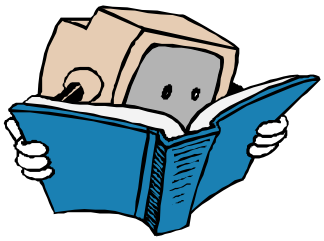
HITACHI

SM0152

HTDK160



SERVICE MANUAL
MANUEL D'ENTRETIEN
WARTUNGSHANDBUCH

CAUTION:
Before servicing this chassis, it is important that the service technician read the "Safety Precautions" and "Product Safety Notices" in this service manual.

ATTENTION:
Avant d'effectuer l'entretien du châassis, le technicien doit lire les «Précautions de sécurité» et les «Notices de sécurité du produit» présentés dans le présent manuel.

VORSICHT:
Vor Öffnen des Gehäuses hat der Service-Ingenieur die „Sicherheitshinweise" und „Hinweise zur Produktsicherheit" in diesem Wartungshandbuch zu lesen.

Data contained within this Service manual is subject to alteration for improvement.

Les données fournies dans le présent manuel d'entretien peuvent faire l'objet de modifications en vue de perfectionner le produit.

Die in diesem Wartungshandbuch enthaltenen Spezifikationen können sich zwecks Verbesserungen ändern.

October 2002

ENGLISH

SAFETY PRECAUTIONS

WARNING: The following precautions must be observed.

ALL PRODUCTS

Before any service is performed on the chassis an isolation transformer should be inserted between the power line and the product.

1. When replacing the chassis in the cabinet, ensure all the protective devices are put back in place.
2. When service is required, observe the original lead dressing. Extra precaution should be taken to ensure correct lead dressing in any high voltage circuitry area.
3. Many electrical and mechanical parts in HITACHI products have special safety related characteristics. These characteristics are often not evident from visual inspection, nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by marking with a ⚠ on the schematics and the replacement parts list.
   The use of a substitute replacement component that does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list, may create electrical shock, fire, X-radiation, or other hazards.
4. Always replace original spacers and maintain lead lengths. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Insulation resistance should not be less than 2M ohms at 500V DC between the main poles and any accessible metal parts.
6. No flashover or breakdown should occur during the dielectric strength test, applying 3kV AC or 4.25kV DC for two seconds between the main poles and accessible metal parts.
7. Before returning a serviced product to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock. The service technician must make sure that no protective device built into the instrument by the manufacturer has become defective, or inadvertently damaged during servicing.

CE MARK

1. HITACHI products may contain the CE mark on the rating plate indicating that the product contains parts that have been specifically approved to provide electromagnetic compatibility to designated levels.
2. When replacing any part in this product, please use only the correct part itemised in the parts list to ensure this standard is maintained, and take care to replace lead dressing to its original state, as this can have a bearing on the electromagnetic radiation/immunity.

PICTURE TUBE

1. The line output stage can develop voltages in excess of 25kV; if the E.H.T. cap is required to be removed, discharge the anode to chassis via a high value resistor, prior to its removal from the picture tube.
2. High voltage should always be kept at the rated value of the chassis and no higher. Operating at higher voltages may cause a failure of the picture tube or high voltage supply, and also, under certain circumstances could produce X-radiation levels moderately in excess of design levels. The high voltage must not, under any circumstances, exceed 29kV on the chassis (except for projection Televisions).
3. The primary source of X-radiation in the product is the picture tube. The picture tube utilised for the above mentioned function in this chassis is specially constructed to limit X-radiation. For continued X-radiation protection, replace tube with the same type as the original HITACHI approved type
4. Keep the picture tube away from the body while handling. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled

LASERS

If the product contains a laser avoid direct exposure to the beam when the cover is open or when interlocks are defeated or have failed.

FRANÇAIS
CONSIGNES DE SECURITE

AVERTISSEMENT: vous devez respecter les précautions suivantes

POUR TOUS LES PRODUITS

Avant d'effectuer une intervention d'entretien sur le châssis, vous devez insérer un transformateur d'isolement entre la ligne d'alimentation électrique et le produit.

1. Lors de la remontage du châssis dans le coffret, vérifiez que tous les dispositifs de protection sont remis en place.
2. Lorsqu'une intervention d'entretien s'avère nécessaire, respectez l'agencement d'origine des conducteurs. Vous devez prendre des précautions supplémentaires pour garantir un agencement correct des conducteurs dans toutes les zones où des circuits haute tension sont présents.
3. De nombreux composants électriques et mécaniques des appareils HITACHI ont des caractéristiques spéciales de sécurité. Bien souvent, ces caractéristiques ne sont pas évidentes lors d'un examen visuel et la protection qu'ils offrent n'est pas forcément garantie si vous utilisez des composants de rechange conçus, par exemple, pour une tension plus élevée, une puissance plus forte. Les pièces de rechange qui offrent des caractéristiques spéciales de sécurité sont identifiées par un repérage comportant le symbole ⚠ sur les schémas et sur la nomenclature des pièces de rechange. L'emploi d'un composant de rechange qui ne respecte pas les mêmes caractéristiques de sécurité que la pièce de rechange que recommande HITACHI et qui figure dans la nomenclature risque de provoquer un choc électrique, un incendie, des rayons X ou d'autres dangers.
4. Remettez toujours en place les entretoises d'origine et respectez la longueur des conduites. En outre, à la suite d'un court-circuit, remplacez les composants présentant des signes de surchauffe.
5. La résistance d'isolement doit être supérieure ou égale à 2 méga ohms à 500 V c.c. entre les pôles principaux et des composants métalliques accessibles, quels qu'ils soient.
6. Aucun claquage et aucune rupture ne doit se produire pendant l'essai de résistance diélectrique à la suite de l'application d'une tension de 3 kV c.a. ou de 4,35 kV c.c. pendant deux secondes entre les pôles principaux et des composants métalliques accessibles.
7. Avant de remettre au client un produit qui a fait l'objet d'un entretien, le technicien qui s'est chargé de cette intervention doit tester à fond cet ensemble pour s'assurer qu'il ne présente aucun danger opérationnel et aucun risque de choc électrique. Ce technicien doit s'assurer qu'aucun des dispositifs de protection intégrés à cet instrument par le fabricant n'est défectueux ou n'a été endommagé de façon accidentelle lors de l'entretien.

LABEL CE

1. Les produits HITACHI peuvent avoir reçu le label CE qui figure sur la plaque signalétique pour indiquer que cet ensemble contient des composants qui ont fait l'objet d'une homologation spécifique de respect des normes de compatibilité électromagnétique en fonction de niveaux bien spécifiés.
2. Lors du remplacement d'un des composants de ce produit, utilisez uniquement le composant correct identifié dans la nomenclature afin de maintenir le respect de cette norme ; en outre, vous devez également ramener l'agencement des conducteurs à son état d'origine car cela peut avoir une influence au niveau des rayonnements électromagnétiques et sur la protection contre ces rayons.

PICTURE TUBE

1. L'étage de sortie des lignes peut développer des tensions de plus de 25 kV ; s'il faut retirer le chapeau de protection contre les tensions extrêmement élevées, il convient de décharger l'anode contre le châssis par le biais d'une résistance de forte valeur avant de déposer ce chapeau du tube image.
2. La haute tension doit toujours se maintenir à la valeur nominale du châssis et ne pas dépasser cette dernière. Un fonctionnement à des températures élevées peut provoquer une défaillance du tube image ou l'entrée d'une tension élevée. Dans certains cas, cela peut même provoquer des rayons X d'un niveau légèrement supérieur aux valeurs de calcul. Cette haute tension ne doit en aucun cas dépasser 29 kV sur le châssis (à l'exception des téléviseurs de projection).
3. La principale source de rayons X de cet appareil est le tube image. Le tube image employé pour assurer la fonction susmentionnée dans ce châssis est spécialement construit pour limiter des rayons X. Pour maintenir cette protection contre les rayons X, il faut remplacer le tube d'origine d'un type agréé par HITACHI par un autre tube de même type.
4. Lors des manipulations, ne tenez jamais le tube image contre le corps. Pendant toutes les opérations d'installation, de dépose et de manipulation de ce tube image, quelle que soit la méthode employée, vous devez toujours porter des lunettes de sécurité anti-éclatements. Les personnes qui ne portent pas ce type de lunettes doivent se tenir à l'écart du tube image lors de la manipulation de ce dernier.

RAYONS LASER

Si ce produit contient un rayon laser, évitez toute exposition directe à ce faisceau lors de l'ouverture du couvercle ou lors de l'élimination des verrouillages de sécurité ou après défaillance de ces verrouillages.

DEUTSCH

SICHERHEITSVORKEHRUNGEN

WARNUNG: Die folgenden Vorkehrungen müssen eingehalten werden.

ALLE PRODUKTE

Bevor die Grundplatte gewartet wird, sollte ein Trenntrafo zwischen die Netzleitung und das Produkt eingebracht werden.

1. Wenn die Grundplatte in das Gehäuse zurückgestellt wird, stellen Sie sicher, dass alle Schutzvorrichtungen wieder an ihrem Ort sind.
2. Wenn Wartung erforderlich ist, halten Sie die originale Verdrahtungsart ein. Besondere Vorsicht ist nötig, um die korrekte Verdrahtungsart in jedem Hochspannungsstromkreis zu gewährleisten.
3. Viele elektrische und mechanische Teile von HITACHI Produkten haben besondere sicherheitsbezogene Eigenschaften. Diese Eigenschaften fallen oft nicht ins Auge, aber der durch sie gewährte Schutz kann nicht unbedingt erreicht werden, wenn man Ersatzteile benutzt, die für höhere Spannung, Leistung usw. ausgelegt sind. Ersatzteile, die diese besonderen Sicherheitsmerkmale haben, sind in den Prinzipskizzen und Ersatzteillisten an einem ⚠ zu erkennen.
   Der Gebrauch von Ersatzteilen, die nicht dieselben Sicherheitsmerkmale haben wie die empfohlenen HITACHI Ersatzteile, wie sie in der Ersatzteilliste aufgeführt sind, kann zu elektrischem Schlag, Feuer, Röntgenstrahlung und anderen Gefahren führen.
4. Immer die originalen Abstandsstücke ersetzen und die Leitungslängen beibehalten. Wo ein Kurzschluss passiert ist, die Teile ersetzen, bei denen Überhitzung nachzuweisen ist.
5. Der Isolierwert sollte bei 500 V Gleichstrom zwischen den Hauptpolen und allen zugänglichen Metallteilen nicht unter 2M Ohm liegen.
6. Bei der Prüfung auf Durchschlagsfestigkeit sollte kein Überschlag oder Durchschlag vorkommen, wenn zwei Sekunden lang 3 kV Wechselstrom oder 4,25 kV Gleichstrom zwischen den Hauptpolen und allen zugänglichen Metallteilen angelegt wird.
7. Bevor das gewartete Produkt dem Kunden zurückgegeben wird, muss der Wartungstechniker das Gerät gründlich prüfen, um sicherzustellen, dass es betriebssicher ist ohne das Risiko eines elektrischen Schlages. Der Wartungstechniker muss sicherstellen, dass keine vom Hersteller im Gerät eingebaute Schutzvorkehrung schadhaft geworden ist oder bei der Wartung unabsichtlich beschädigt wurde.

CE KENNZEICHEN

1. HITACHI Produkte enthalten eventuell das CE Kennzeichen auf dem Leistungsschild, welches angibt, dass das Produkt Teile enthält, die eigens zugelassen sind, um bis zu einem spezifizierten Niveau elektromagnetische Störfreiheit zu bewirken.
2. Wenn Sie irgendein Teil in diesem Produkt ersetzen, benutzen Sie bitte nur das korrekte Teil, das in der Ersatzteilliste aufgeführt ist, um sicherzustellen, dass dieser Standard eingehalten wird, und geben Sie acht, die Verdrahtungsart in ihren ursprünglichen Zustand zurück zu versetzen, weil das einen Einfluss auf die elektromagnetische Abstrahlung/Störsicherheit haben kann.

BILDRÖHRE

1. Die Leitungsausgangsstufe kann Spannungen von mehr als 25 kV entwickeln; wenn die Höchstspannungskappe entfernt werden muss, entladen Sie die Anode zum Gehäuse über einen hochohmigen Widerstand, bevor Sie sie aus der Bildröhre entfernen.
2. Hochspannung sollte immer auf den festgelegten Wert des Gehäuses beschränkt bleiben und nicht mehr. Betrieb bei höherer Spannung kann zum Versagen der Bildröhre oder zu hoher Spannungszufuhr führen und kann unter Umständen auch Röntgenstrahlung hervorbringen, die leicht über dem Konstruktionsniveau liegt. Die Hochspannung darf auf keinen Fall 29 kV am Gehäuse überschreiten (außer bei Projektionsfernsehern).
3. Die Hauptquelle der Röntgenstrahlung im Produkt ist die Bildröhre. Die Bildröhre, die für die oben erwähnte Funktion in diesem Gehäuse benutzt wird, ist eine Spezialkonstruktion zur Begrenzung der Röntgenstrahlung. Um den Schutz vor der Röntgenstrahlung zu behalten, ersetzen Sie bitte die Röhre durch denselben Typ wie den ursprünglichen von HITACHI zugelassenen.
8. Halten Sie die Bildröhre bei der Handhabung vom Körper weg. Sie dürfen die Bildröhre nur dann installieren, entfernen oder handhaben, wenn Sie eine nicht splitternde Schutzbrille tragen. Personen ohne derartigen Schutz sollten ferngehalten werden, solange Bildröhren gehandhabt werden.

LASER

Wenn das Produkt einen Laser enthält, setzen Sie sich keinesfalls direkt dem Strahl aus, wenn die Abdeckung geöffnet ist oder wenn die Verriegelung versagt.

HITACHI

Service Manual

HTD-K160

DOLBY DIGITAL | DVD VIDEO | VIDEO CD | COMPACT disc DIGITAL AUDIO | COMPACT disc DIGITAL VIDEO

Table Of Content :

HITACHI

Specifications

DVD Player

Pickup	Semiconductor laser, Wavelength 650 mm
Signal system	NTSC / PAL
Video signal horizontal resolution	480 lines (DVD)
Video signal-to-noise ratio	50 dB (DVD)
Audio frequency response (at 2 CH stereo mode)	DVD (PCM): 180 Hz ~ 20 kHz (+/- 1.0 dB)
	CD: 180 Hz ~ 20 kHz (+/- 1.0 dB)
Audio signal-to-noise ratio	60 dB
Total harmonic distortion	0.05%
Dynamic range	DVD : 80 dB ; CD: 80 dB

FM Tuner

System	PLL quartz-locked digital synthesizer system
Tuning range	87.50 ~ 108.00 MHz (50 kHz step)
Antenna	FM pigtail antenna
Antenna terminals	75 ohms, unbalanced
Intermediate frequency	10.7 MHz

AM Tuner

System	PLL quartz-locked digital synthesizer system
Tuning range	522~1620 kHz (9 kHz interval)
Antenna	AM Loop antenna

Video outputs

CVBS Video	1 Vp-p 75 ohms
S-video	Y: 1 Vp-p 75 ohms
	C: PAL 0.3 Vp-p 75 ohms / NTSC 0.286 Vp-p 75 ohms
Scart out	1 Vp-p 75 ohms
Optical & Coaxial out	1 Vp-p 75 ohms

Audio line outputs

Audio .L/R	1 Vrms, 1k ohms
Subwoofer	1.2Vrms maximum (adjustable), 1k ohms

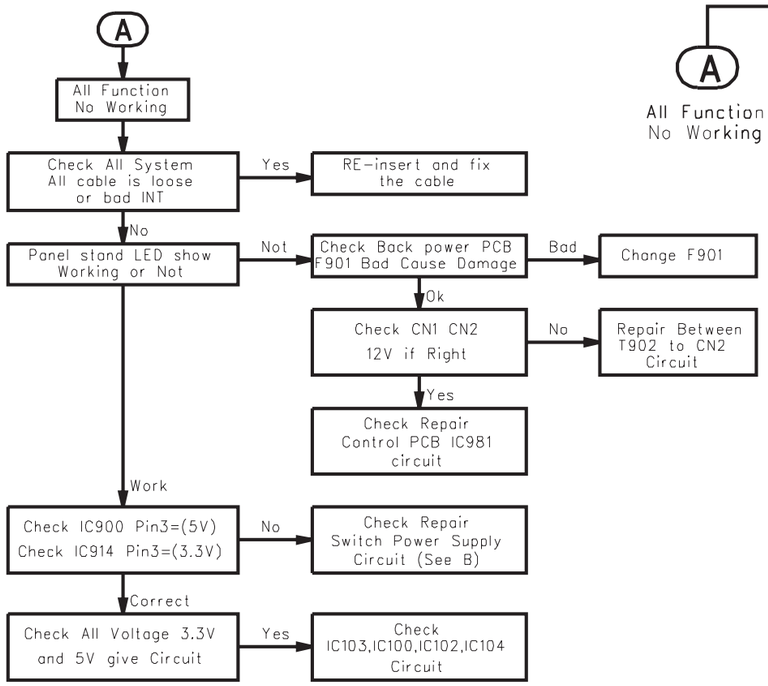
Audio power outputs

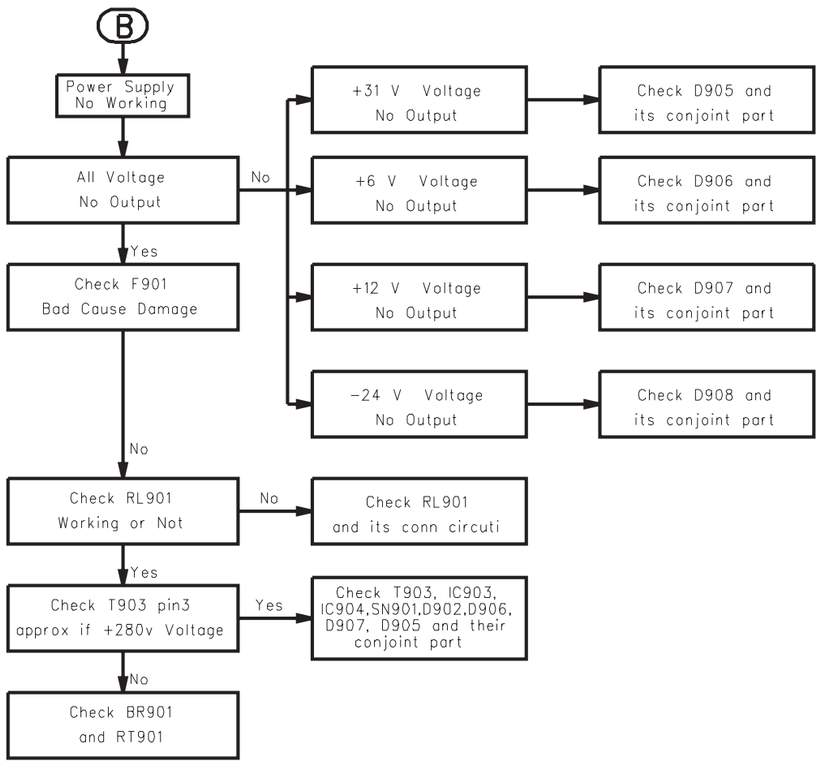
Stereo mode	50 W + 50 W (8 ohms at 1 kHz, THD 10%)
Surround mode	Front: 50 W + 50 W (8 ohms at 1 kHz, THD 10%)
	Center: 50 W (8 ohms at 1 kHz, THD 10%)
	Rear: 50 W + 50 W (8 ohms at 1 kHz, THD 10%)
Phones	Headphones jack(stereo 3.54mm)

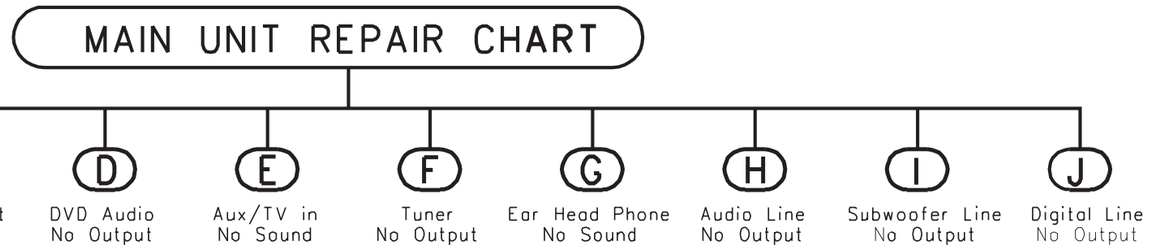
General (main unit)

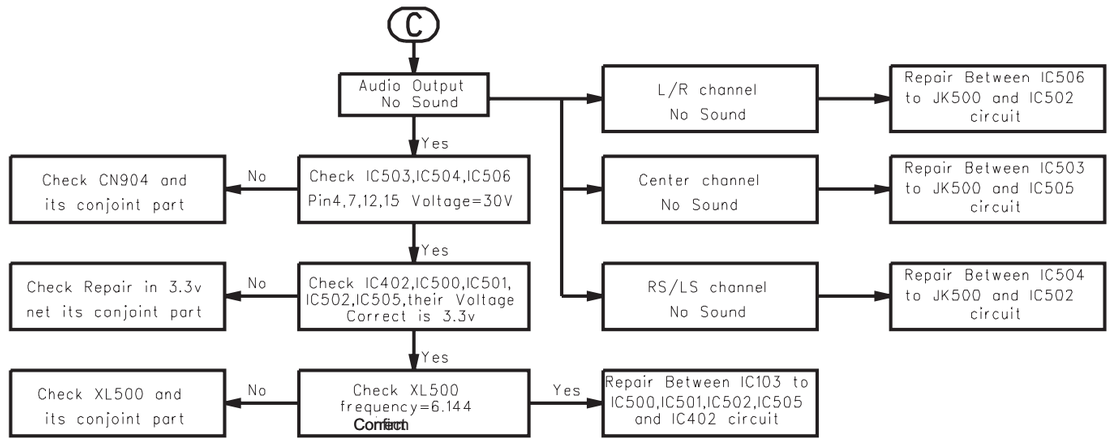
Power requirements	AC 230 V, 50 Hz
Power consumption	250 W
Dimensions	W 435 x H 59 x D 345mm
Weight	4.8 kg

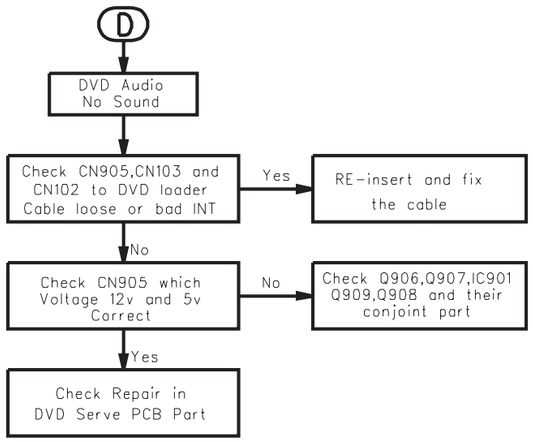
REPAIR INSTRUCTIONS

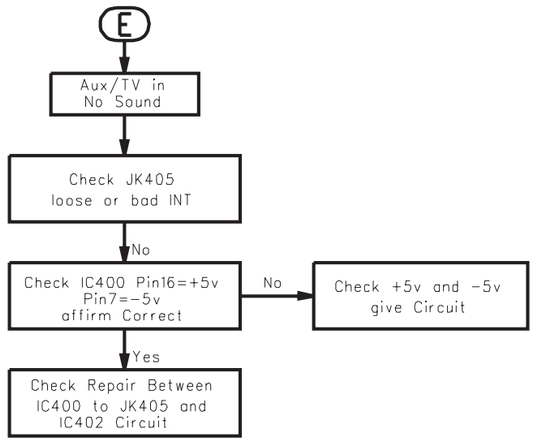






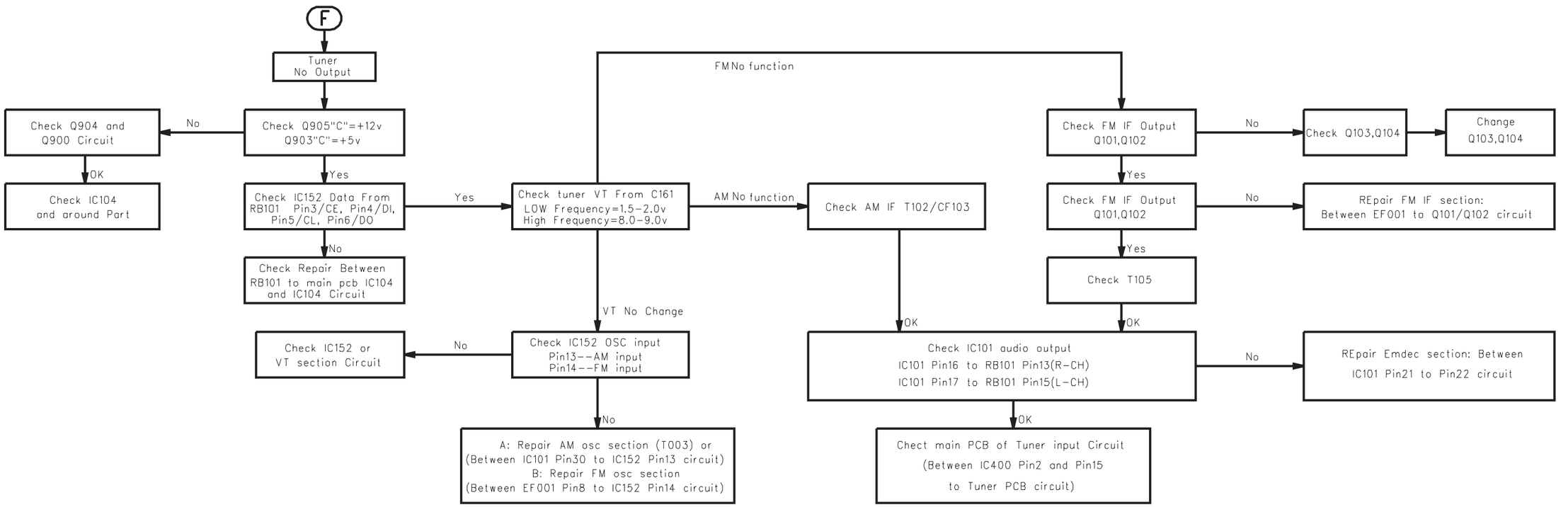


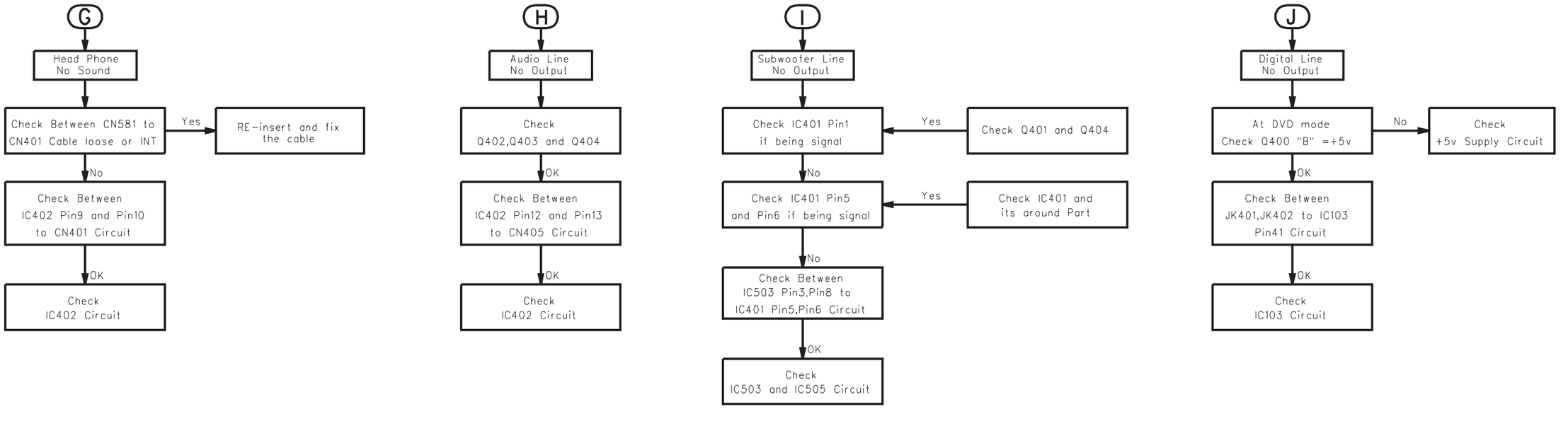




3

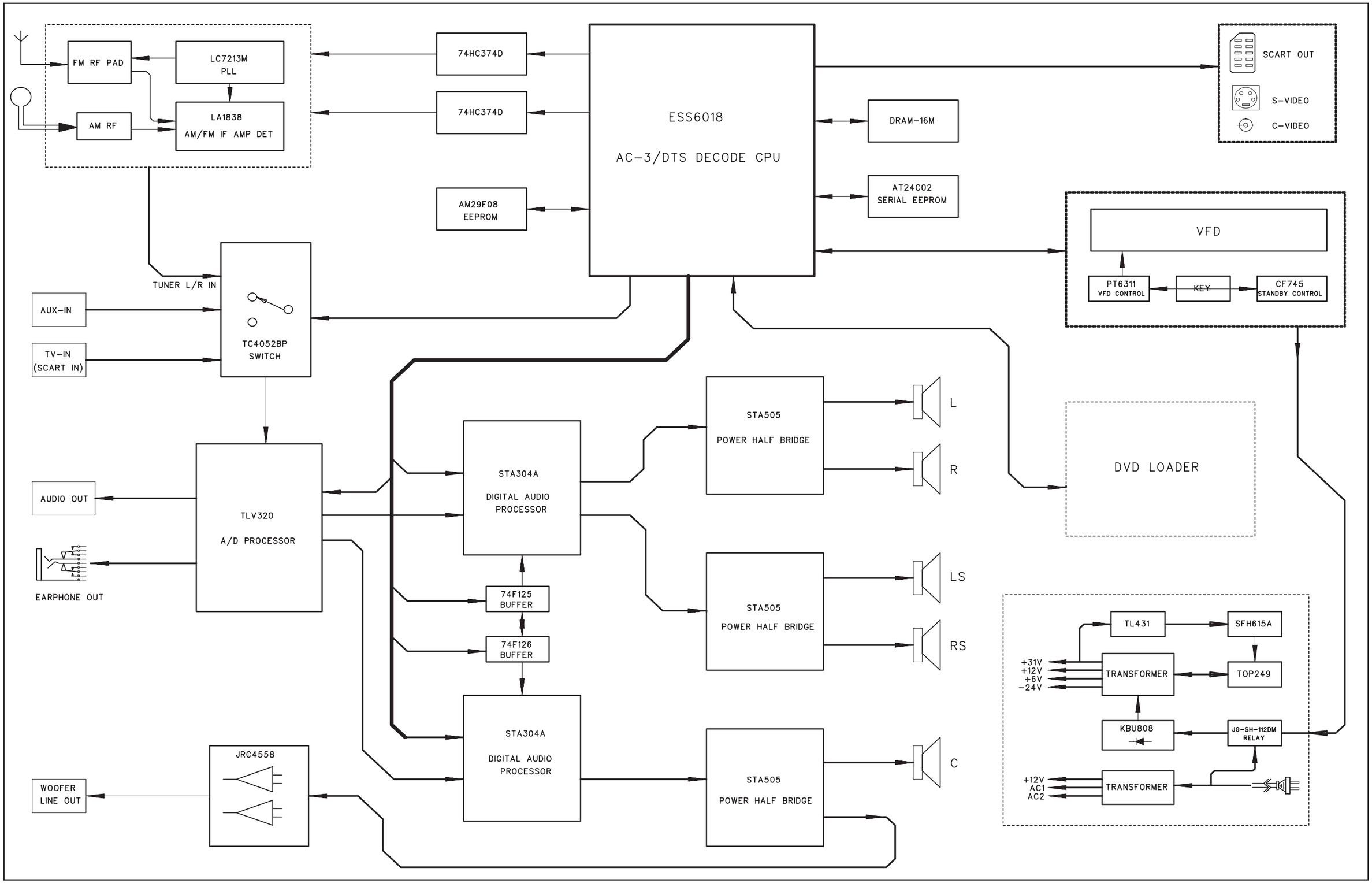
REPAIR INSTRUCTIONS





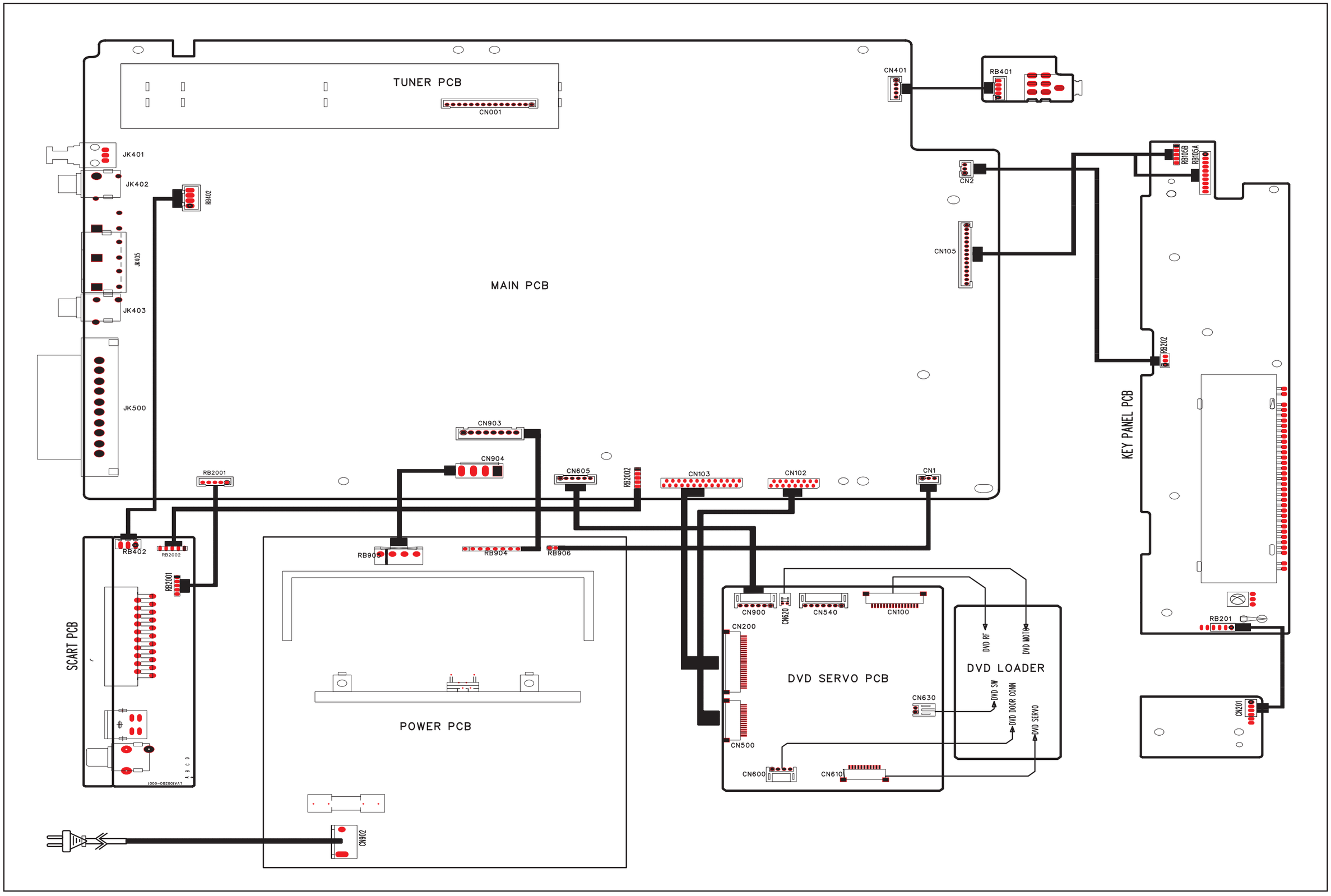
4

Block diagram



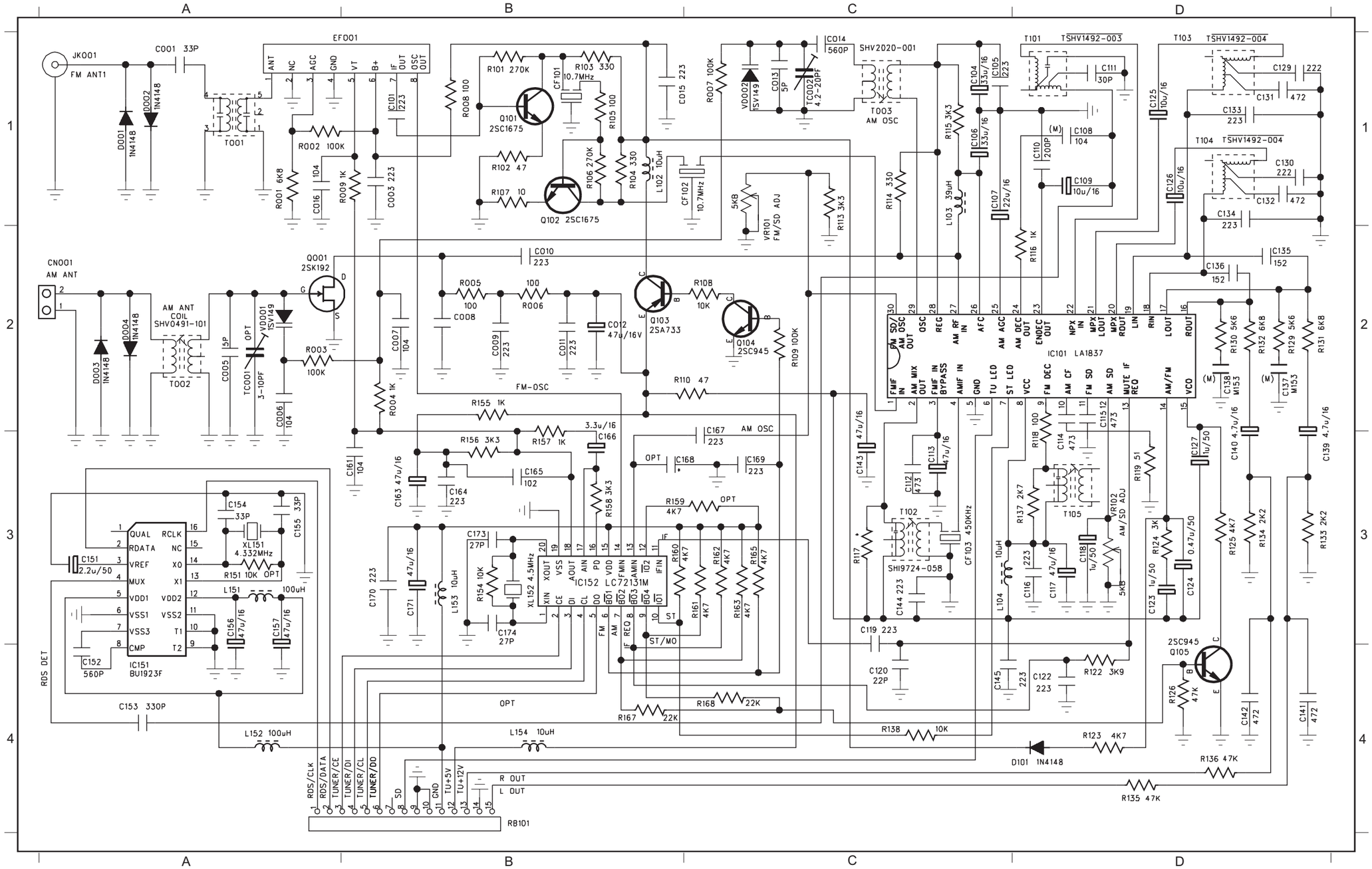
5

Wiring diagram



6

CIRCUIT DIAGRAM TUNER BOARD

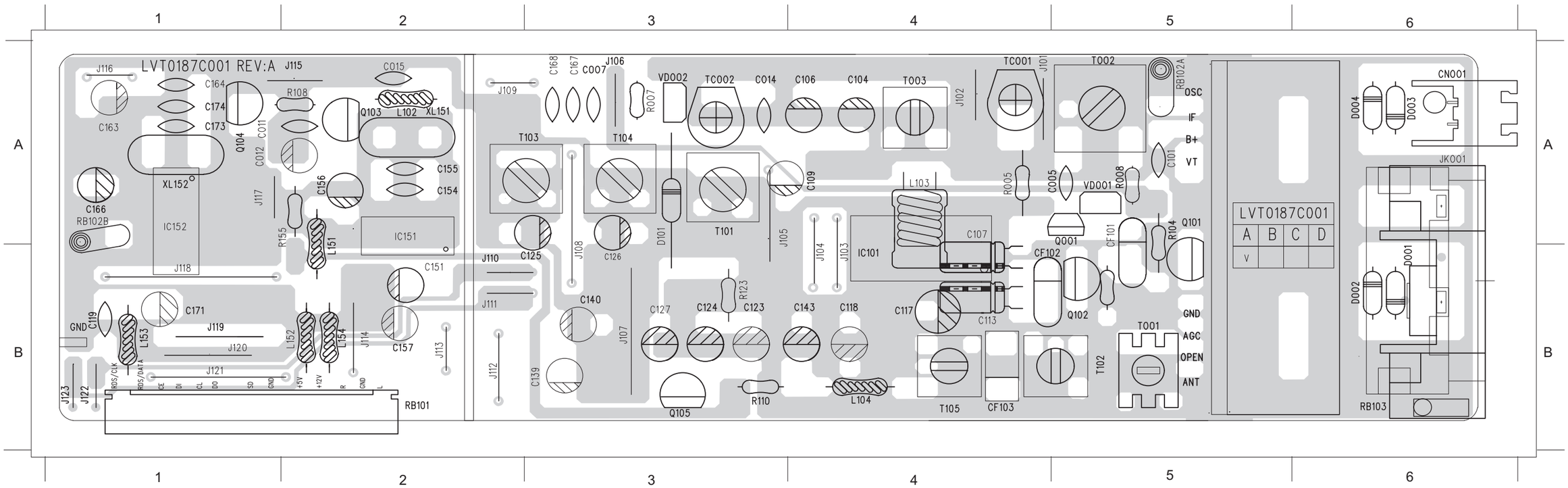


C001	A1	C161	B3	R122	D4
C003	B1	C163	B3	R123	D4
C005	A2	C164	B3	R124	D3
C006	A2	C165	B3	R125	D3
C007	B2	C166	B3	R126	D4
C008	B2	C167	C3	R129	D2
C009	B2	C169	C3	R130	D2
C010	B2	C170	B3	R131	D2
C011	B2	C171	B3	R133	D3
C012	B2	C173	B3	R134	D3
C013	C1	C174	B3	R135	D4
C014	C1	CF101	B1	R136	D4
C015	B1	CF102	C1	R137	D3
C016	A1	CF103	B3	R138	C4
C101	B1	CN001	A2	R151	A3
C104	C1	D101	D4	R154	B3
C105	C1	D001	A1	R155	B2
C106	C1	D002	A1	R156	B3
C107	C1	D003	A2	R157	B3
C108	D1	D004	A2	R158	B3
C109	D1	EF001	B1	R159	B3
C110	D1	IC101	D2	R160	B3
C111	D1	IC151	A4	R161	C3
C112	C3	IC152	B3	R162	C3
C113	C3	Jk001	A1	R163	C3
C114	D3	L102	B1	R165	C3
C115	D2	L103	C1	R167	B4
C116	D3	L104	C3	R168	C4
C117	D3	L151	A3	RB101	B4
C118	D3	L152	A4	T101	D1
C119	C3	L153	B3	T102	C3
C120	C4	L154	B4	T103	D1
C122	D4	Q101	B1	T104	D1
C123	D3	Q102	B1	T105	D3
C124	D3	Q103	B2	TC001	A2
C125	D1	Q104	C2	TC002	C1
C126	D1	Q105	D4	T001	A1
C127	D3	Q001	A2	T002	A2
C129	D1	R001	A1	T003	C1
C130	D1	R002	A1	VD002	A5
C131	D1	R003	A2	VR102	D3
C132	D1	R004	B2	XL151	A3
C133	D1	R005	B2	XL152	B3
C134	D1	R006	B2		
C135	D2	R007	C1		
C136	D2	R008	B1		
C137	D2	R101	B1		
C138	D2	R102	B1		
C139	D3	R103	B1		
C140	D3	R104	B1		
C141	D4	R105	B1		
C142	D4	R107	B1		
C143	C3	R106	B1		
C144	C3	R108	C2		
C145	C4	R109	C2		
C151		R110	C2		
A3		R113	C1		
C152		R114	C1		
A4		R115	C1		
C153		R116	D2		
A4		R117	C3		
C154		R118	D3		
		R119	D3		

7

TUNER TOP PCB LAYOUT VIEW

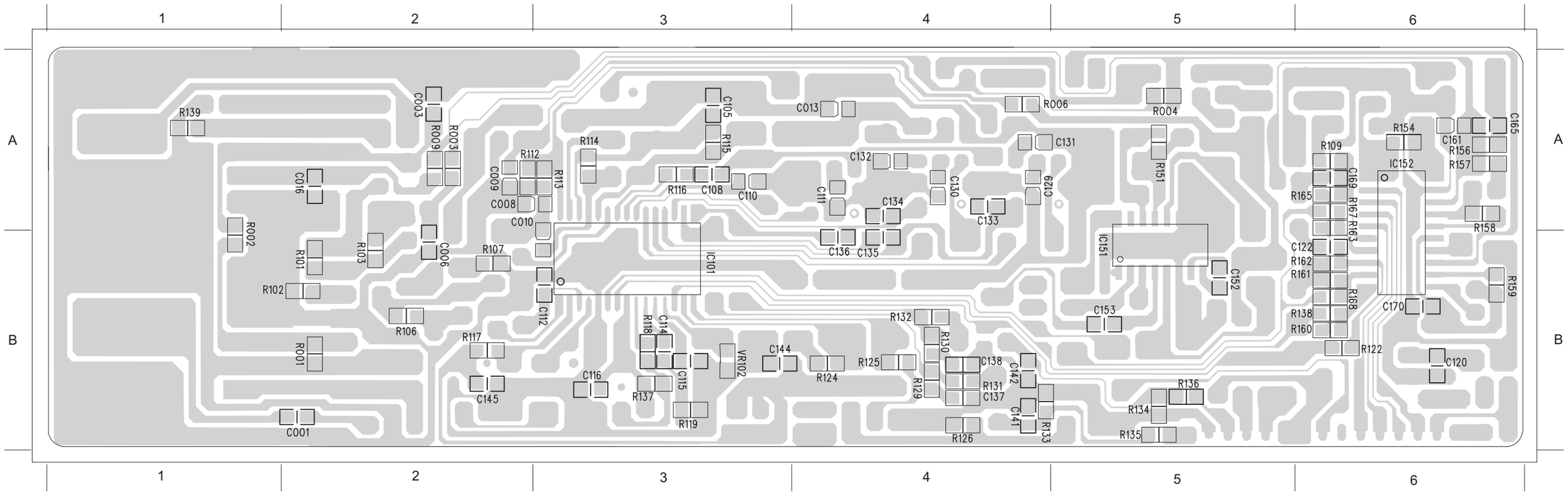
C005	A5	C109	A4	C139	B3	C166	A1	J102	A4	J111	B2	J121	B1	L153	B1	T104	A3	Vd001	A5	R007	A3	Rb103	B6
C007	A3	C113	B4	C140	B3	C167	A3	J103	B4	J112	B2	J122	B1	L154	B2	T105	B4	VD002	A3	R008	A5		
C011	A1	C117	B4	C143	B4	C171	B1	J104	B4	J113	B2	J123	B1	IC151	A2	TC001	A4	XL151	A2	R104	A5		
C012	A1	C118	B4	C151	B2	C173	A1	J116	A1	J114	B2	IC101	B4	IC152	A1	TC002	A3	XL152	A1	R108	A2		
C014	A3	C119	B1	C154	A2	C174	A1	J105	A3	J115	A2	JK001	A6	T001	A1	Q001	A5	D001	B6	R110	B3		
C015	A2	C123	B3	C155	A2	CF101	A5	J106	A3	J116	B5	L102	A2	T002	A5	Q101	A5	D002	B6	R123	B3		
C101	A5	C124	B3	C156	A2	CF102	B5	J107	B3	J117	A1	L103	A4	T003	A4	Q102	B5	D003	A6	R155	A2		
C104	A4	C125	A3	C157	B2	CF103	B4	J108	A3	J118	B1	L104	B4	T101	A3	Q103	A2	D004	A6	RB101	B2		
C106	A4	C126	B3	C163	A1	CN001	A6	J109	A2	J119	B1	L151	A2	T102	B5	Q104	A1	D101	A3	RB102A	A5		
C107	B4	C127	B3	C164	A1	J101	A4	J110	B2	J120	B1	L152	B2	T103	A3	Q105	B3	R005	A4	RB102B	A1		



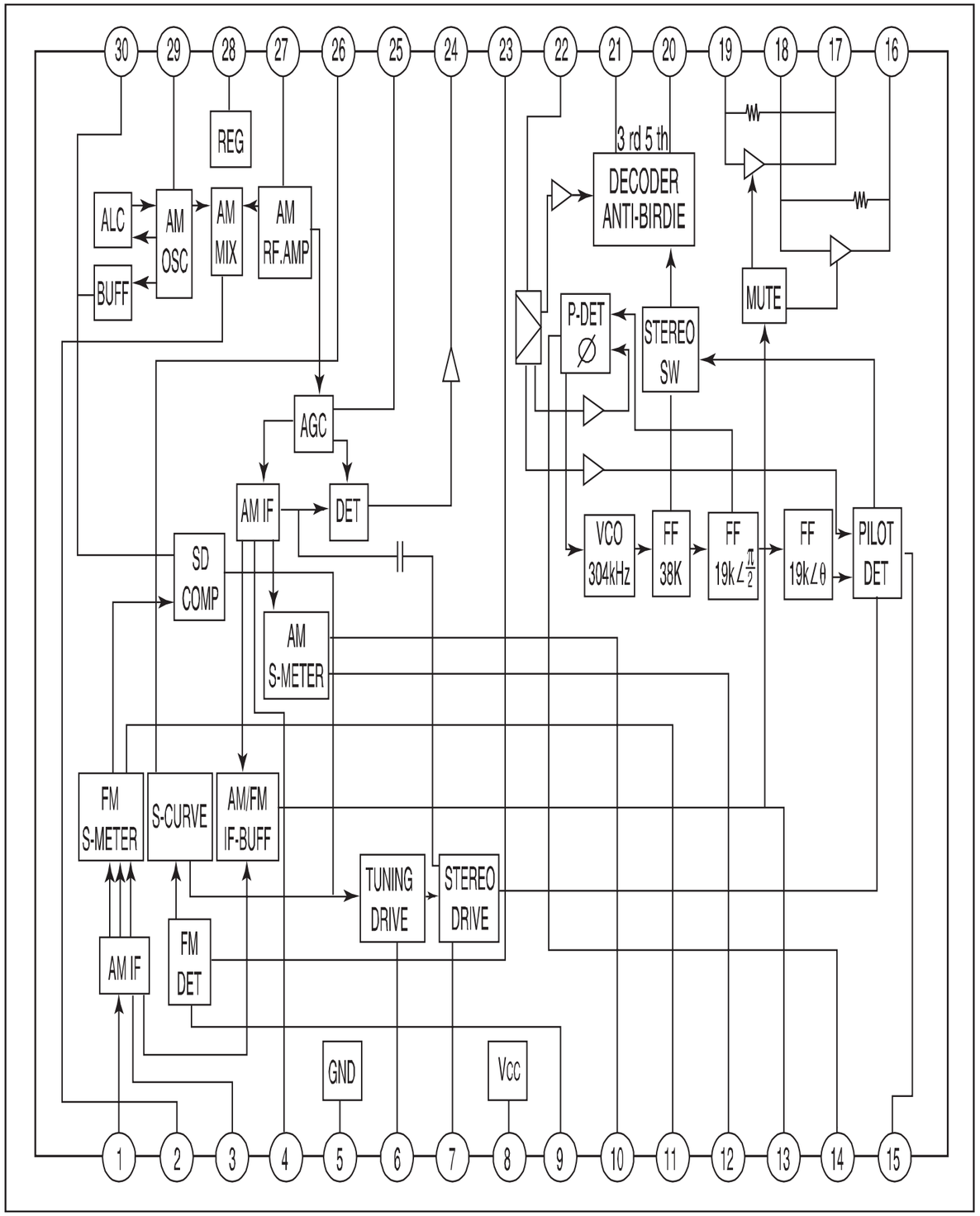
8

TUNER BOTTOM PCB LAYOUT VIEW

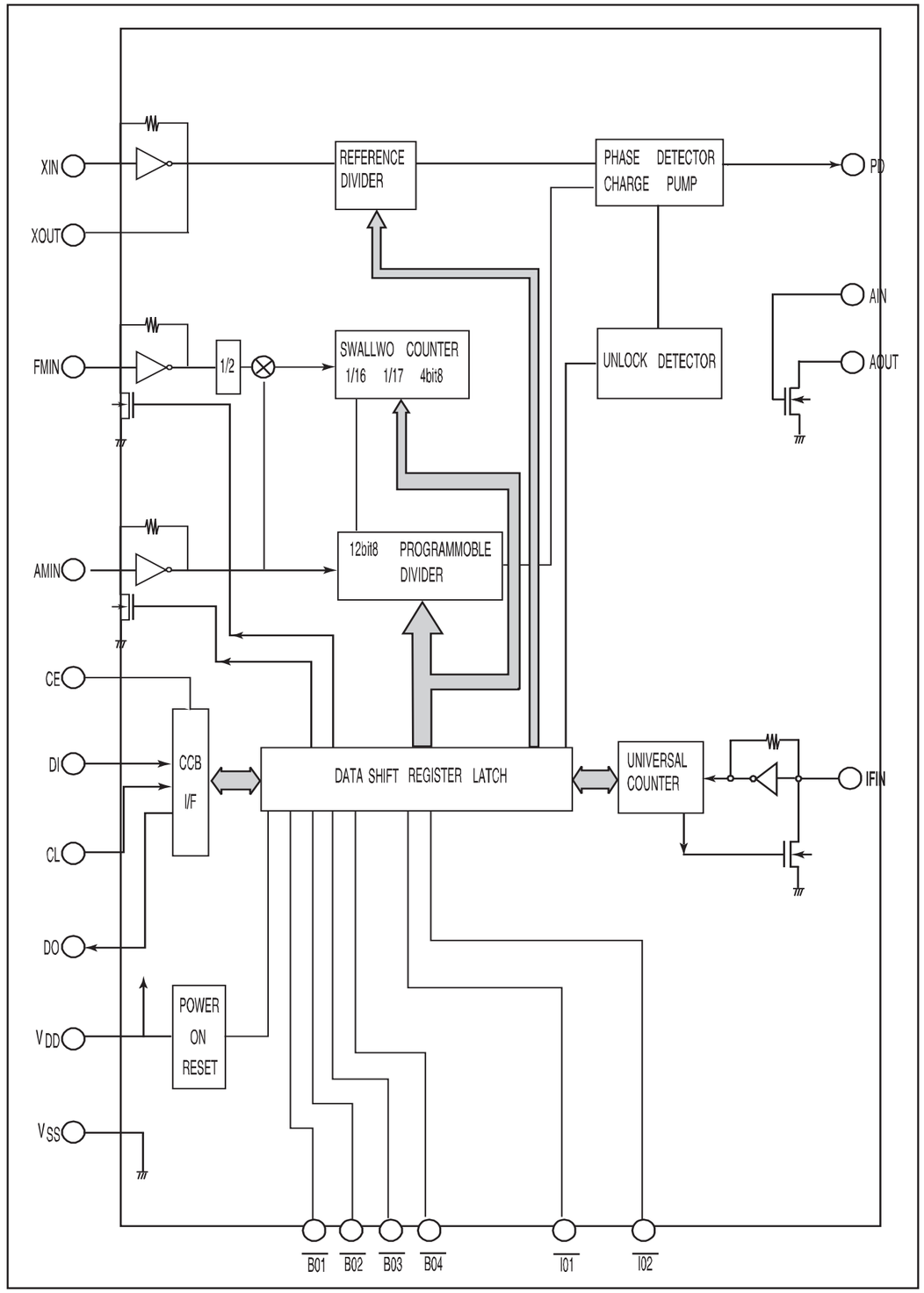
C001	B2	C108	A3	C129	A4	C138	B4	C169	A6	R006	A4	R113	A3	R125	B4	R136	B5	R158	A6	Vr102	B3
C003	A2	C110	A3	C130	A4	C141	B4	C170	B6	R009	A2	R114	A3	R126	B4	R137	B3	R159	B6		
C006	B2	C111	A4	C131	A4	C142	B4	IC101	B3	R101	B2	R115	A3	R129	B4	R138	B6	R160	B6		
C008	A2	C112	B3	C132	A4	C144	B3	IC151	B5	R102	B2	R116	A3	R130	B4	R139	A1	R161	B6		
C009	A2	C114	B3	C133	A4	C145	B2	IC152	A6	R103	B2	R117	B2	R131	B4	R145	B2	R162	B6		
C010	B3	C115	B3	C134	A4	C152	B5	R001	B2	R106	B2	R118	B3	R132	B4	R151	A5	R163	A6		
C013	A4	C116	B3	C135	B4	C153	B5	R002	B1	R107	B2	R119	B3	R133	B4	R154	A6	R165	A6		
C016	A2	C120	B6	C136	B4	C161	A6	R003	A2	R109	A6	R122	B6	R134	B5	R156	A6	R167	A6		
C105	A3	C122	B6	C137	B4	C165	A6	R004	A5	R112	A2	R124	B4	R135	B5	R135	B5	R168	B6		



LA 1837 INTERNAL IC DIAGRAM



LC7213M INTERNAL IC DIAGRAM



10

ELECTRICAL PART LIST

:-TUNER PCB

Misellaneous

	LVT100187-0001	TUNER PCB
CF101	JFT005002-0030	10.7 MHZ
CF102	JFT005002-0040	10.7 MHZ
CF103	JFT005001-0030	450 KHZ
CN001	CCN250000-0502	S2B-XH-A 2 PIN
EF001	WTP000011-0001	TUNER PACK
J101	XJP220000-0001	22 GA TINNED
J102	XJP220000-0001	22 GA TINNED
J103	XJP220000-0001	22 GA TINNED
J104	XJP220000-0001	22 GA TINNED
J105	XJP220000-0001	22 GA TINNED
J106	XJP220000-0001	22 GA TINNED
J107	XJP220000-0001	22 GA TINNED
J108	XJP220000-0001	22 GA TINNED
J109	XJP220000-0001	22 GA TINNED
J110	XJP220000-0001	22 GA TINNED
J111	XJP220000-0001	22 GA TINNED
J112	XJP220000-0001	22 GA TINNED
J113	XJP220000-0001	22 GA TINNED
J114	XJP220000-0001	22 GA TINNED
J115	XJP220000-0001	22 GA TINNED
J116	XJP220000-0001	22 GA TINNED
J117	XJP220000-0001	22 GA TINNED
J118	XJP220000-0001	22 GA TINNED
J119	XJP220000-0001	22 GA TINNED
J120	XJP220000-0001	22 GA TINNED
J121	XJP220000-0001	22 GA TINNED
J122	XJP220000-0001	22 GA TINNED
J123	XJP220000-0001	22 GA TINNED
JK001	CJA003002-2010	FEMALE TYPE ID1.44mm
L102	SAN001600-1000	10 uH 10%
L103	SIL106003-3930	39 mH 10% D6xH11xP5mm
L104	SAN001600-1000	10 uH 10%
L151	SAN001600-1000	10 uH 10%
L152	SAN001600-1000	10 uH 10%
L153	SAN001600-1000	10 uH 10%
L154	SAN001600-1000	10 uH 10%
RB101	CCP200010-0715	15 PIN P=2.0mm 90'
RB102A TO RB102B	VSW243BB2-0160	160mm BLACK
RB103	CCP200010-0703	3 PIN P=2.0mm 90'
VD001	RHV100149-0001	TOSHIBA 1SV149B
VD002	RHV100149-0001	TOSHIBA 1SV149B
VR102	QCF015020-3920	3.9K OHM 1/10W 5%
XL151	JQC013101-4351	4.332 MHZ HC-49/U
XL152	JQC013101-4550	4.5000 MHZ HC-49/U

Capacitor

C001	PYL410370-3300	33 pF 50V 5%
C003	PYL439570-2230	0.022 uF 50V 20%
C005	PRD113870-50905	pF 50V +-0.25pF
C006	PYL456470-1040	0.1 uF 50V 10%
C007	PRD339670-1040	0.1 uF 50V +80-20%
C008	PYL456470-2220	0.0022uF 50V 10%
C009	PYL439570-2230	0.022 uF 50V 20%
C010	PYL439570-2230	0.022 uF 50V 20%
C011	PYL439570-2230	0.022 uF 50V 20%
C011	PRD249670-2230	0.022 uF 50V +80-20%
C012	PRE939540-4700	47 uF 16V 20%
C013	PYL410370-8090	8 pF 50V 5%
C014	PVP026370-5610	560pF 50V 5%
C015	PRD249670-22300	.022 uF 50V +80-20%
C016	PYL456470-1040	0.1 uF 50V 10%
C101	PRD249670-22300	.022 uF 50V +80-20%
C104	PRE939530-330	33 uF 10V 20%
C105	PYL439570-2230	0.022 uF 50V 20%
C106	PRE939530-330	33 uF 10V 20%
C107	PVE939540-220	22 uF 16V 20%
C108	PYL456470-1040	0.1 uF 50V 10%
C109	PRE939540-100	10 uF 16V 20%
C110	PYL410370-2010	200 pF 50V 5%
C111	PYL410370-3000	30 pF 50V 5%
C112	PYL439570-4730	0.047 uF 50V 20%
C113	PVE939540-470	47 uF 16V 20%
C114	PYL439570-4730	0.047 uF 50V 20%
C115	PYL439570-4730	0.047 uF 50V 20%
C116	PYL439570-2230	0.022 uF 50V 20%
C117	PVE939540-470	47 uF 16V 20%
C118	PRE939570-10901	uF 50V 20%
C119	PRD235470-15201	500 pF 50V 10%
C120	PYL410370-2200	22 pF 50V 5%
C122	PYL439570-2230	0.022 uF 50V 20%
C123	PRE939570-10901	uF 50V 20%
C124	PRE939570-47800	.47 uF 50V 20%
C125	PRE939540-100	10 uF 16V 20%
C126	PRE939540-100	10 uF 16V 20%
C127	PRE939570-10901	uF 50V 20%
C129	PYL456470-2220	0.0022uF 50V 10%
C130	PYL456470-2220	0.0022uF 50V 10%
C131	PYL456470-4720	0.0047 uF 50V 10%
C132	PYL456470-4720	0.0047 uF 50V 10%
C133	PYL439570-2230	0.022 uF 50V 20%
C134	PYL439570-2230	0.022 uF 50V 20%
C135	PYL456470-1520	1500 pF 50V 10%
C136	PYL456470-1520	1500 pF 50V 10%
C137	PYL456470-1530	0.015 uF 50V 10%
C138	PYL456470-1530	0.015 uF 50V 10%
C139	PRE939540-47904	.7 uF 16V 20%
C140	PRE939540-47904	.7 uF 16V 20%
C141	PYL456470-2220	0.0022uF 50V 10%
C142	PYL456470-2220	0.0022uF 50V 10%
C143	PRE939540-470	47 uF 16V 20%
C144	PYL439570-2230	0.022 uF 50V 20%
C145	PYL439570-2230	0.022 uF 50V 20%
C151	PRE939540-22902	.2 uF 16V 20%
C152	PYL410370-5610	560 pF 50V 5%
C153	PYL410370-3310	330 pF 50V 5%
C154	PRD113370-330	33 pF 50V 5%
C155	PRD113370-330	33 pF 50V 5%
C156	PRE939540-470	47 uF 16V 20%
C157	PRE939540-470	47 uF 16V 20%
C161	PYL456470-1040	0.1 uF 50V 10%
C163	PRE939540-470	47 uF 16V 20%
C164	PRD249670-22300	.022 uF 50V +80-20%
C165	PYL410370-1020	1000 pF 50V 5%
C166	PVE939540-3390	3.3 uF 16V 20%
C167	RD249670-2230	0.022 uF 50V +80-20%
C169	PYL439570-2230	0.022 uF 50V 20%
C170	PYL439570-2230	0.022 uF 50V 20%
C171	PVE939540-470	47 uF 16V 20%

Capacitor

C173	PRD113370-2700	27 pF 50V 5%
C174	PRD113370-2700	27 pF 50V 5%

Diode

D001	RAD114148-0010	DIODE SW
D002	RAD114148-0010	DIODE SW
D003	RAD114148-0010	DIODE SW
D004	RAD114148-0010	DIODE SW
D101	RAD114148-0010	DIODE SW

Intergrated Circuit

IC101	RCI001837-0001	IC 30 PIN LA1837 SANYO151
IC151	RCI001923-0001	IC 16 PIN BUI1923F
IC152	RCI072131-0001	IC 20 PIN LC72131M SANYO

Transistor

Q001	RAM200192-1001	2SK192A-Y/GR
Q101	RAN201675-0001	2SC1675L NEC
Q102	RAN201675-0001	2SC1675L NEC
Q103	RAP200733-0001	2SA733Q,P NEC
Q104	RAN200945-0001	2SC945P
Q105	RAN200945-0001	2SC945P

Resistor

R001	QCF015020-6820	6.8K OHM 1/10W 5%
R002	QCF015020-1040	100K OHM 1/10W 5%
R003	QCF015020-1040	100K OHM 1/10W 5%
R004	QCF015020-1020	1K OHM 1/10W 5%
R005	QAF065000-3310	330 OHM 1/6W 5% CF
R006	QCF015020-1010	100 OHM 1/10W 5%
R007	QAF065000-1040	100K OHM 1/6W 5% CF
R008	QAF065000-1010	100 OHM 1/6W 5% CF
R009	QCF015020-1020	1K OHM 1/10W 5%
R101	QCF015020-2740	270K OHM 1/10W 5%
R102	QCF015020-4700	47 OHM 1/10W 5%
R103	QCF015020-3310	330 OHM 1/10W 5%
R104	QAF065000-3310	330 OHM 1/6W 5% CF
R105	QAF065000-1010	100 OHM 1/6W 5% CF
R106	QCF015020-2740	270K OHM 1/10W 5%
R107	QCF015020-1000	10 OHM 1/10W 5%
R108	QAF065000-1030	10K OHM 1/6W 5% CF
R109	QCF015020-1040	100K OHM 1/10W 5%
R110	QAF065000-4700	47 OHM 1/6W 5% CF
R112	QCF015020-3320	3.3K OHM 1/10W 5%
R113	QCF015020-5620	5.6K OHM 1/10W 5%
R114	QCF015020-3310	330 OHM 1/10W 5%
R115	QCF015020-3320	3.3K OHM 1/10W 5%
R116	QCF015020-1020	1K OHM 1/10W 5%
R117	QCF015020-1840	180K OHM 1/10W 5%
R118	QCF015020-4700	47 OHM 1/10W 5%
R119	QCF015020-5100	51 OHM 1/10W 5%
R122	QCF015020-3920	3.9K OHM 1/10W 5%
R123	QAF065000-4720	4.7K OHM 1/6W 5% CF
R124	QCF015020-3020	3K OHM 1/10W 5%
R125	QCF015020-1020	1K OHM 1/10W 5%
R126	QCF015020-4730	47K OHM 1/10W 5%
R129	QCF015020-4720	4.7K OHM 1/10W 5%
R130	QCF015020-4720	4.7K OHM 1/10W 5%
R131	QCF015020-6820	6.8K OHM 1/10W 5%
R132	QCF015020-6820	6.8K OHM 1/10W 5%
R133	QCF015020-2220	2.2K OHM 1/10W 5%
R134	QCF015020-2220	2.2K OHM 1/10W 5%
R135	QCF015020-4730	47K OHM 1/10W 5%
R136	QCF015020-4730	47K OHM 1/10W 5%
R137	QCF015020-2720	2.7K OHM 1/10W 5%
R138	QCF015020-1030	10K OHM 1/10W 5%
R139	QCF015020-5610	560 OHM 1/10W 5%
R151	QCF015020-1040	100K OHM 1/10W 5%
R151	QCF015020-1050	1M OHM 1/10W 5%
R154	QCF015020-1040	100K OHM 1/10W 5%
R154	QCF015020-1050	1M OHM 1/10W 5%
R155	QAF065000-1020	1K OHM 1/6W 5% CF
R156	QCF015020-3320	3.3K OHM 1/10W 5%
R157	QCF015020-1020	1K OHM 1/10W 5%
R158	QCF015020-3320	3.3K OHM 1/10W 5%
R159	QCF015020-4720	4.7K OHM 1/10W 5%
R160	QCF015020-4720	4.7K OHM 1/10W 5%
R161	QCF015020-4720	4.7K OHM 1/10W 5%
R162	QCF015020-4720	4.7K OHM 1/10W 5%
R163	QCF015020-4720	4.7K OHM 1/10W 5%
R165	QCF015020-4720	4.7K OHM 1/10W 5%
R167	QCF015020-2230	22K OHM 1/10W 5%
R168	QCF015020-2230	22K OHM 1/10W 5%

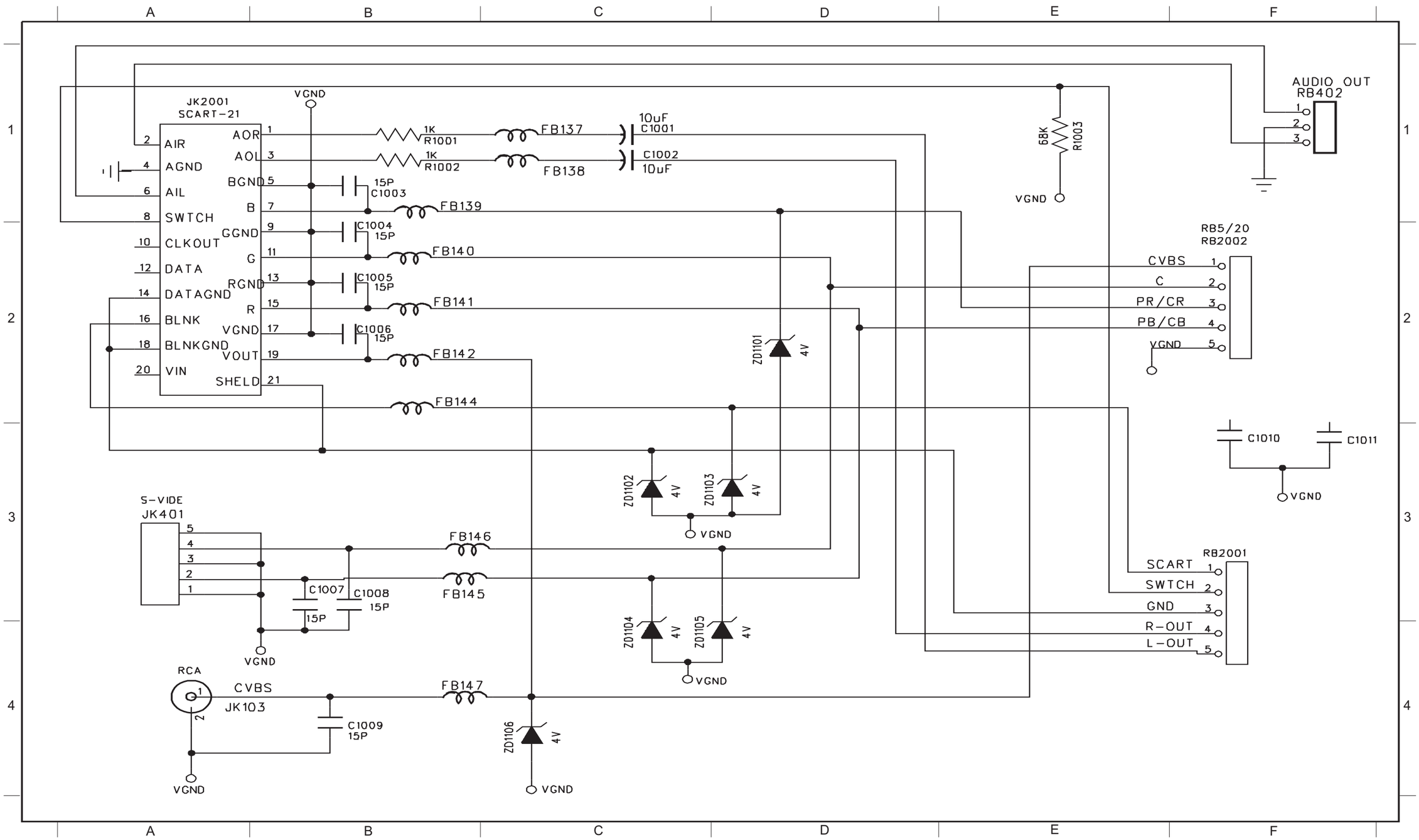
Coils

T001	SIL013012-0010	SUMIDA S-8N
T002	SIL013009-0011	4-6:10T 1-3:86T
T003	SIL013010-0012	108uH (796 KHz) COIL
T101	SIL016001-0010	78 KHz
T102	SIF010001-0040	455KHz Q=130
T103	SIL016001-0020	16 KHz
T104	SIL016001-0020	16 KHz
T105	SIF020001-0050	10.7MHz Q=60 MIN
TC001	MVC001001-00103	- 10 PF NP0
TC002	MVC001002-00104	.2 - 20 PF N450

11

CIRCUIT DIAGRAM ÐSCART BOARD

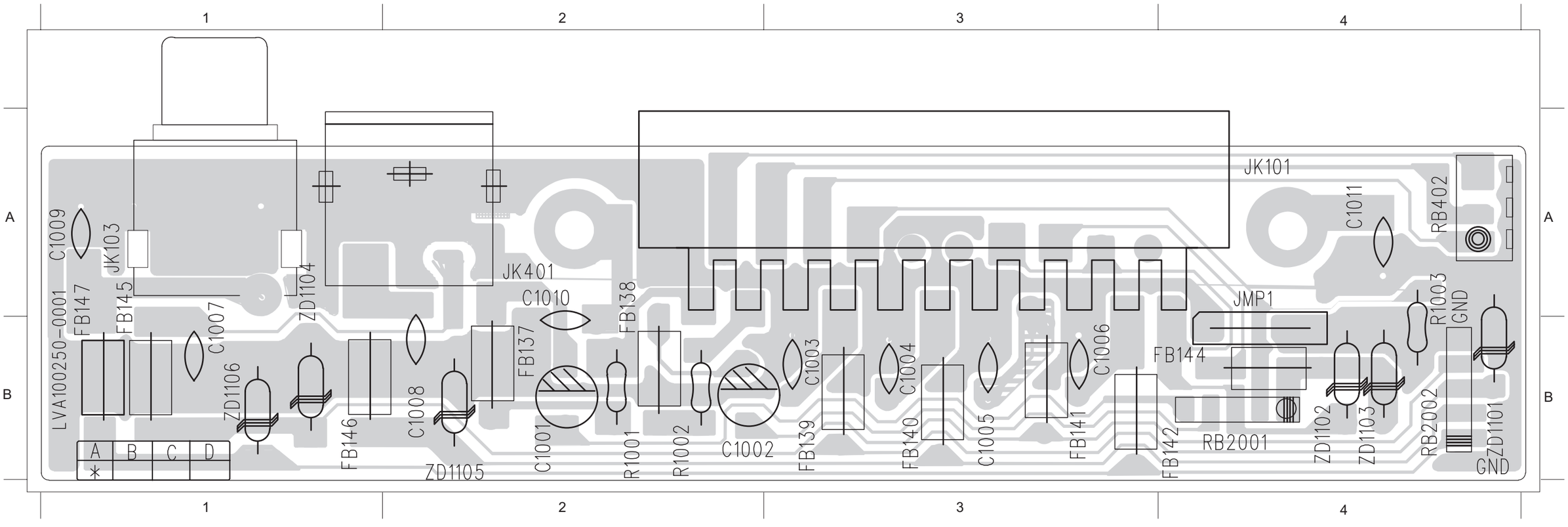
C1001	C1	C1006	B2	C1011	F3	FB141	B2	FB147	B4	R1003	E1	ZD1102	C3
C1002	C1	C1007	B3	FB137	C1	FB142	B2	JK103	A4	RB402	F1	ZD1103	D3
C1003	B1	C1008	B3	FB138	C1	FB144	B2	JK401	A3	RB2001	F3	ZD1104	C4
C1004	B2	C1009	B4	FB139	B1	FB145	B2	R1001	B1	RB2002	F2	ZD1105	C4
C1005	B2	C1010	F3	FB140	B2	FB146	B3	R1002	B1	ZD1101	D2	ZD1106	C4



12

SCART PCB LAYOUT VIEW

C1001	B2	C1009	A1	R1001	B2	FB140	B3	ZD1102	B4
C1002	B2	C1010	A2	R1002	B2	FB141	B3	ZD1103	B4
C1003	B3	C1011	A4	R1003	A4	FB142	B4	ZD1104	A1
C1004	B3	JK101	A4	RB2001	B4	Fb144	B4	ZD1105	B2
C1005	B3	JK103	A1	RB2002	B4	FB145	B1	ZD1106	B1
C1006	B3	JK401	A2	FB137	B2	FB146	B1		
C1007	B1	JMP1	A4	FB138	B2	FB147	B1		
C1008	B2	RB402	A4	FB139	B3	ZD1101	B4		



13

ELECTRICAL PART LIST
:-SCART PCB

Miscellaneous

	LVA100250-0001	SCART PCB
FB137	SFB001001-0030	DIA3.5x6mm
FB138	SFB001001-0030	DIA3.5x6mm
FB139	SFB001001-0030	DIA3.5x6mm
FB140	SFB001001-0030	DIA3.5x6mm
FB141	SFB001001-0030	DIA3.5x6mm
FB142	SFB001001-0030	DIA3.5x6mm
FB144	SFB001001-0030	DIA3.5x6mm
FB145	SFB001001-0030	DIA3.5x6mm
FB146	SFB001001-0030	DIA3.5x6mm
FB147	SFB001001-0030	DIA3.5x6mm
JK101	CSS021001-1020	21PIN PITCH=3.81mm
JK103	CJR001301-0030	1P YELLOW W/GND
JK401	CJD004201-1020	4 PIN
JMP1	XJP220000-0001	22 GA TINNED
RB2001	VFL511245-0800	5P 80mm 2468#26 BLK
RB2002	VSW545455-0250	BLACK UL2854#30 5PIN
RB402	VSW324122-0220	3P 220mm UL2547#28 GRY TO CN402

Capacitor

C1001	PME039570-1000	10 uF 50V 20%
C1002	PME039570-1000	10 uF 50V 20%
C1003	PRD113370-1500	15 pF 50V 5%
C1004	PRD113370-1500	15 pF 50V 5%
C1005	PRD113370-1500	15 pF 50V 5%
C1006	PRD113370-1500	15 pF 50V 5%
C1007	PRD113370-1500	15 pF 50V 5%
C1008	PRD113370-1500	15 pF 50V 5%
C1009	PRD113370-1500	15 pF 50V 5%
C1010	PRD113370-1500	15 pF 50V 5%
C1011	PRD113370-1500	15 pF 50V 5%

Diode

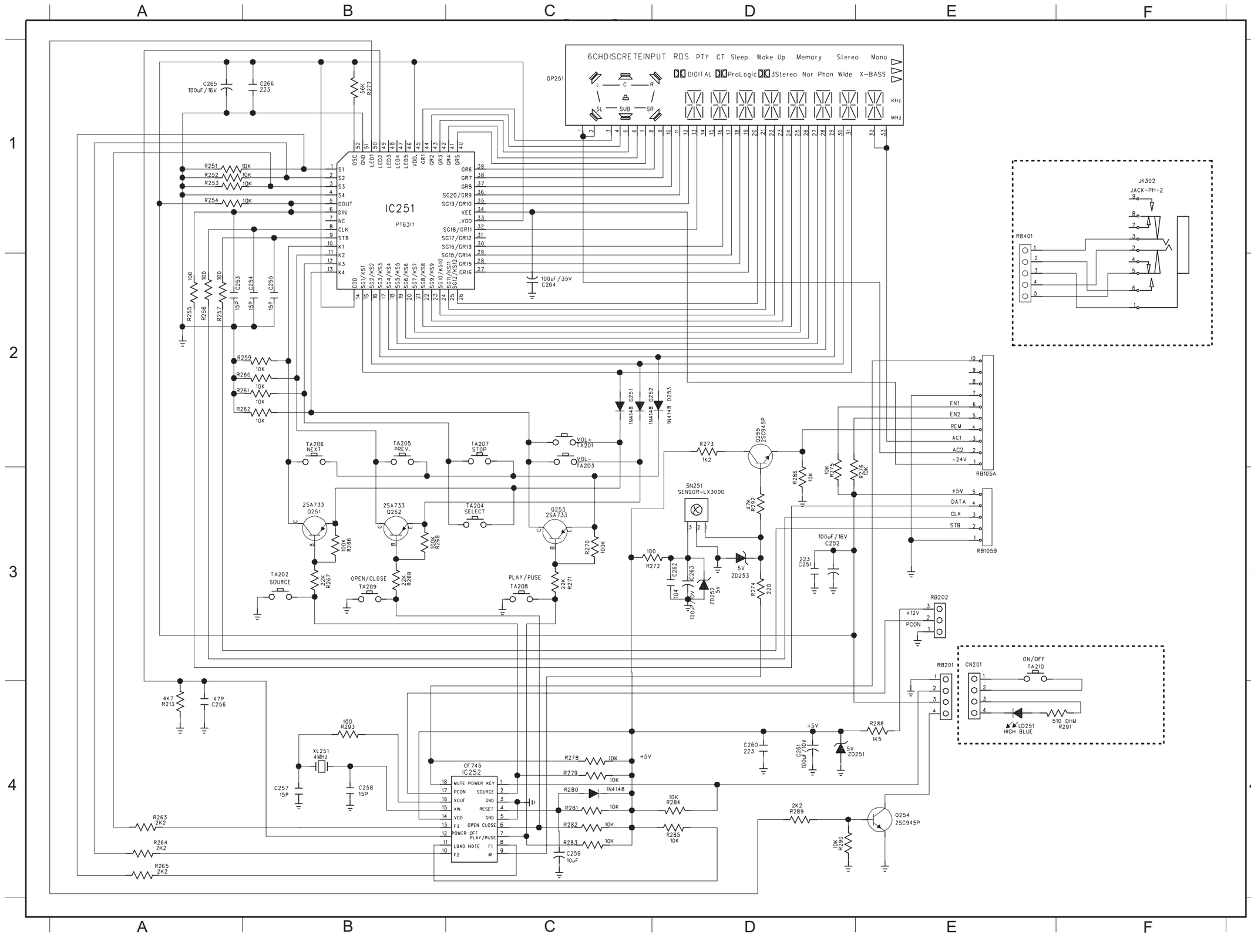
ZD1101	RAZ005004-0020	3.8-4.0V 0.5W
ZD1102	RAZ005004-0020	3.8-4.0V 0.5W
ZD1103	RAZ005004-0020	3.8-4.0V 0.5W
ZD1104	RAZ005004-0020	3.8-4.0V 0.5W
ZD1105	RAZ005004-0020	3.8-4.0V 0.5W
ZD1106	RAZ005004-0020	3.8-4.0V 0.5W

Resistor

R1001	QAF065000-1020	1K OHM 1/6W 5% CF
R1002	QAF065000-1020	1K OHM 1/6W 5% CF
R1003	QAF065000-6830	68K OHM 1/6W 5% CF

14

CIRCUIT DIAGRAM - KEYBOARD



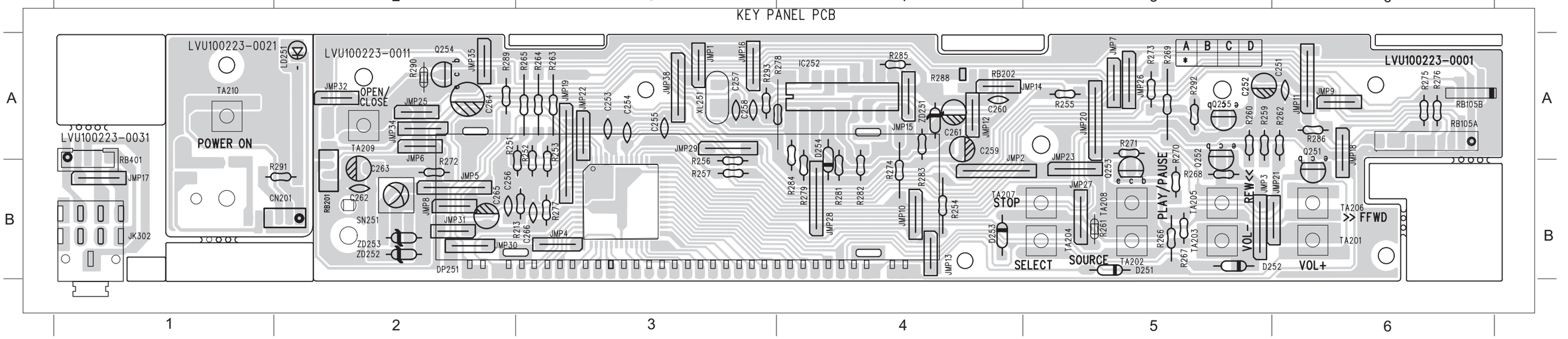
C251	D3	R286	D3
C252	D3	R288	E4
C253	A2	R289	D4
C254	B2	R290	D4
C255	B2	R291	f4
C256	A4	R292	D3
C257	B4	R293	B4
C258	B4	RB105	AE2
C259	C4	RB105	BE3
C260	D	RB201	E4
C261	D4	RB202	E3
C262	D3	RB401	E1
C263	D3	D251	C2
C264	C2	D252	C2
C265	A1	D253	D2
C266	B1	CN201	E4
R213	A4	DP251	C1
R251	A1	IC251	B1
R252	A1	IC252	C4
R253	A1	JK302	F1
R254	A1	LD251	E4
R255	A2	Q251	B3
R256	A2	Q252	B3
R257	A2	Q253	C3
R259	B2	Q254	E4
R260	B2	Q255	D2
R261	B2	TA201	C2
R262	B2	TA202	B3
R263	A4	TA203	C2
R264	A4	TA204	C3
R265	A4	TA205	B2
R266	B3	TA206	B2
R267	B3	TA207	C2
R268	B3	TA208	C3
R269	B3	TA209	B3
R270	C3	TA210	E3
R271	C3	SN251	D3
R272	C3	XL251	B4
R273	D2	ZD251	D4
R274	D3	ZD252	D3
R275	D3	ZD253	D3
R276	E3		
R277	B1		
R278	C4		
R279	C4		
R281	C4		
R282	C4		
R283	C4		
R284	D4		
R285	D4		

15

KEY PCB LAYOUT VIEW

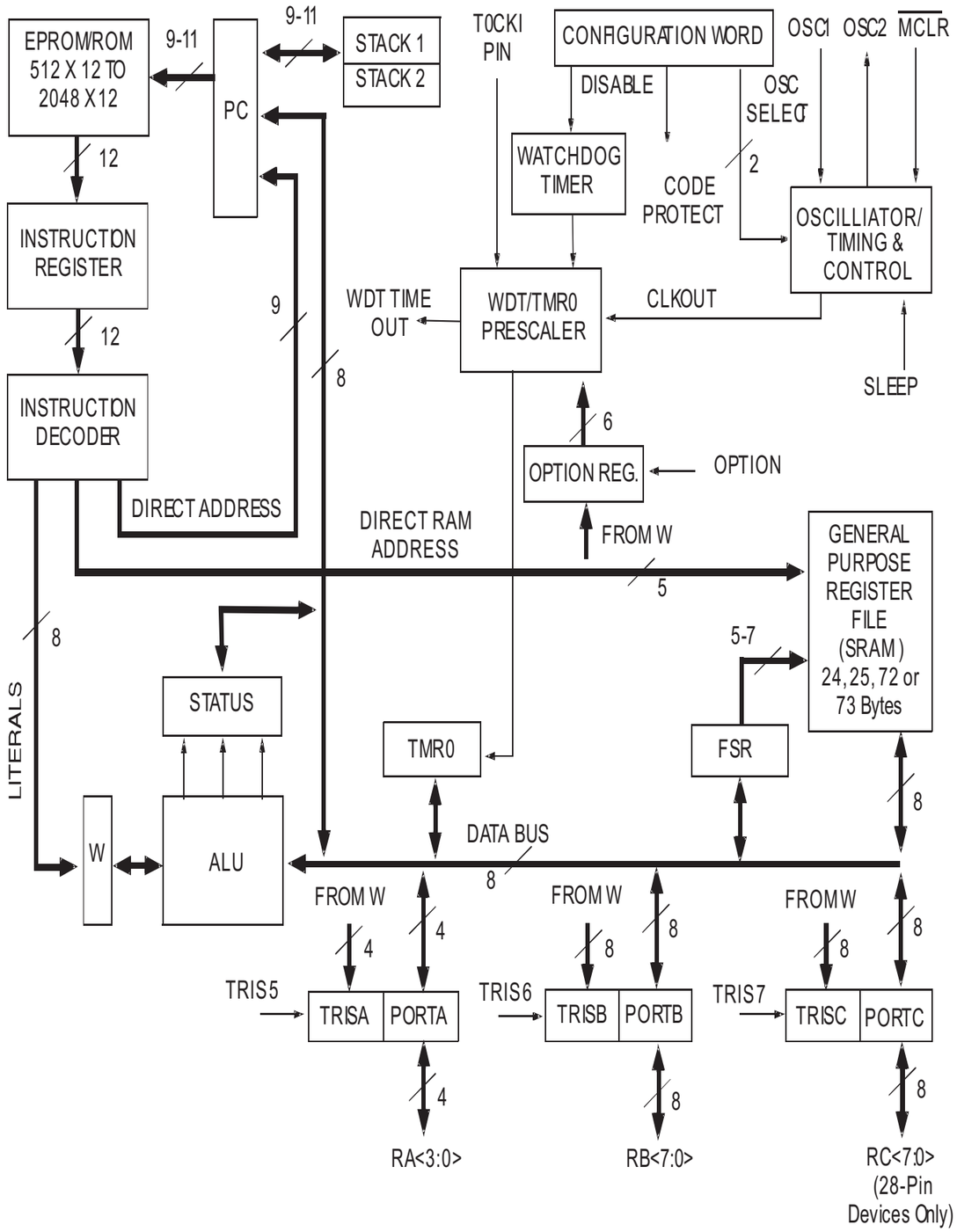
C251	A6	C260	A4	D251	B5	R252	A3	R262	A6	R271	A5	R282	B4	R294	B1	JMP2	B4	JMP11	A6
C252	A5	C261	A4	D252	B5	R253	A3	R263	A3	R272	B2	R283	B4	RB105A	A6	JMP3	B5	JMP12	A4
C253	A3	C262	B2	D253	B4	R254	B4	R264	B2	R273	A5	R284	B4	RB105B	A6	JMP4	B3	JMP13	B4
C254	A3	C263	B2	D254	A4	R255	A5	R265	A3	R274	B4	R285	A4	Rb201	B2	JMP5	B2	JMP14	A4
C255	A3	C264	A2	Dp251	B2	R256	B3	R266	B5	R275	A6	R286	A6	RB202	A4	JMP6	A2	JMP15	A4
C256	B2	C265	B2	ZD251	A4	R257	B3	R267	B5	R276	A6	R289	A2	Rb401	B1	JMP7	A5	JMP16	A3
C257	A3	C266	B3	R213	B3	R259	A5	R268	B5	R277	B3	R291	B2	IC252	A4	JMP8	B2	JMP17	B1
C258	A3	C293	A3	R288	A4	R260	A5	R269	A5	R278	A4	R292	A5	JK302	B1	JMP9	A6	JMP18	A6
C259	A4	CN201	B2	R251	A3	R261	B5	R270	B5	R281	B4	R290	A2	JMP1	A3	JMP10	B4	JMP19	A3

JMP20	A5	JMP30	B2	Q253	B5	TA207	B4												
JMP21	A6	JMP31	B2	Q254	A2	TA208	B5												
JMP22	A3	JMP32	A2	Q255	A5	TA209	A2												
JMP23	B5	JMP34	A2	TA201	B6	Ta210	A1												
JMP25	A2	JMP35	A2	TA202	B5	SN251	B2												
JMP26	A5	JMP38	A3	TA203	B5	XI251	A3												
JMP27	B5	JW30	B2	TA204	B5	ZD252	B2												
JMP28	B4	Q251	B6	TA205	B5	ZD253	B2												
JMP29	A3	Q252	B5	TA206	B6														



16

C F745 INTERNAL IC DIAGRAM



ELECTRICAL PARTS LIST

:-KEY PCB

Miscellaneous

	LVU100223-0001	PCB 94V0
	LVU100223-0011	KEY PCB
	LVU100223-0021	LED PCB
	LVU100223-0031	PHONE PCB 94V0
	IVE100m176-0001	L10xW10xT9mm BLK

For SN251

TA201	MAW060001-0010	SKHVBE3520
TA202	MAW060001-0010	SKHVBE3520
TA203	MAW060001-0010	SKHVBE3520
TA204	MAW060001-0010	SKHVBE3520
TA205	MAW060001-0010	SKHVBE3520
TA206	MAW060001-0010	SKHVBE3520
TA207	MAW060001-0010	SKHVBE3520
TA208	MAW060001-0010	SKHVBE3520
TA209	MAW060001-0010	SKHVBE3520
TA210	MAW060001-0010	SKHVBE3520
JK302	CJM035002-3030	PHONE JACK
JMP1	XJP220000-000122	GA TINNED
JMP2	XJP220000-000122	GA TINNED
JMP3	XJP220000-000122	GA TINNED
JMP4	XJP220000-000122	GA TINNED
JMP5	XJP220000-000122	GA TINNED
JMP6	XJP220000-000122	GA TINNED
JMP7	XJP220000-000122	GA TINNED
JMP8	XJP220000-000122	GA TINNED
JMP9	XJP220000-000122	GA TINNED
JMP10	XJP220000-000122	GA TINNED
JMP11	XJP220000-000122	GA TINNED
JMP12	XJP220000-000122	GA TINNED
JMP13	XJP220000-000122	GA TINNED
JMP14	XJP220000-000122	GA TINNED
JMP15	XJP220000-000122	GA TINNED
JMP16	XJP220000-000122	GA TINNED
JMP17	XJP220000-000122	GA TINNED
JMP18	XJP220000-000122	GA TINNED
JMP19	XJP220000-000122	GA TINNED
JMP20	XJP220000-000122	GA TINNED
JMP21	XJP220000-000122	GA TINNED
JMP22	XJP220000-000122	GA TINNED
JMP23	XJP220000-000122	GA TINNED
JMP25	XJP220000-000122	GA TINNED
JMP26	XJP220000-000122	GA TINNED
JMP27	XJP220000-000122	GA TINNED
JMP28	XJP220000-000122	GA TINNED
JMP29	XJP220000-000122	GA TINNED
JMP30	XJP220000-000122	GA TINNED
JMP31	XJP220000-000122	GA TINNED
JMP32	XJP220000-000122	GA TINNED
JMP34	XJP220000-000122	GA TINNED
JMP35	XJP220000-000122	GA TINNED
JMP38	XJP220000-000122	GA TINNED
LD251	KED600005-0020	LED 5 DIA HI BLUE
RB105A	VFLF1124B-1600	15P 160mm UL2468#26 BLK
RB105B	VFLF1124B-1600	15P 160mm UL2468#26 BLK
RB201	VFL41155-2000	4P 200mm UL2468#26BLK To CN201
RB202	VFL31124B-12003P	120mm BLK
RB401	VFL51124B-08005P	80mm BLK
SN251	RHO200038-0001	IRT SENSOR
XL251	JQC023100-4050	4 MHZ HC-49US 30ppm

Capacitor

C251	PRD249670-2230	0.022 uF 50V +80-20%
C252	PVE839530-1010	100 uF 10V 20%
C253	PVD113580-1500	15pF 50V 5% NPO
C254	PVD113580-1500	15pF 50V 5% NPO
C255	PVD113580-1500	15pF 50V 5% NPO
C256	PVD113370-4700	47 pF 50V 5%
C257	PVD113580-1500	15pF 50V 5% NPO
C258	PVD113580-1500	15pF 50V 5% NPO
C259	PVE839540-1000	10 uF 16V 20%
C260	PRD249670-2230	0.022 uF 50V +80-20%
C261	PVE839530-1010	100 uF 10V 20%
C262	PRD339670-1040	0.1 uF 50V +80-20%
C263	PVE839530-1010	100 uF 10V 20%
C264	PME039560-1010	100 uF 35V 20%
C265	PVE839530-1010	100 uF 10V 20%
C266	PRD249670-2230	0.022 uF 50V +80-20%

Diode

D251	RAD114148-0010	DIODE SW
D252	RAD114148-0010	DIODE SW
D253	RAD114148-0010	DIODE SW
D254	RAD114148-0010	DIODE SW
DP251	KLV000015-0010	74x13mm
ZD251	RAZ005005-0030	5.0-5.2V 0.5W
ZD252	RAZ005005-0030	5.0-5.2V 0.5W
ZD253	RAZ005005-0030	5.0-5.2V 0.5W

Integrated Circuit

IC251	RCI006311-0001	IC 52 PIN PT6311(PTC0)
IC252	RHI000745-0006	IC 18 PIN CF745

SOFTWARE-F

Transistor

Q251	RAP200733-0001	2SA733Q,P NEC
Q252	RAP200733-0001	2SA733Q,P NEC
Q253	RAP200733-0001	2SA733Q,P NEC
Q254	RAN200945-0001	2SC945P
Q255	RAN200945-0001	2SC945P

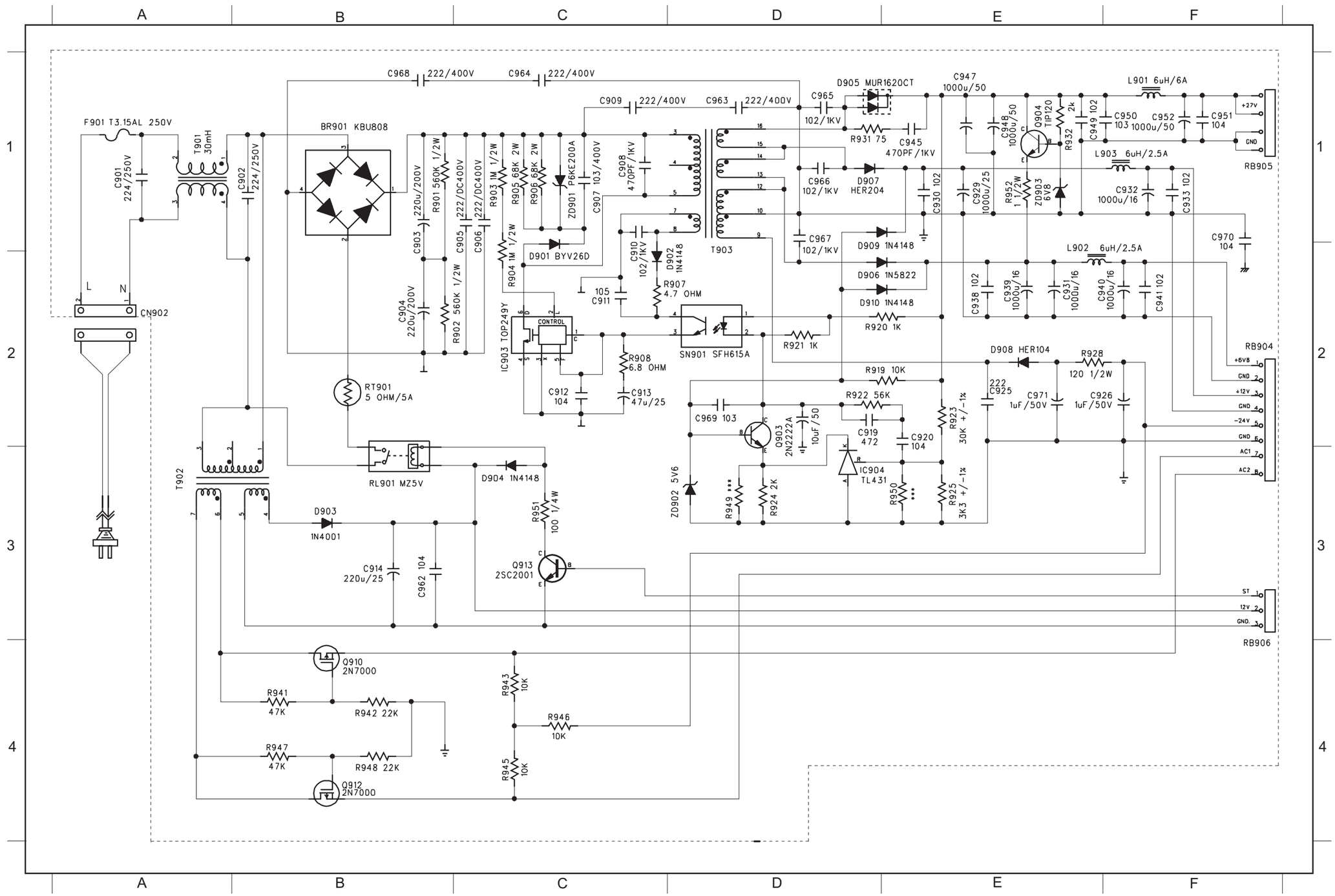
Resistor

R213	QAF065000-4720	4.7K OHM 1/6W 5% CF
R251	QAF065000-1030	10K OHM 1/6W 5% CF
R252	QAF065000-1030	10K OHM 1/6W 5% CF
R253	QAF065000-1030	10K OHM 1/6W 5% CF
R254	QAF065000-1030	10K OHM 1/6W 5% CF
R255	QAF065000-1010	100 OHM 1/6W 5% CF
R256	QAF065000-1010	100 OHM 1/6W 5% CF
R257	QAF065000-1010	100 OHM 1/6W 5% CF
R259	QAF065000-1030	10K OHM 1/6W 5% CF
R260	QAF065000-1030	10K OHM 1/6W 5% CF
R261	QAF065000-1030	10K OHM 1/6W 5% CF
R262	QAF065000-1030	10K OHM 1/6W 5% CF
R263	QAF065000-2220	2.2K OHM 1/6W 5% CF
R264	QAF065000-2220	2.2K OHM 1/6W 5% CF
R265	QAF065000-2220	2.2K OHM 1/6W 5% CF
R266	QAF065000-1040	100K OHM 1/6W 5% CF
R267	QAF065000-2230	22K 1/6W 5% CF
R268	QAF065000-1040	100K OHM 1/6W 5% CF
R269	QAF065000-2230	22K 1/6W 5% CF
R270	QAF065000-1040	100K OHM 1/6W 5% CF
R271	QAF065000-2230	22K 1/6W 5% CF
R272	QAF065000-1010	100 OHM 1/6W 5% CF
R273	QAF065000-1220	1.2K OHM 1/6W 5% CF
R274	QAF065000-2210	220 OHM 1/6W 5% CF
R275	QAF065000-1030	10K OHM 1/6W 5% CF
R276	QAF065000-1030	10K OHM 1/6W 5% CF
R277	QAF065000-5630	56K OHM 1/6W 5% CF
R278	QAF065000-1030	10K OHM 1/6W 5% CF
R279	QAF065000-1030	10K OHM 1/6W 5% CF
R281	QAF065000-1030	10K OHM 1/6W 5% CF
R282	QAF065000-1030	10K OHM 1/6W 5% CF
R283	QAF065000-1030	10K OHM 1/6W 5% CF
R284	QAF065000-1030	10K OHM 1/6W 5% CF
R285	QAF065000-1030	10K OHM 1/6W 5% CF
R286	QAF065000-1030	10K OHM 1/6W 5% CF
R288	QAF065000-1520	1.5K OHM 1/6W 5% CF
R289	QAF065000-2220	2.2K OHM 1/6W 5% CF
R290	QAF065000-1030	10K OHM 1/6W 5% CF
R291	QAF065000-2210	220 OHM 1/6W 5% CF
R292	QAF065000-4730	47K OHM 1/6W 5% CF
R293	QAF065000-1010	100 OHM 1/6W 5% CF

17

18

CIRCUIT DIAGRAM-POWER BOARD



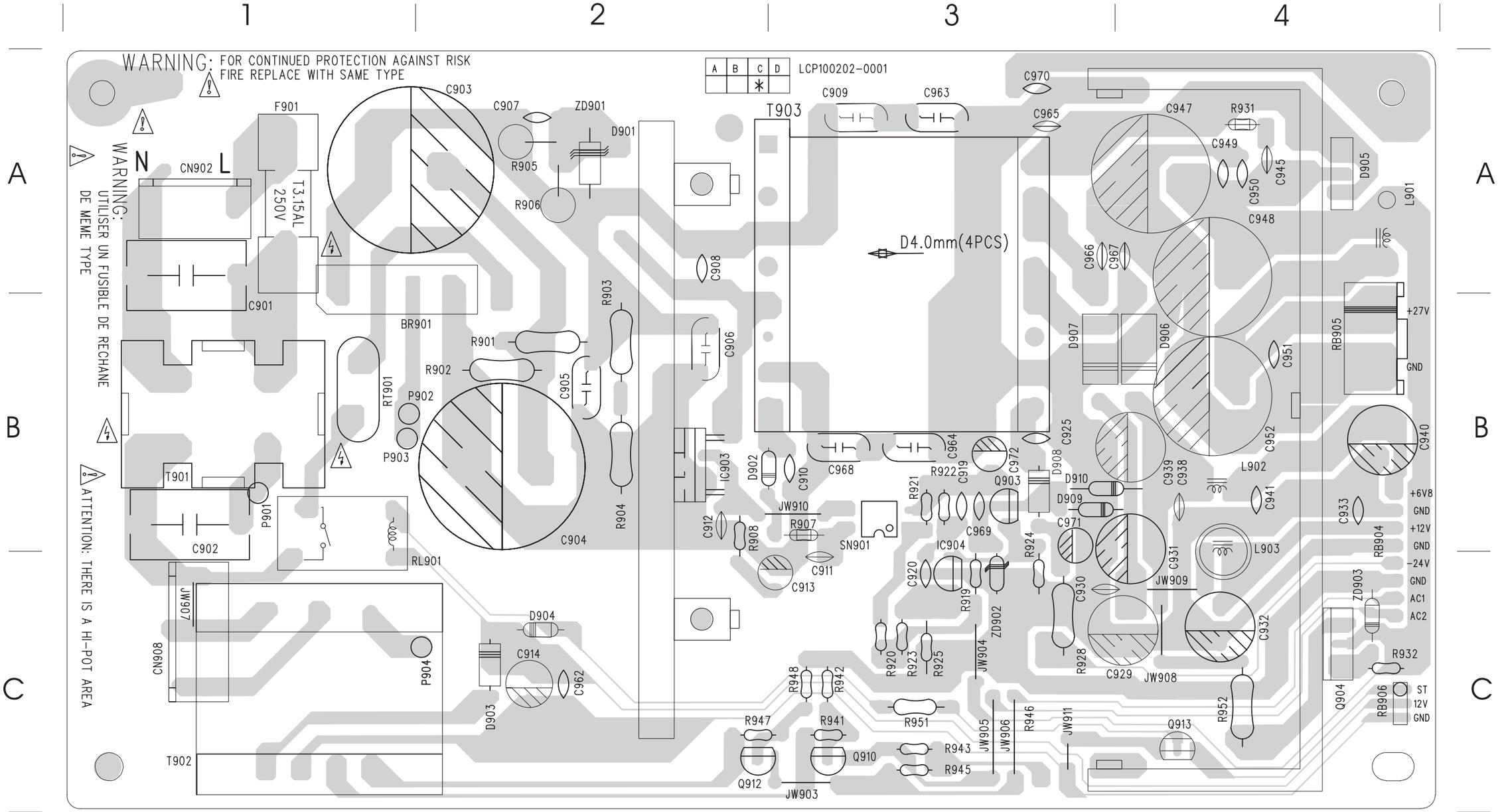
BR901	B1	CN902	A2	R951	C3
C901	A1	D901	C2	R952	E1
C902	B1	D902	C2	RB904	F2
C903	B1	D903	B3	RB905	F1
C904	B2	D904	C3	RB906	F3
C905	C1	D905	D1	RT901	B2
C906	C1	D906	D2	RL901	B3
C907	C1	D907	D1	SN901	D2
C908	B1	D908	E2	T901	A1
C909	B1	D909	D1	T902	A3
C910	C1	D910	D2	T903	D1
C911	C2	F901	A1	ZD901	C1
C912	C2	IC903	C2	ZD902	D3
C913	C2	IC904	D3	ZD903	E1
C914	B3	L901	F1		
C919	D2	L903	F1		
C920	E2	Q903	D2		
C925	E2	Q904	E1		
C926	E2	Q910	B4		
C929	E1	Q912	B4		
C930	E1	Q913	C3		
C931	E2	R901	B1		
C932	F1	R902	B2		
C933	F1	R903	C1		
C938	E2	R904	C2		
C939	E2	R905	C1		
C940	F2	R906	C1		
C941	F2	R907	C2		
C945	E1	R908	C2		
C947	E1	R919	D2		
C948	E1	R920	D2		
C949	E1	R921	D2		
C950	E1	R922	D2		
C951	F1	R923	E2		
C952	F1	R924	D3		
C962	B3	R925	E3		
C963	D1	R928	E2		
C964	C1	R931	D1		
C965	D1	R941	B4		
C966	D1	R942	B4		
C967	D1	R943	C4		
C968	B1	R945	C4		
C969	D2	R946	C4		
C970	F1	R947	B4		
C971	E2	R948	B4		

19

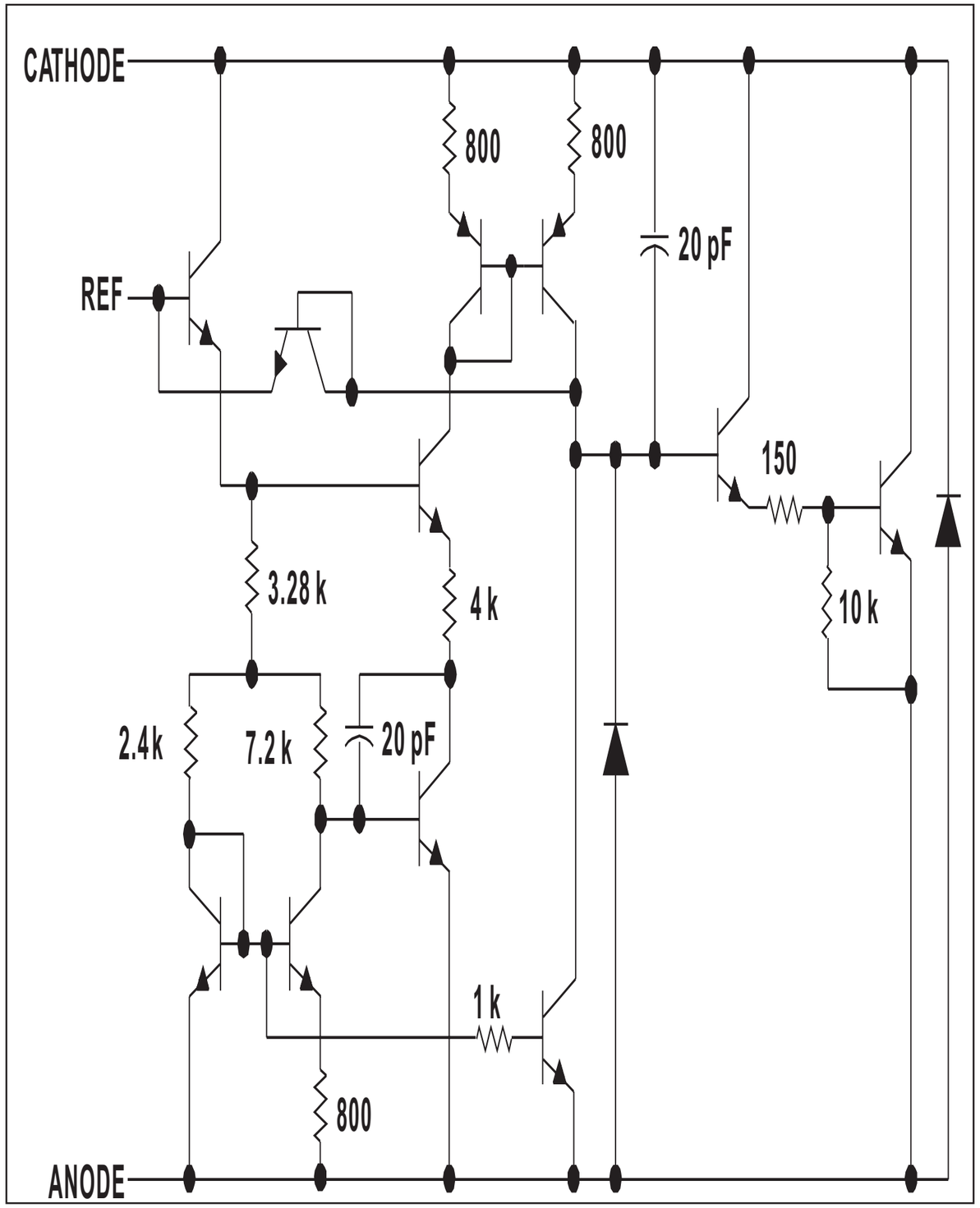
POWER PCB LAYOUT VIEW

C901	A1	C909	A3	C925	B3	C940	B4	C952	B4	C969	B3	R905	A2	R923	C3	R943	C3	Rb905	B4	D905	A4	Zd903	C4	Jw905	C3
C902	B1	C910	B3	C929	C4	C941	B4	C962	C2	C970	A3	R906	A2	R924	C3	R945	C3	RB906	C4	D906	B4	Q903	B3	JW906	C3
C903	A2	C911	C3	C930	C3	C945	A4	C963	A3	C971	B3	R907	B3	R925	C3	R946	C3	RL901	B1	D907	B3	Q904	C4	JW907	C1
C904	B2	C913	C3	C931	C4	C947	A4	C964	B3	C972	B3	R908	B2	R928	C3	R947	C2	RT901	B1	D908	B3	Q910	C3	JW908	C4
C905	B2	C912	B2	C932	C4	C948	A4	C965	A3	R901	B2	R919	C3	R931	A4	R948	C3	D901	A2	D909	B3	Q912	C2	JW909	C4
C906	B2	C914	C2	C933	B4	C949	A4	C966	A3	R902	B2	R920	C3	R932	C4	R951	C3	D902	B2	D910	B3	Q913	C4	JW910	B3
C907	A2	C919	B3	C938	B4	C950	A4	C967	A4	R903	B2	R921	B3	R941	C3	R952	C4	D903	C2	ZD901	A2	JW903	C3	JW911	C3
C908	A2	C920	C3	C939	B4	C951	B4	C968	B3	R904	B2	R922	B3	R942	C3	RB904	B4	D904	C2	ZD902	C3	JW904	C3	L901	A4

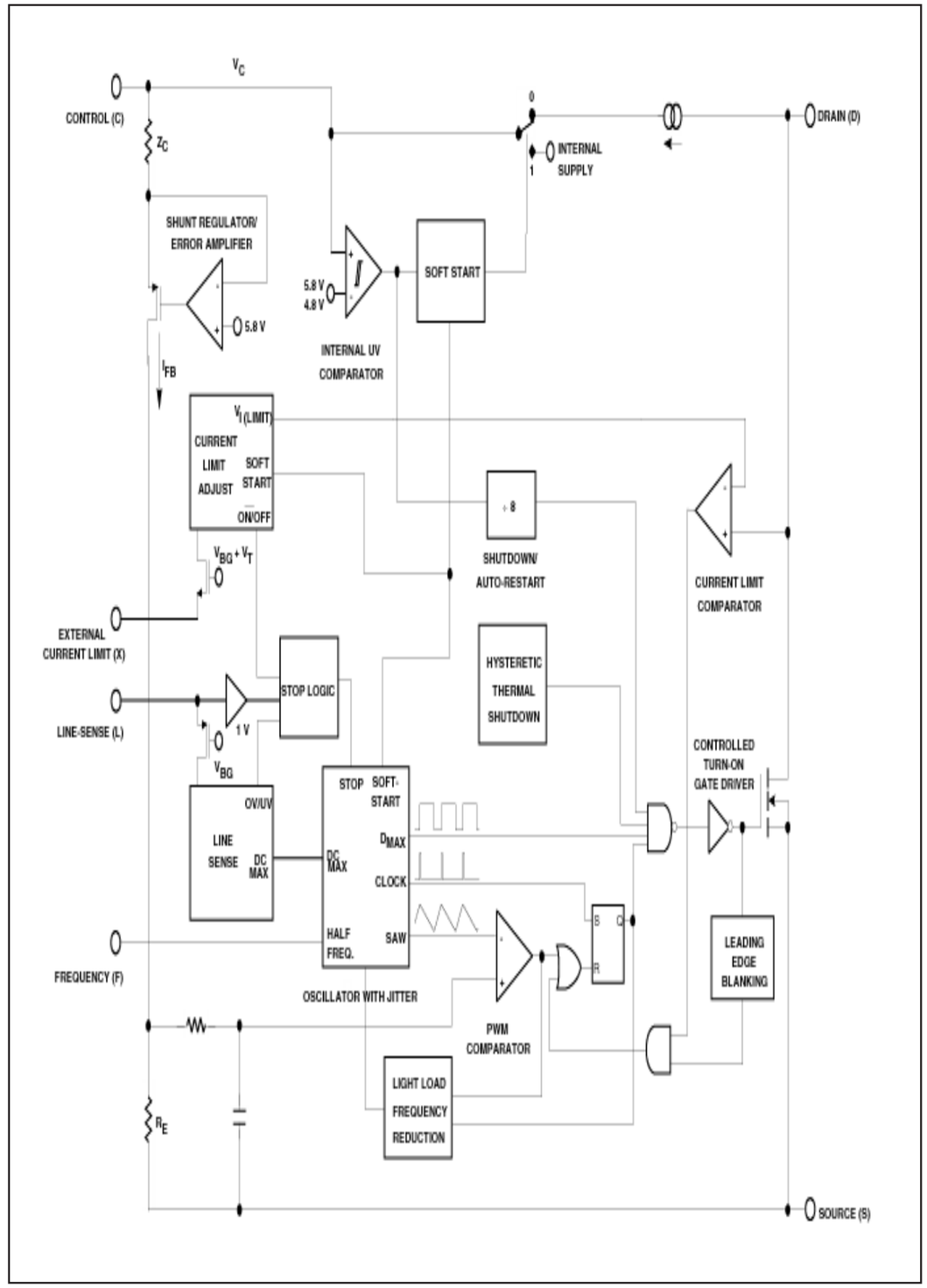
L902	B4	IC904	C3	T903	A3																				
L903	B4	P901	B1																						
BR901	B1	P902	B1																						
CN902	A1	P903	B1																						
BR901	B1	P904	C2																						
CN902	A1	SN901	B3																						
F901	A1	T901	B1																						
IC903	B2	T902	C1																						



TL 431 INTERNAL IC DIAGRAM



TOP 249 250W INTERNAL IC DIAGRAM



21

ELECTRICAL PART LIST

:-POWER PCB

Miscellaneous

	LCP100202-0001	POWER PCB
	RAD114148-0010	DIODE SW
	FBY064015-0003	D10x44mm UM-4 1.5V
	VSC000002-0010	SCART CABL
	VRC101002-0030	5000mm BLACK D2.44mm
	CFC011000-1001	FUSE CLIP For F901x2
	VWA310007-0007	4P 600mm 1015#18 For
RB905		
BR901	RHD208080-0010	BRIDGE
CN902	CCN396021-0104	CONNECTOR
F901	KSA020315-0030	3.15A 250V SLOW
L901	SIL106001-6090	6uH 10.5Ts 6A
L902	SIL106002-6090	6uH 13.5Ts 2UEW
L903	SIL106002-6090	6uH 13.5Ts 2UEW
P901	VWR0333BB-0060	22 GA 60 mm RED 4-4 TO P902
P903	VWR0333BB-0060	22 GA 60 mm RED 4-4TO P904
RB904	VFL81131B-1400	8P 140mm BLK
RB906	VFL31124B-2200	3P 220mm BLK
RL901	MRL012004-0011	RELAY
RT901	RNT005130-5090	5 OHM 5A DIA=13 mm
SN901	RHI000615-0001	SFH615A-3
T901	JFT006008-0020	AC FILTER
T902	TTB123011-0020	230V EI-35
T903	TSC100001-0010	EE-42 50W

Capacitor

C901	PVX2705F0-2240	0.22uF 250V 20%CAMEL
C902	PVX2705F0-2240	0.22uF 250V 20%CAMEL
C903	PJE0995E0-2210	220 uF 200V 20% 105C
C904	PJE0995E0-2210	220 uF 200V 20% 105C
C905	PVY1705K0-2222	0.0022uF 400V 20%
C906	PVY1705K0-2222	0.0022uF 400V 20%
C907	PVD2355Q0-1030	0.01 uF 1KV 20%
C908	PRD5564Q0-4710	470 pF 1KV 10% 125 C
C909	PVY1705K0-2222	0.0022uF 400V 20%
C910	PVD2355Q0-1020	0.001 uF 1KV 20%
C911	PRL048570-1050	1 uF 50V 20%
C912	PRD249670-1040	0.1 uF 50V +80-20%
C913	PME039550-4700	47 uF 25V 20%
C914	PME039550-2210	220 uF 25V 20%
C919	PRD235470-4720	4700 pF 50V 10%
C920	PRD249670-1040	0.1 uF 50V +80-20%
C925	PVD2355Q0-1020	0.001 uF 1KV 20%
C926	PME039570-1090	1 uF 50V 20%
C929	PVE039550-1020	1000 uF 25V 20% 85 C
C930	PRD235470-1020	1000 pF 50V 10%
C931	PVE039540-1020	1000 uF 16V 20% 85 C
C932	PVE039540-1020	1000 uF 16V 20% 85 C
C933	PRD235470-1020	1000 pF 50V 10%
C938	PRD235470-1020	1000 pF 50V 10%
C939	PVE039540-1020	1000 uF 16V 20% 85 C
C940	PVE039540-1020	1000 uF 16V 20% 85 C
C941	PRD235470-1020	1000 pF 50V 10%
C945	PVD2354Q0-4710	470 pF 1KV 10%
C947	PVE039570-1020	1000 uF 50V 20%
C948	PVE039570-1020	1000 uF 50V 20%
C949	PRD235470-1020	1000 pF 50V 10%
C950	PRD235470-1030	0.01 uF 50V 10%
C951	PRD249670-1040	0.1 uF 50V +80-20%
C952	PVE039570-1020	1000 uF 50V 20%
C962	PRD249670-1040	0.1 uF 50V +80-20%
C963	PVY1705K0-2222	0.0022uF 400V 20%
C964	PVY1705K0-2222	0.0022uF 400V 20%
C965	PVD2355Q0-1020	0.001 uF 1KV 20%
C966	PVD2355Q0-1020	0.001 uF 1KV 20%
C967	PVD2355Q0-1020	0.001 uF 1KV 20%
C968	PVY1705K0-2222	0.0022uF 400V 20%
C969	PRD235470-1030	0.01 uF 50V 10%
C970	PRD249670-1040	0.1 uF 50V +80-20%
C972	PME039570-1000	10 uF 50V 20%

Diode

D901	RAD100026-0010	DIODE BYV26D PHILIPS
D902	RAD114148-0010	DIODE SW
D903	RAD114001-0010	DIODE
D904	RAD114148-0010	DIODE SW
D905	RHD208020-0010	BRIDGE
D906	RHD115822-0010	1N5822 3A 45V
D906x2	DSL001001-0100	SLEEVING
D907	RAD100204-0010	HER204 2A 300V 50nS
D908	RAD100104-0010	HER104 1A 300V 50nS
D909	RAD114148-0010	DIODE SW
D910	RAD114148-0010	DIODE SW
ZD901	RAD160200-0010	P6KE200A
ZD902	RAZ005006-0020	5.6-5.9V 0.5W
ZD903	RAZ005007-0020	6.9-7.2V 0.5WI

Integrated Circuit

IC903	RHI000249-0001	IC 6 PIN TOP 249 250W
IC904	RHI004310-0001	IC 3 PIN TI431

Transistor

Q903	RAN202222-0001	2N2222A
Q904	RHN000120-0001	TIP120
Q910	RAM207000-1001	2N7000 60V 200mA
Q912	RAM207000-1001	2N7000 60V 200mA
Q913	RAN202001-0001	2SC2001L NEC

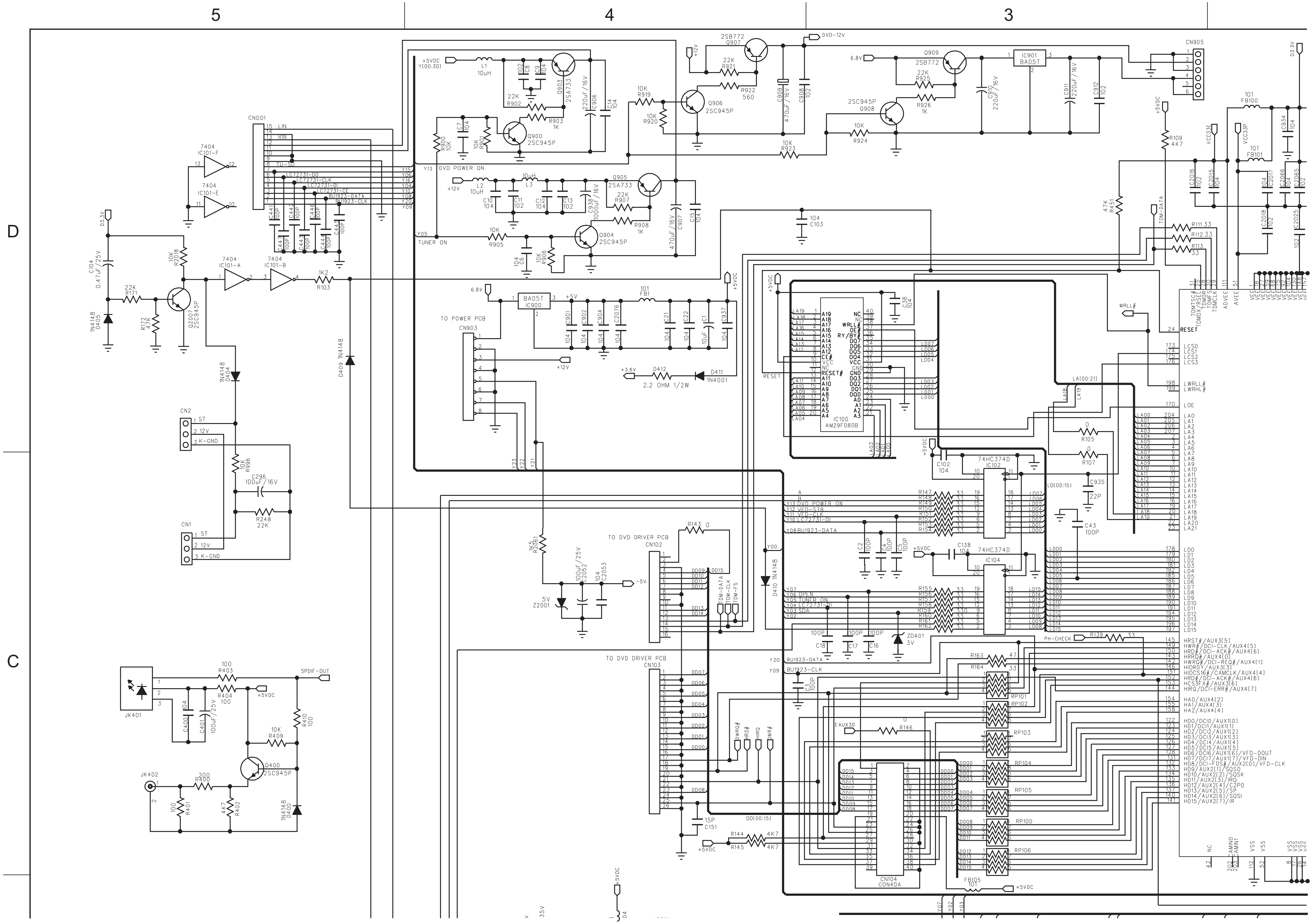
Resistor

R901	QAF025000-5640	560K OHM 1/2W 5% CF
R901	QAF025000-5640	560K OHM 1/2W 5% CF
R902	QAF025000-5640	560K OHM 1/2W 5% CF
R902	QAF025000-5640	560K OHM 1/2W 5% CF
R903	QAF025000-1050	1M OHM 1/2W 5% CF
R904	QAF025000-1050	1M OHM 1/2W 5% CF
R905	QGN205000-6830	68K OHM 2W 5% W/KINK
R906	QGN205000-6830	68K OHM 2W 5% W/KINK
R907	QAF065000-4790	4.7 OHM 1/6W 5% CF
R908	QAF065000-6890	6.8 OHM 1/6W 5%
R919	QAF065000-1030	10K OHM 1/6W 5% CF
R919	QAF065000-1030	10K OHM 1/6W 5% CF
R920	QAF065000-1020	1K OHM 1/6W 5% CF
R921	QAF065000-1020	1K OHM 1/6W 5% CF
R922	QAF065000-5630	56K OHM 1/6W 5% CF
R923	QAM061000-3002	30K OHM 1/6W 1%
R924	QAF065000-2020	2K OHM 1/6W 5% CF
R925	QAF061000-2701	2.7K OHM 1/6W 1%
R928	QAS025101-1210	120 OHM 1/2W
R931	QAF065000-7500	75 OHM 1/6W 5% CF
R932	QAF065000-2020	2K OHM 1/6W 5% CF
R941	QAF065000-4730	47K OHM 1/6W 5% CF
R942	QAF065000-2230	22K 1/6W 5% CF
R943	QAF065000-1030	10K OHM 1/6W 5% CF
R945	QAF065000-1030	10K OHM 1/6W 5% CF
R946	QAF065000-1030	10K OHM 1/6W 5% CF
R947	QAF065000-4730	47K OHM 1/6W 5% CF
R948	QAF065000-2230	22K 1/6W 5% CF
R951	QAF045000-1010	100 OHM 1/4W 5% CF
R952	QAS025100-1090	1 OHM 1/2W 5%

Jumper

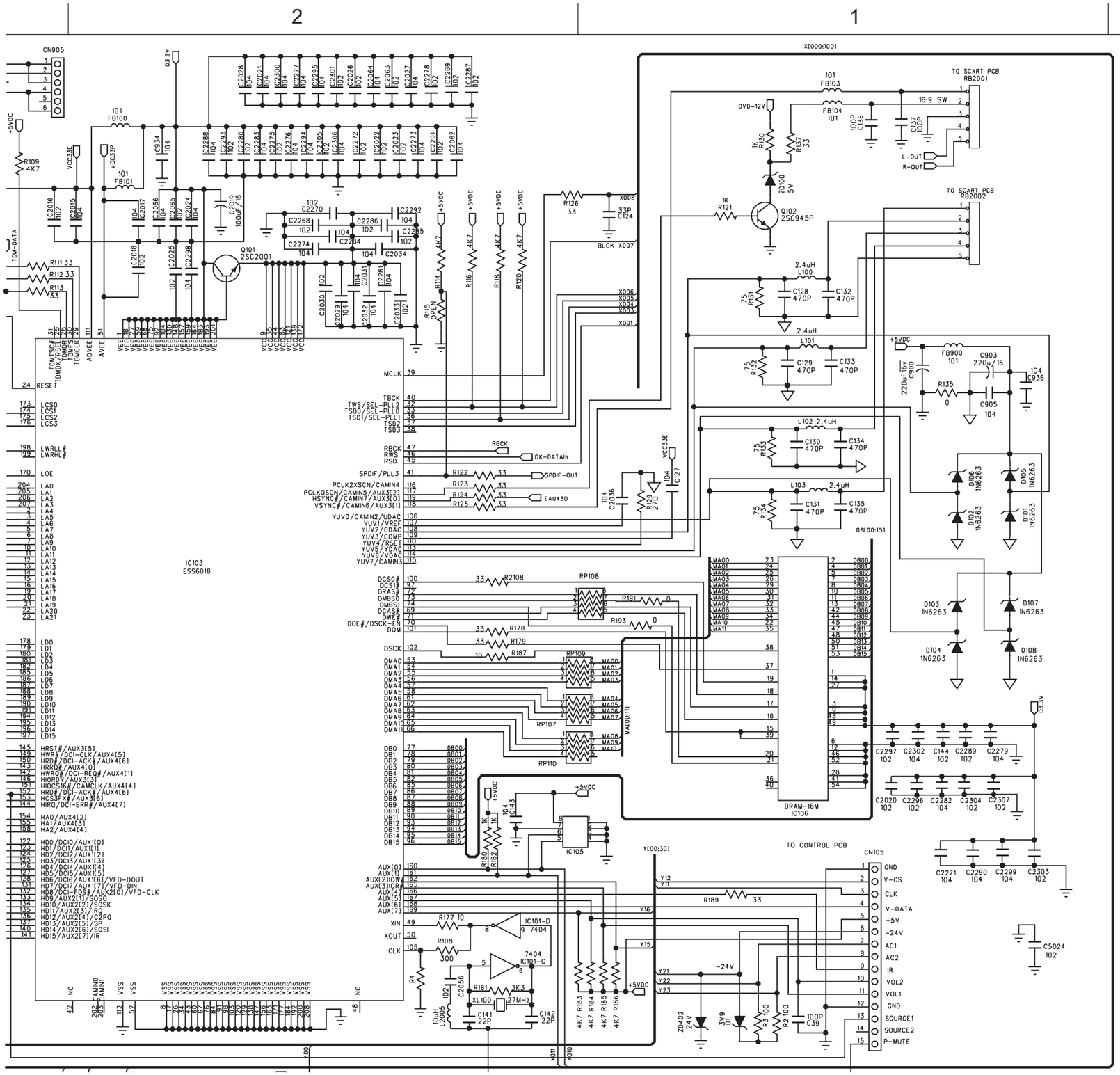
JW903	XJP220000-0001	22 GA TINNED
JW904	XJP220000-0001	22 GA TINNED
JW905	XJP220000-0001	22 GA TINNED
JW906	XJP220000-0001	22 GA TINNED
JW907	XJP220000-0001	22 GA TINNED
JW908	XJP220000-0001	22 GA TINNED
JW909	XJP220000-0001	22 GA TINNED
JW910	XJP220000-0001	22 GA TINNED
JW911	XJP220000-0001	22 GA TINNED

MAIN PCB TOP LEFT VIEW



23

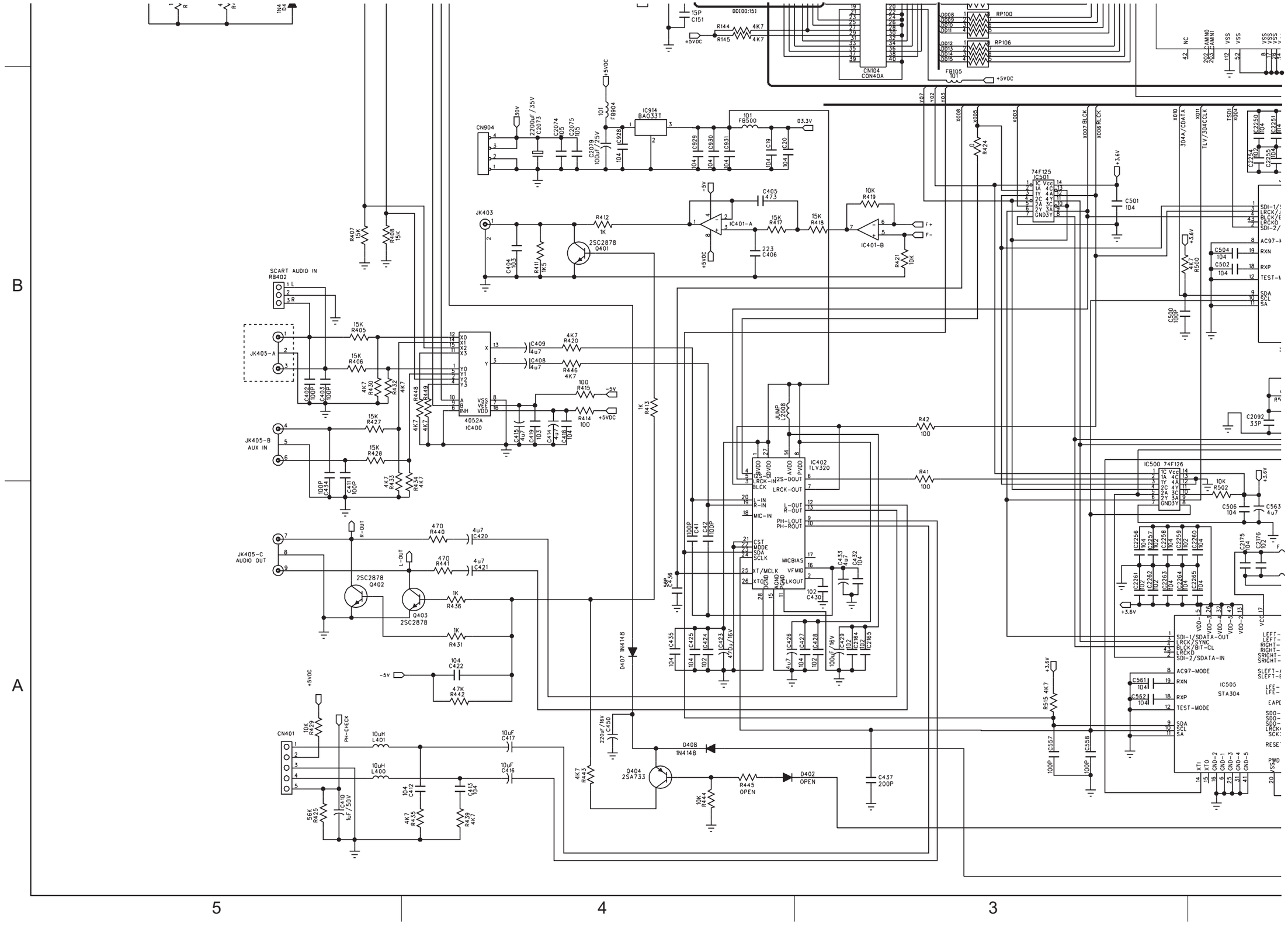
MAIN PCB TOP RIGHT VIEW



CN1	C5	L507	A1	R160	C3	R518	A2
CN2	D5	L508	B1	R161	C3	R519	A1
CN102	C4	L509	B1	R162	C3	R520	B1
CN103	C4	L513	A1	R163	C3	R521	A1
CN105	C1	L514	A1	R164	C3	R522	A1
CN401	A5	L515	B1	R171	D5	R523	A1
CN903	D4	L2005	C2	R172	D5	R524	A1
CN904	B4	L2008	B4	R177	C2	R525	A1
CN905	D3	L2009	B2	R178	C2	R526	A1
D1	C1	L2010	B2	R179	C2	R527	A1
D101	D1	L2032	B1	R180	C2	R528	A1
D102	D1	L2034	A1	R181	C2	R529	A1
D103	C1	L2036	B1	R182	C2	R530	A1
D104	C1	L2037	B1	R183	C1	R531	A1
D105	D1	L2038	A1	R184	C1	R532	A1
D106	D1	L2045	A1	R185	C1	R533	B2
D107	C1	Q101	D2	R186	C1	R534	B2
D108	C1	Q102	D1	R187	C2	R900	D4
D400	C5	Q400	C5	R189	C1	R901	D4
D402	A3	Q401	B4	R191	C1	R902	D4
D404	D5	Q402	A5	R193	C1	R903	D4
D405	D5	Q403	A4	R248	C5	R906	D4
D407	A4	Q404	A4	R400	C5	R907	D4
D408	A4	Q900	D4	R401	C5	R908	D4
D409	D5	Q903	D4	R402	C5	R919	D4
D410	C4	Q904	D4	R403	C5	R920	D4
D411	D4	Q905	D4	R404	C5	R921	D4
D412	D4	Q906	D4	R405	B5	R922	D4
FB1	D4	Q907	D4	R406	B5	R924	D3
FB100	D2	Q908	D3	R407	B5	R925	D3
FB101	D2	Q909	D3	R408	B3	R926	D3
FB103	D1	Q2007	D5	R409	C5	R996	C5
FB104	D1	R1	B2	R410	C5	R2018	D5
FB500	B4	R2	C1	R411	B4	R2061	C4
FB502	A2	R3	C1	R412	B4	R2108	C2
FB503	A2	R4	C2	R413	B4	RB2001	D1
FB900	D1	R41	B3	R414	B4	RB402	B5
IC100	D3	R42	B3	R415	B4	RB2002	D1
IC101-A	D5	R103	D5	R417	B4	RP100	C3
IC101-B	D5	R105	D3	R418	B3	RP101	C3
IC101-C	C2	R107	D3	R419	B3	RP102	C3
IC101-D	C2	R108	C2	R420	B4	RP103	C3
IC101-E	D5	R109	D3	R421	B3	RP104	C3
IC101-F	D5	R111	D3	R424	B3	RP105	C3
IC102	C3	R112	D3	R425	A5	RP106	C3
IC103	C2	R113	D3	R427	B5	RP107	C2
IC104	C3	R114	D2	R428	B5	RP108	C1
IC105	C1	R115	D2	R429	A5	RP109	C1
IC106	C1	R116	D2	R430	B5	RP110	C2
IC400	B4	R118	D2	R431	A4	XL100	C2
IC401-A	B4	R120	D2	R432	B5	XL500	B2
IC401-B	B3	R121	D1	R433	A5	Z2001	C4
IC402	B3	R122	D2	R434	A4	ZD100	D1
IC500	B3	R123	D2	R435	A4	ZD401	C3
IC501	B3	R124	D2	R436	A4	ZD402	C1
IC502	B2	R125	D2	R439	A4		
IC503	A1	R126	D2	R440	A4		
IC504	A1	R129	D1	R441	A4		
IC505	A2	R130	D1	R442	A4		
IC506	B1	R131	D1	R443	A4		
IC900	D4	R132	D1	R444	A4		
IC901	D3	R133	D1	R446	B4		
IC914	B4	R134	D1	R448	B4		
JK401	C5	R135	D1	R449	B4		
JK402	C5	R137	D1	R451	D3		
JK403	B4	R139	C3	R500	B2		
JK405-A	B5	R143	C4	R501	B2		
JK405-B	B5	R144	C4	R502	A2		
JK500	B1	R145	C4	R503	B2		
L1	D4	R146	C3	R504	A2		
L2	D4	R147	C3	R505	B1		
L3	D4	R148	C3	R506	B1		
L100	D1	R149	C3	R507	A1		
L101	D1	R150	C3	R508	B1		
L102	D1	R151	C3	R509	A1		
L103	D1	R152	C3	R510	B1		
L400	A5	R153	C3	R511	B1		
L401	A5	R154	C3	R512	B1		
L500	B1	R155	C3	R513	B1		
L501	B1	R156	C3	R514	B1		
L502	B1	R157	C3	R515	A3		
L503	B1	R158	C3	R516	A2		
L504	A1	R159	C3	R517	A2		

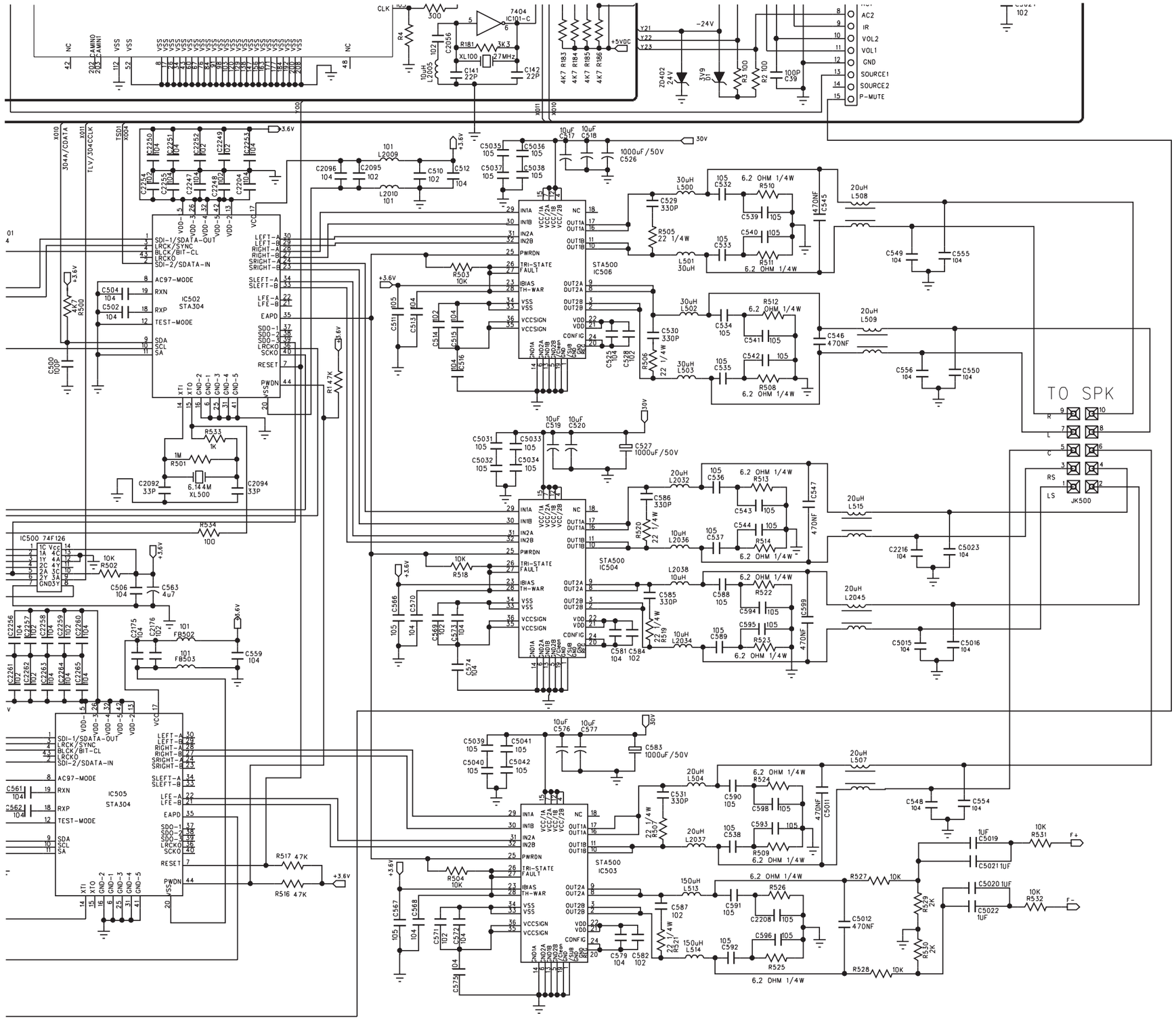
24

MAIN PCB BOTTOM LEFT VIEW



25

MAIN PCB BOTTOM RIGHT VIEW



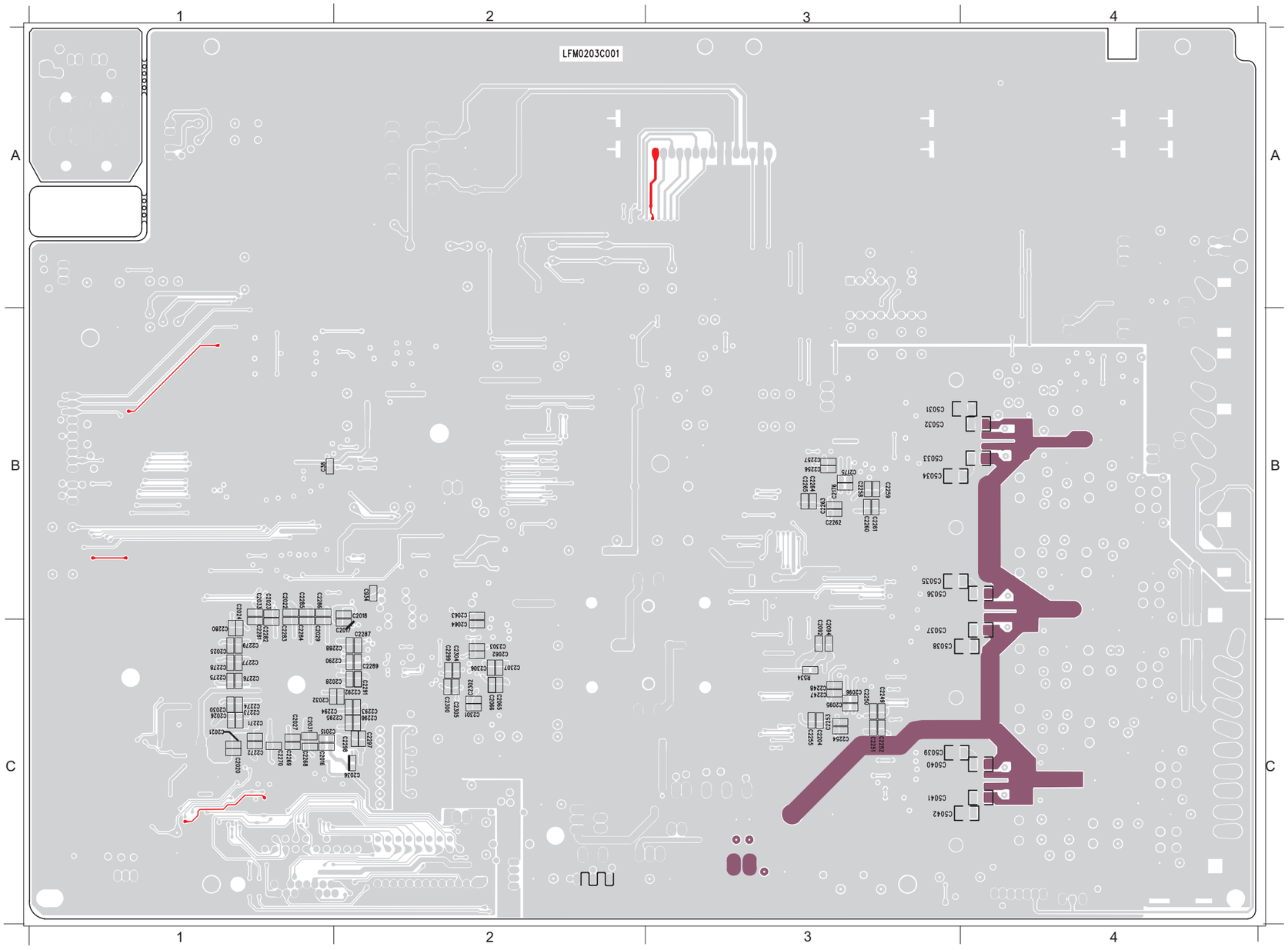
2 1

B

C1	D4	C436	A4	C590	A1	C2257	A3
C2	C3	C441	D5	C591	A1	C2258	A3
C3	C3	C442	D5	C592	A1	C2259	A3
C4	C3	C443	D5	C593	A1	C2260	A2
C5	C3	C444	D5	C594	A1	C2261	A3
C6	D4	C445	D5	C595	A1	C2262	A3
C7	D4	C446	D5	C596	A1	C2263	A3
C8	D4	C447	D5	C598	A1	C2264	A3
C9	D4	C437	A3	C599	A1	C2265	A2
C10	D4	C450	A4	C900	D1	C2268	D2
C11	D4	C500	B3	C901	D4	C2269	D2
C12	D4	C501	B3	C902	D4	C2270	D2
C13	D4	C502	B2	C903	D1	C2271	C1
C14	D4	C504	B2	C904	D4	C2272	D2
C15	D4	C506	A2	C905	D1	C2273	D2
C16	C3	C510	A2	C906	D4	C2274	D2
C17	C3	C511	B2	C907	D4	C2275	D2
C18	C3	C512	A2	C908	D4	C2276	D2
C19	B4	C513	B2	C909	D4	C2277	D2
C20	B4	C514	B2	C910	D3	C2278	D2
C21	D4	C515	B2	C911	D3	C2279	C1
C22	D4	C516	B2	C912	D3	C2280	D2
C38	D3	C517	B1	C928	B4	C2281	D2
C39	C1	C518	B1	C929	B4	C2282	C1
C41	A4	C519	B2	C930	B4	C2283	D2
C42	A4	C520	B1	C931	B4	C2284	D2
C43	C3	C523	B4	C934	D2	C2285	D2
C102	C3	C525	B1	C935	C3	C2286	D2
C103	D4	C526	B1	C937	D4	C2287	D2
C104	D5	C527	B1	C938	D4	C2288	D2
C124	D1	C528	B1	C2015	D2	C2289	C1
C127	D1	C529	B1	C2016	D3	C2290	C1
C128	D1	C530	B1	C2017	D2	C2291	D2
C129	D1	C531	A1	C2018	D2	C2292	D2
C130	D1	C532	B1	C2019	D2	C2293	D2
C131	D1	C533	B1	C2020	C1	C2294	D2
C132	D1	C534	B1	C2021	D2	C2295	D2
C133	D1	C535	B1	C2022	D2	C2296	C1
C134	D1	C536	B1	C2023	D2	C2297	C1
C135	D1	C537	B1	C2024	D2	C2298	D2
C136	D1	C538	A1	C2025	D2	C2299	C1
C137	D1	C539	B1	C2026	D2	C2300	D2
C138	C3	C540	B1	C2027	D2	C2301	D2
C141	C2	C541	B1	C2028	D2	C2302	C1
C142	C2	C542	B1	C2029	D2	C2303	C1
C143	C2	C543	B1	C2030	D2	C2304	C1
C144	C1	C544	B1	C2031	D2	C2305	D2
C151	C4	C545	B1	C2032	D2	C2306	D2
C296	C5	C546	B1	C2033	D2	C2307	C1
C400	C5	C547	B1	C2034	D2	C5011	A1
C401	C5	C548	A1	C2036	D1	C5012	A1
C402	B5	C549	B1	C2052	C4	C5015	A1
C403	B5	C550	B1	C2053	C4	C5016	A1
C404	B4	C554	A1	C2056	C2	C5019	A1
C405	B4	C555	D4	C2062	D2	C5020	A1
C406	B4	C556	A2	C2063	D2	C5021	A1
C407	B4	C557	A3	C2064	D2	C5022	A1
C4080	B4	C558	A3	C2065	D2	C5023	B1
C409	B4	C559	A3	C2066	D2	C5024	C1
C410	A5	C561	A3	C2073	B4	C5031	B2
C411	A5	C562	A3	C2074	B4	C5032	B2
C412	A4	C563	A2	C2076	D4	C5033	B2
C413	A4	C566	A2	C2079	B2	C5034	B2
C414	B4	C567	A2	C2092	B2	C5035	B2
C415	B4	C568	A2	C2094	B2	C5036	B2
C416	B4	C569	A2	C2095	B2	C5037	B2
C417	A4	C570	A2	C2096	B2	C5038	B2
C418	B4	C571	A2	C2164	A3	C5039	A1
C419	B4	C572	A2	C2165	A3	C5040	A1
C420	A4	C573	A2	C2175	A2	C5041	A1
C421	A4	C574	A2	C2176	A2	C5042	A1
C422	A4	C575	A2	C2204	B2		
C423	A4	C576	A1	C2208	A1		
C424	A4	C577	A1	C2216	B1		
C425	A4	C579	A1	C2247	B2		
C426	A3	C581	A1	C2248	B2		
C427	A3	C582	A1	C2249	B2		
C428	A3	C583	A1	C2250	B2		
C429	A3	C584	A1	C2251	B2		
C430	A3	C585	A1	C2252	B2		
C432	A3	C586	B1	C2253	B2		
C433	A3	C587	A1	C2254	B2		
C434	A5	C588	A1	C2255	B2		
C435	A4	C589	A1	C2256	A3		

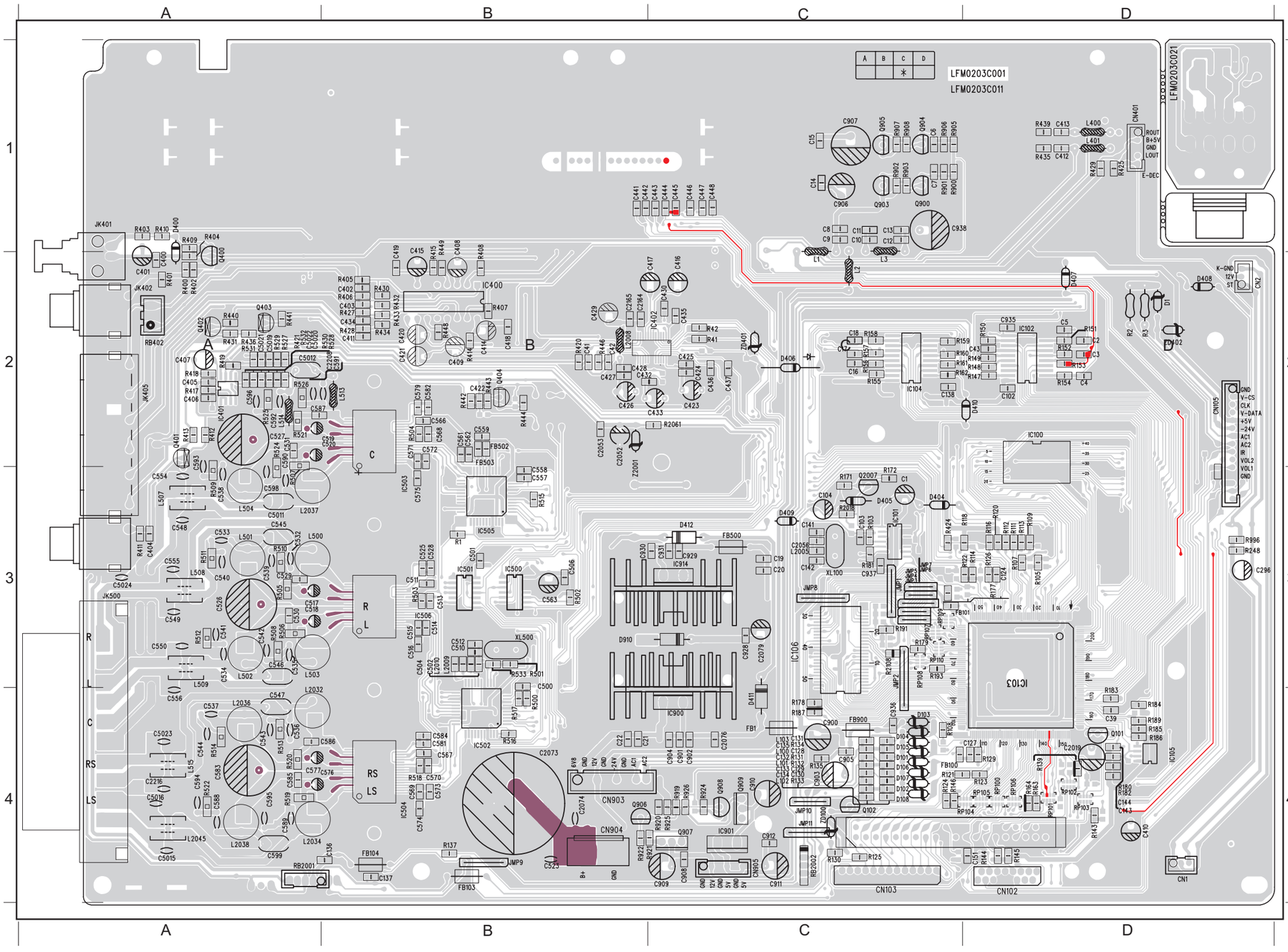
26

MAIN PCB BOTTOM LAYOUT VIEW



C38	B1	C2271	C1
C934	B2	C2272	C1
C2015	C1	C2273	C1
C2016	C1	C2274	C1
C2017	C2	C2275	C1
C2018	B2	C2276	C1
C2020	C1	C2277	C1
C2021	C1	C2278	C1
C2022	B1	C2279	C1
C2023	B1	C2280	C1
C2024	B1	C2281	C1
C2025	C1	C2282	C1
C2026	C1	C2283	C1
C2027	C1	C2284	C1
C2028	C2	C2285	B1
C2029	C1	C2286	B1
C2030	C1	C2287	C2
C2031	C1	C2288	C2
C2032	C1	C2289	C2
C2033	B1	C2290	C2
C2062	C2	C2291	C2
C2063	B2	C2292	C2
C2064	C2	C2293	C2
C2065	C2	C2294	C2
C2066	C2	C2295	C2
C2092	C3	C2296	C2
C2094	C3	C2297	C2
C2095	C3	C2298	C2
C2096	C3	C2299	C2
C2216	C1	C2300	C2
C2247	C3	C2301	C2
C2249	C3	C2302	C2
C2250	C3	C2303	C2
C2251	C3	C2304	C2
C2252	C3	C2305	C2
C2253	C3	C2306	C2
C2254	C3	C2307	C2
C2255	C3	C5031	B3
C2256	B3	C5032	B3
C2257	B3	C5033	B3
C2258	B3	C5034	B3
C2259	B3	C5035	B3
C2260	B3	C5036	B3
C2261	B3	C5037	C3
C2262	B3	C5038	C3
C2263	B3	C5039	C3
C2264	B3	C5040	C3
C2265	B3	C5041	C3
C2268	C1	C5042	C3
C2269	C1	R534	C3
C2270	C1		

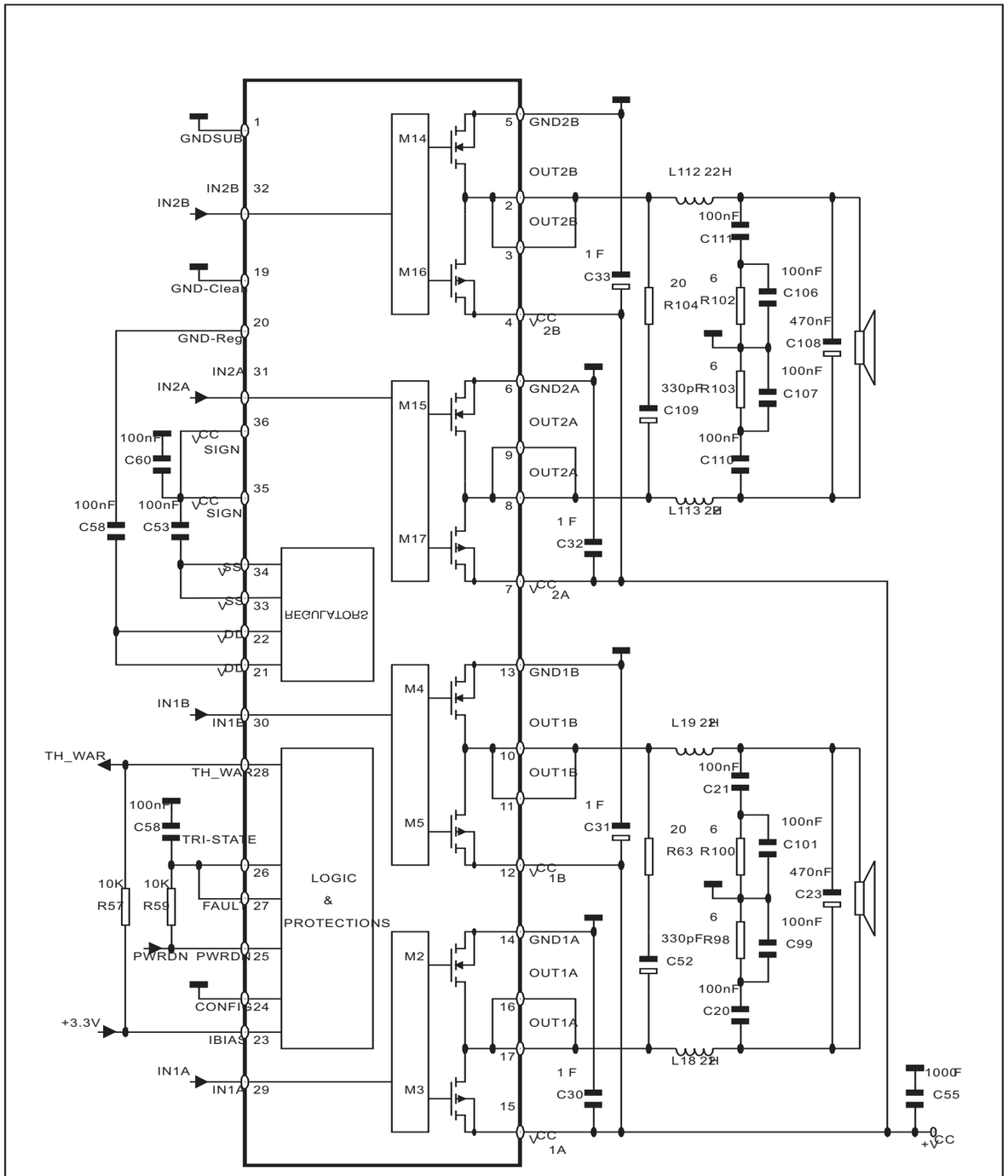
MAIN PCB TOP LAYOUT VIEW



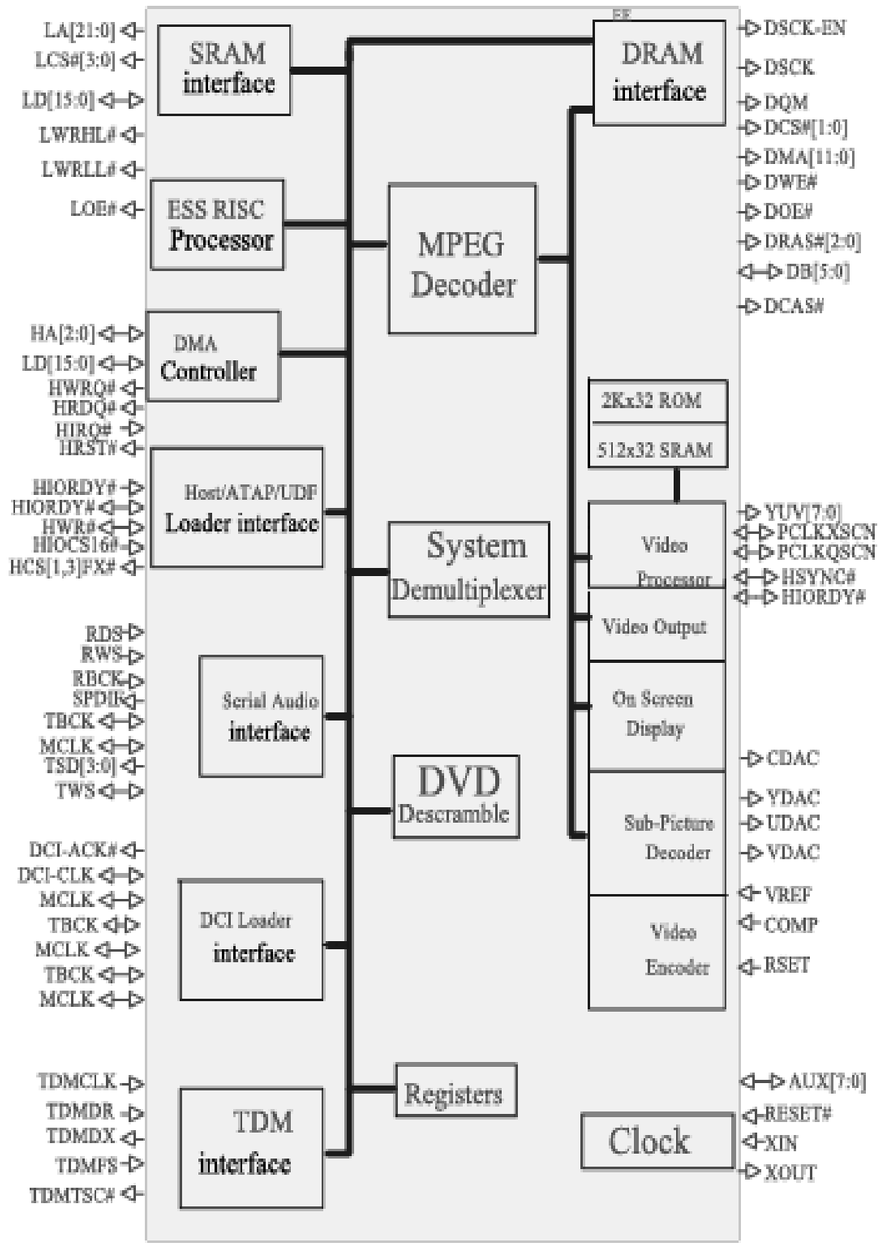
R1	B3	R410	A1	R996	D3	C414	B2	C562	B2	CN105	D2	L502	A3		
R2	D2	R411	A3	R2018	C3	C415	B2	C563	B3	CN401	D1	L503	A3		
R3	D2	R412	A2	R2061	C2	C416	C2	C566	B2	CN903	B4	L504	A3		
R41	C2	R413	A2	R2108	C3	C417	C2	C567	B4	CN904	B4	L507	A3		
R42	C2	R414	B2	RB402	A2	C418	B2	C568	B2	CN905	C4	L508	A3		
R103	C3	R415	B2	RB2001	A4	C419	B2	C569	B4	D1	D2	L509	A3		
R105	D3	R417	A2	RB2002	C4	C420	B2	C570	B4	D101	C4	L513	B2		
R107	D3	R418	A2	RB402	A2	C421	B2	C571	B2	D102	C4	L514	A2		
R108	C4	R419	A2	RP100	D4	C422	B2	C572	B2	D103	C4	L515	A4		
R109	D3	R420	B2	RP101	D4	C423	C2	C573	B4	D104	C4	L2005	C3		
R111	D3	R421	A2	RP102	D4	C424	C2	C574	B4	D105	C4	L2008	B2		
R112	D3	R424	C3	RP103	D4	C425	C2	C575	B3	D106	C4	L2009	B3		
R113	D3	R425	D1	RP104	D4	C426	B2	C576	A4	D107	C4	L2010	B3		
R114	D3	R427	B2	RP105	D4	C427	B2	C577	A4	D108	C4	L2032	A4		
R116	D3	R428	B2	RP106	D4	C428	B2	C579	B2	D400	A1	L2034	A4		
R118	D3	R429	D1	RP107	C3	C429	B2	C581	B4	D404	C3	L2036	A4		
R120	D3	R430	B2	RP108	C3	C430	C2	C582	B2	D405	C3	L2037	A3		
R121	C4	R431	A2	RP109	C3	C432	B2	C583	A4	D406	C2	L2038	A4		
R122	D3	R432	B2	RP110	C3	C433	C2	C584	B4	D407	D2	L2045	A4		
R123	D4	R433	B2	C1	C3	C434	B2	C585	A4	D408	D2	Q101	D4		
R124	C4	R434	B2	C2	D2	C435	C2	C586	A4	D409	C3	Q102	C4		
R125	C4	R435	D1	C3	D2	C436	C2	C587	A2	D410	D2	Q400	A2		
R126	D3	R436	A2	C4	D2	C437	C2	C588	A4	D411	C4	Q401	A2		
R129	D4	R439	D1	C5	D2	C441	B1	C589	A4	D412	C3	Q402	A2		
R130	C4	R440	A2	C6	C1	C442	B1	C590	A2	D910	B3	Q403	A2		
R131	C4	R441	A2	C7	C1	C443	C1	C591	A2	FB1	C4	Q404	B2		
R132	C4	R442	B2	C8	C1	C444	C1	C592	A2	FB100	C4	Q900	C1		
R133	C4	R443	B2	C9	C1	C445	C1	C593	A2	FB101	C3	Q903	C1		
R134	C4	R444	B2	C10	C1	C446	C1	C594	A4	FB103	B4	Q904	C1		
R135	C4	R446	B2	C11	C1	C447	C1	C595	A4	FB104	B4	Q905	C1		
R137	B4	R448	B2	C12	C1	C448	C1	C596	A2	FB500	C3	Q906	B4		
R139	D4	R449	B2	C13	C1	C500	B3	C598	A3	FB502	B2	Q907	C4		
R143	D4	R500	B4	C14	C1	C501	B3	C599	A4	FB503	B2	Q908	C4		
R144	D4	R501	B3	C15	C1	C502	B3	C900	C4	Fb900	C4	Q909	C4		
R145	D4	R502	B3	C16	C2	C504	B3	C901	C4	IC100	D2	Q2007	C3		
R146	C4	R503	B3	C17	C2	C506	B3	C902	C4	IC101	C3	XL100	C3		
R147	D2	R504	B2	C18	C2	C510	B3	C903	C4	IC102	D2	XL500	B3		
R148	D2	R505	A3	C19	C3	C511	B3	C904	B4	IC103	D3	Z2001	B2		
R149	D2	R506	A3	C20	C3	C512	B3	C905	C4	IC104	C2	Zd100	C4		
R150	D2	R507	A3	C21	B4	C513	B3	C906	C1	IC105	D4	ZD401	C2		
R151	D2	R508	A3	C22	B4	C514	B3	C907	C1	IC106	C3	ZD402	D2		
R152	D2	R509	A3	C39	D4	C515	B3	C908	C4	IC106	C3				
R154	D2	R510	A3	C41	B2	C516	B3	C909	B4	IC400	B2				
R155	C2	R511	A3	C42	B2	C517	A3	C910	C4	IC401	A2				
R156	C2	R512	A3	C43	D2	C518	A3	C911	C4	Ic402	C2				
R157	C2	R513	A4	C102	D2	C519	A2	C912	C4	IC500	B3				
R158	C2	R514	A4	C103	C3	C520	A2	C928	C3	IC501	B3				
R159	C2	R515	B3	C104	C3	C523	B4	C929	C3	IC502	B4				
R160	C2	R516	B4	C124	D3	C525	B3	C930	B3	IC503	B3				
R161	C2	R517	B4	C127	D4	C526	A3	C931	C3	IC504	B4				
R162	C2	R518	B4	C128	C4	C527	A2	C935	D2	IC505	B3				
R163	D4	R519	A4	C129	C4	C528	B3	C936	C4	IC506	B3				
R164	D4	R520	A4	C130	C4	C529	A3	C937	C3	IC900	C4				
R171	C3	R521	A2	C131	C4	C530	A3	C938	C1	IC901	C4				
R172	C3	R522	A4	C132	C4	C531	A2	C2019	D4	IC914	C3				
R177	D3	R524	A2	C133	C4	C532	A3	C2052	B2	JK401	A1				
R178	C4	R525	A2	C135	C4	C533	A3	C2053	B2	JK402	A2				
R179	C3	R526	A2	C136	C4	C534	A3	C2056	C3	JK405	A2				
R180	D4	R527	A2	C137	B4	C535	A3	C2073	B4	JK500	A3				
R181	C3	R528	A2	C138	B4	C537	A4	C2074	B4	JMP1	C3				
R182	D4	R529	A2	C141	C2	C536	A4	C2076	C4	JMP2	C3				
R183	D4	R530	A2	C142	C3	C538	A3	C2079	C4	JMP3	C3				
R184	D4	R531	A2	C143	C3	C539	A3	C2079	C4	JMP4	C3				
R185	D4	R533	B3	C144	D4	C540	A3	C2164	B2	JMP5	C3				
R186	D4	R552	A2	C151	D4	C541	A3	C2165	B2	JMP6	C3				
R187	C4	R900	C1	C296	D4	C542	A3	C2208	A2	JMP7	C3				
R189	D4	R901	C1	C400	D3	C543	A4	C2216	A4	JMP8	C3				
R191	C3	R902	C1	C401	A2	C544	A4	C5011	A3	JMP9	B4				
R193	C3	R903	C1	C402	A2	C545	A3	C5012	A2	JMP10	C4				
R248	D3	R904	C1	C403	B2	C546	A3	C5015	A4	JMP11	C4				
R400	A2	R905	C1	C404	B2	C547	A4	C5016	A4	L1	C2				
R401	A2	R906	C1	C405	A3	C548	A3	C5019	A2	L2	C2				
R402	A2	R907	C1	C406	A2	C549	A3	C5020	A2	L3	C2				
R403	A1	R908	C1	C407	A2	C550	A3	C5021	A2	L100	C4				
R404	A1	R919	B4	C408	A2	C554	A3	C5022	A2	L101	C4				
R405	B2	R920	B4	C409	B2	C555	A3	C5023	A4	L102	C4				
R406	B2	R921	B4	C410	B2	C556	A3	C5024	A3	L103	C4				
R407	B2	R922	B4	C411	D4	C557	B3	CN1	D4	L400	D1				
R408	B2	R924	C4	C412	B2	C558	B3	CN2	D2	L401	D1				
R409	A1	R925	C4	C413	D1	C559	B2	CN102	D4	L500	A3				
		R926	C4		D1	C561	B2	CN103	C4	L501	A3				

27

STA505 50Wx2 INTERNAL IC DIAGRAM



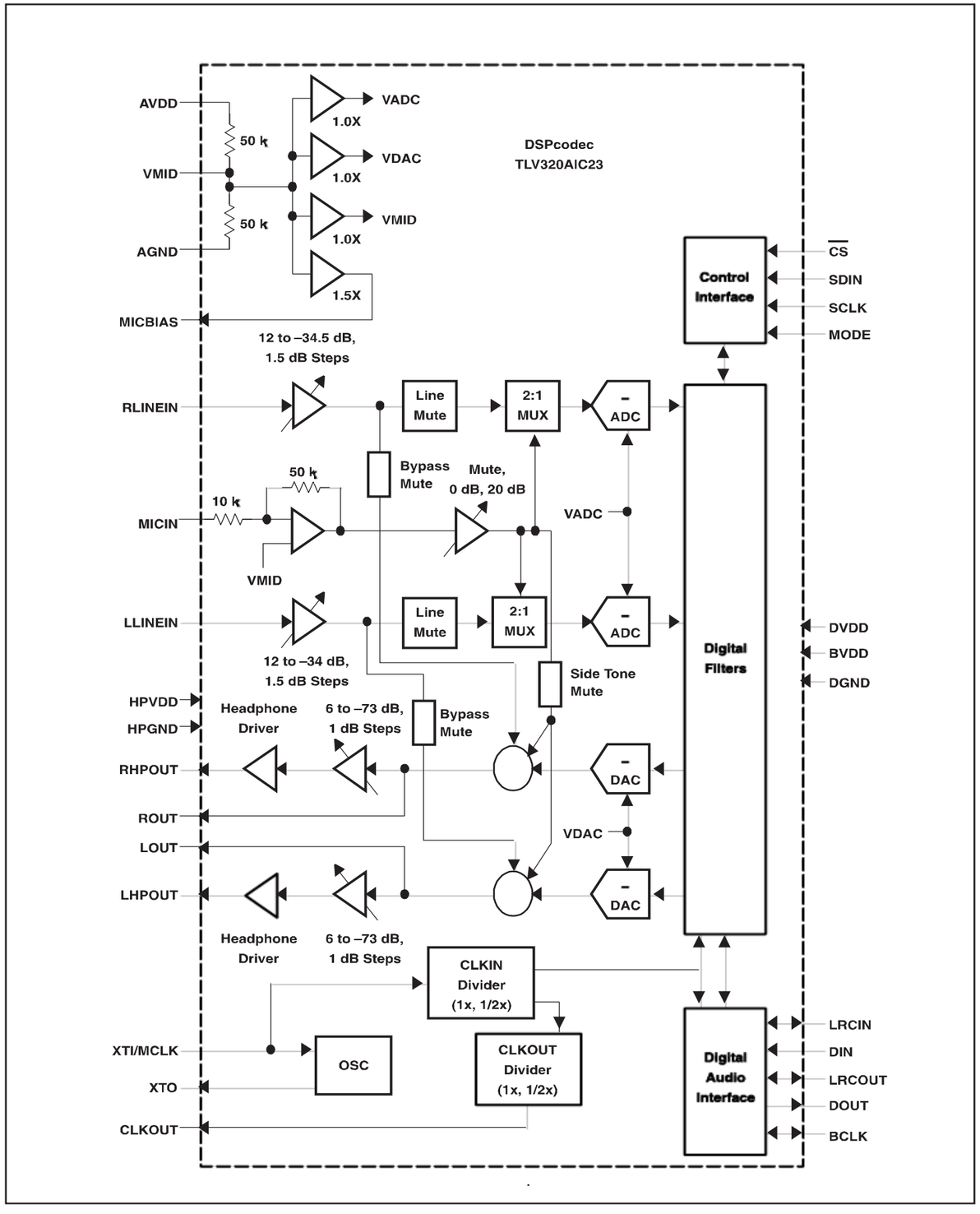
ES6018 INTERNAL IC DIAGRAM



Vibratto
ESS6018/28

29

TLV320A IC 23PW INTERNAL IC DIAGRAM



ELECTRICAL PARTS LIST

:-MAIN PCB

Miscellaneous

	LFM100203-0001	MAIN PCB
	LFM100203-0011	MAIN PCB
	VSW5154B5-02805P	280mm 2854#30 BRN
CN1	CCN200000-0103	3 PIN PITCH=2.0mm
CN2	CCN200000-0103	3 PIN PITCH=2.0mm
CN102	CCH100060-0216	16 PIN TO2-3100-1160
CN103	CCH100010-0226	13x2P FFC P1xL3mm
CN105	CCN200000-0115	15 PIN PITCH=2.0mm
CN401	CCN200000-0105	5 PIN PITCH=2.0mm
CN903	CCN250000-0108	B8B-XH-A 8 PIN
CN904	CCN396020-0104	4 PIN CL3962WVO
CN905	VFL611245-1300	6P 130mm BLK
FB1	SFB001001-0030	DIA3.5x6mm
FB100	SCB008050-1010	100 OHM AT 100MHz
FB101	SCB008050-1010	100 OHM AT 100MHz
FB103	SFB001001-0030	DIA3.5x6mm
FB104	SFB001001-0030	DIA3.5x6mm
FB500	SFB001001-0030	DIA3.5x6mm
FB502	SCB008050-1010	100 OHM AT 100MHz
FB503	SCB008050-1010	100 OHM AT 100MHz
FB900	SFB001001-0030	DIA3.5x6mm
JK401	CJT100001-0001	JACK
JK402	CJR001301-0010	1P BLACK W/GEND PIN
JK403	CJR001301-0010	1P BLACK W/GEND PIN
JK405	CJR004101-0010	4P WHT-WHT/RED-RED
JK500	CJS010101-0020	10P W/SPRING
JMP1	XJP220000-0001	22 GA TINNED
JMP2	XJP220000-0001	22 GA TINNED
JMP3	XJP220000-0001	22 GA TINNED
JMP4	XJP220000-0001	22 GA TINNED
JMP5	XJP220000-0001	22 GA TINNED
JMP6	XJP220000-0001	22 GA TINNED
JMP7	XJP220000-0001	22 GA TINNED
JMP8	XJP220000-0001	22 GA TINNED
JMP9	XJP220000-0001	22 GA TINNED
JMP10	XJP220000-0001	22 GA TINNED
JMP11	XJP220000-0001	22 GA TINNED
L1	SAN001600-1000	10 uH 10%
L2	SAN001600-1000	10 uH 10%
L3	SAN001600-1000	10 uH 10%
L100	SCN023500-2490	2.4 uH 5% SMD 0805
L101	SCN023500-2490	2.4 uH 5% SMD 0805
L102	SCN023500-2490	2.4 uH 5% SMD 0805
L103	SCN023500-2490	2.4 uH 5% SMD 0805
L400	SAN001600-1000	10 uH 10%
L401	SAN001600-1000	10 uH 10%
L500	SIN002002-3000	30uH 15% 1KHZ 0.25V 2A
L501	SIN002002-3000	30uH 15% 1KHZ 0.25V 2A
L502	SIN002002-3000	30uH 15% 1KHZ 0.25V 2A
L503	SIN002002-3000	30uH 15% 1KHZ 0.25V 2A
L504	SIL106002-2000	20 uH 2A
L507	SIL102001-2000	20uH D0.5mm 4PIN
L508	SIL102001-2000	20uH D0.5mm 4PIN
L509	SIL102001-2000	20uH D0.5mm 4PIN
L513	SAN001600-1510	150 uH 10%
L514	SAN001600-1510	150 uH 10%
L515	SIL102001-2000	20uH D0.5mm 4PIN
L2005	SCN023600-1000	10 uH 10% SMD 0805
L2008	XJP220000-0001	22 GA TINNED
L2009	SCB008050-1010	100 OHM AT 100MHz
L2010	SCB008050-1010	100 OHM AT 100MHz
L2032	SIL106002-2000	20 uH 2A
L2034	SIL106002-2000	20 uH 2A
L2036	SIL106002-2000	20 uH 2A
L2037	SIL106002-2000	20 uH 2A
L2038	SIL106002-2000	20 uH 2A
L2045	SIL102001-2000	20uH D0.5mm 4PIN
RB402	CCN250000-0103	B3B-XH-A 3 PIN
RB2001	CCN200000-0105	5 PIN PITCH=2.0mm
RB2002	CCN200000-0105	5 PIN PITCH=2.0mm
Rp100	QCP015081-3300	33 OHMx4 1/10W 5%
RP101	QCP015081-4700	47 OHMx4 1/10W 5%
RP102	QCP015081-4700	47 OHMx4 1/10W 5%
RP103	QCP015081-3300	33 OHMx4 1/10W 5%
RP104	QCP015081-3300	33 OHMx4 1/10W 5%
RP105	QCP015081-3300	33 OHMx4 1/10W 5%
RP106	QCP015081-3300	33 OHMx4 1/10W 5%
RP107	QCP015081-1000	10 OHMx4 1/10W 5%
RP108	QCP015081-3300	33 OHMx4 1/10W 5%
RP109	QCP015081-1000	10 OHMx4 1/10W 5%
RP110	QCP015081-1000	10 OHMx4 1/10W 5%
XL100	JQC023100-2760	27 MHZ HC-49US 30ppm
XL500	JQC013100-6151	6.144 MHZ HC-49/U

Capacitor

C1	PME039570-1000	10 uF 50V 20%
C2	PYL410370-1010	100 pF 50V 5%
C3	PYL410370-1010	100 pF 50V 5%
C4	PYL410370-1010	100 pF 50V 5%
C5	PYL410370-1010	100 pF 50V 5%
C6	PYL456370-1040	0.1 uF 50V 5%
C7	PYL456370-1040	0.1 uF 50V 5%
C8	PYL410370-1020	1000 pF 50V 5%
C9	PYL456370-1040	0.1 uF 50V 5%
C10	PYL456370-1040	0.1 uF 50V 5%
C11	PYL410370-1020	1000 pF 50V 5%
C12	PYL456370-1040	0.1 uF 50V 5%
C13	PYL410370-1020	1000 pF 50V 5%
C14	PYL456370-1040	0.1 uF 50V 5%
C15	PYL456370-1040	0.1 uF 50V 5%
C16	PYL410370-1010	100 pF 50V 5%
C17	PYL410370-1010	100 pF 50V 5%
C18	PYL410370-1010	100 pF 50V 5%
C19	PYL456370-1040	0.1 uF 50V 5%
C20	PYL456370-1040	0.1 uF 50V 5%
C21	PYL456370-1040	0.1 uF 50V 5%
C22	PYL456370-1040	0.1 uF 50V 5%
C38	PYL456370-1040	0.1 uF 50V 5%
C39	PYL410370-1010	100 pF 50V 5%
C41	PYL410370-1010	100 pF 50V 5%
C42	PYL410370-1010	100 pF 50V 5%
C43	PYL410370-1010	100 pF 50V 5%
C102	PYL456370-1040	0.1 uF 50V 5%
C103	PYL456370-1040	0.1 uF 50V 5%
C104	PME039550-4780	0.47 uF 25V 20%
C124	PYL410370-3300	33 pF 50V 5%
C127	PYL456370-1040	0.1 uF 50V 5%
C128	PYL410370-4710	470 pF 50V 5%
C129	PYL410370-4710	470 pF 50V 5%
C130	PYL410370-4710	470 pF 50V 5%
C131	PYL410370-4710	470 pF 50V 5%
C132	PYL410370-4710	470 pF 50V 5%
C133	PYL410370-4710	470 pF 50V 5%
C134	PYL410370-4710	470 pF 50V 5%
C135	PYL410370-4710	470 pF 50V 5%
C136	PYL410370-1010	100 pF 50V 5%
C137	PYL410370-1010	100 pF 50V 5%
C138	PYL456370-1040	0.1 uF 50V 5%
C141	PYL410370-2200	22 pF 50V 5%
C142	PYL410370-2200	22 pF 50V 5%
C143	PYL456370-1040	0.1 uF 50V 5%
C144	PYL410370-1020	1000 pF 50V 5%
C151	PYL410370-1500	15 pF 50V 5%
C296	PME039540-1010	100 uF 16V 20%
C400	PYL456370-1040	0.1 uF 50V 5%
C401	PME039550-1010	100 uF 25V 20%
C402	PYL410370-1010	100 pF 50V 5%
C403	PYL410370-1010	100 pF 50V 5%
C404	PYL439570-1030	0.01 uF 50V 20%
C405	PYL439570-4730	0.047 uF 50V 20%
C406	PYL439570-2230	0.022 uF 50V 20%
C407	XJP220000-0001	22 GA TINNED
C408	PME039570-4790	4.7 uF 50V 20%
C409	PME039570-4790	4.7 uF 50V 20%
C410	PME039570-1090	1 uF 50V 20%
C411	PYL410370-1010	100 pF 50V 5%
C412	PYL456370-1040	0.1 uF 50V 5%
C413	PYL456370-1040	0.1 uF 50V 5%
C414	PME039570-4790	4.7 uF 50V 20%
C415	PME039570-4790	4.7 uF 50V 20%
C416	PME039570-1000	10 uF 50V 20%
C417	PME039570-1000	10 uF 50V 20%
C418	PYL456370-1040	0.1 uF 50V 5%
C419	PYL439570-1030	0.01 uF 50V 20%
C420	PME039570-4790	4.7 uF 50V 20%
C421	PME039570-4790	4.7 uF 50V 20%
C422	PYL456370-1040	0.1 uF 50V 5%
C423	PME039540-4710	470 uF 16V 20%
C424	PYL410370-1020	1000 pF 50V 5%
C425	PYL456370-1040	0.1 uF 50V 5%
C426	PME039570-4790	4.7 uF 50V 20%
C427	PYL456370-1040	0.1 uF 50V 5%
C428	PYL410370-1020	1000 pF 50V 5%
C429	PME039540-1010	100 uF 16V 20%
C430	PYL456470-1020	0.001 uF 50V 10%
C432	PYL456370-1040	0.1 uF 50V 5%
C433	PME039570-4790	4.7 uF 50V 20%
C434	PYL410370-1010	100 pF 50V 5%
C435	PYL439570-1040	0.1 uF 50V 20%
C436	PYL410370-5600	56 pF 50V 5%
C437	PYL410370-5610	560 pF 50V 5%
C441	PYL410370-1010	100 pF 50V 5%
C442	PYL410370-1010	100 pF 50V 5%
C443	PYL410370-1010	100 pF 50V 5%
C444	PYL410370-1010	100 pF 50V 5%
C445	PYL410370-1010	100 pF 50V 5%
C446	PYL410370-1010	100 pF 50V 5%
C447	PYL410370-1010	100 pF 50V 5%
C447	PYL410370-1010	100 pF 50V 5%
C500	PYL410370-1010	100 pF 50V 5%
C501	PYL456370-1040	0.1 uF 50V 5%
C502	PYL456370-1040	0.1 uF 50V 5%
C504	PYL456370-1040	0.1 uF 50V 5%
C506	PYL456370-1040	0.1 uF 50V 5%
C510	PYL410370-1020	1000 pF 50V 5%
C511	PYL456450-1050	1uF 25V 10%
C512	PYL456370-1040	0.1 uF 50V 5%
C513	PYL456370-1040	0.1 uF 50V 5%
C514	PYL410370-1020	1000 pF 50V 5%
C515	PYL456370-1040	0.1 uF 50V 5%
C516	PYL456370-1040	0.1 uF 50V 5%
C517	PME039570-1000	10 uF 50V 20%
C518	PME039570-1000	10 uF 50V 20%
C519	PME039570-1000	10 uF 50V 20%
C520	PME039570-1000	10 uF 50V 20%
C523	PRM0373A0-1040	0.1 uF 100V 5%
C525	PYL456370-1040	0.1 uF 50V 5%
C526	PVE039570-1020	1000 uF 50V 20%
C527	PVE039570-1020	1000 uF 50V 20%
C528	PYL410370-1020	1000 pF 50V 5%
C529	PYL410370-3310	330 pF 50V 5%
C530	PYL410370-3310	330 pF 50V 5%
C531	PYL410370-3310	330 pF 50V 5%
C532	PRL048570-4740	0.47 uF 50V 20%
C533	PRL048570-4740	0.47 uF 50V 20%
C534	PRL048570-4740	0.47 uF 50V 20%
C535	PRL048570-4740	0.47 uF 50V 20%
C536	PRL048570-1050	1 uF 50V 20%
C537	PRL048570-1050	1 uF 50V 20%
C538	PRL048570-1050	1 uF 50V 20%
C539	PRL048570-1050	1 uF 50V 20%
C540	PRL048570-1050	1 uF 50V 20%
C541	PRL048570-1050	1 uF 50V 20%
C542	PRL048570-1050	1 uF 50V 20%
C543	PRL048570-1050	1 uF 50V 20%
C544	PRL048570-1050	1 uF 50V 20%
C545	PRL048570-4740	0.47 uF 50V 20%
C546	PRL048570-4740	0.47 uF 50V 20%
C547	PRL048570-4740	0.47 uF 50V 20%
C548	PRD235470-1040	0.1 uF 50V 10%
C549	PRD235470-1040	0.1 uF 50V 10%
C550	PRD235470-1040	0.1 uF 50V 10%
C554	PRD235470-1040	0.1 uF 50V 10%
C555	PRD235470-1040	0.1 uF 50V 10%
C556	PRD235470-1040	0.1 uF 50V 10%
C557	PYL410370-1010	100 pF 50V 5%
C558	PYL410370-1010	100 pF 50V 5%
C559	PYL456370-1040	0.1 uF 50V 5%
C561	PYL456370-1040	0.1 uF 50V 5%
C562	PYL456370-1040	0.1 uF 50V 5%
C563	PME039570-4790	4.7 uF 50V 20%
C566	PYL456450-1050	1uF 25V 10%
C567	PYL456450-1050	1uF 25V 10%
C568	PYL456370-1040	0.1 uF 50V 5%
C569	PYL410370-1020	1000 pF 50V 5%
C570	PYL456370-1040	0.1 uF 50V 5%
C571	PYL410370-1020	1000 pF 50V 5%
C572	PYL456370-1040	0.1 uF 50V 5%
C573	PYL456370-1040	0.1 uF 50V 5%
C574	PYL456370-1040	0.1 uF 50V 5%
C575	PYL456370-1040	0.1 uF 50V 5%

30

31

C576	PME039570-1000	10 uF 50V 20%
C577	PME039570-1000	10 uF 50V 20%
C579	PYL456370-1040	0.1 uF 50V 5%
C581	PYL456370-1040	0.1 uF 50V 5%
C582	PYL410370-1020	1000 pF 50V 5%
C583	PVE039570-1020	1000 uF 50V 20%
C584	PYL410370-1020	1000 pF 50V 5%
C585	PYL410370-3310	330 pF 50V 5%
C586	PYL410370-3310	330 pF 50V 5%
C587	PYL410370-1020	1000 pF 50V 5%
C588	PRL048570-1050	1 uF 50V 20%
C589	PRL048570-1050	1 uF 50V 20%
C590	PRL048570-1050	1 uF 50V 20%
C591	PRL048570-1050	1 uF 50V 20%
C592	PRL048570-1050	1 uF 50V 20%
C593	PRL048570-1050	1 uF 50V 20%
C594	PRL048570-1050	1 uF 50V 20%
C595	PRL048570-1050	1 uF 50V 20%
C596	PRL048570-1050	1 uF 50V 20%
C598	PRL048570-1050	1 uF 50V 20%
C599	PRL048570-4740	0.47 uF 50V 20%
C900	PME039540-2210	220 uF 16V 20%
C901	PYL456370-1040	0.1 uF 50V 5%
C902	PYL456370-1040	0.1 uF 50V 5%
C903	PME039540-2210	220 uF 16V 20%
C904	PYL456370-1040	0.1 uF 50V 5%
C905	PYL456370-1040	0.1 uF 50V 5%
C906	PME039540-2210	220 uF 16V 20%
C907	PME039540-4710	470 uF 16V 20%
C908	PYL410370-1020	1000 pF 50V 5%
C909	PME039540-4710	470 uF 16V 20%
C910	PME039540-2210	220 uF 16V 20%
C911	PME039540-2210	220 uF 16V 20%
C912	PYL410370-1020	1000 pF 50V 5%
C928	PYL456370-1040	0.1 uF 50V 5%
C929	PYL456370-1040	0.1 uF 50V 5%
C930	PYL456370-1040	0.1 uF 50V 5%
C931	PYL456370-1040	0.1 uF 50V 5%
C934	PYL439570-1040	0.1 uF 50V 20%
C935	PYL410370-2200	22 pF 50V 5%
C936	PYL439570-1040	0.1 uF 50V 20%
C937	PYL439570-1040	0.1 uF 50V 20%
C938	PVE039540-1020	1000 uF 16V 20% 85 C
C2015	PYL456370-1040	0.1 uF 50V 5%
C2016	PYL410370-1020	1000 pF 50V 5%
C2017	PYL456370-1040	0.1 uF 50V 5%
C2018	PYL410370-1020	1000 pF 50V 5%
C2019	PME039540-1010	100 uF 16V 20%
C2020	PYL410370-1020	1000 pF 50V 5%
C2021	PYL456370-1040	0.1 uF 50V 5%
C2022	PYL410370-1020	1000 pF 50V 5%
C2023	PYL410370-1020	1000 pF 50V 5%
C2024	PYL456370-1040	0.1 uF 50V 5%
C2025	PYL410370-1020	1000 pF 50V 5%
C2026	PYL410370-1020	1000 pF 50V 5%
C2027	PYL456370-1040	0.1 uF 50V 5%
C2028	PYL456370-1040	0.1 uF 50V 5%
C2029	PYL456370-1040	0.1 uF 50V 5%
C2030	PYL410370-1020	1000 pF 50V 5%
C2031	PYL456370-1040	0.1 uF 50V 5%
C2032	PYL456370-1040	0.1 uF 50V 5%
C2033	PYL410370-1020	1000 pF 50V 5%
C2036	PYL456370-1040	0.1 uF 50V 5%
C2052	PME039550-1010	100 uF 25V 20%
C2053	PYL456370-1040	0.1 uF 50V 5%
C2056	PYL410370-1020	1000 pF 50V 5%
C2062	PYL456370-1040	0.1 uF 50V 5%
C2063	PYL410370-1020	1000 pF 50V 5%
C2064	PYL456370-1040	0.1 uF 50V 5%
C2065	PYL410370-1020	1000 pF 50V 5%
C2066	PYL456370-1040	0.1 uF 50V 5%
C2073	PVE039570-4720	4700 uF 50V 20%
C2074	PRM0373A0-1040	0.1 uF 100V 5%
C2076	PYL456370-1040	0.1 uF 50V 5%
C2079	PME039550-1010	100 uF 25V 20%
C2092	PYL410370-3300	33 pF 50V 5%
C2094	PYL410370-3300	33 pF 50V 5%
C2095	PYL410370-1020	1000 pF 50V 5%
C2096	PYL456370-1040	0.1 uF 50V 5%
C2164	PYL410370-1020	1000 pF 50V 5%
C2165	PYL410370-1020	1000 pF 50V 5%
C2175	PYL456370-1040	0.1 uF 50V 5%
C2175	PYL456370-1040	0.1 uF 50V 5%
C2176	PYL410370-1020	1000 pF 50V 5%
C2204	PYL456370-1040	0.1 uF 50V 5%
C2208	PRL048570-1050	1 uF 50V 20%
C2216	PRD235470-1040	0.1 uF 50V 10%
C2247	PYL456370-1040	0.1 uF 50V 5%
C2248	PYL410370-1020	1000 pF 50V 5%
C2249	PYL410370-1020	1000 pF 50V 5%
C2250	PYL456370-1040	0.1 uF 50V 5%
C2252	PYL410370-1020	1000 pF 50V 5%
C2253	PYL456370-1040	0.1 uF 50V 5%
C2254	PYL410370-1020	1000 pF 50V 5%
C2255	PYL456370-1040	0.1 uF 50V 5%
C2256	PYL456370-1040	0.1 uF 50V 5%
C2257	PYL410370-1020	1000 pF 50V 5%
C2258	PYL456370-1040	0.1 uF 50V 5%
C2259	PYL410370-1020	1000 pF 50V 5%
C2260	PYL456370-1040	0.1 uF 50V 5%
C2261	PYL410370-1020	1000 pF 50V 5%
C2262	PYL410370-1020	1000 pF 50V 5%
C2263	PYL456370-1040	0.1 uF 50V 5%
C2264	PYL456370-1040	0.1 uF 50V 5%
C2265	PYL456370-1040	0.1 uF 50V 5%
C2268	PYL410370-1020	1000 pF 50V 5%
C2269	PYL410370-1020	1000 pF 50V 5%
C2270	PYL410370-1020	1000 pF 50V 5%
C2271	PYL456370-1040	0.1 uF 50V 5%
C2272	PYL410370-1020	1000 pF 50V 5%
C2273	PYL456370-1040	0.1 uF 50V 5%
C2274	PYL456370-1040	0.1 uF 50V 5%
C2275	PYL410370-1020	1000 pF 50V 5%
C2276	PYL456370-1040	0.1 uF 50V 5%
C2277	PYL456370-1040	0.1 uF 50V 5%
C2278	PYL410370-1020	1000 pF 50V 5%
C2279	PYL456370-1040	0.1 uF 50V 5%
C2280	PYL410370-1020	1000 pF 50V 5%
C2281	PYL456370-1040	0.1 uF 50V 5%
C2282	PYL456370-1040	0.1 uF 50V 5%
C2283	PYL456370-1040	0.1 uF 50V 5%
C2284	PYL456370-1040	0.1 uF 50V 5%
C2285	PYL410370-1020	1000 pF 50V 5%
C2286	PYL410370-1020	1000 pF 50V 5%
C2287	PYL410370-1020	1000 pF 50V 5%
C2288	PYL456370-1040	0.1 uF 50V 5%
C2289	PYL410370-1020	1000 pF 50V 5%
C2290	PYL456370-1040	0.1 uF 50V 5%
C2291	PYL410370-1020	1000 pF 50V 5%
C2292	PYL456370-1040	0.1 uF 50V 5%
C2293	PYL410370-1020	1000 pF 50V 5%
C2294	PYL456370-1040	0.1 uF 50V 5%
C2295	PYL456370-1040	0.1 uF 50V 5%
C2296	PYL410370-1020	1000 pF 50V 5%
C2297	PYL410370-1020	1000 pF 50V 5%
C2297	PYL456370-1040	0.1 uF 50V 5%
C2298	PYL456370-1040	0.1 uF 50V 5%
C2299	PYL456370-1040	0.1 uF 50V 5%
C2300	PYL456370-1040	0.1 uF 50V 5%
C2301	PYL410370-1020	1000 pF 50V 5%
C2302	PYL456370-1040	0.1 uF 50V 5%
C2303	PYL410370-1020	1000 pF 50V 5%
C2304	PYL410370-1020	1000 pF 50V 5%
C2305	PYL410370-1020	1000 pF 50V 5%
C2306	PYL456370-1040	0.1 uF 50V 5%
C2307	PYL410370-1020	1000 pF 50V 5%
C5011	PRL048570-4740	0.47 uF 50V 20%
C5012	PRL048570-4740	0.47 uF 50V 20%
C5015	PRD235470-1040	0.1 uF 50V 10%
C5016	PRD235470-1040	0.1 uF 50V 10%
C5019	PYL456450-1050	1uF 25V 10%
C5020	PYL456450-1050	1uF 25V 10%
C5021	PYL456450-1050	1uF 25V 10%
C5022	PYL456450-1050	1uF 25V 10%
C5023	PRD235470-1040	0.1 uF 50V 10%
C5024	PRD235470-1020	1000 pF 50V 10%
C5031	PZL456550-1050	1uF 25V 20% 1206
C5032	PZL456550-1050	1uF 25V 20% 1206
C5033	PZL456550-1050	1uF 25V 20% 1206
C5034	PZL456550-1050	1uF 25V 20% 1206
C5035	PZL456550-1050	1uF 25V 20% 1206
C5036	PZL456550-1050	1uF 25V 20% 1206
C5037	PZL456550-1050	1uF 25V 20% 1206
C5038	PZL456550-1050	1uF 25V 20% 1206
C5039	PZL456550-1050	1uF 25V 20% 1206
C5040	PZL456550-1050	1uF 25V 20% 1206
C5041	PZL456550-1050	1uF 25V 20% 1206
C5042	PZL456550-1050	1uF 25V 20% 1206

Diode

D1	RAZ005004-0020	3.8-4.0V 0.5W
D100	RAD114148-0010	DIODE SW
D101	RAZ005007-0010	6.4-6.7V 0.5W
D102	RAZ005007-0010	6.4-6.7V 0.5W
D103	RAZ005007-0010	6.4-6.7V 0.5W
D104	RAZ005007-0010	6.4-6.7V 0.5W
D105	RAZ005007-0010	6.4-6.7V 0.5W
D106	RAZ005007-0010	6.4-6.7V 0.5W
D107	RAZ005007-0010	6.4-6.7V 0.5W
D108	RAZ005007-0010	6.4-6.7V 0.5W
D400	RAD114148-0010	DIODE SW
D404	RAD114148-0010	DIODE SW
D405	RAD114148-0010	DIODE SW
D406	RAD114148-0010	DIODE SW
D407	RAD114148-0010	DIODE SW
D408	RAD114148-0010	DIODE SW
D409	RAD114148-0010	DIODE SW
D410	RAD114148-0010	DIODE SW
D411	RAD114001-0010	DIODE
D412	QAF025000-2790	2.7OHM 0.5W
D910	RAD115392-0010	1N5392 1.5A 100V
Z2001	RAZ005005-0030	5.0-5.2V 0.5W
ZD100	RAZ005005-0030	5.0-5.2V 0.5W
ZD401	RAZ005003-0020	2.9-3.1V 0.5W
ZD402	RAZ005024-0020	23.6-24.7V 0.5W

Integrated Circuit

IC100	RCI290080-0001	IC 40 PIN AM29F080B-90CE
IC101	RCI740004-0001	IC 14 PIN TC74HC04AFN TOSHIBA
IC102	RCI740374-0002	IC20 PIN 74HC374
IC103	RCI006018-0001	IC 208 PINES6018
IC104	RCI740374-0002	IC 20 PIN 74HC374
IC105	RCI024002-0001	IC 8 PIN AT24C02
IC106	RCI400160-0001	IC 54 PIN 4MX16 Y3V TW StarRam
IC400	RHI004052-0001	IC 16 PIN TC4052BP
IC401	RCI004558-0001	IC 8 PIN JRC4558D JRC
IC402	RCI280320-0001	IC28 PIN TLV320A IC23PW
IC500	RCI740126-0002	IC 14 PIN 74LVT126 3.3VI
C501	RCI741250-0002	IC 14 PIN 74LVT125 3.3V
IC502	RCI000304-0001	IC 44 PIN STA304A
IC503	RCI000505-0001	IC 36 PIN STA505 50Wx2
IC504	RCI000505-0001	IC 36 PIN STA505 50Wx2
IC505	RCI000304-0001	IC 44 PINSTA304A
IC506	RCI000505-0001	IC 36 PIN STA505 50Wx2
IC900	RHI007805-0005	IC3 PIN BA05T ROHM
IC901	RHI007805-0005	IC 3 PIN BA05T ROHM
IC914	RHI000330-0001	IC 3 PIN BA033T 3.3V 1A ROHM

Transistor

Q101	RAN202001-0001	2SC2001L NEC
Q102	RAN200945-0001	2SC945P
Q400	RAN200945-0001	2SC945P
Q401	RAN202878-0001	2SC2878-A (TEI.M)
Q402	RAN202878-0001	2SC2878-A (TEI.M)
Q403	RAN202878-0001	2SC2878-A (TEI.M)
Q404	RAP200733-0001	2SA733Q,P NEC
Q900	RAN200945-0001	2SC945P
Q903	RAP200733-0001	2SA733Q,P NEC
Q904	RAN200945-0001	2SC945P
Q905	RAP200733-0001	2SA733Q,P NEC
Q906	RAN200945-0001	2SC945P
Q907	RHP200772-0001	2SB772P/Q NEC
Q908	RAN200945-0001	2SC945P
Q909	RHP200772-0001	2SB772P/Q NEC
Q2007	RAN200945-0001	2SC945P

Resistor

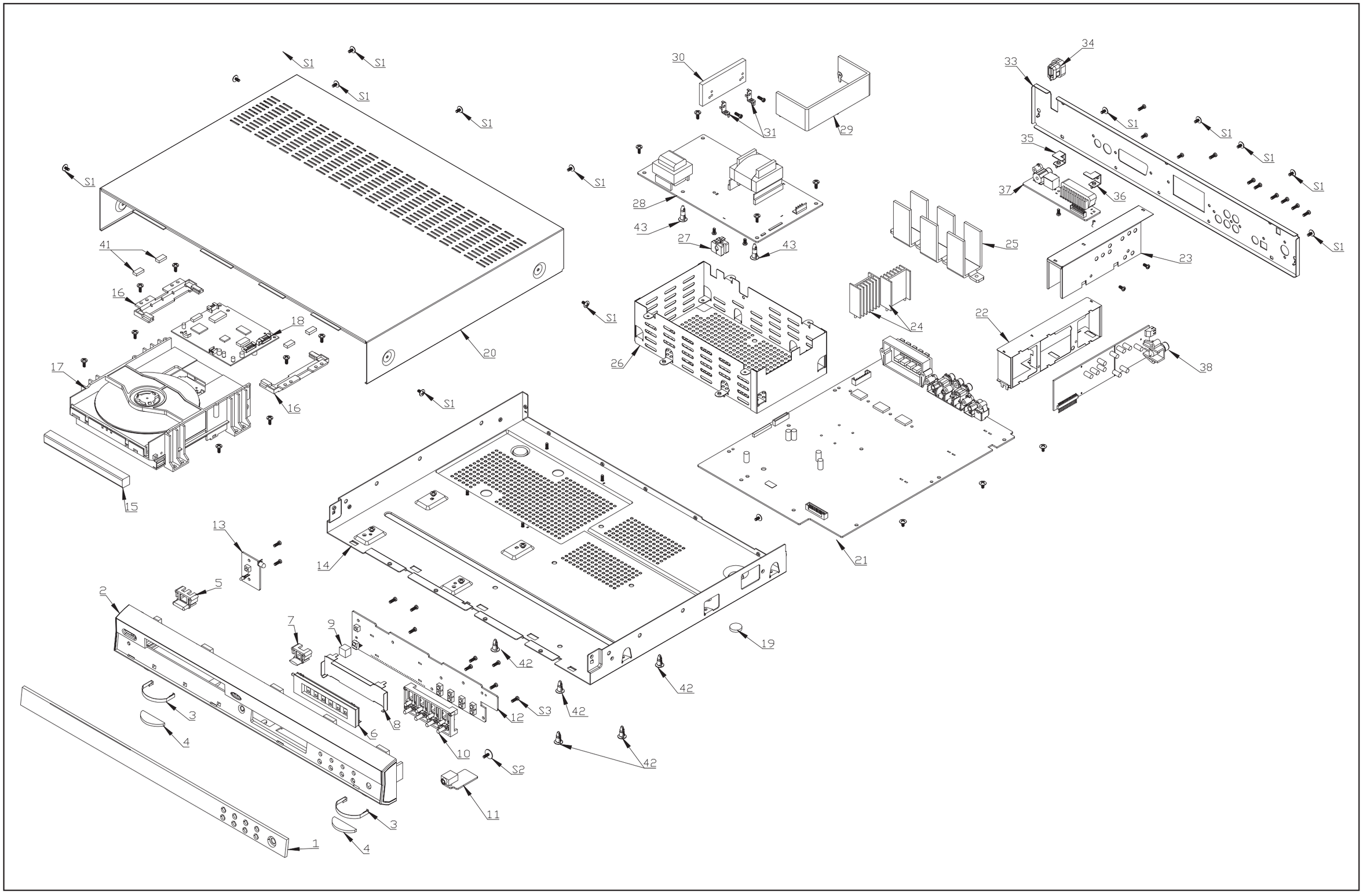
R1	QCF015020-4730	47K OHM 1/10W 5%
R2	QAF065000-2220	2.2K OHM 1/6W 5% CF
R3	QAF065000-2220	2.2K OHM 1/6W 5% CF
R41	QCF015020-1010	100 OHM 1/10W 5%
R42	QCF015020-1010	100 OHM 1/10W 5%
R103	QCF015020-1220	1.2K OHM 1/10W 5%

32

R105	QCF015020-0000	0 OHM JUMP WIRE
R107	QCF015020-0000	0 OHM JUMP WIRE
R108	QCF015020-3010	300 OHM 1/10W 5%
R109	QCF015020-4720	4.7K OHM 1/10W 5%
R111	QCF015020-3300	33 OHM 1/10W 5%
R112	QCF015020-3300	33 OHM 1/10W 5%
R113	QCF015020-3300	33 OHM 1/10W 5%
R114	QCF015020-4720	4.7K OHM 1/10W 5%
R116	QCF015020-4720	4.7K OHM 1/10W 5%
R118	QCF015020-4720	4.7K OHM 1/10W 5%
R120	QCF015020-4720	4.7K OHM 1/10W 5%
R121	QCF015020-1020	1K OHM 1/10W 5%
R122	QCF015020-3300	33 OHM 1/10W 5%
R123	QCF015020-3300	33 OHM 1/10W 5%
R124	QCF015020-3300	33 OHM 1/10W 5%
R125	QCF015020-3300	33 OHM 1/10W 5%
R126	QCF015020-3300	33 OHM 1/10W 5%
R129	QCF015020-2710	270 OHM 1/10W 5%
R130	QCF015020-1020	1K OHM 1/10W 5%
R131	QCF015020-7500	75 OHM 1/10W 5%
R132	QCF015020-7500	75 OHM 1/10W 5%
R133	QCF015020-7500	75 OHM 1/10W 5%
R134	QCF015020-7500	75 OHM 1/10W 5%
R135	QCF015020-0000	0 OHM JUMP WIRE
R137	QCF015020-3300	33 OHM 1/10W 5%
R139	QCF015020-3300	33 OHM 1/10W 5%
R143	QCF015020-0000	0 OHM JUMP WIRE
R144	QCF015020-4720	4.7K OHM 1/10W 5%
R145	QCF015020-4720	4.7K OHM 1/10W 5%
R146	QCF015020-0000	0 OHM JUMP WIRE
R147	QCF015020-3300	33 OHM 1/10W 5%
R148	QCF015020-3300	33 OHM 1/10W 5%
R149	QCF015020-3300	33 OHM 1/10W 5%
R150	QCF015020-3300	33 OHM 1/10W 5%
R151	QCF015020-3300	33 OHM 1/10W 5%
R152	QCF015020-3300	33 OHM 1/10W 5%
R154	QCF015020-3300	33 OHM 1/10W 5%
R155	QCF015020-3300	33 OHM 1/10W 5%
R156	QCF015020-3300	33 OHM 1/10W 5%
R157	QCF015020-3300	33 OHM 1/10W 5%
R158	QCF015020-3300	33 OHM 1/10W 5%
R159	QCF015020-3310	330 OHM 1/10W 5%
R160	QCF015020-3300	33 OHM 1/10W 5%
R161	QCF015020-3300	33 OHM 1/10W 5%
R162	QCF015020-3300	33 OHM 1/10W 5%
R163	QCF015020-4700	47 OHM 1/10W 5%
R164	QCF015020-3300	33 OHM 1/10W 5%
R171	QCF015020-2230	22K OHM 1/10W 5%
R172	QCF015020-4730	47K OHM 1/10W 5%
R177	QCF015020-1000	10 OHM 1/10W 5%
R178	QCF015020-3300	33 OHM 1/10W 5%
R179	QCF015020-3300	33 OHM 1/10W 5%
R180	QCF015020-1020	1K OHM 1/10W 5%
R181	QCF015020-3320	3.3K OHM 1/10W 5%
R182	QCF015020-1020	1K OHM 1/10W 5%
R183	QCF015020-4720	4.7K OHM 1/10W 5%
R184	QCF015020-4720	4.7K OHM 1/10W 5%
R185	QCF015020-4720	4.7K OHM 1/10W 5%
R186	QCF015020-4720	4.7K OHM 1/10W 5%
R187	QCF015020-1000	10 OHM 1/10W 5%
R189	QCF015020-3300	33 OHM 1/10W 5%
R191	QCF015020-0000	0 OHM JUMP WIRE
R193	QCF015020-0000	0 OHM JUMP WIRE
R248	QCF015020-2230	22K OHM 1/10W 5%
R400	QCF015020-2010	200 OHM 1/10W 5%
R401	QCF015020-1010	100 OHM 1/10W 5%
R402	QCF015020-4720	4.7K OHM 1/10W 5%
R403	QCF015020-1010	100 OHM 1/10W 5%
R404	QCF015020-1010	100 OHM 1/10W 5%
R405	QCF015020-1530	15K OHM 1/10W 5%
R406	QCF015020-1530	15K OHM 1/10W 5%
R407	QCF015020-1530	15K OHM 1/10W 5%
R408	QCF015020-1530	15K OHM 1/10W 5%
R409	QCF015020-1030	10K OHM 1/10W 5%
R410	QCF015020-1010	100 OHM 1/10W 5%
R411	QCF015020-1520	1.5K OHM 1/10W 5%
R412	QCF015020-1020	1K OHM 1/10W 5%
R413	QCF015020-1020	1K OHM 1/10W 5%
R414	QCF015020-1010	100 OHM 1/10W 5%
R415	QCF015020-1010	100 OHM 1/10W 5%
R417	QCF015020-1530	15K OHM 1/10W 5%
R418	QCF015020-1530	15K OHM 1/10W 5%
R419	QCF015020-1030	10K OHM 1/10W 5%
R420	QCF015020-4720	4.7K OHM 1/10W 5%
R421	QCF015020-1030	10K OHM 1/10W 5%
R424	QCF015020-0000	0 OHM JUMP WIRE
R425	QCF015020-5630	56K OHM 1/10W 5%
R427	QCF015020-1530	15K OHM 1/10W 5%
R428	QCF015020-1530	15K OHM 1/10W 5%
R429	QCF015020-1030	10K OHM 1/10W 5%
R430	QCF015020-4720	4.7K OHM 1/10W 5%
R431	QCF015020-1020	1K OHM 1/10W 5%
R432	QCF015020-4720	4.7K OHM 1/10W 5%
R433	QCF015020-4720	4.7K OHM 1/10W 5%
R434	QCF015020-4720	4.7K OHM 1/10W 5%
R435	QCF015020-4720	4.7K OHM 1/10W 5%
R436	QCF015020-1020	1K OHM 1/10W 5%
R439	QCF015020-4720	4.7K OHM 1/10W 5%
R440	QCF015020-4710	470 OHM 1/10W 5%
R441	QCF015020-4710	470 OHM 1/10W 5%
R442	QCF015020-4730	47K OHM 1/10W 5%
R443	QCF015020-4720	4.7K OHM 1/10W 5%
R444	QCF015020-1030	10K OHM 1/10W 5%
R446	QCF015020-4720	4.7K OHM 1/10W 5%
R448	QCF015020-4720	4.7K OHM 1/10W 5%
R449	QCF015020-4720	4.7K OHM 1/10W 5%
R500	QCF015020-4720	4.7K OHM 1/10W 5%
R501	QCF015020-1050	1M OHM 1/10W 5%
R502	QCF015020-1030	10K OHM 1/10W 5%
R503	QCF015020-1030	10K OHM 1/10W 5%
R504	QCF015020-1030	10K OHM 1/10W 5%
R505	QCF045010-2200	22 OHM 1/4W 5%
R506	QCF045010-2200	22 OHM 1/4W 5%
R507	QCF045010-2200	22 OHM 1/4W 5%
R508	QCF045010-6290	6.2 OHM 1/4W 5%
R509	QCF045010-6290	6.2 OHM 1/4W 5%
R510	QCF045010-6290	6.2 OHM 1/4W 5%
R511	QCF045010-6290	6.2 OHM 1/4W 5%
R512	QCF045010-6290	6.2 OHM 1/4W 5%
R513	QCF045010-6290	6.2 OHM 1/4W 5%
R514	QCF045010-6290	6.2 OHM 1/4W 5%
R515	QCF015020-4720	4.7K OHM 1/10W 5%
R516	QCF015020-4730	47K OHM 1/10W 5%
R517	QCF015020-4730	47K OHM 1/10W 5%
R518	QCF015020-1030	10K OHM 1/10W 5%
R519	QCF045010-2200	22 OHM 1/4W 5%
R520	QCF045010-2200	22 OHM 1/4W 5%
R521	QCF045010-2200	22 OHM 1/4W 5%
R522	QCF045010-6290	6.2 OHM 1/4W 5%
R524	QCF045010-6290	6.2 OHM 1/4W 5%
R525	QCF045010-6290	6.2 OHM 1/4W 5%
R526	QCF045010-6290	6.2 OHM 1/4W 5%
R527	QCF015020-1030	10K OHM 1/10W 5%
R528	QCF015020-1030	10K OHM 1/10W 5%
R529	QCF015020-2020	2K OHM 1/10W 5%
R530	QCF015020-2020	2K OHM 1/10W 5%
R531	QCF015020-1030	10K OHM 1/10W 5%
R532	QCF015020-1030	10K OHM 1/10W 5%
R533	QCF015020-1020	1K OHM 1/10W 5%
R534	QCF015020-1010	100 OHM 1/10W 5%
R900	QCF015020-1030	10K OHM 1/10W 5%
R901	QCF015020-1030	10K OHM 1/10W 5%
R902	QCF015020-2230	22K OHM 1/10W 5%
R903	QCF015020-1020	1K OHM 1/10W 5%
R905	QCF015020-1030	10K OHM 1/10W 5%
R906	QCF015020-1030	10K OHM 1/10W 5%
R907	QCF015020-2230	22K OHM 1/10W 5%
R908	QCF015020-1020	1K OHM 1/10W 5%
R919	QCF015020-1030	10K OHM 1/10W 5%
R920	QCF015020-1030	10K OHM 1/10W 5%
R921	QCF015020-2230	22K OHM 1/10W 5%
R922	QCF015020-5610	560 OHM 1/10W 5%
R924	QCF015020-1030	10K OHM 1/10W 5%
R925	QCF015020-2230	22K OHM 1/10W 5%
R926	QCF015020-1020	1K OHM 1/10W 5%
R996	QCF015020-1030	10K OHM 1/10W 5%
R2018	QCF015020-1030	10K OHM 1/10W 5%
R2061	QCF015020-1520	1.5K OHM 1/10W 5%
R2108	QCF015020-3300	33 OHM 1/10W 5%

33

EXPLORE VIEW DIAGRAM



34

MECHANICAL PARTS LIST

MECHANICAL PARTS LIST

No	Part No	Description
1	BPN100086-0001	DISPLAY WINDOW
2	BPF104014-0001	FRONT PANEL
3	GAL000092-0001	FOOT RING
4	DUF000024-0001	FRONT FOOT
5	BPK106028-0001	POWER KNOB
6	KVL0015-001	VFK
7	BPK108056-0001	OP/CL KNOB
8	GTP100008-0001	VFD BKT
9	IVE100176-0001	SPONGE
10	BPK108056-0001	FUNCTION KEY
11	APE0216C001	PHONE JACK
12	APE0223C001	CONTROL PCB
13	APE0202C003	POWER-SW PCB
14	GSE100164-0001	BOTTOM CAB
15	BPD101040-0001	DOOR
16	BPH100059-0001	SV-PCB-HOLDER
17	WVD100004-0001	DVD LOADER
18	WPC0310-001	SV-PCB ASS`Y
19	BRB00049-0004	BTM-FOOT
20	GSE100163-0001	TOP COVER
21	APE0203C001	MAIN PCB
22	GTP100006-0001	TUNER-SHIELD COVER
23	GTP100007-0001	TUNER-SHIELD BASE
24	GAL000104-0002	IC HEAT SINK
25	GAL100103-0001	POWER-IC HTSK
26	GSE100165-0001	POWER CAB
27	DBU001004-0010	AC-CORD HOLDER
28	APE0202C001	POWER PCB
29	GAL100187-0001	HEAT SINK-1
30	GAL100188-0001	HEAT SINK-2
31	GSE100155-0001	HEATSINK BKT
33	GSE100162-0001	REAR PANEL
34	DBU001005-0020	AC-CORD HOLDER
35	GSE100152-0001	SCART-PCB HOLDER-L
36	GSE100153-0001	SCART-PCB HOLDER-R
37	APE0193C001	SCART PCB
38	APE0187C001	TUNER PCB
39	BRB100038-0001	CABLE CLIP RUBBER
40	BRB100039-0001	CABLE CLIP RUBBER
41	BRB100049-0001	RUBBER
42	DSS100018-0001	SPACER
43	DSS100005-0001	SPACER
S3	HSP140054-1080	SCREW
S2	HSW140054-1081	SCREW
S1	HST143048-1060	SCREW

MECHANICAL PARTS LIST-ACCESSORIES

No	Part No	Description
1	VTA400003-0010	1000mm 1007#24 TC W/TERMINAL
2	VTA100001-0020	LOOP ANT SHINTA PS-100
3	AIR151009-0033	51 KEY Dr351 HITACHI
4	ESB015003-3021	SKT SPK ASS`Y
5	FBY064015-0003	BATTERY UM-4 1.5V
6	ESB015003-3021	SAT SPK AY 50W 8 OHM (5 P CS)
7	FBY064015-0003	BATTERY Di0x44mm UM-4 1.5V
8	VSC000002-0010	SCART CABL SC/G-SC/G,1000mm
9	VIC101002-0030	RCA CABLE 5000mm BLACK D2.44mm
10	YOM100150-0001	OWN MANUAL 8 LANGUAGE
11	VRC202001-0040	RCA CABLE 1200mm BLK 0D2.6x5.2
12	VRC101008-0010	RCA CABLE 1200mm BLK 0D2.6mm

HITACHI

Service Manual

HTD-K160 Subwoofer

HITACHI

Table Of Content :

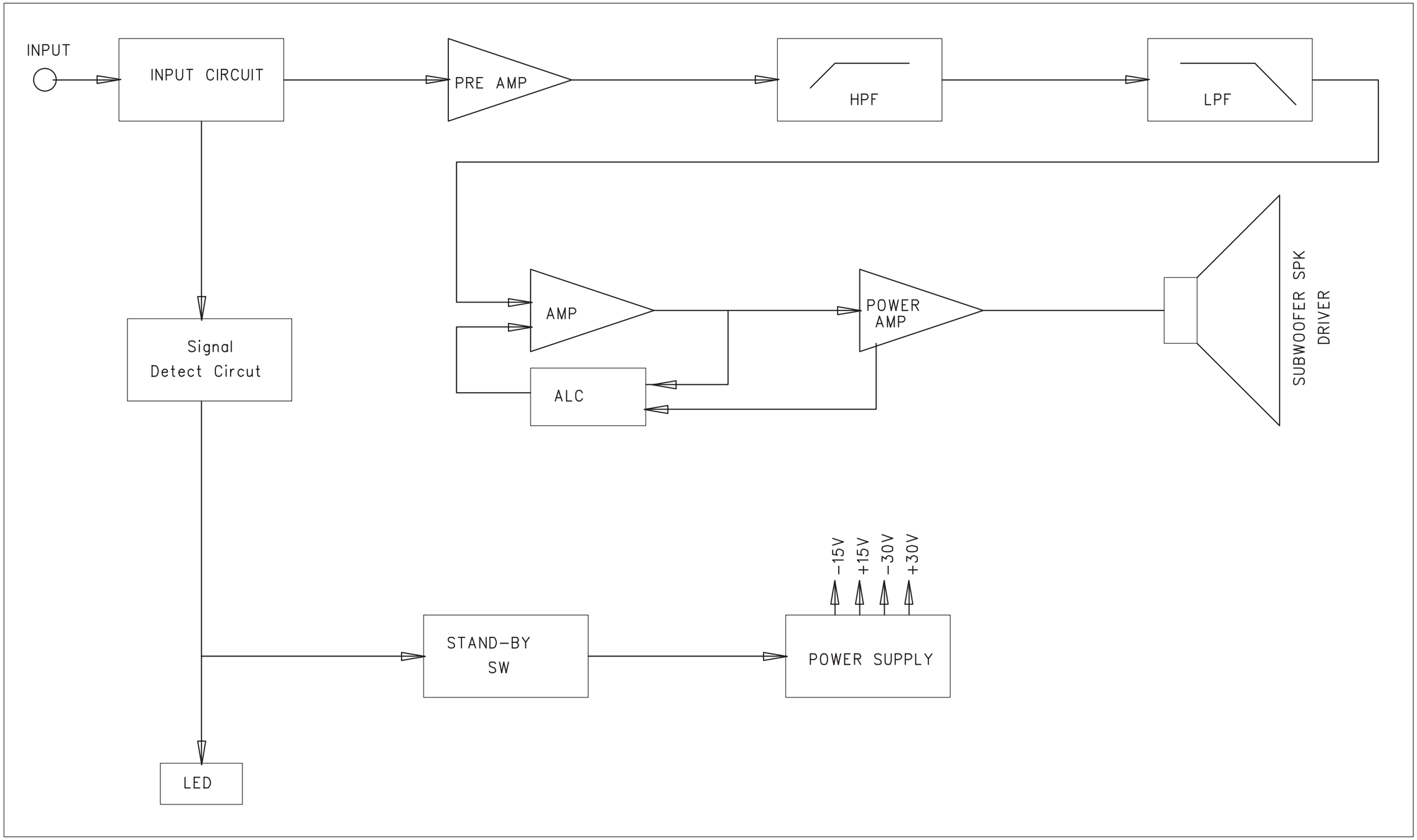
Specifications

Subwoofer

Active Subwoofer	Output power : 100 W (4 ohms at 55Hz, THD 10%)
	Speaker system : Bass reflex
	Power requirements : AC 230 V, 50 Hz
	Power consumption : 165 W
	Speaker unit : 8 inches
	Rated impedance : 4 ohms
	Dimensions : W200x H360 x D345 mm
	Weight : 9.8 kg
Front / Center / Rear speakers	Power: 50 W maximum
	Speaker system: Bass reflex
	Speaker unit: 3 inches,cone type: paper
	Rated impedance: 8 ohms
	Dimensions: W90x H150x D110 mm
	Weight: 0.64 kg (rear speaker)
	0.82 kg (front , center speaker)

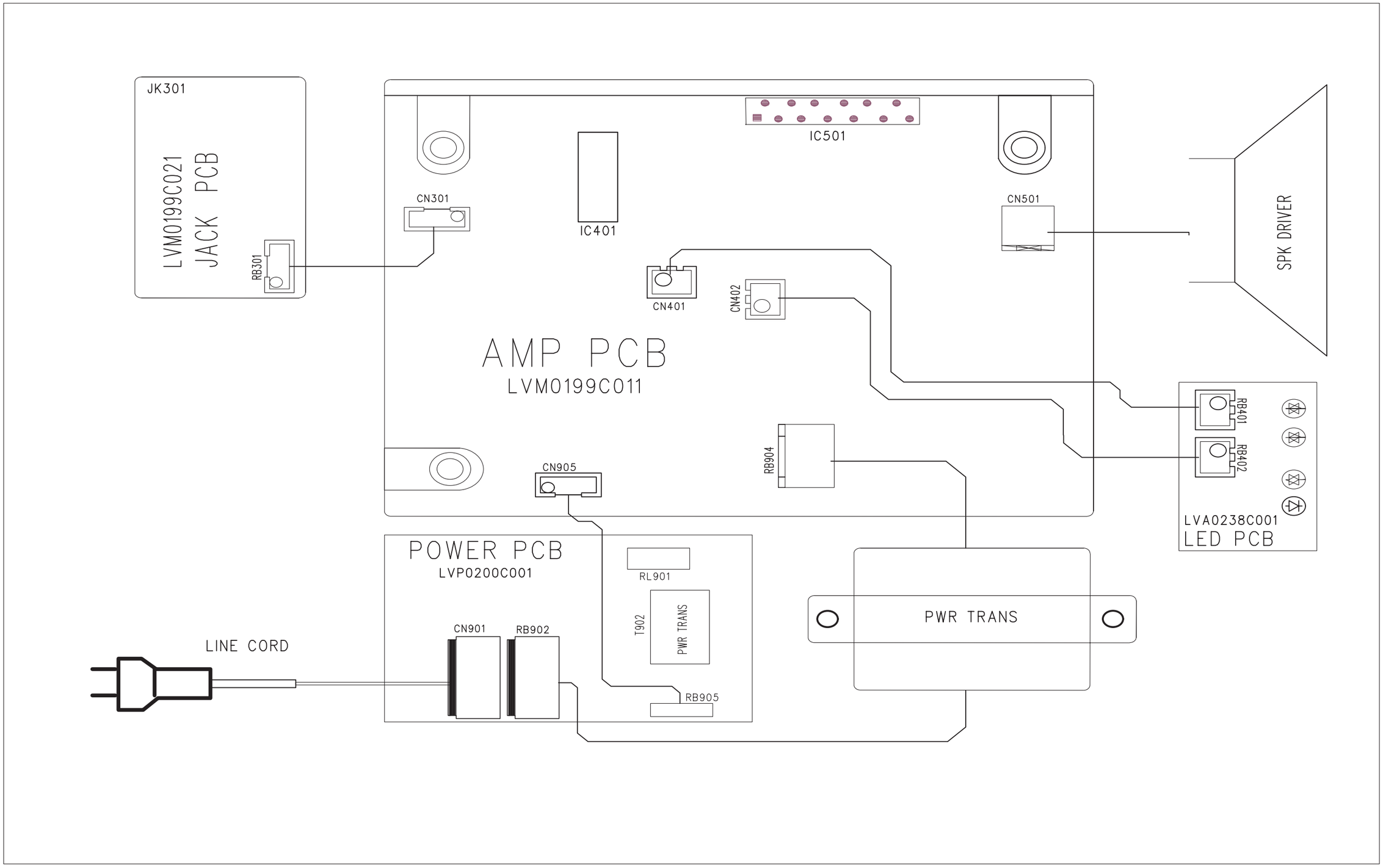
36

BLOCK DIAGRAM

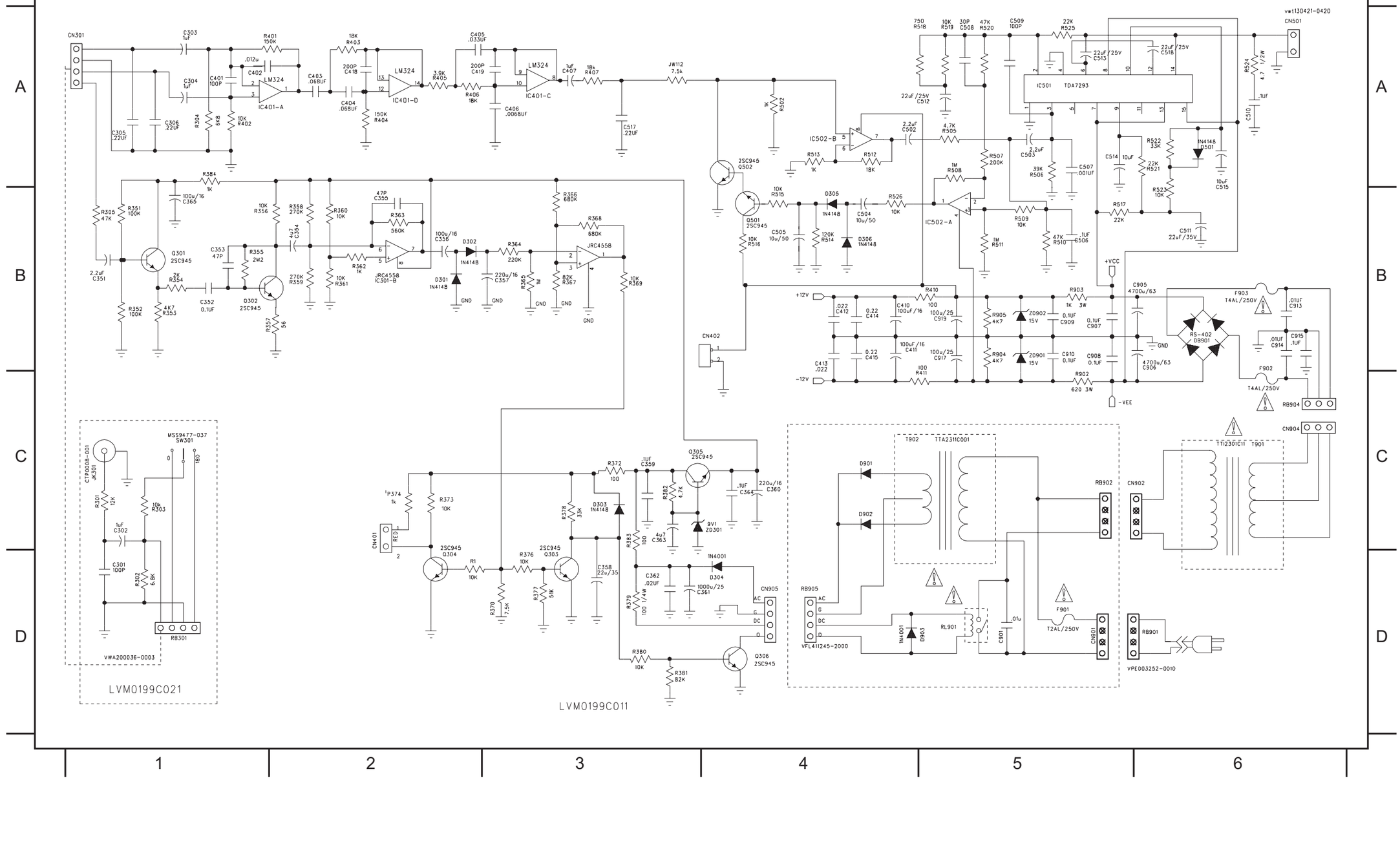


37

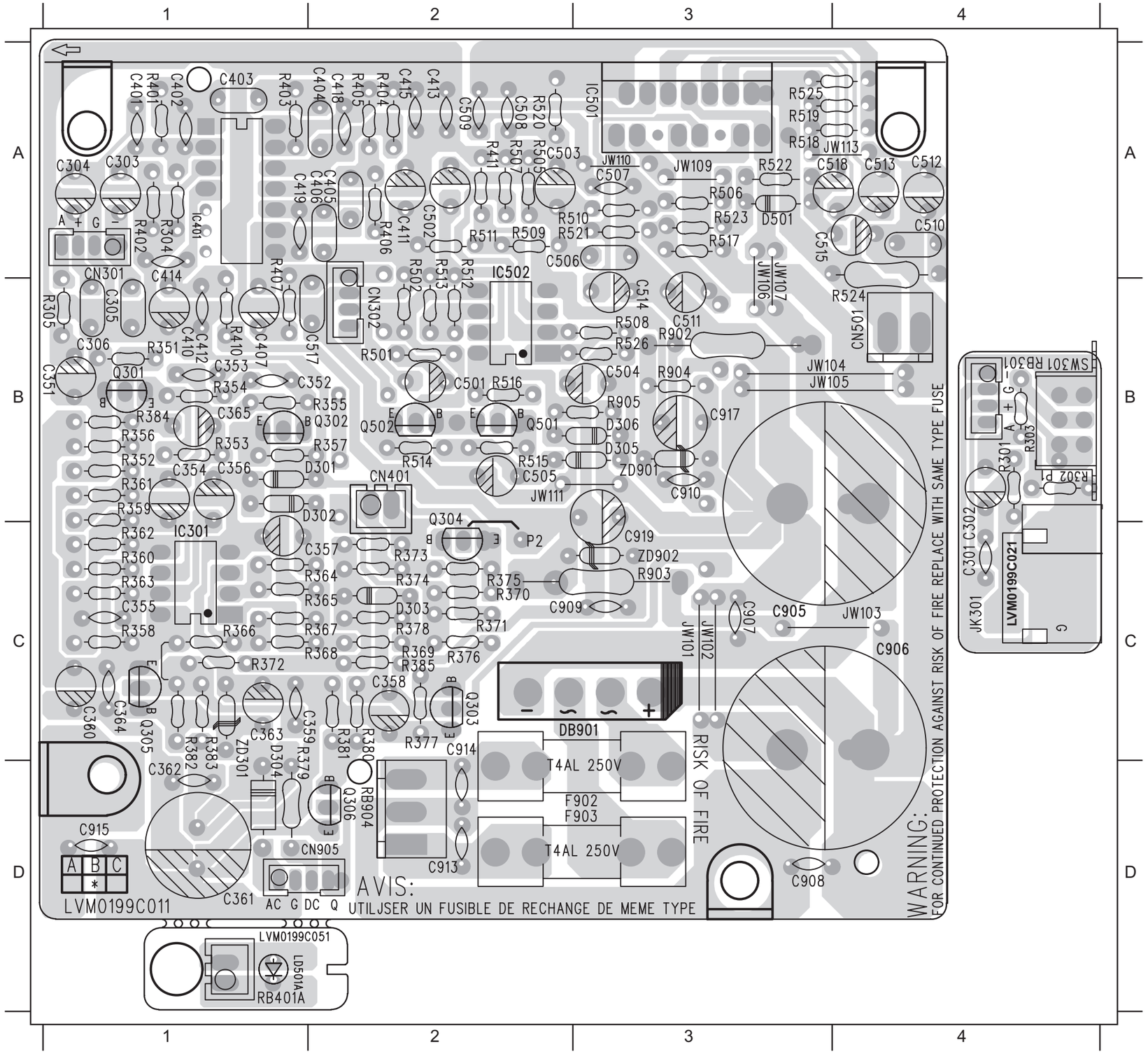
WIRING DIAGRAM



38



MAIN PCB LAYOUT VIEW



C301	C4	C919	C3	R368	C1
C302	B4	CN301	A1	R369	C2
C303	A1	CN302	B2	R370	C2
C304	A1	CN401	B2	R371	C2
C305	B1	CN501	B4	R372	C1
C306	B1	CN905	D2	R373	C2
C351	B1	D301	B1	R374	C2
C352	B1	D302	B1	R376	C2
C353	B1	D303	C2	R377	C2
C354	B1	C304	D1	R378	C2
C355	C1	D305	B3	R379	D1
C356	B1	D306	B3	R380	C2
C357	C1	D501	A3	R381	C2
C358	C2	Db901	C3	R382	C1
C359	C1	F902	D3	R383	C1
C360	C1	F903	D3	R384	B1
C361	D1	IC301	C1	R401	A1
C362	D1	IC401	A1	R402	A1
C363	C1	IC501	A3	R403	A1
C364	C1	IC502	B2	R404	A2
C365	B1	JK301	C4	R405	A2
C401	A1	JW101	C3	R406	A2
C402	A1	JW102	C3	R407	B1
C403	A1	JW103	C4	R410	B1
C404	A2	JW104	B3	R411	A2
C405	A2	JW105	B3	R502	B2
C406	A2	JW106	B3	R505	A2
C407	B1	JW107	B3	R506	A3
C410	B1	JW109	A3	R507	A2
C411	A2	JW110	A3	R508	B3
C413	A2	JW111	B2	R509	A2
C414	A1	JW113	A4	R510	A3
C415	A2	Q301	B1	R511	A2
C418	A2	Q302	B1	R512	B2
C419	A1	Q303	C2	R513	B2
C502	A2	C304	C2	R514	B2
C503	A2	Q305	C1	R515	B2
C504	B3	Q306	D2	R516	B2
C505	B2	Q501	B2	R517	A3
C506	A3	Q502	B2	R518	A3
C507	A3	R301	B4	R519	A3
C508	A2	R302	B4	R520	A2
C509	A2	R303	B4	R521	A3
C510	A4	R305	B1	R522	A3
C511	B3	R351	B1	R523	A3
C512	A4	R352	B1	R524	B4
C513	A4	R353	B1	R525	A3
C514	B3	R354	B1	R526	B3
C515	A4	R355	B1	R902	B3
C517	B2	R356	B1	R903	C3
C518	A4	R357	B1	R904	B3
C905	C3	R358	C1	R905	B3
C906	C4	R359	B1	RB301	B4
C907	C3	R360	C1	RB401	AD1
C908	D3	R361	B1	RB904	D2
C909	C3	R362	C1	SW301	B4
C910	B3	R363	C1	ZD301	C1
C913	D2	R364	C1	ZD901	B3
C914	C2	R365	C1	ZD902	C3
C915	D1	R366	C1		
C917	B3	R367	C1		

ELECTRICAL PART LIST

:-MAIN PCB

MISCELLANEOUS

LVM100199-0001MAIN PCB
LVM100199-0011MAIN PCB
LVM100199-0021JACK PCB
VWT130121-04202P 420mmRD/BK

B:STP4ForCN501

DHU201001-0001OD6xID3xH2.5mm ForIC501

CN301 CCN200000-01044 PIN PITCH=2.0mm
CN401 CCN250000-0102B2B-XH-A 2 PIN
CN402 CCN250000-0102B2B-XH-A 2 PIN
CN905 VFL411245-2000 4P 200mm2468#26 BLK
F902 CFC011000-1001DIA5xL20mm FUSE
F902 KSA020400-00304A 250V SLOW
F903 KSA020400-00304A 250V SLOW
F903 CFC011000-1001DIA5xL20mm FUSE
RB301 VWA200036-00034P 110mm 2854#28&30 BRN
RB401 CCN200000-05022 PIN PITCH=2.0mm
RB402 CCN200000-05022 PIN PITCH=2.0mm
RB904 CCN3960-0103 3 PIN PITCH=3.96mm
SW301 MSW004020-00102P2T
K22F24

CAPACITOR

C301 PRD113370-1010100 pF 50V 5%
C302 PME039570-10901uF 50V 20%
C303 PME039570-10901uF 50V 20%
C304 PME039570-10901uF 50V 20%
C305 PRM0373A0-22400.22 uF 100V 5%
C306 PRM0373A0-22400.22 uF 100V 5%
C351 PME039570-22402.2 uF 50V 20%
C352 PRD339670-10400.1uF 50V +80-20%
C353 PRD113370-470047 pF 50V 5%
C354 PME039570-47904.7 uF 50V 20%
C355 PRD113370-470047 pF 50V 5%
C356 PME039540-1010100 uF16V 20%
C357 PME039540-2210220 uF 16V 20%
C358 PME039560-220022 uF 35V 20%
C359 PRC339670-10400.1 uF 50V +80-20%
C360 PME039540-2210220 uF 16V 20%
C361 PVE039550-10201000 uF 25V 20% 85`C
C362 PRD49670-2230 0.022 uF 50V +80-20%
C363 PME039570-47904.7 uF 50V 20%
C364 PRD339670-10400.1 uF 50V +80-20%
C365 PME039540-1010100 uF 16V 20%
C401 PRD113370-1010100 pF 50V 5%
C402 PRM0373A0-12300.012uF 100V 5%
C403 PRM0373A0-68300.068 uF 100V 5%
C404 PRM0373A0-68300.068 uF 100V 5%
C405 PRM0373A0-33300.033 uF 100V 5%
C406 PRM0373A0-68200.0068 uF 100V 5%
C407 PME039570-10901 uF 50V 20%
C410 PME039540-1010100 uF 16V 20%
C411 PME039540-1010100 uF 16V 20%
C412 PRD249670-22300.022 uF 50V +80-20%
C413 PRD249670-22300.022 uF 50V +80-20%
C414 PRD249670-22400.22uF 50V +80-20%
C415 PRD249670-2240 0.22 uF 50V +80-20%
C418 PRD235470-2010 200 pF 50V 10%
C419 PRD235470-2010 200 pF 50V 10%
C502 PME039570-2290 2.2 uF 50V 20%
C503 PME039570-2290 2.2 uF 50V 20%
C504 PME039570-1000 10 uF 50V 20%
C505 PME039570-1000 10 uF 50V 20%
C506 PRM0373A0-10400.1 uF 100V 5%
C507 PRM0373A0-10200.001 uF 100V 5%
C508 PRD113370-3000 30 pF 50V 5%
C509 PRD113370-1010 100 pF 50V 5%
C510 PRM0373A0-10400.1 uF 100V 5%
C511 PME039560-2200 22 uF 35V 20%
C512 PME039550-2200 22 uF 25V 20%
C513 PME039550-2200 22 uF 25V 20%
C514 PME039570-1000 10 uF 50V 20%
C515 PME039570-1000 10 uF 50V 20%
C517 PRM0373A0-22400.22 uF 100V 5%
C518 PME039550-2200 22 uF 25V 20%
C905 PVE039580-4720 4700 uF 63V 20%
C906 PVE039580-4720 4700 uF 63V 20%
C907 PRD339670-1040 0.1 uF 50V +80-20%
C908 PRD339670-1040 0.1 uF 50V +80-20%
C909 PRD339670-1040 0.1 uF 50V +80-20%
C910 PRD339670-1040 0.1 uF 50V +80-20%
C913 PRD2485M0-10300.01 uF 500V 20%
C914 PRD2485M0-10300.01 uF 500V 20%
C915 PRD339670-1040 0.1 uF 50V +80-20%
C917 PME039550-1010 100 uF 25V 20%
C919 PME039550-1010 100 uF 25V 20%

DIODE

D301 RAD114148-0010 DIODE SW
D302 RAD114148-0010 DIODE SW
D303 RAD114148-0010 DIODE
D304 RAD114148-0010 DIODE
D305 RAD114148-0010 DIODE SW
D306 RAD114148-0010 DIODE SW
D501 RAD114148-0010 DIODE SW
DB901 RHD204010-0011 4A 100V UL
ZD301 RAZ005009-0020 9.1-9.5V 0.5W
ZD901 RAZ005015-0020 14.5-15.1V 0.5W
ZD902 RAZ005015-0020 14.5-15.1V 0.5W

INTEGRATED CIRCUITS

IC301 RHI004558-0001 JRC4558D JRC
IC401 RH1003240-0001 LM324N
IC501 RHI007293-0001 TDA7293
IC502 RHI004558-0001 JRC4558D JRC

JUMPER

JK301 CJR001101-0010 1P BLACK
Jw101 XJP220000-0001 22 GA TINNED
JW102 XJP220000-0001 22 GA TINNED
JW103 XJP220000-0001 22 GA TINNED
JW104 XJP220000-0001 22 GA TINNED
Jw105 XJP220000-0001 22 GA TINNED
JW106 XJP220000-0001 22 GA TINNED
JW107 XJP220000-0001 22 GA TINNED
JW109 XJP220000-0001 22 GA TINNED
JW110 XJP220000-0001 22 GA TINNED
JW111 XJP220000-0001 22 GA TINNED
JW112 QAF065000-75207.5K OHM 1/6W 5% CF
JW113 XJP220000-0001 22 GA TINNED

TRANSISTOR

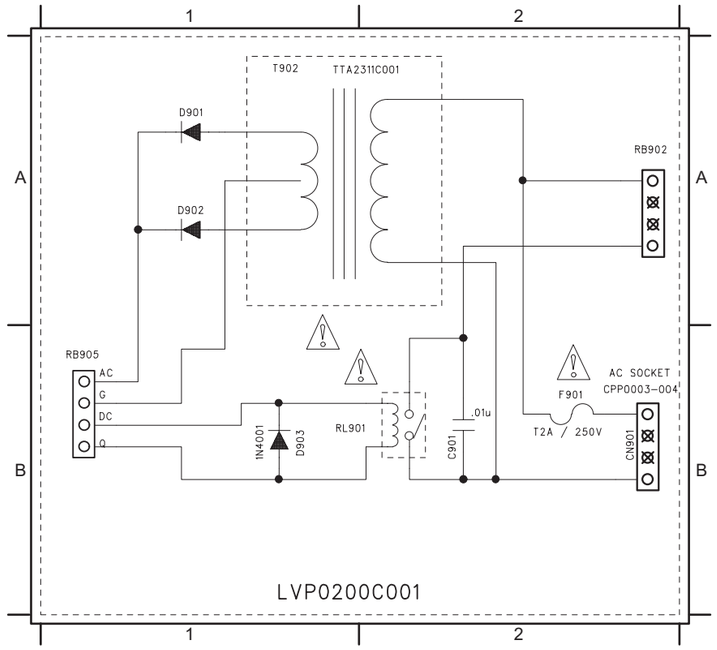
Q301 RAN200945-00012SC945P
Q302 RAN200945-00012SC945P
Q303 RAN200945-00012SC945P
Q304 RAN200945-00012SC945P
Q305 RAN200945-00012SC945P
Q306 RAN200945-00012SC945P
Q501 RAN200945-00012SC945P
Q502 RAN200945-00012SC945P

RESISTOR

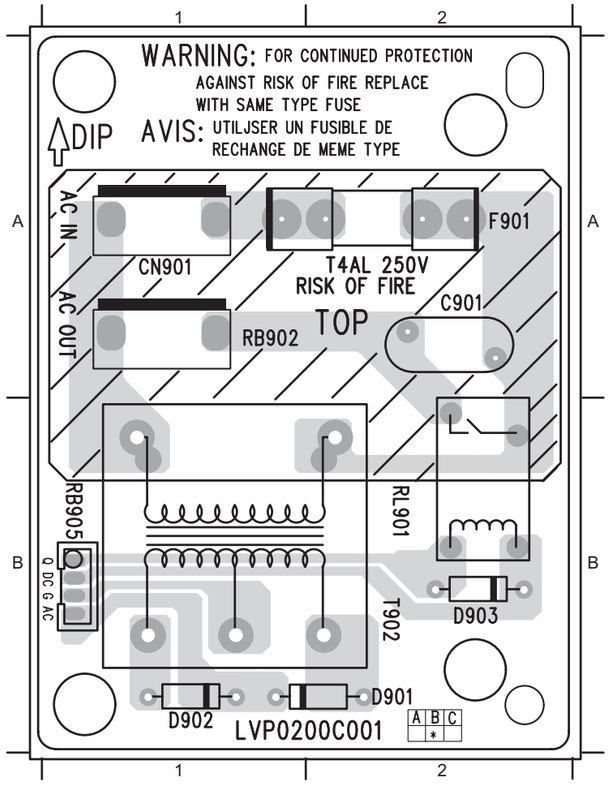
R301 QAF065000-123012K OHM 1/6W 5% CF
R302 QAF065000-68206.8K OHM 1/6W 5% CF
R303 QAF065000-103010K OHM 1/6W 5% CF
R304 QAF065000-68206.8K OHM 1/6W 5% CF
R305 QAF065000-473047K OHM 1/6W 5% CF
R351 QAF065000-1040100K OHM 1/6W 5% CF
R352 QAF065000-1040100K OHM 1/6W 5% CF
R353 QAF065000-47204.7K OHM 1/6W 5% CF
R354 QAF065000-20202K OHM 1/6W 5% CF
R355 QAF065000-22502.2K OHM 1/6W 5% CF
R356 QAF065000-103010K OHM 1/6W 5% CF
R357 QAF065000-560056 OHM 1/6W 5% CF
R358 QAF065000-2740270K OHM 1/6W 5% CF
R359 QAF065000-2740270K OHM 1/6W 5% CF
R360 QAF065000-103010K OHM 1/6W 5% CF
R361 QAF065000-103010K OHM 1/6W 5% CF
R362 QAF065000-10201K OHM 1/6W 5% CF
R363 QAF065000-5640560K OHM 1/6W 5% CF
R364 QAF065000-2240220K OHM 1/6W 5% CF
R365 QAF065000-10501.0M OHM 1/6W 5% C F
R366 QAF065000-6840680K OHM 1/6W 5% CF
R367 QAF065000-823082K OHM 1/6W 5% CF
R368 QAF065000-6840680K OHM 1/6W 5% CF
R369 QAF065000-103010K OHM 1/6W 5% CF
R370 QAF065000-75207.5K OHM 1/6W 5% CF
R371 QAF065000-103010K OHM 1/6W 5% CF
R372 QAF065000-1010100 OHM 1/6W 5% CF
R373 QAF065000-103010K OHM 1/6W 5% CF
R374 QAF065000-10201K OHM 1/6W 5% CF
R376 QAF065000-103010K OHM 1/6W 5% CF
R377 QAF065000-513051K OHM 1/6W 5% CF
R378 QAF065000-333033K OHM 1/6W 5% CF
R379 QAF045000-1010100 OHM 1/4W 5% CF
R380 QAF065000-103010K OHM 1/6W 5% CF
R381 QAF065000-823082K OHM 1/6W 5% CF
R382 QAF065000-47204.7K OHM 1/6W 5% CF
R383 QAF065000-1010100 OHM 1/6W 5% CF
R384 QAF065000-10201K OHM 1/6W 5% CF
R401 QAF065000-1540150K OHM 1/6W 5% CF
R401 QAF065000-10501.0M OHM 1/6W 5% CF
R402 QAF065000-103010K OHM 1/6W 5% CF
R403 QAF065000-183018K OHM 1/6W 5% CF
R404 QAF065000-10501.0M OHM 1/6W 5% CF
R404 QAF065000-1540150K OHM 1/6W 5% CF
R405 QAF065000-38203.8K OHM 1/6W 5% CF
R406 QAF065000-183018K OHM 1/6W 5% CF
R407 QAF065000-183018K OHM1/6W 5% CF
R410 QAF065000-1010100 OHM 1/6W 5% CF
R411 QAF065000-1010100 OHM 1/6W 5% CF
R502 QAF065000-10201K OHM 1/6W 5% CF
R505 QAF065000-47204.7K OHM 1/6W 5% CF
R506 QAF065000-393039K OHM 1/6W 5% CF
R507 QAF065000-2040200K OHM 1/6W 5% CF
R508 QAF065000-10501.0M OHM 1/6W 5% CF
R509 QAF065000-103010K OHM 1/6W 5% CF
R510 QAF065000-473047K OHM 1/6W 5% CF
R511 QAF065000-10501.0M OHM 1/6W 5% CF
R512 QAF065000-183018K OHM 1/6W 5% CF
R513 QAF065000-10201K OHM 1/6W 5% CF
R514 QAF065000-1240120K OHM 1/6W 5% CF
R515 QAF065000-103010K OHM 1/6W 5% CF
R516 QAF065000-103010K OHM 1/6W 5% CF
R517 QAF065000-223022K 1/6W 5% CF
R518 QAF065000-7510750K OHM 1/6W 5% CF
R519 QAF065000-103010K OHM 1/6W 5% CF
R520 QAF065000-473047K OHM 1/6W 5% CF
R521 QAF065000-223022K 1/6W 5% CF
R522 QAF065000-333033K OHM 1/6W 5% CF
R523 QAF065000-103010K OHM 1/6W 5% CF
R524 QAF065000-47904.7K OHM 1/6W 5% CF
R525 QAF065000-223022K 1/6W 5% CF
R526 QAF065000-103010K OHM 1/6W 5% CF
R902 QDO305000-1020 1K OHM 3W 5% MO MIN
R903 QDO305000-6210 620 OHM 3W 5% MO MIN
R904 QAF065000-47204.7K OHM 1/6W 5% CF
R905 QAF065000-47204.7K OHM 1/6W 5% CF

40

POWER PCB LAYOUT VIEW



C901	B2
CN901	B2
D901	A1
D902	A1
D903	B1
F901	B2
RB902	A2
RB905	B1
RL901	B1
T902	A1



C901	A2
CN901	A1
D901	B2
D902	B1
D903	B2
F901	A2
RB902	B1
RB905	B1
RL901	B2
T902	B2

41

ELECTRICAL PART LIST

:-POWER PCB

MISCELLANEOUS

LVP100200-0001

POWER PCB

VFL201314-5500

CON/WIRE For Cn401

DCR030001-0001

ID19.6xW11xH5.5mmUL For F901

CN901 CCN396021-0104 4 PIN P=3.69mm

F901 KSA020200-0110 2A 250V SLOW

RB902 CCN396021-0104 4 PIN P=3.69mm

RB905 CCN200000-0104 4 PIN PITCH=2.0mm

RL901 MRL012004-0011 GJ-SH-112DM

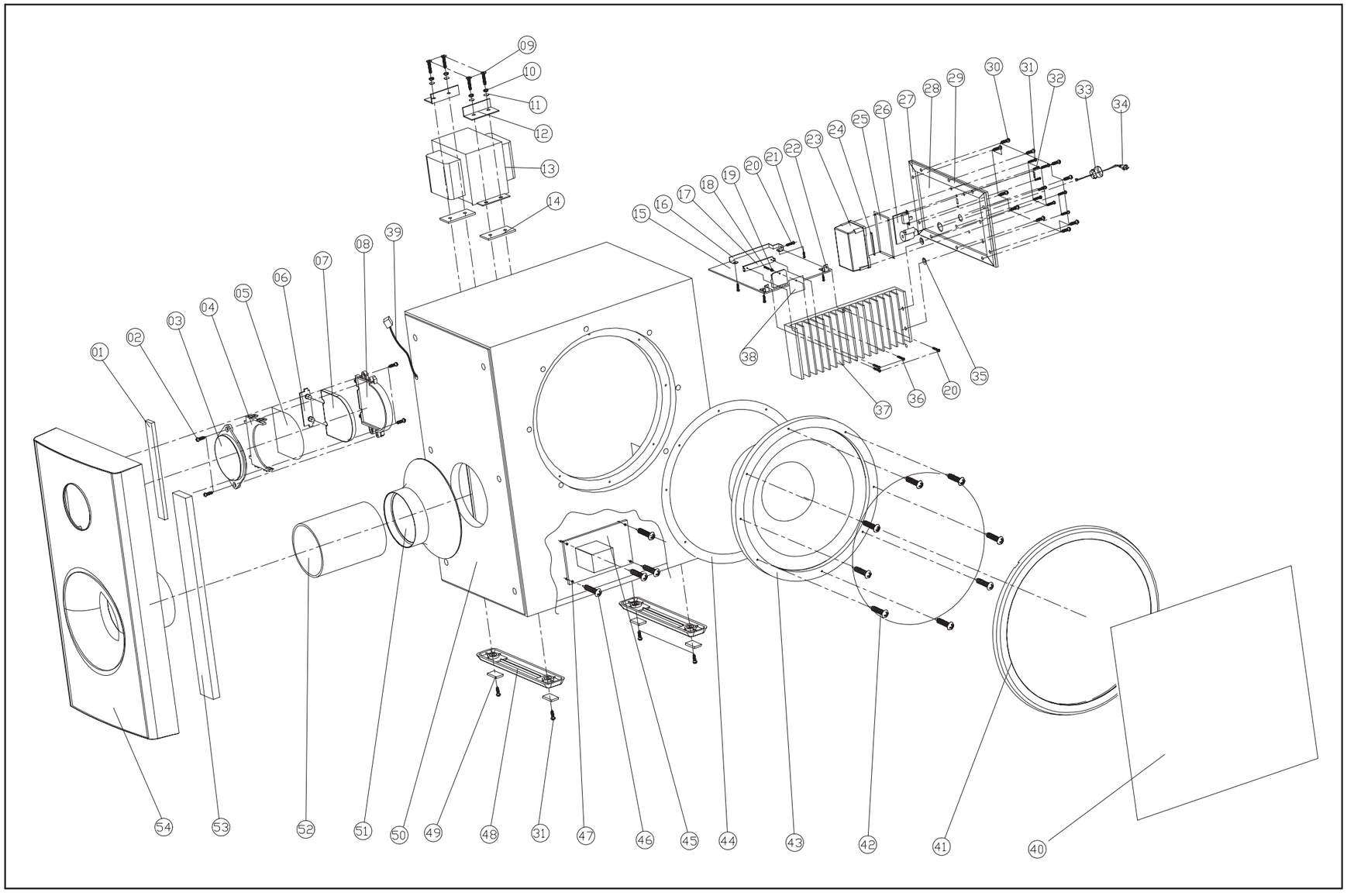
T902 TTA123011-0010230V 50Hz EI28 AXIAL

CAPACITOR

C901 PVY2705F0-1031 0.01uF 250V 20%

DIODE

EXPLODED VIEW DIAGRAM



42

MECHANICAL PARTS LIST

MECHANICAL PARTS LIST

No	Part No	Description
01	IVE100221-0001	SPONGE
02	HSP140054-3080	SCREW
03	BPN10082-0001	LED LENS
04	BPH100069-0001	LENS COVER
06	APE100426-0001	LED PCB
07	BPN100060-0001	VIEW FINDER
08	BPH100060-0001	LENS HOLDER
09	HSD143103-3250	SCREW
10	HNT140700-1300	NUT
11	HWT168540-1100	WASHER
12	GSE000110-0001	X`FORMER BRACKET
13	TTI123001-0110	PWR TRANS
14	ICH080007-0007	RUBBER
15	APE100199-0011	MAIN PCB ASS`Y
16	GSE100117-0001	PCB BRACKET
17	GSE000206-0001	IC BRACKET
18	HSP140054-3100	SCREW
19	DHU201001-0001	WASHER
20	HSP143084-3100	SCREW
21	HSP143084-3060	SCREW
22	GSE000093-0002	PCB BKT
23	BPC000021-0001	REAR COVER
24	IVE000096-0002	COVER SPONGE
25	IVE000095-0001	COVER SPONGE
26	APE100199-0021	JACK ASS`Y
27	IVE100172-0001	SPONGE
28	GAL100090-0001	REAR PLATE
29	IVE100173-0001	SPONGE
30	HST140071-3140	SCREW
31	HSP140054-3100	SCREW
32	HSP143053-3060	SCREW
33	DBU001002-3060	BUSHING
34	VPE003252-0010	LINE CORD
35	HWF118040-6100	WASHING FIB
36	HSP143083-3160	SCREW
37	GAL100113-0001	HEAT SINK
38	HIM000001-0007	MICA SHEET
39	VFL211214-5500	CON/WIRE
40	IVN00042-0001	CLOTH
41	BPG101031-0001	SPK GRILLE
42	HST140091-3200	SCREW
43	FSB02A080-31110	SPK DRIVER
44	IVE000037-0001	DRV SPONGE
45	APE100200-0003	POWER PCB
46	HST140051-3220	SCREW
47	DSS100004-0003	SPACER
48	BPE100014-0001	PLAS.FOOT
49	BRF100021-0001	RUBBER FOOT
50	EVM100054-0001	WOOD BOX
51	BPR100027-0001	PORT TUBE
52	DPP017065-1250	PAPER PORT
53	IVE10074-0001	SPONGE
54	BPF102007-0001	FRONT CAB

HITACHI

Hitachi, Ltd. Tokyo, Japan
International Sales Division
THE HITACHI ATAGO BUILDING,
No. 15 –12 Nishi Shinbashi, 2 – Chome,
Minato – Ku, Tokyo 105-8430, Japan.
Tel: 03 35022111

HITACHI EUROPE LTD.
Dukes Meadow
Millboard Road
Bourne End
Buckinghamshire
SL8 5XF
UNITED KINGDOM
Tel: 01628 643000
Fax: 01628 643400
Email: consumer-service@hitachi-eu.com

HITACHI EUROPE S.A.
364, Kifissias Ave. & 1, Delfon Str.
152 33 Chalandri
Athens
GREECE
Tel: 1-6837200
Fax: 1-6835694
Email: service.hellas@hitachi-eu.com

HITACHI EUROPE GmbH
Munich Office
Dornacher Strasse 3
D-85622 Feldkirchen bei München
GERMANY
Tel: +49 -89-991 80-0
Fax: +49 - 89 - 991 80 -224
Hotline: +49 - 180 - 551 25 51 (12ct/min.)
Email: HSE-DUS.Service@Hitachi-eu.com

HITACHI EUROPE S.A.
Gran Via Carlos III, 101 - 1
08028 Barcelona
SPAIN
Tel: 93 409 2550
Fax: 93 491 3513
Email: rplan@hitachi-eu.com

HITACHI EUROPE SRL
Via T. Gulli n.39
20147 MILAN
ITALY
Tel: 02 487861
Fax: 02 48786381
Servizio Clienti
Tel. 02 38073415
Email: customerservice.italy@hitachi-eu.com

HITACHI EUROPE AB
Box 77
S-164 94 KISTA
SWEDEN
Tel: 08 562 711 00
Fax: 08 562 711 11
Email: csgswe@hitachi-eu.com

HITACHI EUROPE S.A.S
Lyon Office
B.P. 45, 69671 Bron Cedex
FRANCE
Tel: 04 72 14 29 70
Fax: 04 72 14 29 99
Email: france.consommateur@hitachi-eu.com

HITACHI EUROPE LTD.
Norwegian Branch Office
Strandveien 18
1366 Dysaker
NORWAY
Tel: 02205 9060
Fax: 02205 9061
Email csgnor@hitachi-eu.com

ITEM N.V./S.A. (INTERNATIONAL TRADE FOR ELECTRONIC MATERIAL & MEDIA N.V./S.A)
UCO Tower – Bellevue, 17
B – 9050 GENT
BELGIUM (for BENELUX)
Tel: 09 230 48 01
Fax: 09 230 96 80
Email: hitachi.item@skynet.be

www.hitachi-consumer-eu.com

SM0152
Oct 2002