ELECT 220μF 16V
C842	4822 124 90364	ELECT 220μF 16V
C881	4822 124 22277	ELECT 470μF 16V
RA13	4822 050 23909	39Ω ± 5% 1/4W
RA15	4822 050 23909	39Ω ± 5% 1/4W
RAH02	4822 115 90166	10Ω ± 2% 1/4W, FUSE
RAH04	4822 115 90166	10Ω ± 2% 1/4W, FUSE
RL05	4822 100 20681	2.2KΩ TRIMMING, METER (L)
RL06	4822 100 20681	2.2KΩ TRIMMING, METER (R)
RL09	4822 115 90166	10Ω ± 2% 1/4W, FUSE
RL10	4822 115 90166	10Ω ± 2% 1/4W, FUSE
RM01	4822 053 10228	2.2Ω 1W
RM23	4822 113 90107	4.7Ω ± 5% 1/4W, FUSE
RM57	4822 113 90107	4.7Ω ± 5% 1/4W, FUSE
RM88	4822 116 60355	33Ω ± 5% 1W

REF. DESIG.	PART NO.	DESCRIPTION
REF. DESIG.	PART NO.	DESCRIPTION
QM03	4822 130 61725	TRANSISTOR, 2SD2010
QM04	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QM21	4822 209 61188	IC, BA6219
QM22	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QM51	4822 209 30193	IC, LB1641
QM81	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QM84	4822 130 60173	TRANSISTOR, 2SC2060(Q,R)
QM85	4822 130 60173	TRANSISTOR, 2SC2060(Q,R)
QM86	4822 130 60173	TRANSISTOR, 2SC2060(Q,R)
QM87	4822 130 63188	TRANSISTOR, 2SB1425(E, U)
QQ01	4822 209 83706	IC, BA335PK
QQ03	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QQ06	4822 130 42298	TRANSISTOR, 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QQ21	4822 130 42298	IC, BA15218
QQ51	4822 209 61187	DIGITAL TRANSISTOR, DTC114TS
QQ52	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QR01	4822 130 42715	TRANSISTOR, 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QR02	4822 130 42298	TRANSISTOR, 2SC536SP, 2SC2458, 2SC3311A, 2SC1740S
QR51	4822 130 42594	DIGITAL TRANSISTOR, DTC144ES
QR52	4822 130 42594	DIGITAL TRANSISTOR, DTC144ES
QU01	4822 209 31936	MICROPROCESSOR, MAIN μ PD75P518GF CHIP
QU02	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QU03	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU05	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU11	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU12	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QU14	4822 130 61189	DIGITAL TRANSISTOR, DTA114TS
QU16	4822 130 61189	DIGITAL TRANSISTOR, DTA114TS
QU17	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QU18	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU19	4822 130 42298	TRANSISTOR, 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QU21	4822 209 31932	IC, 74HC125AP
QU22	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
QU33	4822 130 42682	DIGITAL TRANSISTOR, DTA144ES
QU41	4822 130 42298	TRANSISTOR, 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QU52	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU53	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
QU54	4822 130 42682	DIGITAL TRANSISTOR, DTA144ES
QU55	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QU56	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QU57	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
QU61	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
QU62	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU63	4822 130 61725	TRANSISTOR, 2SD2010
QU64	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
QU65	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
QU81	4822 209 31923	IC, EEPROM BR93LC46
Q031	4822 209 31924	IC, TA75358CP
Q601	4822 209 62251	IC, DOLBYB/C NR CXA1330
Q602	4822 209 73064	IC, NJM-2068-DD
Q611	4822 130 61189	DIGITAL TRANSISTOR, DTA114TS
Q612	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
Q613	4822 130 61227	DIGITAL TRANSISTOR, DTA114ES
Q641	4822 130 61723	DIGITAL TRANSISTOR, DTC323TS 2.2K
Q642	4822 130 61723	DIGITAL TRANSISTOR, DTC323TS 2.2K
Q671	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
Q672	4822 130 60588	DIGITAL TRANSISTOR, DTC114ES
Q701	4822 130 63189	TRANSISTOR, 2SD2159 (U, V)
Q702	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
Q720	4822 209 61187	IC, BA15218
Q731	4822 209 73287	IC, LB1630
Q751	4822 209 73064	IC, NJM-2068-DD
Q761	4822 130 61189	TRANSISTOR, 2SD2144S (U, V)
Q768	4822 130 61189	TRANSISTOR, 2SD2159 (U, V)
Q806	4822 130 63189	TRANSISTOR, 2SD2159 (U, V)
Q807	4822 130 63188	TRANSISTOR, 2SB1425 (E, U)
Q809	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
Q810	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
▲Q811	4822 209 31925	IC, PQ05RA11 1A,5V
▲Q812	4822 209 62941	IC, NJM78M08FA
Q843	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
PG03-MISCELLANEOUS		
JA01	4822 265 31042	OPTICAL CONNECTOR, PLT102, OUT
JA02	4822 265 31043	OPTICAL CONNECTOR TORX176, IN
JA03	4822 265 31044	RCA JACK, 2P COAX IN/OUT
JR01	4822 267 41009	RCA PIN JACK, 2P ORG
JU02	4822 265 51347	JACK, 25P CARD TYPE
J311	4822 265 31034	JACK, 6P
J312	4822 265 31035	JACK, 11P
J313	4822 265 31034	JACK, 6P
J421	4822 265 31039	JACK, 50P (25X2)
J740	4822 265 31045	RCA JACK W/R GOLD 2P
J741	4822 265 31045	RCA JACK W/R GOLD 2P
J742	4822 265 31045	RCA JACK W/R GOLD 2P
LA01	4822 142 60388	PULSE TRANSFORMER
LA02	4822 157 53813	CHOKE COIL, 10 μ H
LA03	4822 157 53585	CHOKE COIL, 47 μ H
L701	4822 280 20183	RELAY, SZ-2103 12V
L711	4822 526 10543	FERRITE CORE
L718	4822 526 10584	FERRITE CORE
L721	4822 526 10584	FERRITE CORE
SR01	4822 277 21559	SLIDE SWITCH REMOTE SELECT
XU01	4822 242 72194	CERAMIC VIBRATOR, 4.19MHZ
PM03-TRAY WIRE CONNECTIVE/SERVO CIRCUIT BOARD		
PM03-CAPACITORS		
C001	4822 124 22703	ELECT 0.22 μ F 50V
C002	4822 124 40721	ELECT 2.2 μ F 50V
C004	4822 126 12496	CERAMIC 0.01 μ F +80% -20% 50V
C005	4822 124 41537	ELECT 220 μ F 6.3V
C006	4822 122 40617	CERAMIC 0.1 μ F +80% -20% 50V
C007	4822 122 40617	CERAMIC 0.1 μ F +80% -20% 50V
PM03-RESISTORS		
RS02	4822 100 11235	4.7K Ω TRIMMING, SIDE A
RS03	4822 111 92128	130 Ω THERMISTOR
RS08	4822 100 11452	470 Ω TRIMMING, SIDE B
R018	4822 116 82752	10K Ω ± 1% 1/6W
R019	4822 116 82752	10K Ω ± 1% 1/6W
R031	4822 050 21501	150 Ω ± 5% 1/4W
R036	4822 100 20539	22K Ω TRIMMING, Q. SENSOR
PM03-SEMICONDATORS		
D001	4822 130 33305	DIODE, 1SS176,MA165,ISS254 30V 0.1A
D002	4822 130 81424	ZENER DIODE, BZV86-2V0

REF. DESIG.	PART NO.	DESCRIPTION
REF. DESIG.	PART NO.	DESCRIPTION
Q701	4822 130 63189	TRANSISTOR, 2SD2159 (U, V)
Q702	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
Q720	4822 209 61187	IC, BA15218
Q731	4822 209 73287	IC, LB1630
Q751	4822 209 73064	IC, NJM-2068-DD
Q761	4822 130 61189	TRANSISTOR, 2SD2144S (U, V)
Q768	4822 130 61189	TRANSISTOR, 2SD2159 (U, V)
Q806	4822 130 63189	TRANSISTOR, 2SD2159 (U, V)
Q807	4822 130 63188	TRANSISTOR, 2SB1425 (E, U)
Q809	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
Q810	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
▲Q811	4822 209 31925	IC, PQ05RA11 1A,5V
▲Q812	4822 209 62941	IC, NJM78M08FA
Q843	4822 130 61189	DIGITAL TRANSISTOR, DTC114TS
PG03-MISCELLANEOUS		
JA01	4822 265 31042	OPTICAL CONNECTOR, PLT102, OUT
JA02	4822 265 31043	OPTICAL CONNECTOR TORX176, IN
JA03	4822 265 31044	RCA JACK, 2P COAX IN/OUT
JR01	4822 267 41009	RCA PIN JACK, 2P ORG
JU02	4822 265 51347	JACK, 25P CARD TYPE
J311	4822 265 31034	JACK, 6P
J312	4822 265 31035	JACK, 11P
J313	4822 265 31034	JACK, 6P
J421	4822 265 31039	JACK, 50P (25X2)
J740	4822 265 31045	RCA JACK W/R GOLD 2P
J741	4822 265 31045	RCA JACK W/R GOLD 2P
J742	4822 265 31045	RCA JACK W/R GOLD 2P
LA01	4822 142 60388	PULSE TRANSFORMER
LA02	4822 157 53813	CHOKE COIL, 10 μ H
LA03	4822 157 53585	CHOKE COIL, 47 μ H
L701	4822 280 20183	RELAY, SZ-2103 12V
L711	4822 526 1054	

REF. DESIG.	PART NO.	DESCRIPTION
C193	4822 126 12498	CERAMIC 39PF ± 5% CHIP
C194	4822 126 11566	CERAMIC 2200PF ± 10% CHIP
C195	4822 126 11566	CERAMIC 2200PF ± 10% CHIP
C196	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
		PW03-RESISTORS
R101	4822 100 11943	4.7KΩ ± 25% 1/10W, TRIMMING, A BIAS CHIP
R102	4822 100 11943	4.7KΩ ± 25% 1/10W, TRIMMING, B BIAS CHIP
R103	4822 051 30473	47KΩ ± 5% 1/16W, CHIP
R104	4822 051 30473	47KΩ ± 5% 1/16W, CHIP
R105	4822 051 30303	30KΩ ± 5% 1/16W, CHIP
R106	4822 051 30303	30KΩ ± 5% 1/16W, CHIP
R107	4822 051 30154	150KΩ ± 5% 1/16W, CHIP
R108	4822 051 30154	150KΩ ± 5% 1/16W, CHIP
R109	4822 100 11943	4.7KΩ ± 25% 1/10W, TRIMMING, A BIAS CHIP
R110	4822 100 11943	4.7KΩ ± 25% 1/10W, TRIMMING, B BIAS CHIP
		PW03-MISCELLANEOUS
R111	4822 051 30109	10Ω ± 5% 1/16W, CHIP
R114	4822 051 30561	560Ω ± 5% 1/16W, CHIP
R115	4822 051 30561	560Ω ± 5% 1/16W, CHIP
R116	4822 116 82487	0Ω , CHIP
R121	4822 051 30682	6.8KΩ ± 5% 1/16W, CHIP
R122	4822 051 30683	68KΩ ± 5% 1/16W, CHIP
R125	4822 051 30104	100KΩ ± 5% 1/16W, CHIP
R127	4822 051 30102	1KΩ ± 5% 1/16W, CHIP
R128	4822 051 30102	1KΩ ± 5% 1/16W, CHIP
R129	4822 051 30479	47Ω ± 5% 1/16W, CHIP
R130	4822 051 30471	470Ω ± 5% 1/16W, CHIP
R131	4822 051 30331	330Ω ± 5% 1/16W, CHIP
R132	4822 051 30561	560Ω ± 5% 1/16W, CHIP
R133	4822 116 83221	8.2KΩ ± 5% 1/16W, CHIP
R134	4822 116 83208	12KΩ ± 5% 1/16W, CHIP
R135	4822 100 11604	1KΩ ± 25% 1/10W, TRIMMING, D OUT CHIP
R136	4822 116 83214	39KΩ ± 5% 1/16W, CHIP
R137	4822 116 83352	560Ω ± 5% 1/10W, CHIP
R145	4822 051 30561	560Ω ± 5% 1/16W, CHIP
R146	4822 111 92129	22Ω ± 1% 1/4W, CHIP
R151	4822 111 92131	2.2Ω ± 5% 1/4W, CHIP
R155	4822 111 92133	180Ω ± 5% 1/4W, CHIP
R158	4822 051 30229	22Ω ± 5% 1/16W, CHIP
R166	4822 051 30229	22Ω ± 5% 1/16W, CHIP
R167	4822 100 11941	100Ω TRIMMING, I REC, CHIP
R171	4822 051 30472	4.7KΩ ± 5% 1/16W, CHIP
R172	4822 051 30472	4.7KΩ ± 5% 1/16W, CHIP
R180	4822 051 30102	1KΩ ± 5% 1/16W, CHIP
R181	4822 051 30331	330Ω ± 5% 1/16W, CHIP
R182	4822 051 30109	10Ω ± 5% 1/16W, CHIP
R183	4822 116 83221	8.2KΩ ± 5% 1/16W, CHIP
R184	4822 111 91077	56Ω ± 5% 1/10W, CHIP
R185	4822 116 83211	1.8KΩ ± 5% 1/16W, CHIP
R186	4822 116 83218	68Ω ± 5% 1/16W, CHIP
R187	4822 111 92127	40Ω THERMISTOR, CHIP
R192	4822 116 83211	1.8KΩ ± 5% 1/16W, CHIP
R193	4822 051 30152	1.5KΩ ± 5% 1/16W, CHIP
R194	4822 051 30561	560Ω ± 5% 1/16W, CHIP
R195	4822 051 30101	100Ω ± 5% 1/16W, CHIP
R196	4822 051 30101	27Ω ± 5% 1/16W, CHIP
R197	4822 051 30399	39Ω ± 5% 1/16W, CHIP
R198	4822 051 30399	39Ω ± 5% 1/16W, CHIP

REF. DESIG.	PART NO.	DESCRIPTION
Q101	4822 209 31918	PW03-SEMICONDUCTORS
Q102	4822 130 43398	IC, READ AMP TDA1317 CHIP
Q103	4822 130 43398	TRANSISTOR, 2SC2712(G), CHIP
Q104	4822 130 43954	TRANSISTOR, 2SD999 (CL,CK), CHIP
Q105	4822 130 42733	TRANSISTOR, 2SA1162-G, CHIP
Q106	4822 130 43398	TRANSISTOR, 2SC2712(G), CHIP
Q151	4822 209 31919	IC, WRITE AMP TDA1316TN-T CHIP
Q153	4822 130 62522	DIGITAL TRANSISTOR, UN2217 22K CHIP
Q180	4822 130 43398	TRANSISTOR, 2SC2712(G), CHIP
Q181	4822 209 62503	IC, 74HC4053 CHIP
Q182	4822 209 31934	IC, 74HC175 CHIP
Q183	4822 209 31928	IC, CMOS 74HC00 CHIP
Q184	4822 209 31933	IC, 74HC163 CHIP
Q185	4822 209 63341	IC, 74HC02 CHIP
Q190	4822 130 43398	TRANSISTOR, 2SC2712(G), CHIP
		PW03-MISCELLANEOUS
J101	4822 265 31041	JACK, 30P GOLD
J103	4822 265 31037	JACK, 18P CFM
J111	4822 116 83251	CHECKER CHIP
J112	4822 116 83251	CHECKER CHIP
J121	4822 116 83251	CHECKER CHIP
J122	4822 116 83251	CHECKER CHIP
J151	4822 116 83251	CHECKER CHIP
J152	4822 116 83251	CHECKER CHIP
L101	4822 157 70268	CHOKE COIL 15µH ±20% 5MA CHIP
L102	4822 157 70268	CHOKE COIL 15µH ±20% 5MA CHIP
W103	4822 321 61806	JUMPER LEAD, 18P CARD TYPE
		PZ03-DIGITAL CIRCUIT BOARD
C401	4822 126 11687	PZ03-CAPACITORS
C406	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C409	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C410	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C411	4822 126 11565	CERAMIC 0.01µF ± 10% CHIP
C412	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C418	4822 126 11668	CERAMIC 220PF ±5% 50V CHIP
C423	4822 124 11074	TANTLUM 10µF 16V CHIP
C424	4822 124 11226	TANTLUM 22µF 6.3V CHIP
C425	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C426	4822 124 11332	TANTLUM 2.2µF 50V CHIP
C427	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C428	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C429	4822 124 11074	TANTLUM 10µF 16V CHIP
C430	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C431	4822 124 11074	TANTLUM 10µF 16V CHIP
C432	4822 122 33777	CERAMIC 47PF ±5% 50V CHIP
C433	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C434	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C440	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C441	4822 126 12504	CERAMIC 0.039µF +80% -20% CHIP
C442	4822 126 12499	CERAMIC 0.47µF +80% -20% CHIP
C443	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
		PZ03-SEMICONDUCTORS
C446	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C447	4822 124 11074	TANTLUM 10µF 16V CHIP
C448	4822 126 11562	CERAMIC 100PF ±5% 50V CHIP
C449	4822 126 11687	CERAMIC 0.1µF +80% -20% CHIP
C450	4822 124 11074	TANTLUM 10µF 16V CHIP
C451	4822 122 33744	CERAMIC 100PF ± 5% 50V CHIP
C453	4822 122 33744	CERAMIC 100PF ± 5% 50V CHIP
C457	4822 122 33753	CERAMIC 150PF ±5% 50V CHIP

REF. DESIG.	PART NO.	DESCRIPTION	REF. DESIG.	PART NO.	DESCRIPTION
C471	4822 126 12497	CERAMIC 7PF ±0.5PF 50V CHIP	Q423	4822 209 31917	IC, DEQ2 SAA2051 CHIP
C474	4822 126 12497		Q441	4822 209 31922	IC, DAI M51581FD CHIP
RJ03	4822 116 82487	PZ03-RESISTORS	Q442	4822 209 61534	IC, CMOS 74HCU04 CHIP
RJ04	4822 116 82487	0Ω ± 5% 1/16W, CHIP	Q443	4822 209 31909	IC, NE5230D CHIP
RJ04	4822 116 82487	0Ω ± 5% 1/16W, CHIP	Q444	4822 209 31931	IC, 74HC4046 CHIP
		PZ03-MISCELLANEOUS			
R402	4822 051 30104	J408	4822 265 31038	JACK	
R411	4822 051 30222	J409	4822 116 83251	CHECKER CHIP (RD-MUX)	
R413	4822 116 82487	J441	4822 265 31039	CHECKER CHIP (VCO-CONTROL)	
R417	4822 116 82487	J442	4822 116 83251	CHECKER CHIP (RXCK)	
R418	4822 116 83207	L421	4822 157 53873	CHOKE COIL 100µH ±10% 40MA CHIP	
R423	4822 051 30272	L441	4822 157 53873	CHOKE COIL 100µH ±10%	