

Service
Service
Service

Product Service Group CE Audio

Service Information

Already published Service Informations:

CORRECTION TO SERVICE MANUAL



3CDC-LC

(3 Disc Carousel Changer)

Layout stage .5

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MC-Service

Service hints

CAUTION

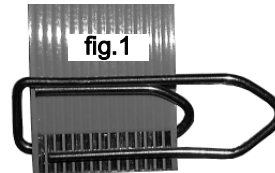
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- SWITCH OFF POWER SUPPLY
- ESD PROTECTION

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

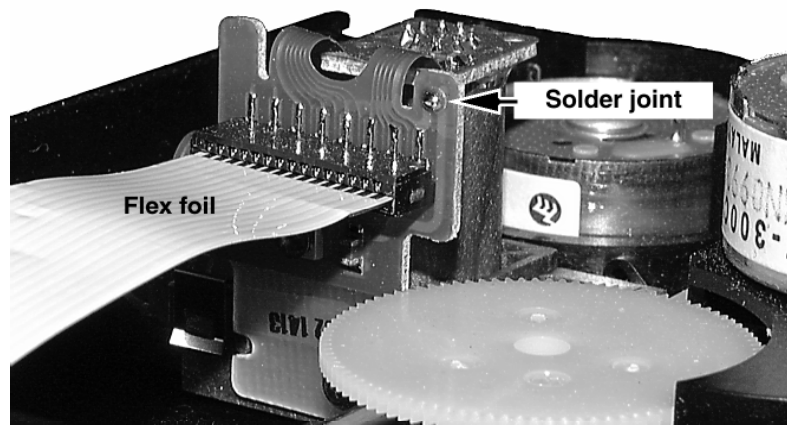
The following steps have to be done when replacing the CD mechanism:

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



Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.

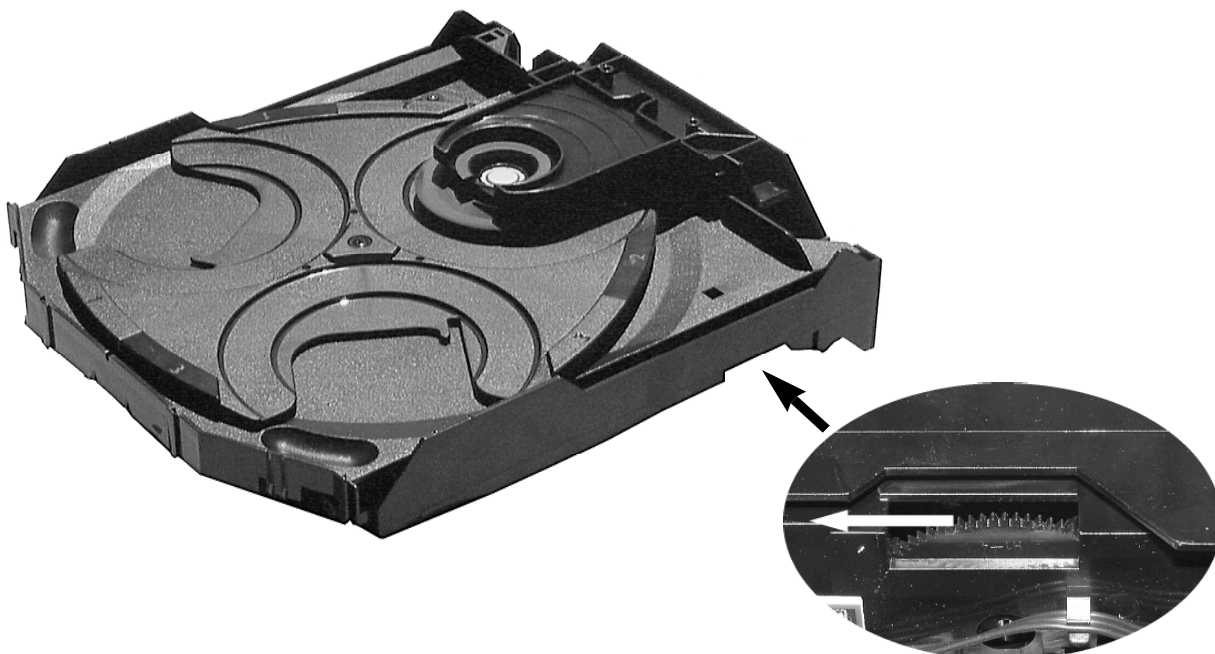
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



Emergency open

In case of a Supply fault, the tray can be opened manually.

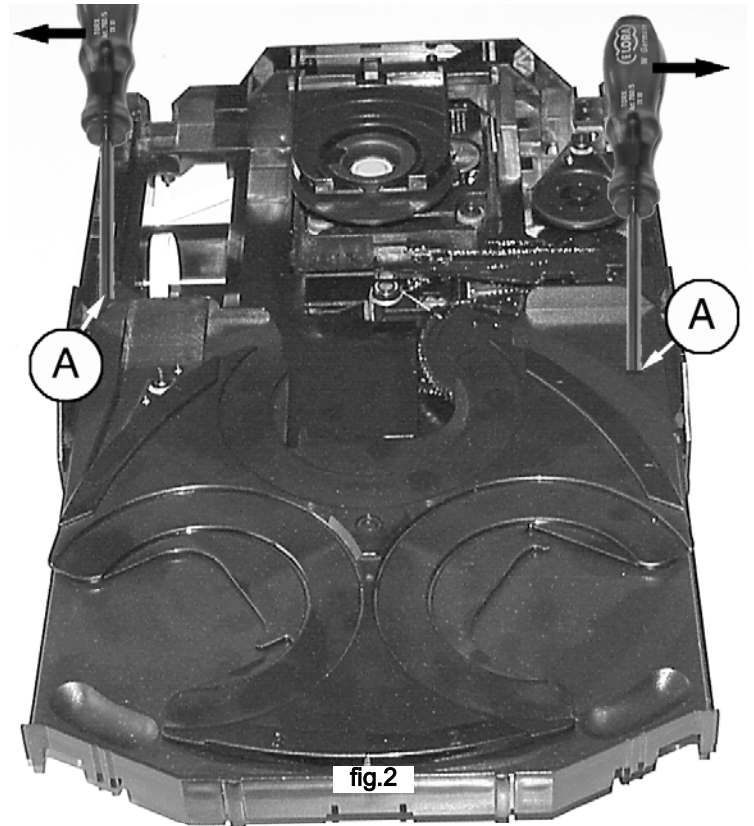
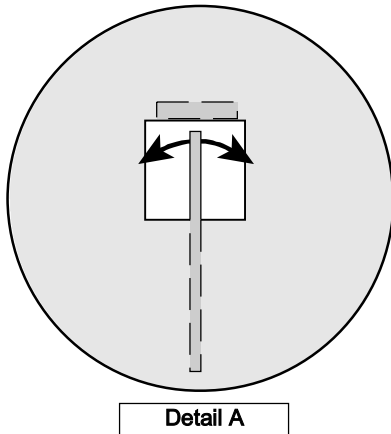
1. Remove the top cover of the set to get access to the Changer Module.
2. Turn gearwheel clockwise (as shown in picture below).



Service hints

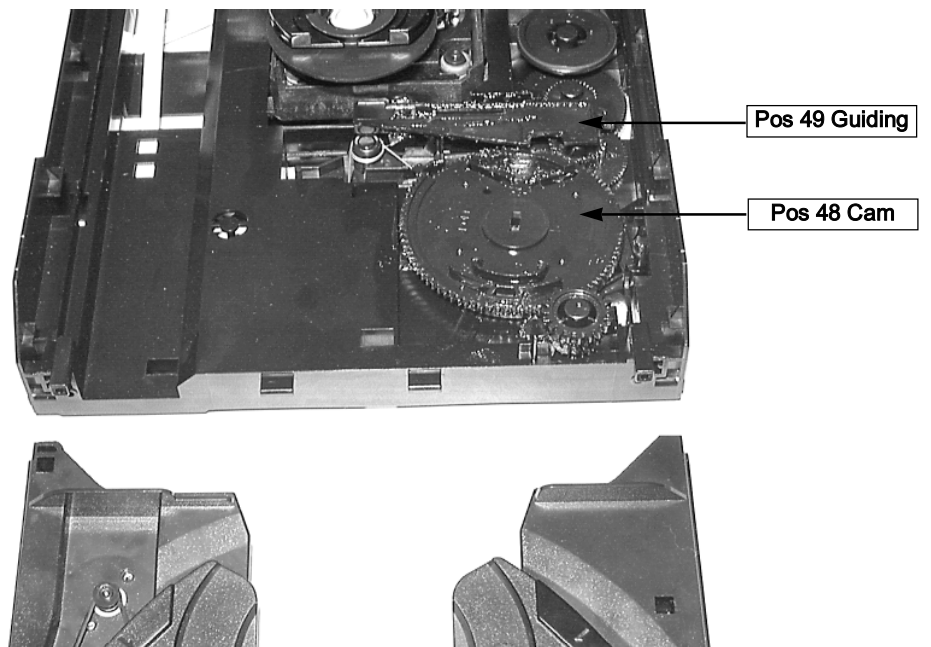
Dismantling of Tray

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

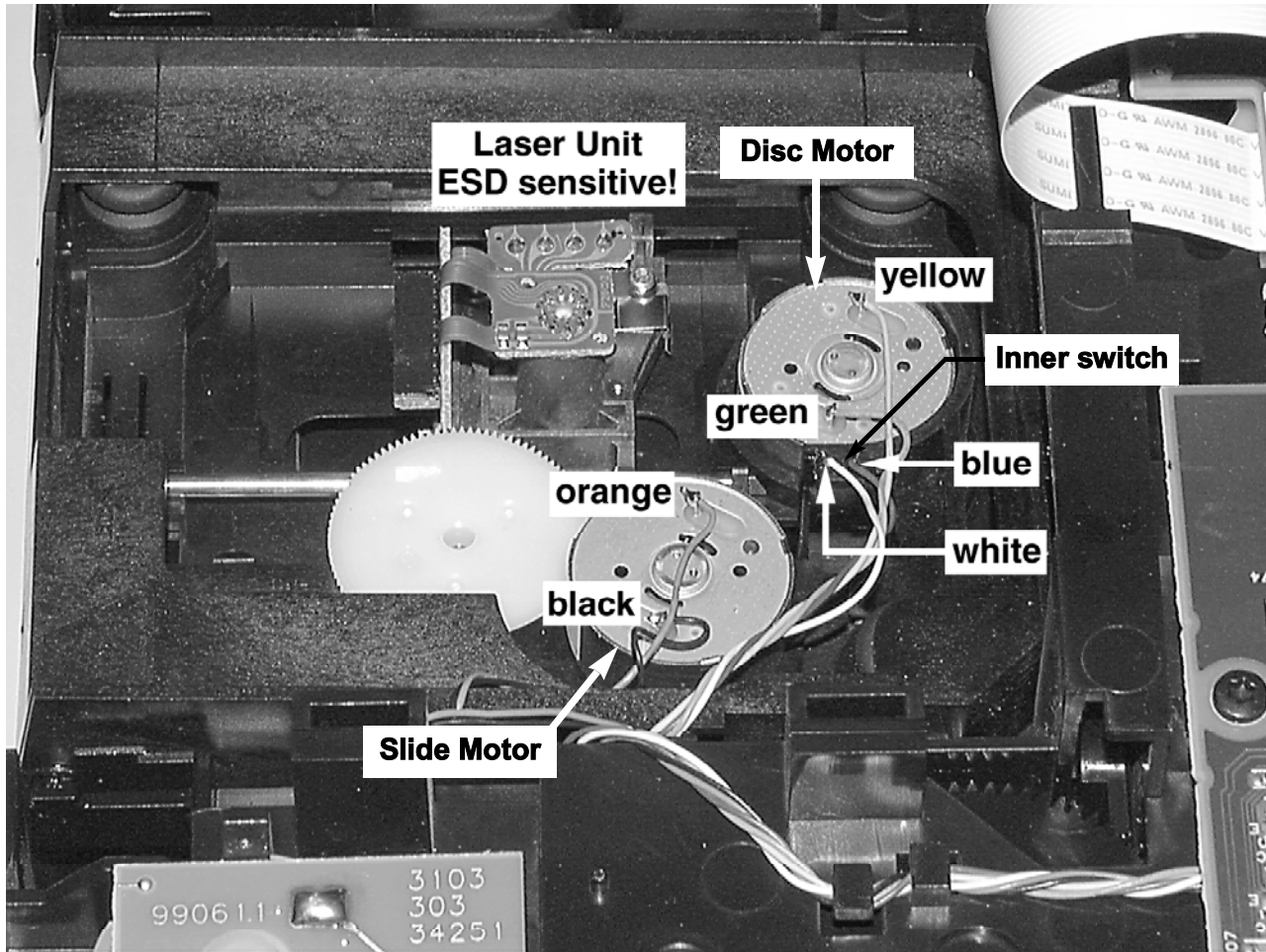


Assembling of Tray

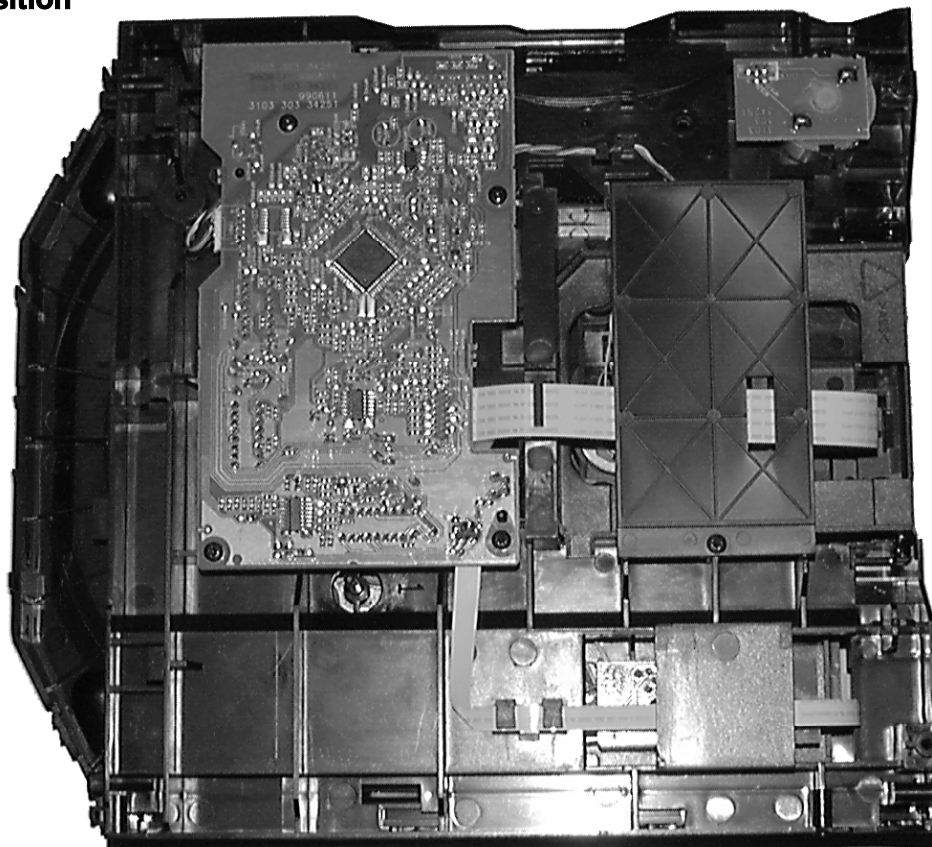
1. Turn Cam (pos. 48) clockwise to end position.
2. If necessary - move Guiding (pos. 49) to the right end position.
3. Insert the Tray.

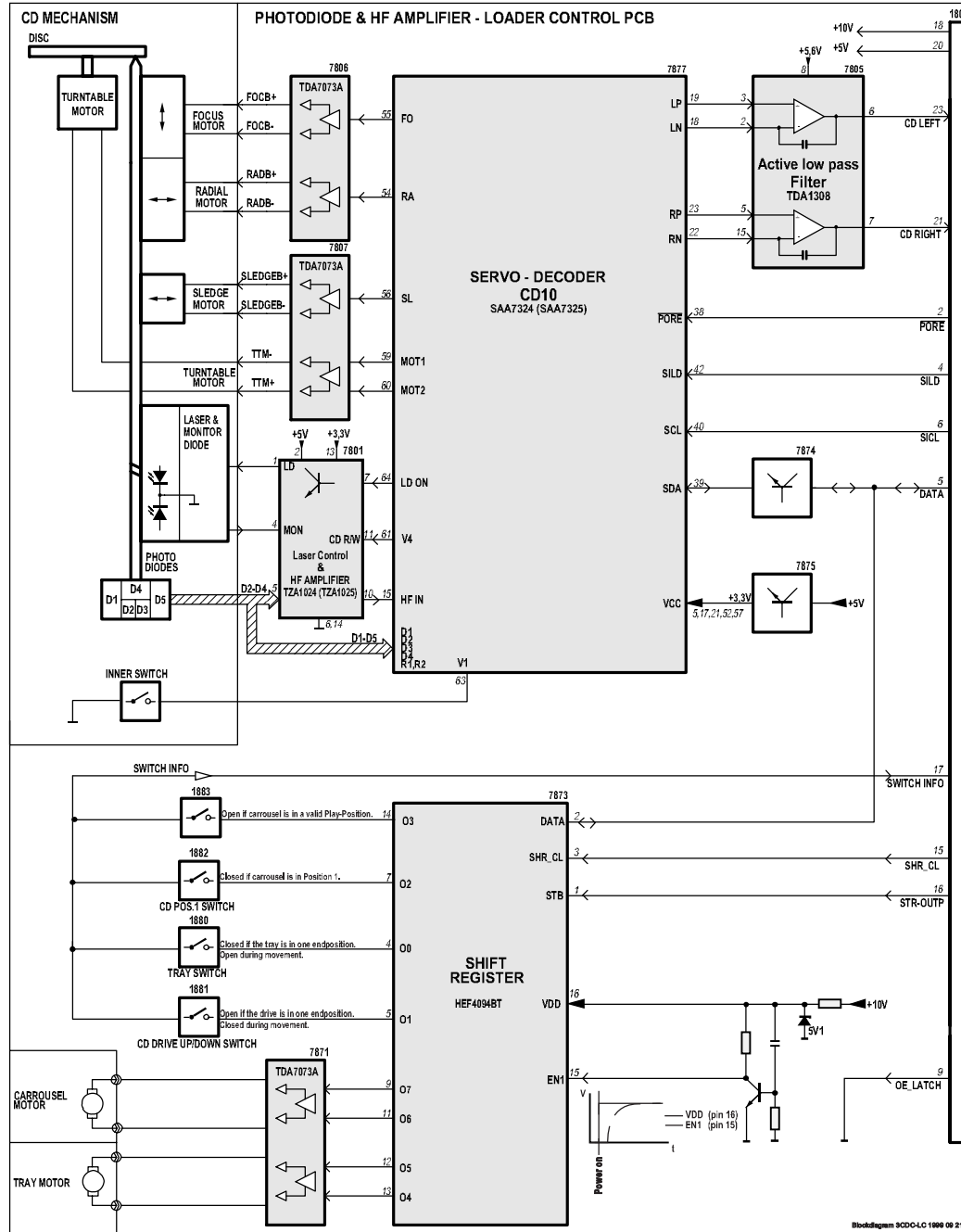


Wiring



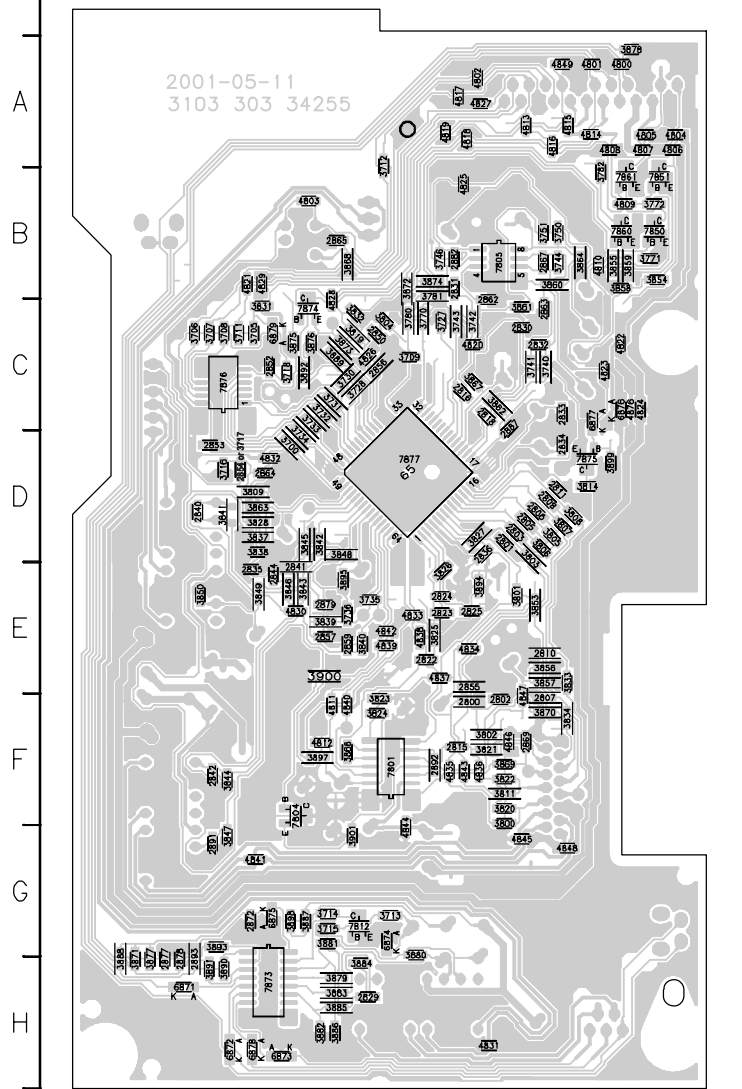
Service Position





MC-Service

3CDC-LC Mainboard Copperside view



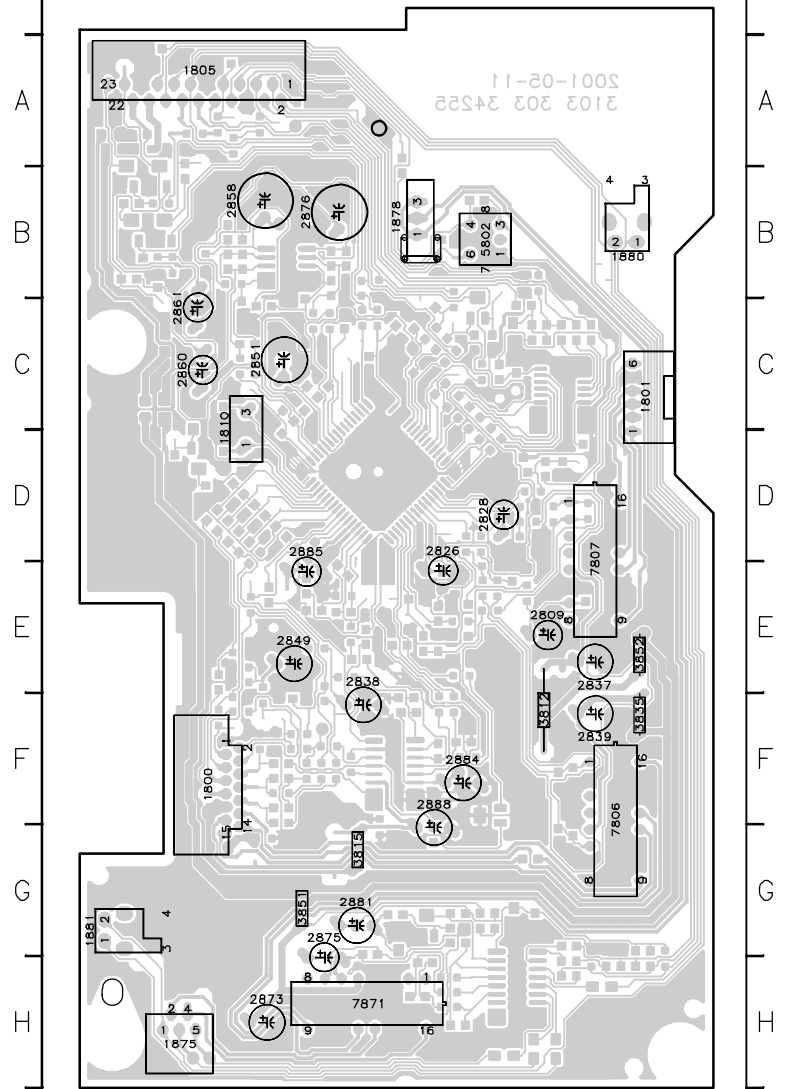
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

3CDC-LC Mainboard Layout stage 3 10 08 2001

Mapping

Copperside			Componentside
2800 F4	3770 C3	3892 C2	1800 F1
2801 D4	3771 B5	3893 G2	1801 C5
2802 F4	3772 B5	3894 E4	1805 A2
2803 D4	3780 C3	3895 E3	1810 C2
2805 D4	3781 B3	3897 F2	1875 H1
2806 D4	3782 B5	3898 G2	1878 B3
2807 F4	3800 F4	3899 D5	1880 B5
2808 D4	3801 E4	3900 E2	1881 G1
2810 E4	3802 F4	3901 G3	2809 E4
2811 D4	3803 D4	4800 A5	2826 E3
2815 F3	3804 C3	4801 A4	2828 D4
2816 C3	3805 D4	4802 A4	2837 E4
2818 C4	3806 D4	4803 B2	2838 F3
2822 E3	3807 D4	4804 A5	2839 F4
2823 E3	3808 D4	4805 A5	2849 E2
2824 E3	3809 D2	4806 A5	2851 C2
2825 E4	3811 F4	4807 A5	2858 B2
2829 H3	3814 D4	4808 A5	2860 C1
2830 C4	3819 C3	4809 B5	2861 C1
2831 B3	3820 F4	4810 B4	2873 H2
2832 C4	3821 F4	4811 F2	2875 G2
2833 C4	3822 F4	4812 F2	2876 B2
2834 D4	3823 F3	4813 A4	2881 G3
2835 E2	3824 F3	4814 A4	2884 F3
2836 D4	3825 E3	4815 A4	2885 E2
2840 D1	3826 E3	4816 A4	2888 G3
2841 E2	3827 D4	4817 A3	3912 F4
2842 F2	3828 D2	4818 A3	3915 G3
2844 E2	3831 C2	4819 A3	3935 F5
2850 C3	3832 C3	4820 C4	3951 G2
2852 C2	3833 E4	4821 B2	3952 E5
2853 D2	3834 F4	4822 C5	3902 B4
2854 D2	3837 D2	4823 C5	7806 F5
2855 E4	3838 D2	4824 C5	7807 D5
2856 C3	3839 E2	4825 B3	7871 H3
2857 E2	3840 E3	4826 C3	
2859 E3	3841 D2	4827 A4	
2862 C4	3842 D2	4828 C2	
2863 C4	3843 E2	4829 B2	
2864 D2	3844 F2	4830 E2	
2865 B3	3845 D2	4831 H4	
2867 B4	3846 E2	4832 D2	
2869 F4	3847 G2	4833 E3	
2872 G2	3848 D3	4834 E4	
2877 H1	3849 E2	4835 F3	
2878 H1	3850 E1	4836 F4	
2879 E2	3853 E4	4837 E3	
2882 B3	3854 B5	4838 E3	
2887 C4	3855 B5	4839 E3	
2891 G2	3856 E4	4840 F3	
2892 F3	3857 E4	4841 G2	
2893 H1	3858 B5	4842 E3	
3700 D2	3859 B5	4843 F3	
3705 C2	3860 B4	4844 G3	
3706 C1	3861 C4	4845 G4	
3707 C2	3862 C4	4846 F4	
3708 C2	3863 D2	4847 F4	
3709 C3	3864 B4	4848 G4	
3711 C2	3866 F3	4849 A4	
3712 A3	3867 C4	4876 C5	
3713 G3	3868 B3	6871 H1	
3714 G2	3869 F4	6872 H2	
3715 G2	3870 F4	6873 H2	
3716 D2	3871 H1	6874 G3	
3717 D2	3872 B3	6875 G2	
3718 C2	3873 C3	6876 C5	
3727 C3	3874 B3	6877 C4	
3728 C3	3875 C2	6878 H2	
3729 C3	3876 C2	6879 C2	
3730 C3	3877 H1	7001 F3	
3731 C2	3878 A5	7804 F2	
3732 C2	3879 H3	7805 B4	
3733 C2	3880 G3	7812 G3	
3734 D2	3881 G2	7850 B5	
3735 E3	3882 H2	7851 B5	
3736 E3	3883 H3	7860 B5	
3740 C4	3884 H3	7861 B5	
3741 C4	3885 H3	7873 H2	
3742 C4	3886 H2	7874 C2	
3743 C3	3887 G2	7875 D4	
3744 B4	3888 H1	7876 C2	
3746 B3	3889 C2	7877 D3	
3750 B4	3890 H2		
3751 B4	3891 H2		

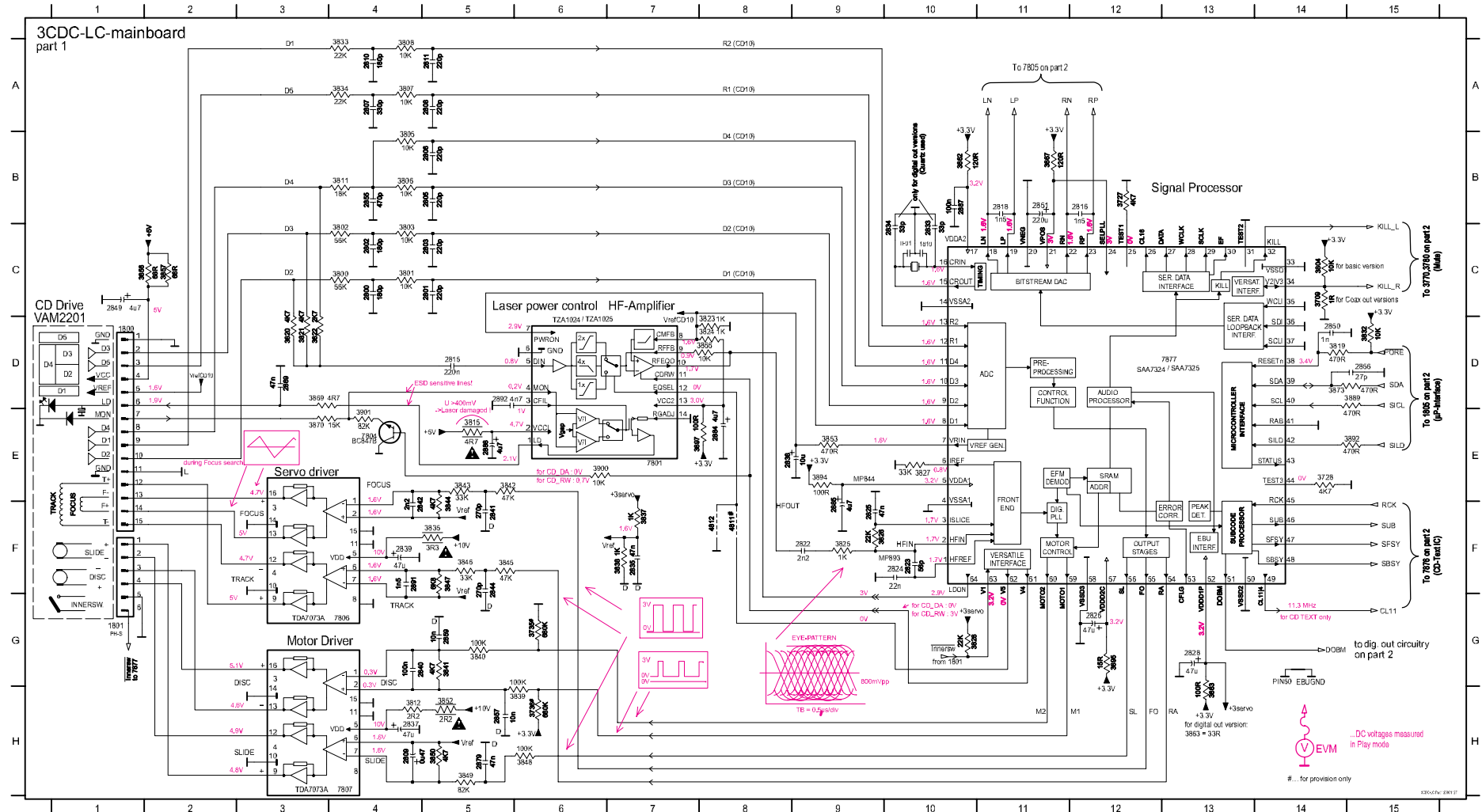
3CDC-LC Mainboard Componentside view



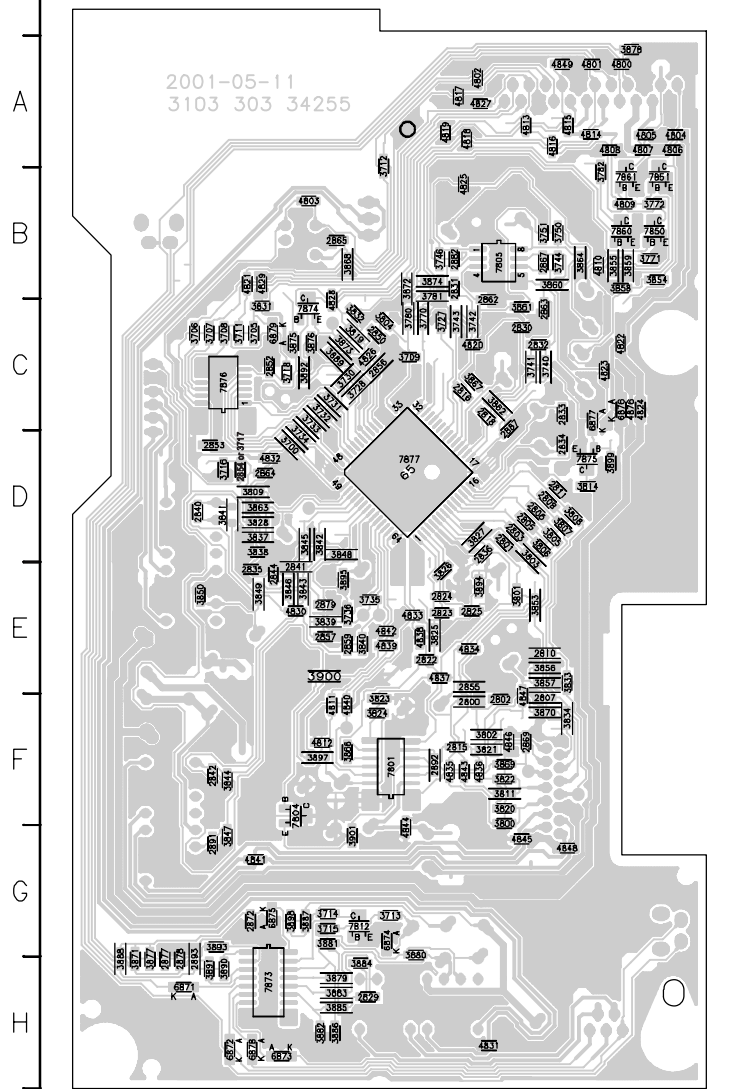
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3CDC-LC Mainboard Layout stage 3 10 08 2001

1800 D1	2803 C5	2810 A4	2823 F10	2834 C10	2841 F5	2855 B4	2864 E8	3709 C14	3801 C4	3807 A4	3820 D3	3826 F9	3835 F5	3842 E5	3848 H6	3857 C2	3870 E3	3897 E7	7804 E4
1801 G1	2805 B5	2811 A5	2824 F10	2835 F7	2842 F5	2856 D15	2865 F9	3727 B12	3802 C4	3806 A4	3821 D3	3827 E10	3837 F7	3843 E5	3849 H5	3862 B10	3873 D14	3900 E6	7806 G4
1810 C10	2806 B5	2815 D5	2825 F9	2837 H4	2844 F5	2857 H5	2867 B10	3728 E14	3803 C4	3811 B4	3822 D3	3828 G10	3838 F7	3844 F5	3850 H5	3863 H13	3889 D15	3901 E4	7807 H4
2800 C4	2807 A4	2816 B12	2826 G12	2838 E8	2849 C1	2859 G5	2868 E5	3735 G6	3804 C14	3812 H4	3823 D6	3832 D15	3839 H6	3845 F5	3852 H5	3866 D8	3892 E5	4811 F8	7877 D12
2801 C5	2806 A5	2818 B11	2828 G13	2839 F4	2850 D14	2859 D3	2891 F4	3736 H6	3805 B4	3815 E5	3824 D6	3833 A4	3840 G5	3846 F5	3853 E9	3867 B11	3894 E9	4812 F8	
2802 C4	2809 H4	2822 F9	2833 C10	2840 G4	2851 B11	2879 H5	2892 D5	3800 C4	3806 B4	3819 D14	3825 F9	3834 A4	3841 G5	3847 F5	3856 C1	3869 D3	3895 G12	7801 E7	



3CDC-LC Mainboard Copperside view



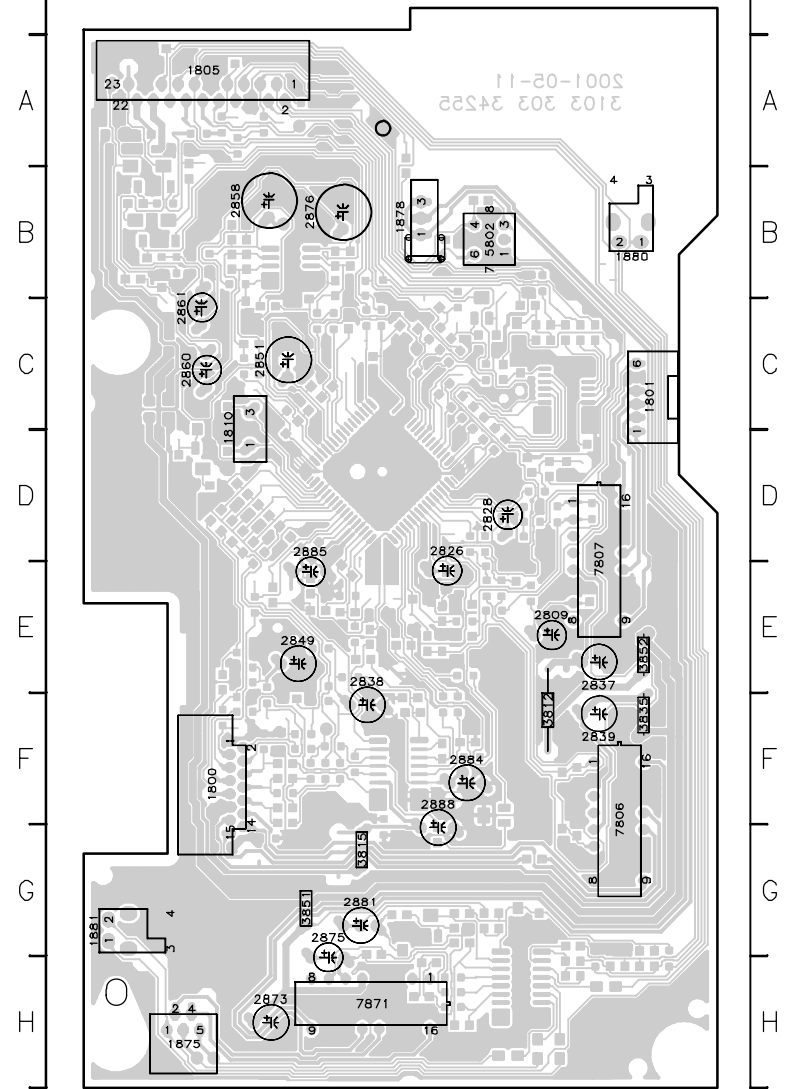
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3CDC-LC Mainboard Layout stage 3 10 08 2001

Mapping

Copperside	770 C3	3892 C2	Componentside
2800 F4	3771 B5	3893 G2	1800 F1
2801 D4	3772 B5	3894 E4	1801 C5
2802 F4	3780 C3	3895 E3	1805 A2
2803 D4	3781 B3	3897 F2	1810 C2
2805 D4	3782 B5	3898 G2	1875 H1
2806 D4	3800 F4	3899 D5	1878 B3
2807 F4	3801 E4	3900 E2	1880 B5
2808 D4	3802 F4	3901 G3	1881 G1
2810 E4	3803 D4	4800 A5	2809 E4
2811 D4	3804 C3	4801 A4	2826 E3
2815 F3	3805 D4	4802 A4	2828 D4
2816 C3	3806 D4	4803 B2	2837 E4
2818 C4	3807 D4	4804 A5	2838 F3
2822 E3	3808 D4	4805 A5	2839 F4
2823 E3	3809 D2	4806 A5	2849 E2
2824 E3	3811 F4	4807 A5	2851 C2
2825 E4	3814 D4	4808 A5	2858 B2
2829 H3	3819 C3	4809 B5	2860 C1
2830 C4	3820 F4	4810 B4	2861 C1
2831 B3	3821 F4	4811 F2	2873 H2
2832 C4	3822 F4	4812 F2	2875 G2
2833 C4	3823 F3	4813 A4	2876 B2
2834 D4	3824 F3	4814 A4	2881 G3
2835 E2	3825 E3	4815 A4	2884 F3
2836 D4	3826 E3	4816 A4	2885 E2
2840 D1	3827 D4	4817 A3	2888 G3
2841 E2	3828 D2	4818 A3	3812 F4
2842 F2	3831 C2	4819 A3	3815 G3
2844 E2	3832 C3	4820 C4	3835 F5
2850 C3	3833 C3	4821 B2	3851 G2
2852 C2	3834 F4	4822 C5	3852 E5
2853 D2	3837 D2	4823 C5	5802 B4
2854 D2	3838 D2	4824 C5	7806 F5
2855 E4	3839 E2	4825 B3	7807 D5
2856 C3	3840 E3	4826 C3	7871 H3
2857 E2	3841 D2	4827 A4	
2859 E3	3842 D2	4828 C2	
2862 C4	3843 E2	4829 B2	
2863 C4	3844 F2	4830 E2	
2864 D2	3845 D2	4831 H4	
2865 B3	3846 E2	4832 D2	
2867 B4	3847 G2	4833 E3	
2869 F4	3848 D3	4834 E4	
2872 G2	3849 E2	4835 F3	
2877 H1	3850 E1	4836 F4	
2878 H1	3853 E4	4837 E3	
2879 E2	3854 B5	4838 E3	
2882 B3	3855 B5	4839 E3	
2887 C4	3856 E4	4840 F3	
2891 G2	3857 E4	4841 G2	
2892 F3	3858 B5	4842 E3	
2893 H1	3859 B5	4843 F3	
3700 D2	3860 B4	4844 G3	
3705 C2	3861 C4	4845 G4	
3706 C1	3862 C4	4846 F4	
3707 C2	3863 D2	4847 F4	
3708 C2	3864 B4	4848 G4	
3709 C3	3866 F3	4849 A4	
3711 C2	3867 C4	4876 C5	
3712 A3	3868 B3	6871 H1	
3713 G3	3869 F4	6872 H2	
3714 G2	3870 F4	6873 H2	
3715 G2	3871 H1	6874 G3	
3716 D2	3872 B3	6875 G2	
3717 D2	3873 C3	6876 C5	
3718 C2	3874 B3	6877 C4	
3727 C3	3875 C2	6878 H2	
3728 C3	3876 C2	6879 C2	
3730 C3	3877 H1	7001 F3	
3731 C2	3878 A5	7804 F2	
3732 C2	3879 H3	7805 B4	
3733 C2	3880 G3	7812 G3	
3734 D2	3881 G2	7850 B5	
3735 E3	3882 H2	7851 B5	
3736 E3	3883 H3	7860 B5	
3740 C4	3884 H3	7861 B5	
3741 C4	3885 H3	7873 H2	
3742 C4	3886 H2	7874 C2	
3743 C3	3887 G2	7875 D4	
3744 B4	3888 H1	7876 C2	
3746 B3	3889 C2	7877 D3	
3750 B4	3890 H2		
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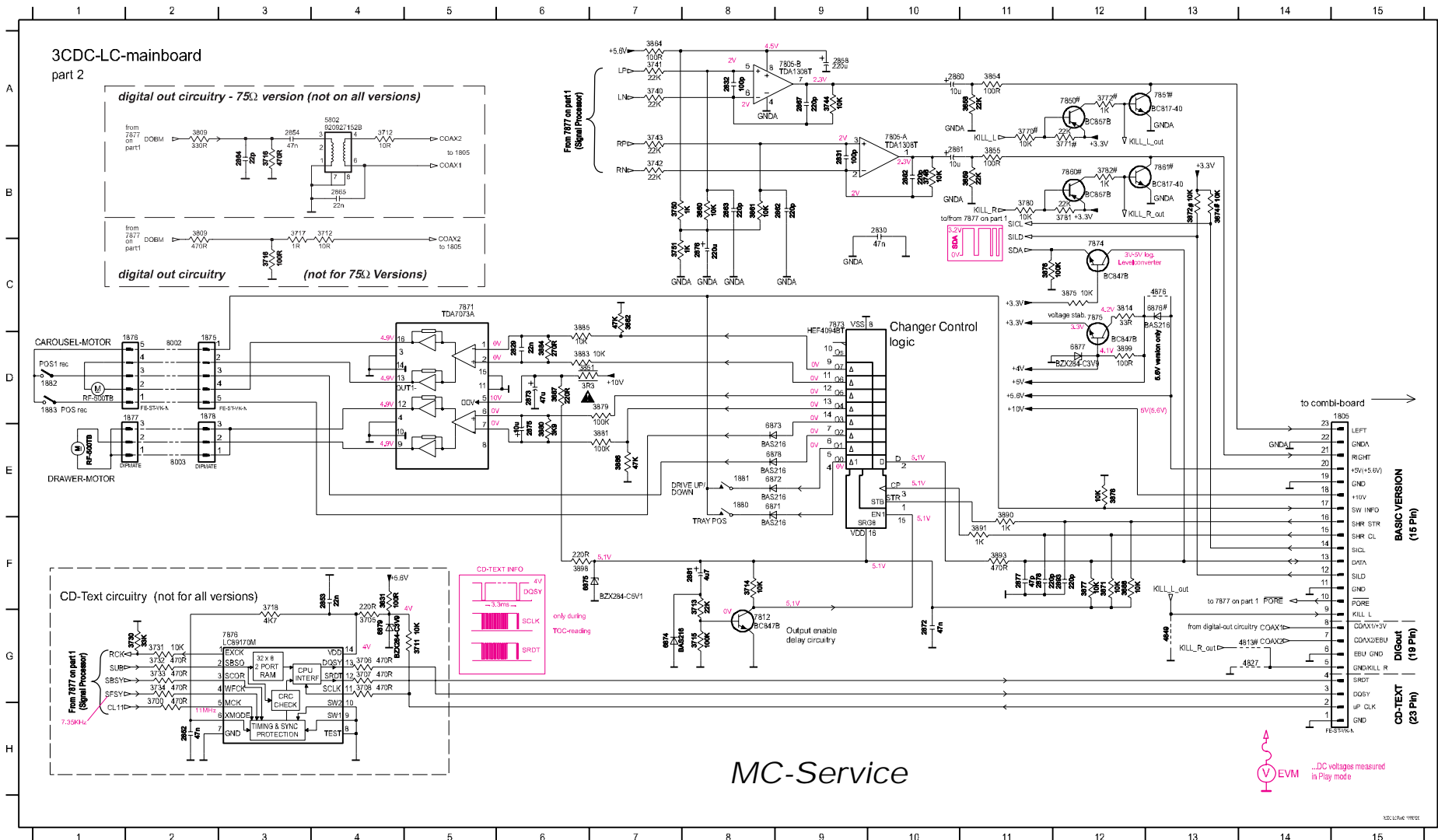
3CDC-LC Mainboard Componentside view



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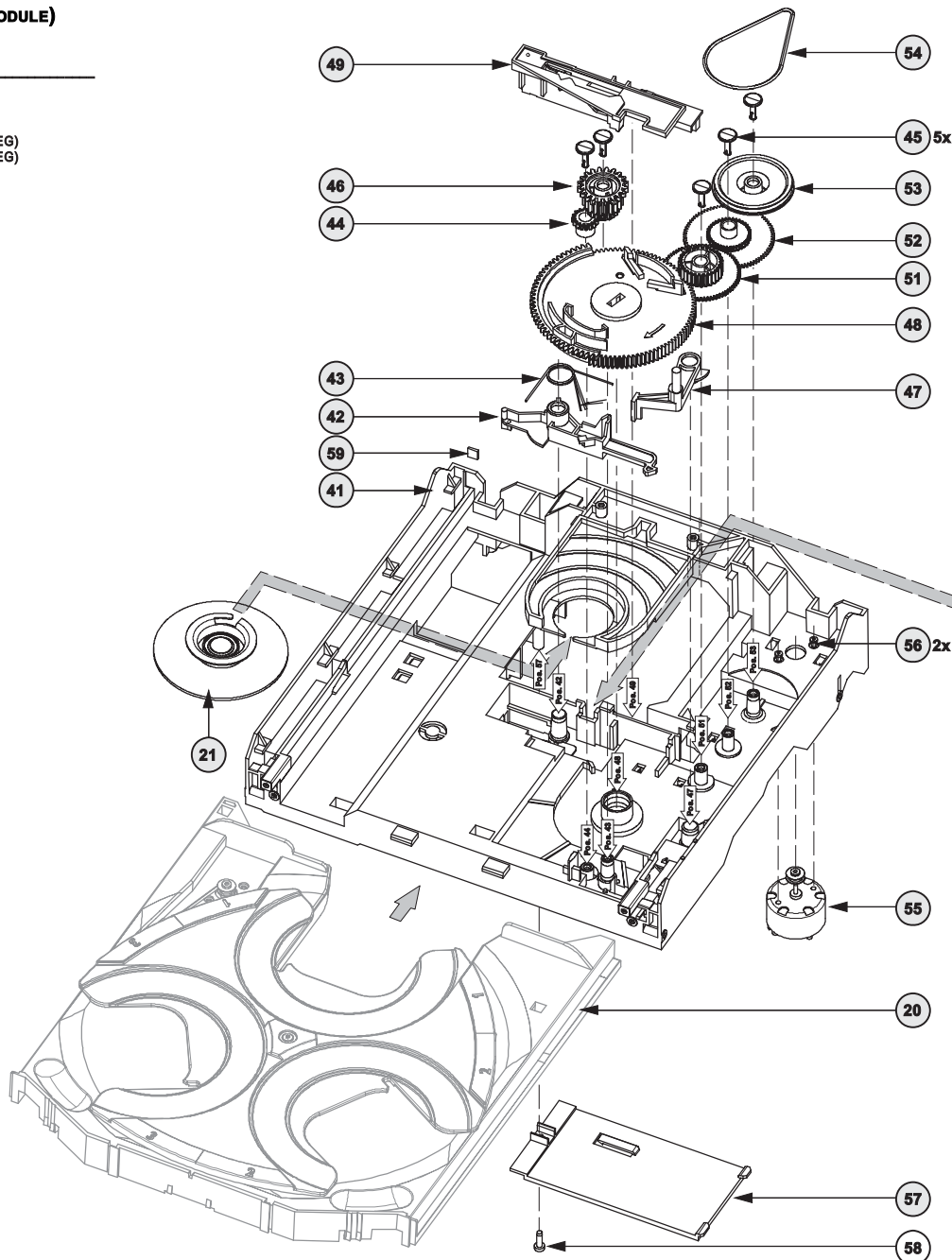
3CDC-LC Mainboard Layout stage 3 10 08 2001

1806 D16	2830 B10	2858 A10	2866 C4	2877 F11	3706 G4	3713 F8	3730 G2	3741 A7	3751 C7	3762 B12	3856 B11	3898 C4	3877 F12	3883 D6	3890 F11	4813 G14	6872 E8	6878 E6	7851 A13	7876 C12	MP726 D8	MP803 F10	MP810 F13	MP830 A9	MP856 E14	MP867 E8	MP882 G2	MP891 B5
1876 D2	2831 B9	2859 A10	2867 A9	2878 F11	3706 G4	3714 F8	3731 G2	3742 B7	3770 A11	3809 B2	3858 A11	3871 F12	3878 F12	3884 D6	3891 F11	4827 G14	6873 E8	6879 G4	7860 B12	7876 G3	MP726 D8	MP804 G14	MP811 F13	MP832 G9	MP857 B13	MP868 F8	MP885 G3	MP892 B5
1876 D2	2832 A8	2861 B10	2872 G10	2881 F8	3707 G4	3716 G8	3732 G2	3743 A7	3771 A12	3814 C12	3859 B11	3872 B13	3879 D7	3886 C8	3893 F11	4848 G13	6874 G7	7836 A10	7861 B13	7872 C3	MP740 H14	MP795 E13	MP806 E13	MP823 F13	MP833 F13	MP869 C12	MP887 H4	MP897 D12
1880 E8	2852 H2	2882 B9	2973 D8	2882 B10	3706 G4	3716 B3	3733 G2	3744 A9	3772 A12	3831 F4	3860 B6	3874 B13	3880 E9	3888 E7	3896 F6	4878 C13	6875 F6	7806 B A9	7871 C5	MP722 E8	MP741 G14	MP806 F13	MP823 D3	MP834 G14	MP835 C11	MP871 D8	MP888 G6	MP898 D13
1881 E8	2853 F4	2883 B8	2876 E8	2893 F12	3711 G6	3717 B3	3734 G2	3748 B10	3780 B11	3861 D8	3881 B6	3891 B6	3887 D8	3888 D12	3892 B4	4802 B4	6878 C13	7812 G6	7873 C9	MP723 C8	MP742 G14	MP807 F14	MP824 D4	MP835 F14	MP835 D11	MP864 D12	MP889 G6	MP899 E14
2829 D6	2854 B3	2894 B3	2878 C8	3700 H2	3712 B4	3716 G3	3740 A7	3750 B7	3781 B12	3864 A11	3884 A7	3878 C11	3882 C7	3888 F12	4803 B4	6871 E8	6877 D12	7800 A12	7874 C12	MP724 D8	MP801 D12	MP806 E13	MP825 D4	MP854 A13	MP856 E6	MP881 G2	MP899 B3	

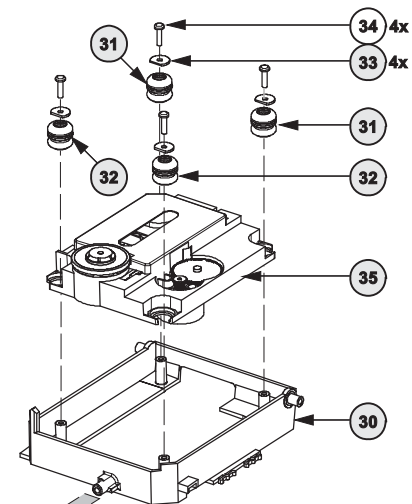


EXPLODED VIEW (3CDC-LC MODULE)**MECHANICAL PARTS** *Loader → this page*

20	3103 304 66500	DRAWER
21	3140 117 58650	CLAMPER ASSY-VAM
30	3103 304 66560	SUPPORT
31	4822 529 10431	DAMPER - RUBBER (25DEG)
32	4822 529 10431	DAMPER - RUBBER (25DEG)
33	3103 304 06970	WASHER
35	9305 022 30103	CD Drive VAM2201/03
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 68890	COVER-VAM
59	4822 466 12146	RUBBER

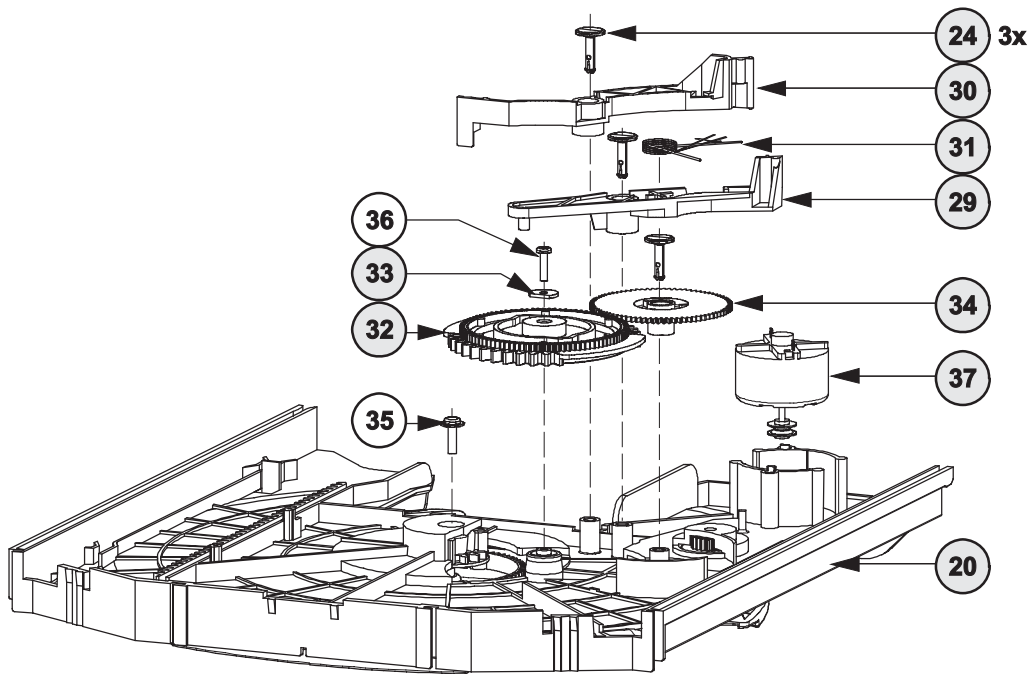


(X) spare part
(Y) non spare part

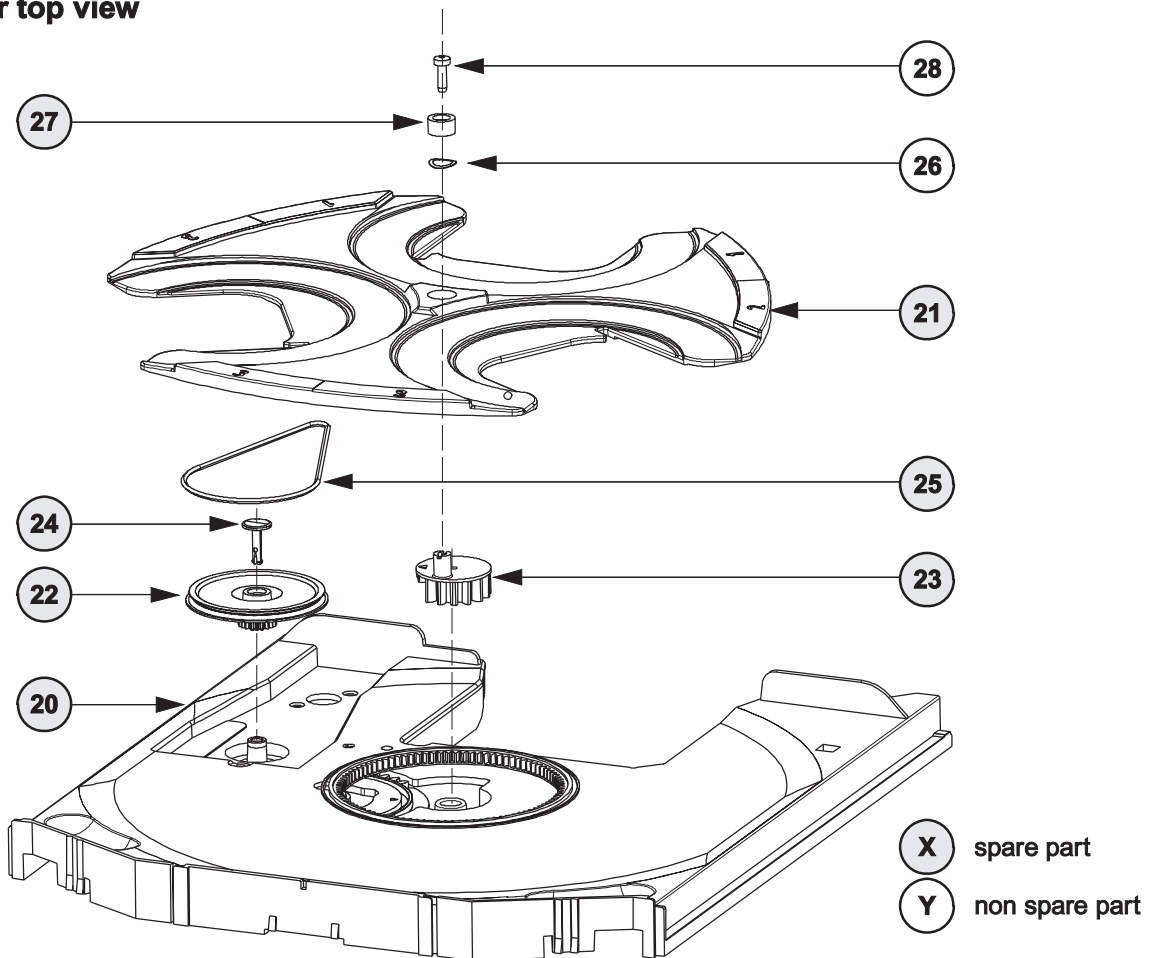
**MECHANICAL PARTS** *Drawer → Chapter 10-11*

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
34	3103 304 06870	GEAR-1
37	4822 361 10753	CAROUSEL MOTOR

Drawer bottom view



Drawer top view



ELECTRICAL PARTSLIST 3CDC-LC MODULE

MISCELLANEOUS

1800	4822 265 10925	FLEX FOIL CONNECTOR 15PIN
1805	4822 265 10979	FLEX FOIL CONNECTOR 15PIN
1805	4822 265 11182	FLEX FOIL CONNECTOR 23PIN
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 in endposition
1881	4822 276 13503	SWITCH, Drive up/down
1882	4822 276 13503	SWITCH, Position 1
1883	4822 276 13503	SWITCH, Position recognized
8002	3103 308 91990	FLEX FOIL CABLE 5P, 200mm
8005	3103 308 91980	FLEX FOIL CABLE 15P, 170mm

CAPACITORS

2800 ©	4822 126 10326	180pF	5%	
2801 ©	4822 122 33575	220pF	5%	50V
2802 ©	4822 126 10326	180pF	5%	
2803 ©	4822 122 33575	220pF	5%	50V
2805 ©	4822 122 33575	220pF	5%	50V
2806 ©	4822 122 33575	220pF	5%	50V
2807 ©	5322 122 31863	330pF	5%	50V
2808 ©	4822 122 33575	220pF	5%	50V
2809	5322 124 41948	0,47µF	20%	50V
2810 ©	4822 126 10326	180pF	5%	
2811 ©	4822 122 33575	220pF	5%	50V
2815 ©	4822 126 14076	220nF	20%	25V
2816 ©	4822 126 13344	1,5nF	5%	63V
2818 ©	4822 126 13344	1,5nF	5%	63V
2822 ©	2222 861 15222	2,2nF	10%	50V
2823 ©	4822 126 13693	56pF	1%	63V
2824 ©	4822 126 13751	47nF	10%	50V
2825 ©	4822 122 33177	10nF	20%	50V
2826	4822 124 12362	47µF	20%	4V
2828	4822 124 12362	47µF	20%	4V
2829 ©	5322 122 32654	22nF	10%	63V
2830 ©	4822 126 13751	47nF	10%	50V
2831 ©	5322 122 32531	100pF	5%	50V
2832 ©	5322 122 32531	100pF	5%	50V
2833 ©	5322 122 32659	33pF	5%	50V
2834 ©	5322 122 32659	33pF	5%	50V
2835 ©	4822 126 13751	47nF	10%	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 ©	4822 122 33216	270pF	5%	50V
2842 ©	4822 122 33127	2,2nF	10%	63V
2844 ©	4822 122 33216	270pF	5%	50V
2849	4822 124 40769	4,7µF	20%	100V
2850 ©	5322 122 31647	1nF	10%	63V
2851	4822 124 42383	220µF	20%	4V
2852 ©	4822 126 13751	47nF	10%	50V
2853 ©	5322 122 32654	22nF	10%	63V
2854 ©	4822 126 13751	47nF	10%	50V
2855 ©	5322 122 34099	470pF	10%	63V
2856 ©	4822 126 13691	27pF	1%	63V
2857 ©	4822 122 33177	10nF	20%	50V
2858	4822 124 12245	220µF	20%	16V
2859 ©	4822 122 33177	10nF	20%	50V
2860	4822 124 11947	10µF	20%	16V
2861	4822 124 11947	10µF	20%	16V
2862 ©	4822 122 33575	220pF	5%	50V
2863 ©	4822 122 33575	220pF	5%	50V
2864 ©	5322 122 32658	22pF	5%	50V

CAPACITORS

2865 ©	5322 122 32654	22nF	10%	63V
2867 ©	4822 122 33575	220pF	5%	50V
2869 ©	4822 126 13751	47nF	10%	50V
2872 ©	4822 126 13751	47nF	10%	50V
2873	4822 124 80231	47µF	20%	16V
2875	4822 124 11947	10µF	20%	16V
2876	4822 124 12245	220µF	20%	16V
2877 ©	4822 126 13692	47pF	1%	63V
2878 ©	4822 122 33575	220pF	5%	50V
2879 ©	4822 126 13751	47nF	10%	50V
2881	4822 124 40769	4,7µF	20%	100V
2882 ©	4822 122 33575	220pF	5%	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 ©	5322 122 31865	1,5nF	10%	63V
2892 ©	5322 126 10223	4,7nF	10%	63V
2893 ©	4822 122 33575	220pF	5%	50V

RESISTORS

3700 ©	4822 051 20471	470Ω	5%	0,1W
3705 ©	4822 117 11503	220Ω	5%	0,1W
3706 ©	4822 051 20471	470Ω	5%	0,1W
3707 ©	4822 051 20471	470Ω	5%	0,1W
3708 ©	4822 051 20471	470Ω	5%	0,1W
3709 ©	4822 051 20108	1Ω	5%	0,1W
3711 ©	4822 117 10833	10kΩ	1%	0,1W
3712 ©	4822 051 20109	10Ω	5%	0,1W
3713 ©	4822 051 20223	22kΩ	5%	0,1W
3714 ©	4822 117 10833	10kΩ	1%	0,1W
3715 ©	4822 117 10837	100kΩ	1%	0,1W
3716 ©	4822 051 20471	470Ω	5%	0,1W
3718 ©	4822 051 20472	4,7kΩ	5%	0,1W
3727 ©	4822 051 20472	4,7kΩ	5%	0,1W
3728 ©	4822 051 20472	4,7kΩ	5%	0,1W
3730 ©	4822 051 20333	33kΩ	5%	0,1W
3731 ©	4822 117 10833	10kΩ	1%	0,1W
3732 ©	4822 051 20471	470Ω	5%	0,1W
3733 ©	4822 051 20471	470Ω	5%	0,1W
3734 ©	4822 051 20471	470Ω	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 117 10833	10kΩ	1%	0,1W
3746 ©	4822 117 10833	10kΩ	1%	0,1W
3750 ©	4822 051 10102	1kΩ	2%	0,25W
3751 ©	4822 051 10102	1kΩ	2%	0,25W
3800 ©	4822 117 11148	56kΩ	1%	0,1W
3801 ©	4822 117 10833	10kΩ	1%	0,1W
3802 ©	4822 117 11148	56kΩ	1%	0,1W
3803 ©	4822 117 10833	10kΩ	1%	0,1W
3805 ©	4822 117 10833	10kΩ	1%	0,1W
3806 ©	4822 117 10833	10kΩ	1%	0,1W
3807 ©	4822 117 10833	10kΩ	1%	0,1W
3808 ©	4822 117 10833	10kΩ	1%	0,1W
3809 ©	4822 117 13577	330Ω	1%	0,1W
3811 ©	4822 051 20273	27kΩ	5%	0,1W
3812	4822 053 10228	2,2Ω	5%	1W
3814 ©	4822 051 20339	33Ω	5%	0,1W
3815	4822 052 10478	4,7Ω	5%	NFR
3819 ©	4822 051 20471	470Ω	5%	0,1W
3820 ©	4822 051 20472	4,7kΩ	5%	0,1W

ELECTRICAL PARTSLIST 3CDC-LC MODULE

RESISTORS

3821	© 4822 051 20472	4,7kΩ	5%	0,1W
3822	© 4822 117 12955	2,7kΩ	1%	0,1W
3823	© 4822 051 10102	1kΩ	2%	0,25W
3824	© 4822 051 10102	1kΩ	2%	0,25W
3825	© 4822 051 10102	1kΩ	2%	0,25W
3826	© 4822 051 20223	22kΩ	5%	0,1W
3827	© 4822 051 20273	27kΩ	5%	0,1W
3828	© 4822 051 20223	22kΩ	5%	0,1W
3831	© 4822 051 20101	100Ω	5%	0,1W
3832	© 4822 117 10833	10kΩ	1%	0,1W
3833	© 4822 051 20223	22kΩ	5%	0,1W
3834	© 4822 051 20223	22kΩ	5%	0,1W
3835	© 4822 052 10338	3,3Ω		NFR25
3837	© 4822 051 10102	1kΩ	2%	0,25W
3838	© 4822 051 10102	1kΩ	2%	0,25W
3839	© 4822 117 10837	100kΩ	1%	0,1W
3840	© 4822 117 10837	100kΩ	1%	0,1W
3841	© 4822 051 20472	4,7kΩ	5%	0,1W
3842	© 4822 117 10834	47kΩ	1%	0,1W
3843	© 4822 051 20333	33kΩ	5%	0,1W
3844	© 4822 051 20472	4,7kΩ	5%	0,1W
3845	© 4822 117 10834	47kΩ	1%	0,1W
3846	© 4822 051 20333	33kΩ	5%	0,1W
3847	© 4822 117 11507	6,8kΩ	1%	0,1W
3848	© 4822 117 10837	100kΩ	1%	0,1W
3849	© 4822 117 11149	82kΩ	1%	0,1W
3850	© 4822 051 20472	4,7kΩ	5%	0,1W
3851	© 4822 052 10338	3,3Ω		NFR25
3852	© 4822 052 10228	2,2Ω	5%	0,33W
3853	© 4822 051 20471	470Ω	5%	0,1W
3854	© 4822 051 20101	100Ω	5%	0,1W
3855	© 4822 051 20101	100Ω	5%	0,1W
3856	© 4822 117 12521	68Ω	1%	0,1W
3857	© 4822 117 12521	68Ω	1%	0,1W
3858	© 4822 051 20223	22kΩ	5%	0,1W
3859	© 4822 051 20223	22kΩ	5%	0,1W
3860	© 4822 117 10833	10kΩ	1%	0,1W
3861	© 4822 117 10833	10kΩ	1%	0,1W
3862	© 4822 051 20121	120Ω	5%	0,1W
3863	© 4822 051 20339	33Ω	5%	0,1W
3864	© 4822 051 20101	100Ω	5%	0,1W
3866	© 4822 117 10833	10kΩ	1%	0,1W
3867	© 4822 051 20121	120Ω	5%	0,1W
3869	© 4822 051 20478	4,7Ω	5%	0,1W
3870	© 4822 116 83933	15kΩ	5%	0,1W
3871	© 4822 117 10833	10kΩ	1%	0,1W
3873	© 4822 051 20471	470Ω	5%	0,1W
3875	© 4822 117 10833	10kΩ	1%	0,1W
3876	© 4822 117 10837	100kΩ	1%	0,1W
3877	© 4822 117 10833	10kΩ	1%	0,1W
3878	© 4822 117 10833	10kΩ	1%	0,1W
3879	© 4822 117 10837	100kΩ	1%	0,1W
3880	© 4822 051 20392	3,9kΩ	5%	0,1W
3881	© 4822 117 10837	100kΩ	1%	0,1W
3882	© 4822 117 10834	47kΩ	1%	0,1W
3883	© 4822 117 10833	10kΩ	1%	0,1W
3884	© 4822 117 11504	270Ω	1%	0,1W
3885	© 4822 117 10833	10kΩ	1%	0,1W
3886	© 4822 117 10834	47kΩ	1%	0,1W
3887	© 4822 117 11503	220Ω	5%	0,1W
3888	© 4822 117 10833	10kΩ	1%	0,1W
3889	© 4822 051 20471	470Ω	5%	0,1W
3890	© 4822 051 10102	1kΩ	2%	0,25W
3891	© 4822 051 10102	1kΩ	2%	0,25W

RESISTORS

3892	© 4822 051 20471	470Ω	5%	0,1W
3893	© 4822 051 20471	470Ω	5%	0,1W
3894	© 4822 051 20101	100Ω	5%	0,1W
3895	© 4822 051 20159	15Ω	5%	0,1W
3897	© 4822 051 20101	100Ω	5%	0,1W
3898	© 4822 117 11503	220Ω	5%	0,1W
3899	© 4822 051 20101	100Ω	5%	0,1W
3900	© 4822 051 20823	82kΩ	5%	0,1W
3901	© 4822 117 10833	10kΩ	1%	0,1W
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 20008			CHIP JUMPER 0805
4806	© 4822 051 20008			CHIP JUMPER 0805
4807	© 4822 051 20008			CHIP JUMPER 0805
4808	© 4822 051 20008			CHIP JUMPER 0805
4810	© 4822 051 20008			CHIP JUMPER 0805
4812	© 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 20008			CHIP JUMPER 0805
4825	© 4822 051 20008			CHIP JUMPER 0805
4826	© 4822 051 20008			CHIP JUMPER 0805
4827	© 4822 051 20008			CHIP JUMPER 0805
4828	© 4822 051 20008			CHIP JUMPER 0805
4830	© 4822 051 20008			CHIP JUMPER 0805
4831	© 4822 051 20008			CHIP JUMPER 0805
4832	© 4822 051 20008			CHIP JUMPER 0805
4833	© 4822 051 20008			CHIP JUMPER 0805
4834	© 4822 051 20008			CHIP JUMPER 0805
4835	© 4822 051 20008			CHIP JUMPER 0805
4836	© 4822 051 20008			CHIP JUMPER 0805
4837	© 4822 051 20008			CHIP JUMPER 0805
4838	© 4822 051 20008			CHIP JUMPER 0805
4839	© 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 20008			CHIP JUMPER 0805
4847	© 4822 051 20008			CHIP JUMPER 0805
4848	© 4822 051 20008			CHIP JUMPER 0805
4849	© 4822 051 20008			CHIP JUMPER 0805
4876	© 4822 051 20008			CHIP JUMPER 0805

COILS

1810	2422 543 01068	RESONATOR 8MHZ
5802	4822 157 70601	100μH

ELECTRICAL PARTSLIST 3CDC-LC MODULE

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

7804 ©	5322 130 60159	BC846B
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 32852	TDA7073A/N2, Motor driver
7807	4822 209 32852	TDA7073A/N2, Motor driver
7871	4822 209 32852	TDA7073A/N2, Motor driver
7873	5322 209 11306	HEF4094BT, Shift register
7876	4822 209 16143	LC89170M, CD TEXT IC
7877 ©	9352 642 17557	SAA7325H/M2B CD10/M2

Service Information

Already published Service Informations: A01-168 3139 785 30037

CHANGES DURING PRODUCTION

COMBI BOARD

- * From production wk212 (for FW-C252/21 Brazil KITS only) onwards a new pt. 5 board (recognized by marking 3139_113_34115_01) was introduced to solve transistor 7233 (BD242BFP) failure causing 12V supplier line to increased to 30V

Delete:

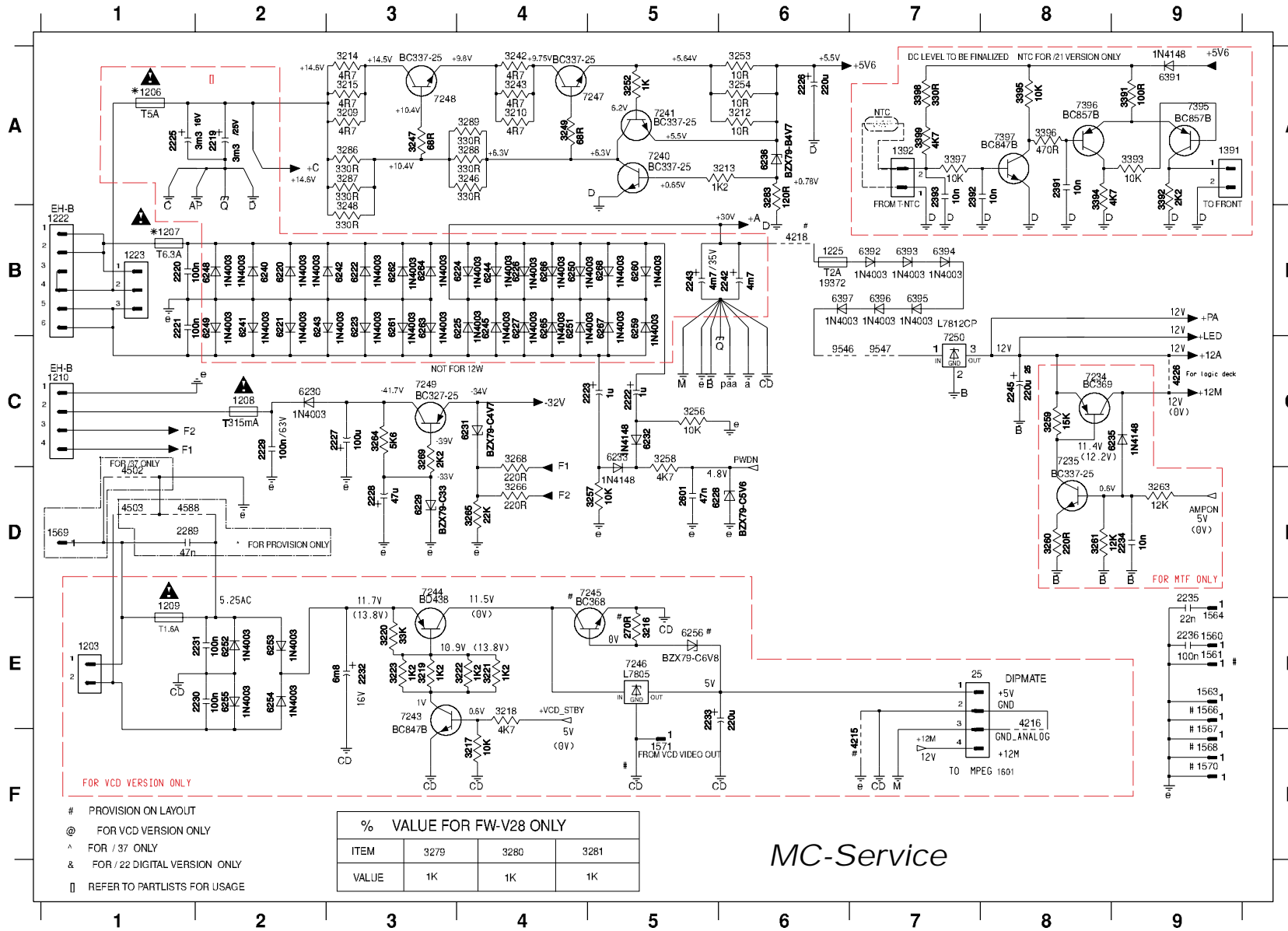
2224, 2246, 2247, 3270 - 3282, 4217, 4221, 4288,
4571, 6257, 6258, 6269, 7233 and 7236 - 7239

Add:

1225	9965 000 07788	⚠ Fuse T2A 250V
2601	4822 121 43526	47nF 10% 50V
4218	4822 051 20008	0R Jumper 0805
4681	4822 051 20008	0R Jumper 0805
4682	4822 051 20008	0R Jumper 0805
6392	4822 130 31878	1N4003
6393	4822 130 31878	1N4003
6394	4822 130 31878	1N4003
6395	4822 130 31878	1N4003
6396	4822 130 31878	1N4003
6397	4822 130 31878	1N4003
7250	4822 209 33575	L7812CP

Due to this design change the new schematics and layout drawings are enclosed.

CIRCUIT DIAGRAM - POWER SUPPLY PART



- 25 E7 3268 C4 7248 A3
- 1203 E1 3269 C3 7249 C3
- 1206 A1 3283 A6 7250 C7
- 1207 B1 3286 A3 7385 A9
- 1208 C2 3287 A3 7386 A8
- 1209 E1 3288 A4 7387 A8
- 1210 C1 3289 A4 9546 C6
- 1222 B1 3391 A9 9547 C7
- 1223 B1 3392 A9
- 1225 B6 3393 A9
- 1226 B1 3394 A8
- 1392 A7 3395 A8
- 1560 E9 3396 A8
- 1561 E9 3397 A7
- 1563 E9 3398 A7
- 1564 E9 3399 A7
- 1566 E9 4215 F7
- 1567 F9 4216 E8
- 1568 F9 4218 B6
- 1569 D1 4226 C9
- 1570 F9 4502 D1
- 1571 F5 4503 D1
- 2219 A2 4588 D1
- 2220 B1 6220 B2
- 2221 B1 6221 B2
- 2222 C5 6222 B3
- 2223 C5 6223 B3
- 2225 A1 6224 B4
- 2226 A6 6225 B4
- 2227 C3 6226 B4
- 2228 D3 6227 B4
- 2229 C2 6228 D5
- 2230 E2 6229 D3
- 2231 E2 6230 C2
- 2232 E3 6231 C4
- 2233 E5 6232 C5
- 2234 D9 6233 C5
- 2235 E9 6235 C9
- 2236 E9 6236 A6
- 2242 B6 6240 B2
- 2243 B5 6241 B2
- 2245 C8 6242 B3
- 2289 D1 6243 B2
- 2391 A8 6244 B4
- 2392 A7 6245 B4
- 2393 A7 6248 B2
- 2601 D5 6249 B2
- 3209 A3 6250 B4
- 3210 A4 6251 B4
- 3212 A6 6252 E2
- 3213 A6 6253 E2
- 3214 A3 6254 E2
- 3215 A3 6255 E2
- 3216 E5 6256 E5
- 3217 F4 6259 B5
- 3218 E4 6260 B5
- 3219 E3 6261 B3
- 3220 E3 6262 B3
- 3221 E4 6263 B3
- 3222 E4 6264 B3
- 3223 E3 6265 B4
- 3242 A4 6266 B4
- 3243 A4 6267 B5
- 3246 A4 6268 B5
- 3247 A3 6391 A9
- 3248 B3 6392 B7
- 3249 A4 6393 B7
- 3252 A5 6394 B7
- 3253 A6 6395 B7
- 3254 A6 6396 B7
- 3256 C5 6397 B6
- 3257 D5 7234 C8
- 3258 C5 7235 C8
- 3259 C8 7240 A5
- 3260 D8 7241 A5
- 3261 D8 7243 E3
- 3263 D9 7244 D3
- 3264 C3 7245 D4
- 3265 D4 7246 E5
- 3266 D4 7247 A4

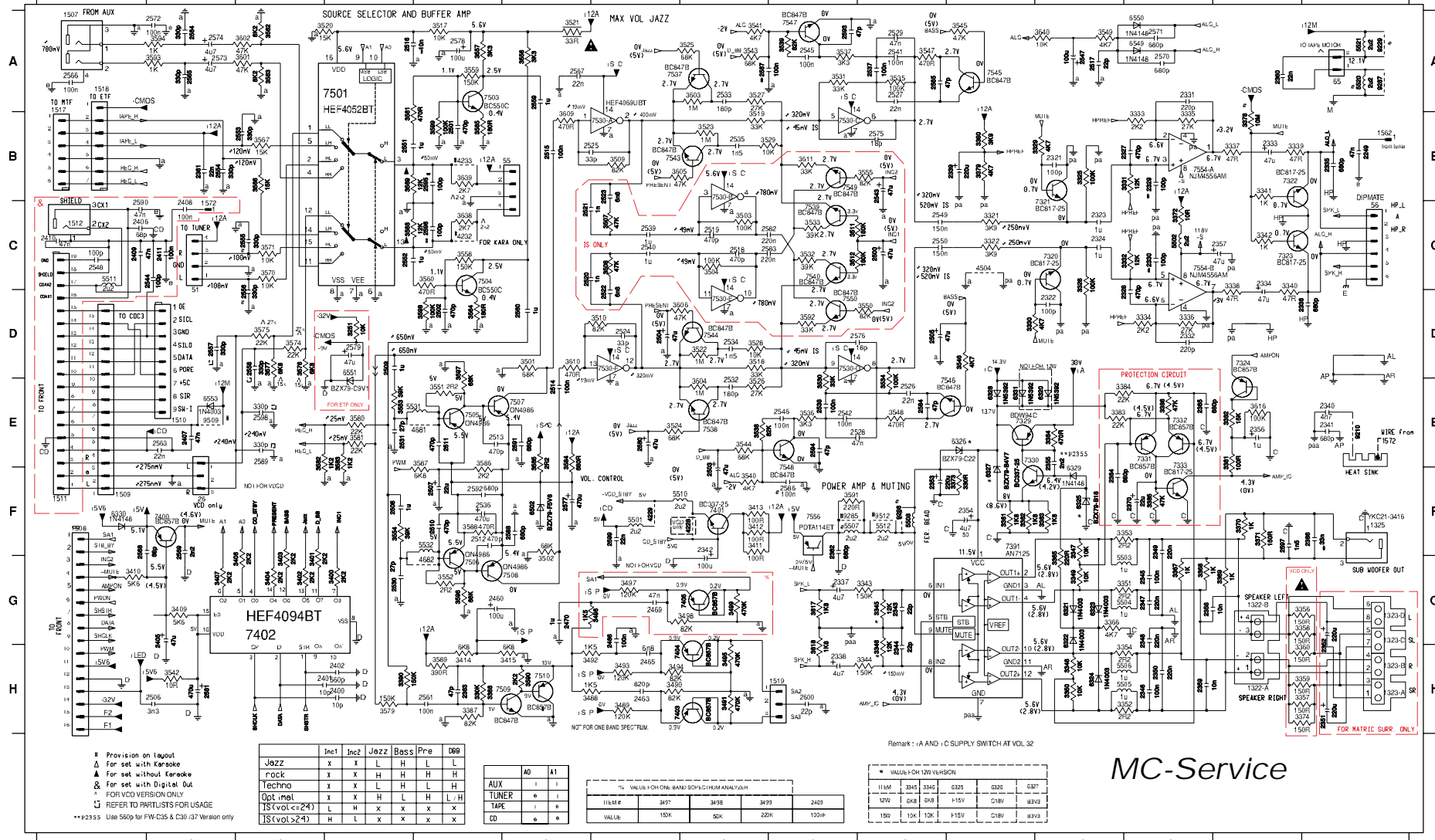
PROVISION ON LAYOUT
 @ FOR VCD VERSION ONLY
 ^ FOR / 37 ONLY
 & FOR / 22 DIGITAL VERSION ONLY
 || REFER TO PARTLISTS FOR USAGE

% VALUE FOR FW-V28 ONLY			
ITEM	3279	3280	3281
VALUE	1K	1K	1K

MC-Service

CIRCUIT DIAGRAM - SOURCE SELECTION & AMPLIFIER PART

26 F2	1511 F1	2331 A13	2347 G13	2363 H5	2463 H7	2511 E5	2527 A10	2543 B10	2559 A6	2576 D10	2592 F5	3331 B13	3347 F12	3364 E12	3383 E12	3411 F8	3489 G8	3522 D8	3538 E8	3554 F4	3570 C3	3589 H5	3609 H6	3501 F7	6321 G12	7320 C12	7405 G8	7537 A8	8229 A15
51 C2	1512 C1	2332 D13	2348 G13	2364 H10	2464 H7	2512 F5	2528 E10	2544 C2	2560 D2	2577 F6	2593 A9	3332 C13	3348 H12	3365 G12	3384 E12	3412 F8	3490 G8	3523 B9	3539 A8	3555 B10	3571 C3	3590 H6	3610 D8	3502 C13	6322 G12	7321 C12	7401 A3	7538 B8	8285 P15
55 B6	1513 B1	2333 B13	2349 H13	2365 E13	2465 H7	2513 A5	2529 A10	2545 B6	2561 A2	2578 A5	2594 A8	3333 A13	3349 H12	3366 F12	3385 A5	3413 B8	3491 G8	3524 B7	3540 A7	3556 A8	3572 D3	3591 H6	3611 D8	3503 A13	6323 B12	7322 B12	7402 A3	7539 C8	8286 P16
56 C15	1514 A1	2334 C14	2350 H13	2366 F15	2466 G7	2514 B6	2530 G4	2546 B9	2562 E2	2579 D4	2595 B5	3334 D13	3350 H12	3367 G13	3386 E13	3414 H5	3492 G8	3525 A8	3541 A8	3557 A5	3573 D3	3592 D9	3612 E4	3504 G13	6324 H12	7323 C14	7403 C5	7540 C8	8287 A15
63 A15	1519 H6	2338 B15	2351 H15	2370 H13	2470 G6	2519 B6	2535 E4	2547 A12	2564 A2	2580 E7	2596 C5	3335 B13	3351 G13	3368 G13	3387 H5	3415 H6	3493 G8	3526 B8	3542 H6	3558 C5	3574 D3	3593 A2	3613 G9	3505 H15	6325 H12	7324 D14	7404 B7	7541 B7	8288 E15
132-3 H14	1522 B14	2337 G9	2353 H10	2401 H4	2501 B5	2515 A5	2531 D2	2543 C10	2560 A2	2582 C7	2598 A3	3336 D13	3352 H13	3369 G14	3388 H5	3416 H6	3494 G8	3527 A8	3543 B8	3559 A5	3575 D3	3594 A2	3614 E4	3506 H15	6326 E11	7325 B11	7405 C5	7542 D8	8289 E16
132-3 H15	1523 C14	2339 G9	2354 H11	2402 H4	2502 D5	2516 C6	2532 D8	2544 C10	2561 A2	2583 C7	2599 A3	3337 F14	3353 H13	3370 H14	3389 H4	3417 H6	3495 G8	3528 B8	3544 B8	3560 C5	3576 D3	3595 A2	3615 G9	3507 H15	6327 H11	7326 E11	7406 H5	7543 A11	8290 E17
132-3 G11	1524 D12	2340 E15	2356 E14	2405 C1	2505 D7	2517 B8	2533 C6	2545 A10	2562 F1	2584 B10	2600 B9	3338 C14	3354 H13	3371 F14	3400 G4	3420 H7	3496 H6	3529 B10	3545 A11	3561 B4	3577 D3	3596 A2	3616 E4	3508 H15	6328 E11	7327 E12	7407 H5	7544 B11	8291 F16
132-3 H12	1525 B11	2341 E15	2357 E14	2407 E2	2506 F8	2518 B8	2534 C6	2546 A10	2563 F1	2585 A10	2601 B9	3339 C14	3355 G13	3372 C13	3401 G3	3421 H7	3497 H6	3530 A9	3546 A12	3562 A4	3578 D3	3597 A2	3617 G9	3509 H15	6329 F12	7328 E11	7408 H5	7545 C8	8292 A15
132-3 H13	1526 C12	2342 F16	2358 G13	2408 C2	2507 H8	2519 B8	2535 C6	2547 A10	2564 A2	2586 B6	2602 B9	3340 C14	3356 H13	3373 H11	3402 G3	3422 H7	3498 H6	3531 A9	3547 A10	3563 A3	3579 D3	3598 A2	3618 E4	3510 H15	6330 F1	7329 F11	7409 H5	7546 B9	8293 F16
132-3 H14	1527 C12	2343 F16	2359 G13	2409 C2	2508 H8	2520 B8	2536 C6	2548 A10	2565 A2	2587 A6	2603 B9	3341 C14	3357 H13	3374 H11	3403 G3	3423 H7	3499 H6	3532 A9	3548 A11	3564 A3	3580 D3	3599 A2	3619 E4	3511 H15	6331 F11	7330 E11	7410 H5	7547 B9	8294 A15
1507 A1	2327 B13	2343 G10	2359 H13	2408 C2	2507 F5	2519 B8	2535 C6	2547 A10	2564 A2	2586 B6	2603 B9	3342 C14	3358 H13	3375 H11	3404 G3	3424 H7	3499 H6	3533 A9	3549 A11	3565 B5	3581 D3	3600 B8	3601 B8	3512 H15	6332 F11	7331 E11	7411 H5	7548 B13	8295 F16
1508 F1	2328 B13	2344 H10	2360 A11	2410 C1	2508 F4	2520 C7	2536 C6	2548 A10	2565 A2	2587 A6	2604 B9	3343 C14	3359 H13	3376 H11	3405 G3	3425 H7	3500 H6	3534 A10	3550 D10	3566 B5	3582 D3	3601 B8	3602 B8	3513 H15	6333 F11	7332 E11	7412 H5	7549 B13	8296 F16
1509 F1	2329 B13	2345 G13	2361 B2	2411 C2	2509 D4	2521 B7	2537 D6	2549 A10	2566 A2	2588 A6	2605 B9	3344 C14	3360 H13	3377 H11	3406 G3	3426 H7	3501 H6	3535 A10	3551 D10	3567 B5	3583 D3	3602 B8	3603 B8	3514 H15	6334 F11	7333 E11	7413 H5	7550 B13	8297 F16
1510 E2	2330 B13	2346 H13	2362 H9	2400 G5	2509 D4	2522 B7	2538 D6	2550 A10	2567 A2	2589 C1	2606 B9	3345 C14	3361 H13	3378 H11	3407 G3	3427 H7	3502 H6	3536 A10	3552 D10	3568 B5	3584 D3	3603 B8	3604 B8	3515 H15	6335 F11	7334 E11	7414 H5	7551 B13	8298 F16



- Provision on layout
- ▲ For set with Karaoke
- △ For set without Karaoke
- ⊗ For set with Digital Out
- FOR VCD VERSION ONLY
- ⊞ REFER TO PARTLISTS FOR USAGE
- ***2335 Use 5690 for FW-C35 & C30-37 Version only

	Inc1	Inc2	Jazz	Bass	Pre	DBB
Jazz	x	x	L	H	L	L
rock	x	x	H	H	H	H
Techno	x	x	L	H	L	H
Opt.mel	x	x	H	L	H	L
TS (vol.<=24)	L	H	x	x	x	x
TS (vol.>24)	L	L	x	x	x	x

AUX	•	•
TUNER	•	•
TAPE	•	•
CD	•	•

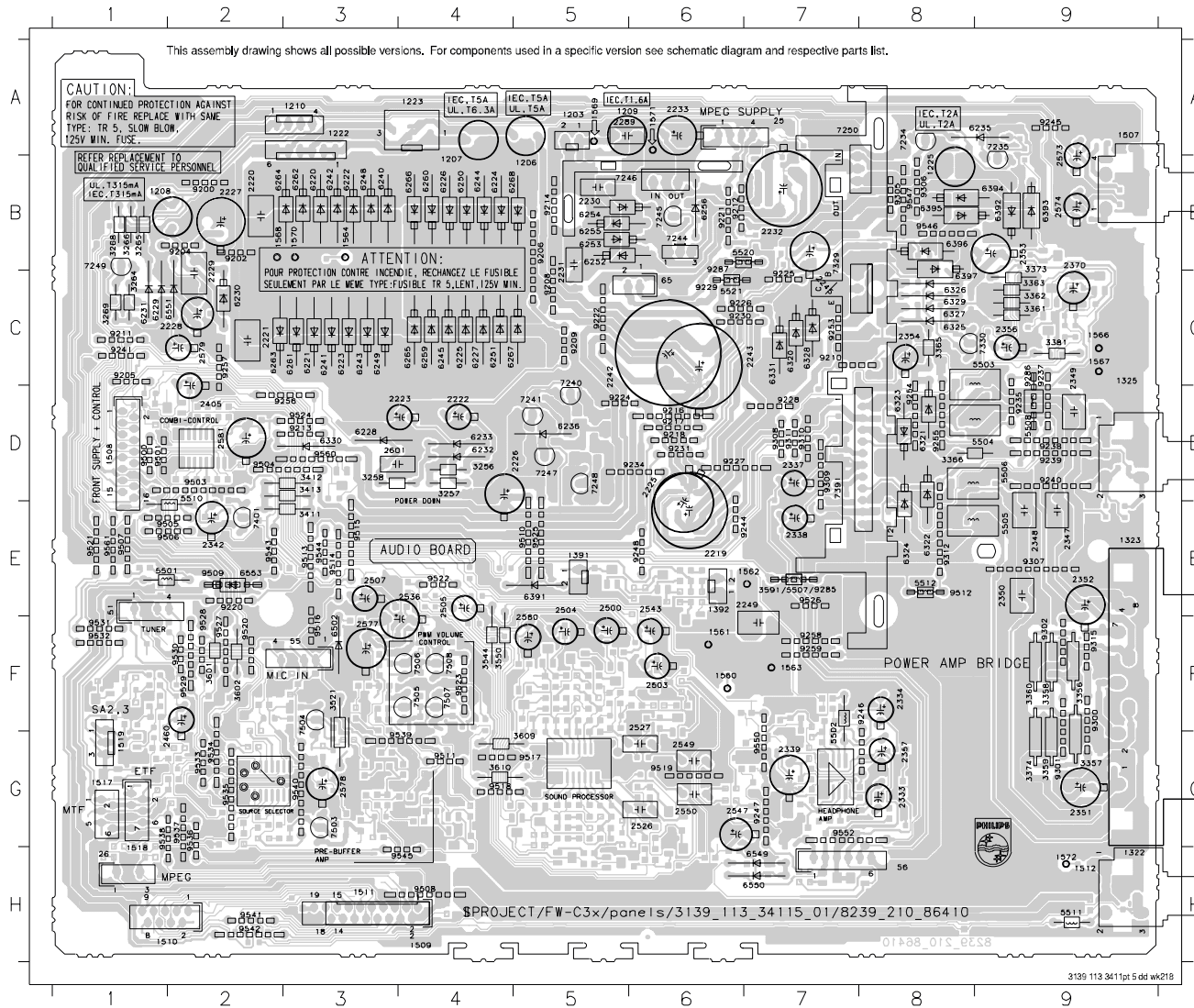
11kΩ	39k	39k	39k	39k	39k
15k	15k	5k	22k	15k	15k

11kΩ	33k	33k	33k	33k	33k
15k	10k	10k	15k	10k	10k

Remark: 1. A AND 1. C SUPPLY SWITCH AT VOL. 32

MC-Service

COMBI COMPONENT LAYOUT - MAIN PART

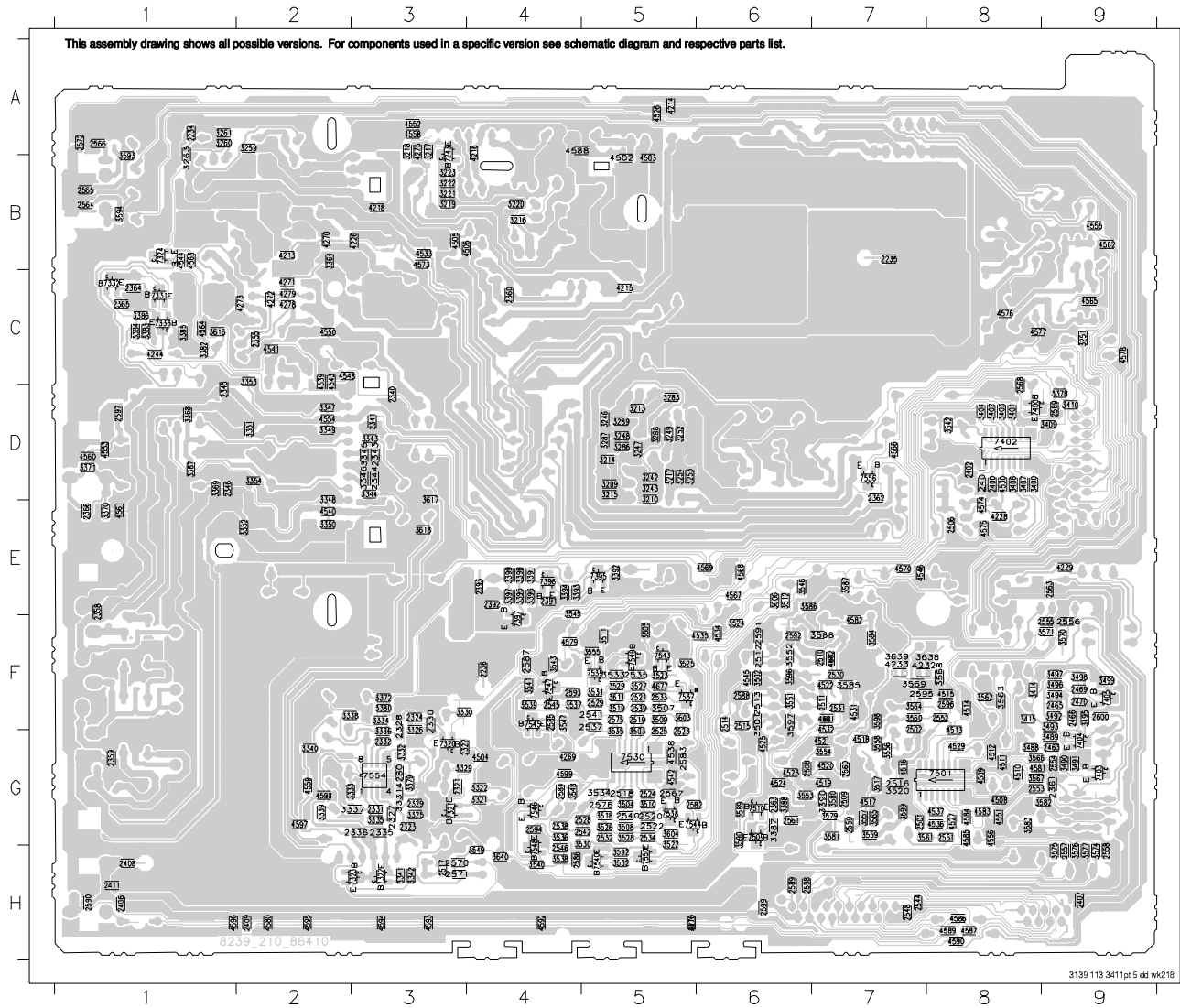


3139 113 3411pt 5 dtd wk21b

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COMBI CHIP LAYOUT - MAIN PART



7401	7402	7403	7404	7405	7406	7407	7408	7409	7410	7411	7412	7413	7414	7415	7416	7417	7418	7419	7420	7421	7422	7423	7424	7425	7426	7427	7428	7429	7430	7431	7432	7433	7434	7435	7436	7437	7438	7439	7440	7441	7442	7443	7444	7445	7446	7447	7448	7449	7450	7451	7452	7453	7454	7455	7456	7457	7458	7459	7460	7461	7462	7463	7464	7465	7466	7467	7468	7469	7470	7471	7472	7473	7474	7475	7476	7477	7478	7479	7480	7481	7482	7483	7484	7485	7486	7487	7488	7489	7490	7491	7492	7493	7494	7495	7496	7497	7498	7499	7500
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Mini System

Service
Service
Service



Service Manual

COMPACT
disc
DIGITAL AUDIO

MC-Service

**CLASS 1
LASER PRODUCT**

GB

3139 785 30021

Version 1.0



PHILIPS

SPECIFICATIONS**GENERAL:**

Mains voltage : 110-127V/220-240V Switchable for /21/21M
 120V for /37
 230-240V for /30
 Mains frequency : 50/60Hz
 Power consumption : < 70W Active
 < 15W at Standby /37
 < 20W at Standby /21/21M/30
 Clock accuracy : < 4 seconds per day
 Dimension centre unit : 265 x 310 x 365mm

TUNER:**FM**

Tuning range : 87.5-108MHz
 Grid : 50kHz
 100kHz for /21/21M/37
 IF frequency : 10.7MHz \pm 20kHz
 Aerial input : 75 Ω coaxial
 300 Ω click fit for /37
 Sensitivity at 26dB S/N : < 7 μ V
 Selectivity at 600kHz bandwidth : > 25dB
 IF rejection : > 60dB
 Image rejection : > 25dB
 Distortion at RF=1mV, dev. 75kHz : < 3%
 -3dB Limiting point : < 8 μ V
 Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
 530-1700kHz for /21/21M/37
 Grid : 9kHz
 10kHz for /21/21M/37
 IF frequency : 450kHz \pm 1kHz
 Aerial input : Frame aerial
 Sensitivity at 26dB S/N : < 4.4mV/M
 Selectivity at 18kHz bandwidth : > 18dB
 IF rejection : > 45dB
 Image rejection : > 28dB
 Distortion at RF=50mV, m=80% : < 5%

AMPLIFIER:

Output power : 2 x 40W ¹⁾ RMS /21/21M/30
 2 x 33W ²⁾ FTC /37
 Frequency response within -3dB : 50Hz-15kHz
 Dynamic Bass Boost : DBB ON, DBB 1, DBB 2, DBB 3 ³⁾
 Digital Sound Control : Jazz, Techno, Optimal, Rock ³⁾
 Headphone output at 32 Ω : 15mW \pm 2dB
 Input sensitivity, R_s = 600 Ω
 Aux / CDR : 500mV / 1.0V
 Mic : {3.5mV}

CASSETTE RECORDER:

Number of track : 2 x 2 stereo
 Tape speed : 4.76 cm/sec +2.5/-1.5%
 Wow and flutter : < 0.35% DIN
 Fast-wind/rewind time C60 : 130 sec
 Bias system : 75kHz \pm 5kHz
 Rec/Pb frequency response within 8dB : 80Hz - 12.5kHz
 Signal to noise ratio Type I : > 48dBA

COMPACT DISC:

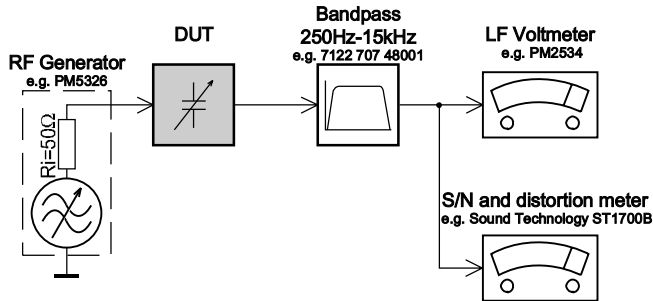
Measurement done at output conn. of the CDC module.
 Frequency response within \pm 1.5dB : 20Hz - 20kHz
 Output level (in V_{rms}) : 550mV \pm 2dB, R_{out} = 100 Ω
 Signal/Noise ratio (A-weighted) : > 80dBA
 Distortion at 1kHz : < 0.003%
 Channel unbalance at 1kHz : \pm 1dB
 Channel separation at 1kHz : > 60dB
 De-emphasis : 0 or 15/50 mS (Switched by subcode on the disc)

{...} Values for /21/21M only

- 1) 6 Ω , 1kHz, 10% THD
- 2) 6 Ω , 60Hz-12.5kHz, 10% THD
- 3) Frequency response in each setting is software controlled.

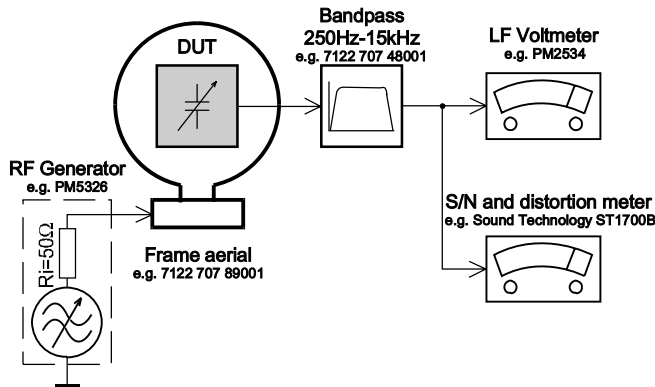
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

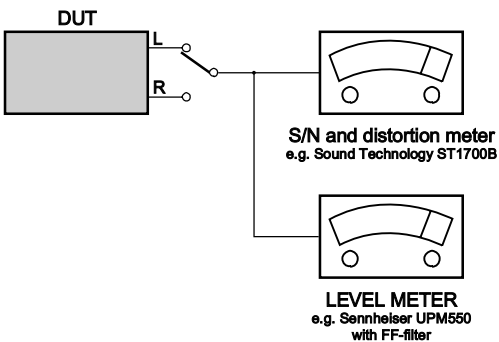
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

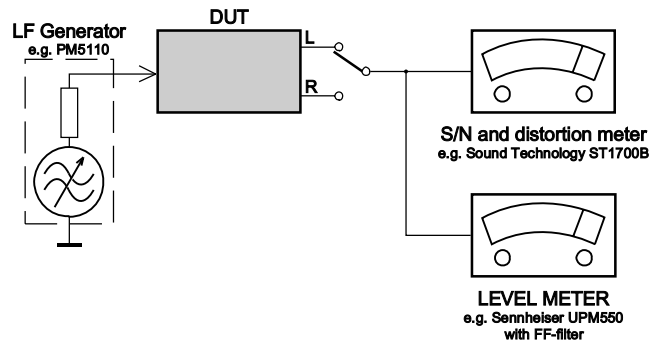
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette CrO2 SBC419 4822 397 30069
or Universal Test Cassette Fe SBC420 4822 397 30071



SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Cassette:

SBC419 Test cassette CrO2	4822 397 30069
SBC420 Test cassette Fe	4822 397 30071
MTT150 Dolby level 200nWb/M	4822 397 30271

Compact Disc:

SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

ESD Equipment:

Anti-static table mat - large 1200x650x1.25mm ...	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1M Ω)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

HANDLING CHIP COMPONENTS

GENERAL

DISMOUNTING

MOUNTING

EXAMPLES

PRECAUTIONS

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD**(NL) WAARSCHUWING**

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

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilier le braceleterti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes. Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

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

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisés les pièces de rechange identiques à celles spécifiées.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

**(GB) Warning !**

Invisible laser radiation when open. Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstråling när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

DISMANTLING INSTRUCTIONS

Dismantling the 3CDC Module

- 1) Loosen the 4 screws, slide Cover top (pos 253) towards the rear and remove it upwards.
- 2) Loosen 3 screws slide the Panel right (pos 252) towards the rear and remove it outwards. Do likewise for the Panel left (pos 251).
- 3) Push the gear slowly towards the front as shown in figure 2 until the CDC tray starts to move out of the Front Cabinet (pos 101). The CDC tray is now disengage and can be pulled out completely.

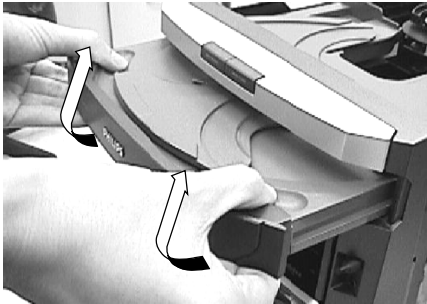


Figure 1

- 4) Remove the Cover Tray (pos 105) as shown in figure 2.
- 5) Loosen 4 screws A to remove the CDC Module (pos 1104) as shown in figure 2.

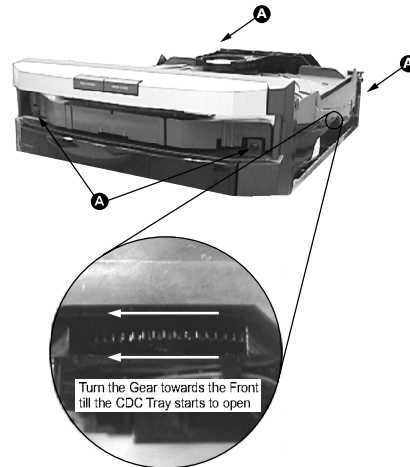


Figure 2

Dismantling of the Volume & Jog Rotary knobs

- 1) Cut a piece of packaging tape approximately 5cm width by 12cm length and tape its narrow side on to the top and bottom side of the Volume knob (pos 132) as shown in figure 3.



Figure 3

- 2) Place a small screw driver in between the tape & knob (see figure 3) to give more leverage in pulling out the knob as shown in figure 4.
- 3) Do likewise for the Jog Rotary knob (pos 131). You may have to rotate the knob to provide the most exposed area during application of the packaging tape.

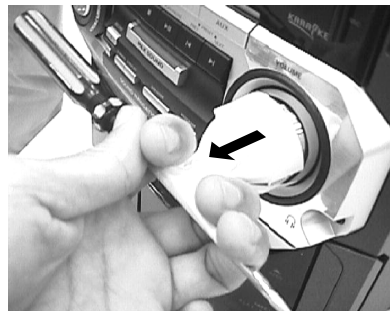


Figure 4

Dismantling of the Front Panel assembly

- 1) Loosen 2 screws below the Front Panel (pos 101) mounting it to the Bottom plate (pos 227).
- 2) Release the 2 catches on the sides of the Front Panel to separate it from the Bottom plate.
- 3) Remove the Volume and Jog Rotary knob if the Front board needs to be dismantled. For Karaoke versions, the Karaoke knob (pos 133) also need to be removed.
- 4) Loosen 8 screws B to remove the Front board as shown in Figure 5.
- 5) Loosen 6 screws C and eject both cassette doors to remove the Tape mechanism (pos 1103) as shown in figure 6.

Note: The Cassette door can be removed only after the removal of the Tape mechanism and buttons.

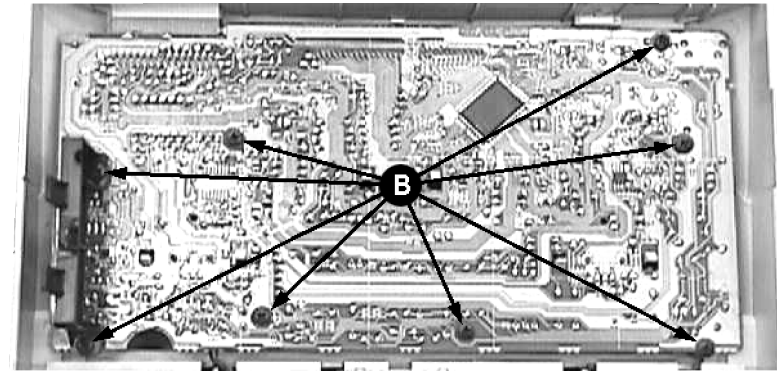


Figure 5

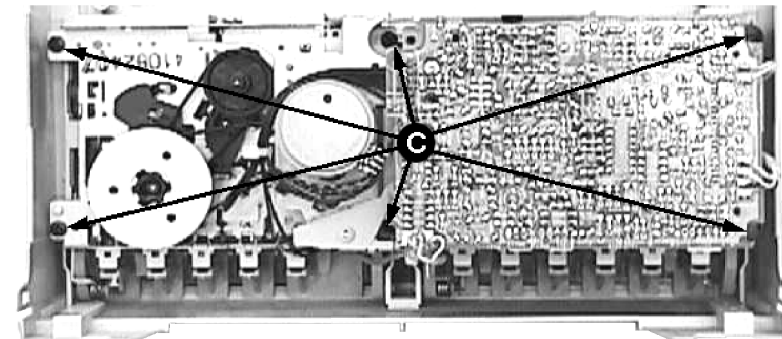


Figure 6

Dismantling of the Cassette door Lenses

- 1) Loosen the Lens Cassette Strip Left Top (pos 163) by pushing it towards the inside as indicated in Figure 7 and remove it by using a minus screw driver force it out as indicated in Figure 8.
- 2) Remove the Lens Cassette Left (pos 161) by pushing it towards the inside as indicated in Figure 7. Be careful not to damage or break the catch A.
- 3) Do likewise for the right Cassette Door Lens (pos 160 and 162).

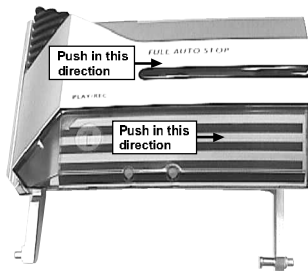


Figure 7

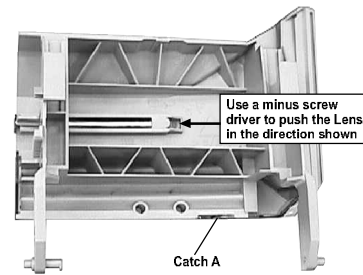


Figure 8

Dismantling of the Bottom & Rear Panel assembly

- 1) Loosen 5 screws D mounting the Combi board to the Rear Panel (pos 254) as shown in figure 9.
- 2) Loosen 3 screws E and release the 2 catches on the sides of the Rear Panel to separate it from the Bottom plate (pos 227).
- 3) Loosen 4 screws G to remove the Mains Transformer.
- 5) Loosen 2 screws F to remove the Combi Board.

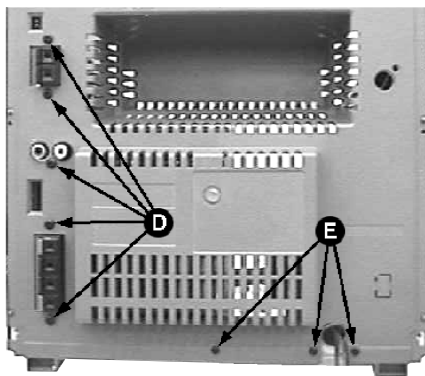


Figure 9

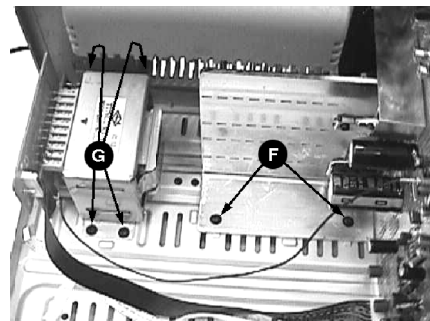
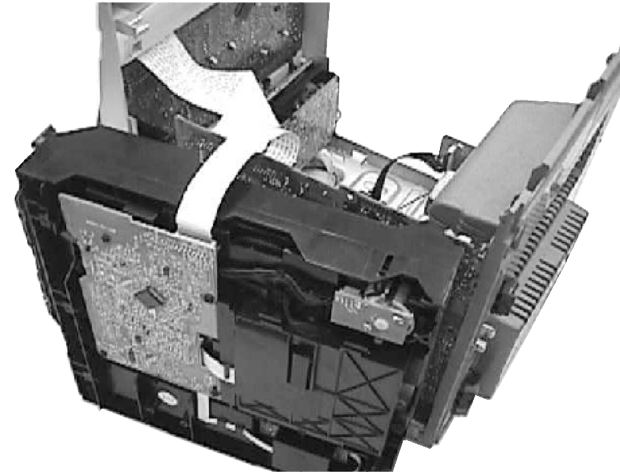


Figure 10

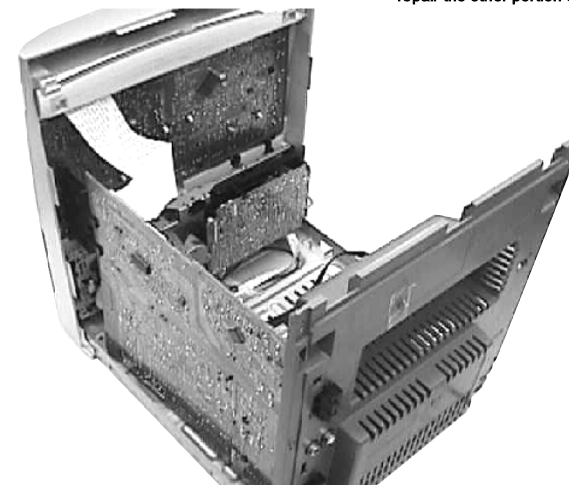
Service pos A



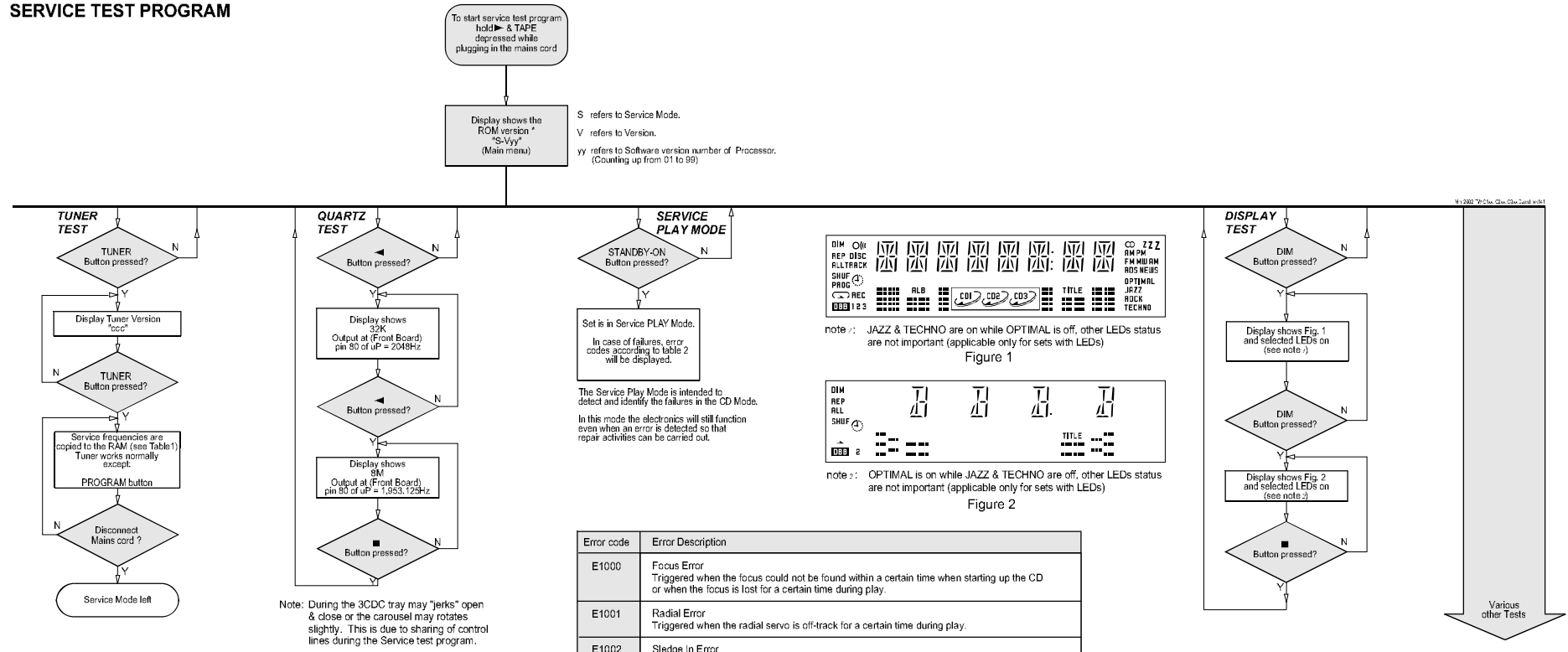
Note: After re-assembly, it is very important to ensure all wires are routed properly to ensure that they do not touch/obstruct all moving parts.

Service pos B

The 3CDC Module can be complete detached while repair the other portion of the set.



SERVICE TEST PROGRAM



Note: During the 3CDC tray may "jerk" open & close or the carousel may rotate slightly. This is due to sharing of control lines during the Service test program.

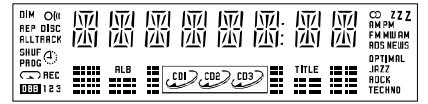
PRESET	Europe "EUR"	East Eur. Extended-band "EAS"	East Eur. "EAS"	USA "USA"	Oversea "OSE"
1	87.5MHz	65.81MHz	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	74MHz	531kHz	530kHz	530/531kHz*
4	1602kHz	87.5MHz	1602kHz	1700kHz	1700/1602kHz*
5	558kHz	531kHz	558kHz	560kHz	560/558kHz*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

Table 1

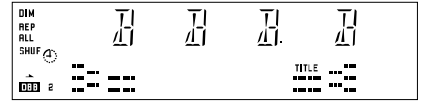
Note: * Depending on the selected grid frequency (9 or 10kHz)
 By holding the TUNER and >> buttons depressed while switching on the Mains supply, one of the undermentioned features will be activated:
 - the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (Z1) version.
 - the extended 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	This happens when the carousel switch is defective and closed all the time, or when the carousel is blocked when it is located exactly at a disc position.
E1071	This happens when the carousel switch is defective and does not closed electrically, or when the carousel is blocked in between two disc positions. The time-out is approximately 5 Sec.
E1079	The drawer could not open or enter the inside position and is opening again. This happen when the drawer is blocked and cannot go fully inside or when the drawer switch is defective and does not close.

Table 2



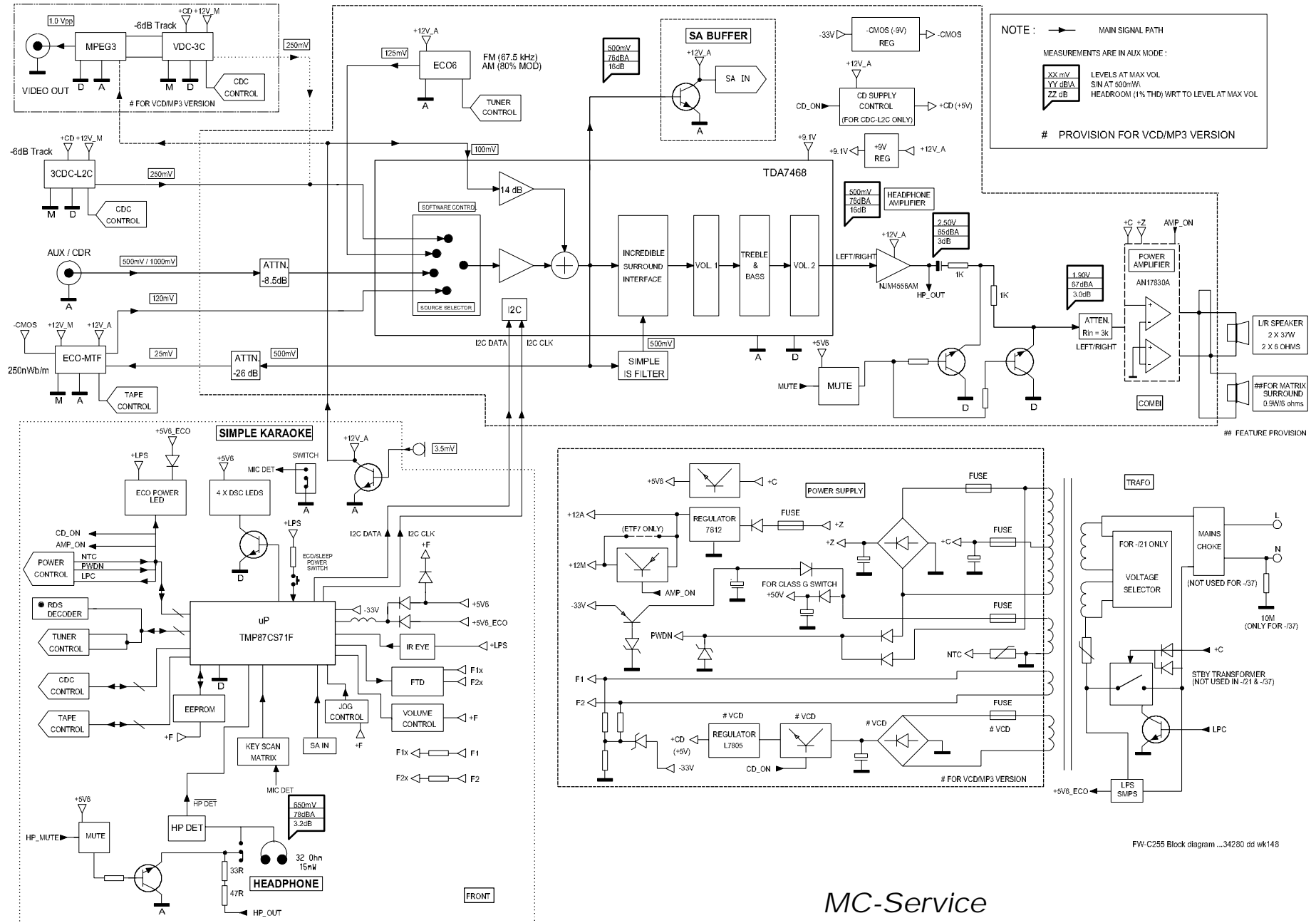
note 1: JAZZ & TECHNO are on while OPTIMAL is off, other LEDs status are not important (applicable only for sets with LEDs)
 Figure 1



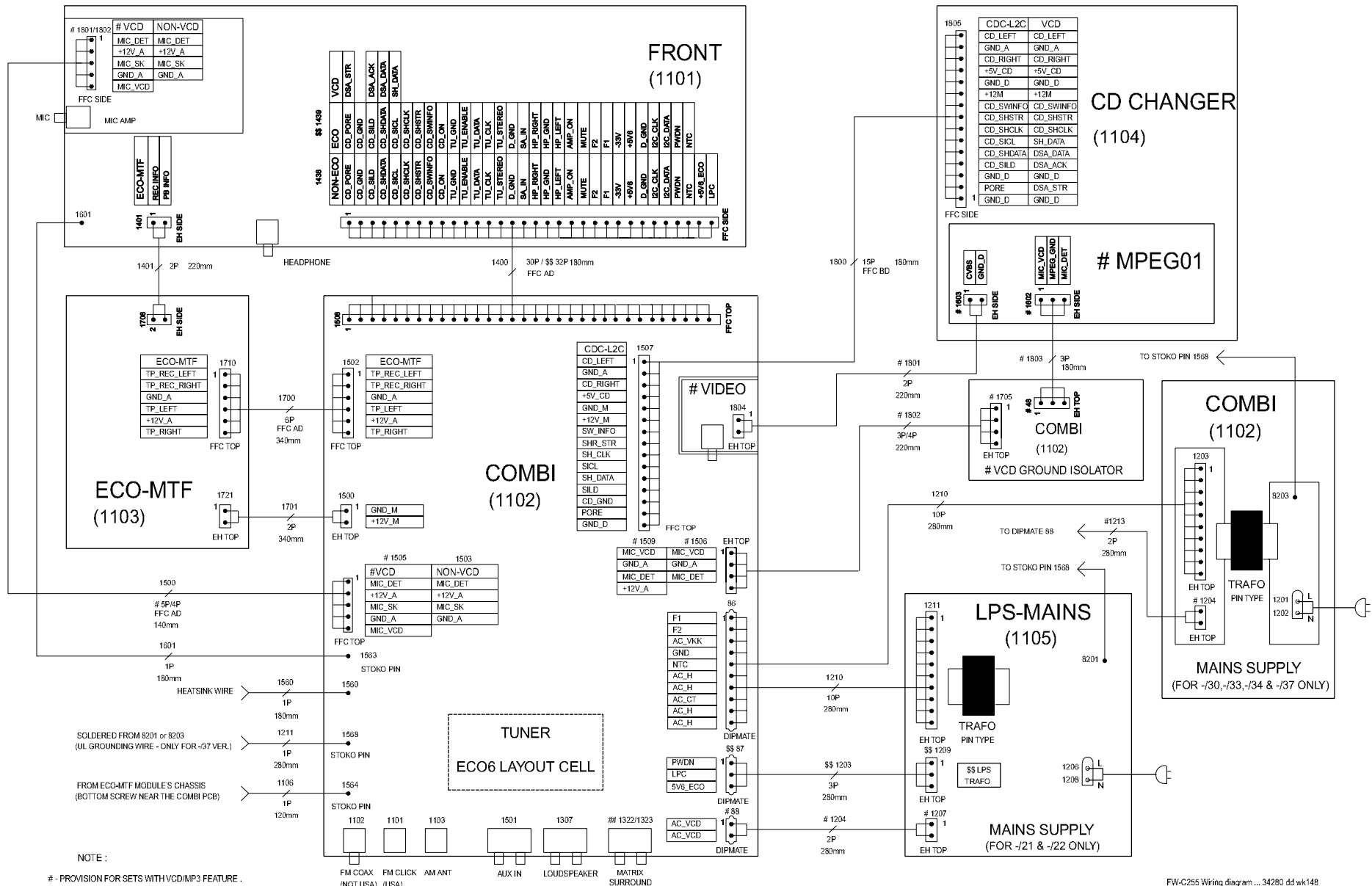
note 2: OPTIMAL is on while JAZZ & TECHNO are off, other LEDs status are not important (applicable only for sets with LEDs)
 Figure 2

TEST	Activated with	ACTION
EEPROM TEST	>>>	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT	<<<	Load default data. Display shows "NEW" for 1 second. Caution! All presets from the customer will be lost!!
ROTARY ENCODER TEST	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.
DEMO	DBB	DEMO will toggle on or off. The message: "DEMO ON" or "DEMO OFF" will scroll across the display to show the new status of the set.
LEAVE SERVICE TESTPROGRAM	Disconnect mains cord	

SET BLOCK DIAGRAM



SET WIRING DIAGRAM

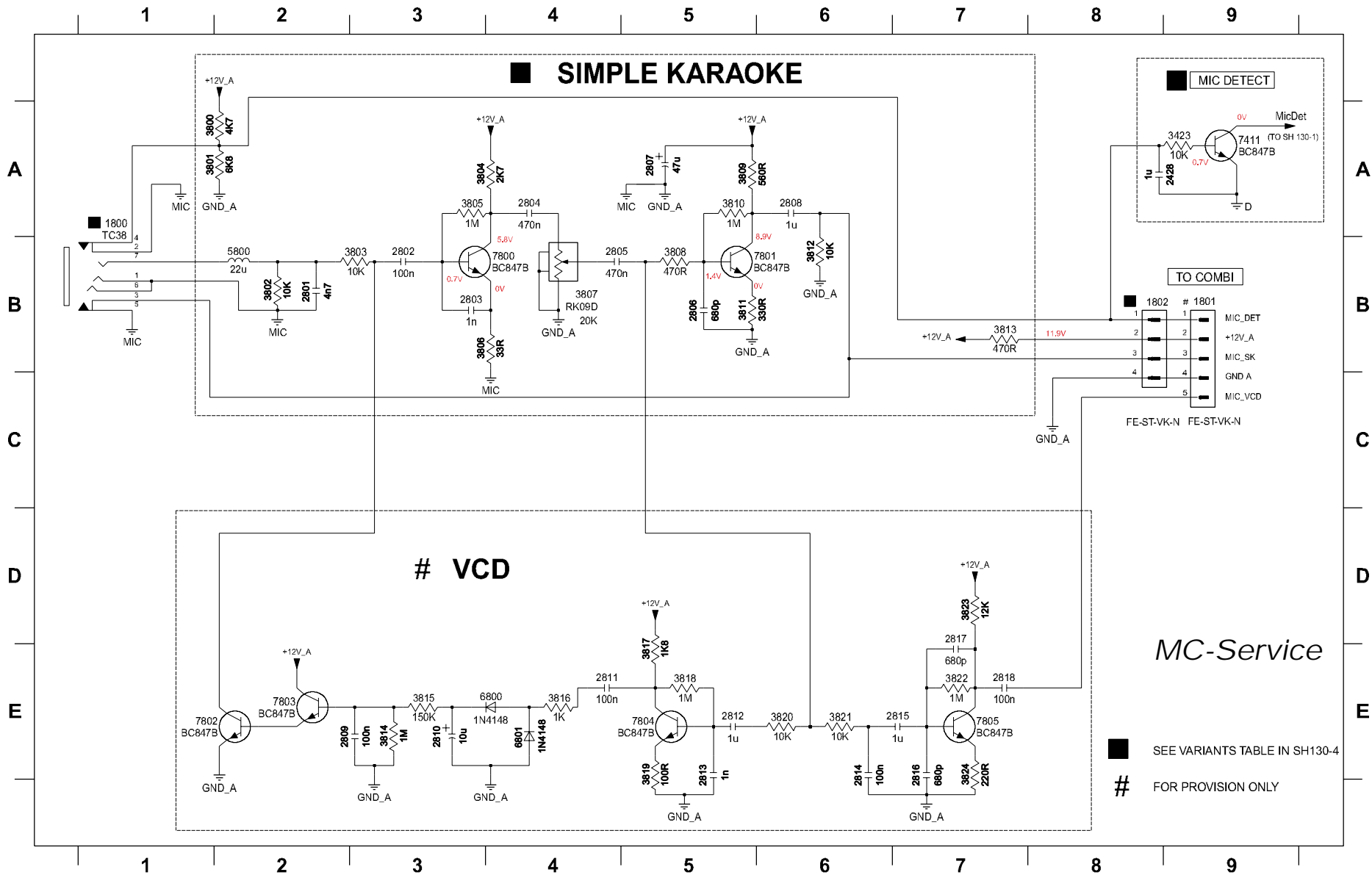


NOTE :

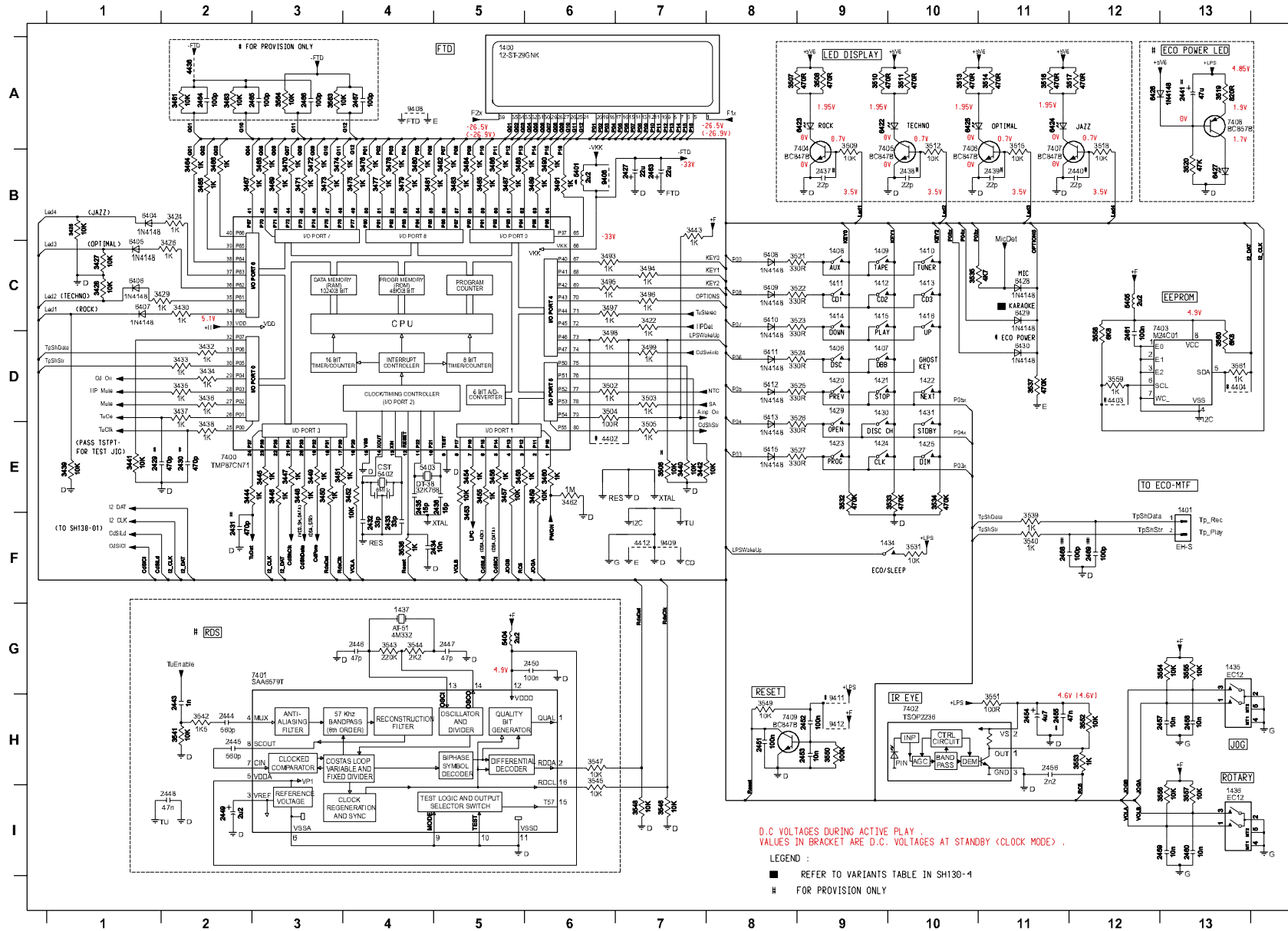
- # - PROVISION FOR SETS WITH VCD/MP3 FEATURE.
- ## - PROVISION FOR SETS WITH MATRIX SURROUND.
- \$\$ - PROVISION FOR SETS WITH ECO FEATURE (ONLY FOR -/22 VER.).

CIRCUIT DIAGRAM - KARAOKE PART

1800 A1	2428 A9	2803 B3	2806 B5	2809 E2	2812 E5	2815 E7	2818 E7	3801 A1	3804 A3	3807 B4	3810 A5	3813 B7	3816 E4	3819 E5	3822 E7	5800 B2	7411 A9	7802 E2	7805 E7
1801 B9	2801 B2	2804 A4	2807 A5	2810 E3	2813 E5	2816 E7	3423 A9	3802 B2	3805 A3	3808 B5	3811 B5	3814 E3	3817 E5	3820 E6	3823 D7	6800 E4	7800 B4	7803 E2	
1802 B8	2802 B3	2805 B4	2808 A6	2811 E4	2814 E6	2817 D7	3800 A1	3803 B3	3806 B3	3809 A5	3812 B6	3815 E3	3818 E5	3821 E6	3824 E7	6801 E4	7801 B5	7804 E5	



CIRCUIT DIAGRAM - MICROPROCESSOR PART



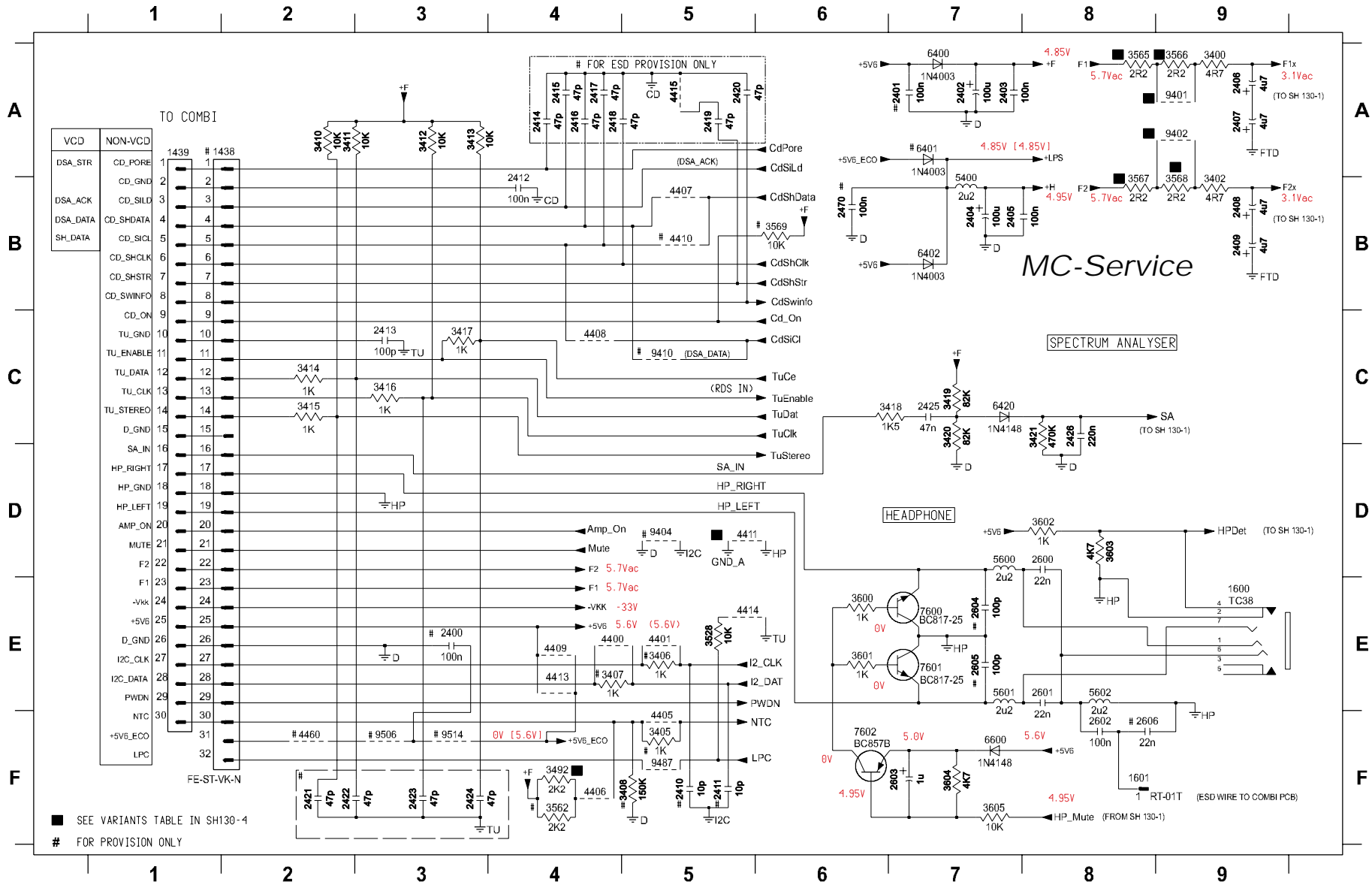
1400 A5	3474 B3	7405 B10
1401 E13	3475 B4	7406 B10
1402 D9	3476 B4	7407 B11
1407 D9	3477 B4	7408 A13
1408 C9	3478 B4	7409 H9
1409 C9	3479 B4	9408 B6
1410 C10	3480 B4	9408 A4
1411 C9	3481 B4	9409 F7
1412 C9	3482 A10	9411 H9
1413 C10	3483 B5	
1414 C9	3484 B5	
1415 C9	3485 B5	
1416 C10	3486 B5	
1420 D9	3487 B5	
1421 D9	3488 B5	
1422 D10	3489 B6	
1423 E9	3490 B6	
1424 E9	3491 B6	
1425 E10	3493 C6	
1430 D9	3494 C7	
1430 D9	3495 C8	
1431 D10	3496 C7	
1434 F10	3497 C6	
1435 G13	3498 D6	
1436 H13	3499 D7	
1437 G4	3502 D6	
2427 B7	3503 D7	
2429 E1	3504 D6	
2430 E2	3505 E7	
2431 F2	3506 E7	
2432 F4	3508 A8	
2433 F4	3508 A9	
2434 F4	3509 A9	
2435 F4	3510 A9	
2438 E5	3511 A10	
2437 B9	3512 A10	
2438 B10	3513 A10	
2439 B11	3514 A11	
2440 B12	3515 A11	
2441 A13	3516 A11	
2442 H2	3517 A12	
2444 H2	3518 A12	
2445 H2	3519 A13	
2446 G4	3520 B13	
2447 G5	3521 C9	
2448 E2	3522 C9	
2449 E2	3523 C9	
2450 E2	3524 D9	
2451 H5	3525 D9	
2452 H9	3526 D9	
2453 H9	3527 E9	
2454 H11	3531 F10	
2455 H11	3532 E9	
2456 H11	3533 E10	
2457 H13	3534 E10	
2458 H13	3535 C10	
2459 H13	3536 F4	
2460 H13	3537 D11	
2461 H12	3539 F11	
2463 B7	3540 F11	
2464 B2	3541 H2	
2465 A3	3542 H2	
2466 A3	3543 G4	
2467 A4	3544 G4	
2468 F11	3545 H6	
2469 F12	3546 F7	
3422 C7	3547 H6	
3424 B2	3548 H6	
3425 B1	3549 H6	
3426 C2	3550 H9	
3427 C1	3551 H11	
3428 C1	3552 H12	
3429 C2	3553 H12	
3430 C2	3554 G13	
3432 D2	3555 G13	
3433 D2	3556 H13	
3434 D2	3557 H13	
3435 D2	3558 D12	
3436 D2	3559 D12	
3437 D2	3560 D13	
3438 E2	3561 D13	
3439 E1	3563 A3	
3440 E7	3564 A3	
3441 E1	4402 E6	
3442 E7	4403 D12	
3443 B7	4404 D13	
3444 E2	4412 F7	
3445 E3	4436 A2	
3446 E3	5401 B6	
3447 E3	5402 E4	
3448 E3	5403 E4	
3449 E3	5404 C5	
3450 E3	5405 C12	
3451 E3	6404 B1	
3452 E4	6405 C1	
3453 F5	6406 C1	
3454 E5	6407 C1	
3455 B2	6425 B10	
3456 E5	6408 C5	
3457 E5	6410 C6	
3458 E5	6411 D5	
3459 E6	6412 D5	
3460 E6	6413 D5	
3461 A2	6415 E5	
3462 E6	6422 A9	
3463 A2	6423 A9	
3464 B2	6424 A11	
3465 B2	6425 B10	
3466 B2	6426 A12	
3467 B2	6427 B13	
3468 B3	6428 C11	
3469 B3	6429 C11	
3470 B3	6430 D11	
3471 B3	7402 H10	
3472 B3	7403 C12	
3473 B3	7404 B9	

D.C. VOLTAGES DURING ACTIVE PLAY.
VALUES IN BRACKET ARE D.C. VOLTAGES AT STANDBY (CLOCK MODE).

- LEGEND:
- REFER TO VARIANTS TABLE IN SH130-4
 - H FOR PROVISION ONLY

CIRCUIT DIAGRAM - HEADPHONE / MISCELLANEOUS PART

1438 A1	2400 E3	2404 B7	2408 B9	2412 B4	2416 A4	2420 A5	2424 F3	2600 D8	2604 E7	3402 B9	3408 F5	3413 A3	3417 C3	3421 C8	3565 A8	3569 B6	3603 D8	4401 E5	4408 C4	4413 E4	5400 B7	6400 A7	6600 F7	9401 A9	9487 F5
1439 A1	2401 A7	2405 B7	2409 B9	2413 C3	2417 A4	2421 F2	2425 C7	2601 E8	2605 E7	3405 F5	3410 A2	3414 C2	3418 C7	3492 F4	3566 A9	3600 E6	3604 F7	4405 F5	4409 E4	4414 E5	5600 D7	6401 A7	7600 E7	9402 A9	9506 F3
1600 E9	2402 A7	2406 A9	2410 F5	2414 A4	2418 A4	2422 F2	2426 C8	2602 F8	2606 F8	3406 E5	3411 A2	3415 C2	3419 C7	3528 E5	3567 B8	3601 E6	3605 F7	4406 F4	4410 B5	4415 A5	5601 E7	6402 B7	7601 E7	9404 D5	9514 F3
1601 F8	2403 A7	2407 A9	2411 F5	2415 A4	2419 A5	2423 F3	2470 B6	2603 F7	3400 A9	3407 E4	3412 A3	3416 C3	3420 C7	3562 F4	3568 B9	3602 D8	4400 E4	4407 B5	4411 D5	4460 F2	5602 E8	6420 C7	7602 F6	9410 C5	



ELECTRICAL PARTS LIST - FRONT BOARD

MISCELLANEOUS

1400	3139 110 52850	FTD Display 12-ST-29GNK
1406	2422 128 02917	Tact Switch
1407	2422 128 02917	Tact Switch
1408	2422 128 02917	Tact Switch
1409	2422 128 02917	Tact Switch
1410	2422 128 02917	Tact Switch
1411	2422 128 02917	Tact Switch
1412	2422 128 02917	Tact Switch
1413	2422 128 02917	Tact Switch
1414	2422 128 02917	Tact Switch
1415	2422 128 02917	Tact Switch
1416	2422 128 02917	Tact Switch
1420	2422 128 02917	Tact Switch
1421	2422 128 02917	Tact Switch
1422	2422 128 02917	Tact Switch
1423	2422 128 02917	Tact Switch
1424	2422 128 02917	Tact Switch
1425	2422 128 02917	Tact Switch
1429	2422 128 02917	Tact Switch
1430	2422 128 02917	Tact Switch
1431	2422 128 02917	Tact Switch
1434	2422 128 02917	Tact Switch
1435	2422 129 16707	Rotary Encoder 24P
1436	2422 129 16708	Rotary Encoder 24P
1439	2422 025 17414	Flex Socket 30pin Hort.
1600	2422 026 05059	Headphone Socket
1800	2422 026 05059	Mic Socket /21/21M
1802	4822 265 11183	Flex Socket 4pin Hort. /21/21M

CAPACITORS

2402	4822 124 23432	100µF 20% 10V
2403	4822 126 14305	100nF 10% 16V
2404	4822 124 23432	100µF 20% 10V
2405	4822 126 14305	100nF 10% 16V
2406	4822 124 12032	4,7µF 20% 50V
2407	4822 124 12032	4,7µF 20% 50V
2408	4822 124 12032	4,7µF 20% 50V
2409	4822 124 12032	4,7µF 20% 50V
2412	4822 126 14305	100nF 10% 16V
2413	4822 122 31765	100pF 2% 63V
2425	3198 017 34730	47nF 16V
2426	4822 126 13879	220nF +80/-20% 16V
2427	3198 028 52290	22µF 20% 50V
2428	3198 017 41050	1µF 10V /21/21M
2432	2222 867 15339	33pF 50V
2433	2222 867 15339	33pF 50V
2434	5322 126 11583	10nF 10% 50V
2435	4822 122 33752	15pF 5% 50V
2436	4822 122 33752	15pF 5% 50V
2451	4822 126 14305	100nF 10% 16V
2452	4822 126 14305	100nF 10% 16V
2453	5322 126 11583	10nF 10% 50V

2454	4822 124 12032	4,7µF 20% 50V
2456	4822 126 14238	2,2nF 50V
2457	5322 126 11583	10nF 10% 50V
2458	5322 126 11583	10nF 10% 50V
2459	5322 126 11583	10nF 10% 50V
2460	5322 126 11583	10nF 10% 50V
2461	4822 126 14305	100nF 10% 16V
2463	3198 028 52290	22µF 20% 50V
2600	4822 126 14494	22nF 10% 25V
2601	4822 126 14494	22nF 10% 25V
2602	4822 126 14305	100nF 10% 16V
2603	4822 124 22651	1µF 20% 50V
2801	4822 126 13193	4,7nF 10% 63V /21/21M
2802	4822 126 14305	100nF 10% 16V /21/21M
2803	5322 126 11578	1nF 10% 50V /21/21M
2804	3198 017 44740	470nF 10V /21/21M
2805	3198 017 44740	470nF 10V /21/21M
2806	4822 126 13909	680pF 10% 50V /21/21M
2807	4822 124 81286	47µF 20% 16V /21/21M
2808	3198 017 41050	1µF 10V /21/21M

RESISTORS

3400	4822 050 24708	4R7 1% 0,6W
3402	4822 050 24708	4R7 1% 0,6W
3410	4822 051 30103	10k 5% 0,062W
3411	4822 051 30103	10k 5% 0,062W
3412	4822 051 30103	10k 5% 0,062W
3413	4822 051 30103	10k 5% 0,062W
3414	4822 051 30102	1k 5% 0,062W
3415	4822 050 11002	1k 1% 0,4W
3416	4822 051 30102	1k 5% 0,062W
3417	4822 051 30102	1k 5% 0,062W
3418	4822 116 52243	1k5 5% 0,5W
3419	4822 117 12864	82k 5% 0,8W
3420	4822 117 12864	82k 5% 0,8W
3421	4822 051 30474	470k 5% 0,062W
3422	4822 051 30102	1k 5% 0,062W
3423	4822 051 30103	10k 5% 0,062W /21/21M
3424	4822 051 30102	1k 5% 0,062W
3425	4822 051 30103	10k 5% 0,062W
3426	4822 051 30102	1k 5% 0,062W
3427	4822 051 30103	10k 5% 0,062W
3428	4822 051 30103	10k 5% 0,062W
3429	4822 051 30102	1k 5% 0,062W
3430	4822 051 30102	1k 5% 0,062W
3432	4822 051 30102	1k 5% 0,062W
3433	4822 051 30102	1k 5% 0,062W
3434	4822 051 30102	1k 5% 0,062W
3435	4822 051 30102	1k 5% 0,062W
3436	4822 051 30102	1k 5% 0,062W
3437	4822 051 30102	1k 5% 0,062W
3438	4822 051 30102	1k 5% 0,062W

ELECTRICAL PARTS LIST - FRONT BOARD

3439	4822 051 30103	10k 5% 0,062W
3440	4822 051 30103	10k 5% 0,062W
3441	4822 050 21003	10k 1% 0,6W
3442	4822 051 30103	10k 5% 0,062W
3443	4822 051 30102	1k 5% 0,062W
3444	4822 051 30102	1k 5% 0,062W
3445	4822 051 30102	1k 5% 0,062W
3446	4822 051 30102	1k 5% 0,062W
3447	4822 051 30102	1k 5% 0,062W
3448	4822 051 30102	1k 5% 0,062W
3449	4822 050 11002	1k 1% 0,4W
3450	4822 051 30102	1k 5% 0,062W
3451	4822 051 30102	1k 5% 0,062W
3452	4822 050 21003	10k 1% 0,6W
3453	4822 051 30103	10k 5% 0,062W
3454	4822 051 30102	1k 5% 0,062W
3455	4822 051 30102	1k 5% 0,062W
3456	4822 051 30102	1k 5% 0,062W
3457	4822 050 21003	10k 1% 0,6W
3458	4822 051 30102	1k 5% 0,062W
3459	4822 050 21003	10k 1% 0,6W
3460	4822 051 30102	1k 5% 0,062W
3462	4822 051 30105	1M 5% 0,062W
3464	4822 051 30102	1k 5% 0,062W
3465	4822 051 30102	1k 5% 0,062W
3466	4822 051 30102	1k 5% 0,062W
3467	4822 051 30102	1k 5% 0,062W
3468	4822 051 30102	1k 5% 0,062W
3469	4822 051 30102	1k 5% 0,062W
3470	4822 051 30102	1k 5% 0,062W
3471	4822 051 30102	1k 5% 0,062W
3472	4822 051 30102	1k 5% 0,062W
3473	4822 051 30102	1k 5% 0,062W
3474	4822 051 30102	1k 5% 0,062W
3475	4822 051 30102	1k 5% 0,062W
3476	4822 051 30102	1k 5% 0,062W
3477	4822 051 30102	1k 5% 0,062W
3478	4822 051 30102	1k 5% 0,062W
3479	4822 051 30102	1k 5% 0,062W
3480	4822 051 30102	1k 5% 0,062W
3481	4822 051 30102	1k 5% 0,062W
3482	4822 051 30102	1k 5% 0,062W
3483	4822 051 30102	1k 5% 0,062W
3484	4822 051 30102	1k 5% 0,062W
3485	4822 051 30102	1k 5% 0,062W
3486	4822 051 30102	1k 5% 0,062W
3487	4822 051 30102	1k 5% 0,062W
3488	4822 051 30102	1k 5% 0,062W
3489	4822 051 30102	1k 5% 0,062W
3490	4822 051 30102	1k 5% 0,062W
3491	4822 051 30102	1k 5% 0,062W
3492	4822 117 12968	820R 5% 0,62W

3493	4822 051 30102	1k 5% 0,062W
3494	4822 051 30102	1k 5% 0,062W
3495	4822 051 30102	1k 5% 0,062W
3496	4822 051 30102	1k 5% 0,062W
3497	4822 051 30102	1k 5% 0,062W
3498	4822 051 30102	1k 5% 0,062W
3499	4822 051 30102	1k 5% 0,062W
3502	4822 051 30102	1k 5% 0,062W
3503	4822 051 30102	1k 5% 0,062W
3504	4822 051 30101	100R 5% 0,062W
3505	4822 051 30102	1k 5% 0,062W
3507	4822 051 30471	470R 5% 0,062W
3508	4822 051 30471	470R 5% 0,062W
3509	4822 051 30103	10k 5% 0,062W
3510	4822 051 30471	470R 5% 0,062W
3511	4822 051 30471	470R 5% 0,062W
3512	4822 051 30103	10k 5% 0,062W
3513	4822 051 30471	470R 5% 0,062W
3514	4822 051 30471	470R 5% 0,062W
3515	4822 051 30103	10k 5% 0,062W
3516	4822 051 30471	470R 5% 0,062W
3517	4822 051 30471	470R 5% 0,062W
3518	4822 051 30103	10k 5% 0,062W
3521	4822 051 30331	330R 5% 0,062W
3522	4822 116 52219	330R 5% 0,5W
3523	4822 116 52219	330R 5% 0,5W
3524	4822 116 52219	330R 5% 0,5W
3525	4822 116 52219	330R 5% 0,5W
3526	4822 116 52219	330R 5% 0,5W
3527	4822 116 52219	330R 5% 0,5W
3528	4822 051 30103	10k 5% 0,062W
3531	4822 051 30103	10k 5% 0,062W
3532	4822 051 30474	470k 5% 0,062W
3533	4822 051 30474	470k 5% 0,062W
3534	4822 051 30474	470k 5% 0,062W
3535	4822 051 30472	4k7 5% 0,062W
3536	4822 050 11002	1k 1% 0,4W
3537	4822 051 30474	470k 5% 0,062W
3539	4822 050 11002	1k 1% 0,4W
3540	4822 050 11002	1k 1% 0,4W
3546	4822 051 30103	10k 5% 0,062W
3548	4822 051 30103	10k 5% 0,062W
3549	4822 051 30103	10k 5% 0,062W
3550	4822 117 13632	100k 1% 0,062W
3551	4822 051 30101	100R 5% 0,062W
3552	4822 051 30103	10k 5% 0,062W
3553	4822 051 30102	1k 5% 0,062W
3554	4822 051 30103	10k 5% 0,062W
3555	4822 051 30103	10k 5% 0,062W
3556	4822 051 30103	10k 5% 0,062W
3557	4822 051 30103	10k 5% 0,062W
3558	4822 051 30682	6k8 5% 0,062W

ELECTRICAL PARTS LIST - FRONT BOARD

RESISTORS

3559	4822 051 30102	1k 5% 0,062W
3560	4822 051 30682	6k8 5% 0,062W
3561	4822 051 30102	1k 5% 0,062W
3565	4822 050 24708	4R7 5% 0,5W /21/21M
3565	4822 116 81154	2R2 5% 0,5W /30/37
3566	4822 116 81154	2R2 5% 0,5W /30/37
3567	4822 050 24708	4R7 5% 0,5W /21/21M
3567	4822 116 81154	2R2 5% 0,5W /30/37
3568	4822 116 81154	2R2 5% 0,5W /30/37
3600	4822 051 30102	1k 5% 0,062W
3601	4822 051 30102	1k 5% 0,062W
3602	4822 050 11002	1k 1% 0,4W
3603	4822 051 30472	4k7 5% 0,062W
3604	4822 051 30472	4k7 5% 0,062W
3605	4822 051 30103	10k 5% 0,062W
3800	4822 116 52283	4k7 5% 0,5W /21/21M
3801	4822 051 30682	6k8 5% 0,062W /21/21M
3802	4822 051 30103	10k 5% 0,062W /21/21M
3803	4822 051 30103	10k 5% 0,062W /21/21M
3804	4822 051 30272	2k7 5% 0,062W /21/21M
3805	4822 051 30105	1M 5% 0,062W /21/21M
3806	4822 051 30339	33R 5% 0,062W /21/21M
3807	2120 366 90292	Potm Rotary 20K /21/21M
3808	4822 051 30471	470R 5% 0,062W /21/21M
3809	4822 051 30561	560R 5% 0,062W /21/21M
3810	4822 051 30105	1M 5% 0,062W /21/21M
3811	4822 051 30331	330R 5% 0,062W /21/21M
3812	4822 051 30103	10k 5% 0,062W /21/21M
3813	4822 051 30471	470R 5% 0,062W /21/21M
4400	4822 051 30008	OR Jumper 0603
4401	4822 051 30008	OR Jumper 0603
4405	4822 051 30008	OR Jumper 0603
4406	4822 051 30008	OR Jumper 0603
4407	4822 051 30008	OR Jumper 0603
4408	4822 051 30008	OR Jumper 0603
4409	4822 051 30008	OR Jumper 0603
4411	4822 051 30008	OR Jumper 0603 /21/21M
4412	4822 051 30008	OR Jumper 0603
4413	4822 051 30008	OR Jumper 0603
4414	4822 051 30008	OR Jumper 0603
4420	4822 051 30008	OR Jumper 0603
4421	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
4430	4822 051 30008	OR Jumper 0603
4431	4822 051 30008	OR Jumper 0603

4432	4822 051 30008	OR Jumper 0603
4433	4822 051 30008	OR Jumper 0603
4434	4822 051 30008	OR Jumper 0603
4435	4822 051 30008	OR Jumper 0603
4436	4822 051 30008	OR Jumper 0603 /30/37
4437	4822 051 30008	OR Jumper 0603
4438	4822 051 30008	OR Jumper 0603
4439	4822 051 30008	OR Jumper 0603
4440	4822 051 30008	OR Jumper 0603
4441	4822 051 30008	OR Jumper 0603
4442	4822 051 30008	OR Jumper 0603
4443	4822 051 30008	OR Jumper 0603
4444	4822 051 30008	OR Jumper 0603
4445	4822 051 30008	OR Jumper 0603
4446	4822 051 30008	OR Jumper 0603
4447	4822 051 30008	OR Jumper 0603
4448	4822 051 30008	OR Jumper 0603
4449	4822 051 30008	OR Jumper 0603
4450	4822 051 30008	OR Jumper 0603
4451	4822 051 30008	OR Jumper 0603
4452	4822 051 30008	OR Jumper 0603
4453	4822 051 30008	OR Jumper 0603
4454	4822 051 30008	OR Jumper 0603
4455	4822 051 30008	OR Jumper 0603
4456	4822 051 30008	OR Jumper 0603
4457	4822 051 30008	OR Jumper 0603
4458	4822 051 30008	OR Jumper 0603
4459	4822 051 30008	OR Jumper 0603
4461	4822 051 30008	OR Jumper 0603
4462	4822 051 30008	OR Jumper 0603
4463	4822 051 30008	OR Jumper 0603
4464	4822 051 30008	OR Jumper 0603
4465	4822 051 30008	OR Jumper 0603
4466	4822 051 30008	OR Jumper 0603
4467	4822 051 30008	OR Jumper 0603
4468	4822 051 30008	OR Jumper 0603
4469	4822 051 30008	OR Jumper 0603
4470	4822 051 30008	OR Jumper 0603
4471	4822 051 30008	OR Jumper 0603
4472	4822 051 30008	OR Jumper 0603
4473	4822 051 30008	OR Jumper 0603
4474	4822 051 30008	OR Jumper 0603
4475	4822 051 30008	OR Jumper 0603
4476	4822 051 30008	OR Jumper 0603
4477	4822 051 30008	OR Jumper 0603
4478	4822 051 30008	OR Jumper 0603
4479	4822 051 30008	OR Jumper 0603
4480	4822 051 30008	OR Jumper 0603
4481	4822 051 30008	OR Jumper 0603
4601	4822 051 30008	OR Jumper 0603
4801	4822 051 30008	OR Jumper 0603 /21/21M
4802	4822 051 30008	OR Jumper 0603 /21/21M

ELECTRICAL PARTS LIST - FRONT BOARD

4803	4822 051 30008	OR Jumper 0603 /21/21M
4804	4822 051 30008	OR Jumper 0603 /21/21M
4805	4822 051 30008	OR Jumper 0603 /21/21M
4808	4822 051 30008	OR Jumper 0603
4810	4822 051 30008	OR Jumper 0603

COILS & FILTERS

5400	4822 157 62552	Coil 2,2µH 5%
5402	4822 242 72066	Ceram Resonator 8MHz
5403	2422 543 01069	X'tal Resonator 32,768kHz
5405	4822 157 62552	Coil 2,2µH 5%
5600	4822 157 62552	Coil 2,2µH 5%
5601	4822 157 62552	Coil 2,2µH 5%
5602	4822 157 62552	Coil 2,2µH 5%
5800	4822 157 11235	Coil 22µH 5% /21/21M

DIODES

6400	4822 130 31878	1N4003G
6402	4822 130 31878	1N4003G
6404	4822 130 30621	1N4148
6405	4822 130 30621	1N4148
6406	4822 130 30621	1N4148
6407	4822 130 30621	1N4148
6408	4822 130 30621	1N4148
6409	4822 130 30621	1N4148
6410	4822 130 30621	1N4148
6411	4822 130 30621	1N4148
6412	4822 130 30621	1N4148
6413	4822 130 30621	1N4148
6415	4822 130 30621	1N4148
6420	4822 130 30621	1N4148
6422	9322 178 15676	LTL-8166FTNN
6423	9322 178 15676	LTL-8166FTNN
6424	9322 178 15676	LTL-8166FTNN
6425	9322 178 15676	LTL-8166FTNN
6428	4822 130 30621	1N4148
6429	4822 130 30621	1N4148 /21/21M
6600	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7400	3139 110 52941	TMP87CS71F "C255S52941"
7402	9322 155 22667	IR Receiver TS0P2236ZC1
7403	9965 000 04931	M24C01-WMNM6
7404	4822 130 60511	BC847B
7405	4822 130 60511	BC847B
7406	4822 130 60511	BC847B
7407	4822 130 60511	BC847B
7409	4822 130 60511	BC847B
7411	4822 130 60511	BC847B /21/21M
7600	4822 130 42804	BC817-25
7601	4822 130 42804	BC817-25
7602	4822 130 60373	BC857B

7800	4822 130 60511	BC847B /21/21M
7801	4822 130 60511	BC847B /21/21M

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

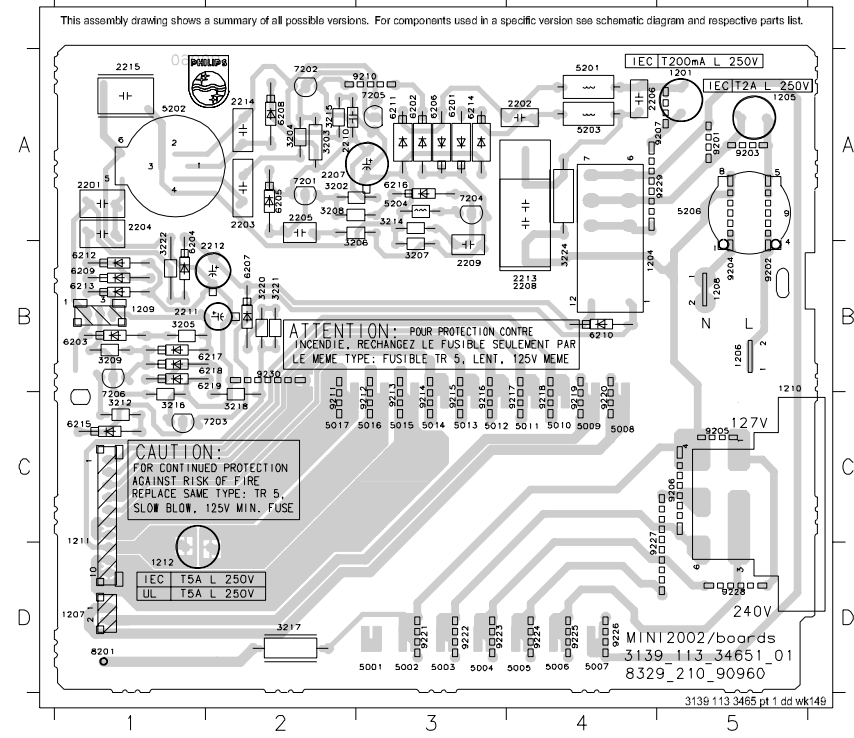
COMPONENT LAYOUT

1201	A5	1211	C1	2207	A2	2215	A1	3209	B1	3221	B2	5006	D4	5014	C3	5206	A5	6208	A2	6216	A3	7205	A3	9206	C5	9216	C3	9224	D4
1204	B4	1212	D1	2208	B4	3202	A2	3212	C1	3222	B1	5007	D4	5015	C3	6201	A3	6209	B1	6217	B2	7206	C1	9207	A5	9217	C4	9225	D4
1205	A5	2201	A1	2209	B3	3203	A2	3214	A3	3224	B4	5008	C4	5016	C3	6202	A3	6210	B4	6218	B5	7201	A5	9211	C1	9219	C4	9226	D4
1206	B5	2202	A4	2210	A2	3204	A2	3214	A2	3224	B4	5009	C4	5017	C2	6203	B1	6211	A3	6219	B5	7201	A5	9211	C1	9219	C4	9227	D4
1207	D1	2203	A2	2211	B1	3205	B1	3216	C1	3226	D1	5002	D5	5010	C4	5201	A4	6204	B1	6212	B1	7201	A5	9202	B5	9212	C3	9220	C4
1208	B5	2204	A1	2212	B2	3206	B2	3217	D2	3227	D1	5003	D4	5011	C4	5202	A1	6205	A2	6213	B1	7202	A5	9203	A5	9213	C3	9221	D5
1209	B1	2205	A2	2213	B3	3207	B3	3218	C2	3228	D2	5004	D5	5012	C3	5203	A4	6206	A3	6214	A3	7203	C3	9204	A5	9214	C3	9222	D5
1210	B5	2206	A4	2214	A2	3208	A2	3220	B2	3230	D2	5005	D4	5013	C3	5204	A3	6207	B2	6215	C1	7204	A5	9205	C5	9215	C3	9223	D3

MAINS BOARD

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ELECTRICAL PARTS LIST - MAINS BOARD

- MISCELLANEOUS**
- 1205 9965 000 07788 Δ Fuse T2A 250V
 - 1210 2422 129 16478 Δ Voltage Selector 5A
 - 1212 4822 071 55002 Δ Fuse T5A 250V
- COILS & FILTERS**
- 5206 4822 157 11832 Δ Mains Filter 400μH 3A

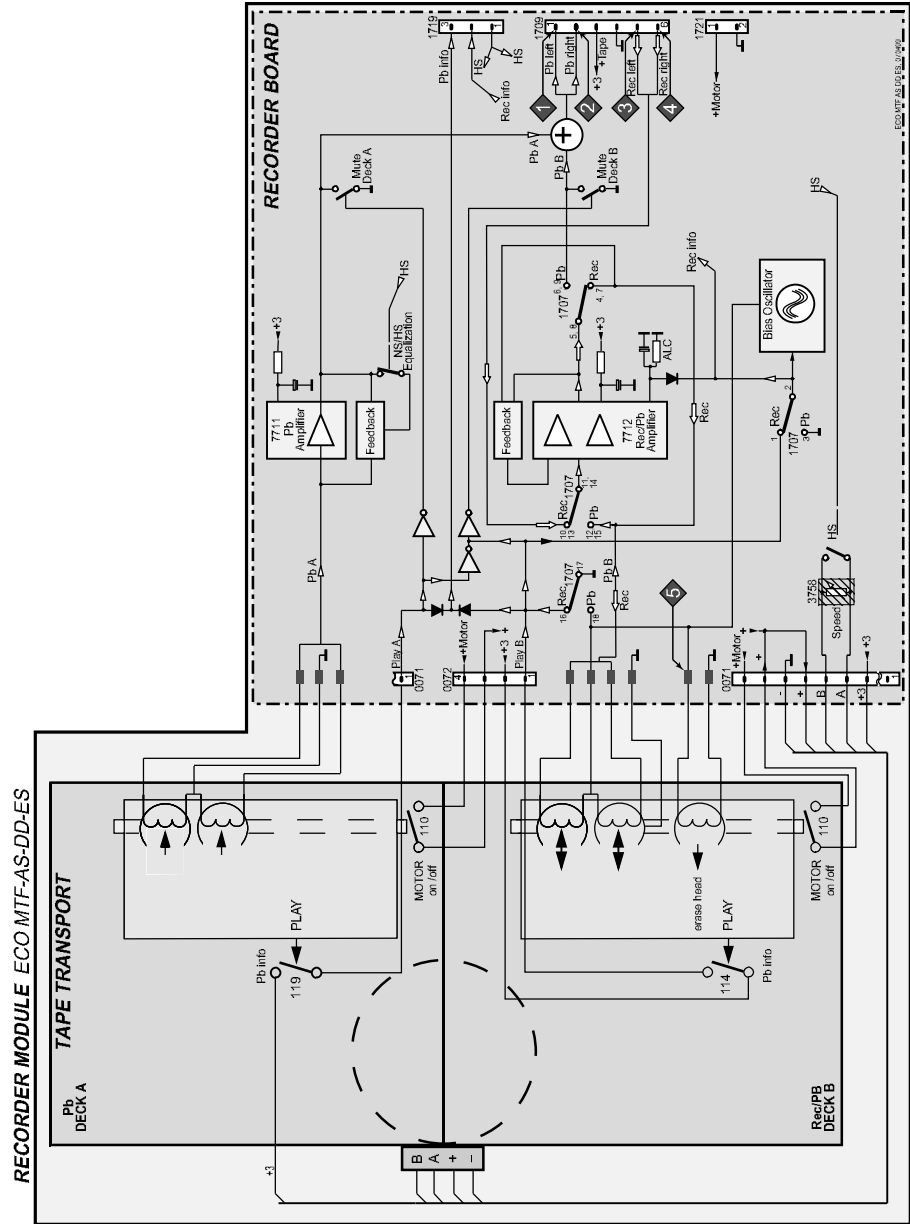
Note: Only the parts mentioned in this list are normal service spare parts.

MC-Service

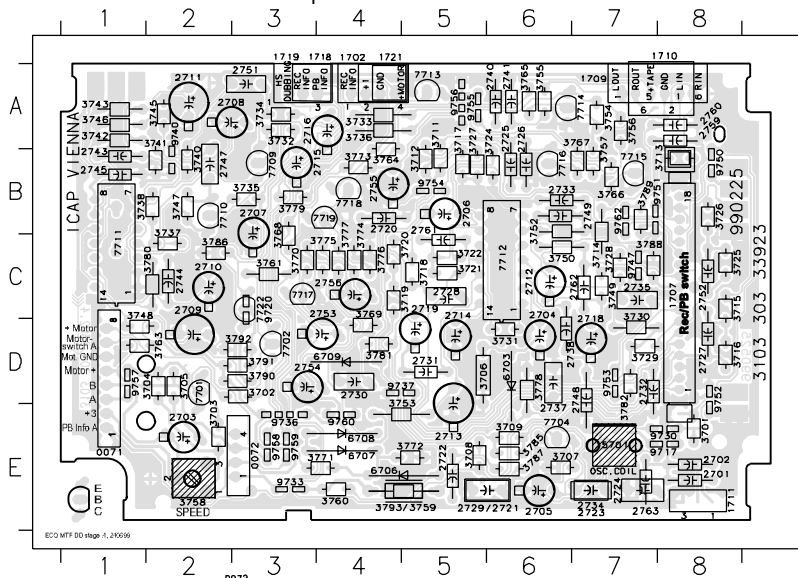
ECO MTF MODULE

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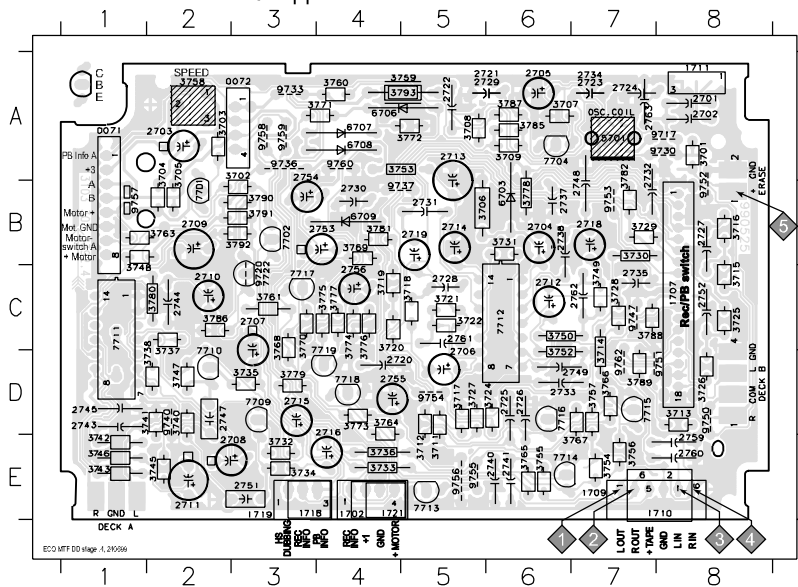


RECORDER BOARD / componentside view



- 0071 E1 2744 C2 3735 B3 3789 B7
- 0072 E3 2745 A1 3736 A4 3790 D3
- 1702 A2 2747 B2 3737 B2 3791 B2
- 1707 B8 2748 D7 3738 B2 3792 D3
- 1710 E8 2751 E3 3741 D1 5701 A7
- 1711 A8 2752 C8 3742 E1 6703 B6
- 1719 A3 2753 D4 3743 B1 6708 E4
- 1721 A4 2754 D4 3746 A2 6707 A4
- 2702 E8 2756 C4 3747 B2 6709 D4
- 2703 E2 2759 A8 3748 C1 7701 B2
- 2704 C6 2760 E8 3749 C7 7702 B3
- 2705 E8 2761 B6 3750 C8 7704 E8
- 2706 B6 2762 C7 3752 B8 7708 B3
- 2707 B5 2763 E7 3753 D5 7710 B2
- 2708 A3 3701 E8 3754 A7 7711 C1
- 2708 D2 3702 D3 3755 A6 7712 B6
- 2710 C2 3703 E2 3759 A7 7713 A6
- 2711 A2 3704 D2 3767 B7 7714 A7
- 2712 C6 3705 D2 3758 E2 7715 B7
- 2713 E5 3706 D6 3759 E5 7716 B6
- 2714 D5 3707 E8 3763 E4 7717 C3
- 2715 B4 3708 E5 3781 C3 7718 B4
- 2718 A3 3709 E8 3763 D2 7719 B4
- 2718 E7 3711 B8 3764 B4 7722 C3
- 2719 D5 3712 B5 3765 A6 9717 E8
- 2720 B4 3713 B8 3769 B7 9720 C3
- 2721 B6 3714 B8 3770 C4 9731 D4
- 2722 E6 3716 B8 3768 A2 9740 B2
- 2723 E6 3715 C8 3786 C3 9733 E3
- 2723 E7 3718 D8 3769 C4 9736 E3
- 2724 E7 3717 B5 3770 C4 9737 D4
- 2725 B6 3718 B8 3771 C4 9740 B2
- 2728 A6 3719 C5 3772 E5 9747 C7
- 2727 D8 3720 C5 3773 B4 9750 B8
- 2728 C5 3721 C5 3774 C4 9751 B8
- 2729 E5 3722 C5 3775 C4 9752 D8
- 2730 D4 3724 A5 3776 C4 9755 D7
- 2731 D5 3725 B2 3777 C4 9756 B6
- 2732 D7 3726 B8 3778 D8 9755 A5
- 2733 B6 3727 A5 3779 B3 9756 A5
- 2734 E7 3728 C7 3780 C1 9757 D1
- 2735 C7 3729 D7 3781 D4 9758 E3
- 2737 E6 3730 C7 3782 E7 9759 E3
- 2738 D7 3731 D6 3785 E8 9760 E4
- 2740 A5 3732 A5 3786 C2 9762 B7
- 2741 A6 3733 A4 3787 E8
- 2743 A1 3734 A3 3788 C7

RECORDER BOARD / copperside view



- 0071 B1 2744 C2 3735 D3 3789 D7
- 0072 A3 2745 E1 3736 E4 3790 B5
- 1702 E4 2747 D2 3737 D2 3791 B2
- 1707 B8 2748 B7 3738 D2 3792 B3
- 1710 E8 2751 E3 3741 D1 5701 A7
- 1711 A8 2752 C8 3742 E1 6703 B6
- 1719 E5 2753 D4 3743 B1 6708 E4
- 1721 A4 2754 D4 3746 E2 6707 A4
- 2701 A8 2755 D5 3748 D1 6708 A4
- 2702 A8 2756 C4 3747 D2 6709 B4
- 2703 A2 2759 E8 3748 C1 7701 B2
- 2704 C6 2760 E8 3749 C7 7702 B3
- 2705 A6 2761 D5 3750 C8 7704 A6
- 2706 D6 2762 C7 3752 B8 7708 D3
- 2707 C3 2763 A7 3753 A4 7710 D2
- 2708 E3 3701 A8 3754 E7 7711 C1
- 2709 E3 3702 B8 3755 E7 7713 E7
- 2710 C2 3703 A2 3756 E7 7715 E5
- 2711 E2 3704 B2 3757 E7 7714 E7
- 2712 A5 3705 C4 3758 E7 7716 B6
- 2713 A5 3706 B5 3759 A5 7718 D8
- 2714 B5 3707 A8 3760 A4 7719 C3
- 2715 B4 3708 E5 3761 B4 7720 B3
- 2716 D4 3709 A6 3763 B2 7719 D4
- 2718 B7 3711 E5 3764 E4 7722 C3
- 2719 B5 3712 E5 3765 E5 9717 A6
- 2720 D4 3713 B8 3766 D4 9718 C3
- 2721 A8 3714 C7 3767 E7 9730 A7
- 2722 A5 3715 B8 3768 C3 9733 A3
- 2723 A7 3716 B8 3769 C4 9735 A3
- 2724 A7 3717 E5 3770 C3 9737 B4
- 2725 D6 3718 C5 3771 A4 9740 D2
- 2726 E2 3719 A5 3772 E5 9747 C7
- 2727 B8 3720 D4 3773 D4 9750 E8
- 2728 C5 3721 C5 3774 D4 9751 D8
- 2729 A4 3722 E2 3775 C4 9752 B6
- 2730 B4 3724 E6 3776 C4 9753 B7
- 2731 B5 3725 C8 3777 C4 9754 D5
- 2732 B7 3726 B8 3778 B8 9756 E9
- 2733 A7 3727 D8 3779 B4 9759 A3
- 2734 A7 3728 C7 3780 C2 9757 B1
- 2735 C7 3729 B7 3781 B4 9758 A3
- 2737 B3 3732 C7 3782 A7 9759 A3
- 2738 B7 3731 B5 3785 A6 9760 A4
- 2740 E6 3732 E3 3786 C2 9762 D7
- 2741 A5 3733 E4 3787 A5
- 2743 E1 3734 E3 3788 C8

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
General						
ADJUST MOTOR SPEED	SBC420 (4822.397.30071) 3150Hz	PLAY deck A or B	1 or 2 LEFT or RIGHT or headphone socket	frequency counter	3758	3150Hz ±1%
CHECK WOW & FLUTTER	SBC420 (4822.397.30071) 3150Hz	PLAY deck A or B	1 or 2 LEFT or RIGHT or headphone socket	W&F-meter	check only	≤0.4 % DIN or ≤0.35 % CCIR
ADJUST AZIMUTH	SBC420 (4822.397.30071) 10kHz	PLAY deck A PLAY deck B	1 2 LEFT or RIGHT or headphone socket	mV-meter or oscilloscope	left hand screw	max. output level & left=right
Playback						
CHECK PLAYBACK FREQUENCY RESPONSE	SBC420 (4822.397.30071)	PLAY deck A PLAY deck B	1 or 2 LEFT or RIGHT	mV-meter	Check	limits see fig.1
Recording						
PRE-ADJUST BIAS	FERRO	RECORD	5	mV-meter	5701	14V _{rms} (40V _{pp})
CHECK OVERALL FREQUENCY RESPONSE	FERRO	RECORD				
Input signal: 3mV 100Hz, 250Hz, 1kHz, 10kHz		RECORDED CASSETTE	1 or 2 LEFT or RIGHT	mV-meter	check only	limits see fig.2
via 3 or 4						
CHECK DISTORTION	FERRO	RECORD				
Input signal: 300mV 1kHz		RECORDED CASSETTE	1 or 2 LEFT or RIGHT	THD-meter	check only	≤5%
via 3 or 4						
Remark: If high frequencies are not within lower limit, decrease bias and re-measure. If distortion is too high increase bias and re-measure.						

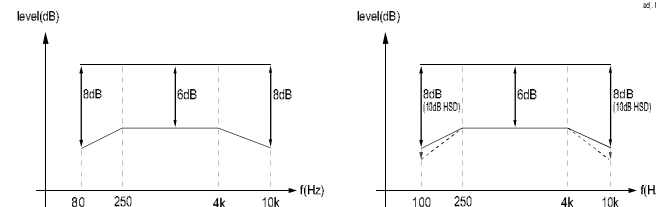
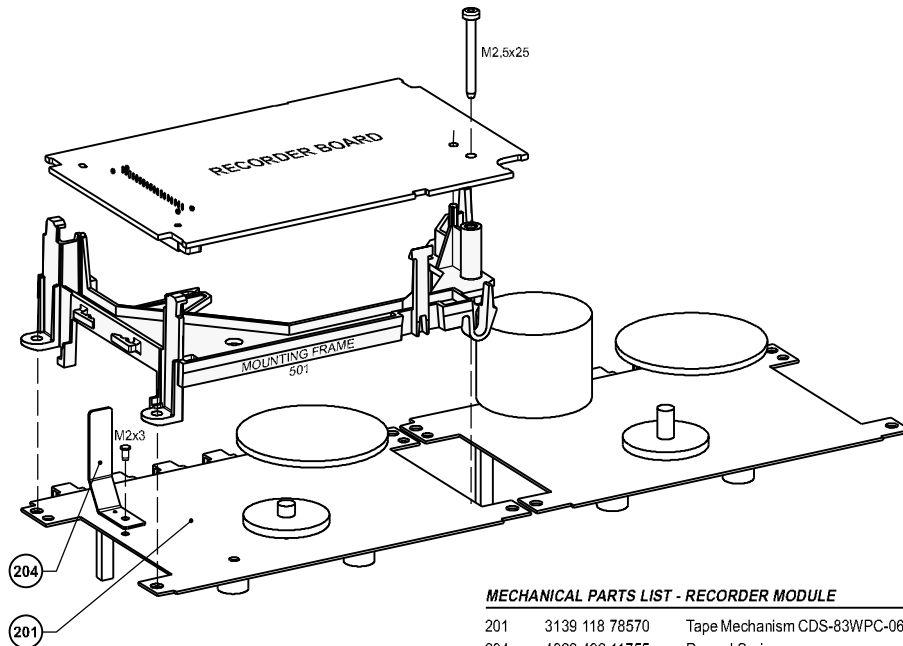


figure. 1

figure. 2

EXPLODED VIEW / RECORDER MODULE



MECHANICAL PARTS LIST - RECORDER MODULE

201	3139 118 78570	Tape Mechanism CDS-83WPC-06
204	4822 492 11755	Record Spring

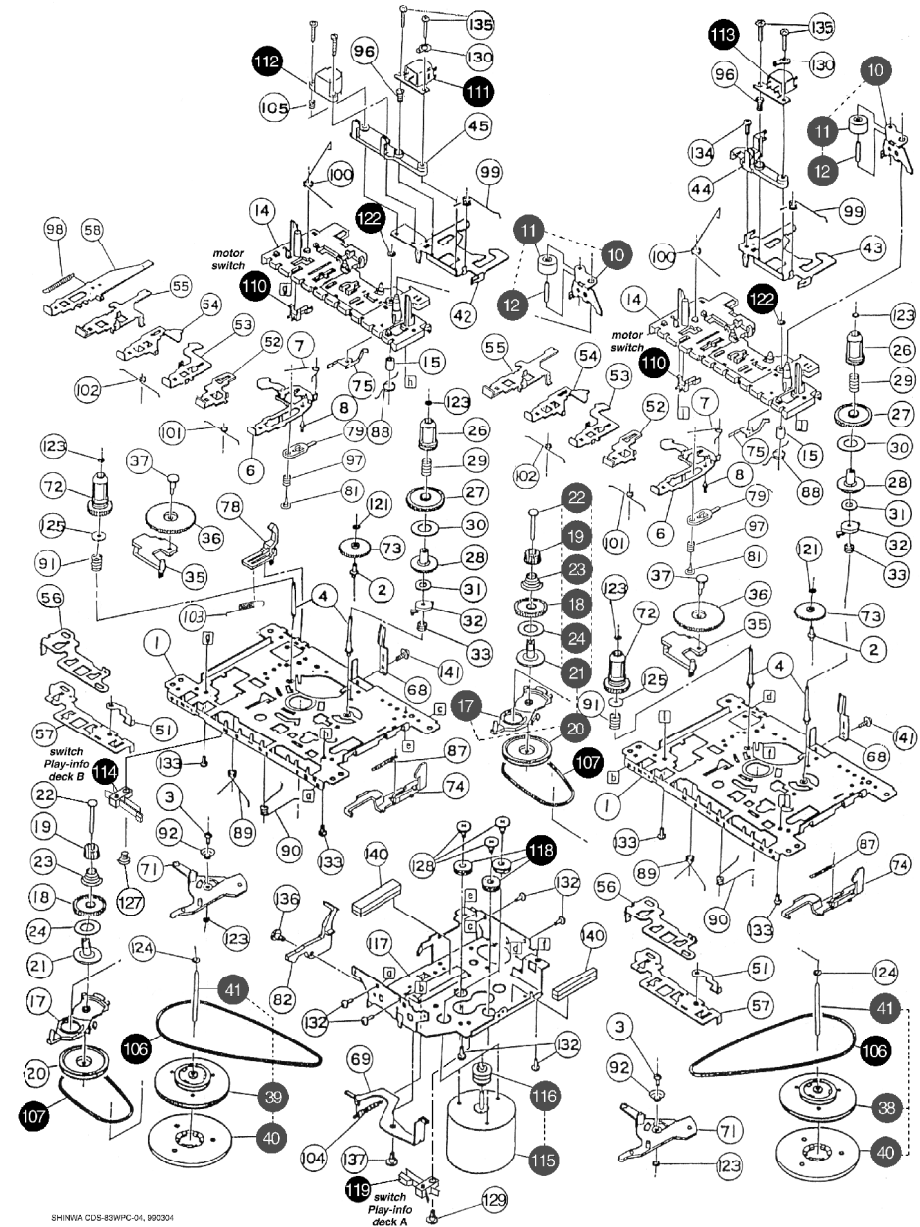
Note: Only the parts mentioned in this list are normal service spare parts.

MECHANICAL PARTS LIST - TAPE TRANSPORT

10-12	4822 528 11189	Pinch Roller Assembly	118	4822 466 11787	Motor Cushion
106	4822 358 31225	Main Belt	119	4822 277 11753	Leaf Switch
107	4822 358 31124	Sub Belt	122	4822 532 12937	Washer PSW-S 1.6X3.5X0.4
110	4822 278 90663	Leaf Switch, Motor On/Off	17-24	4822 402 10966	FR Arm Assembly
111	4822 249 10565	Rec/PB Head, TC951-B	38-41	9965 000 08765	Flywheel Assembly, Play Deck
112	9965 000 02600	Erase Head	39-41	9965 000 08766	Flywheel Assembly, Rec/PB Deck
113	4822 249 10565	Rec/PB HEAD, TC951-B			
114	4822 276 13712	Leaf Switch LSA1115B			
115-116	4822 361 11053	Motor Assembly			

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

EXPLODED VIEW TAPE TRANSPORT



ELECTRICAL PARTS LIST - ECO MTF BOARD

MISCELLANEOUS

1707	4822 277 11504	Rec/PB Slide Switch
1710	4822 265 11207	Flex Socket 6pin Hort.

CAPACITORS

2703	4822 124 40433	47µF 20% 25V
2704	4822 124 81151	22µF 50V
2705	4822 124 40769	4,7µF 20% 100V
2706	4822 124 41584	100µF 20% 10V
2707	4822 124 21913	1µF 20% 63V HSD only
2708	4822 124 41584	100µF 20% 10V
2709	4822 124 40196	220µF 20% 16V
2710	4822 124 40433	47µF 20% 25V
2711	4822 124 23432	100µF 20% 10V
2712	4822 124 41584	100µF 20% 10V
2713	4822 124 40196	220µF 20% 16V
2714	4822 124 40433	47µF 20% 25V
2715	4822 124 81151	22µF 50V
2716	4822 124 81151	22µF 50V
2718	4822 124 40433	47µF 20% 25V
2719	4822 124 40433	47µF 20% 25V
2720	4822 126 12882	100nF +80/-20% 50V
2721	4822 121 41857	10nF 5% 250V
2722	4822 126 13307	8,2nF 10% 16V
2723	4822 121 10686	4,7nF 10% 50V
2724	4822 121 43179	18nF 5% 100V
2725	4822 126 12878	1,5nF 10% 16V
2726	4822 126 12878	1,5nF 10% 16V
2727	4822 126 12878	1,5nF 10% 16V
2728	4822 121 10746	6,8nF 10% 50V
2730	4822 121 10685	1,8nF 10% 50V
2731	4822 126 11585	22nF +80/-20% 25V
2732	4822 126 11585	22nF +80/-20% 25V
2733	4822 126 12878	1,5nF 10% 16V
2735	4822 121 10746	6,8nF 10% 50V
2737	4822 121 10685	1,8nF 10% 50V
2738	4822 126 11585	22nF +80/-20% 25V
2740	4822 126 12878	1,5nF 10% 16V
2741	4822 126 12878	1,5nF 10% 16V
2743	4822 122 33197	1nF 10% 50V
2744	4822 122 33197	1nF 10% 50V
2745	4822 122 33197	1nF 10% 50V
2747	4822 121 10746	6,8nF 10% 50V
2748	4822 126 11585	22nF +80/-20% 25V
2749	4822 126 12878	1,5nF 10% 16V
2751	4822 121 10746	6,8nF 10% 50V
2752	4822 126 12878	1,5nF 10% 16V
2753	4822 124 21913	1µF 20% 63V
2754	4822 124 40433	47µF 20% 25V
2755	4822 124 21913	1µF 20% 63V
2756	4822 124 40433	47µF 20% 25V
2759	4822 122 33519	470pF 10% 50V
2760	4822 122 33519	470pF 10% 50V

RESISTORS

3701	4822 050 11002	1k 1% 0,4W
3702	4822 116 52234	100k 5% 0,5W HSD only
3703	4822 116 52176	10R 5% 0,5W HSD only
3704	4822 116 52176	10R 5% 0,5W non-HSD only
3704	4822 116 52276	3k9 5% 0,5W HSD only
3705	4822 050 11002	1k 1% 0,4W
3706	4822 050 24705	4M7 1% 0,6W
3707	4822 116 52176	10R 5% 0,5W
3708	4822 116 52257	22k 5% 0,5W
3709	4822 116 83872	220R 5% 0,5W
3711	4822 116 52256	2k2 5% 0,5W
3712	4822 116 52256	2k2 5% 0,5W
3713	4822 116 52257	22k 5% 0,5W
3714	4822 116 52257	22k 5% 0,5W
3715	4822 050 11002	1k 1% 0,4W
3716	4822 116 52303	8k2 5% 0,5W
3717	4822 116 52219	330R 5% 0,5W
3718	4822 116 52257	22k 5% 0,5W
3719	4822 116 52244	15k 5% 0,5W
3720	4822 116 52244	15k 5% 0,5W
3721	4822 116 52272	330k 5% 0,5W
3722	4822 116 83872	220R 5% 0,5W
3724	4822 116 52193	39R 5% 0,5W
3725	4822 116 52303	8k2 5% 0,5W
3726	4822 050 11002	1k 1% 0,4W
3727	4822 116 52219	330R 5% 0,5W
3728	4822 116 52257	22k 5% 0,5W
3729	4822 116 52244	15k 5% 0,5W
3730	4822 116 52244	15k 5% 0,5W
3731	4822 116 52272	330k 5% 0,5W
3732	4822 050 21003	10k 1% 0,6W HSD only
3733	4822 116 52256	2k2 5% 0,5W
3734	4822 116 52238	12k 5% 0,5W
3735	4822 050 21003	10k 1% 0,6W HSD only
3736	4822 116 52256	2k2 5% 0,5W
3737	4822 116 52272	330k 5% 0,5W
3738	4822 116 83872	220R 5% 0,5W
3740	4822 050 21003	10k 1% 0,6W
3741	4822 116 52193	39R 5% 0,5W
3742	4822 116 52272	330k 5% 0,5W
3743	4822 116 83872	220R 5% 0,5W
3745	4822 050 21003	10k 1% 0,6W
3746	4822 116 52193	39R 5% 0,5W
3747	4822 116 52238	12k 5% 0,5W
3748	4822 116 83883	470R 5% 0,5W
3749	4822 116 52272	330k 5% 0,5W
3750	4822 116 83872	220R 5% 0,5W
3752	4822 116 52193	39R 5% 0,5W

ELECTRICAL PARTS LIST - ECO MTF BOARD

RESISTORS

3753	4822 050 11002	1k 1% 0,4W
3754	4822 116 52256	2k2 5% 0,5W
3755	4822 116 52256	2k2 5% 0,5W
3756	4822 116 52256	2k2 5% 0,5W
3757	4822 116 52256	2k2 5% 0,5W
3758	4822 100 11368	Potm Trim 2K 30%
3759	4822 052 10478	4R7 5% 0,33W
3760	4822 116 52263	2k7 5% 0,5W
3761	4822 116 52285	470k 5% 0,5W HSD only
3763	4822 116 52245	150k 5% 0,5W HSD only
3764	4822 050 21003	10k 1% 0,6W
3765	4822 050 21003	10k 1% 0,6W
3766	4822 050 11002	1k 1% 0,4W
3767	4822 050 11002	1k 1% 0,4W
3768	4822 050 21003	10k 1% 0,6W
3769	4822 116 52303	8k2 5% 0,5W
3770	4822 116 83884	47k 5% 0,5W
3771	4822 050 21003	10k 1% 0,6W
3772	4822 116 52234	100k 5% 0,5W
3773	4822 116 52263	2k7 5% 0,5W
3774	4822 116 52303	8k2 5% 0,5W
3775	4822 116 83884	47k 5% 0,5W
3776	4822 116 52234	100k 5% 0,5W
3777	4822 116 83884	47k 5% 0,5W
3778	4822 116 52234	100k 5% 0,5W
3779	4822 050 21003	10k 1% 0,6W
3780	4822 116 52272	330k 5% 0,5W
3781	4822 116 52228	680R 5% 0,5W
3782	4822 116 52228	680R 5% 0,5W
3785	4822 116 83872	220R 5% 0,5W
3786	4822 116 83884	47k 5% 0,5W HSD only
3787	4822 116 83872	220R 5% 0,5W
3788	4822 116 52228	680R 5% 0,5W
3789	4822 116 52228	680R 5% 0,5W
3790	4822 116 52257	22k 5% 0,5W HSD only
3791	4822 116 83884	47k 5% 0,5W HSD only
3792	4822 116 52251	18k 5% 0,5W HSD only

COILS & FILTERS

5701	4822 157 10371	Oscillator coil
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DIODES

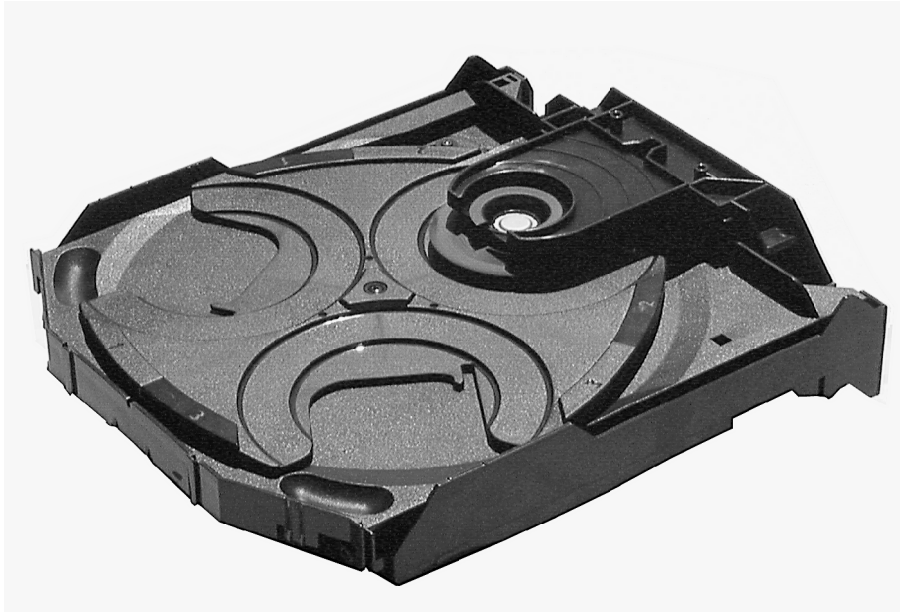
6703	4822 130 30621	1N4148
6706	4822 130 30621	1N4148
6707	4822 130 30621	1N4148
6708	4822 130 30621	1N4148
6709	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7701	4822 130 44568	BC557B	HSD only
7702	4822 130 44568	BC557B	HSD only
7704	4822 130 40981	BC337-25	

7709	4822 130 40959	BC547B	HSD only
7710	4822 130 40959	BC547B	HSD only
7711	4822 209 17498	AN7323	
7712	4822 209 17498	AN7323	
7713	4822 130 40981	BC337-25	
7714	4822 130 40981	BC337-25	
7715	4822 130 40981	BC337-25	
7716	4822 130 40981	BC337-25	
7717	4822 130 40959	BC547B	
7718	4822 130 40959	BC547B	
7719	4822 130 40959	BC547B	
7722	4822 130 40959	BC547B	HSD only

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



3CDC-LLC-MCD1
(3 Disc Carousel Changer) Layout stage .3

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Component Layout Main Board	10-8
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Service hints

CAUTION

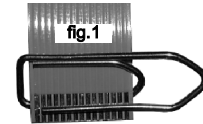
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- SWITCH OFF POWER SUPPLY
- ESD PROTECTION

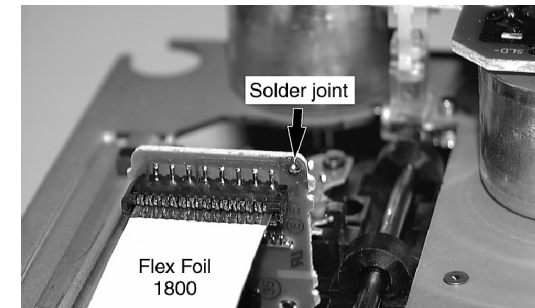
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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



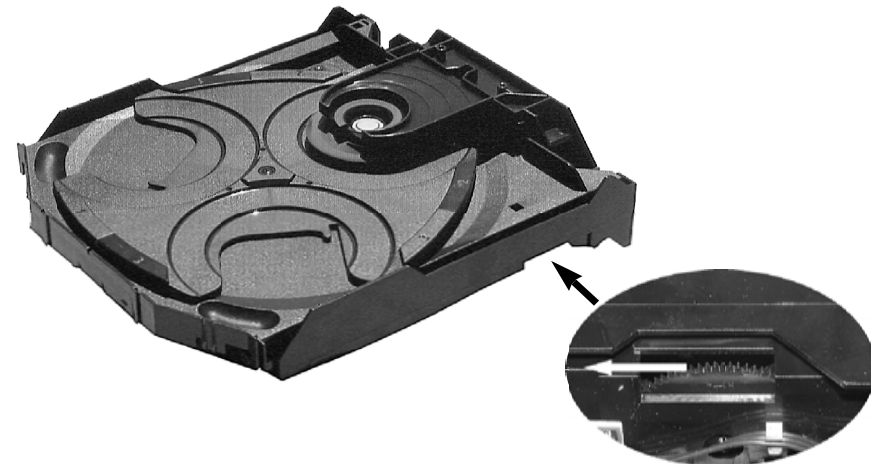
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



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).



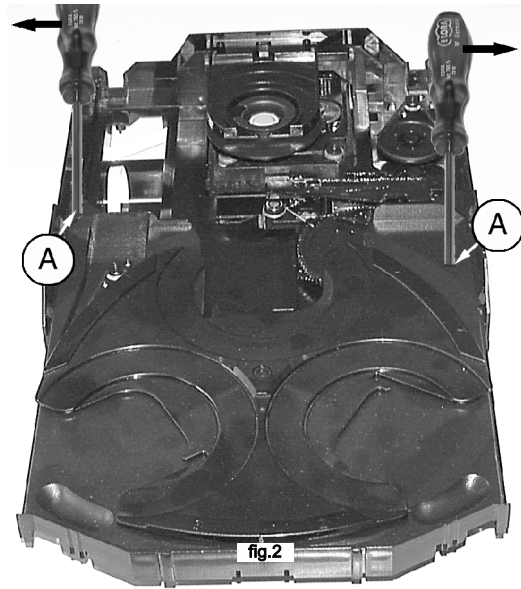
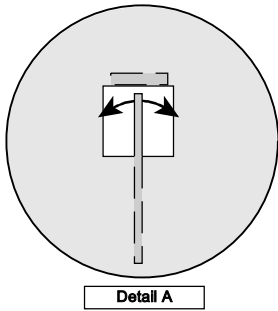
MC-Service

Service hints

10-3

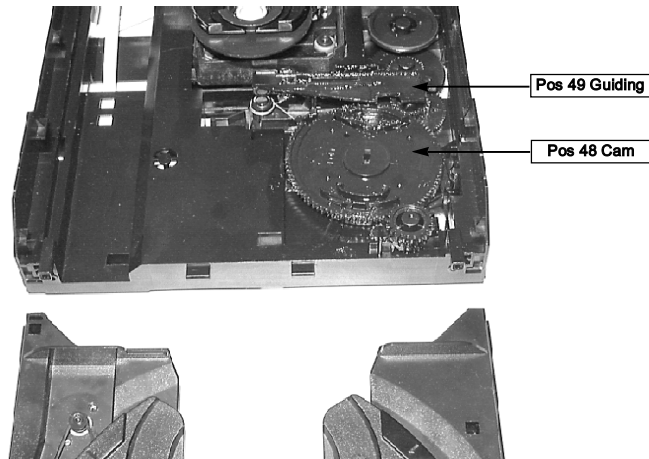
Dismantling of Tray

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



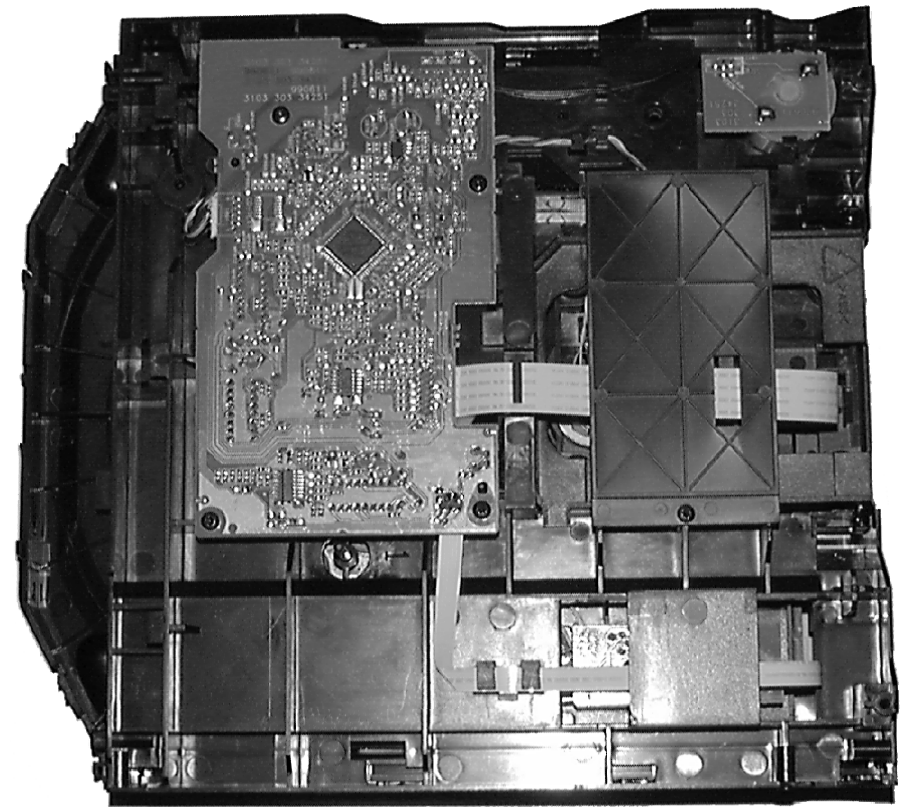
Assembling of Tray

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.

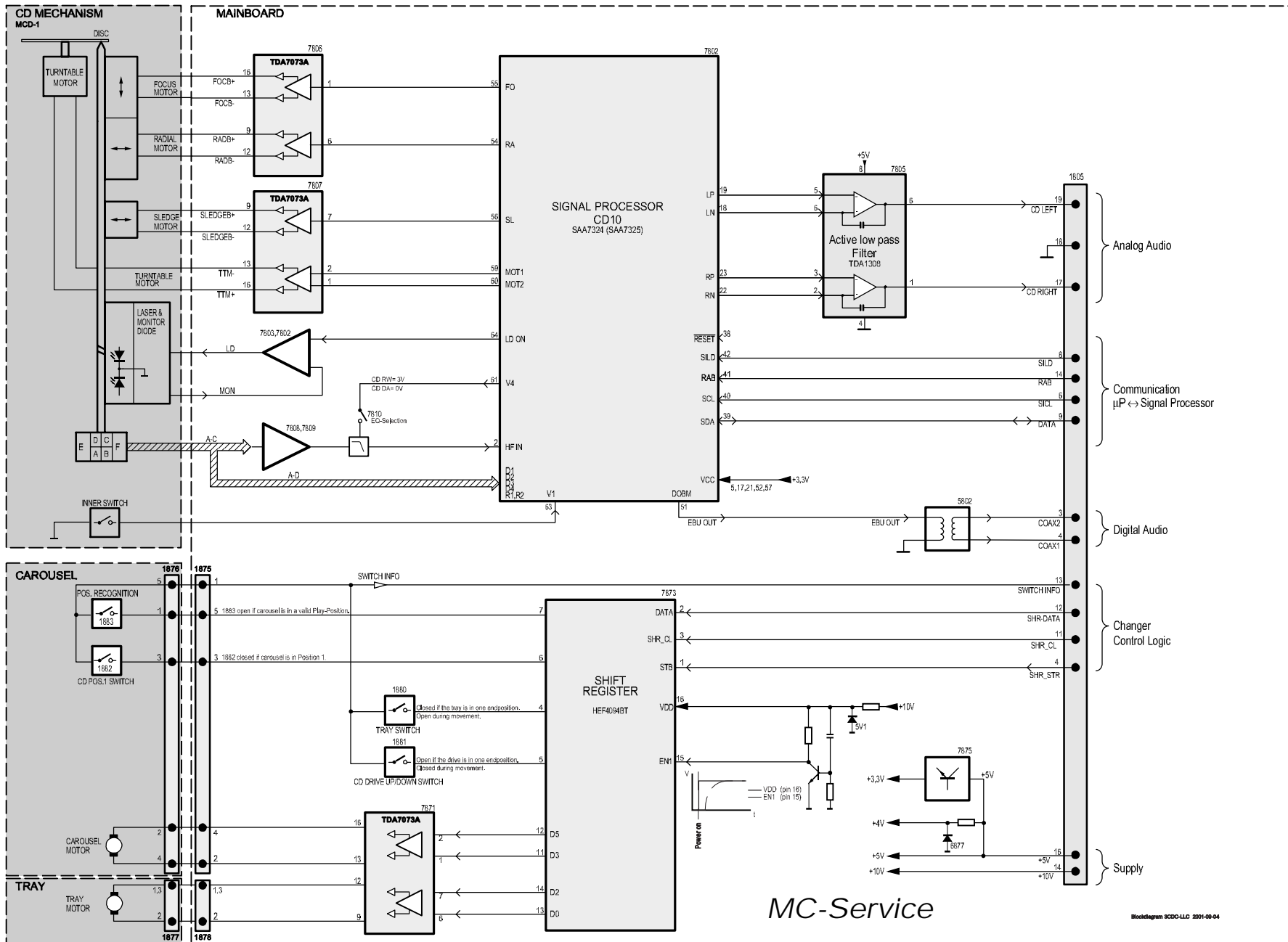


10-4

Service Position

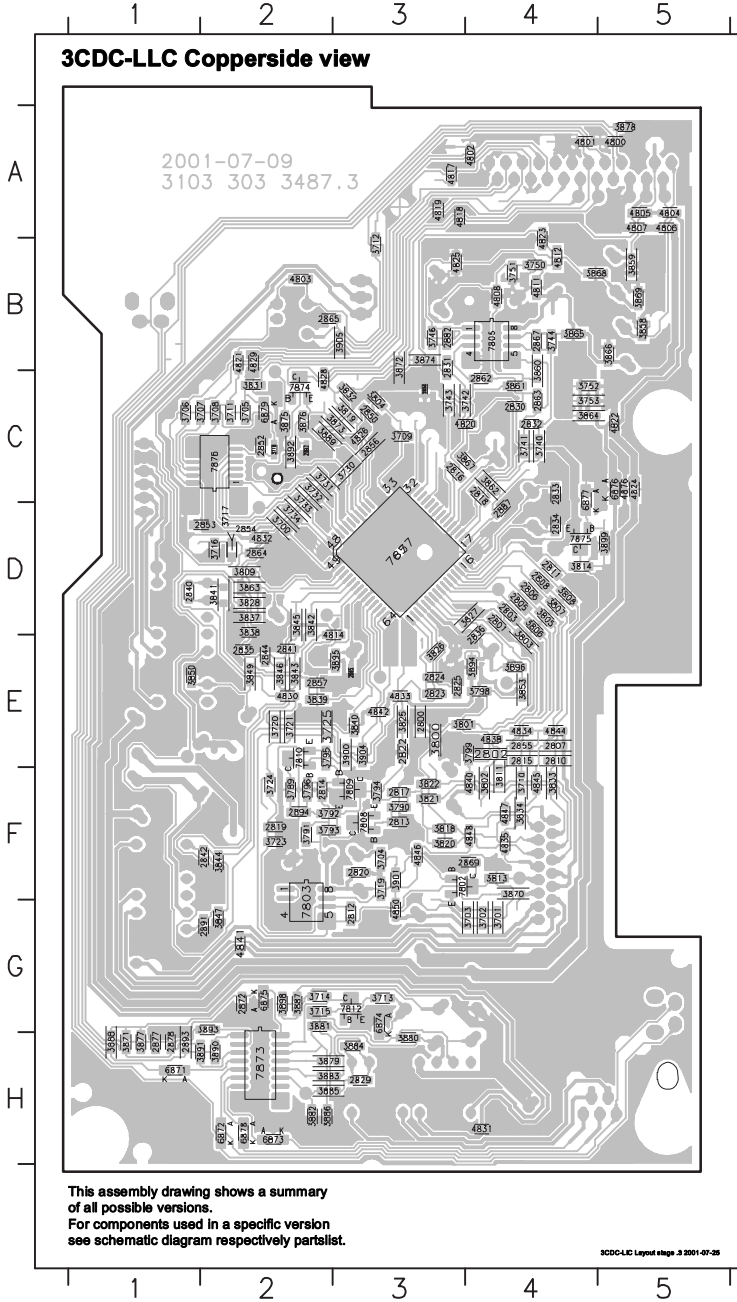


BLOCK DIAGRAM 3CDC-LLC-MCD1

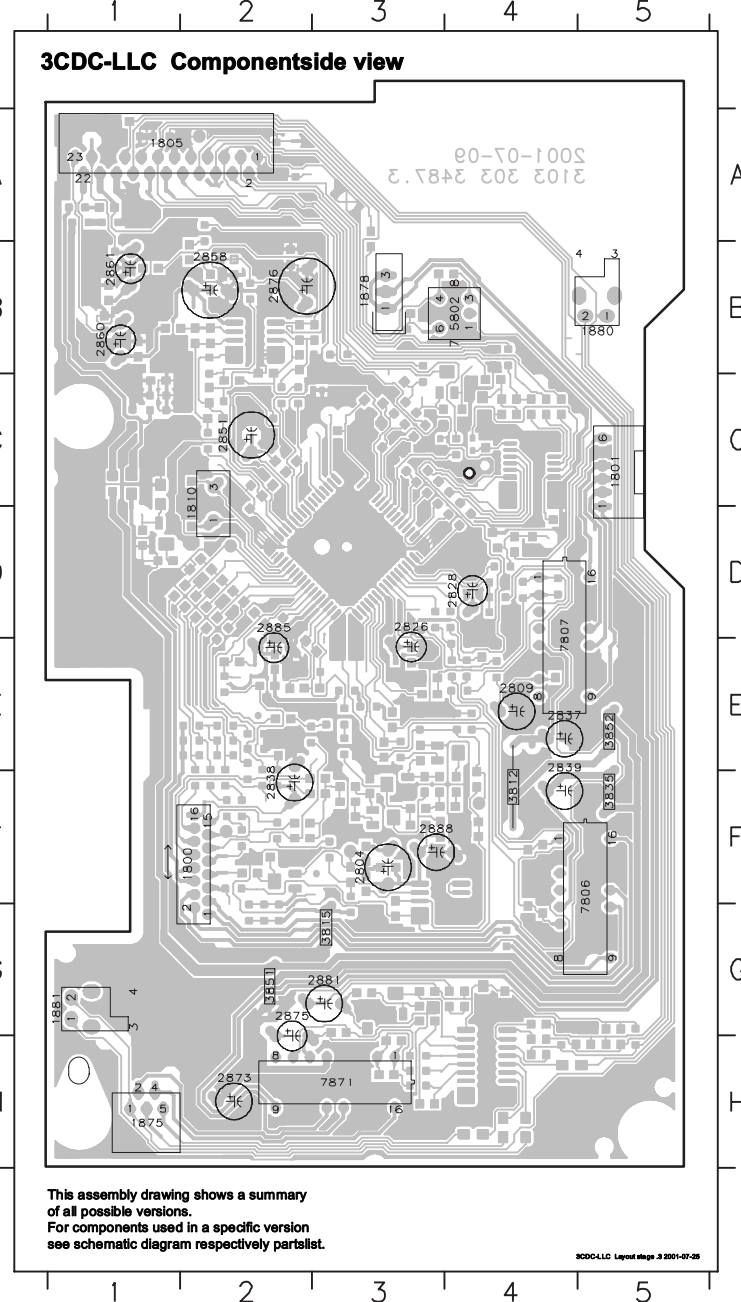


MC-Service

Mapping

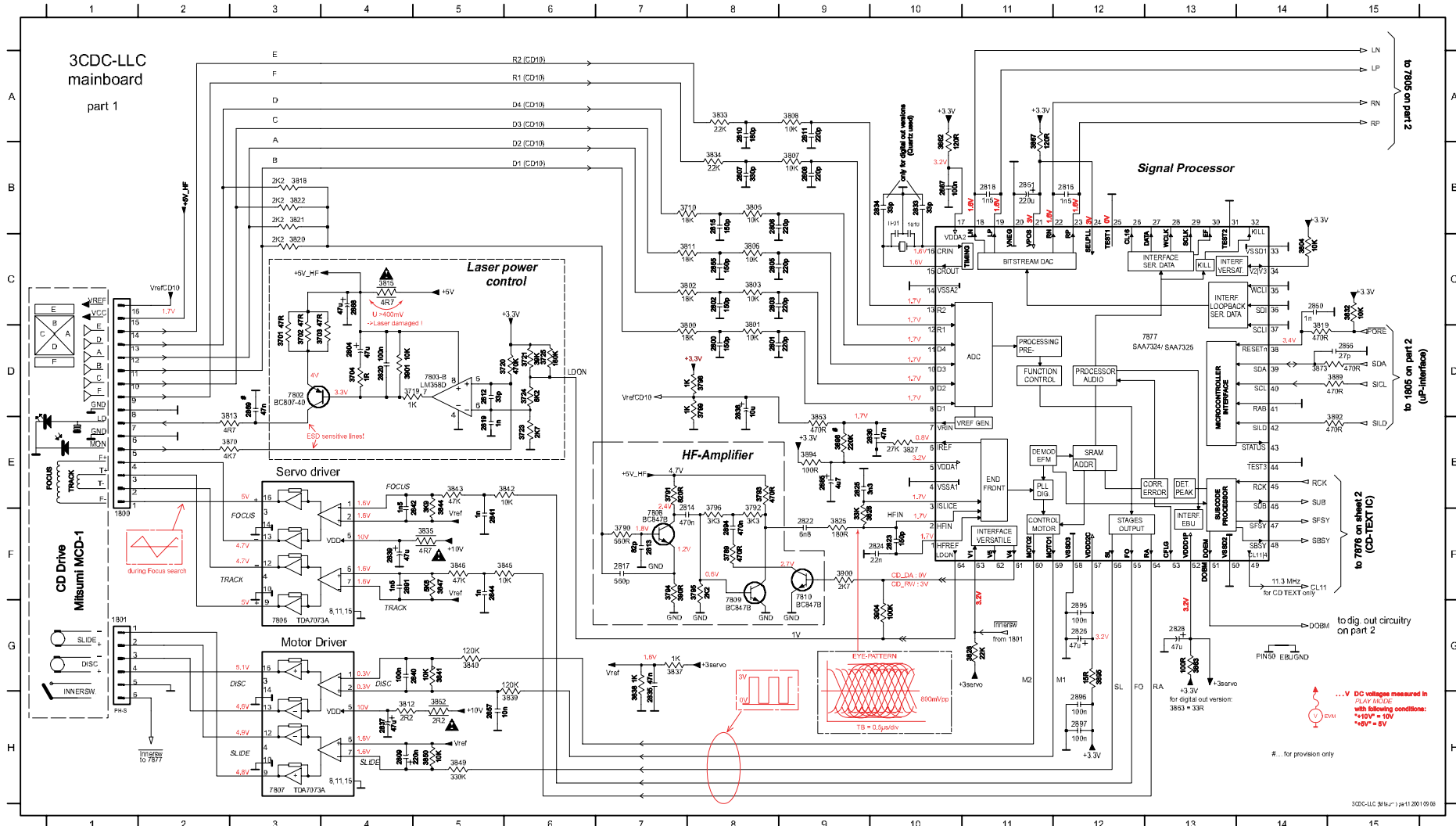


Copperside		Componentside
2800 E3	3741 C4	3889 C2
2801 D4	3742 C4	3890 H2
2802 E4	3743 C3	3891 H2
2803 D4	3744 B4	3892 C2
2805 D4	3746 B3	3893 G2
2806 D4	3750 B4	3894 E4
2807 E4	3751 B4	3895 E3
2808 D4	3752 C4	3896 E4
2810 E4	3753 C4	3898 G2
2811 D4	3789 F2	3899 D5
2812 G3	3790 F3	3900 E3
2813 F3	3791 F2	3901 F3
2814 F2	3792 F3	3904 E3
2815 E4	3793 F3	3905 E3
2816 C3	3794 F3	4800 A5
2817 F3	3795 E2	4801 A4
2819 C4	3796 E2	4802 A4
2819 F2	3798 E4	4803 B2
2820 F3	3799 E4	4804 A5
2822 E3	3800 E3	4805 A5
2823 E3	3801 E4	4806 A5
2824 E3	3802 F4	4807 A5
2825 E3	3803 D4	4808 B4
2829 H3	3804 C3	4811 B4
2830 C4	3805 D4	4812 B4
2831 B3	3806 D4	4814 C3
2832 C4	3807 D4	4817 A3
2833 C4	3808 D4	4818 A3
2834 D4	3809 D2	4819 A3
2835 E2	3811 F4	4820 C4
2836 D4	3813 F4	4821 B2
2840 D1	3814 D4	4822 C5
2841 E2	3818 F3	4823 A4
2842 F2	3819 C3	4824 C5
2844 E2	3820 F3	4825 B3
2850 C3	3821 F3	4826 C3
2852 C2	3822 E3	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	

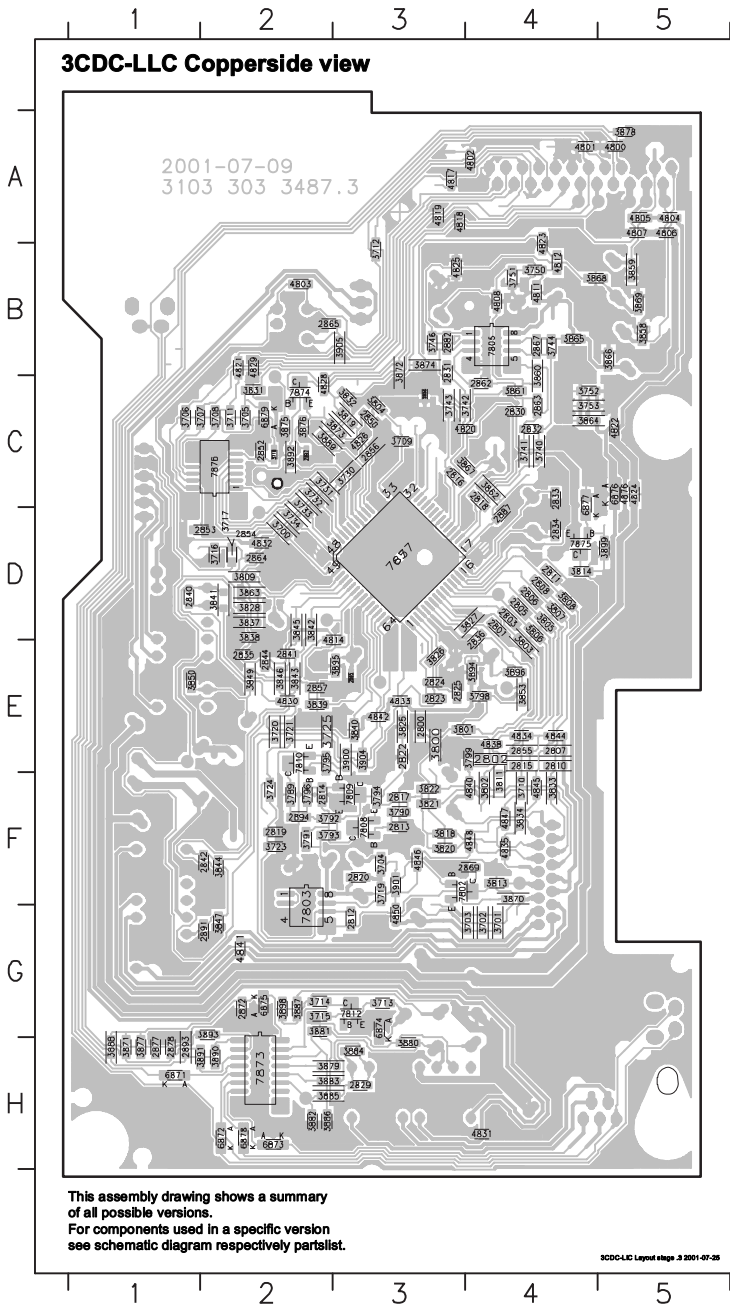


MC-Service

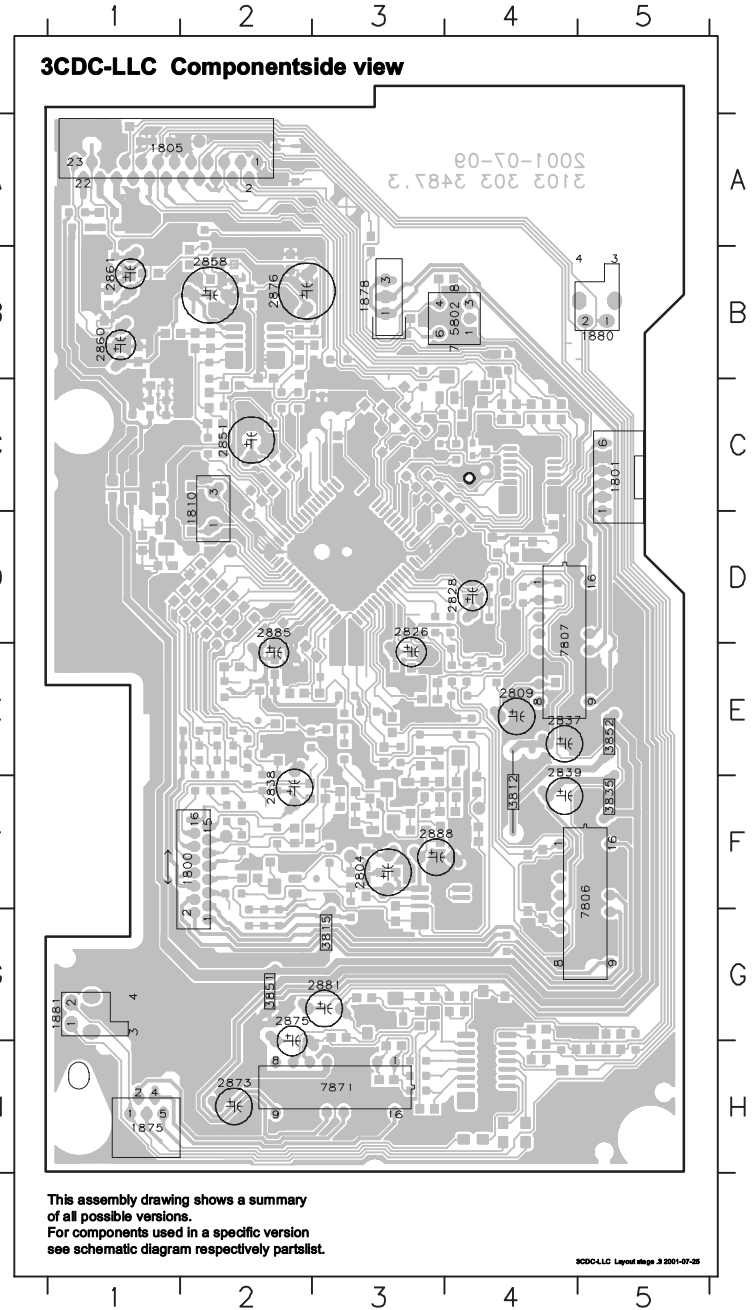
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1801 G1	2806 C8	2812 D5	2819 E5	2829 G13	2839 F4	2855 C8	2891 F4	3703 D0	3723 E5	3793 E8	3801 D8	3808 A9	3820 C3	3832 C15	3840 G5	3847 F5	3867 A11	3896 E9	7806 G3	MP715 D9	MP744 C2	MP814 G2	MP821 C15	MP836 G8	MP845 F4	MP852 G2	MP875 F13	MP883 F10
1810 B10	2808 B8	2813 F7	2820 D4	2833 B10	2840 G4	2856 D15	2894 F8	3704 D4	3724 D6	3784 F7	3802 C8	3811 C8	3821 B3	3833 A8	3841 G5	3849 H5	3870 E2	3900 F9	7807 H3	MP716 B9	MP745 E2	MP815 B3	MP822 B10	MP839 G6	MP846 H2	MP853 G2	MP876 E2	
2800 D8	2807 B8	2814 F7	2822 F9	2834 B10	2841 F5	2857 H6	2895 G12	3708 C14	3729 D6	3785 F8	3803 C9	3812 H4	3822 B3	3834 B8	3842 E5	3850 H5	3871 D4	3901 D4	7808 F7	MP717 A8	MP808 E2	MP816 A3	MP828 G11	MP840 E6	MP847 H2	MP858 G8	MP877 E3	
2801 D8	2808 B9	2815 B8	2823 F10	2835 H7	2842 E5	2859 D3	2895 H12	3710 B8	3739 F8	3796 F8	3804 C14	3813 E2	3825 F9	3835 F5	3843 E5	3852 H5	3889 D15	3904 G10	7809 G6	MP729 B9	MP802 B15	MP817 A3	MP829 A3	MP841 F6	MP848 E2	MP859 E10	MP878 B13	
2802 C8	2809 H4	2816 B12	2824 F10	2836 E10	2844 F5	2858 E9	2897 H12	3719 D4	3730 F7	3798 D8	3806 B8	3815 C4	3826 F9	3837 G7	3844 E5	3853 E9	3892 E15	7802 D3	7819 F9	MP730 C9	MP809 D10	MP818 C4	MP831 A4	MP842 H6	MP849 E2	MP860 C2	MP879 B11	
2803 C8	2810 A8	2817 F7	2824 E9	2837 H4	2850 C14	2887 B10	3701 D3	3729 D6	3791 E7	3799 D8	3806 C8	3816 B3	3827 E10	3838 H7	3845 F6	3852 A10	3894 E9	7803 A B5	7817 D12	MP731 B13	MP812 G2	MP819 F10	MP836 D3	MP843 G7	MP850 E2	MP872 C15	MP883 C4	



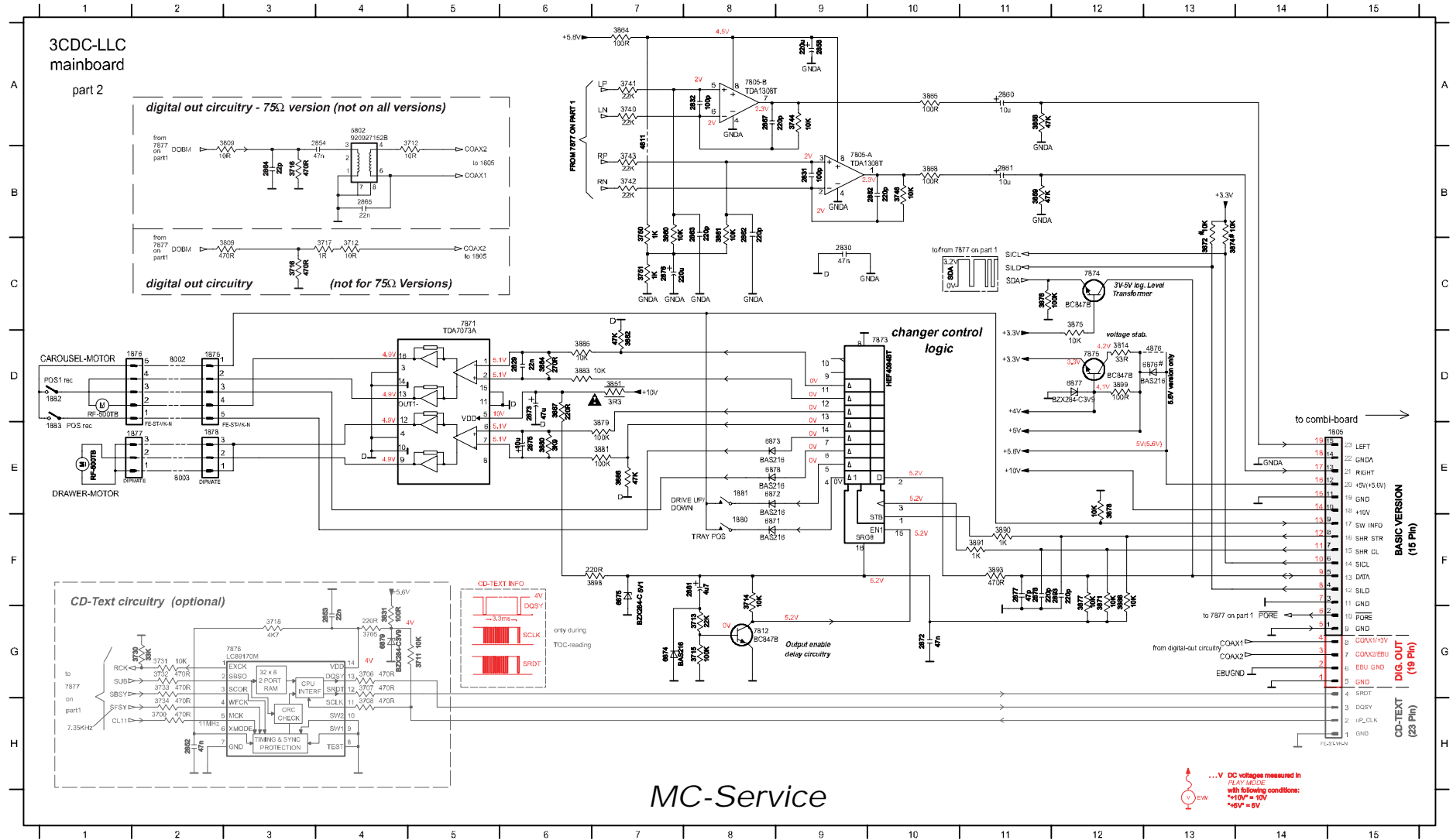
Mapping



Copperside		Componentside
2800 E3	3741 C4	3889 C2
2801 D4	3742 C4	3890 H2
2802 E4	3743 C3	3891 H2
2803 D4	3744 B4	3892 C2
2805 D4	3746 B3	3893 G2
2806 D4	3750 B4	3894 E4
2807 E4	3751 B4	3895 E3
2808 D4	3752 C4	3896 E4
2810 E4	3753 C4	3898 G2
2811 D4	3789 F2	3899 D5
2812 G3	3790 F3	3900 E3
2813 F3	3791 F2	3901 F3
2814 F2	3792 F3	3904 E3
2815 E4	3793 F3	3905 E3
2816 C3	3794 F3	4800 A5
2817 F3	3795 E2	4801 A4
2818 C4	3796 F2	4802 A4
2819 F2	3798 E4	4803 B2
2820 F3	3799 E4	4804 A5
2822 E3	3800 E3	4805 A5
2823 E3	3801 E4	4806 A5
2824 E3	3802 F4	4807 A5
2825 E3	3803 D4	4808 B4
2829 H3	3804 C3	4811 B4
2830 C4	3805 D4	4812 B4
2831 E3	3806 D4	4814 D3
2832 C4	3807 D4	4817 A3
2833 C4	3808 D4	4818 A3
2834 D4	3809 D2	4819 A3
2835 E2	3811 F4	4820 C4
2836 D4	3813 F4	4821 B2
2840 D1	3814 D4	4822 C5
2841 E2	3818 F3	4823 A4
2842 F2	3819 C3	4824 C5
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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
2868 D2	3834 F4	4838 E4
2865 E3	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
2894 H1	3846 E2	4878 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 C2	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	
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3740 C4	3888 H1	



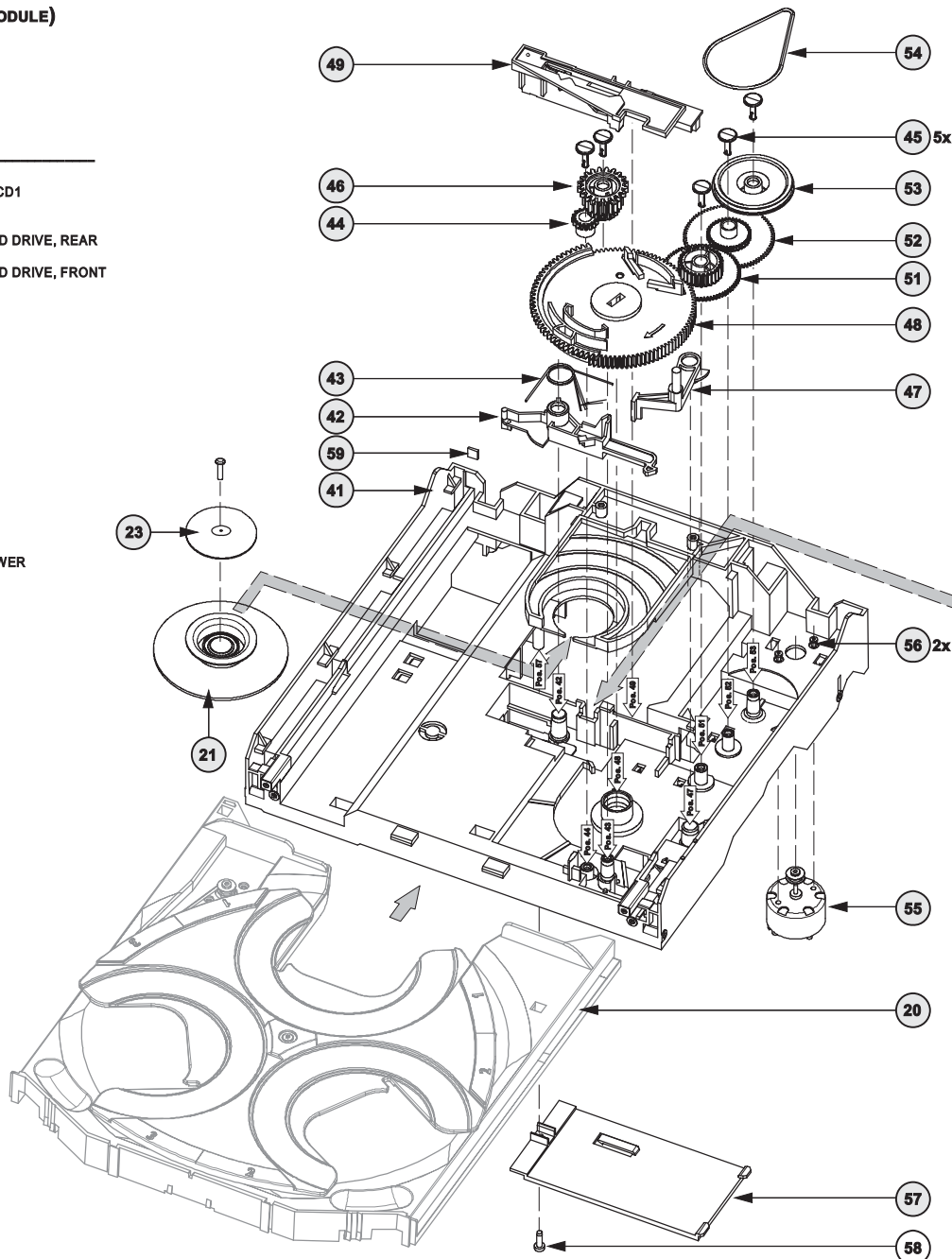
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1875 D2	2831 B9	2840 A11	2867 A8	2878 F11	3705 G4	3714 F8	3731 C2	3742 B7	3752 A6	3858 A11	3886 A10	3876 C12	3881 E7	3887 D8	3899 D12	5802 B4	8875 D13	7812 G6	MP721 C8	MP740 H14	MP805 F13	MP822 E3	MP833 F14	MP865 D11	MP874 D12	MP889 G5	MP899 E14
1878 E2	2832 A8	2861 B11	2872 C10	2881 F8	3707 G4	3715 G8	3732 C2	3743 B7	3753 A6	3859 B11	3888 B10	3878 C11	3882 D7	3888 F12	3905 C5	8871 F8	8877 D12	7871 C5	MP722 E8	MP741 G14	MP806 F13	MP823 E3	MP835 F14	MP868 E8	MP881 G2	MP890 B3	
1880 F8	2852 M2	2862 B8	2873 D8	2882 B10	3708 M4	3716 B3	3733 G2	3744 A9	3809 B2	3810 B7	3809 B10	3877 F12	3883 D6	3890 F11	4803 B4	8872 E8	8878 E8	7873 D10	MP723 D8	MP742 G14	MP807 F14	MP824 D4	MP864 A13	MP867 E8	MP882 G2	MP891 B9	
1881 E8	2853 G4	2863 B8	2875 E8	2883 F12	3711 G5	3717 B3	3734 M2	3746 B10	3814 D12	3861 B6	3871 F12	3878 E12	3884 D6	3891 F11	4811 A7	8873 E8	8879 G4	7874 C12	MP724 D8	MP801 E12	MP808 F13	MP825 D4	MP866 E14	MP868 F8	MP886 G3	MP892 B5	
2820 D8	2854 B3	2864 B3	2876 C7	3700 M2	3712 B4	3718 G3	3740 A7	3750 B7	3831 C4	3872 C13	3878 D7	3885 D6	3893 F11	4812 B7	8874 G7	7805-A B9	7875 D12	MP725 D8	MP803 F10	MP810 F13	MP830 A7	MP867 B13	MP869 C12	MP887 M5	MP897 E13		



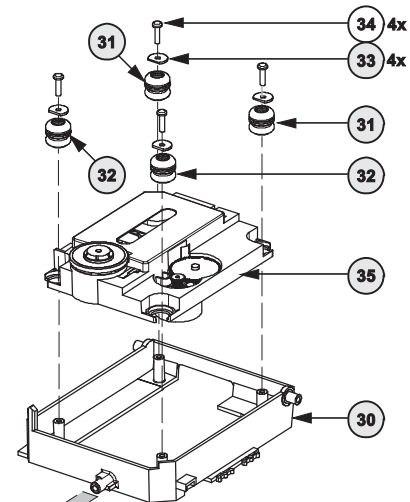
EXPLODED VIEW (3CDC-LC MODULE)

MECHANICAL PARTS Loader → this page

20	3103 304 66500	DRAWER
21	3140 114 29070	PRESSURE RING-MCD1
23	3140 111 21270	METAL RING-MCD1
30	3103 304 66560	SUPPORT
31	4822 529 10386	RUBBER DAMPER CD DRIVE, REAR
32	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
33	3103 304 06970	WASHER
35	3103 309 05350	CD DRIVE MCD1B
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-MCD1
59	4822 466 12146	RUBBER



(X) spare part
(Y) non spare part

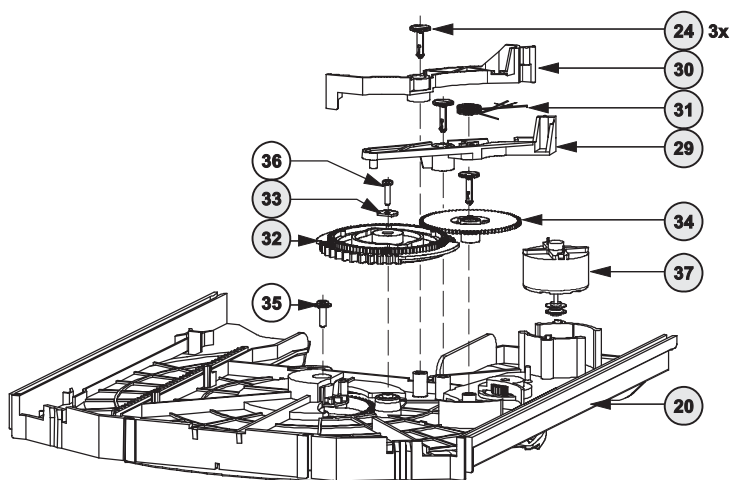


MECHANICAL PARTS Drawer → Chapter 10-11

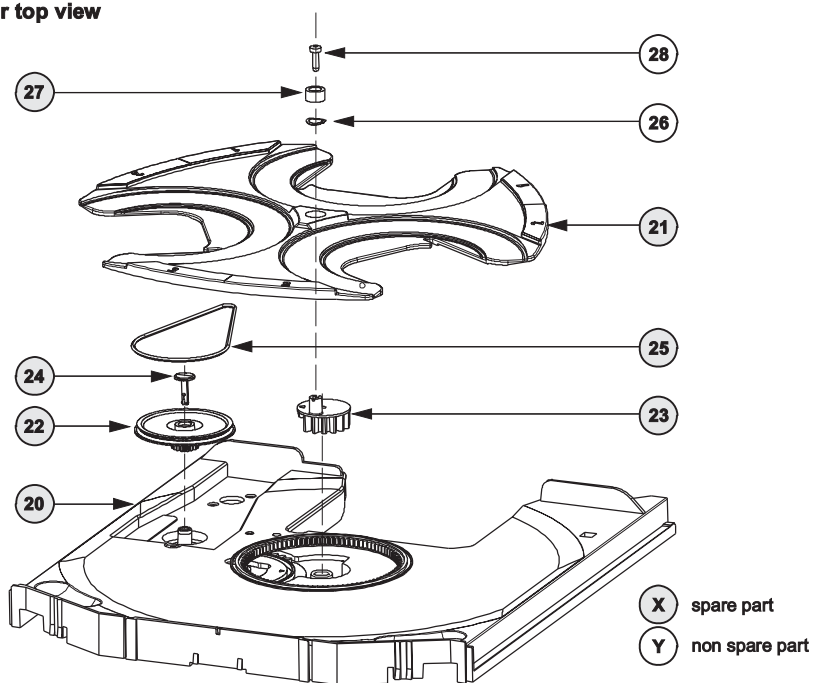
20	3103 304 66500	DRAWER
21	3103 304 66490	CAROUSEL
22	3103 304 06860	PULLEY-DRAWER
23	3103 304 06850	ECCENTRIC GEAR WHEEL
24	3103 304 06980	NAIL FIXATION
25	3103 304 66850	DRIVING BELT CAROUSEL
27	4822 532 12365	BUSH DRAWER (height=5,5mm,d=9,4mm)
27	3103 304 07100	BUSH DRAWER (height=8,5mm,d=16mm)
29	3103 304 66550	BRACKET-DISC
30	3103 304 66520	TUMBLER
31	3103 301 06470	SPRING-DISC
32	3103 304 06920	CONTROL-DISC
34	3103 304 06870	GEAR-1
37	4822 361 10753	CAROUSEL MOTOR

MC-Service

Drawer bottom view



Drawer top view



ELECTRICAL PARTSLIST 3CDC-LLC-MCD1 MODULE

MISCELLANEOUS

35	3103 309 05350	CD DRIVE MCD1B
37	4822 361 10753	CAROUSEL MOTOR
55	4822 361 10753	TRAY MOTOR
1800	2422 025 17389	FLEX FOIL CONNECTOR 16Pin
1805	4822 285 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 122 33172	390pF	5%	50V
2801	4822 126 13883	220pF	5%	50V
2802	4822 122 33172	390pF	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	5322 122 31863	330pF	5%	50V
2808	4822 126 13883	220pF	5%	50V
2809	4822 124 40746	0,22µF	20%	63V

2810	4822 126 10326	180pF	5%	
2811	4822 126 13883	220pF	5%	50V
2812	2222 867 15339	33pF	5%	50V
2813	4822 126 14226	82pF	5%	50V
2814	2238 246 59858	450nF	20%	10V

2815	4822 122 33172	390pF	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	5322 122 31866	6,8nF	10%	63V
2823	3198 016 31510	150pF	10%	50V
2824	5322 122 32654	22nF	10%	63V
2825	4822 122 33891	3,3nF	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	220pF	20%	4V
2855	4822 122 33172	390pF	5%	50V
2856	4822 126 13691	27pF	1%	63V
2857	5322 126 11583	10nF	10%	63V

2858	4822 124 12245	220µF	20%	16V
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CAPACITORS

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
2865	4822 126 14494	22nF	10%	25V

2867	4822 126 13883	220pF	5%	50V
2872	3198 024 44730	47nF	5%	50V
2873	4822 124 80231	47µF	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 051 51831	18kΩ	5%	0,1W

3712	4822 051 30109	10Ω	5%	0,06W
3713	4822 051 30223	22kΩ	5%	0,06W
3714	4822 051 30103	10kΩ	5%	0,06W
3715	4822 117 13632	100kΩ	1%	0,06W
3716	4822 051 30471	470Ω	5%	0,06W

3717	4822 117 12917	1Ω	5%	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 117 12968	820Ω	5%	0,06W
3792	4822 051 30332	3,3kΩ	5%	0,06W

3793	4822 051 20471	470Ω	5%	0,1W
3794	4822 051 30391	390Ω	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 051 51831	18kΩ	5%	0,1W

ELECTRICAL PARTSLIST 3CDC-LLC-MCD1 MODULE

RESISTORS

3801	4822 051 30103	10kΩ	5%	0,06W
3802	4822 051 51831	18kΩ	5%	0,1W
3803	4822 117 10833	10kΩ	1%	0,1W
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 051 20471	470Ω	5%	0,1W
3811	4822 051 51831	18kΩ	5%	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%	NFR
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 20181	180Ω	5%	0,1W
3826	4822 051 30333	33kΩ	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 30223	22kΩ	5%	0,06W
3834	4822 051 20223	22kΩ	5%	0,1W
3835	4822 052 10478	4,7Ω	5%	NFR
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 20392	3,9kΩ	5%	0,1W
3845	4822 117 10833	10kΩ	1%	0,1W
3846	4822 117 10834	47kΩ	1%	0,1W
3847	4822 051 20562	5,6kΩ	5%	0,1W
3849	4822 051 20334	330kΩ	5%	0,1W
3850	4822 051 30103	10kΩ	5%	0,06W
3851	4822 052 10338	3,3Ω		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

RESISTORS

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
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		
4803	4822 051 30008	CHIP JUMPER 0603		
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-MCD1 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
 7806 4822 209 32852 TDA7073A/N2
 7807 4822 209 32852 TDA7073A/N2
 7871 4822 209 32852 TDA7073A/N2
 7873 5322 209 11306 HEF4094BT, SHIFT REGISTER
 7877 9352 641 80557 SAA7324H/M2B, "CD10" SIGN.PROC.

MC-Service

COMBI BOARD

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Brief introduction of the Combi Board

A. TRANSFORMER PRIMARY PART

Transformer Primary Circuit provide connection for AC mains supply and primary wires of transformer.

B. POWER SUPPLY PART

Power Supply Circuit consists of rectifiers, capacitive filters and voltage regulators. Regulated voltage include +5V6, +LED, +12A, +12M, -32V, PWDN. The +C supply to the power amplifier is not regulated. F1-F2 is the ac supply voltage to the FTD Display filament.

C. SOURCE SELECT & AMPLIFIER PART

a) SHIFT REGISTER (AF CONTROL)

This shift register deliver commands from the μ P to control the AF functions which include source selection (A0 & A1 control lines), DSC modes, DBB, IS and CD_STBY. Other control lines such as MUTE, AMPON, STBY and PWM are coming directly from the μ P on the Front board.

b) SOURCE SELECTION

One of the 4 sources, namely AUX, TAPE, TUNER, CD, can be selected via A0 & A1 lines which control the IC 7501 (HEF4052BT). Karaoke mic. mixing is connected to the selected source before the signal is amplified with a buffer amplifier (Tr 7503 & 7504). The source signal is then split into recording path (for recording on tape) and main signal path (to the PWM volume control).

c) PWM VOLUME CONTROL

The discrete volume control makes use of 4 Transistors 7505, 7506, 7507 & 7508 (ON4986 or selected BC557B) and PWM control signal from μ P. For good performance transistors for the left and right channels should be paired for gain characteristics.

d) SOUND FEATURES

Sound Features include the DBB, IS and 4 DSC modes. The sound features are realised with a hex-inverter IC 7530 (HEF4069UBT) as analog buffer/amplifier and transistors as electronic switches controlled by the shift registers (AF control).

e) POWER AMPLIFIER

IC 7391 (AN7125) is used as power amplifier.

f) CD_STBY CONTROL

This Transistor 7401 (BC337-25) switches on the supply +CD supply (derived from +12A) to CD servo control, HF circuit and the laser light pen on the CD Module during the CD mode only.

g) MATRIX SURROUND OUTPUT

The matrix surround feature is provided on board. This feature is only optional on certain type version.

D. KARAOKE PART

This simple Karaoke consists of a 1-mic. mono amplifier using discrete components. It has a level control using a rotary potmeter. This feature is available for some version only.

E. HEADPHONE PART

The headphone output is derived from the power amplifier output after the attenuation resistors which are tailored to deliver 18mW output power into a 32 ohm headphone.

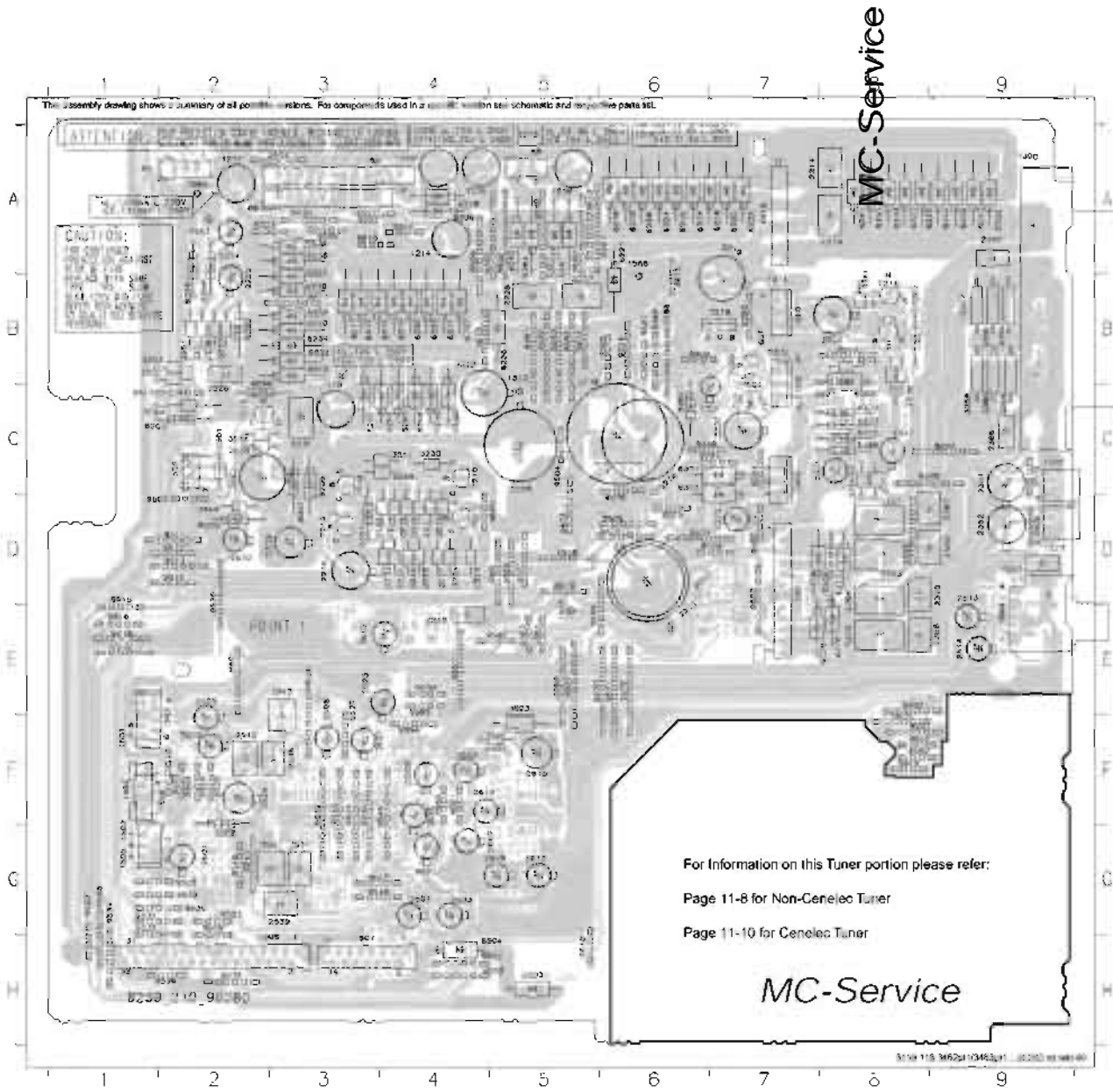
F. CDC KEY PART

The CDC key buttons and LEDs are provided on this board.

CHIP LAYOUT - MAIN PART (excluding the Tuner portion)

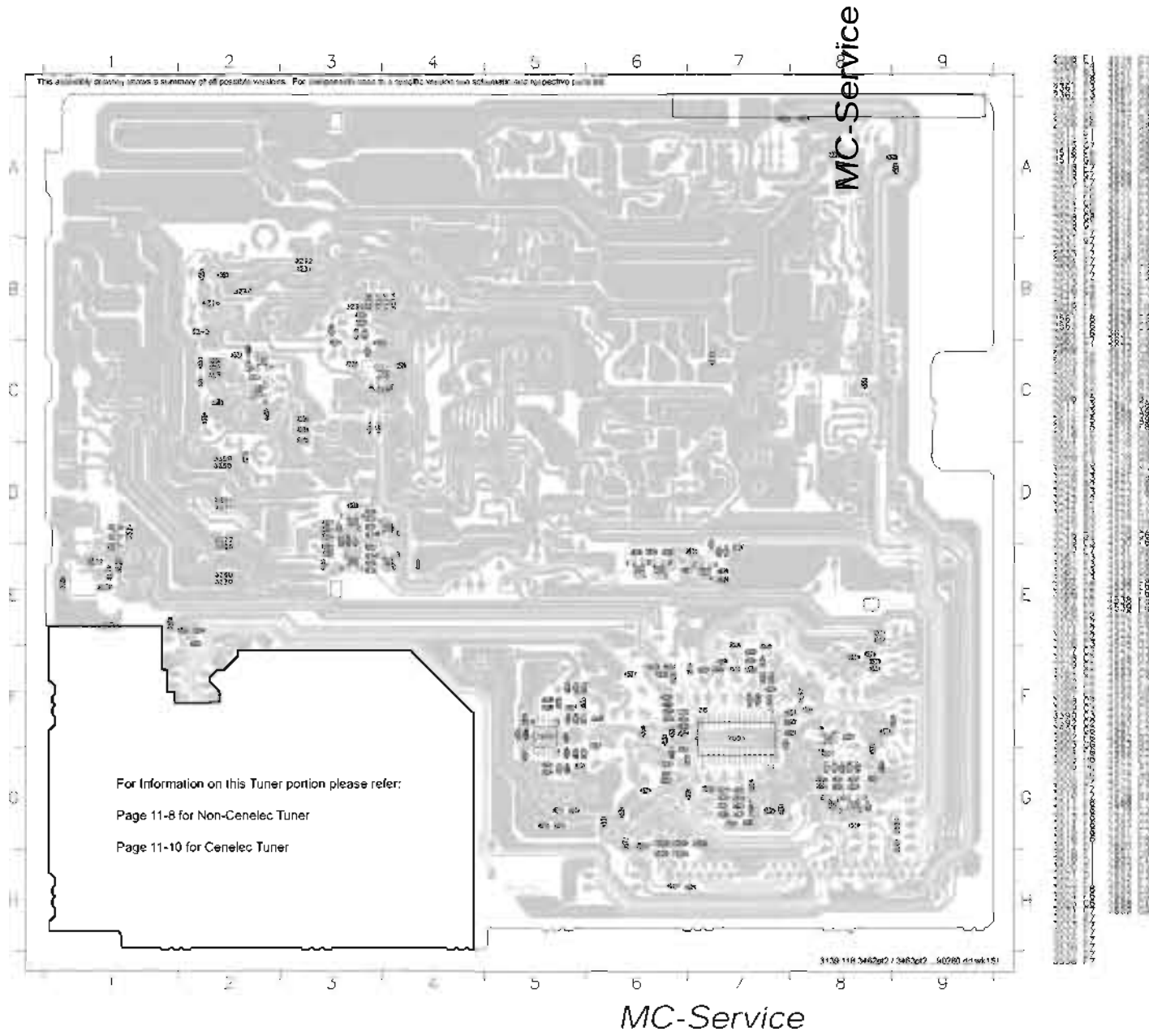


COMPONENT LAYOUT - MAIN PART (excluding the Tuner portion)

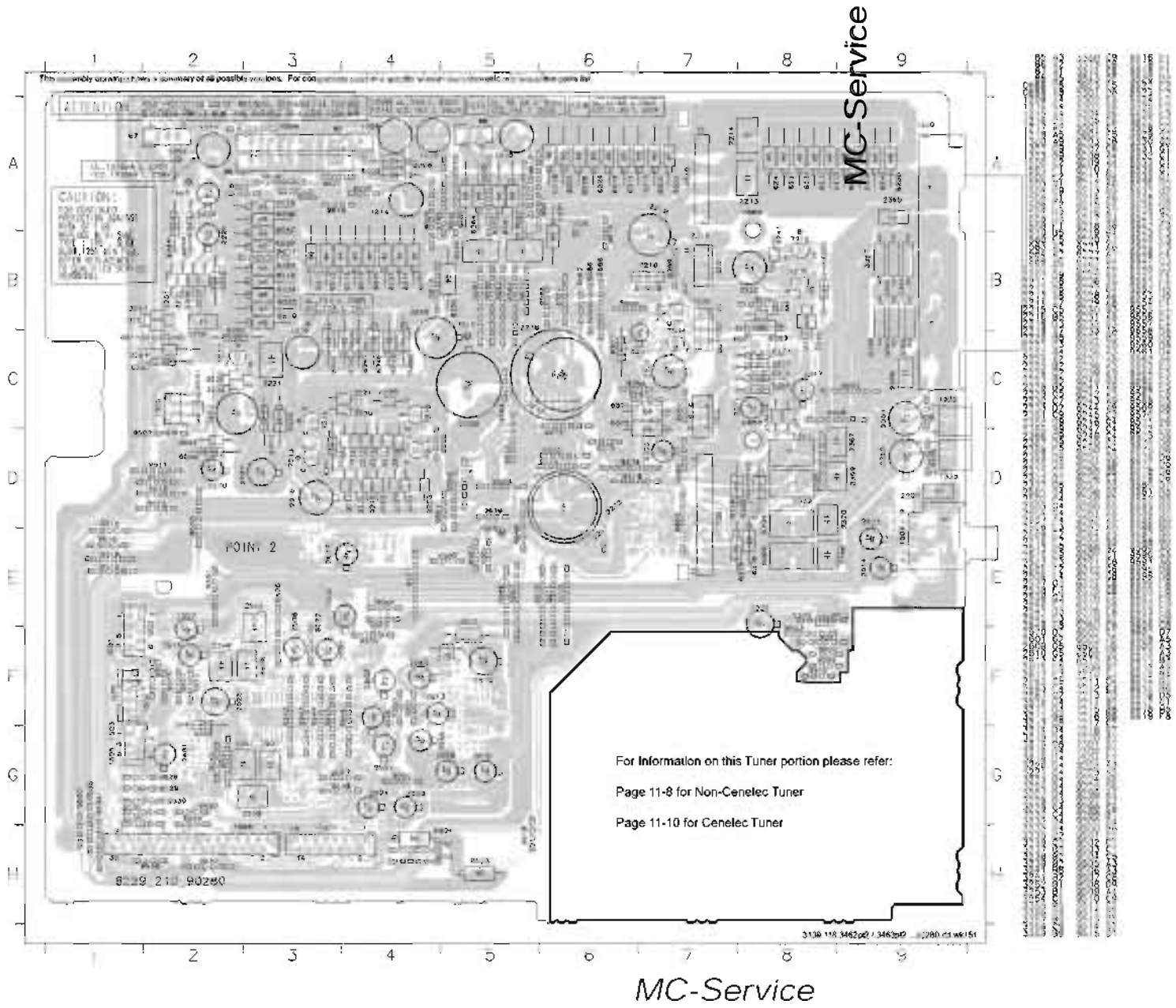


1	2	3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H	I	J
<p>11-3 08</p> <p>11-3 09</p> <p>11-3 10</p> <p>11-3 11</p> <p>11-3 12</p> <p>11-3 13</p> <p>11-3 14</p> <p>11-3 15</p> <p>11-3 16</p> <p>11-3 17</p> <p>11-3 18</p> <p>11-3 19</p> <p>11-3 20</p> <p>11-3 21</p> <p>11-3 22</p> <p>11-3 23</p> <p>11-3 24</p> <p>11-3 25</p> <p>11-3 26</p> <p>11-3 27</p> <p>11-3 28</p> <p>11-3 29</p> <p>11-3 30</p> <p>11-3 31</p> <p>11-3 32</p> <p>11-3 33</p> <p>11-3 34</p> <p>11-3 35</p> <p>11-3 36</p> <p>11-3 37</p> <p>11-3 38</p> <p>11-3 39</p> <p>11-3 40</p> <p>11-3 41</p> <p>11-3 42</p> <p>11-3 43</p> <p>11-3 44</p> <p>11-3 45</p> <p>11-3 46</p> <p>11-3 47</p> <p>11-3 48</p> <p>11-3 49</p> <p>11-3 50</p> <p>11-3 51</p> <p>11-3 52</p> <p>11-3 53</p> <p>11-3 54</p> <p>11-3 55</p> <p>11-3 56</p> <p>11-3 57</p> <p>11-3 58</p> <p>11-3 59</p> <p>11-3 60</p> <p>11-3 61</p> <p>11-3 62</p> <p>11-3 63</p> <p>11-3 64</p> <p>11-3 65</p> <p>11-3 66</p> <p>11-3 67</p> <p>11-3 68</p> <p>11-3 69</p> <p>11-3 70</p> <p>11-3 71</p> <p>11-3 72</p> <p>11-3 73</p> <p>11-3 74</p> <p>11-3 75</p> <p>11-3 76</p> <p>11-3 77</p> <p>11-3 78</p> <p>11-3 79</p> <p>11-3 80</p> <p>11-3 81</p> <p>11-3 82</p> <p>11-3 83</p> <p>11-3 84</p> <p>11-3 85</p> <p>11-3 86</p> <p>11-3 87</p> <p>11-3 88</p> <p>11-3 89</p> <p>11-3 90</p> <p>11-3 91</p> <p>11-3 92</p> <p>11-3 93</p> <p>11-3 94</p> <p>11-3 95</p> <p>11-3 96</p> <p>11-3 97</p> <p>11-3 98</p> <p>11-3 99</p> <p>11-3 100</p>									

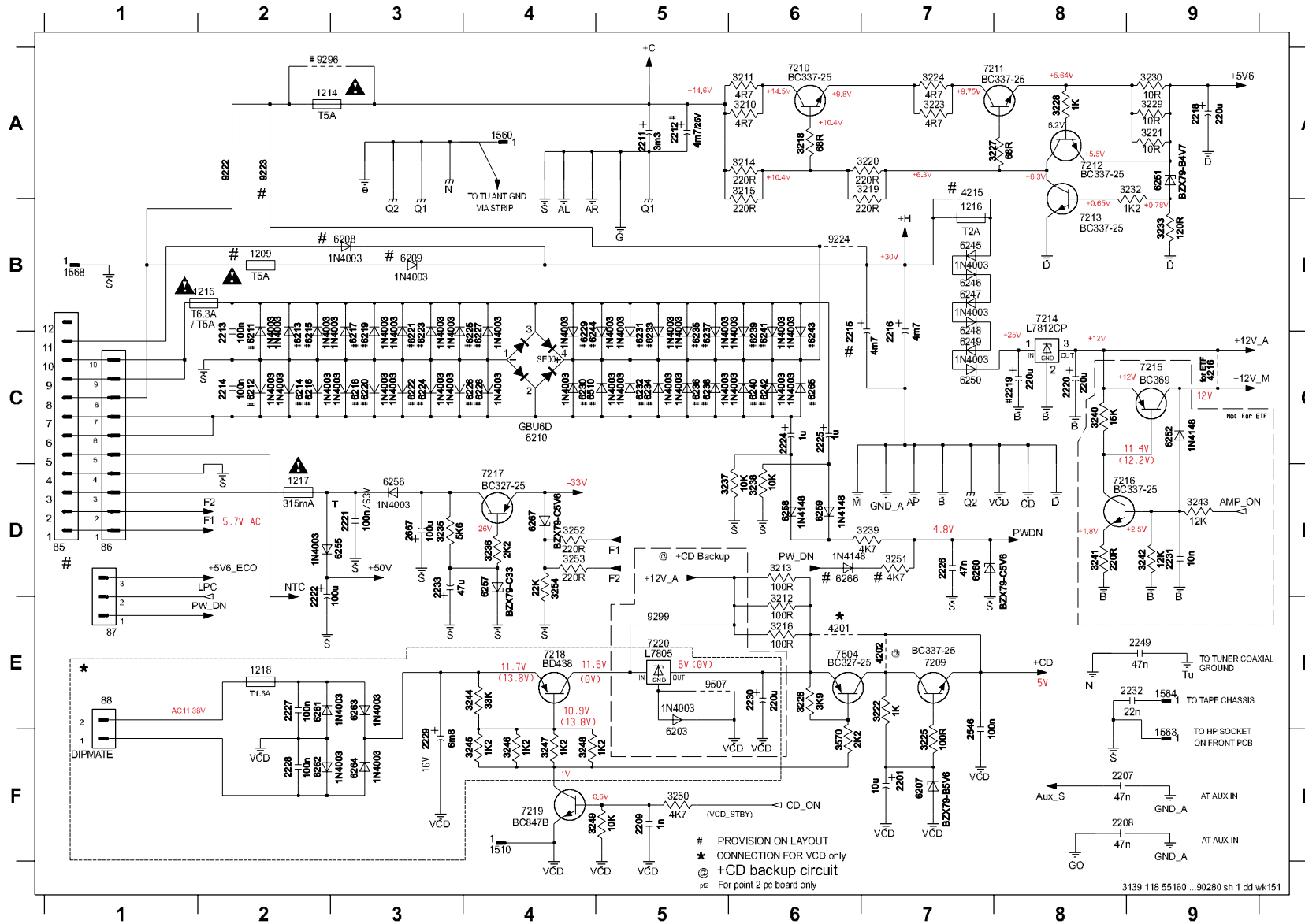
CHIP LAYOUT - MAIN PART (excluding the Tuner portion)



COMPONENT LAYOUT - MAIN PART (excluding the Tuner portion)



POWER SUPPLY CIRCUIT



85 D1	3252 D4	9222 A2
86 D1	3253 D4	9223 A2
87 E1	3254 D4	9224 B6
88 E1	3570 F6	9296 A2
1209 B2	4201 E6	9299 E5
1214 A2	4202 E7	9507 E5
1215 B2	4215 A7	
1216 B7	4216 C9	
1217 D2	6203 E5	
1218 E2	6207 F7	
1510 F4	6208 B3	
1560 A4	6209 B3	
1563 F9	6210 C4	
1564 E9	6211 C2	
1568 B1	6212 C2	
2201 F7	6213 C2	
2207 F8	6214 C2	
2208 F8	6215 C2	
2209 F5	6216 C2	
2211 A5	6217 C3	
2212 A5	6218 C3	
2213 C2	6219 C3	
2214 C2	6220 C3	
2215 C6	6221 C3	
2216 C7	6222 C3	
2218 A9	6223 C3	
2219 C8	6224 C3	
2220 C8	6225 C4	
2221 D3	6226 C4	
2222 E2	6227 C4	
2224 C6	6228 C4	
2225 C6	6229 C4	
2226 D7	6230 C4	
2227 E2	6231 C5	
2228 F2	6232 C5	
2229 F3	6233 C5	
2230 E6	6234 C5	
2231 D9	6235 C5	
2232 E9	6236 C5	
2249 E9	6237 C5	
2233 D3	6238 C5	
2846 F7	6239 C5	
2867 D3	6240 C6	
3210 A6	6241 C6	
3211 A6	6242 C6	
3212 E6	6243 C6	
3213 D6	6244 C4	
3214 A6	6245 B7	
3215 A6	6246 B7	
3216 E6	6247 B7	
3218 A6	6248 B7	
3219 A7	6249 C7	
3220 A7	6250 C7	
3221 A9	6251 A9	
3222 E7	6252 C9	
3223 A7	6253 D3	
3224 A7	6256 D3	
3225 F7	6257 D4	
3226 E6	6258 D6	
3227 A8	6259 D6	
3228 A8	6260 D7	
3229 A9	6261 E2	
3230 A9	6262 F2	
3232 A9	6263 E3	
3233 B9	6264 F3	
3235 D3	6265 C6	
3236 D4	6266 D6	
3237 D5	6267 D4	
3238 D6	6510 C4	
3239 D7	7209 E7	
3240 C8	7210 A6	
3241 D8	7211 A7	
3242 D9	7212 A8	
3243 D9	7213 B8	
3244 E4	7214 B8	
3245 F4	7215 C9	
3246 F4	7216 D8	
3247 F4	7217 D4	
3248 F4	7218 E4	
3249 F4	7219 F4	
3250 F5	7220 E5	
3251 D7	7504 E6	

PROVISION ON LAYOUT
 * CONNECTION FOR VCD only
 @ +CD backup circuit
 p2 For point 2 pc board only

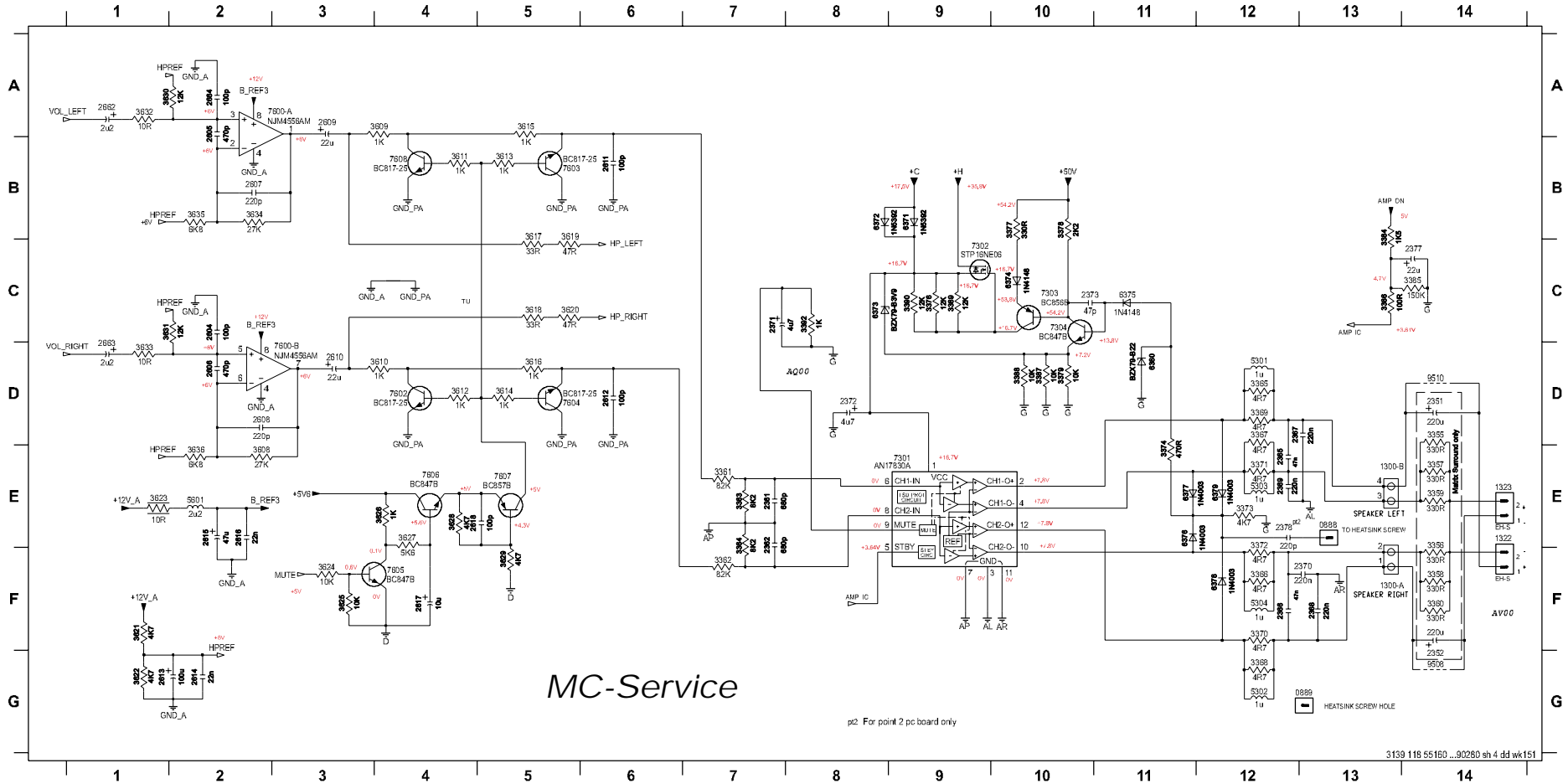
3139 118 55160 ...90280 sh 1 dd wk151

SOURCE SELECTION CIRCUIT

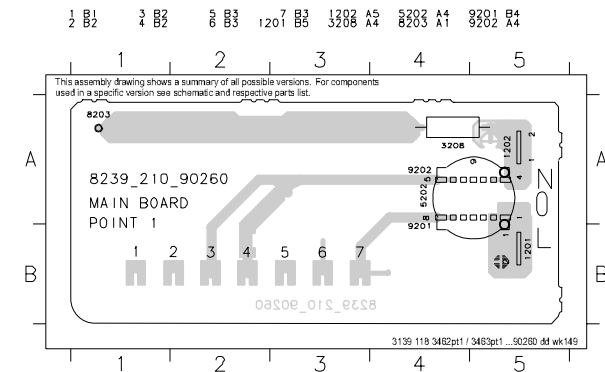
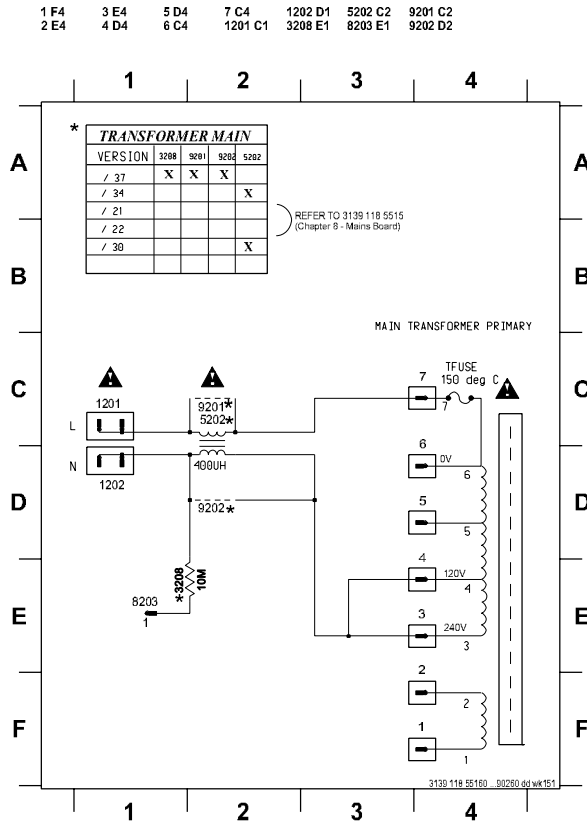
C3 E15	C10 C14	1501 D1	1507 C13	2504 B4	2510 D4	2516 G5	2522 G7	2528 F7	2534 H10	2540 G11	2546 E15	2552 D15	2558 G5	2565 B3	3505 B3	3511 D3	3517 E2	3523 C6	3534 H9	3540 H11	3546 E12	3552 A5	3558 D6	3564 B5	3570 B9	3576 D15	3582 E15	3588 D15	3594 G5	3600 A5	3606 D6	3612 B5	3618 B9	3624 D15	3630 E15	3636 D15	3642 A3	3648 C1	3654 B5	3660 C1	3666 D15	3672 A3	3678 B5	3684 C1	3690 D15	3696 E15	3702 A3	3708 B5	3714 C1	3720 D15	3726 E15	3732 A3	3738 B5	3744 C1	3750 D15	3756 E15	3762 A3	3768 B5	3774 C1	3780 D15	3786 E15	3792 A3	3798 B5	3804 C1	3810 D15	3816 E15	3822 A3	3828 B5	3834 C1	3840 D15	3846 E15	3852 A3	3858 B5	3864 C1	3870 D15	3876 E15	3882 A3	3888 B5	3894 C1	3900 D15	3906 E15	3912 A3	3918 B5	3924 C1	3930 D15	3936 E15	3942 A3	3948 B5	3954 C1	3960 D15	3966 E15	3972 A3	3978 B5	3984 C1	3990 D15	3996 E15	4002 A3	4008 B5	4014 C1	4020 D15	4026 E15	4032 A3	4038 B5	4044 C1	4050 D15	4056 E15	4062 A3	4068 B5	4074 C1	4080 D15	4086 E15	4092 A3	4098 B5	4104 C1	4110 D15	4116 E15	4122 A3	4128 B5	4134 C1	4140 D15	4146 E15	4152 A3	4158 B5	4164 C1	4170 D15	4176 E15	4182 A3	4188 B5	4194 C1	4200 D15	4206 E15	4212 A3	4218 B5	4224 C1	4230 D15	4236 E15	4242 A3	4248 B5	4254 C1	4260 D15	4266 E15	4272 A3	4278 B5	4284 C1	4290 D15	4296 E15	4302 A3	4308 B5	4314 C1	4320 D15	4326 E15	4332 A3	4338 B5	4344 C1	4350 D15	4356 E15	4362 A3	4368 B5	4374 C1	4380 D15	4386 E15	4392 A3	4398 B5	4404 C1	4410 D15	4416 E15	4422 A3	4428 B5	4434 C1	4440 D15	4446 E15	4452 A3	4458 B5	4464 C1	4470 D15	4476 E15	4482 A3	4488 B5	4494 C1	4500 D15	4506 E15	4512 A3	4518 B5	4524 C1	4530 D15	4536 E15	4542 A3	4548 B5	4554 C1	4560 D15	4566 E15	4572 A3	4578 B5	4584 C1	4590 D15	4596 E15	4602 A3	4608 B5	4614 C1	4620 D15	4626 E15	4632 A3	4638 B5	4644 C1	4650 D15	4656 E15	4662 A3	4668 B5	4674 C1	4680 D15	4686 E15	4692 A3	4698 B5	4704 C1	4710 D15	4716 E15	4722 A3	4728 B5	4734 C1	4740 D15	4746 E15	4752 A3	4758 B5	4764 C1	4770 D15	4776 E15	4782 A3	4788 B5	4794 C1	4800 D15	4806 E15	4812 A3	4818 B5	4824 C1	4830 D15	4836 E15	4842 A3	4848 B5	4854 C1	4860 D15	4866 E15	4872 A3	4878 B5	4884 C1	4890 D15	4896 E15	4902 A3	4908 B5	4914 C1	4920 D15	4926 E15	4932 A3	4938 B5	4944 C1	4950 D15	4956 E15	4962 A3	4968 B5	4974 C1	4980 D15	4986 E15	4992 A3	4998 B5	5004 C1	5010 D15	5016 E15	5022 A3	5028 B5	5034 C1	5040 D15	5046 E15	5052 A3	5058 B5	5064 C1	5070 D15	5076 E15	5082 A3	5088 B5	5094 C1	5100 D15	5106 E15	5112 A3	5118 B5	5124 C1	5130 D15	5136 E15	5142 A3	5148 B5	5154 C1	5160 D15	5166 E15	5172 A3	5178 B5	5184 C1	5190 D15	5196 E15	5202 A3	5208 B5	5214 C1	5220 D15	5226 E15	5232 A3	5238 B5	5244 C1	5250 D15	5256 E15	5262 A3	5268 B5	5274 C1	5280 D15	5286 E15	5292 A3	5298 B5	5304 C1	5310 D15	5316 E15	5322 A3	5328 B5	5334 C1	5340 D15	5346 E15	5352 A3	5358 B5	5364 C1	5370 D15	5376 E15	5382 A3	5388 B5	5394 C1	5400 D15	5406 E15	5412 A3	5418 B5	5424 C1	5430 D15	5436 E15	5442 A3	5448 B5	5454 C1	5460 D15	5466 E15	5472 A3	5478 B5	5484 C1	5490 D15	5496 E15	5502 A3	5508 B5	5514 C1	5520 D15	5526 E15	5532 A3	5538 B5	5544 C1	5550 D15	5556 E15	5562 A3	5568 B5	5574 C1	5580 D15	5586 E15	5592 A3	5598 B5	5604 C1	5610 D15	5616 E15	5622 A3	5628 B5	5634 C1	5640 D15	5646 E15	5652 A3	5658 B5	5664 C1	5670 D15	5676 E15	5682 A3	5688 B5	5694 C1	5700 D15	5706 E15	5712 A3	5718 B5	5724 C1	5730 D15	5736 E15	5742 A3	5748 B5	5754 C1	5760 D15	5766 E15	5772 A3	5778 B5	5784 C1	5790 D15	5796 E15	5802 A3	5808 B5	5814 C1	5820 D15	5826 E15	5832 A3	5838 B5	5844 C1	5850 D15	5856 E15	5862 A3	5868 B5	5874 C1	5880 D15	5886 E15	5892 A3	5898 B5	5904 C1	5910 D15	5916 E15	5922 A3	5928 B5	5934 C1	5940 D15	5946 E15	5952 A3	5958 B5	5964 C1	5970 D15	5976 E15	5982 A3	5988 B5	5994 C1	6000 D15	6006 E15	6012 A3	6018 B5	6024 C1	6030 D15	6036 E15	6042 A3	6048 B5	6054 C1	6060 D15	6066 E15	6072 A3	6078 B5	6084 C1	6090 D15	6096 E15	6102 A3	6108 B5	6114 C1	6120 D15	6126 E15	6132 A3	6138 B5	6144 C1	6150 D15	6156 E15	6162 A3	6168 B5	6174 C1	6180 D15	6186 E15	6192 A3	6198 B5	6204 C1	6210 D15	6216 E15	6222 A3	6228 B5	6234 C1	6240 D15	6246 E15	6252 A3	6258 B5	6264 C1	6270 D15	6276 E15	6282 A3	6288 B5	6294 C1	6300 D15	6306 E15	6312 A3	6318 B5	6324 C1	6330 D15	6336 E15	6342 A3	6348 B5	6354 C1	6360 D15	6366 E15	6372 A3	6378 B5	6384 C1	6390 D15	6396 E15	6402 A3	6408 B5	6414 C1	6420 D15	6426 E15	6432 A3	6438 B5	6444 C1	6450 D15	6456 E15	6462 A3	6468 B5	6474 C1	6480 D15	6486 E15	6492 A3	6498 B5	6504 C1	6510 D15	6516 E15	6522 A3	6528 B5	6534 C1	6540 D15	6546 E15	6552 A3	6558 B5	6564 C1	6570 D15	6576 E15	6582 A3	6588 B5	6594 C1	6600 D15	6606 E15	6612 A3	6618 B5	6624 C1	6630 D15	6636 E15	6642 A3	6648 B5	6654 C1	6660 D15	6666 E15	6672 A3	6678 B5	6684 C1	6690 D15	6696 E15	6702 A3	6708 B5	6714 C1	6720 D15	6726 E15	6732 A3	6738 B5	6744 C1	6750 D15	6756 E15	6762 A3	6768 B5	6774 C1	6780 D15	6786 E15	6792 A3	6798 B5	6804 C1	6810 D15	6816 E15	6822 A3	6828 B5	6834 C1	6840 D15	6846 E15	6852 A3	6858 B5	6864 C1	6870 D15	6876 E15	6882 A3	6888 B5	6894 C1	6900 D15	6906 E15	6912 A3	6918 B5	6924 C1	6930 D15	6936 E15	6942 A3	6948 B5	6954 C1	6960 D15	6966 E15	6972 A3	6978 B5	6984 C1	6990 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B5	8424 C1	8430 D15	8436 E15	8442 A3	8448 B5	8454 C1	8460 D15	8466 E15	8472 A3	8478 B5	8484 C1	8490 D15	8496 E15	8502 A3	8508 B5	8514 C1	8520 D15	8526 E15	8532 A3	8538 B5	8544 C1	8550 D15	8556 E15	8562 A3	8568 B5	8574 C1	8580 D15	8586 E15	8592 A3	8598 B5	8604 C1	8610 D15	8616 E15	8622 A3	8628 B5	8634 C1	8640 D15	8646 E15	8652 A3	8658 B5	8664 C1	8670 D15	8676 E15	8682 A3	8688 B5	8694 C1	8700 D15	8706 E15	8712 A3	8718 B5	8724 C1	8730 D15	8736 E15	8742 A3	8748 B5	8754 C1	8760 D15	8766 E15	8772 A3	8778 B5	8784 C1	8790 D15	8796 E15	8802 A3	8808 B5	8814 C1	8820 D15	8826 E15	8832 A3	8838 B5	8844 C1	8850 D15	8856 E15	8862 A3	8868 B5	8874 C1	8880 D15	8886 E15	8892 A3	8898 B5	8904 C1	8910 D15	8916 E15	8922 A3	8928 B5	8934 C1	8940 D15	8946 E15	8952 A3	8958 B5	8964 C1	8970 D15	8976 E15	8982 A3	8988 B5	8994 C1	9000 D15	9006 E15	9012 A3	9018 B5	9024 C1	9030 D15	9036 E15	9042 A3	9048 B5	9054 C1	9060 D15	9066 E15	9072 A3	9078 B5	9084 C1	9090 D15	9096 E15	9102 A3	9108 B5	9114 C1	9120 D15	9126 E15	9132 A3	9138 B5	9144 C1	9150 D15	9156 E15	9162 A3	9168 B5	9174 C1	9180 D15	9186 E15	9192 A3	9198 B5	9204 C1	9210 D15	9216 E15	9222 A3	9228 B5	9234 C1	9240 D15	9246 E15	9252 A3	9258 B5	9264 C1	9270 D15	9276 E15	9282 A3	9288 B5	9294 C1	9300 D15	9306 E15	9312 A3	9318 B5	9324 C1	9330 D15	9336 E
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PRE- & POWER AMPLIFIER CIRCUIT

0888 E13	1323 E14	2365 E12	2370 F13	2378 E12	2608 D2	2613 O1	2618 E4	3366 E14	3361 E7	3366 F12	3371 E12	3377 B10	3386 C13	3392 C8	3612 D4	3617 B5	3622 O1	3627 E4	3632 A1	5301 D12	6371 B9	6376 E11	7301 E9	7600 B D3	7606 E4
0889 C13	2361 D14	2368 F12	2371 C7	2604 C2	2609 A3	2614 C2	2620 A1	3367 E14	3362 F7	3367 D12	3372 E12	3378 B10	3387 D10	3398 E2	3613 B5	3618 C5	3623 E1	3628 E4	3633 D11	5302 C12	6372 B8	6377 E11	7302 C9	7602 D4	7607 E5
1300 A F13	2362 F14	2367 D12	2372 D8	2606 A2	2610 D3	2615 E2	2623 D1	3368 F14	3363 E7	3368 C12	3373 E12	3379 D10	3388 D10	3609 A4	3614 D5	3619 B5	3624 F3	3629 F5	3634 B2	5303 E12	6373 C8	6378 F12	7303 C10	7603 B5	7608 B4
1300 B E13	2361 E7	2368 F13	2373 C10	2606 D2	2611 B6	2616 E2	2624 A2	3369 F14	3364 E7	3369 D12	3374 E11	3384 B13	3389 C9	3610 D4	3615 A5	3620 C5	3625 F3	3630 A1	3635 B2	5304 F12	6374 C10	6379 E12	7304 C10	7604 D5	7608 C14
1322 E14	2362 E7	2369 E12	2377 C14	2607 B2	2612 D5	2617 F4	3365 D14	3369 F14	3365 D12	3370 F12	3376 C9	3385 C14	3390 C9	3611 B4	3616 D5	3621 F1	3626 E4	3631 C1	3636 E2	6601 E2	6376 C11	6380 D11	7600 A A2	7605 F4	9510 D14

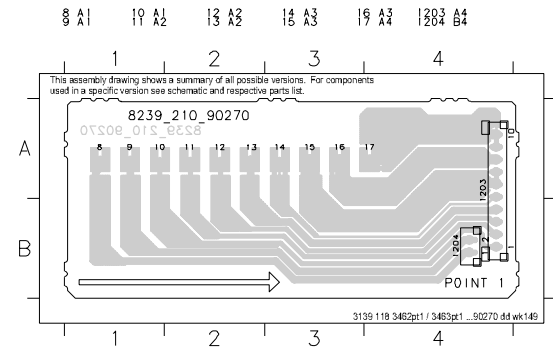
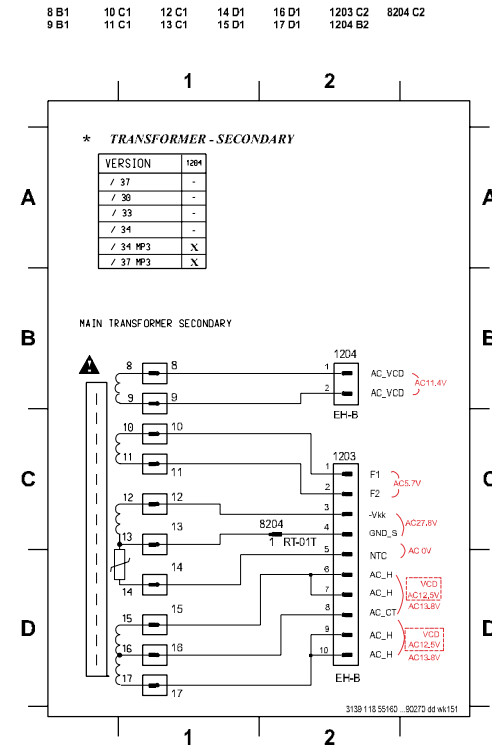


TRANSFORMER PRIMARY PART - CIRCUIT & LAYOUT (except /21/22 version)



Note: This layout drawing is applicable for both pt 1 and pt 2 pc board.

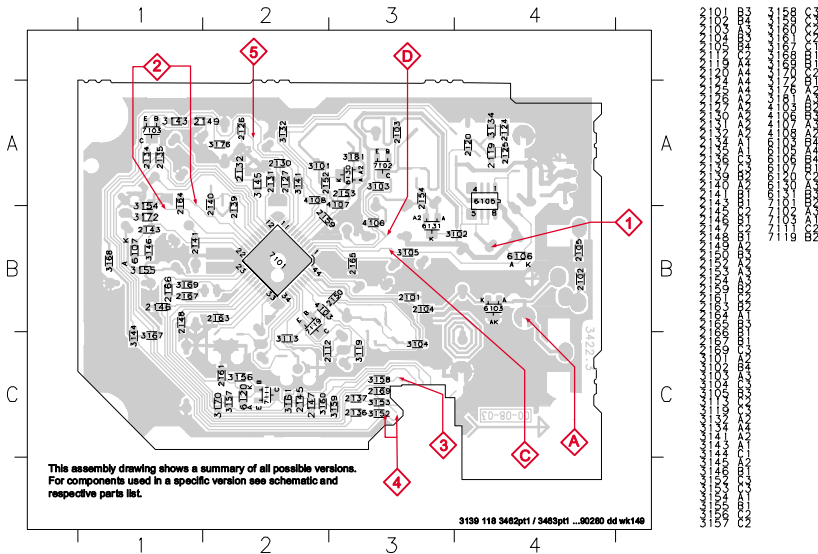
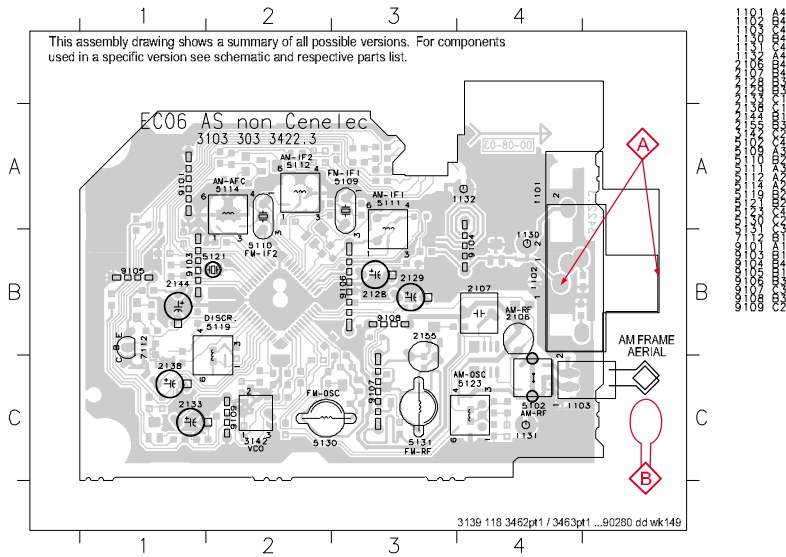
TRANSFORMER SECONDARY PART - CIRCUIT & LAYOUT (except /21/22 version)



Note: This layout drawing is applicable for both pt 1 and pt 2 pc board.

MC-Service

NON-CENELEC TUNER PORTION - COMPONENT & CHIP LAYOUTS



Note: This layout drawings are applicable for both pt 1 and pt 2 pc board.

MC-Service

TUNER ADJUSTMENT TABLE (EC06 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 (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	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	1	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	1	8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123	1	8V ±0.2V
			531kHz	check		1.1V ±0.4V
<i>FM IF</i>						
FM	10.7MHz, 45mV continuous wave	D	IC 7101 21 shortcircuit to block AFC	5119	2	0 ± 3 mV DC
<i>FM RF</i>						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A mod=1kHz Δf=±22.5kHz	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
<i>VCO</i>						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
<i>AM IF</i>						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C Δf=±10kHz V _{RF} = 0.5mV (as low as possible) see remark 2)	IC 7101 36 100nF	5111	5	
			IC 7101 40 100nF	5112		
AM AFC				5114	2	0 ± 2 mV DC
MW						
<i>AM RF³⁾</i>						
MW⁴⁾ FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B	1494kHz	2106	5	
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V _{RF} as low as possible	1500kHz	2106	5	
	560kHz		560kHz	5102		

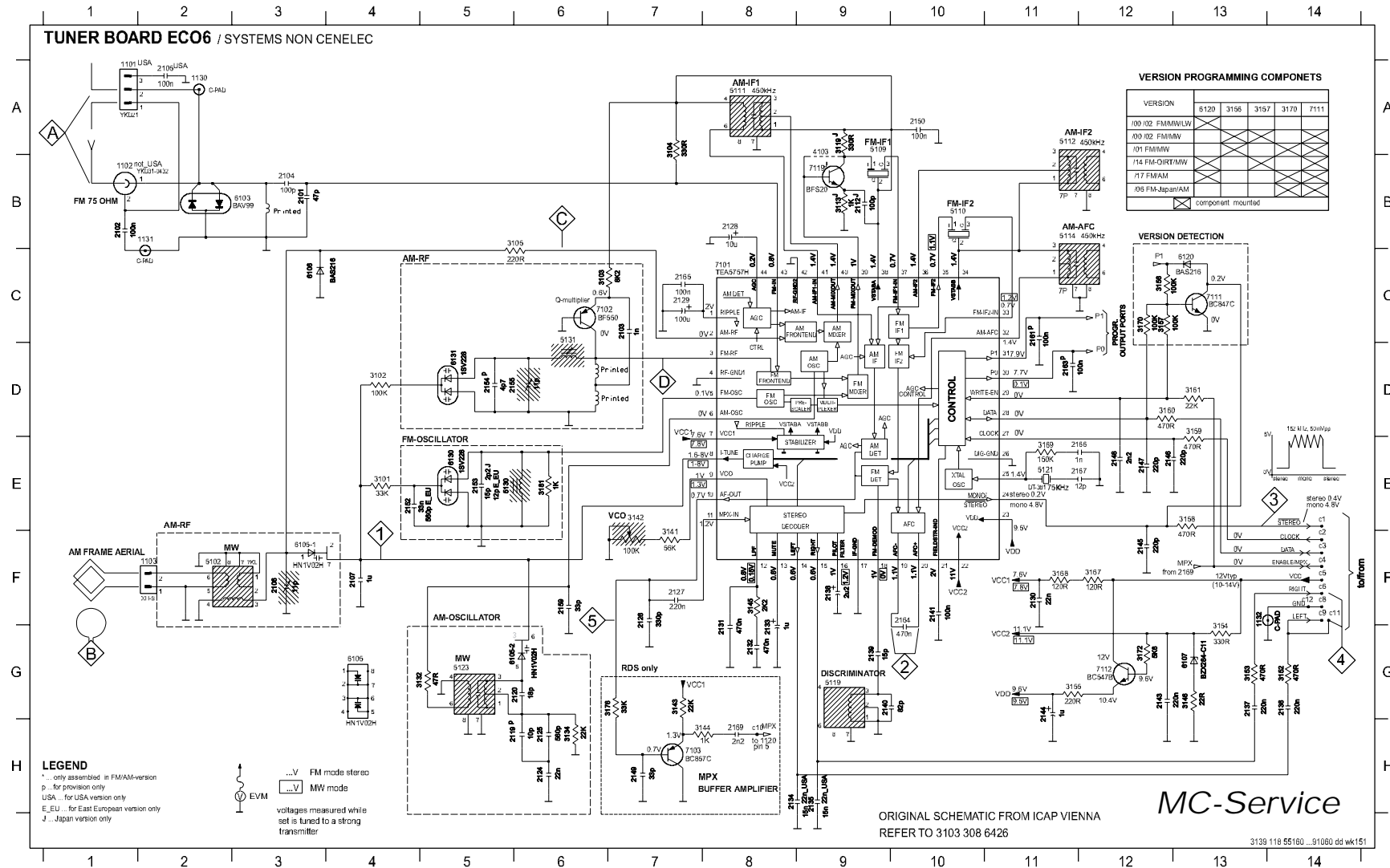
Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

- 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

8206_S99 - PA with blank aerial_070709

NON-CENELEC TUNER CIRCUIT



- c1 E14
- c2 F14
- c3 F14
- c4 F14
- c5 F14
- c6 F14
- c8 F14
- c9 F14
- c10 H8
- c11 F14
- c12 F14
- c100 A1
- c101 A1
- c102 B1
- c103 F2
- c104 A2
- c105 B2
- c106 A2
- c107 F4
- c108 B9
- c109 H8
- c110 G6
- c111 F7
- c112 F7
- c113 P11
- c114 G8
- c115 G8
- c116 H8
- c117 H9
- c118 G14
- c119 G13
- c120 H9
- c121 H9
- c122 H9
- c123 P11
- c124 F10
- c125 G12
- c126 E12
- c127 H7
- c128 A10
- c129 E4
- c130 D6
- c131 D6
- c132 D6
- c133 D11
- c134 P10
- c135 C7
- c136 E12
- c137 E12
- c138 D4
- c139 D5
- c140 G5
- c141 H6
- c142 E7
- c143 G7
- c144 H8
- c145 P8
- c146 G13
- c147 G14
- c148 G13
- c149 G11
- c150 C12
- c151 C12
- c152 E13
- c153 D13
- c154 D12
- c155 D13
- c156 F12
- c157 C12
- c158 G7
- c159 E5
- c160 A9
- c161 B10
- c162 A8
- c163 A11
- c164 B11
- c165 G5
- c166 G5
- c167 G5
- c168 G5
- c169 G5
- c170 G5
- c171 G5
- c172 G5
- c173 G5
- c174 G5
- c175 G5
- c176 G5
- c177 G5
- c178 G5
- c179 G5
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- c181 G5
- c182 G5
- c183 G5
- c184 G5
- c185 G5
- c186 G5
- c187 G5
- c188 G5
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- c191 G5
- c192 G5
- c193 G5
- c194 G5
- c195 G5
- c196 G5
- c197 G5
- c198 G5
- c199 G5
- c200 G5

ELECTRICAL PARTS LIST - COMBI BOARD

MISCELLANEOUS

1101	2422 015 19376	Socket 2P Clickfit /37
1102	4822 267 10283	Socket Coaxial 75R /21/21M/30
1103	4822 265 31184	JST Connector 2P
1214	4822 071 55002	△ Fuse T5A 250V /30/37
1215	4822 071 55002	△ Fuse T5A 250V /21/21M/30
1215	4822 252 51123	△ Fuse T5A 250V /37
1216	9965 000 07788	Fuse T2A 250V /21/21M/30
1216	4822 253 10128	Fuse T2A 250V /37
1217	4822 071 53151	Fuse T315mA 250V /21/21M/30
1217	4822 252 51151	Fuse T315mA 250V /37
1300	4822 267 31176	Loudspeaker Socket
1502	4822 267 10731	Flex Socket 6pin Vert.
1503	4822 267 10733	Flex Socket 4pin Vert. /21/21M
1504	4822 265 20553	Cinch Socket, Aux-in
1507	4822 265 10981	Flex Socket 15pin Vert.
1508	2422 025 17411	Flex Socket 30pin Vert.

CAPACITORS

2101	4822 122 33777	47pF 5% 63V
2102	4822 126 14305	100nF 10% 16V
2103	5322 126 11578	1nF 10% 50V
2104	4822 122 31765	100pF 2% 63V
2105	2238 586 59812	100nF +80/-20% 50V /37
2106	2020 800 00191	Trimmer 3-11pF 100V
2107	4822 121 51319	1µF 10% 63V
2120	4822 126 14507	18pF 5% 50V
2124	4822 126 14494	22nF 10% 25V
2125	2238 861 18561	560pF 1% 50V
2126	4822 126 14241	330pF 50V
2127	4822 126 13879	220nF +80/-20% 16V
2128	4822 124 40248	10µF 20% 63V
2129	4822 124 41584	100µF 20% 10V
2130	4822 126 14494	22nF 10% 25V
2131	3198 017 44740	470nF 10V
2132	3198 017 44740	470nF 10V
2133	4822 124 21913	1µF 20% 63V
2134	3198 017 31530	15nF 50V /21/21M/30
2134	4822 126 14494	22nF 25V /37
2135	3198 017 31530	15nF 50V /21/21M/30
2135	4822 126 14494	22nF 25V /37
2136	4822 126 13879	220nF +80/-20% 16V
2137	4822 126 13879	220nF +80/-20% 16V
2138	4822 124 22652	2,2µF 20% 50V
2139	4822 122 33752	15pF 5% 50V
2140	4822 126 14226	82pF 5% 50V
2141	4822 126 14305	100nF 10% 16V
2143	4822 126 13879	220nF +80/-20% 16V
2144	4822 124 21913	1µF 20% 63V
2145	4822 126 13883	220pF 5% 50V
2146	4822 126 13883	220pF 5% 50V
2147	4822 126 13883	220pF 5% 50V
2148	4822 126 14238	2,2nF 50V

2150	4822 126 14585	100nF 10% 50V
2152	4822 126 14549	33nF 16V
2153	4822 122 33752	15pF 5% 50V
2155	2020 800 00191	Trimmer 3-11pF 100V
2159	2222 867 15339	33pF 50V
2164	3198 017 44740	470nF 10V
2165	4822 126 14305	100nF 10% 16V
2166	5322 126 11578	1nF 10% 50V
2167	4822 126 11663	12pF 50V
2201	4822 124 40248	10µF 20% 63V
2207	4822 121 43526	47nF 10% 63V
2208	3198 017 34730	47nF 16V
2209	5322 126 11578	1nF 50V /37
2211	4822 124 42367	3300µF 20% 35V
2213	5322 121 42386	100nF 5% 63V
2214	5322 121 42386	100nF 5% 63V
2216	4822 124 80415	4700µF 20% 50V
2218	4822 124 80144	220µF 20% 25V
2220	4822 124 80144	220µF 20% 25V
2221	5322 121 42386	100nF 5% 63V
2222	2020 012 93547	100µF 20% 63V
2224	4822 124 21913	1µF 20% 63V
2225	4822 124 21913	1µF 20% 63V
2226	4822 121 43526	47nF 5% 250V
2231	5322 126 11583	10nF 10% 50V
2232	4822 126 14494	22nF 25V /30/37
2233	4822 124 41751	47µF 20% 50V
2249	4822 121 43526	47nF 5% 250V
2361	3198 016 36810	680pF 25V
2362	3198 016 36810	680pF 25V
2365	4822 121 43526	47nF 5% 250V
2366	4822 121 43526	47nF 5% 250V
2367	4822 121 42408	220nF 5% 63V
2368	4822 121 42408	220nF 5% 63V
2369	4822 121 42408	220nF 5% 63V
2370	4822 121 42408	220nF 5% 63V
2371	4822 124 40769	4,7µF 20% 100V
2372	4822 124 40769	4,7µF 20% 100V
2373	4822 122 33777	47pF 5% 63V
2377	4822 124 81151	22µF 50V
2378	4822 126 13883	220pF 5% 50V
2501	4822 124 22466	1µF 20% 50V
2502	4822 124 22466	1µF 20% 50V
2503	4822 124 22466	1µF 20% 50V
2504	4822 124 22466	1µF 20% 50V
2505	3198 016 31020	1nF 25V
2506	3198 016 31020	1nF 25V
2507	4822 124 22466	1µF 20% 50V
2508	4822 124 22466	1µF 20% 50V
2509	4822 124 22466	1µF 20% 50V
2510	4822 124 22466	1µF 20% 50V
2511	4822 122 31765	100pF 2% 63V

ELECTRICAL PARTS LIST - COMBI BOARD

2512	4822 122 31765	100pF 2% 63V
2513	4822 124 22466	1µF 20% 50V
2514	4822 124 22466	1µF 20% 50V
2515	4822 122 31765	100pF 2% 63V
2516	4822 122 31765	100pF 2% 63V
2517	4822 122 31765	100pF 2% 63V
2518	4822 122 31765	100pF 2% 63V
2519	4822 122 31765	100pF 2% 63V
2520	4822 122 31765	100pF 2% 63V
2521	4822 126 13956	88pF 5% 63V
2522	4822 126 13956	88pF 5% 63V
2523	4822 124 40433	47µF 20% 25V
2524	4822 126 14238	2,2nF 50V
2525	4822 124 40196	220µF 20% 16V
2526	4822 124 81151	22µF 50V
2527	3198 017 44740	470nF 10V
2528	4822 126 14305	100nF 10% 16V
2529	4822 126 13193	4,7nF 10% 63V
2530	4822 126 13193	4,7nF 10% 63V
2537	4822 121 42408	220nF 5% 63V
2538	4822 121 42408	220nF 5% 63V
2539	5322 121 42661	330nF 5% 63V
2540	5322 121 42661	330nF 5% 63V
2541	4822 121 51252	470nF 5% 63V
2542	4822 121 51252	470nF 5% 63V
2543	4822 122 31765	100pF 2% 63V
2546	4822 126 14305	100nF 10% 16V
2547	3198 017 44740	470nF 10V
2549	4822 124 80144	220µF 20% 25V
2560	4822 122 33741	10pF 10% 50V
2561	4822 122 33741	10pF 10% 50V
2563	3198 016 31020	1nF 25V
2564	3198 016 31020	1nF 25V
2567	3198 017 44740	470nF 10V
2568	3198 017 34730	47nF 16V /37
2571	4822 126 14305	100nF 10% 16V
2601	4822 124 40433	47µF 20% 25V
2602	4822 126 14305	100nF 10% 16V
2603	4822 122 33752	15pF 5% 50V
2604	4822 122 31765	100pF 2% 63V
2605	4822 126 13881	470pF 5% 50V
2606	4822 126 13881	470pF 5% 50V
2607	4822 126 13883	220pF 5% 50V
2608	4822 126 13883	220pF 5% 50V
2609	4822 124 81151	22µF 50V
2610	4822 124 81151	22µF 50V
2611	4822 122 31765	100pF 2% 63V
2612	4822 122 31765	100pF 2% 63V
2613	4822 124 41584	100µF 20% 10V
2614	4822 126 14494	22nF 10% 25V
2615	4822 124 41751	47µF 20% 50V
2616	4822 126 14494	22nF 10% 25V

2617	4822 124 40248	10µF 20% 63V
2618	4822 122 31765	100pF 2% 63V
2662	4822 124 22652	2,2µF 20% 50V
2663	4822 124 22652	2,2µF 20% 50V
2664	4822 122 31765	100pF 2% 63V
2665	5322 126 11578	1nF 10% 50V /21/21M
2666	3198 017 44740	470nF 10V
2667	2020 012 93547	100µF 20% 63V

RESISTORS

3101	4822 051 30333	33k 5% 0,062W
3102	4822 117 13632	100k 1% 0,062W
3103	4822 117 12902	8k2 1% 0,063W
3104	4822 117 13577	330R 1% 0,1W
3105	4822 051 30221	220R 5% 0,062W
3132	4822 051 30479	47R 5% 0,062W
3134	4822 051 30223	22k 5% 0,062W
3141	4822 051 30563	56k 5% 0,062W
3142	4822 100 12159	Trimpot 100k 30%
3145	4822 051 30222	2k2 5% 0,062W
3146	4822 117 12139	22R 5% 0,062W
3152	4822 051 30471	470R 5% 0,062W
3153	4822 051 30471	470R 5% 0,062W
3154	4822 051 30331	330R 5% 0,062W
3155	4822 051 30221	220R 5% 0,062W
3156	4822 117 13632	100k 1% 0,062W /21/21M/30
3158	4822 051 30471	470R 5% 0,062W
3159	4822 051 30471	470R 5% 0,062W
3160	4822 051 30471	470R 5% 0,062W
3161	4822 051 20223	22k 5% 0,1W
3167	4822 051 20121	120R 5% 0,1W
3168	4822 051 30121	120R 5% 0,062W
3169	4822 051 30154	150k 5% 0,062W
3170	4822 117 13632	100k 1% 0,062W
3172	4822 051 30562	5k8 5% 0,063W
3181	4822 051 30102	1k 5% 0,062W
3208	4822 053 21106	10M 5% 0,5W /37
3210	4822 050 24708	4R7 1% 0,6W
3211	4822 050 24708	4R7 1% 0,6W
3212	4822 116 52175	100R 5% 0,5W
3213	4822 116 52175	100R 5% 0,5W
3214	4822 116 83872	220R 5% 0,5W
3215	4822 116 83872	220R 5% 0,5W
3216	4822 116 52175	100R 5% 0,5W
3218	4822 116 52199	68R 5% 0,5W
3219	4822 116 83872	220R 5% 0,5W
3220	4822 116 83872	220R 5% 0,5W
3221	4822 116 52176	10R 5% 0,5W
3222	4822 051 30102	1k 5% 0,062W
3223	4822 050 24708	4R7 1% 0,6W
3224	4822 050 24708	4R7 1% 0,6W
3225	4822 051 30101	100R 5% 0,062W

MC-Service

MC-Service

ELECTRICAL PARTS LIST - COMBI BOARD

RESISTORS

3226	4822 051 30392	3k9 5% 0,063W
3227	4822 116 52199	68R 5% 0,5W
3228	4822 050 11002	1k 1% 0,4W
3229	4822 116 52176	10R 5% 0,5W
3230	4822 116 52176	10R 5% 0,5W
3232	4822 116 52207	1k2 5% 0,5W
3233	4822 116 52206	120R 5% 0,5W
3235	4822 116 52289	5k6 5% 0,5W
3236	4822 116 52256	2k2 5% 0,5W
3237	4822 050 21003	10k 1% 0,6W
3238	4822 050 21003	10k 1% 0,6W
3239	4822 116 52283	4k7 5% 0,5W
3240	4822 051 30153	15k 5% 0,062W
3241	4822 116 83872	220R 5% 0,5W
3242	4822 051 30123	12k 5% 0,062W
3243	4822 051 30123	12k 5% 0,062W
3249	4822 051 30103	10k 5% 0,062W
3250	4822 051 30472	4k7 5% 0,062W
3252	4822 116 83872	220R 5% 0,5W
3253	4822 116 83872	220R 5% 0,5W
3254	4822 116 52257	22k 5% 0,5W
3361	4822 117 12864	82k 5% 0,6W
3362	4822 117 12864	82k 5% 0,6W
3363	4822 117 12902	8k2 1% 0,063W
3364	4822 117 12902	8k2 1% 0,063W
3365	4822 117 13608	4,7R 5% 0,062W
3366	4822 117 13608	4,7R 5% 0,062W
3367	4822 117 13608	4,7R 5% 0,062W
3368	4822 117 13608	4,7R 5% 0,062W
3369	4822 117 13608	4,7R 5% 0,062W
3370	4822 117 13608	4,7R 5% 0,062W
3371	4822 117 13608	4,7R 5% 0,062W
3372	4822 117 13608	4,7R 5% 0,062W
3373	4822 116 52283	4k7 5% 0,5W
3374	4822 116 83883	470R 5% 0,5W
3376	4822 051 30123	12k 5% 0,062W
3377	4822 051 30331	330R 5% 0,062W
3378	4822 051 30222	2k2 5% 0,062W
3379	4822 051 30103	10k 5% 0,062W
3384	4822 051 30152	1k5 5% 0,062W
3385	4822 051 30154	150k 5% 0,062W
3386	4822 051 30101	100R 5% 0,062W
3387	4822 051 30103	10k 5% 0,062W
3388	4822 051 30103	10k 5% 0,062W
3389	4822 051 30123	12k 5% 0,062W
3390	4822 051 30123	12k 5% 0,062W
3392	4822 051 30102	1k 5% 0,062W
3501	4822 051 30102	1k 5% 0,062W
3502	4822 051 30102	1k 5% 0,062W
3505	4822 051 30222	2k2 5% 0,062W
3506	4822 051 30222	2k2 5% 0,062W
3507	4822 051 30332	3k3 5% 0,062W
3508	4822 051 30332	3k3 5% 0,062W
3509	4822 051 30273	27k 5% 0,062W
3510	4822 051 30273	27k 5% 0,062W
3511	4822 051 30152	1k5 5% 0,062W
3512	4822 051 30152	1k5 5% 0,062W
3513	4822 051 30102	1k 5% 0,062W
3514	4822 051 30102	1k 5% 0,062W
3517	4822 051 30472	4k7 5% 0,062W
3518	4822 051 30472	4k7 5% 0,062W
3519	4822 051 30123	12k 5% 0,062W
3520	4822 051 30123	12k 5% 0,062W
3521	4822 051 30153	15k 5% 0,062W
3522	4822 051 30153	15k 5% 0,062W
3523	4822 051 30151	150R 5% 0,062W
3524	4822 051 30221	220R 5% 0,062W
3525	4822 051 30221	220R 5% 0,062W
3531	4822 117 12925	47k 1% 0,063W
3532	4822 117 12925	47k 1% 0,063W
3539	4822 117 12902	8k2 1% 0,063W
3540	4822 117 12902	8k2 1% 0,063W
3541	4822 051 30562	5k6 5% 0,063W
3542	4822 051 30562	5k6 5% 0,063W
3560	4822 051 30102	1k 5% 0,062W
3561	4822 051 30102	1k 5% 0,062W
3563	4822 051 30221	220R 5% 0,062W
3564	4822 051 30221	220R 5% 0,062W
3570	4822 051 30222	2k2 5% 0,062W
3601	4822 051 30154	150k 5% 0,062W
3602	4822 051 30154	150k 5% 0,062W
3603	4822 051 30151	150R 5% 0,062W
3604	4822 051 30391	390R 5% 0,062W
3605	4822 051 30334	330k 5% 0,062W
3606	4822 117 12864	82k 5% 0,6W
3607	4822 117 11817	1k2 1% 1/16W
3608	4822 051 30273	27k 5% 0,062W
3609	4822 051 30102	1k 5% 0,062W
3610	4822 051 30102	1k 5% 0,062W
3611	4822 051 30102	1k 5% 0,062W
3612	4822 051 30102	1k 5% 0,062W
3613	4822 051 30102	1k 5% 0,062W
3614	4822 051 30102	1k 5% 0,062W
3615	4822 051 30102	1k 5% 0,062W
3616	4822 051 30102	1k 5% 0,062W
3617	4822 051 30339	33R 5% 0,062W
3618	4822 051 30339	33R 5% 0,062W
3619	4822 051 30479	47R 5% 0,062W
3620	4822 051 30479	47R 5% 0,062W
3621	4822 051 30472	4k7 5% 0,062W
3622	4822 051 30472	4k7 5% 0,062W
3623	4822 052 10109	10R 5% 0,33W
3624	4822 051 30103	10k 5% 0,062W
3625	4822 051 30103	10k 5% 0,062W

ELECTRICAL PARTS LIST - COMBI BOARD

3626	4822 051 30102	1k 5% 0,062W
3627	4822 051 30562	5k6 5% 0,063W
3628	4822 051 30472	4k7 5% 0,062W
3629	4822 051 30472	4k7 5% 0,062W
3630	4822 051 30123	12k 5% 0,062W
3631	4822 051 30123	12k 5% 0,062W
3632	4822 051 30109	10R 5% 0,062W
3633	4822 051 30109	10R 5% 0,062W
3634	4822 051 30273	27k 5% 0,062W
3635	4822 051 30682	6k8 5% 0,062W
3636	4822 051 30682	6k8 5% 0,062W
4103	4822 051 30008	OR Jumper 0603
4106	4822 051 20008	OR Jumper 0805
4107	4822 051 30008	OR Jumper 0603
4108	4822 051 30008	OR Jumper 0603
4501	4822 051 30008	OR Jumper 0603 /30/37
4508	4822 051 30008	OR Jumper 0603
4509	4822 051 30008	OR Jumper 0603
4514	4822 051 30008	OR Jumper 0603
4515	4822 051 30008	OR Jumper 0603
4516	4822 051 30008	OR Jumper 0603
4517	4822 051 30008	OR Jumper 0603
4518	4822 051 30008	OR Jumper 0603
4519	4822 051 30008	OR Jumper 0603
4520	4822 051 30008	OR Jumper 0603
4521	4822 051 30008	OR Jumper 0603
4522	4822 051 30008	OR Jumper 0603
4523	4822 051 30008	OR Jumper 0603
4524	4822 051 30008	OR Jumper 0603
4525	4822 051 30008	OR Jumper 0603
4526	4822 051 30008	OR Jumper 0603
4527	4822 051 30008	OR Jumper 0603
4528	4822 051 30008	OR Jumper 0603
4529	4822 051 30008	OR Jumper 0603
4530	4822 051 30008	OR Jumper 0603
4531	4822 051 30008	OR Jumper 0603
4532	4822 051 30008	OR Jumper 0603
4533	4822 051 30008	OR Jumper 0603
4534	4822 051 30008	OR Jumper 0603
4535	4822 051 30008	OR Jumper 0603
4536	4822 051 30008	OR Jumper 0603
4537	4822 051 30008	OR Jumper 0603
4538	4822 051 30008	OR Jumper 0603
4539	4822 051 30008	OR Jumper 0603
4540	4822 051 30008	OR Jumper 0603
4541	4822 051 30008	OR Jumper 0603
4542	4822 051 30008	OR Jumper 0603
4543	4822 051 30008	OR Jumper 0603
4544	4822 051 30008	OR Jumper 0603
4545	4822 051 20008	OR Jumper 0805 /21/21M/30
4546	4822 051 30008	OR Jumper 0603
4547	4822 051 30008	OR Jumper 0603
4548	4822 051 30008	OR Jumper 0603
4549	4822 051 30008	OR Jumper 0603 .1 pcb board only
4550	4822 051 30008	OR Jumper 0603 /21/21M/30
4551	4822 051 30008	OR Jumper 0603 /21/21M/30
4552	4822 051 30008	OR Jumper 0603
4553	4822 051 30008	OR Jumper 0603
4554	4822 051 30008	OR Jumper 0603
4555	4822 051 30008	OR Jumper 0603
4556	4822 051 30008	OR Jumper 0603
4557	4822 051 30008	OR Jumper 0603
4558	4822 051 30008	OR Jumper 0603
4559	4822 051 30008	OR Jumper 0603
4560	4822 051 30008	OR Jumper 0603
4561	4822 051 30008	OR Jumper 0603
4562	4822 051 30008	OR Jumper 0603
4563	4822 051 30008	OR Jumper 0603
4564	4822 051 30008	OR Jumper 0603
4567	4822 051 30008	OR Jumper 0603
4569	4822 051 30008	OR Jumper 0603
4572	4822 051 30008	OR Jumper 0603
4573	4822 051 30008	OR Jumper 0603
4574	4822 051 30008	OR Jumper 0603
4575	4822 051 30008	OR Jumper 0603
4576	4822 051 30008	OR Jumper 0603
4578	4822 051 30008	OR Jumper 0603
4588	4822 051 30008	OR Jumper 0603
COILS & FILTERS		
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
5202	4822 157 11832	Mains Filter 400µH 3A /30
5301	4822 157 62255	Coil 18,5 Turns
5302	4822 157 62255	Coil 18,5 Turns
5303	4822 157 62255	Coil 18,5 Turns
5304	4822 157 62255	Coil 18,5 Turns
5305	4822 157 62552	Coil 2,2µH 5% .2 pcb onwards
5501	4822 157 62552	Coil 2,2µH 5%
5601	4822 157 62552	Coil 2,2µH 5%
DIODES		
6103	5322 130 34337	BAV99
6105	4822 130 83075	HN1V02H-B
6106	4822 130 83757	BAS216

ELECTRICAL PARTS LIST - COMBI BOARD**DIODES**

6107	9340 386 90115	BZX284-C11	7303	4822 130 60373	BC856B
6120	4822 130 83757	BAS216 /37	7304	4822 130 60511	BC847B
6130	4822 130 82833	1SV228	7501	9322 150 74668	TDA7468D
6131	4822 130 82833	1SV228	7502	4822 130 60511	BC847B
6207	4822 130 34173	BZX79-B5V6	7504	4822 130 41246	BC327-25
6210	4822 130 10944	GBU6D	7600	4822 209 31378	NJM4556MB
6245	4822 130 31878	1N4003G	7601	4822 130 60511	BC847B
6246	4822 130 31878	1N4003G	7602	4822 130 42804	BC817-25
6247	4822 130 31878	1N4003G	7603	4822 130 42804	BC817-25
6248	4822 130 31878	1N4003G	7604	4822 130 42804	BC817-25
6249	4822 130 31878	1N4003G	7605	4822 130 60511	BC847B
6250	4822 130 31878	1N4003G	7606	4822 130 60511	BC847B
6251	4822 130 34174	BZX79-B4V7	7607	4822 130 60373	BC857B
6252	4822 130 30621	1N4148	7608	4822 130 42804	BC817-25
6255	4822 130 31878	1N4003G	7609	4822 130 60373	BC857B
6256	4822 130 31878	1N4003G			
6257	4822 130 34142	BZX79-B33			
6258	4822 130 30621	1N4148			
6259	4822 130 30621	1N4148			
6260	4822 130 34173	BZX79-B5V6			
6267	4822 130 34173	BZX79-B5V6			
6371	4822 130 31878	1N5392			
6372	4822 130 31878	1N5392			
6373	3198 010 53980	BZX79-B3V9			
6374	4822 130 30621	1N4148			
6375	4822 130 30621	1N4148			
6376	4822 130 31878	1N4003G			
6377	4822 130 31878	1N4003G			
6378	4822 130 31878	1N4003G			
6379	4822 130 31878	1N4003G			
6380	3198 010 52290	BZX79-B22			
6502	4822 130 61219	BZX79-B10			
6503	4822 130 31878	1N4003G			
6504	4822 130 31878	1N4003G			

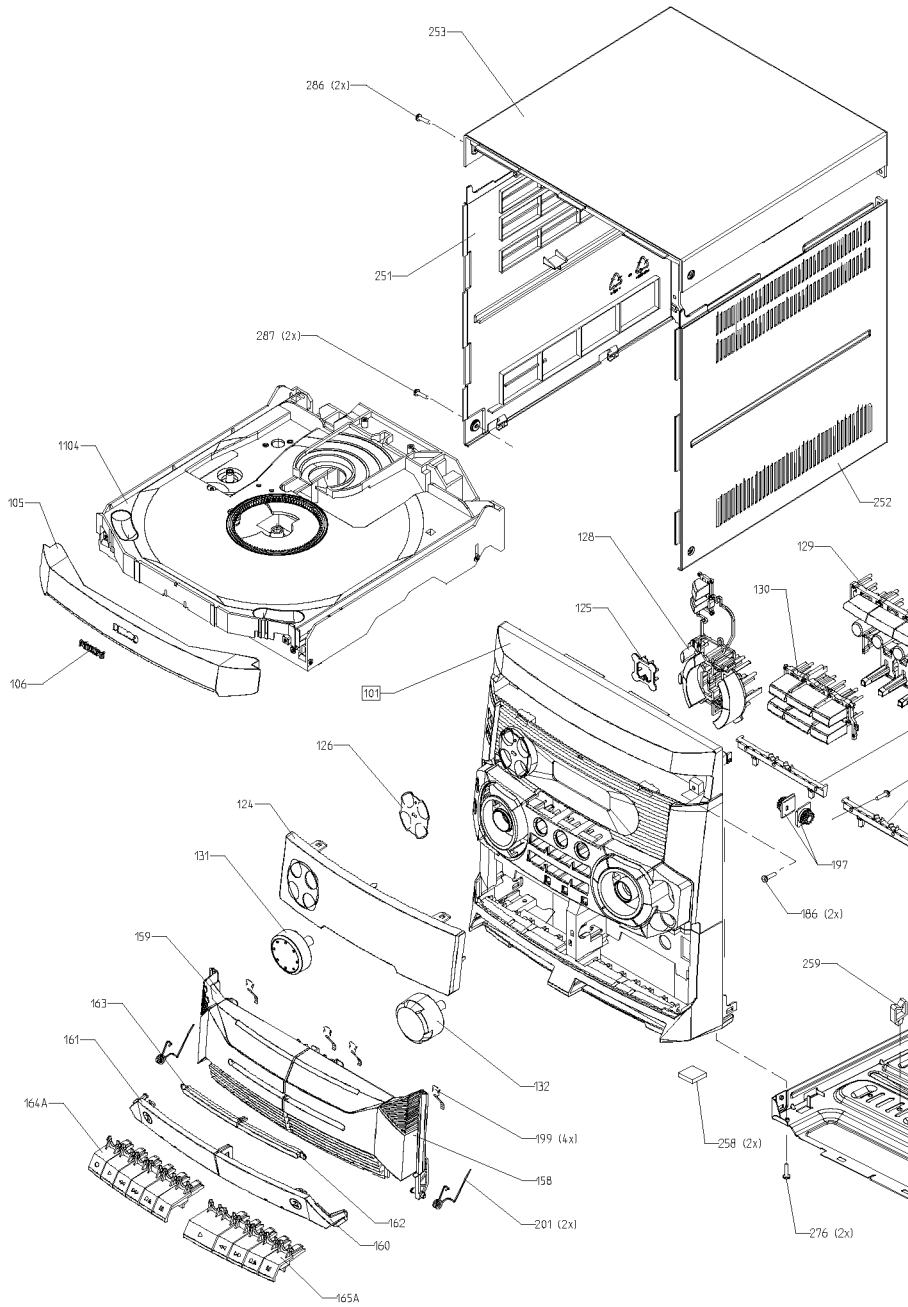
Note: Only the parts mentioned in this list are normal service spare parts.

TRANSISTORS & INTEGRATED CIRCUITS

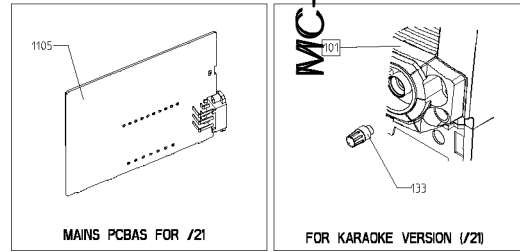
7101	9351 740 80557	TEA5757H/V1
7102	4822 130 42131	BF550
7111	5322 130 42755	BC847C
7112	4822 130 40959	BC547B
7209	4822 130 40981	BC337-25
7210	4822 130 40981	BC337-25
7211	4822 130 40981	BC337-25
7212	4822 130 40981	BC337-25
7213	4822 130 40981	BC337-25
7214	4822 209 33575	L7812CP
7215	5322 130 44593	BC369
7216	4822 130 40981	BC337-25
7217	4822 130 41246	BC327-25
7219	4822 130 60511	BC847B
7301	9322 174 32682	AN17830A
7302	4822 130 11578	STP16NE06

EXPLODED VIEW - MAIN UNIT

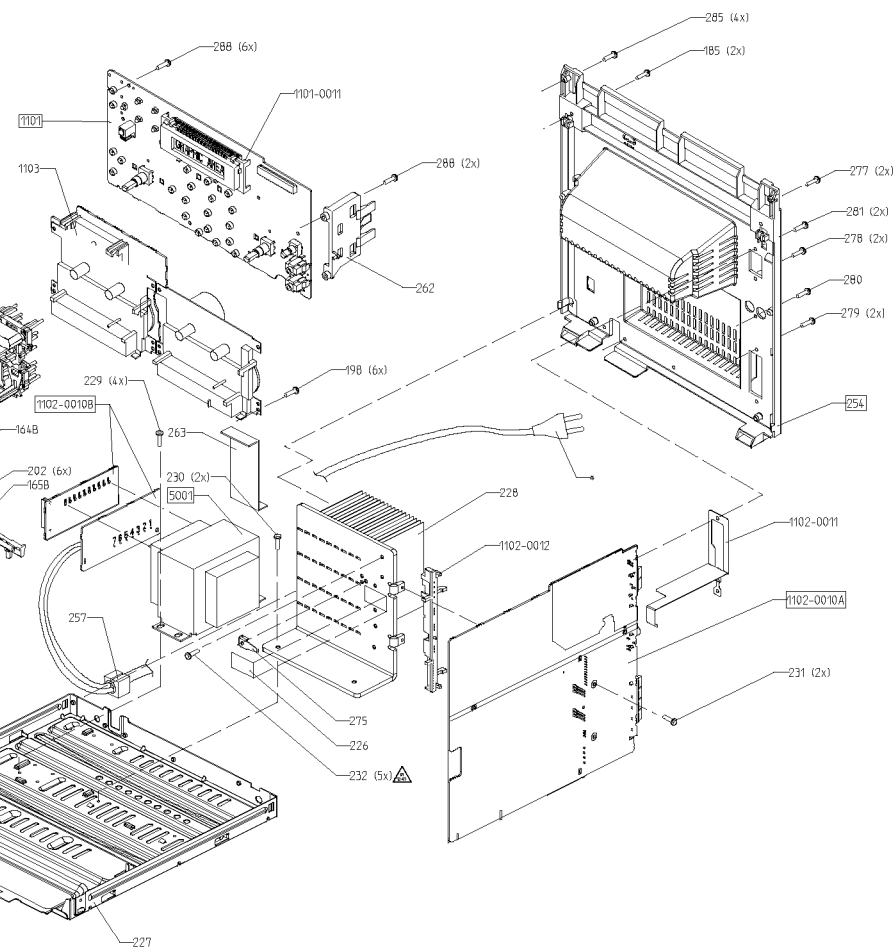
12-1



12-1



NOTES:
 * - FIXED MAINS CORD SHALL BE INDICATED IN ITEM 385 AT THE COMMERCIAL LEVEL.
 □ - PARTS/ASSEMBLIES SHALL DIFFER IN DIFFERENT VERSIONS.



MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

101	3139 118 16280	Cabinet Front /21/21M	1500	3139 110 35920	Flex Cable 4pin 14cm AD /21/21M
101	3139 118 17050	Cabinet Front /30	1700	3139 110 34590	Flex Cable 6pin 34cm AD
101	3139 118 16270	Cabinet Front /37	1800	3139 110 35880	Flex Cable 15pin 18cm BD
105	3139 118 16290	Cover Tray CDC	5001	3139 118 32490	△ Mains Transformer /21/21M
106	4822 454 13408	Badge Philips	5001	3139 118 32480	△ Mains Transformer /30
124	3139 118 16310	Window Display /21/21M	5001	3139 118 32470	△ Mains Transformer /37
124	3139 118 17040	Window Display /30	Note: Only the parts mentioned in this list are normal service spare parts		
124	3139 118 16300	Window Display /37			
128	3139 118 16320	Button Set Power			
129	3139 118 16330	Button Set Source			
130	3139 118 16340	Button Set Control			
131	3139 118 16350	Knob Jog Rotary			
132	3139 118 16360	Knob Vol Rotary			
133	3139 118 16390	Knob Karaoke /21/21M			
158	3139 118 16370	Cover Cassette Right			
159	3139 118 16380	Cover Cassette Left			
160	3139 114 74060	Lens Cassette Right			
161	3139 114 74070	Lens Cassette Left			
162	3139 114 74400	Lens Cassette Strip Right			
163	3139 114 74410	Lens Cassette Strip Left			
164	3139 118 16030	Button Cassette Left			
165	3139 118 16040	Button Cassette Right			
197	4822 529 10322	Damper Assembly			
199	4822 492 70231	Spring Leaf			
201	3139 111 01440	Spring Torsion Cassette			
257	3139 114 74620	Grommet, Mains Cord			
258	4822 462 40683	Foot Rubber SQ			
275	4822 492 11735	Spring, Trans			
350	3139 118 79250	LS Box Package /21/21M/30			
	9965 000 11647	Left LS Box /21/21M/30			
	9965 000 11647	Right LS Box /21/21M/30			
350	3139 118 79040	LS Box Package /37			
	9965 000 11638	Left LS Box /37			
	9965 000 11639	Right LS Box /37			
351	4822 303 50063	FM Aerial /21/21M/30			
351	4822 320 11094	FM Aerial /37			
356	3139 118 79300	Remote Control FW-C255			
384	2422 549 45067	AM Antenna Loop			
385	2422 070 98145	△ Mains cord 1,6M /21/21M			
385	2422 070 98204	△ Mains cord 1,6M /30			
385	2422 070 98108	△ Mains cord 1,6M /37			
386	4822 263 21092	△ Adapter Plug 6A 250V /21			
387	3139 115 21250	Instruction For Use /21/21M/30			
387	3139 115 21130	Instruction For Use /37			
1400	3139 110 35940	Flex Cable 30pin 18cm AD			

SCREW LISTS - MAIN UNIT

185	D3 x 12
186	D3 x 12
198	D3 x 12
202	D3 x 12
229	M3 x 6
230	M3 x 10
231	M3 x 10
232	M3 x 10
276	M3 x 6
277	M3 x 10
278	M3 x 10
279	D3 x 12
280	D3 x 12
281	D3 x 12
285	D3 x 12
286	D3 x 12
287	M3 x 6
288	D3 x 12