Mini System

FW-C399/25/30/34

Service
Service
Service

Service Manual

COMPACT disc DIGITAL AUDIO

Introduction of FW-C399/25/30/34

For Service documentation please refer to FW-C399 Service Manual 12NC: 3139 785 30031

FW-C399/25 refers to FW-C399/22 except the following adaptations:

385	2422 070 98147	Mains Cord

FW-C399/30 refers to FW-C399/22 except without RDS/NEWS and the following adaptations:

1. Mechanical & Accessories

101	3139 118 17081	Cabinet Front
128	3139 118 16750	Window Display
142	Deleted	
256	3139 114 73140	Panel Rear
385	2422 070 98148	Mains Cord
387	3139 115 21120	Instruction For Use

2. Front Board

Delete 1425, 1427, 1433, 2449 - 2455, 2479, 3510, 3530, 3576 - 3580, 5403, 6426, 7401

2400	4822 124 41584	100uF 20% 10V
3432	4822 116 80176	1R 5% 0,5W
3433	4822 116 80176	1R 5% 0,5W
3511	4822 051 30103	10k 5% 0,062W
3581	4822 051 30103	10k 5% 0,062W

3. It refers to ECO6 Tuner Board - System Non-Cenelec /01 version.

FW-C399/34 refers to FW-C399/22 except the following adaptations:

1. Accessories

387	3139 115 21240	Instruction For Use

3. It refers to ECO6 Tuner Board - System Non-Cenelec /14 version.

CLASS 1
LASER PRODUCT

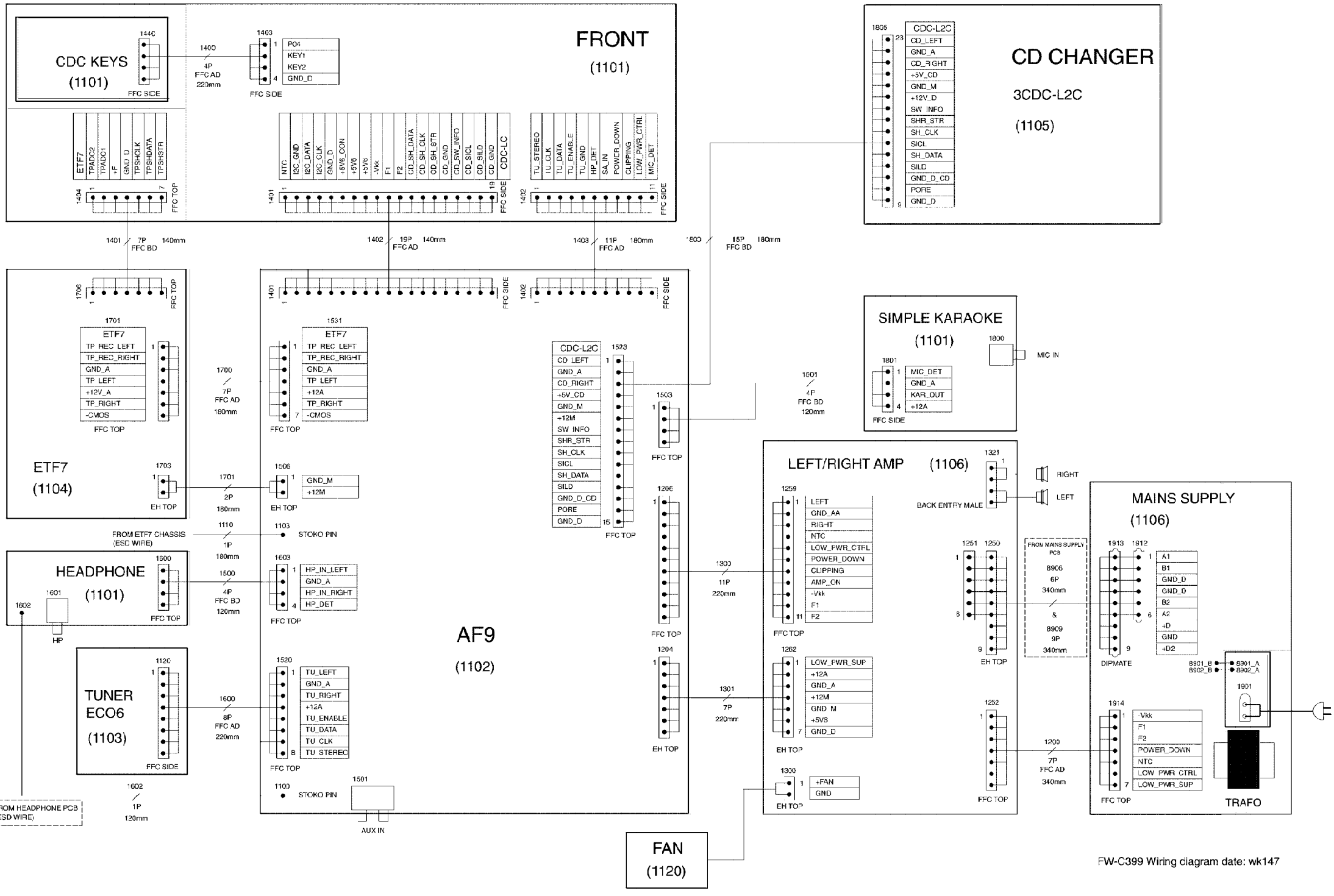
Published by KC 0208 Service Audio Printed in The Netherlands Subject to modification

GB 3139 785 30058

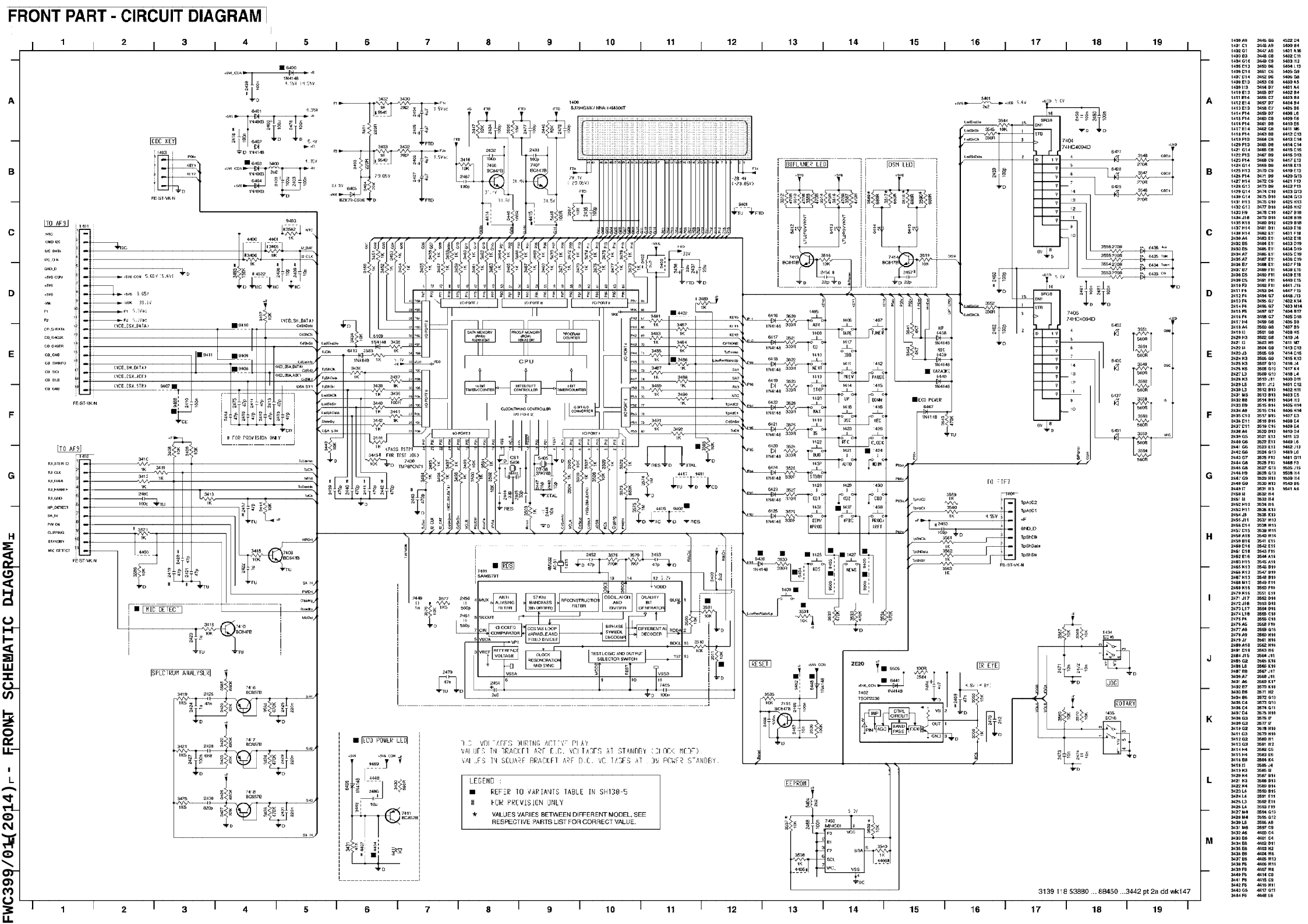
Version 1.0

PHILIPS

SET WIRING DIAGRAM



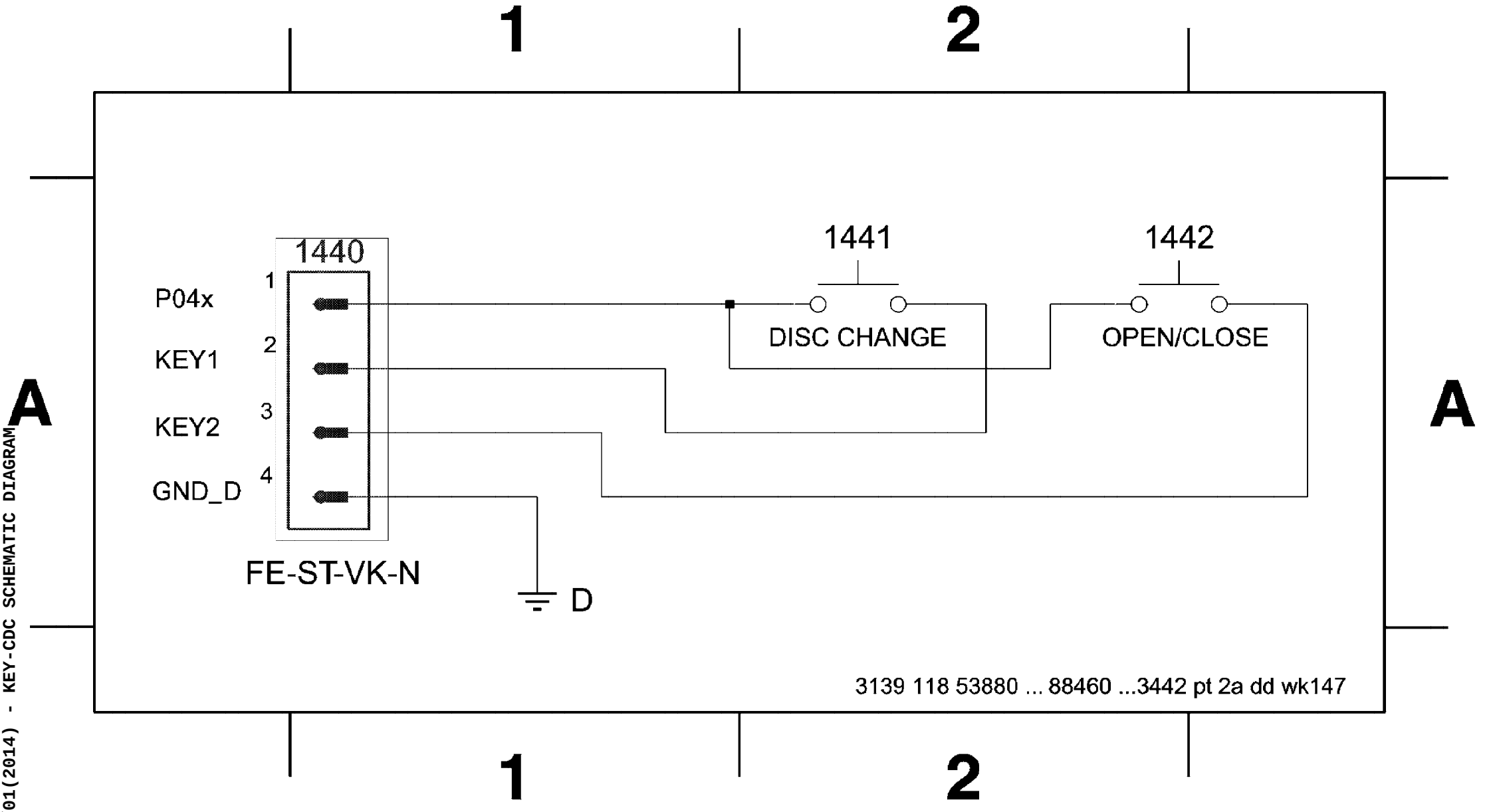
FRONT PART - CIRCUIT DIAGRAM



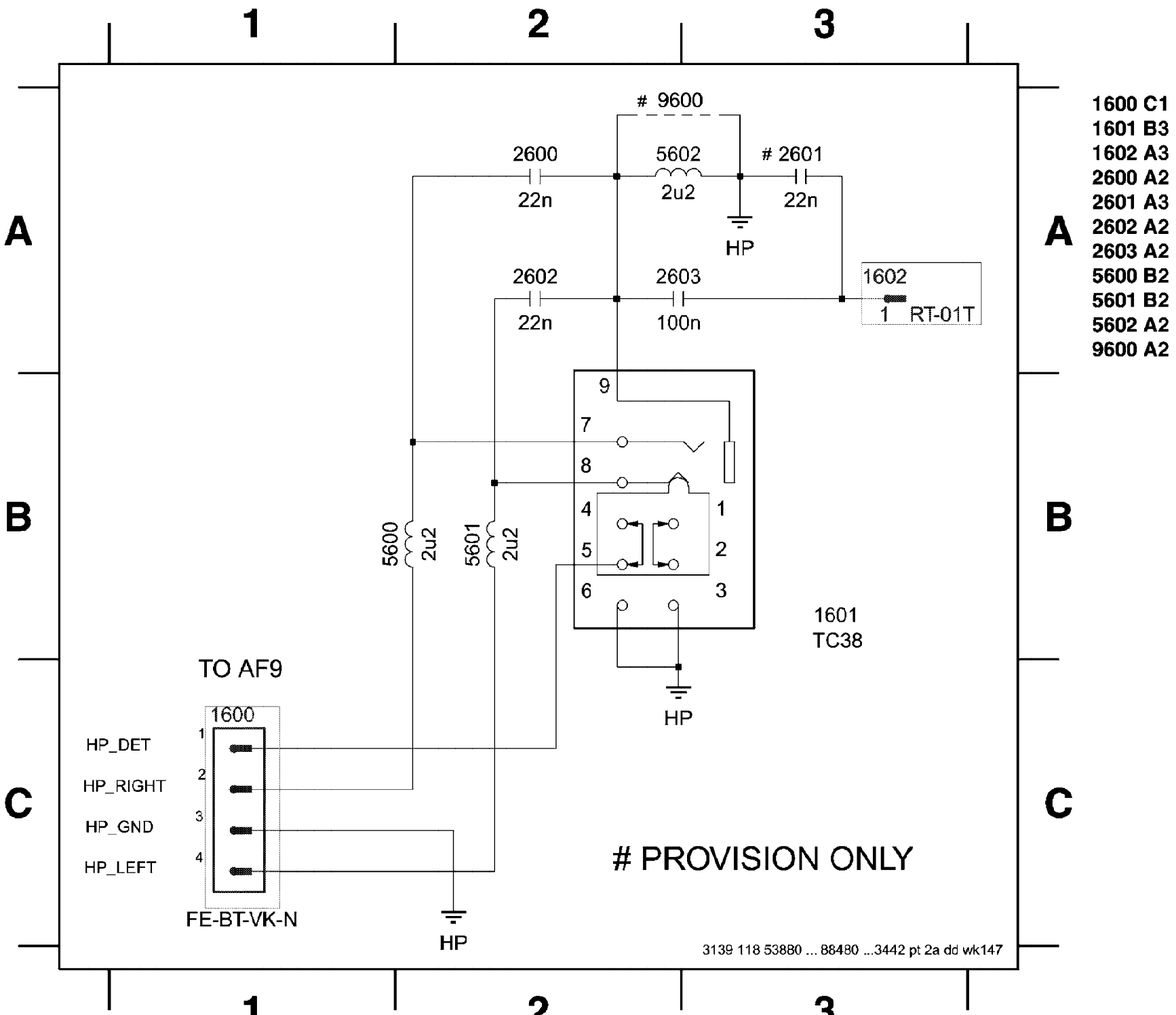
FWC399/01(2014) - FRONT SCHEMATIC DIAGRAM

KEY-CDC PART - CIRCUIT DIAGRAM

1440 A1 1441 A2 1442 A2



HEADPHONE PART - CIRCUIT DIAGRAM



1600 C1
1601 B3
1602 A3
2600 A2
2601 A3
2602 A2
2603 A2
5600 B2
5601 B2
5602 A2
9600 A2

KARAOKE SCHEMATIC DIAGRAM

30 D9	1802 C2	2802 B5	2805 B5	2808 E3	2811 D6	2814 E7	2817 D8	3800 A2	3803 B3	3806 C4	3809 B6	3812 B8	3815 D5	3818 E6	3821 D8	5800 B2	7800 B4	7803 E6	9800 A5
1800 C1	2800 B2	2803 B4	2806 B6	2809 E4	2812 E6	2815 E7	2818 E8	3801 A2	3804 B4	3807 B4	3810 C6	3813 D4	3816 D6	3819 E7	3822 E8	6800 D5	7801 B6	7804 E8	
1801 B9	2801 B3	2804 B4	2807 B6	2810 E5	2813 E6	2816 E8	2819 C3	3802 B2	3805 B4	3808 B6	3811 B6	3814 E5	3817 D6	3820 D8	4800 D7	6801 E5	7802 D4	7805 D3		

SIMPLE KARAOKE

+12V_A
3800 4K7
3801 6K8
MIC
TC38 1800
5800 22u
2800 4n7
3802 10K
RT-01T
1802
2819 100n
3803 4K7
2801 220n
3804 2K7
3805 1M
2803 470n
7800 BC847B
2804 1n
3806 33R
9800
3807 RK09D 20K
GND_A
2802 47u
3808 820R
3809 1M
2807 10u
2805 470n
7801 BC847B
2806 1n
3810 330R
3811 100K
QE10
■ FOR VCD VERSION : ITEM 3808 IS 390 OHM

TO AF9
1801
Mic_Det
GND_A
Kar_Out
+12V_A
3812 470R
FE-BT-VK-N

VCD

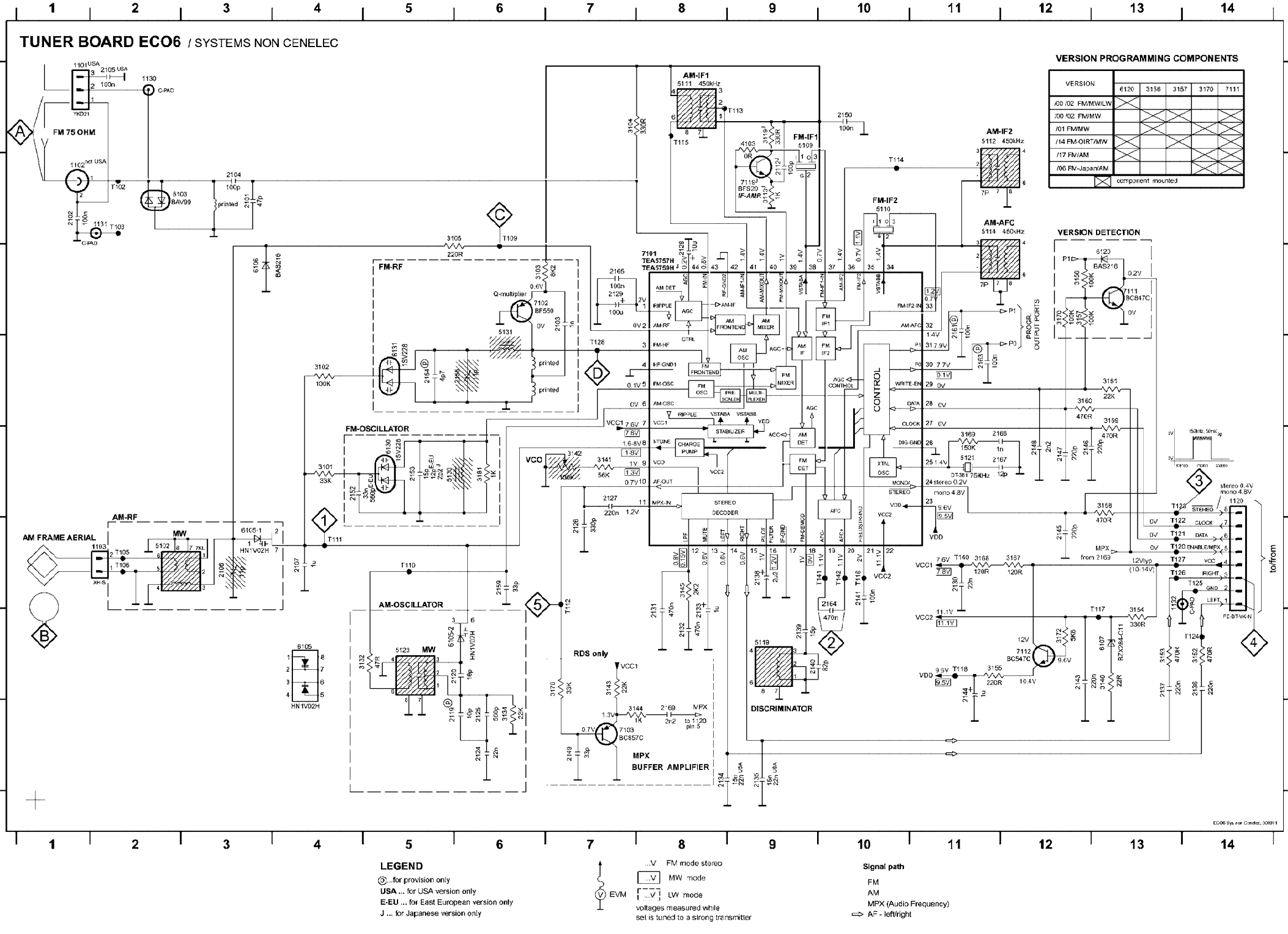
7805 BC847B
3813 470R
2808 1n
7802 BC847B
2809 1n
3814 10K
3815 10K
2810 10u
6800 1N4148
6801 1N4148
2811 1u
3816 3K3
3816 560R
7803 BC847B
2812 1n
2813 1u
4800
3819 8K2
2814 100n
2815 100n
3820 3K3
3821 1M
2816 1n
3822 2K7
7804 BC847B
2817 1u
2818 100n
TO MPEG
30
Mic_Out
MPEG_GND
Mic_Det
DIPMATE

LEGEND :
REFER TO VARIANTS TABLE IN SH130-5
FOR PROVISION ONLY

3139 118 53880 ... 88470 ...3442 pt 2a dd wk147

FWC399/01(2014) - KARAOKE SCHEMATIC DIAGRAM

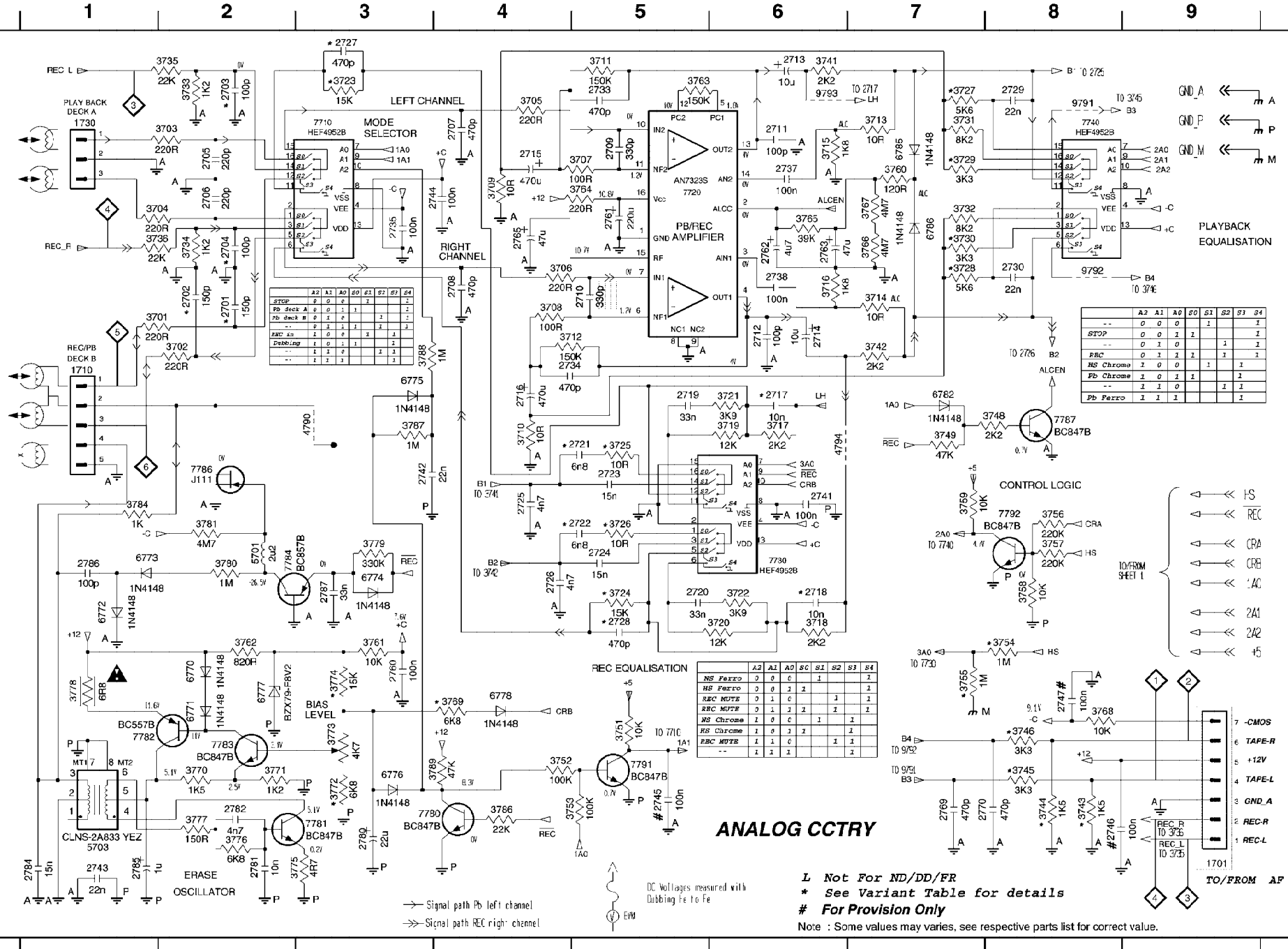
EC06 TUNER (NON-CENELEC) SCHEMATIC DIAGRAM



FWC399/01(2014) - EC06 TUNER (NON-CENELEC) SCHEMATIC DIAGRAM

CASSETTE ANALOG SCHEMATIC DIAGRAM

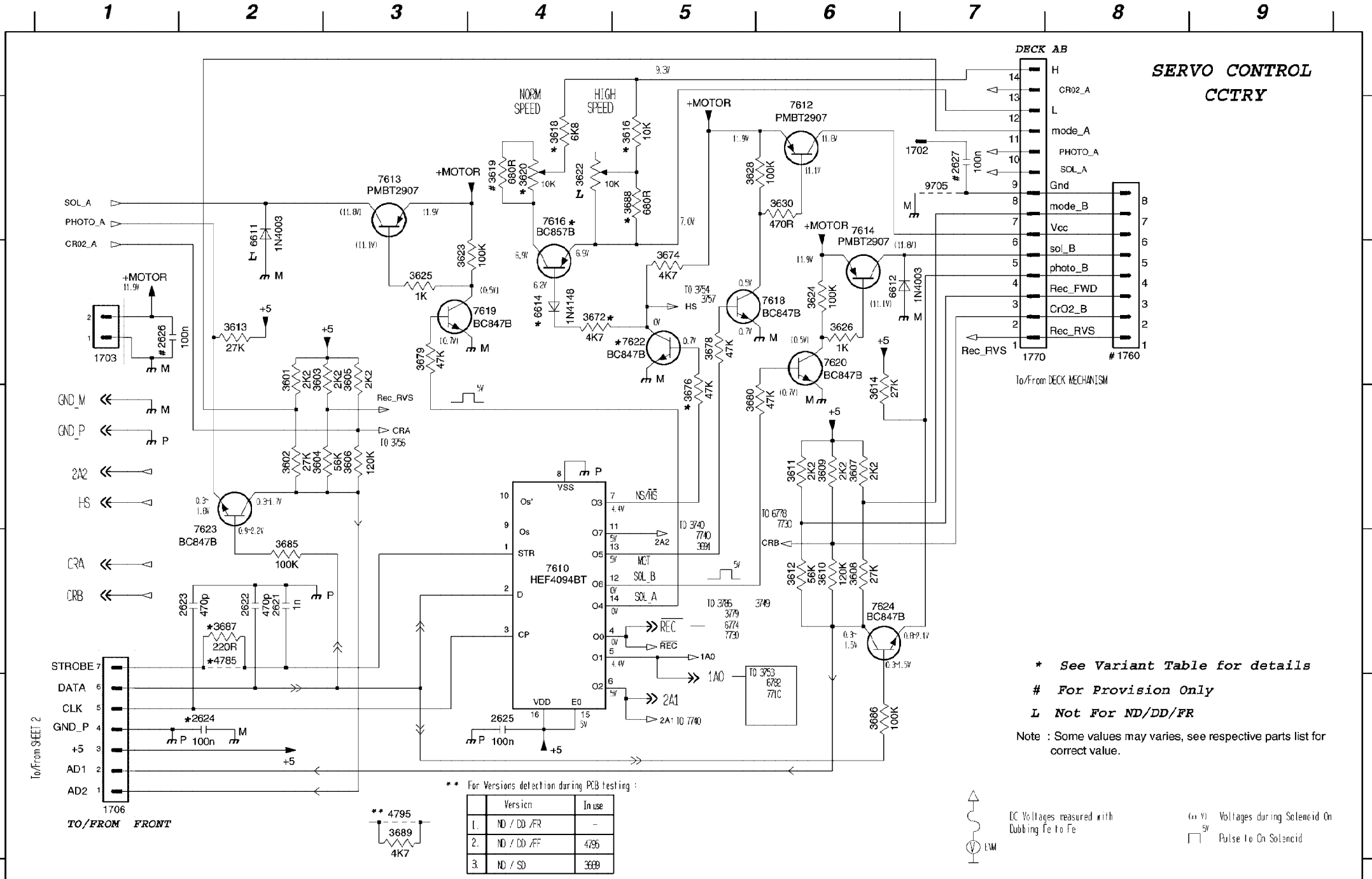
1701 F9	2705 A2	2712 B6	2719 C5	2726 D4	2735 B3	2745 F5	2765 B4	2785 F1	3705 A4	3712 B4	3719 C6	3726 D5	3733 A2	3744 F8	3753 F5	3760 A7	3767 A7	3774 E3	3781 D2	4794 C6	6774 D3	6786 B7	7782 E1	9791 A8
1710 C1	2706 A2	2713 A6	2720 D5	2727 A3	2737 A6	2746 F8	2769 F7	2786 D1	3706 B4	3713 A7	3720 E6	3727 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	7785 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	



FWC399/01(2014) - CASSETTE ANALOG SCHEMATIC DIAGRAM

CASSETTE SERVO CONTROL SCHEMATIC DIAGRAM

1702 A7	1760 B8	2622 D2	2625 E4	3601 B2	3604 C2	3607 C6	3610 D6	3613 B2	3618 A4	3622 A4	3625 B3	3630 A6	3676 C5	3680 C5	3687 D2	4785 D2	6612 B6	7612 A6	7616 A4	7620 B6	7624 D6		
1703 B1	1770 B7	2623 D2	2626 B1	3602 C2	3605 B3	3608 D6	3611 C6	3614 C6	3619 A4	3623 B3	3626 B6	3672 B4	3678 B5	3685 D2	3688 A5	4795 E3	6614 B4	7613 A3	7618 B6	7622 B5	9705 A7		
1706 E1	2621 D2	2624 E2	2627 A7	3603 B2	3606 C3	3609 C6	3612 D6	3616 A5	3620 A4	3624 B6	3628 A5	3674 B5	3679 B3	3686 E6	3689 E3	6611 A2	7610 D4	7614 A6	7619 B4	7623 D2			



1800 F1 1801 G1 1810 B10 2800 D8 2801 D8 2802 C8 2803 C8 2804 D4 2805 C8 2806 B8 2807 B8 2808 B9 2809 H4 2810 A8 2811 A6 2812 D5 2813 F7 2814 F7 2815 B6 2816 B12 2817 F7 2818 B11 2819 E5 2820 D4 2822 F9 2823 F10 2824 F10 2825 E9 2826 G12 2828 G13 2833 B10 2834 B10 2835 H7 2836 E10 2837 H4 2838 F4 2839 F5 2840 G4 2841 F5 2842 E5 2844 F5 2850 C14 2851 B11 2855 C8 2856 D15 2857 H5 2865 C12 2868 H12 2869 D3 2885 E9 2887 B10 2888 C4 2891 F4 2894 F8 2897 H12 3701 D3 3702 D3 3703 D3 3704 D4 3709 C14 3710 B8 3719 D4 3720 D5 3721 D6 3723 E6 3724 D6 3725 D6 3789 F8 3790 F7 3791 E7 3792 F8 3793 E8 3794 F7 3795 F8 3796 F8 3798 D3 3799 D3 3800 D8 3801 D8 3802 C8 3803 C8 3804 C14 3805 B8 3806 C8 3807 B9 3808 A9 3811 C8 3812 H4 3813 E2 3815 C4 3816 B3 3819 D14 3820 C3 3821 B3 3822 B3 3825 F9 3827 E10 3828 G11 3832 C15 3833 A8 3834 B8 3835 F5 3837 G7 3838 H7 3839 H6 3840 G5 3841 G5 3842 E6 3843 E5 3844 E5 3845 F6 3846 F5 3847 F5 3849 H5 3850 H5 3852 H5 3853 E15 3862 E15 3863 G13 3867 A11 3870 E2 3873 D14 3889 D15 3892 E15 3894 E9 3895 G12 3896 E9 3901 D4 3904 G10 7802 D3 7803-A B5 7803-B D5 7806 G3 7807 H3 7808 F7 7809 G8 7810 F9 7877 D12 MP715 C9 MP715 D9 MP716 B9 MP717 A9 MP729 B9 MP730 C9 MP731 B13 MP743 D2 MP744 C2 MP745 E2 MP800 E2 MP802 B15 MP809 D10 MP812 G2 MP813 B3 MP814 G2 MP815 B3 MP816 A3 MP817 A3 MP818 C4 MP819 F10 MP820 F8 MP821 C15 MP827 B10 MP828 G11 MP829 A3 MP831 A4 MP836 D3 MP837 D4 MP838 G6 MP839 G6 MP840 E6 MP841 F6 MP842 H6 MP843 G7 MP844 E9 MP845 F4 MP846 H2 MP847 H2 MP848 E2 MP849 E2 MP850 E2 MP851 E2 MP852 G2 MP853 G2 MP853 G6 MP859 E10 MP860 C2 MP872 C15 MP873 H4 MP875 F13 MP876 E2 MP877 E3 MP878 B13 MP879 B11 MP883 C4 MP884 C5 MP893 F10

3CDC-LLC mainboard

part 1

CD Drive Mitsumi MCD-1

Laser power control

HF-Amplifier

Servo driver

Motor Driver

Signal Processor

to 7805 on part 2

to 1805 on part 2 (uP-interface)

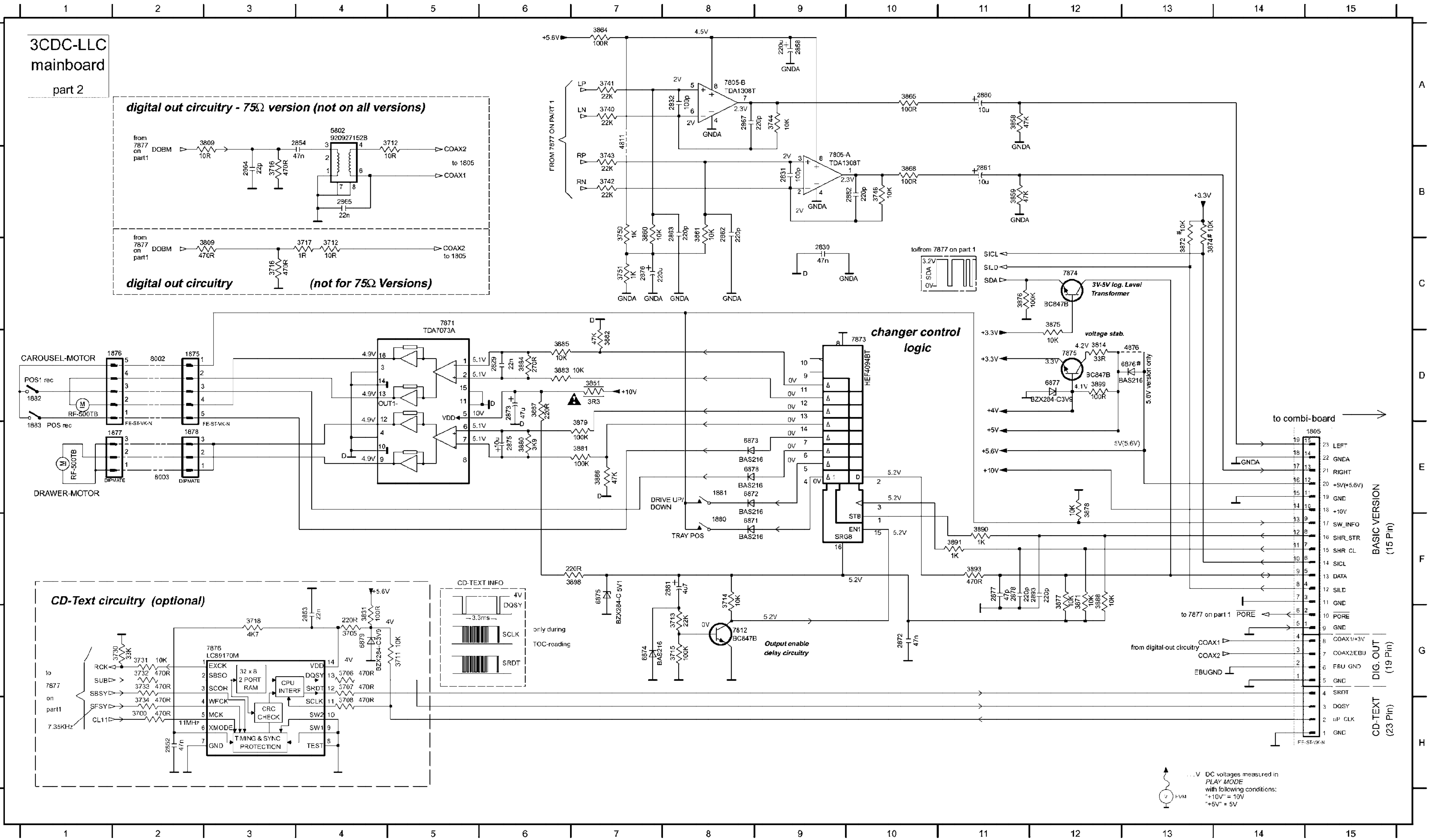
to 7876 on sheet 2 (CD-TEXT IC)

to dig. out circuitry on part 2

3CDC-LLC (Mitsumi) part1 2001 9996

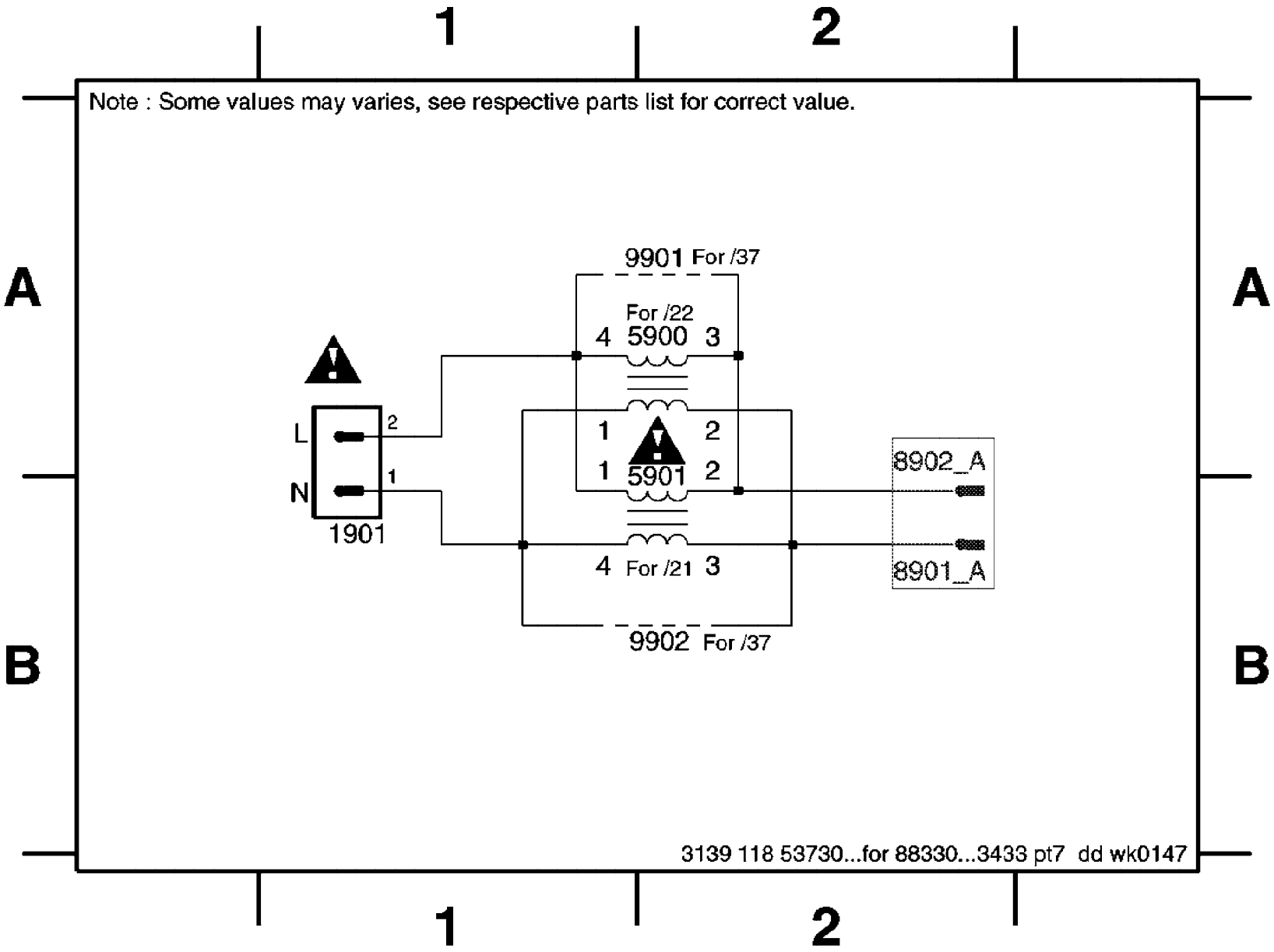
1805 E15	2830 C9	2858 A9	2865 C4	2877 F11	3705 G4	3713 G8	3730 G2	3741 A7	3751 C7	3851 D7	3865 A10	3874 C13	3880 E6
1875 D2	2831 B9	2860 A11	2867 A8	2878 F11	3706 G4	3714 F8	3731 G2	3742 B7	3752 A6	3858 A11	3866 A10	3875 C12	3881 E7
1878 E2	2832 A8	2861 B11	2872 G10	2881 F8	3707 G4	3715 G8	3732 G2	3743 B7	3753 A6	3859 B11	3868 B10	3876 C11	3882 D7
1880 F8	2852 H2	2862 B8	2873 D6	2882 B10	3708 H4	3716 B3	3733 G2	3744 A9	3809 B2	3860 B7	3869 B10	3877 F12	3883 D6
1881 E8	2853 G4	2863 B8	2875 E6	2893 F12	3711 G5	3717 B3	3734 H2	3746 B10	3814 D12	3861 B8	3871 F12	3878 E12	3884 D6
2829 D6	2854 B3	2864 B3	2876 C7	3700 H2	3712 B4	3718 G3	3740 A7	3750 B7	3831 G4	3864 A7	3872 C13	3879 D7	3885 D6

3886 E7	3898 F7	4876 D13	6875 F7	7805-B A8	7876 G3	MP726 D8	MP804 G14	MP811 F14	MP832 G9	MP863 C11	MP871 D6	MP888 G5	MP898 E13
3887 D6	3899 D12	5802 B4	6876 D13	7812 G8	MP721 C8	MP740 H14	MP805 F13	MP822 E3	MP833 F14	MP865 D11	MP874 D12	MP889 G5	MP899 E14
3888 F12	3905 C5	6871 F8	6877 D12	7871 C5	MP722 E8	MP741 G14	MP806 F13	MP823 E3	MP835 F14	MP866 E8	MP881 G2	MP890 B3	
3890 F11	4803 B4	6872 E8	6878 E8	7873 D10	MP723 D8	MP742 G14	MP807 F14	MP824 D4	MP854 A13	MP867 E8	MP882 G2	MP891 B5	
3891 F11	4811 A7	6873 E8	6879 G4	7874 C12	MP724 D8	MP801 E12	MP808 F13	MP825 D4	MP856 E14	MP868 F8	MP886 G3	MP892 B5	
3893 F11	4812 B7	6874 G7	7805-A B9	7875 D12	MP725 D8	MP803 F10	MP810 F13	MP830 A7	MP857 B13	MP869 C12	MP887 H5	MP897 E13	



MAINS SOCKET - CIRCUIT DIAGRAM

1901 B1	5901 A2	8902_A A2	9902 B2
5900 A2	8901_A B2	9901 A2	



MAINS BOARD - CIRCUIT DIAGRAM

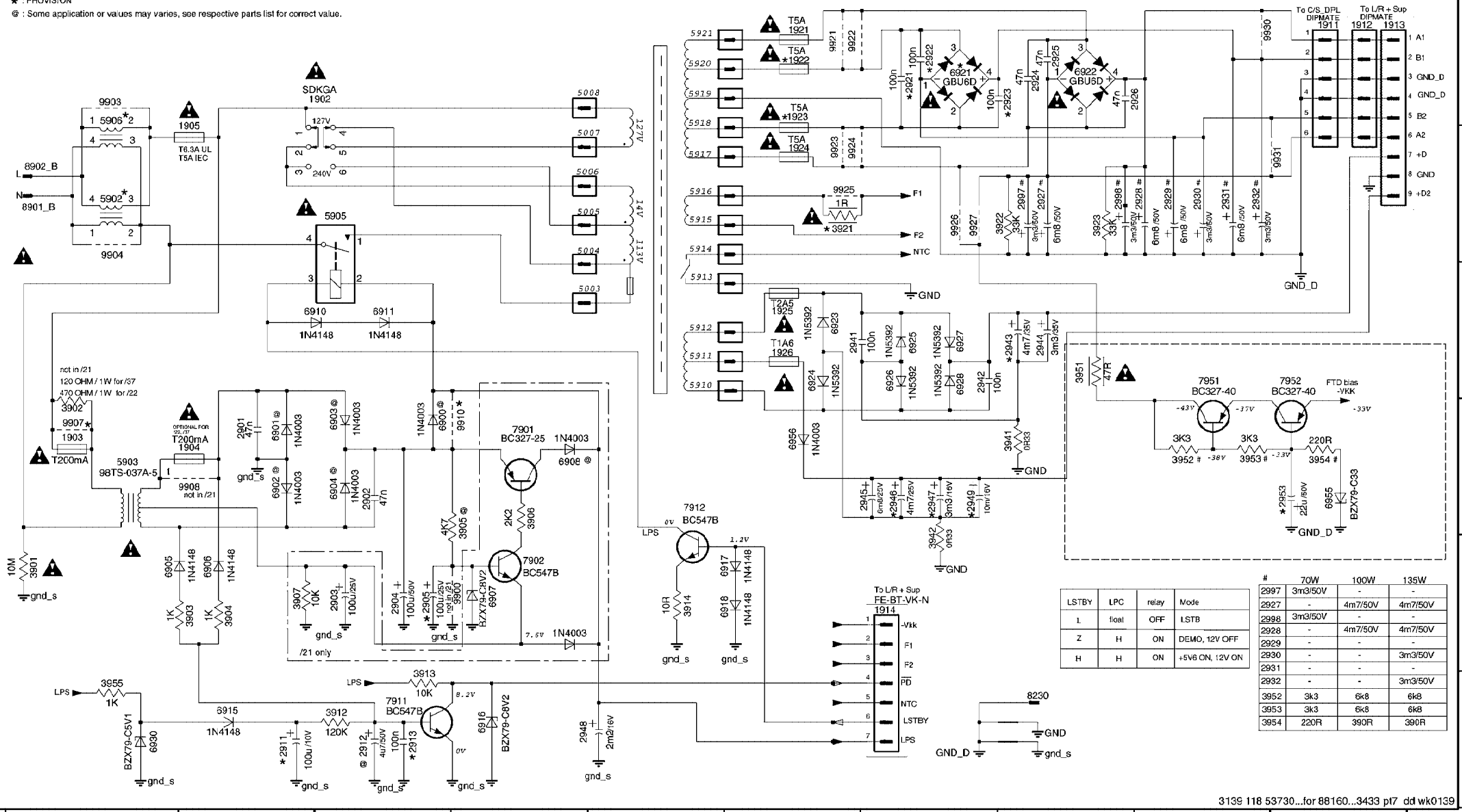
1902 A3 1903 D1 1904 D2 1905 B2 1911 A10 1912 A10 1913 A10 1914 E7 1921 A6 1922 A6 1923 A6 1924 B6 1925 C6 1926 C6 2901 D2 2902 D3 2903 E3 2904 E3 2905 E3 2911 F2 2912 F3 2913 F3 2921 A7 2922 A7 2923 A8 2924 A8 2925 A8 2926 A8 2927 B8 2928 B9 2929 B9 2930 B9 2931 B9 2932 B9 2941 C6 2942 C7 2943 C8 2944 C8 2945 D7 2946 D7 2947 D7 2948 B8 2953 D10 2997 B8 2998 B8 3901 E1 3902 D1 3903 E2 3904 E2 3905 D4 3906 D4 3907 E2 3912 F3 3913 F3 3914 E5 3921 B6 3922 B7 3923 B8 3941 D8 3942 E7 3951 C8 3952 D9 3953 D9 3954 D10 3955 F1 5902 B1 5903 D1 5905 B3 5906 A1 5900 D3 5901 D2 5902 D2 5903 D3 5904 D3 6900 D3 6901 D2 6902 D2 6903 E1 6904 E2 6906 E2 6907 E4 6908 D4 6909 E4 6910 C3 6911 C3 6915 F2 6916 F4 6917 E6 6918 E6 6921 A7 6922 A8 6923 C6 6924 C6 6925 C7 6926 C7 6927 C7 6928 C7 6930 F1 6955 D10 6956 D6 7901 D4 7902 E4 7911 F3 7912 D5 7951 C9 7952 C10 8230 F8 8901_B B1 8902_B B1 9900 E4 9903 A1 9904 B1 9905 A6 9907 D1 9908 D2 9910 D4 9921 A6 9922 A6 9923 B6 9924 B6 9925 B6 9926 B7 9927 B7 9930 A10 9931 B10

1 2 3 4 5 6 7 8 9 10

A B C D E F

★ : PROVISION

@ : Some application or values may varies, see respective parts list for correct value.



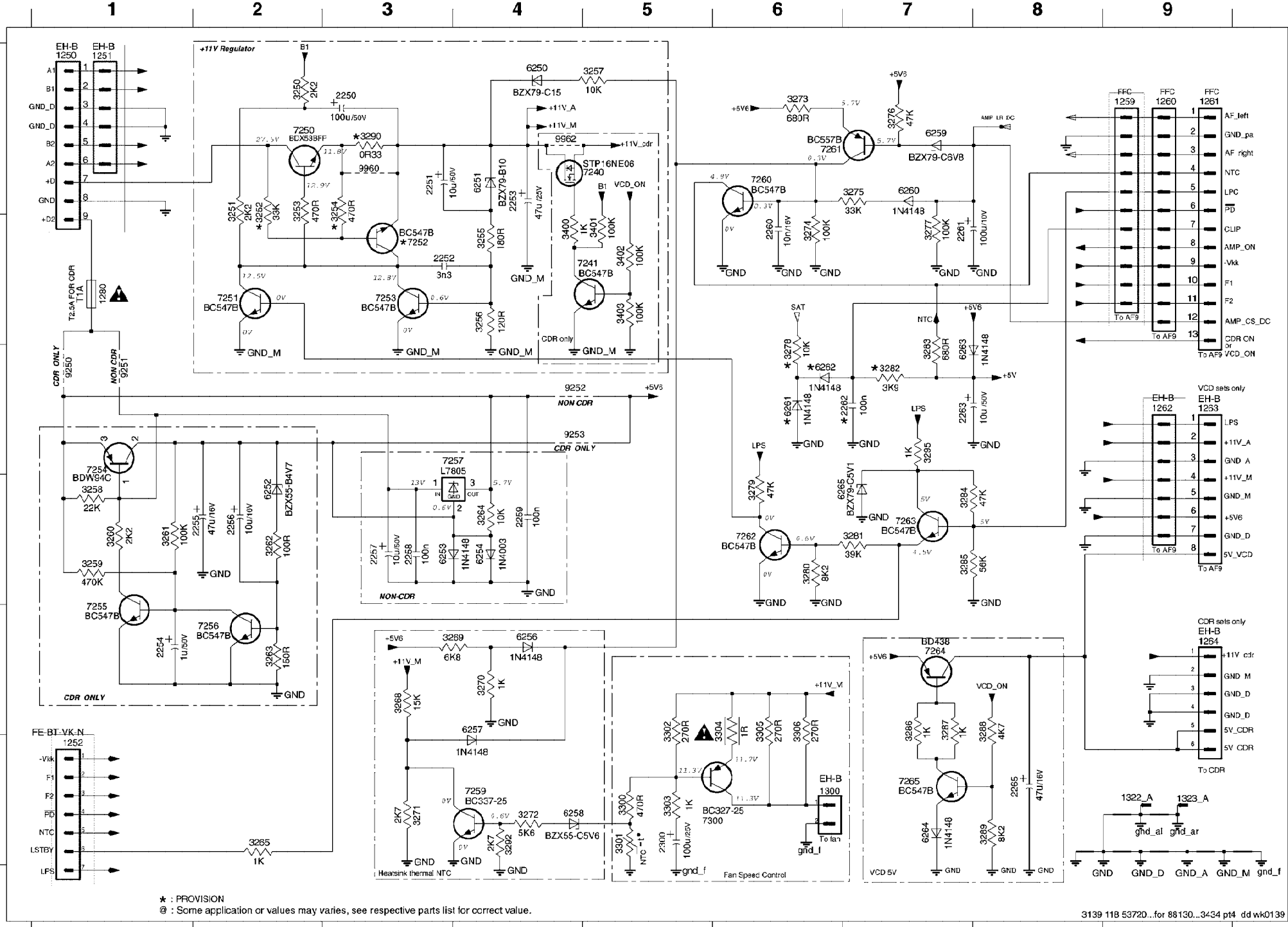
LSTBY	LPC	relay	Mode
L	float	OFF	LSTB
Z	H	ON	DEMO, 12V OFF
H	H	ON	+5V6 ON, 12V ON

#	70W	100W	135W
2997	3m3/50V	-	-
2927	-	4m7/50V	4m7/50V
2998	3m3/50V	-	-
2928	-	4m7/50V	4m7/50V
2929	-	-	-
2930	-	-	3m3/50V
2931	-	-	-
2932	-	-	3m3/50V
3952	3k3	6k8	6k8
3953	3k3	6k8	6k8
3954	220R	390R	390R

3139 118 53730...for 88160...3433 pt7 dd wk0139

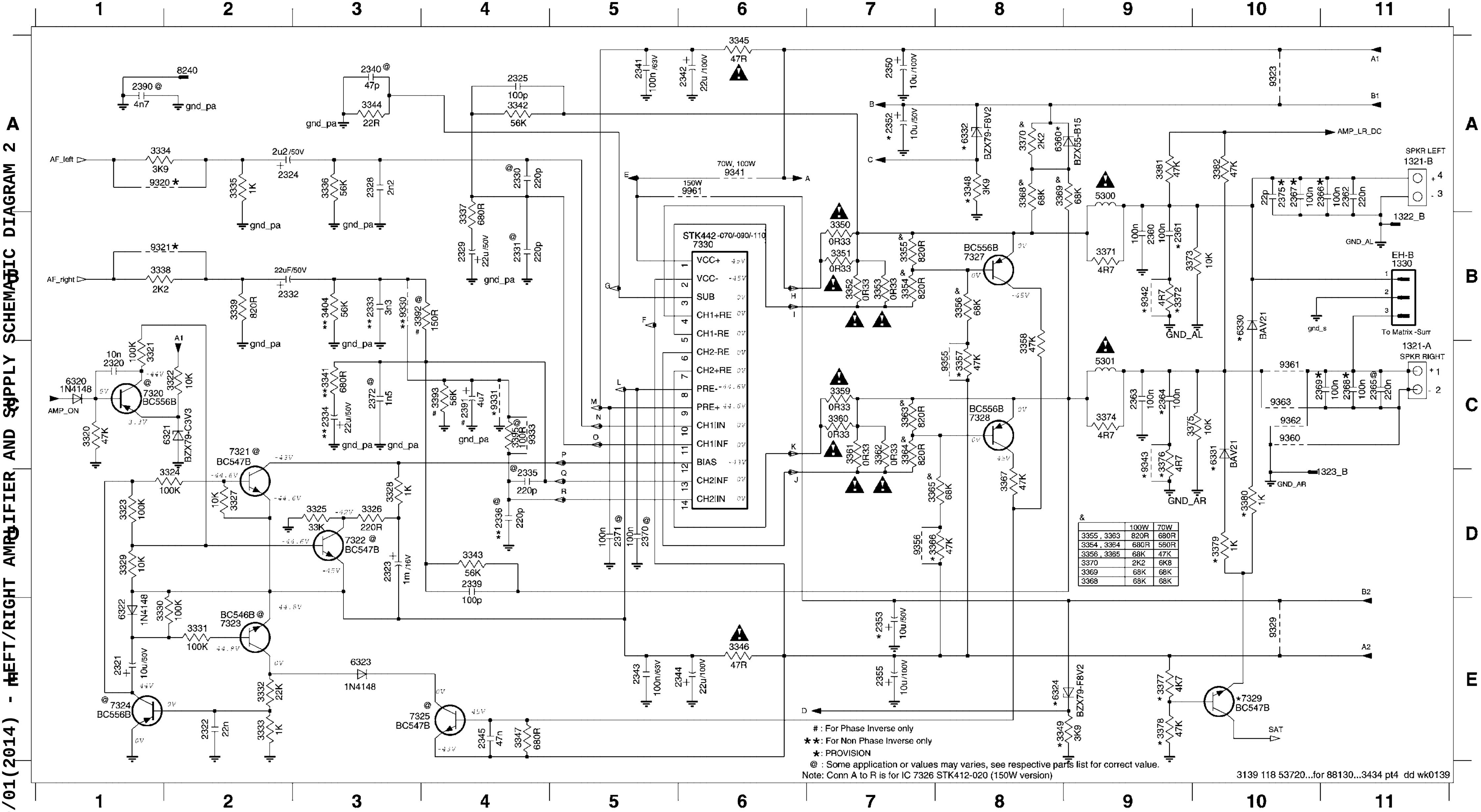
FWC399/01(2014) - MAINS SCHEMATIC DIAGRAM

LEFT/RIGHT AMPLIFIER AND SUPPLY SCHEMATIC DIAGRAM 1



LEFT/RIGHT AMPLIFIER AND SUPPLY SCHEMATIC DIAGRAM 2

1321-A C11	2323 D3	2333 B3	2343 E5	2361 B9	2369 C11	3321 C1	3329 D1	3337 B4	3346 E6	3354 B7	3362 C7	3370 A8	3378 E9	3404 B3	6330 B10	7324 E1	9321 B1	9343 C9
1321-B A11	2324 A2	2334 C3	2344 E6	2362 A11	2370 D5	3322 C2	3330 E1	3338 B1	3347 E4	3355 B7	3363 C7	3371 B9	3379 D10	5300 A9	6331 C10	7325 E4	9323 A10	9355 C8
1322_B B11	2325 A4	2335 D4	2345 E4	2363 C9	2371 D5	3323 D1	3331 E2	3339 B2	3348 A8	3356 B8	3364 C7	3372 B9	3380 D10	5301 C9	6332 A8	7327 B8	9329 E10	9356 D7
1323_B D11	2328 A3	2336 D4	2350 A7	2364 C9	2372 C3	3324 D2	3332 E2	3341 C3	3349 E8	3357 C8	3365 D8	3373 B10	3381 A9	6320 C1	6360 A8	7328 C8	9330 B3	9360 C10
1330 B11	2329 B4	2339 D4	2352 A7	2365 C11	2375 A10	3325 D3	3333 E2	3342 A4	3350 B7	3358 C8	3366 D8	3374 C9	3382 A10	6321 C1	7320 C1	7329 E10	9331 C4	9361 C10
2320 C1	2330 A4	2340 A3	2353 E7	2366 A10	2390 A1	3326 D3	3334 A1	3343 D4	3351 B7	3359 C7	3367 D8	3375 C10	3392 B3	6322 E1	7321 C2	7330 B6	9333 C4	9362 C10
2321 E1	2331 B4	2341 A5	2355 E7	2367 A10	2391 C4	3327 D2	3335 A2	3344 A3	3352 B7	3360 C7	3368 A8	3376 C9	3393 C4	6323 E3	7322 D3	8240 A2	9341 A6	9363 C10
2322 E2	2332 B2	2342 A6	2360 B9	2368 C11	3320 C1	3328 D3	3336 A3	3345 A6	3353 B7	3361 C7	3369 A8	3377 E9	3395 C4	6324 E8	7323 E2	9320 A1	9342 B9	9961 A6



&

	100W	70W
3355 , 3363	820R	680R
3354 , 3364	680R	560R
3356 , 3365	68K	47K
3370	2K2	6K8
3369	68K	68K
3368	68K	68K

#: For Phase Inverse only

★★: For Non Phase Inverse only

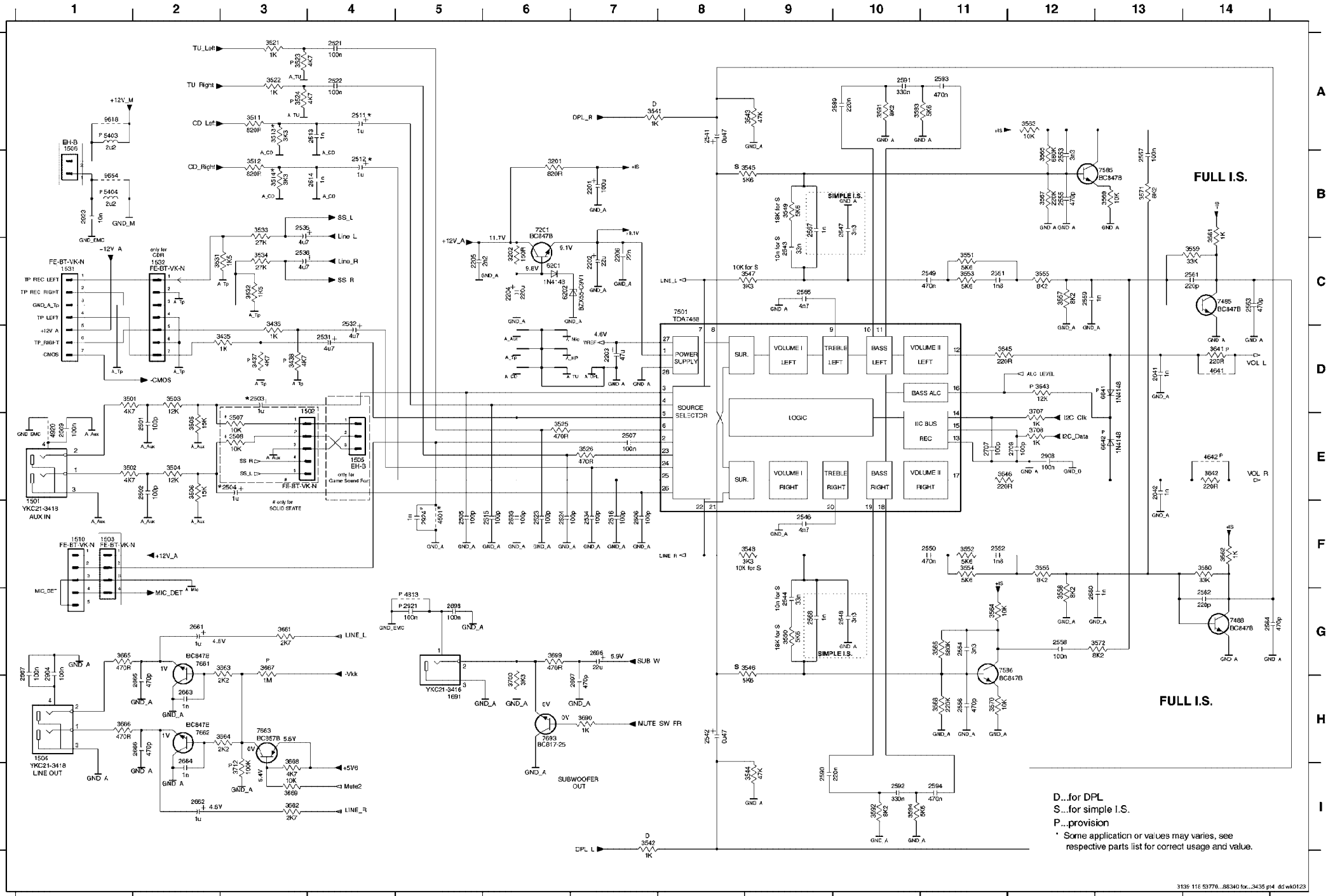
★: PROVISION

@ : Some application or values may varies, see respective parts list for correct value.

Note: Conn A to R is for IC 7326 STK412-020 (150W version)

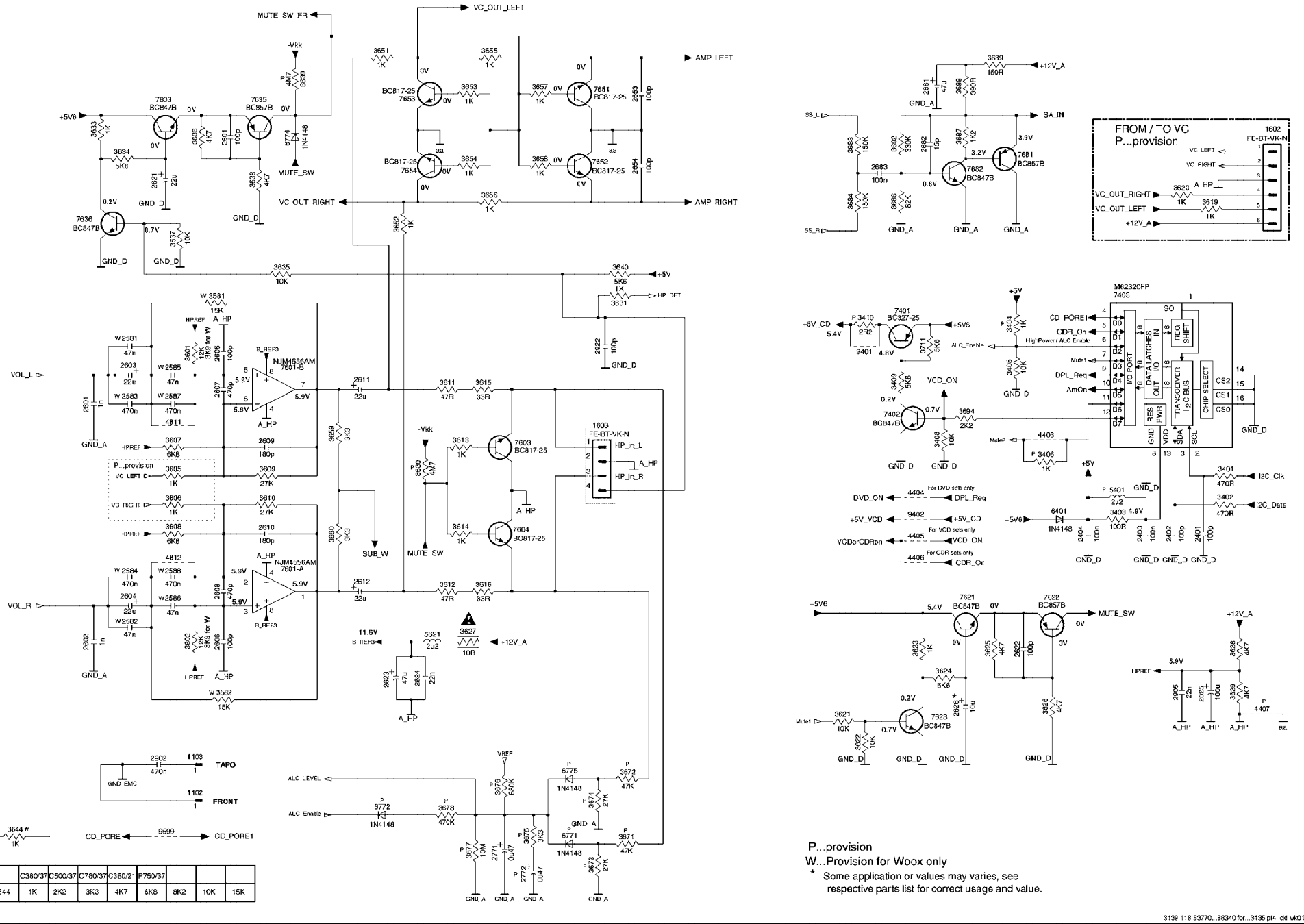
3139 118 53720...for 88130...3434 pt4 dd wk0139

SOURCE SELECTION & SOUND PROCESSING CIRCUIT



1501 E1 3511 A3
1502 E3 3512 B3
1503 F1 3513 A3
1504 H1 3514 B3
1505 E4 3521 A3
1506 A1 3522 A3
1510 F1 3523 A3
1531 C1 3524 A3
1532 C2 3525 E4
1691 H5 3526 E7
2201 B7 3531 C2
2202 C7 3532 C3
2203 D7 3533 B3
2204 C6 3534 C3
2205 C5 3541 A7
2206 C7 3542 I7
2501 E2 3543 A9
2502 E2 3544 I9
2503 D3 3545 B9
2504 E3 3546 G9
2505 F5 3547 C9
2506 F7 3548 F9
2507 E7 3549 B9
2511 A4 3550 G9
2512 B4 3551 C11
2513 A4 3552 F11
2514 B4 3553 C11
2515 F6 3554 F11
2516 F7 3555 C12
2521 A4 3556 F12
2522 A4 3557 C12
2523 F6 3558 G12
2524 F6 3559 C14
2531 D4 3560 F14
2532 C4 3561 B14
2533 F6 3562 F14
2534 F7 3563 A12
2535 B3 3564 G11
2536 C3 3565 B12
2541 A8 3566 G11
2542 H8 3567 B12
2543 C9 3568 H11
2544 G9 3569 B13
2546 F9 3570 H11
2547 B10 3571 B13
2548 G10 3572 G13
2549 C11 3591 A10
2550 F11 3592 I10
2551 C11 3593 A10
2552 F11 3594 I10
2553 B12 3641 D14
2554 G11 3642 E14
2555 B12 3643 D12
2556 H11 3645 D11
2557 B13 3646 E11
2558 G12 3661 G3
2559 C12 3662 I3
2560 G12 3663 G3
2561 C14 3664 H3
2562 G14 3665 G1
2563 C14 3666 H1
2564 G14 3667 G3
2565 C9 3668 I3
2567 B9 3669 I3
2568 G9 3690 H7
2569 A10 3699 G6
2590 I9 3700 H6
2591 A10 3707 E12
2592 I10 3708 E12
2593 A11 3712 I3
2594 I11 4501 F5
2641 D13 4641 D14
2642 E13 4642 E14
2651 G2 4813 G5
2652 I2 4920 E1
2653 H2 5403 A1
2654 I2 5404 B1
2655 H2 6201 C6
2656 H2 6202 C6
2657 G1 6641 D13
2658 E1 6642 E13
2696 G7 7201 B6
2697 H7 7485 C14
2698 G5 7488 G14
2707 E11 7501 C8
2708 E12 7585 B13
2924 G1 7586 G11
2926 E12 7661 G2
2921 G5 7662 H2
2923 B1 7663 H3
2924 F5 7693 H6
3201 B6 9618 A1
3202 C6 9654 B1
3435 D3
3436 D3
3437 D3
3438 D3
3501 D1
3502 E1
3503 D2
3504 E2
3505 E2
3506 E2
3507 E3
3508 E3

HEADPHONE AMPLIFIER & I²C EXPANDER CIRCUIT



	C380/37	C500/37	C760/37	C380/21	P750/37			
3644	1K	2K2	3K3	4K7	6K8	8K2	10K	15K

P...provision
W...Provision for Woox only
* Some application or values may varies, see respective parts list for correct usage and value.

3139 118 53770...88340 for...3435 pt4 dd wk0129

1102 H3
1103 H3
1602 B13
1603 E7
2401 F13
2402 F12
2403 F12
2404 F11
2581 D2
2582 G2
2583 D2
2584 F2
2585 D2
2586 F2
2587 D2
2588 F2
2601 E2
2602 G2
2603 D2
2604 F2
2605 D3
2606 G3
2607 D3
2608 F3
2609 E3
2610 F3
2611 D4
2612 F4
2621 B2
2622 G11
2623 G5
2624 G5
2625 G13
2626 H10
2653 A7
2654 B7
2681 A10
2682 B10
2683 B9
2691 B3
2771 I6
2772 I6
2902 H2
2905 G12
2922 D7
3401 E13
3402 E13
3403 F12
3404 D11
3405 D11
3406 E11
3408 E10
3409 D10
3410 D9
3581 D3
3582 G3
3601 D3
3602 G3
3605 E2
3606 F2
3607 E2
3608 F2
3609 E3
3610 F3
3611 D5
3612 F5
3613 E5
3614 F5
3615 D5
3616 F5
3619 C13
3620 B12
3621 H9
3622 H9
3623 G10
3624 G10
3625 G10
3626 H11
3627 G5
3628 G13
3629 G13
3630 E5
3631 D7
3633 B2
3634 B2
3635 C3
3636 B3
3637 C2
3638 B3
3639 A4
3640 C7
3644 I1
3651 A4
3652 C5
3653 A5
3654 B5
3655 A6
3656 C6
3657 A6
3658 B6
3659 E4
3660 F4
3671 I7
3672 H7
3673 I7
3674 H7
3675 I6
3676 H6
3677 I5
3678 I5
3683 B9
3684 C9
3686 C10
3687 B10
3688 A10
3689 A11
3692 B10
3694 E10
3711 D10
4403 E11
4404 E10
4405 F10
4406 F10
4407 H13
4811 E2
4812 F2
5401 E12
5621 G5
6401 F11
6771 I6
6772 I4
6774 B4
6775 H6
7401 D10
7402 E10
7403 C12
7601-A G3
7601-B D3
7603 E6
7604 F5
7621 F10
7622 F11
7623 H10
7635 B3
7636 C2
7651 A7
7652 B7
7653 B5
7654 B5
7681 B11
7682 B10
7803 B2
9401 D9
9402 F10
9599 I2

FWC399/01(2014) - HEADPHONE AND I2C EXPANDER AF9_SCHEMATIC DIAGRAM_2

DIGITAL OUT & INTERCONNECTION CIRCUIT

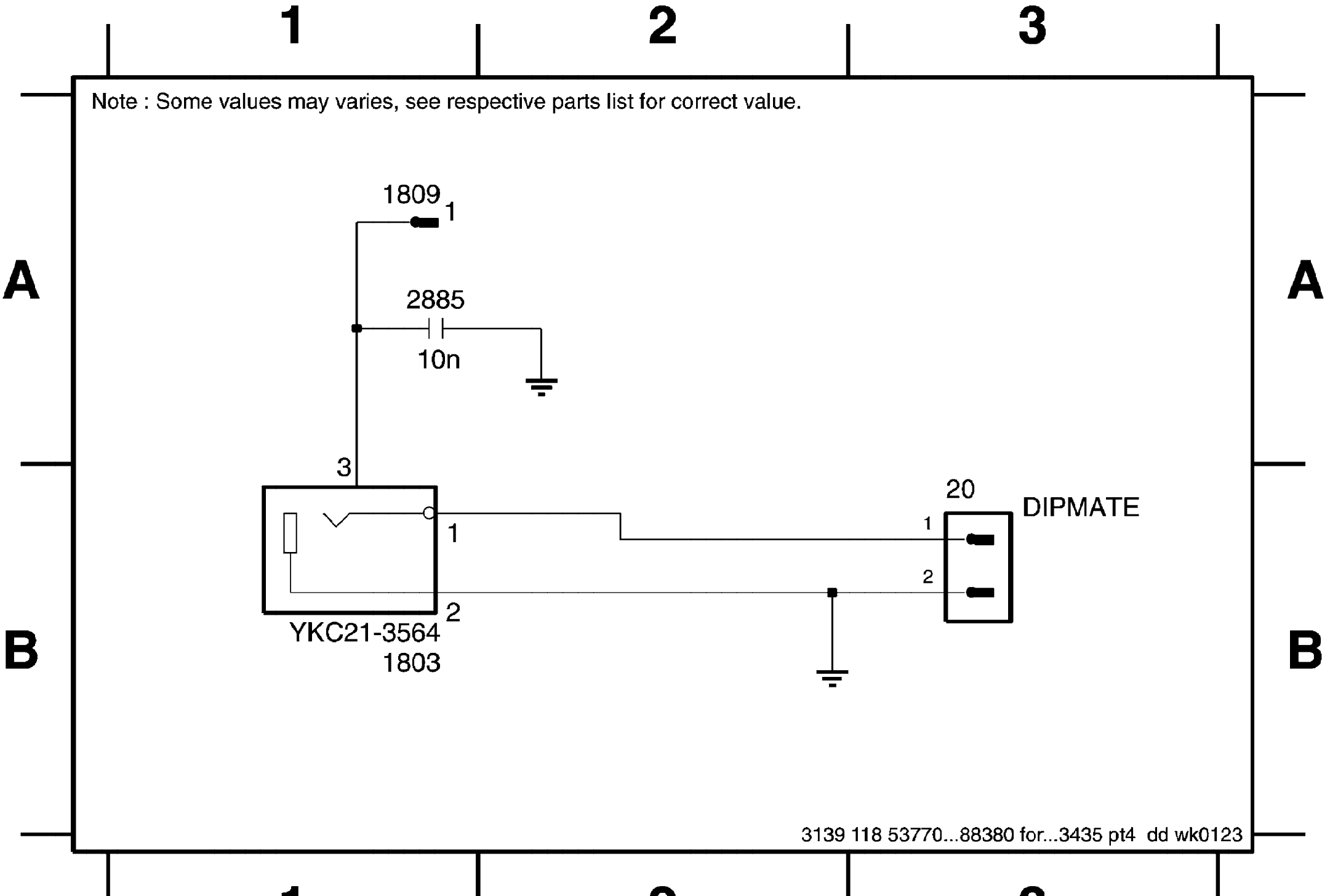
1100 F6 1201 C1 1202 E1 1203 C1 1204 E1 1205 C1 1206 C1 1401 A9 1402 D9 1403 A9 1404 D9 1501 A7 1502 A6 1520 E6 1521 A7 1522 A6 1523 B6 1524 B5 1525 B5 1541 D4 1542 D4 1801 A1 2207 D3 2208 F2 2209 E3 2210 F2 2211 F3 2520 E7 2801 B4 2802 C3 2803 B3 2804 B3 2805 B2 2806 B2 2807 B1 2808 B4 2809 B4 2810 A4 2901 F6 2950 E7 2951 E7 2952 E7 2953 E7 2954 E6 2955 E1 3205 D2 3412 A8 3801 B4 3802 A4 3803 B3 3804 A3 3805 B2 3806 A1 3807 B4 3808 A3 3809 B2 3820 E3 3821 E2 3822 F3 4801 B4 4802 C4 4903 B8 4904 F7 4905 C3 4906 A5 4907 C8 4908 C8 4909 A3 4910 A4 4911 A4 4912 B8 4913 B8 4914 B5 4915 C8 4921 B2 5801 B2 5802 A3 6204 F7 6205 D3 6206 F3 6207 C5 6208 C5 6209 F3 7202 E3 7404 F3 7802 A3 9405 C8 9484 D4 9486 E7 9614 E3 9634 D4 9904 F7

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

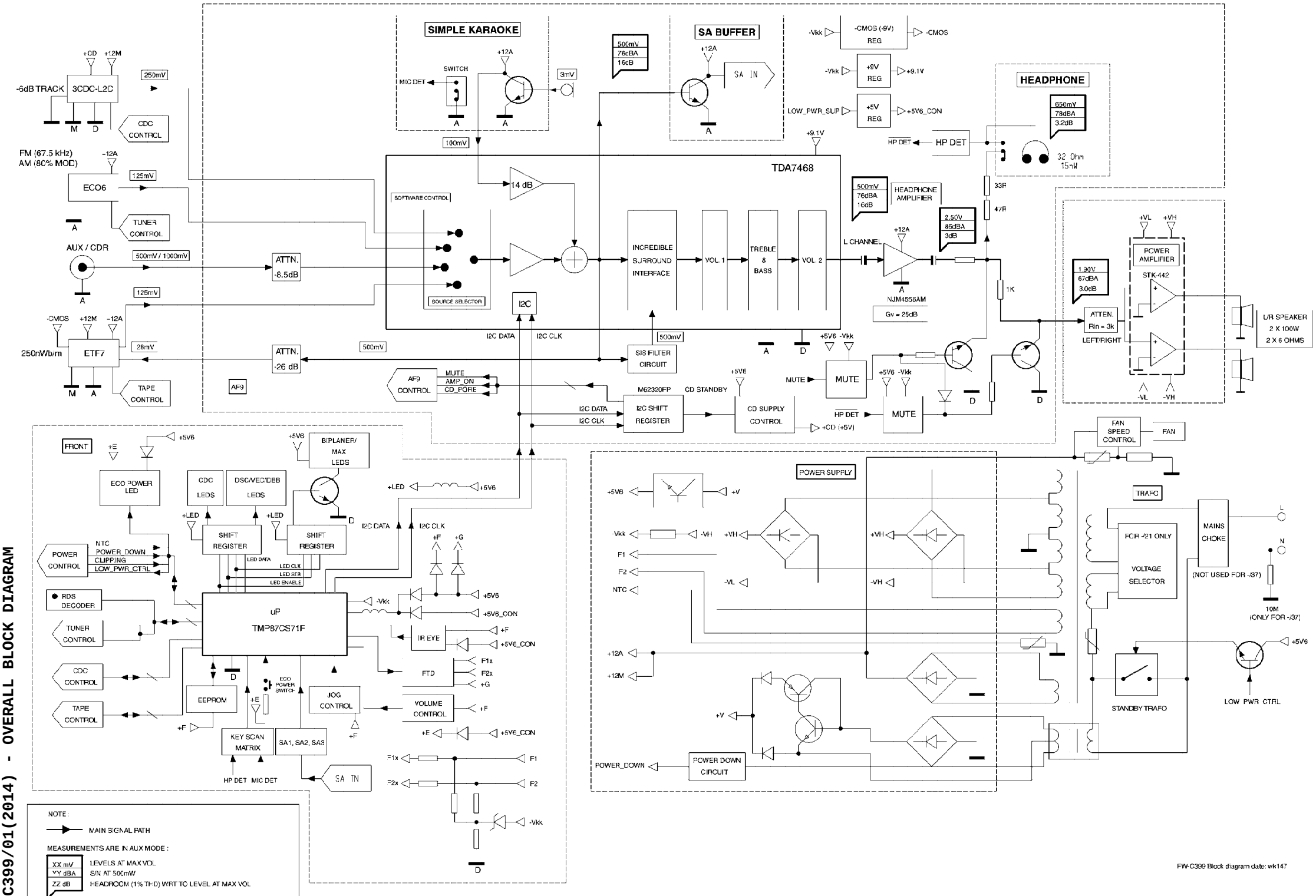
COAX DIGITAL OUT
1801 YKC21-3416
3809 47R
3805 220R
2806 150p
5801 6RG
2804 100n
2807 100n
2805 100n
4921
GND_EMC
3806 75R P
P 4909
P 4910
P 4911
+5V_CD
3804 220R
5802 2u2
3808 22K
3802 22K
2810 47p
GND_D
2.9V
7802 74LVU04D
2803 1u
3801 470R
2801 100n
3807 2K2
3803 560R
2802 1n
P 4906
EH-B 1524
P 4801
2809 100n
2808 100n
GND_D
CD_PORE
For VCD version only
GND_M
4914
1525 FE-BT-VK-N
+12V_M
6207 1N4003
6208 1N4003
+5V_CD
CD_Right
A_CD
CD_Left
1523 FE-BT-VK-N
1521 FE-BT-VK-N
D_Text
1522 FE-BT-VK-N
GND_D
UP_CLK
DQSY
SRDT
GND_D
SHIELD
COAX2
COAX1
GND_D
PORE / DSA_STB
GND_D
SILD
CD_SH_DATA
SICL
CD_SH_CLK
CD_SH_STR
SW_INFO
+12V_M
GND_M
+5V_CD
CD_RIGHT
GND_A
CD LEFT
FROM/TO BOOM
3412 1K
+5V
4.5V
1403 1401 1405 FE-BT-VK-N
NTC
GND_D
I2C_Data
I2C_Clk
GND_D
+5V6_Con
+12V_M
+5V6
-Vkk
F1
F2
4903
P 4907
9405
GND_D
4908
P 4915
DSA_STB
D_Text
P 4912
4913
1 NTC
2 GND_D
3 I2C_DATA
4 I2C_CLK
5 GND_D
6 +5V6 CON
7 +11V_D
8 +5V6
9 -VKK
10 F1
11 F2
12 CD_SH_DATA
13 CD_SH_CLK
14 CD_SH_STR
15 GND D
16 SW_INFO
17 SICL
18 SILD
19 DSA_STE/GND_D
20 UP CLK
21 DQSY
22 SRDT
23 GND_D
FROM/TO FRONT
FE-BT-VK-N 1206 1203 1201 1205
FROM / TO Power Board
AMP LEFT
aa
AMP RIGHT
NTC
Low_Pw_Ctrl
Pw_Dn
Clipping
AmOn
F1
F2
AMP_CS_DC
VCDorCDRon
DVD_ON
For CDR version only
+5V6
4905
+12V_M
CD_PORE
For VCD version only
4802
DSA_STB
GND_D
9484
For Non-VCD version only
-Vkk
-32V
3205 5K6
-10V
-CMOS
6205 BZX79-C10
2207 47u
GND_D GND_D
+5V6 Con
1n 2955*
GND_D
1204 EH-B
1202 EH-B
FROM / TO Power Board
+12V_A
GND_A
+12V_M
GND_M
+5V6
GND_D
+5V_VCD
3821 10R
9.3V
9634 P
7202 MC78L05
IN GND OUT
9614 P
3820 10R
6206 1N4003
2209 47u
6209 BZX79-C6V8
GND_D GND_D
7404 BC817-25
2208 220n
2210 220n
2211 100n
3822 270R
GND_D GND_D GND_D GND_D
Provision only
1541 FE-BT-VK-N
1542 FE-BT-VK-N
FROM / TO DPL Board
AMP_CS_DC
AmOn
DPL_Clk
DPL_Data
D_DPL
DPL_Vol_Clk
DPL_Req
+12V_A
SS_L
A_DPL
SS_R
DPL_R
A_DPL
DPL_L
TU_STEREO
TU_CLK
TU_DATA
TU_ENAB
+12V_A
TU_Right
GND_A
TU_Left
FROM/TO TUNER
1520 FE-BT-VK-N
+12V_A
9486
P 2520
10n
A_TU
47n 2954
470p 2951
470p 2950
100p 2952
470p 2953
Provision only
1404 1402 FE-BT-VK-N
HP_DET
SA_IN
Pw_Dn
Clipping
Low_Pw_Ctrl
MIC_DET
DPL_Vol_Clk
DPL_Clk
DPL_Data
D_DPL
3.5V
8.5V
4.9V
1 TU_STEREO
2 TU_CLK
3 TU DATA
4 TU_ENAE
5 Tu_Gnd
6 HP_DET
7 SA_IN
8 POWER DOWN
9 CLIP
10 LOW PWR CTRL
11 MIC_DET
12 DPL_VOL_CLK
13 DPL_CLK
14 DPL_DATA
15 GND_D
FROM/TO FRONT
1100
2901* 100n
GND_D GND_EMC
9483
aa GND_A
MIC_DET
4904* 9904 P 6204 BZX79-B3V3
GND_D
P Provision
* Some application or values may varies, see respective parts list for correct usage and values
3139 118 53770...88540 for...3435 pt4 dd wk0123

FWC399/01(2014) - DIGITAL OUT AND INTERCONNECTION AF9 SCHEMATIC DIAGRAM 3

20 B3 1803 B1 1809 A1 2885 A1



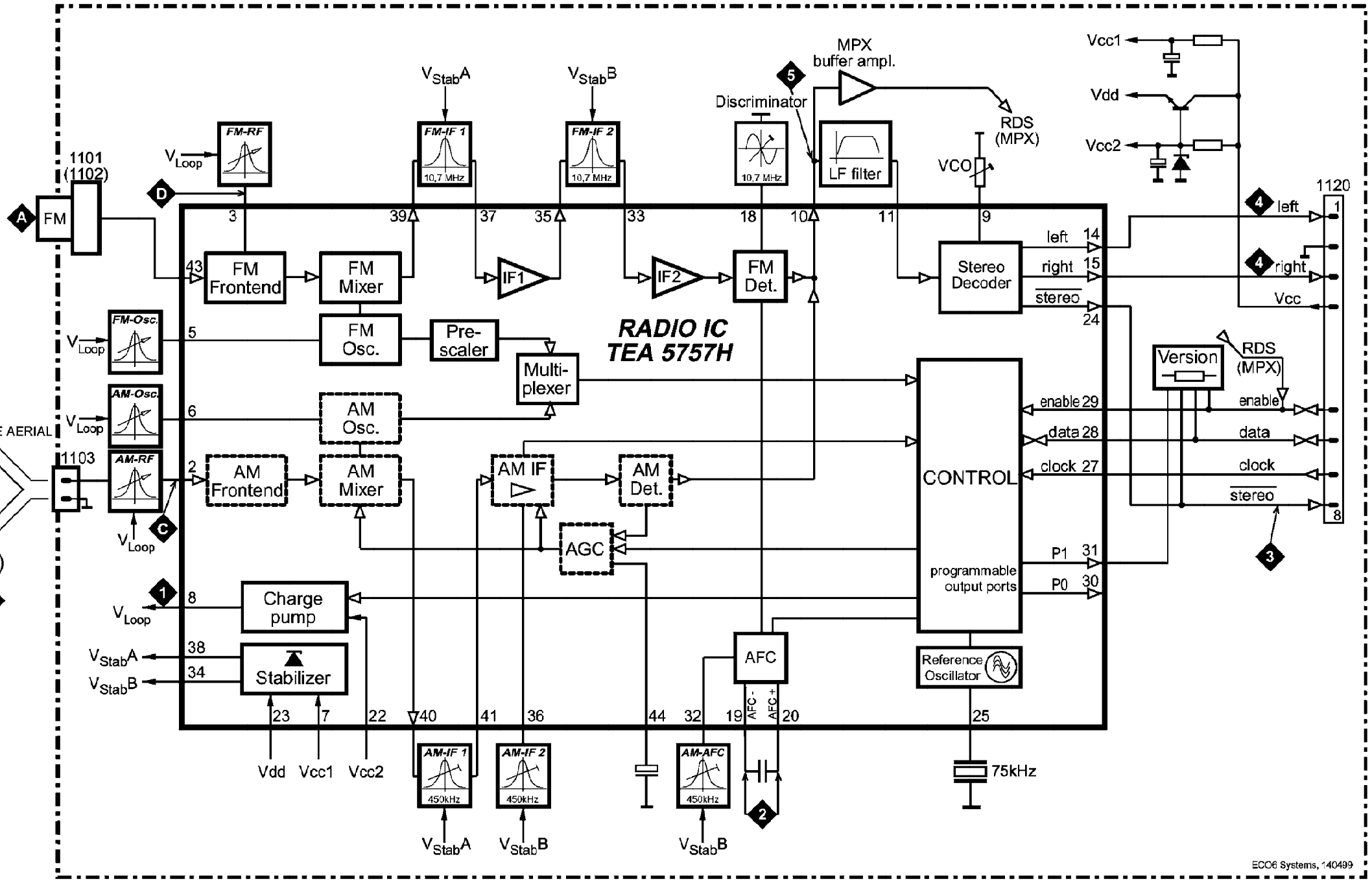
SET BLOCK DIAGRAM



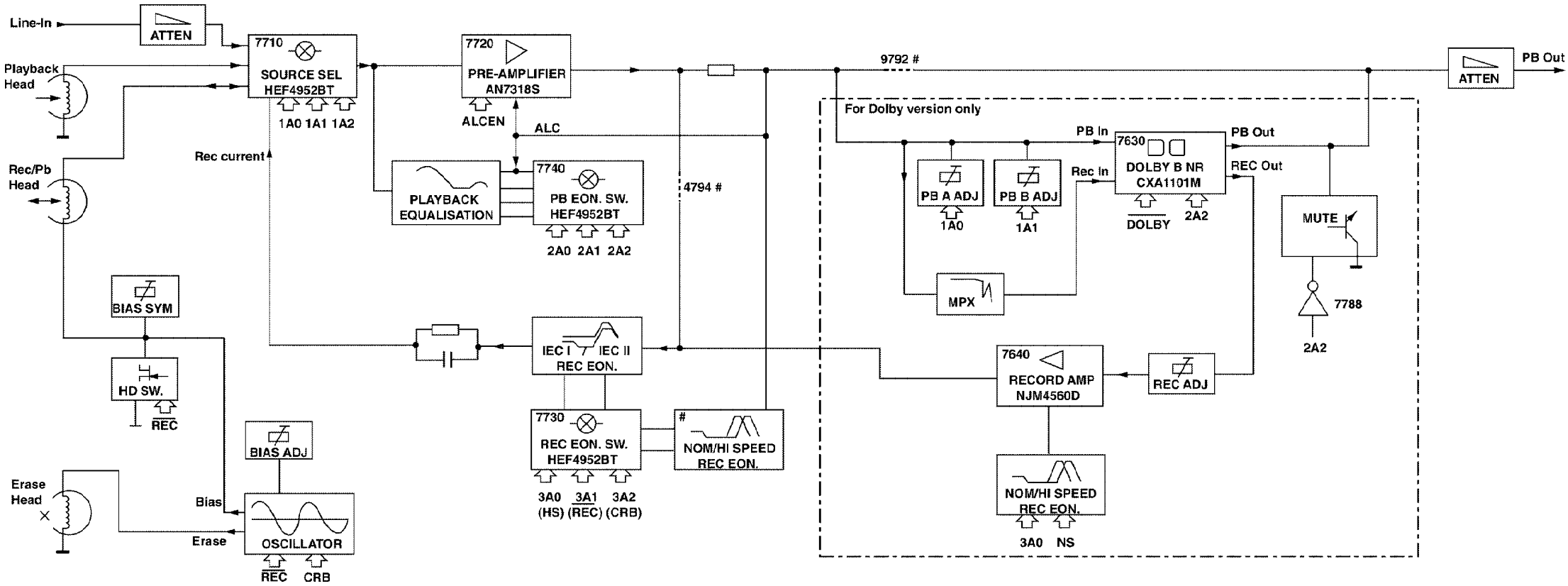
FW-C399 Block diagram date: wk147

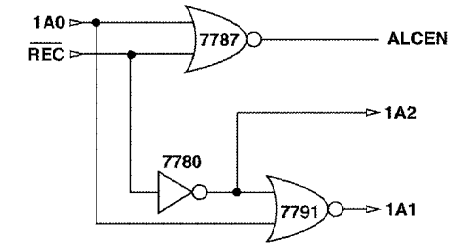
FWC399/01(2014) - OVERALL BLOCK DIAGRAM

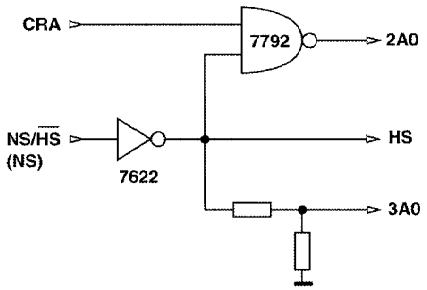
EC06 TUNER (NON-CENELEC) BLOCK DIAGRAM

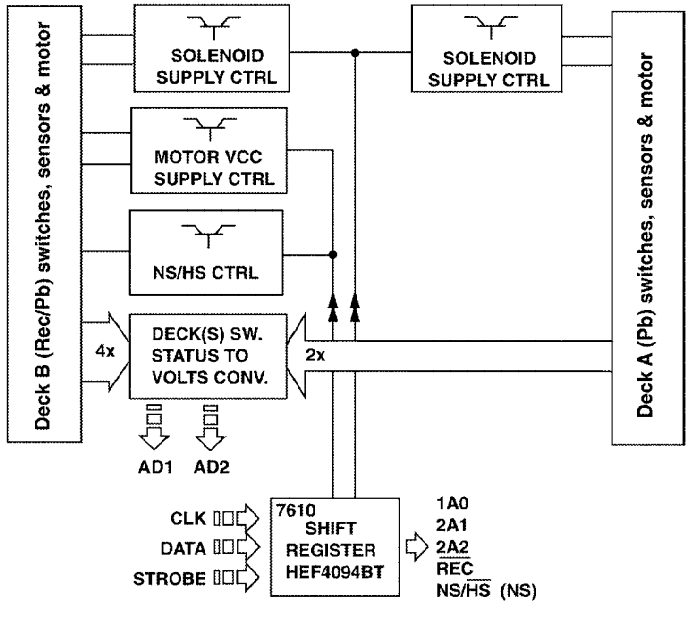


CASSETTE BLOCK DIAGRAM







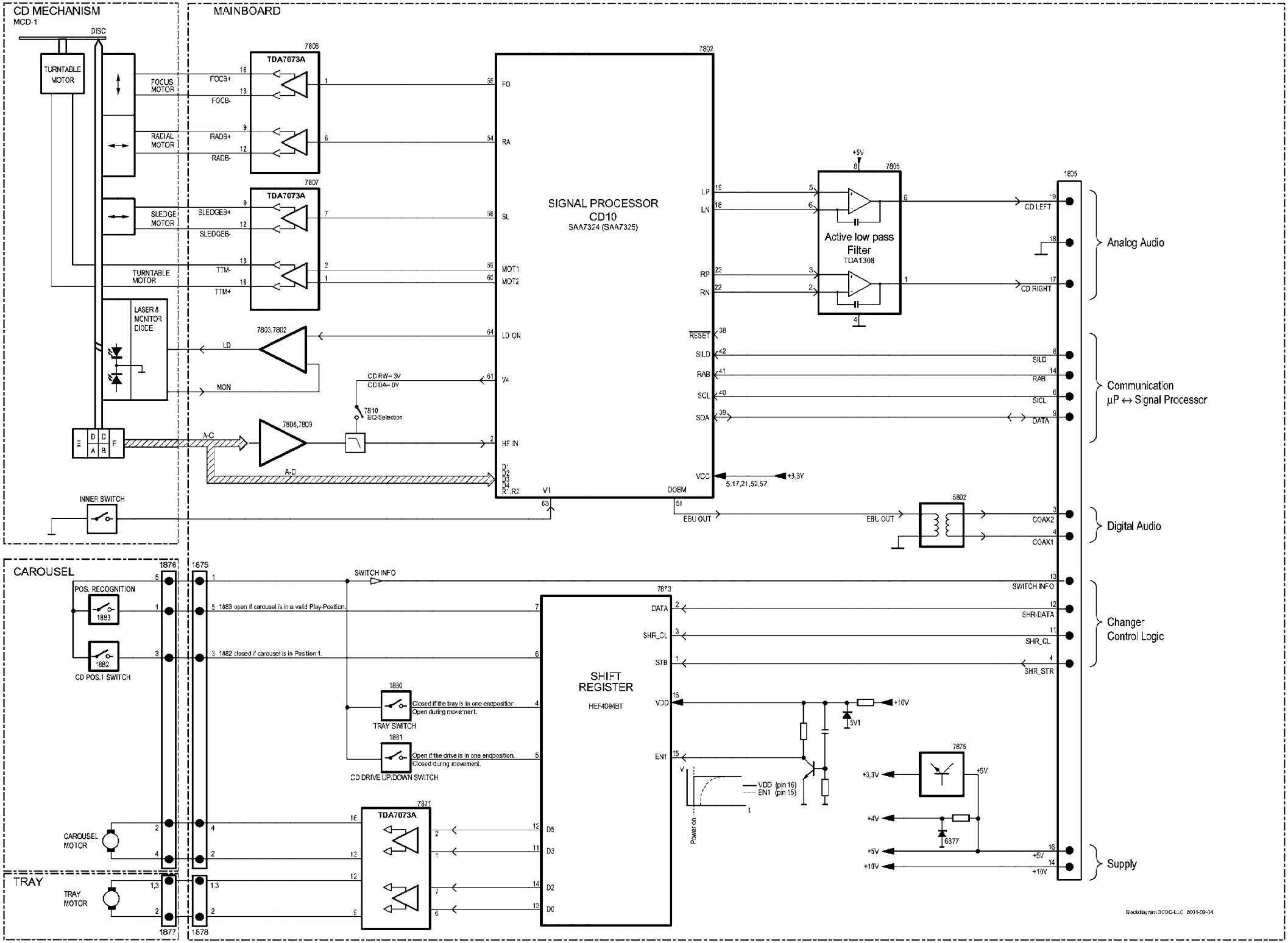


NOTE: # For Non-dolby version only
Only 1 channel is presented.

MicroProcessor Control / Communication lines

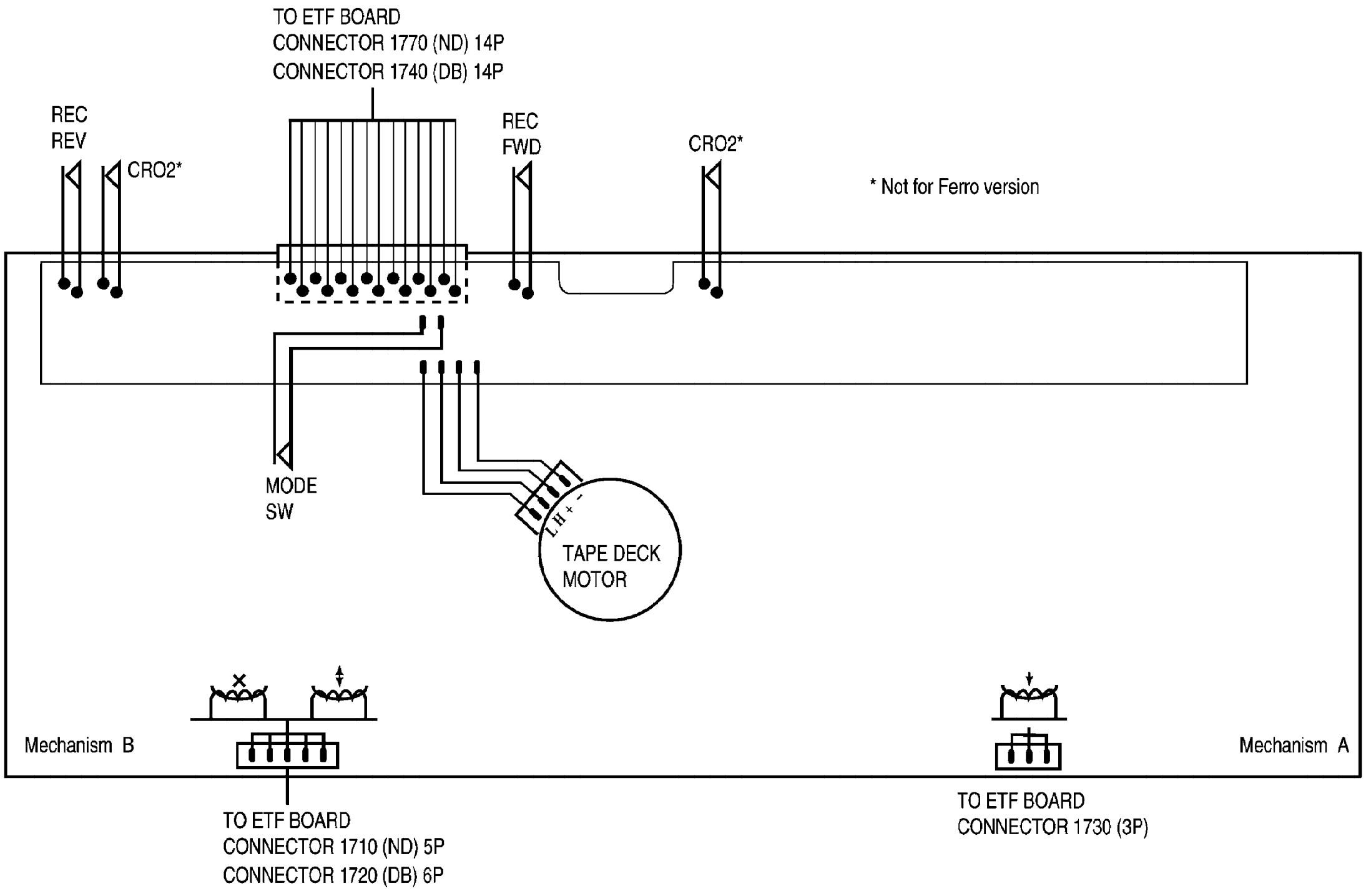
Direct / Indirect Control lines from Shift Registers

BLOCK DIAGRAM 3CDC-LLC-MCD1



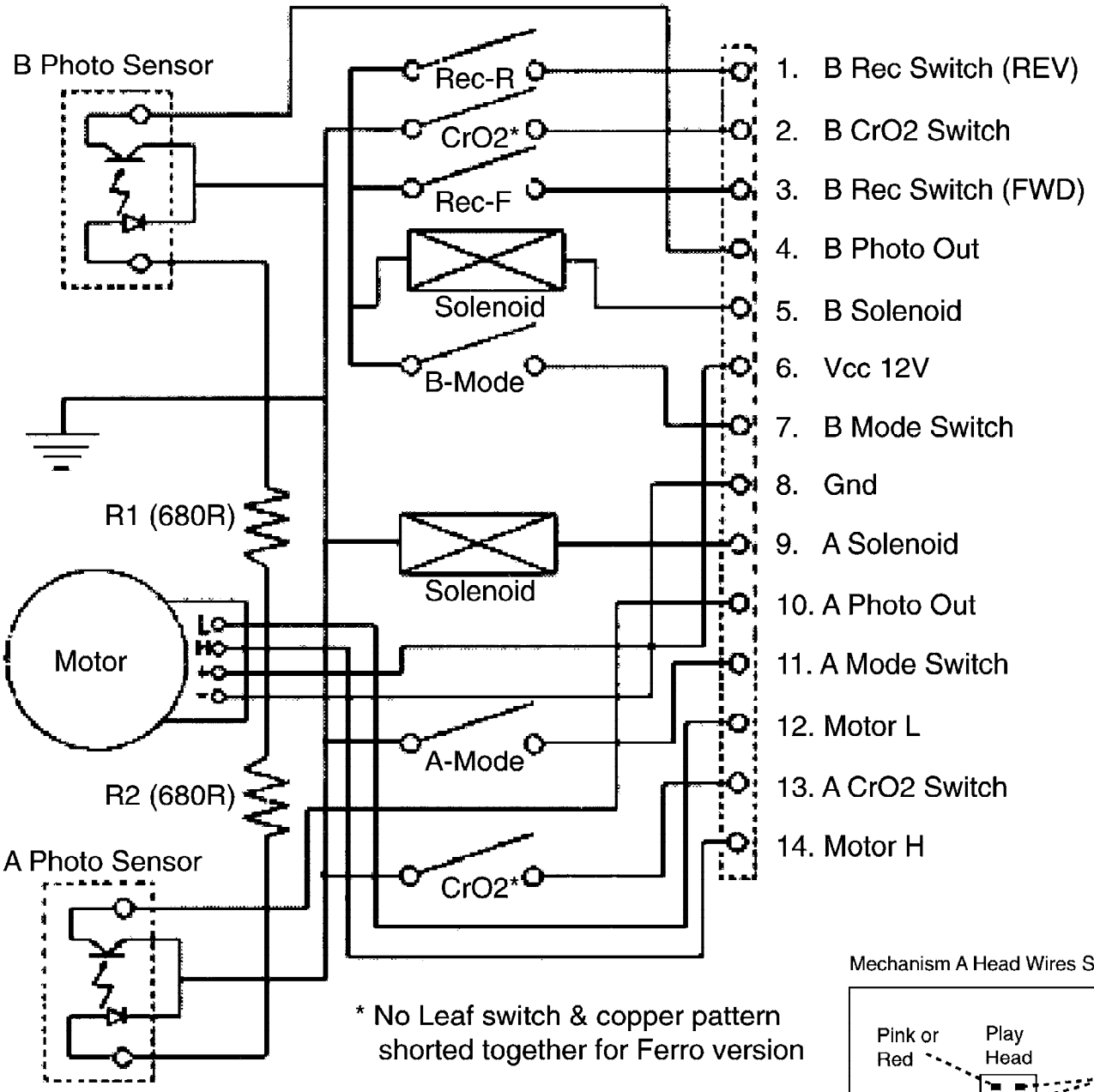
FWC399/01(2014) - CD BLOCK DIAGRAM

Tapedeck wiring (Double deck)



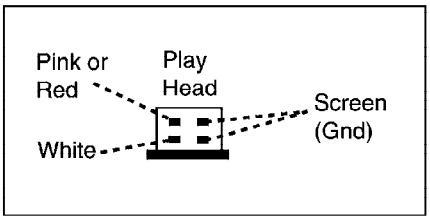
FWC399/01(2014) - TAPE WIRING DIAGRAM

TAPE MECHANISM ELECTRONICS

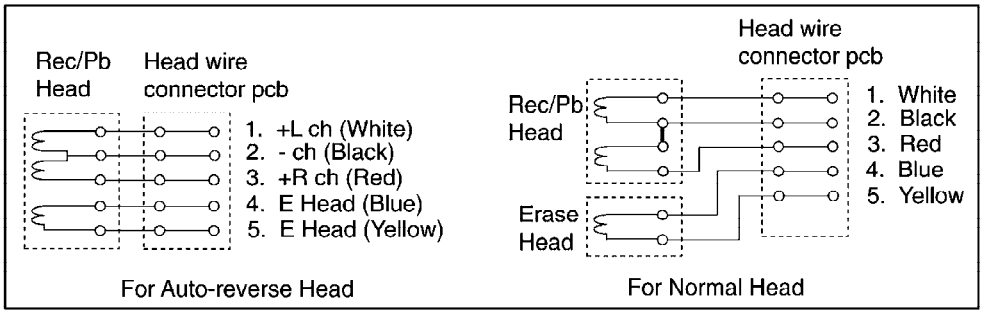


* No Leaf switch & copper pattern shorted together for Ferro version

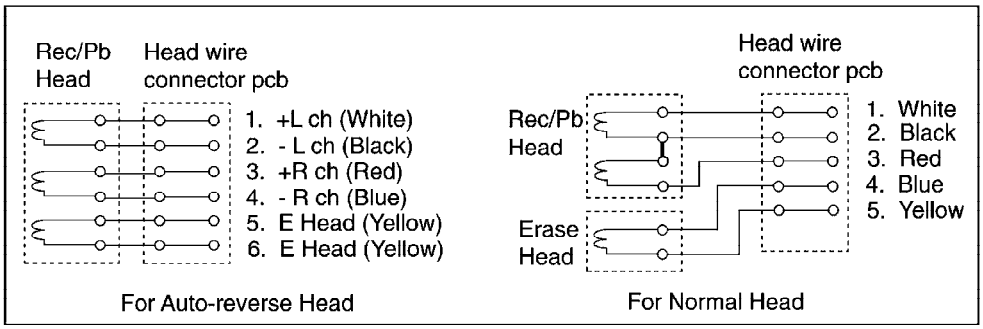
Mechanism A Head Wires Soldering



Mechanism B Head Wires Soldering (Non-Dolby version)



Mechanism B Head Wires Soldering (Dolby B NR version)



Service
Service
Service

Product Service Group CE Audio

Service Information

Already published Service Informations: A02-159 3139 785 30073

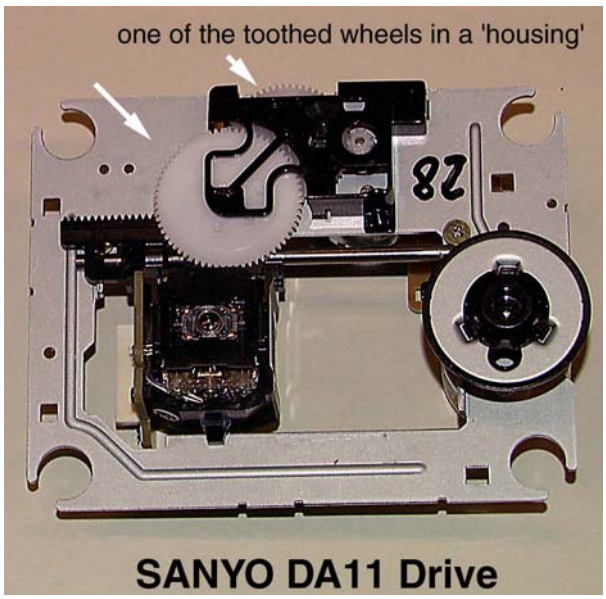
CHANGES DURING PRODUCTION

3CDC MODULE

* From production wk224 onwards a new 3CDC-LLC-DA11 module with Sanyo DA11 Drive is introduced as an alternative module.

  The new module can be recognized by:

  a) the label on the left side of the module
  b) the additional housing over one of the toothed wheels as shown in the picture below



Enclosed is the complete new chapter 10 for the new module.

MMPWR 100W MODULE

* From wk238 onwards (begin with /37 versions) the following changes are make to improve reliability of the Power amplifier.

Delete:	2360, 2363, 3371 and 3374		
Add:	2361	5322 121 42386	100nF 10% 50V
	2364	5322 121 42386	100nF 10% 50V
	3372	4822 053 10478	4R7 5% 1W
	3374	4822 053 10478	4R7 5% 1W
Change:	2362 to	4822 121 43856	4,7nF 10% 50V
	2365 to	4822 121 43856	4,7nF 10% 50V
	7330 to	9322 182 31682	STK442-110i

All components are already provided as provision in the existing schematics & layout drawings.

3CDC-LLC-DA11

(3 Disc Carousel Changer)

Layout stage .3

TABLE OF CONTENTS

Service hints

CAUTION

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
• SWITCH OFF POWER SUPPLY
• ESD PROTECTION
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CD mechanism:

1. Disconnect flexfoil cable from the old CD drive
2. Put a paperclip on the flexfoil to short-circuit the contacts (fig.1)
3. Remove the old CD drive
4. Remove paperclip from the flexfoil and connect it to the new drive
5. Position the new CD drive in its studs
6. Remove solder joint from the Laserunit

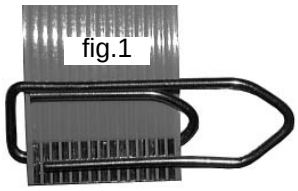
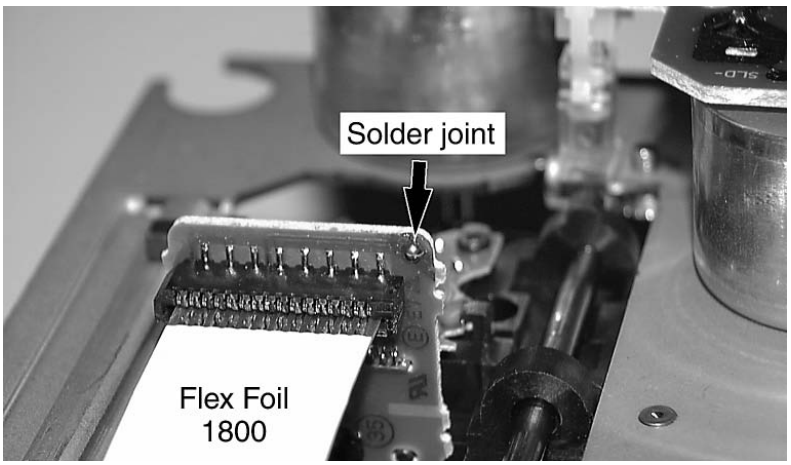


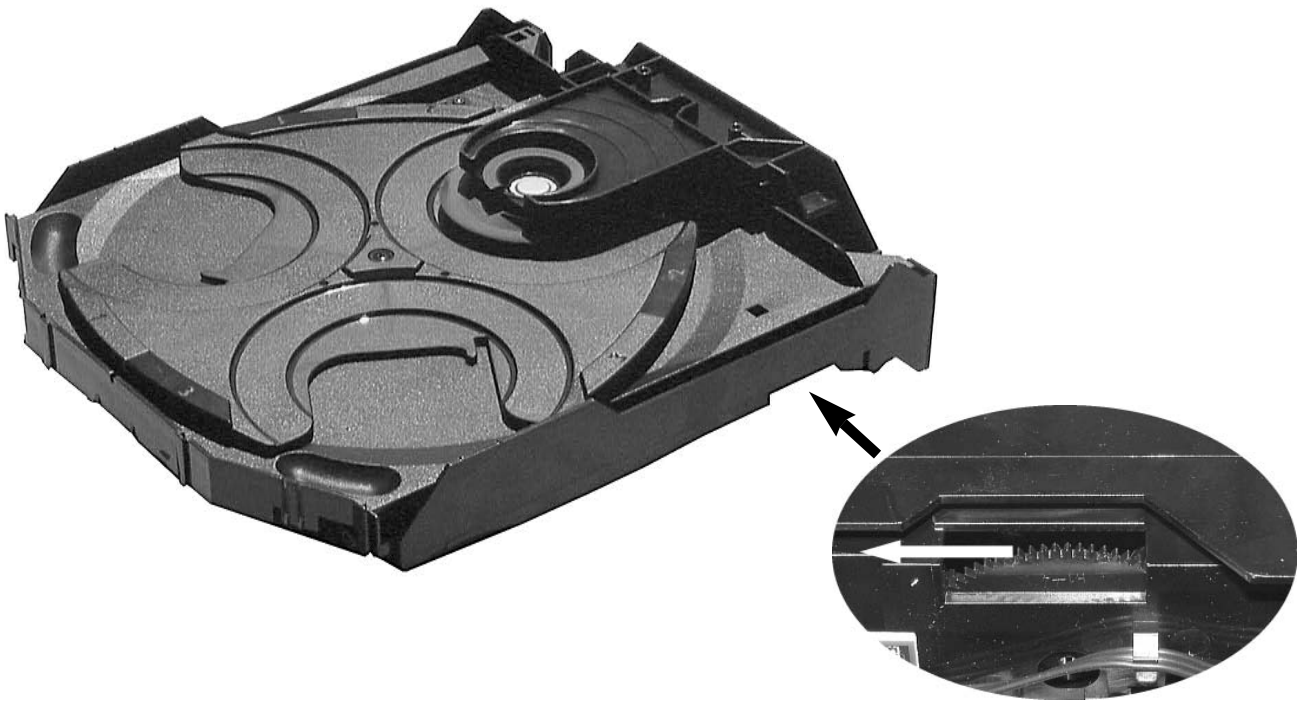
fig.1

Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



Emergency open

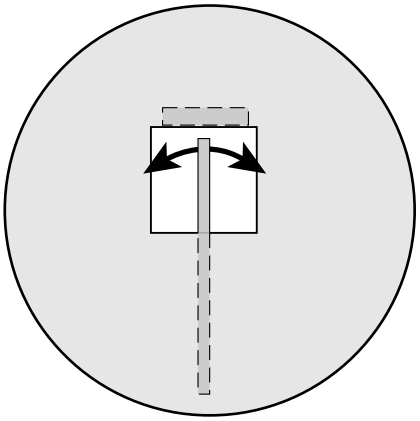
In case of a Supply fault, the tray can be opened manually.
1. Remove the top cover of the set to get access to the Changer Module.
2. Turn gearwheel clockwise (as shown in picture below).



Service hints

Dismantling of Tray

1. Open the tray.
2. Release 2x catch as shown in fig. 2 and Detail A
3. Pull tray out.



Detail A

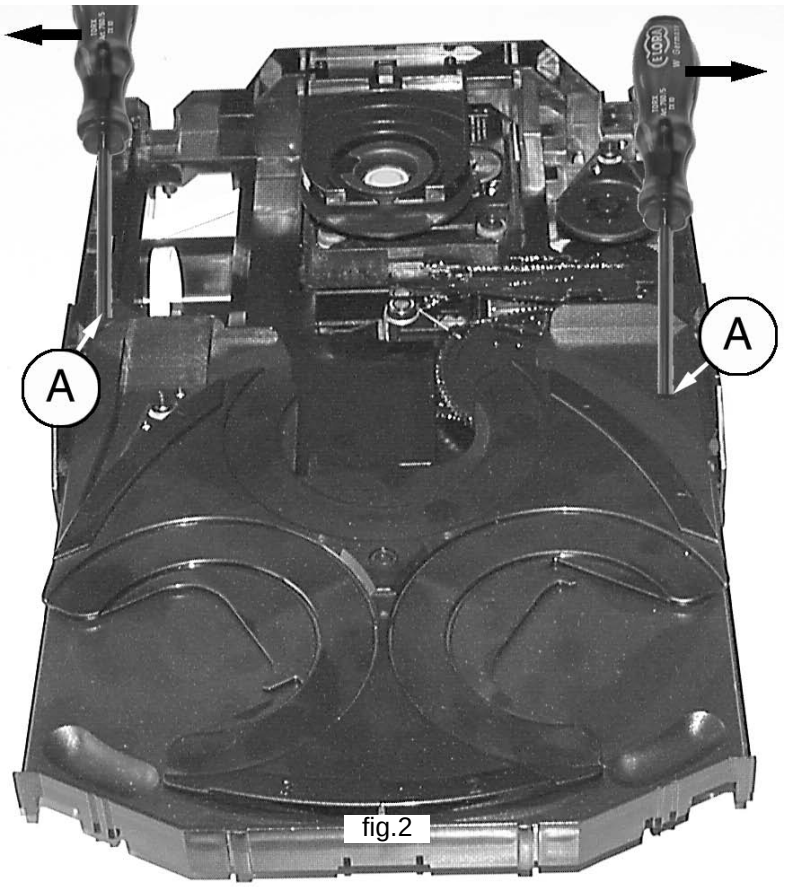
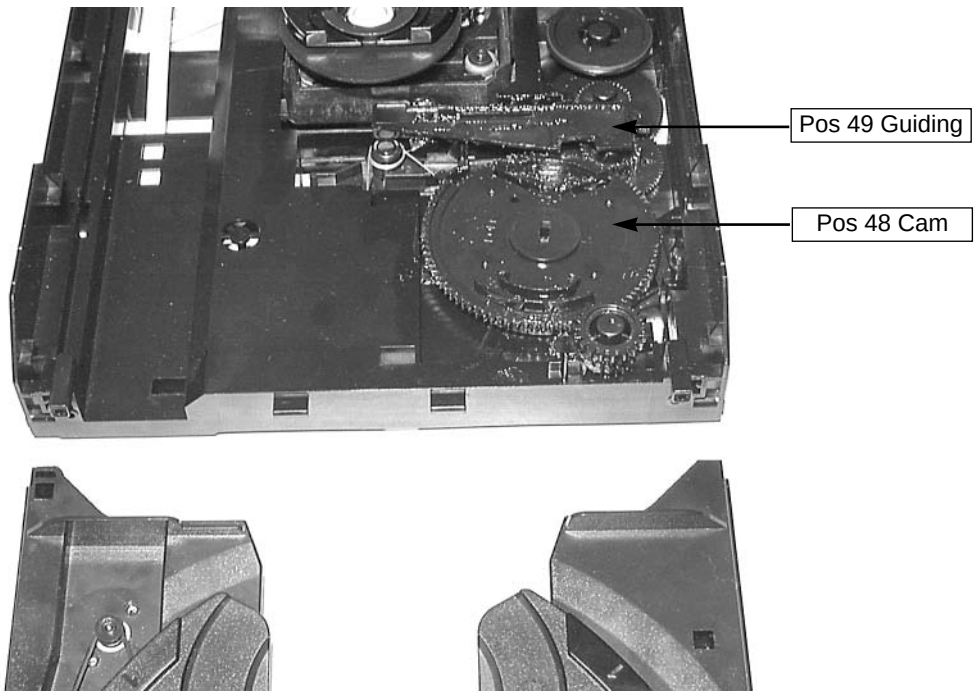


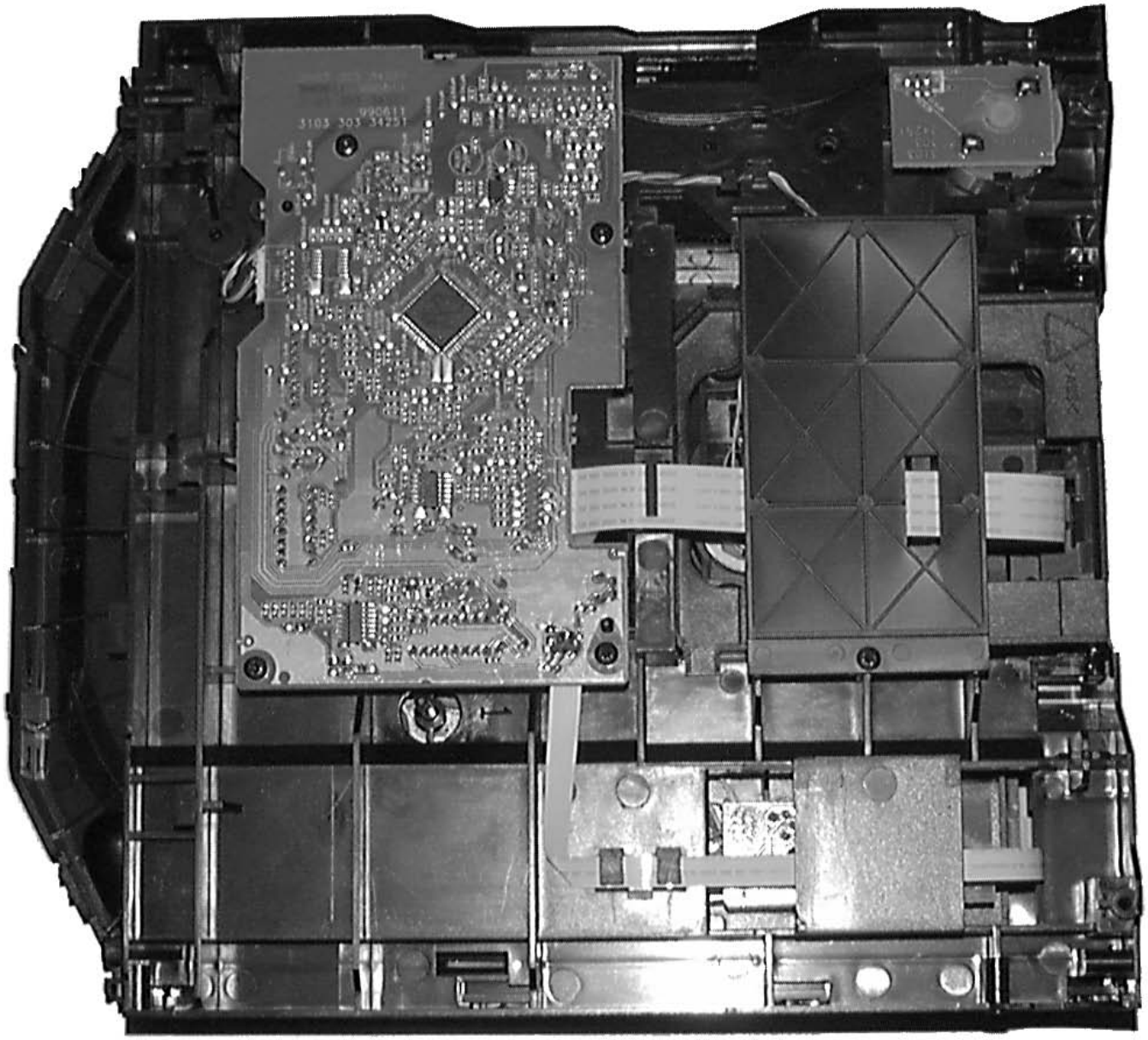
fig.2

Assembling of Tray

1. Turn Cam (pos. 48) clockwise to end position.
2. If necessary - move Guiding (pos. 49) to the right end position.
3. Insert the Tray.

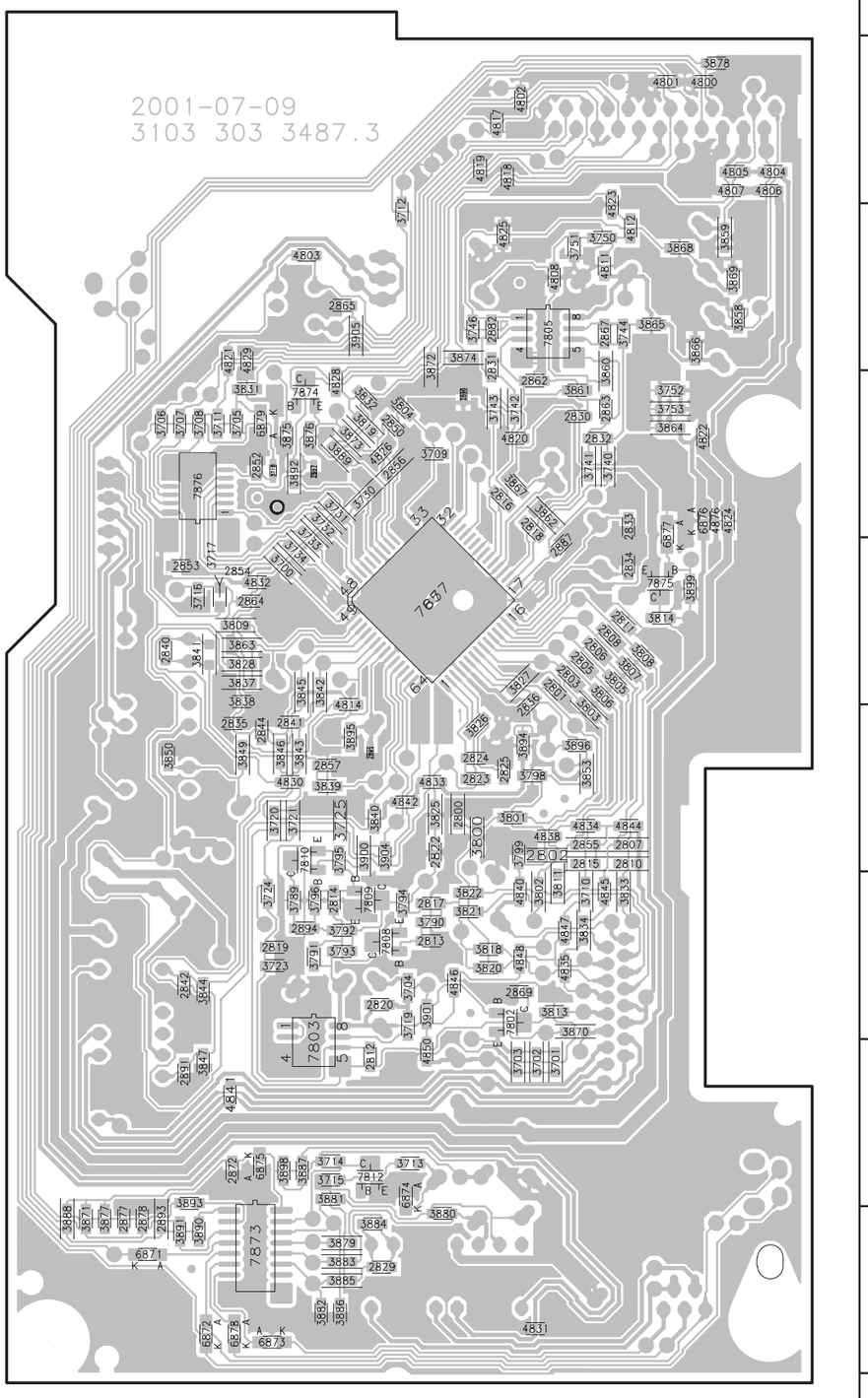


Service Position



10-6

3CDC-LLC Copperside view



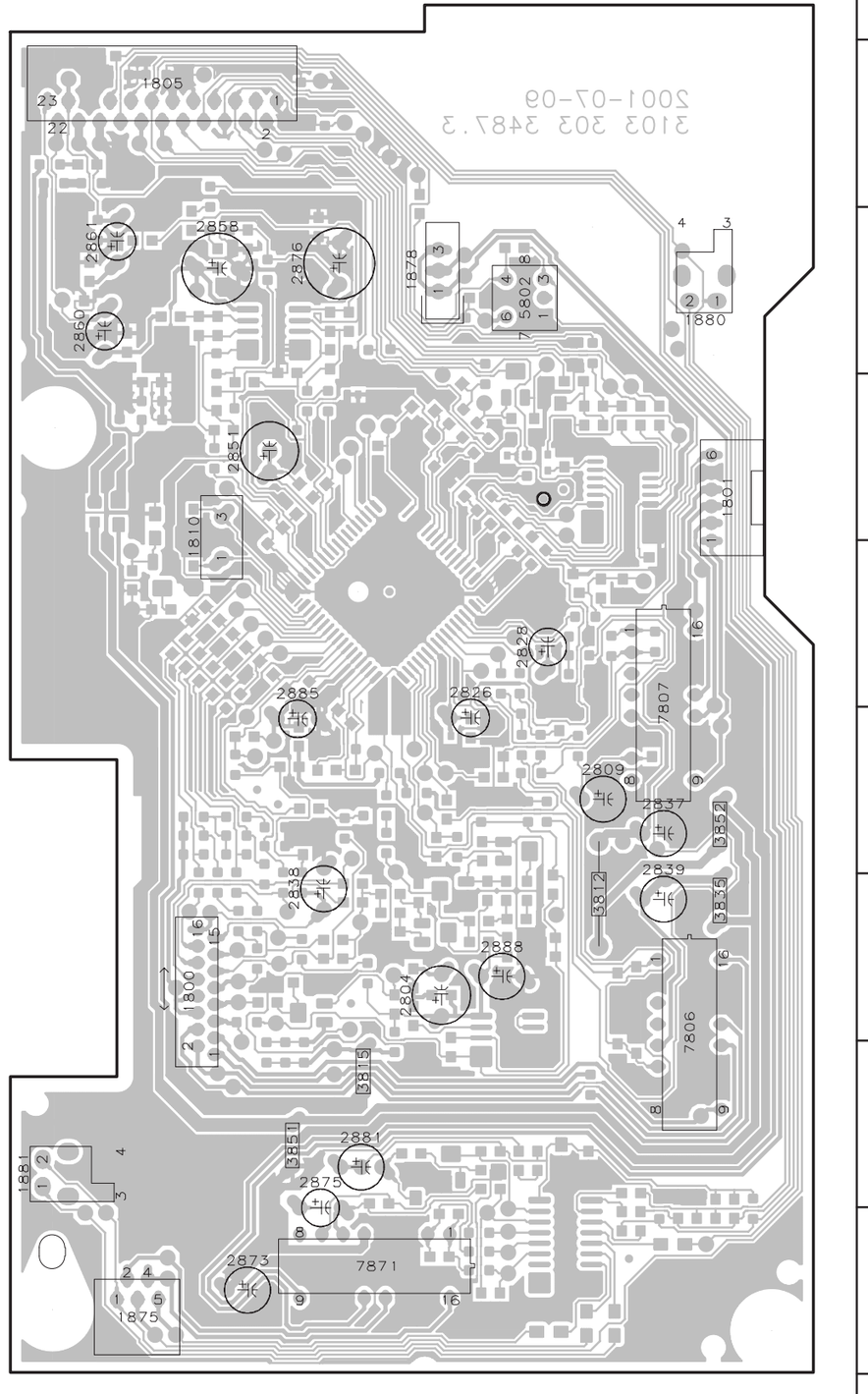
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

3CDC-LIC Layout stage .3 2001-07-25

Mapping

Copperside						Componentside	
2800	E3	3741	C4	3889	C2	1800	F2
2801	D4	3742	C4	3890	H2	1801	C5
2802	E4	3743	C3	3891	H2	1805	A2
2803	D4	3744	B4	3892	C2	1810	C2
2805	D4	3746	B3	3893	G2	1875	H1
2806	D4	3750	B4	3894	E4	1878	B3
2807	E4	3751	B4	3895	E3	1880	B5
2808	D4	3752	C4	3896	E4	1881	G1
2810	E4	3753	C4	3898	G2	2804	F3
2811	D4	3789	F2	3899	D5	2809	E4
2812	G3	3790	F3	3900	E3	2826	D3
2813	F3	3791	F2	3901	F3	2828	D4
2814	F2	3792	F3	3904	E3	2837	E5
2815	E4	3793	F3	3905	B3	2838	F2
2816	C3	3794	F3	4800	A5	2839	E5
2817	F3	3795	E2	4801	A4	2851	C2
2818	C4	3796	F2	4802	A4	2858	B2
2819	F2	3798	E4	4803	B2	2860	B1
2820	F3	3799	E4	4804	A5	2861	B1
2822	E3	3800	E3	4805	A5	2873	H2
2823	E3	3801	E4	4806	A5	2875	G3
2824	E3	3802	F4	4807	A5	2876	B2
2825	E3	3803	D4	4808	B4	2881	G3
2829	H3	3804	C3	4811	B4	2885	D2
2830	C4	3805	D4	4812	B4	2888	F4
2831	B3	3806	D4	4814	D3	3812	F4
2832	C4	3807	D4	4817	A3	3815	G3
2833	C4	3808	D4	4818	A3	3835	F5
2834	D4	3809	D2	4819	A3	3851	G2
2835	E2	3811	F4	4820	C4	3852	E5
2836	D4	3813	F4	4821	B2	5802	B4
2840	D1	3814	D4	4822	C5	7806	F5
2841	E2	3818	F3	4823	A4	7807	D5
2842	F2	3819	C3	4824	C5	7871	H3
2844	E2	3820	F3	4825	B3		
2850	C3	3821	F3	4826	C3		
2852	C2	3822	F3	4828	C2		
2853	D2	3825	E3	4829	B2		
2854	D2	3826	E3	4830	E2		
2855	E4	3827	D4	4831	H4		
2856	C3	3828	D2	4832	D2		
2857	E2	3831	C2	4833	E3		
2862	C4	3832	C3	4834	E4		
2863	C4	3833	F4	4835	F4		
2864	D2	3834	F4	4838	E4		
2865	B3	3837	D2	4840	F4		
2867	B4	3838	D2	4841	G2		
2869	F4	3839	E2	4842	E3		
2872	G2	3840	E3	4844	E4		
2877	H1	3841	D2	4845	F4		
2878	H1	3842	D2	4846	F3		
2882	B3	3843	E2	4847	F4		
2887	C4	3844	F2	4848	F4		
2891	G2	3845	D2	4850	G3		
2893	H1	3846	E2	4876	C5		
2894	F2	3847	G2	6871	H1		
2895	E3	3849	E2	6872	H2		
2896	C3	3850	E1	6873	H2		
2897	C2	3853	E4	6874	G3		
3700	D2	3858	B5	6875	G2		
3701	G4	3859	B5	6876	C5		
3702	G4	3860	B4	6877	C4		
3703	G4	3861	C4	6878	H2		
3704	F3	3862	C4	6879	C2		
3705	C2	3863	D2	7802	F4		
3706	C1	3864	C4	7803	F2		
3707	C2	3865	B4	7805	B4		
3708	C2	3866	B5	7808	F3		
3709	C3	3867	C4	7809	F3		
3710	F4	3868	B5	7810	E2		
3711	C2	3869	B5	7812	G3		
3712	A3	3870	F4	7873	H2		
3713	G3	3871	H1	7874	C2		
3714	G2	3872	B3	7875	D4		
3715	G2	3873	C3	7876	C2		
3716	D2	3874	B3	7877	D3		
3717	D2	3875	C2				
3718	C2	3876	C2				
3719	F3	3877	H1				
3720	E2	3878	A5				
3721	E2	3879	H3				
3723	F2	3880	G3				
3724	F2	3881	G2				
3725	E2	3882	H2				
3730	C3	3883	H3				
3731	C2	3884	H3				
3732	C2	3885	H3				
3733	C2	3886	H2				
3734	D2	3887	G2				
3740	C4	3888	H1				

3CDC-LLC Componentside view

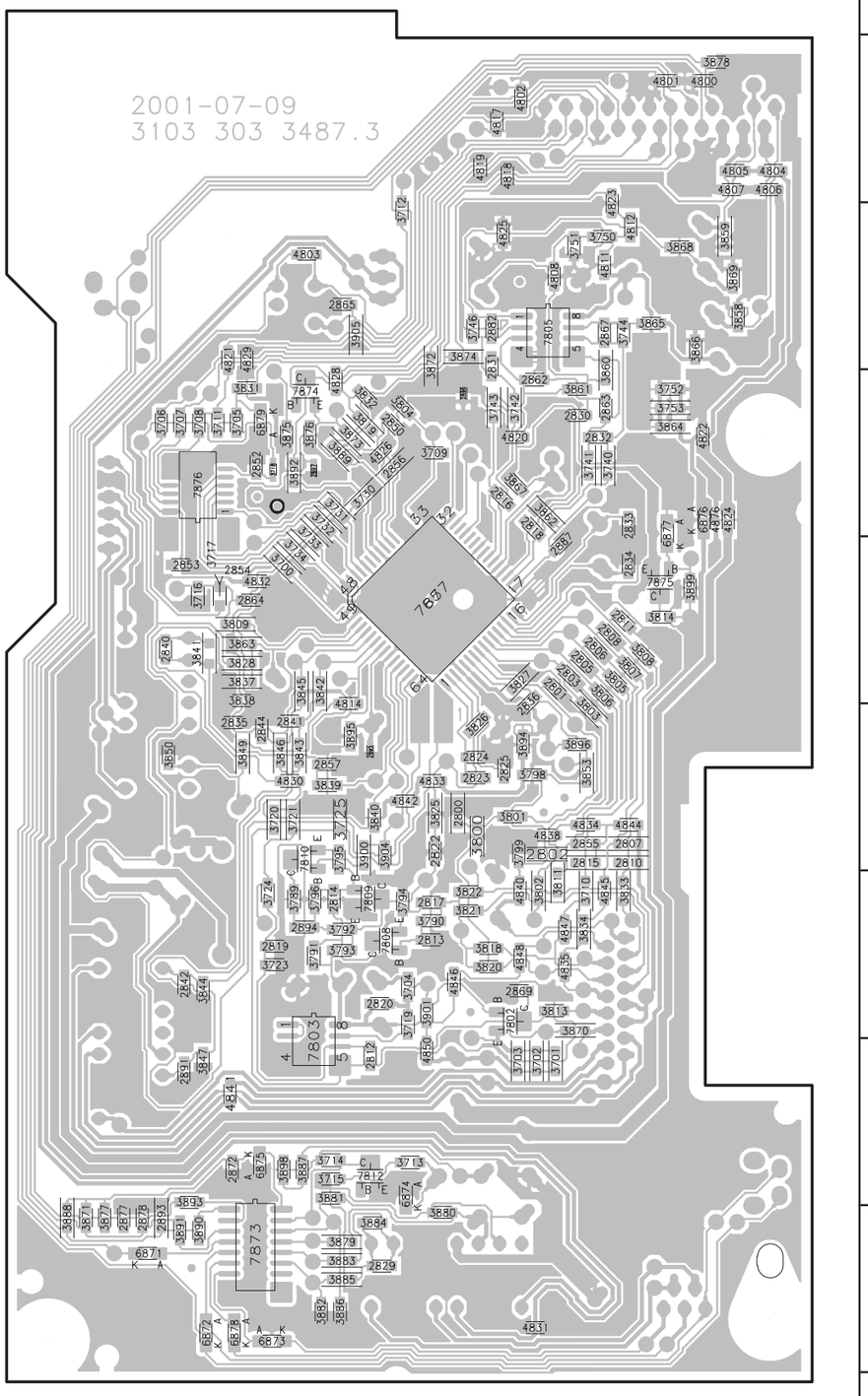


This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

3CDC-LLC Layout stage .3 2001-07-25

10-8

3CDC-LLC Copperside view



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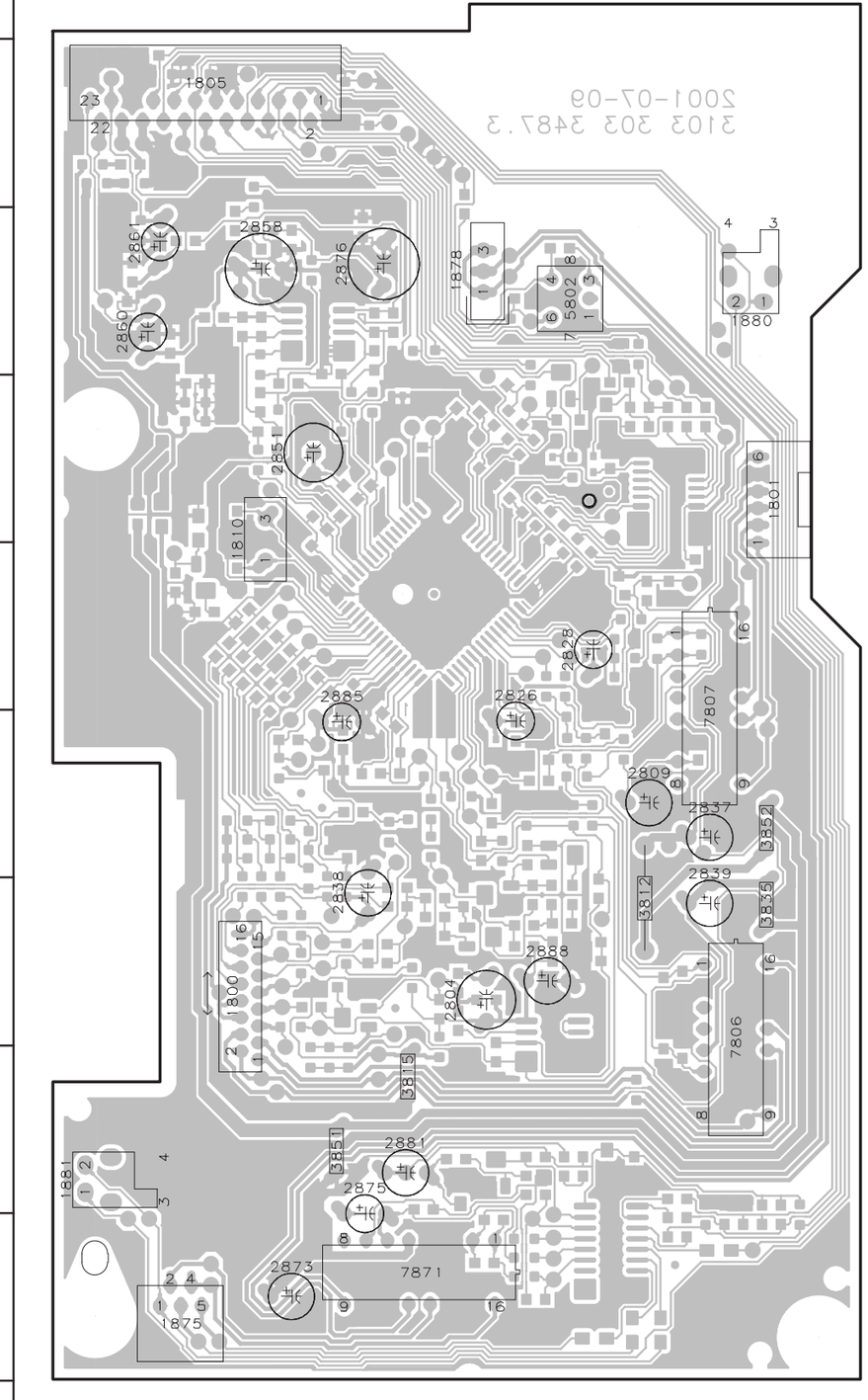
see schematic diagram respectively partslist.

3CDC-LIC Layout stage .3 2001-07-25

Mapping

Copperside						Componentside	
2800	E3	3741	C4	3889	C2	1800	F2
2801	D4	3742	C4	3890	H2	1801	C5
2802	E4	3743	C3	3891	H2	1805	A2
2803	D4	3744	B4	3892	C2	1810	C2
2805	D4	3746	B3	3893	G2	1875	H1
2806	D4	3750	B4	3894	E4	1878	B3
2807	E4	3751	B4	3895	E3	1880	B5
2808	D4	3752	C4	3896	E4	1881	G1
2810	E4	3753	C4	3898	G2	2804	F3
2811	D4	3789	F2	3899	D5	2809	E4
2812	G3	3790	F3	3900	E3	2826	D3
2813	F3	3791	F2	3901	F3	2828	D4
2814	F2	3792	F3	3904	E3	2837	E5
2815	E4	3793	F3	3905	B3	2838	F2
2816	C3	3794	F3	4800	A5	2839	E5
2817	F3	3795	E2	4801	A4	2851	C2
2818	C4	3796	F2	4802	A4	2858	B2
2819	F2	3798	E4	4803	B2	2860	B1
2820	F3	3799	E4	4804	A5	2861	B1
2822	E3	3800	E3	4805	A5	2873	H2
2823	E3	3801	E4	4806	A5	2875	G3
2824	E3	3802	F4	4807	A5	2876	B2
2825	E3	3803	D4	4808	B4	2881	G3
2829	H3	3804	C3	4811	B4	2885	D2
2830	C4	3805	D4	4812	B4	2888	F4
2831	B3	3806	D4	4814	D3	3812	F4
2832	C4	3807	D4	4817	A3	3815	G3
2833	C4	3808	D4	4818	A3	3835	F5
2834	D4	3809	D2	4819	A3	3851	G2
2835	E2	3811	F4	4820	C4	3852	E5
2836	D4	3813	F4	4821	B2	5802	B4
2840	D1	3814	D4	4822	C5	7806	F5
2841	E2	3818	F3	4823	A4	7807	D5
2842	F2	3819	C3	4824	C5	7871	H3
2844	E2	3820	F3	4825	B3		
2850	C3	3821	F3	4826	C3		
2852	C2	3822	F3	4828	C2		
2853	D2	3825	E3	4829	B2		
2854	D2	3826	E3	4830	E2		
2855	E4	3827	D4	4831	H4		
2856	C3	3828	D2	4832	D2		
2857	E2	3831	C2	4833	E3		
2862	C4	3832	C3	4834	E4		
2863	C4	3833	F4	4835	F4		
2864	D2	3834	F4	4838	E4		
2865	B3	3837	D2	4840	F4		
2867	B4	3838	D2	4841	G2		
2869	F4	3839	E2	4842	E3		
2872	G2	3840	E3	4844	E4		
2877	H1	3841	D2	4845	F4		
2878	H1	3842	D2	4846	F3		
2882	B3	3843	E2	4847	F4		
2887	C4	3844	F2	4848	F4		
2891	G2	3845	D2	4850	G3		
2893	H1	3846	E2	4876	C5		
2894	F2	3847	G2	6871	H1		
2895	E3	3849	E2	6872	H2		
2896	C3	3850	E1	6873	H2		
2897	C2	3853	E4	6874	G3		
3700	D2	3858	B5	6875	G2		
3701	G4	3859	B5	6876	C5		
3702	G4	3860	B4	6877	C4		
3703	G4	3861	C4	6878	H2		
3704	F3	3862	C4	6879	C2		
3705	C2	3863	D2	7802	F4		
3706	C1	3864	C4	7803	F2		
3707	C2	3865	B4	7805	B4		
3708	C2	3866	B5	7808	F3		
3709	C3	3867	C4	7809	F3		
3710	F4	3868	B5	7810	E2		
3711	C2	3869	B5	7812	G3		
3712	A3	3870	F4	7873	H2		
3713	G3	3871	H1	7874	C2		
3714	G2	3872	B3	7875	D4		
3715	G2	3873	C3	7876	C2		
3716	D2	3874	B3	7877	D3		
3717	D2	3875	C2				
3718	C2	3876	C2				
3719	F3	3877	H1				
3720	E2	3878	A5				
3721	E2	3879	H3				
3723	F2	3880	G3				
3724	F2	3881	G2				
3725	E2	3882	H2				
3730	C3	3883	H3				
3731	C2	3884	H3				
3732	C2	3885	H3				
3733	C2	3886	H2				
3734	D2	3887	G2				
3740	C4	3888	H1				

3CDC-LLC Componentside view



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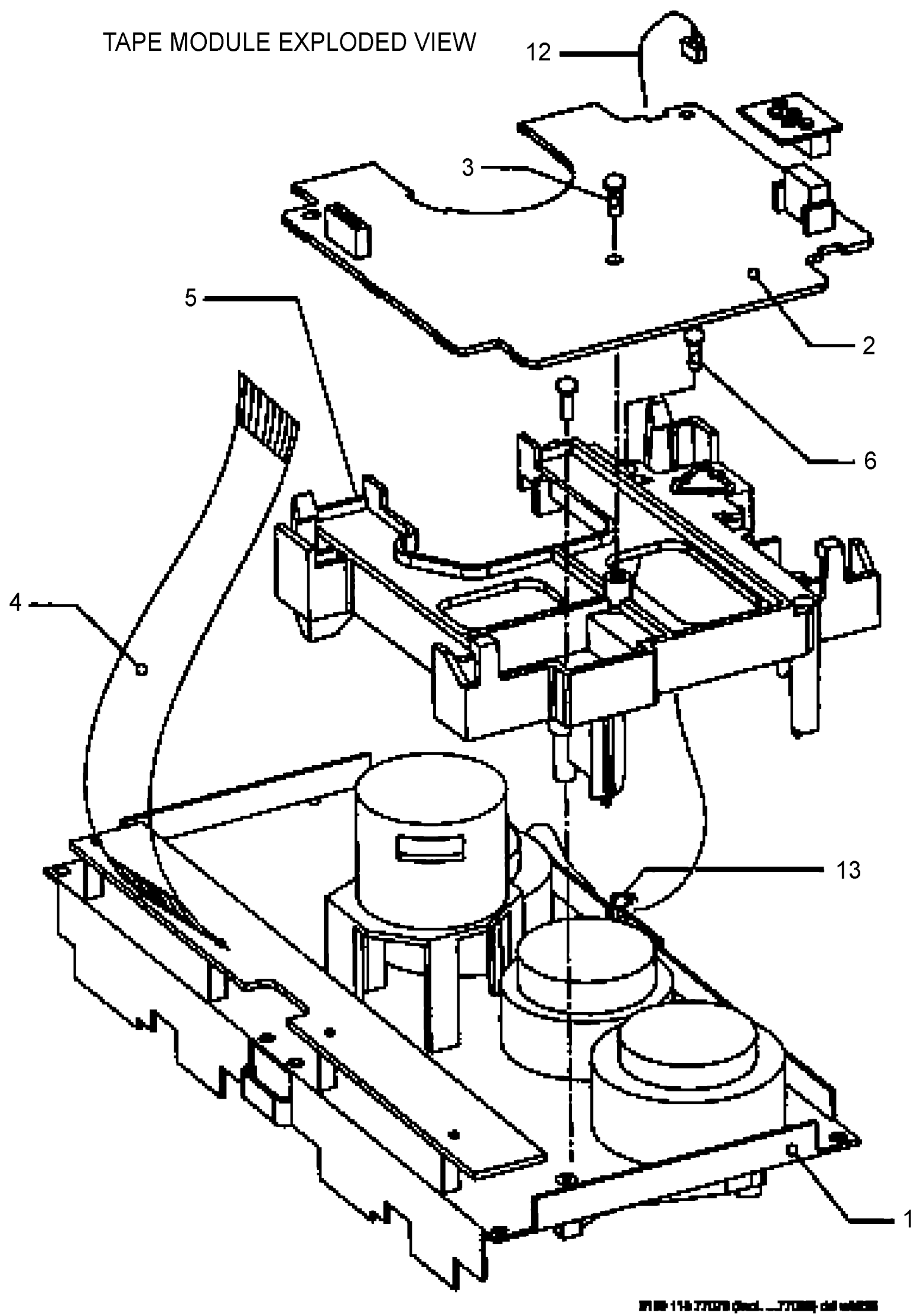
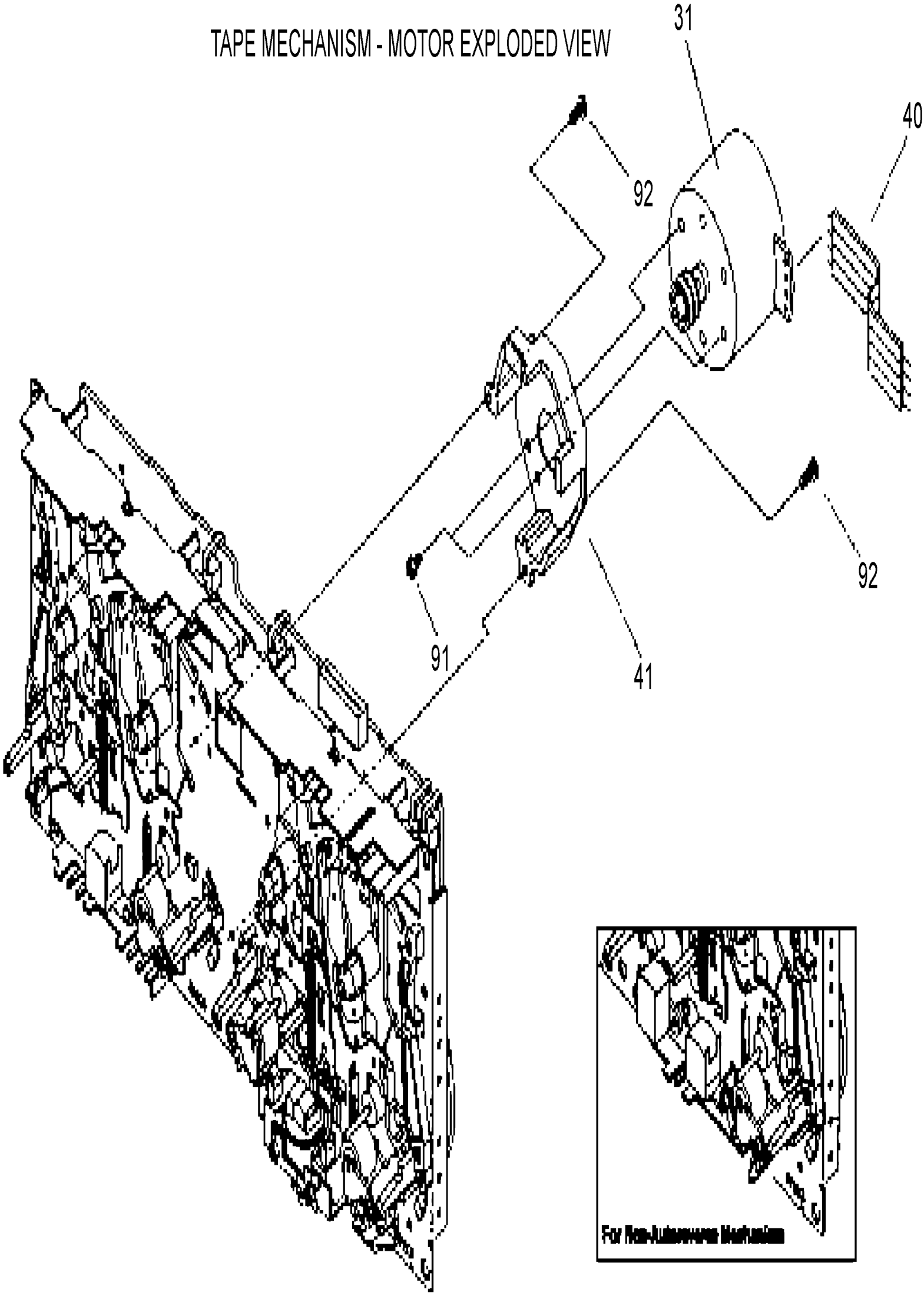
see schematic diagram respectively partslist.

3CDC-LLC Layout stage .3 2001-07-25

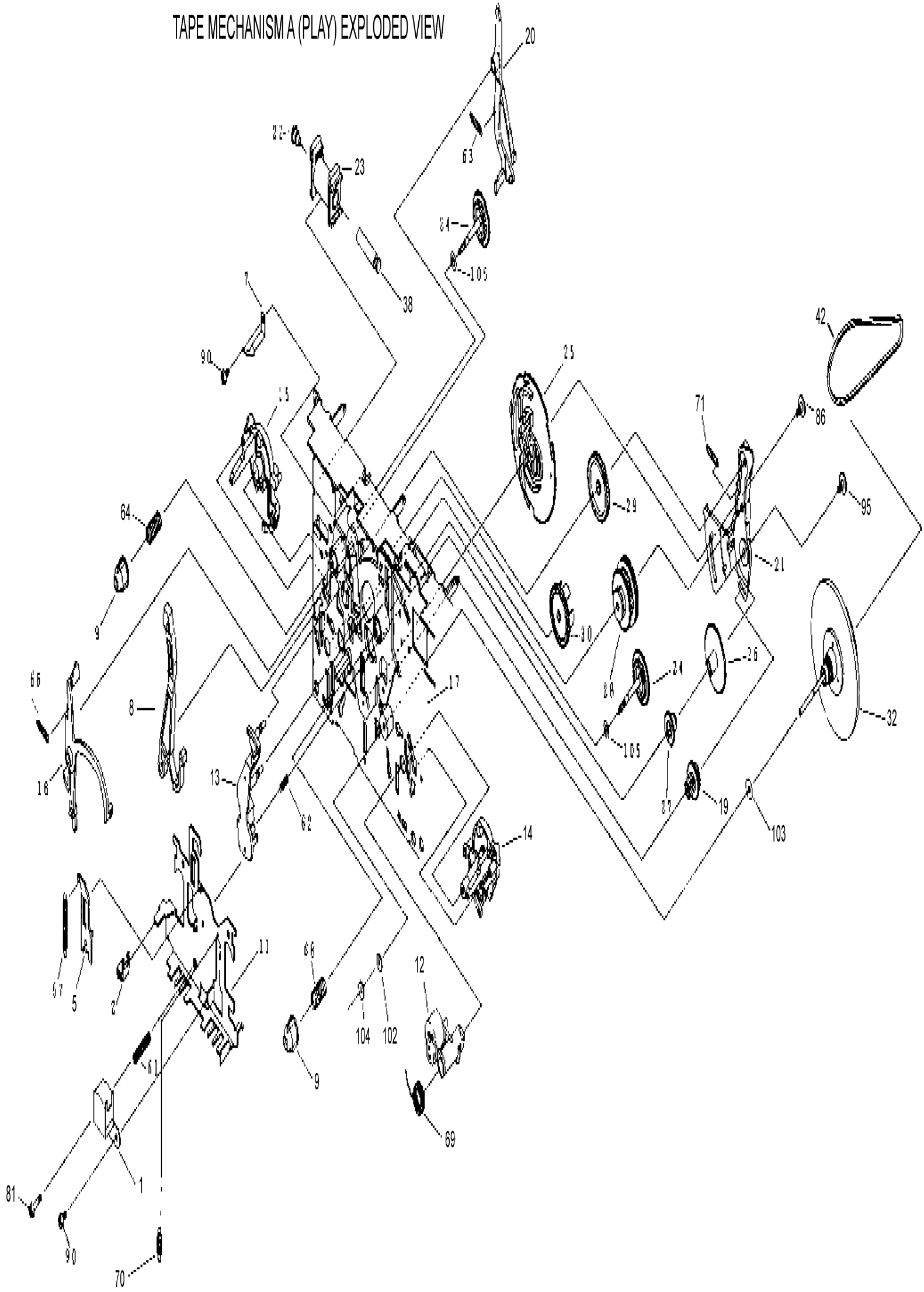
TAPE MODULE EXPLODED VIEW



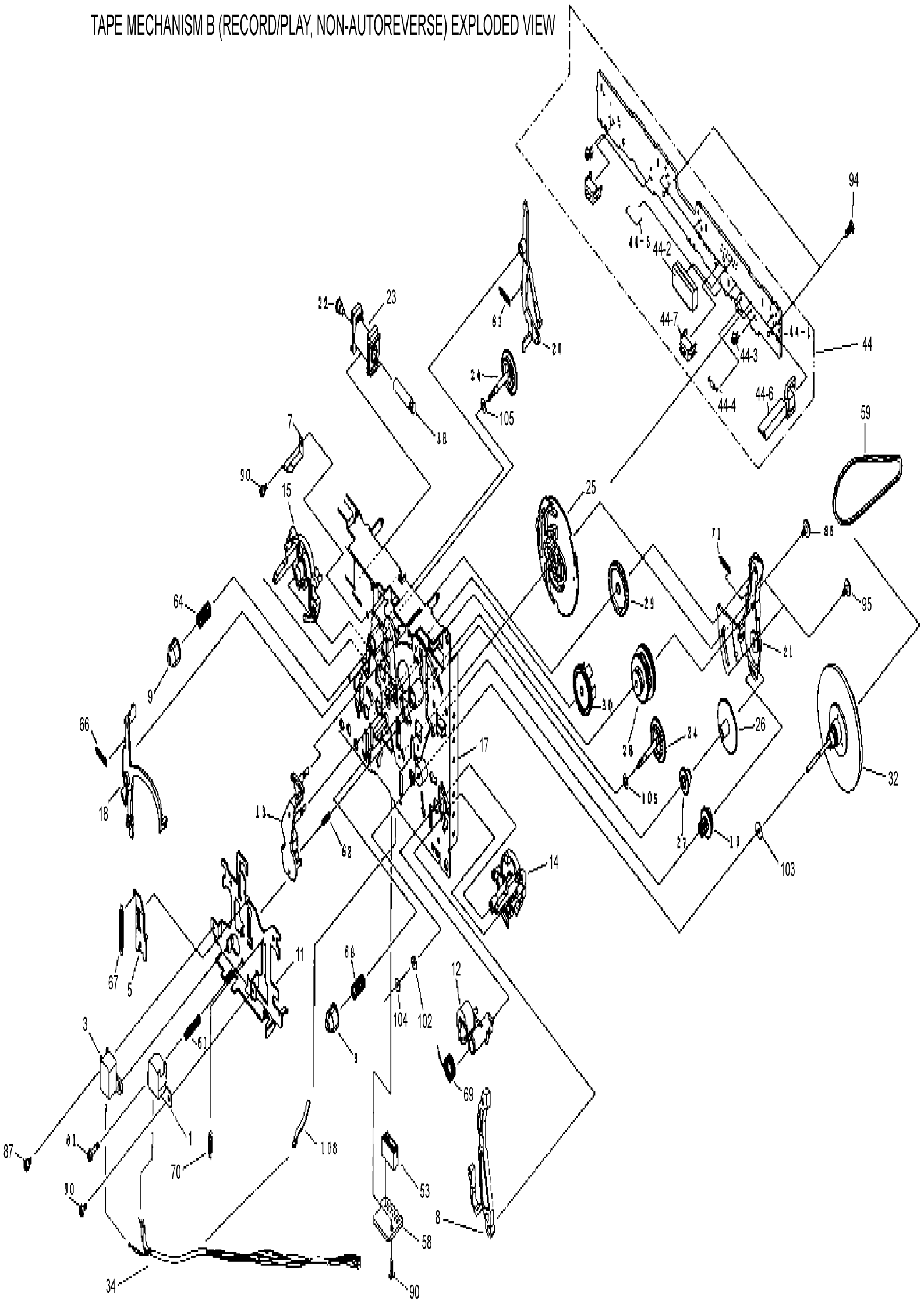
TAPE MECHANISM - MOTOR EXPLODED VIEW

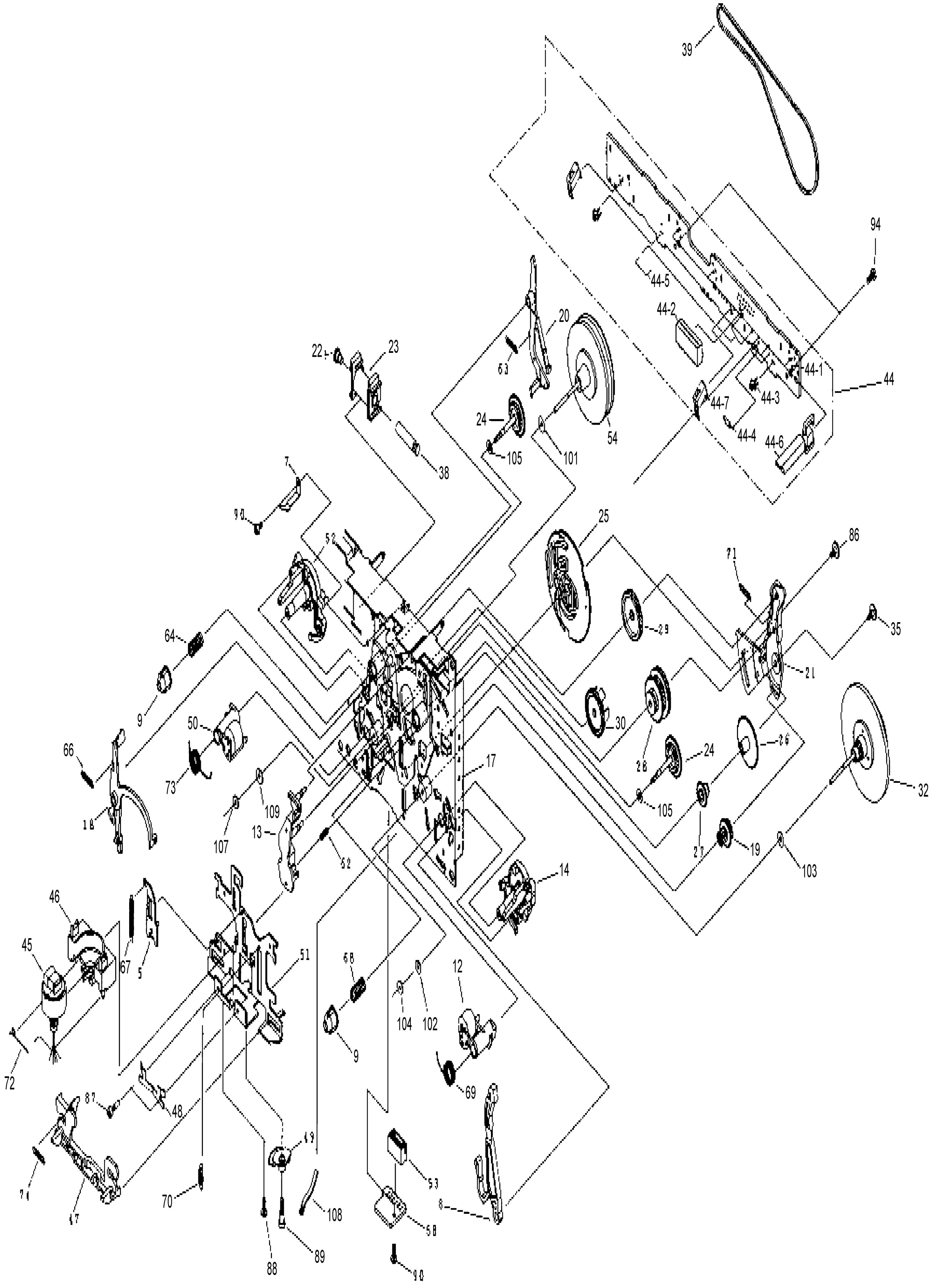


TAPE MECHANISM A (PLAY) EXPLODED VIEW



TAPE MECHANISM B (RECORD/PLAY, NON-AUTOREVERSE) EXPLODED VIEW





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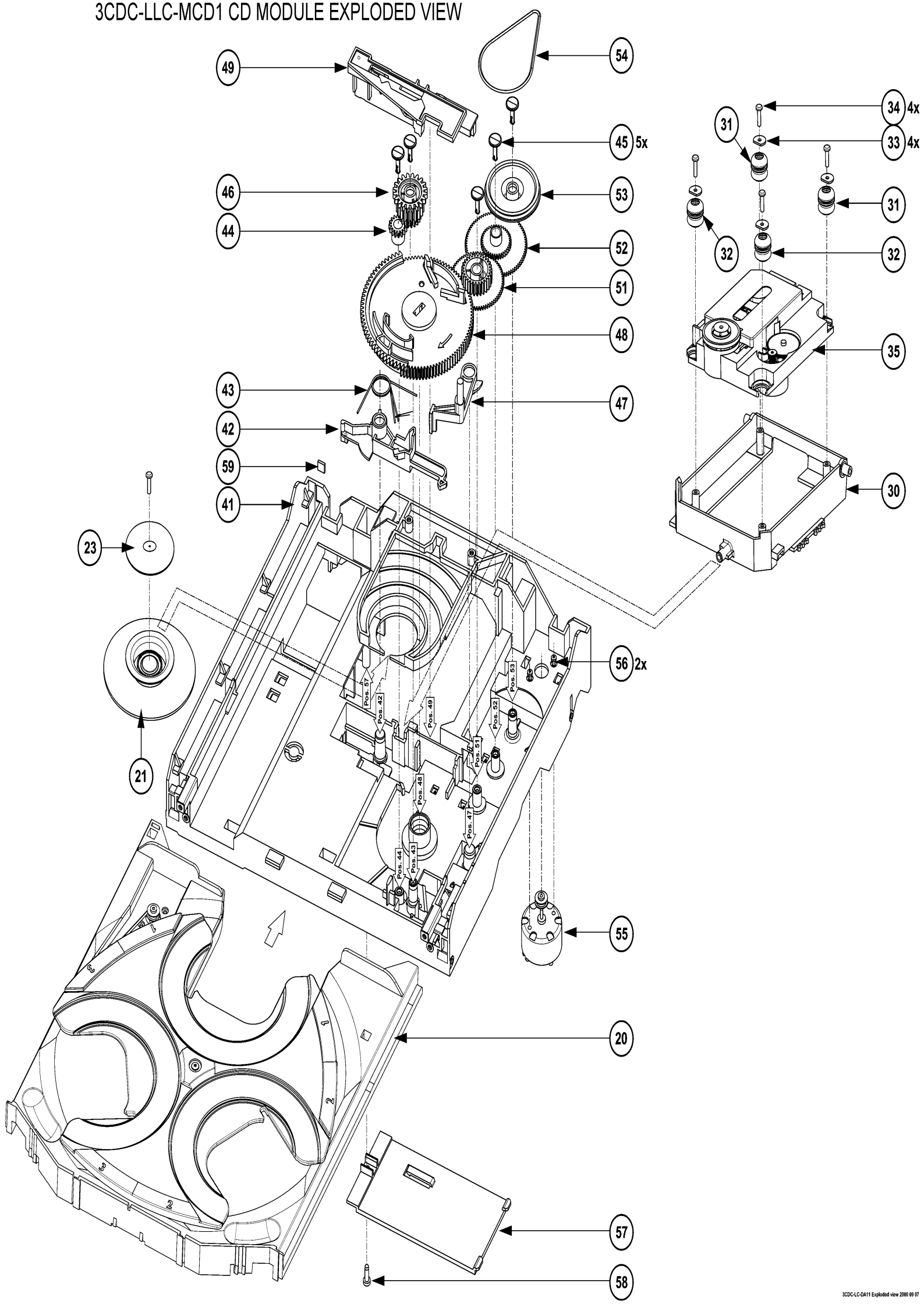
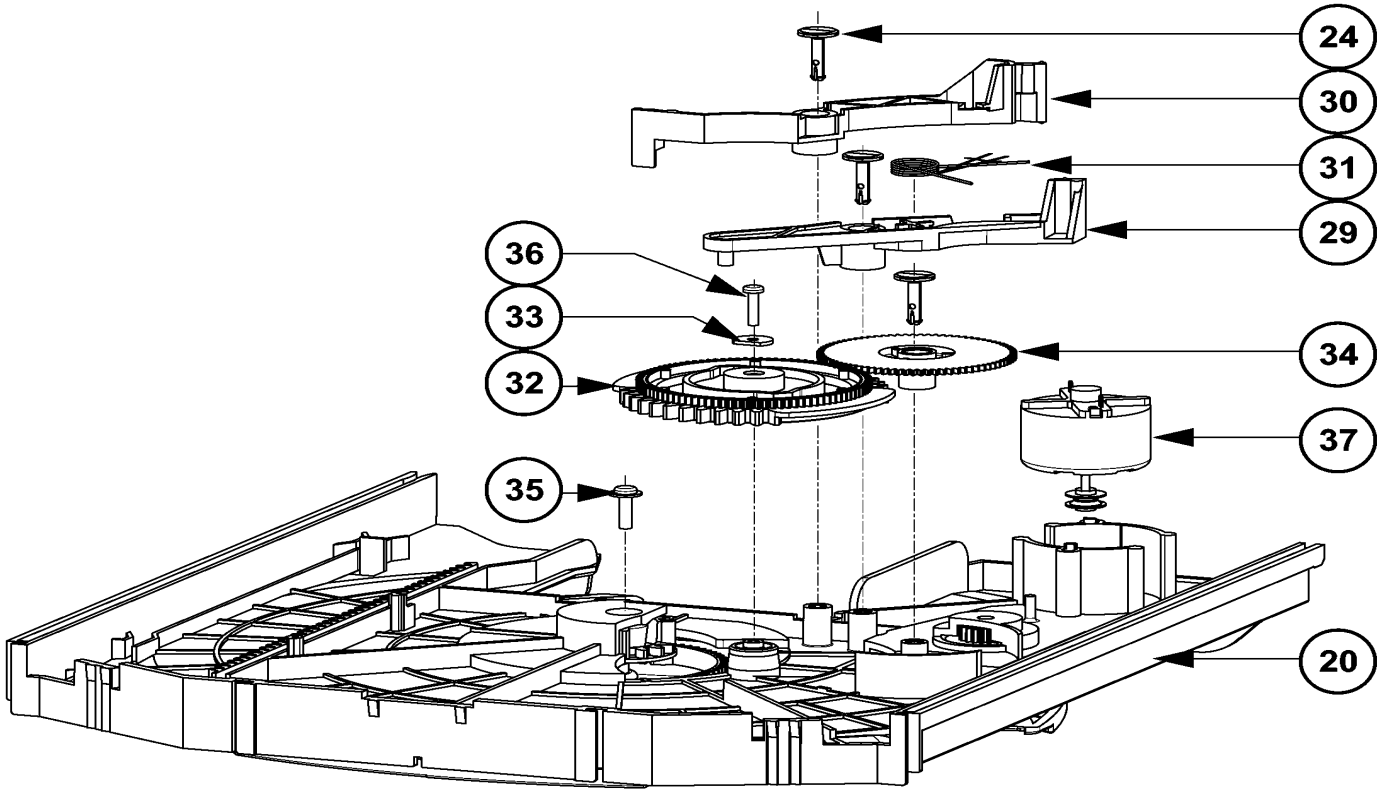
3CDC-LLC-MCD1 CD MODULE EXPLODED VIEW

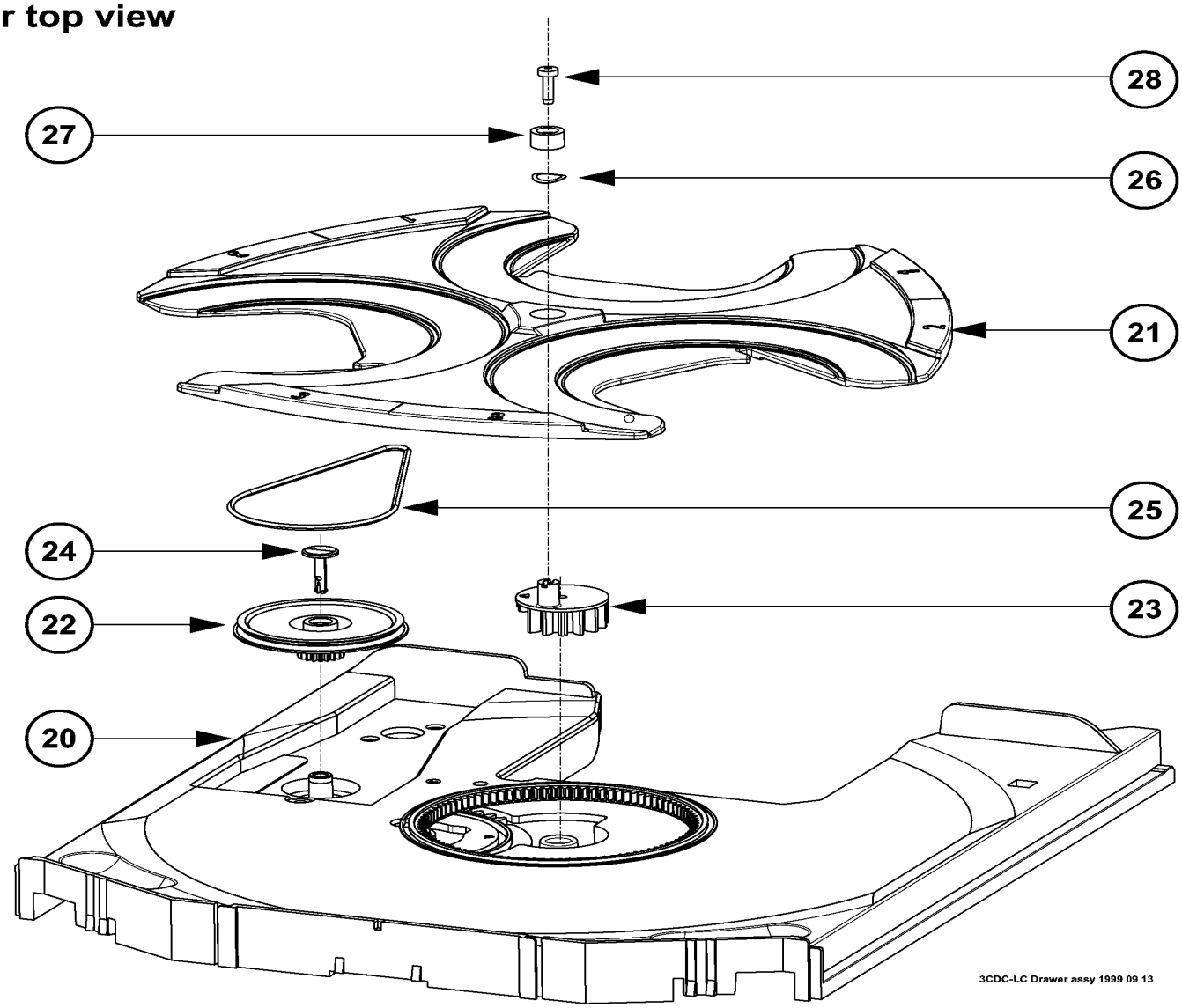


CD MODULE DRAWER EXPLODED VIEWS

Drawer bottom view



Drawer top view



ELECTRICAL PARTSLIST 3CDC-LLC-DA11 MODULE

MISCELLANEOUS

35	3103 309 05310	CD DRIVE DA11T3CN
37	4822 361 10753	CAROUSEL MOTOR
55	4822 361 10753	TRAY MOTOR
1800	2422 025 17389	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 5Pin
1876	2422 025 08332	FLEX FOIL CONNECTOR 5Pin
1880	4822 276 13503	SWITCH, Tray switch
1881	4822 276 13503	SWITCH, Drive UP/DOWN
1882	4822 276 13503	SWITCH, CD Pos.1 recognized
1883	4822 276 13503	SWITCH, valid CD Play position
8002	3103 308 91990	FLEX FOIL CABLE 5P 200mm 1:n
8005	3103 308 92930	FLEX FOIL CABLE 16P 170mm 1:n

CAPACITORS

2800 ©	4822 126 10326	180pF	5%	50V
2801 ©	4822 126 13883	220pF	5%	50V
2802 ©	4822 126 10326	180pF	5%	50V
2803 ©	4822 126 13883	220pF	5%	50V
2804	4822 124 41751	47µF	20%	16V
2805 ©	4822 126 13883	220pF	5%	50V
2806 ©	4822 126 13883	220pF	5%	50V
2807 ©	4822 126 10326	180pF	5%	50V
2808 ©	4822 126 13883	220pF	5%	50V
2809	4822 124 40746	0,22µF	20%	63V
2810 ©	4822 126 10326	180pF	5%	50V
2811 ©	4822 126 13883	220pF	5%	50V
2812 ©	2222 867 15339	33pF	5%	50V
2813 ©	4822 126 14226	82pF		50V
2814 ©	2238 780 59861	680nF	10%	16V
2815 ©	4822 126 10326	180pF	5%	50V
2816 ©	4822 126 14247	1,5nF	10%	50V
2817 ©	4822 126 14249	560pF	10%	50V
2818 ©	4822 126 13344	1,5nF	5%	63V
2819 ©	5322 126 11578	1nF	10%	63V
2820 ©	4822 126 14305	100nF	10%	16V
2822 ©	4822 122 33127	2,2nF	10%	63V
2823 ©	4822 122 33777	47pF	5%	63V
2824 ©	4822 126 13751	47nF	10%	50V
2825 ©	5322 126 11582	6,8nF	10%	63V
2826	4822 124 12362	47µF	20%	4V
2828	4822 124 12362	47µF	20%	4V
2829 ©	3198 017 42230	22nF	10%	50V
2830 ©	4822 126 13751	47nF	10%	50V
2831 ©	4822 122 31765	100pF	5%	50V
2832 ©	4822 122 31765	100pF	5%	50V
2835 ©	3198 024 44730	47nF	5%	50V
2836 ©	3198 024 44730	47nF	5%	50V
2837	4822 124 40433	47µF	20%	25V
2838	4822 124 40248	10µF	20%	63V
2839	4822 124 40433	47µF	20%	25V
2840 ©	4822 126 14585	100nF	10%	50V
2841 ©	5322 126 10511	1nF	5%	50V
2842 ©	4822 126 14247	1,5nF	10%	50V
2844 ©	3198 016 31020	1nF	5%	25V
2850 ©	5322 126 11578	1nF	10%	63V
2851	4822 124 42383	220µF	20%	4V
2855 ©	4822 126 10326	180pF	5%	50V
2856 ©	4822 126 13691	27pF	1%	63V
2857 ©	5322 126 11583	10nF	10%	63V
2858	4822 124 12245	220µF	20%	16V
2860	4822 124 11947	10µF	20%	16V

CAPACITORS

2861	4822 124 11947	10µF	20%	16V
2862 ©	4822 126 13883	220pF	5%	50V
2863 ©	4822 126 13883	220pF	5%	50V
2865 ©	4822 126 14494	22nF	10%	25V
2867 ©	4822 126 13883	220pF	5%	50V
2872 ©	3198 024 44730	47nF	5%	50V
2873	4822 124 40196	220µF	20%	16V
2875	4822 124 11947	10µF	20%	16V
2876	4822 124 12245	220µF	20%	16V
2877 ©	4822 122 33777	47pF	5%	63V
2878 ©	4822 126 13883	220pF	5%	50V
2881	4822 124 40769	4,7µF	20%	100V
2882 ©	4822 126 13883	220pF	5%	50V
2885	4822 124 40769	4,7µF	20%	100V
2887 ©	4822 126 14585	100nF	10%	50V
2888	4822 124 80231	47µF	20%	16V
2891 ©	4822 126 14247	1,5nF	10%	50V
2893 ©	4822 122 33575	220pF	5%	50V
2894 ©	3198 017 44740	470nF	20%	10V
2895 ©	4822 126 14305	100nF	10%	16V
2896 ©	4822 126 14305	100nF	10%	16V
2897 ©	4822 126 14305	100nF	10%	16V

RESISTORS

3701 ©	4822 051 20479	47Ω	5%	0,1W
3702 ©	4822 051 20479	47Ω	5%	0,1W
3703 ©	4822 051 20479	47Ω	5%	0,1W
3704 ©	4822 117 12917	1Ω	5%	0,06W
3710 ©	4822 117 10834	47kΩ	1%	0,1W
3713 ©	4822 051 30223	22kΩ	5%	0,06W
3714 ©	4822 051 30103	10kΩ	5%	0,06W
3715 ©	4822 117 13632	100kΩ	1%	0,06W
3719 ©	4822 051 30102	1kΩ	5%	0,06W
3720 ©	4822 051 20474	470kΩ	5%	0,1W
3721 ©	4822 051 20393	39kΩ	5%	0,1W
3723 ©	4822 051 30272	2,7kΩ	5%	0,06W
3724 ©	4822 117 12902	8,2kΩ	1%	0,06W
3725 ©	4822 051 30184	180kΩ	5%	0,06W
3730 ©	4822 051 20333	33kΩ	5%	0,1W
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
3789 ©	4822 051 30471	470Ω	5%	0,06W
3790 ©	4822 051 30561	560Ω	5%	0,06W
3791 ©	4822 051 30152	1,5kΩ	5%	0,06W
3792 ©	4822 051 30332	3,3kΩ	5%	0,06W
3793 ©	4822 117 12968	820Ω	5%	0,06W
3794 ©	4822 117 12968	820Ω	5%	0,06W
3795 ©	4822 051 30222	2,2kΩ	5%	0,06W
3796 ©	4822 051 30332	3,3kΩ	5%	0,06W
3798 ©	4822 051 30102	1kΩ	5%	0,06W
3799 ©	4822 051 30102	1kΩ	5%	0,06W
3800 ©	4822 117 10834	47kΩ	1%	0,1W
3801 ©	4822 051 30103	10kΩ	5%	0,06W
3802 ©	4822 117 10834	47kΩ	1%	0,1W
3803 ©	4822 117 10833	10kΩ	1%	0,1W
3804 ©	4822 051 30103	10kΩ	5%	0,06W

ELECTRICAL PARTSLIST 3CDC-LLC-DA11 MODULE

RESISTORS

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	
3811 ©	4822 117 10834	47kΩ	1%	0,1W	
3812	4822 053 10228	2,2Ω	5%	1W	
3813 ©	4822 117 13608	4,7Ω	5%	0,06W	
3814 ©	4822 051 30339	33Ω	5%	0,06W	
3815	4822 052 10478	4,7Ω	5%	NFR25	
3818 ©	4822 051 30222	2,2kΩ	5%	0,06W	
3819 ©	4822 051 20471	470Ω	5%	0,1W	
3820 ©	4822 051 30222	2,2kΩ	5%	0,06W	
3821 ©	4822 051 30222	2,2kΩ	5%	0,06W	
3822 ©	4822 051 30222	2,2kΩ	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	
3831 ©	4822 051 30101	100Ω	5%	0,06W	
3832 ©	4822 051 30103	10kΩ	5%	0,06W	
3833 ©	4822 051 20393	39kΩ	5%	0,1W	
3834 ©	4822 051 20393	39kΩ	5%	0,1W	
3835	4822 052 10478	4,7Ω	5%	NFR25	
3837 ©	4822 051 10102	1kΩ	2%	0,25W	
3838 ©	4822 051 30102	1kΩ	5%	0,06W	
3839 ©	4822 051 20124	120kΩ	5%	0,1W	
3840 ©	4822 051 30124	120kΩ	5%	0,06W	
3841 ©	4822 117 10833	10kΩ	1%	0,1W	
3842 ©	4822 117 10833	10kΩ	1%	0,1W	
3843 ©	4822 117 10834	47kΩ	1%	0,1W	
3844 ©	4822 051 30332	3,3kΩ	5%	0,06W	
3845 ©	4822 117 10833	10kΩ	1%	0,1W	
3846 ©	4822 117 10834	47kΩ	1%	0,1W	
3847 ©	4822 051 30472	4,7kΩ	5%	0,06W	
3849 ©	4822 051 20334	330kΩ	5%	0,1W	
3850 ©	4822 051 30103	10kΩ	5%	0,06W	
3851	4822 052 10338	3,3Ω	5%	NFR25	
3852	4822 052 10228	2,2Ω	5%	0,33W	
3853 ©	4822 051 20471	470Ω	5%	0,1W	
3858 ©	4822 117 12925	47kΩ	1%	0,06W	
3859 ©	4822 117 10834	47kΩ	1%	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 117 11373	100Ω	1%	0,1W	
3864 ©	4822 117 11373	100Ω	1%	0,1W	
3865 ©	4822 051 30101	100Ω	5%	0,06W	
3867 ©	4822 051 30121	120Ω	5%	0,06W	
3868 ©	4822 051 30101	100Ω	5%	0,06W	
3870 ©	4822 051 20472	4,7kΩ	5%	0,1W	
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 117 10837	100kΩ	1%	0,1W	
3880 ©	4822 051 30392	3,9kΩ	5%	0,06W	
3881 ©	4822 117 13632	100kΩ	1%	0,06W	
3882 ©	4822 117 12925	47kΩ	1%	0,06W	
3883 ©	4822 117 10833	10kΩ	1%	0,1W	
3884 ©	4822 051 30271	270Ω	5%	0,06W	

RESISTORS

3885 ©	4822 117 10833	10kΩ	1%	0,1W	
3886 ©	4822 117 12925	47kΩ	1%	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	
3898 ©	4822 051 30221	220Ω	5%	0,06W	
3899 ©	4822 051 30101	100Ω	5%	0,06W	
3900 ©	4822 117 12955	2,7kΩ	1%	0,1W	
3901 ©	4822 117 10833	10kΩ	1%	0,1W	
3904 ©	4822 117 13632	100kΩ	1%	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			
4811 ©	4822 051 20008	CHIP JUMPER 0805			
4814 ©	4822 051 20008	CHIP JUMPER 0805			
4817 ©	4822 051 20008	CHIP JUMPER 0805			
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 30008	CHIP JUMPER 0603			
4825 ©	4822 051 30008	CHIP JUMPER 0603			
4826 ©	4822 051 20008	CHIP JUMPER 0805			
4828 ©	4822 051 20008	CHIP JUMPER 0805			
4829 ©	4822 051 20008	CHIP JUMPER 0805			
4830 ©	4822 051 20008	CHIP JUMPER 0805			
4831 ©	4822 051 20008	CHIP JUMPER 0805			
4832 ©	4822 051 30008	CHIP JUMPER 0603			
4833 ©	4822 051 20008	CHIP JUMPER 0805			
4834 ©	4822 051 20008	CHIP JUMPER 0805			
4835 ©	4822 051 20008	CHIP JUMPER 0805			
4838 ©	4822 051 30008	CHIP JUMPER 0603			
4840 ©	4822 051 20008	CHIP JUMPER 0805			
4841 ©	4822 051 30008	CHIP JUMPER 0603			
4842 ©	4822 051 20008	CHIP JUMPER 0805			
4844 ©	4822 051 20008	CHIP JUMPER 0805			
4845 ©	4822 051 20008	CHIP JUMPER 0805			
4846 ©	4822 051 20008	CHIP JUMPER 0805			
4847 ©	4822 051 20008	CHIP JUMPER 0805			
4848 ©	4822 051 20008	CHIP JUMPER 0805			
4850 ©	4822 051 20008	CHIP JUMPER 0805			
4876 ©	4822 051 20008	CHIP JUMPER 0805			

ELECTRICAL PARTSLIST 3CDC-LLC-DA11 MODULE

COILS

1810	4822 242 73557	CERAMIC RES. 8,46MHz

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

7802 ©	5322 130 60123	BC807-40
7808 ©	4822 130 60511	BC847B
7809 ©	4822 130 60511	BC847B
7810 ©	4822 130 60511	BC847B
7812 ©	4822 130 60511	BC847B
7874 ©	4822 130 60511	BC847B
7875 ©	4822 130 60511	BC847B

INTEGRATED CIRCUITS

7803 ©	5322 209 82941	LM358D, Dual Opamp
7805 ©	4822 209 33165	TDA1308T/N1, Dual Opamp
7806	4822 209 32852	TDA7073A/N2, Servo Driver
7807	4822 209 32852	TDA7073A/N2, Motor Driver
7871	4822 209 32852	TDA7073A/N2, Motor Driver
7873 ©	5322 209 11306	HEF4094BT, SHIFT REGISTER
7877 ©	9352 641 80557	SAA7324H/M2B,“CD10“ SIGN.PROC.

TRAINING INFORMATION

DISPLAY OVERALL BLOCK DIAGRAM

DISPLAY EC05 TUNER BLOCK DIAGRAM

DISPLAY CASSETTE BLOCK DIAGRAM

DISPLAY TAPE MECHANISM ELECTRONICS

DISPLAY TAPE DECK WIRING DIAGRAM

DISPLAY CD BLOCK DIAGRAM

DISPLAY STK442-110 INTERNAL BLOCK DIAGRAM

Front Board Variations Table

DISPLAY FRONT BOARD VARIATIONS TABLE

Cassette Variations Table

DISPLAY CASSETTE VARIATIONS TABLE

Cassette Brief Introduction

General

1. Playback Mode

A 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 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 being registered into the Rec./PB Head of Deck B.

3. Dubbing Mode

In dubbing mode, a signal from the playback head Deck A is selected and fed through by

the Mode Selector IC7710 (HEF4952BT), which is then equalized for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalized signal will then follow the same path as in the Recording mode.

4. Mode Selector
The Mode Selector IC7710 (HEF4952BT) caters for 4 input signals, 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 IC7740 (HEF4952BT) is for the purpose of muting the output during recording mode. During recording mode, S4 is closed and shorted to ground.

8. IC7740 (HEF4952BT)
The function of IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determine 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 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 determine whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).

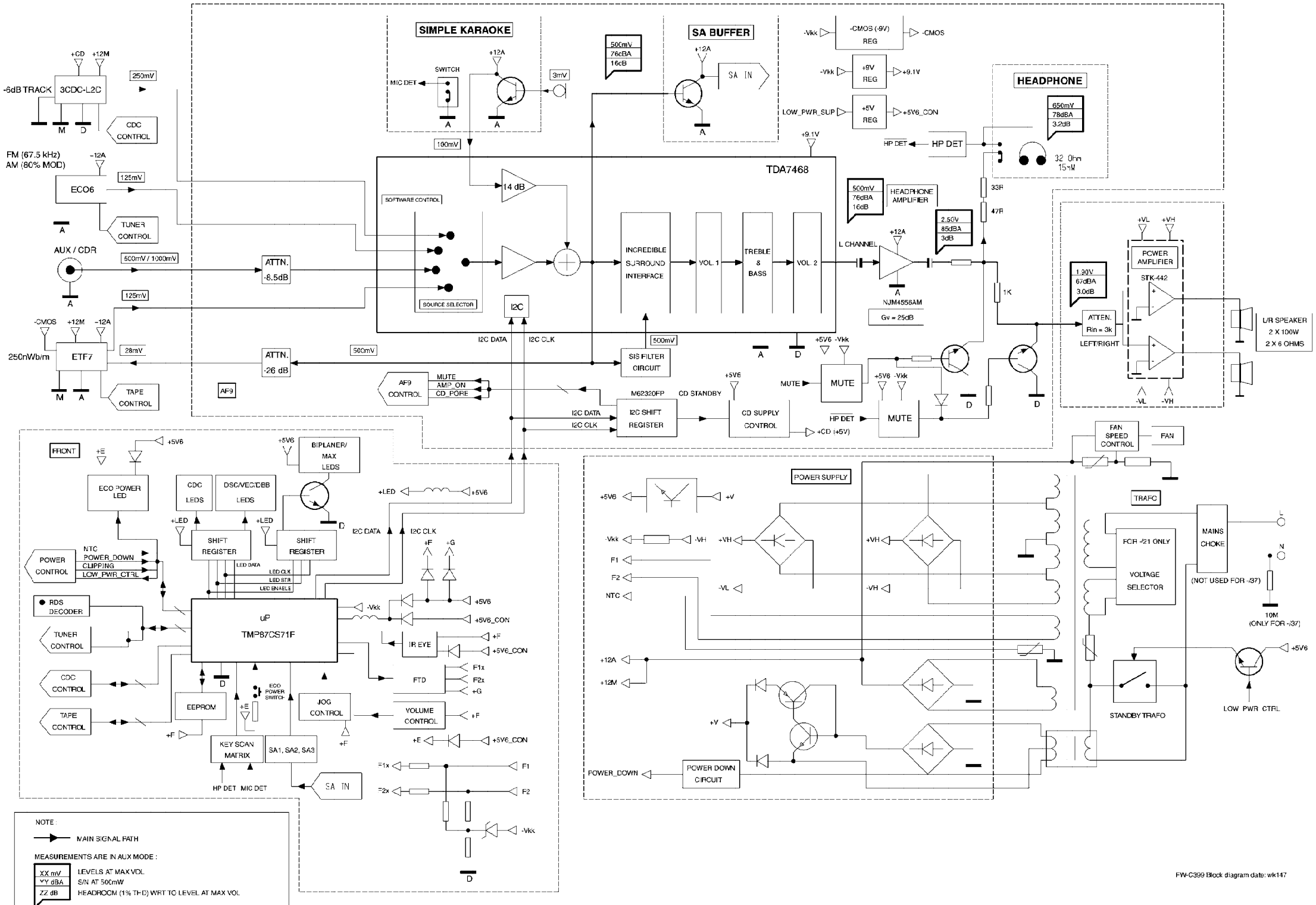
10. Bias Level
Bias Level makes use of the variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.

11. Bias Symm (For Dolby B NR version only)
Bias Symm makes 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) and 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 turned on and short pins 2 and 4 of connector 1720 to ground. During recording mode, the FETs are turned off to allow the oscillator signal to be superpositioned onto the recording signal for recording.

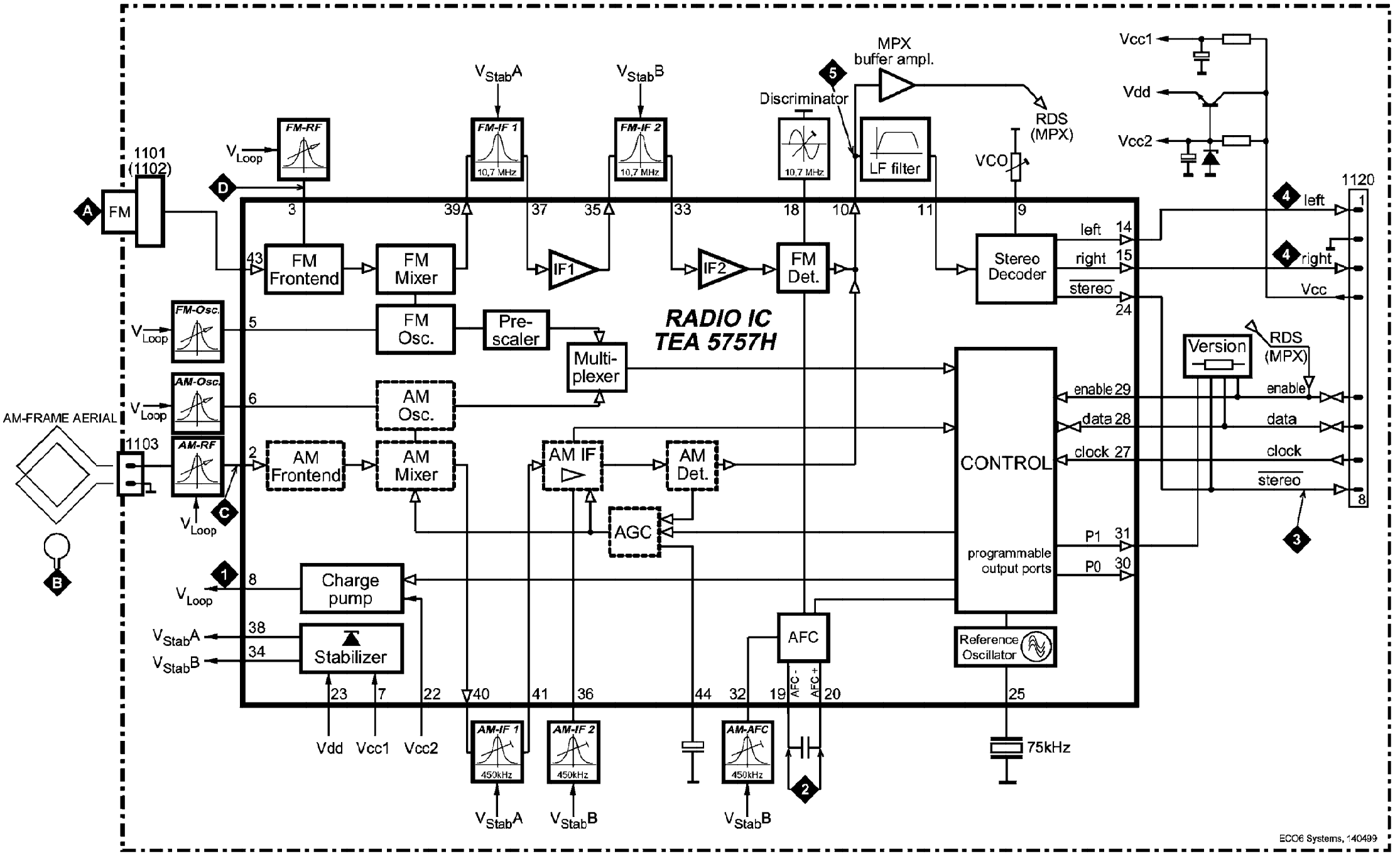
13. Motor Speed (For FR versions only)
During high speed dubbing, a feedback signal from the uP through pin 03 of IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between high and low, thus changing the speed of the motor.

SET BLOCK DIAGRAM

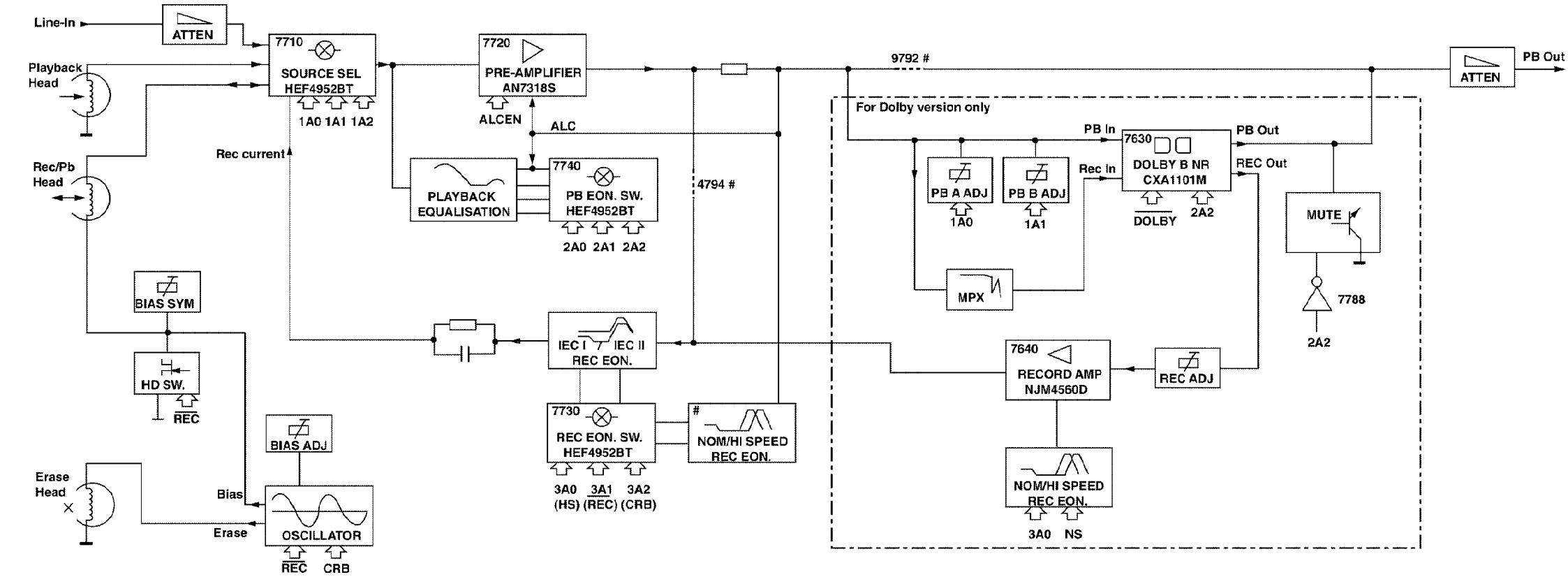


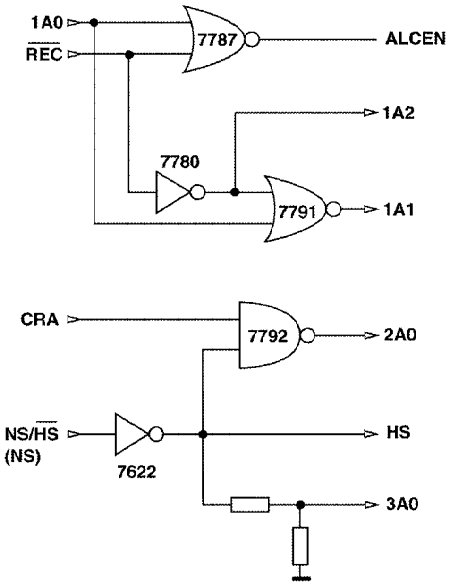
FW-C399 Block diagram date: wk147

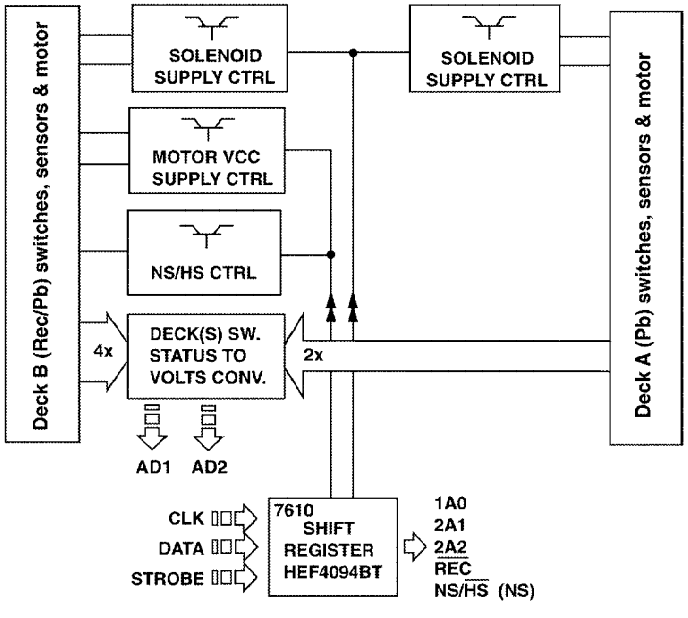
EC06 TUNER (NON-CENELEC) BLOCK DIAGRAM



CASSETTE BLOCK DIAGRAM





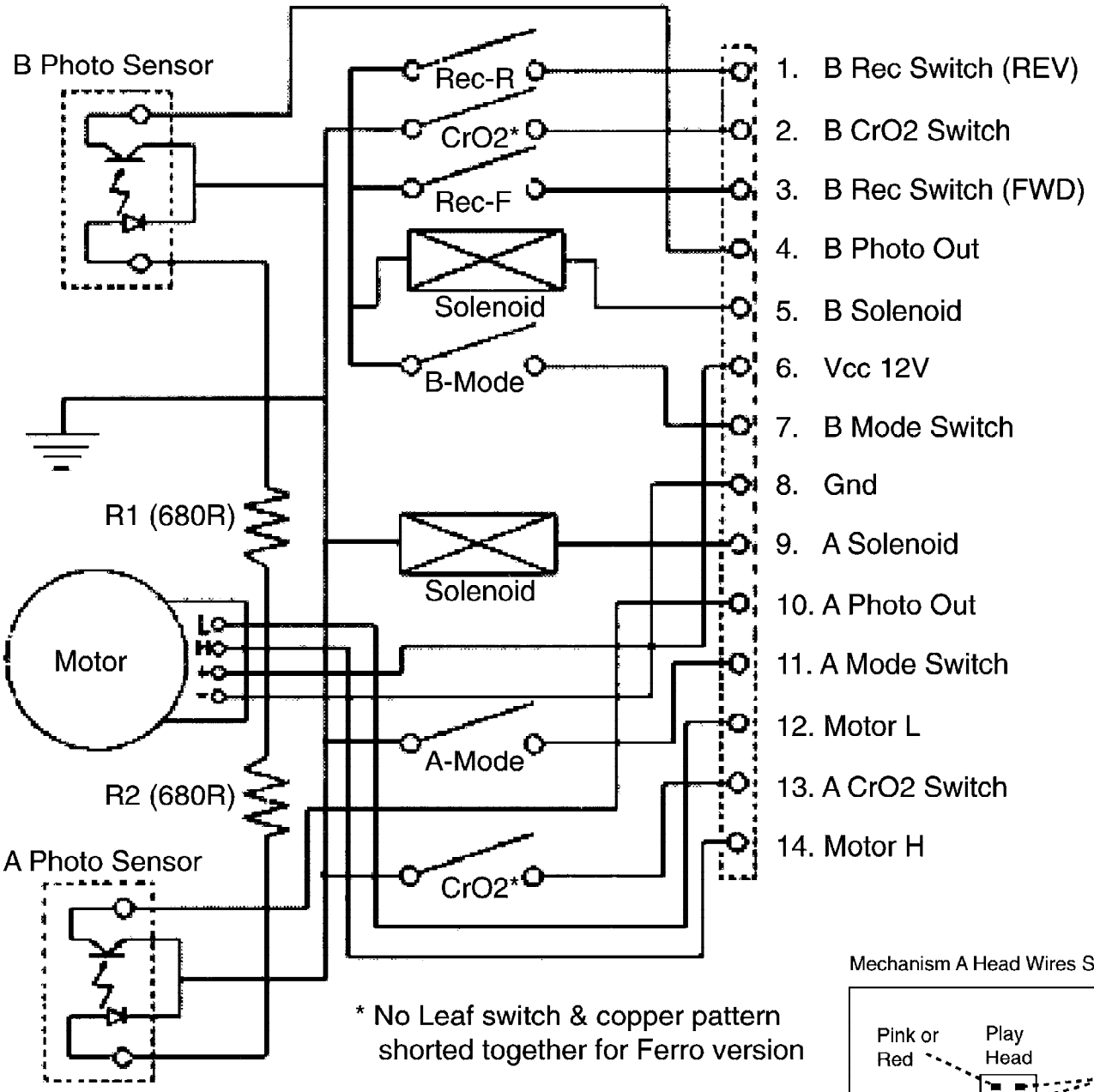


NOTE: # For Non-dolby version only
Only 1 channel is presented.

MicroProcessor Control / Communication lines

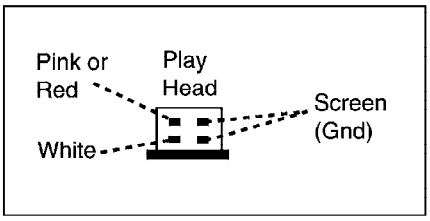
Direct / Indirect Control lines from Shift Registers

TAPE MECHANISM ELECTRONICS

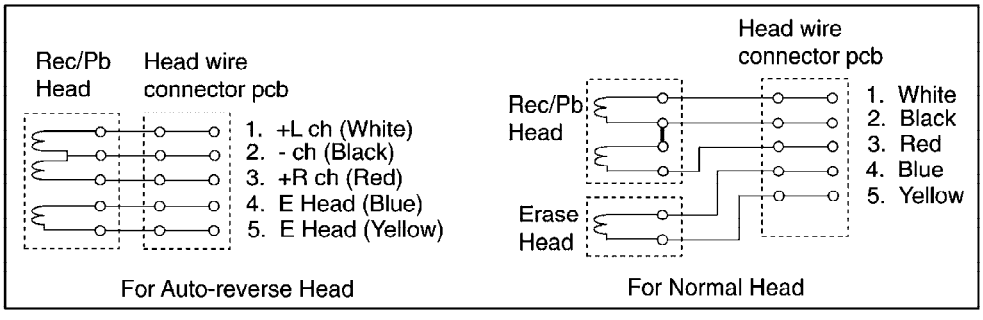


* No Leaf switch & copper pattern shorted together for Ferro version

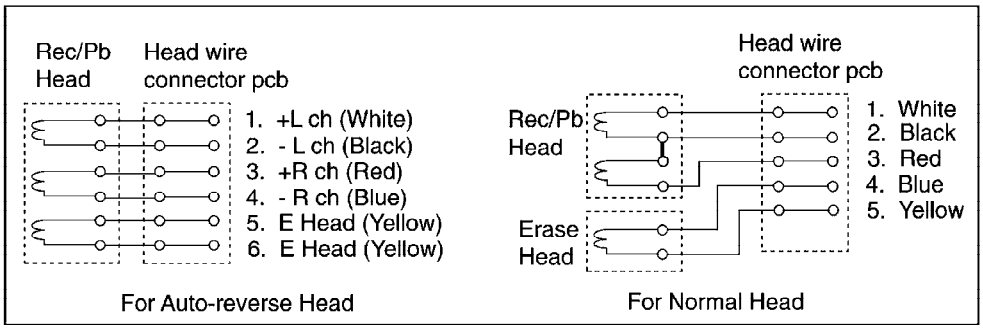
Mechanism A Head Wires Soldering



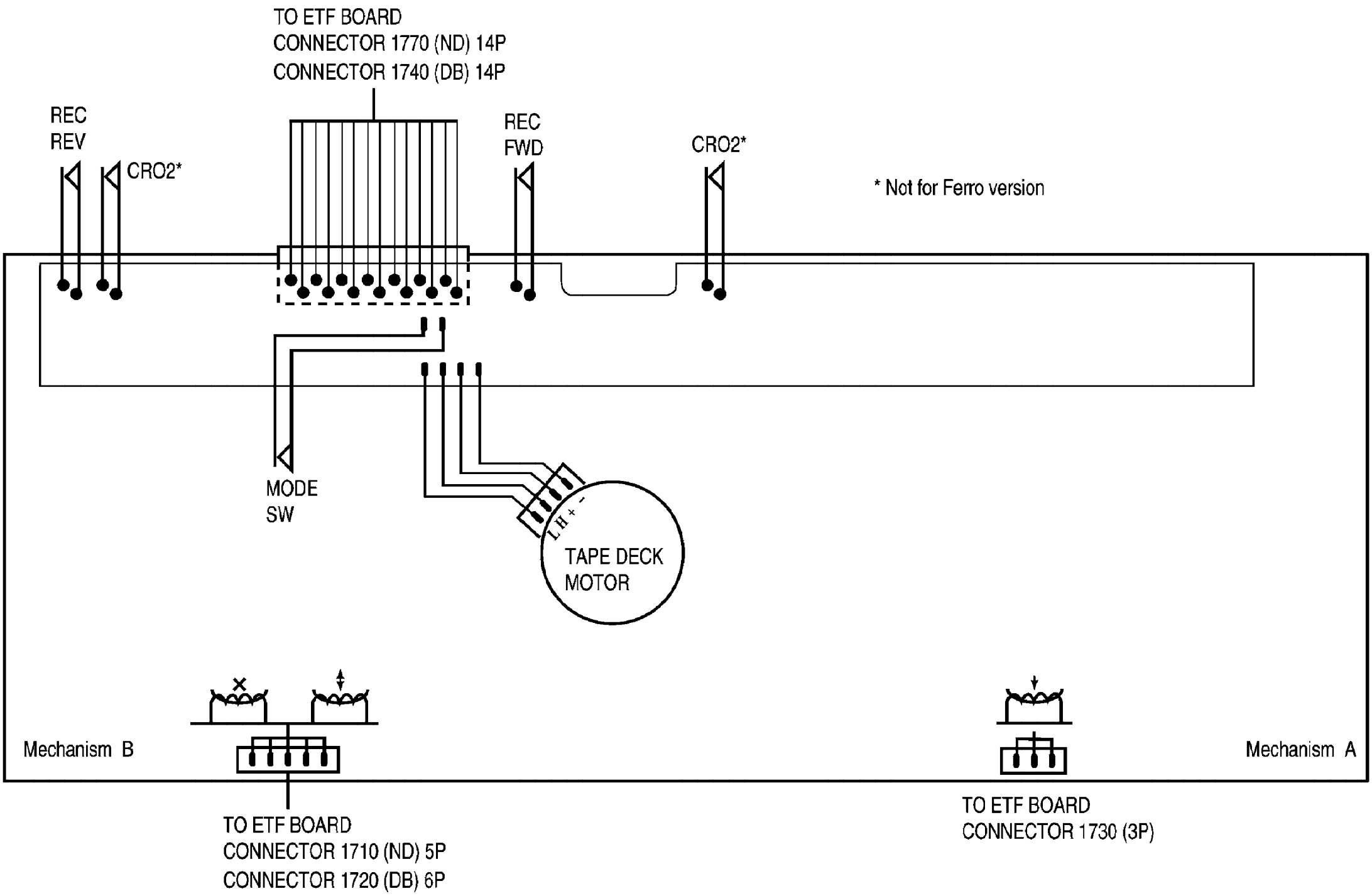
Mechanism B Head Wires Soldering (Non-Dolby version)



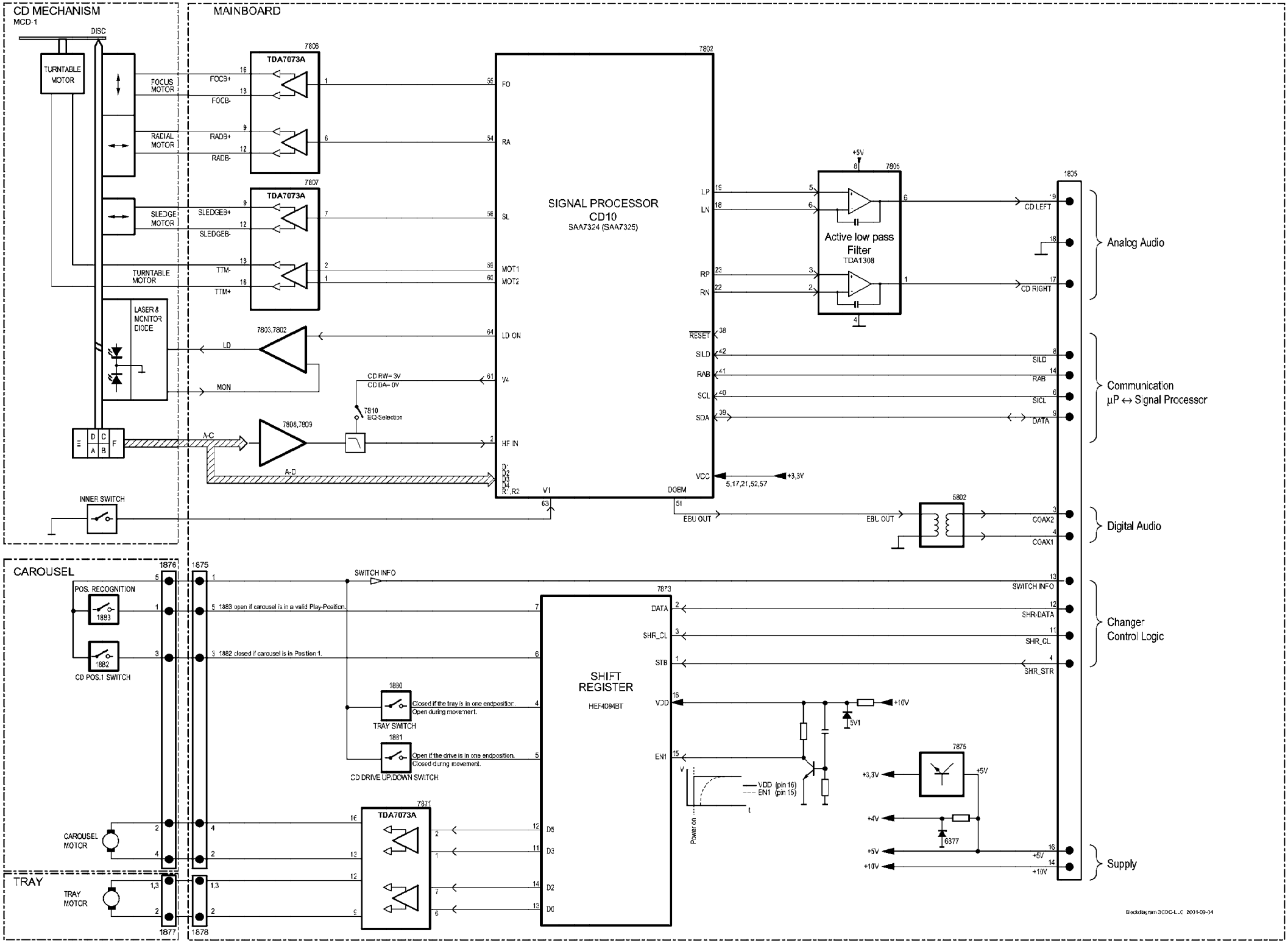
Mechanism B Head Wires Soldering (Dolby B NR version)



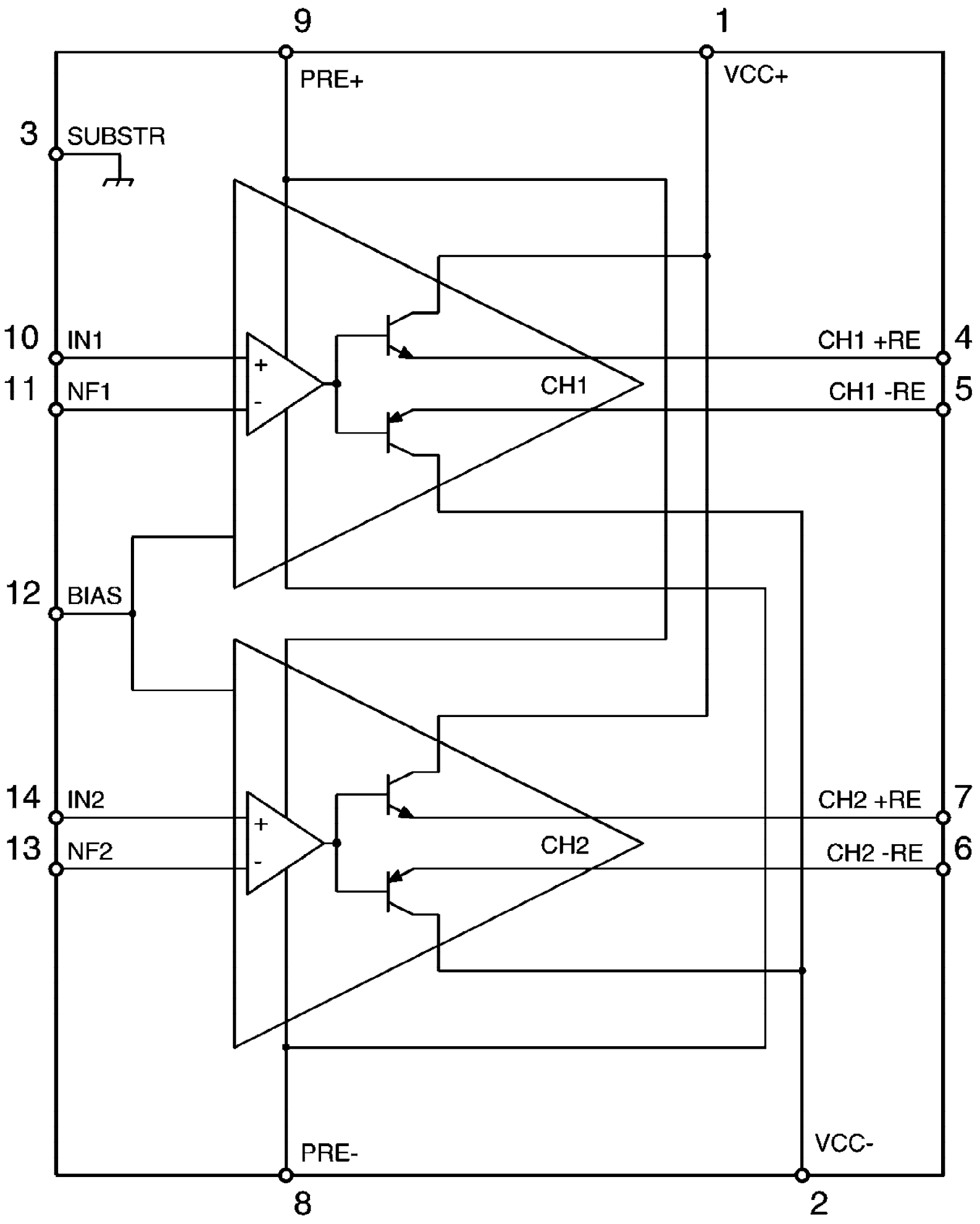
Tapedeck wiring (Double deck)



BLOCK DIAGRAM 3CDC-LLC-MCD1



STK442-110 Internal Block diagram



VARIATION TABLE

Item No / Features	FW-C399/30/37	FW-C399/21/21M/33	FW-C399/22/34
RDS / News	-	-	x
Simple Karaoke	-	x	-
Mic Detect	-	x	-
1409	x	x	x
1424	-	-	-
1425	-	-	x
1427	-	-	x
1437	-	-	-
3486	1k	1k	1k
3511	10k	10k	-
3530	-	-	330R
3531	10k	10k	10k
3581	10k	10k	-
3595	-	-	-
3808	-	-	820R
4402	-	-	-
4404	-	-	-
6400	x	x	x
6403	x	x	x
6426	-	-	x
6440	-	x	-
6441	x	x	x
6447	x	x	x
6448	x	x	x
9402	-	-	x
9404	-	-	x
9405	-	-	x
9406	-	-	x
9407	-	-	-
9408	x	x	x
9409	-	-	-
9410	x	x	x
9411	-	-	-
9462	-	-	-
9488	x	x	x
9505	-	-	-
9508	-	-	x
9509	-	-	x

x - item in use

Variations table for Analog Circuit

	Autoreverse ND/DD/FR	Non-autoreverse ND/DD/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 ND/DD/FR	Non-autoreverse ND/DD/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	-	-