

Service
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Service



Service Manual



TABLE OF CONTENTS

	Page
Location of pc boards & Version variations	1-2
Technical Specifications	1-3
Measurement setup	1-4
Service Aids, Safety Instruction, etc.	1-5
Instruction for use : European version excerpt	2-1
Disassembly Instructions & Service positions	3-1
Service Test Programs	3-4
Set Block diagram	4-1
Set Wiring diagram	4-2
Front Control Board	5
Front Display Board	6
ECO6 Tuner Board : Systems Non-Cenelec	7A
ECO6 Tuner Board : Systems Cenelec	7B
ETF7 ND Tape Module	9
ETF7 DB Tape Module	9A
3CDC-LC-MB-DA11 Module	10
Power 2001 Module (30-70W Version)	11
AF9 Board	12
Set Mechanical Exploded view & parts list	13



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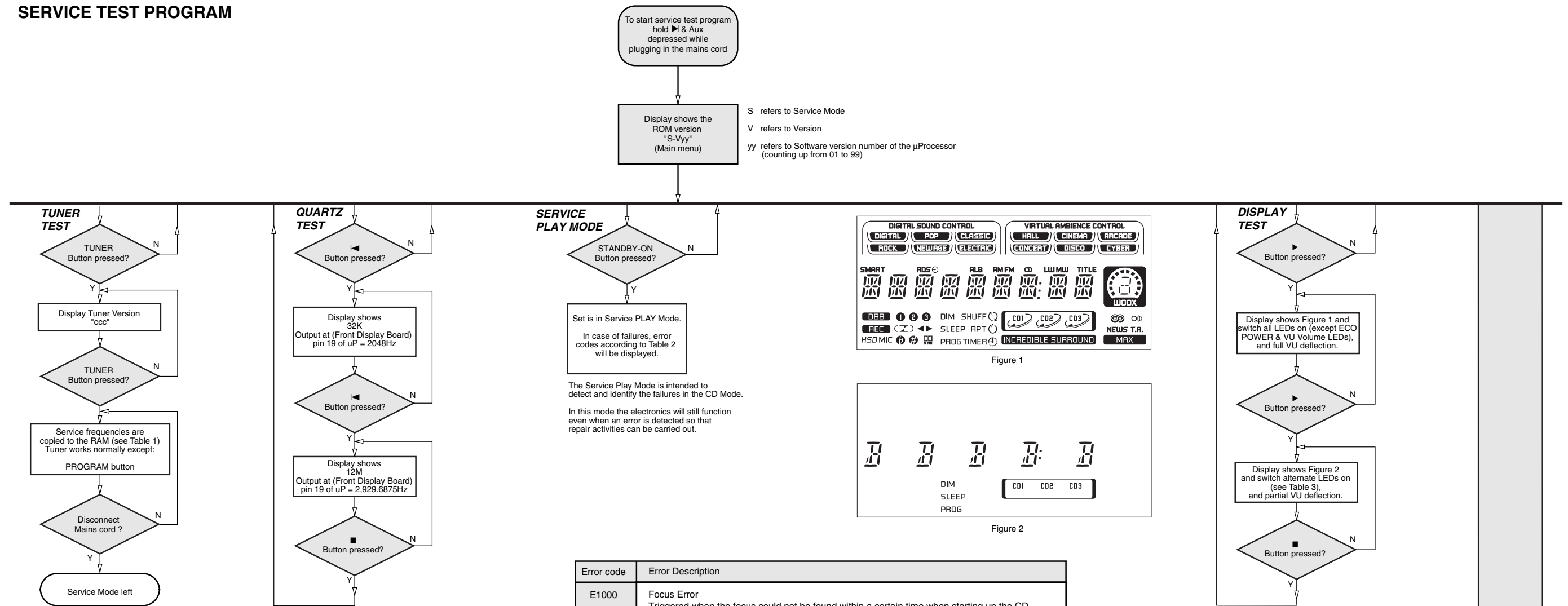


3139 785 22640



PHILIPS

SERVICE TEST PROGRAM



PRESET	Europe "EUR"	East Eur. "EAS"	East Eur. Extended-band "EAS"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	65.81MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	531kHz	74MHz	530kHz	531/530kHz*
4	1602kHz	1602kHz	87.5MHz	1700kHz	1602/1700kHz*
5	558kHz	558kHz	531kHz	560kHz	558/560kHz*
6	1494kHz	1494kHz	1602kHz	1500kHz	1494/1500kHz*
7	153kHz	87.5MHz	558kHz	98MHz	87.5MHz
8	279kHz	87.5MHz	1494kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	98MHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	70.01MHz	87.5MHz	87.5MHz
11	87.5MHz	98MHz	65.81MHz	87.5MHz	98MHz

Table 1

Note: * Depending on the selected grid frequency (9 or 10kHz)
 By holding the TUNER and >>> buttons depressed while switching on the Mains supply, one of the undermentioned features will be activated:
 - the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.
 - the extended FM1 (65.81MHz - 74MHz) is toggled on and off for East Eur. (/34) version.

Error code	Error Description
E1000	Focus Error Triggered when the focus could not be found within a certain time when starting up the CD or when the focus is lost for a certain time during play.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during play.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 Sec. have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250 mSec. have passed by. Inner-switch or sledge motor problem.
E1005	Jump-offtrack error Triggered in normal play when the jump destination could not be found within a certain time. When this error occurred, software will try to recover by initiating the jump command again. If it is recoverable, the disc will continue to play.
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during play.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during startup within a certain time. Discmotor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1070	The carousel switch is not open within certain time. This can happen when either the switch is defective and closed all the time, or when the carousel is blocked when located exactly at a disc position.
E1071	The carousel position switch did not close within a certain time. This can happen when the switch is defective and never closes electrically, or when the carousel is blocked in between two disc positions. The time-out is approximately 5 Sec.
E1079	The drawer could not enter the inside position is opening again. This can be caused because the drawer is blocked by something and cannot go fully inside, or the drawer switch is defective and does not close.

Table 2

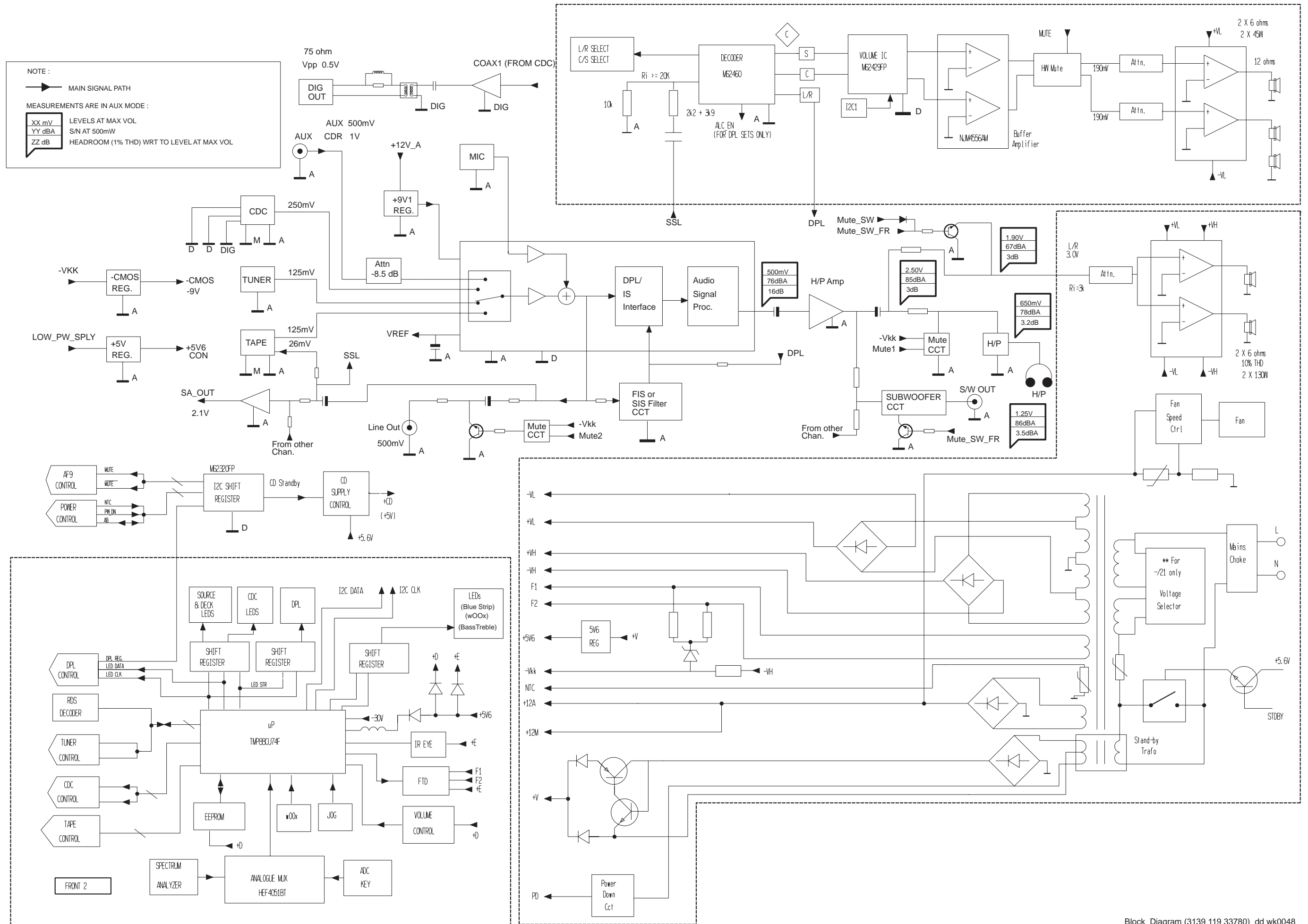
LEDs	FW-C500 , FW-C550	FW-C700 , FW-C720 FW-C780	FW-P750
DISC 1	On	On	On
DISC 3	On	On	On
TAPE	On	On	On
TUNER	On	On	On
CENTRE			On
SURROUND LEFT			On
STEREO RIGHT			On
VAC	On	On	On
DBB	On		On
VU BACK LIGHT	On	On	On
VU VOLUME	On		On

Table 3

TEST	Activated with	ACTION
EEPROM TEST	>>> ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "ERROR" will be displayed.
EEPROM FORMAT TEST	<<<	Load default data. Display shows "NEW" for 1 second. Caution! All presets from the customer will be lost!!
ROTARY ENCODER TEST	Rotary Volume Knob or Jog Shuttle Knob	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
LEAVE SERVICE TESTPROGRAM	Disconnect mains cord	

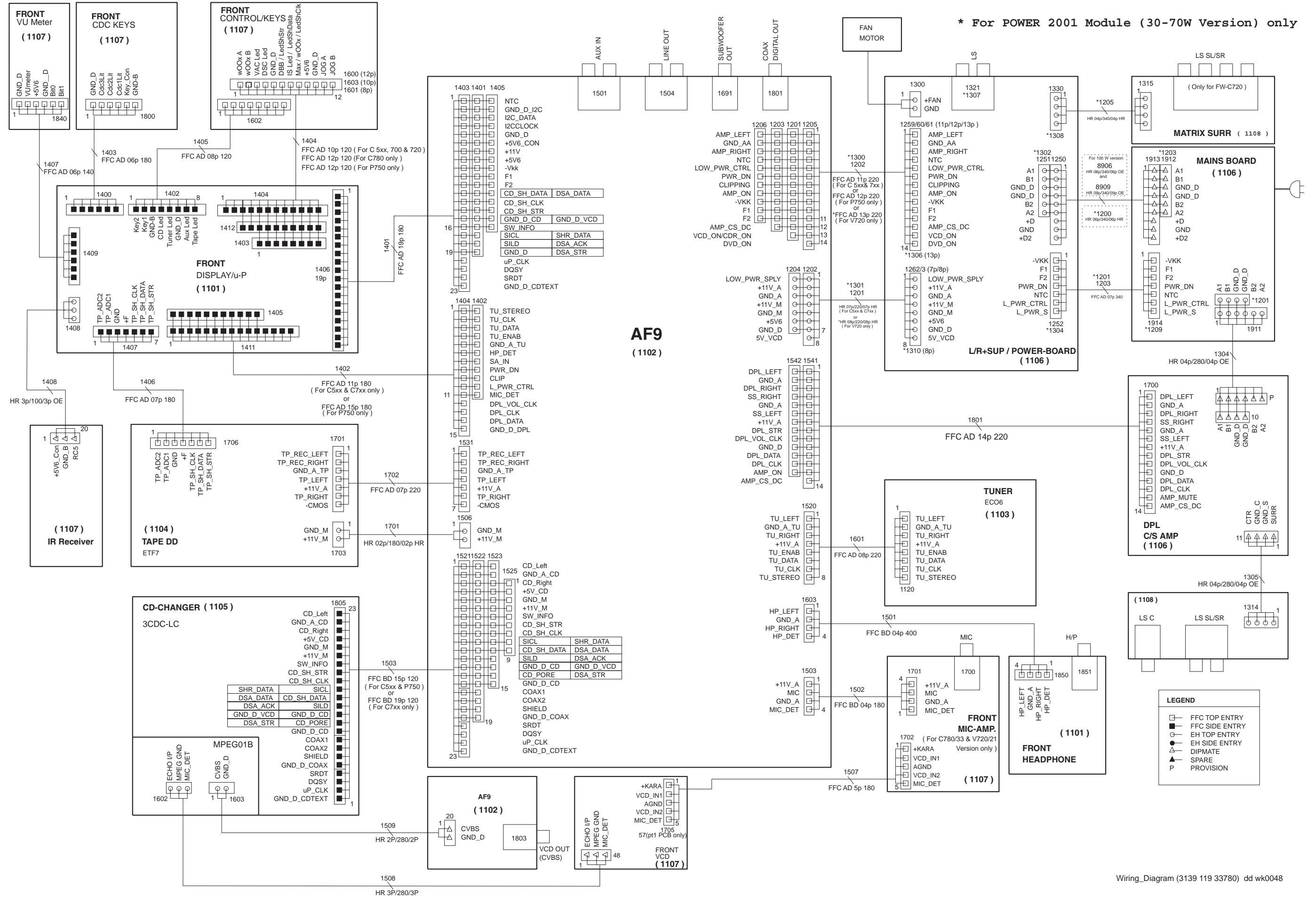
SET BLOCK DIAGRAM

NOTE :
 → MAIN SIGNAL PATH
 MEASUREMENTS ARE IN AUX MODE :
 XX mV LEVELS AT MAX VOL
 YY dBA S/N AT 500mW
 ZZ dB HEADROOM (1% THD) WRT TO LEVEL AT MAX VOL



SET WIRING DIAGRAM

* For POWER 2001 Module (30-70W Version) only



ELECTRICAL PARTS LIST - FRONT CONTROL BOARD**MISCELLANEOUS**

1602	4822 265 11535	Flex Connector 8P
1603	4822 265 11208	Flex Connector 10P
1650	4822 276 13775	Tact Switch
1651	4822 276 13775	Tact Switch
1652	4822 276 13775	Tact Switch
1653	4822 276 13775	Tact Switch
1654	4822 276 13775	Tact Switch
1655	4822 276 13775	Tact Switch
1656	4822 276 13775	Tact Switch
1657	4822 276 13775	Tact Switch
1658	4822 276 13775	Tact Switch
1659	4822 276 13775	Tact Switch
1661	4822 276 13775	Tact Switch /22
1663	4822 276 13775	Tact Switch
1664	4822 276 13775	Tact Switch
1665	4822 276 13775	Tact Switch
1666	4822 276 13775	Tact Switch
1667	4822 276 13775	Tact Switch
1669	4822 276 13775	Tact Switch
1670	4822 276 13775	Tact Switch
1671	4822 276 13775	Tact Switch
1672	4822 276 13775	Tact Switch
1673	4822 276 13775	Tact Switch
1674	4822 276 13775	Tact Switch
1675	4822 276 13775	Tact Switch /22
1690	2422 129 16385	Rotary Encoder 12P
1800	4822 265 11207	Flex Connector 6P
1801	4822 276 13775	Tact Switch
1802	4822 276 13775	Tact Switch
1803	4822 276 13775	Tact Switch
1804	4822 276 13775	Tact Switch
1805	4822 276 13775	Tact Switch
1840	4822 267 10731	Flex Connector 6P

CAPACITORS

2606	5322 126 11583	10nF 10% 50V
2607	5322 126 11583	10nF 10% 50V
2608	4822 122 31765	100pF 2% 63V
2613	4822 122 31765	100pF 2% 63V
2615	4822 124 12233	47µF 20% 25V
2622	4822 126 14305	100nF 10% 16V
2623	4822 126 14305	100nF 10% 16V
2800	4822 122 31765	100pF 2% 63V
2840	4822 122 31765	100pF 2% 63V
2841	4822 124 22651	1µF 20% 50V
2842	4822 122 31765	100pF 2% 63V
2843	4822 122 31765	100pF 2% 63V
2844	4822 122 31765	100pF 2% 63V
2860	4822 124 81286	47µF 20% 16V
2861	4822 126 14238	2,2nF 50V
2862	3198 017 34730	47nF 16V

RESISTORS

3606	4822 051 30103	10k 5% 0,062W
3607	4822 051 30103	10k 5% 0,062W
3610	4822 051 30151	150R 5% 0,062W
3611	4822 051 30221	220R 5% 0,062W
3612	4822 051 30271	270R 5% 0,062W
3613	4822 051 30391	390R 5% 0,062W
3614	4822 051 30561	560R 5% 0,062W
3615	4822 117 12968	820R 5% 0,62W
3616	4822 117 11817	1k2 1% 1/16W
3617	4822 117 12903	1k8 1% 0,063W
3618	4822 116 52263	2k7 5% 0,5W
3619	4822 051 30472	4k7 5% 0,062W
3620	4822 051 30103	10k 5% 0,062W
3621	4822 051 30121	120R 5% 0,062W
3622	4822 051 30121	120R 5% 0,062W
3623	4822 051 30121	120R 5% 0,062W
3624	4822 051 30121	120R 5% 0,062W
3630	4822 051 30151	150R 5% 0,062W
3631	4822 051 30221	220R 5% 0,062W
3632	4822 051 30271	270R 5% 0,062W
3633	4822 051 30391	390R 5% 0,062W
3634	4822 051 30561	560R 5% 0,062W
3635	4822 117 12968	820R 5% 0,62W
3636	4822 117 11817	1k2 1% 1/16W
3637	4822 117 12903	1k8 1% 0,063W
3638	4822 051 30272	2k7 5% 0,062W
3639	4822 051 30472	4k7 5% 0,062W
3640	4822 051 30103	10k 5% 0,062W
3646	4822 051 30181	180R 5% 0,062W
3651	4822 051 30221	220R 5% 0,062W
3652	4822 051 30221	220R 5% 0,062W
3653	4822 051 30271	270R 5% 0,062W
3654	4822 051 30121	120R 5% 0,062W
3655	4822 051 30102	1k 5% 0,062W
3800	4822 116 83872	220R 5% 0,5W
3801	4822 116 83872	220R 5% 0,5W
3802	4822 116 83872	220R 5% 0,5W
3803	4822 051 30561	560R 5% 0,062W
3804	4822 051 30391	390R 5% 0,062W
3805	4822 051 30271	270R 5% 0,062W
3806	4822 051 30221	220R 5% 0,062W
3807	4822 051 30151	150R 5% 0,062W
3841	4822 117 12925	47k 1% 0,063W
3842	4822 117 13632	100k 1% 0,62W
3843	4822 051 30102	1k 5% 0,062W
3844	4822 117 12902	8k2 1% 0,063W
3845	4822 117 11817	1k2 1% 1/16W
3846	4822 116 52283	4k7 5% 0,5W
3847	4822 116 83872	220R 5% 0,5W
3848	4822 051 30471	470R 5% 0,062W
3849	4822 116 83868	150R 5% 0,5W
3850	4822 051 30391	390R 5% 0,062W

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

3851	4822 051 30181	180R 5% 0,062W
3860	4822 051 30101	100R 5% 0,062W
3861	4822 051 30103	10k 5% 0,062W
3862	4822 050 11002	1k 1% 0,4W
4500	4822 051 30008	OR Jumper 0603
4600	4822 051 30008	OR Jumper 0603
4601	4822 051 30008	OR Jumper 0603
4602	4822 051 30008	OR Jumper 0603
4603	4822 051 30008	OR Jumper 0603
4604	4822 051 30008	OR Jumper 0603
4605	4822 051 30008	OR Jumper 0603
4606	4822 051 30008	OR Jumper 0603
4607	4822 051 30008	OR Jumper 0603
4627	4822 051 30008	OR Jumper 0603
4628	4822 051 30008	OR Jumper 0603
4843	4822 051 30008	OR Jumper 0603
4845	4822 051 30008	OR Jumper 0603

COILS & FILTERS

5600	3139 110 52720	METER VU P-47SI-B BLUE
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DIODES

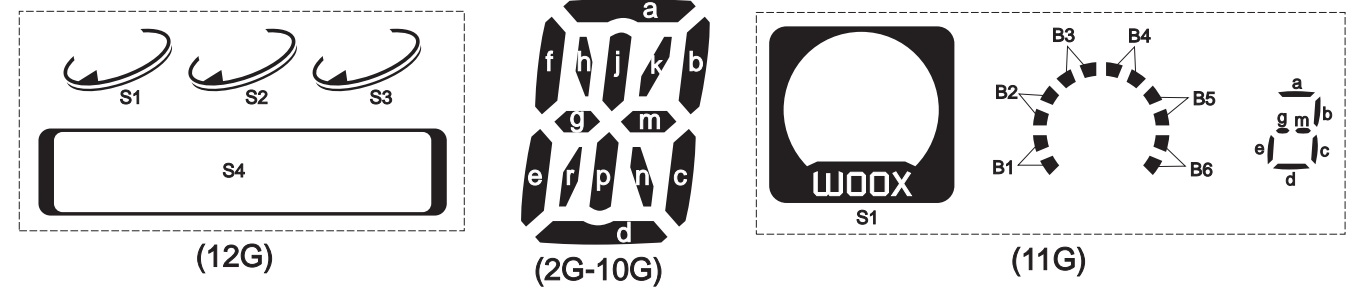
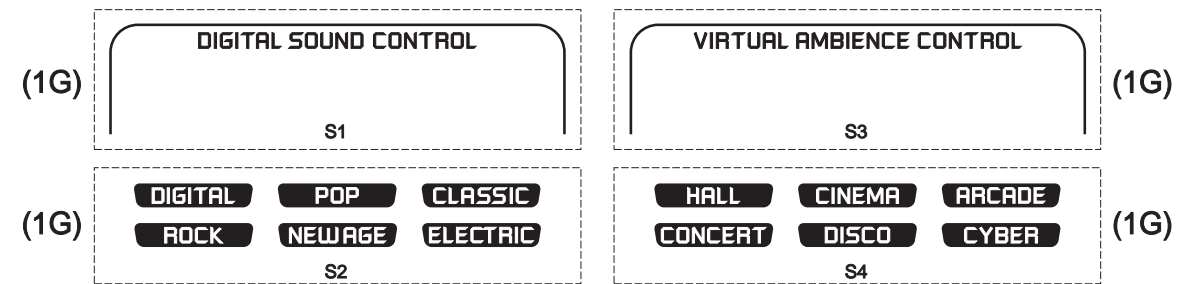
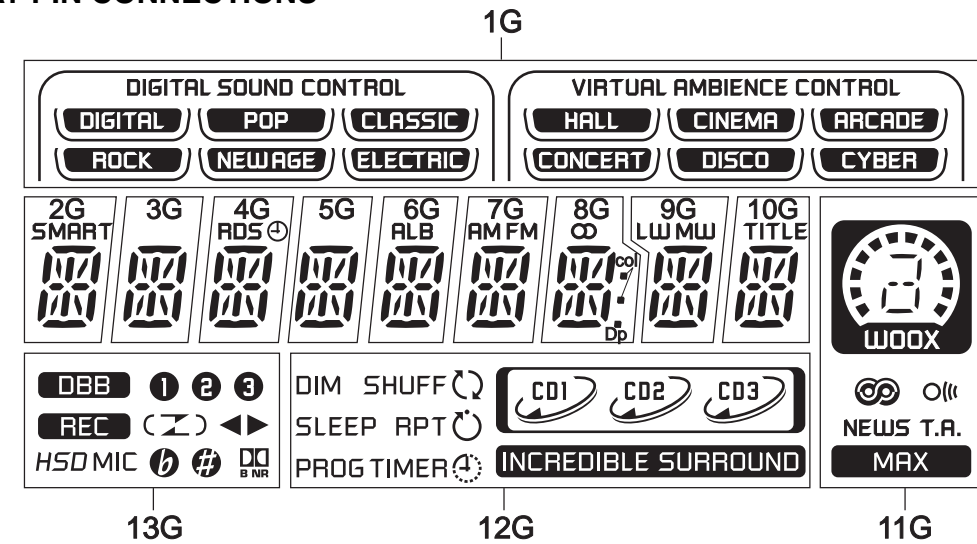
6602	4822 130 30621	1N4148
6603	4822 130 10791	LTL-1CHGE
6604	4822 130 10791	LTL-1CHGE
6605	4822 130 10791	LTL-1CHGE
6606	4822 130 10791	LTL-1CHGE
6610	4822 130 10791	LTL-1CHGE
6611	4822 130 10791	LTL-1CHGE
6612	4822 130 82978	LTL-1CHPE
6613	4822 130 10791	LTL-1CHGE
6623	9322 153 37676	LB3333RT-E7898
6802	4822 130 10791	LTL-1CHGE
6803	4822 130 10791	LTL-1CHGE
6804	4822 130 10791	LTL-1CHGE
6840	4822 130 30621	1N4148
6841	4822 130 30621	1N4148
6842	9322 153 37676	LB3333RT-E7898
6843	4822 130 82978	LTL-1CHPE
6844	4822 130 11589	LTL-1CHAE

TRANSISTORS & INTEGRATED CIRCUITS

7602	5322 130 60159	BC847B
7800	9322 155 22667	TSOP2236ZC1
7841	5322 130 60159	BC847B
7842	4822 130 60373	BC857B
7843	5322 130 60159	BC847B
7844	5322 130 60159	BC847B
7845	4822 130 60373	BC857B

Note : Only the parts mentioned in this list are normal service spare parts.

FTD DISPLAY PIN CONNECTIONS



FRONT DISPLAY BOARD

TABLE OF CONTENTS

FTD pin connection 6-1
 Front Display Board - Chip layout 6-2
 Front Display Board - Component layout 6-3
 Front Display Board - Circuit diagram 6-4
 Headphone Part - Layout & Circuit diagram 6-5
 Electrical parts list 6-5

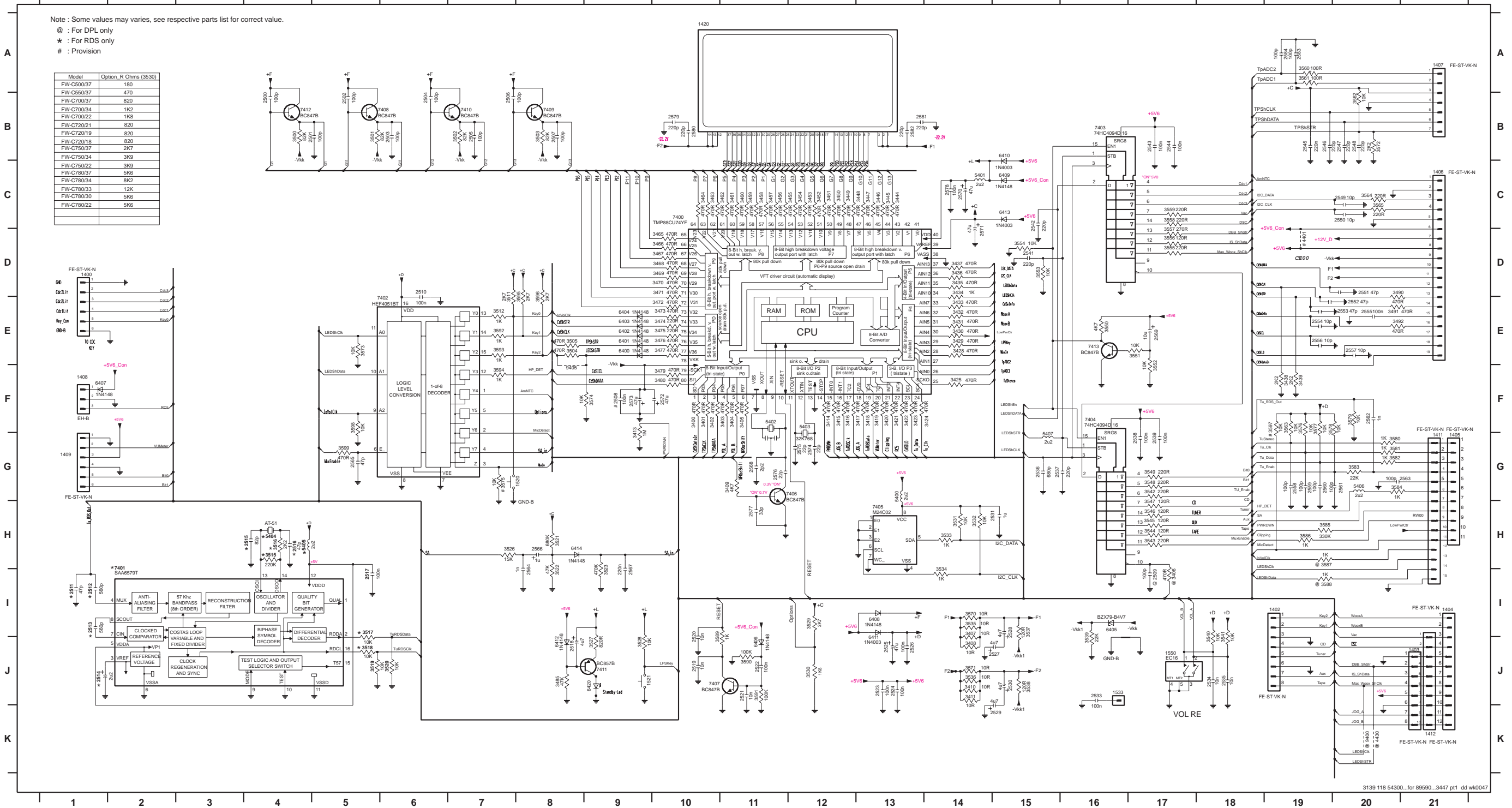
	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G
P1	S1	a	a	a	a	a	a	a	a	a	S1	DIM	DBB
P2	S2	h	h	h	h	h	h	h	h	h	B1	SHUFF	1
P3	(CLASSIC)	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	B2	SLEEP	2
P4	(POP)	k	k	k	k	k	k	k	k	k	B3	RPT	3
P5	(DIGITAL)	b	b	b	b	b	b	b	b	b	B4	PROG	REC
P6	(ELECTRIC)	f	f	f	f	f	f	f	f	f	B5	TIMER	C
P7	(NEWAGE)	m	m	m	m	m	m	m	m	m	B6	CD1	Z
P8	(ROCK)	g	g	g	g	g	g	g	g	g	a, g, m, d	S1)
P9	S3	c	c	c	c	c	c	c	c	c	b	CD2	◀
P10	S4	e	e	e	e	e	e	e	e	e	c	S2	▶
P11	(ARCADE)	r	r	r	r	r	r	r	r	r	e	CD3	HSD
P12	(CINEMA)	n	n	n	n	n	n	n	n	n	Ⓞ	S3	MIC
P13	(HALL)	d	d	d	d	d	d	d	d	d	O	S4	b
P14	(CYBER)	SMART	-	RDS	-	ALB	AM	∞	LW	TITLE	NEWS	INCREDIBLE SURROUND	#
P15	(DISCO)	-	-	-	-	-	FM	col	MW	-	T.A.	-	MR
P16	(CONCERT)	-	-	-	-	-	-	Dp	-	-	MAX	-	-

FRONT DISPLAY BOARD - CIRCUIT DIAGRAM

1400 D1 1407 A21 1520 G8 2502 B5 2508 F9 2514 J1 2520 J10 2526 J13 2533 J16 2539 J17 2546 B19 2552 E20 2558 G19 2564 I8 2570 C14 2576 G11 2582 B13 3403 F11 3409 G11 3416 F12 3422 F13 3430 E14 3436 D14 3446 C13 3452 C12 3458 C11 3464 C10 3470 D10 3476 E10 3482 E20 3504 E8 3517 I5 3523 I9 3531 H14 3537 H5 3543 H7 3549 G17 3555 D17 3561 A19 3571 J14 3577 F19 3583 G20 3589 J10 3595 E8 4430 K20 5405 H4 6403 E9 6409 C15 6420 J9 7405 H13 7411 J9
 1402 H9 1408 F1 1521 J9 2503 B6 2509 H7 2515 H4 2521 J11 2527 J15 2534 J18 2541 D15 2547 B20 2553 E20 2559 G19 2565 G5 2571 D14 2577 H11 2583 A19 3404 F11 3410 J14 3417 F13 3423 F13 3431 E14 3437 D14 3447 C13 3453 C12 3459 C11 3465 D10 3471 D10 3477 E10 3483 E20 3506 E8 3519 J5 3525 H7 3532 H14 3538 H5 3544 H7 3550 E16 3556 D17 3562 B20 3572 B20 3578 F19 3584 G20 3590 J11 3596 E8 5400 G13 5406 G20 6404 E9 6410 B15 7400 C10 7406 G11 7412 B4
 1403 J21 1409 G1 1533 J16 2506 B6 2510 D6 2516 H4 2522 J11 2528 H5 2535 J16 2542 C15 2548 B20 2554 E19 2560 G19 2566 H8 2572 F10 2578 C14 2584 A19 3405 F11 3411 J14 3418 F13 3424 F13 3432 E14 3438 F19 3448 C13 3454 C12 3460 C11 3466 D10 3472 E10 3478 F10 3500 B4 3511 E7 3519 J5 3525 H7 3532 H14 3538 H5 3544 H7 3551 E7 3557 D17 3563 F19 3573 E5 3579 F20 3585 H19 3591 J11 3597 F19 5401 C14 5407 D15 6405 H6 6411 H3 7401 E1 7407 J10 7413 E16
 1404 J21 1411 G21 1539 J17 2506 B7 2511 H1 2517 I5 2523 J13 2529 K15 2536 G15 2543 B17 2549 C20 2555 E20 2561 I9 2567 I9 2573 F9 2579 B10 3406 F10 3412 G9 3419 F13 3425 F14 3433 E14 3439 F19 3449 C12 3455 C11 3461 C11 3467 D10 3473 E10 3479 E10 3485 J8 3502 B7 3515 H4 3521 H8 3528 I8 3534 J9 3540 H18 3546 H7 3552 F17 3558 C17 3564 C20 3574 F9 3580 G20 3586 H19 3592 E7 3598 F5 5402 F11 6406 J11 6412 E1 7402 E5 7408 B5 9402 K9
 1405 G21 1412 K21 2500 B4 2506 B7 2512 H1 2518 J8 2524 J13 2530 J15 2537 G15 2544 B17 2550 C20 2556 E19 2562 F20 2568 G11 2574 G12 2580 B10 3401 F10 3407 I14 3414 F12 3420 F13 3428 E14 3434 D14 3444 C13 3450 C12 3456 C11 3462 C10 3468 D10 3474 E10 3479 E10 3485 J8 3502 B7 3515 H4 3521 H8 3528 I8 3534 J9 3540 H18 3546 H7 3552 F17 3558 C17 3564 C20 3574 F9 3580 G20 3586 H19 3592 E7 3598 F5 5402 F11 6406 J11 6412 E1 7402 E5 7408 B5 9402 K9
 1406 C21 1420 A10 2501 B5 2507 B8 2513 H1 2519 J10 2525 J13 2531 H15 2538 G17 2545 B19 2551 D20 2557 E20 2563 G21 2569 E17 2575 G12 2581 B13 3402 F10 3408 J14 3415 G12 3421 F13 3429 E14 3435 D14 3445 C13 3451 C12 3457 C11 3463 C10 3469 D10 3475 E10 3480 D20 3503 B8 3516 H4 3522 I8 3530 J2 3536 J14 3542 G17 3548 G17 3554 D15 3560 A19 3570 H4 3576 F19 3582 G20 3588 H19 3594 F7 4401 D19 5404 H4 6402 E9 6408 J13 6414 H6 7404 F16 7410 B7

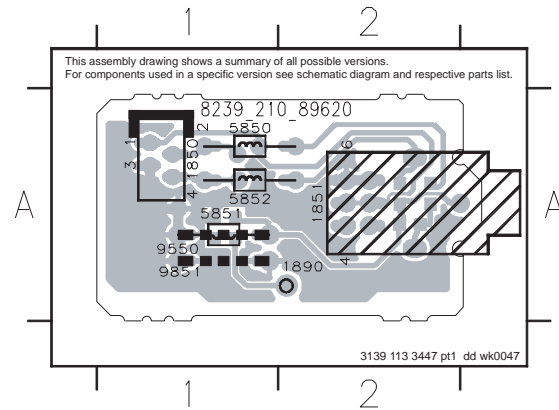
Note : Some values may varies, see respective parts list for correct value.
 @ : For DPL only
 * : For RDS only
 # : Provision

Model	Option_R	Ohms (3530)
FW-C50037	180	
FW-C50037	470	
FW-C70037	820	
FW-C70034	1K2	
FW-C70022	1K8	
FW-C72021	820	
FW-C72019	820	
FW-C72018	820	
FW-C75037	2K7	
FW-C75034	3K9	
FW-C75022	3K9	
FW-C78037	5K6	
FW-C78034	8K2	
FW-C78033	12K	
FW-C78030	5K6	
FW-C78022	5K6	



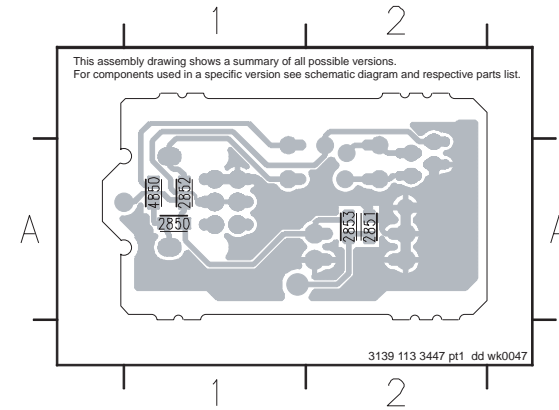
HEADPHONE BOARD - COMPONENT LAYOUT

1850 A1 1890 A2 5851 A1 9550 A1
1851 A2 5850 A1 5852 A1 9851 A1



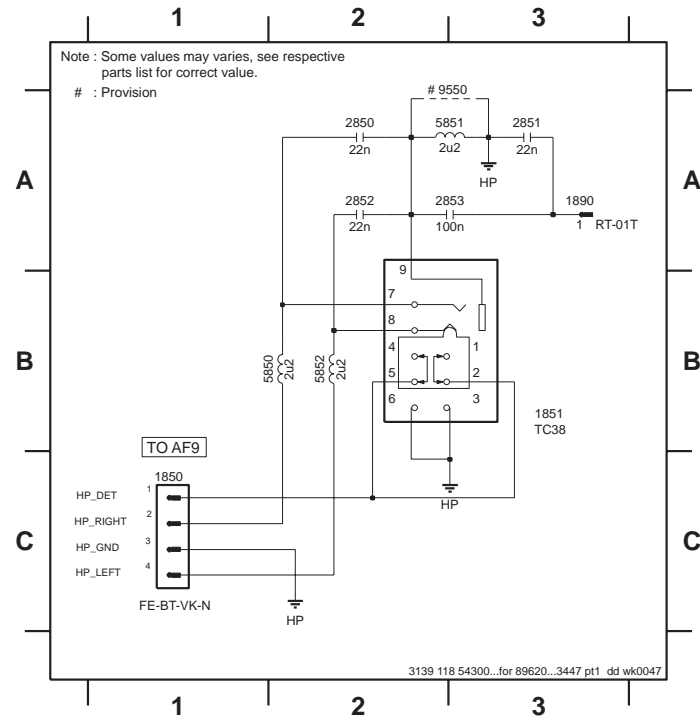
HEADPHONE BOARD - CHIP LAYOUT

2850 A1 2852 A1 4850 A1
2851 A2 2853 A2



HEADPHONE BOARD - CIRCUIT DIAGRAM

1850 C1 1890 A3 2851 A3 2853 A3 5851 A3 9550 A3
1851 B3 2850 A2 2852 A2 5850 B2 5852 B2



ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

MISCELLANEOUS

1400	4822 265 11207	Flex Connector 6P
1402	4822 265 11535	Flex Connector 8P
1405	2422 025 14541	Flex Connector 11P
1406	4822 265 11545	Flex Connector 19P
1407	4822 267 10956	Flex Connector 7P
1409	4822 265 11207	Flex Connector 6P
1412	4822 265 11208	Flex Connector 10P
1420	3139 110 52550	FTD Display
1520	4822 276 13775	Tact Switch
1521	4822 276 13775	Tact Switch
1550	4822 273 10365	Rotary Encoder 24P
1850	4822 267 10733	Flex Connector 4P

1851 4822 265 11529 Headphone Socket

CAPACITORS

2500	4822 122 31765	100pF 2% 63V
2501	4822 122 31765	100pF 2% 63V
2502	4822 122 31765	100pF 2% 63V
2503	4822 122 31765	100pF 2% 63V
2504	4822 122 31765	100pF 2% 63V
2505	4822 122 31765	100pF 2% 63V
2506	4822 122 31765	100pF 2% 63V
2507	4822 122 31765	100pF 2% 63V
2510	4822 126 14305	100nF 10% 16V

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

2511	4822 122 33777	47pF 5% 63V	2566	4822 124 22651	1µF 20% 50V
2512	4822 126 14249	560pF 10% 50V	2567	4822 126 13879	220nF +80/-20% 16V
2513	4822 126 14249	560pF 10% 50V	2568	4822 126 14223	2,2pF 50V
2514	4822 124 22652	2,2µF 20% 50V	2569	4822 124 11947	10µF 20% 16V
2515	4822 126 14226	82pF 5% 50V	2570	4822 124 12233	47µF 20% 25V
2516	4822 122 33777	47pF 5% 63V	2571	4822 124 12233	47µF 20% 25V
2517	4822 126 14305	100nF 10% 16V	2572	3198 028 44790	47µF 20% 35V
2518	4822 124 22726	4,7µF 35V	2573	3198 028 44790	47µF 20% 35V
2519	5322 126 11583	10nF 10% 50V	2574	4822 122 33761	22pF 5% 50V
2520	5322 126 11583	10nF 10% 50V	2575	4822 122 33761	22pF 5% 50V
2521	5322 126 11583	10nF 10% 50V	2576	4822 122 33761	22pF 5% 50V
2522	4822 126 14305	100nF 10% 16V	2577	4822 126 11671	33pF
2523	4822 126 14305	100nF 10% 16V	2578	4822 126 14305	100nF 10% 16V
2524	4822 126 14305	100nF 10% 16V	2579	4822 126 13883	220pF 5% 50V
2525	4822 124 12233	47µF 20% 25V	2580	4822 126 13883	220pF 5% 50V
2526	4822 126 14305	100nF 10% 16V	2581	4822 126 13883	220pF 5% 50V
2527	4822 124 22726	4,7µF 35V	2582	4822 126 13883	220pF 5% 50V
2528	4822 124 22726	4,7µF 35V	2583	4822 122 31765	100pF 2% 63V
2529	4822 124 22726	4,7µF 35V	2584	4822 122 31765	100pF 2% 63V
2530	4822 124 22726	4,7µF 35V	2850	4822 126 14494	22nF 10% 25V
2531	3198 017 41050	1µF 10V	2851	4822 126 14494	22nF 10% 25V
2533	4822 126 14305	100nF 10% 16V	2852	4822 126 14494	22nF 10% 25V
2534	5322 126 11583	10nF 10% 50V	2853	4822 126 14305	100nF 10% 16V
2535	5322 126 11583	10nF 10% 50V			
2536	3198 016 36810	680pF 25V			
2537	4822 126 13883	220pF 5% 50V			
2538	4822 126 14305	100nF 10% 16V			
2539	4822 126 14305	100nF 10% 16V			
2541	4822 126 13883	220pF 5% 50V			
2542	4822 126 13883	220pF 5% 50V			
2543	4822 126 14305	100nF 10% 16V			
2544	4822 126 14305	100nF 10% 16V			
2545	4822 126 13879	220nF +80/-20% 16V			
2546	4822 126 13883	220pF 5% 50V			
2547	4822 126 13883	220pF 5% 50V			
2548	4822 126 13883	220pF 5% 50V			
2549	4822 122 33741	10pF 10% 50V			
2550	4822 122 33741	10pF 10% 50V			
2551	4822 122 33777	47pF 5% 63V			
2552	4822 122 33777	47pF 5% 63V			
2553	4822 122 33777	47pF 5% 63V			
2554	4822 122 33741	10pF 10% 50V			
2555	4822 126 14305	100nF 10% 16V			
2556	4822 122 33741	10pF 10% 50V			
2557	4822 122 33741	10pF 10% 50V			
2558	4822 122 31765	100pF 2% 63V			
2559	4822 122 31765	100pF 2% 63V			
2560	4822 122 31765	100pF 2% 63V			
2561	4822 122 31765	100pF 2% 63V			
2562	3198 016 31020	1nF 25V			
2563	4822 122 31765	100pF 2% 63V			
2564	5322 126 11578	1nF 10% 50V			
2565	4822 122 33777	47pF 5% 63V			

RESISTORS

3400	4822 051 30471	470R 5% 0,062W
3401	4822 051 30471	470R 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W
3403	4822 051 30471	470R 5% 0,062W
3404	4822 051 30471	470R 5% 0,062W
3405	4822 051 30471	470R 5% 0,062W
3407	4822 051 20109	10R 5% 0,1W
3408	4822 051 20109	10R 5% 0,1W
3409	4822 051 30472	4k7 5% 0,062W
3410	4822 051 20109	10R 5% 0,1W
3411	4822 051 20109	10R 5% 0,1W
3413	4822 051 30105	1M 5% 0,062W
3414	4822 051 30471	470R 5% 0,062W
3415	4822 051 30471	470R 5% 0,062W
3416	4822 051 30471	470R 5% 0,062W
3417	4822 051 30471	470R 5% 0,062W
3418	4822 051 30471	470R 5% 0,062W
3419	4822 051 30471	470R 5% 0,062W
3420	4822 051 30471	470R 5% 0,062W
3421	4822 051 30471	470R 5% 0,062W
3422	4822 051 30471	470R 5% 0,062W
3423	4822 051 30471	470R 5% 0,062W
3424	4822 051 30471	470R 5% 0,062W
3425	4822 051 30471	470R 5% 0,062W
3428	4822 051 30471	470R 5% 0,062W
3429	4822 116 83883	470R 5% 0,5W
3430	4822 116 83883	470R 5% 0,5W
3431	4822 051 30471	470R 5% 0,062W

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

RESISTORS

3432	4822 051 30471	470R 5% 0,062W	3505	4822 051 30471	470R 5% 0,062W
3433	4822 051 30471	470R 5% 0,062W	3511	4822 051 30272	2k7 5% 0,062W
3434	4822 051 30102	1k 5% 0,062W	3512	4822 051 30102	1k 5% 0,062W
3435	4822 051 30471	470R 5% 0,062W	3515	4822 117 12891	220k 1%
3436	4822 051 30471	470R 5% 0,062W	3516	4822 051 30222	2k2 5% 0,062W
3437	4822 051 30471	470R 5% 0,062W	3517	4822 051 30103	10k 5% 0,062W
3438	4822 051 30222	2k2 5% 0,062W	3518	4822 051 30103	10k 5% 0,062W
3439	4822 051 30222	2k2 5% 0,062W	3519	4822 051 30103	10k 5% 0,062W
3444	4822 051 30471	470R 5% 0,062W	3520	4822 051 30103	10k 5% 0,062W
3445	4822 051 30471	470R 5% 0,062W	3521	4822 051 30684	680k 5% 0,062W
3446	4822 051 30471	470R 5% 0,062W	3522	4822 117 12925	47k 1% 0,063W
3447	4822 051 30471	470R 5% 0,062W	3523	4822 051 30474	470k 5% 0,062W
3448	4822 051 30471	470R 5% 0,062W	3526	4822 116 52244	15k 5% 0,5W
3449	4822 051 30471	470R 5% 0,062W	3527	4822 117 12968	820R 5% 0,62W
3450	4822 051 30471	470R 5% 0,062W	3528	4822 051 30103	10k 5% 0,062W
3451	4822 051 30471	470R 5% 0,062W	3529	4822 051 30272	2k7 5% 0,062W
3452	4822 051 30471	470R 5% 0,062W	3530	4822 117 12903	1k8 1% 0,063W /22
3453	4822 051 30471	470R 5% 0,062W	3530	4822 117 12968	820R 5% 0,62W /37
3454	4822 051 30471	470R 5% 0,062W	3531	4822 051 30103	10k 5% 0,062W
3455	4822 051 30471	470R 5% 0,062W	3532	4822 051 30103	10k 5% 0,062W
3456	4822 116 83883	470R 5% 0,5W	3533	4822 051 30102	1k 5% 0,062W
3457	4822 051 30471	470R 5% 0,062W	3534	4822 051 30102	1k 5% 0,062W
3458	4822 051 30471	470R 5% 0,062W	3535	4822 051 20109	10R 5% 0,1W
3459	4822 051 30471	470R 5% 0,062W	3536	4822 051 20109	10R 5% 0,1W
3460	4822 051 30471	470R 5% 0,062W	3537	4822 116 52206	120R 5% 0,5W
3461	4822 051 30471	470R 5% 0,062W	3538	4822 116 52206	120R 5% 0,5W
3462	4822 051 30471	470R 5% 0,062W	3539	4822 051 30223	22k 5% 0,062W
3463	4822 051 30471	470R 5% 0,062W	3540	4822 051 30103	10k 5% 0,062W
3464	4822 051 30471	470R 5% 0,062W	3541	4822 051 30103	10k 5% 0,062W
3465	4822 051 30471	470R 5% 0,062W	3542	4822 116 83872	220R 5% 0,5W
3466	4822 051 30471	470R 5% 0,062W	3543	4822 051 30221	220R 5% 0,062W
3467	4822 051 30471	470R 5% 0,062W	3544	4822 051 30121	120R 5% 0,062W
3468	4822 051 30471	470R 5% 0,062W	3545	4822 051 30121	120R 5% 0,062W
3469	4822 051 30471	470R 5% 0,062W	3546	4822 051 30121	120R 5% 0,062W
3470	4822 051 30471	470R 5% 0,062W	3547	4822 051 30121	120R 5% 0,062W
3471	4822 051 30471	470R 5% 0,062W	3548	4822 051 30221	220R 5% 0,062W
3472	4822 051 30471	470R 5% 0,062W	3549	4822 051 30221	220R 5% 0,062W
3473	4822 051 30471	470R 5% 0,062W	3550	4822 051 30472	4k7 5% 0,062W
3474	4822 051 30221	220R 5% 0,062W	3551	4822 051 30103	10k 5% 0,062W
3475	4822 051 30221	220R 5% 0,062W	3552	4822 051 30103	10k 5% 0,062W
3476	4822 051 30471	470R 5% 0,062W	3553	4822 051 30103	10k 5% 0,062W
3477	4822 051 30471	470R 5% 0,062W	3554	4822 051 30103	10k 5% 0,062W
3479	4822 051 30471	470R 5% 0,062W	3555	4822 051 30221	220R 5% 0,062W
3480	4822 051 30471	470R 5% 0,062W	3556	4822 051 30121	120R 5% 0,062W
3485	4822 117 12925	47k 1% 0,063W	3557	4822 051 30271	270R 5% 0,062W
3490	4822 051 30471	470R 5% 0,062W	3558	4822 051 30221	220R 5% 0,062W
3491	4822 051 30471	470R 5% 0,062W	3559	4822 051 30221	220R 5% 0,062W
3492	4822 051 30471	470R 5% 0,062W	3560	4822 116 52175	100R 5% 0,5W
3500	4822 117 12864	82k 5% 0,6W	3561	4822 116 52175	100R 5% 0,5W
3501	4822 117 12864	82k 5% 0,6W	3562	4822 051 30103	10k 5% 0,062W
3502	4822 117 12864	82k 5% 0,6W	3563	4822 051 30103	10k 5% 0,062W
3503	4822 117 12864	82k 5% 0,6W	3564	4822 051 30221	220R 5% 0,062W
3504	4822 051 30471	470R 5% 0,062W	3565	4822 051 30221	220R 5% 0,062W

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

3570	4822 051 20109	10R 5% 0,1W
3571	4822 051 20109	10R 5% 0,1W
3572	4822 051 30222	2k2 5% 0,062W
3573	4822 051 30103	10k 5% 0,062W
3574	4822 051 30103	10k 5% 0,062W
3576	4822 051 30103	10k 5% 0,062W
3577	4822 051 30103	10k 5% 0,062W
3578	4822 051 30103	10k 5% 0,062W
3579	4822 051 30103	10k 5% 0,062W
3580	4822 051 30102	1k 5% 0,062W
3581	4822 051 30102	1k 5% 0,062W
3582	4822 051 30102	1k 5% 0,062W
3583	4822 051 30223	22k 5% 0,062W
3584	4822 051 30102	1k 5% 0,062W
3585	4822 051 30334	330k 5% 0,062W
3586	4822 051 30102	1k 5% 0,062W
3587	4822 051 30102	1k 5% 0,062W
3588	4822 051 30102	1k 5% 0,062W
3589	4822 051 30102	1k 5% 0,062W
3590	4822 117 13632	100k 1% 0,62W
3591	4822 117 13632	100k 1% 0,62W
3592	4822 051 30102	1k 5% 0,062W
3593	4822 051 30102	1k 5% 0,062W
3594	4822 051 30102	1k 5% 0,062W
3595	4822 051 30272	2k7 5% 0,062W
3596	4822 051 30272	2k7 5% 0,062W
3597	4822 051 30103	10k 5% 0,062W
3598	4822 051 30103	10k 5% 0,062W
3599	4822 051 30471	470R 5% 0,062W
4401	4822 051 30008	OR Jumper 0603
4402	4822 051 30008	OR Jumper 0603
4403	4822 051 30008	OR Jumper 0603
4404	4822 051 30008	OR Jumper 0603
4405	4822 051 30008	OR Jumper 0603
4410	4822 051 30008	OR Jumper 0603
4411	4822 051 30008	OR Jumper 0603
4412	4822 051 30008	OR Jumper 0603
4413	4822 051 30008	OR Jumper 0603
4414	4822 051 30008	OR Jumper 0603
4415	4822 051 30008	OR Jumper 0603
4416	4822 051 30008	OR Jumper 0603
4418	4822 051 30008	OR Jumper 0603
4419	4822 051 30008	OR Jumper 0603
4420	4822 051 30008	OR Jumper 0603
4422	4822 051 30008	OR Jumper 0603
4423	4822 051 30008	OR Jumper 0603
4424	4822 051 30008	OR Jumper 0603
4425	4822 051 30008	OR Jumper 0603
4426	4822 051 30008	OR Jumper 0603
4427	4822 051 30008	OR Jumper 0603
4428	4822 051 30008	OR Jumper 0603
4429	4822 051 30008	OR Jumper 0603
4431	4822 051 30008	OR Jumper 0603

4434	4822 051 30008	OR Jumper 0603
4435	4822 051 30008	OR Jumper 0603
4850	4822 051 30008	OR Jumper 0603

COILS & FILTERS

5400	4822 157 62552	Coil 2,2μH 5%
5401	4822 157 62552	Coil 2,2μH 5%
5402	5322 242 73686	RES CER 12MHz
5403	4822 242 70938	RES XTL 32,768kHz
5404	4822 242 72195	QUARZ 4,332 MHz
5405	4822 157 62552	Coil 2,2μH 5%
5406	4822 157 62552	Coil 2,2μH 5%
5407	4822 157 62552	Coil 2,2μH 5%
5850	4822 157 62552	Coil 2,2μH 5%
5851	4822 157 62552	Coil 2,2μH 5%
5852	4822 157 62552	Coil 2,2μH 5%

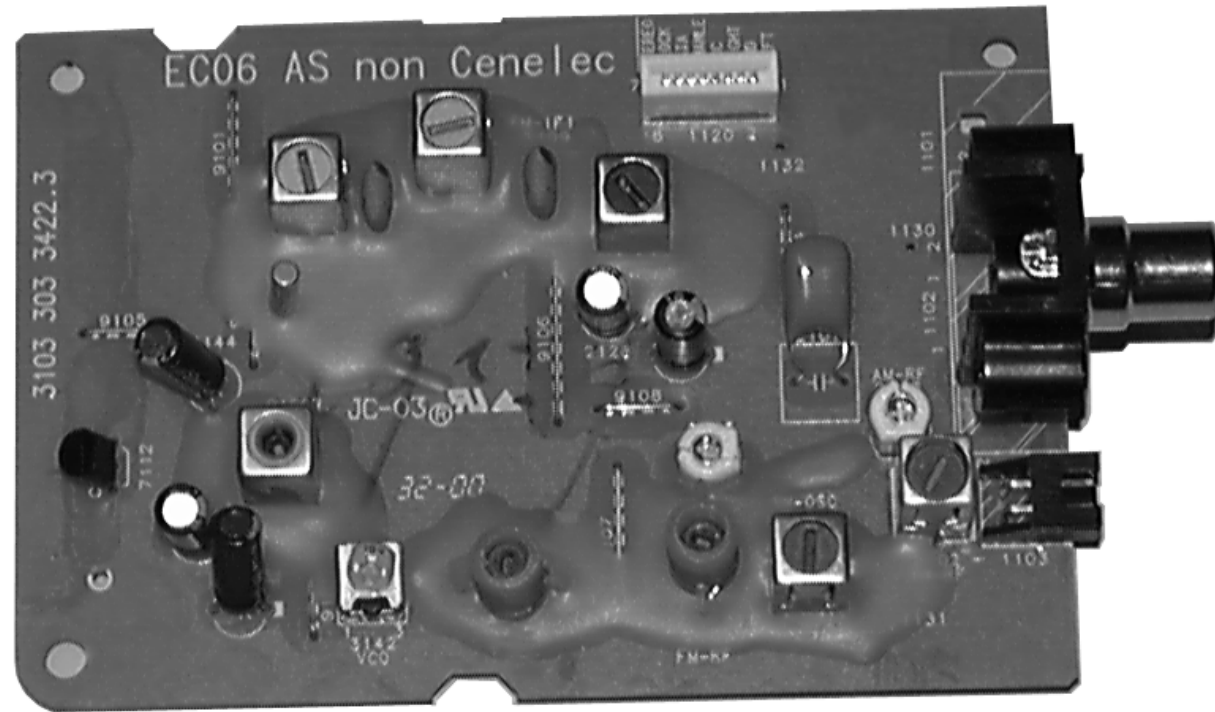
DIODES

6400	4822 130 30621	1N4148
6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6403	4822 130 30621	1N4148
6404	4822 130 30621	1N4148
6405	4822 130 34174	BZX79-B4V7
6406	4822 130 30621	1N4148
6407	4822 130 30621	1N4148
6408	4822 130 30621	1N4148
6409	4822 130 30621	1N4148
6410	4822 130 31878	1N4003G
6411	4822 130 31878	1N4003G
6412	4822 130 30621	1N4148
6413	4822 130 31878	1N4003G
6414	4822 130 30621	1N4148
6420	9322 160 65676	LED VS LTL-4221NLC-VA

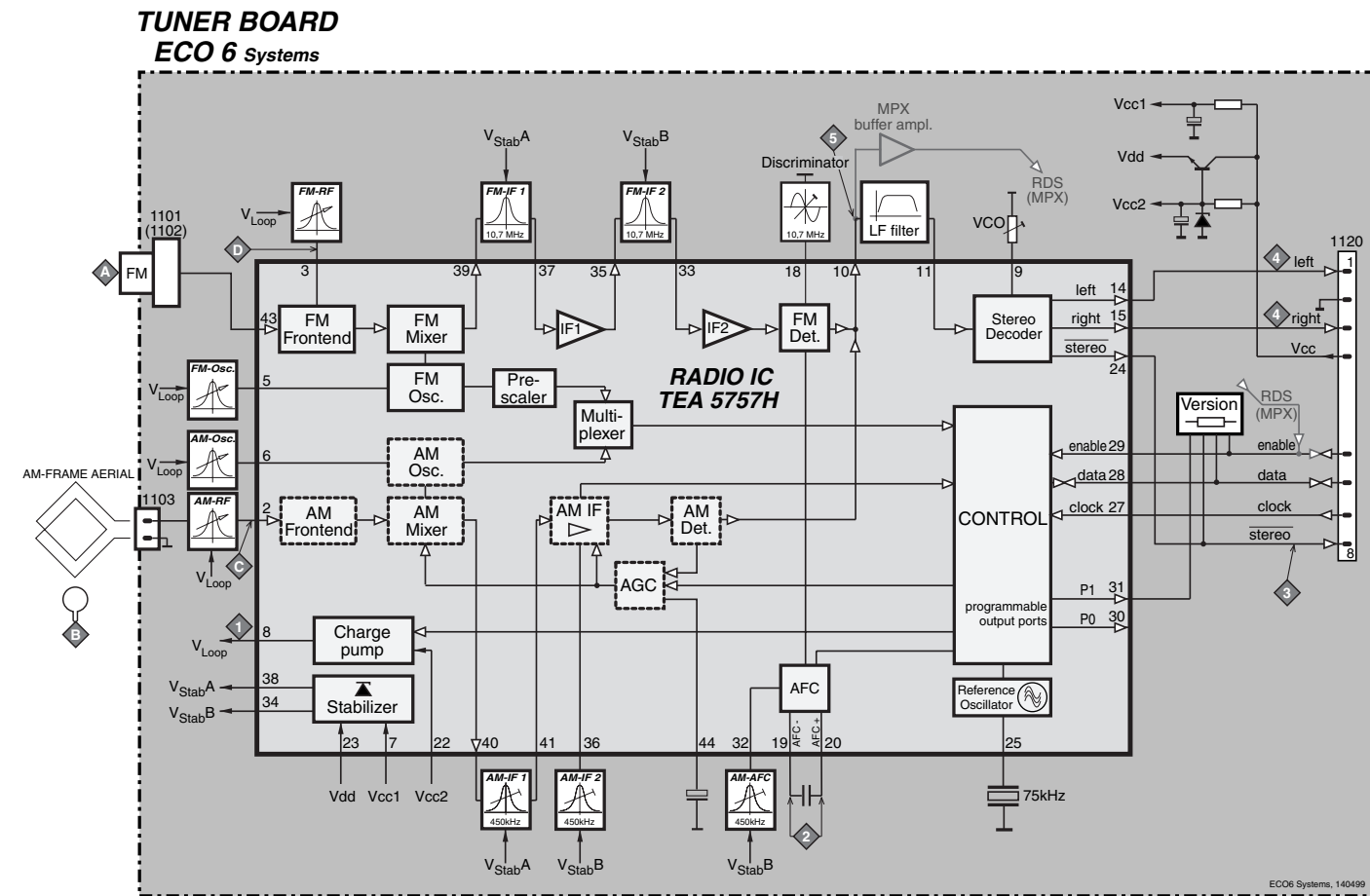
TRANSISTORS & INTEGRATED CIRCUITS

7400	3139 110 52600	TMP88CU74YF - 'C55S52601'
7401	4822 209 31981	SAA6579T/V1
7402	5322 209 11446	HEF4051BT
7403	4822 209 15449	74HC4094D
7404	4822 209 15449	74HC4094D
7405	9322 145 26668	M24C02-WMN6
7406	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7408	5322 130 60159	BC847B
7409	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7411	4822 130 60373	BC857B
7412	5322 130 60159	BC847B
7413	5322 130 60159	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.



BLOCK DIAGRAM

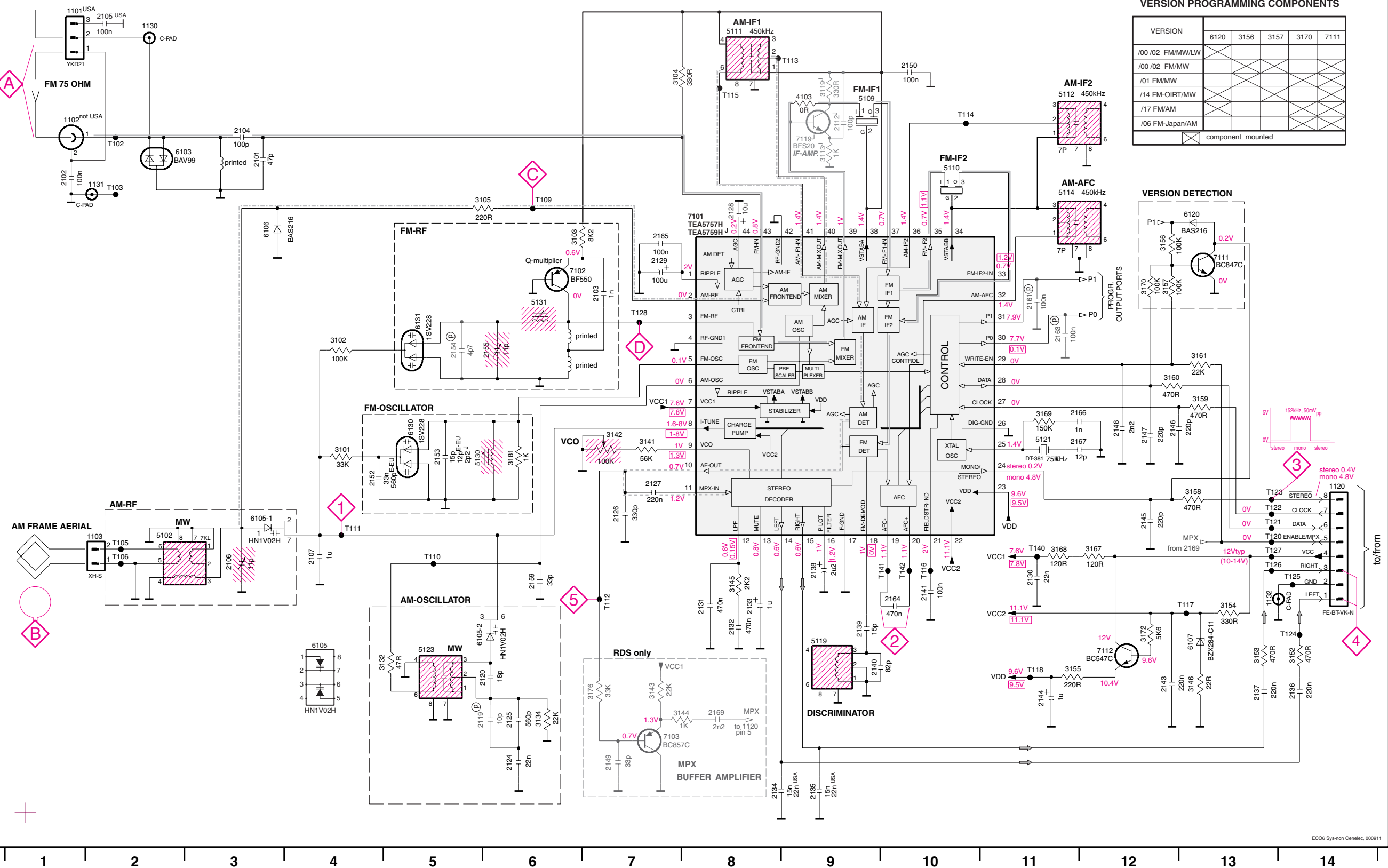


ECO6 Tuner Board
version: **SYSTEMS non-CENELEC**

TABLE OF CONTENTS

Blockdiagram7A-1
 Schematic Diagram7A-2
 Component Layout.....7A-3
 Adjustment table7A-3
 Electrical Partslist.....7A-4

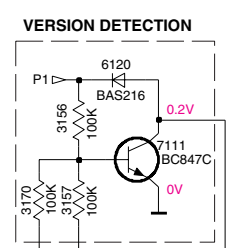
TUNER BOARD ECO6 / SYSTEMS NON CENELEC



VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW					
/00 /02 FM/MW					
/01 FM/MW					
/14 FM-OIRT/MW					
/17 FM/AM					
/06 FM-Japan/AM					

component mounted



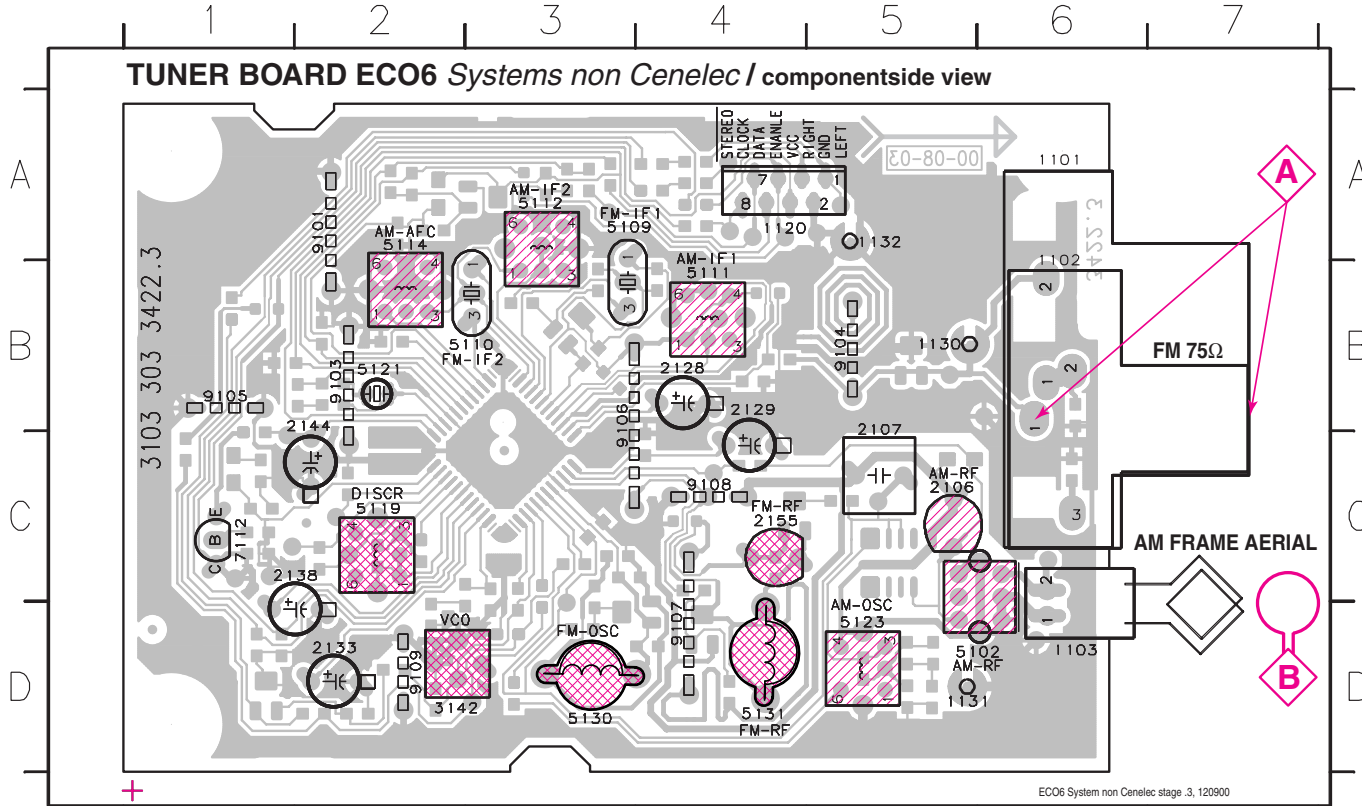
- 1101 A1
- 1102 B1
- 1103 F2
- 1120 E14
- 1130 A2
- 1131 B2
- 1132 G13
- 2101 B3
- 2102 B1
- 2103 C7
- 2104 B3
- 2105 A2
- 2106 F3
- 2107 F4
- 2119 H6
- 2120 G6
- 2124 H6
- 2125 H6
- 2126 F7
- 2127 E7
- 2128 C8
- 2129 C7
- 2130 F11
- 2131 G8
- 2132 G8
- 2133 G8
- 2134 H8
- 2135 H9
- 2136 G14
- 2137 G13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 F12
- 2146 E12
- 2147 E12
- 2148 H7
- 2149 H7
- 2150 A10
- 2152 E4
- 2153 E5
- 2154 D5
- 2155 D5
- 2159 F6
- 2161 C11
- 2163 D11
- 2164 F10
- 2165 C7
- 2166 E11
- 2167 E11
- 2169 H8
- 3101 E4
- 3102 D4
- 3103 C6
- 3104 A7
- 3105 B6
- 3132 G5
- 3134 H6
- 3141 E7
- 3142 E7
- 3143 G7
- 3144 H7
- 3145 F8
- 3146 G13
- 3152 G14
- 3153 G13
- 3154 G13
- 3155 G11
- 3156 C12
- 3157 C12
- 3158 E13
- 3159 D13
- 3160 D12
- 3161 D13
- 3167 F12
- 3168 F11
- 3169 E11
- 3170 C12
- 3172 G12
- 3176 G7
- 3181 E6
- 5102 F2
- 5109 B9
- 5110 B10
- 5111 A8
- 5112 A11
- 5114 B11
- 5119 G9
- 5121 E11
- 5123 G5
- 5130 E5
- 5131 C6
- 5132 B2
- 6105-1 F3
- 6105-2 G5
- 6106 C3
- 6107 G13
- 6120 G13
- 6130 E5
- 6131 D5
- 7101 C8
- 7102 C6
- 7103 H7
- 7111 C13
- 7112 F13
- T102 B2
- T103 B2
- T105 F2
- T106 F2
- T109 B6
- T110 F5
- T111 F4
- T112 F7
- T113 A8
- T114 B10
- T115 A8
- T116 F10
- T117 G13
- T118 G11
- T120 F13
- T122 F13
- T123 F13
- T124 F13
- T127 F13
- T128 D7
- T140 F11
- T141 F10
- T142 F10

LEGEND
 (P) ... for provision only
 USA ... for USA version only
 E-EU ... for East European version only
 J ... for Japanese version only

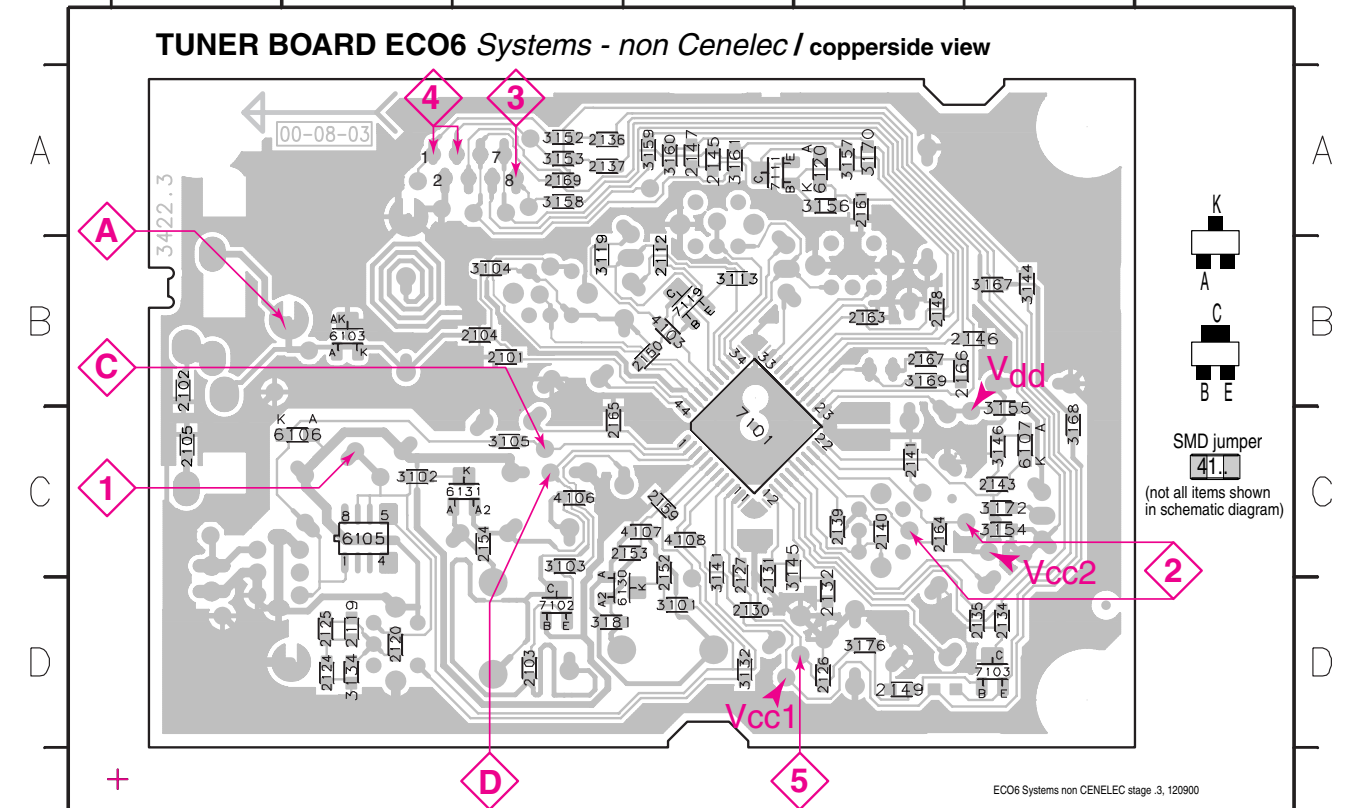
...V FM mode stereo
 ...V MW mode
 ...V LW mode
 voltages measured while set is tuned to a strong transmitter

Signal path
 — FM
 - - - AM
 - - - MPX (Audio Frequency)
 ⇨ AF - left/right

1101 A6 1120 A4 1132 A5 2128 C4 2138 C2 3142 D2 5110 B3 5114 A2 5123 D5 7112 C1 9104 B5 9107 D4
 1102 B6 1130 B5 2106 C5 2129 B4 2144 B2 5102 D6 5111 B4 5119 C2 5130 D3 9101 A2 9105 B1 9108 C4
 1103 D6 1131 D5 2107 B5 2133 D2 2155 C4 5109 A3 5112 A3 5121 B2 5131 D4 9103 B2 9106 B3 9109 D2



2101 B4 2119 D3 2130 D5 2137 A4 2146 B7 2153 C5 2165 C4 3103 C4 3134 D3 3152 A4 3158 A4 3169 B6 4106 C4 6107 C7 7103 D7
 2102 B1 2120 D3 2131 C5 2139 C6 2147 A5 2154 C4 2166 B6 3104 B4 3141 C5 3153 A4 3159 A5 3170 A6 4107 C5 6120 A6 7111 A5
 2103 D4 2124 D3 2132 D6 2140 C6 2148 B6 2159 C5 2167 B6 3105 C4 3143 D6 3154 C7 3160 A5 3172 C7 4108 C5 6130 D4 7119 B5
 2104 B4 2125 D3 2134 D7 2141 C6 2149 D6 2161 A6 2169 A4 3113 B5 3144 B7 3155 C7 3161 A5 3176 D6 6103 B3 6131 C4
 2105 C1 2126 D6 2135 D7 2143 C7 2150 B5 2163 B6 3101 D5 3119 B5 3145 C5 3156 A6 3167 B7 3181 D4 6105 C3 7101 C5
 2112 B5 2127 C5 2136 A4 2145 A5 2152 C5 3102 C3 3132 D5 3146 C7 3157 A6 3168 C7 4103 B5 6106 C3 7102 D4



These assembly drawings show a summary of all possible versions.
 For components used in a specific version see schematic diagram respectively partlist.

TUNER ADJUSTMENT TABLE (ECO6 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130		8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123	1	6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C		5111	5	
		C	see remark 2)	5112		
AM AFC MW		C		5114	2	0 ± 2 mV DC
AM RF³⁾						
MW⁴⁾ FM/MW/LW- and FM/MW-version (9kHz grid)	1494kHz	B	1494kHz	2106	5	
	531 - 1602kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	B	1500kHz	2106	5	
	560kHz		560kHz	5102		

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

- 1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)
- 2) RC network serves for damping the IF-filter while adjusting the other one.
- 3) For AM RF adjustments the original frame antenna has to be used!
- 4) MW has to be aligned before LW.

↑ Repeat

MISCELLANEOUS

1101	2422 015 19376	SOCKET 2P CLICKFIT	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR 2 POLE	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2101	4822 126 13692	47pF	1%	63V	
2102	4822 126 13838	100nF	10%	50V	not USA
2103	5322 122 31647	1nF	10%	63V	
2104	5322 122 32531	100pF	5%	50V	
2105	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00191	3-11pF TRIMCAP.,N450			
2107	4822 121 51319	1μF	20%	50V	
2120	4822 126 13689	18pF	1%	63V	
2124	5322 122 32654	22nF	10%	63V	
2125	2020 552 96199	560pF	1%	50V	
2126	5322 122 31863	330pF	5%	50V	
2127	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10μF	20%	63V	
2129	4822 124 41584	100μF	20%	10V	
2130	5322 122 32654	22nF	10%	63V	
2131	4822 126 13482	470nF	20%	16V	
2132	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1μF	20%	63V	
2134	4822 126 13188	15nF	5%	63V	not USA
2134	5322 122 32654	22nF	10%	63V	USA only
2135	4822 126 13188	15nF	5%	63V	not USA
2135	5322 122 32654	22nF	10%	63V	USA only
2136	4822 126 14076	220nF	20%	25V	
2137	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2μF	20%	50V	
2139	4822 126 14236	15pF	5%	50V	
2140	4822 126 13695	82pF	1%	63V	
2141	4822 126 13838	100nF	10%	50V	
2143	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1μF	20%	63V	
2145	4822 122 33575	220pF	5%	50V	
2146	4822 122 33575	220pF	5%	50V	
2147	4822 122 33575	220pF	5%	50V	
2148	4822 122 33127	2,2nF	10%	63V	
2149	5322 122 32659	33pF	5%	50V	RDS only
2150	4822 126 13838	100nF	10%	50V	
2152	4822 126 12105	33nF	5%	63V	not for East Europe
2152	5322 116 80853	560pF	5%	63V	for East Europe only
2153	4822 126 13486	15pF	2%	63V	not for East Europe
2153	4822 122 33926	12pF	2%	50V	for East Europe only
2155	2020 800 00191	3-11pF TRIMCAP.,N450			
2159	5322 122 32659	33pF	5%	50V	
2164	4822 126 13482	470nF	20%	16V	
2165	4822 126 13838	100nF	10%	50V	
2166	5322 122 31647	1nF	10%	63V	
2167	4822 122 33926	12pF	5%	50V	
2169	4822 122 33127	2,2nF	10%	63V	RDS only

RESISTORS

3101	4822 051 20333	33kΩ	5%	0,1W
3102	4822 117 10837	100kΩ	1%	0,1W
3103	4822 051 20822	8,2kΩ	5%	0,1W
3104	4822 117 13577	330Ω	1%	0,1W
3105	4822 117 11503	220Ω	5%	0,1W
3132	4822 051 20479	47Ω	5%	0,1W
3134	4822 051 20223	22kΩ	5%	0,1W
3141	4822 117 11148	56kΩ	1%	0,1W
3142	4822 100 12159	TRIMPOT. 100kΩ		

RESISTORS

3143	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145	4822 117 11449	2,2kΩ	1%	0,1W	
3146	4822 051 20229	22Ω	5%	0,1W	
3152	4822 051 20471	470Ω	5%	0,1W	
3153	4822 051 20471	470Ω	5%	0,1W	
3154	4822 117 13577	330Ω	1%	0,1W	
3155	4822 117 11503	220Ω	5%	0,1W	
3156	4822 117 10837	100kΩ	1%	0,1W	
3157	4822 117 10837	100kΩ	1%	0,1W	
3158	4822 051 20471	470Ω	5%	0,1W	
3159	4822 051 20471	470Ω	5%	0,1W	
3160	4822 051 20471	470Ω	5%	0,1W	
3161	4822 051 20223	22kΩ	5%	0,1W	
3167	4822 051 20121	120Ω	5%	0,1W	
3168	4822 051 20121	120Ω	5%	0,1W	
3169	4822 051 20154	150kΩ	5%	0,1W	
3170	4822 117 10837	100kΩ	1%	0,1W	
3172	4822 051 20562	5,6kΩ	5%	0,1W	
3176	4822 051 20333	33kΩ	5%	0,1W	RDS only
3181	4822 051 10102	1kΩ	2%	0,25W	
4103	4822 051 20008	CHIP JUMPER 0805			
4106	4822 051 20008	CHIP JUMPER 0805			
4107	4822 051 20008	CHIP JUMPER 0805			
4108	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	FM-IF FILTER 10,7MHz
5110	4822 242 70665	FM-IF FILTER 10,7MHz
5111	2422 549 44023	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz
5119	4822 157 11443	DISCRIMINATOR COIL
5121	4822 242 10261	QUARTZ 75kHz
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR
5130	4822 157 11843	RF COIL 1,5 TURNS
5131	4822 157 11843	RF COIL 1,5 TURNS

DIODES

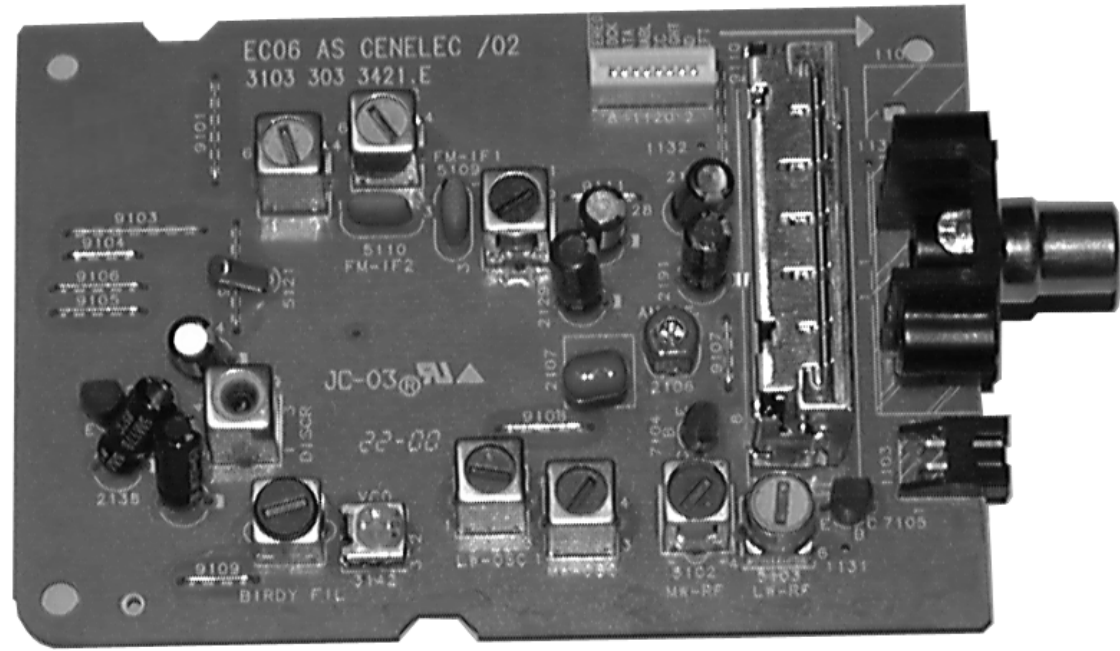
6103	5322 130 34337	BAV99
6105	4822 130 83075	HN1V02H
6106	4822 130 83757	BAS216
6107	9340 386 90115	BZX284-C11
6120	4822 130 83757	BAS216
6130	4822 130 82833	1SV228
6131	4822 130 82833	1SV228

TRANSISTORS

7102	4822 130 42131	BF550
7103	5322 130 42756	BC857C
7111	5322 130 42755	BC847C
7112	4822 130 44503	BC547C

INTEGRATED CIRCUITS

7101	9351 740 80557	TEA5757H/V1, RADIO IC
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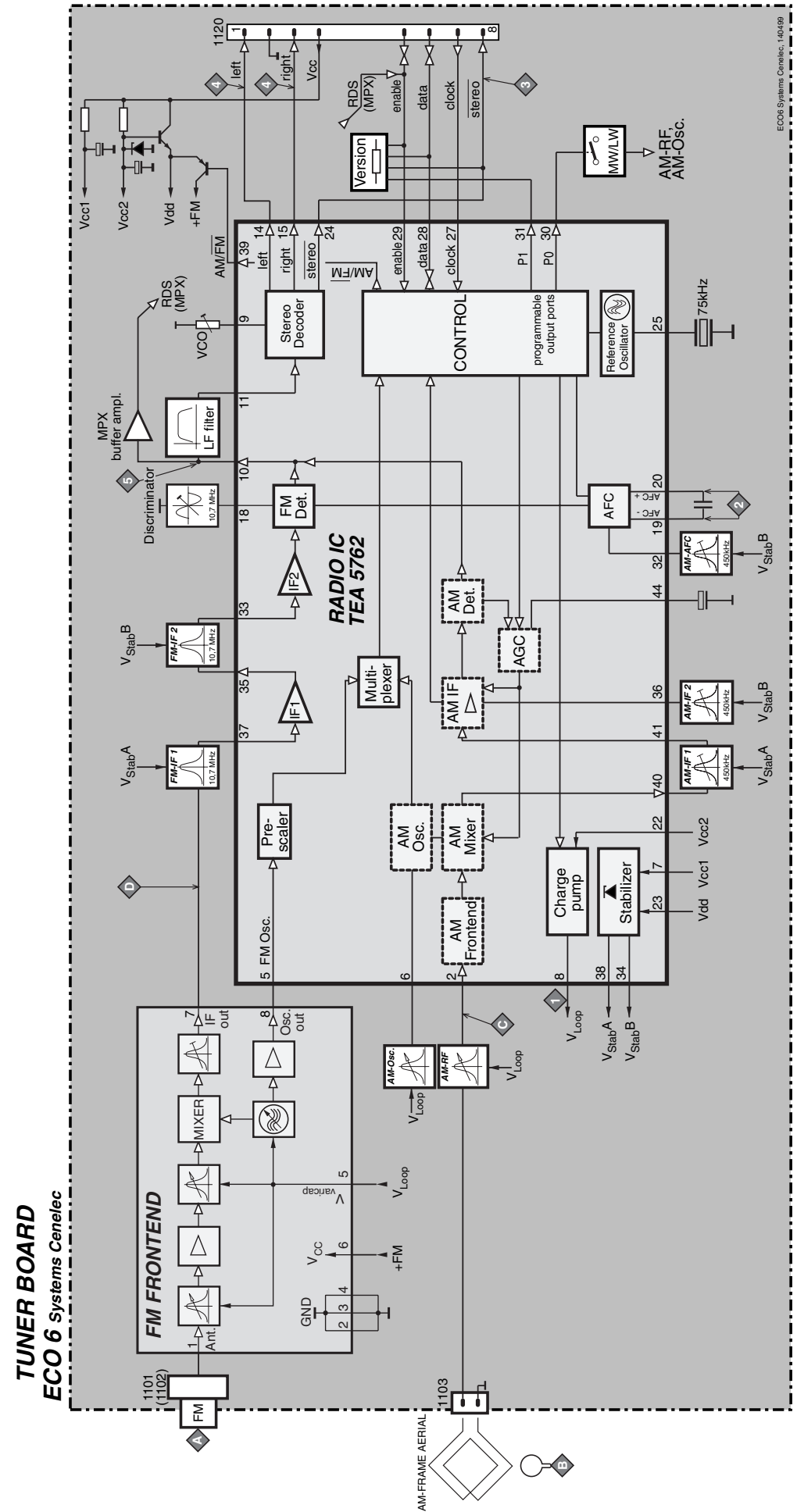
ECO6 Tuner Board

version: **SYSTEMS CENELEC**

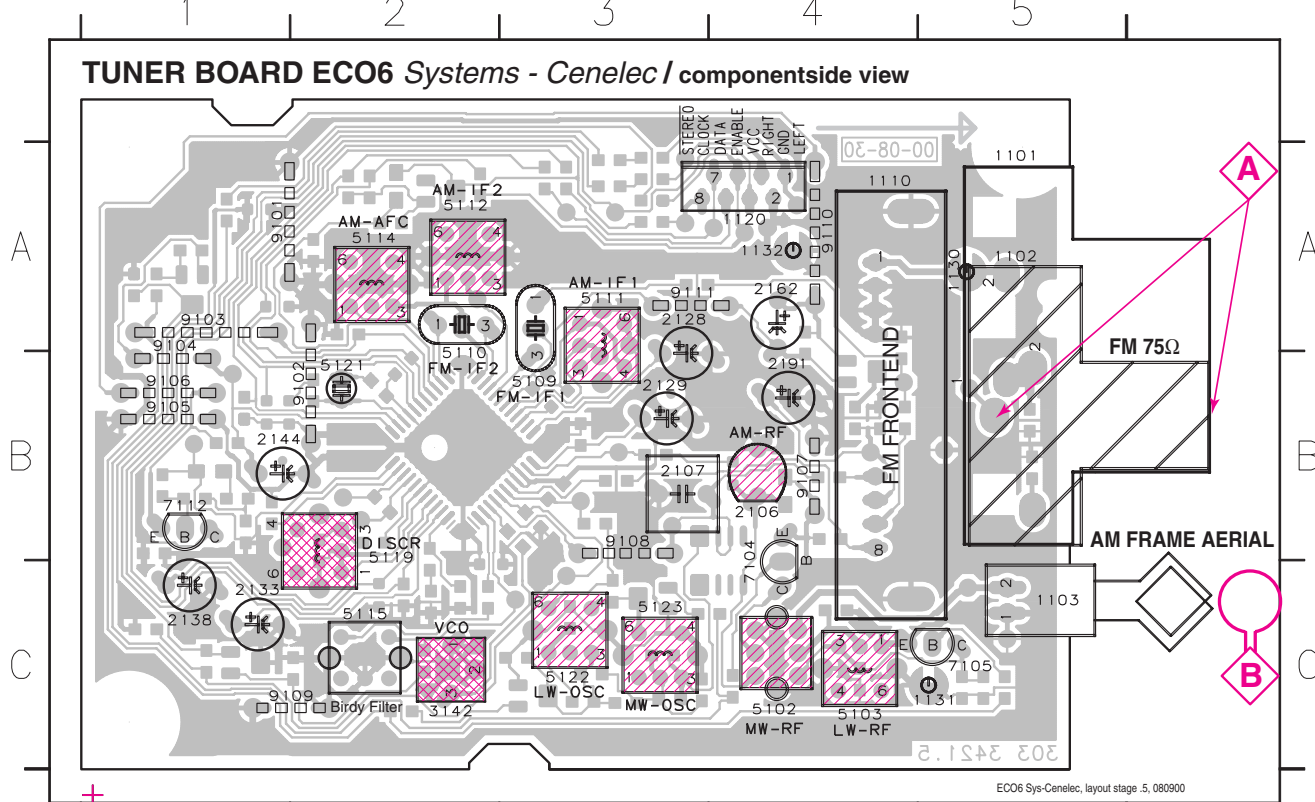
TABLE OF CONTENTS

- Blockdiagram7B-1
- Schematic Diagram7B-2
- Component Layout7B-3
- Adjustment table7B-3
- Electrical Partslist7B-4

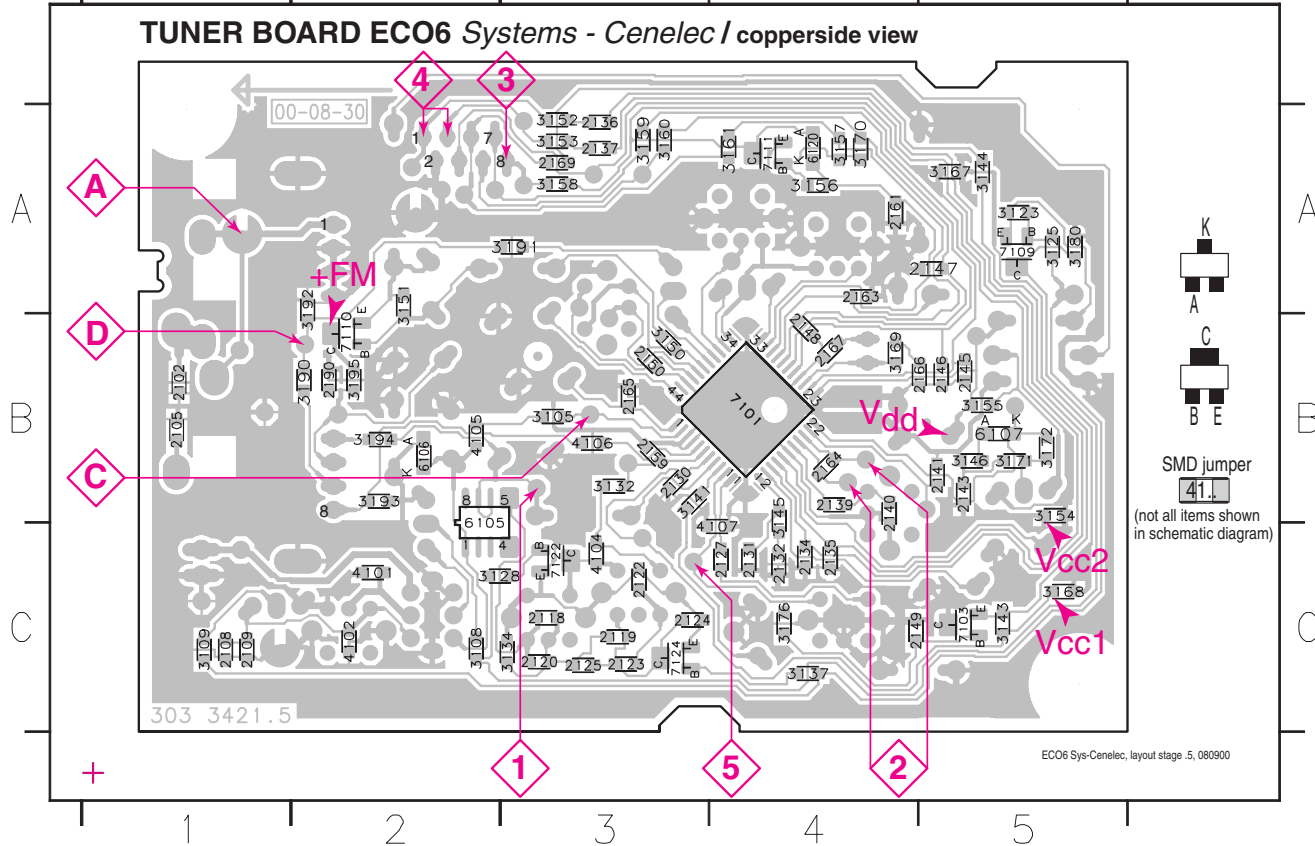
BLOCK DIAGRAM



1101 B5 1110 B4 1131 C5 2107 B3 2133 C1 2162 A4 5102 C4 5110 A2 5114 A2 5121 B2 7104 C4 9101 A2 9104 B1 9107 B4 9110 A4
 1102 B5 1120 A4 1132 A4 2128 A3 2138 B1 2191 B4 5103 C4 5111 A3 5115 C2 5122 C3 7105 C5 9102 B2 9105 B1 9108 B3 9111 A3
 1103 C5 1130 A5 2106 B4 2129 B3 2144 B1 3142 C2 5109 B3 5112 A2 5119 B2 5123 C3 7112 B1 9103 A1 9106 B1 9109 C2

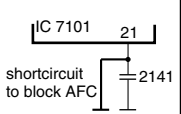
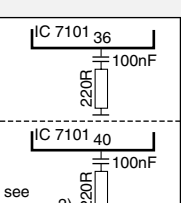
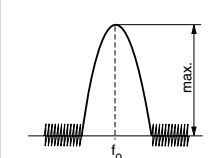
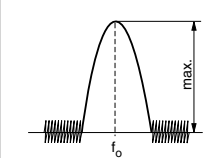


2102 B1 2120 C3 2130 B3 2137 A3 2146 B5 2161 A4 2169 A3 3125 A5 3143 C5 3152 A3 3158 A3 3169 B4 3190 B2 4101 C2 6105 B2 7109 A5
 2105 B1 2122 C3 2131 C4 2139 B4 2147 A5 2163 A4 2190 B2 3128 C2 3144 A5 3153 A3 3159 A3 3170 A4 3191 A3 4102 C2 6106 B2 7110 B2
 2108 C1 2123 C3 2132 C4 2140 B4 2148 B4 2164 B4 3105 B3 3132 B3 3145 C4 3154 B5 3160 A3 3171 B5 3192 A2 4104 C3 6107 B5 7111 A4
 2109 C1 2124 C3 2134 C4 2141 B5 2149 C4 2165 B3 3108 C2 3134 C3 3146 B5 3155 B5 3161 A4 3172 B5 3193 B2 4105 B2 6120 A4 7122 C3
 2118 C3 2125 C3 2135 C5 2143 B5 2150 B3 2166 B5 3109 C1 3137 C4 3150 B3 3156 A4 3167 A5 3176 C4 3194 B2 4106 B3 7101 B4 7124 C3
 2119 C3 2127 C4 2136 A3 2145 B5 2159 B3 3123 A5 3141 B3 3151 A2 3157 A4 3168 C5 3180 A5 3195 B2 4107 C4 7103 C5



These assembly drawings show a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (ECO6 Cenelec FM/MW - and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check		8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123	1	8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
<i>FM - IF</i>						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0mV ±3mV
<i>FM - VCO</i>						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
<i>FM RF (channel separation)</i> Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.						
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
<i>AM IF</i>						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C		5111	5	
				5112		
AM AFC MW		C		5114	2	0mV ±2mV
<i>AM RF ³⁾</i>						
MW	1494kHz	B		1494kHz	2106	
	558kHz			5102		
LW	198kHz			198kHz	5103	

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.
¹⁾ If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)
²⁾ RC network serves for damping the IF-filter while adjusting the other one.
³⁾ For AM RF adjustments the original frame antenna has to be used!
 MW has to be aligned before LW.
 ↑ Repeat

MISCELLANEOUS

1101	2422 015 19376	SOCKET CLICKFIT 2P	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR, 2 POLE	
1110	2422 542 90071	FM FRONTEND	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2102	4822 126 13838	100nF 10% 50V	not USA
2105	4822 126 13838	100nF 10% 50V	USA only
2106	2020 800 00204	TRIMCAP. 4.2 - 20pF, N750	LW only
2106	2020 800 00191	TRIMCAP. 3 - 11pF, N450	FM/AM only
2107	4822 121 51319	1μF 20% 50V	
2108	4822 122 32531	100pF 5% 50V	LW only
2109	4822 122 32448	10pF 5% 50V	LW only
2120	4822 126 13689	18pF 1% 63V	FM/AM only
2120	4822 122 32658	22pF 5% 50V	LW only
2122	4822 122 33891	3,3nF 10% 63V	LW only
2123	2020 552 93494	390pF 1% 50V	LW only
2124	4822 122 33177	10nF 20% 50V	FM/AM only
2125	2020 552 96199	560pF 1% 50V	
2127	4822 126 14076	220nF 20% 25V	
2128	4822 124 40248	10μF 20% 63V	
2129	4822 124 41584	100μF 20% 10V	
2130	4822 122 32654	22nF 10% 63V	
2131	4822 126 13482	470nF 20% 16V	
2132	4822 126 13482	470nF 20% 16V	
2133	4822 124 21913	1μF 20% 63V	
2134	4822 122 33893	18nF 5% 63V	not USA
2134	4822 122 32654	22nF 10% 63V	USA only
2135	4822 122 33893	18nF 5% 63V	not USA
2135	4822 122 32654	22nF 10% 63V	USA only
2136	4822 126 14076	220nF 20% 25V	
2137	4822 126 14076	220nF 20% 25V	
2138	4822 124 22652	2,2μF 20% 50V	
2139	4822 126 14236	15pF 5% 50V	
2140	4822 126 13695	82pF 1% 63V	
2141	4822 126 13838	100nF 10% 50V	
2143	4822 126 14076	220nF 20% 25V	
2144	4822 124 21913	1μF 20% 63V	
2145	4822 122 33575	220pF 5% 50V	
2146	4822 122 33575	220pF 5% 50V	
2147	4822 122 33575	220pF 5% 50V	
2148	4822 122 33127	2,2nF 10% 63V	
2149	4822 122 32659	33pF 5% 50V	RDS only
2150	4822 126 13838	100nF 10% 50V	
2159	4822 122 32659	33pF 5% 50V	
2162	4822 124 81151	22μF 20% 50V	
2163	4822 126 13838	100nF 10% 50V	LW only
2164	4822 126 13482	470nF 20% 16V	
2165	4822 126 13838	100nF 10% 50V	
2166	4822 122 31647	1nF 10% 63V	
2167	4822 122 33926	12pF 5% 50V	
2169	4822 122 33127	2,2nF 10% 63V	RDS only
2190	4822 126 13838	100nF 10% 50V	
2191	4822 124 40178	100μF 20% 10V	

RESISTORS

3105	4822 117 11503	220Ω 5% 0,1W	
3108	4822 117 11449	2,2kΩ 1% 0,1W	LW only
3109	4822 051 20472	4,7kΩ 5% 0,1W	LW only
3123	4822 051 20472	4,7kΩ 5% 0,1W	LW only
3125	4822 117 10833	10kΩ 1% 0,1W	LW only
3128	4822 117 11449	2,2kΩ 1% 0,1W	LW only

RESISTORS

3132	4822 051 20479	47Ω 5% 0,1W	
3134	4822 051 20223	22kΩ 5% 0,1W	
3137	4822 051 20223	22kΩ 5% 0,1W	LW only
3141	4822 117 11148	56kΩ 1% 0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ	
3143	4822 051 20223	22kΩ 5% 0,1W	RDS only
3144	4822 051 10102	1kΩ 2% 0,25W	RDS only
3145	4822 117 11449	2,2kΩ 1% 0,1W	
3146	4822 051 20229	22Ω 5% 0,1W	
3150	4822 117 10833	10kΩ 1% 0,1W	
3151	4822 051 20683	68kΩ 5% 0,1W	
3152	4822 051 20471	470Ω 5% 0,1W	
3153	4822 051 20471	470Ω 5% 0,1W	
3154	4822 117 13577	330Ω 1% 0,1W	
3155	4822 117 10353	150Ω 5% 0,1W	
3156	4822 117 10837	100kΩ 1% 0,1W	
3157	4822 117 10837	100kΩ 1% 0,1W	
3158	4822 051 20471	470Ω 5% 0,1W	
3159	4822 051 20471	470Ω 5% 0,1W	
3160	4822 051 20471	470Ω 5% 0,1W	
3161	4822 051 20223	22kΩ 5% 0,1W	
3167	4822 051 20121	120Ω 5% 0,1W	
3168	4822 051 20121	120Ω 5% 0,1W	
3169	4822 051 20154	150kΩ 5% 0,1W	
3170	4822 117 10837	100kΩ 1% 0,1W	
3171	4822 117 10834	47kΩ 1% 0,1W	
3172	4822 051 20562	5,6kΩ 5% 0,1W	
3176	4822 051 20333	33kΩ 5% 0,1W	RDS only
3180	4822 117 10833	10kΩ 1% 0,1W	LW only
3190	4822 051 20121	120Ω 5% 0,1W	
3191	4822 051 20121	120Ω 5% 0,1W	
3192	4822 117 13577	330Ω 1% 0,1W	
3193	4822 117 13577	330Ω 1% 0,1W	
3194	4822 117 11449	2,2kΩ 1% 0,1W	
3195	4822 051 20101	100Ω 5% 0,1W	
4101	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4102	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4104	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4105	4822 051 20008	CHIP JUMPER 0805	
4106	4822 051 20008	CHIP JUMPER 0805	
4107	4822 051 20008	CHIP JUMPER 0805	

COILS

5102	4822 157 71634	RF-COIL MW	
5103	2422 549 44107	RF-COIL LW	LW only
5109	4822 157 71639	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	
5114	4822 157 70302	AM-IF FILTER 450kHz	
5115	4822 157 71636	ANTI BIRDY FILTER	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR	LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR	

DIODES

6105	4822 130 83075	HN1V02H	
6106	4822 130 83757	BAS216	
6107	9340 386 90115	BZX284-C11	
6120	4822 130 83757	BAS216	

TRANSISTORS

7103	4822 130 42756	BC857C	RDS only
7104	9322 003 64676	TBC337-40	LW only
7105	9322 003 64676	TBC337-40	LW only
7109	4822 130 60373	BC856B	LW only
7110	4822 130 60373	BC856B	
7111	4822 130 42755	BC847C	
7112	4822 130 44503	BC547C	
7122	4822 130 42755	BC847C	LW only
7124	4822 130 42755	BC847C	LW only

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC	
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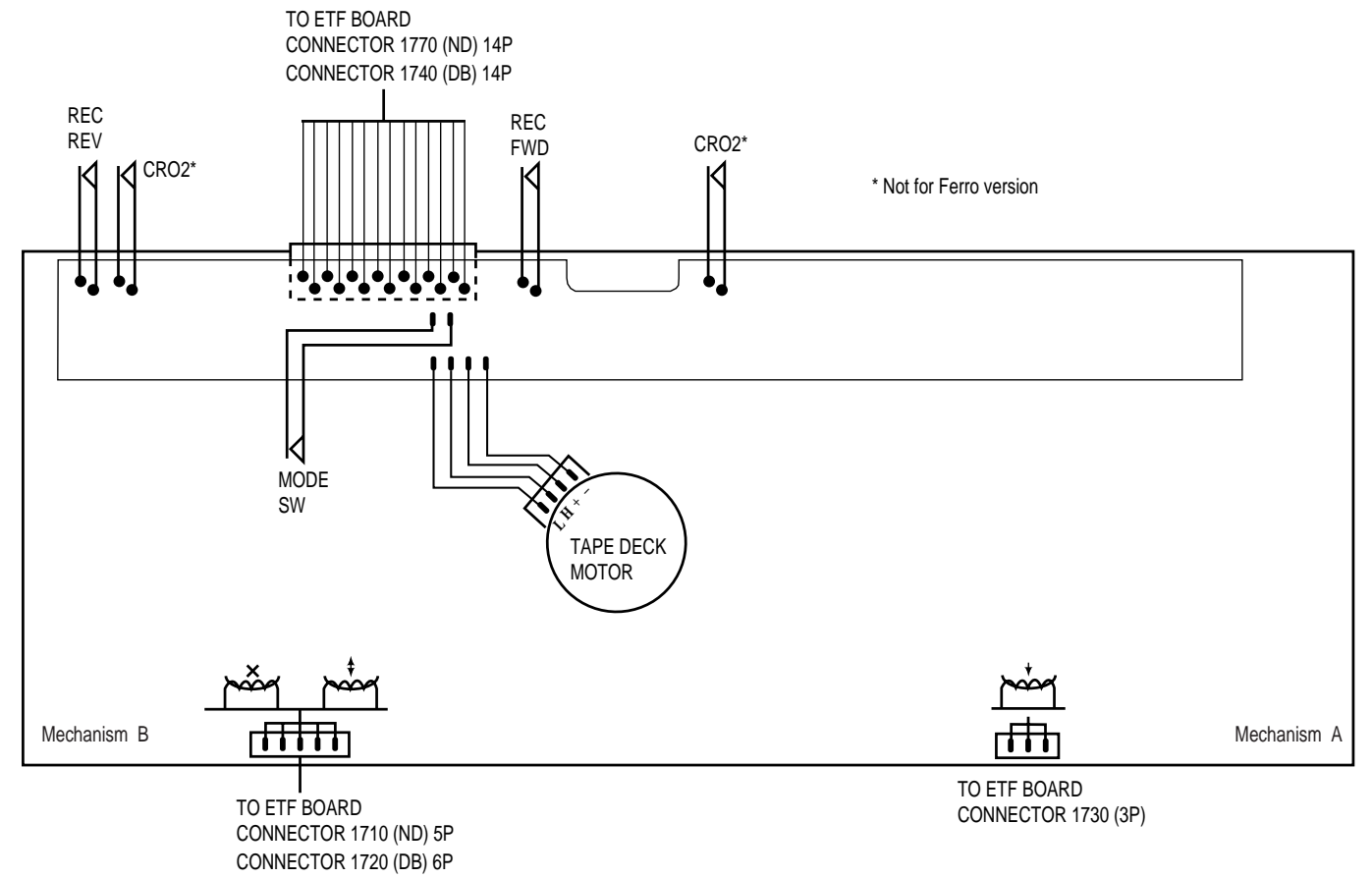
ETF7 TAPE MODULE

(Non-Dolby Version)

TABLE OF CONTENTS

Tape Module Wiring & variation table 9-1
 Block diagram 9-2
 Brief Introduction 9-3
 Connector assignment 9-4
 Tape deck electronics & Tape adjustments 9-5
 ETF7 Non-Dolby board layouts 9-6
 Analog Circuit diagram 9-7
 Servo Circuit diagram 9-8
 Exploded views & parts list 9-9
 Electrical parts list 9-13

Tapedeck wiring (Double deck)

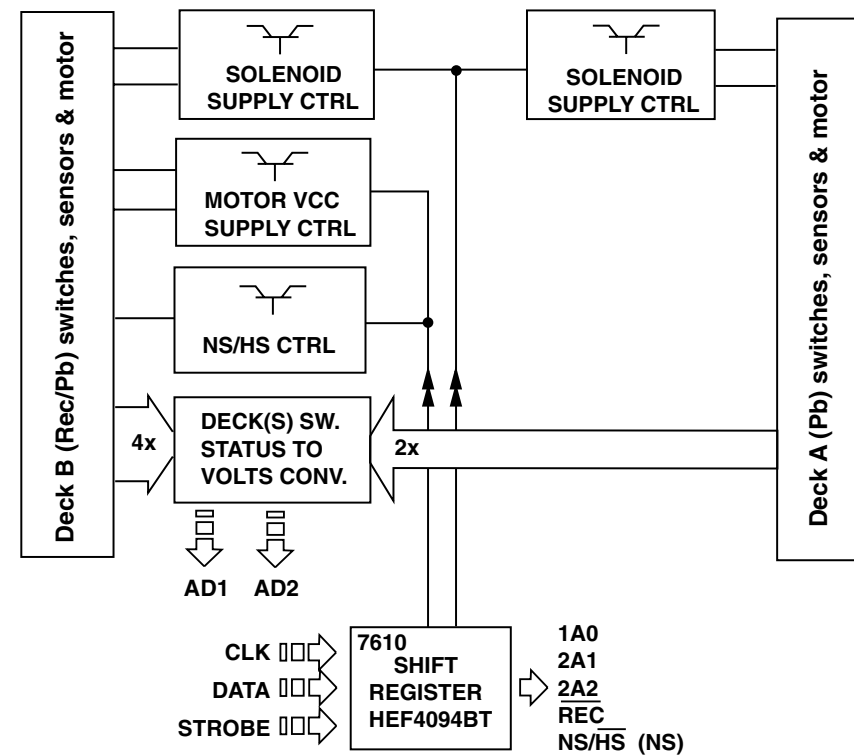
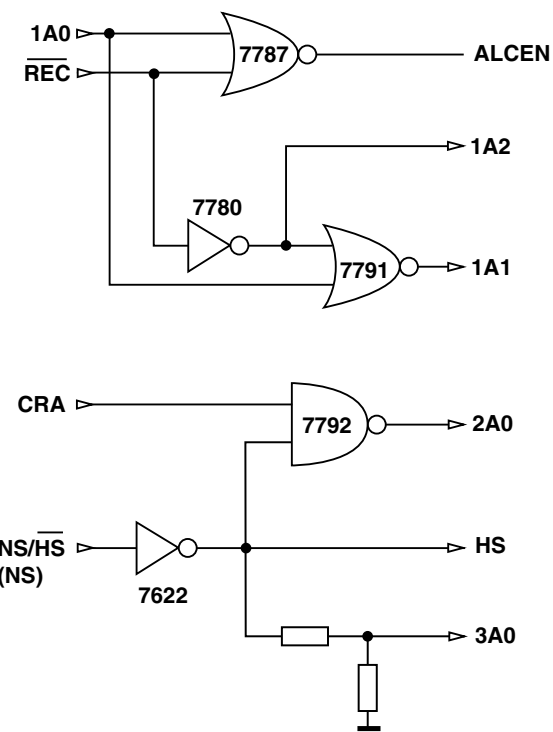
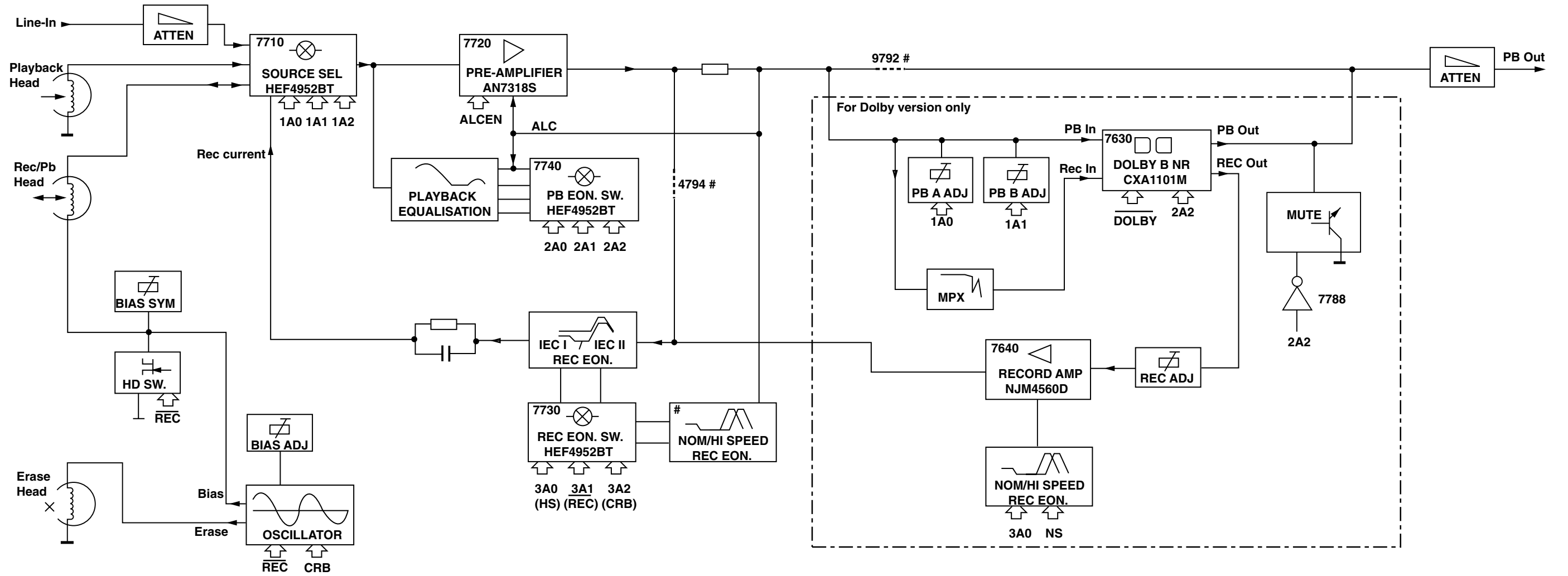


Variations table for Analog Circuit

	Autoreverse	Non-autoreverse	
	ND/DD/FR	ND/DD/FF	FF
	Chrome/Ferro	Chrome/Ferro	Ferro
2624	-	-	100nF
2701 , 2702	150pF	270pF	270pF
2703 , 2704	100pF	220pF	220pF
2717 , 2718	10nF	15nF	15nF
2721 , 2722	6,8nF	6,8nF	-
2727 , 2728	470pF	1nF	1nF
3616	10k	1k	1k
3618	6k8	-	-
3620	10k trimmer	-	-
3622	-	10k trimmer	10k trimmer
3672	4k7	-	-
3676	47k	-	-
3687	220R	220R	-
3688	680R	-	-
3723 , 3724	15k	18k	18k
3725 , 3726	10R	10R	-
3727 , 3728	5k6	6k8	6k8
3729 , 3730	3k3	4k7	4k7
3743 , 3744	1k5	2k2	2k2
3745 , 3746	3k3	5k6	5k6
3754 , 3755	1M	47R	47R

	Autoreverse	Non-autoreverse	
	ND/DD/FR	ND/DD/FF	FF
	Chrome/Ferro	Chrome/Ferro	Ferro
3769	12k	8k2	8k2
3772	6k8	5k6	5k6
4785	-	-	0R jumper
3774	15k	8k2	8k2
6614	1N4148	-	-
7616	BC857B	-	-
7622	BC847B	-	-

BLOCK DIAGRAM



NOTE: # For Non-dolby version only
Only 1 channel is presented.

MicroProcessor Control / Communication lines

Direct / Indirect Control lines from Shift Registers

Brief introduction

General

1. Playback Mode
Signal from the playback head Deck A or Deck B is selected and fed through by the Mode Selector IC7710 (HEF4952BT). The signal is amplified by amplifier IC7720 (AN7323S) before feeding to the IC7740 (HEF4952BT) and out to the AF Board via connector 1701.
2. Recording Mode
Recording Signal is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then amplified by the amplifier IC7720 (AN7323S). The amplified output signal will pass through IC7730 (HEF4952BT) for record equalization and back to IC7710 (HEF4952BT) before registered into the Rec/PB Head of Deck B.
3. Dubbing Mode
In Dubbing mode, signal from the playback head Deck A is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then equalised for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalised signal will then follow the same path as in the Recording mode.
4. Mode Selector
The Mode Selector IC7710 (HEF4952BT) caters for 4 inputs signal, namely Playback Signal from Deck A, Playback Signal from Deck B, Recording Signal and Dubbing Signal.
5. Amplifier PB/REC
Amplifier IC7720 (AN7323S) is for the purpose of amplifying the Playback and Recording signal from the Mode Selector.
6. Automatic Level Control (ALC)
ALC circuit consists of resistors (3760, 3765, 3766, 3767), capacitors (2762, 2763) and control by transistor 7787 (BC847B). ALC limits the amplifier output to a constant value when input signal becomes too large, thus limiting recording current to below saturation level, to prevent recording distortion.
7. Muting Circuit (For Non-Dolby version only)
Switch S4 of the IC7740 (HEF4952BT) is for the purpose of muting the output during Recording mode. During Recording mode, S4 is closed and shorted to the ground.
8. IC7740 (HEF4952BT)
The function of the IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II). This IC will switch to Flat Gain during the Recording mode.
9. IC7730 (HEF4952BT)
The function of the IC7730 (HEF4952BT) is to change gain and time constant according to tape type and recording speed to boost recording current at higher frequency during recording to compensate for head loss. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).
10. Bias Level
Bias Level making use of the Variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.
11. Bias Symm (For Dolby B NR version only)
Bias Symm making use of the Variable resistor (3785) to adjust the bias current for the left and the right channel to be equal.
12. PB Switch
Playback Switch which consists of the FETs 7785 (For Dolby B NR version only) & 7786 (J111) is for the purpose of providing a virtual ground for the Rec/PB Head (Deck B) during Playback mode. During the Playback mode, the FETs are turn on and shorted pin 2 and 4 of connector 1720 to the ground. During Recording mode, the FETs are turn off to allow the oscillator signal to be superposition onto the Recording signal for recording.

13. Motor Speed (For FR versions only)
During High speed dubbing, a feedback signal from the uP through pin 03 of the IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between High and Low, thus changing the speed of the motor.
14. IC7610 (HEF4094BT)
IC7610 (HEF4094BT) is a Shift Register use for issues the logic for cmos switch ICs (HEF4952BT) via 1A0, 2A1 and 2A2. It also issues logic to On/Off SOL_A, SOL_B and MOT. Recording speed is controlled via NS/HS.

Dolby Circuit (For sets with Dolby B NR version only)

15. IC7630 (CXA1551M)
IC7630 (CXA1551M) in the Dolby circuit is a Dolby Noise Reduction Type B IC for the Playback and Recording signal. Noise Reduction ON/OFF are controlled by $\overline{\text{DOLBY}}$, which is from CLK, direct from uP. After clocking in DATA, CLK is set to HIGH/LOW for NR OFF/ON.
16. 19kHz Filter
The 19kHz filters 5631 & 5632 (LXD-210) in the Dolby circuit is for the purpose of filtering the 19kHz Pilot Tone (for Tuner signal only) of the Recording signal.
17. Level Adjust
The Variable resistor 3635, 3636, 3641 and 3642 in the Dolby circuit is for adjusting the playback level of the Dolby reference (400Hz, 200nWb/m). Transistor 7631, 7632 are ON to enable adjustment of 3641, 3642 during Playback Deck A. Transistor 7633, 7634 and 3635, 3636 are active for Playback Deck B.
18. Amplifier IC7640 (NJM4560M)
The Amplifiers 7640A & 7640B (NJM4560M) in the Dolby circuit is for the purpose of amplified the Recording signal.
19. Muting Circuit
The muting circuit which consists of transistors 7788, 7789 and 7790 (BC847B) is for the purpose of muting the output during Recording mode.

NOTATIONS & ABBREVIATIONS USED IN THIS DOCUMENT

CR	Chrome (IEC type II)
DB	Dolby NR type B
DD	Double Deck
DM	Double Motor
FE	Ferro (IEC type I)
FF	Non-Autoreverse
FR	Autoreverse Deck B
Gnd x	Ground x
HSD	High speed dubbing
ND	Non Dolby
NR	Noise Reduction
NSD	Normal speed dubbing
PB	Playback
REC	Record
S/A	Sub-assy
SD	Single Deck
SM	Single Motor

CONNECTORS ASSIGNMENTS:**CONNECTOR 1701****INTERCONNECTION TO AF BOARD**

○ 1	REC-L	Record input left
○ 2	REC-R	Record input right
○ 3	GND A	AF Ground
○ 4	TAPE-L	Playback output left
○ 5	+12V	D.C. supply (+12V) for AF electronics
○ 6	TAPE-R	Playback output right
○ 7	-CMOS	Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703**INTERCONNECTION TO AF BOARD**

○ 1	GND M	Motor Ground
○ 2	+MOTOR	D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706**INTERCONNECTION TO FRONT BOARD**

○ 1	AD2	Deck sensing switches output voltage / Deck A EOT
○ 2	AD1	Deck sensing switches output voltage / Deck B EOT
○ 3	+5V	DC supply +5V for ADC network
○ 4	GND P	Control & Oscillator Ground
○ 5	CLK	HEF4094BT shift register Clock line
○ 6	DATA	HEF4094BT shift register Data line
○ 7	STROBE	HEF4094BT shift register Strobe line

CONNECTOR 1710**DECK B HEADS CONNECTOR (For Non-Dolby version only)**

○ 1	B R/P HD L+	R/P Head left channel positive
○ 2	GND A	R/P Head return ground
○ 3	B R/P HD R+	R/P Head right channel positive
○ 4	ERASE HEAD	Erase Head
○ 5	GND A	Erase Head ground

CONNECTOR 1720**DECK B HEADS CONNECTOR (For Dolby B NR version only)**

○ 1	B R/P HD L+	R/P Head left channel positive
○ 2	B R/P HD L-	R/P Head left channel negative
○ 3	B R/P HD R+	R/P Head right channel positive
○ 4	B R/P HD R-	R/P Head right channel negative
○ 5	ERASE HEAD	Erase Head
○ 6	GND A	Erase Head ground

CONNECTOR 1730**DECK A HEAD CONNECTIONS (For Double Deck versions only)**

○ 1	A PB HD L+	Pb Head left channel positive
○ 2	GND A	Pb Head return ground shield
○ 3	A PB HD R+	Pb Head right channel positive

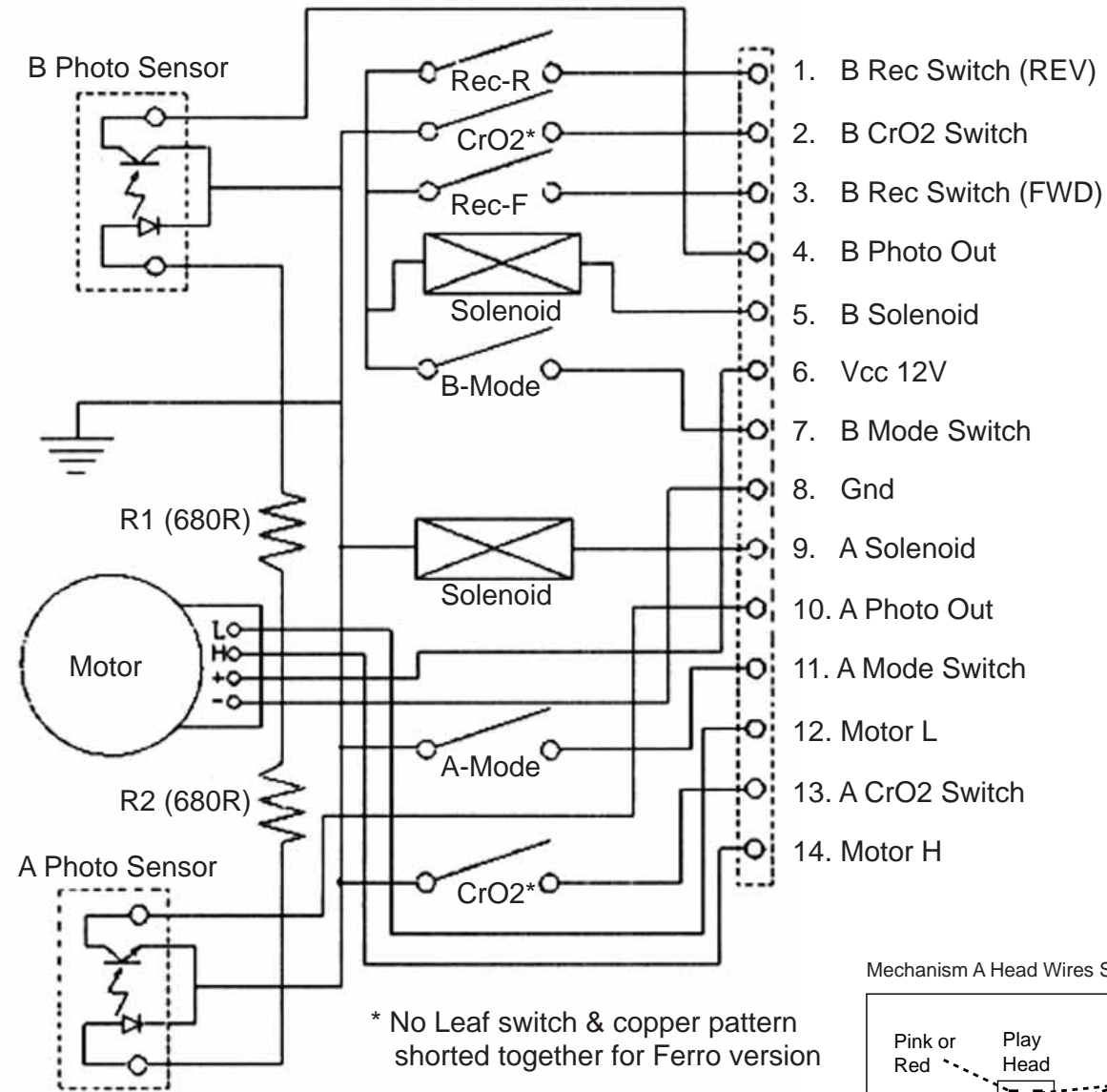
CONNECTOR 1740**DECK A & B CONTROL INTERFACE (For Dolby B NR version only)**

○ 1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○ 2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○ 3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○ 4	PHOTO B	Photo sensor output (tape movement indication)	
○ 5	SOL B	Solenoid supply for deck B	
○ 6	Vcc	Deck / Motor supply	
○ 7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○ 8	GND M	Deck / Motor ground	
○ 9	SOL A	Solenoid supply for deck A	
○ 10	PHOTO A	Photo sensor output (tape movement indication)	
○ 11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○ 12	L	L pin for motor	
○ 13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○ 14	H	H pin for motor	

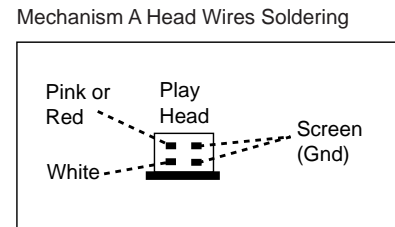
CONNECTOR 1770**DECK A & B CONTROL INTERFACE (For Non-Dolby version only)**

○ 1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○ 2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○ 3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○ 4	PHOTO B	Photo sensor output (tape movement indication)	
○ 5	SOL B	Solenoid supply for deck B	
○ 6	Vcc	Deck / Motor supply	
○ 7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○ 8	GND M	Deck / Motor ground	
○ 9	SOL A	Solenoid supply for deck A	
○ 10	PHOTO A	Photo sensor output (tape movement indication)	
○ 11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○ 12	L	L pin for motor	
○ 13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○ 14	H	H pin for motor	

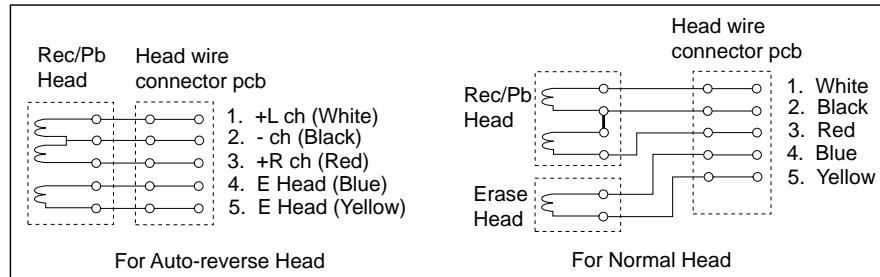
TAPE MECHANISM ELECTRONICS



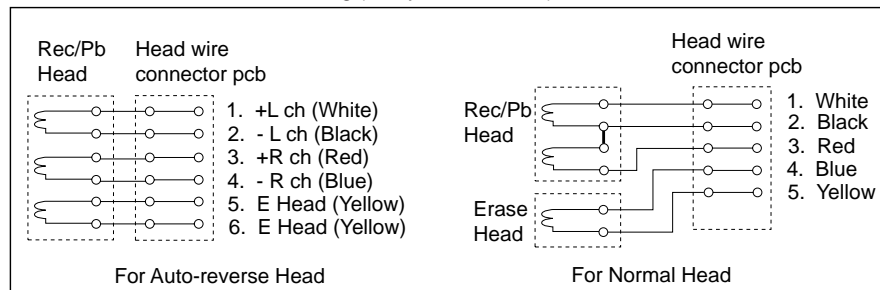
* No Leaf switch & copper pattern shorted together for Ferro version



Mechanism B Head Wires Soldering (Non-Dolby version)



Mechanism B Head Wires Soldering (Dolby B NR version)

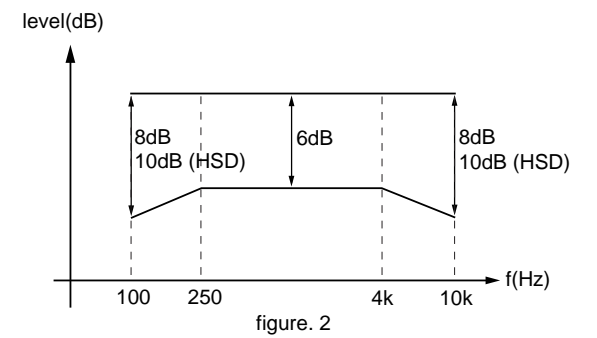
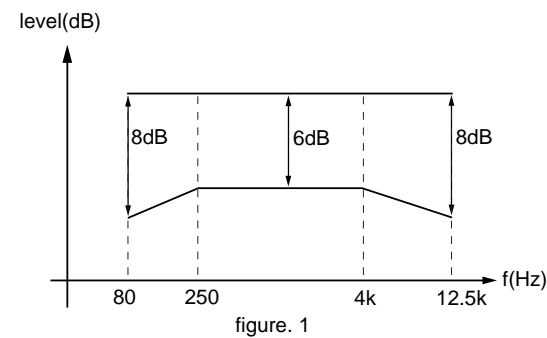


TAPE ADJUSTMENT & CHECK TABLE

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
ADJUST MOTOR SPEED						
NORMAL SPEED	SBC420 3150Hz	PLAY B	1 or 2	frequency counter	3620	3150Hz - 0.5%
		PLAY A	LEFT RIGHT		check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 3150Hz	PLAY	1 or 2	W&F-meter	check	†0.4 % DIN
ADJUST AZIMUTH						
DECK A & B	SBC420 10kHz	PLAY FWD	1 or 2	mV-meter	left hand screw	max. output level & left=right
		PLAY REV #	LEFT RIGHT		right hand screw	
CHECK PLAYBACK FREQUENCY RESPONSE						
DECK A & B	SBC420	PLAY	1 or 2	mV-meter	check	limits see fig.1
ADJUST BIAS CURRENT						
DECK B	SBC419A^	RECORD	5 or 6	mV-meter	3773	995mV
	SBC420		LEFT RIGHT		check	750mV - 1.5dB
CHECK OVERALL FREQUENCY RESPONSE AND DISTORTION						
Inject 3mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via 3 or 4	SBC419A^ or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	1 or 2	mV-meter	check	limits see fig. 2 *
Inject 1kHz 8.85mV via 3 or 4	SBC419A^ or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	1 or 2	THD-meter	check	†3% *

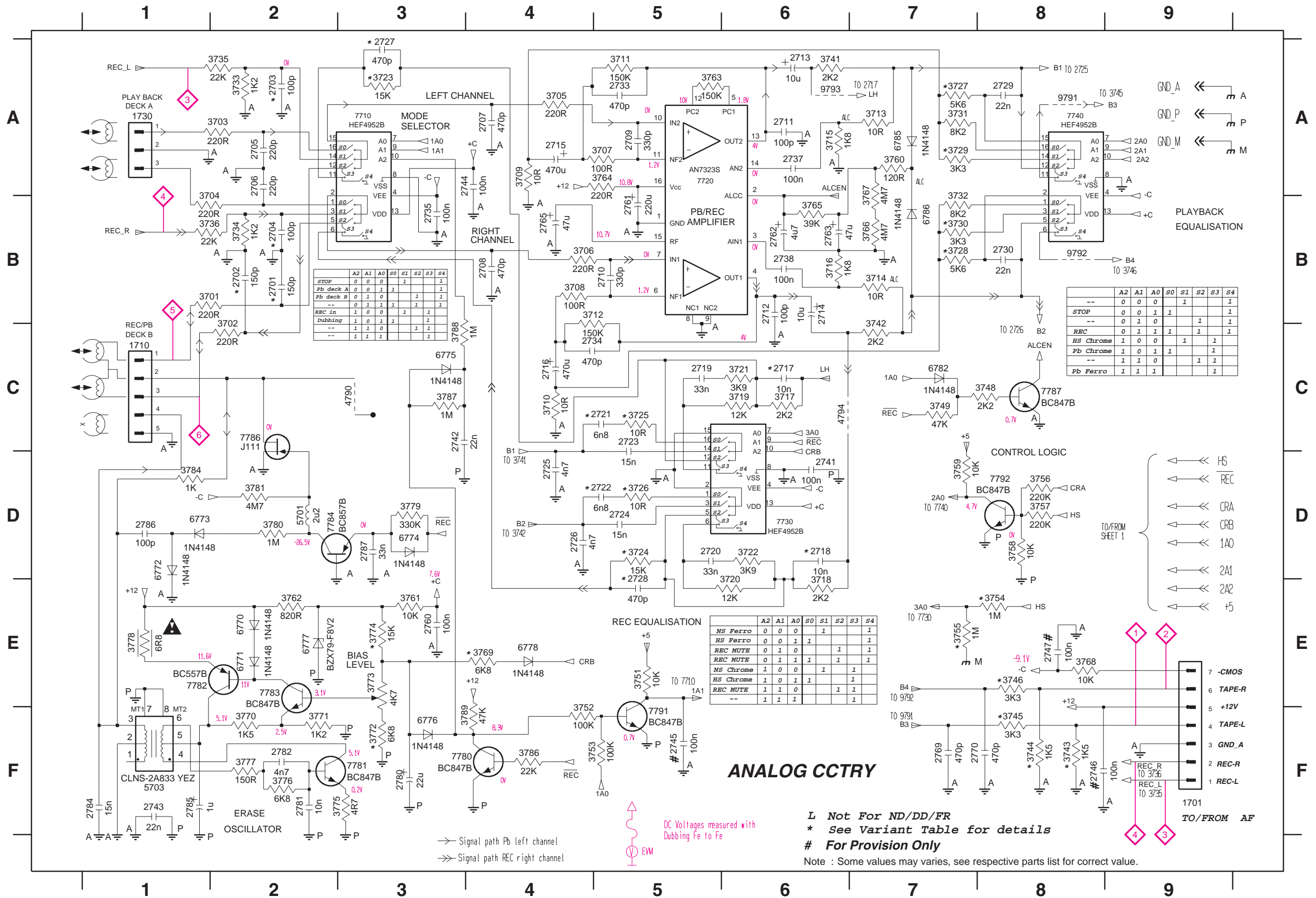
SBC419A^ : 4822 397 30069
SBC420 : 4822 397 30071

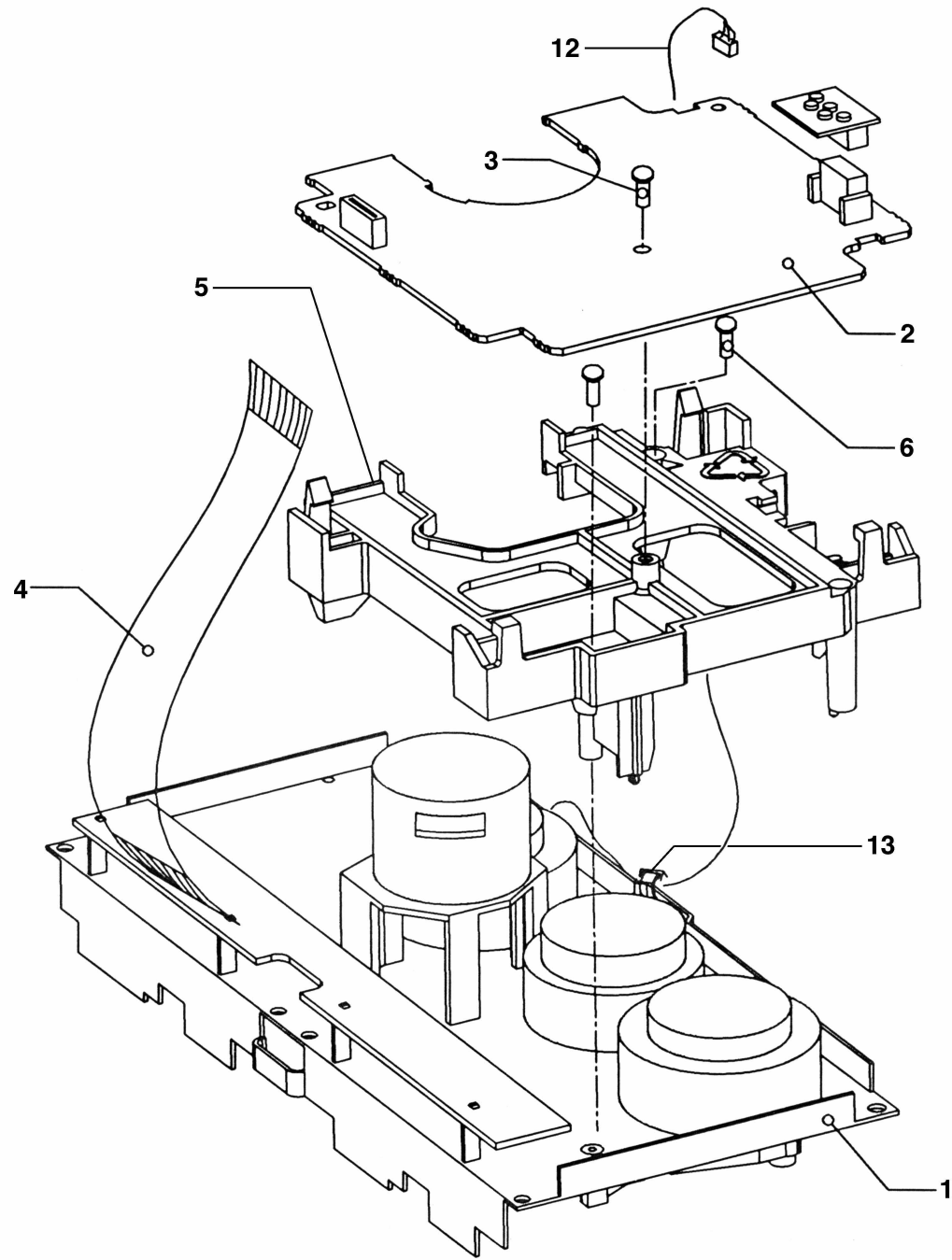
For Auto-reverse version only
* If high frequencies are not within limits, decrease bias and re-measure. If distortion is too high, increase bias and re-measure
^ Not applicable for Ferro version



ANALOG CIRCUIT

1701 F9	2705 A2	2712 B6	2719 C5	2726 D4	2735 B3	2745 F5	2765 B4	2785 F1	3705 A4	3712 B4	3719 C6	3726 D5	3733 A2	3744 F8	3753 F5	3760 A7	3767 A7	3774 E3	3781 D2	4794 C6	6774 D3	6786 B7	7782 E1	9791 A8
1710 C1	2706 A2	2713 A6	2720 D5	2727 A3	2737 A6	2746 F8	2769 F7	2786 D1	3706 B4	3713 A7	3720 E6	3727 A7	3734 B2	3745 F8	3754 E8	3761 E3	3768 E8	3775 F3	3784 D1	5701 D2	6775 C3	7710 A3	7783 E2	9792 B8
1730 A1	2707 A4	2714 B6	2721 C5	2728 E5	2738 B6	2747 E8	2770 F8	2787 D3	3707 A5	3714 B7	3721 C6	3728 B7	3735 A2	3746 E8	3755 E7	3762 E2	3769 E4	3776 F2	3786 F4	5703 F1	6776 F3	7720 A5	7784 D2	9793 A6
2701 B2	2708 B4	2715 A4	2722 D5	2729 A8	2741 D6	2760 E3	2780 F3	3701 B1	3708 B4	3715 A6	3722 D6	3729 A7	3736 B1	3748 C8	3756 D8	3763 A5	3770 F2	3777 F2	3787 C3	6770 E2	6777 E2	7730 D6	7786 C2	
2702 B2	2709 A5	2716 C4	2723 C5	2730 B8	2742 C3	2761 B5	2781 F2	3702 C2	3709 A4	3716 B6	3723 A3	3730 B7	3741 A6	3749 C7	3757 D8	3764 A5	3771 F2	3778 E1	3788 C3	6771 E2	6778 E4	7740 A8	7787 C8	
2703 A2	2710 B5	2717 C6	2724 D5	2733 A5	2743 F1	2762 B6	2782 F2	3703 A2	3710 C4	3717 C6	3724 D5	3731 A7	3742 C7	3751 E5	3758 D8	3765 B6	3772 F3	3779 D3	3789 F4	6772 D1	6782 C7	7780 F4	7791 F5	
2704 B2	2711 A6	2718 D6	2725 D4	2734 C4	2744 A4	2763 B6	2784 F1	3704 B1	3711 A5	3718 E6	3725 C5	3732 B7	3743 F8	3752 F4	3759 D7	3766 B7	3773 E3	3780 D2	4790 C3	6773 D1	6785 A7	7781 F3	7792 D8	



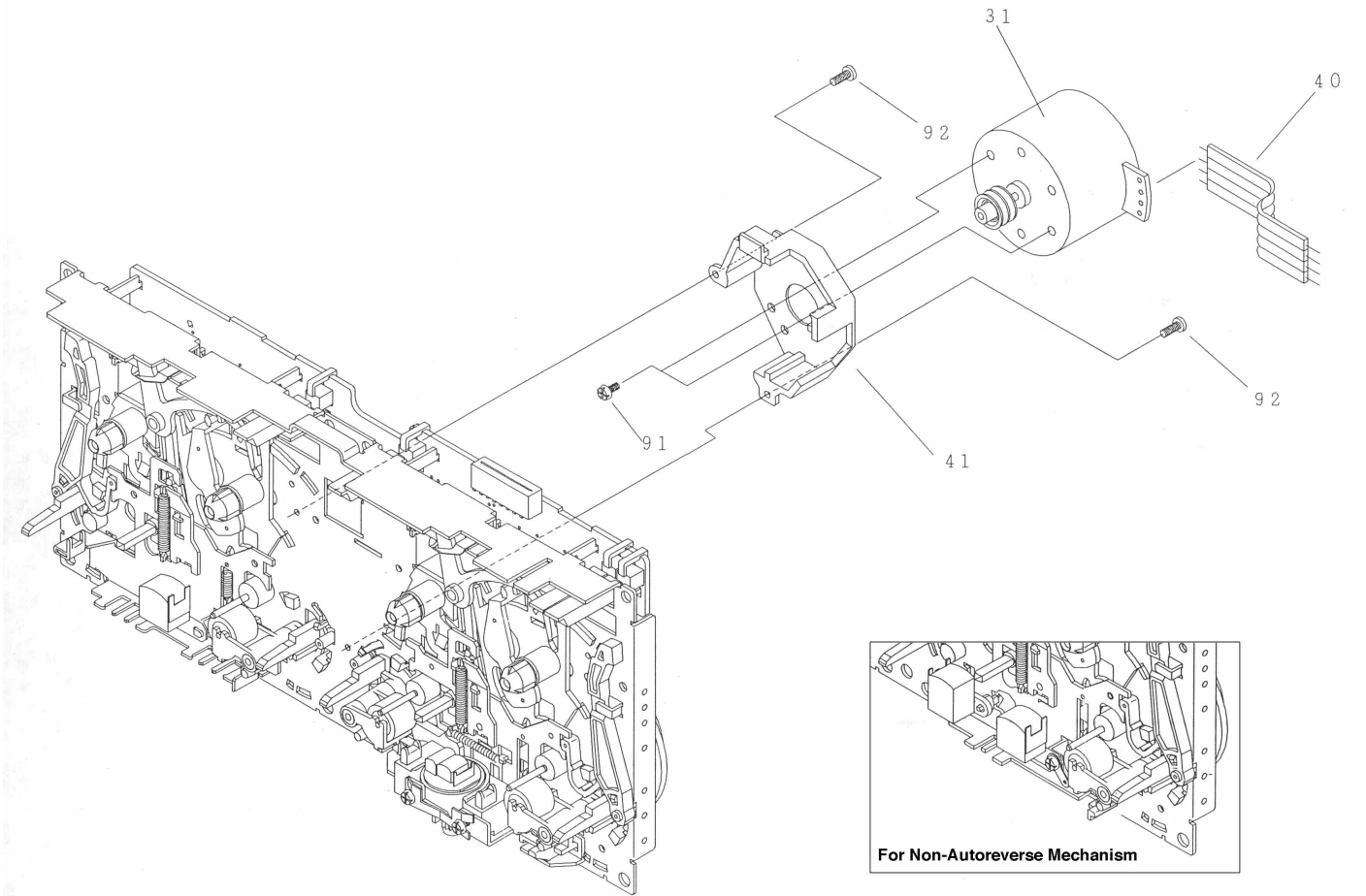


3139 118 77070 (Incl. ...77080) dd wk926

TAPE MODULE EXPLODED VIEW

- 1 3139 118 77130 Autoreverse Mech. CWE44FR01
- 1 3139 118 77140 Non-Autoreverse Mech. CWE44FF02 Chrome/Ferro
- 1 3139 118 77950 Non-Autoreverse Mech. CWE44FF05 Ferro
- 3 - Screw D3 x 10
- 6 - Screw M2 x 16
- 7 3139 110 34080 Flex Cable 14 pin 7,5 cm

Note: Only the parts mentioned in this list are normal service spare parts.



For Non-Autoreverse Mechanism

TAPE MECHANISM - MOTOR EXPLODED VIEW

- 31 4822 361 11055 Motor Assembly
- 91 - Screw M2,6 x 5
- 92 - Screw M2 x 5

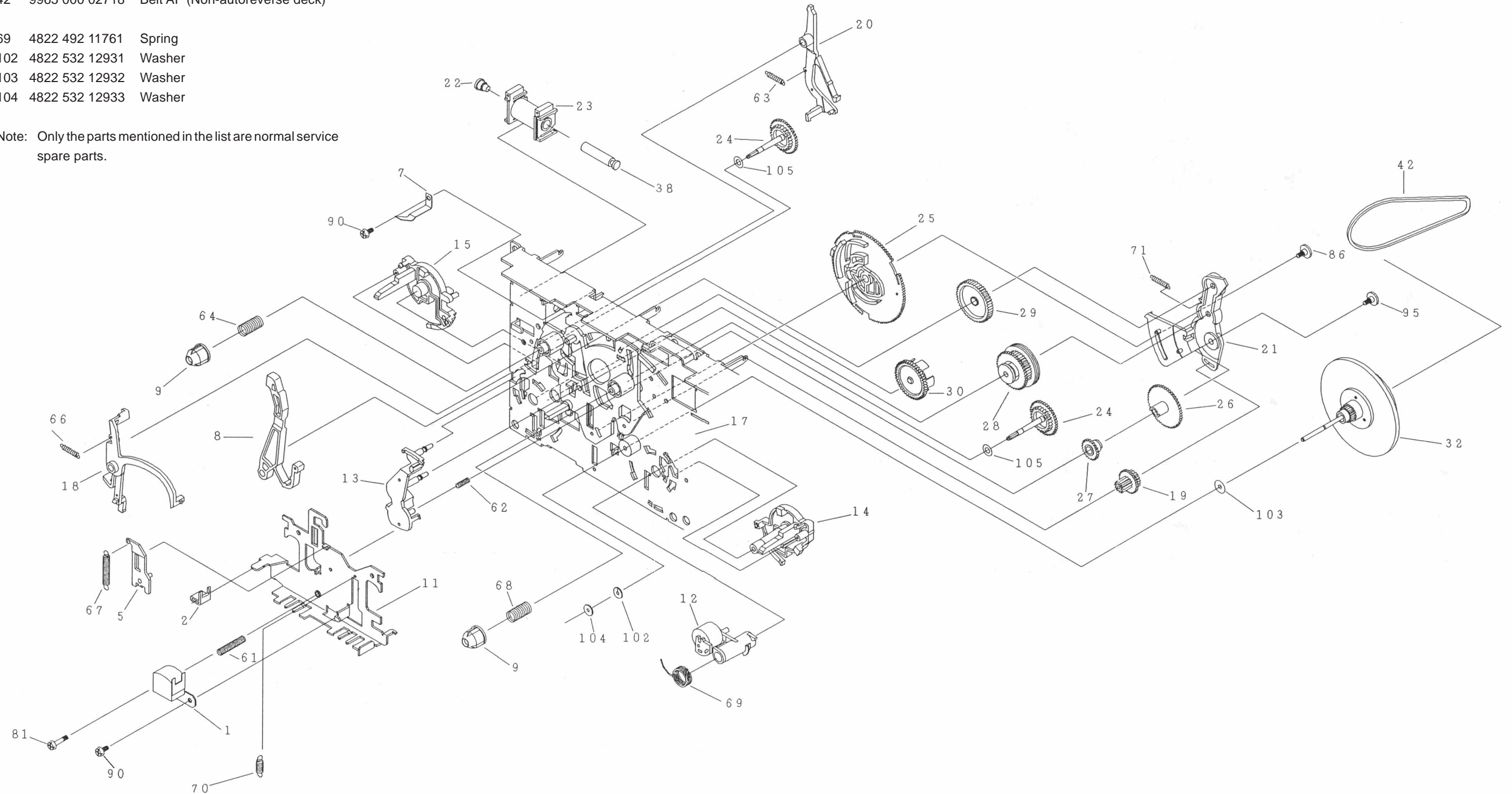
Note: Only the parts mentioned in this list are normal service spare parts.

TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	9965 000 02313	Play Head (Non-Autoreverse deck)
1	9965 000 02321	Play Head (Autoreverse deck)
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
42	9965 000 02315	Belt AF (Autoreverse deck)
42	9965 000 02718	Belt AF (Non-autoreverse deck)
69	4822 492 11761	Spring
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer

Note: Only the parts mentioned in the list are normal service spare parts.

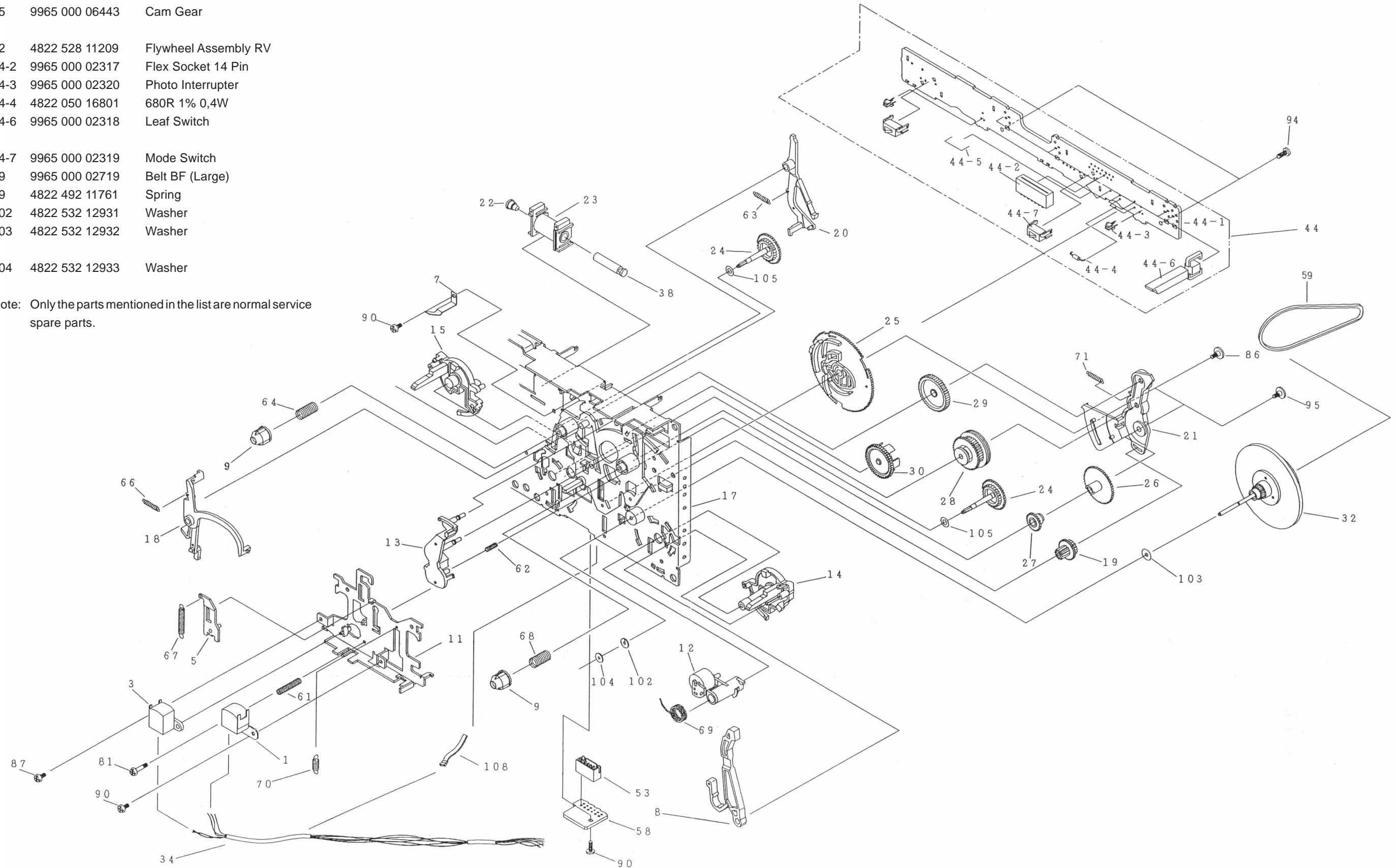


TAPE MECHANISM B - RECORD/PLAYBACK (Non-Autoreverse version)

MECHANICAL PARTS - REC/PB MECHANISM

1	9965 000 02313	Play Head
3	9965 000 02600	Head, Erase
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
44-2	9965 000 02317	Flex Socket 14 Pin
44-3	9965 000 02320	Photo Interrupter
44-4	4822 050 16801	680R 1% 0,4W
44-6	9965 000 02318	Leaf Switch
44-7	9965 000 02319	Mode Switch
59	9965 000 02719	Belt BF (Large)
69	4822 492 11761	Spring
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer

Note: Only the parts mentioned in the list are normal service spare parts.

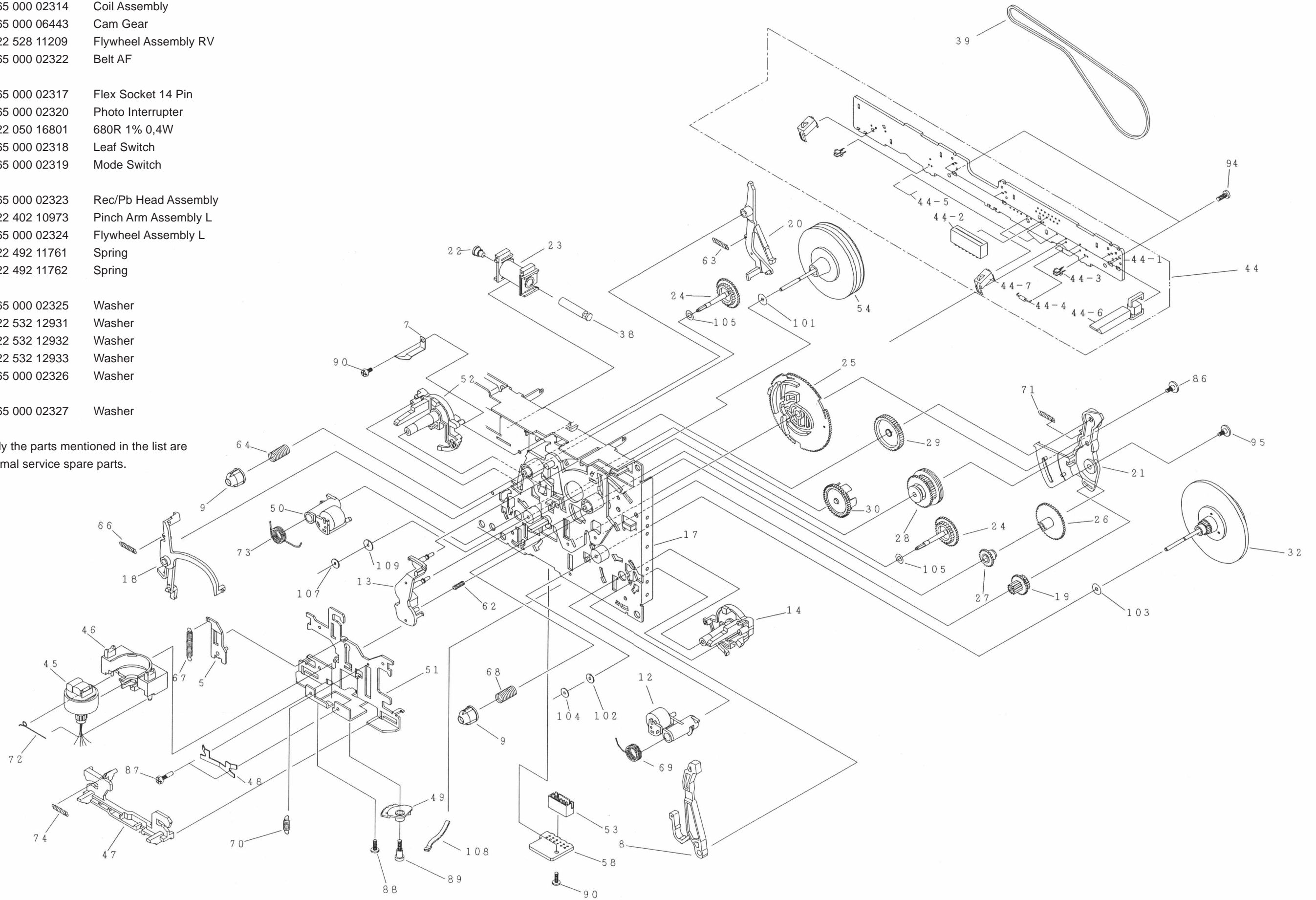


TAPE MECHANISM B - RECORD/PLAYBACK (Autoreverse version)

MECHANICAL PARTS - REC/PB MECHANISM

12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
39	9965 000 02322	Belt AF
44-2	9965 000 02317	Flex Socket 14 Pin
44-3	9965 000 02320	Photo Interrupter
44-4	4822 050 16801	680R 1% 0,4W
44-6	9965 000 02318	Leaf Switch
44-7	9965 000 02319	Mode Switch
45	9965 000 02323	Rec/Pb Head Assembly
50	4822 402 10973	Pinch Arm Assembly L
54	9965 000 02324	Flywheel Assembly L
69	4822 492 11761	Spring
73	4822 492 11762	Spring
101	9965 000 02325	Washer
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer
107	9965 000 02326	Washer
109	9965 000 02327	Washer

Note: Only the parts mentioned in the list are normal service spare parts.



ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

MISCELLANEOUS

1701	482226710953	Flex Socket 7pin Vert.
1706	482226710953	Flex Socket 7pin Vert.
1770	482226751255	Flex Socket 14pin Vert.

CAPACITORS

2621	532212231647	1nF 10% 63V
2622	532212234099	470pF 10% 63V
2623	532212234099	470pF 10% 63V
2624	482212614585	100nF 10% 50V only for Ferro
2625	482212614585	100nF 10% 50V
2701	532212233538	150pF 2% 63V Autoreverse
2701	482212233216	270pF 5% 63V Non-autoreverse
2702	532212233538	150pF 2% 63V Autoreverse
2702	482212233216	270pF 5% 63V Non-autoreverse
2703	532212232531	100pF 5% 50V Autoreverse
2703	482212233575	220pF 5% 63V Non-autoreverse
2704	532212232531	100pF 5% 50V Autoreverse
2704	482212233575	220pF 5% 63V Non-autoreverse
2705	482212233575	220pF 5% 63V
2706	482212233575	220pF 5% 63V
2707	532212234099	470pF 10% 63V
2708	532212234099	470pF 10% 63V
2709	532212231863	330pF 5% 63V
2710	532212231863	330pF 5% 63V
2711	532212232531	100pF 5% 50V
2712	532212232531	100pF 5% 50V
2713	482212440248	10μF 20% 63V
2714	482212440248	10μF 20% 63V
2715	482212480195	470μF 20% 10V
2716	482212480195	470μF 20% 10V
2717	482212233177	10nF 20% 50V Autoreverse
2717	482212613188	15nF 5% 63V Non-autoreverse
2718	482212233177	10nF 20% 50V Autoreverse
2718	482212613188	15nF 5% 63V Non-autoreverse
2719	482212612105	33nF 5% 50V
2720	482212612105	33nF 5% 50V
2721	532212231866	6,8nF 10% 63V not for Ferro
2722	532212231866	6,8nF 10% 63V not for Ferro
2723	482212613188	15nF 5% 63V
2724	482212613188	15nF 5% 63V
2725	532212610223	4,7nF 10% 63V
2726	532212610223	4,7nF 10% 63V
2727	532212234099	470pF 10% 63V Autoreverse
2727	532212231647	1nF 10% 63V Non-autoreverse
2728	532212234099	470pF 10% 63V Autoreverse
2728	532212231647	1nF 10% 63V Non-autoreverse
2729	532212232654	22nF 10% 63V
2730	532212232654	22nF 10% 63V
2733	532212234099	470pF 10% 63V
2734	532212234099	470pF 10% 63V
2735	482212614585	100nF 10% 50V
2737	482212614585	100nF 10% 50V

2738	482212614585	100nF 10% 50V
2741	482212611585	22nF +80/-20% 25V
2742	532212232654	22nF 10% 63V
2743	532212232654	22nF 10% 63V
2744	482212614585	100nF 10% 50V
2760	482212614585	100nF 10% 50V
2761	482212480144	220μF 20% 25V
2762	482212440769	4,7μF 20% 100V
2763	482212440433	47μF 20% 25V
2765	482212440433	47μF 20% 25V
2769	532212234099	470pF 10% 63V
2770	532212234099	470pF 10% 63V
2780	482212481151	22μF 20% 50V
2781	482212233177	10nF 20% 50V
2782	532212610223	4,7nF 10% 63V
2784	482212151305	15nF 10% 50V
2785	482212421913	1μF 20% 63V
2786	532212232531	100pF 5% 50V
2787	482212612105	33nF 5% 50V

RESISTORS

3601	482211711449	2k2 1% 0,1W
3602	482205120273	27k 5% 0,1W
3603	482211711449	2k2 1% 0,1W
3604	482211711148	56k 1% 0,1W
3605	482211711449	2k2 1% 0,1W
3606	482205120124	120k 5% 0,1W
3607	482211652256	2k2 5% 0,5W
3608	482205120273	27k 5% 0,1W
3609	482211652256	2k2 5% 0,5W
3610	482205120124	120k 5% 0,1W
3611	482211652256	2k2 5% 0,5W
3612	482211711148	56k 1% 0,1W
3613	482205120273	27k 5% 0,1W
3614	482205120273	27k 5% 0,1W
3616	482211710833	10k 1% 0,1W Autoreverse
3616	482205110102	1k 2% 0,25W Non-autoreverse
3618	482211711507	6k8 1% 0,1W Autoreverse
3620	482210011141	Trim. 10k 30% Autoreverse
3622	482210011141	Trim. 10k 30% Non-autoreverse
3623	482211710837	100k 1% 0,1W
3624	482211710837	100k 1% 0,1W
3625	482205110102	1k 2% 0,25W
3626	482205110102	1k 2% 0,25W
3628	482211710837	100k 1% 0,1W
3630	482205120471	470R 5% 0,1W
3672	482205120472	4k7 5% 0,1W Autoreverse
3674	482211652283	4k7 5% 0,5W
3676	482211710834	47k 1% 0,1W Autoreverse
3678	482211710834	47k 1% 0,1W
3679	482211710834	47k 1% 0,1W
3680	482211710834	47k 1% 0,1W

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

3685	482211652234	100k 5% 0,5W
3686	482211710837	100k 1% 0,1W
3687	482211711503	220R 1% 0,1W not for Ferro
3688	482211710361	680R 1% 0,1W Autoreverse
3701	482211711503	220R 1% 0,1W
3702	482211711503	220R 1% 0,1W
3703	482211711503	220R 1% 0,1W
3704	482211711503	220R 1% 0,1W
3705	482211711503	220R 1% 0,1W
3706	482211711503	220R 1% 0,1W
3707	482205120101	100R 5% 0,1W
3708	482205120101	100R 5% 0,1W
3709	482205120109	10R 5% 0,1W
3710	482205120109	10R 5% 0,1W
3711	482205120154	150k 5% 0,1W
3712	482205120154	150k 5% 0,1W
3713	482205120109	10R 5% 0,1W
3714	482205120109	10R 5% 0,1W
3715	482205120182	1k8 5% 0,1W
3716	482205120182	1k8 5% 0,1W
3717	482211711449	2k2 1% 0,1W
3718	482211711449	2k2 1% 0,1W
3719	482211711383	12k 1% 0,1W
3720	482211711383	12k 1% 0,1W
3721	482205120392	3k9 5% 0,1W
3722	482205120392	3k9 5% 0,1W
3723	482211683933	15k 1% 0,1W Autoreverse
3723	482211710965	18k 1% 0,1W Non-autoreverse
3724	482211683933	15k 1% 0,1W Autoreverse
3724	482211710965	18k 1% 0,1W Non-autoreverse
3725	482205120109	10R 5% 0,1W not for Ferro
3726	482205120109	10R 5% 0,1W not for Ferro
3727	482205120562	5k6 5% 0,1W Autoreverse
3727	482211711507	6k8 1% 0,1W Non-autoreverse
3728	482205120562	5k6 5% 0,1W Autoreverse
3728	482211711507	6k8 1% 0,1W Non-autoreverse
3729	482205120332	3k3 5% 0,1W Autoreverse
3729	482205120472	4k7 5% 0,1W Non-autoreverse
3730	482205120332	3k3 5% 0,1W Autoreverse
3730	482205120472	4k7 5% 0,1W Non-autoreverse
3731	482205120822	8k2 5% 0,1W
3732	482205120822	8k2 5% 0,1W
3733	482205120122	1k2 5% 0,1W
3734	482205120122	1k2 5% 0,1W
3735	482205120223	22k 5% 0,1W
3736	482205120223	22k 5% 0,1W
3741	482211711449	2k2 1% 0,1W
3742	482211711449	2k2 1% 0,1W
3743	482211711139	1k5 1% 0,1W Autoreverse
3743	482211711449	2k2 1% 0,1W Non-autoreverse
3744	482211711139	1k5 1% 0,1W Autoreverse
3744	482211711449	2k2 1% 0,1W Non-autoreverse

3745	482205120332	3k3 5% 0,1W Autoreverse
3745	482205120562	5k6 5% 0,1W Non-autoreverse
3746	482205120332	3k3 5% 0,1W Autoreverse
3746	482205120562	5k6 5% 0,1W Non-autoreverse
3748	482211711449	2k2 1% 0,1W
3749	482211710834	47k 1% 0,1W
3751	482211710833	10k 1% 0,1W
3752	482211710837	100k 1% 0,1W
3753	482211710837	100k 1% 0,1W
3754	482205120105	1M 5% 0,1W Autoreverse
3754	482205120479	47R 5% 0,1W Non-autoreverse
3755	482205120105	1M 5% 0,1W Autoreverse
3755	482205120479	47R 5% 0,1W Non-autoreverse
3756	482211713579	220k 1% 0,1W
3757	482211713579	220k 1% 0,1W
3758	482211710833	10k 1% 0,1W
3759	482211710833	10k 1% 0,1W
3760	482205120121	120R 5% 0,1W
3761	482205021003	10k 1% 0,6W
3762	482211711454	820R 1% 0,1W
3763	482205120154	150k 5% 0,1W
3764	482211683872	220R 5% 0,5W
3765	482205120393	39k 5% 0,1W
3766	482205120475	4M7 5% 0,1W
3767	482205120475	4M7 5% 0,1W
3768	482211710833	10k 1% 0,1W
3769	482211711383	12k 1% 0,1W Autoreverse
3769	482205120822	8k2 5% 0,1W Non-autoreverse
3770	482211711139	1k5 1% 0,1W
3771	482205120122	1k2 5% 0,1W
3772	482211711507	6k8 1% 0,1W Autoreverse
3772	482205120562	5k6 5% 0,1W Non-autoreverse
3773	482210012227	Trimmer 4k7 30% 0,1W
3774	482211683933	15k 1% 0,1W Autoreverse
3774	482205120822	8k2 5% 0,1W Non-autoreverse
3775	482205120478	4R7 5% 0,1W
3776	482211711507	6k8 1% 0,1W
3777	482211710353	150R 1% 0,1W
3778	482205120688	△ 6R8 5% 0,33W
3779	482205120334	330k 5% 0,1W
3780	482205120105	1M 5% 0,1W
3781	482205120475	4M7 5% 0,1W
3784	482205110102	1k 2% 0,25W
3786	482205120223	22k 5% 0,1W
3787	482205120105	1M 5% 0,1W
3788	482205120105	1M 5% 0,1W
3789	482211710834	47k 1% 0,1W
4701	482205120008	0R Jumper 0805
4702	482205120008	0R Jumper 0805
4703	482205120008	0R Jumper 0805
4704	482205120008	0R Jumper 0805
4705	482205120008	0R Jumper 0805

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD**RESISTORS**

4706	482205120008	OR Jumper 0805	6612	482213031878	1N4003G	
4707	482205120008	OR Jumper 0805	6614	482213030621	1N4148	Autoreverse
4708	482205120008	OR Jumper 0805	6770	482213030621	1N4148	
4709	482205120008	OR Jumper 0805	6771	482213030621	1N4148	
4710	482205120008	OR Jumper 0805	6772	482213030621	1N4148	
4711	482205120008	OR Jumper 0805	6773	482213030621	1N4148	
4712	482205120008	OR Jumper 0805	6774	482213030621	1N4148	
4713	482205120008	OR Jumper 0805	6775	482213030621	1N4148	
4714	482205120008	OR Jumper 0805	6776	482213030621	1N4148	
4715	482205120008	OR Jumper 0805	6777	482213034382	BZX79-F8V2	
4716	482205120008	OR Jumper 0805	6778	482213030621	1N4148	
4717	482205120008	OR Jumper 0805	6782	482213030621	1N4148	
4718	482205120008	OR Jumper 0805	6785	482213030621	1N4148	
4719	482205120008	OR Jumper 0805	6786	482213030621	1N4148	
4720	482205120008	OR Jumper 0805				
4721	482205120008	OR Jumper 0805				
4722	482205120008	OR Jumper 0805				
4723	482205120008	OR Jumper 0805				
4724	482205120008	OR Jumper 0805				
4725	482205120008	OR Jumper 0805				
4726	482205120008	OR Jumper 0805				
4727	482205120008	OR Jumper 0805				
4728	482205120008	OR Jumper 0805				
4729	482205120008	OR Jumper 0805				
4730	482205120008	OR Jumper 0805				
4731	482205120008	OR Jumper 0805				
4732	482205120008	OR Jumper 0805				
4733	482205120008	OR Jumper 0805				
4734	482205120008	OR Jumper 0805				
4735	482205120008	OR Jumper 0805				
4736	482205120008	OR Jumper 0805				
4737	482205120008	OR Jumper 0805				
4738	482205120008	OR Jumper 0805				
4739	482205120008	OR Jumper 0805				
4740	482205120008	OR Jumper 0805				
4741	482205120008	OR Jumper 0805				
4742	482205120008	OR Jumper 0805				
4744	482205120008	OR Jumper 0805				
4745	482205120008	OR Jumper 0805				
4746	482205120008	OR Jumper 0805				
4748	482205120008	OR Jumper 0805				
4785	482205120008	OR Jumper 0805 only for Ferro				
4790	482205120008	OR Jumper 0805				
4794	482205120008	OR Jumper 0805				
4795	482205120008	OR Jumper 0805				

TRANSISTORS & INTEGRATED CIRCUITS

7610	532220911306	HEF4094BT			
7612	532213060845	BC807-25			
7613	532213060845	BC807-25			
7614	532213060845	BC807-25			
7616	482213060373	BC857B			Autoreverse
7618	482213060511	BC847B			
7619	482213060511	BC847B			
7620	482213060511	BC847B			
7622	482213060511	BC847B			Autoreverse
7623	482213060511	BC847B			
7624	482213060511	BC847B			
7710	482220932919	HEF4952BT			
7720	932214000668	AN7323S			
7730	482220932919	HEF4952BT			
7740	482220932919	HEF4952BT			
7780	482213060511	BC847B			
7781	482213042804	BC817-25			
7782	482213044568	BC557B			
7783	482213060511	BC847B			
7784	482213060373	BC857B			
7786	482213063494	J111			
7787	482213060511	BC847B			
7791	482213060511	BC847B			
7792	482213060511	BC847B			

Note: Only the parts mentioned in this list are normal service spare parts.

COILS & FILTERS

5701	482215711477	Coil 2,2 μ H 5%
5703	482215620946	Osc Coil 100kHz

DIODES

6611	482213031878	1N4003G
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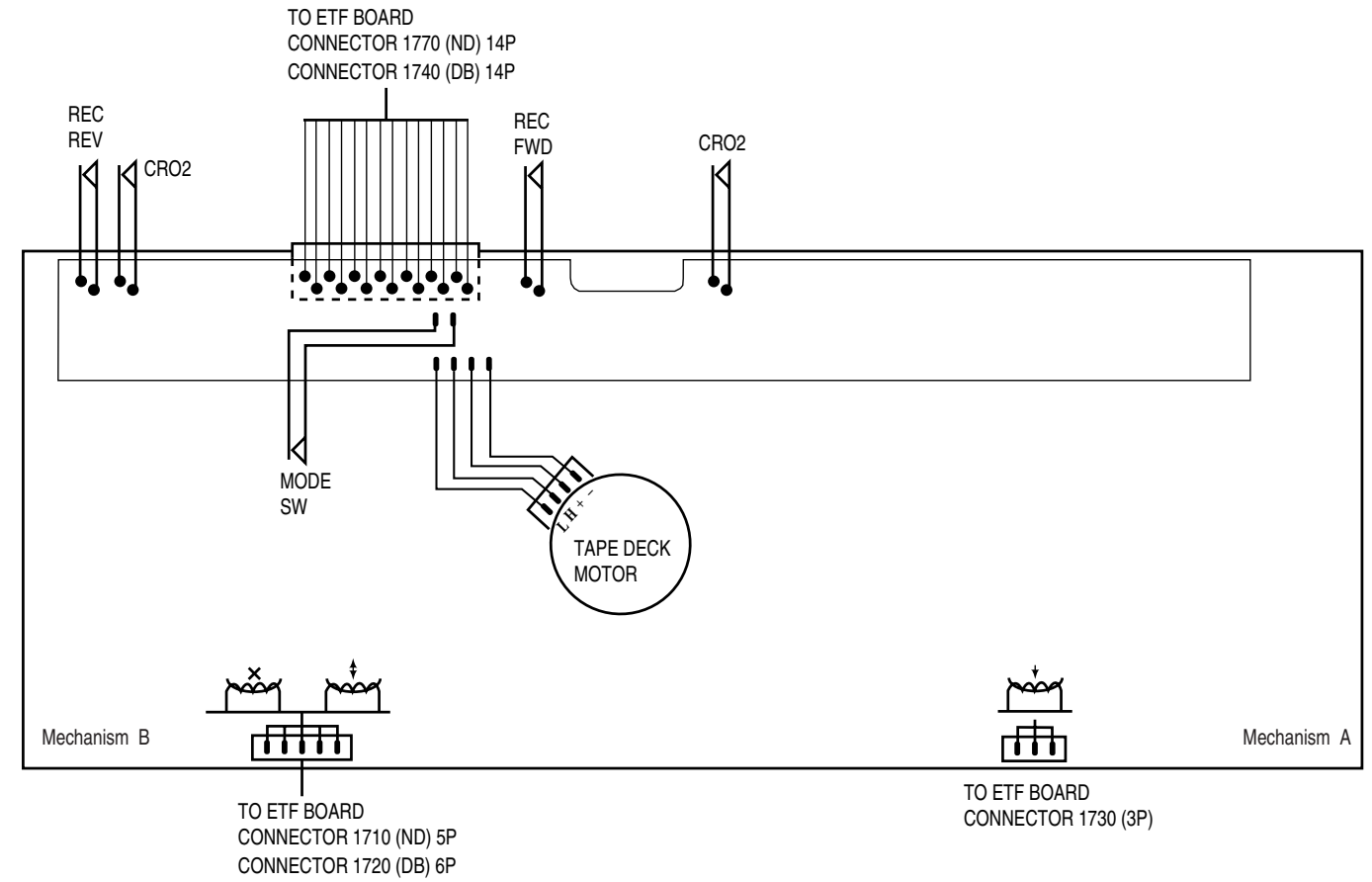
ETF7 TAPE MODULE

(Dolby Version)

TABLE OF CONTENTS

Tape Module Wiring & variation table9A-1
 Block diagram9A-2
 Brief Introduction9A-3
 Connector assignment9A-4
 Tape deck electronics9A-5
 Tape adjustments9A-6
 ETF7 Dolby Board Component layout9A-7
 ETF7 Dolby Board Chip layout9A-8
 Analog Circuit diagram9A-9
 Servo Circuit diagram9A-10
 Dolby Circuit diagram9A-11
 Exploded views & parts list9A-12
 Electrical parts list9A-15

Tapedeck wiring (Double deck)

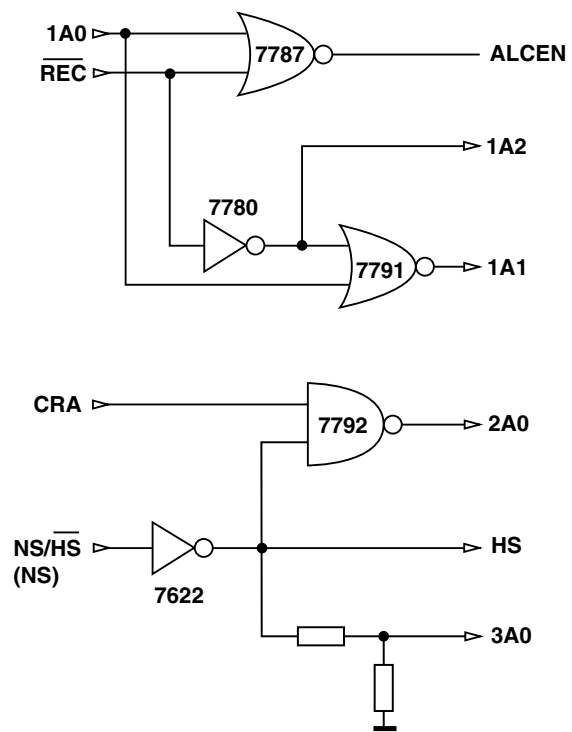
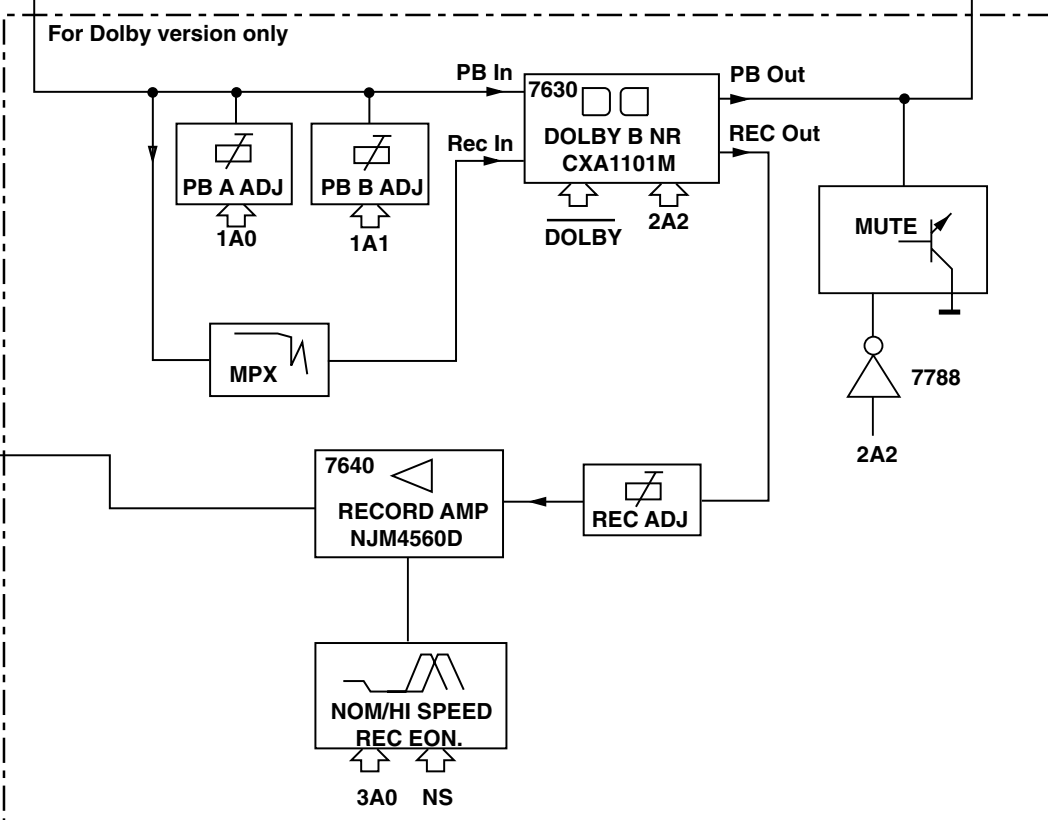
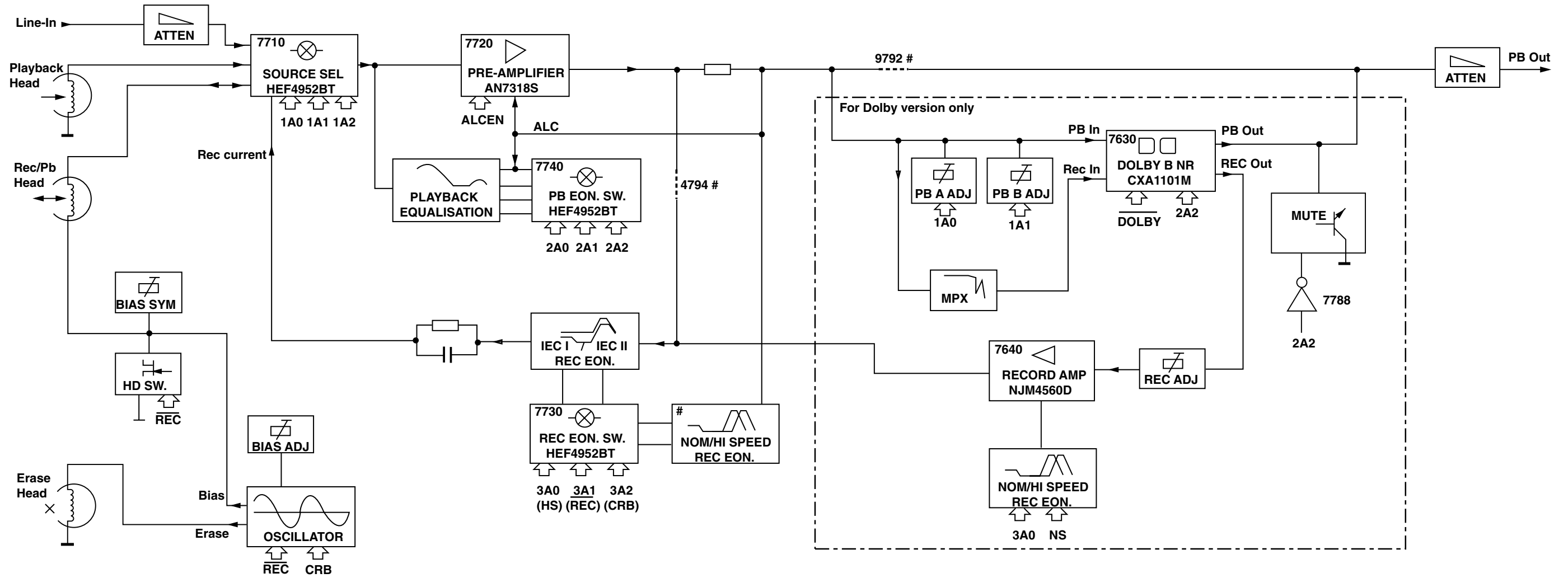


OPTIONS / VARIANTS TABLE

MODULE	ETF7		
	1	2	3
VARIANT			
FEATURES	DB/DD/FR	ND/DD/FR	ND/DD/FF
Deck configuration	double	double	double
Deck type (Tokyo Pigeon)	CWE	CWE	CWE
Autoreverse	yes (B)	yes (B)	no
Auto Replay	no	no	yes (A+B)
Motor configuration	single	single	single
Auto tape type selection	yes	yes	yes
Dolby type B Noise Reduction	yes	no	no
19 kHz pilot suppression	yes	no	no
Normal / High speed dubbing	yes	yes	no
Cue/Review & Fwd/Rewind	yes	yes	yes

- DB = Dolby B NR
- DD = Double Deck
- FF = Non-Autoreverse
- FR = Autoreverse Deck B
- ND = Non-Dolby
- SD = Single Deck

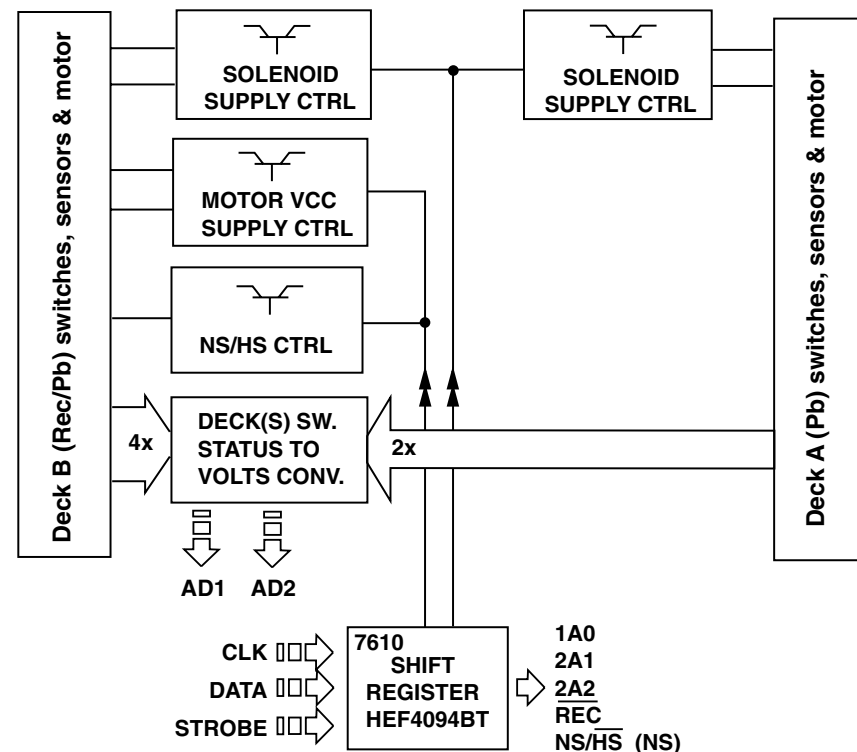
BLOCK DIAGRAM



NOTE: # For Non-dolby version only
Only 1 channel is presented.

MicroProcessor Control / Communication lines

Direct / Indirect Control lines from Shift Registers



Brief introduction

General

1. Playback Mode
Signal from the playback head Deck A or Deck B is selected and fed through by the Mode Selector IC7710 (HEF4952BT). The signal is amplified by amplifier IC7720 (AN7323S) before feeding to the IC7740 (HEF4952BT) and out to the AF Board via connector 1701.
2. Recording Mode
Recording Signal is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then amplified by the amplifier IC7720 (AN7323S). The amplified output signal will pass through IC7730 (HEF4952BT) for record equalization and back to IC7710 (HEF4952BT) before registered into the Rec/PB Head of Deck B.
3. Dubbing Mode
In Dubbing mode, signal from the playback head Deck A is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then equalised for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalised signal will then follow the same path as in the Recording mode.
4. Mode Selector
The Mode Selector IC7710 (HEF4952BT) caters for 4 inputs signal, namely Playback Signal from Deck A, Playback Signal from Deck B, Recording Signal and Dubbing Signal.
5. Amplifier PB/REC
Amplifier IC7720 (AN7323S) is for the purpose of amplifying the Playback and Recording signal from the Mode Selector.
6. Automatic Level Control (ALC)
ALC circuit consists of resistors (3760, 3765, 3766, 3767), capacitors (2762, 2763) and control by transistor 7787 (BC847B). ALC limits the amplifier output to a constant value when input signal becomes too large, thus limiting recording current to below saturation level, to prevent recording distortion.
7. Muting Circuit (For Non-Dolby version only)
Switch S4 of the IC7740 (HEF4952BT) is for the purpose of muting the output during Recording mode. During Recording mode, S4 is closed and shorted to the ground.
8. IC7740 (HEF4952BT)
The function of the IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II). This IC will switch to Flat Gain during the Recording mode.
9. IC7730 (HEF4952BT)
The function of the IC7730 (HEF4952BT) is to change gain and time constant according to tape type and recording speed to boost recording current at higher frequency during recording to compensate for head loss. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).
10. Bias Level
Bias Level making use of the Variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.
11. Bias Symm (For Dolby B NR version only)
Bias Symm making use of the Variable resistor (3785) to adjust the bias current for the left and the right channel to be equal.
12. PB Switch
Playback Switch which consists of the FETs 7785 (For Dolby B NR version only) & 7786 (J111) is for the purpose of providing a virtual ground for the Rec/PB Head (Deck B) during Playback mode. During the Playback mode, the FETs are turn on and shorted pin 2 and 4 of connector 1720 to the ground. During Recording mode, the FETs are turn off to allow the oscillator signal to be superposition onto the Recording signal for recording.

13. Motor Speed (For FR versions only)
During High speed dubbing, a feedback signal from the uP through pin 03 of the IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between High and Low, thus changing the speed of the motor.
14. IC7610 (HEF4094BT)
IC7610 (HEF4094BT) is a Shift Register use for issues the logic for cmos switch ICs (HEF4952BT) via 1A0, 2A1 and 2A2. It also issues logic to On/Off SOL_A, SOL_B and MOT. Recording speed is controlled via NS/HS.

Dolby Circuit (For sets with Dolby B NR version only)

15. IC7630 (CXA1551M)
IC7630 (CXA1551M) in the Dolby circuit is a Dolby Noise Reduction Type B IC for the Playback and Recording signal. Noise Reduction ON/OFF are controlled by $\overline{\text{DOLBY}}$, which is from CLK, direct from uP. After clocking in DATA, CLK is set to HIGH/LOW for NR OFF/ON.
16. 19kHz Filter
The 19kHz filters 5631 & 5632 (LXD-210) in the Dolby circuit is for the purpose of filtering the 19kHz Pilot Tone (for Tuner signal only) of the Recording signal.
17. Level Adjust
The Variable resistor 3635, 3636, 3641 and 3642 in the Dolby circuit is for adjusting the playback level of the Dolby reference (400Hz, 200nWb/m). Transistor 7631, 7632 are ON to enable adjustment of 3641, 3642 during Playback Deck A. Transistor 7633, 7634 and 3635, 3636 are active for Playback Deck B.
18. Amplifier IC7640 (NJM4560M)
The Amplifiers 7640A & 7640B (NJM4560M) in the Dolby circuit is for the purpose of amplified the Recording signal.
19. Muting Circuit
The muting circuit which consists of transistors 7788, 7789 and 7790 (BC847B) is for the purpose of muting the output during Recording mode.

NOTATIONS & ABBREVIATIONS USED IN THIS DOCUMENT

CR	Chrome (IEC type II)
DB	Dolby NR type B
DD	Double Deck
DM	Double Motor
FE	Ferro (IEC type I)
FF	Non-Autoreverse
FR	Autoreverse Deck B
Gnd x	Ground x
HSD	High speed dubbing
ND	Non Dolby
NR	Noise Reduction
NSD	Normal speed dubbing
PB	Playback
REC	Record
S/A	Sub-assy
SD	Single Deck
SM	Single Motor

CONNECTORS ASSIGNMENTS:**CONNECTOR 1701****INTERCONNECTION TO AF BOARD**

○ 1	REC-L	Record input left
○ 2	REC-R	Record input right
○ 3	GND A	AF Ground
○ 4	TAPE-L	Playback output left
○ 5	+12V	D.C. supply (+12V) for AF electronics
○ 6	TAPE-R	Playback output right
○ 7	-CMOS	Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703**INTERCONNECTION TO AF BOARD**

○ 1	GND M	Motor Ground
○ 2	+MOTOR	D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706**INTERCONNECTION TO FRONT BOARD**

○ 1	AD2	Deck sensing switches output voltage / Deck A EOT
○ 2	AD1	Deck sensing switches output voltage / Deck B EOT
○ 3	+5V	DC supply +5V for ADC network
○ 4	GND P	Control & Oscillator Ground
○ 5	CLK	HEF4094BT shift register Clock line
○ 6	DATA	HEF4094BT shift register Data line
○ 7	STROBE	HEF4094BT shift register Strobe line

CONNECTOR 1710**DECK B HEADS CONNECTOR (For Non-Dolby version only)**

○ 1	B R/P HD L+	R/P Head left channel positive
○ 2	GND A	R/P Head return ground
○ 3	B R/P HD R+	R/P Head right channel positive
○ 4	ERASE HEAD	Erase Head
○ 5	GND A	Erase Head ground

CONNECTOR 1720**DECK B HEADS CONNECTOR (For Dolby B NR version only)**

○ 1	B R/P HD L+	R/P Head left channel positive
○ 2	B R/P HD L-	R/P Head left channel negative
○ 3	B R/P HD R+	R/P Head right channel positive
○ 4	B R/P HD R-	R/P Head right channel negative
○ 5	ERASE HEAD	Erase Head
○ 6	GND A	Erase Head ground

CONNECTOR 1730**DECK A HEAD CONNECTIONS (For Double Deck versions only)**

○ 1	A PB HD L+	Pb Head left channel positive
○ 2	GND A	Pb Head return ground shield
○ 3	A PB HD R+	Pb Head right channel positive

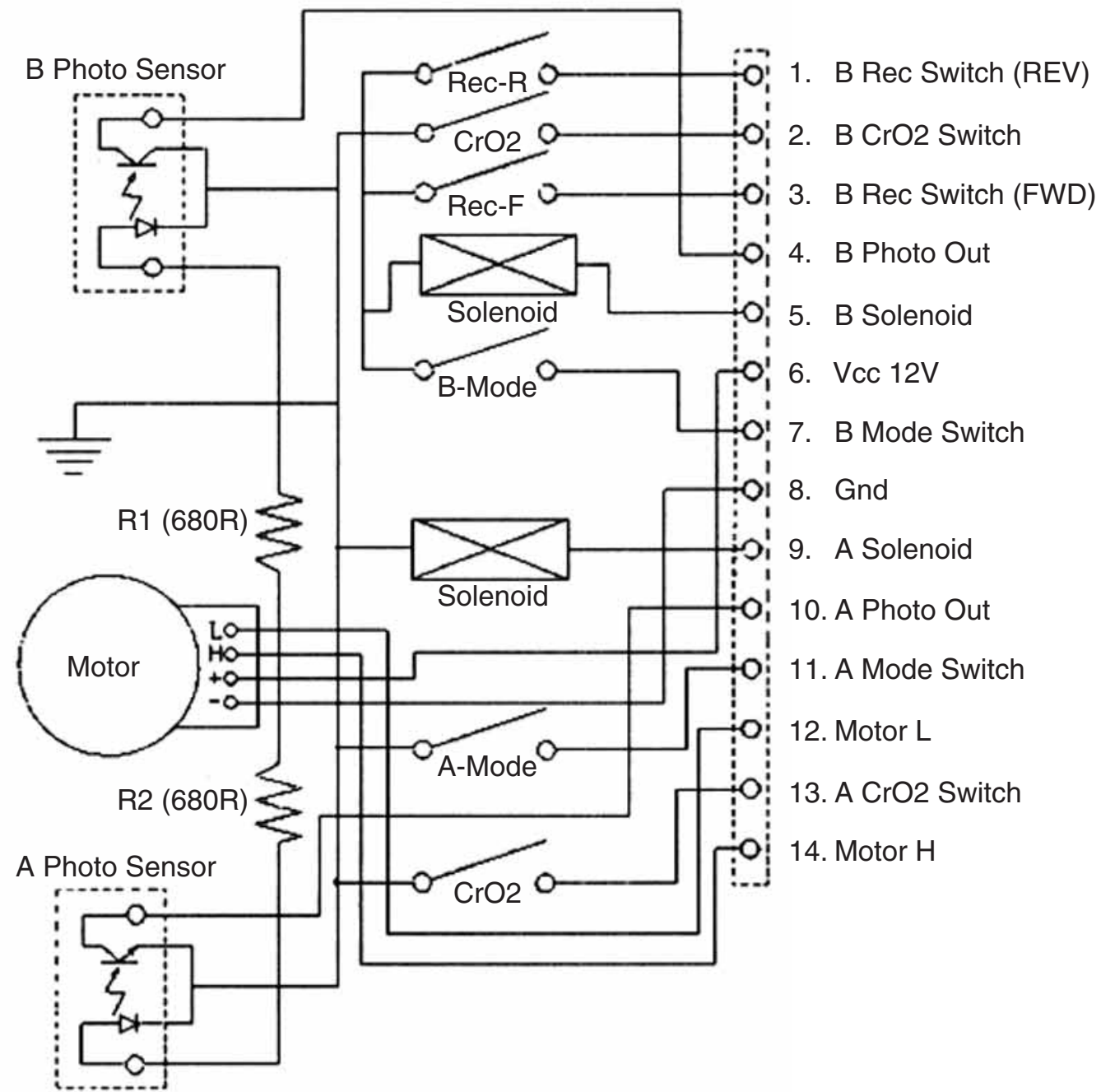
CONNECTOR 1740**DECK A & B CONTROL INTERFACE (For Dolby B NR version only)**

○ 1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○ 2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○ 3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○ 4	PHOTO B	Photo sensor output (tape movement indication)	
○ 5	SOL B	Solenoid supply for deck B	
○ 6	Vcc	Deck / Motor supply	
○ 7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○ 8	GND M	Deck / Motor ground	
○ 9	SOL A	Solenoid supply for deck A	
○ 10	PHOTO A	Photo sensor output (tape movement indication)	
○ 11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○ 12	L	L pin for motor	
○ 13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○ 14	H	H pin for motor	

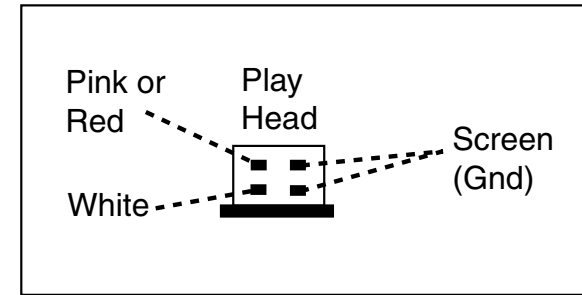
CONNECTOR 1770**DECK A & B CONTROL INTERFACE (For Non-Dolby version only)**

○ 1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○ 2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○ 3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○ 4	PHOTO B	Photo sensor output (tape movement indication)	
○ 5	SOL B	Solenoid supply for deck B	
○ 6	Vcc	Deck / Motor supply	
○ 7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○ 8	GND M	Deck / Motor ground	
○ 9	SOL A	Solenoid supply for deck A	
○ 10	PHOTO A	Photo sensor output (tape movement indication)	
○ 11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○ 12	L	L pin for motor	
○ 13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○ 14	H	H pin for motor	

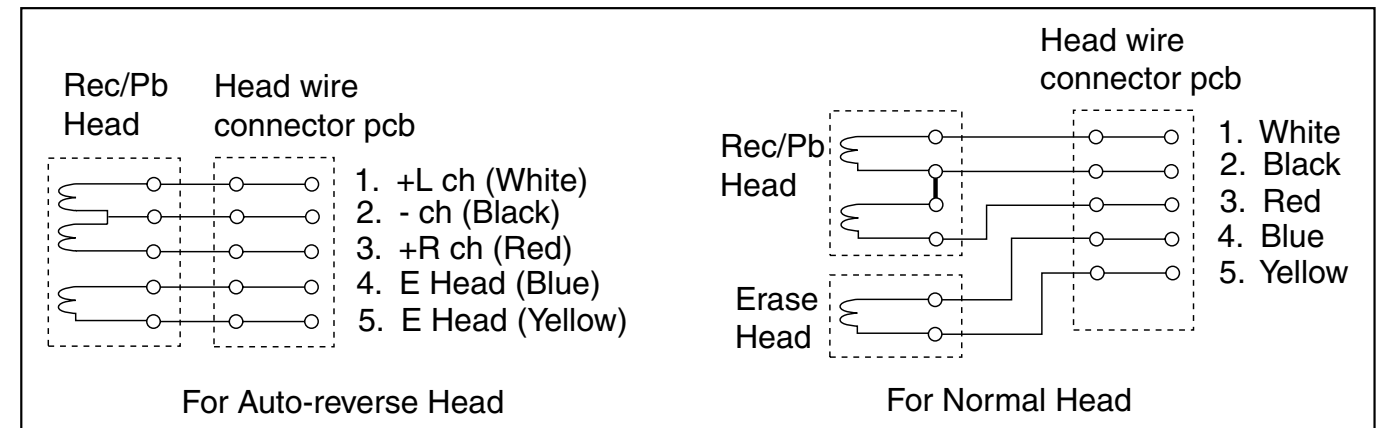
TAPE MECHANISM ELECTRONICS



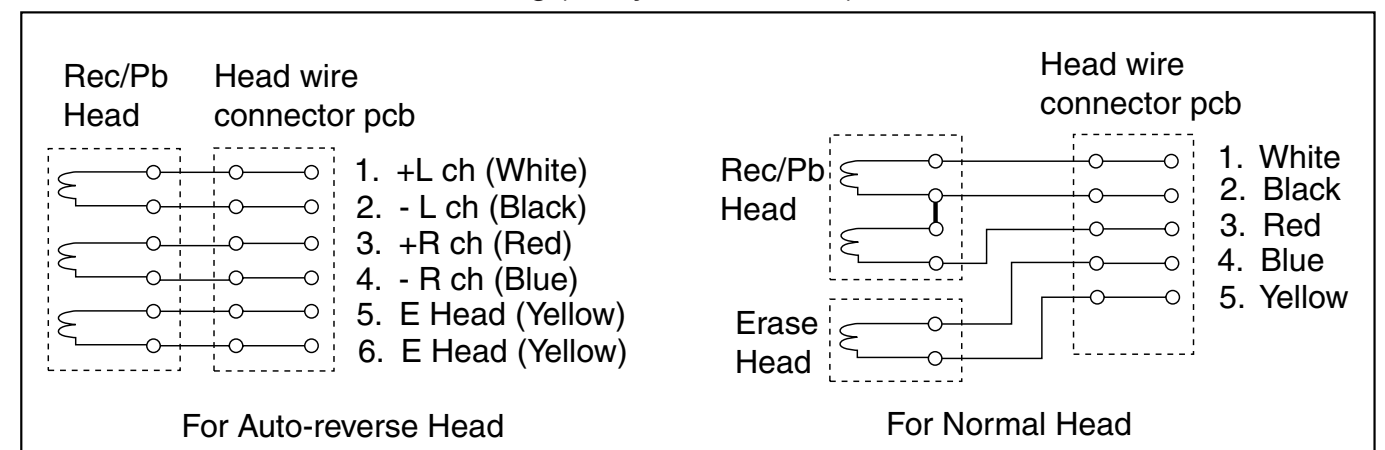
Mechanism A Head Wires Soldering



Mechanism B Head Wires Soldering (Non-Dolby version)



Mechanism B Head Wires Soldering (Dolby B NR version)



General

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
ADJUST MOTOR SPEED						
HIGH SPEED	SBC420 (4822 397 30071) 3150Hz	DUBBING	1 or 2 LEFT RIGHT	frequency counter	3622 *	5040Hz ± 0.5%
NORMAL SPEED		PLAY B			3620	3150Hz ± 0.5%
		PLAY A			check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 (4822 397 30071) 3150Hz	PLAY	1 or 2 LEFT RIGHT	W&F-meter	check only	≤0.4 % DIN or ≤0.35 % CCIR *
ADJUST AZIMUTH						
DECK A & B	SBC420 (4822 397 30071) 10kHz	PLAY FWD PLAY REV #	1 or 2 LEFT RIGHT	mV-meter	left hand screw right hand screw	max. output level & left=right

Playback

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
ADJUST DOLBY PLAYBACK LEVEL *						
DECK A	TCC-130 (4822 397 30269) 200nWb/m	PLAY	7 or 8 LEFT RIGHT	mV-meter	3641(L), 3642(R)	548mV ±0.5dB
DECK B		PLAY FWD			3635(L), 3636(R)	
		PLAY REV #			Check	548mV ±1dB
CHECK PLAYBACK FREQUENCY RESPONSE						
PB. FREQ. RESP.	SBC420 (4822 397 30071)	PLAY	1 or 2 LEFT RIGHT	mV-meter	Check	limits see fig.1

* For Dolby version only

For Auto-reverse version only

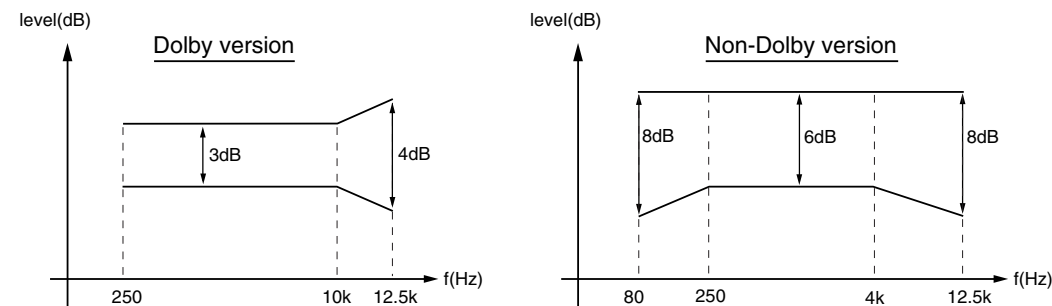


figure. 1

Recording

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
PRE-ADJUST BIAS AND BIAS-SYMMETRY						
DECK B	CrO ₂	RECORD	5 or 6 LEFT RIGHT	mV-meter	3773	995mV
	FERRO				3785 *	left = right
					check only	750mV ± 1.5dB
CHECK OVERALL FREQUENCY RESPONSE AND DISTORTION						
Inject 3mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via 3 or 4	CrO ₂	RECORD				
	RECORDED CASSETTE	PLAY	1 or 2 LEFT RIGHT	mV-meter	check only	limits see fig.2
Inject 1kHz 8.85mV via 3 or 4	CrO ₂	RECORD				
	RECORDED CASSETTE	PLAY	1 or 2 LEFT RIGHT	THD-meter	check only	≤3%
Remark: If high frequencies are not within limits, decrease bias and re-measure. If distortion is too high increase bias and re-measure.						
ADJUST DOLBY RECORD LEVEL *						
Inject 400Hz 8.85mV via 3 or 4	CrO ₂	RECORD	9 or 10 LEFT RIGHT	mV-meter	3655 & 3556	420mV
	RECORDED CASSETTE	PLAY	7 or 8 LEFT RIGHT	mV-meter	check	170mV ± 1dB
Remark: If measured value is out, re-adjust record level up or down slightly to attain play level.						

* For Dolby version only

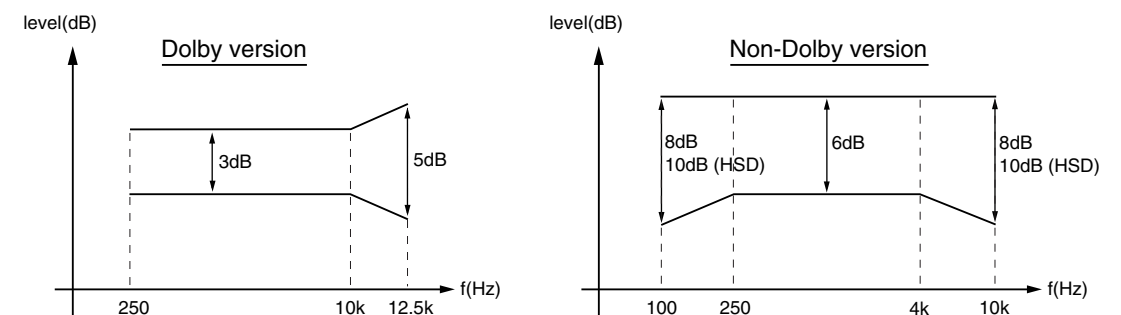
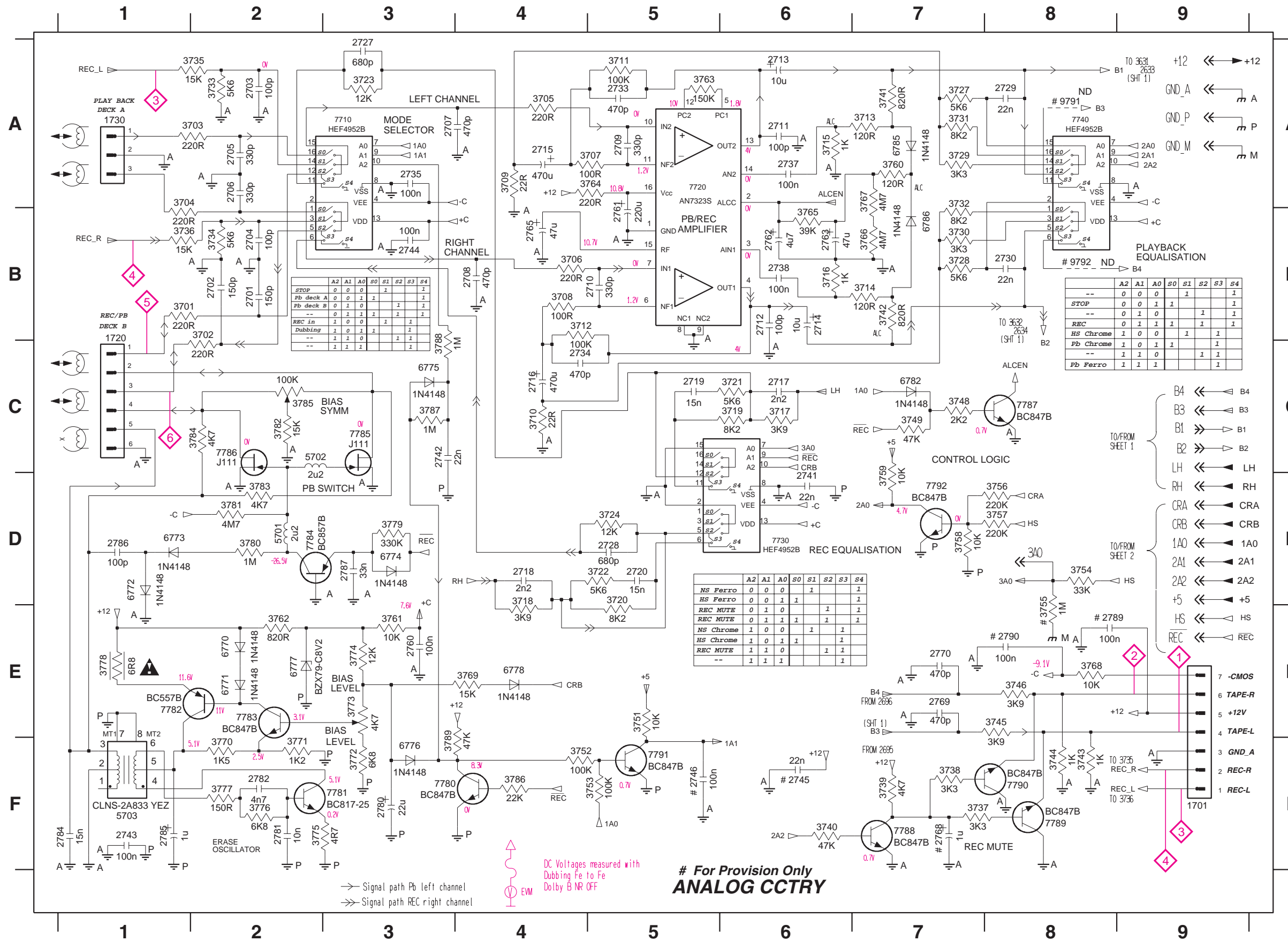


figure. 2

ANALOG CIRCUIT



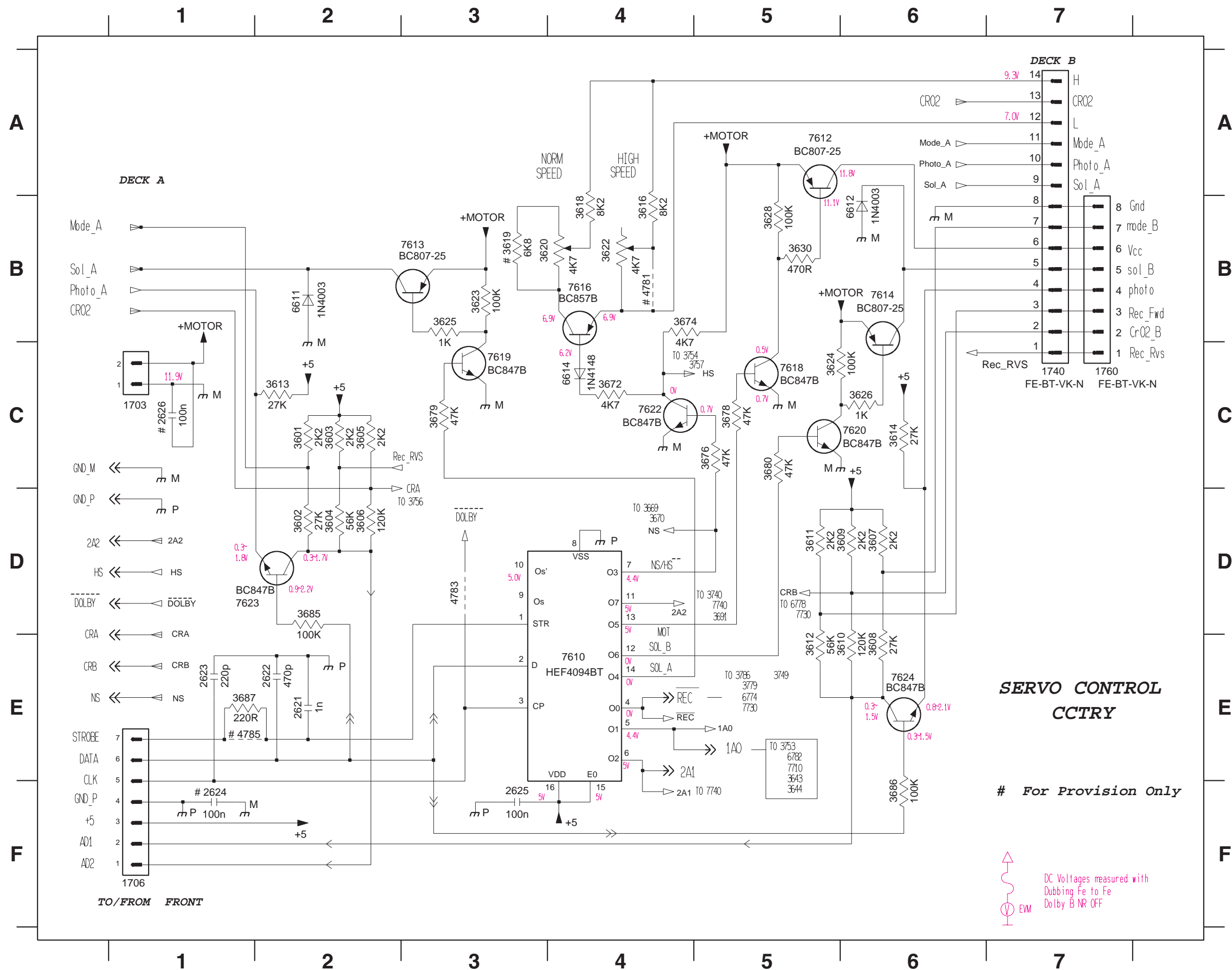
1701 F9	3720 D5	6775 C3
1720 C1	3721 C6	6776 F3
1730 A1	3722 D5	6777 E2
2701 B2	3723 A3	6778 E4
2702 B2	3724 D5	6782 C7
2703 A2	3727 A7	6785 A7
2704 B2	3728 B7	6786 B7
2705 A2	3729 A7	7710 A3
2706 A2	3730 B7	7720 A5
2707 A3	3731 A7	7730 D6
2708 B4	3732 A7	7740 A8
2709 A5	3733 A2	7780 F4
2710 B5	3734 B2	7781 F3
2711 A6	3735 A2	7782 E1
2712 B6	3736 B1	7783 E2
2713 A6	3737 F7	7784 D2
2714 B6	3738 F7	7785 C3
2715 A4	3739 F7	7786 C2
2716 C4	3740 F6	7787 C8
2717 C6	3741 A7	7788 F7
2718 D4	3742 B7	7789 F8
2719 C5	3743 F8	7790 F8
2720 D5	3744 F8	7791 F5
2727 A3	3745 E8	7792 D7
2728 D5	3746 E8	9791 A8
2729 A8	3748 C7	9792 B8
2730 B8	3749 C7	
2733 A5	3751 E5	
2734 C4	3752 F4	
2735 A3	3753 F5	
2737 A6	3754 D8	
2738 B6	3755 E8	
2741 D6	3756 D8	
2742 C3	3757 D8	
2743 F1	3758 D7	
2744 B3	3759 D7	
2745 F6	3760 A7	
2746 F5	3761 E3	
2760 E3	3762 E2	
2761 B5	3763 A5	
2762 B6	3764 A5	
2763 B6	3765 B6	
2765 B4	3766 B7	
2768 F7	3767 A7	
2769 E7	3768 E8	
2770 E7	3769 E4	
2780 F3	3770 F2	
2781 F2	3771 F2	
2782 F2	3772 F3	
2784 F1	3773 E3	
2785 F1	3774 E3	
2786 D1	3775 F2	
2787 D3	3776 F2	
2789 E8	3777 F2	
2790 E8	3778 E1	
3701 B1	3779 D3	
3702 B2	3780 D2	
3703 A2	3781 D2	
3704 A1	3782 C2	
3705 A4	3783 D2	
3706 B4	3784 C2	
3707 A5	3785 C2	
3708 B4	3786 F4	
3709 A4	3787 C3	
3710 C4	3788 C3	
3711 A5	3789 F3	
3712 B4	5701 D2	
3713 A7	5702 C1	
3714 B7	5703 F1	
3715 A6	6770 E2	
3716 B6	6771 E2	
3717 C6	6772 D1	
3718 D4	6773 D1	
3719 C6	6774 D3	

For Provision Only
ANALOG CCTRY

→ Signal path Pb left channel
→ Signal path REC right channel

DC Voltages measured with
Dubbing Fe to Fe
Dolby B NR OFF

SERVO CONTROL CIRCUIT



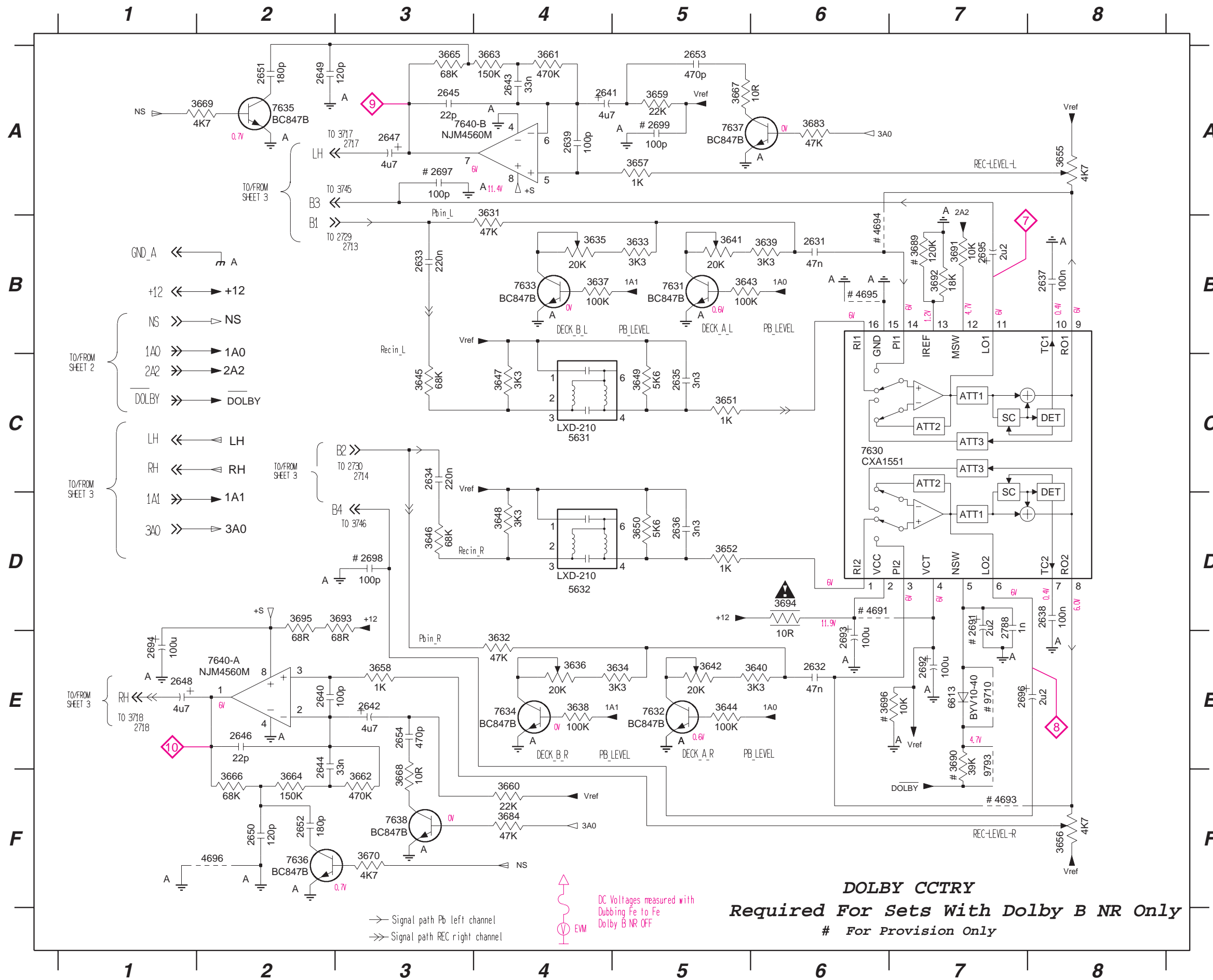
- 1703 C1
- 1706 F1
- 1740 C7
- 1760 C7
- 2621 E2
- 2622 E2
- 2623 E1
- 2624 F1
- 2625 F3
- 2626 C1
- 3601 C2
- 3602 D2
- 3603 C2
- 3604 D2
- 3605 C2
- 3606 D2
- 3607 D6
- 3608 E6
- 3609 D6
- 3610 E6
- 3611 D5
- 3612 E5
- 3613 C2
- 3614 C6
- 3616 B4
- 3618 B4
- 3619 B3
- 3620 B3
- 3622 B4
- 3623 B3
- 3624 C5
- 3625 B3
- 3626 C6
- 3628 B5
- 3630 B5
- 3672 C4
- 3674 B4
- 3676 C5
- 3679 C3
- 3680 C5
- 3685 D2
- 3686 F6
- 3687 E1
- 4781 B4
- 4783 D3
- 4785 E1
- 6611 B2
- 6612 B6
- 6614 C4
- 7610 E4
- 7612 A5
- 7613 B2
- 7614 B6
- 7616 B4
- 7618 C5
- 7619 C3
- 7620 C6
- 7622 C4
- 7623 D1
- 7624 E6

SERVO CONTROL CCTRY

For Provision Only

DC Voltages measured with
 Dubbing Fe to Fe
 Dolby B NR OFF

DOLBY CIRCUIT



- 2631 B6
- 2632 E6
- 2633 B3
- 2634 C3
- 2635 C5
- 2636 D5
- 2637 B8
- 2638 D8
- 2639 A4
- 2640 E2
- 2641 A4
- 2642 E3
- 2643 A4
- 2644 E2
- 2645 A3
- 2646 E2
- 2647 A3
- 2648 E1
- 2649 A2
- 2650 F2
- 2651 A2
- 2652 F2
- 2653 A5
- 2654 E3
- 2691 D7
- 2692 E7
- 2693 E6
- 2694 E1
- 2695 B7
- 2696 E7
- 2697 A3
- 2698 D3
- 2699 A5
- 2788 D7
- 3631 B4
- 3632 E4
- 3633 B5
- 3634 E5
- 3635 B4
- 3636 E4
- 3637 B4
- 3638 E4
- 3639 B6
- 3640 E6
- 3641 B5
- 3642 E5
- 3643 B5
- 3644 E5
- 3645 C3
- 3646 D3
- 3647 C4
- 3648 D4
- 3649 C5
- 3650 D5
- 3651 C5
- 3652 D5
- 3655 A8
- 3656 F8
- 3657 A5
- 3658 E3
- 3659 A5
- 3660 F4
- 3661 A4
- 3662 F3
- 3663 A4
- 3664 F2
- 3665 A3
- 3666 F2
- 3667 A5
- 3668 F3
- 3669 A2
- 3670 F3
- 3683 A6
- 3684 F4
- 3689 B7
- 3690 E7
- 3691 B7
- 3692 B7
- 3693 D3
- 3694 D6
- 3695 D2
- 3696 E6
- 4691 D6
- 4693 F7
- 4694 B6
- 4695 B6
- 4696 F2
- 5631 C4
- 5632 D4
- 6613 E7
- 7630 C6
- 7631 B5
- 7632 E5
- 7633 B4
- 7634 E4
- 7635 A2
- 7636 F2
- 7637 A5
- 7638 F3
- 7640-A E2
- 7640-B A4
- 9710 E7
- 9793 E7

DOLBY C CTRY
Required For Sets With Dolby B NR Only
 # For Provision Only

DC Voltages measured with
 Dubbing Fe to Fe
 Dolby B NR OFF

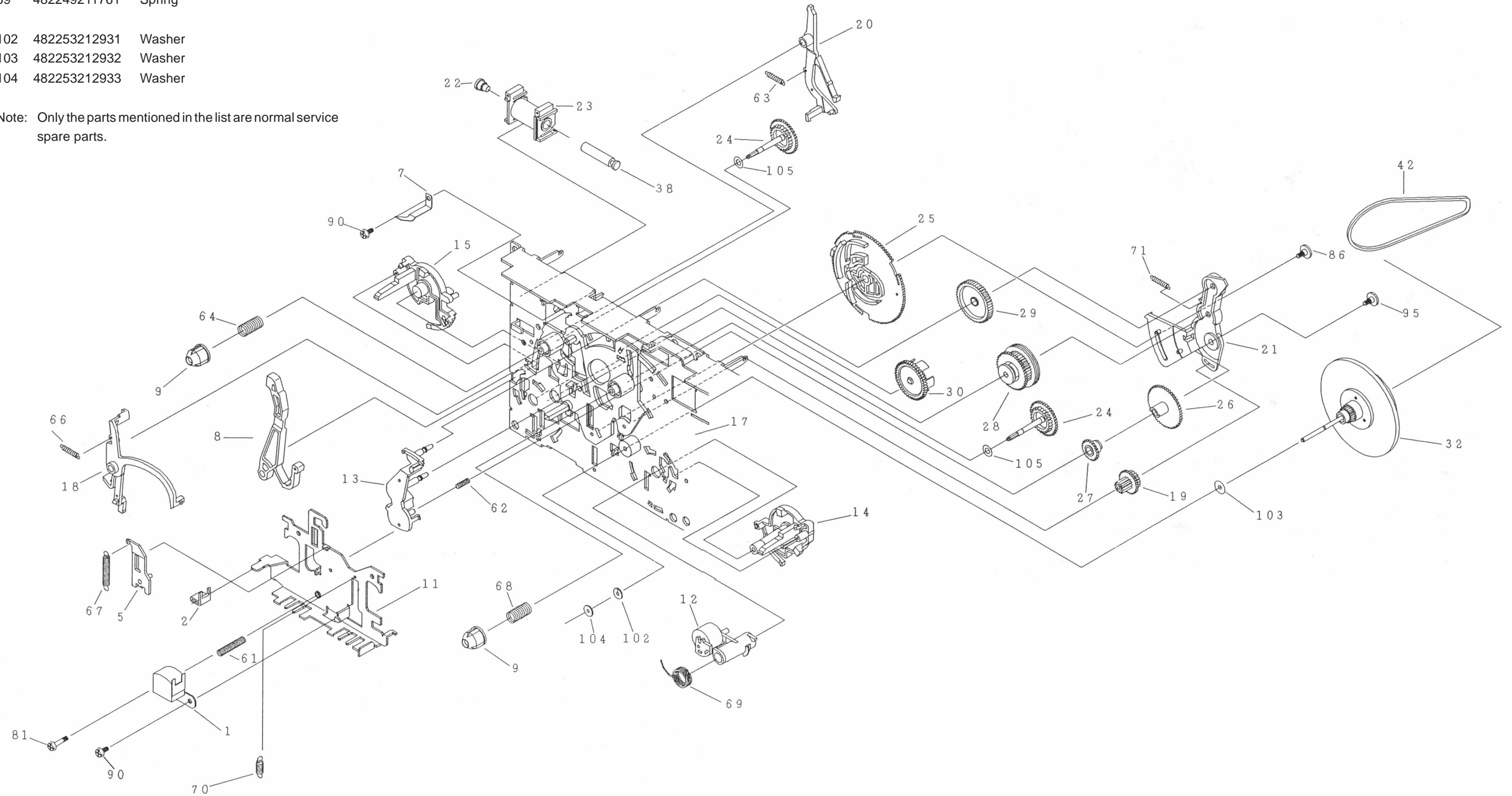
→ Signal path Pb left channel
 ⇨ Signal path REC right channel

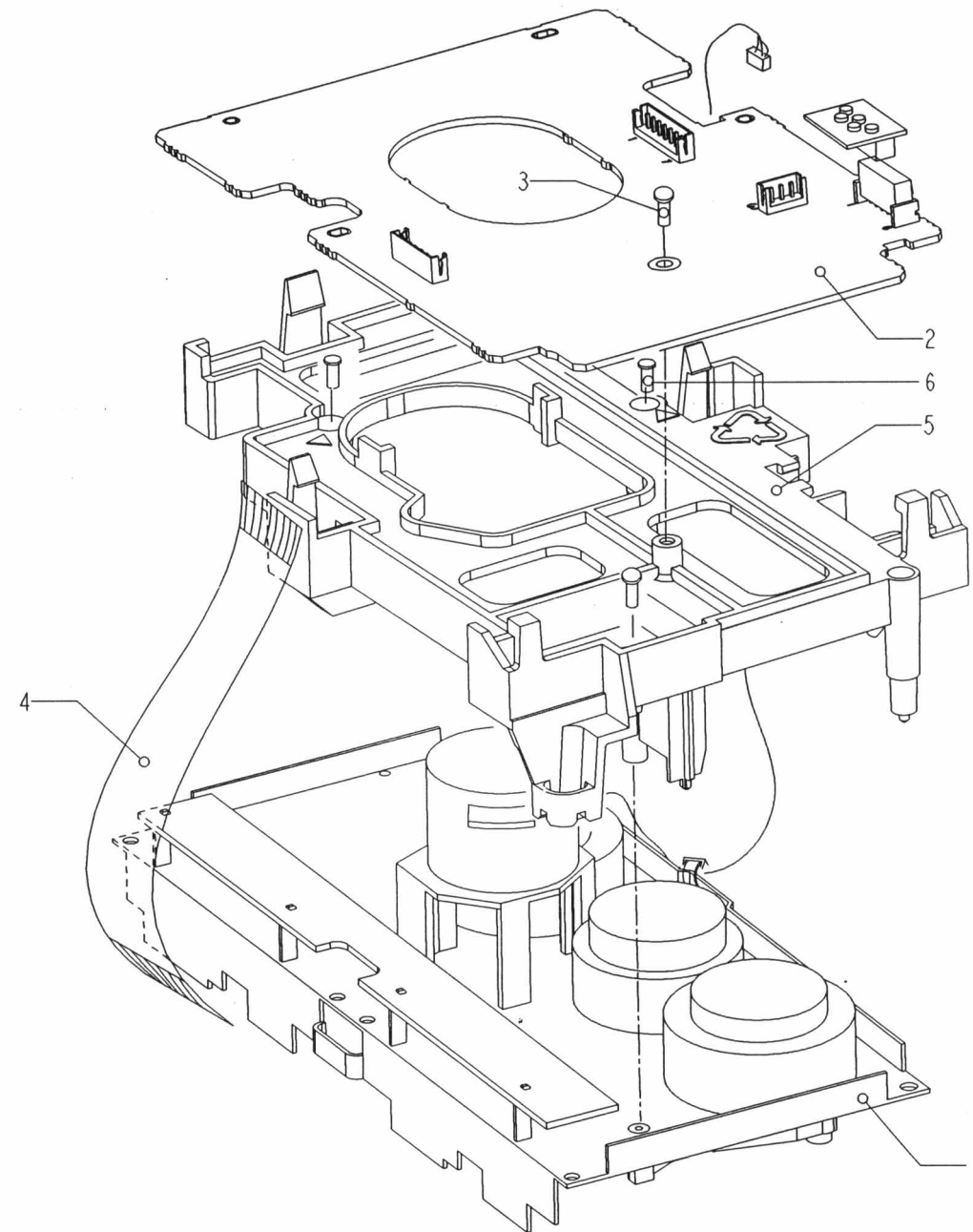
TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	996500002313	Play Head (Non-Autoreverse deck)
1	996500002321	Play Head (Autoreverse deck)
12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
42	996500002315	Belt AF (Autoreverse deck)
42	996500002718	Belt AF (Non-autoreverse deck)
69	482249211761	Spring
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer

Note: Only the parts mentioned in the list are normal service spare parts.

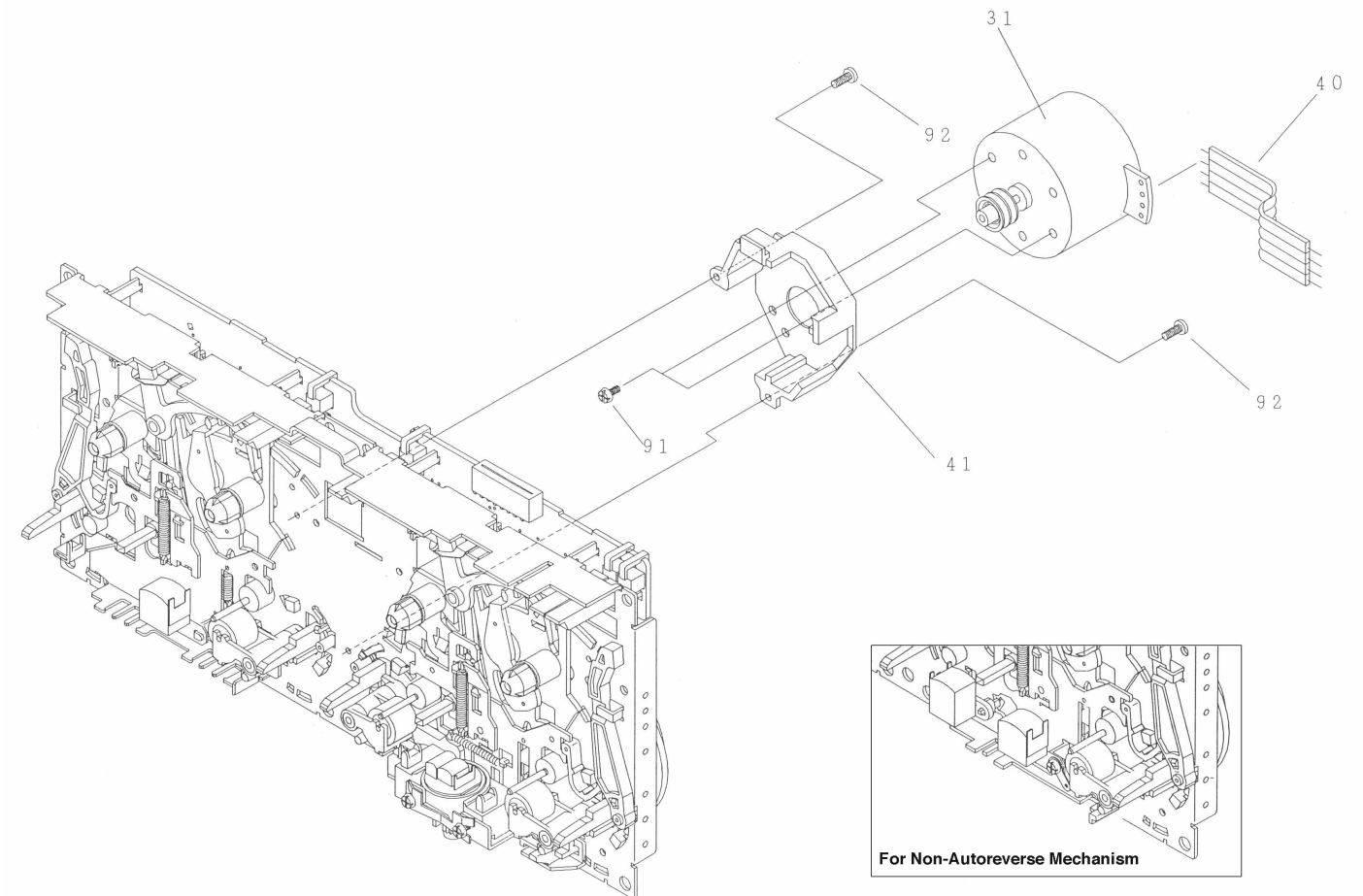




TAPE MODULE EXPLODED VIEW

1	313911877150	Autoreverse Mech. CWE44FR03
3	-	Screw D3 x 10
4	313911034080	Flex Cable 14 pin 7,5 cm
6	-	Screw M2 x 16

Note: Only the parts mentioned in this list are normal service spare parts.



TAPE MECHANISM - MOTOR EXPLODED VIEW

31	996500003006	Motor Assembly
91	-	Screw M2,6 x 5
92	-	Screw M2 x 5

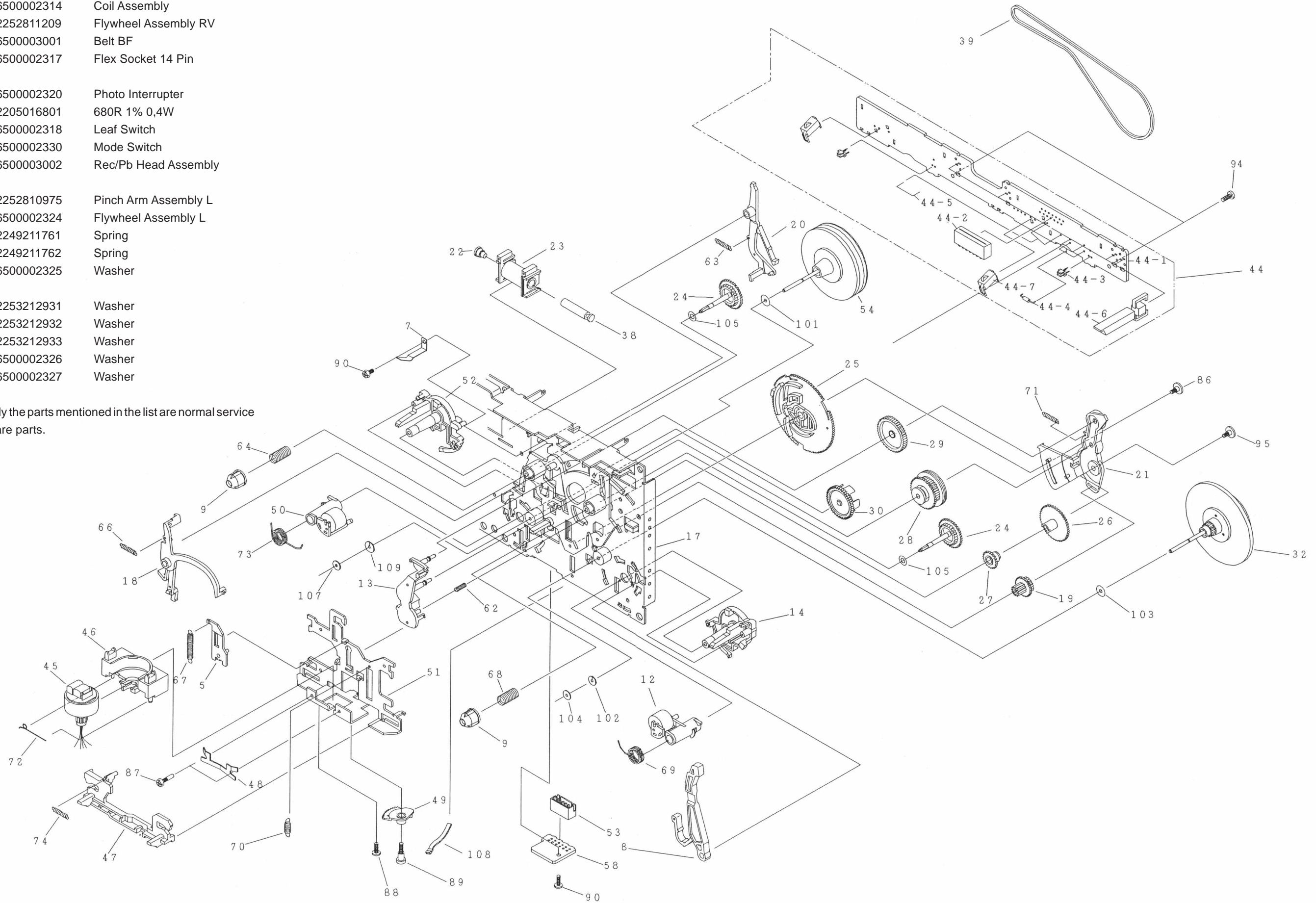
Note: Only the parts mentioned in this list are normal service spare parts.

TAPE MECHANISM B - RECORD/PLAYBACK (Autoreverse version)

MECHANICAL PARTS - REC/PB MECHANISM

12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
39	996500003001	Belt BF
44-2	996500002317	Flex Socket 14 Pin
44-3	996500002320	Photo Interrupter
44-4	482205016801	680R 1% 0,4W
44-6	996500002318	Leaf Switch
44-7	996500002330	Mode Switch
45	996500003002	Rec/Pb Head Assembly
50	482252810975	Pinch Arm Assembly L
54	996500002324	Flywheel Assembly L
69	482249211761	Spring
73	482249211762	Spring
101	996500002325	Washer
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer
107	996500002326	Washer
109	996500002327	Washer

Note: Only the parts mentioned in the list are normal service spare parts.



ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD

MISCELLANEOUS

1701	482226710953	Flex Connector 7P
1706	482226710953	Flex Connector 7P
1740	482226751255	Flex Connector 14P

CAPACITORS

2621	532212231647	1nF 10% 63V
2622	532212234099	470pF 10% 63V
2623	482212233575	220pF 5% 63V
2625	482212614585	100nF 10% 50V
2631	482212613751	47nF 10% 63V
2632	482212613751	47nF 10% 63V
2633	482212613473	220nF +80/-20% 50V
2634	482212613473	220nF +80/-20% 50V
2635	482212233891	3,3nF 10% 63V
2636	482212233891	3,3nF 10% 63V
2637	532212142386	100nF 5% 63V
2638	532212142386	100nF 5% 63V
2639	532212232531	100pF 5% 50V
2640	532212232531	100pF 5% 50V
2641	482212440769	4,7μF 20% 100V
2642	482212440769	4,7μF 20% 100V
2643	482212612105	33nF 5% 50V
2644	482212612105	33nF 5% 50V
2645	532212232658	22pF 5% 50V
2646	532212232658	22pF 5% 50V
2647	482212440769	4,7μF 20% 100V
2648	482212440769	4,7μF 20% 100V
2649	532212233861	120pF 10% 50V
2650	532212233861	120pF 10% 50V
2651	482212610326	180pF 5% 63V
2652	482212610326	180pF 5% 63V
2653	532212234099	470pF 10% 63V
2654	532212234099	470pF 10% 63V
2692	482212441584	100μF 20% 10V
2693	482212440207	100μF 20% 25V
2694	482212440207	100μF 20% 25V
2695	482212422652	2,2μF 20% 50V
2696	482212422652	2,2μF 20% 50V
2701	532212233538	150pF 2% 63V
2702	532212233538	150pF 2% 63V
2703	532212232531	100pF 5% 50V
2704	532212232531	100pF 5% 50V
2705	532212231863	330pF 5% 63V
2706	532212231863	330pF 5% 63V
2707	532212234099	470pF 10% 63V
2708	532212234099	470pF 10% 63V
2709	532212231863	330pF 5% 63V
2710	532212231863	330pF 5% 63V
2711	532212232531	100pF 5% 50V
2712	532212232531	100pF 5% 50V
2713	482212440248	10μF 20% 63V
2714	482212440248	10μF 20% 63V

2715	482212480195	470μF 20% 10V
2716	482212480195	470μF 20% 10V
2717	482212233127	2,2nF 10% 63V
2718	482212233127	2,2nF 10% 63V
2719	482212613188	15nF 5% 63V
2720	482212613188	15nF 5% 63V
2727	482212232535	680pF 10% 63V
2728	482212232535	680pF 10% 63V
2729	532212232654	22nF 10% 63V
2730	532212232654	22nF 10% 63V
2733	532212234099	470pF 10% 63V
2734	532212234099	470pF 10% 63V
2735	482212614585	100nF 10% 50V
2737	482212614585	100nF 10% 50V
2738	482212614585	100nF 10% 50V
2741	482212611585	22nF +80/-20% 25V
2742	532212232654	22nF 10% 63V
2743	482212614585	100nF 10% 50V
2744	482212614585	100nF 10% 50V
2760	482212614585	100nF 10% 50V
2761	482212480144	220μF 20% 25V
2762	482212440769	4,7μF 20% 100V
2763	482212440433	47μF 20% 25V
2765	482212440433	47μF 20% 25V
2769	532212234099	470pF 10% 63V
2770	532212234099	470pF 10% 63V
2780	482212481151	22μF 50V
2781	482212233177	10nF 20% 50V
2782	532212610223	4,7nF 10% 63V
2784	482212151305	15nF 10% 50V
2785	482212421913	1μF 20% 63V
2786	532212232531	100pF 5% 50V
2787	482212612105	33nF 5% 50V
2788	532212231647	1nF 10% 63V

RESISTORS

3601	482211711449	2k2 1% 0,1W
3602	482205120273	27k 5% 0,1W
3603	482211711449	2k2 1% 0,1W
3604	482211711148	56k 1% 0,1W
3605	482211711449	2k2 1% 0,1W
3606	482205120124	120k 5% 0,1W
3607	482211652256	2k2 5% 0,5W
3608	482205120273	27k 5% 0,1W
3609	482211652256	2k2 5% 0,5W
3610	482205120124	120k 5% 0,1W
3611	482211652256	2k2 5% 0,5W
3612	482211711148	56k 1% 0,1W
3613	482205120273	27k 5% 0,1W
3614	482205120273	27k 5% 0,1W
3616	482205120822	8k2 5% 0,1W
3618	482205120822	8k2 5% 0,1W

ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD

3620	482210012227	4k7 30% 0,1W
3622	482210012227	4k7 30% 0,1W
3623	482211710837	100k 1% 0,1W
3624	482211710837	100k 1% 0,1W
3625	482205110102	1k 2% 0,25W
3626	482205110102	1k 2% 0,25W
3628	482211710837	100k 1% 0,1W
3630	482205120471	470R 5% 0,1W
3631	482211710834	47k 1% 0,1W
3632	482211710834	47k 1% 0,1W
3633	482205120332	3k3 5% 0,1W
3634	482205120332	3k3 5% 0,1W
3635	482210011771	20k 30% 0,1W
3636	482210011771	20k 30% 0,1W
3637	482211710837	100k 1% 0,1W
3638	482211710837	100k 1% 0,1W
3639	482205120332	3k3 5% 0,1W
3640	482205120332	3k3 5% 0,1W
3641	482210011771	20k 30% 0,1W
3642	482210011771	20k 30% 0,1W
3643	482211710837	100k 1% 0,1W
3644	482211710837	100k 1% 0,1W
3645	482205120683	68k 5% 0,1W
3646	482205120683	68k 5% 0,1W
3647	482205120332	3k3 5% 0,1W
3648	482205120332	3k3 5% 0,1W
3649	482205120562	5k6 5% 0,1W
3650	482205120562	5k6 5% 0,1W
3651	482205110102	1k 2% 0,25W
3652	482205011002	1k 1% 0,4W
3655	482210012227	4k7 30% 0,1W
3656	482210012227	4k7 30% 0,1W
3657	482205110102	1k 2% 0,25W
3658	482205110102	1k 2% 0,25W
3659	482205120223	22k 5% 0,1W
3660	482205120223	22k 5% 0,1W
3661	482205120474	470k 5% 0,1W
3662	482205120474	470k 5% 0,1W
3663	482205120154	150k 5% 0,1W
3664	482205120154	150k 5% 0,1W
3665	482205120683	68k 5% 0,1W
3666	482205120683	68k 5% 0,1W
3667	482205120109	10R 5% 0,1W
3668	482205120109	10R 5% 0,1W
3669	482205120472	4k7 5% 0,1W
3670	482205120472	4k7 5% 0,1W
3672	482205120472	4k7 5% 0,1W
3674	482211652283	4k7 5% 0,5W
3676	482211710834	47k 1% 0,1W
3678	482211710834	47k 1% 0,1W
3679	482211710834	47k 1% 0,1W
3680	482211710834	47k 1% 0,1W

3683	482211710834	47k 1% 0,1W
3684	482211710834	47k 1% 0,1W
3685	482211652234	100k 5% 0,5W
3686	482211710837	100k 1% 0,1W
3687	482211711503	220R 1% 0,1W
3691	482211710833	10k 1% 0,1W
3692	482211710965	18k 1% 0,1W
3693	482211652199	68R 5% 0,5W
3694	482205210109	△ 10R 5% 0,33W
3695	482211712521	68R 1% 0,1W
3701	482211711503	220R 1% 0,1W
3702	482211711503	220R 1% 0,1W
3703	482211711503	220R 1% 0,1W
3704	482211711503	220R 1% 0,1W
3705	482211711503	220R 1% 0,1W
3706	482211711503	220R 1% 0,1W
3707	482205120101	100R 5% 0,1W
3708	482205120101	100R 5% 0,1W
3709	482205120229	22R 5% 0,1W
3710	482205120229	22R 5% 0,1W
3711	482211710837	100k 1% 0,1W
3712	482211710837	100k 1% 0,1W
3713	482205120121	120R 5% 0,1W
3714	482205120121	120R 5% 0,1W
3715	482205110102	1k 2% 0,25W
3716	482205110102	1k 2% 0,25W
3717	482205120392	3k9 5% 0,1W
3718	482205120392	3k9 5% 0,1W
3719	482205120822	8k2 5% 0,1W
3720	482205120822	8k2 5% 0,1W
3721	482205120562	5k6 5% 0,1W
3722	482205120562	5k6 5% 0,1W
3723	482211711383	12k 1% 0,1W
3724	482211711383	12k 1% 0,1W
3727	482205120562	5k6 5% 0,1W
3728	482205120562	5k6 5% 0,1W
3729	482205120332	3k3 5% 0,1W
3730	482205120332	3k3 5% 0,1W
3731	482205120822	8k2 5% 0,1W
3732	482205120822	8k2 5% 0,1W
3733	482205120562	5k6 5% 0,1W
3734	482205120562	5k6 5% 0,1W
3735	482211683933	15k 1% 0,1W
3736	482211683933	15k 1% 0,1W
3737	482205120332	3k3 5% 0,1W
3738	482205120332	3k3 5% 0,1W
3739	482205120472	4k7 5% 0,1W
3740	482211710834	47k 1% 0,1W
3741	482211711454	820R 1% 0,1W
3742	482211711454	820R 1% 0,1W
3743	482205110102	1k 2% 0,25W
3744	482205110102	1k 2% 0,25W

ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD**RESISTORS**

3745	482205120392	3k9 5% 0,1W
3746	482205120392	3k9 5% 0,1W
3748	482211711449	2k2 1% 0,1W
3749	482211710834	47k 1% 0,1W
3751	482211710833	10k 1% 0,1W
3752	482211710837	100k 1% 0,1W
3753	482211710837	100k 1% 0,1W
3754	482205120333	33k 5% 0,1W
3756	482211713579	220k 1% 0,1W
3757	482211713579	220k 1% 0,1W
3758	482211710833	10k 1% 0,1W
3759	482211710833	10k 1% 0,1W
3760	482205120121	120R 5% 0,1W
3761	482205021003	10k 1% 0,6W
3762	482211711454	820R 1% 0,1W
3763	482205120154	150k 5% 0,1W
3764	482211683872	220R 5% 0,5W
3765	482205120393	39k 5% 0,1W
3766	482205120475	4M7 5% 0,1W
3767	482205120475	4M7 5% 0,1W
3768	482211710833	10k 1% 0,1W
3769	482211683933	15k 1% 0,1W
3770	482211711139	1k5 1% 0,1W
3771	482205120122	1k2 5% 0,1W
3772	482211711507	6k8 1% 0,1W
3773	482210012227	4k7 30% 0,1W
3774	482211711383	12k 1% 0,1W
3775	482205120478	4R7 5% 0,1W
3776	482211711507	6k8 1% 0,1W
3777	482211710353	150R 1% 0,1W
3778	482205210688	△ 6R8 5% 0,33W
3779	482205120334	330k 5% 0,1W
3780	482205120105	1M 5% 0,1W
3781	482205120475	4M7 5% 0,1W
3782	482211683933	15k 1% 0,1W
3783	482205120472	4k7 5% 0,1W
3784	482205120472	4k7 5% 0,1W
3785	532210011539	100k 30% 0,1W
3786	482205120223	22k 5% 0,1W
3787	482205120105	1M 5% 0,1W
3788	482205120105	1M 5% 0,1W
3789	482211710834	47k 1% 0,1W
4601	482205120008	0R Jumper 0805
4602	482205120008	0R Jumper 0805
4603	482205120008	0R Jumper 0805
4604	482205120008	0R Jumper 0805
4605	482205120008	0R Jumper 0805
4606	482205120008	0R Jumper 0805
4607	482205120008	0R Jumper 0805
4608	482205120008	0R Jumper 0805
4610	482205120008	0R Jumper 0805
4696	482205120008	0R Jumper 0805

4697	482205120008	0R Jumper 0805
4701	482205120008	0R Jumper 0805
4702	482205120008	0R Jumper 0805
4703	482205120008	0R Jumper 0805
4704	482205120008	0R Jumper 0805
4705	482205120008	0R Jumper 0805
4706	482205120008	0R Jumper 0805
4707	482205120008	0R Jumper 0805
4708	482205120008	0R Jumper 0805
4709	482205120008	0R Jumper 0805
4710	482205120008	0R Jumper 0805
4711	482205120008	0R Jumper 0805
4712	482205120008	0R Jumper 0805
4713	482205120008	0R Jumper 0805
4714	482205120008	0R Jumper 0805
4715	482205120008	0R Jumper 0805
4716	482205120008	0R Jumper 0805
4717	482205120008	0R Jumper 0805
4718	482205120008	0R Jumper 0805
4719	482205120008	0R Jumper 0805
4720	482205120008	0R Jumper 0805
4721	482205120008	0R Jumper 0805
4722	482205120008	0R Jumper 0805
4723	482205120008	0R Jumper 0805
4724	482205120008	0R Jumper 0805
4725	482205120008	0R Jumper 0805
4726	482205120008	0R Jumper 0805
4727	482205120008	0R Jumper 0805
4728	482205120008	0R Jumper 0805
4729	482205120008	0R Jumper 0805
4730	482205120008	0R Jumper 0805
4731	482205120008	0R Jumper 0805
4732	482205120008	0R Jumper 0805
4733	482205120008	0R Jumper 0805
4734	482205120008	0R Jumper 0805
4735	482205120008	0R Jumper 0805
4736	482205120008	0R Jumper 0805
4737	482205120008	0R Jumper 0805
4738	482205120008	0R Jumper 0805
4739	482205120008	0R Jumper 0805
4740	482205120008	0R Jumper 0805
4741	482205120008	0R Jumper 0805
4742	482205120008	0R Jumper 0805
4743	482205120008	0R Jumper 0805
4783	482205120008	0R Jumper 0805
4786	482205120008	0R Jumper 0805
4787	482205120008	0R Jumper 0805
4788	482205120008	0R Jumper 0805

COILS & FILTERS

5631	482215711865	Filter MPX 20kHz
5632	482215711865	Filter MPX 20kHz

ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD

5701	482215711477	Coil 2,2μH 5%
5702	482215711477	Coil 2,2μH 5%
5703	482215620946	Osc. Coil 100kHz

DIODES

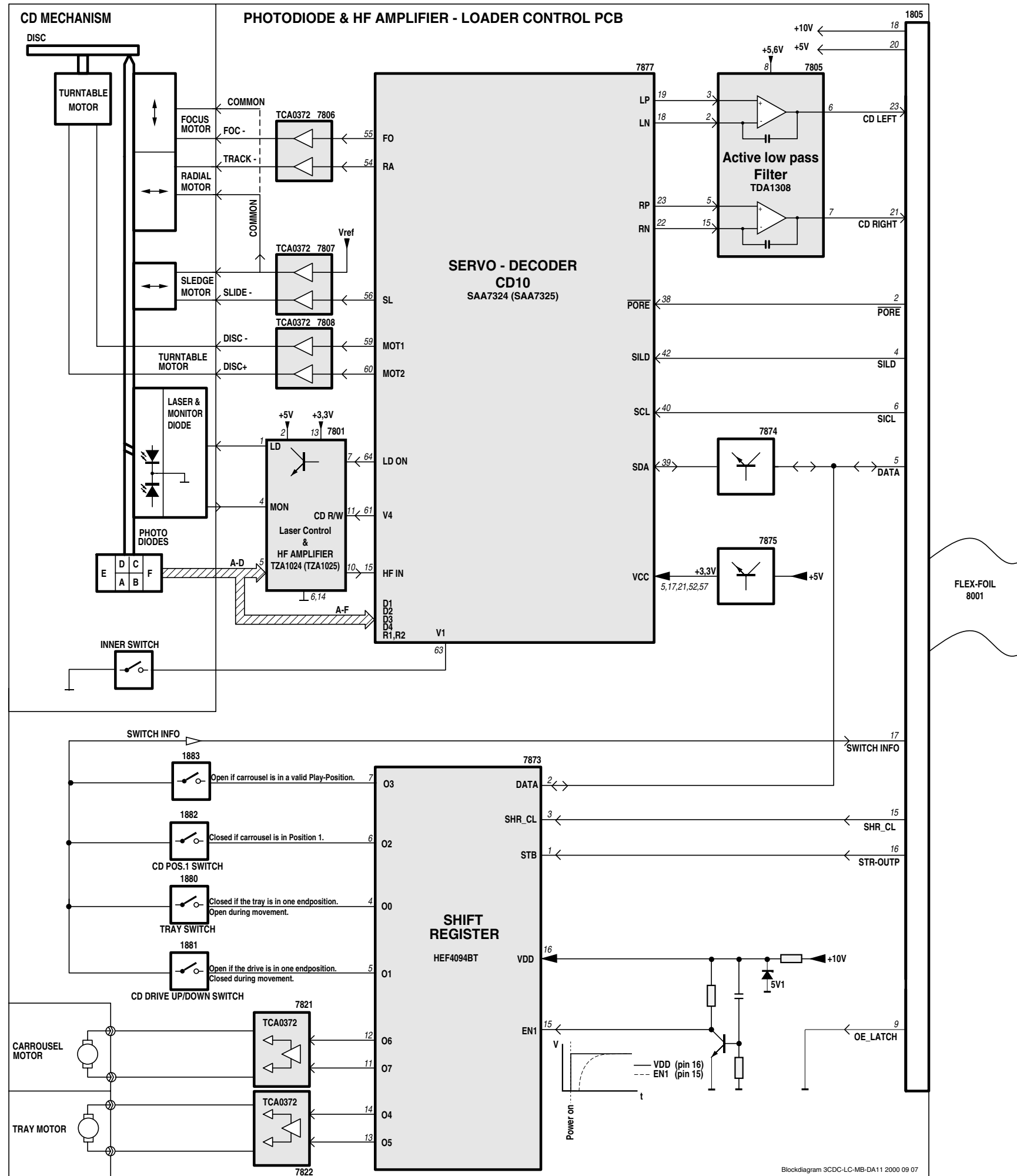
6611	482213031878	1N4003G
6612	482213031878	1N4003G
6613	482213032245	BYV10-40
6614	482213030621	1N4148
6770	482213030621	1N4148
6771	482213030621	1N4148
6772	482213030621	1N4148
6773	482213030621	1N4148
6774	482213030621	1N4148
6775	482213030621	1N4148
6776	482213030621	1N4148
6777	482213034382	BZX79-C8V2
6778	482213030621	1N4148
6782	482213030621	1N4148
6785	482213030621	1N4148
6786	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

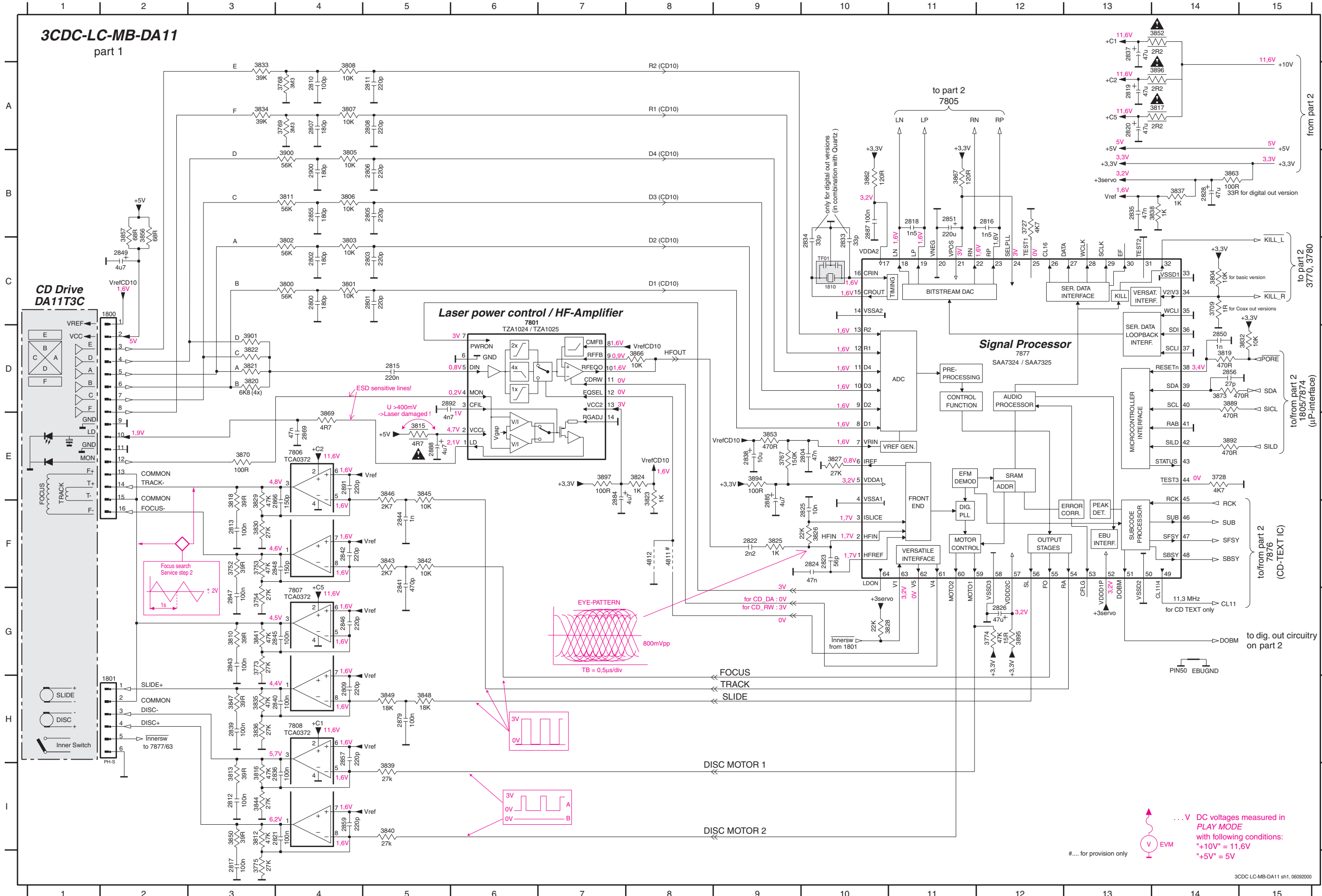
7610	532220911306	HEF4094BT
7612	532213060845	BC807-25
7613	532213060845	BC807-25
7614	532213060845	BC807-25
7616	482213060373	BC857B
7618	482213060511	BC847B
7619	482213060511	BC847B
7620	482213060511	BC847B
7622	482213060511	BC847B
7623	482213060511	BC847B
7624	482213060511	BC847B
7630	482220917322	CXA1551M
7631	482213060511	BC847B
7632	482213060511	BC847B
7633	482213060511	BC847B
7634	482213060511	BC847B
7635	482213060511	BC847B
7636	482213060511	BC847B
7637	482213060511	BC847B
7638	482213060511	BC847B
7640	482220983357	NJM4560M
7710	482220932919	HEF4952BT
7720	932214000668	AN7323S
7730	482220932919	HEF4952BT
7740	482220932919	HEF4952BT
7780	482213060511	BC847B
7781	482213042804	BC817-25
7782	482213044568	BC557B
7783	482213060511	BC847B

7784	482213060373	BC857B
7785	482213063494	J111
7786	482213063494	J111
7787	482213060511	BC847B
7788	482213060511	BC847B
7789	482213060511	BC847B
7790	482213060511	BC847B
7791	482213060511	BC847B
7792	482213060511	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.

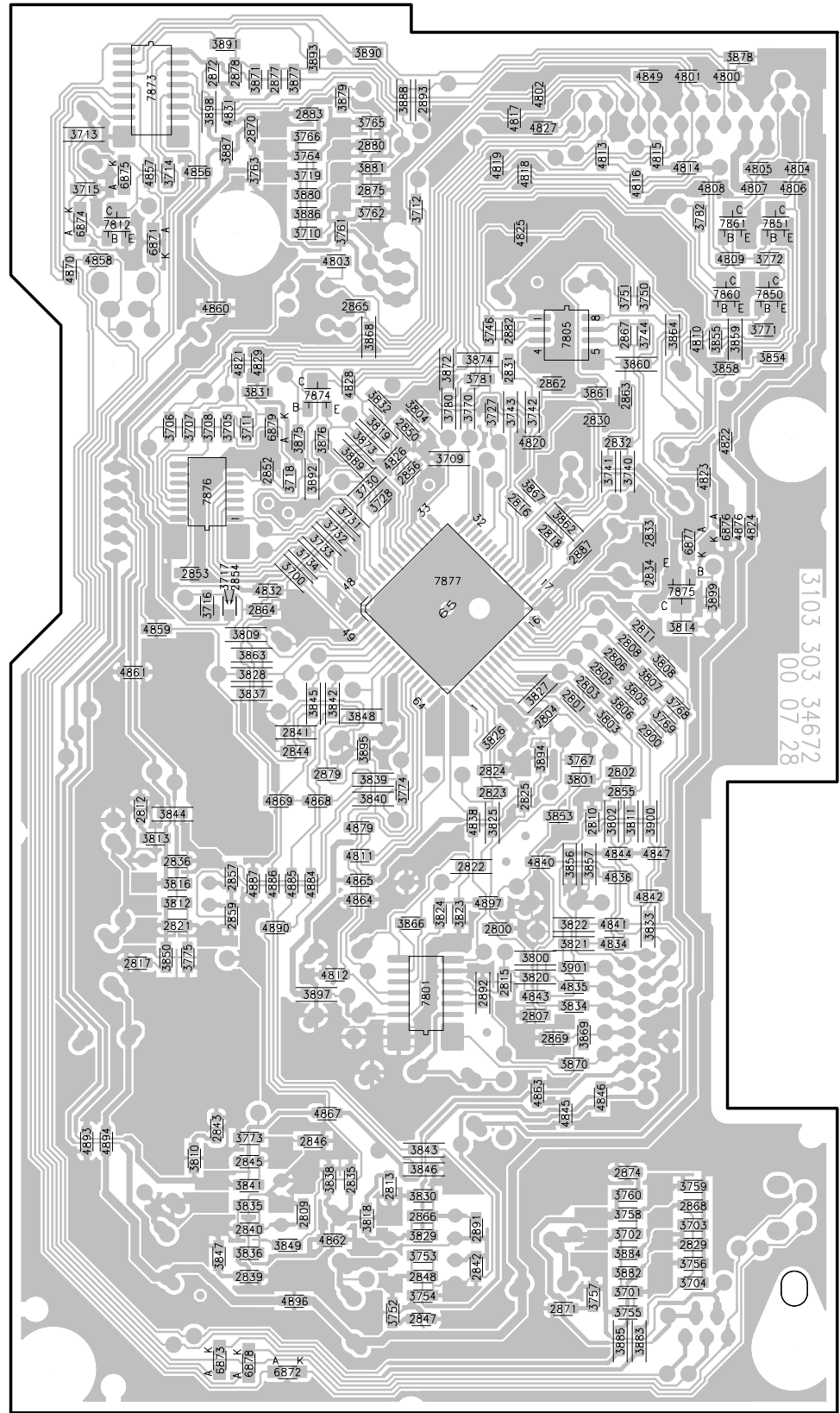


1800 D1 2801 C5 2805 B5 2809 H4 2813 F3 2818 B11 2822 F9 2826 G12 2835 B13 2839 H3 2843 G3 2847 G3 2851 B11 2859 I4 2864 E7 2891 E4 3727 B12 3754 G3 3773 G3 3801 C4 3805 B4 3810 G3 3815 E5 3819 D14 3823 E8 3827 E10 3832 D15 3836 H3 3840 I5 3844 I3 3848 H5 3853 E9 3863 B14 3870 E3 3894 E9 3900 B3 7801 E7 7877 D12
 1801 G1 2802 C4 2806 B5 2810 A4 2815 D5 2819 A13 2823 F10 2828 B14 2836 I4 2840 H4 2844 F5 2848 F4 2855 B4 2866 F4 2868 F9 2892 D5 3728 E14 3754 G3 3774 G12 3802 C4 3806 B4 3811 B4 3816 I3 3819 D14 3823 E8 3827 E10 3832 D15 3836 H3 3840 I5 3844 I3 3848 H5 3853 E9 3863 B14 3870 E3 3894 E9 3900 B3 7801 E7 7877 D12
 1810 C10 2803 C5 2807 A4 2811 A5 2816 B12 2820 A13 2824 F10 2833 C10 2837 A13 2841 G5 2845 G4 2849 C2 2856 D14 2869 E4 2887 B10 2900 B4 3752 F3 3768 A4 3800 C4 3803 C4 3807 A4 3812 I3 3817 F3 3821 D3 3825 F10 3829 F3 3834 A3 3838 B14 3842 F5 3846 E5 3850 I3 3852 A14 3857 C2 3867 B11 3889 D14 3896 A14 4811 F8 7807 G4 7808 H4
 2800 C4 2804 E10 2808 A5 2812 I3 2817 I3 2821 I4 2825 F10 2834 C10 2838 E8 2842 F4 2846 G4 2850 D14 2857 H4 2879 H5 2888 E5 3709 C14 3753 F3 3769 A4 3800 C4 3803 C4 3807 A4 3812 I3 3817 F3 3821 D3 3825 F10 3829 F3 3834 A3 3838 B14 3842 F5 3846 E5 3850 I3 3852 A14 3857 C2 3867 B11 3889 D14 3896 A14 4811 F8 7807 G4 7808 H4



... V DC voltages measured in PLAY MODE with following conditions: "+10V" = 11.6V "+5V" = 5V

3CDC-LC-MB Copperside view

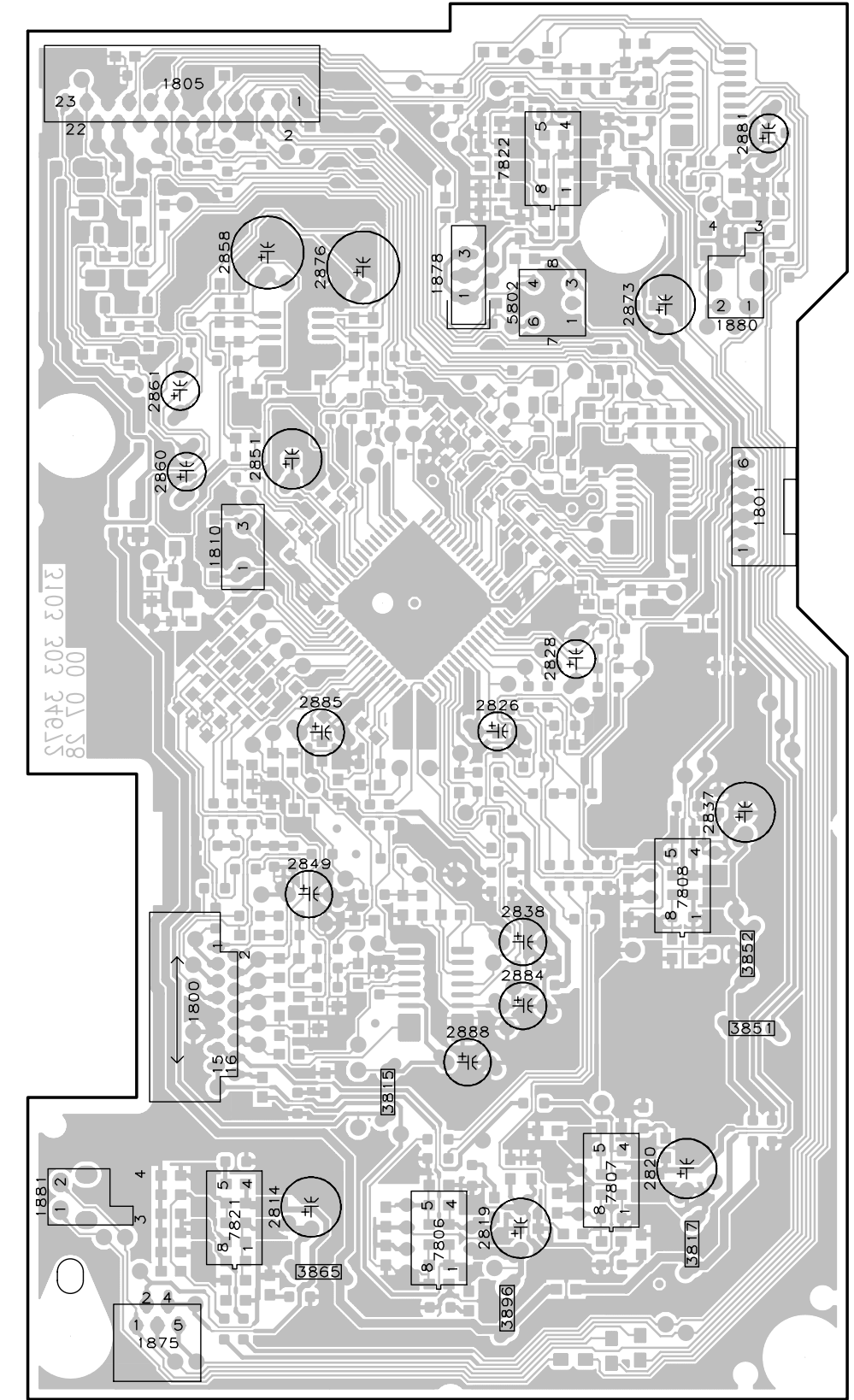


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

3CDC-LC-MB-DA11 Layout stage 2 2000-09-07

Copperside			Componentside		
2800 F3	3746 B3	3880 A2	7860 B5	1800 F2	
2801 D4	3750 B4	3881 A3	7861 B5	1801 C5	
2802 E4	3751 B4	3882 H4	7873 A1	1805 A2	
2803 D4	3752 H3	3883 H4	7874 C2	1810 C2	
2804 D4	3753 H3	3884 H4	7875 D4	1875 H1	
2805 D4	3754 H3	3885 H4	7876 C2	1878 B3	
2806 D4	3755 H4	3886 B2	7877 D3	1880 B5	
2807 F4	3756 H4	3887 A2		1881 G1	
2808 D4	3757 H4	3888 A3		2814 G2	
2809 G2	3758 G4	3889 C2		2819 G3	
2810 E4	3759 G4	3890 A3		2820 G4	
2811 D4	3760 G4	3891 A2		2826 D3	
2812 E1	3761 B2	3892 C2		2828 D4	
2813 G3	3762 B3	3893 A2		2837 E5	
2815 F3	3763 A2	3894 E4		2838 F4	
2816 C3	3764 A2	3895 E3		2849 E2	
2817 F1	3765 A3	3897 F2		2851 C2	
2818 C4	3766 A2	3898 A2		2858 B2	
2821 F1	3767 E4	3899 D5		2860 C1	
2822 E3	3768 D4	3900 E4		2861 C1	
2823 E3	3769 D4	3901 F4		2873 B4	
2824 E3	3770 C3	4800 A5		2876 B2	
2825 E3	3771 B5	4801 A4		2881 A5	
2829 H4	3772 B5	4802 A4		2884 F4	
2830 C4	3773 G2	4803 B2		2885 D2	
2831 B3	3774 E3	4804 A5		2888 F3	
2832 C4	3775 F2	4805 A5		3815 G3	
2833 C4	3780 C3	4806 A5		3817 H5	
2834 D4	3781 B3	4807 A5		3851 F5	
2835 G2	3782 B5	4808 A5		3852 F5	
2836 E1	3800 F4	4809 B5		3865 H2	
2839 H2	3801 E4	4810 B4		3896 H3	
2840 G2	3802 E4	4811 E3		5802 B4	
2841 E2	3803 D4	4812 F2		7806 H3	
2842 H3	3804 C3	4813 A4		7807 G4	
2843 G2	3805 D4	4814 A4		7808 E5	
2844 E2	3806 D4	4815 A4		7821 G2	
2845 G2	3807 D4	4816 A4		7822 A3	
2846 G2	3808 D4	4817 A3			
2847 H3	3809 D2	4818 A3			
2848 H3	3810 G2	4819 A3			
2850 C3	3811 E4	4820 C4			
2852 C2	3812 F1	4821 B2			
2853 D2	3813 E1	4822 C5			
2854 D2	3814 D4	4823 C5			
2855 E4	3816 E1	4824 C5			
2856 C3	3818 G3	4825 B3			
2857 E2	3819 C3	4826 C3			
2859 F2	3820 F4	4827 A4			
2862 C4	3821 F4	4828 C2			
2863 C4	3822 F4	4829 B2			
2864 D2	3823 F3	4831 A2			
2865 B3	3824 F3	4832 D2			
2866 G3	3825 E3	4834 F4			
2867 B4	3826 E3	4835 F4			
2868 G4	3827 D4	4836 E4			
2869 F4	3828 D2	4838 E3			
2870 A2	3829 G3	4840 F4			
2871 H4	3830 G3	4841 F4			
2872 A2	3831 C2	4842 E4			
2874 G4	3832 C3	4843 F4			
2875 A3	3833 F4	4844 E4			
2877 A2	3834 F4	4845 G4			
2878 A2	3835 G2	4846 G4			
2879 E2	3836 H2	4847 E4			
2880 A3	3837 D2	4849 A4			
2882 B3	3838 G2	4856 A2			
2883 A2	3839 E3	4857 A1			
2887 C4	3840 E3	4858 B1			
2891 G3	3841 G2	4859 D1			
2892 F3	3842 D2	4860 B2			
2893 A3	3843 G3	4861 D1			
2900 E4	3844 E1	4862 G2			
3700 D2	3845 D2	4863 G4			
3701 H4	3846 G3	4864 F3			
3702 G4	3847 H2	4865 E3			
3703 G4	3848 D3	4867 G2			
3704 H4	3849 H2	4868 E2			
3705 C2	3850 F1	4869 E2			
3706 C1	3853 F4	4870 B1			
3707 C2	3854 B5	4876 C5			
3708 C2	3855 B5	4879 E3			
3709 C3	3856 E4	4884 E2			
3710 B2	3857 E4	4885 E2			
3711 C2	3858 B5	4886 E2			
3712 A3	3859 B5	4887 E2			
3713 A1	3860 B4	4890 F2			
3714 A1	3861 C4	4893 G1			
3715 A1	3862 C4	4894 G1			
3716 D2	3863 D2	4896 H2			
3717 D2	3864 B4	4897 F3			
3718 C2	3866 F3	6871 B1			
3719 A2	3867 C4	6872 H2			
3727 C3	3868 B3	6873 H2			
3728 C3	3869 F4	6874 B1			
3730 C3	3870 F4	6875 A1			
3731 C2	3871 A2	6876 C5			
3732 C2	3872 B3	6877 C4			
3733 C2	3873 C3	6878 H2			
3734 D2	3874 B3	6879 C2			
3740 C4	3875 C2	7801 F3			
3741 C4	3876 C2	7805 B4			
3742 C4	3877 A2	7812 B1			
3743 C3	3878 A5	7850 B5			
3744 B4	3879 A2	7851 B5			

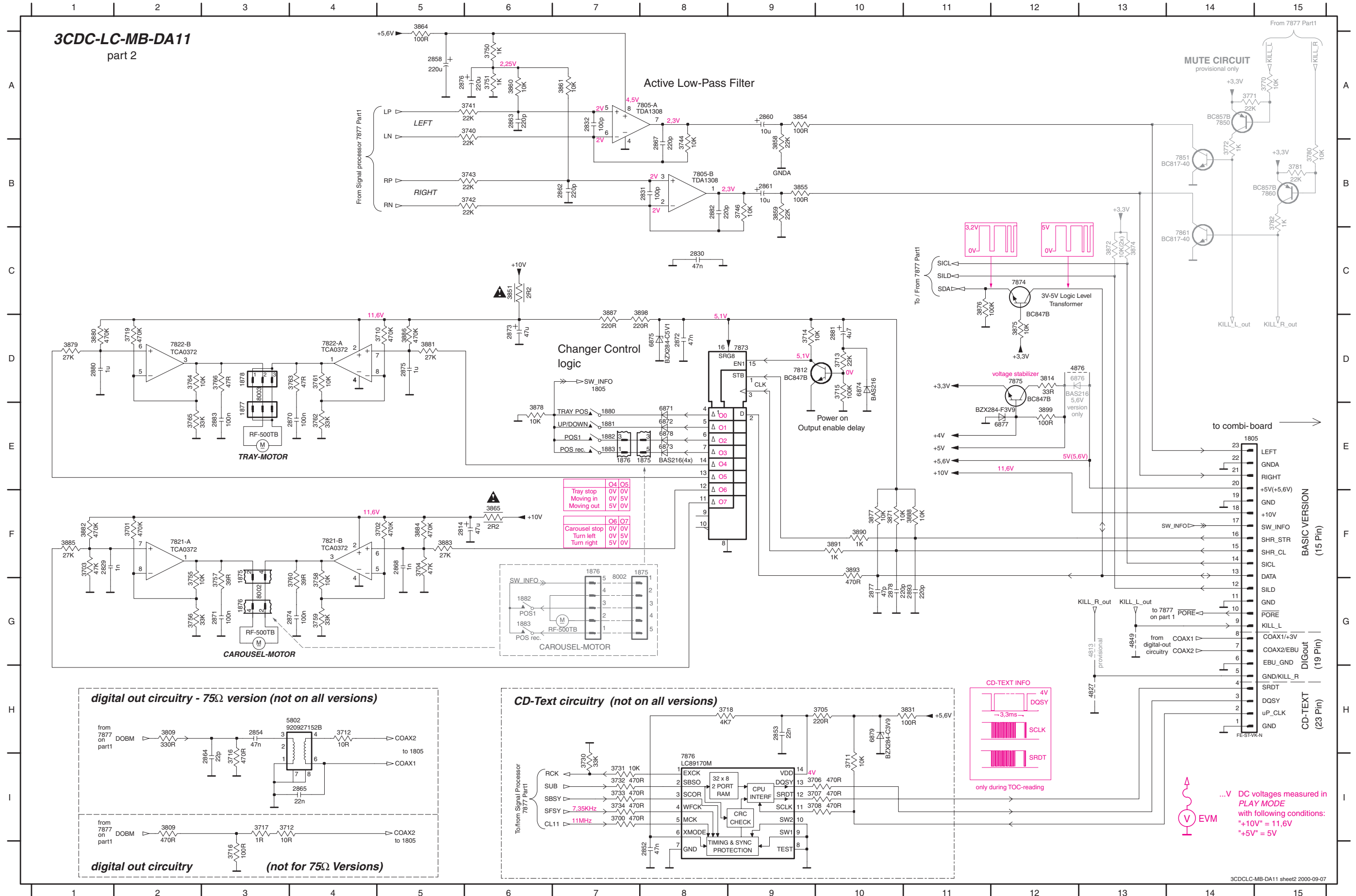
3CDC-LC-MB Componentside view



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

3CDC-LC-MB-DA11 Layout stage 2 2000-09-07

1805	E14	1880	E7	2831	B8	2861	B9	2870	E4	2877	G10	3372	C13	3705	H10	3713	D10	3730	I7	3743	B6	3757	G3	3764	D2	3781	B15	3855	B9	3871	F10	3881	D5	3888	F11	4827	H13	6874	D10	7805-B	B8	7851	B14
1850	G3	1881	E7	2832	A7	2862	B7	2871	G3	2878	G10	3374	C13	3706	I10	3714	D9	3732	I7	3744	B8	3758	G4	3765	E2	3782	B15	3858	B9	3875	D12	3882	F1	3890	F10	4849	G13	6875	D8	7812	D9	7860	B15
1875	E8	1882	E7	2852	I8	2863	A6	2872	D8	2880	D10	3700	I7	3707	I10	3715	D10	3733	I7	3746	B9	3759	G4	3766	D3	3809	H2	3859	B9	3876	C11	3883	F5	3891	F10	4876	D12	6876	D12	7821-A	F2	7861	C14
1876	E7	1883	E7	2853	H9	2864	I3	2873	D6	2881	D10	3701	F2	3708	I10	3716	I3	3734	I7	3750	A6	3760	G4	3770	A15	3814	D12	3860	A6	3877	F10	3884	F5	3893	F10	5802	H4	6877	E12	7821-B	F4	7873	D9
1877	E3	2814	F6	2854	H3	2865	I4	2874	G4	2882	B8	3702	F5	3710	D5	3718	H8	3740	A6	3751	A6	3761	D4	3771	A14	3831	H11	3861	A7	3878	E6	3885	F1	3898	D7	6871	E8	6878	E8	7822-A	D4	7874	C12
1878	D3	2829	F2	2858	A5	2867	B8	2875	D5	2883	E3	3703	F1	3711	I10	3719	D2	3741	A6	3755	G2	3762	E4	3772	B14	3851	C6	3864	A5	3879	D1	3886	D5	3899	E12	6872	E8	6879	H10	7822-B	D2	7875	D12
1878	G3	2830	C8	2860	A9	2868	F5	2876	A6	2893	G11	3704	F5	3712	H4	3730	I7	3742	B6	3756	G2	3763	D4	3780	B15	3854	A9	3865	F6	3880	D1	3887	D7	4813	G13	6873	E8	7805-A	A7	7850	A14	7876	I8



EXPLODED VIEW (3CDC-LC-DA11 MODULE)

MECHANICAL PARTS Loader → this page

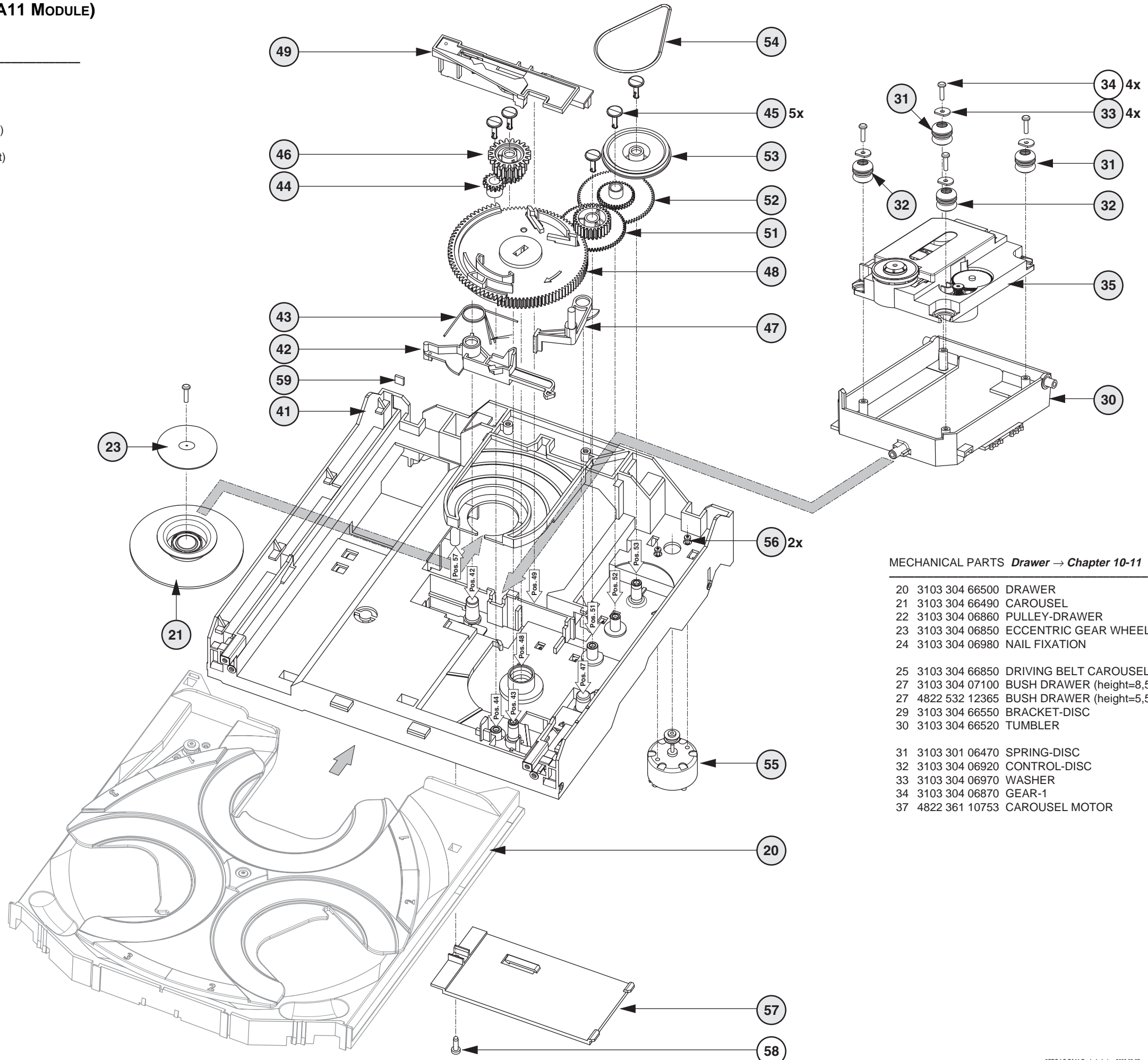
- 20 3103 304 66500 DRAWER
- 21 3140 114 29070 PRESSURE RING-DA11
- 23 3140 111 21270 METAL RING-DA11
- 30 3103 304 66560 SUPPORT
- 31 4822 529 10386 DAMPER - RUBBER (Rear)

- 32 4822 529 10387 DAMPER - RUBBER (Front)
- 33 3103 304 06970 WASHER
- 35 3103 309 05310 CD DRIVE DA11T3C
- 41 3103 304 66480 FRAME
- 42 3103 304 66540 BRACKET-GUIDING

- 43 3103 301 06460 SPRING-GUIDING
- 44 3103 304 06890 GEAR-3
- 45 3103 304 06980 NAIL FIXATION
- 46 3103 304 06880 GEAR-2
- 47 3103 304 66530 BRACKET-LOAD

- 48 3103 304 06910 CAM
- 49 3103 304 66510 GUIDING
- 51 3103 304 06900 GEAR-4
- 52 3103 304 06870 GEAR-1
- 53 3103 304 06960 PULLEY-FRAME

- 54 3103 304 66910 DRIVING-BELT-DRAWER
- 55 4822 361 10753 TRAY MOTOR
- 56 4822 502 12548 SCREW M2,6X3,5
- 57 3103 304 69880 COVER-DA11
- 59 4822 466 12146 RUBBER



MECHANICAL PARTS Drawer → Chapter 10-11

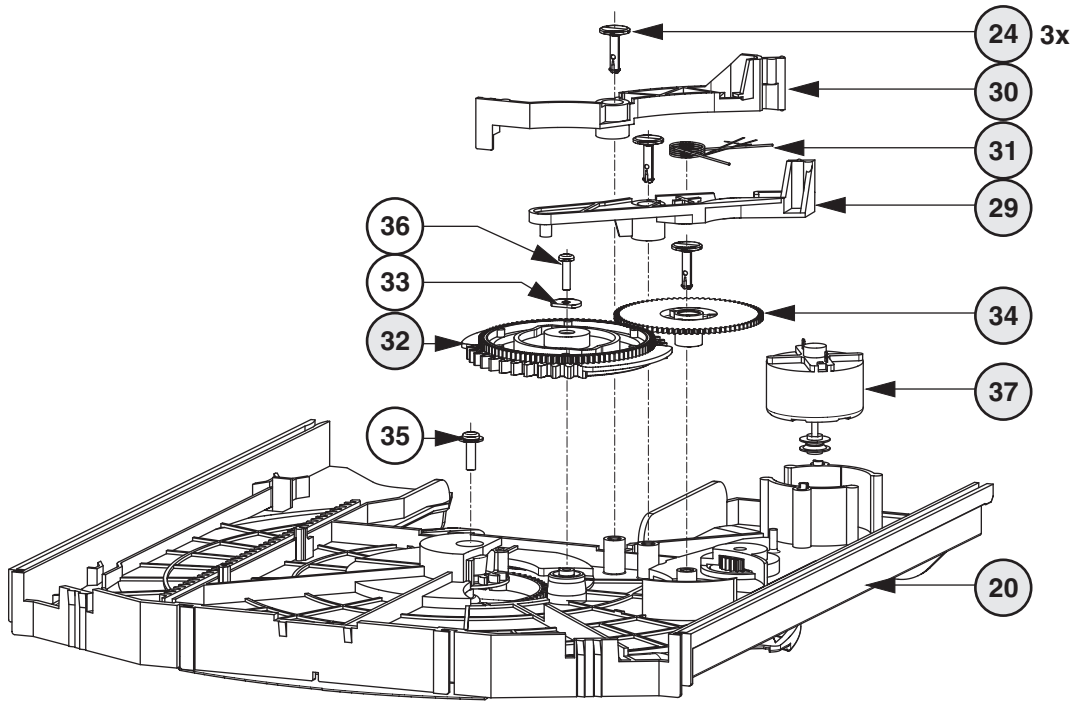
- 20 3103 304 66500 DRAWER
- 21 3103 304 66490 CAROUSEL
- 22 3103 304 06860 PULLEY-DRAWER
- 23 3103 304 06850 ECCENTRIC GEAR WHEEL
- 24 3103 304 06980 NAIL FIXATION

- 25 3103 304 66850 DRIVING BELT CAROUSEL
- 27 3103 304 07100 BUSH DRAWER (height=8,5mm,d=16mm)
- 27 4822 532 12365 BUSH DRAWER (height=5,5mm,d=9,4mm)
- 29 3103 304 66550 BRACKET-DISC
- 30 3103 304 66520 TUMBLER

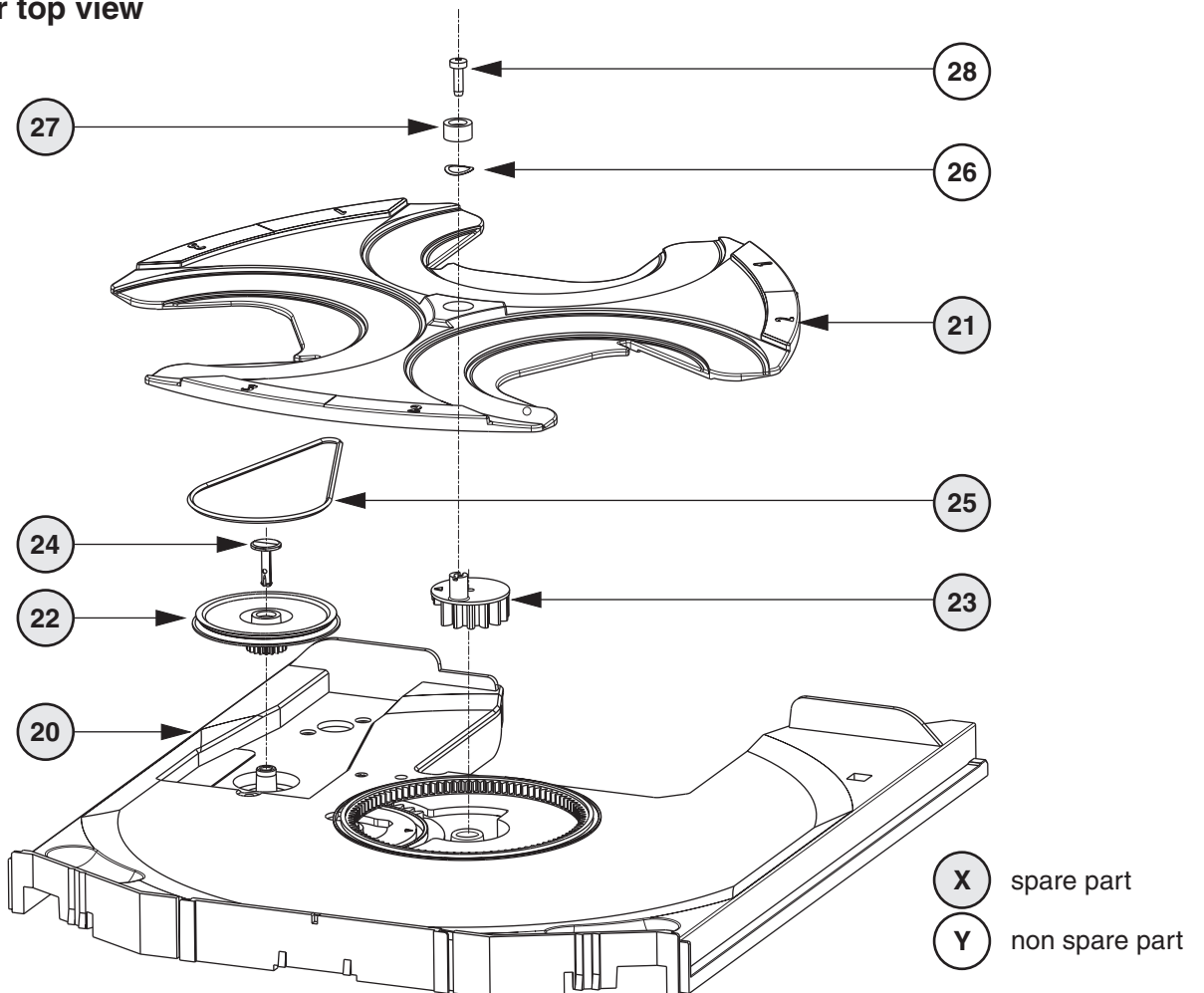
- 31 3103 301 06470 SPRING-DISC
- 32 3103 304 06920 CONTROL-DISC
- 33 3103 304 06970 WASHER
- 34 3103 304 06870 GEAR-1
- 37 4822 361 10753 CAROUSEL MOTOR

- X** spare part
- Y** non spare part

Drawer bottom view



Drawer top view



ELECTRICAL PARTSLIST 3CDC-LC-MB-DA11 MODULE

MISCELLANEOUS

37	4822 361 10753	CARROUSEL MOTOR
55	4822 361 10753	CARROUSEL MOTOR
1800	2422 025 12133	FLEX FOIL CONNECTOR 16PIN
1805	4822 265 10979	FLEX FOIL CONNECTOR 15PIN
1805	4822 265 11545	FLEX FOIL CONNECTOR 19PIN
1875	4822 267 10958	FLEX FOIL CONNECTOR 5P
1876	2422 025 08332	FLEX FOIL CONNECTOR 5P
1880	4822 276 13503	SWITCH, Tray in endposition
1881	4822 276 13503	SWITCH, Drive up/down
1882	4822 276 13503	SWITCH, Position 1
1883	4822 276 13503	SWITCH, Position recogiced
8002	3103 308 91990	FLEX FOIL CABLE 5P, 200mm
8005	3103 308 92620	FLEX FOIL CABLE 16P, 170mm
8005	3103 308 91980	FLEX FOIL CABLE 15P, 170mm

CAPACITORS

2800©	4822 126 14508	180pF	5%	50V
2801©	4822 126 13883	220pF	5%	50V
2802©	4822 126 14508	180pF	5%	50V
2803©	4822 126 13883	220pF	5%	50V
2804©	3198 024 44730	47nF	5%	50V
2805©	4822 126 13883	220pF	5%	50V
2806©	4822 126 13883	220pF	5%	50V
2807©	4822 126 14508	180pF	5%	50V
2808©	4822 126 13883	220pF	5%	50V
2809©	4822 126 13883	220pF	5%	50V
2810©	4822 122 31765	100pF	5%	50V
2811©	4822 126 13883	220pF	5%	50V
2812©	4822 126 14585	100nF	10%	50V
2813©	4822 126 14585	100nF	10%	50V
2814	4822 124 40433	47µF	20%	25V
2815©	4822 126 13879	220nF	20%	16V
2816©	4822 126 13344	1,5nF	5%	63V
2817©	4822 126 14585	100nF	10%	50V
2818©	4822 126 13344	1,5nF	5%	63V
2819	4822 124 40433	47µF	20%	25V
2820	4822 124 40433	47µF	20%	25V
2821©	4822 126 14585	100nF	10%	50V
2822©	2222 861 15222	2,2nF	10%	50V
2823©	4822 126 14225	56pF	5%	50V
2824©	4822 126 13751	47nF	10%	50V
2825©	5322 126 11583	10nF	10%	63V
2826	4822 124 12362	47µF	20%	4V
2828	4822 124 12362	47µF	20%	4V
2829©	5322 126 11578	1nF	10%	63V
2830©	4822 126 13751	47nF	10%	50V
2831©	4822 122 31765	100pF	5%	50V
2832©	4822 122 31765	100pF	5%	50V
2833©	4822 126 11671	33pF	5%	50V
2834©	4822 126 11671	33pF	5%	50V
2835©	3198 024 44730	47nF	5%	50V
2836©	4822 126 14585	100nF	10%	50V
2837	4822 124 40433	47µF	20%	25V
2838	4822 124 40248	10µF	20%	63V
2839©	4822 126 14585	100nF	10%	50V
2840©	4822 126 14585	100nF	10%	50V
2841©	5322 122 31647	1nF	10%	63V
2842©	4822 126 13883	220pF	5%	50V
2843©	4822 126 14585	100nF	10%	50V
2844©	5322 122 34099	470pF	10%	63V
2845©	4822 126 14585	100nF	10%	50V

CAPACITORS

2846©	4822 126 13883	220pF	5%	50V
2847©	4822 126 14585	100nF	10%	50V
2848©	4822 122 33753	150pF	5%	50V
2849	4822 124 40769	4,7µF	20%	100V
2850©	5322 126 11578	1nF	10%	63V
2851	4822 124 42383	220µF	20%	4V
2854©	4822 126 13751	47nF	10%	50V
2855©	4822 126 14508	180pF	5%	50V
2856©	4822 126 11669	27pF	10%	50V
2857©	4822 126 13883	220pF	5%	50V
2858	4822 124 12245	220µF	20%	16V
2859©	4822 126 13883	220pF	5%	50V
2860	4822 124 11947	10µF	20%	16V
2861	4822 124 11947	10µF	20%	16V
2862©	4822 126 13883	220pF	5%	50V
2863©	4822 126 13883	220pF	5%	50V
2864©	4822 122 33761	22pF	5%	50V
2865©	4822 126 14494	22nF	10%	25V
2866©	4822 122 33753	150pF	5%	50V
2867©	4822 126 13883	220pF	5%	50V
2868©	5322 126 11578	1nF	10%	63V
2869©	3198 024 44730	47nF	5%	50V
2870©	4822 126 14585	100nF	10%	50V
2871©	4822 126 14585	100nF	10%	50V
2872©	3198 024 44730	47nF	5%	50V
2873	4822 124 40433	47µF	20%	25V
2874©	4822 126 14585	100nF	10%	50V
2875©	3198 017 41050	1µF	20%	10V
2876	4822 124 12245	220µF	20%	16V
2877©	4822 122 33777	47pF	5%	63V
2878©	4822 126 13883	220pF	5%	50V
2879©	4822 126 14585	100nF	10%	50V
2880©	3198 017 41050	1µF	20%	10V
2881	4822 124 40769	4,7µF	20%	100V
2882©	4822 126 13883	220pF	5%	50V
2883©	4822 126 14585	100nF	10%	50V
2884	4822 124 40769	4,7µF	20%	100V
2885	4822 124 40769	4,7µF	20%	100V
2887©	4822 126 14585	100nF	10%	50V
2888	4822 124 40769	4,7µF	20%	100V
2891©	4822 126 13883	220pF	5%	50V
2892©	5322 126 10223	4,7nF	10%	63V
2893©	4822 122 33575	220pF	5%	50V
2900©	4822 126 14508	180pF	5%	50V

RESISTORS

3701©	4822 051 30474	470kΩ	5%	0,06W
3702©	4822 051 30474	470kΩ	5%	0,06W
3703©	4822 117 12925	47kΩ	1%	0,06W
3704©	4822 117 12925	47kΩ	1%	0,06W
3709©	4822 117 10833	10kΩ	1%	0,1W
3710©	4822 051 30474	470kΩ	5%	0,06W
3712©	4822 051 30109	10Ω	5%	0,06W
3713©	4822 051 20223	22kΩ	5%	0,1W
3714©	4822 051 30103	10kΩ	5%	0,06W
3715©	4822 117 13632	100kΩ	1%	0,06W
3716©	4822 051 30471	470Ω	5%	0,06W
3719©	4822 051 30474	470kΩ	5%	0,06W
3727©	4822 051 30472	4,7kΩ	5%	0,06W
3728©	4822 051 30472	4,7kΩ	5%	0,06W
3730©	4822 051 20333	33kΩ	5%	0,1W

ELECTRICAL PARTSLIST 3CDC-LC-MB-DA11 MODULE

RESISTORS

3740©	4822 051 20223	22kΩ	5%	0,1W
3741©	4822 051 20223	22kΩ	5%	0,1W
3742©	4822 051 20223	22kΩ	5%	0,1W
3743©	4822 051 20223	22kΩ	5%	0,1W
3744©	4822 051 30103	10kΩ	5%	0,06W
3746©	4822 051 30103	10kΩ	5%	0,06W
3750©	4822 051 30102	1kΩ	5%	0,06W
3751©	4822 051 30102	1kΩ	5%	0,06W
3752©	4822 051 20399	39Ω	5%	0,1W
3753©	4822 117 12925	47kΩ	1%	0,06W
3754©	4822 051 30273	27kΩ	5%	0,06W
3755©	4822 051 30103	10kΩ	5%	0,06W
3756©	4822 051 30333	33kΩ	5%	0,06W
3757©	4822 051 20399	39Ω	5%	0,1W
3758©	4822 051 30103	10kΩ	5%	0,06W
3759©	4822 051 30333	33kΩ	5%	0,06W
3760©	4822 051 20399	39Ω	5%	0,1W
3761©	4822 051 30103	10kΩ	5%	0,06W
3762©	4822 051 30333	33kΩ	5%	0,06W
3763©	4822 051 30479	47Ω	5%	0,06W
3764©	4822 051 30103	10kΩ	5%	0,06W
3765©	4822 051 30333	33kΩ	5%	0,06W
3766©	4822 051 30479	47Ω	5%	0,06W
3773©	4822 051 30273	27kΩ	5%	0,06W
3775©	4822 051 30273	27kΩ	5%	0,06W
3800©	4822 051 30563	56kΩ	5%	0,06W
3801©	4822 051 30103	10kΩ	5%	0,06W
3802©	4822 117 11148	56kΩ	1%	0,1W
3803©	4822 051 30103	10kΩ	5%	0,06W
3804©	4822 051 30103	10kΩ	5%	0,06W
3805©	4822 051 30103	10kΩ	5%	0,06W
3806©	4822 051 30103	10kΩ	5%	0,06W
3807©	4822 051 30103	10kΩ	5%	0,06W
3808©	4822 051 30103	10kΩ	5%	0,06W
3809©	4822 117 13577	330Ω	1%	0,1W
3810©	4822 051 20399	39Ω	5%	0,1W
3811©	4822 117 11148	56kΩ	1%	0,1W
3812©	4822 117 12925	47kΩ	1%	0,06W
3813©	4822 051 20399	39Ω	5%	0,1W
3814©	4822 051 30339	33Ω	5%	0,06W
3815	4822 052 10478	4,7Ω	5%	NFR
3816©	4822 117 12925	47kΩ	1%	0,06W
3817	4822 052 10228	2,2Ω	5%	0,33W
3818©	4822 051 20399	39Ω	5%	0,1W
3819©	4822 051 20471	470Ω	5%	0,1W
3820©	4822 051 30682	6,8kΩ	5%	0,06W
3821©	4822 117 11507	6,8kΩ	1%	0,1W
3822©	4822 051 30682	6,8kΩ	5%	0,06W
3823©	4822 051 30102	1kΩ	5%	0,06W
3824©	4822 051 30102	1kΩ	5%	0,06W
3825©	4822 051 10102	1kΩ	2%	0,25W
3826©	4822 051 30223	22kΩ	5%	0,06W
3827©	4822 051 20273	27kΩ	5%	0,1W
3828©	4822 051 20223	22kΩ	5%	0,1W
3829©	4822 117 12925	47kΩ	1%	0,06W
3830©	4822 051 30273	27kΩ	5%	0,06W
3831©	4822 051 30101	100Ω	5%	0,06W
3832©	4822 051 30103	10kΩ	5%	0,06W
3833©	4822 051 30393	39kΩ	5%	0,06W
3834©	4822 051 20393	39kΩ	5%	0,1W

RESISTORS

3835©	4822 117 12925	47kΩ	1%	0,06W
3836©	4822 051 30273	27kΩ	5%	0,06W
3837©	4822 051 10102	1kΩ	2%	0,25W
3838©	4822 051 30102	1kΩ	5%	0,06W
3839©	4822 051 20273	27kΩ	5%	0,1W
3840©	4822 051 20273	27kΩ	5%	0,1W
3841©	4822 117 12925	47kΩ	1%	0,06W
3842©	4822 117 10833	10kΩ	1%	0,1W
3843©	4822 117 12955	2,7kΩ	1%	0,1W
3844©	4822 117 12024	27kΩ	1%	0,1W
3845©	4822 117 10833	10kΩ	1%	0,1W
3846©	4822 117 12955	2,7kΩ	1%	0,1W
3847©	4822 051 20399	39Ω	5%	0,1W
3848©	4822 117 10965	18kΩ	2%	0,1W
3849©	4822 051 30183	18kΩ	5%	0,06W
3850©	4822 051 20399	39Ω	5%	0,1W
3851	4822 052 10228	2,2Ω	5%	0,33W
3852	4822 052 10228	2,2Ω	5%	0,33W
3853©	4822 051 30471	470Ω	5%	0,06W
3854©	4822 051 30101	100Ω	5%	0,06W
3855©	4822 051 30101	100Ω	5%	0,06W
3856©	4822 117 12521	68Ω	1%	0,1W
3857©	4822 117 12521	68Ω	1%	0,1W
3858©	4822 051 30223	22kΩ	5%	0,06W
3859©	4822 051 20223	22kΩ	5%	0,1W
3860©	4822 117 10833	10kΩ	1%	0,1W
3861©	4822 051 30103	10kΩ	5%	0,06W
3862©	4822 051 20121	120Ω	5%	0,1W
3863©	4822 051 20101	100Ω	5%	0,1W
3863©	4822 051 20339	33Ω	5%	0,1W
3864©	4822 051 20101	100Ω	5%	0,1W
3865	4822 052 10228	2,2Ω	5%	0,33W
3866©	4822 051 30103	10kΩ	5%	0,06W
3867©	4822 051 30121	120Ω	5%	0,06W
3869©	4822 117 13608	4,7Ω	5%	0,06W
3870©	4822 051 30101	100Ω	5%	0,06W
3871©	4822 051 30103	10kΩ	5%	0,06W
3873©	4822 051 20471	470Ω	5%	0,1W
3875©	4822 051 30103	10kΩ	5%	0,06W
3876©	4822 117 13632	100kΩ	1%	0,06W
3877©	4822 051 30103	10kΩ	5%	0,06W
3878©	4822 051 30103	10kΩ	5%	0,06W
3879©	4822 051 30273	27kΩ	5%	0,06W
3880©	4822 051 30474	470kΩ	5%	0,06W
3881©	4822 051 30273	27kΩ	5%	0,06W
3882©	4822 051 30474	470kΩ	5%	0,06W
3883©	4822 051 20273	27kΩ	5%	0,1W
3884©	4822 051 30474	470kΩ	5%	0,06W
3885©	4822 051 20273	27kΩ	5%	0,1W
3886©	4822 051 30474	470kΩ	5%	0,06W
3887©	4822 051 30221	220Ω	5%	0,06W
3888©	4822 117 10833	10kΩ	1%	0,1W
3889©	4822 051 20471	470Ω	5%	0,1W
3890©	4822 051 30102	1kΩ	5%	0,06W
3891©	4822 051 30102	1kΩ	5%	0,06W
3892©	4822 051 20471	470Ω	5%	0,1W
3893©	4822 051 30471	470Ω	5%	0,06W
3894©	4822 051 30101	100Ω	5%	0,06W
3895©	4822 117 12971	15Ω	5%	0,06W
3896	4822 052 10228	2,2Ω	5%	0,33W

ELECTRICAL PARTSLIST 3CDC-LC-MB-DA11 MODULE**RESISTORS**

3897	4822 051 20101	100Ω	5%	0,1W
3898	4822 117 11503	220Ω	5%	0,1W
3899	4822 051 30101	100Ω	5%	0,06W
3900	4822 117 11148	56kΩ	1%	0,1W
3901	4822 051 30682	6,8kΩ	5%	0,06W
4800	4822 051 20008	CHIP JUMPER 0805		
4801	4822 051 20008	CHIP JUMPER 0805		
4802	4822 051 20008	CHIP JUMPER 0805		
4804	4822 051 20008	CHIP JUMPER 0805		
4805	4822 051 30008	CHIP JUMPER 0603		
4806	4822 051 20008	CHIP JUMPER 0805		
4807	4822 051 20008	CHIP JUMPER 0805		
4808	4822 051 20008	CHIP JUMPER 0805		
4809	4822 051 20008	CHIP JUMPER 0805		
4810	4822 051 20008	CHIP JUMPER 0805		
4812	4822 051 20008	CHIP JUMPER 0805		
4814	4822 051 20008	CHIP JUMPER 0805		
4815	4822 051 20008	CHIP JUMPER 0805		
4816	4822 051 20008	CHIP JUMPER 0805		
4817	4822 051 30008	CHIP JUMPER 0603		
4818	4822 051 20008	CHIP JUMPER 0805		
4819	4822 051 20008	CHIP JUMPER 0805		
4820	4822 051 20008	CHIP JUMPER 0805		
4821	4822 051 20008	CHIP JUMPER 0805		
4822	4822 051 20008	CHIP JUMPER 0805		
4823	4822 051 20008	CHIP JUMPER 0805		
4824	4822 051 20008	CHIP JUMPER 0805		
4825	4822 051 30008	CHIP JUMPER 0603		
4826	4822 051 20008	CHIP JUMPER 0805		
4827	4822 051 30008	CHIP JUMPER 0603		
4828	4822 051 20008	CHIP JUMPER 0805		
4831	4822 051 20008	CHIP JUMPER 0805		
4832	4822 051 30008	CHIP JUMPER 0603		
4834	4822 051 30008	CHIP JUMPER 0603		
4835	4822 051 30008	CHIP JUMPER 0603		
4836	4822 051 20008	CHIP JUMPER 0805		
4838	4822 051 20008	CHIP JUMPER 0805		
4840	4822 051 20008	CHIP JUMPER 0805		
4841	4822 051 20008	CHIP JUMPER 0805		
4842	4822 051 20008	CHIP JUMPER 0805		
4843	4822 051 20008	CHIP JUMPER 0805		
4844	4822 051 20008	CHIP JUMPER 0805		
4845	4822 051 20008	CHIP JUMPER 0805		
4846	4822 051 30008	CHIP JUMPER 0603		
4847	4822 051 20008	CHIP JUMPER 0805		
4849	4822 051 30008	CHIP JUMPER 0603		
4856	4822 051 20008	CHIP JUMPER 0805		
4857	4822 051 20008	CHIP JUMPER 0805		
4858	4822 051 20008	CHIP JUMPER 0805		
4859	4822 051 30008	CHIP JUMPER 0603		
4860	4822 051 30008	CHIP JUMPER 0603		
4861	4822 051 20008	CHIP JUMPER 0805		
4862	4822 051 30008	CHIP JUMPER 0603		
4863	4822 051 30008	CHIP JUMPER 0603		
4864	4822 051 20008	CHIP JUMPER 0805		
4865	4822 051 20008	CHIP JUMPER 0805		
4867	4822 051 20008	CHIP JUMPER 0805		
4868	4822 051 20008	CHIP JUMPER 0805		
4869	4822 051 20008	CHIP JUMPER 0805		
4870	4822 051 20008	CHIP JUMPER 0805		

RESISTORS

4876	4822 051 20008	CHIP JUMPER 0805
4879	4822 051 20008	CHIP JUMPER 0805
4884	4822 051 20008	CHIP JUMPER 0805
4885	4822 051 20008	CHIP JUMPER 0805
4886	4822 051 20008	CHIP JUMPER 0805
4887	4822 051 20008	CHIP JUMPER 0805
4890	4822 051 20008	CHIP JUMPER 0805
4893	4822 051 20008	CHIP JUMPER 0805
4894	4822 051 20008	CHIP JUMPER 0805
4896	4822 051 30008	CHIP JUMPER 0603
4897	4822 051 20008	CHIP JUMPER 0805

COILS

1810	2422 543 01068	RESONATOR 8MHZ
1810	4822 242 73557	CERAMIC RES. 8,46MHZ
5802	4822 157 70601	100μH

DIODES

6871	4822 130 11397	BAS316
6872	4822 130 11397	BAS316
6873	4822 130 11397	BAS316
6874	4822 130 11397	BAS316
6875	9340 548 52115	BZX284-C5V1
6877	9322 129 34685	BZX284-C3V9
6878	4822 130 11397	BAS316
6879	9322 129 34685	BZX284-C3V9

TRANSISTORS

7812	5322 130 60159	BC846B
7874	5322 130 60159	BC846B
7875	5322 130 60159	BC846B

INTEGRATED CIRCUITS

7801	9352 622 36118	TZA1025T/V2, HF-Amplifier
7805	4822 209 33165	TDA1308T/N1, OPAMP
7806	4822 209 62059	TCA0372DP1, Motor driver
7807	4822 209 62059	TCA0372DP1, Motor driver
7808	4822 209 62059	TCA0372DP1, Motor driver
7821	4822 209 62059	TCA0372DP1, Motor driver
7822	4822 209 62059	TCA0372DP1, Motor driver
7873	5322 209 11306	HEF4094BT, Shift register
7877	9352 642 17557	SAA7325H/M2B Signal processor CD10

Circuit details continued:

• **Low power standby feature**

An additional small standby transformer, reduces power consumption in standby-mode. In case power is switched on, the control line ECO is low → relay 1210 is activated → contacts 1 and 2 are closed → transformer 5001 is connected to mains. When the set is switched off (standby) the control line ECO is high → relay 1210 is not activated → main transformer is disconnected. Via standby transformer and rectifiers 6210-6214 the supply voltage LOW_PWR_SUP is substituted. This voltage is always available and so the microprocessor is kept running.

• **DC voltages +A1, +B1, +C1**

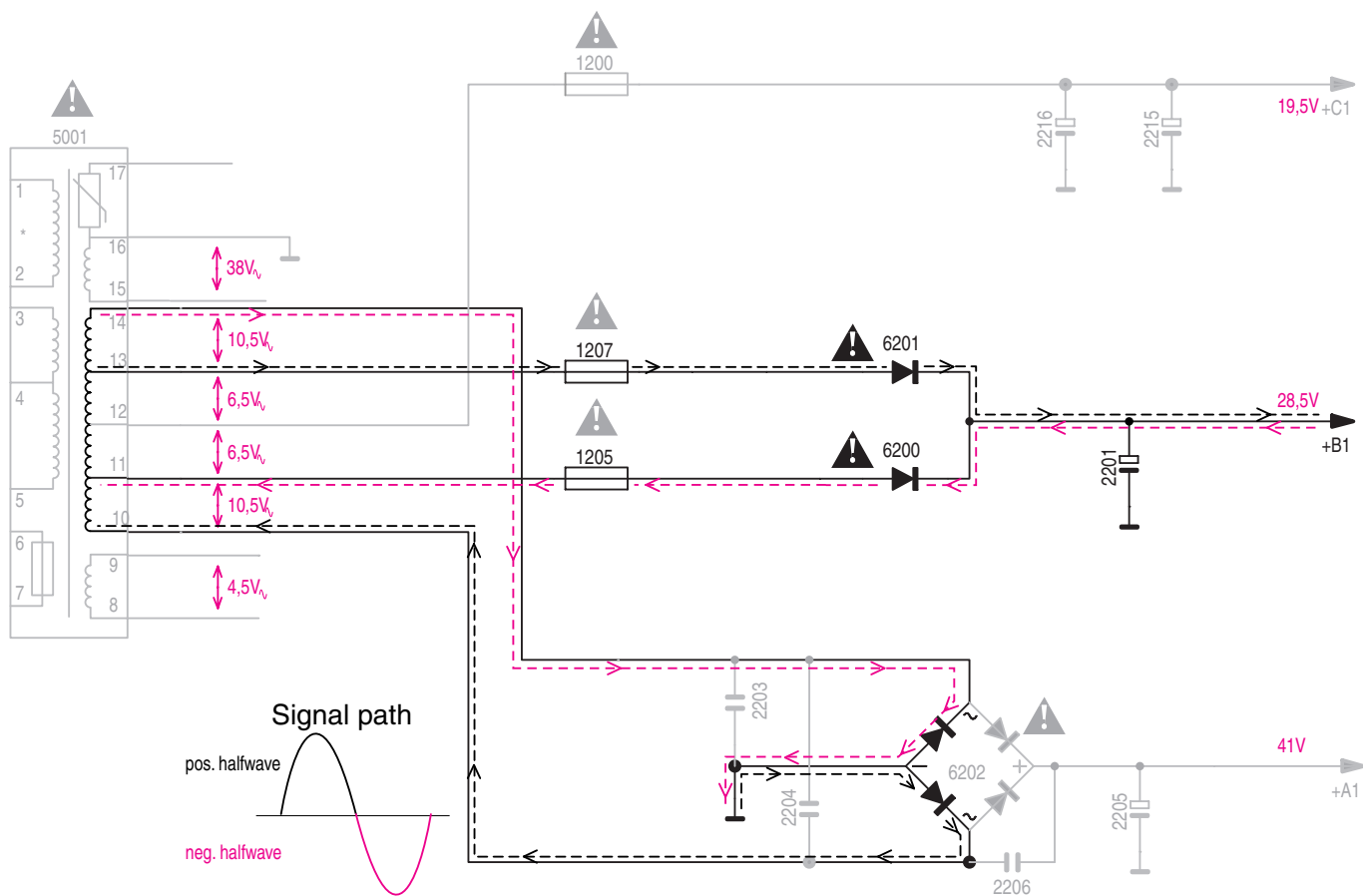
These voltages supply the Super Class G amplifier, described on previous page. The whole power supply is optimized for the special characteristic of this type of amplifier. For that reason several “tricky” details have been applied to ensure optimal efficiency and symmetrical load to the mains transformer.

Generation of +A1

Common full wave rectifying with bridge rectifier 6202, using 100% secondary winding of mains transformer (pin 10-14).

Generation of +B1

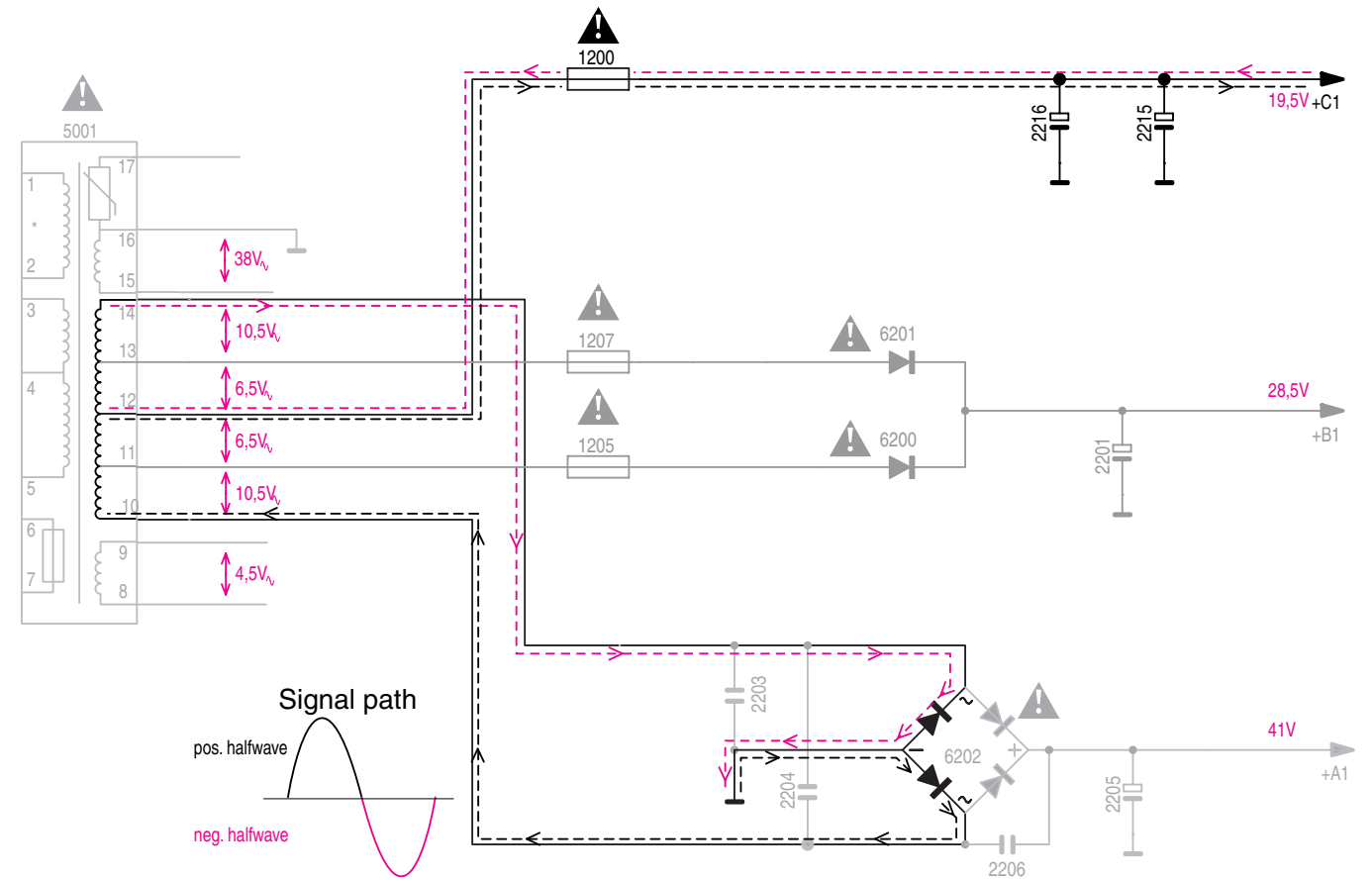
The supply for +B1 consists of one full wave rectifier: – 2 diodes of bridge rectifier 6202, with 6200(6220 in parallel) 6201(6221 in parallel) for generation of +B1 using approx. 70% secondary winding of mains transformer (pin 10-13 respectively pin 11-14). As example for generation of +B1 see picture 1.



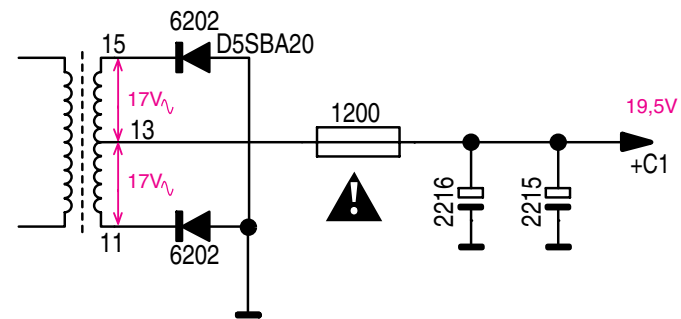
picture 1

Generation of +C1

Full wave rectifying with 2 diodes of bridge rectifier 6202, using 50% secondary winding of mains transformer (pin 13-15/13-11). See picture 2 below.

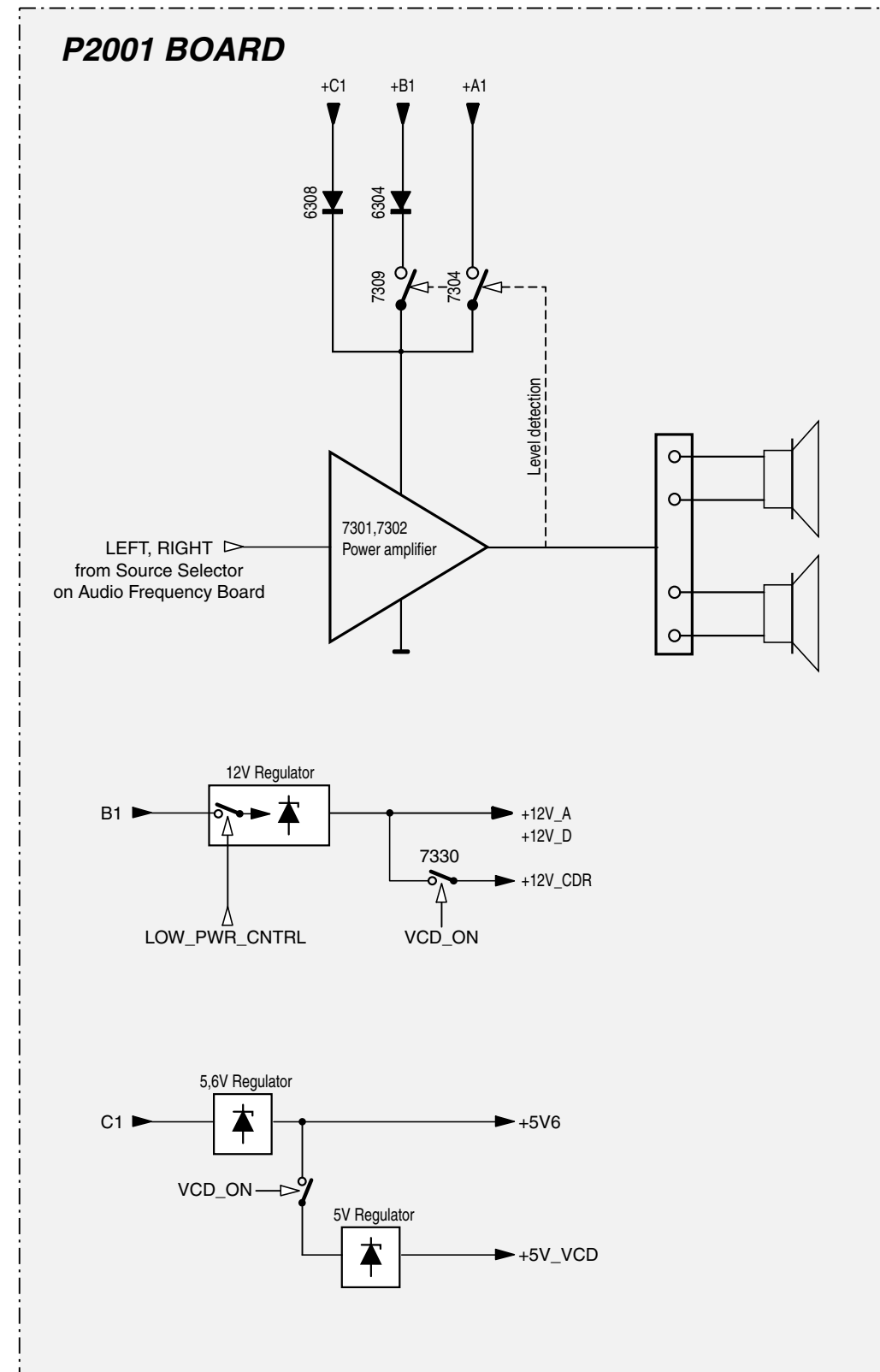
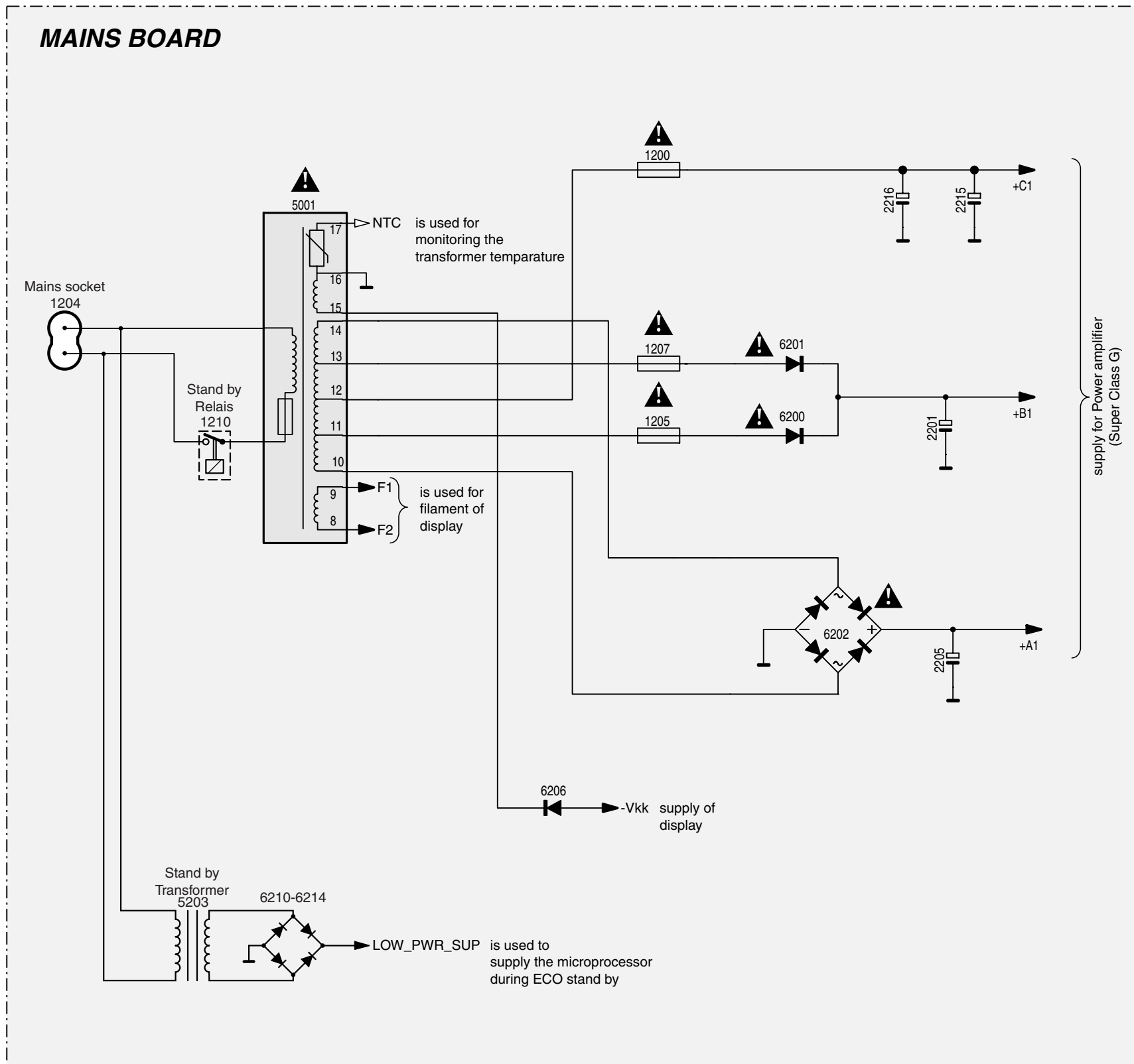


simplified:

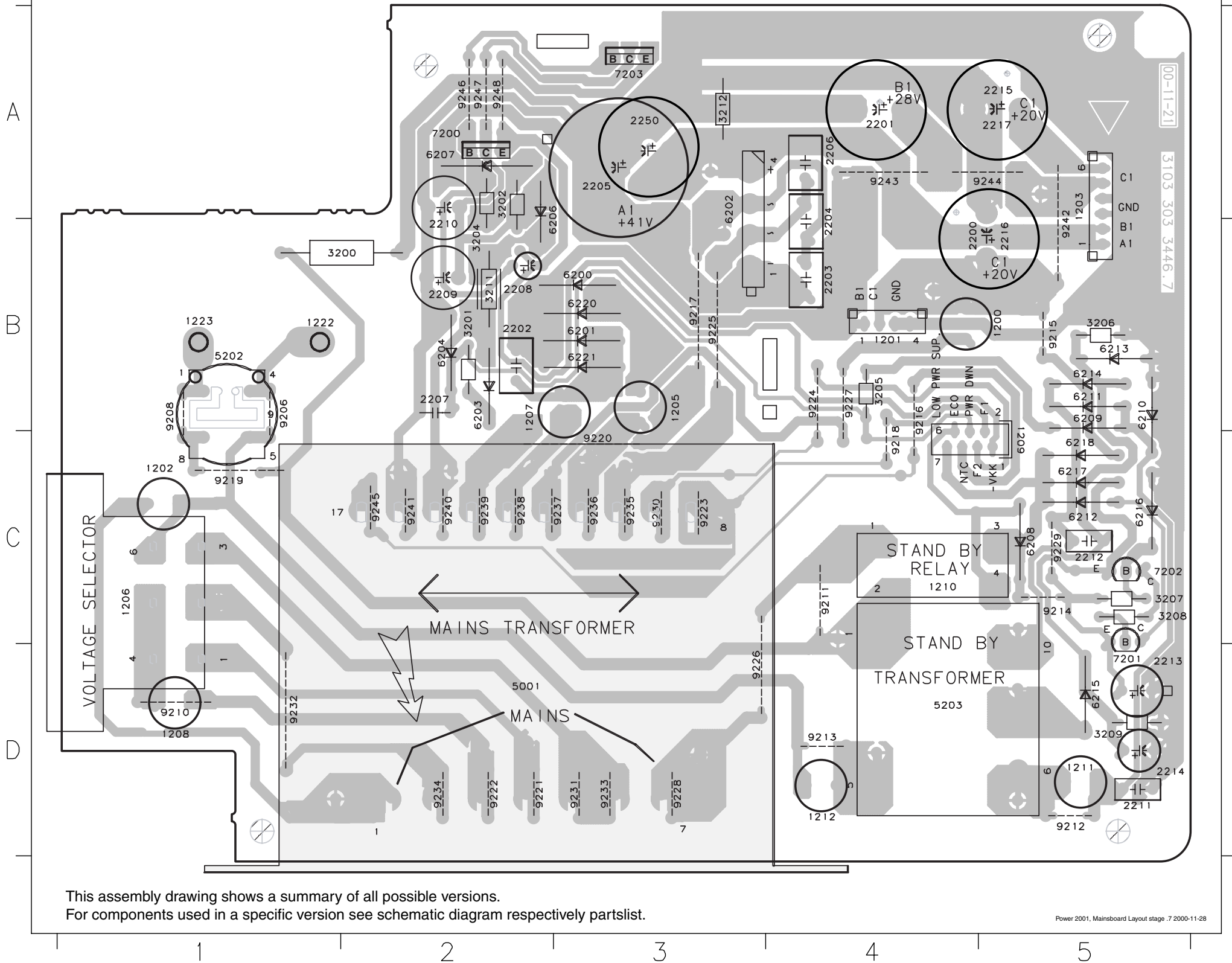


picture 2

Block Diagram



Mains Board Copperside view

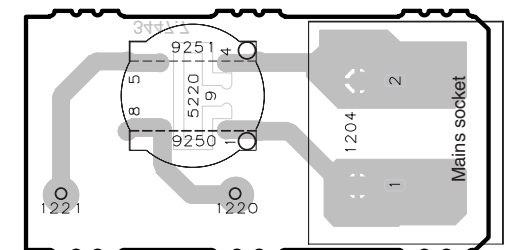


This assembly drawing shows a summary of all possible versions.
 For components used in a specific version see schematic diagram respectively partslist.

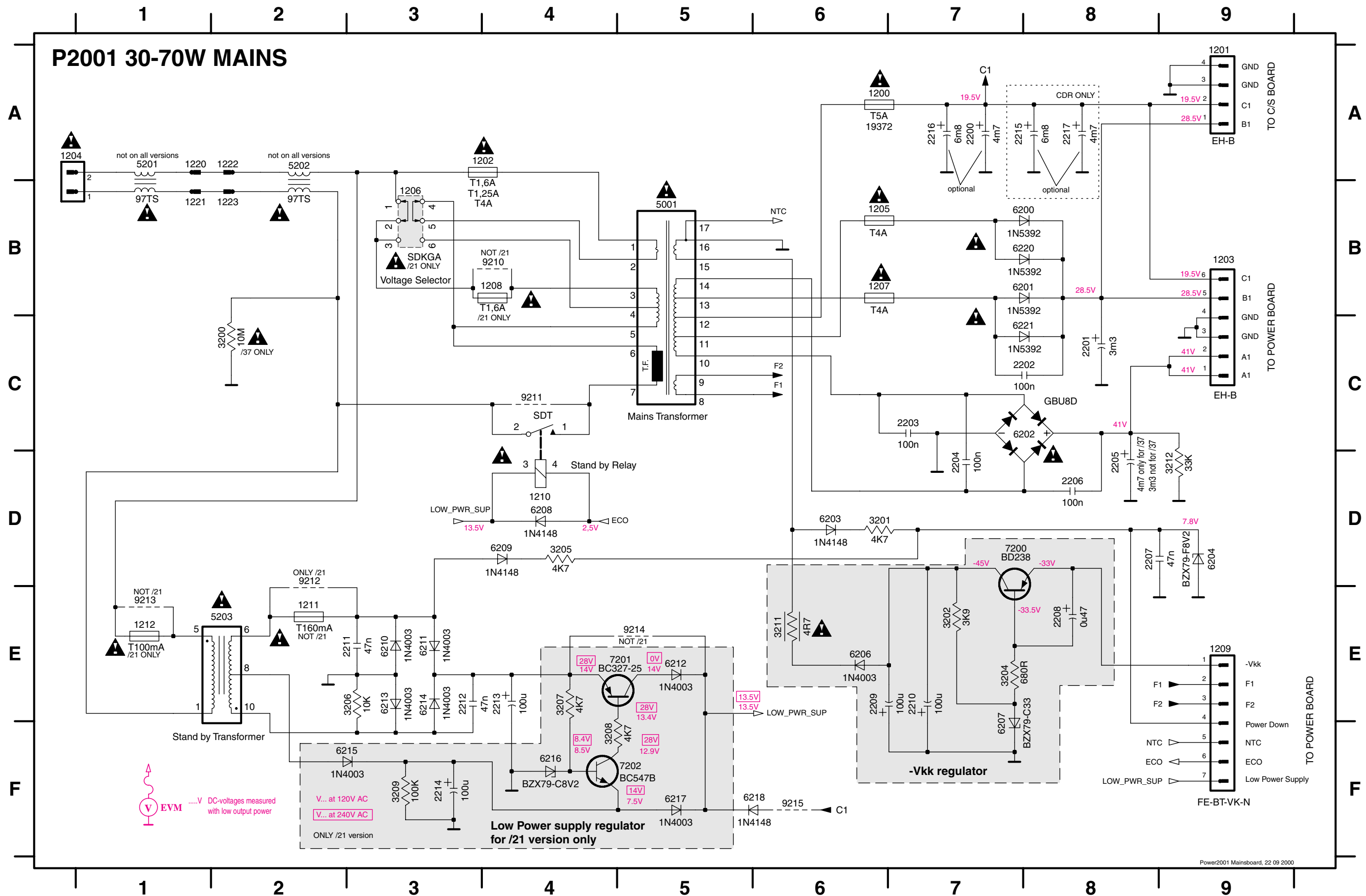
Power 2001, Mainsboard Layout stage 7 2000-11-28

- | | |
|---------|---------|
| 1200 B5 | 6213 B5 |
| 1201 B4 | 6214 B5 |
| 1202 C1 | 6215 D5 |
| 1203 A5 | 6216 C5 |
| 1205 B3 | 6217 C5 |
| 1206 C1 | 6218 C5 |
| 1207 C3 | 6220 B3 |
| 1208 D1 | 6221 B3 |
| 1209 C5 | 7200 A2 |
| 1210 C5 | 7201 D5 |
| 1211 D5 | 7202 C5 |
| 1212 D4 | 7203 A3 |
| 1222 B2 | 9206 B2 |
| 1223 B1 | 9208 B1 |
| 2200 B5 | 9210 D1 |
| 2201 A4 | 9211 D4 |
| 2202 B3 | 9212 D5 |
| 2203 B4 | 9213 D4 |
| 2204 B4 | 9214 C5 |
| 2205 B3 | 9215 B5 |
| 2206 A4 | 9216 B4 |
| 2207 B2 | 9217 B3 |
| 2208 B3 | 9218 C4 |
| 2209 B2 | 9219 C1 |
| 2210 B2 | 9220 C3 |
| 2211 D5 | 9221 D3 |
| 2212 C5 | 9222 D3 |
| 2213 D5 | 9223 C4 |
| 2214 D5 | 9224 B4 |
| 2215 A5 | 9225 B4 |
| 2216 B5 | 9226 D4 |
| 2217 A5 | 9227 B4 |
| 2250 A3 | 9228 D3 |
| 3200 B2 | 9229 C5 |
| 3201 B2 | 9230 C3 |
| 3202 B3 | 9231 D3 |
| 3204 A3 | 9232 D2 |
| 3205 B4 | 9233 D3 |
| 3206 B5 | 9234 D2 |
| 3207 C5 | 9235 C3 |
| 3208 C5 | 9236 C3 |
| 3209 D5 | 9237 C3 |
| 3211 B3 | 9238 C3 |
| 3212 A4 | 9239 C3 |
| 5001 C2 | 9240 C2 |
| 5202 B1 | 9241 C2 |
| 5203 D5 | 9242 B5 |
| 6200 B3 | 9243 A4 |
| 6201 B3 | 9244 A5 |
| 6202 B4 | 9245 C2 |
| 6203 B2 | 9246 A2 |
| 6204 B2 | 9247 A2 |
| 6206 B3 | 9248 A3 |
| 6207 A2 | |
| 6208 C5 | |
| 6209 C5 | |
| 6210 C5 | |
| 6211 B5 | |
| 6212 C5 | |

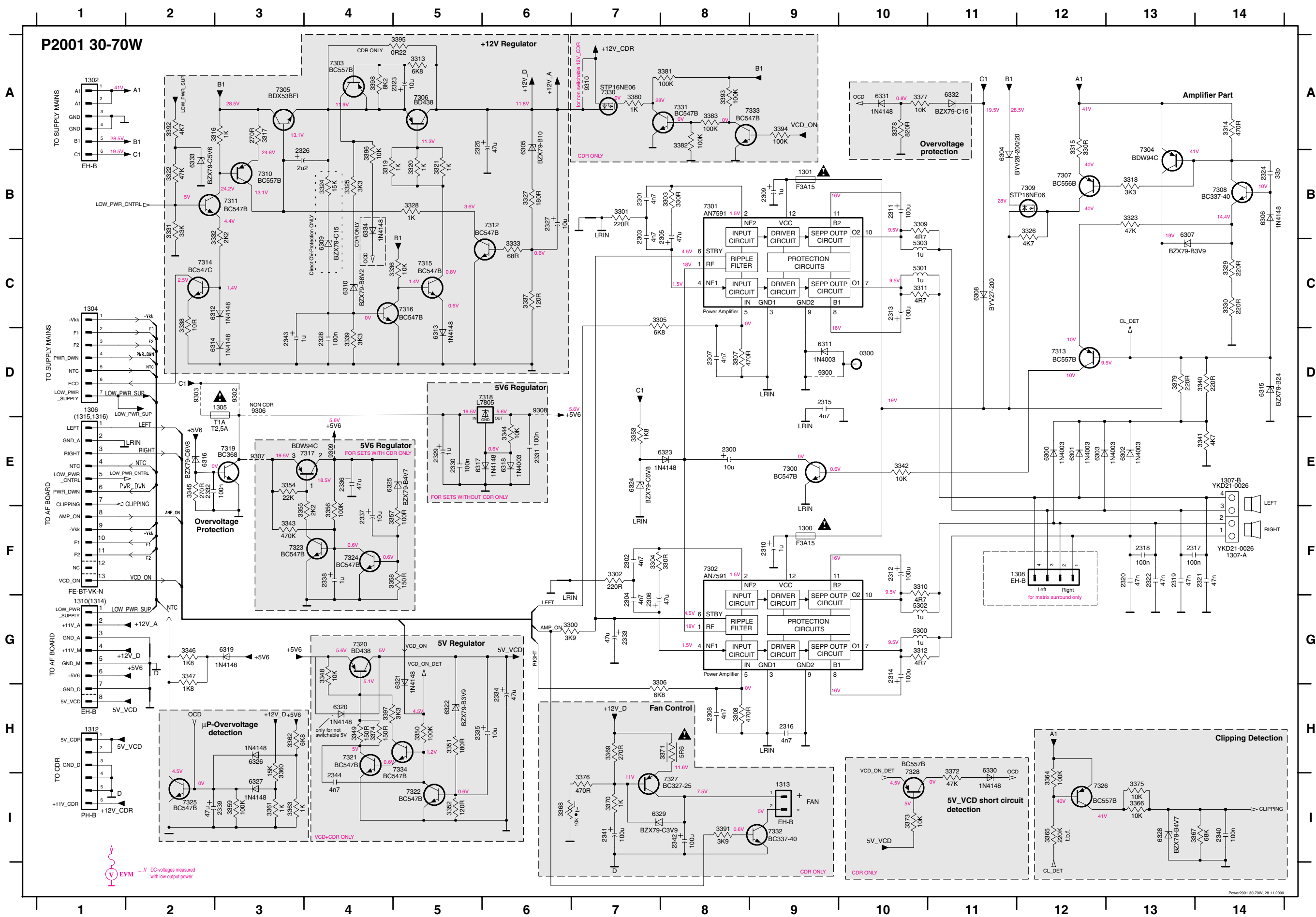
Mains Socket



1200 A6	1207 B6	1222 A2	2204 D7	2210 E7	2216 A7	3205 E4	3212 D9	6202 C8	6209 E4	6215 F3	7200 D7	9211 C4
1201 A9	1208 B4	1223 B2	2205 D8	2211 E3	2217 A8	3206 E3	5001 C5	6203 D6	6210 E3	6216 F4	7201 E4	9212 D2
1202 A4	1209 E9	2200 A7	2206 D8	2212 E3	3200 C2	3207 E4	5202 A2	6204 D9	6211 E3	6217 F5	7202 F5	9213 E1
1203 B9	1210 D4	2201 C8	2207 D8	2213 E4	3201 D6	3208 F4	5203 E1	6206 E6	6212 E5	6218 F6	9206 A2	9214 E5
1205 B6	1211 E2	2202 C8	2208 E8	2214 F3	3202 E7	3209 F3	6200 B8	6207 F7	6213 E3	6220 B8	9208 B2	9215 F6
1206 B3	1212 E1	2203 C7	2209 E6	2215 A7	3204 E7	3211 E6	6201 B8	6208 D4	6214 E3	6221 C8	9210 B4	



9300	D10	1307-a	F14	1315	D1	2305	B8	2312	F10	2319	F13	2326	B3	2333	G7	2340	I14	3303	B8	3310	F10	3317	A3	3324	B4	3331	B2	3340	D14	3347	G2	3354	E3	3361	I3	3368	I6	3375	I13	3382	A8	6300	E12	6307	B13	6314	D2	6321	H5	6328	I13	7302	F8	7309	B12	7316	C5	7323	F3	7331	A8	9308	D4
1300	F9	1307-b	E14	1316	D1	2306	G7	2313	C10	2320	F14	2327	B6	2334	H6	2341	I7	3304	F7	3311	C10	3318	B13	3325	B4	3332	B3	3341	E10	3348	G4	3355	F3	3362	H3	3369	H7	3376	I7	3383	A8	6301	E12	6308	C11	6315	D14	6322	H5	6329	I7	7303	A4	7310	B3	7317	E3	7324	F4	7332	F4	9309	D4
1301	B9	1308	F12	2300	E8	2307	D8	2314	G10	2321	F14	2328	D4	2335	H5	2342	I8	3305	C7	3312	G10	3319	B4	3326	B12	3333	C6	3342	E10	3349	H4	3356	F4	3363	I3	3370	I7	3377	A10	3391	I8	6302	E13	6309	C4	6316	F5	6323	E8	6330	H11	7304	A13	7311	B3	7318	D6	7325	I2	9300	D9	9310	A5
1302	A1	1310	G1	2301	B7	2308	H8	2315	D9	2322	F13	2329	E5	2336	E4	2343	D3	3306	H7	3313	A5	3320	B6	3327	B6	3334	C5	3343	F3	3350	H5	3357	H7	3364	I12	3371	H8	3378	A10	3392	G10	6303	E12	6310	C4	6317	E6	6324	E7	6331	A10	7305	A8	7312	B6	7319	F6	7326	I12	9302	D3		
1304	C1	1312	H1	2302	F7	2309	B9	2316	H9	2323	A4	2330	E5	2337	F4	2344	B14	3307	D8	3314	A14	3321	B5	3328	B3	3335	C6	3344	E5	3351	H5	3358	F5	3365	I12	3372	I11	3379	D13	3390	C10	6304	B11	6311	D9	6318	E6	6325	E5	6332	A11	7306	A5	7313	D12	7320	G4	7327	H4	9303	D2		
1305	D3	1313	I9	2303	B7	2310	F9	2317	F13	2324	A4	2331	E6	2338	F4	2345	B14	3308	H8	3315	A12	3322	B2	3329	C14	3336	C2	3345	F5	3352	I5	3359	H3	3366	I13	3373	I10	3380	A7	3390	G10	6305	A6	6312	C2	6319	G3	6326	H2	6333	A12	7307	B12	7314	C2	7321	H4	7328	H10	9306	D3		
1306	E1	1314	G1	2304	G7	2311	B10	2318	F13	2325	A5	2332	F5	2339	I2	2346	F7	3309	B10	3316	A3	3323	B13	3330	C14	3337	D4	3346	G2	3353	E7	3360	H3	3367	I14	3374	H4	3381	A8	3390	C10	6306	B14	6313	D5	6320	H4	6327	H3	7301	B8	7308	B14	7315	C5	7322	I5	7330	A7	9307	E3		



EVM — V DC-voltages measured with low output power

AF9 BOARD

TABLE OF CONTENTS

Brief Introduction of the AF9 Board	12-1
AF9 Board - Component layout	12-2
AF9 Board - Chip layout	12-3
AF9 Board - Circuit Diagram (Part 1)	12-4
AF9 Board - Circuit Diagram (Part 2)	12-5
Video Out Cinch part - Layout & Circuit diagram	12-6
Electrical parts list	12-6

BRIEF INTRODUCTION OF THE AF9 BOARD

The AF9 Board consists of the following features :

a. TDA7468D IC

TDA7468D IC (7501) which includes functions such as source selection, loudness control, dynamic bass control, treble control, volume control and muting function. Sound features such as ALC, DBB, DSC and IS are controllable via I²C Bus from the microprocessor.

The TDA7468D IC caters for 4 input sources namely TUNER, TAPE, CD and AUX. It also has a Mic mix input. In our application, software will switch the input source to previous source MUTE during STANDBY mode and some other occasions where noise from other input source is undesirable.

Note that the input to the TDA7468D IC must be ac coupled to prevent 'pop' noise. Input networks are included to provide appropriate attenuation for various sources.

b. SIMPLE MIC MIXING

The AF9 Board has provisions which can be configured to cater for one of the following:

MM : which caters for Mic mixing with additional Mic amplifier board.

NM : non Mic mixing.

c. DOLBY PRO LOGIC (DPL) INTERFACE

The AF9 Board has provisions which can be configured to cater for DPL.

d. LINE OUT

Line out cinch socket for connection to external amplifier.

e. SUB-WOOFER OUT

Sub-woofer out cinch socket for connection to active sub-woofer speaker.

f. INCREDIBLE SURROUND

Incredible surround effect using transistor circuit to create phase shifting and spatial effect.

g. HEADPHONE AMPLIFIER

Headphone amplifier to drive 32 ohm to 1kohm headphone.

h. CD STANDBY CONTROL

CD Standby Control circuit which switches on the supply to CD servo control IC, digital out buffer IC, HF circuit and the laser light pen in CD mode only.

i. ATTENUATION NETWORK

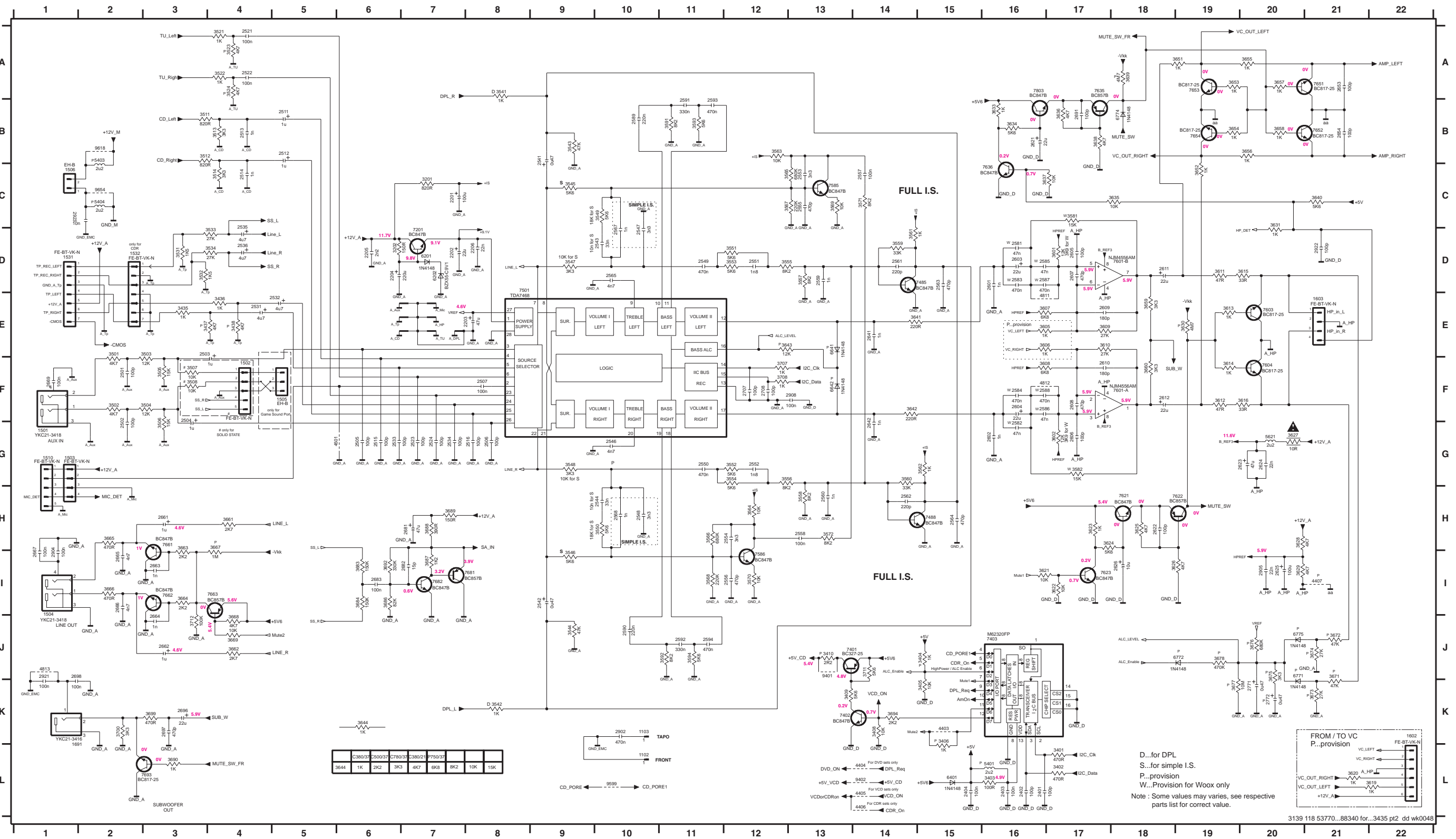
Attenuation network is provided at the output of the AF9 Board for interfacing with power board of different output power.

j. CD DIGITAL OUT

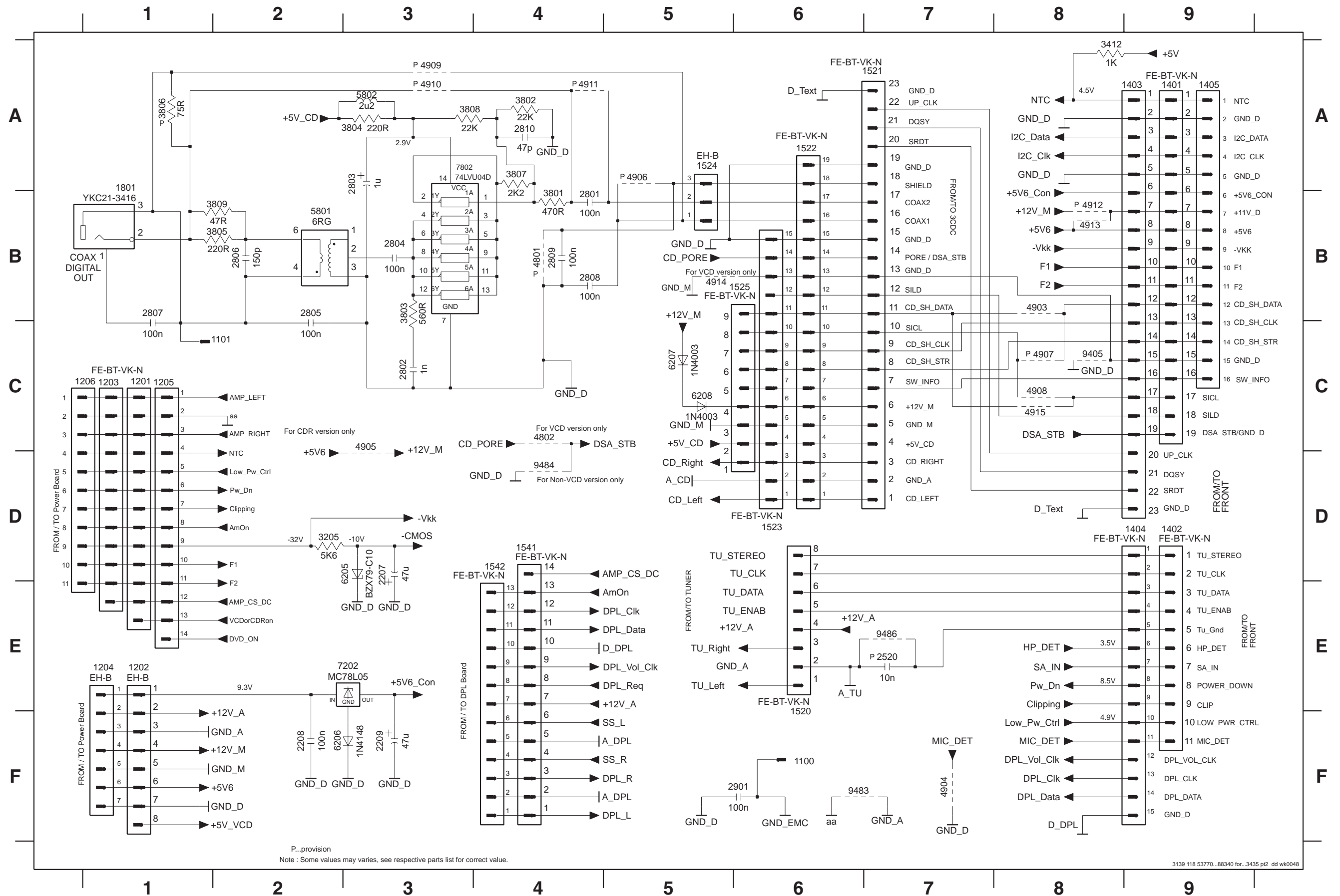
CD Digital out cinch socket for connection to external digital audio decoders.

AF9 BOARD - CIRCUIT DIAGRAM (PART 1)

1102 L10	1531 D1	2205 D6	2504 G3	2516 G8	2535 D4	2549 D11	2558 H13	2568 H10	2589 B10	2604 F16	2621 B16	2654 B21	2681 H7	2771 K20	3201 C7	3409 K13	3504 F3	3521 A4	3542 K8	3551 D12	3560 G14	3569 C13	3594 J11	3611 D19	3622 H7	3631 C20	3641 E14	3656 B20	3665 H2	3675 J20	3689 H7	3712 J3	4813 J1	6642 F13	7485 D14	7621 H18	7661 H3	9599 L10	
1103 K10	1532 O2	2206 D8	2505 G6	2517 A4	2536 D4	2550 D11	2559 D13	2561 D16	2590 J10	2605 D17	2622 H18	2661 H3	2682 T7	2772 K20	3202 D6	3410 J13	3505 F3	3522 A4	3543 B9	3552 G12	3561 D14	3570 H2	3601 D17	3612 F19	3623 H17	3633 B16	3642 F14	3657 A20	3666 G2	3676 J20	3690 L3	4403 K10	5401 L16	6771 J20	7486 H15	7622 H18	7662 G3	9618 B2	
1501 G1	1602 K22	2401 L16	2506 G8	2521 A4	2541 B8	2552 D12	2560 H13	2562 G16	2591 A11	2606 G17	2623 G20	2662 G3	2683 B6	2900 K10	3401 L17	3435 E3	3506 G3	3523 A4	3544 J9	3553 D12	3562 G15	3571 C14	3602 G17	3613 E19	3624 H17	3634 B16	3643 E12	3658 B20	3667 H4	3677 K19	3694 K14	4404 L14	5402 B2	6772 J19	7488 H15	7623 H18	7663 G4	9619 C2	
1502 F4	1603 E21	2402 L18	2507 F8	2522 G7	2542 B9	2553 D12	2561 D14	2563 D16	2592 J11	2607 D17	2624 G20	2663 D3	2684 B6	2901 H1	3402 L17	3436 E4	3507 F3	3524 A4	3545 C9	3554 G12	3563 B12	3572 H13	3605 E16	3614 F19	3625 H18	3635 C18	3644 K6	3659 E18	3668 J4	3678 J19	3694 K14	4405 L14	5404 C2	6774 B18	7489 H15	7624 H18	7664 A4	9620 A2	
1503 G1	1601 K2	2403 L18	2511 B5	2524 G7	2543 D10	2553 D12	2562 H14	2564 F16	2593 A11	2608 F17	2625 B20	2664 B3	2685 K3	2902 H0	3403 L18	3437 E3	3508 F3	3521 D3	3546 B9	3555 D12	3564 H12	3581 C17	3606 E16	3615 D30	3626 H18	3636 B17	3645 A19	3660 F16	3669 J4	3679 K19	3695 K3	4406 L14	5401 G20	6775 J20	7490 H15	7625 H18	7665 B7	9621 A2	
1504 I1	2201 C7	2404 L15	2512 B5	2521 E4	2544 H10	2554 H12	2563 D15	2565 D16	2594 J11	2609 E17	2626 H18	2665 D2	2686 K3	2903 H1	3404 J15	3438 E4	3511 B3	3523 D3	3547 D9	3556 G12	3565 C12	3582 G17	3607 E16	3616 F20	3627 G20	3637 C16	3646 C19	3661 H4	3671 J21	3684 B6	3700 K2	4407 D1	6201 D7	7201 C7	7601 A F18	7651 A21	7693 L3		
1505 F5	2202 O7	2501 F2	2513 B4	2525 E5	2546 G10	2555 C13	2564 H15	2566 F16	2601 D16	2610 F17	2641 E14	2666 D2	2687 J1	2921 J1	3405 K15	3401 E2	3496 K15	3501 E2	3512 B3	3523 D3	3548 G9	3557 D13	3566 H11	3591 B11	3608 F16	3619 L22	3628 H20	3638 B17	3653 A19	3662 J4	3672 J21	3689 B6	3707 F12	4401 G6	6202 O7	7401 J14	7601 B D18	7652 B21	7693 A16
1506 C1	2203 E8	2502 G2	2514 C4	2523 G6	2547 D10	2556 H12	2565 D10	2567 D16	2602 D16	2611 D18	2642 G14	2667 I1	2922 I21	3406 K15	3402 F2	3513 B4	3524 D4	3549 C10	3558 H13	3567 C12	3592 I11	3599 E17	3620 L21	3629 D20	3639 A18	3654 B19	3663 B3	3673 K21	3687 I7	3708 F12	4401 E16	6401 L15	7402 K13	7602 E20	7653 A19	7694 J13			
1510 G1	2204 D6	2503 E3	2515 G8	2524 G7	2548 H10	2557 C14	2567 D10	2568 F16	2603 D16	2612 F18	2653 A21	2669 F1	2708 F12	2923 C1	3408 K14	3503 E3	3514 C4	3541 A8	3550 H10	3559 D14	3568 H11	3593 B11	3610 E17	3621 I16	3630 E19	3640 C21	3655 A20	3664 D3	3674 J21	3688 H7	3711 J14	4412 F16	6441 E13	7403 J16	7604 F20	7654 B19	7694 L14		



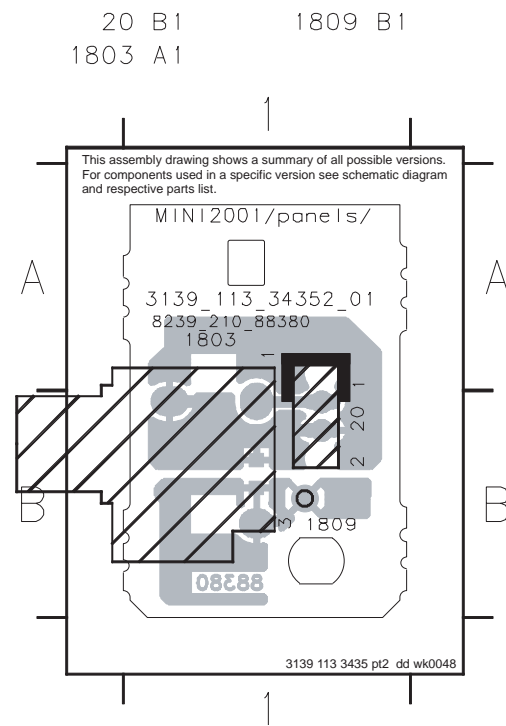
AF9 BOARD - CIRCUIT DIAGRAM (PART 2)



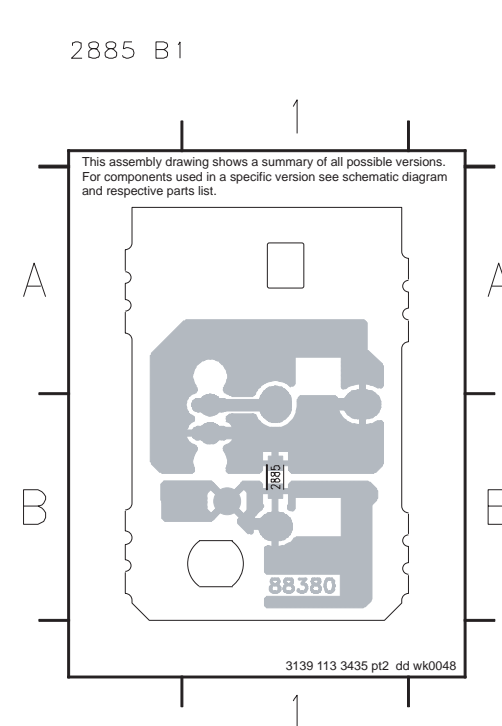
- 1100 F6
- 1101 C2
- 1201 C1
- 1202 C1
- 1203 C1
- 1204 E1
- 1205 C1
- 1206 C1
- 1401 A9
- 1402 D9
- 1403 A9
- 1404 D9
- 1405 A9
- 1520 E6
- 1521 A7
- 1522 A6
- 1524 A5
- 1525 B5
- 1541 D4
- 1542 D4
- 1801 A1
- 2207 D3
- 2208 F2
- 2209 F3
- 2520 E7
- 2801 B4
- 2802 C3
- 2803 A3
- 2804 B3
- 2805 B2
- 2806 B2
- 2807 B1
- 2808 B4
- 2809 B4
- 2810 A4
- 2901 F6
- 3205 D2
- 3412 A8
- 3801 B4
- 3802 A4
- 3803 B3
- 3804 A3
- 3805 B2
- 3806 A1
- 3807 A4
- 3808 A3
- 3809 B2
- 4801 B4
- 4802 C4
- 4903 B8
- 4904 F7
- 4905 C3
- 4906 A5
- 4907 C8
- 4908 C8
- 4909 A3
- 4910 A3
- 4911 A4
- 4912 B8
- 4913 B8
- 4914 B5
- 4915 C8
- 5801 B2
- 5802 A3
- 6205 D3
- 6206 F2
- 6207 C5
- 6208 C5
- 7202 E3
- 7802 A3
- 9405 C8
- 9483 F6
- 9484 D4
- 9486 E7

P..provision
 Note : Some values may varies, see respective parts list for correct value.

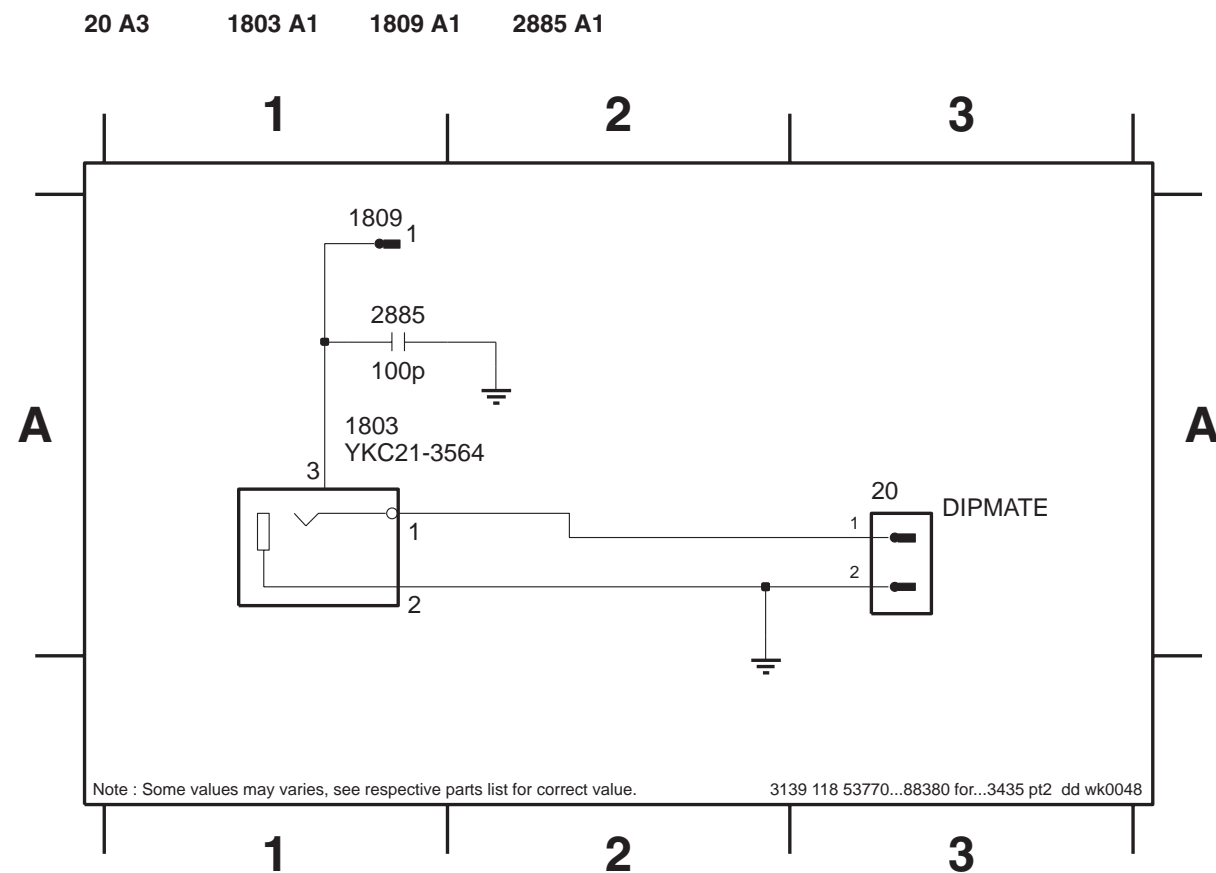
VIDEO OUT CINCH BOARD - COMPONENT LAYOUT



VIDEO OUT CINCH BOARD - CHIP LAYOUT



VIDEO OUT CINCH PART - CIRCUIT DIAGRAM



ELECTRICAL PARTS LIST - AF9 BOARD

MISCELLANEOUS

1201	4822 267 10738	Flex Connector 13P	2544	5322 126 11583	10nF 10% 50V
1401	4822 265 11553	Flex Connector 19P	2546	4822 121 43856	4,7nF 5% 250V
1402	4822 267 11039	Flex Connector 11P	2547	5322 126 11579	3,3nF 10% 63V
1501	4822 265 20553	Cinch Socket - Aux in	2548	5322 126 11579	3,3nF 10% 63V
1504	4822 265 20553	Cinch Socket - Line out	2565	4822 121 43856	4,7nF 5% 250V
1520	4822 265 11515	Flex Connector 8P	2567	3198 016 31020	1nF 25V
1522	4822 265 11553	Flex Connector 19P	2568	3198 016 31020	1nF 25V
1531	4822 267 10953	Flex Connector 7P	2589	4822 121 42408	220nF 5% 63V
1603	4822 267 10733	Flex Connector 4P	2590	4822 121 42408	220nF 5% 63V
1801	4822 267 31729	Cinch Socket - Digital out	2591	5322 121 42661	330nF 5% 63V

CAPACITORS

2201	4822 124 40207	100µF 20% 25V	2592	5322 121 42661	330nF 5% 63V
2202	4822 124 81151	22µF 50V	2593	4822 121 51252	470nF 5% 63V
2203	4822 124 40433	47µF 20% 25V	2594	4822 121 51252	470nF 5% 63V
2204	4822 124 40196	220µF 20% 16V	2601	3198 016 31020	1nF 25V
2205	4822 126 14238	2,2nF 50V	2602	3198 016 31020	1nF 25V
2206	4822 126 14494	22nF 10% 25V	2603	4822 124 81151	22µF 50V
2207	4822 124 40433	47µF 20% 25V	2604	4822 124 81151	22µF 50V
2208	4822 126 14305	100nF 10% 16V	2605	4822 122 31765	100pF 2% 63V
2209	4822 124 41751	47µF 20% 50V	2606	4822 122 31765	100pF 2% 63V
2401	4822 122 31765	100pF 2% 63V	2607	4822 126 13881	470pF 5% 50V
2402	4822 122 31765	100pF 2% 63V	2608	4822 126 13881	470pF 5% 50V
2403	4822 126 14305	100nF 10% 16V	2609	4822 126 14508	180pF 5% 50V
2404	4822 126 14305	100nF 10% 16V	2610	4822 126 14508	180pF 5% 50V
2501	4822 122 31765	100pF 2% 63V	2611	4822 124 81151	22µF 50V
2502	4822 122 31765	100pF 2% 63V	2612	4822 124 81151	22µF 50V
2503	4822 124 21913	1µF 20% 63V	2621	4822 124 81151	22µF 50V
2504	4822 124 21913	1µF 20% 63V	2622	4822 122 31765	100pF 2% 63V
2505	4822 122 31765	100pF 2% 63V	2623	4822 124 40433	47µF 20% 25V
2506	4822 122 31765	100pF 2% 63V	2624	3198 017 42230	22nF 50V
2507	4822 126 14305	100nF 10% 16V	2625	4822 124 40207	100µF 20% 25V
2511	4822 124 21913	1µF 20% 63V	2626	4822 124 81151	22µF 50V
2512	4822 124 21913	1µF 20% 63V	2641	3198 016 31020	1nF 25V
2513	3198 016 31020	1nF 25V	2642	3198 016 31020	1nF 25V
2514	3198 016 31020	1nF 25V	2653	4822 122 31765	100pF 2% 63V
2515	4822 122 31765	100pF 2% 63V	2654	4822 122 31765	100pF 2% 63V
2516	4822 122 31765	100pF 2% 63V	2661	4822 124 21913	1µF 20% 63V
2520	4822 121 51387	10nF 20% 16V	2662	4822 124 21913	1µF 20% 63V
2521	4822 126 14305	100nF 10% 16V	2663	3198 016 31020	1nF 25V
2522	4822 126 14305	100nF 10% 16V	2664	3198 016 31020	1nF 25V
2523	4822 122 31765	100pF 2% 63V	2665	4822 126 13193	4,7nF 10% 63V
2524	4822 122 31765	100pF 2% 63V	2666	4822 126 13193	4,7nF 10% 63V
2531	4822 124 40769	4,7µF 20% 100V	2667	4822 126 14305	100nF 10% 16V
2532	4822 124 40769	4,7µF 20% 100V	2669	4822 126 14305	100nF 10% 16V
2533	4822 122 31765	100pF 2% 63V	2681	4822 124 40433	47µF 20% 25V
2534	4822 122 31765	100pF 2% 63V	2682	4822 122 33752	15pF 5% 50V
2535	4822 124 40769	4,7µF 20% 100V	2683	4822 126 14305	100nF 10% 16V
2536	4822 124 40769	4,7µF 20% 100V	2691	4822 122 31765	100pF 2% 63V
2541	4822 124 41407	0,47µF 20% 63V	2707	4822 122 31765	100pF 2% 63V
2542	4822 124 41407	0,47µF 20% 63V	2708	4822 122 31765	100pF 2% 63V
2543	5322 126 11583	10nF 10% 50V	2771	4822 124 41407	0,47µF 20% 63V
			2801	4822 126 14305	100nF 10% 16V
			2802	3198 016 31020	1nF 25V

ELECTRICAL PARTS LIST - AF9 BOARD**CAPACITORS**

2803	4822 124 40756	1µF 20% 100V	3593	4822 051 30562	5k6 5% 0,063W
2804	4822 126 14305	100nF 10% 16V	3594	4822 051 30562	5k6 5% 0,063W
2805	4822 126 14305	100nF 10% 16V	3601	4822 116 52238	12k 5% 0,5W
2806	4822 122 33753	150pF 5% 50V	3602	4822 116 52238	12k 5% 0,5W
2807	4822 126 14305	100nF 10% 16V	3607	4822 051 30682	6k8 5% 0,062W
2808	4822 126 14305	100nF 10% 16V	3608	4822 116 83961	6k8 5%
2809	4822 126 14305	100nF 10% 16V	3609	4822 051 30273	27k 5% 0,062W
2810	4822 122 33777	47pF 5% 63V	3610	4822 051 30273	27k 5% 0,062W
2901	4822 126 12882	100nF +80/-20% 50V	3611	4822 051 30479	47R 5% 0,062W
2902	3198 017 44740	470nF 10V	3612	4822 051 30479	47R 5% 0,062W
2905	3198 017 42230	22nF 50V	3613	4822 051 30102	1k 5% 0,062W
2908	4822 126 14305	100nF 10% 16V	3614	4822 051 30102	1k 5% 0,062W

RESISTORS

3201	4822 117 12968	820R 5% 0,62W	3615	4822 051 30339	33R 5% 0,062W
3202	4822 051 30151	150R 5% 0,062W	3616	4822 051 30339	33R 5% 0,062W
3205	4822 116 52289	5k6 5% 0,5W	3621	4822 051 30103	10k 5% 0,062W
3401	4822 051 30471	470R 5% 0,062W	3622	4822 051 30103	10k 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W	3623	4822 051 30102	1k 5% 0,062W
3403	4822 116 52175	100R 5% 0,5W	3624	4822 051 30562	5k6 5% 0,063W
3405	4822 051 30103	10k 5% 0,062W	3625	4822 051 30472	4k7 5% 0,062W
3408	4822 051 30103	10k 5% 0,062W	3626	4822 051 30472	4k7 5% 0,062W
3409	4822 051 30562	5k6 5% 0,063W	3627	4822 052 10109	△ 10R 5% 0,33W
3412	4822 050 11002	1k 1% 0,4W	3628	4822 116 52283	4k7 5% 0,5W
3435	4822 050 11002	1k 1% 0,4W	3629	4822 051 30472	4k7 5% 0,062W
3436	4822 050 11002	1k 1% 0,4W	3631	4822 050 11002	1k 1% 0,4W
3501	4822 051 30472	4k7 5% 0,062W	3633	4822 051 30102	1k 5% 0,062W
3502	4822 051 30472	4k7 5% 0,062W	3634	4822 051 30562	5k6 5% 0,063W
3503	4822 051 30123	12k 5% 0,062W	3635	4822 051 30103	10k 5% 0,062W
3504	4822 051 30123	12k 5% 0,062W	3636	4822 051 30472	4k7 5% 0,062W
3505	4822 051 30153	15k 5% 0,062W	3637	4822 051 30103	10k 5% 0,062W
3506	4822 051 30153	15k 5% 0,062W	3638	4822 051 30472	4k7 5% 0,062W
3511	4822 117 12968	820R 5% 0,62W	3640	4822 116 52289	5k6 5% 0,5W
3512	4822 117 12968	820R 5% 0,62W	3641	4822 051 30221	220R 5% 0,062W
3513	4822 051 30102	1k 5% 0,062W	3642	4822 051 30221	220R 5% 0,062W
3514	4822 051 30102	1k 5% 0,062W	3644	4822 117 12902	8k2 1% 0,063W /22
3521	4822 051 30102	1k 5% 0,062W	3644	4822 051 30332	3k3 5% 0,062W /37
3522	4822 051 30102	1k 5% 0,062W	3651	4822 051 30102	1k 5% 0,062W
3531	4822 051 30152	1k5 5% 0,062W	3652	4822 051 30102	1k 5% 0,062W
3532	4822 051 30152	1k5 5% 0,062W	3653	4822 051 30102	1k 5% 0,062W
3533	4822 051 30273	27k 5% 0,062W	3654	4822 051 30102	1k 5% 0,062W
3534	4822 116 52264	27k 5% 0,5W	3655	4822 051 30102	1k 5% 0,062W
3543	4822 117 12925	47k 1% 0,063W	3656	4822 051 30102	1k 5% 0,062W
3544	4822 117 12925	47k 1% 0,063W	3657	4822 051 30102	1k 5% 0,062W
3545	4822 051 30562	5k6 5% 0,063W	3658	4822 051 30102	1k 5% 0,062W
3546	4822 051 30562	5k6 5% 0,063W	3661	4822 051 30272	2k7 5% 0,062W
3547	4822 051 30103	10k 5% 0,062W	3662	4822 051 30272	2k7 5% 0,062W
3548	4822 051 30103	10k 5% 0,062W	3663	4822 116 52256	2k2 5% 0,5W
3549	4822 051 30183	18k 5% 0,062W	3664	4822 051 30222	2k2 5% 0,062W
3550	4822 051 30183	18k 5% 0,062W	3665	4822 051 30471	470R 5% 0,062W
3591	4822 117 12902	8k2 1% 0,063W	3666	4822 051 30471	470R 5% 0,062W
3592	4822 117 12902	8k2 1% 0,063W	3668	4822 051 30472	4k7 5% 0,062W
			3669	4822 051 30103	10k 5% 0,062W
			3683	4822 051 30154	150k 5% 0,062W

ELECTRICAL PARTS LIST - AF9 BOARD**RESISTORS**

3684	4822 051 30154	150k 5% 0,062W
3686	4822 117 12864	82k 5% 0,6W
3687	4822 117 11817	1k2 1% 1/16W
3688	4822 051 30391	390R 5% 0,062W
3689	4822 051 30151	150R 5% 0,062W
3692	4822 051 30334	330k 5% 0,062W
3694	4822 051 30222	2k2 5% 0,062W
3707	4822 051 30102	1k 5% 0,062W
3708	4822 051 30102	1k 5% 0,062W
3711	4822 051 30562	5k6 5% 0,063W
3801	4822 051 30471	470R 5% 0,062W
3802	4822 051 30223	22k 5% 0,062W
3803	4822 051 30561	560R 5% 0,062W
3804	4822 116 83872	220R 5% 0,5W
3805	4822 051 30221	220R 5% 0,062W
3807	4822 051 30222	2k2 5% 0,062W
3808	4822 051 30223	22k 5% 0,062W
3809	4822 051 30479	47R 5% 0,062W
4100	4822 051 30008	0R Jumper 0603
4101	4822 051 30008	0R Jumper 0603
4102	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4108	4822 051 30008	0R Jumper 0603
4110	4822 051 30008	0R Jumper 0603
4111	4822 051 30008	0R Jumper 0603
4112	4822 051 30008	0R Jumper 0603
4113	4822 051 30008	0R Jumper 0603
4114	4822 051 30008	0R Jumper 0603
4115	4822 051 30008	0R Jumper 0603
4116	4822 051 30008	0R Jumper 0603
4118	4822 051 30008	0R Jumper 0603
4119	4822 051 30008	0R Jumper 0603
4122	4822 051 30008	0R Jumper 0603
4124	4822 051 30008	0R Jumper 0603
4125	4822 051 30008	0R Jumper 0603
4126	4822 051 30008	0R Jumper 0603
4127	4822 051 30008	0R Jumper 0603
4128	4822 051 30008	0R Jumper 0603
4130	4822 051 30008	0R Jumper 0603
4132	4822 051 30008	0R Jumper 0603
4133	4822 051 30008	0R Jumper 0603
4134	4822 051 30008	0R Jumper 0603
4135	4822 051 30008	0R Jumper 0603
4137	4822 051 30008	0R Jumper 0603
4138	4822 051 30008	0R Jumper 0603
4139	4822 051 30008	0R Jumper 0603
4141	4822 051 30008	0R Jumper 0603
4142	4822 051 30008	0R Jumper 0603
4143	4822 051 30008	0R Jumper 0603
4144	4822 051 30008	0R Jumper 0603
4145	4822 051 30008	0R Jumper 0603
4146	4822 051 30008	0R Jumper 0603

4147	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4501	4822 051 30008	0R Jumper 0603
4811	4822 051 30008	0R Jumper 0603
4812	4822 051 30008	0R Jumper 0603
4903	4822 051 30008	0R Jumper 0603
4904	4822 051 30008	0R Jumper 0603
4908	4822 051 30008	0R Jumper 0603
4913	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5621	4822 157 62552	Coil 2,2 μ H 5%
5801	2422 536 00019	Transformer 6RG

DIODES

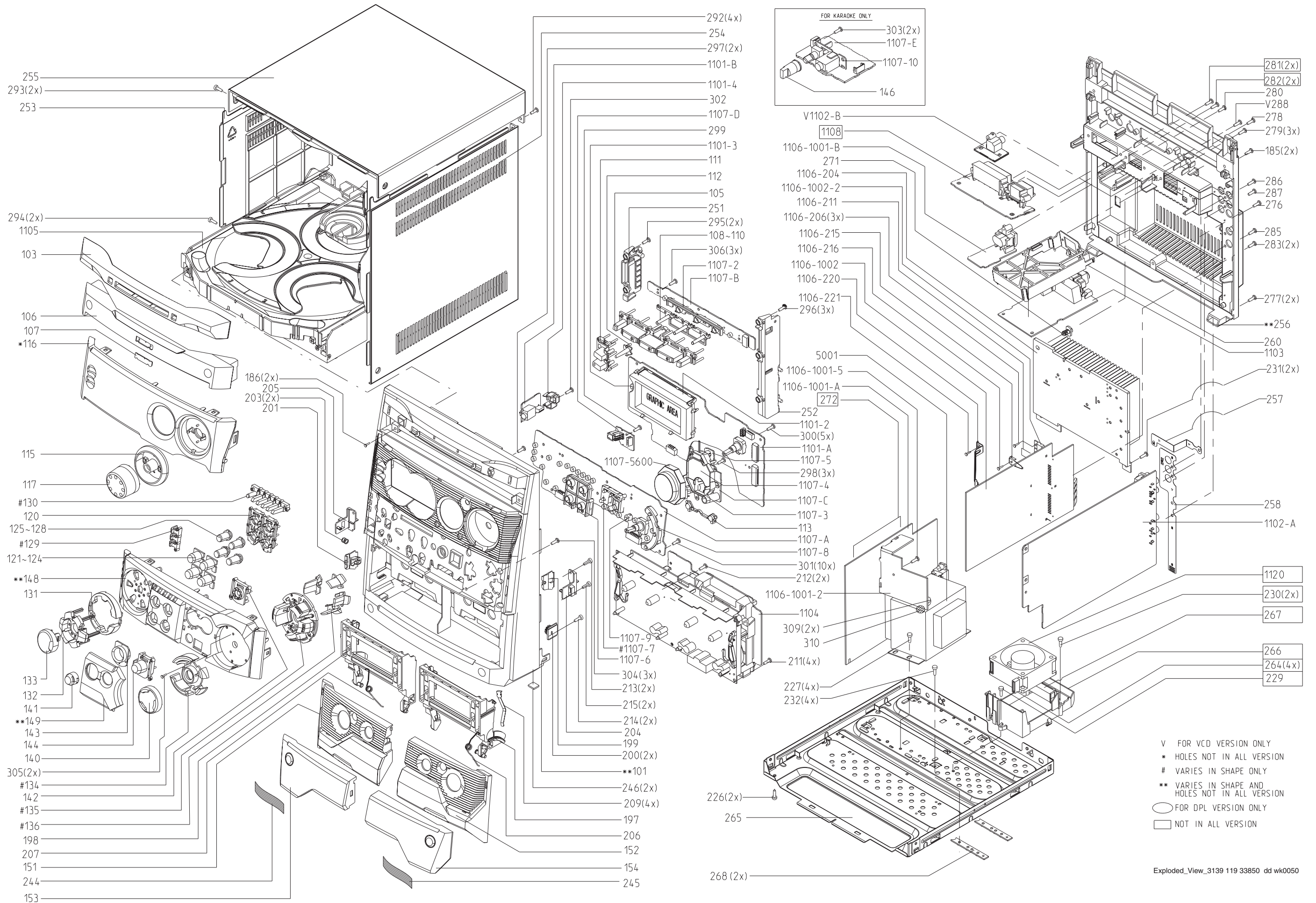
6201	4822 130 30621	1N4148
6202	4822 130 30862	BZX55-C9V1
6205	4822 130 61219	BZX79-C10
6206	4822 130 30621	1N4148
6207	4822 130 31878	1N4003G
6208	4822 130 31878	1N4003G
6401	4822 130 30621	1N4148
6774	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7201	5322 130 60159	BC847B
7202	4822 209 72042	MC78L05ACP
7401	4822 130 41246	BC327-25
7402	5322 130 60159	BC847B
7403	4822 209 17345	M62320FP
7501	9322 150 74668	TDA7468D
7601	4822 209 31378	NJM4556AM
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7621	5322 130 60159	BC847B
7622	4822 130 60373	BC857B
7623	5322 130 60159	BC847B
7635	4822 130 60373	BC857B
7636	5322 130 60159	BC847B
7651	4822 130 42804	BC817-25
7652	4822 130 42804	BC817-25
7653	4822 130 42804	BC817-25
7654	4822 130 42804	BC817-25
7661	5322 130 60159	BC847B
7662	5322 130 60159	BC847B
7663	4822 130 60373	BC857B
7681	4822 130 60373	BC857B
7682	5322 130 60159	BC847B
7802	4822 209 17235	74LVU04D
7803	5322 130 60159	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.

SET MECHANICAL EXPLODED VIEW



V FOR VCD VERSION ONLY
 * HOLES NOT IN ALL VERSION
 # VARIES IN SHAPE ONLY
 ** VARIES IN SHAPE AND HOLES NOT IN ALL VERSION
 ○ FOR DPL VERSION ONLY
 □ NOT IN ALL VERSION

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT**SCREW LISTS - MAIN UNIT**

0101	3139 118 15430	Cabinet Front /22	0204	4822 402 11246	Bracket Right	185	D3 x 10
0101	3139 118 15420	Cabinet Front /37	0205	4822 402 11245	Bracket Left	186	D3 x 12
0103	3139 118 14320	Window CDC	0206	3139 111 01380	Spring Torsion Right	211	D3 x 12
0105	3139 118 14330	Button Set CDC Select	0207	3139 111 01390	Spring Torsion Left	212	D3 x 12
0106	3139 118 14340	Cover Tray CDC	0209	4822 492 42787	Spring Cassette	213	D3 x 12
0107	4822 454 13408	Badge Philips	0246	4822 462 40683	Foot Rubber (SQ)	214	M3 x 12
0111	3139 118 14350	Button Standby/Eco Power /22	0251	3139 114 72750	Bracket CDC Left	215	M3 x 12
0111	3139 118 14870	Button Power /37	0252	3139 114 72760	Bracket CDC Right	226	M3 x 6
0115	3139 118 14370	Cover Ring Volume/VU Chrome	0253	3139 114 73570	Panel Left	227	M3 x 6
0116	3139 118 15210	Window Display /22	0254	3139 114 73580	Panel Right	231	M3 x 6
0116	3139 118 14830	Window Display /37	0255	3139 114 73590	Cover Top	232	M3 x 6
0117	3139 118 14380	Knob Volume Rotary	0256	3139 114 72790	Panel Rear	276	M3 x 6
0120	3139 114 72360	Frame Button Set Source Select	0271	3139 114 71010	Stopper Heatsink	277	M3 x 10
0121	3139 118 14390	Button Cap Source-CD	0309	4822 462 40683	Plate (Foot)	278	D3 x 12
0122	3139 118 14400	Button Cap Source-Tuner	0310	4822 462 40683	Plate (Foot)	279	D3 x 12
0123	3139 118 14410	Button Cap Source-Tape	0350	3139 118 78320	L/R Loudspeaker Box /22	280	D3 x 12
0124	3139 118 14420	Button Cap Source-Aux	0350	3139 118 78310	L/R Loudspeaker Box /37	283	D3 x 12
0125	3139 114 72410	Lightguide Source-CD	0351	4822 303 50063	FM Aerial /22	285	D3 x 12
0126	3139 114 72420	Lightguide Source-Tuner	0351	4822 320 11094	FM Antenna Wire /37	286	D3 x 12
0127	3139 114 72430	Lightguide Source-Tape	0356	3139 118 78260	Remote Control	287	D3 x 12
0128	3139 114 72440	Lightguide Source-Aux	0384	4822 303 50082	AM Frame Aerial	292	M3 x 12
0129	3139 118 14720	Button Set RDS/NEWS /22	0385	4822 321 10249	△ Mains Cord /22	293	M3 x 12
0130	3139 118 14440	Button Prog/Time-Disp	0385	4822 321 11466	△ Mains Cord /37	294	M3 x 6
0131	3139 118 15450	Cover Ring Func Control	0387	3139 115 20580	Instruction For Use /22	295	D3 x 12
0132	3139 118 15460	Button Set Func Control	0387	3139 115 20570	Instruction For Use /37	296	D3 x 12
0133	3139 118 14470	Cap Function Control	1202	3139 110 35350	FFC Foil 11P/220/11P AD	297	D2 x 8
0134	3139 118 15170	Cover Ring DSC/VAC/IS	1204	3139 110 34600	FFC Foil 07P/280/07P AD	298	D3 x 10
0135	3139 118 14770	Button DSC/VAC/IS	1401	3139 110 34970	FFC Foil 19P/180/19P AD	299	D3 x 10
0140	3139 118 14500	Knob Jog Rotary	1402	3139 110 34610	FFC Foil 11P/180/11P AD	300	D3 x 12
0141	3139 118 14850	Button WOOX Plus	1403	3139 110 35130	FFC Foil 06P/180/06P AD	301	D3 x 12
0142	3139 114 72470	Frame Button Set WOOX	1404	3139 110 35280	FFC Foil 10P/120/10P AD	302	D3 x 12
0144	3139 118 14840	Button Plus WOOX Level	1405	3139 110 35000	FFC Foil 08P/120/08P AD	304	D3 x 12
0148	3139 118 15700	Cover Orn Control /22	1406	4822 320 12752	FFC Foil 07P/180/07P AD	305	D2 x 8
0148	3139 118 15690	Cover Orn Control /37	1407	3139 110 34010	FFC Foil 06P/140/06P AD	306	D3 x 12
0149	3139 118 14810	Cover Control WOOX	1501	3139 110 35120	FFC Foil 04P/400/04P BD		
0151	3139 118 15480	Cover Cassette Left	1503	3139 110 34910	FFC Foil 19P/120/19P BD		
0152	3139 118 15490	Cover Cassette Right	1601	3139 110 35050	FFC Foil 08P/220/08P AD		
0153	3139 118 14560	Lens Cassette Left	1702	4822 320 12654	FFC Foil 07P/220/07P AD		
0154	3139 118 14570	Lens Cassette Right	5001	3103 308 30630	△ Mains Transformer /22		
0197	3139 114 68630	Door Cassette Right	5001	3103 308 30620	△ Mains Transformer /37		
0198	3139 114 68620	Door Cassette Left	Note : Only the parts mentioned in this list are normal service spare parts.				
0199	4822 402 10621	Push-Catch					
0200	4822 529 10322	Damper Assembly					
0201	3139 114 68640	Push Catch Left					
0203	4822 492 11344	Spring Compression					