

# SERVICE MANUAL

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COLOR TELEVISION

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## SPECIFICATION

Sistemas de recepção de cores:	PAL-M/PAL-N/NTSC com seleção automática ou manual
Recepção de canais (181 canais)	VHF = canais de 2 a 13 UHF = canais de 14 a 69 CATV = canais de 1a 125
Cinescópio (tubo de imagens):	14 polegadas Diagonal visual 33,5 cm (13 <sup>1</sup> / <sub>4</sub> polegadas)
Alimentação elétrica (FREE VOLTAGE)	110 a 240V AC - 50/60Hz
Consumo de energia	70 W
Potência acústica:	2,5 W por canal
Peso	9,5 kg
Dimensões (LxAxP):	450 x 320 x 375 mm

- Design and specifications are subject to change without notice.

## NOTICES BEFORE REPAIRING

### To make the best use of this equipment, make sure to obey the following items when repairing (or mending).

1. Do not damage or melt the tunicate of the leading wire on the AC1 side, including the power supply cord.
2. Do not soil or stain the letters on the spec. inscription plates, notice labels, fuse labels, etc.
3. When repairing the part extracted from the conducted side of the board pattern, fix it firmly with applying bond to the pattern and the part.
4. Restore the following items after repairing.
  - 1) Conditions of soldering of the wires (especially, the distance on the AC1 side).
  - 2) Conditions of wiring, bundling of wires, etc.
  - 3) Types of the wries.
  - 4) Attachment conditions of all types of the insulation.
5. After repairing, always measure the insulation resistance and perform the voltage-withstand test (See Fig-1).
  - 1) The insulation resistance must be 7.0 to 9.5 M when applying 500V per second.
  - 2) In the voltage withstand test, apply 3.0 KV for 1 minute and check that the GO lamp lights.

- \* Breaking current set to 10 mA.
- \* Connect the safety checker as shown in Fig-1, then measure the resistance and perform the test.
- \* Do not touch the equipment during testing.
- \* For details of the safety checker, refer to the supplied Operation manual.

Insulation resistance: 7.0 to 9.5 M (500 V/s)  
Voltage-withstand: 3.0 KV for 1 minute

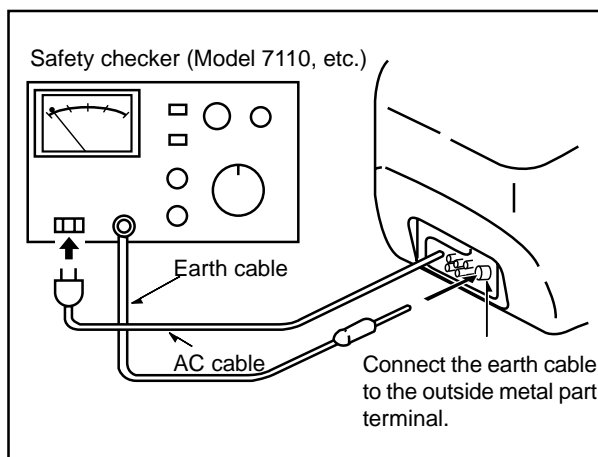


Fig-1

### When servicing and checking on the TV, note the followings.

1. Keep the notices  
As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.
2. Avoid an electric shock.  
There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.
3. Use the designated parts.  
The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety.  
Therefore, the part which is replaced should be used the part which has the same character. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a  $\Delta$  mark, the designated parts must be used.
4. Put parts and wires in the original position after assembling or wiring.  
There are parts which use the insulation material such as a tube or tape for safety, or which are assembled so that these parts do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.
5. Take care of the cathode-ray tube.  
By setting an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion.  
However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.
6. Avoid an X-ray.  
Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing except indicates causes rising of high voltage, and the cathode-ray tube emits an X-ray.
7. Perform a safety check after servicing.  
Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the places serviced.

# ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
CAP. CERAMICO				C403	C1-490-547-200		CAP.SMD X7R 4,7KPF/50V K 0805
C410	C1-363-471-600	C.C.D.Y5P/Y5E 470PF>=500V K		C403	C1-494-247-200		CAP.SMD Y5P 4,7KPF/50V K 0805
C417	C1-364-331-795	C.C.D.SL 330PF/2KV K		C405	C1-490-522-200		CAP.SMD X7R 2,2KPF/50V K 0805
C420	C1-363-102-601	C.C.D.Y5P 1KPF>=500V K		C405	C1-494-222-200		CAP.SMD Y5P 2,2KPF/50V K 0805
C421	C1-363-102-601	C.C.D.Y5P 1KPF>=500V K		C406	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C422	C1-363-102-601	C.C.D.Y5P 1KPF>=500V K		C406	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C427	C1-363-222-302	C.C.D.Y5P 2,2KPF>=50V K		C407	C1-490-447-104		CAP.SMD X7R 470PF/50V J 0805
C636	C1-364-104-103	C.C.D.Y5V/Y5U 100KPF>=25V Z		C413	C1-490-522-300		CAP.SMD X7R 22KPF/50V K 0805
C643	C1-364-104-103	C.C.D.Y5V/Y5U 100KPF>=25V Z		C416	C1-265-414-552		CAP.POLYPRO 410KPF/250V J
C717	C1-364-223-202	C.C.D.Y5U 22KPF>=50V Z		C418	C1-265-912-952		CAP.POLYPRO MET.9,1KPF/1600V J
C718	C1-363-102-300	C.C.D.Y5P 1KPF>=50V K		C501	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
C724	C1-363-102-300	C.C.D.Y5P 1KPF>=50V K		C501	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C734	C1-361-151-303	C.C.D.N220 150PF>=50V K		C502	C1-490-533-200		CAP.SMD X7R 3,3KPF/50V K 0805
C735	C1-361-151-303	C.C.D.N220 150PF>=50V K		C502	C1-494-233-200		CAP.SMD Y5P 3,3KPF/50V K 0805
▲C800	C1-245-102-346	CCD GKO 1KPF/250VAC		C503	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C802	C1-363-472-803	C.C.D.Y5U 4,7KPF/2KV M (7,5mm)		C504	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C803	C1-363-472-803	C.C.D.Y5U 4,7KPF/2KV M (7,5mm)		C505	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C804	C1-363-472-803	C.C.D.Y5U 4,7KPF/2KV M (7,5mm)		C601	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805
C815	C1-363-221-600	C.C.D.Y5P 220PF>=500V K		C602	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C816	C1-363-471-600	C.C.D.Y5P/Y5E 470PF>=500V K		C602	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C819	C1-244-472-641	C.C.D.Y5P 4,7KPF/1KV K (6LR)		C604	C1-490-433-004		CAP.SMD NPO 33PF/50V J 0805
C820	C1-364-331-795	C.C.D.SL 330PF/2KV K		C605	C1-490-547-303		CAP.SMD X7R 47KPF/25V K 0805
C822	C1-363-102-300	C.C.D.Y5P 1KPF>=50V K		C607	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
▲C823	C1-369-222-803	C.C.D.GKO 2K2PF/620 M		C607	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C833	C1-363-102-601	C.C.D.Y5P 1KPF>=500V K		C610	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C843	C1-364-221-795	C.C.D.SL 220PF/1KV K		C613	C1-490-647-405		CAP.SMD Y5V 470KPF/25V Z 0805
C844	C1-364-102-795	C.C.D.R 1KPF/1KV K		C614	C1-490-522-420		CAP.SMD X7R 220KPF/16V K 0805
C845	C1-364-331-795	C.C.D.SL 330PF/2KV K		C614	C1-494-222-420		CAP.SMD Y5P 220KPF/16V K 0805
C901	C1-363-471-600	C.C.D.Y5P/Y5E 470PF>=500V K		C621	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C904	C1-363-102-803	C.C.D.Y5P 1KPF/2KV K 6LS		C621	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C905	C1-363-102-601	C.C.D.Y5P 1KPF>=500V K		C622	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
				C622	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
				C624	C1-490-515-300		CAP.SMD X7R 15KPF/50V K 0805
CAP. POLY				C624	C1-494-215-300		CAP.SMD Y5P 15KPF/50V K 0805
C301	C1-331-104-004	C.POLYPRO 100KPF/160V 5%		C625	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C303	C1-330-224-222	C.POLYMET 220KPF/100V K		C625	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C409	C1-330-122-101	C.POLYMET 1,2KPF/100V J		C629	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C411	C1-330-103-516	C.POLYMET 10KPF/400V K		C631	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C414	C1-330-122-101	C.POLYMET 1,2KPF/100V J		C631	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C423	C1-330-104-421	C.POLYMET 100KPF/250V J		C633	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
C424	C1-330-473-521	C.POLYMET 47KPF/400V K		C633	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C801	C1-265-104-073	C.POLY.100KPF/250VAC M(SUP.X1)		C637	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C809	C1-330-273-103	C.POLYMET 27KPF/63V J		C638	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805
C827	C1-330-474-904	C.POLYMET 470KPF/63V K		C638	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805
C902	C1-330-104-421	C.POLYMET 100KPF/250V J		C640	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
				C640	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
				C644	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
CAP. SMD				C645	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805
C102	C1-490-410-410	CAP.SMD X7R 100KPF/25V K 805		C652	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805
C102	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805		C702	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C105	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805		C704	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C106	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805		C705	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C108	C1-490-410-100	CAP.SMD NPO 100PF/50V K 0805		C706	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C109	C1-490-410-100	CAP.SMD NPO 100PF/50V K 0805		C707	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C203	C1-490-410-410	CAP.SMD X7R 100KPF/25V K 805		C709	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C203	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805		C710	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C205	C1-490-522-300	CAP.SMD X7R 22KPF/50V K 0805		C711	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C206	C1-490-410-410	CAP.SMD X7R 100KPF/25V K 805		C712	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C206	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805		C719	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C208	C1-490-547-303	CAP.SMD X7R 47KPF/25V K 0805		C721	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C209	C1-490-547-303	CAP.SMD X7R 47KPF/25V K 0805		C722	C1-490-433-000		CAP.SMD NPO 33PF/50V K 0805
C210	C1-490-410-410	CAP.SMD X7R 100KPF/25V K 805		C725	C1-490-447-100		CAP.SMD NPO 470PF/50V K 0805
C210	C1-494-210-410	CAP.SMD Y5P 100KPF/25V K 0805		C727	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C211	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805		C728	C1-490-415-104		CAP.SMD NPO 150PF/50V J 0805
C216	C1-490-447-000	CAP.SMD NPO 47PF/50V K 0805		C729	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
C217	C1-490-447-000	CAP.SMD NPO 47PF/50V K 0805		C729	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
C304	C1-490-510-300	CAP.SMD X7R 10KPF/50V K 0805		C730	C1-490-447-100		CAP.SMD NPO 470PF/50V K 0805
C401	C1-490-433-004	CAP.SMD NPO 33PF/50V J 0805		C731	C1-490-410-410		CAP.SMD X7R 100KPF/25V K 805
C402	C1-490-433-004	CAP.SMD NPO 33PF/50V J 0805		C731	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805
				C732	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805

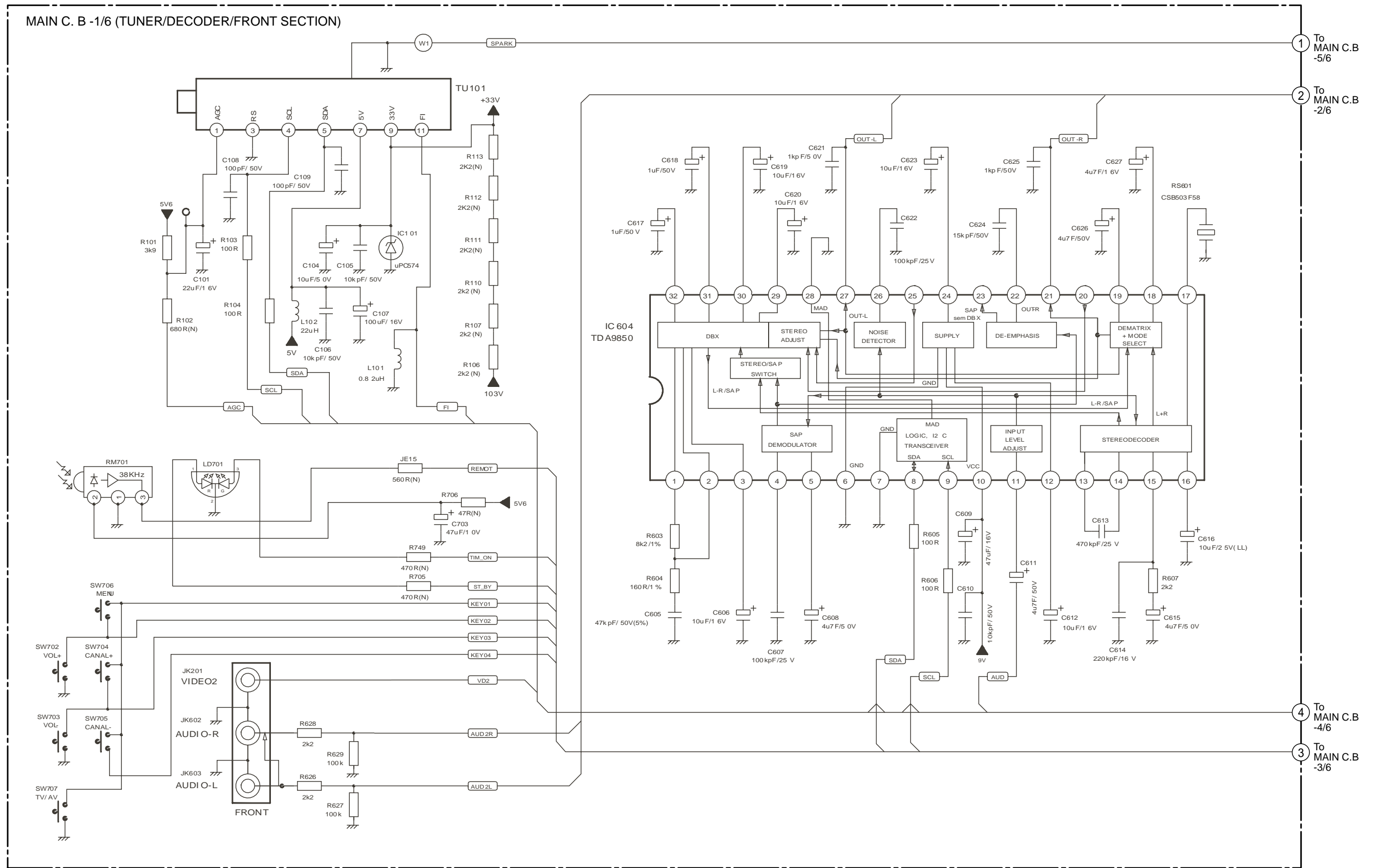
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C808	C1-490-533-200		CAP.SMD X7R 3,3KPF/50V K 0805	C805	C1-292-221-055		ELCO 220UF / 385V (30X30)
C808	C1-494-233-200		CAP.SMD Y5P 3,3KPF/50V K 0805	C806	C1-380-479-522		ELCO G1 4,7UF/50V M
C810	C1-490-547-303		CAP.SMD X7R 47KPF/25V K 0805	C807	C1-380-479-522		ELCO G1 4,7UF/50V M
C811	C1-490-522-200		CAP.SMD X7R 2,2KPF/50V K 0805	C812	C1-380-470-224		ELCO G1 47UF >= 16V M
C811	C1-494-222-200		CAP.SMD Y5P 2,2KPF/50V K 0805	C825	C1-297-101-934		ELCO 100UF/160V HR
C813	C1-490-410-410		CAP. SMD X7R 100KPF/25V K 805	C829	C1-297-330-922		ELCO 33UF/160V HR
C813	C1-494-210-410		CAP.SMD Y5P 100KPF/25V K 0805	C831	C1-297-102-334		ELCO 1000UF/25V HR
C818	C1-490-522-300		CAP.SMD X7R 22KPF/50V K 0805	C834	C1-380-101-328		ELCO 100UF/25V M
C824	C1-490-510-200		CAP.SMD X7R 1KPF/50V K 0805	C835	C1-380-470-224		ELCO G1 47UF >= 16V M
C824	C1-494-210-200		CAP.SMD Y5P 1KPF/50V K 0805	C836	C1-380-101-228		ELCO G1 100UF >= 16V M
C826	C1-490-410-100		CAP.SMD NPO 100PF/50V K 0805	C838	C1-380-221-231		ELCO 220UF/16V M 6,3X11mm
C837	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805	C839	C1-380-101-228		ELCO G1 100UF >= 16V M
C841	C1-490-510-300		CAP.SMD X7R 10KPF/50V K 0805	C840	C1-291-102-318		ELCO 1000UF/16V M 10X16
C847	C1-490-547-420		CAP.SMD X7R 470KPF/16V K 0805	C840	C1-291-102-317		ELCO 1000UF/16V M 10X20
				C846	C1-380-470-222		ELCO 47UF/16V M
CAP. ELCO				C903	C1-291-220-017		ELCO 22UF/250V M 12,5X25
C101	C1-380-220-221		ELCO G1 22UF >= 16V M				
C103	C1-380-478-622		ELCO 0,47UF/100V M	FILTRO			
C104	C1-380-100-524		ELCO 10UF/50V M	CF201	C1-421-506-600		FILTRO CERAMICO TPS4.5MB
C107	C1-380-101-228		ELCO G1 100UF >= 16V M	CF601	C1-421-507-600		FILTRO CERAMICO SFSH4.5MDB
C201	C1-380-100-221		ELCO G1 10UF >= 16V M	CF601	C1-421-500-400		FILTRO CERAMICO SFE- 4.5MB
C204	C1-380-229-622		ELCO 2,2UF/100V M 5x11mm	SF101	C1-421-507-200		FILTRO CERAMICO M1971M
C207	C1-380-100-221		ELCO G1 10UF >= 16V M				
C212	C1-380-229-622		ELCO 2,2UF/100V M 5x11mm	CONECTOR			
C302	C1-380-101-630		ELCO 100UF/35V M 6,3X11				
C404	C1-380-109-622		ELCO 1UF/100V M				
C412	C1-380-101-228		ELCO G1 100UF >= 16V M	CN401	C1-647-661-800		CABO 18AWG 70MM PR AMARRACAO
C415	C1-380-479-732		ELCO 4,7UF/160V M	CN401	C1-631-028-304		BASE CONECTORA 04VIAS
C419	C1-380-109-622		ELCO 1UF/100V M	CN501	C1-647-659-500		CJT.CHICOTE 26AWG 3V 270MM
C425	C1-380-471-229		ELCO 470UF/16V M	CN601	C1-647-659-600		CABO FLAT 2.54 24AWG 5V 320MM
C426	C1-380-471-229		ELCO 470UF/16V M	CN601	C1-633-210-660		BASE CONECTORA 4VIAS 180 MIS
C603	C1-380-100-221		ELCO G1 10UF >= 16V M	CN801	C1-633-212-700		BASE CONECTORA 2VIAS
C606	C1-380-100-221		ELCO G1 10UF >= 16V M	CN802	C1-633-211-202		BASE CONECTORA 2VIAS
C608	C1-380-479-522		ELCO G1 4,7UF/50V M	EP601	C1-633-212-500		JACK PHONE STEREO
C609	C1-380-470-224		ELCO G1 47UF >= 16V M	EP601	C1-633-213-000		JACK PHONE
C611	C1-380-479-522		ELCO G1 4,7UF/50V M	EP601	C1-633-213-000		JACK PHONE
C612	C1-380-100-221		ELCO G1 10UF >= 16V M	EP601	C1-633-212-500		JACK PHONE STEREO
C615	C1-380-479-522		ELCO G1 4,7UF/50V M	JK601	C1-633-212-400		CJT.TOMADA 3RCA HT C/CHAVE
C616	C1-380-100-525		ELCO 10UF/16V M LL	JK601	C1-633-213-100		CJT.TOMADA 3RCA HT C/CHAVE
C617	C1-380-109-521		ELCO G1 1UF >= 50V M	JK602	C1-633-212-600		CJT.TOMADA 3RCA HT C/CHAVE
C618	C1-380-109-521		ELCO G1 1UF >= 50V M		C1-631-281-205		GUIA P/FIOS 05VIAS CINESCOPIO
C619	C1-380-100-221		ELCO G1 10UF >= 16V M	W1	C1-647-659-700		CABO MONT.1VC/TER.18AWG MR460
C620	C1-380-100-221		ELCO G1 10UF >= 16V M	W2	C1-641-000-167		CABO MON.1VC/TER.18AWG MR 320
C623	C1-380-100-221		ELCO G1 10UF >= 16V M	W2	C1-641-000-167		CABO MON.1VC/TER.18AWG MR 320
C626	C1-380-479-522		ELCO G1 4,7UF/50V M				
C627	C1-380-479-522		ELCO G1 4,7UF/50V M	DIODO			
C628	C1-380-100-221		ELCO G1 10UF >= 16V M	D201	C1-414-621-902		DIODO 1N-4148 75V SINAL
C630	C1-380-470-224		ELCO G1 47UF >= 16V M	D301	C1-410-430-015		DIODO 1N-4004 RETIFICADOR
C632	C1-380-478-622		ELCO 0,47UF/100V M	D301	C1-415-172-201		DIODO UF-4004
C634	C1-380-109-622		ELCO 1UF/100V M	D401	C1-415-161-909		DIODO BYD-33G
C635	C1-380-221-231		ELCO 220UF/16V M 6,3X11mm	D401	C1-415-167-701		DIODO RAP.PASS.A VIDRO RGP10G
C639	C1-380-478-622		ELCO 0,47UF/100V M	D401	C1-129-314-199		DIODO SK-4F1/06 RETIFICADOR
C641	C1-380-109-622		ELCO 1UF/100V M	D402	C1-415-161-909		DIODO BYD-33G
C642	C1-380-221-231		ELCO 220UF/16V M 6,3X11mm	D402	C1-415-167-701		DIODO RAP.PASS.A VIDRO RGP10G
C646	C1-291-222-422		ELCO 2200UF/25V M	D402	C1-129-314-199		DIODO SK-4F1/06 RETIFICADOR
C647	C1-380-109-521		ELCO G1 1UF >= 50V M	D403	C1-415-161-909		DIODO BYD-33G
C648	C1-380-109-521		ELCO G1 1UF >= 50V M	D403	C1-415-167-701		DIODO RAP.PASS.A VIDRO RGP10G
C649	C1-380-109-521		ELCO G1 1UF >= 50V M	D403	C1-129-314-199		DIODO SK-4F1/06 RETIFICADOR
C650	C1-380-109-521		ELCO G1 1UF >= 50V M	D404	C1-415-161-909		DIODO BYD-33G
C651	C1-380-229-622		ELCO 2,2UF/100V M 5x11mm	D404	C1-415-167-701		DIODO RAP.PASS.A VIDRO RGP10G
C653	C1-380-229-622		ELCO 2,2UF/100V M 5x11mm	D404	C1-129-314-199		DIODO SK-4F1/06 RETIFICADOR
C655	C1-380-100-221		ELCO G1 10UF >= 16V M	D405	C1-414-621-902		DIODO 1N-4148 75V SINAL
C701	C1-380-109-622		ELCO 1UF/100V M	D406	C1-414-621-902		DIODO 1N-4148 75V SINAL
C703	C1-380-470-922		ELCO 47UF/10V M	D601	C1-410-430-015		DIODO 1N-4004 RETIFICADOR
C708	C1-380-109-622		ELCO 1UF/100V M	D601	C1-415-172-201		DIODO UF-4004
C716	C1-380-221-231		ELCO 220UF/16V M 6,3X11mm	D701	C1-414-621-902		DIODO 1N-4148 75V SINAL
C720	C1-380-101-228		ELCO G1 100UF >= 16V M	D801	C1-414-621-902		DIODO 1N-4148 75V SINAL
C723	C1-380-100-221		ELCO G1 10UF >= 16V M	D802	C1-414-621-902		DIODO 1N-4148 75V SINAL
C733	C1-380-478-521		ELCO G1 0,47UF/50V M	D803	C1-414-621-902		DIODO 1N-4148 75V SINAL

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
D804	C1-414-621-902		DIODO 1N-4148 75V SINAL	FB701	C1-427-011-600		FERRITE BEAD 3,5x6,5-0,8H
D805	C1-414-621-903		DIODO BAV-21	FB801	C1-427-010-820		FERR.BEAD BL02RN2R6T4 DP.RAD
D805	C1-414-621-905		DIODO DE CHAVEAMENTO 1SS244T77	FB802	C1-427-010-820		FERR.BEAD BL02RN2R6T4 DP.RAD
D806	C1-415-161-910		DIODO BYD-33J	FB803	C1-427-010-820		FERR.BEAD BL02RN2R6T4 DP.RAD
D806	C1-415-167-701		DIODO RAP.PASS.A VIDRO RGP10G	FB803	C1-427-011-000		FERRITE 5,1X1,5X4
D806	C1-129-314-199		DIODO SK-4F1/06 RETIFICADOR	FB804	C1-427-011-000		FERRITE 5,1X1,5X4
D807	C1-129-309-899		DIODO MR-856				
D807	C1-129-313-899		DIODO SK-3GH06 RETIFICADOR				
D808	C1-415-163-601		DIODO BYM-26D	ALTO FALANTE			
D808	C1-129-313-899		DIODO SK-3GH06 RETIFICADOR				
D809	C1-411-431-007		DIODO 1N-5062	FL601	C1-510-454-010		ALTO FALANTE 120x50mm 5W 8R
D809	C1-415-168-001		DIODO PASSIVADO A VIDRO GP15K	FL602	C1-510-454-010		ALTO FALANTE 120x50mm 5W 8R
D809	C1-129-314-099		DIODO SK-1/08 RETIFICADOR				
D810	C1-411-431-007		DIODO 1N-5062	FUSISTOR			
D810	C1-415-168-001		DIODO PASSIVADO A VIDRO GP15K				
D810	C1-129-314-099		DIODO SK-1/08 RETIFICADOR	△FR301	C1-183-515-917		FUSISTOR 1/2W 1,5R J
D811	C1-411-431-007		DIODO 1N-5062	△FR401	C1-185-510-914		FUSISTOR 1W 1R 5% N
D811	C1-415-168-001		DIODO PASSIVADO A VIDRO GP15K	△FR402	C1-183-510-917		FUSISTOR 1/2W 1R J
D811	C1-129-314-099		DIODO SK-1/08 RETIFICADOR	△FR403	C1-183-510-917		FUSISTOR 1/2W 1R J
D812	C1-411-431-007		DIODO 1N-5062	△FR404	C1-183-522-017		FUSISTOR 1/2W 22R J
D812	C1-415-168-001		DIODO PASSIVADO A VIDRO GP15K	△FR602	C1-183-533-917		FUSISTOR 1/2W 3,3R J
D812	C1-129-314-099		DIODO SK-1/08 RETIFICADOR	△FR603	C1-183-533-917		FUSISTOR 1/2W 3,3R J
D813	C1-415-161-910		DIODO BYD-33J	△FR801	C1-183-510-917		FUSISTOR 1/2W 1R J
D813	C1-415-167-701		DIODO RAP.PASS.A VIDRO RGP10G	△FR802	C1-183-539-017		FUSISTOR 1/2W 39R J
D813	C1-129-314-199		DIODO SK-4F1/06 RETIFICADOR	△FR803	C1-183-510-217		FUSISTOR 1/2W 1K J
D814	C1-414-621-902		DIODO 1N-4148 75V SINAL	△FR804	C1-183-539-017		FUSISTOR 1/2W 39R J
D815	C1-414-621-902		DIODO 1N-4148 75V SINAL				
D816	C1-414-621-902		DIODO 1N-4148 75V SINAL	IC			
D901	C1-414-621-903		DIODO BAV-21				
D901	C1-414-621-905		DIODO DE CHAVEAMENTO 1SS244T77	IC804	C1-146-100-353		I.C. 7805 (METAL)
D902	C1-414-621-903		DIODO BAV-21	IC703	C1-149-394-899		I.C. M51943B
D902	C1-414-621-905		DIODO DE CHAVEAMENTO 1SS244T77	IC601	C1-149-379-299		I.C. TDA-1013B
D903	C1-414-621-903		DIODO BAV-21	IC602	C1-149-379-299		I.C. TDA-1013B
D903	C1-414-621-905		DIODO DE CHAVEAMENTO 1SS244T77	IC901	C1-149-388-799		I.C. TDA-6107Q-N1
NTC801	C1-125-707-400		RES.COEF.NEG.NTC LIM.CORR.PICO	IC501	C1-149-390-999		I.C. TDA8841/N2
PTC801	C1-125-707-100		PTC B59209-T80-B10	IC802	C1-146-300-103		I.C. TL-431-BCLP
				IC801	C1-149-392-099		I.C. UC-3842BN
				IC101	C1-149-302-499		I.C. UPC-574/KA-33V
				IC301	C1-149-389-299		I.C.TDA-9309 AMP.VT.C/ACOPL.DC
DIODO ZENER				IC803	C1-139-999-427		PHOTO COUPLER PC817X1 A (DIP)
DZ201	C1-415-169-801		DIODO BZX79C8V2	IC803	C1-139-999-159		PHOTO COUPLER PS-2501-1-H
DZ202	C1-415-169-801		DIODO BZX79C8V2				
DZ401	C1-415-169-801		DIODO BZX79C8V2	IC SMD			
DZ601	C1-415-169-801		DIODO BZX79C8V2				
DZ602	C1-415-169-801		DIODO BZX79C8V2				
DZ604	C1-415-169-801		DIODO BZX79C8V2	IC701	C1-710-100-085		I.C. MC68HC908TV24
DZ605	C1-415-169-801		DIODO BZX79C8V2	IC603	C1-710-100-023		I.C. SMD HEF4052B M1/BU4052BCF
DZ701	C1-415-169-301		DIODO BZX79C4V7	IC702	C1-710-100-062		I.C. SMD MN24C08MN6
DZ702	C1-415-169-401		DIODO BZX79C5V1	IC604	C1-710-100-063		I.C. SMD TDA-9850T
DZ703	C1-415-169-301		DIODO BZX79C4V7	IC701	C1-710-100-095		I.C. XC68HC08TV24CP-AIWA
DZ704	C1-415-169-501		DIODO BZX79C5V6	INDUTOR/BOBINA			
DZ705	C1-415-169-501		DIODO BZX79C5V6				
DZ801	C1-415-171-901		DIODO BZX79C18V		C1-311-604-200		BOBINA DESMAGNETIZADORA
DZ802	C1-415-171-901		DIODO BZX79C18V	L101	C1-479-920-034		INDUTOR 0,82UH K
DZ803	C1-415-169-301		DIODO BZX79C4V7	L102	C1-479-903-734		INDUTOR FIXO 22UH K AXIAL
DZ804	C1-415-171-901		DIODO BZX79C18V	L201	C1-479-908-634		INDUTOR FIXO 15UH K AXIAL
DZ805	C1-415-169-301		DIODO BZX79C4V7	L402	C1-319-951-400		INDUTOR 22UH
DZ806	C1-415-166-801		DIODO BZX79B9V1	L701	C1-479-906-734		INDUTOR FIXO 2,2UH K AXIAL
DZ806	C1-415-165-701		DIODO MTZ-JT77-9,1C	L702	C1-479-906-734		INDUTOR FIXO 2,2UH K AXIAL
DZ807	C1-415-169-801		DIODO BZX79C8V2	L703	C1-479-909-334		INDUTOR FIXO 33UH K AXIAL
DZ808	C1-415-169-001		DIODO BZX79C3V6	L801	C1-479-907-634		INDUTOR FIXO 5,6UH K AXIAL
DZ809	C1-415-171-901		DIODO BZX79C18V	L803	C1-319-953-000		INDUTOR 33UH
DZ901	C1-415-169-801		DIODO BZX79C8V2	LF801	C1-312-400-900		FILTRO DE LINHA ELF18N012A
FUSIVEL				DIODO LED			
△F801	C1-461-058-002		FUS.ACAO RET. 20AG 4A/250V	LD701	C1-459-524-100		DIODO LED BICOLOR SLP-581D-51
△F802	C1-461-052-002		FUS.ACAO RET. 20AG 1A/250V				
FERRITE				TRANSISTOR			

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
Q802	C1-139-999-188		TRANSISTOR 2SD2061E/F	R705	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N
Q801	C1-139-999-351		TRANSISTOR 2SK-2545	R706	C1-183-547-092		RES.METAL FILME 1/2W 47R 5% N
Q804	C1-320-030-402		TRANSISTOR BC-327/16	R711	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q402	C1-139-999-302		TRANSISTOR BU-2506DX	R712	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q801	C1-139-999-404		TRANSISTOR MOS FET FL7KM-12A	R713	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q401	C1-139-608-600		TRANSISTOR MPS-A42	R714	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
				R715	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
				R716	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
				R717	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
				R720	C1-183-527-292		RES.METAL FILME 1/2W 2,7K 5% N
TRANSISTOR SMD							
Q201	C1-700-100-003		TRANSISTOR SMD BC-847B	R721	C1-183-527-292		RES.METAL FILME 1/2W 2,7K 5% N
Q202	C1-700-100-003		TRANSISTOR SMD BC-847B	R722	C1-183-527-292		RES.METAL FILME 1/2W 2,7K 5% N
Q501	C1-700-100-003		TRANSISTOR SMD BC-847B	R728	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q502	C1-700-100-003		TRANSISTOR SMD BC-847B	R729	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
Q701	C1-700-100-003		TRANSISTOR SMD BC-847B	R736	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
Q702	C1-700-100-003		TRANSISTOR SMD BC-847B				
Q703	C1-700-100-003		TRANSISTOR SMD BC-847B	R737	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
Q704	C1-700-100-003		TRANSISTOR SMD BC-847B	R739	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N
Q706	C1-700-100-003		TRANSISTOR SMD BC-847B	R740	C1-183-533-392		RES.METAL FILME 1/2W 33K 5% N
Q708	C1-700-100-003		TRANSISTOR SMD BC-847B	R743	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
				R745	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
Q803	C1-700-100-003		TRANSISTOR SMD BC-847B				
Q601	C1-700-100-004		TRANSISTOR SMD BC-857B	R749	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N
Q705	C1-700-100-004		TRANSISTOR SMD BC-857B	R759	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N
Q707	C1-700-100-004		TRANSISTOR SMD BC-857B	R760	C1-183-556-192		RES.METAL FILME 1/2W 560R 5% N
Q709	C1-700-100-004		TRANSISTOR SMD BC-857B	R761	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
				R762	C1-183-556-192		RES.METAL FILME 1/2W 560R 5% N
RESISTOR							
R102	C1-183-568-192		RES.METAL FILME 1/2W 680R 5% N	R763	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
R106	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R764	C1-183-556-192		RES.METAL FILME 1/2W 560R 5% N
R107	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R765	C1-183-547-292		RES.METAL FILME 1/2W 4,7K 5% N
R110	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R766	C1-183-522-592		RES.METAL FILME 1/2W 2,2M 5% N
R111	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R801	C1-184-527-312		RES.METAL FILME 2W 27K 5% N
R112	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N				
R113	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N	R804	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R202	C1-183-547-992		RES.METAL FILME 1/2W 4,7R 5% N	R810	C1-184-527-812		RES.METAL FILME 2W 0,27R 5% N
R207	C1-185-547-145		RES.METAL FILME 1W 470R 5%	R812	C1-184-547-312		RES.METAL FILME 2W 47K 5% N
R208	C1-183-527-392		RES.METAL FILME 1/2W 27K 5% N	R813	C1-183-568-392		RES.METAL FILME 1/2W 68K 5% N
R209	C1-183-527-392		RES.METAL FILME 1/2W 27K 5% N	R814	C1-183-515-192		RES.METAL FILME 1/2W 150R 5% N
R210	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N				
R215	C1-183-547-192		RES.METAL FILME 1/2W 470R 5% N	AR815	C1-183-568-548		RES.METAL GLAZED 6,8M
R301	C1-189-139-331		RES.PRECISAO 0,4W 39K 1% N	AR816	C1-189-111-331		RES.PRECISAO 0,6W 113K 0,5%
R302	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N	AR817	C1-189-128-231		RES.PRECISAO 0,6W 2,8K 0,5%
R303	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N	R820	C1-185-547-145		RES.METAL FILME 1W 470R 5%
R304	C1-183-515-292		RES.METAL FILME 1/2W 1,5K 5% N	R821	C1-187-533-040		RES.METAL FILME 3W 33R 5% N
R305	C1-183-515-292		RES.METAL FILME 1/2W 1,5K 5% N				
R307	C1-183-533-192		RES.METAL FILME 1/2W 330R 5% N	R823	C1-185-510-245		RES.METAL FILME 1W 1K 5%
R308	C1-185-533-912		RES.M.FILME 1W 3,3R 5% N	R824	C1-183-533-992		RES.METAL FILME 1/2W 3,3R 5% N
R309	C1-185-533-912		RES.M.FILME 1W 3,3R 5% N	R825	C1-183-510-092		RES.METAL FILME 1/2W 10R 5% N
R408	C1-183-539-192		RES.METAL FILME 1/2W 390R 5% N	R826	C1-183-510-392		RES.METAL FILME 1/2W 10K 5% N
R410	C1-183-556-292		RES.METAL FILME 1/2W 5,6K 5% N	R827	C1-174-051-025		RES.FIO 5W 1K 5% V-SQM
R411	C1-187-547-212		RES.METAL FILME 3W 4,7K 5% N				
R412	C1-183-522-992		RES.METAL FILME 1/2W 2,2R 5% N	R828	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R413	C1-183-556-392		RES.METAL FILME 1/2W 56K 5% N	R829	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R414	C1-183-515-392		RES.METAL FILME 1/2W 15K 5% N	R830	C1-183-518-292		RES.METAL FILME 1/2W 1,8K 5% N
R415	C1-185-515-345		RES.METAL FILME 1W 15K 5%	R831	C1-183-510-392		RES.METAL FILME 1/2W 10K 5% N
R416	C1-183-547-092		RES.METAL FILME 1/2W 47R 5% N	R901	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
R504	C1-183-522-392		RES.METAL FILME 1/2W 22K 5% N				
R506	C1-183-522-392		RES.METAL FILME 1/2W 22K 5% N	R902	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
R507	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N	R903	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N
R508	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N	R904	C1-183-615-219		RES.COMPOS.1/2W 1,5K 5% N
R509	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N	R905	C1-183-615-219		RES.COMPOS.1/2W 1,5K 5% N
R510	C1-183-522-192		RES.METAL FILME 1/2W 220R 5% N	R906	C1-183-615-219		RES.COMPOS.1/2W 1,5K 5% N
R608	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N				
R616	C1-183-522-492		RES.METAL FILME 1/2W 220K 5% N	R907	C1-183-510-292		RES.METAL FILME 1/2W 1K 5% N
R617	C1-185-515-145		RES.METAL FILME 1W 150R 5%				
R619	C1-185-515-145		RES.METAL FILME 1W 150R 5%				
R620	C1-183-522-492		RES.METAL FILME 1/2W 220K 5% N				
R624	C1-183-522-292		RES.METAL FILME 1/2W 2,2K 5% N				
R702	C1-183-510-192		RES.METAL FILME 1/2W 100R 5% N				
R704	C1-183-533-392		RES.METAL FILME 1/2W 33K 5% N				
				RES.SMD			
				R101	C1-502-539-202		RES.SMD 3,9K 0805
				R103	C1-502-510-102		RES.SMD 100R 5% 0805
				R104	C1-502-510-102		RES.SMD 100R 5% 0805
				R105	C1-502-556-102		RES.SMD 560R 5% N 0805
				R201	C1-502-510-202		RES.SMD 1K 5% 0805
				R203	C1-502-518-102		RES.SMD 180R 5% 0805
				R204	C1-502-518-102		RES.SMD 180R 5% 0805
				R205	C1-502-510-002		RES.SMD 10R 5% 0805
				R206	C1-502-512-202		RES.SMD 1,2K 5% 0805
				R211	C1-502-510-102		RES.SMD 100R 5% 0805

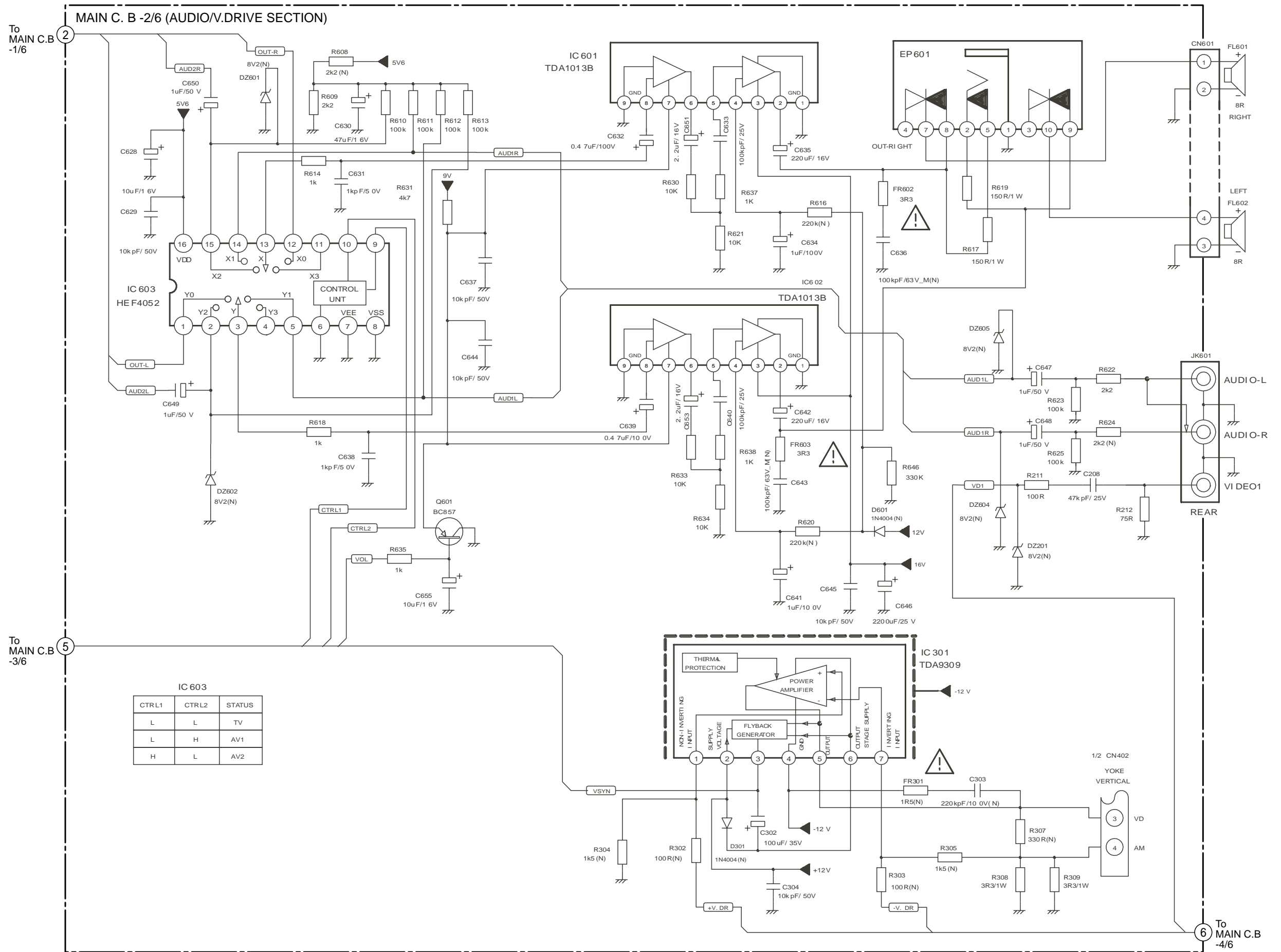
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
R212	C1-502-575-002	RES.SMD 75R 5% 0805	
R213	C1-502-510-102	RES.SMD 100R 5% 0805	
R216	C1-502-533-102	RES.SMD 330R 5% 0805	
R218	C1-502-547-102	RES.SMD 470R 5% 0805	
R219	C1-502-575-002	RES.SMD 75R 5% 0805	
R228	C1-502-522-502	RES.SMD 2,2M 5% 0805	
R401	C1-502-510-102	RES.SMD 100R 5% 0805	
R402	C1-502-510-102	RES.SMD 100R 5% 0805	
R403	C1-502-518-302	RES.SMD 18K 5% 0805	
R404	C1-502-527-302	RES.SMD 27K 5% 0805	
R405	C1-502-515-202	RES.SMD 1,5K 5% 0805	
R406	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R407	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R409	C1-502-533-102	RES.SMD 330R 5% 0805	
R418	C1-502-527-302	RES.SMD 27K 5% 0805	
R502	C1-502-510-402	RES.SMD 100K 5% 0805	
R503	C1-502-547-302	RES.SMD 47K 5% 0805	
R505	C1-502-547-302	RES.SMD 47K 5% 0805	
R601	C1-502-510-102	RES.SMD 100R 5% 0805	
R602	C1-502-512-202	RES.SMD 1,2K 5% 0805	
R603	C1-502-182-202	RES.SMD 8,2K 1% 0805	
R604	C1-502-116-102	RES.SMD 160R 1% 0805	
R605	C1-502-510-102	RES.SMD 100R 5% 0805	
R606	C1-502-510-102	RES.SMD 100R 5% 0805	
R607	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R609	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R610	C1-502-510-402	RES.SMD 100K 5% 0805	
R611	C1-502-510-402	RES.SMD 100K 5% 0805	
R612	C1-502-510-402	RES.SMD 100K 5% 0805	
R613	C1-502-510-402	RES.SMD 100K 5% 0805	
R614	C1-502-510-202	RES.SMD 1K 5% 0805	
R618	C1-502-510-202	RES.SMD 1K 5% 0805	
R621	C1-502-510-302	RES.SMD 10K 5% 0805	
R622	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R623	C1-502-510-402	RES.SMD 100K 5% 0805	
R625	C1-502-510-402	RES.SMD 100K 5% 0805	
R626	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R627	C1-502-510-402	RES.SMD 100K 5% 0805	
R628	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R629	C1-502-510-402	RES.SMD 100K 5% 0805	
R630	C1-502-510-302	RES.SMD 10K 5% 0805	
R631	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R633	C1-502-510-302	RES.SMD 10K 5% 0805	
R634	C1-502-510-302	RES.SMD 10K 5% 0805	
R635	C1-502-510-202	RES.SMD 1K 5% 0805	
R637	C1-502-510-202	RES.SMD 1K 5% 0805	
R638	C1-502-510-202	RES.SMD 1K 5% 0805	
R646	C1-502-533-402	RES.SMD 330K 5% 0805	
R701	C1-502-510-302	RES.SMD 10K 5% 0805	
R707	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R708	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R709	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R710	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R718	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R719	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R726	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R727	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R730	C1-502-547-502	RES.SMD 4,7M 5% 0805	
R731	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R732	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R734	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R735	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R741	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R744	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R747	C1-502-510-302	RES.SMD 10K 5% 0805	
R748	C1-502-510-302	RES.SMD 10K 5% 0805	
R751	C1-502-510-202	RES.SMD 1K 5% 0805	
R753	C1-502-533-402	RES.SMD 330K 5% 0805	
R754	C1-502-510-302	RES.SMD 10K 5% 0805	
R755	C1-502-522-302	RES.SMD 22K 5% 0805	

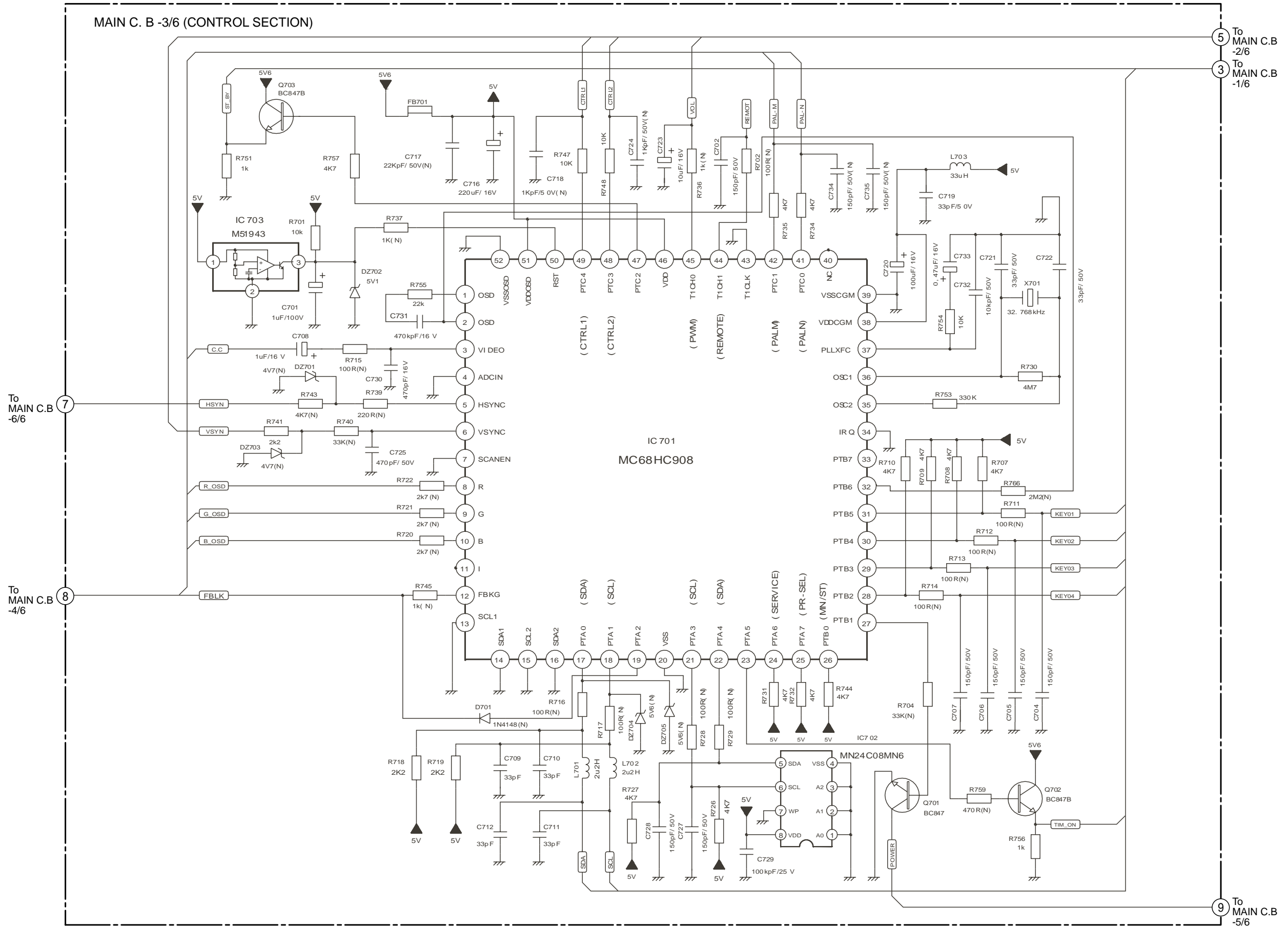
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
R756	C1-502-510-202	RES.SMD 1K 5% 0805	
R757	C1-502-547-202	RES.SMD 4,7K 5% 0805	
R802	C1-502-515-202	RES.SMD 1,5K 5% 0805	
R803	C1-502-522-202	RES.SMD 2,2K 5% 0805	
R805	C1-502-533-302	RES.SMD 33K 5% 0805	
R806	C1-502-510-502	RES.SMD 1M 5% 0805	
R807	C1-502-518-202	RES.SMD 1,8K 5% 0805	
R808	C1-502-522-102	RES.SMD 220R 5% 0805	
R809	C1-502-518-102	RES.SMD 180R 5% 0805	
R818	C1-502-547-302	RES.SMD 47K 5% 0805	
R819	C1-502-510-202	RES.SMD 1K 5% 0805	
MODULO			
RM701	C1-271-205-400		RECEPTOR IR SBX1981-72P
CHAVE			
SW701	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW701	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW702	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW702	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW703	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW703	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW704	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW704	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW705	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW705	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW706	C1-449-009-400		CHAVE DE TOQUE 7,0MM 260g
SW706	C1-449-009-200		CHAVE DE TOQUE 7,0MM 260g
SW801	C1-440-090-053		CHAVE POWER
TRAFO			
T401	C1-353-101-200		TRAFO DRIVE HT
T402	C1-355-215-800		TRAFO FLY BACK 14"KFT2AA293X
T801	C1-356-005-600		TRAFO CHAVEAMENTO
SINTONIZADOR			
TU101	C1-271-503-800		SINTONIZADOR 181CH UV-1336S/AF
TU101	C1-271-503-500		SINTONIZADOR IIC 5V ENV56D33G3
PEPCI CINESCOPIO			
V901	C1-408-010-300		CJT.CINESCOPIO S/CHICOTE
	C1-027-221-802		CJT.PCI MANUAL/MONT CINESCOPIO
	C1-027-221-822		CJT.PCI SMD CINESCOPIO
	C1-027-221-812		CJT.PCI AUTOMATICO CINESCOPIO
	C1-107-221-802		PEPCI CINESCOPIO 9PECAS
	C1-682-021-400		MOLA DO ATERRAMENTO DO CRT
CONECTOR			
	C1-638-100-912		SOQUETE P/CINESCOPIO 1SMS11S
CRISTAL			
RS601	C1-421-506-100		RESSONADOR CERAMICO CSB-503F58
X501	C1-425-009-200		CRISTAL NTSC 3.579545 SE / S
X502	C1-425-009-100		CRISTAL PAL-M 3.575611 SSP / S
X503	C1-425-009-300		CRISTAL PAL-N 3.582056 SSP / S
X701	C1-425-011-400		CRISTAL 32,768KHZ
PEPCI PRINCIPAL			
	C1-027-221-801		CJT.PCI MAN/MONT PRINCIPAL
	C1-027-221-821		CJT.PCI SMD PRINCIPAL
	C1-027-221-811		CJT.PCI AUTOMATICO PRINCIPAL
	C1-107-221-801		PCI PRINCIPAL



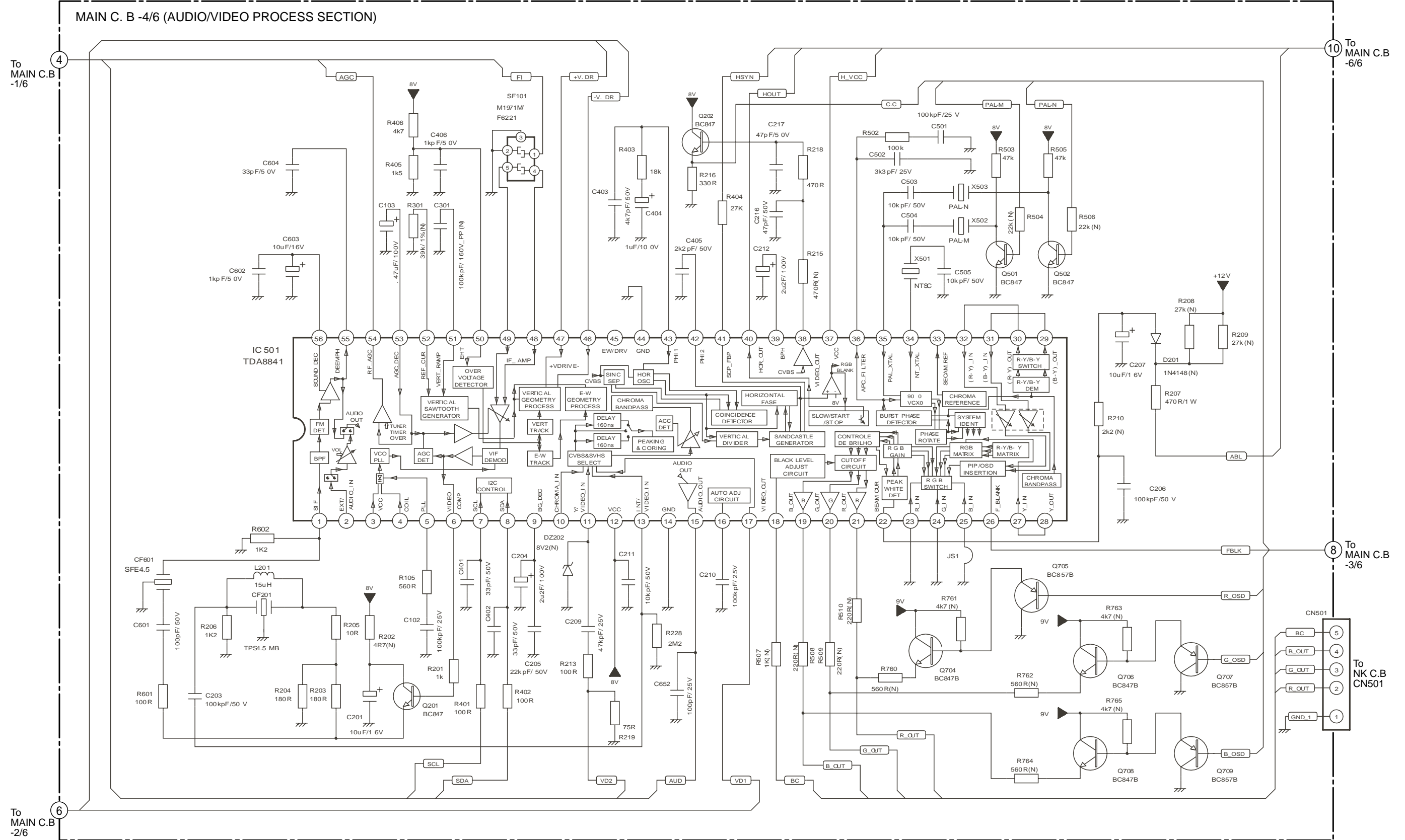


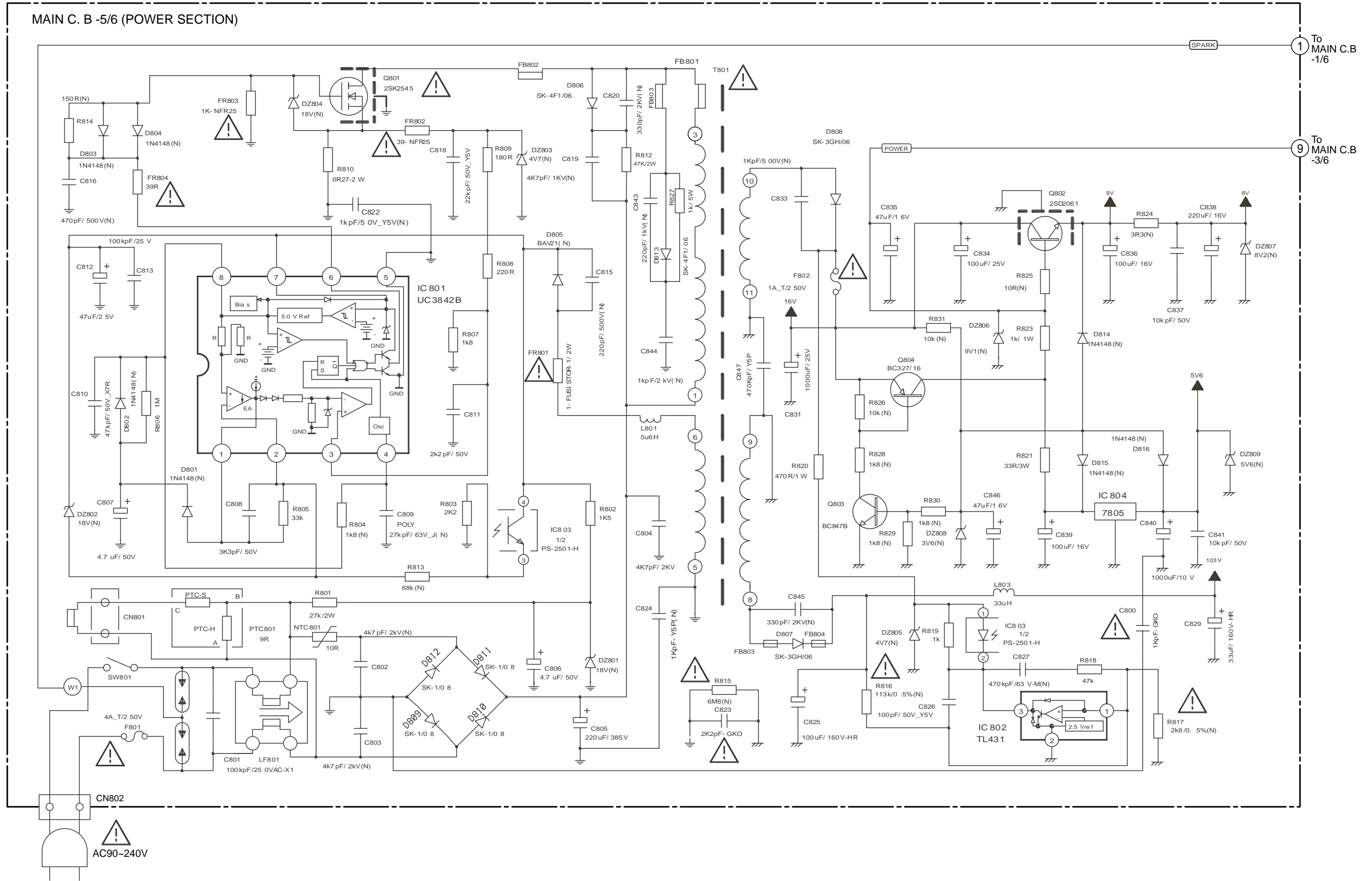
SCHEMATIC DIAGRAM-2 (MAIN C.B-2/6)

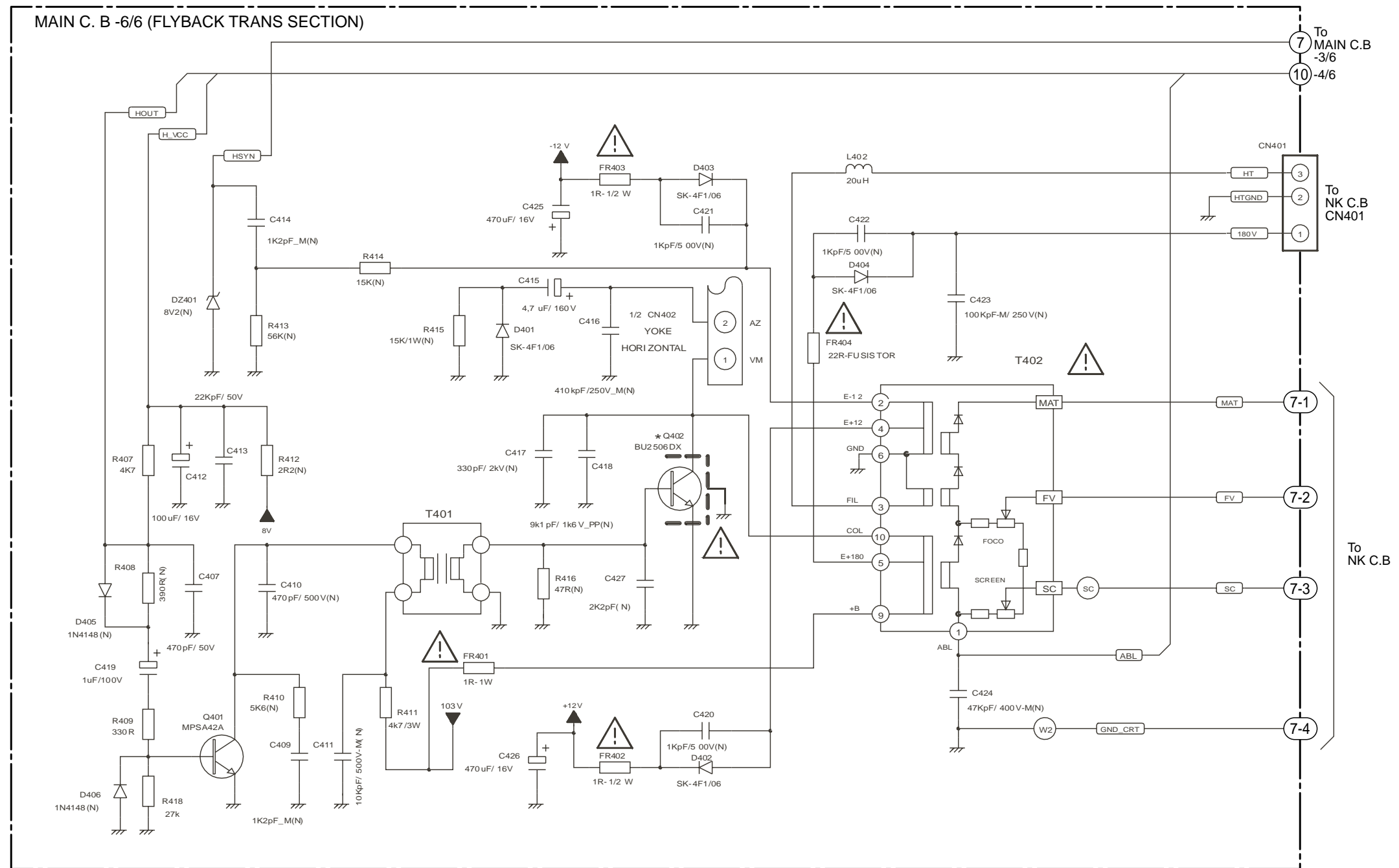




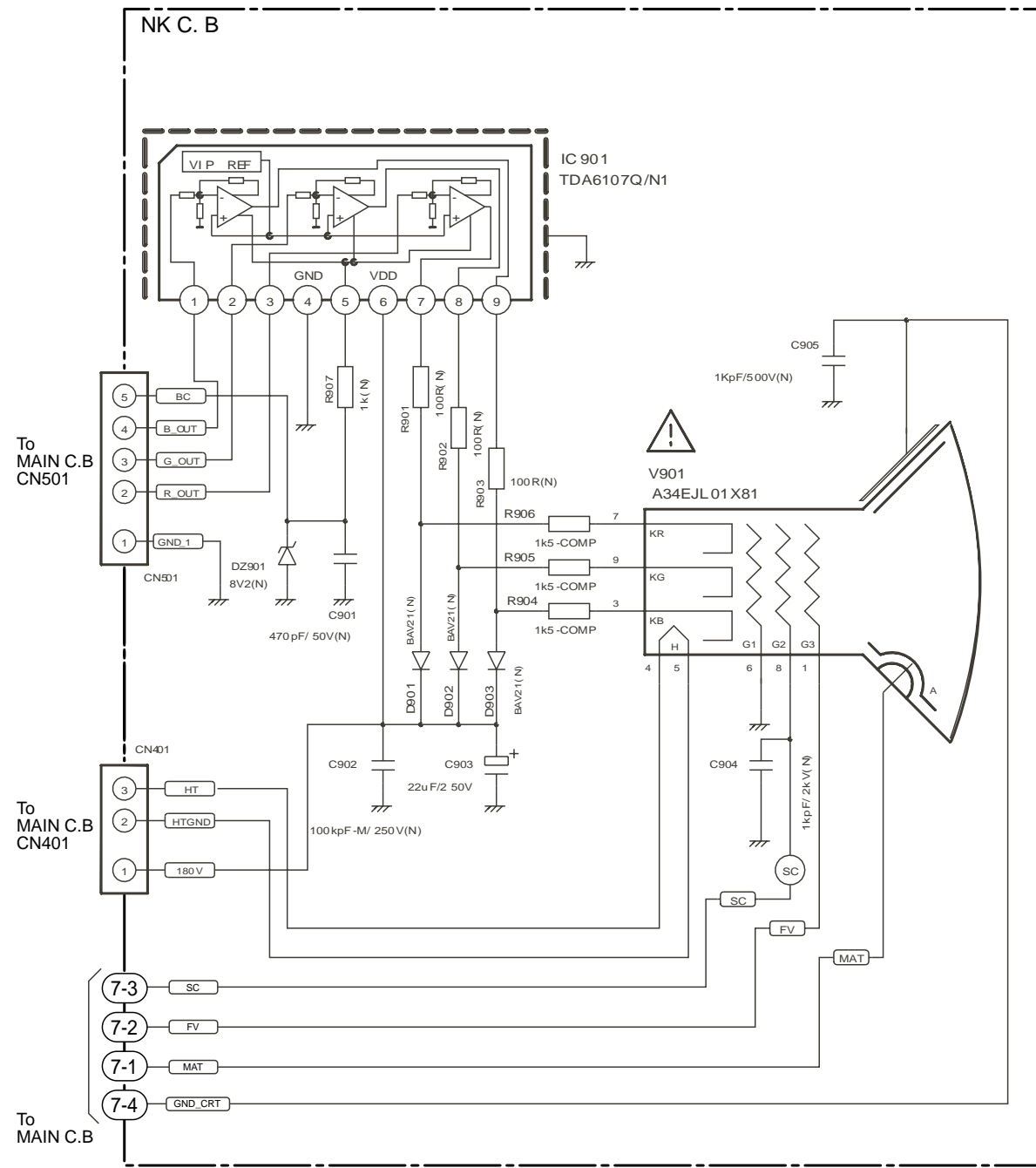
SCHEMATIC DIAGRAM-4 (MAIN C.B-4/6)



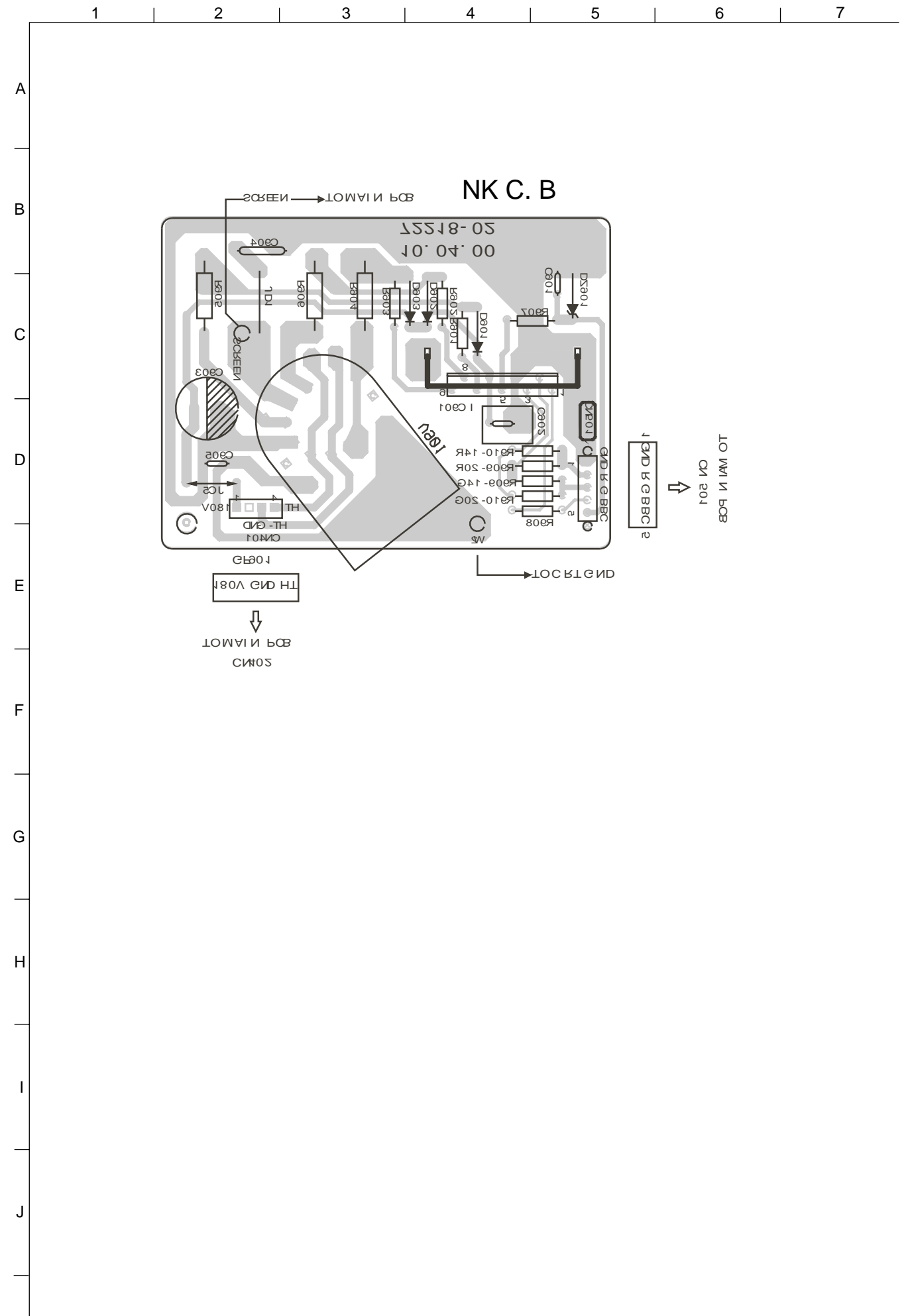




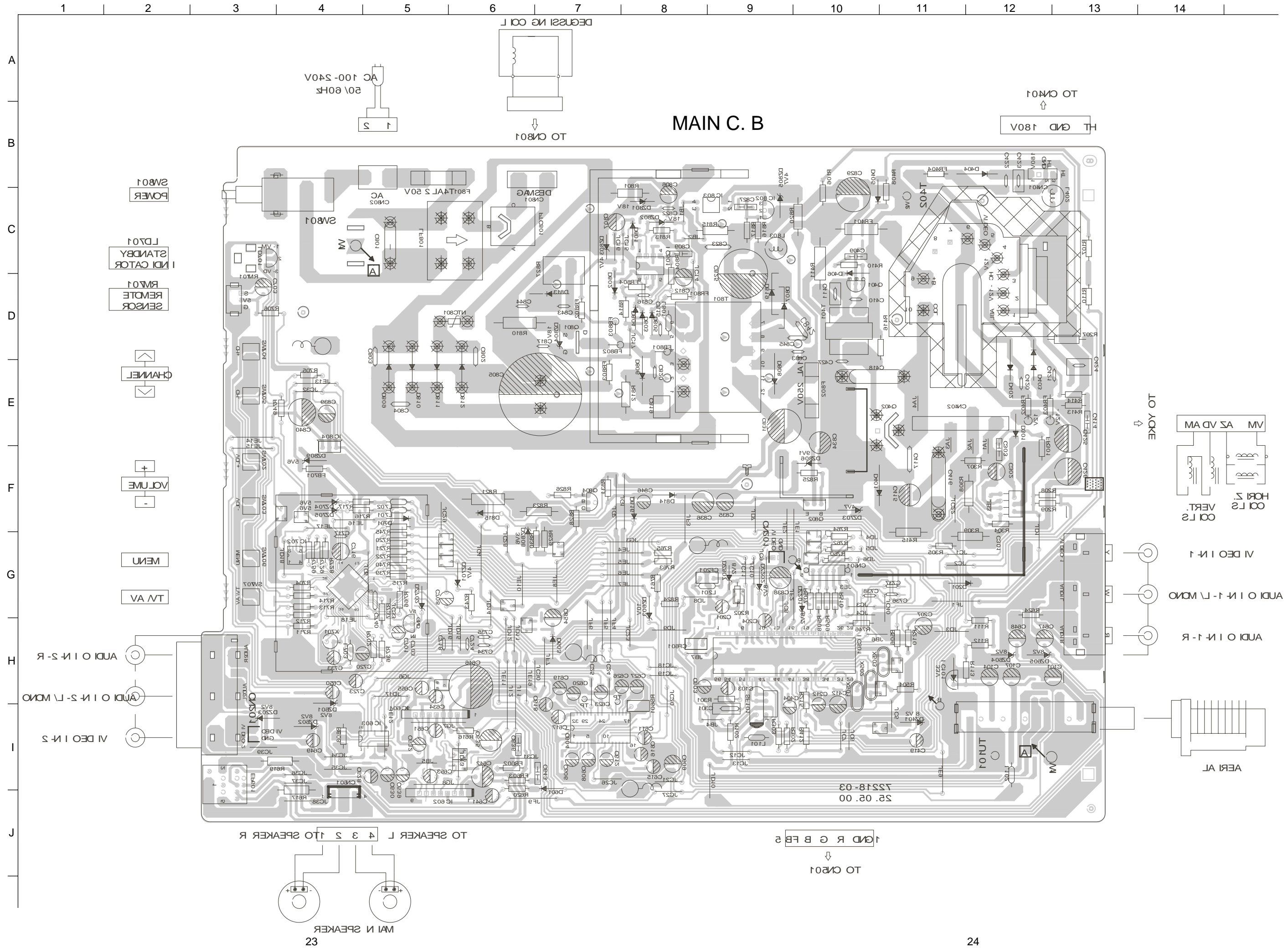
SCHEMATIC DIAGRAM-7 (NK C.B)



WIRING-1 (NK C.B)



WIRING-2 (MAIN C.B)

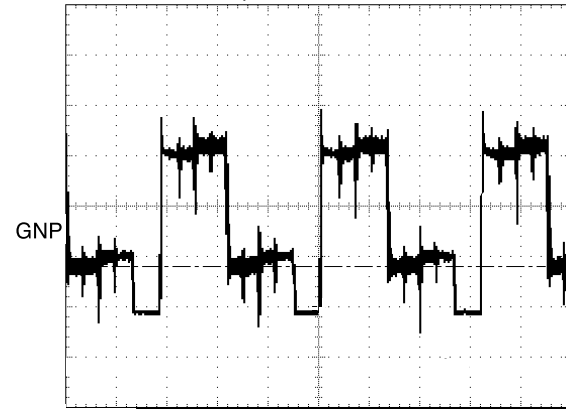


# WAVEFORM

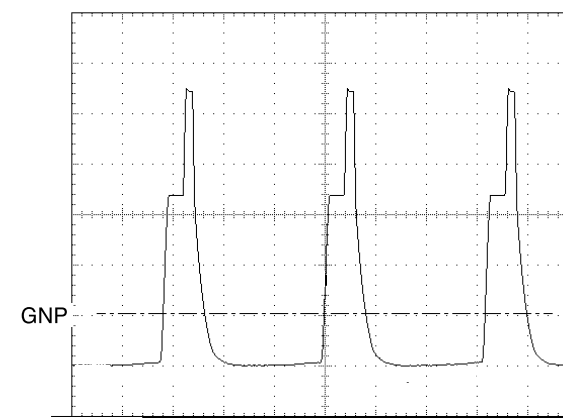
## CONDITIONS:

- 1- TV MODE TV
- 2- RF INPUT CH 3 90dB
- 3- SOUND MONO
- VOL. MIN.
- 4- MANIS 127V 60Hz
- 5- PICTURE CONTR. MAX
- BRIGHT - 50%
- COLOR - 30%
- SHARP - 50%
- 6- RUN TIME 1h

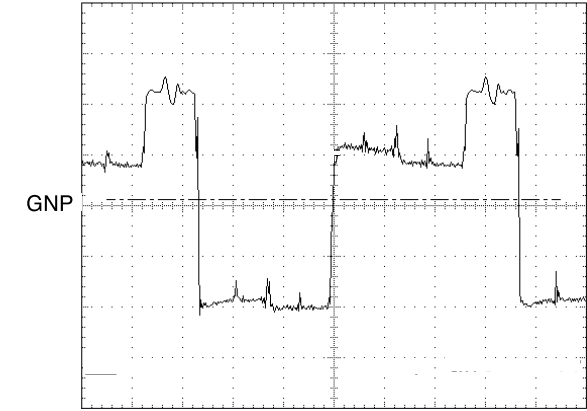
4 - PINO # 20 IC501  
500mV/Div. 20.0μs/Div.



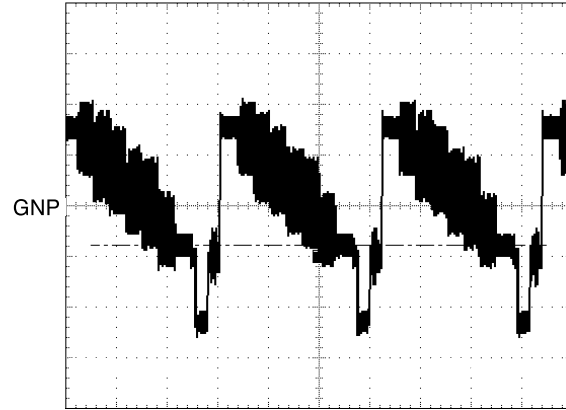
8 - PINO # 41 IC501  
1.0V/Div. 20.0μs/Div.



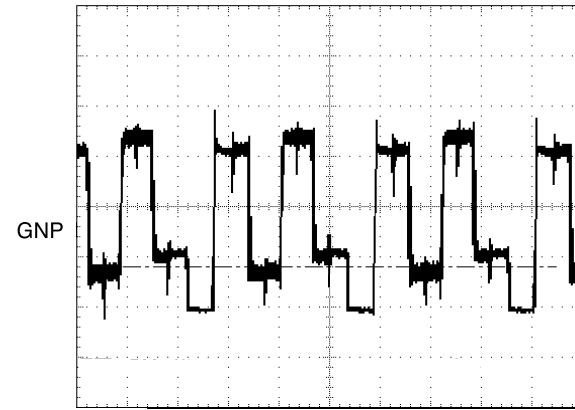
12 - R OUT PUT  
200mV/Div. 10.0μs/Div.



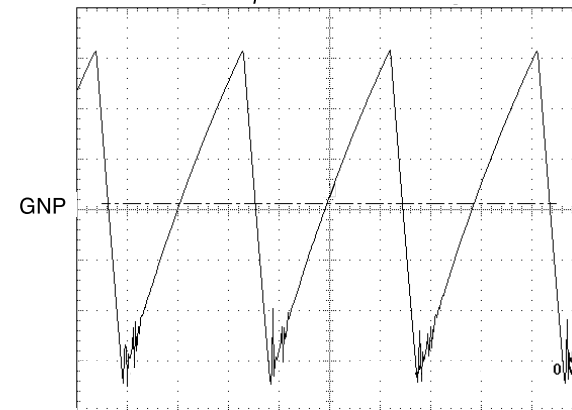
1 - PINO # 6 IC501  
500mV/Div. 20.0μs/Div



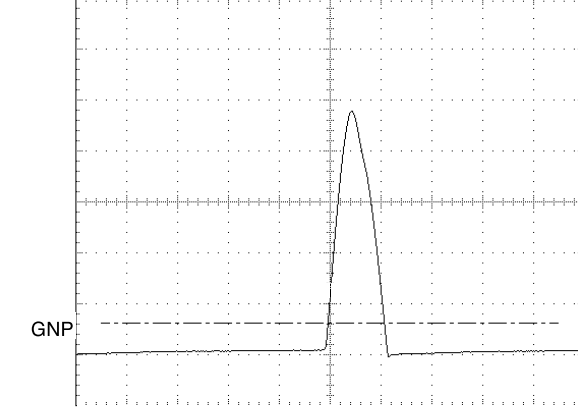
5 - PINO # 21 IC501  
500mV/Div. 20.0μs/Div.



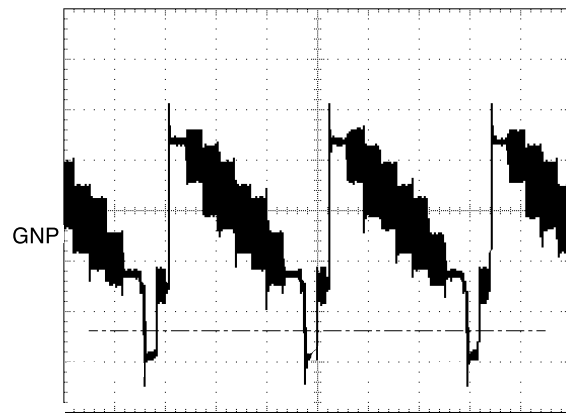
9 - PINO # 4 IC801  
200mV/Div. 10.0μs/Div.



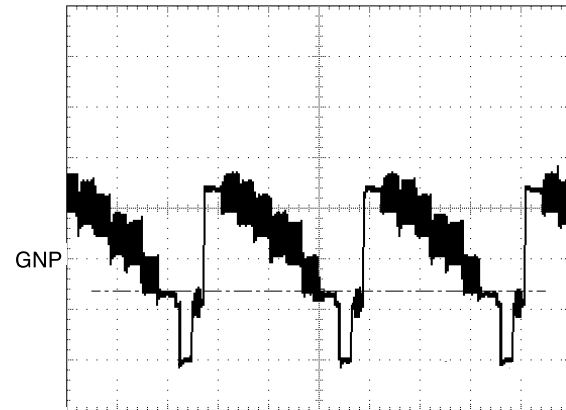
13 - COL Q402 (X100)  
2.0V Div. 10.0μs/Div.



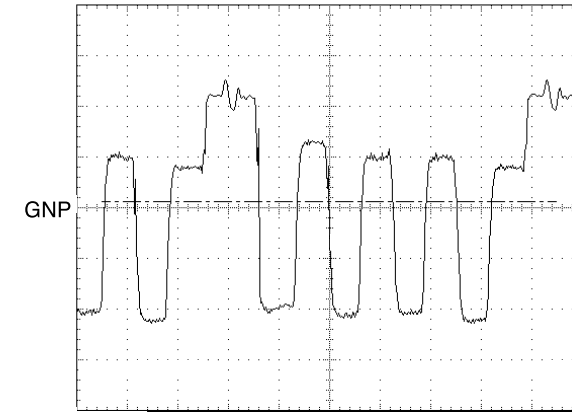
2 - PINO # 13 IC501  
200mV/Div. 20.0μs/Div.



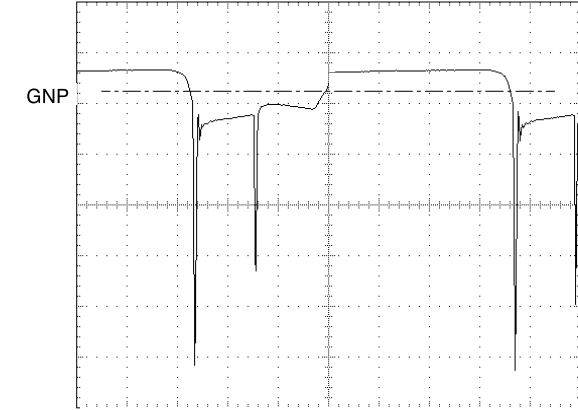
6 - PINO # 38 IC501  
500mV/Div. 20.0μs/Div.



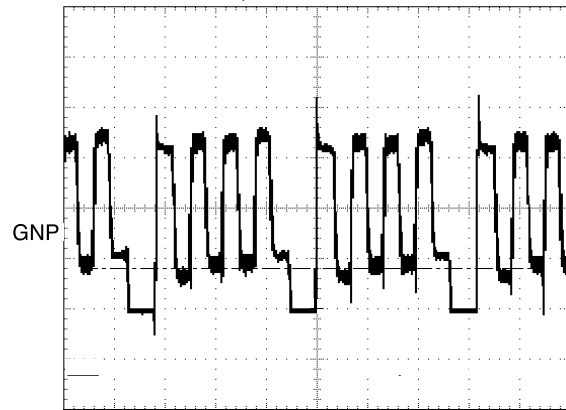
10 - B OUT PUT  
200mV/Div. 10.0μs/Div.



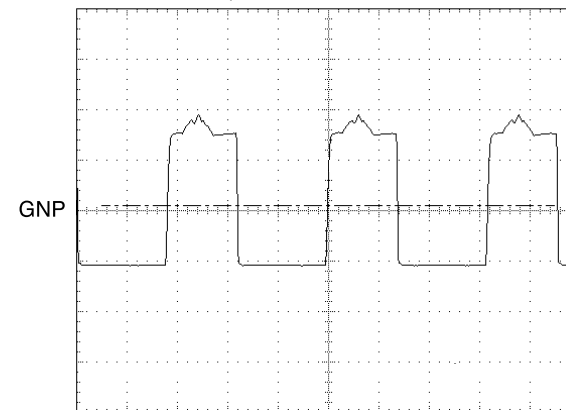
14 - BASE Q402  
2.0V/Div. 10.0μs/Div.



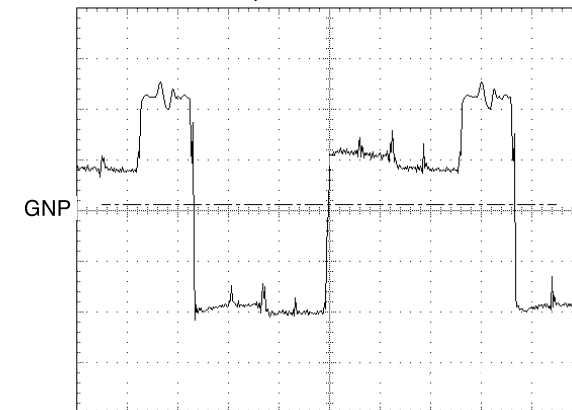
3 - PINO # 19 IC501  
500mV/Div. 20.0μs/Div.



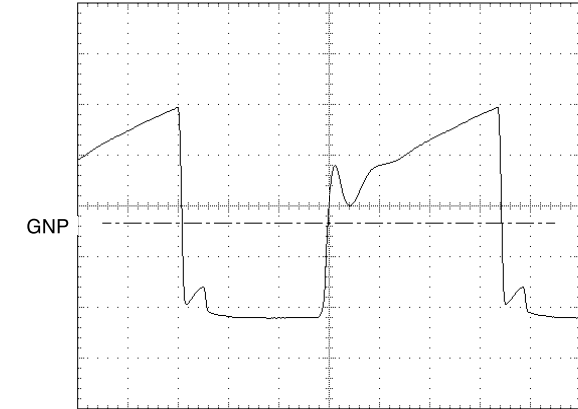
7 - PINO # 40 IC501  
1.0V/Div. 20.0μs/Div.



11 - G OUT PUT  
200mV/Div. 10.0μs/Div.

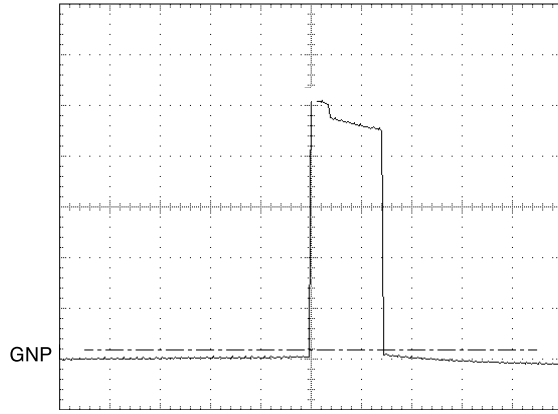


15 - COL Q401 (X10)  
2.0V/Div. 10.0μs/Div.

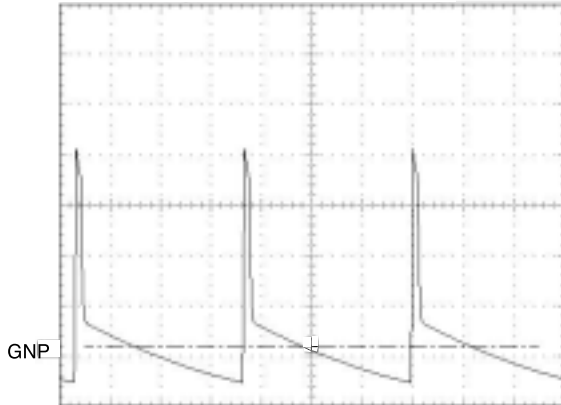




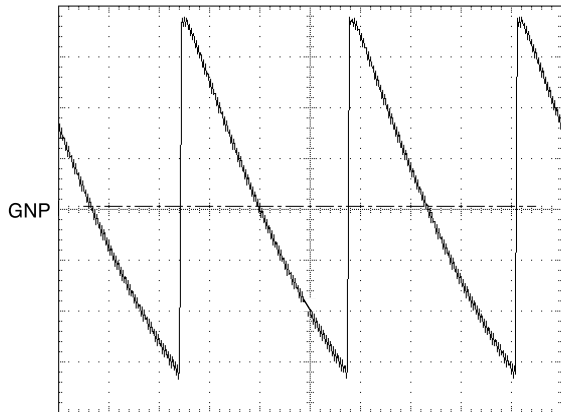
16 - PINO # 16 IC401  
5.0V/Div. 500 $\mu$ s/Div.



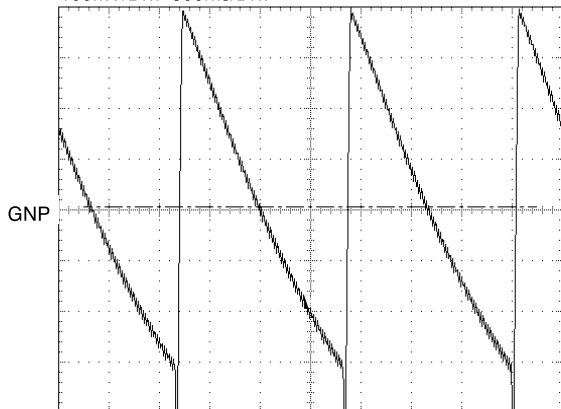
17 - PINO # 5 IC301  
10.0V/Div. 5.0ms/Div.



18 - PINO # 1 IC301  
100mV/Div. 5.0ms/Div.



19 - PINO # 7 IC301  
100mV/Div. 500ms/Div.



# VOLTAGE CHARTS

IC301

PIN#	VOLTAGE (V)
1	0.5
2	12.8
3	-10.4
4	-11.8
5	0.082
6	13
7	0.5

IC601, IC602

PIN#	VOLTAGE (V)
1	0
2	5.7
3	14.9
4	11.9
5	1.1
6	6.6
7	3.4
8	2.8
9	0

IC603

PIN#	VOLTAGE (V)
1	3.6
2	2.4
3	3.6
4	1.3
5	2.5
6	0
7	0
8	0
9	0
10	5
11	0
12	3.6
13	3.6
14	2.4
15	2.4
16	4.9

IC501

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	0	29	0
2	3.6	30	2.2
3	0	31	2.2
4	0	32	2.2
5	2.5	33	0
6	3	34	2.4
7	4.4	35	2.4
8	4.4	36	4.6
9	6.6	37	8
10	1.4	38	2.4
11	3.3	39	4.9
12	8.1	40	1.2
13	3.7	41	0.6
14	0	42	3.1
15	3	43	3.9
16	1.5	44	-2.2
17	3.3	45	0
18	5.9	46	05
19	3.0	47	06
20	3.0	48	4.6
21	3.0	49	4.6
22	3.0	50	1.9
23	1.9	51	3.8
24	0	52	3.8
25	0	53	4.4
26	0	54	0.9
27	2.7	55	2.8
28	2.7	56	0

IC604

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	2.9	27	3.5
2	2	28	0
3	3.6	29	3.4
4	0	30	3.5
5	3.5	31	3.6
6	0	32	3.5
7	0		
8	4.4		
9	4.4		
10	8.5		
11	3.5		
12	8.5		
13	3.5		
14	3.6		
15	3.5		
16	2.9		
17	5.4		
18	3.6		
19	3.5		
20	3.5		
21	3.6		
22	3.6		
23	3.6		
24	3.6		
25	3.5		
26	3		

## IC701

PIN#	VOLTAGE (V)	PIN#	VOLTAGE (V)
1	0	27	6
2	0	28	4.9
3	3	29	4.9
4	0	30	4.9
5	0	31	4.9
6	0	32	4.9
7	0	33	0
8	0	34	0
9	0	35	2.4
10	0	36	2.2
11	0	37	1
12	0	38	4.9
13	0	39	0
14	0	40	-
15	0	41	0
16	0	42	4.9
17	4.9	43	0
18	4.9	44	4.9
19	0	45	2.7
20	0	46	4.9
21	4.9	47	0
22	4.9	48	0
23	0	49	0
24	4.9	50	4.9
25	4.9	51	4.9
26	4.9	52	0

## IC702

PIN#	VOLTAGE (V)
1	0
2	0
3	0
4	0
5	5
6	5
7	0
8	5

## IC703

PIN#	VOLTAGE (V)
1	5
2	0
3	5

## IC801

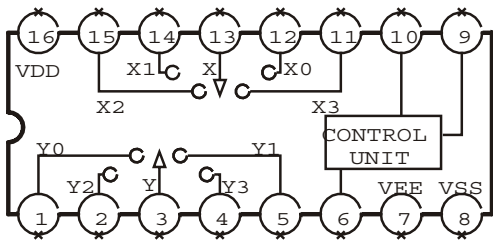
PIN#	VOLTAGE (V)
1	2.5
2	0
3	0
4	2.39
5	1.95
6	3.6
7	18
8	5

## IC901

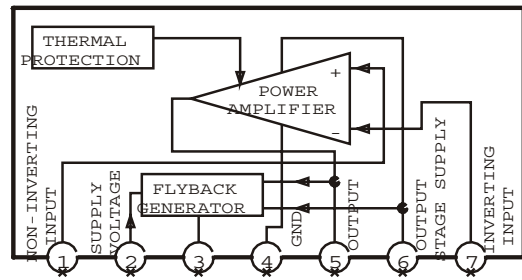
PIN#	VOLTAGE (V)
1	2.9
2	2.8
3	3
4	0
5	6
6	175
7	101
8	115
9	115

# IC BLOCK DIAGRAMS

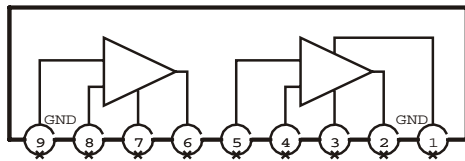
IC, HEF4052



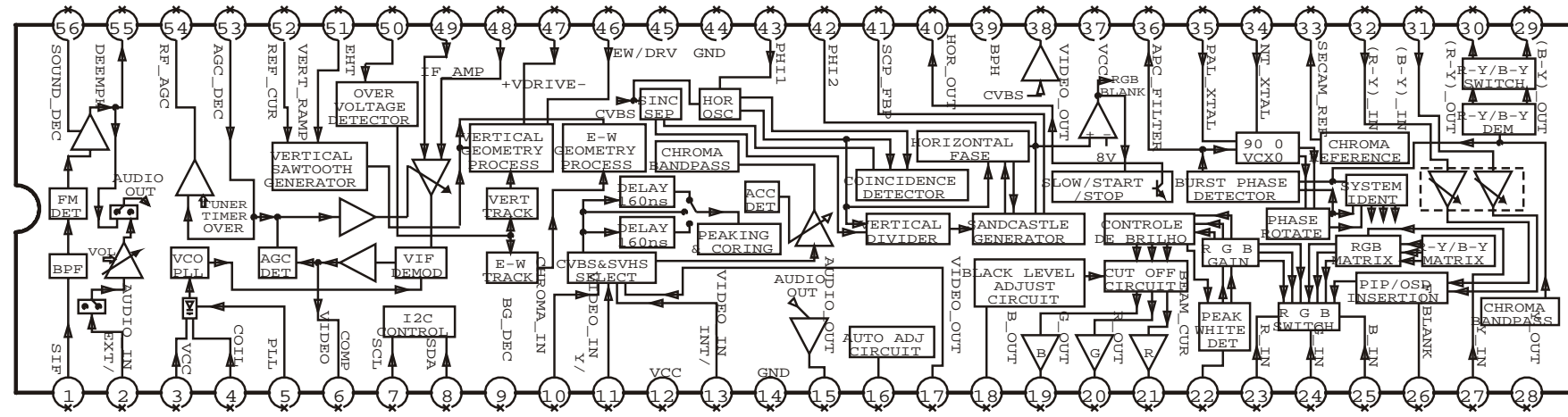
IC, TDA9309



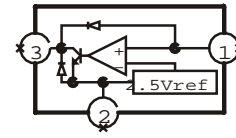
IC, TDA1013B



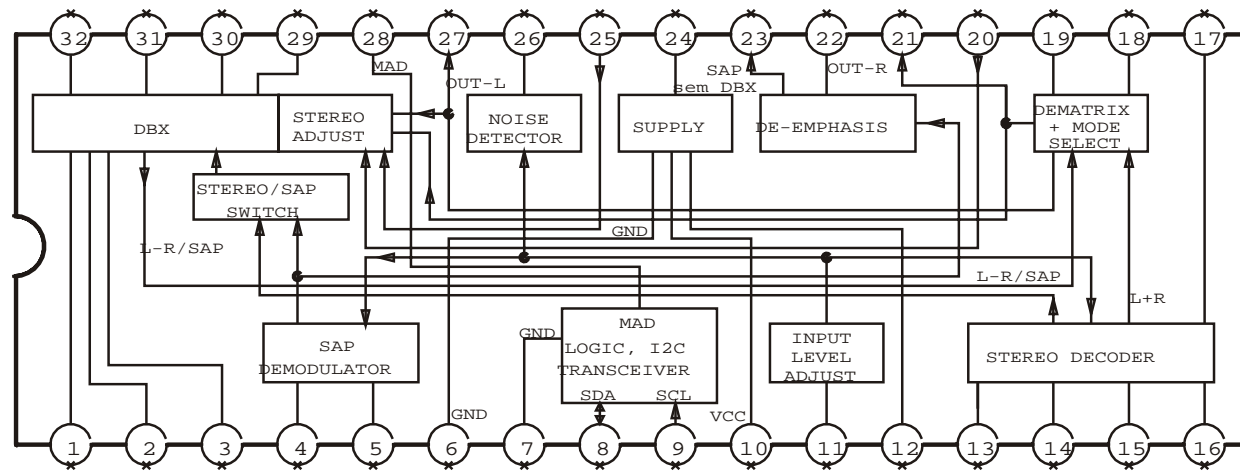
IC, TDA8841



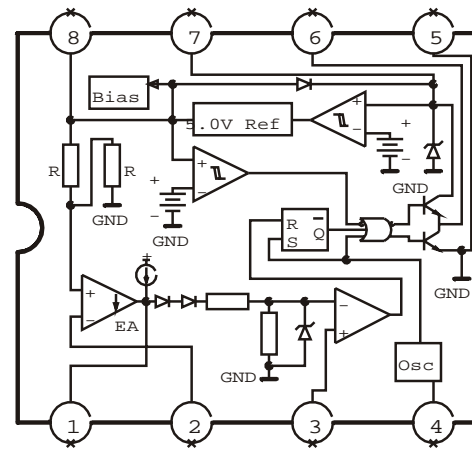
IC, TL431



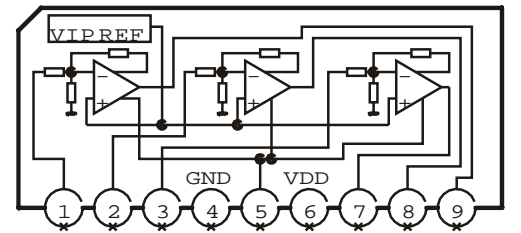
IC, TDA9850



IC, UC3842B



IC, TDA6107Q/N1



**INTRODUCTION**

**Note:**

It is necessary to pre-heat the TV during 15 minutes, before its calibration.

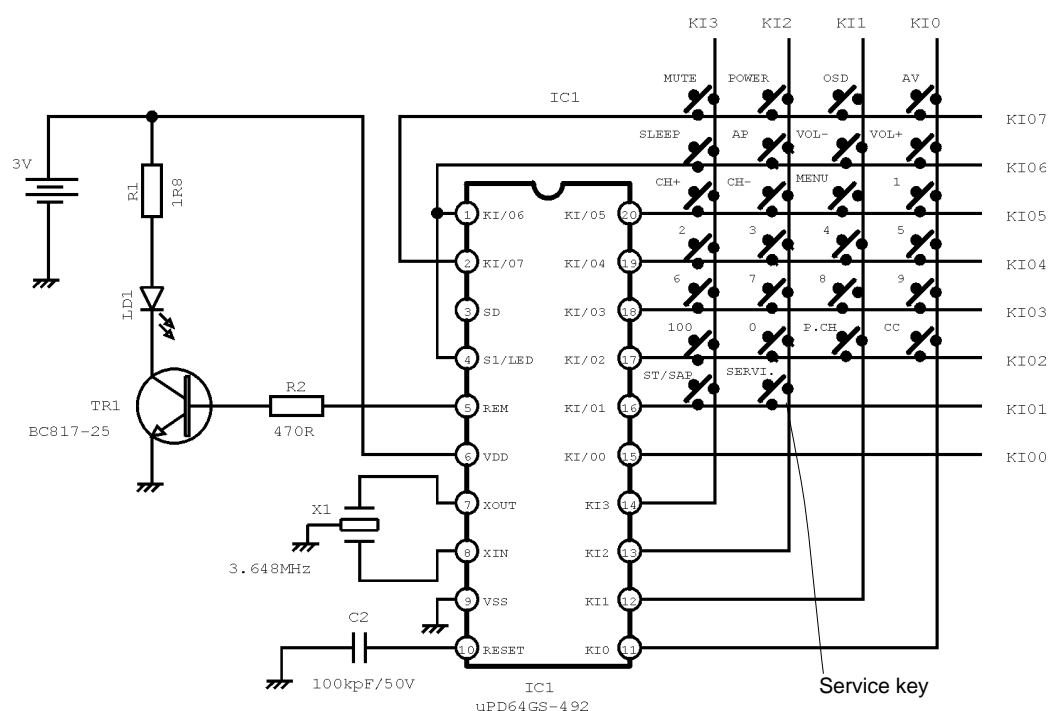
- 1) Important recommendations
- 2) Definitions of the terms
- 3) Geometry of the Image
- 4) White Balance
- 5) Screen adjustment
- 6) AGC adjustment

**How to select the FACTORY MODE**

a) Short to ground pin 24 of IC701 (momentarily) on the MAIN PWB or use a remote control with protocol RC5 and system 7.

a1) Remote control reconstruction method.

Connection SW between pin13 and 16 of the IC: Pressing the SW will display the test mode screen on TV.



b) Select the adjustment options pressing the key CH▲ or CH▼ of the remote control or of the television front panel.

**Note:** All the adjustment options can be selected directly by the remote control numeric keys.

c) Adjust the selected option pressing the key VOL➤ or <VOL of the remote control or of the television front panel.

c1) VOL➤ - increases registers (MAX.).

c2) <VOL - decreases registers (MIN.).

d) To exit the FACTORY MODE, use the key OSD/OUT of the remote control.

**1. Important recommendations**

- 1.1 Before beginning the adjustments, the TV set should be a pre-heated during at least 15 minutes.
- 1.2 The positioning of the TV set should obey the magnetic parameters of South America that it is -120 vertical mG. In the practice, this is gotten with a relative precision, positioning the TV set with the face (screen) of the CRT pointing to the geographical East.

**2. Definitions of the terms**

**Description of service and factory registers**

Register	Name	Range	Description	Descrição	Reference adjustment value
00	HSh	0...63	Horizontal Shift	Posição Horizontal	42
01	HWi	0...63	Not used	N o Usado	-
02	HPW	0...63	Not used	N o Usado	-
03	HCP	0...63	Not used	N o Usado	-
04	HTC	0...63	Not used	N o Usado	-
05	VSI	0...63	Vertical Slope	Aj. Linearidade vertical no "topo"	34
06	VAm	0...63	Vertical Amplitude	Aj. de altura	27
07	VSc	0...63	S-Correction	Aj. Linearidade vertical no "centro"	10
08	VSh	0...63	Vertical Shift	Posição Vertical	38
09	WPR	0...63	White point R.	Ganho R	31
10	WPG	0...63	White point G.	Ganho G	31
11	WPB	0...63	White point B.	Ganho B	31
12	AGC	0...63	AGC Take Over	Aj. De atraso do AGC	15
13	PLL	0...127	IF-PLL adjustment	Ajuste de IF-PLL	32
14	VZo	0...63	Not used	N o Usado	-
15	VSR	0...63	Not used	N o Usado	-
16	CT2	0...255	See description below	Veja a descrição a seguir	136
17	CT3	0...255	See description below	Veja a descrição a seguir	07
18	CT4	0...255	See description below	Veja a descrição a seguir	168
19	CT5	0...255	See description below	Veja a descrição a seguir	04
20	Bit	0...255	See description below	Veja a descrição a seguir	00
21	OP1	0...255	See description below	Veja a descrição a seguir	01
22	OP2	0...255	See description below	Veja a descrição a seguir	145
23	OP3	0...255	See description below	Veja a descrição a seguir	255
24	OP4	0...255	See description below	Veja a descrição a seguir	33
25	OP5	0...255	See description below	Veja a descrição a seguir	14
26	LA	0...15	Input level adjustment	N vel de ajuste de udio	07
27	ALS	0...31	Alignment for spectral	Aj. de separa o de est reo	15
28	ALW	0...31	Alignment for wideband	Aj. de separa o de est reo	15
29	STT	0...03	Stereo noise threshold	Aj. de sensibilidade de est reo	08
30	SPR	0...00	SAP noise threshold	Aj. de sensibilidade SAP	08
31	BRI	0...99	Default Brightness	Brilho	58
32	CON	0...99	Default Contrast	Contraste	99
33	COR	0...99	Default Color	Cor	55
34	NIT	0...99	Default Sharpness	Nitidez	45
35	MAT	0...99	Default Hue	Matiz	50
36	VOL	0...99	Default Volume	Volume	00
37	AAL	0..00	Not used	N o Usado	-
38	CHN	0...00	Change channel in factory mode	Seleção de canais no modo fábrica	03
39	InF	0...00	Initialize factory parameters	Inicialização da EEPROM	00
40	Inc	0...00	Initialize channels parameters	Inicialização dos canais	00
41	Scr	0...00	Vertical out on/off	Deflexão Vertical L: gado/Desi: gado	00

After replacing EEPROM (IC702), set to the reference adjustment value, and then perform.

**Nota:**

\* Estes ajuste não devem ser alterados em hipótese nenhuma, caso isto ocorra a EEPROM deverá ser inicializado novamente (Selecione e execute o registrador 39).

Initial conditions about some features after reset are: DSC off, Portuguese to language, blue background off and Closed Caption off.

**Binary description about some registers:**

<b>Register 20 (BIT)</b>		
BIT		Description
Bit0	Not-used	Not used
Bit1	HBL	Normal Blanking
Bit2	IFS	IF Sensitive
Bit3	COR	Noise coring
Bit4	EVG	Vertical guard
Bit5	STM	Search tuning mode
Bit6	LBM	Blanking mode
Bit7	VID	Video ident mode

<b>Register 21 (OP1)</b>		
BIT		Description
Bit0	-	Force vertical in 60Hz (Automatic Programming)
Bit1	-	Stereo menu (AV mode)
Bit2	FOA	Phase timing const. #1
Bit3	FOB	Phase timing const. #2
Bit4	BCO	ON/OFF behavior
Bit5	-	Aiwa indication
Bit6	POC control.	POC control ⇒ POC off=1
Bit7	Not used	Not used

<b>Register 22 (OP2)</b>		
BIT		Description
Bit0	-	Field indicator is inverted or no
Bit1	-	Field selection to 50 Hz
Bit2	-	Field selection to 60 Hz
Bit3	VPD	VPD Vertical Pulse Delay
Bit4	PW0	PW0 vertical sync Pulse Width 0
Bit5	PW1	PW1 vertical sync Pulse Width 1
Bit6	VR0	VR0 Voltage Reference 0
Bit7	VR1	VR1 Voltage Reference 1

<b>Register23 (OP3)</b>		
BIT		Description
Bit0	-	C.C initial pos. set 0 – 60Hz
Bit1	-	C.C initial pos. set 1 – 60Hz
Bit2	-	C.C initial pos. set 2 – 60Hz
Bit3	-	C.C initial pos. set 3 – 60Hz
Bit4	-	C.C initial pos. set 0 – 50Hz
Bit5	-	C.C initial pos. set 1 – 50Hz
Bit6	-	C.C initial pos. set 2 – 50Hz
Bit7	-	C.C initial pos. set 3 – 50Hz

<b>VPD</b>	
0	VSYNC input is delayed by 8 to 24 μs before field detection
1	VSYNC input is not delayed

VR1	VR0	NominalBias
0	0	3.12 V
0	1	2.98 V
1	0	2.84 V
1	1	2.70 V

PW1	PW0	Pulse Width
0	0	8 μs
0	1	10 μs
1	0	12 μs
1	1	14 μs

**Note:**

The **register 22 (OP2)** is used to make adjustment about some Closed Caption parameters in the microcontroller.

The **register 23 (OP3)** is used to make vertical positioning of Closed Caption in the microcontroller.

### Register24 (OP4):

This register has CC line number - (Low nibble to 60Hz and high nibble to 50Hz)

The Bits 0,1,2,3 are used to select the line where Closed Caption information will be extracted when in 60Hz, and the bits 4, 5, 6, 7 are used to select the line where Closed Caption information will be extracted when in 50Hz

**Note:**

*This information is used by microcontroller.*

Register25 (OP5)		
BIT		Description
Bit0	-	Horizontal Delay 0
Bit1	-	Horizontal Delay 1
Bit2	-	Horizontal Delay 2
Bit3	-	Horizontal Delay 3
Bit4	-	Not used
Bit5	-	Not used
Bit6	-	Not used
Bit7	-	Not used

Register 16 (CTRL2)		
BIT		Description
Bit0	BB	Blue back off
Bit1	CS0	2 <sup>nd</sup> CVBS output
Bit2	CS1	2 <sup>nd</sup> CVBS output
Bit3	BKS	Black Stretch mode
Bit4	BLS	Blue Stretch mode
Bit5	CB	Chroma band pass freq.
Bit6	VSD	Vertical scan active
Bit7	OSC	Switch off in vertical overscan

**Note:**

*The register25 (OP5) is used to make horizontal positioning of Closed Caption in the microcontroller.. Forced color on.*

Register 17 (CTRL3)		
BIT		Description
Bit0	CL0	Cathode driver level
Bit1	CL1	Cathode driver level
Bit2	CL2	Cathode driver level
Bit3	AST	Automatic mode
Bit4	CMB	Ext. comb filter on/off
Bit5	ACL	Automatic color limit
Bit6	BPS	By pass delay line
Bit7	HOB	Output blanking

Register 18 (CTRL4)		
BIT		Description
Bit0	EBS	Extend Blue Stretch
Bit1	FF1	Fast filter IF PLL
Bit2	DSA	Dynamic skin control angle
Bit3	DS	Dynamic skin control
Bit4	ID0	Y delay adjustment
Bit5	ID1	Y delay adjustment
Bit6	ID2	Y delay adjustment
Bit7	ID3	Y delay adjustment

Register 19 (CTRL5)		
BIT		Description
Bit0	FCO	

## 3. Geometry of the Image

a) Using the PM - 5515 generator, apply the crosshatch pattern with circle.

b) Adjust the following items:

*Vertical slope (VSI);*

*Height (VAm);*

*Vertical position (VSh);*

*Center Linearity (VSc);*

*Horizontal position (HSh)*

Adjust the above items, until obtaining the best circle symmetry and positioning, as well as the minor image geometric distortion.



#### 4. **Whitebalance**

**Note:**

*The cut point doesn't need adjustment, because it's automatically made by the IC501.*

*The white adjustment is already pre-adjusted and incised in the IC501 and, thus, its adjustment is not necessary.*

Otherwise, if it is necessary to change the temperature of the white pattern, proceed in the following way:

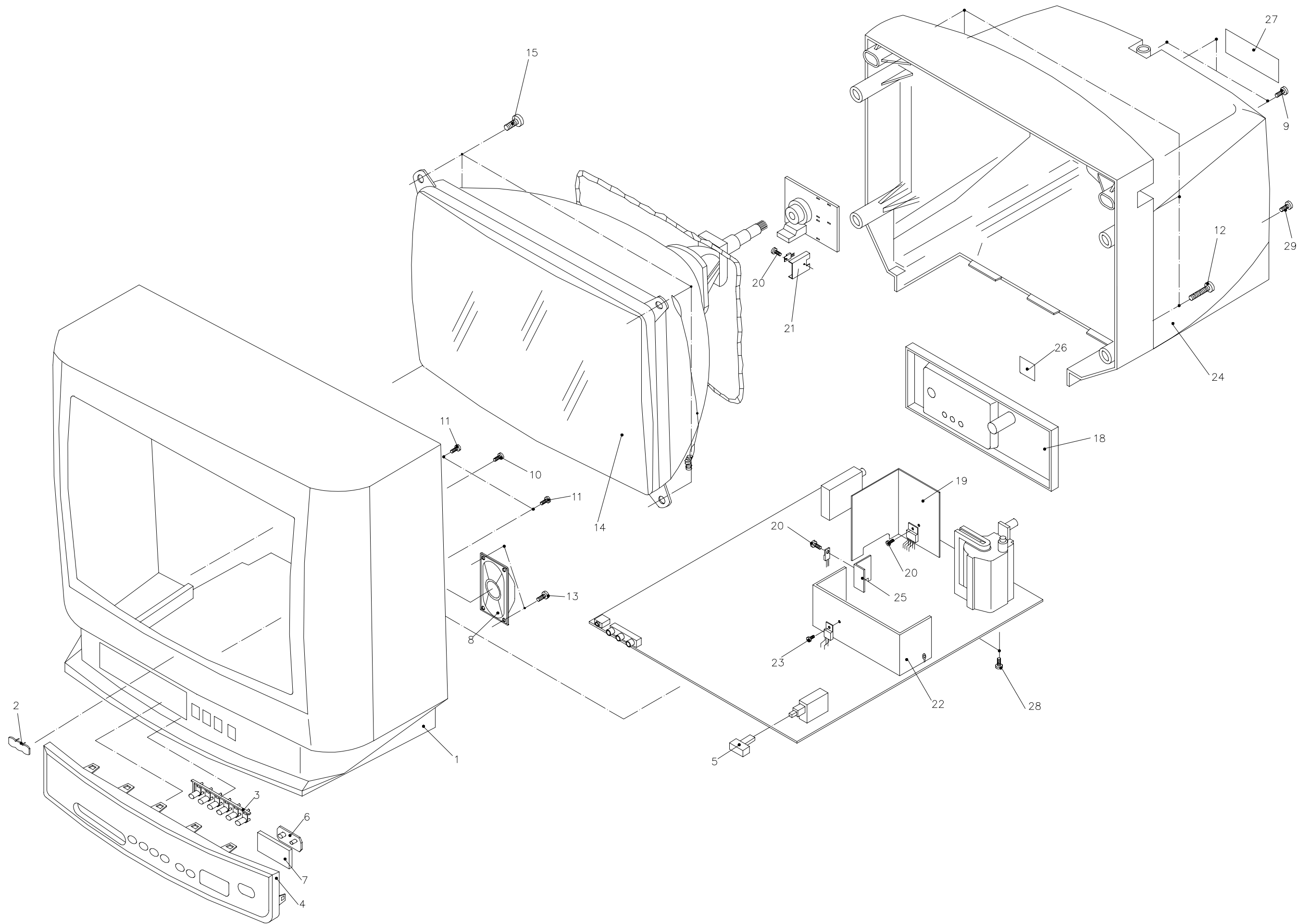
- a) Enter in the service mode.
- b) Select via **CH**▲ or **CH**▼ the WPR (09), WPG (10) and WPB (11) functions.
- c) Increase or decrease the function via **VOL**► or via ◀**VOL** respectively.

#### 5. **Screen adjustment**

- a) Select the register 41 (Scr).
- b) Press **VOL**► to access and adjust the screen control localized on the FBT, until the horizontal line be slightly visible on the screen center.

#### 6. **AGC adjustment**

- a) Select the register 12 (AGC)  
Apply a PHILIPS pattern with 60dB<sub>μ</sub>V of intensity and adjust the delay until obtain 3.5V in AGC pin of tuner.



# MECHANICAL MAIN PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	C1-577-221-801		GABINETE FRONTAL
2	C1-677-221-807		EMBLEMA AIWA
3	C1-677-221-801		TECLADO
4	C1-677-221-802		PAINEL FRONTAL
5	C1-677-221-803		TECLA POWER
6	C1-777-221-908		SUPORTE DO LED
7	C1-677-221-805		VISOR LED
8	C1-510-454-010		ALTO FALANTE 120x50mm 5W 8R
9	C1-040-570-002		PARAFUSO 3X12
10	C1-040-570-003		PARAFUSO 3X12
11	C1-040-570-004		PARAFUSO 3X10
12	C1-040-570-005		PARAFUSO 4X16
13	C1-040-570-006		PARAFUSO 4X12
14	C1-408-011-800		CJT.CINESCOPIO A34EDJ01X081
15	C1-040-570-007		PARAFUSO 5X25
18	C1-677-221-804		PAINEL TRASEIRO
19	C1-657-217-701		DISSIPADOR P/SAIDA VERTICAL
20	C1-600-007-106		PAR.AA.PAN.PH.BEMLI3,0X6 ZNA
21	C1-657-215-410		DISSIPADOR R-G-B
22	C1-657-214-303		CJT.DISSIPADOR P/FONTE
23	C1-600-005-107		PAR.AA.PAN.PH.PP1 3,0X8 ZNA
24	C1-577-221-802		GABINETE TRASEIRO
25	C1-657-200-402		DISSIPADOR B
26	C1-677-221-808		PLACA ORNAMENTAL
27	C1-067-221-801		ETIQ.IDENTIFICACAO
28	C1-600-050-120		PAR.AA.VRJ.PH.B3X10 ZNA
29	C1-600-015-112		PAR.AA.P.PH.PP1 4,0X12 ZNA RES

<OTHER PARTS>

C1-057-221-899	CJT.CALCO PROT.SUP/INF
C1-057-221-801	CAIXA DA EMBALAGEM
C1-067-221-802	MANUAL DE INSTRUCOES
C1-644-505-100	CABO FORCA 2x0,75x2m C/CONNECT
C1-889-401-800	FITA A.ADES.S/LOG L=38X100MT
C1-062-216-022	FOLHETO OFICINAS AUTORIZADAS
C1-067-218-504	CERTIFICADO DE GARANTIA-AZUL
C1-068-127-201	ETIQ.ADES.N.SERIE C/5
C1-067-221-803	ETIQ.PROMOCIONAL
C1-886-001-400	PILHA ALCALINA (PEQ) 1.5V AA
C1-769-900-064	SACO PLASTICO 90X280X0,04B.D.
C1-769-900-003	SACO PLASTICO 25X40X0,05MM A.D
C1-311-604-200	BOBINA DESMAGNETIZADORA
C1-738-002-400	MALHA DE ATERRAMENTO
C1-621-203-299	ILHOS LATAO EST. 2X3,5X3,2
C1-727-218-501	ILHOS 1,6mm X 23mm

## COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue				

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