



TSL910 RSL900 STL SYSTEM



OPERATOR AND SERVICE MANUAL



INSTALLATION

The installation of any electrical equipment should be made by trained technicians who know the risks related to handling electrical supplies.

Before proceeding with the installation, it is necessary to verify that the equipment is in compliance with the rules of the Country where the unit will operate. Before connecting the transmitter to the AC source, it is necessary to verify that the voltage range reported in the back of the unit matches the voltage of the AC supplied. Here are some important details about electrical systems.



ELECTRICAL SYSTEM

Depending upon the exact location of the site, electricity is subject to more or less fluctuations in power. Fluctuation in voltage is not the only issue you can have with electricity. Most of the time, you can have spikes and peaks of power that last for very short intervals but that are sufficient to destroy your device. There are many devices on the market that protect the AC line and they are all useful (surge suppressors, stabilizers etc.). However, only one is really mandatory to avoid disasters caused by the AC. It is called an **ISOLATION TRASFORMER**. The isolation transformer creates a physical separation from the input of your AC line to the trasmitter. Anything destructive that would come through the AC, stops in the transformer and cannot reach the transmitter.

This device is indispensable because, in the last 10 years, the broadcast industry has developed new smaller power supplies that are very light. They did this to allow the units to be lighter for easy trasportation. Unfortunately, the side the downside is that the big transformers that were located inside the units protecting them, have been removed. The new AC-DC power supplies do not give any sort of protection. The isolation transformer is necessary to give that protection. A big isolation transformer installed where the AC enters the site protect not only one specific device, but all of the equipment that are in the same building.

If you want to protect only one specific device and you want to know what size of transformer you will need, you can multiply the output watt power of your device by 2.5 and you will have the Watts needed by your isolation transformer. (Example: for a 1000 W transmitter you need at least a 2.5KWatt isolation transformer). If you want to protect more devices you should add the wattage of every unit and multiply by 2.5.

Once you have your transformer installed, you need to verify how good your ground system is. Every good electrician should have a proper device to measure the ground. Money invested in measuring your ground can fix problems and avoid bigger expenses in the future. Every rack and every unit must be connected to ground.

Once that the electrical connections have been verified, you need to connect the antenna to the transmitter through the coaxial cable. Verify that the connector is properly tighten and, in case you have a rigid coaxial cable feeding the transmitter, install a pigtail with proper power capability and more flexibility so that you do not put too much pressure on the connector.

Before proceeding to operate, we strongly recommend that you make double sure an adequate grounding system has been set. Nicom will not be held responsible for damages to persons and materials if these guidelines are not followed.

The positioning of the transmitter inside the room is equally important. If the unit is placed in a rack, make sure there is enough space around for the air to circulate. Remember that fresh air is positioned lowest in the room. Place your transmitter as low as possible, but not too close to the floor to avoid damages due to humidity. Leave at least 2 feet of space behind the transmitter to allow the warm air flow to circulate without obstruction. We highly recommend to keep the room cool with an air conditioning system, so that the unit can work at a constant temperature without excessive humidity (between 60 and 75 degrees); a temperature over 75 degrees causes the unit to work in a stressed environment which can negatively impact the life and performance of the unit.

CONNECTION AND OPERATION

1. First, connect the transmitting cable coming from the antenna to the corresponding connector placed in the rear panel of the unit; check that it is tightened properly.
2. Then connect the plug to the AC mains and also make a good ground connection.
3. Once these procedures have been performed, you can turn the power on. The transmitter requires about 20 to 30 seconds to perform the internal checks and lock onto the frequency. After that, it will start delivering power.
4. Always start with low power and keep an eye on the reading of the reflected power to be sure that your system (antenna, cables etc.) is performing well.
5. Allow the unit to warm up for about 30 minutes and then you can increase the power to the desired level.
6. Wait another 30 minutes to verify that everything is working properly.
7. Check the air coming out from the rear fans and verify that it is just warm air not overly hot. At this point, if everything looks good, you can consider your installation successful.

SAFETY SUGGESTIONS

Thank you for your business. We at Nicom appreciate our partnership with you and your broadcasting team. We proudly stand behind our products. Regardless of how well our electrical equipment is designed; personnel can be exposed to dangerous electrical shock when protective covers are removed for maintenance or other activities. Therefore, it is incumbent on the user to see that all safety regulations are consistently observed and that each individual assigned to the equipment has a clear understanding of first aid related to electrical shocks (see next pages).

In addition, these safety practices **must** be followed:

- Do not attempt to adjust unprotected circuit controls or to dress leads with the power on.
- Always avoid placing parts of the body in a series between ground and circuit points.
- To avoid burns, do not touch heavily loaded or overheated components without precaution.
- Remember that some semiconductor cases and solid-state circuits carry high voltages.
- Do not assume that all danger of electrical shock is removed when the power is off. Charged capacitors can retain dangerous voltages for long periods of time after the power is turned off. These capacitors should be discharged through a suitable resistor before any circuit points are touched.
- Do not take chances. Be fully trained. Nicom equipment should be operated and maintained by fully qualified personnel.
- Do not service equipment alone and do not perform internal adjustments to this unit unless another person is capable of rendering first aid and resuscitation is present.
- Some components used in the construction of this equipment contain Beryllium Oxide (BeO). This substance is harmless as it is, but becomes highly dangerous if it is ground to powder. Special procedures of disposal must be observed in case of failure of these devices.

NOTE: This section is not intended to contain a complete statement of all safety precautions that should be observed by personnel in using this electronic equipment or others.

Nicom shall not be responsible for injury or damage resulted from improper procedures or from using it by improperly trained or inexperienced personnel.

GENERAL INFORMATION FOR SAFETY

When connecting the equipment to power, please follow these important recommendations:

- This product is intended to operate from a power source that will not apply more than 10% of the voltage specified on the rear panel between the supply conductors or between either supply conductor and ground. A protective- ground connection by way of the grounding conductor in the power cord is essential for safe operation.
- This equipment is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired socket before connecting to the product input or output terminals.
- Upon loss of the protective-ground connection, all accessible conductive parts (including parts that may appear to be insulating) can render an electric shock.
- To avoid fire hazard, use only the fuse of correct type, voltage rating, and current rating. Refer fuse replacement to qualified service personnel.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- To avoid personal injury, do not remove the product covers or panels. Do not operate the product without the covers and panels properly installed.

GOOD PRACTICE

In maintaining the equipment covered in this manual, please keep in mind the following standards for good safety practice:

- At regular intervals, the condition of the equipment and the correct functioning of protective and safety devices shall be checked by a skilled person approved by the appropriate authority for this duty. Functional checks shall be carried out on interlocking systems of doors, mechanical interlocks, isolating switches, earthing switches, parallel resistances and protective devices against overvoltage and over-currents. The above checks shall not be carried out after the protective and safety devices have operated under faulty conditions. The safety devices shall not be altered or disconnected except for replacement, nor shall the safety circuit be modified without specific approval of the appropriate authority in each case.
- When connecting any instrument (wattmeter, spectrum analyzer, etc.) to a high frequency output, use the appropriate attenuator or dummy load to protect the final amplifiers and the instrument input.

- When inserting or removing printed circuit boards (PCBs), cable connectors, or fuses, always turn off power to the affected portion of the equipment. After power is removed, allow sufficient time for the power supplies to bleed down before reinserting PCBs.
- When troubleshooting, remember that FETs and other metal-oxide semiconductor (MOS) devices may appear defective because of leakage between traces or component leads on the printed circuit board. Clean the printed circuit board and recheck the MOS device before assuming it is defective.
- When replacing MOS devices, follow standard practices to avoid damage caused by static charges and soldering.
- When removing components from PCBs (particularly ICs), use care to avoid damaging PCB traces.

PROCEDURE TO ESTABLISH THE ABSENCE OF VOLTAGE

Follow these simple steps for establish the absence of voltage:

- Before starting work on the equipment, it shall be isolated from the main power supply. This disconnection shall always be checked by visual inspection. Further precautions shall be taken to ensure that the main supply cannot be restored while work is being carried out. After the main supply has been disconnected, all other lines such as the control, interlocking and modulation lines shall be disconnected if they carry dangerous voltage. Moreover, the antenna or the antenna transmission line shall be disconnected from the antenna terminal device to prevent the introduction of dangerous voltage due to antenna pick-up. When disconnection of the antenna or antenna transmission line is not possible, other suitable precautions shall be taken, for example, earthing, when necessary at several places, to establish absence of voltage. These earthing connections shall be very short compared with the wave-length.
- Capacitors, which are connected to a circuit isolated from its supply, shall be discharged (and have their terminals permanently short-circuited, and the casing earthed) during the whole period of the work.
- The electrical charge retained by electrical machinery when stopped may, in certain cases, be sufficient to cause a severe shock. This shall be taken into account when making connections to an apparently "dead" machine. Therefore, all machinery shall be discharged and earthed using an adequately insulated lead for this purpose. The discharge operation shall be repeated several times.

- Before any maintenance work is carried out on automatic or remote-controlled equipment, the remote switching circuits shall be made inoperative.

PROCEDURE FOR DETERMINATION OF THE ABSENCE OF VOLTAGE

After the equipment has been isolated according to the standard EN60215, the absence of voltage shall be determined at the work place. This may be done by the use of voltage indicators, measuring instruments, glow discharge lamps for indicating radio-frequency voltage or other suitable means.

ELECTRIC SAFETY PRECAUTIONS



All parts making up the equipment have danger identification tags (with a yellow background) to highlight the parts dangerous for the operator that has access to the system

Presence of hazardous energy levels

A hazardous energy level is defined as a stored energy level of 20 J or more, or an available continuous power level of 240 VA or more, at a potential of 2 V or more.

Precautions for Handling Components Containing Toxic Material

The Beryllium (Beryllium Oxide) is used in the construction of some components of the apparatus.

This material, when in the form of fine powder or vapor if inhaled into the lungs can cause respiratory problems. In its solid form, as used herein, can be handled quite safely, but it is prudent to avoid conditions that favor the formation of dust due to abrasion of the surfaces. Because of this risk, you should be very careful in the removal and disposal of these components.

Do not throw them in containers for generic waste material, industrial or domestic, or send via mail. They must be packed separately and clearly identified in safety and to show the nature of the risk and then safely disposed by authorized personnel for toxic waste. Before you remove or replace any RF COMPONENT, make sure that all precautions comply with the recommendations of SAFETY.



This warning label is used for components containing Beryllium Oxide.

ELECTROSTATIC PRECAUTIONS

Before removing or replacing any PCB assembly within the equipment, make sure that all precautions comply with ESD protections (ESD = Electro Static Discharge). Make sure that electrostatic discharge protections are reset after maintenance and/or measurement operations.



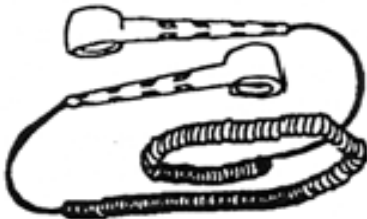
The tag of CAUTION is used for the majority of electronic devices that are subject to electrical shocks.

If electronic parts have to be touched during installation or repair, please observe the following precautions.

Operators must be equipped with anti-static protection devices such as:



Elastic wristband: to be fixed on the operator's wrist.



Flexible cords: to be connected to the elastic wristband and the special plug on the shelf highlighted with the ESD warning label.

RULES OF FIRST AID

Personnel engaged in the installation, use and maintenance of the equipment must be familiar with the theory and practice of first aid.

FIRST AID IN CASE OF ELECTRIC SHOCK

If someone seems unable to free themselves when they receive an electric shock, disconnect the power before trying to help. A muscle spasm or unconsciousness may render the victim unable to free themselves from the power source.

If power cannot be turned off immediately, very carefully loop a length of dry non-conducting material (such as a rope, insulating material, or clothing) around the victim and pull him free of the power. Carefully avoid touching him or his clothing until free of power.

DO NOT TOUCH VICTIM OR HIS CLOTHING BEFORE POWER IS DISCONNECTED OR YOU CAN ALSO BECOME A SHOCK VICTIM.

EMERGENCY RESUSCITATION TECHNIQUE



Step 1

Check the victim for unresponsiveness. If there is no response, **immediately call for medical assistance** and then return to the person.



Step 2

Position the person flat on their back. Kneel by their side and place one hand on the forehead and the other under the chin. Tilt the head back and lift the chin until teeth almost touch. Look and listen for breathing.



Step 3

If not breathing normally, pinch the nose and cover the mouth with yours. Give two full breaths. The person's chest will rise if you are giving enough air.

**Step 4**

Put the fingertips of your hand on the Adam's apple; slide them into the groove next to the windpipe. Feel for a pulse. If you cannot feel a pulse or are unsure, move on to the next step.

**Step 5**

Position your hands in the center of the chest between the nipples. Place one hand on top of the other.

**Step 6**

Push down firmly two inches. Push on chest 15 times.

CONTINUE WITH TWO BREATHS AND 15 PUMPS UNTIL HELP

ARRIVES.

TREATMENT FOR BURNS

Extensive burns and broken skin

- Cover area with clean sheet or a clean cloth.
- Do not break blisters, remove tissue, remove any clothing that is stuck to the skin, and apply an ointment.
- Treat victim according to the type of accident.
- Arrange transportation to a hospital as quickly as possible.
- If arms or legs are affected, keep them elevated.

If medical help is not available within an hour and the victim is conscious and not vomiting, give a solution of salt and baking soda: 1 teaspoon of salt and half of baking soda every 250 ml of water. Make slowly drink half a glass of solution four times and for a period of 15 minutes. Stop at the retching. Do not administer alcoholic beverages

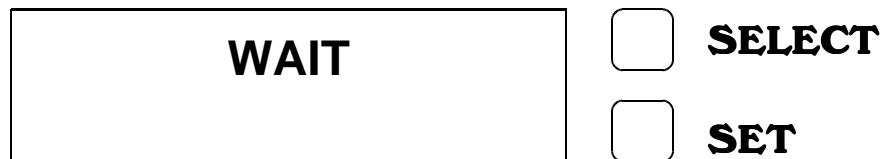
Less severe burns

- Apply cold gauze compresses (not iced) using a cloth as clean as possible.
- Do not break blisters, remove tissue, remove any clothing that is stuck to the skin, and apply an ointment.
- If necessary, put on clean clothes and dry.
- Treat victim according to the type of accident.
- Arrange transportation to a hospital as quickly as possible.

STL TRANSMITTER AND RECEIVER OPERATION

After having unpacked the STL system the first thing to do is to set the transmitter. Connect a 50 Ω load or 50 Ω antenna to the N type connector marked "RF output", connect the equipment into a mains supply (100÷240 VAC) with a good ground system. The transmitter is usually set at a power of 5-6 watts. Switch ON the power and the V POWER led will light.

The Display will show:



After few seconds the green PLL LOCK led will light and the Display will show an increasing bar; after a further 5 seconds the green ON AIR LED will light and the unit will start increasing power.




Once the unit has finished the cycle, the display will show the

modulation bar 

- Forward Power (FRW 5.0W);
- Reflected Power (RFL 0.1W);



In case of a receiver the display will show the following:

- Level Modulation (MOD > );
 - Level Signal(50dBuV).
-

MOD > ■■■■■■ □	<input type="checkbox"/>	SELECT
SGN 50dBuV	<input type="checkbox"/>	SET

To display the frequency push and hold the SET key.
In order to display the parameter push and hold the SELECT key.

Display Password

The Password is factory set to enable, and is not possible change this SET.

The default password is 1 2 3.

The way for changing the password is the following:

- Press for 3 seconds the SELECT key;

PASSWORD	<input type="checkbox"/>	SELECT
<u>0</u> 1 2 3 4 5 6 7 8 9	<input type="checkbox"/>	SET

- Press the SELECT key for move the underscore character position at the default digit, and press the SET key to confirm the digit.

PASSWORD *	<input type="checkbox"/>	SELECT
0 1 2 3 4 5 6 7 8 9	<input type="checkbox"/>	SET

Carry out the same operation for the two remaining digits.

PASSWORD * * *	<input type="checkbox"/>	SELECT
0 1 2 3 4 5 6 7 8 9	<input type="checkbox"/>	SET

- If the password is corrected press SET key to confirm, otherwise press SELECT key to leave the function.

CONFIRM (Y/N) ? N=SEL. Y=SET.	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

If the password is not corrected an error is displayed:

ERROR PASSWORD	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

After few seconds display will show again the parameters.

- When the password is corrected the display will show:

NEW PASS . = SEL . NEW FREQ . = SET .	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

To change the password press the SET key.
To change the frequency press the SELECT key.

- For changing the password use the same method for the default password:

NEW PASSWORD <u>0</u> 1 2 3 4 5 6 7 8 9	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

The confirmation password will be required.

CONFIRMATION <u>0</u> 1 2 3 4 5 6 7 8 9	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

If the password is corrected the display will show:

STORED NEW PASSWORD	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

If the confirmation password is wrong the display will show:

ERROR CONFIRMATION	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

IMPORTANT NOTE

! BE CAREFUL !

Once the password is set, it must be remembered otherwise neither can the frequency be changed or a new password entered and you will need to return the unit to the Factory for a complete reset.

Display Change of Frequency.

- Press 3 seconds the SELECT key and put the correct password, at this point press again the SELECT key:

NEW PASS . = SEL .	<input type="checkbox"/> SELECT
NEW FREQ . = SET .	<input type="checkbox"/> SET

- Press the SELECT key to change the digit and press the SET key to confirm the digit.

FREQUENCY ?	<input type="checkbox"/> SELECT
MHz 950.000	<input type="checkbox"/> SET

The underscore character move the position one place to the left.

When the five digit are changed then press the "SET" key to confirm the new frequency.

After this operation it will follow the "WAIT" cycle and then the display will show the parameters:

MOD > ■■■■■■ □ FRW 8.0W RFL 0.0W	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

After 7 minutes the display light will switch off and the display will show:

NICOM MHz 950.000	<input type="checkbox"/> SELECT
	<input type="checkbox"/> SET

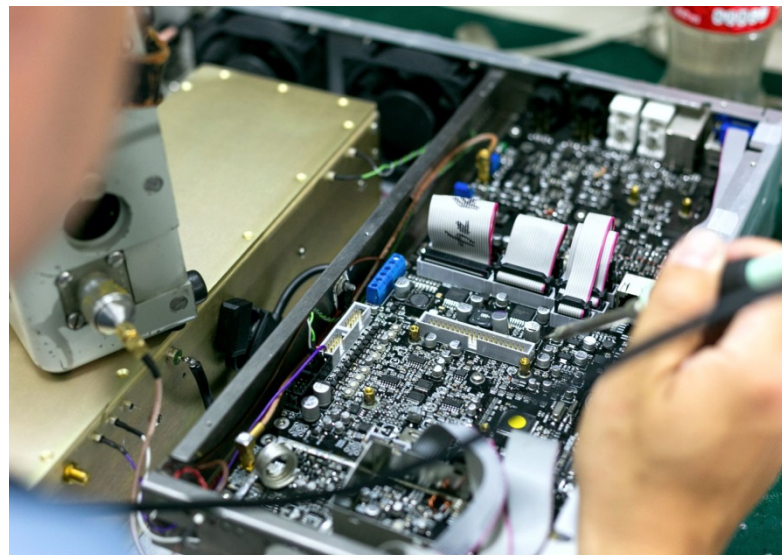
SERVICE MANUAL

In this section we supply all the schematics and component list with the purpose of helping the technicians willing to repair possible failures in the units. Servicing FM transmitters is not so simple and also skilled technicians could find some repair or adjustments difficult. We advise persons who don't have experience in repairing to avoid any attempt to fix the units; by our experience in most cases the result have been a further increase of the cost of repair.

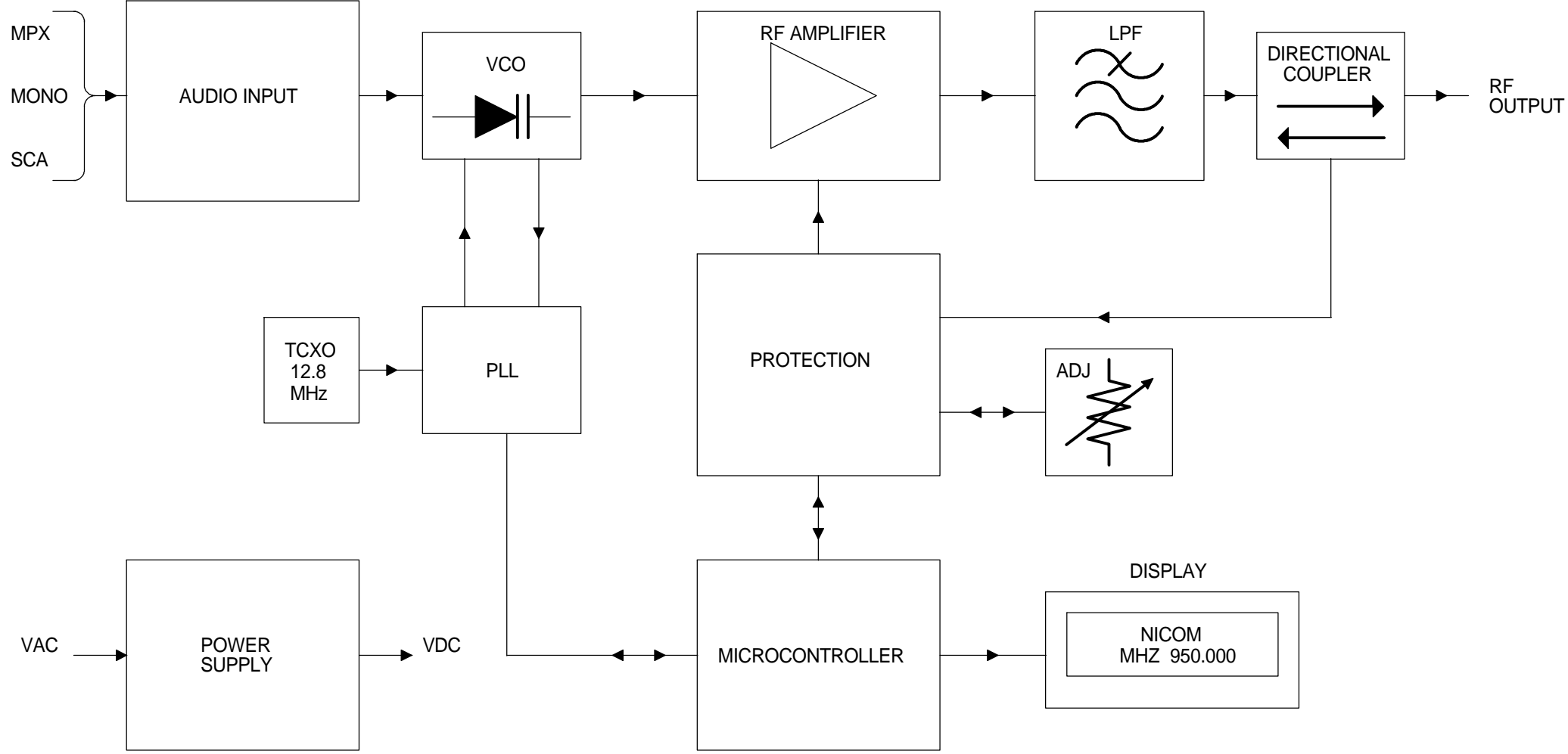


Our laboratories will offer assistance for skilled technicians equipped with proper testing equipment.

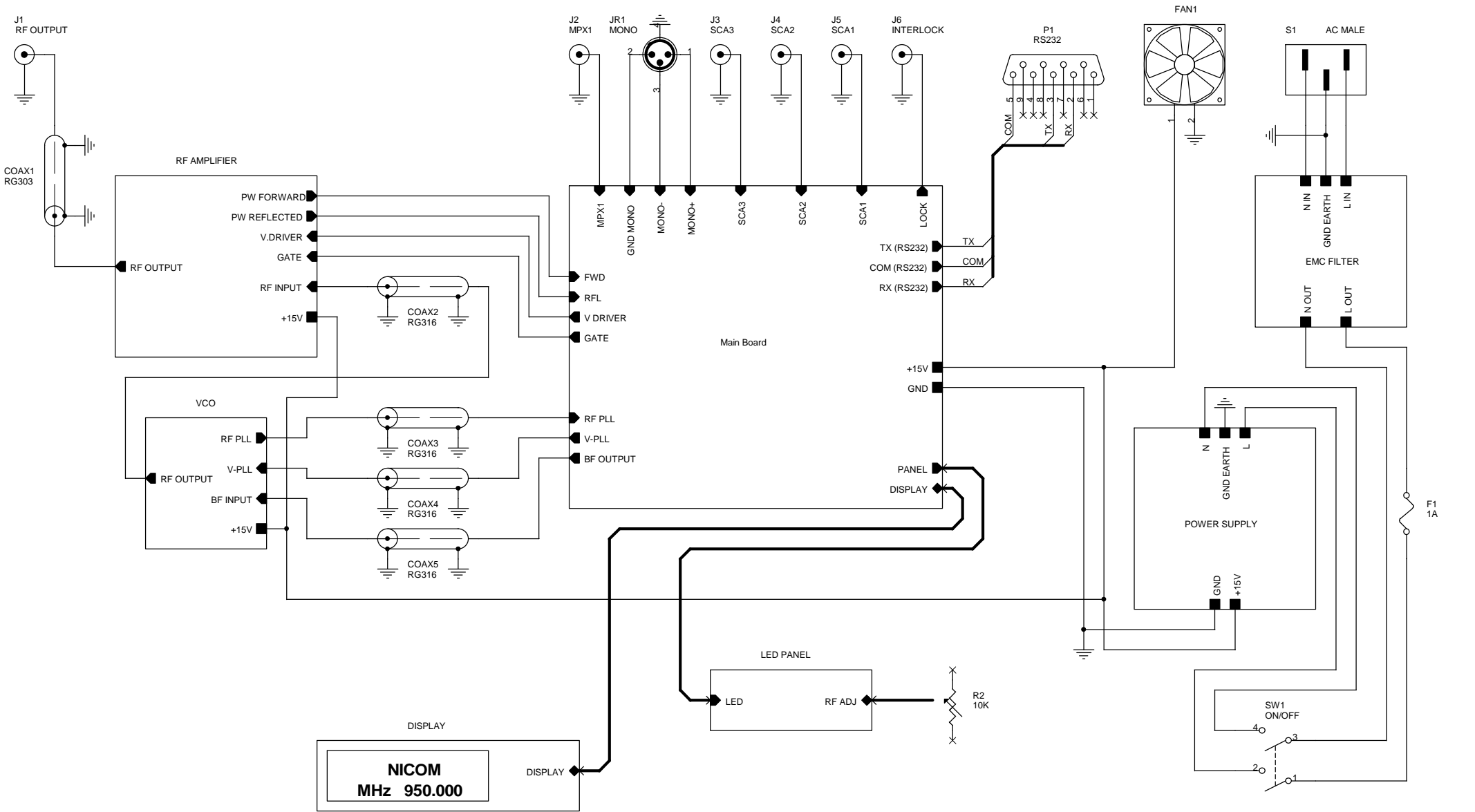
Those that don't have this kind of experience and equipment can call our service department and have an estimate for the repair and in most cases, if the repair of the unit is consistent or if the unit is old, we can offer a trade-in solution with a good evaluation of the old unit swapped with a new one.



TRANSMITTER FUNCTIONAL SCHEMATIC



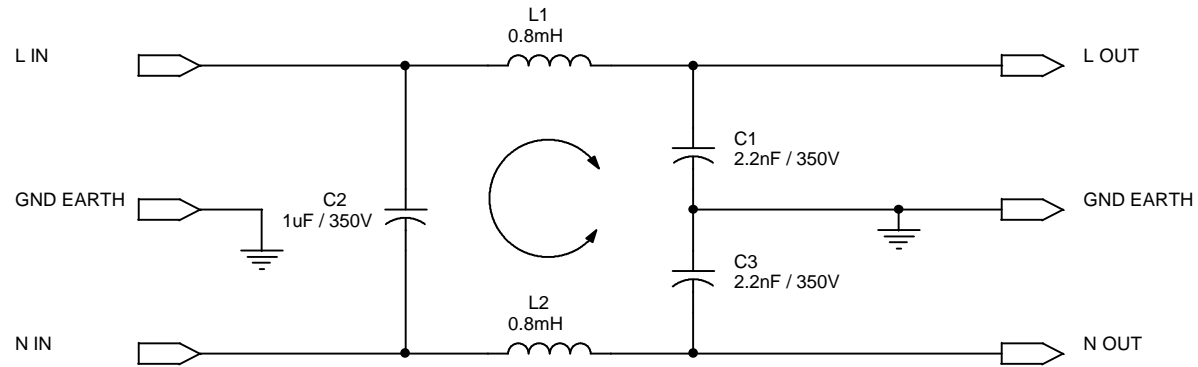
TRANSMITTER GENERAL SCHEMATIC




NICOM
 MHz 950.000
 DISPLAY

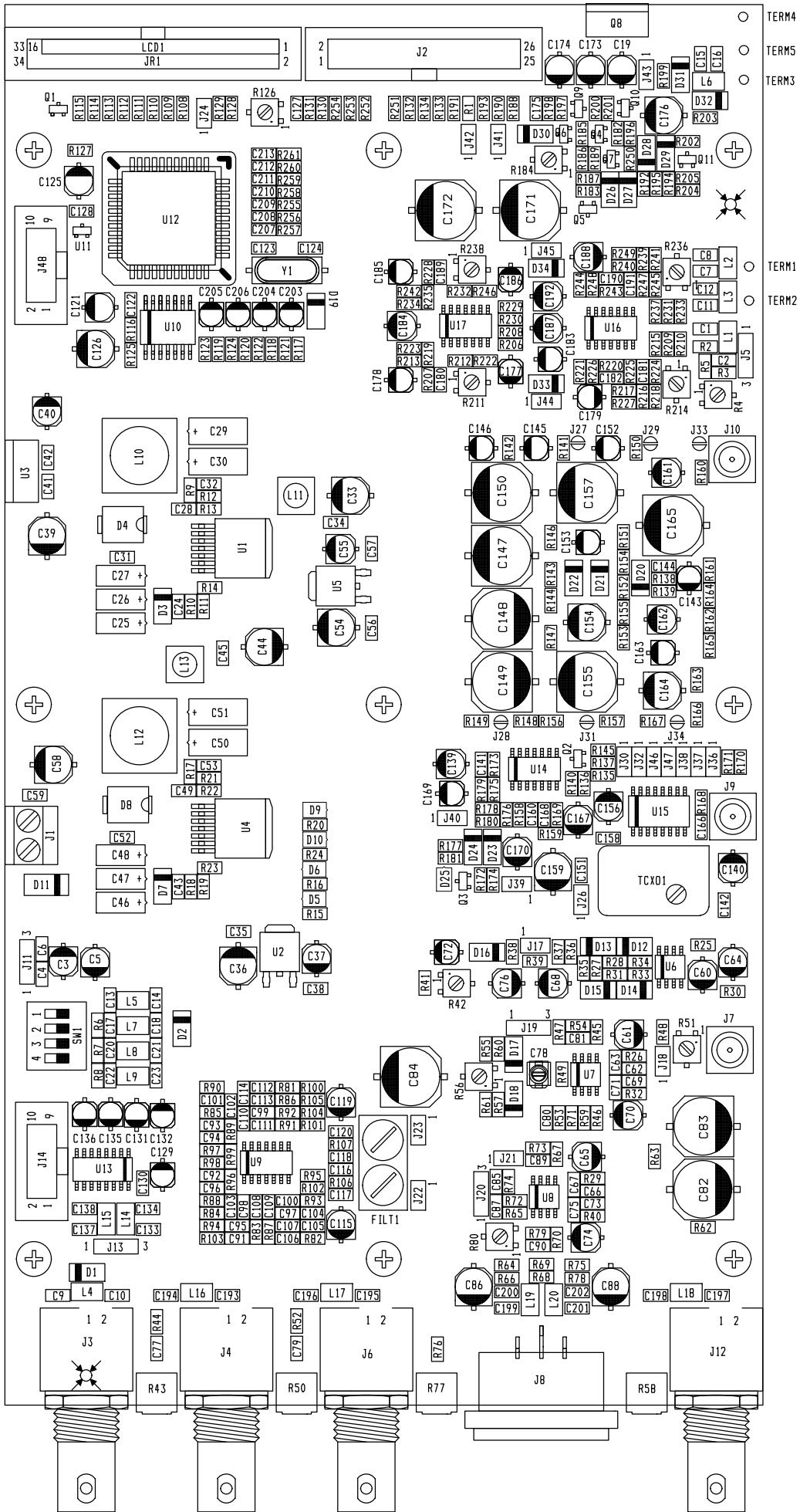
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EMC FILTER

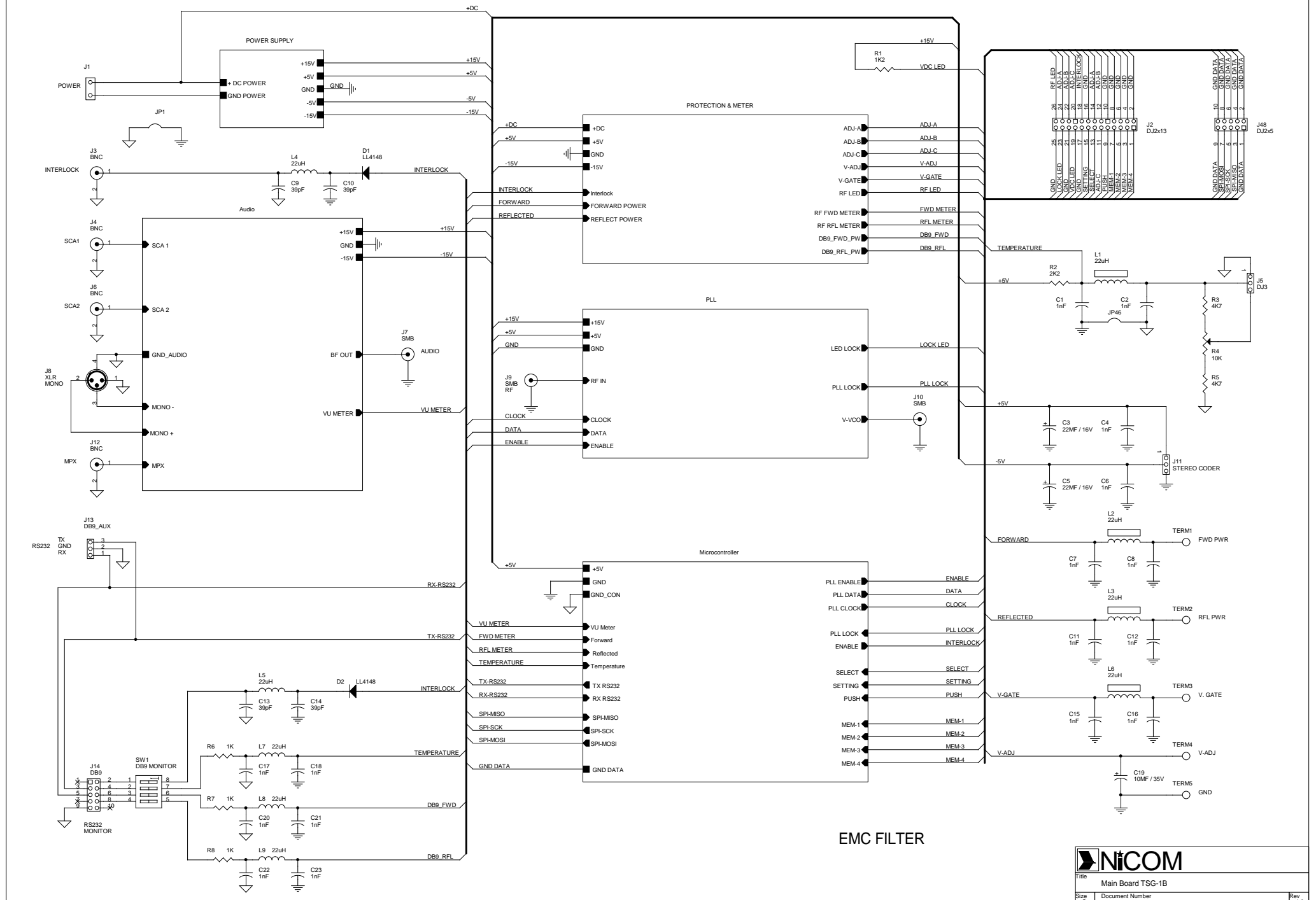


		
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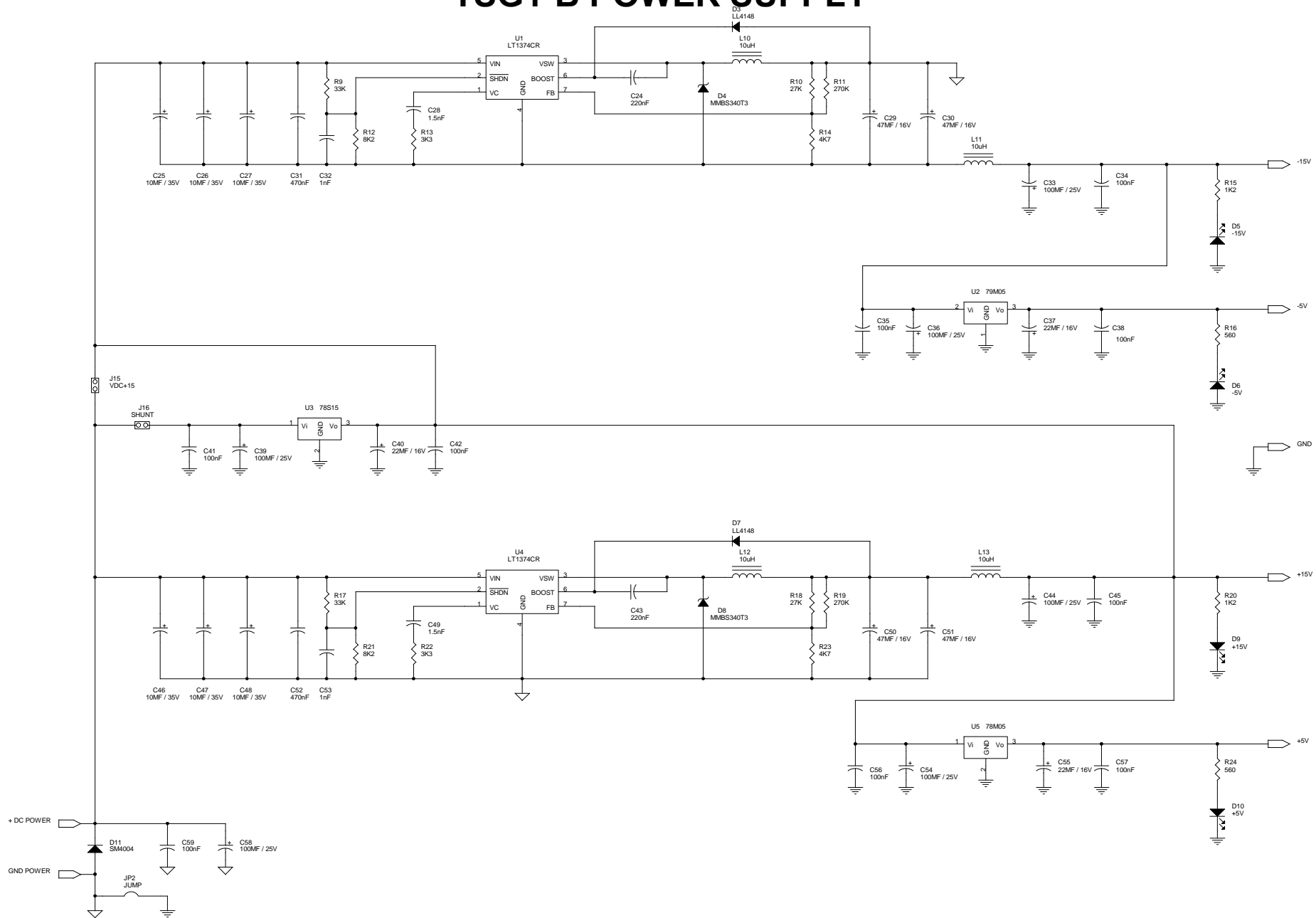
TRANSMITTER MAIN BOARD LAYOUT



TSG1-B ELECTRICAL SCHEMATIC

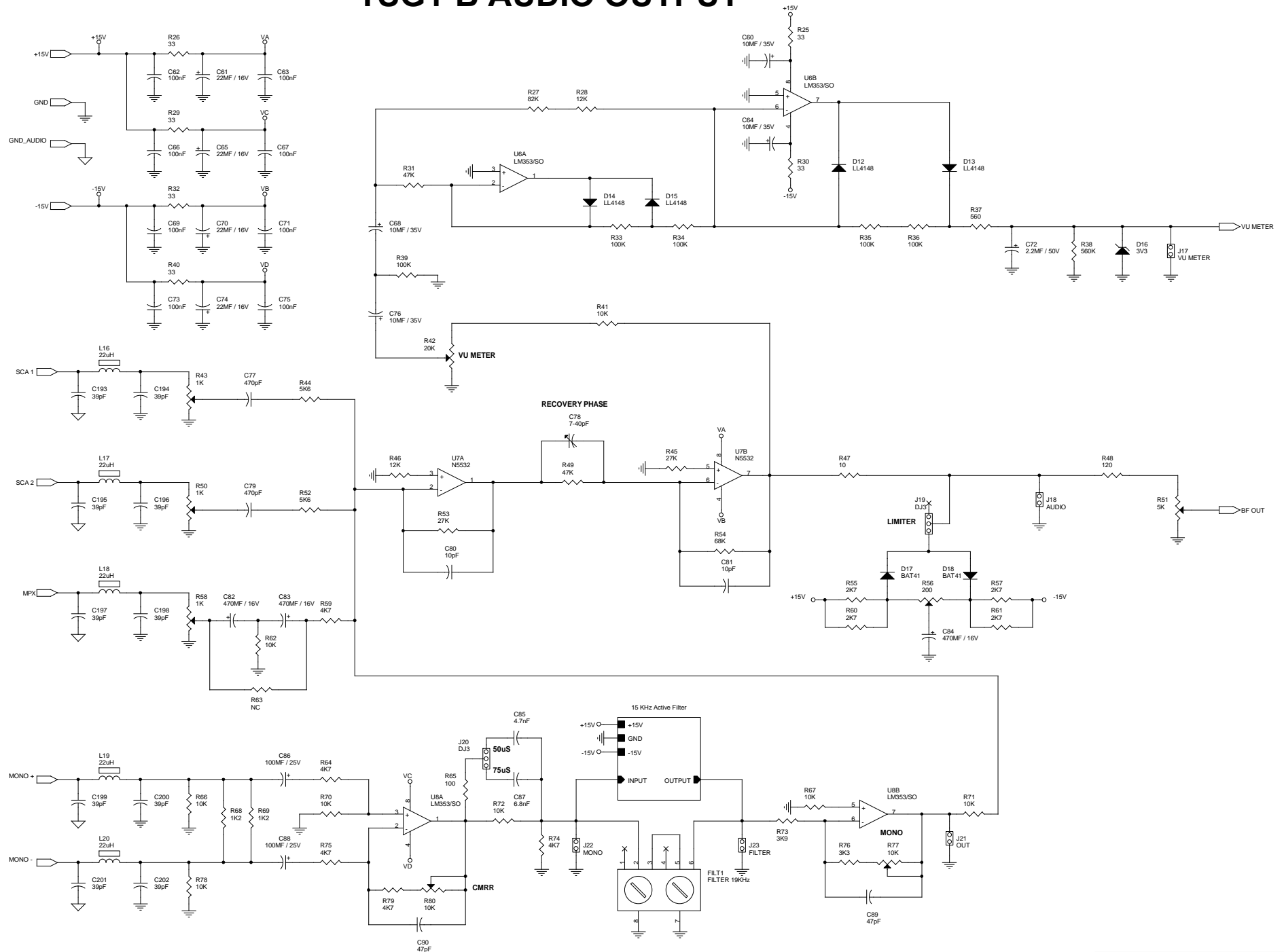


TSG1-B POWER SUPPLY

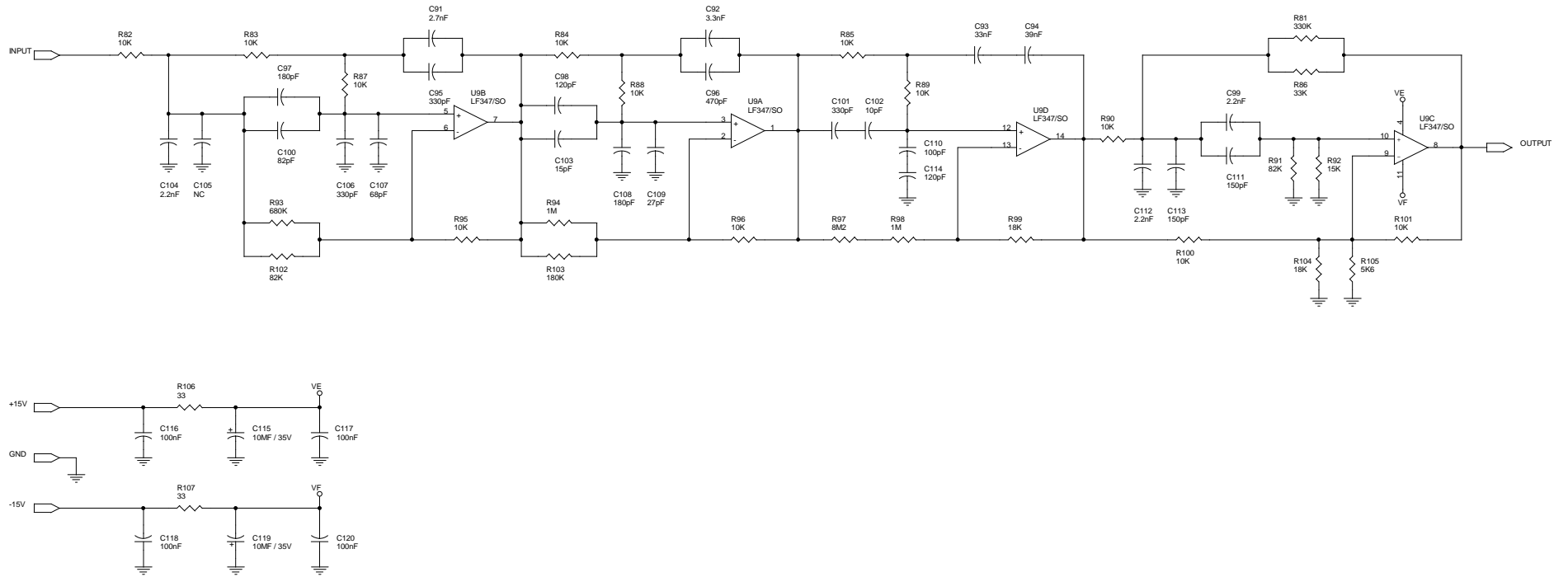


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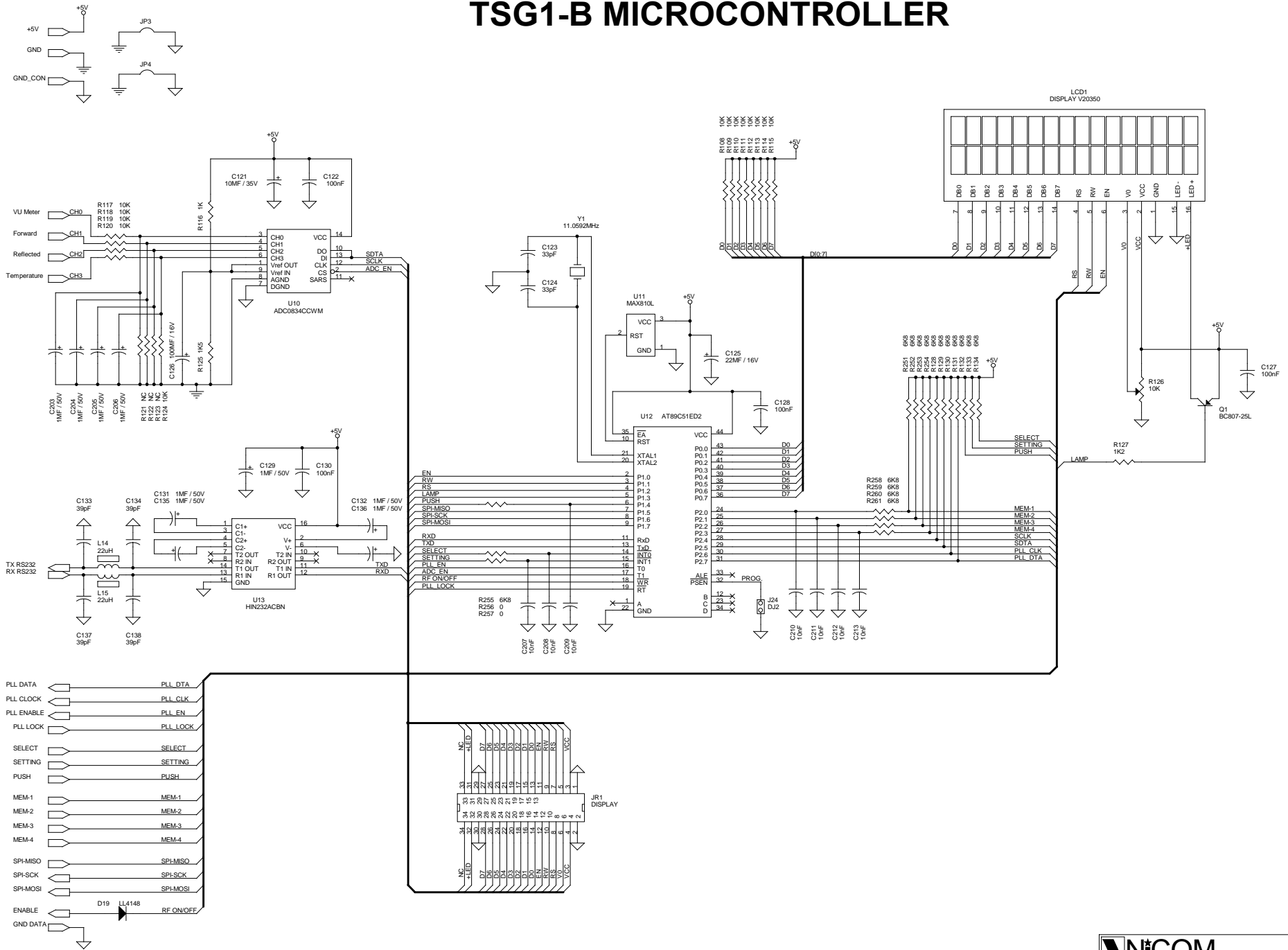
TSG1-B AUDIO OUTPUT



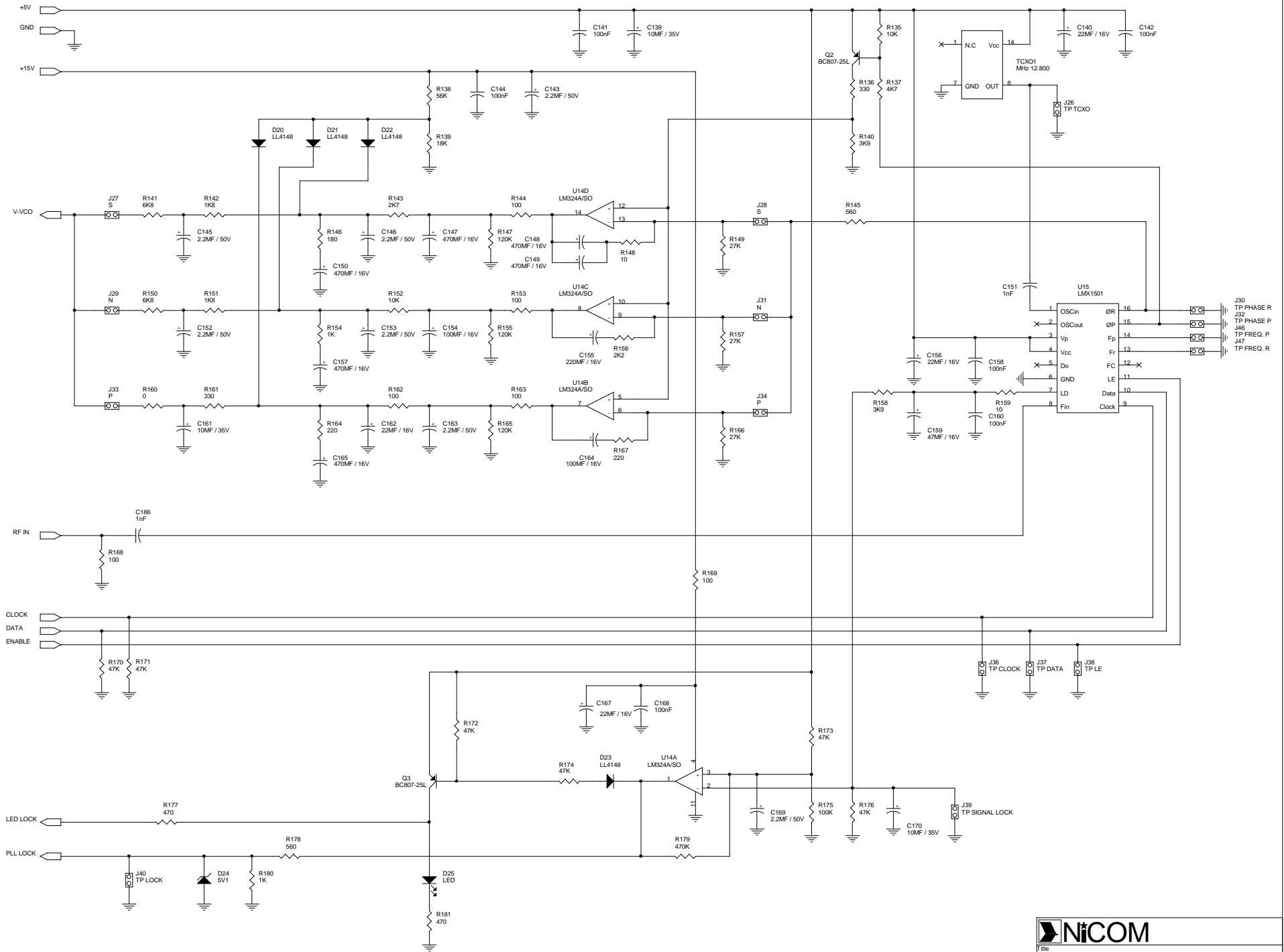
TSG1-B MONO FILTER



TSG1-B MICROCONTROLLER



TSG1-B PLL SCHEMATIC



Part List Schematic : TSG1-B

Rif.	Value	Remarks	Description	Code
C1	1nF		SMD Multilayer Ceramic Capacitor	
C2	1nF		SMD Multilayer Ceramic Capacitor	
C3	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C4	1nF		SMD Multilayer Ceramic Capacitor	
C5	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C6	1nF		SMD Multilayer Ceramic Capacitor	
C6	1nF		SMD Multilayer Ceramic Capacitor	
C7	1nF		SMD Multilayer Ceramic Capacitor	
C8	1nF		SMD Multilayer Ceramic Capacitor	
C9	39pF		SMD Multilayer Ceramic Capacitor	
C10	39pF		SMD Multilayer Ceramic Capacitor	
C11	1nF		SMD Multilayer Ceramic Capacitor	
C12	1nF		SMD Multilayer Ceramic Capacitor	
C13	39pF		SMD Multilayer Ceramic Capacitor	
C14	39pF		SMD Multilayer Ceramic Capacitor	
C15	1nF		SMD Multilayer Ceramic Capacitor	
C16	1nF		SMD Multilayer Ceramic Capacitor	
C17	1nF		SMD Multilayer Ceramic Capacitor	
C18	1nF		SMD Multilayer Ceramic Capacitor	
C19	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C20	1nF		SMD Multilayer Ceramic Capacitor	
C21	1nF		SMD Multilayer Ceramic Capacitor	
C22	1nF		SMD Multilayer Ceramic Capacitor	
C23	1nF		SMD Multilayer Ceramic Capacitor	
C24	220nF		SMD Multilayer Ceramic Capacitor	
C25	10MF	35V	SMD Tantalum Capacitor	
C26	10MF	35V	SMD Tantalum Capacitor	
C27	10MF	35V	SMD Tantalum Capacitor	
C28	1.5nF		SMD Multilayer Ceramic Capacitor	
C29	47MF	16V	SMD Tantalum Capacitor	
C30	47MF	16V	SMD Tantalum Capacitor	
C31	470nF		SMD Multilayer Ceramic Capacitor	
C32	1nF		SMD Multilayer Ceramic Capacitor	
C33	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C34	100nF		SMD Multilayer Ceramic Capacitor	
C35	100nF		SMD Multilayer Ceramic Capacitor	
C36	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C37	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C38	100nF		SMD Multilayer Ceramic Capacitor	
C39	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C40	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C41	100nF		SMD Multilayer Ceramic Capacitor	
C42	100nF		SMD Multilayer Ceramic Capacitor	
C43	220nF		SMD Multilayer Ceramic Capacitor	
C44	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C45	100nF		SMD Multilayer Ceramic Capacitor	
C46	10MF	35V	SMD Tantalum Capacitor	
C47	10MF	35V	SMD Tantalum Capacitor	
C48	10MF	35V	SMD Tantalum Capacitor	

Rif.	Value	Remarks	Description	Code
C49	1.5nF		SMD Multilayer Ceramic Capacitor	
C50	47MF	16V	SMD Tantalum Capacitor	
C51	47MF	16V	SMD Tantalum Capacitor	
C52	470nF		SMD Multilayer Ceramic Capacitor	
C53	1nF		SMD Multilayer Ceramic Capacitor	
C54	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C55	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C56	100nF		SMD Multilayer Ceramic Capacitor	
C57	100nF		SMD Multilayer Ceramic Capacitor	
C58	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C59	100nF		SMD Multilayer Ceramic Capacitor	
C60	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C61	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C62	100nF		SMD Multilayer Ceramic Capacitor	
C63	100nF		SMD Multilayer Ceramic Capacitor	
C64	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C65	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C66	100nF		SMD Multilayer Ceramic Capacitor	
C67	100nF		SMD Multilayer Ceramic Capacitor	
C68	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C69	100nF		SMD Multilayer Ceramic Capacitor	
C70	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C71	100nF		SMD Multilayer Ceramic Capacitor	
C72	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C73	100nF		SMD Multilayer Ceramic Capacitor	
C74	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C75	100nF		SMD Multilayer Ceramic Capacitor	
C76	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C77	470pF		SMD Multilayer Ceramic Capacitor	
C78	7-40pF		SMD Trimmer Capacitor	
C79	470pF		SMD Multilayer Ceramic Capacitor	
C80	10pF		SMD Multilayer Ceramic Capacitor	
C81	10pF		SMD Multilayer Ceramic Capacitor	
C82	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C83	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C84	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C85	4.7nF		SMD Multilayer Ceramic Capacitor	
C86	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C87	6.8nF		SMD Multilayer Ceramic Capacitor	
C88	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C89	47pF		SMD Multilayer Ceramic Capacitor	
C90	47pF		SMD Multilayer Ceramic Capacitor	
C91	2.7nF		SMD Multilayer Ceramic Capacitor	
C92	3.3nF		SMD Multilayer Ceramic Capacitor	
C93	33nF		SMD Multilayer Ceramic Capacitor	
C94	39nF		SMD Multilayer Ceramic Capacitor	
C95	330pF		SMD Multilayer Ceramic Capacitor	
C96	470pF		SMD Multilayer Ceramic Capacitor	
C97	180pF		SMD Multilayer Ceramic Capacitor	
C98	120pF		SMD Multilayer Ceramic Capacitor	
C99	2.2nF		SMD Multilayer Ceramic Capacitor	
C100	82pF		SMD Multilayer Ceramic Capacitor	

Rif.	Value	Remarks	Description	Code
C101	330pF		SMD Multilayer Ceramic Capacitor	
C102	10pF		SMD Multilayer Ceramic Capacitor	
C103	15pF		SMD Multilayer Ceramic Capacitor	
C104	2.2nF		SMD Multilayer Ceramic Capacitor	
C105	NC		SMD Multilayer Ceramic Capacitor	
C106	330pF		SMD Multilayer Ceramic Capacitor	
C107	68pF		SMD Multilayer Ceramic Capacitor	
C108	180pF		SMD Multilayer Ceramic Capacitor	
C109	27pF		SMD Multilayer Ceramic Capacitor	
C110	100pF		SMD Multilayer Ceramic Capacitor	
C111	150pF		SMD Multilayer Ceramic Capacitor	
C112	2.2nF		SMD Multilayer Ceramic Capacitor	
C113	150pF		SMD Multilayer Ceramic Capacitor	
C114	120pF		SMD Multilayer Ceramic Capacitor	
C115	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C116	100nF		SMD Multilayer Ceramic Capacitor	
C117	100nF		SMD Multilayer Ceramic Capacitor	
C118	100nF		SMD Multilayer Ceramic Capacitor	
C119	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C120	100nF		SMD Multilayer Ceramic Capacitor	
C121	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C122	100nF		SMD Multilayer Ceramic Capacitor	
C123	33pF		SMD Multilayer Ceramic Capacitor	
C124	33pF		SMD Multilayer Ceramic Capacitor	
C125	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C126	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C127	100nF		SMD Multilayer Ceramic Capacitor	
C128	100nF		SMD Multilayer Ceramic Capacitor	
C129	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C130	100nF		SMD Multilayer Ceramic Capacitor	
C131	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C132	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C133	39pF		SMD Multilayer Ceramic Capacitor	
C134	39pF		SMD Multilayer Ceramic Capacitor	
C135	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C136	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C137	39pF		SMD Multilayer Ceramic Capacitor	
C138	39pF		SMD Multilayer Ceramic Capacitor	
C139	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C140	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C141	100nF		SMD Multilayer Ceramic Capacitor	
C142	100nF		SMD Multilayer Ceramic Capacitor	
C143	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C144	100nF		SMD Multilayer Ceramic Capacitor	
C145	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C146	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C147	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C148	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C149	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C150	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C151	1nF		SMD Multilayer Ceramic Capacitor	
C152	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	

Rif.	Value	Remarks	Description	Code
C153	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C154	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C155	220MF	16V	SMD Aluminium Electrolytic Capacitor	
C156	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C157	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C158	100nF		SMD Multilayer Ceramic Capacitor	
C159	47MF	16V	SMD Aluminium Electrolytic Capacitor	
C160	100nF		SMD Multilayer Ceramic Capacitor	
C161	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C162	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C163	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C164	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C165	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C166	1nF		SMD Multilayer Ceramic Capacitor	
C167	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C168	100nF		SMD Multilayer Ceramic Capacitor	
C169	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C170	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C171	470MF	16V	SMD Aluminium Electrolytic Capacitor	
C172	NC		SMD Multilayer Ceramic Capacitor	
C173	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C174	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C175	100nF		SMD Multilayer Ceramic Capacitor	
C176	22MF	25V	SMD Aluminium Electrolytic Capacitor	
C177	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C178	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C179	NC		SMD Multilayer Ceramic Capacitor	
C180	100nF		SMD Multilayer Ceramic Capacitor	
C181	1nF		SMD Multilayer Ceramic Capacitor	
C182	NC		SMD Multilayer Ceramic Capacitor	
C183	NC		SMD Multilayer Ceramic Capacitor	
C184	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C185	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C186	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C187	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C188	NC		SMD Multilayer Ceramic Capacitor	
C189	100nF		SMD Multilayer Ceramic Capacitor	
C190	NC		SMD Multilayer Ceramic Capacitor	
C191	1nF		SMD Multilayer Ceramic Capacitor	
C192	NC		SMD Multilayer Ceramic Capacitor	
C193	39pF		SMD Multilayer Ceramic Capacitor	
C194	39pF		SMD Multilayer Ceramic Capacitor	
C195	39pF		SMD Multilayer Ceramic Capacitor	
C196	39pF		SMD Multilayer Ceramic Capacitor	
C197	39pF		SMD Multilayer Ceramic Capacitor	
C198	39pF		SMD Multilayer Ceramic Capacitor	
C199	39pF		SMD Multilayer Ceramic Capacitor	
C200	39pF		SMD Multilayer Ceramic Capacitor	
C201	39pF		SMD Multilayer Ceramic Capacitor	
C202	39pF		SMD Multilayer Ceramic Capacitor	
C203	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C204	1MF	50V	SMD Aluminium Electrolytic Capacitor	

Rif.	Value	Remarks	Description	Code
C205	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C206	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C207	10nF		SMD Multilayer Ceramic Capacitor	
C208	10nF		SMD Multilayer Ceramic Capacitor	
C209	10nF		SMD Multilayer Ceramic Capacitor	
C210	10nF		SMD Multilayer Ceramic Capacitor	
C211	10nF		SMD Multilayer Ceramic Capacitor	
C212	10nF		SMD Multilayer Ceramic Capacitor	
C213	10nF		SMD Multilayer Ceramic Capacitor	
L1	22uH		SMD Inductor	
L2	22uH		SMD Inductor	
L3	22uH		SMD Inductor	
L4	22uH		SMD Inductor	
L5	22uH		SMD Inductor	
L6	22uH		SMD Inductor	
L7	22uH		SMD Inductor	
L8	22uH		SMD Inductor	
L9	22uH		SMD Inductor	
L10	10uH		SMD Inductor	
L11	10uH		SMD Inductor	
L12	10uH		SMD Inductor	
L13	10uH		SMD Inductor	
L14	22uH		SMD Inductor	
L15	22uH		SMD Inductor	
L16	22uH		SMD Inductor	
L17	22uH		SMD Inductor	
L18	22uH		SMD Inductor	
L19	22uH		SMD Inductor	
L20	22uH		SMD Inductor	
R1	1K2	1/8W	SMD Thick Film Resistor	
R2	2K2	1/8W	SMD Thick Film Resistor	
R3	4K7	1/8W	SMD Thick Film Resistor	
R4	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R5	4K7	1/8W	SMD Thick Film Resistor	
R6	1K	1/8W	SMD Thick Film Resistor	
R7	1K	1/8W	SMD Thick Film Resistor	
R8	1K	1/8W	SMD Thick Film Resistor	
R9	33K	1/8W	SMD Thick Film Resistor	
R10	27K	1/8W	SMD Thick Film Resistor	
R11	270K	1/8W	SMD Thick Film Resistor	
R12	8K2	1/8W	SMD Thick Film Resistor	
R13	3K3	1/8W	SMD Thick Film Resistor	
R14	4K7	1/8W	SMD Thick Film Resistor	
R15	1K2	1/8W	SMD Thick Film Resistor	
R16	560	1/8W	SMD Thick Film Resistor	
R17	33K	1/8W	SMD Thick Film Resistor	
R18	27K	1/8W	SMD Thick Film Resistor	
R19	270K	1/8W	SMD Thick Film Resistor	
R20	1K2	1/8W	SMD Thick Film Resistor	
R21	8K2	1/8W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R22	3K3	1/8W	SMD Thick Film Resistor	
R23	4K7	1/8W	SMD Thick Film Resistor	
R24	560	1/8W	SMD Thick Film Resistor	
R25	33	1/8W	SMD Thick Film Resistor	
R26	33	1/8W	SMD Thick Film Resistor	
R27	82K	1/8W	SMD Thick Film Resistor	
R28	12K	1/8W	SMD Thick Film Resistor	
R29	33	1/8W	SMD Thick Film Resistor	
R30	33	1/8W	SMD Thick Film Resistor	
R31	47K	1/8W	SMD Thick Film Resistor	
R32	33	1/8W	SMD Thick Film Resistor	
R33	100K	1/8W	SMD Thick Film Resistor	
R34	100K	1/8W	SMD Thick Film Resistor	
R35	100K	1/8W	SMD Thick Film Resistor	
R36	100K	1/8W	SMD Thick Film Resistor	
R37	560	1/8W	SMD Thick Film Resistor	
R38	560K	1/8W	SMD Thick Film Resistor	
R39	100K	1/8W	SMD Thick Film Resistor	
R40	33	1/8W	SMD Thick Film Resistor	
R41	10K	1/8W	SMD Thick Film Resistor	
R42	20K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R43	1K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R44	5K6	1/8W	SMD Thick Film Resistor	
R45	27K	1/8W	SMD Thick Film Resistor	
R46	12K	1/8W	SMD Thick Film Resistor	
R47	10	1/8W	SMD Thick Film Resistor	
R48	120	1/8W	SMD Thick Film Resistor	
R49	47K	1/8W	SMD Thick Film Resistor	
R50	1K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R51	5K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R52	5K6	1/8W	SMD Thick Film Resistor	
R53	27K	1/8W	SMD Thick Film Resistor	
R54	68K	1/8W	SMD Thick Film Resistor	
R55	2K7	1/8W	SMD Thick Film Resistor	
R56	200	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R57	2K7	1/8W	SMD Thick Film Resistor	
R58	1K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R59	4K7	1/8W	SMD Thick Film Resistor	
R60	2K7	1/8W	SMD Thick Film Resistor	
R61	2K7	1/8W	SMD Thick Film Resistor	
R62	10K	1/8W	SMD Thick Film Resistor	
R63	NC	1/8W	SMD Thick Film Resistor	
R64	4K7	1/8W	SMD Thick Film Resistor	
R65	100	1/8W	SMD Thick Film Resistor	
R66	10K	1/8W	SMD Thick Film Resistor	
R67	10K	1/8W	SMD Thick Film Resistor	
R68	1K2	1/8W	SMD Thick Film Resistor	
R69	1K2	1/8W	SMD Thick Film Resistor	
R70	10K	1/8W	SMD Thick Film Resistor	
R71	10K	1/8W	SMD Thick Film Resistor	
R72	10K	1/8W	SMD Thick Film Resistor	
R73	3K9	1/8W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R74	4K7	1/8W	SMD Thick Film Resistor	
R75	4K7	1/8W	SMD Thick Film Resistor	
R76	3K3	1/8W	SMD Thick Film Resistor	
R77	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R78	10K	1/8W	SMD Thick Film Resistor	
R79	4K7	1/8W	SMD Thick Film Resistor	
R80	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R81	330K	1/8W	SMD Thick Film Resistor	
R82	10K	1/8W	SMD Thick Film Resistor	
R83	10K	1/8W	SMD Thick Film Resistor	
R84	10K	1/8W	SMD Thick Film Resistor	
R85	10K	1/8W	SMD Thick Film Resistor	
R86	33K	1/8W	SMD Thick Film Resistor	
R87	10K	1/8W	SMD Thick Film Resistor	
R88	10K	1/8W	SMD Thick Film Resistor	
R89	10K	1/8W	SMD Thick Film Resistor	
R90	10K	1/8W	SMD Thick Film Resistor	
R91	82K	1/8W	SMD Thick Film Resistor	
R92	15K	1/8W	SMD Thick Film Resistor	
R93	680K	1/8W	SMD Thick Film Resistor	
R94	1M	1/8W	SMD Thick Film Resistor	
R95	10K	1/8W	SMD Thick Film Resistor	
R96	10K	1/8W	SMD Thick Film Resistor	
R97	8M2	1/8W	SMD Thick Film Resistor	
R98	1M	1/8W	SMD Thick Film Resistor	
R99	18K	1/8W	SMD Thick Film Resistor	
R100	10K	1/8W	SMD Thick Film Resistor	
R101	10K	1/8W	SMD Thick Film Resistor	
R102	82K	1/8W	SMD Thick Film Resistor	
R103	180K	1/8W	SMD Thick Film Resistor	
R104	18K	1/8W	SMD Thick Film Resistor	
R105	5K6	1/8W	SMD Thick Film Resistor	
R106	33	1/8W	SMD Thick Film Resistor	
R107	33	1/8W	SMD Thick Film Resistor	
R108	10K	1/8W	SMD Thick Film Resistor	
R109	10K	1/8W	SMD Thick Film Resistor	
R110	10K	1/8W	SMD Thick Film Resistor	
R111	10K	1/8W	SMD Thick Film Resistor	
R112	10K	1/8W	SMD Thick Film Resistor	
R113	10K	1/8W	SMD Thick Film Resistor	
R114	10K	1/8W	SMD Thick Film Resistor	
R115	10K	1/8W	SMD Thick Film Resistor	
R116	1K	1/8W	SMD Thick Film Resistor	
R117	10K	1/8W	SMD Thick Film Resistor	
R118	10K	1/8W	SMD Thick Film Resistor	
R119	10K	1/8W	SMD Thick Film Resistor	
R120	10K	1/8W	SMD Thick Film Resistor	
R121	NC	1/8W	SMD Thick Film Resistor	
R122	NC	1/8W	SMD Thick Film Resistor	
R123	NC	1/8W	SMD Thick Film Resistor	
R124	10K	1/8W	SMD Thick Film Resistor	
R125	1K5	1/8W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R126	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R127	1K2	1/8W	SMD Thick Film Resistor	
R128	6K8	1/8W	SMD Thick Film Resistor	
R129	6K8	1/8W	SMD Thick Film Resistor	
R130	6K8	1/8W	SMD Thick Film Resistor	
R131	6K8	1/8W	SMD Thick Film Resistor	
R132	6K8	1/8W	SMD Thick Film Resistor	
R133	6K8	1/8W	SMD Thick Film Resistor	
R134	6K8	1/8W	SMD Thick Film Resistor	
R135	10K	1/8W	SMD Thick Film Resistor	
R136	330	1/8W	SMD Thick Film Resistor	
R137	4K7	1/8W	SMD Thick Film Resistor	
R138	56K	1/8W	SMD Thick Film Resistor	
R139	18K	1/8W	SMD Thick Film Resistor	
R140	3K9	1/8W	SMD Thick Film Resistor	
R141	6K8	1/8W	SMD Thick Film Resistor	
R142	1K8	1/8W	SMD Thick Film Resistor	
R143	2K7	1/8W	SMD Thick Film Resistor	
R144	100	1/8W	SMD Thick Film Resistor	
R145	560	1/8W	SMD Thick Film Resistor	
R146	180	1/8W	SMD Thick Film Resistor	
R147	120K	1/8W	SMD Thick Film Resistor	
R148	10	1/8W	SMD Thick Film Resistor	
R149	27K	1/8W	SMD Thick Film Resistor	
R150	6K8	1/8W	SMD Thick Film Resistor	
R151	1K8	1/8W	SMD Thick Film Resistor	
R152	10K	1/8W	SMD Thick Film Resistor	
R153	100	1/8W	SMD Thick Film Resistor	
R154	1K	1/8W	SMD Thick Film Resistor	
R155	120K	1/8W	SMD Thick Film Resistor	
R156	2K2	1/8W	SMD Thick Film Resistor	
R157	27K	1/8W	SMD Thick Film Resistor	
R158	3K9	1/8W	SMD Thick Film Resistor	
R159	10	1/8W	SMD Thick Film Resistor	
R160	1,5K	1/8W	SMD Thick Film Resistor	
R161	330	1/8W	SMD Thick Film Resistor	
R162	100	1/8W	SMD Thick Film Resistor	
R163	100	1/8W	SMD Thick Film Resistor	
R164	220	1/8W	SMD Thick Film Resistor	
R165	120K	1/8W	SMD Thick Film Resistor	
R166	27K	1/8W	SMD Thick Film Resistor	
R167	220	1/8W	SMD Thick Film Resistor	
R168	100	1/8W	SMD Thick Film Resistor	
R169	100	1/8W	SMD Thick Film Resistor	
R170	47K	1/8W	SMD Thick Film Resistor	
R171	47K	1/8W	SMD Thick Film Resistor	
R172	47K	1/8W	SMD Thick Film Resistor	
R173	47K	1/8W	SMD Thick Film Resistor	
R174	47K	1/8W	SMD Thick Film Resistor	
R175	100K	1/8W	SMD Thick Film Resistor	
R176	47K	1/8W	SMD Thick Film Resistor	
R177	470	1/8W	SMD Thick Film Resistor	

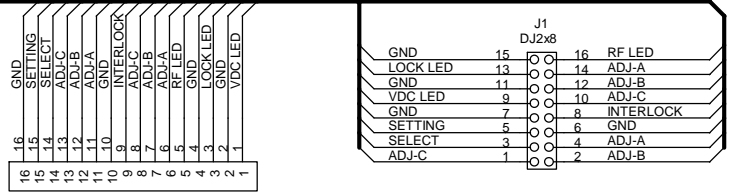
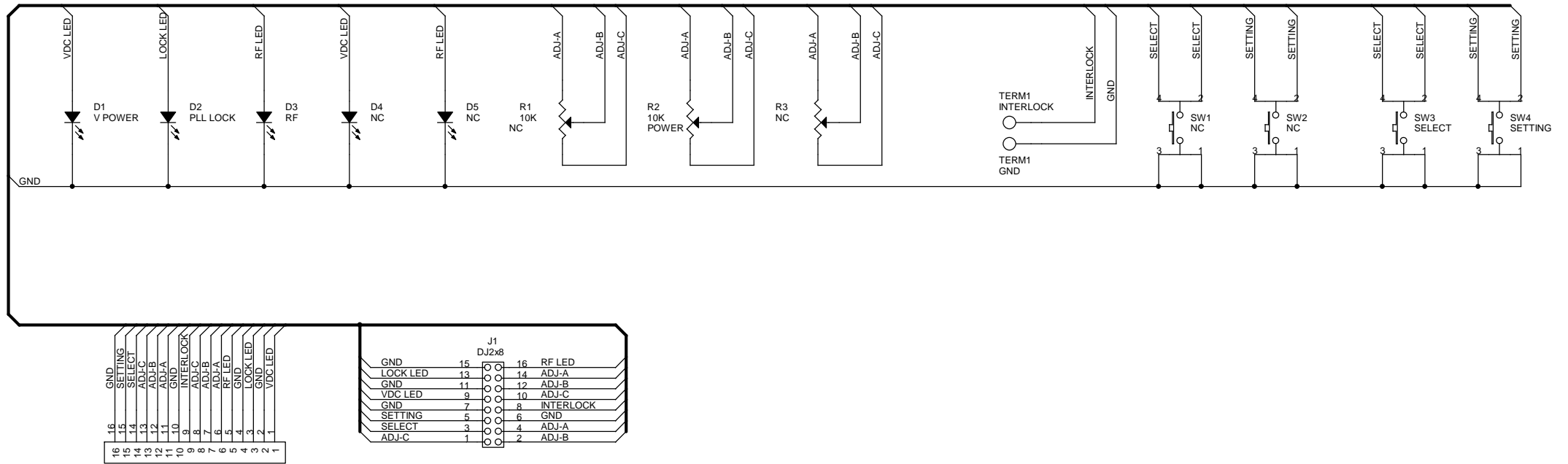
Rif.	Value	Remarks	Description	Code
R178	560	1/8W	SMD Thick Film Resistor	
R179	470K	1/8W	SMD Thick Film Resistor	
R180	1K	1/8W	SMD Thick Film Resistor	
R181	470	1/8W	SMD Thick Film Resistor	
R182	47K	1/8W	SMD Thick Film Resistor	
R183	47K	1/8W	SMD Thick Film Resistor	
R184	NC	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R185	6K8	1/8W	SMD Thick Film Resistor	
R186	10	1/8W	SMD Thick Film Resistor	
R187	27K	1/8W	SMD Thick Film Resistor	
R188	470	1/8W	SMD Thick Film Resistor	
R189	47K	1/8W	SMD Thick Film Resistor	
R190	10	1/8W	SMD Thick Film Resistor	
R191	4K7	1/8W	SMD Thick Film Resistor	
R192	47K	1/8W	SMD Thick Film Resistor	
R193	NC	1/8W	SMD Thick Film Resistor	
R194	47K	1/8W	SMD Thick Film Resistor	
R195	NC	1/8W	SMD Thick Film Resistor	
R196	27K	1/8W	SMD Thick Film Resistor	
R197	47K	1/8W	SMD Thick Film Resistor	
R198	47K	1/8W	SMD Thick Film Resistor	
R199	100	1/8W	SMD Thick Film Resistor	
R200	12K	1/8W	SMD Thick Film Resistor	
R201	47K	1/8W	SMD Thick Film Resistor	
R202	4K7	1/8W	SMD Thick Film Resistor	
R203	100	1/8W	SMD Thick Film Resistor	
R204	27K	1/8W	SMD Thick Film Resistor	
R205	100K	1/8W	SMD Thick Film Resistor	
R206	15K	1/8W	SMD Thick Film Resistor	
R207	10K	1/8W	SMD Thick Film Resistor	
R208	4K7	1/8W	SMD Thick Film Resistor	
R209	4K7	1/8W	SMD Thick Film Resistor	
R210	2K2	1/8W	SMD Thick Film Resistor	
R211	50K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R212	10K	1/8W	SMD Thick Film Resistor	
R213	100	1/8W	SMD Thick Film Resistor	
R214	2K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R215	15K	1/8W	SMD Thick Film Resistor	
R216	22K	1/8W	SMD Thick Film Resistor	
R217	10K	1/8W	SMD Thick Film Resistor	
R218	4K7	1/8W	SMD Thick Film Resistor	
R219	10K	1/8W	SMD Thick Film Resistor	
R220	470K	1/8W	SMD Thick Film Resistor	
R221	470K	1/8W	SMD Thick Film Resistor	
R222	4K7	1/8W	SMD Thick Film Resistor	
R223	10K	1/8W	SMD Thick Film Resistor	
R224	10	1/8W	SMD Thick Film Resistor	
R225	470K	1/8W	SMD Thick Film Resistor	
R226	100nF	1/8W	SMD Thick Film Resistor	
R227	NC	1/8W	SMD Thick Film Resistor	
R228	10K	1/8W	SMD Thick Film Resistor	
R229	15K	1/8W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R230	4K7	1/8W	SMD Thick Film Resistor	
R231	4K7	1/8W	SMD Thick Film Resistor	
R232	10K	1/8W	SMD Thick Film Resistor	
R233	2K2	1/8W	SMD Thick Film Resistor	
R234	100	1/8W	SMD Thick Film Resistor	
R235	10K	1/8W	SMD Thick Film Resistor	
R236	2K	1/8W	SMD Thick Film Resistor	
R237	15K	1/8W	SMD Thick Film Resistor	
R238	50K	1/8W	SMD Thick Film Resistor	
R239	22K	1/8W	SMD Thick Film Resistor	
R240	10K	1/8W	SMD Thick Film Resistor	
R241	4K7	1/8W	SMD Thick Film Resistor	
R242	10K	1/8W	SMD Thick Film Resistor	
R243	470K	1/8W	SMD Thick Film Resistor	
R244	470K	1/8W	SMD Thick Film Resistor	
R245	10	1/8W	SMD Thick Film Resistor	
R246	4K7	1/8W	SMD Thick Film Resistor	
R247	470K	1/8W	SMD Thick Film Resistor	
R248	100nF	1/8W	SMD Thick Film Resistor	
R249	NC	1/8W	SMD Thick Film Resistor	
R250	NC	1/8W	SMD Thick Film Resistor	
R251	6K8	1/8W	SMD Thick Film Resistor	
R252	6K8	1/8W	SMD Thick Film Resistor	
R253	6K8	1/8W	SMD Thick Film Resistor	
R254	6K8	1/8W	SMD Thick Film Resistor	
R255	6K8	1/8W	SMD Thick Film Resistor	
R256	0	1/8W	SMD Thick Film Resistor	
R257	0	1/8W	SMD Thick Film Resistor	
R258	6K8	1/8W	SMD Thick Film Resistor	
R259	6K8	1/8W	SMD Thick Film Resistor	
R260	6K8	1/8W	SMD Thick Film Resistor	
R261	6K8	1/8W	SMD Thick Film Resistor	
D1	LL4148		SMD Low Power Signal Diode	
D2	LL4148		SMD Low Power Signal Diode	
D3	LL4148		SMD Low Power Signal Diode	
D4	MMBS340T3		SMD Diode Schottky	
D5	-15V		SMD Light Emitting Diode	
D6	-5V		SMD Light Emitting Diode	
D7	LL4148		SMD Low Power Signal Diode	
D8	MMBS340T3		SMD Diode Schottky	
D9	+15V		SMD Light Emitting Diode	
D10	+5V		SMD Light Emitting Diode	
D11	SM4004		SMD Power Diode	
D12	LL4148		SMD Low Power Signal Diode	
D13	LL4148		SMD Low Power Signal Diode	
D14	LL4148		SMD Low Power Signal Diode	
D15	LL4148		SMD Low Power Signal Diode	
D16	3V3		SMD Diode Zener	
D17	BAT41		SMD Diode Schottky	
D18	BAT41		SMD Diode Schottky	
D19	LL4148		SMD Low Power Signal Diode	

Rif.	Value	Remarks	Description	Code
D20	LL4148		SMD Low Power Signal Diode	
D21	LL4148		SMD Low Power Signal Diode	
D22	LL4148		SMD Low Power Signal Diode	
D23	LL4148		SMD Low Power Signal Diode	
D24	5V1		SMD Diode Zener	
D25	LED		SMD Light Emitting Diode	
D26	LL4148		SMD Low Power Signal Diode	
D27	LL4148		SMD Low Power Signal Diode	
D28	NC		SMD Diode Zener	
D29	NC		SMD Low Power Signal Diode	
D30	LL4148		SMD Low Power Signal Diode	
D31	LL4148		SMD Low Power Signal Diode	
D32	LL4148		SMD Low Power Signal Diode	
D33	15V		SMD Diode Zener	
D34	15V		SMD Diode Zener	
Q1	BC807-25L		SMD Low Power Bipolar Transistor	
Q2	BC807-25L		SMD Low Power Bipolar Transistor	
Q3	BC807-25L		SMD Low Power Bipolar Transistor	
Q4	BC807-25L		SMD Low Power Bipolar Transistor	
Q5	BC807-25L		SMD Low Power Bipolar Transistor	
Q6	BC807-25L		SMD Low Power Bipolar Transistor	
Q7	BC817-25L		SMD Low Power Bipolar Transistor	
Q8	BDX53		Medium Power Bipolar Transistor	
Q9	BC807-25L		SMD Low Power Bipolar Transistor	
Q10	BC817-25L		SMD Low Power Bipolar Transistor	
Q11	BC817-25L		SMD Low Power Bipolar Transistor	
U1	LT1374CR		Special Function Integrated Circuit	
U2	79M05		Fixed Voltage Regulator	
U3	78S15		Fixed Voltage Regulator	
U4	LT1374CR		Special Function Integrated Circuit	
U5	78M05		Fixed Voltage Regulator	
U6	LM353/SO		SMD Operational Amplifier	
U7	N5532		SMD Operational Amplifier	
U8	LM353/SO		SMD Operational Amplifier	
U9	LF347/SO		SMD Operational Amplifier	
U10	ADC0834CCWM		Special Function Integrated Circuit	
U11	MAX810L		Special Function Integrated Circuit	
U12	AT89C51ED2		Microprocessor	
U13	HIN232ACBN		Special Function Integrated Circuit	
U14	LM324A/SO		SMD Operational Amplifier	
U15	LMX1501		Special Function Integrated Circuit	
U16	LM324A/SO		SMD Operational Amplifier	
U17	LM324A/SO		SMD Operational Amplifier	
SW1	DB9 MONITOR		Slide Switcher	
TCXO1	MHz 12.800		Crystal Oscillator Module	
Y1	11.0592MHZ		Quartz Crystal	
LCD1	DISPLAY		Male PCB Mounting Header	
FILT1	FILTER 19KHZ		Audio Filter	

Rif.	Value	Remarks	Description	Code
J1	POWER		Panel Mount Terminal Bloks	
J2	DJ2x13		Male PCB Mounting Header	
J3	BNC		BNC Panel Connector - 50 Ohm	
J4	BNC		BNC Panel Connector - 50 Ohm	
J5	DJ3		Male PCB Mounting Header	
J6	BNC		BNC Panel Connector - 50 Ohm	
J7	SMB		SMB PCB Socket - 50 Ohm	
J8	XLR		Audio Connector - XLR Style Palastic	
J9	SMB		SMB PCB Socket - 50 Ohm	
J10	SMB		SMB PCB Socket - 50 Ohm	
J11	CODER ST		Male PCB Mounting Header	
J12	BNC		BNC Panel Connector - 50 Ohm	
J13	DB9_AUX		Male PCB Mounting Header	
J14	DB9		Female Connector DB9	
J15	VDC+15		Male PCB Mounting Header	
J16	SHUNT		Male PCB Mounting Header	
J17	VU METER		Male PCB Mounting Header	
J18	AUDIO		Male PCB Mounting Header	
J19	DJ3		Male PCB Mounting Header	
J20	DJ3		Male PCB Mounting Header	
J21	OUT		Male PCB Mounting Header	
J22	MONO		Male PCB Mounting Header	
J23	FILTER		Male PCB Mounting Header	
J24	DJ2		Male PCB Mounting Header	
J26	TP TCXO		Test Point	
J27	S		Male PCB Mounting Header	
J28	S		Male PCB Mounting Header	
J29	N		Male PCB Mounting Header	
J30	TP PHASE R		Test Point	
J31	N		Male PCB Mounting Header	
J32	TP PHASE P		Test Point	
J33	P		Male PCB Mounting Header	
J34	P		Male PCB Mounting Header	
J36	TP CLOCK		Test Point	
J37	TP DATA		Test Point	
J38	TP LE		Test Point	
J39	SIGNAL LOCK		Male PCB Mounting Header	
J40	TP LOCK		Test Point	
J41	TP RF POWER		Test Point	
J42	TP INTERLOCK		Test Point	
J43	TP BLOCK		Test Point	
J44	TP MAX RFL		Test Point	
J45	TP MAX FWD		Test Point	
J46	TP FREQ. P		Test Point	
J47	TP FREQ. R		Test Point	
J48	DJ2x5		Male PCB Mounting Header	
JR1	DISPLAY		Male PCB Mounting Header	

TSG1-B FRONT PANEL

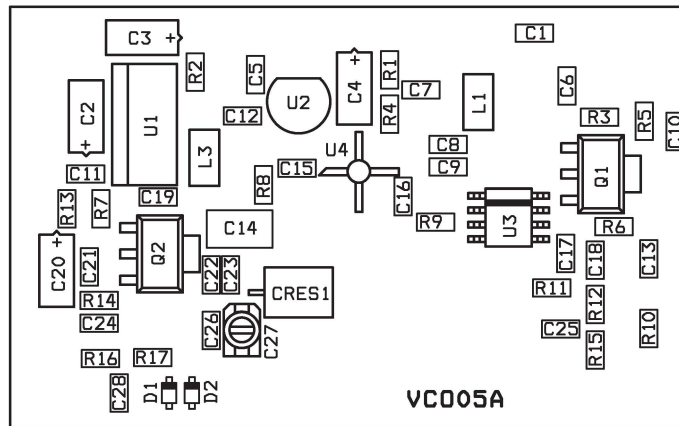


JA1A
CONN ASY EDGE 16

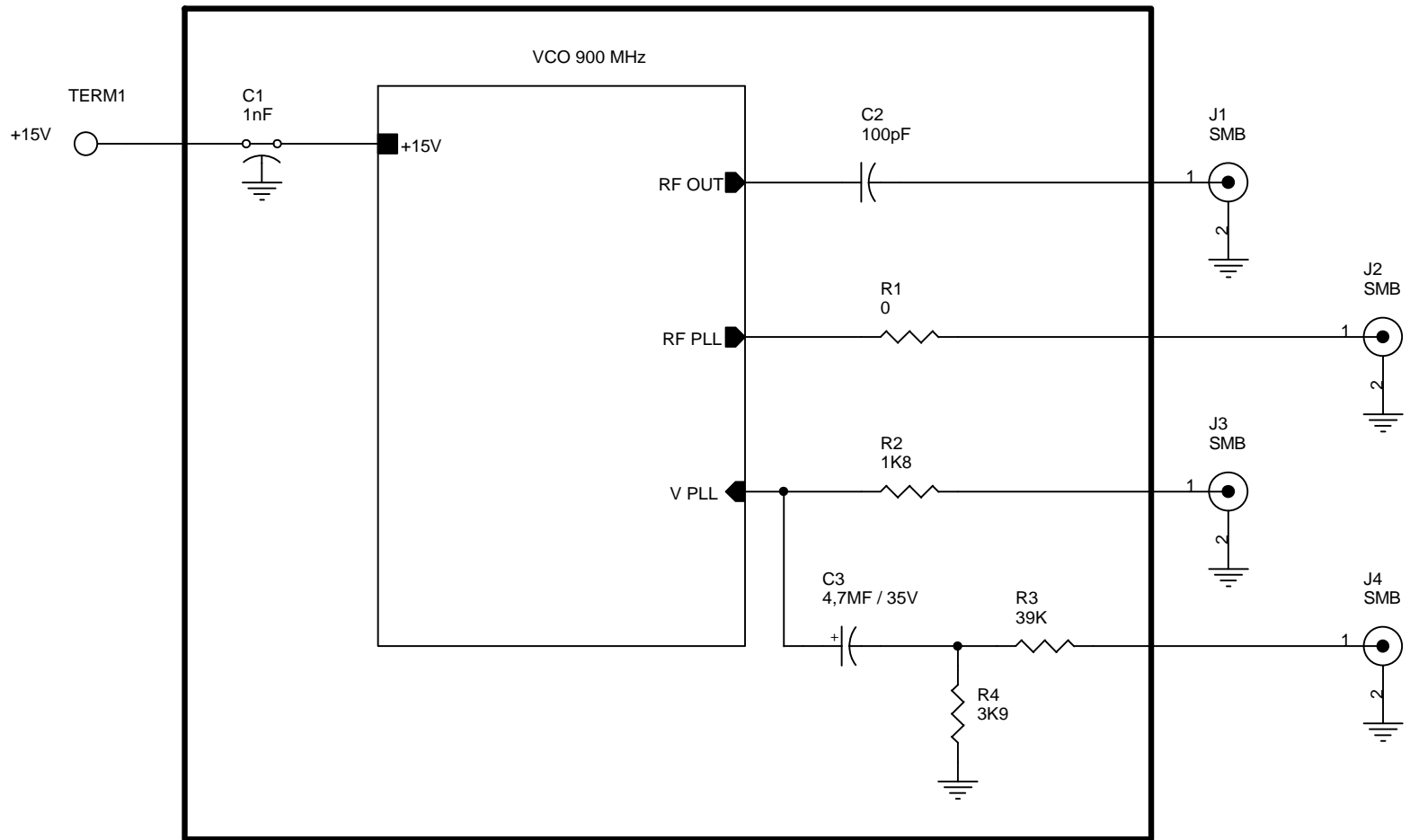


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Size	Document Number	Mod. TSG-FP	Rev
B			1.0
		Sheet 1	of 1

TSG1-B VCO LAYOUT

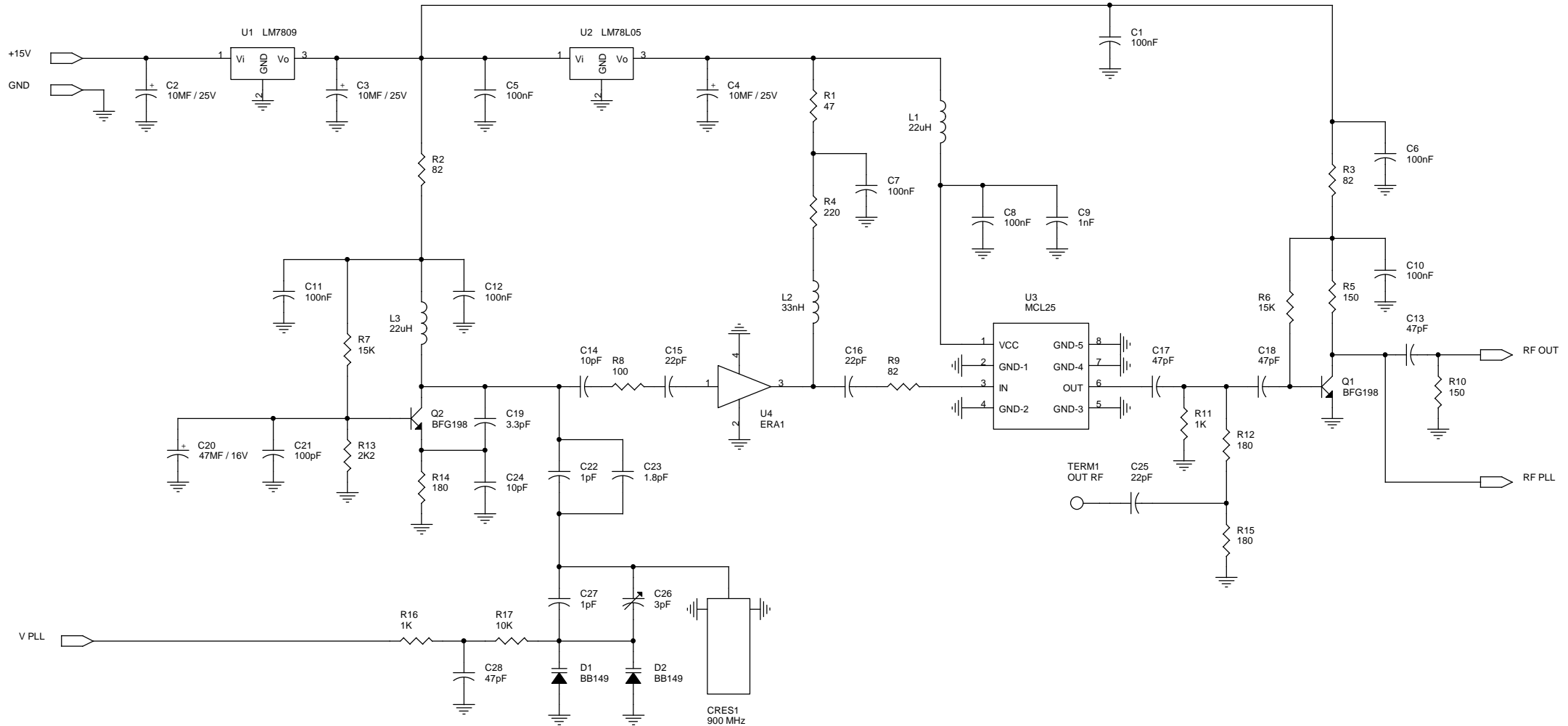


TSG1-B VCO DIAGRAM



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VCO MHz 900		
Size	Document Number	Rev
A	Mod. VCO05-900	1.0
Sheet 1 of 2		

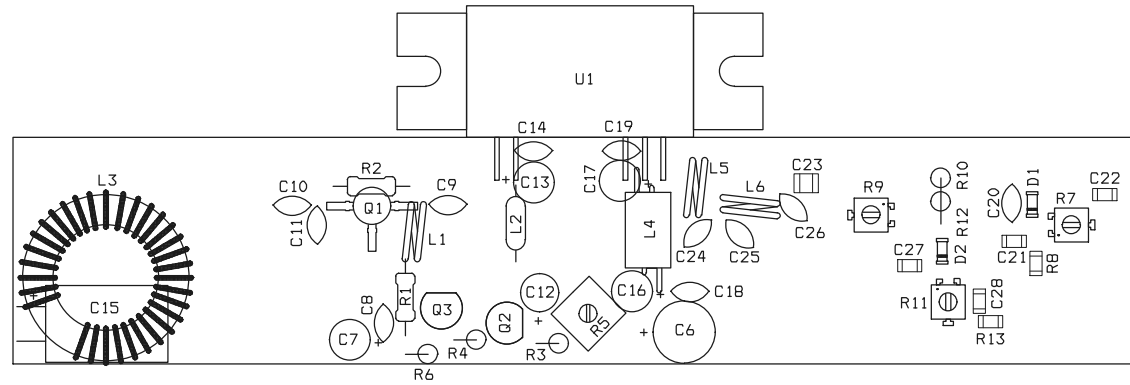
TSG1-B VCO SCHEMATIC DIAGRAM



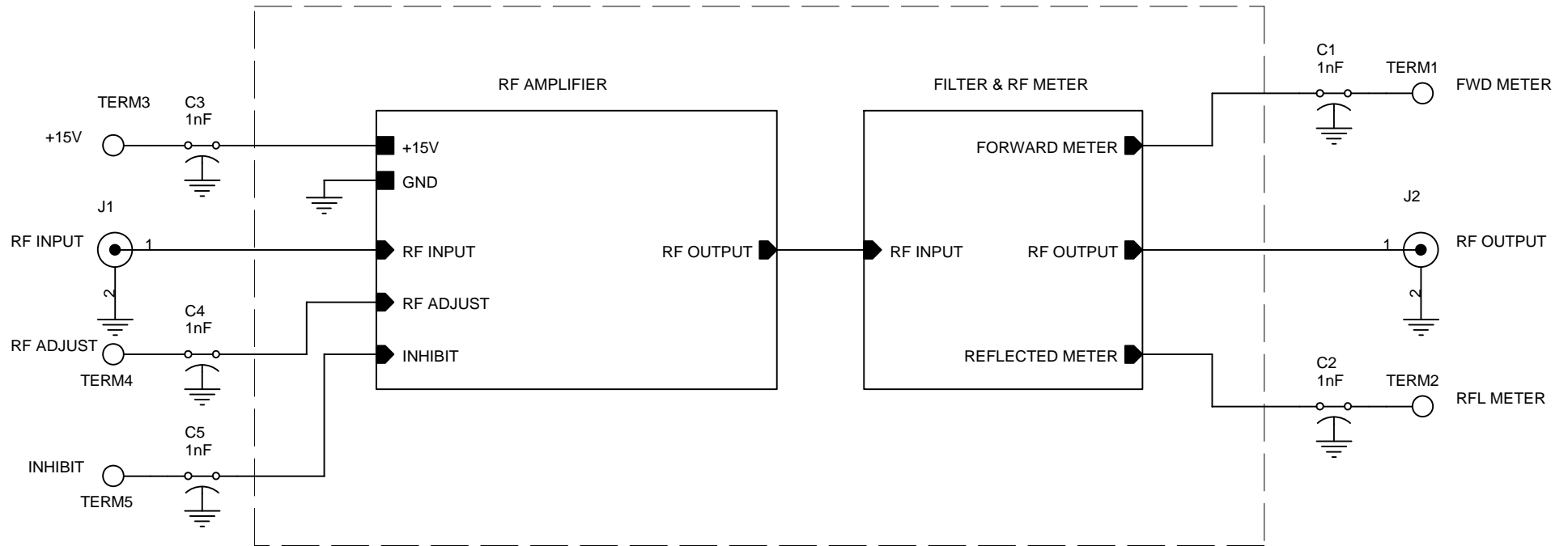
Part List Schematic : VCO05A


Rif.	Value	Remarks	Description	Code
C1	100nF		SMD Multilayer Ceramic Capacitor	
C2	10MF	25V	SMD Aluminium Electrolytic Capacitor	
C3	10MF	25V	SMD Aluminium Electrolytic Capacitor	
C4	10MF	25V	SMD Aluminium Electrolytic Capacitor	
C5	100nF		SMD Multilayer Ceramic Capacitor	
C6	100nF		SMD Multilayer Ceramic Capacitor	
C7	100nF		SMD Multilayer Ceramic Capacitor	
C8	100nF		SMD Multilayer Ceramic Capacitor	
C9	1nF		SMD Multilayer Ceramic Capacitor	
C10	100nF		SMD Multilayer Ceramic Capacitor	
C11	100nF		SMD Multilayer Ceramic Capacitor	
C12	100nF		SMD Multilayer Ceramic Capacitor	
C13	47pF		SMD Multilayer Ceramic Capacitor	
C14	10pF		SMD Multilayer Ceramic Capacitor	
C15	22pF		SMD Multilayer Ceramic Capacitor	
C16	22pF		SMD Multilayer Ceramic Capacitor	
C17	47pF		SMD Multilayer Ceramic Capacitor	
C18	47pF		SMD Multilayer Ceramic Capacitor	
C19	3.3pF		SMD Multilayer Ceramic Capacitor	
C20	47MF	16V	Aluminium Electrolytic Capacitor	
C21	100pF		SMD Multilayer Ceramic Capacitor	
C22	1pF		SMD Multilayer Ceramic Capacitor	
C23	1.8pF		SMD Multilayer Ceramic Capacitor	
C24	10pF		SMD Multilayer Ceramic Capacitor	
C25	22pF		SMD Multilayer Ceramic Capacitor	
C26	3pF		SMD Multilayer Ceramic Capacitor	
C27	1pF		SMD Multilayer Ceramic Capacitor	
C28	47pF		SMD Multilayer Ceramic Capacitor	
L1	22uH		SMD Inductor	
L2	33nH		SMD Inductor	
L3	22uH		SMD Inductor	
R1	47	1/4W	SMD Thick Film Resistor	
R2	82	1/4W	SMD Thick Film Resistor	
R3	82	1/4W	SMD Thick Film Resistor	
R4	220	1/4W	SMD Thick Film Resistor	
R5	150	1/4W	SMD Thick Film Resistor	
R6	15K	1/4W	SMD Thick Film Resistor	
R7	15K	1/4W	SMD Thick Film Resistor	
R8	100	1/4W	SMD Thick Film Resistor	
R9	82	1/4W	SMD Thick Film Resistor	
R10	150	1/4W	SMD Thick Film Resistor	
R11	1K	1/4W	SMD Thick Film Resistor	
R12	180	1/4W	SMD Thick Film Resistor	
R13	2K2	1/4W	SMD Thick Film Resistor	
R14	180	1/4W	SMD Thick Film Resistor	
R15	180	1/4W	SMD Thick Film Resistor	
R16	1K	1/4W	SMD Thick Film Resistor	

940-960MHz AMPLIFIER MODULE LAYOUT

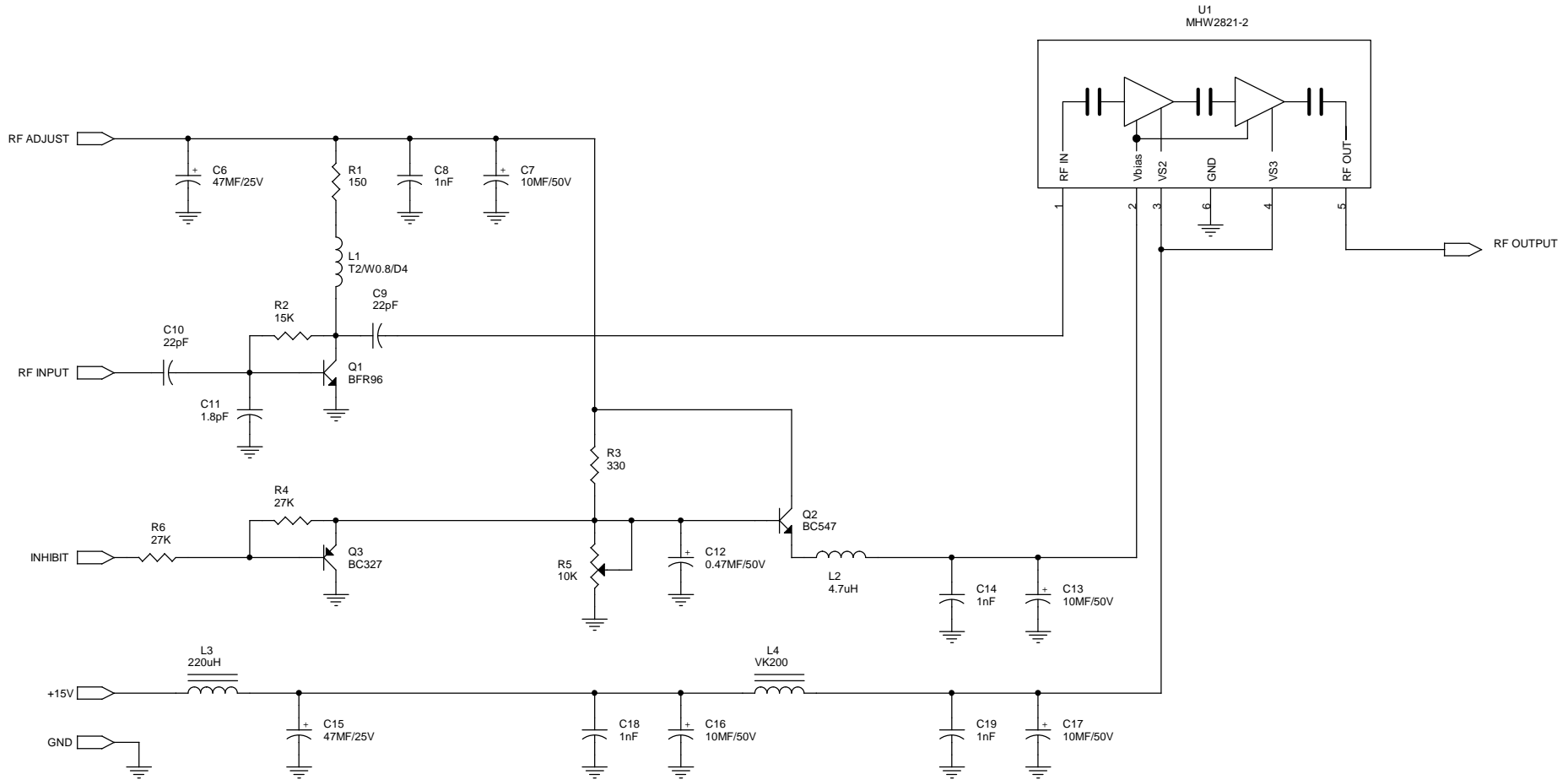


9940-960MHz AMPLIFIER MODULE BLOCK DIAGRAM



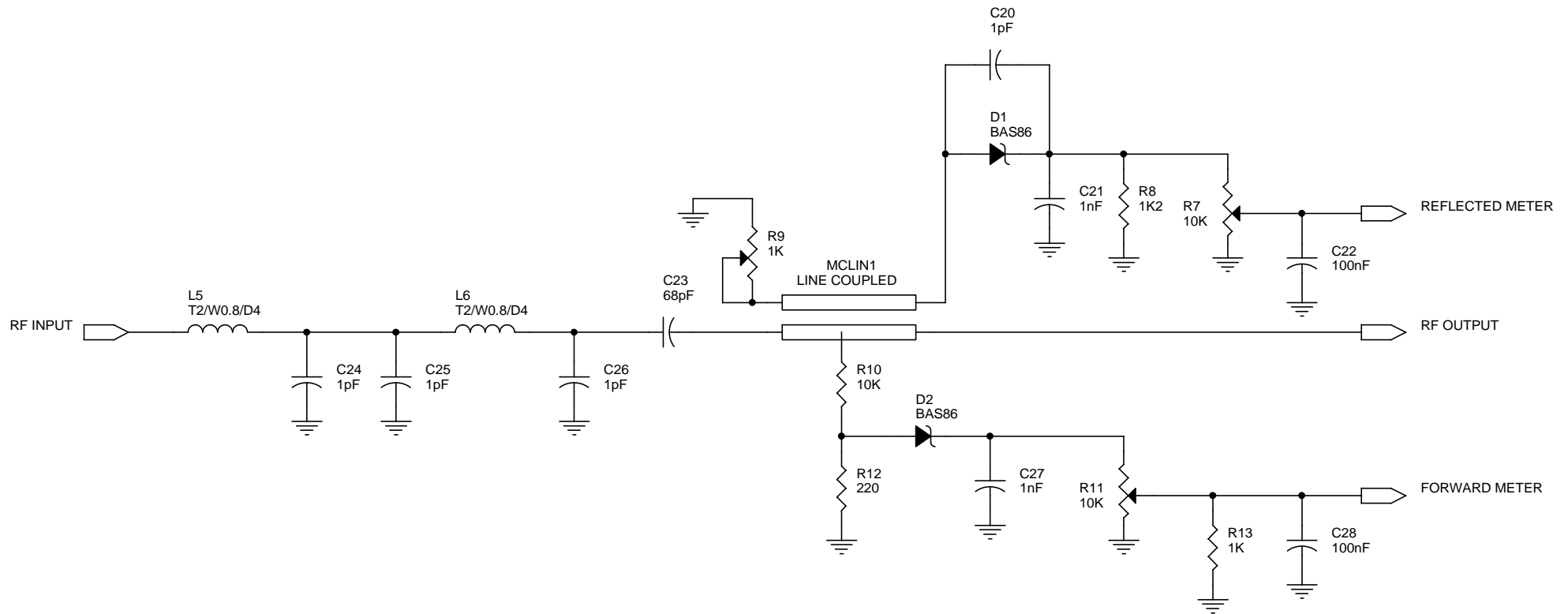
		
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RF AMPLIFIER 900MHz 10W		
Size	Document Number	Rev
A	Mod. AMPIBR3-900	1.0
Sheet 1		of 3


940-960 MHz AMPLIFIER MODULE ELECTRICAL SCHEMATIC



Title		
RF AMPLIFIER		
Size	Document Number	Rev
B	Mod. AMPIBR3-900	1.0
Date:	Sheet 2	of 3

FILTER AND METER ELECTRICAL SCHEMATIC

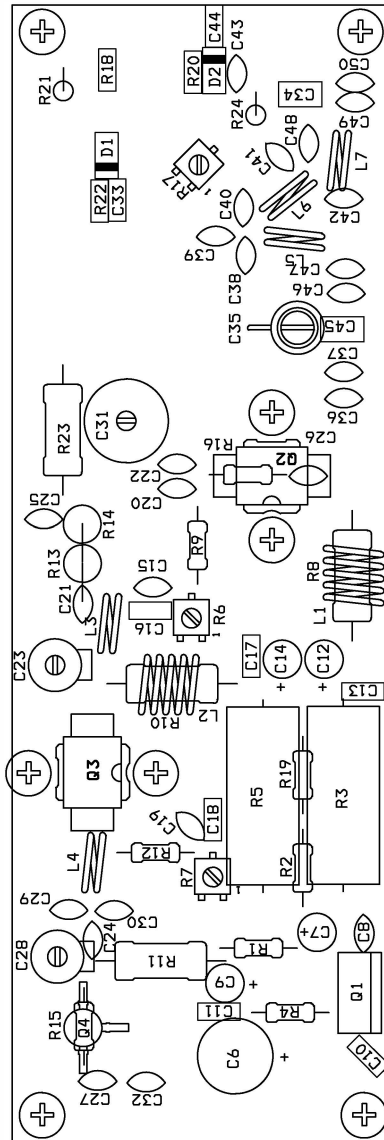


		
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Size A4	Document Number Mod. AMPIBR3-900	Rev 1.0
Sheet 3 of 3		

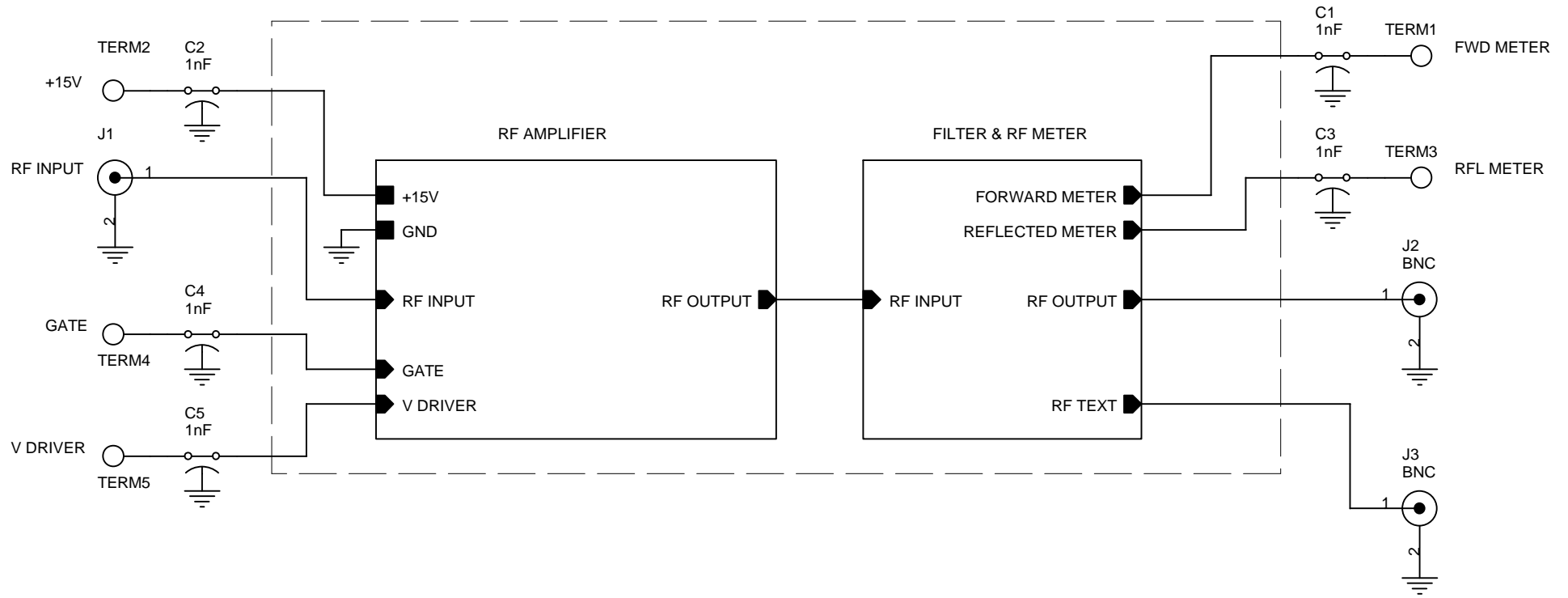
940-960 MHz AMPLIFIER MODULE COMPONENT LIST

Rif.	Value	Remarks	Description	Code
C1	1nF		Ceramic Lead Through Capacitor	
C2	1nF		Ceramic Lead Through Capacitor	
C3	1nF		Ceramic Lead Through Capacitor	
C4	1nF		Ceramic Lead Through Capacitor	
C5	1nF		Ceramic Lead Through Capacitor	
C6	47MF/25V	25V	Aluminium Electrolytic Capacitor	
C7	10MF/50V	50V	Aluminium Electrolytic Capacitor	
C8	1nF		SMD Multilayer Ceramic Capacitor	
C9	22pF		Ceramic Disc Capacitor NPO	
C10	22pF		Ceramic Disc Capacitor NPO	
C11	1.8pF		Ceramic Disc Capacitor NPO	
C12	0.47MF/50V	50V	Aluminium Electrolytic Capacitor	
C13	10MF/50V	50V	Aluminium Electrolytic Capacitor	
C14	1nF		SMD Multilayer Ceramic Capacitor	
C15	47MF/25V	25V	Aluminium Electrolytic Capacitor	
C16	10MF/50V	50V	Aluminium Electrolytic Capacitor	
C17	10MF/50V	50V	Aluminium Electrolytic Capacitor	
C18	1nF		SMD Multilayer Ceramic Capacitor	
C19	1nF		SMD Multilayer Ceramic Capacitor	
C20	1pF		Ceramic Disc Capacitor NPO	
C21	1nF		SMD Multilayer Ceramic Capacitor	
C22	100nF		SMD Multilayer Ceramic Capacitor	
C23	68pF		Ceramic ATC Capacitor	
C24	1pF		Ceramic Disc Capacitor NPO	
C25	1pF		Ceramic Disc Capacitor NPO	
C26	1pF		Ceramic Disc Capacitor NPO	
C27	1nF		SMD Multilayer Ceramic Capacitor	
C28	100nF		SMD Multilayer Ceramic Capacitor	
L1	T2/W0.8/D4		Tinned Copper Wire	
L2	4.7uH		Ferrite Drum Cored Inductor	
L3	220uH		Ferrite Drum Cored Inductor	
L4	VK200		Ferrite Drum Cored Inductor	
L5	T2/W0.8/D4		Tinned Copper Wire	
L6	T2/W0.8/D4		Tinned Copper Wire	
R1	150		Carbon Film Resistor	
R2	15K		Carbon Film Resistor	
R3	330		Carbon Film Resistor	
R4	27K		Carbon Film Resistor	
R5	10K		Cermet Skeleton Trimmer Resistor	
R6	27K		Carbon Film Resistor	
R7	10K		SMD Cermet Skeleton Trimmer Resistor	
R8	1K2		SMD Thick Film Resistor	
R9	1K		SMD Cermet Skeleton Trimmer Resistor	
R10	10K		Carbon Film Resistor	
R11	10K		SMD Cermet Skeleton Trimmer Resistor	
R12	220		Carbon Film Resistor	
R13	1K		SMD Thick Film Resistor	

220-240 MHz AMPLIFIER MODULE LAYOUT

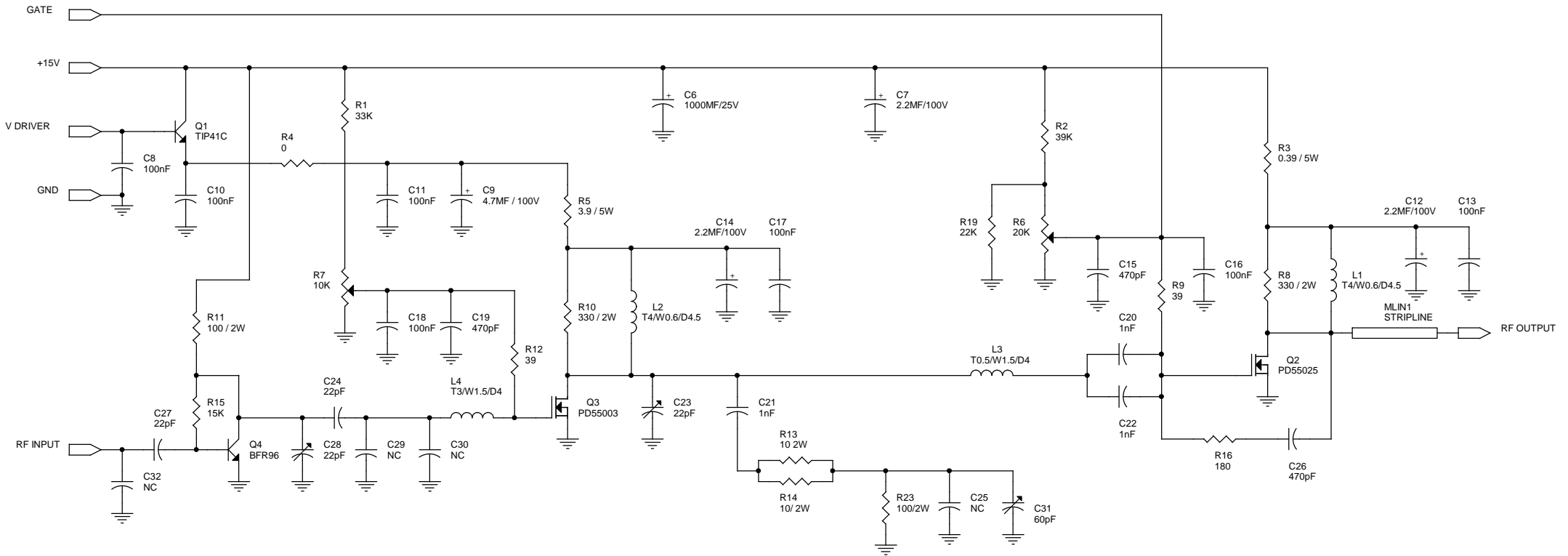


220-240 MHz AMPLIFIER MODULE BLOCK DIAGRAM



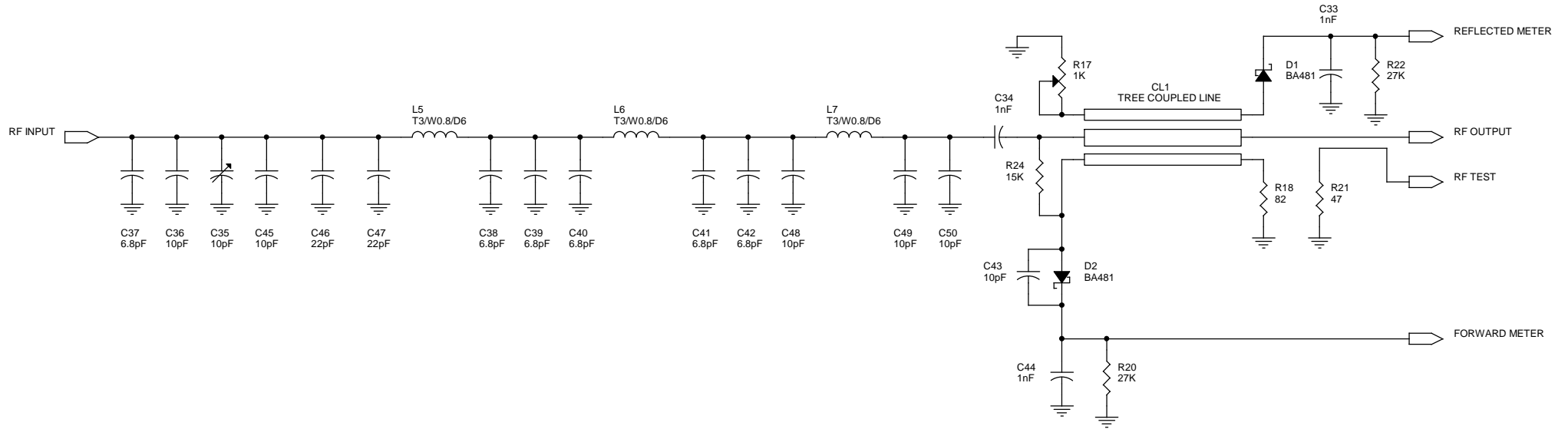
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A	Mod. FM200-10-D	1.0
Sheet 1 of 3		


220-240MHz AMPLIFIER MODULE ELECTRICAL SCHEMATIC



Title		
RF AMPLIFIER		
Size	Document Number	Rev
B	Mod. FM200-10-D	1.0
Sheet 2 of 3		

220-240 MHz AMPLIFIER MODULE FILTER AND METER

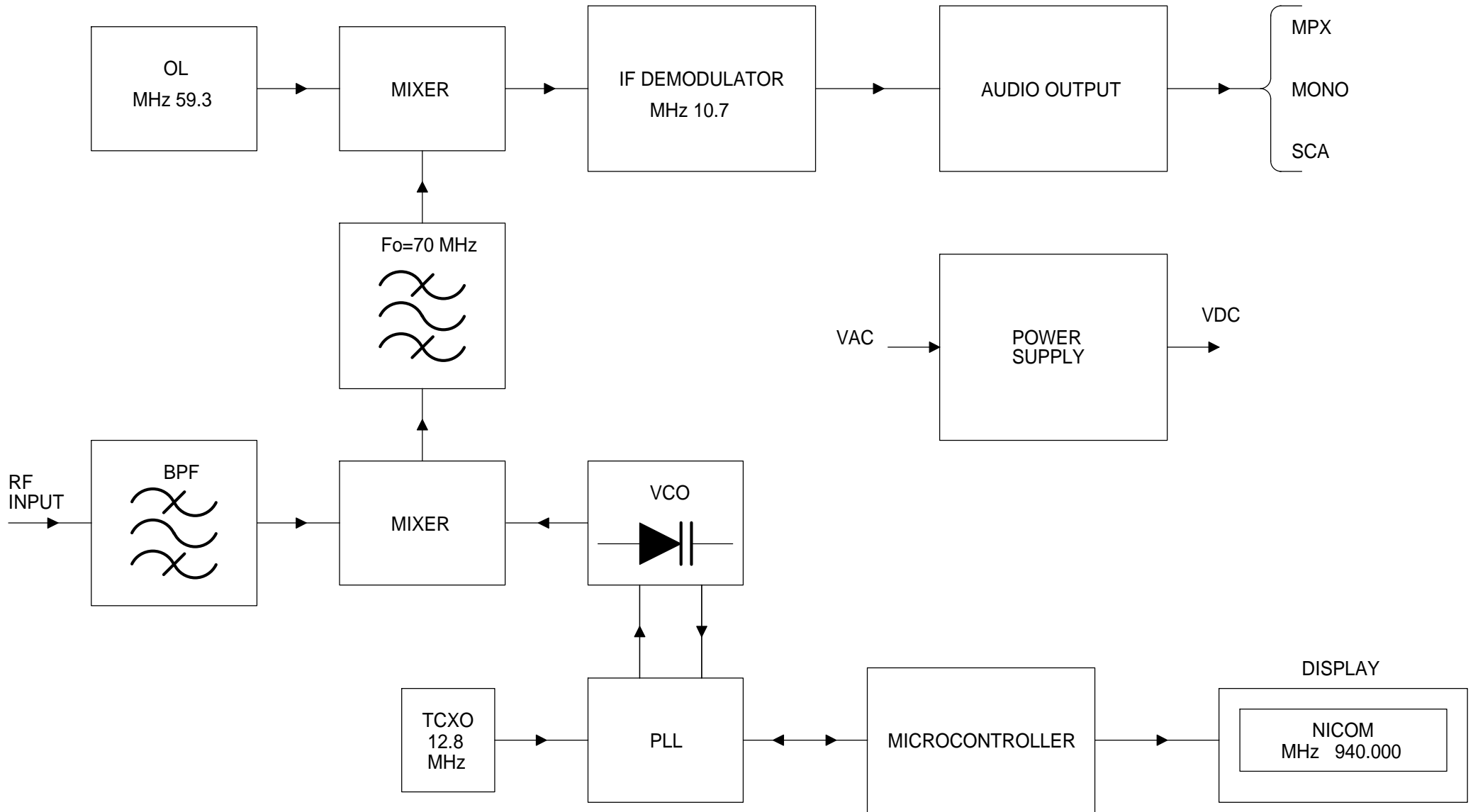


		
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Date: Monday, June 18, 2018	Sheet 3	of 3

220-240 MHz AMPLIFIER MODULE COMPONENT LIST

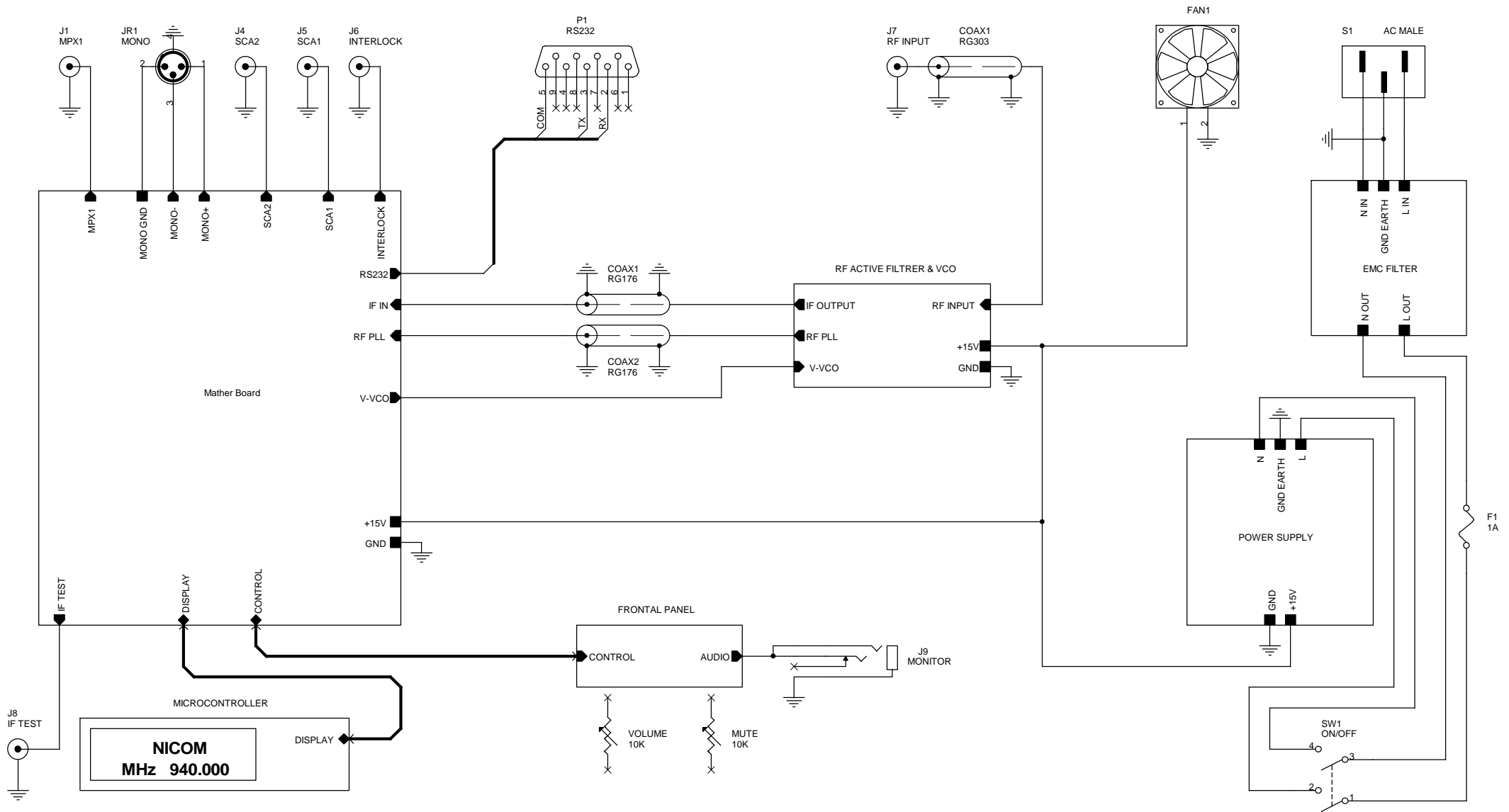
Rif.	Value	Remarks	Description	Code
C1	1nF		Ceramic Lead Through Capacitor	
C2	1nF		Ceramic Lead Through Capacitor	
C3	1nF		Ceramic Lead Through Capacitor	
C4	1nF		Ceramic Lead Through Capacitor	
C5	1nF		Ceramic Lead Through Capacitor	
C6	1000MF	25V	Aluminium Electrolytic Capacitor	
C7	2.2MF	100V	Aluminium Electrolytic Capacitor	
C8	100nF		SMD Multilayer Ceramic Capacitor	
C9	4.7MF	100V	Aluminium Electrolytic Capacitor	
C10	100nF		SMD Multilayer Ceramic Capacitor	
C11	100nF		SMD Multilayer Ceramic Capacitor	
C12	2.2MF	100V	Aluminium Electrolytic Capacitor	
C13	100nF		SMD Multilayer Ceramic Capacitor	
C14	2.2MF	100V	Aluminium Electrolytic Capacitor	
C15	470pF		Ceramic Disc Capacitor NPO	
C16	100nF		SMD Multilayer Ceramic Capacitor	
C17	100nF		SMD Multilayer Ceramic Capacitor	
C18	100nF		SMD Multilayer Ceramic Capacitor	
C19	470pF		Ceramic Disc Capacitor NPO	
C20	1nF		Ceramic Disc Capacitor NPO	
C21	1nF		Ceramic Disc Capacitor NPO	
C22	1nF		Ceramic Disc Capacitor NPO	
C23	22pF		Trimmer Polyethylene Film Capacitor	
C24	22pF		Ceramic Disc Capacitor NPO	
C25	NC		Ceramic Disc Capacitor NPO	
C26	470pF		Ceramic Disc Capacitor NPO	
C27	22pF		Ceramic Disc Capacitor NPO	
C28	22pF		Trimmer Polyethylene Film Capacitor	
C29	NC		Ceramic Disc Capacitor NPO	
C30	NC		Ceramic Disc Capacitor NPO	
C31	60pF		Trimmer Polyethylene Film Capacitor	
C32	NC		Ceramic Disc Capacitor NPO	
C33	1nF		SMD Multilayer Ceramic Capacitor	
C34	1nF		SMD Ceramic ATC Capacitor	
C35	10pF		Trimmer Ceramic Capacitor	
C36	10pF		Ceramic Disc Capacitor NPO	
C37	6.8pF		Ceramic Disc Capacitor NPO	
C38	6.8pF		Ceramic Disc Capacitor NPO	
C39	6.8pF		Ceramic Disc Capacitor NPO	
C40	6.8pF		Ceramic Disc Capacitor NPO	
C41	6.8pF		Ceramic Disc Capacitor NPO	
C42	6.8pF		Ceramic Disc Capacitor NPO	
C43	10pF		Ceramic Disc Capacitor NPO	
C44	1nF		SMD Multilayer Ceramic Capacitor	
C45	10pF		SMD Ceramic ATC Capacitor	
C46	22pF		Ceramic Disc Capacitor NPO	
C47	22pF		Ceramic Disc Capacitor NPO	
C48	10pF		Ceramic Disc Capacitor NPO	
C49	10pF		Ceramic Disc Capacitor NPO	
C50	10pF		Ceramic Disc Capacitor NPO	
L1	T4/W0.6/D4.5		Enamelled Copper Wire	
L2	T4/W0.6/D4.5		Enamelled Copper Wire	

RSL900-B STL RECEIVER FUNCTIONAL SCHEMATIC



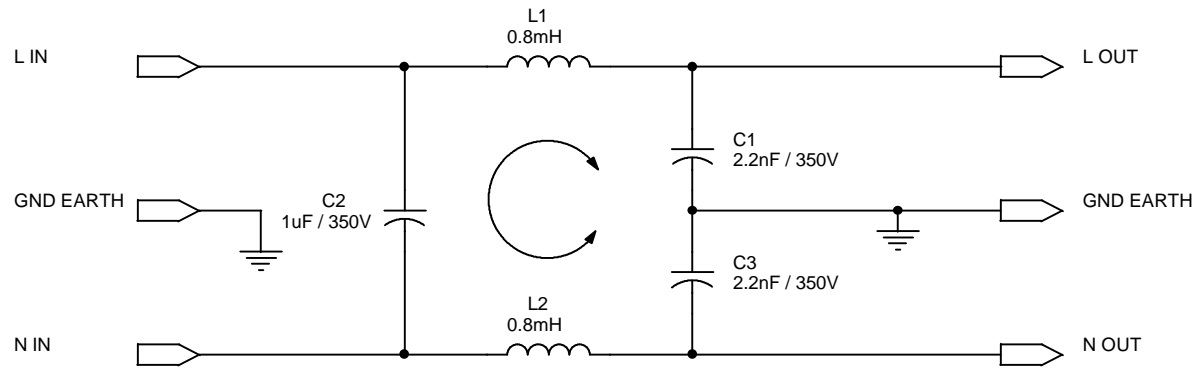
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RSL900-B STL RECEIVER GENERAL SCHEMATIC



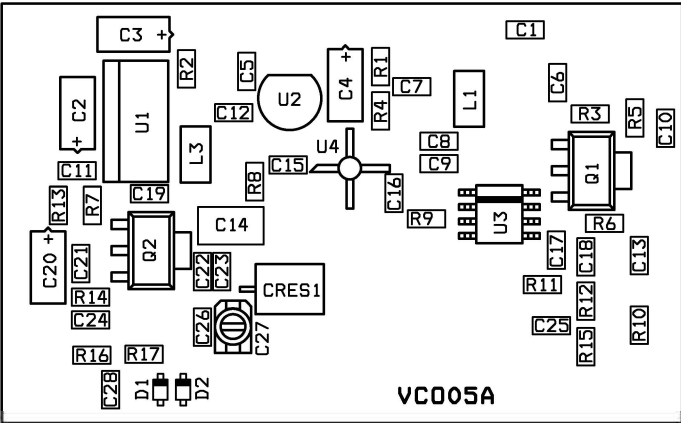
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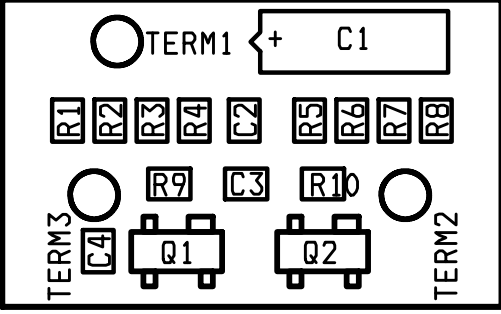
RSL900-B STL RECEIVER EMC FILTER ELECTRICAL SCHEMATIC



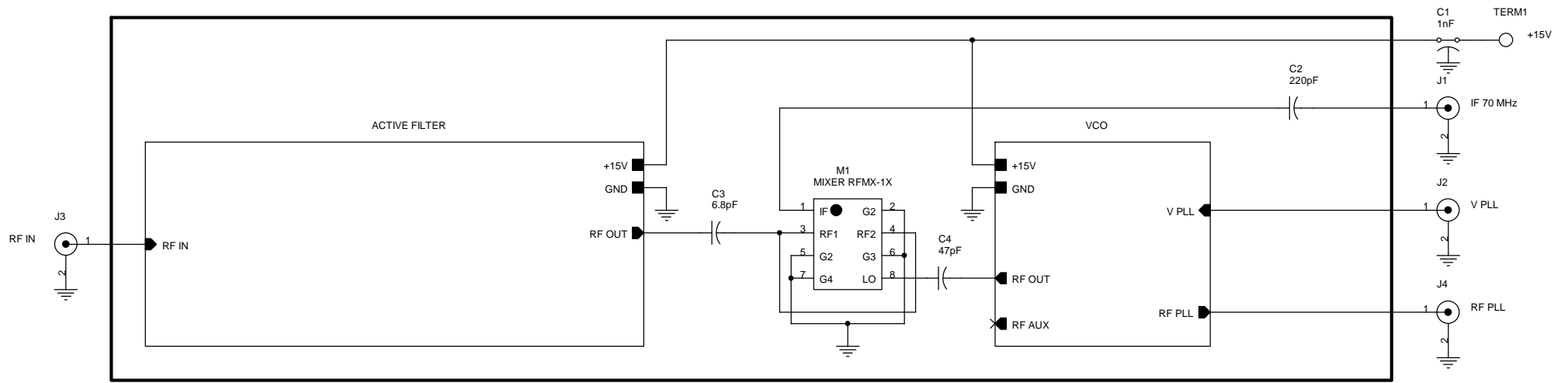
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Size	Document Number	Rev
A	Mod. EMC-02	1.0
Sheet 1 of 1		

940-960 MHz RECEIVER VCO LAYOUT

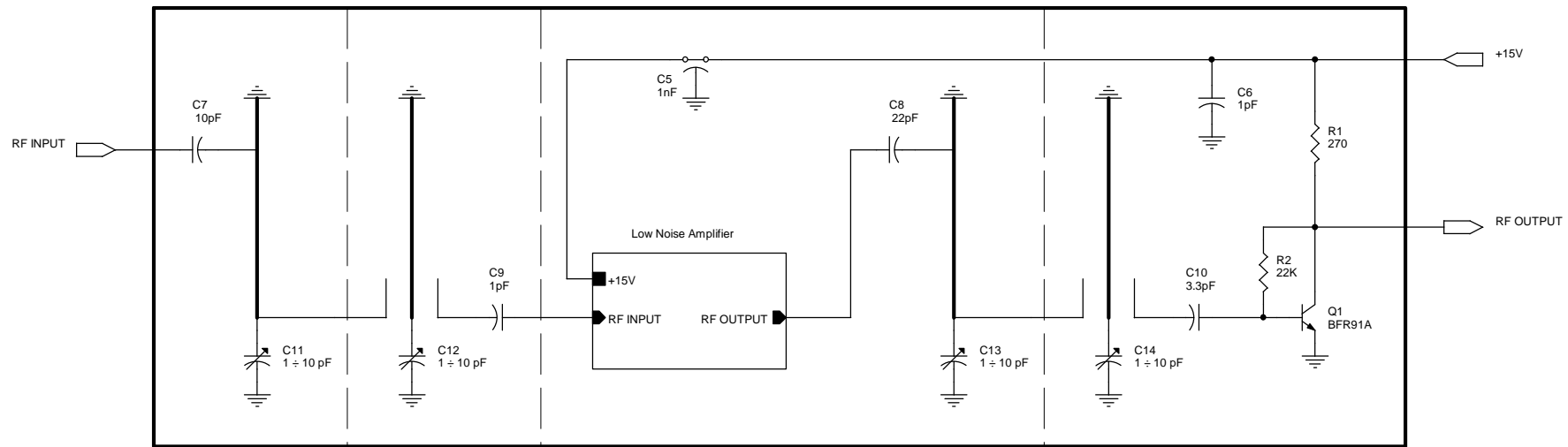




RSL900-B STL RECEIVER VCO & ACTIVE FILTER ELECTRICAL SCHEMATIC

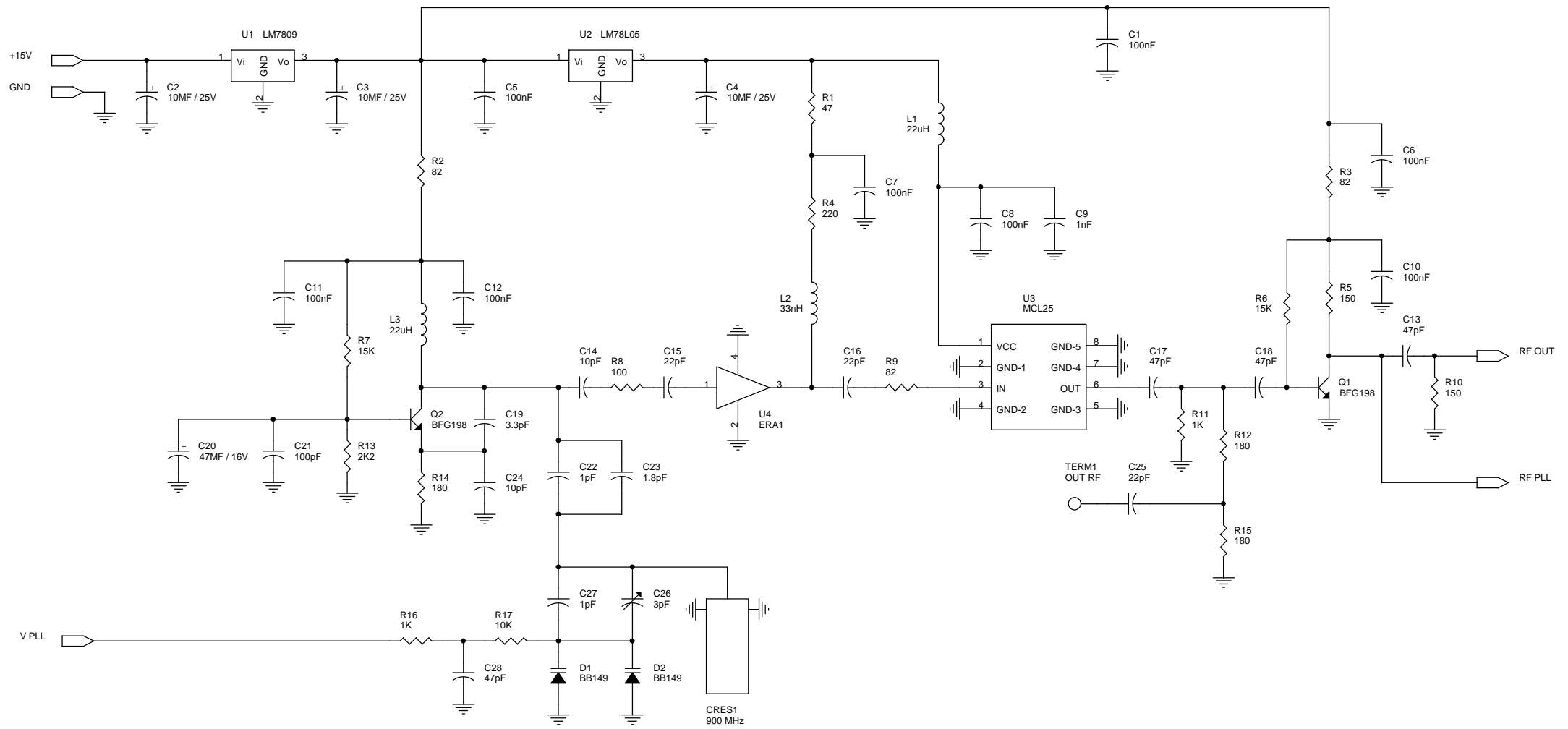


Title			
VCO & ACTIVE FILTER 940-960 MHz			
Size	Document Number	Mod. VCO & AFILTER	Rev
B			1.0
Sheet 1 of 4			



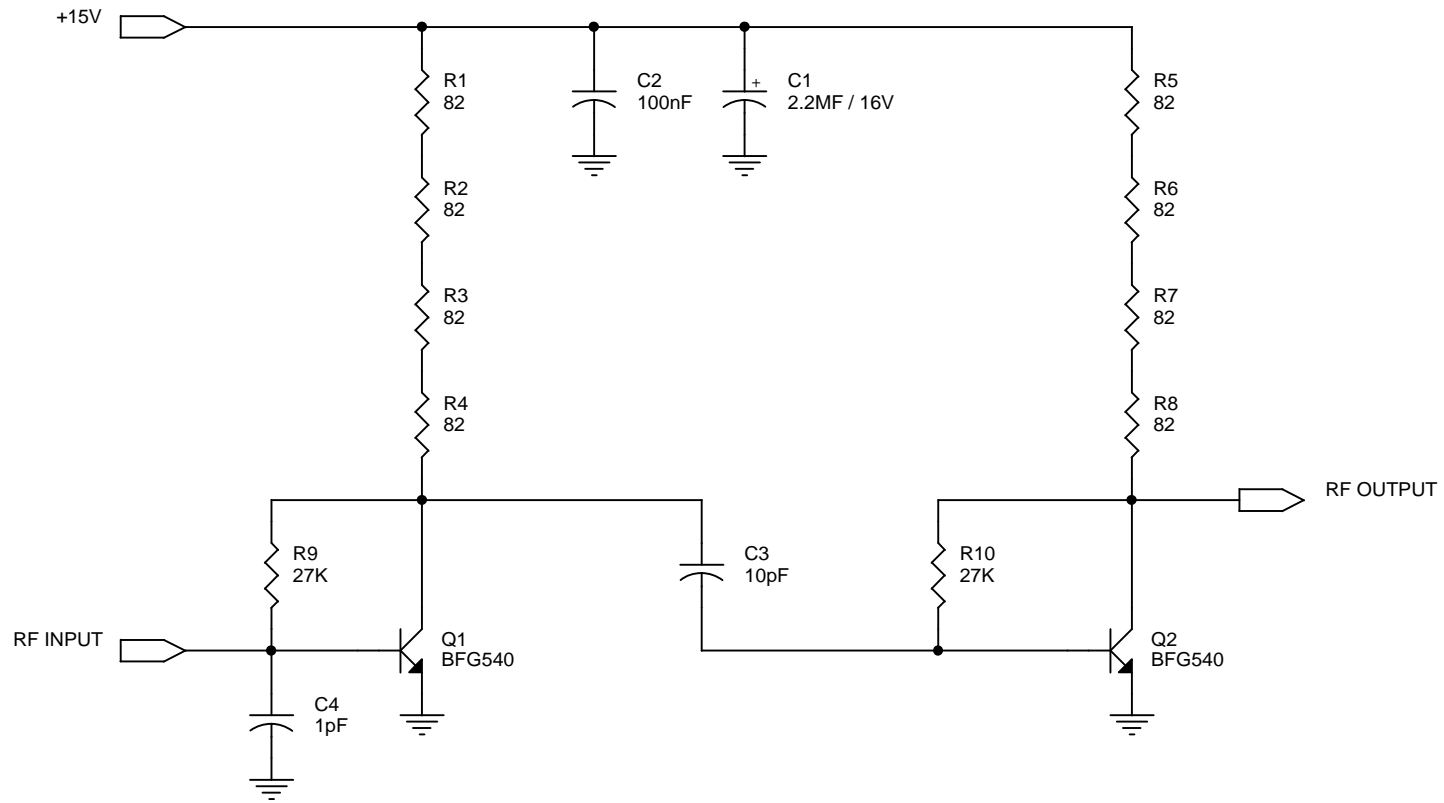
Title		
Active Filter		
Size	Document Number	Rev
B	Mod. AFILT900	1.0
Sheet 2 of 4		

RSL900-B VCO ELECTRIC SCHEMATIC



Title		900 MHz VCO	
Size B	Document Number	Mod. VCO05A900	Rev 1.0
Sheet 4 of 4			

RSL900-B PRE-AMPLIFIER ELECTRIC SCHEMATIC

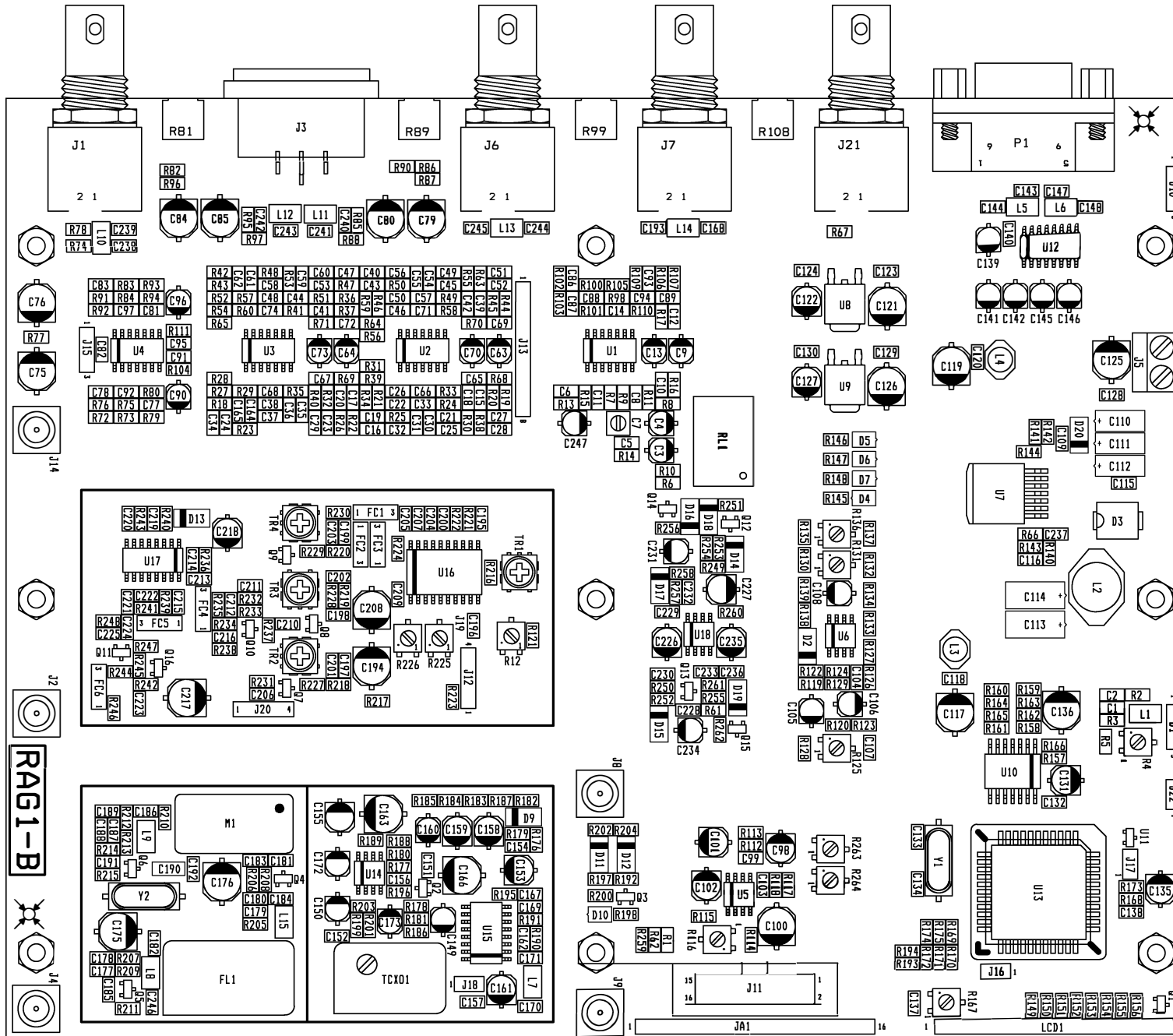


Title		
Low Noise Amplifier		
Size	Document Number	Rev
A	Mod. AFILT900	1.0
Sheet 3 of 4		

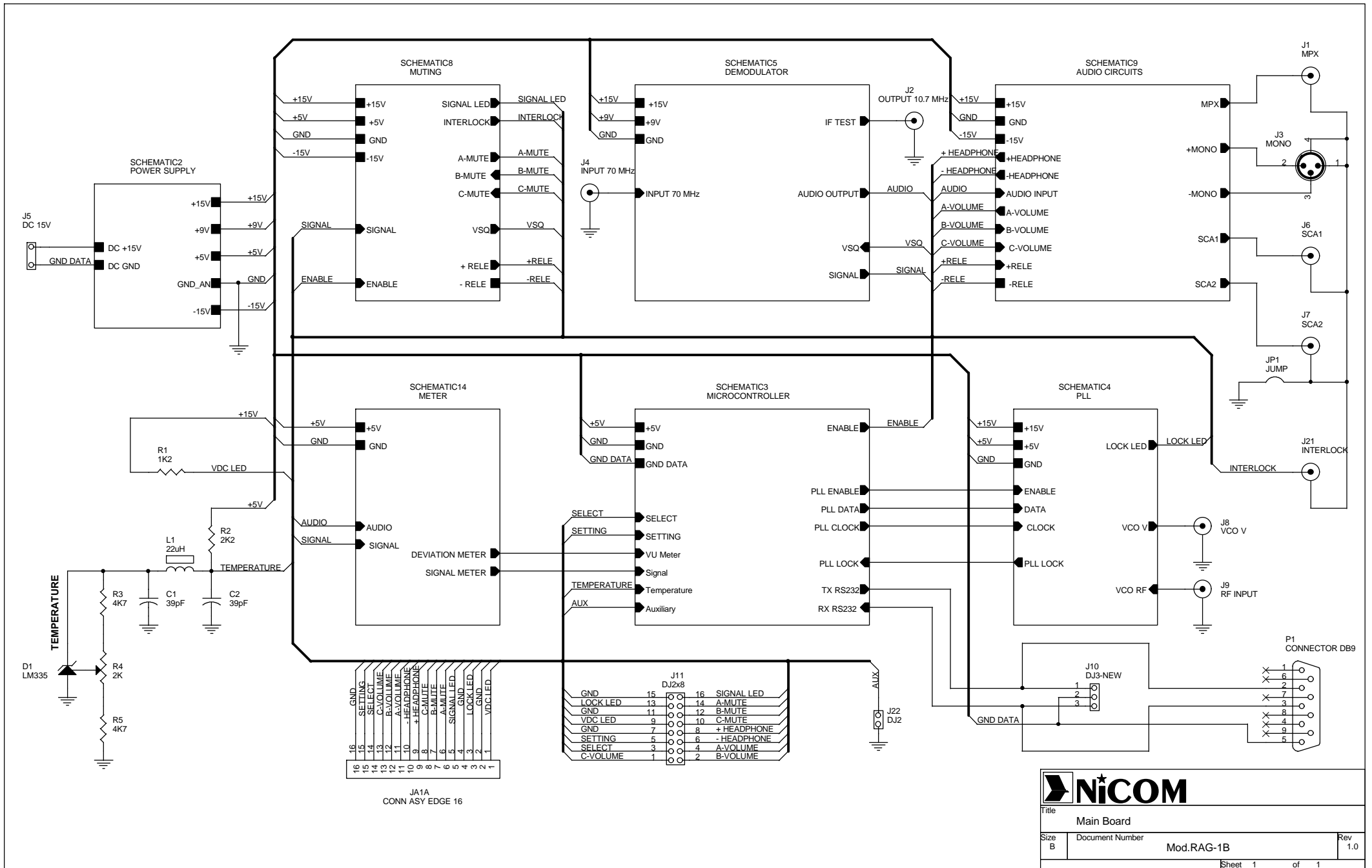
Part List Schematic : VCO 900 Mhz

Rif.	Value	Remarks	Description	Code
C1	100nF		SMD Multilayer Ceramic Capacitor	
C2	10MF	25V	SMD Tantalum Capacitor	
C3	10MF	25V	SMD Tantalum Capacitor	
C4	10MF	25V	SMD Tantalum Capacitor	
C5	100nF		SMD Multilayer Ceramic Capacitor	
C6	100nF		SMD Multilayer Ceramic Capacitor	
C7	100nF		SMD Multilayer Ceramic Capacitor	
C8	100nF		SMD Multilayer Ceramic Capacitor	
C9	1nF		SMD Multilayer Ceramic Capacitor	
C10	100nF		SMD Multilayer Ceramic Capacitor	
C11	100nF		SMD Multilayer Ceramic Capacitor	
C12	100nF		SMD Multilayer Ceramic Capacitor	
C13	47pF		SMD Multilayer Ceramic Capacitor	
C14	10pF		SMD Multilayer Ceramic Capacitor	
C15	22pF		SMD Multilayer Ceramic Capacitor	
C16	22pF		SMD Multilayer Ceramic Capacitor	
C17	47pF		SMD Multilayer Ceramic Capacitor	
C18	47pF		SMD Multilayer Ceramic Capacitor	
C19	3.3pF		SMD Multilayer Ceramic Capacitor	
C20	47MF	16V	SMD Tantalum Capacitor	
C21	100pF		SMD Multilayer Ceramic Capacitor	
C22	1pF		SMD Multilayer Ceramic Capacitor	
C23	1.8pF		SMD Multilayer Ceramic Capacitor	
C24	10pF		SMD Multilayer Ceramic Capacitor	
C25	22pF		SMD Multilayer Ceramic Capacitor	
C26	3pF		SMD Trimmer Capacitor	
C27	1pF		SMD Multilayer Ceramic Capacitor	
C28	47pF		SMD Multilayer Ceramic Capacitor	
L1	22uH		SMD Inductor	
L2	33nH		SMD Inductor	
L3	22uH		SMD Inductor	
R1	47		SMD Thick Film Resistor	
R2	82		SMD Thick Film Resistor	
R3	82		SMD Thick Film Resistor	
R4	220		SMD Thick Film Resistor	
R5	150		SMD Thick Film Resistor	
R6	15K		SMD Thick Film Resistor	
R7	15K		SMD Thick Film Resistor	
R8	100		SMD Thick Film Resistor	
R9	82		SMD Thick Film Resistor	
R10	150		SMD Thick Film Resistor	
R11	1K		SMD Thick Film Resistor	
R12	180		SMD Thick Film Resistor	
R13	2K2		SMD Thick Film Resistor	
R14	180		SMD Thick Film Resistor	
R15	180		SMD Thick Film Resistor	
R16	1K		SMD Thick Film Resistor	

RAG1-B BOARD LAYOUT



RAG1-B GENERAL BLOCK DIAGRAM



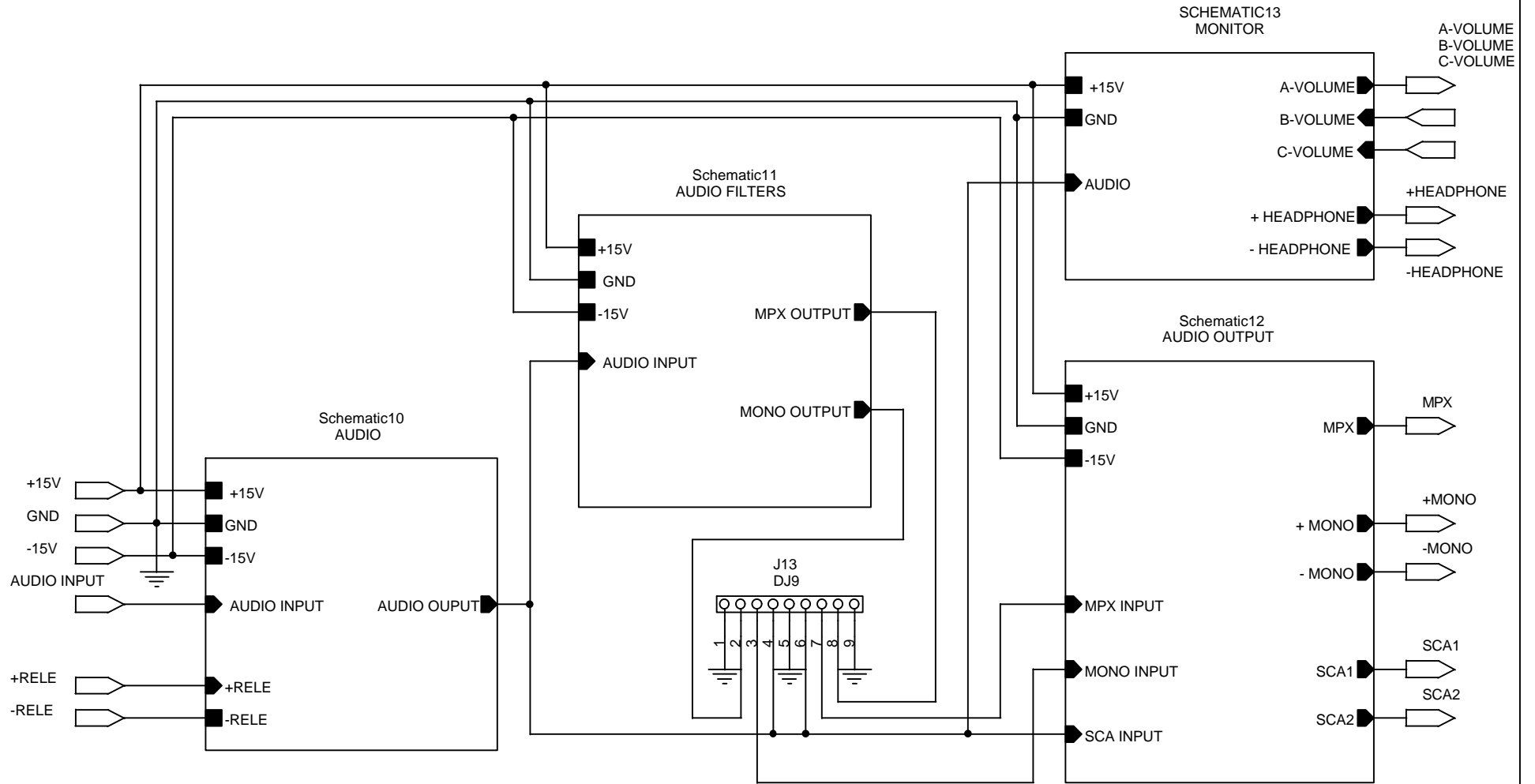
NICOM

Title: Main Board

Size B Document Number: Mod.RAG-1B Rev 1.0

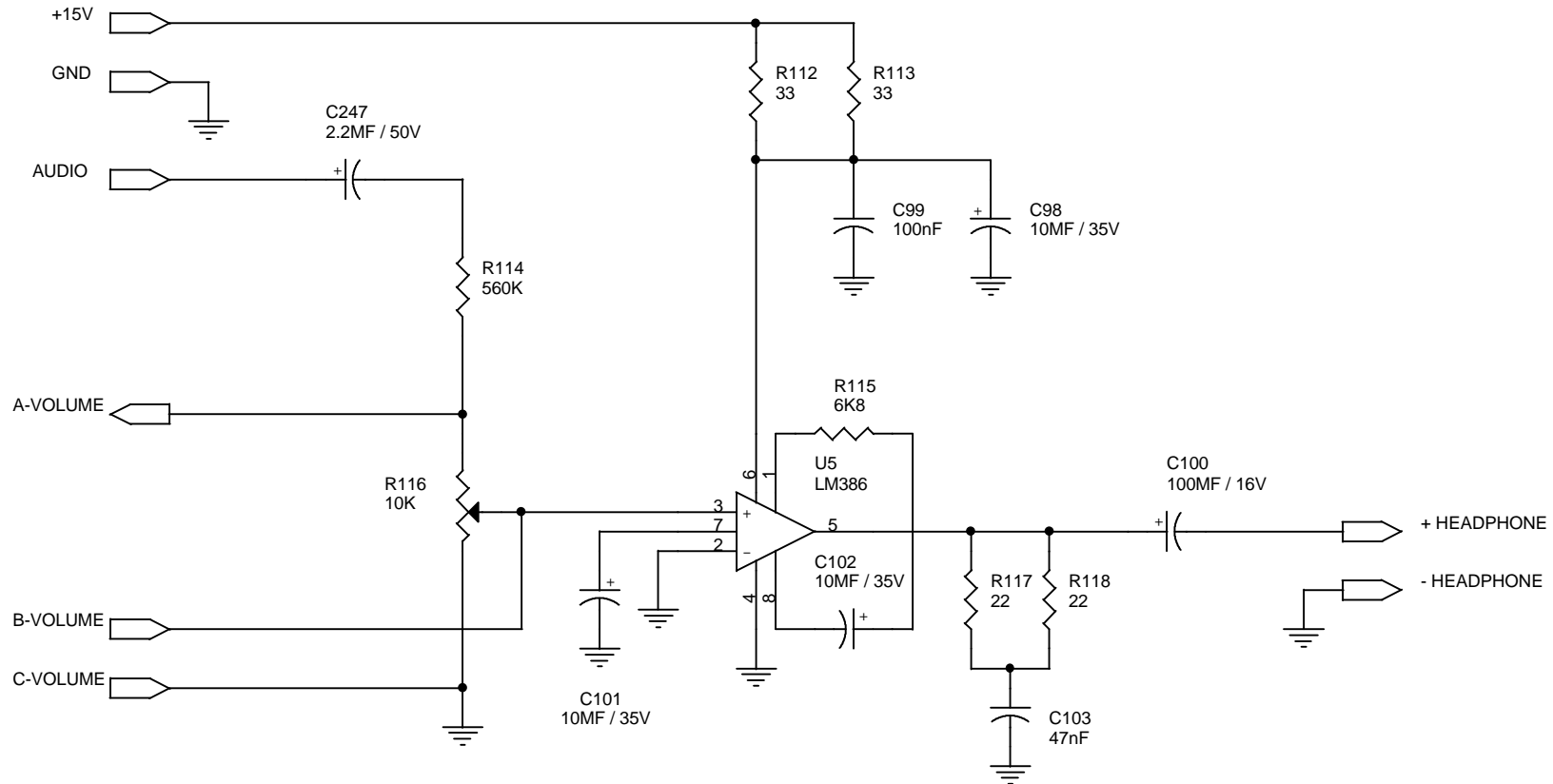
Sheet 1 of 1


RAG1-B AUDIO BLOCK DIAGRAM



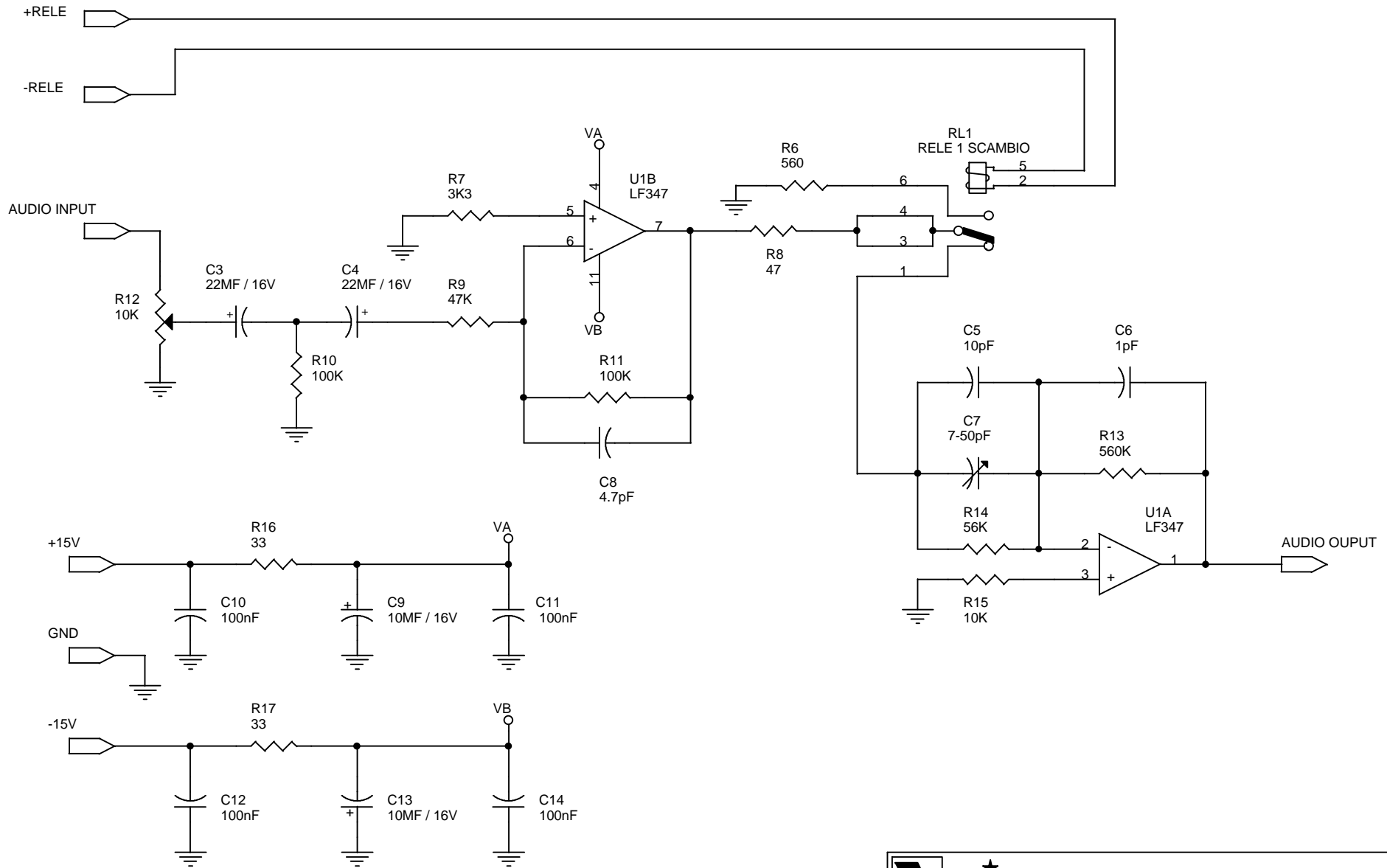
Title		
AUDIO GENERAL		
Size	Document Number	Rev
A	Mod. RAG-AUDIO-GEN	1.0
Sheet 1 of 1		

RAG1-B MONITOR ELECTRICAL SCHEMATIC



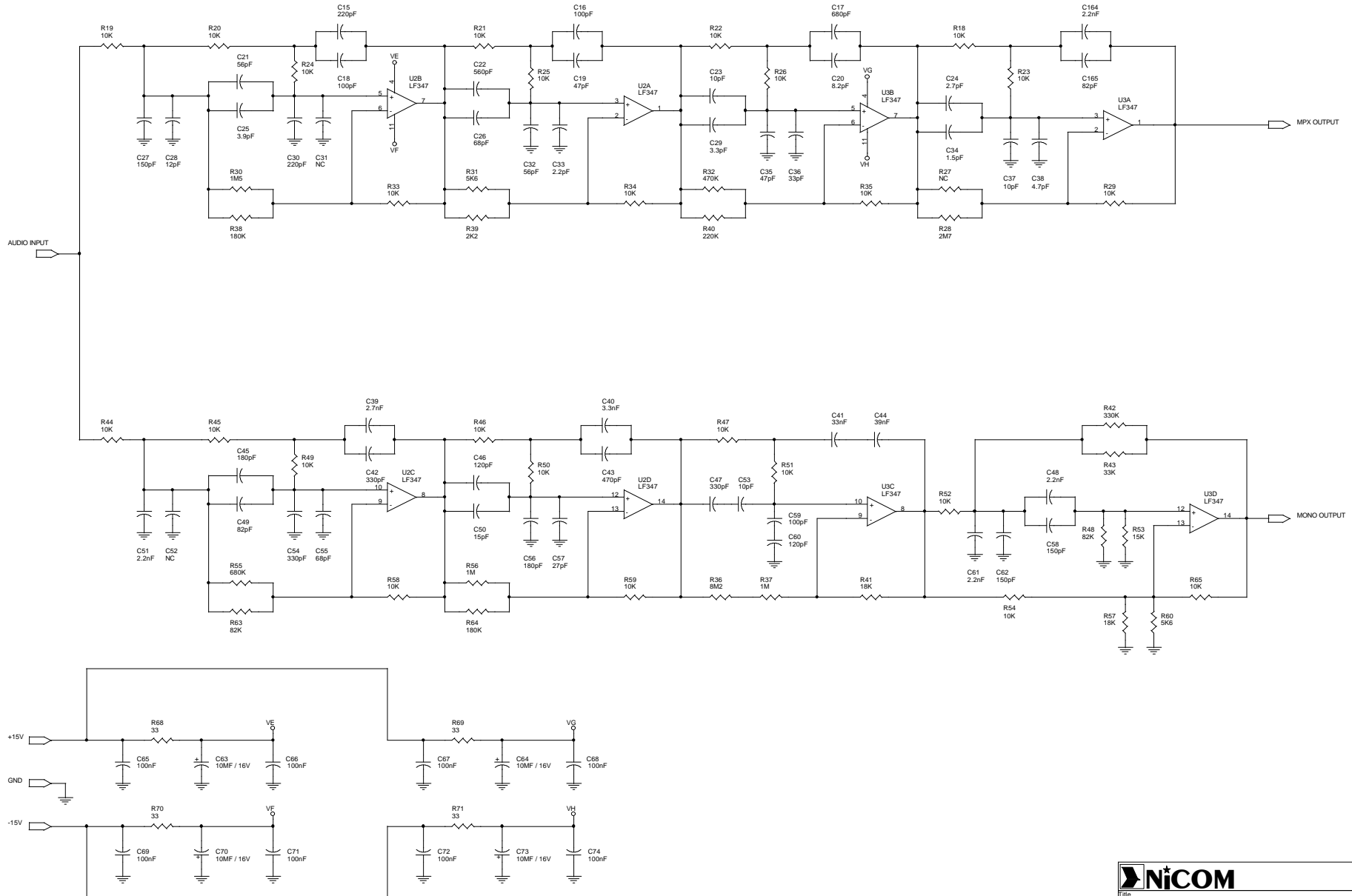
		
Title		
MONITOR		
Size	Document Number	Rev
A	Mod. RAG-MONIT	1.0
Sheet 1 of 1		

RAG1-B AUDIO ELECTRICAL SCHEMATIC

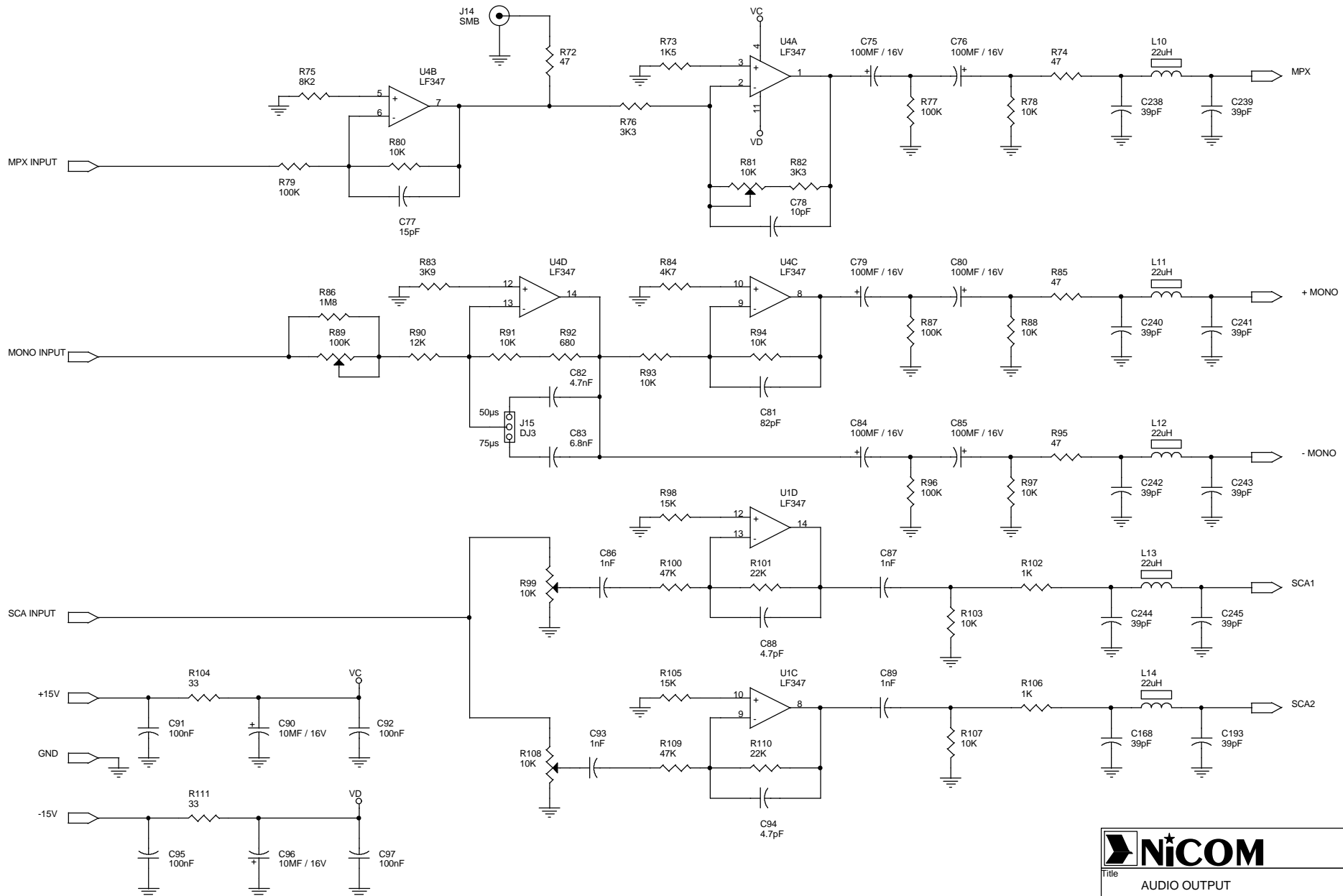


Title		
AUDIO		
Size	Document Number	Rev
A	Mod. RAG-AUDIO	1.0
Sheet 1 of 1		

RAG1-B MPX AND MONO FILTER ELECTRICAL SCHEMATIC

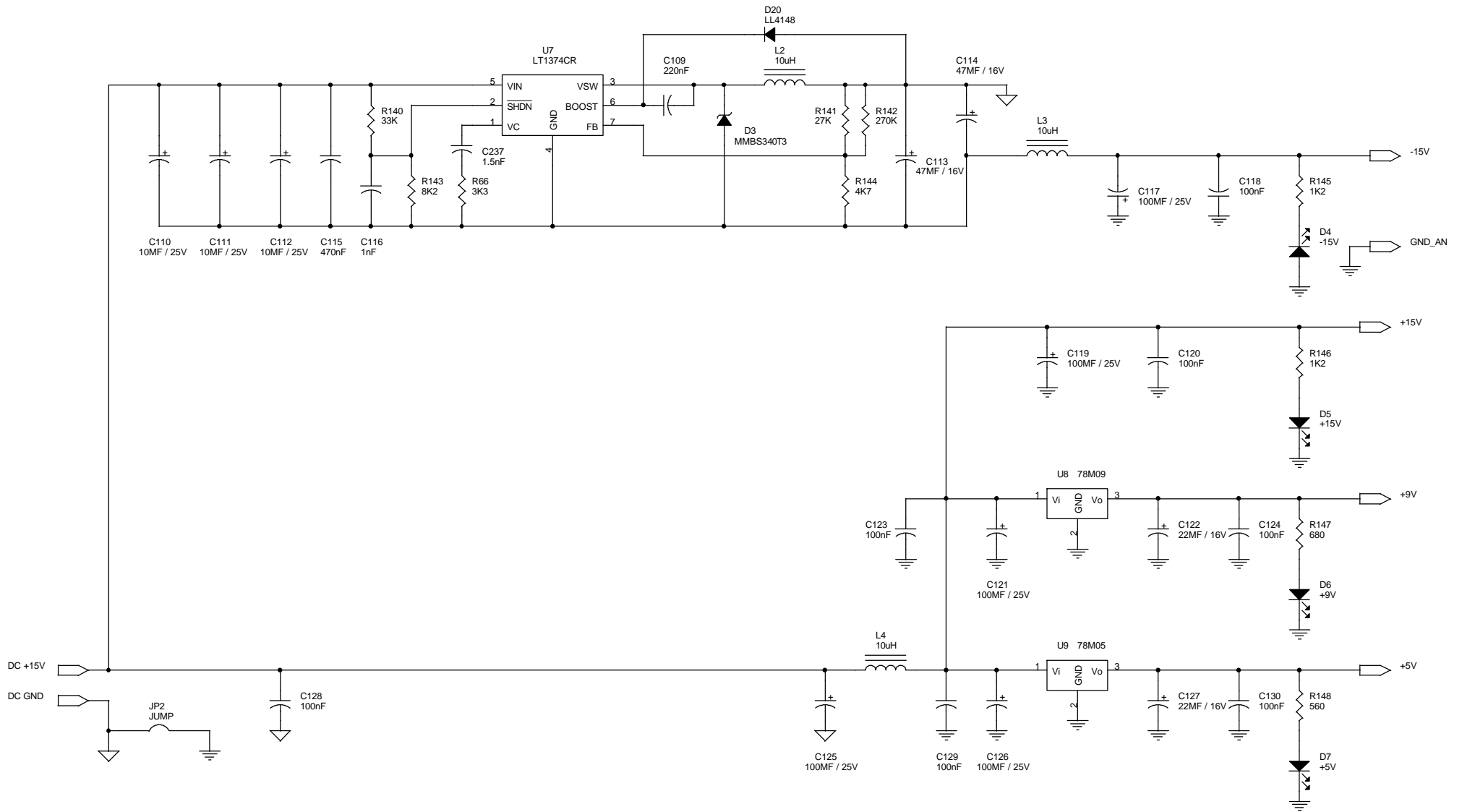


RAG1-B AUDIO OUTPUT ELECTRICAL SCHEMATIC



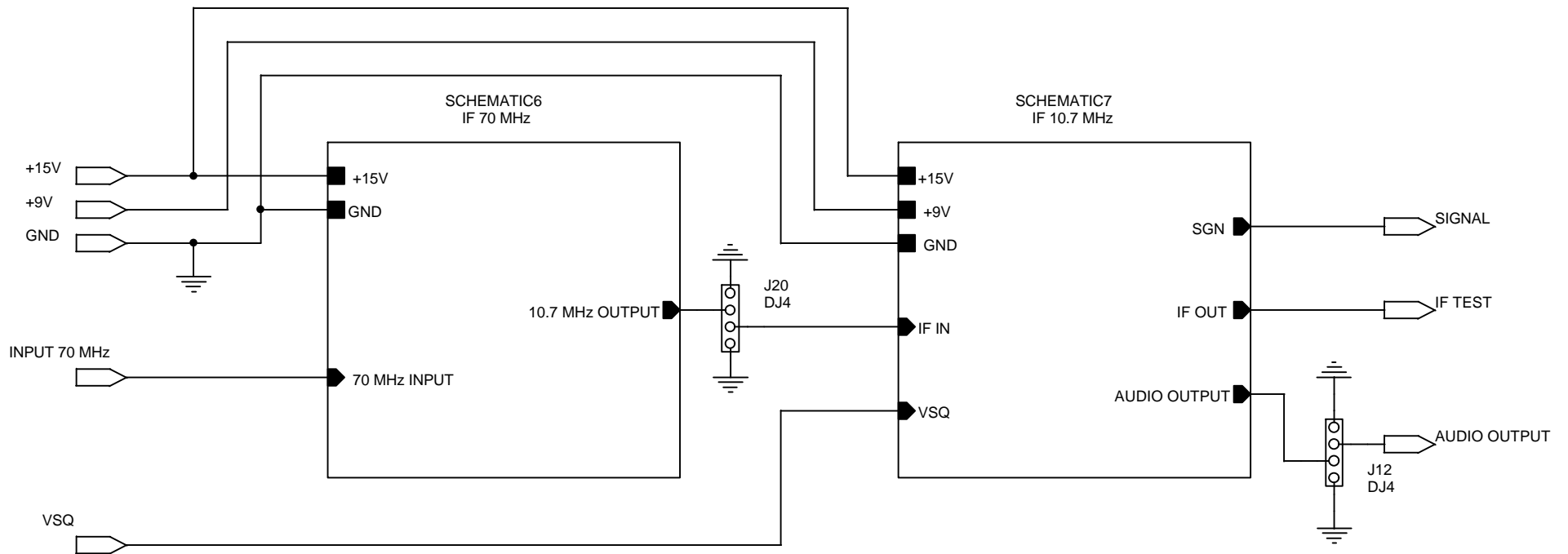
NiCOM		
Title AUDIO OUTPUT		
Size B	Document Number	Rev 1.0
Mod. AUD-OUT		
Sheet 1 of 1		

RAG1-B POWER SUPPLY ELECTRICAL SCHEMATIC



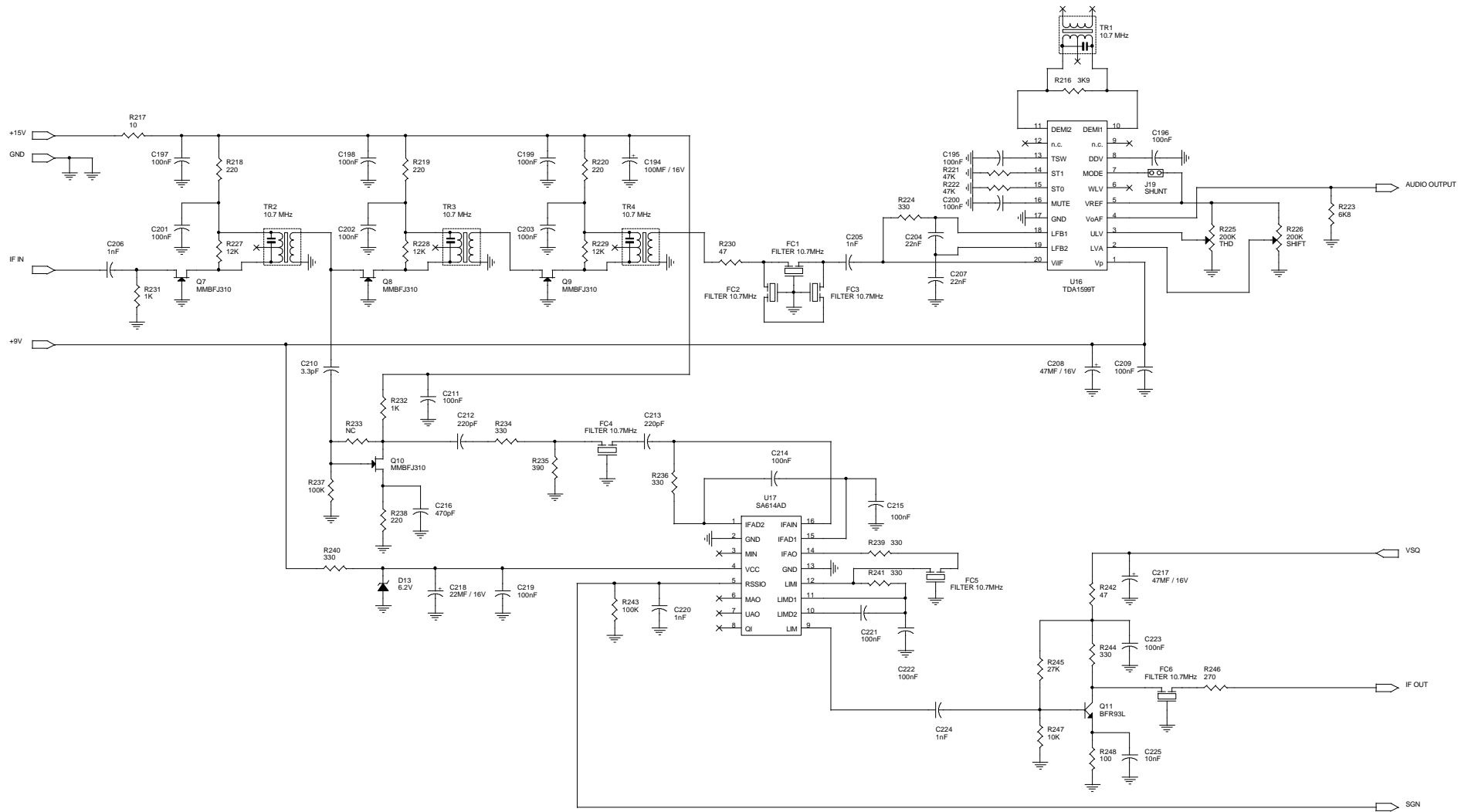
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Size B	Document Number Mod. RAG-POWER	Rev 1.0
Sheet 1 of 1		

RAG1-B DEMODULATOR ELECTRICAL SCHEMATIC

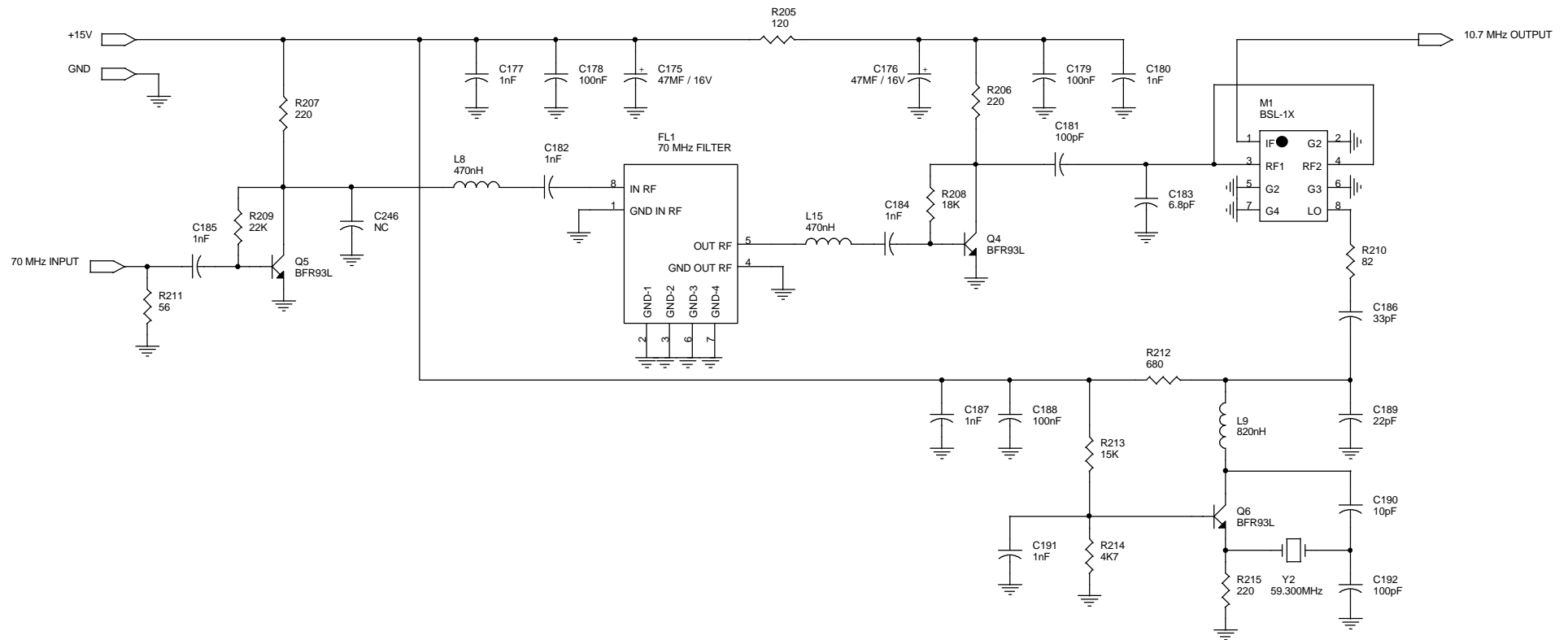


Title		
DEMODULATOR		
Size	Document Number	Rev
A	Mod. RAG-DEMOD	1.0
Sheet 1 of 1		

RAG1-B 10.7MHz IF SECTION ELECTRICAL SCHEMATIC

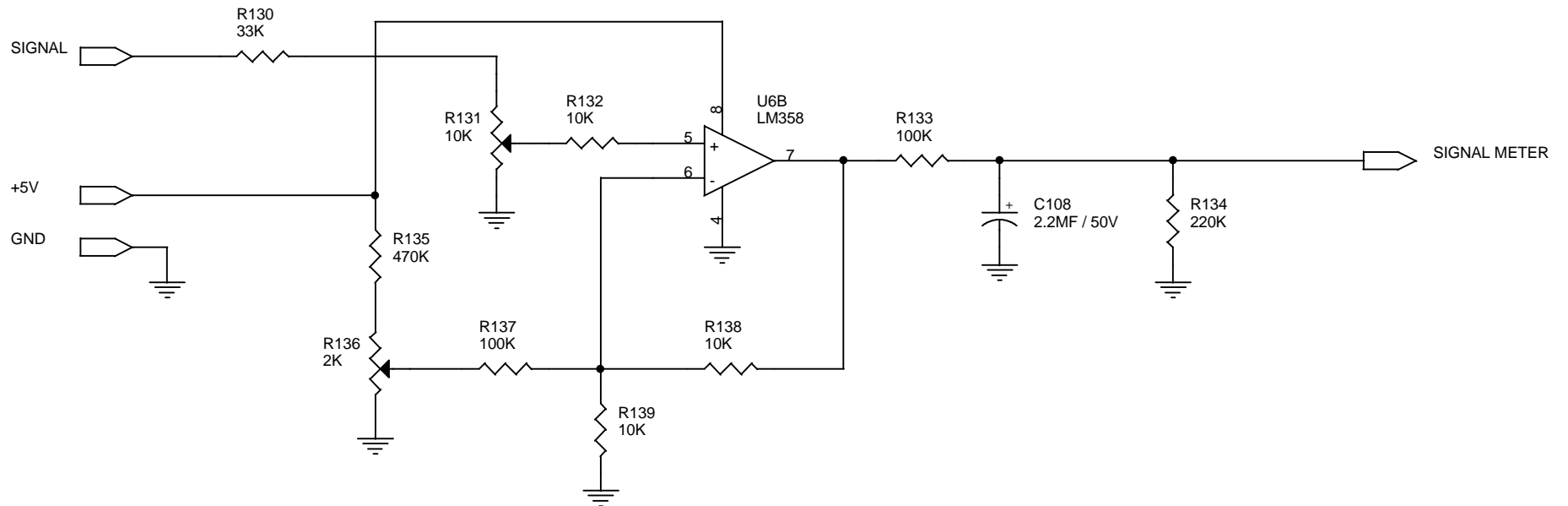
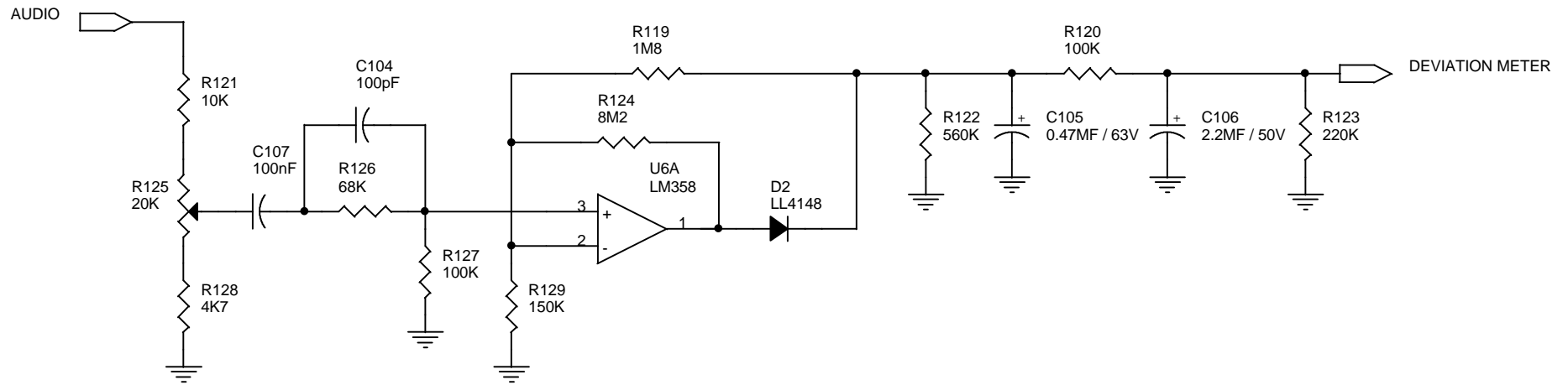



RAG1-B 70MHz IF SECTION ELECTRICAL SCHEMATIC



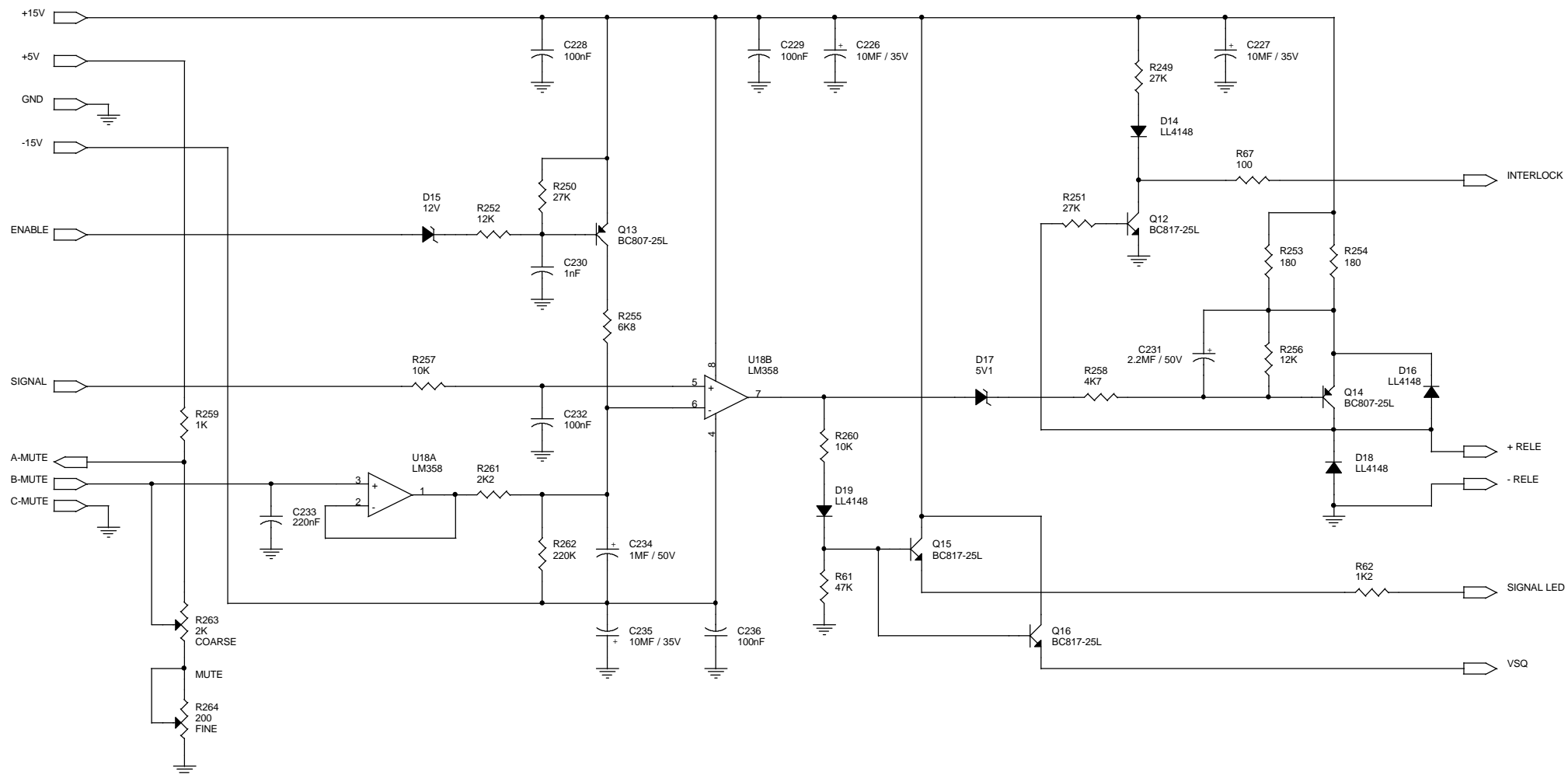
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Size B	Document Number Mod. RAG-IF70
Rev 1.0	
Sheet 1 of 1	


RAG1-B METER ELECTRICAL SCHEMATIC



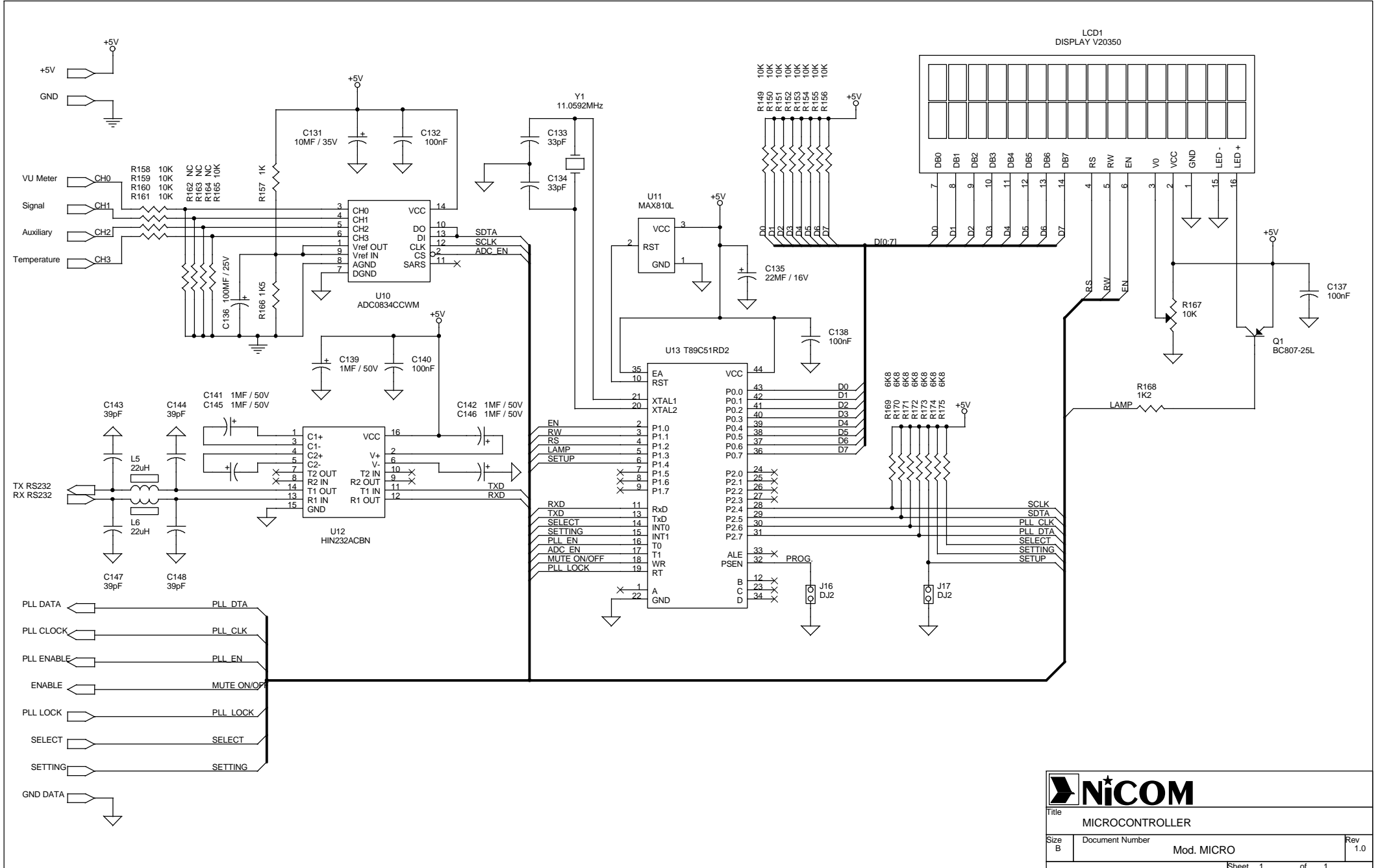
		
Title METER		
Size A	Document Number Mod. RAG-MET	Rev 1.0
Sheet 1 of 1		

RAG1-B MUTING ELECTRICAL SCHEMATIC

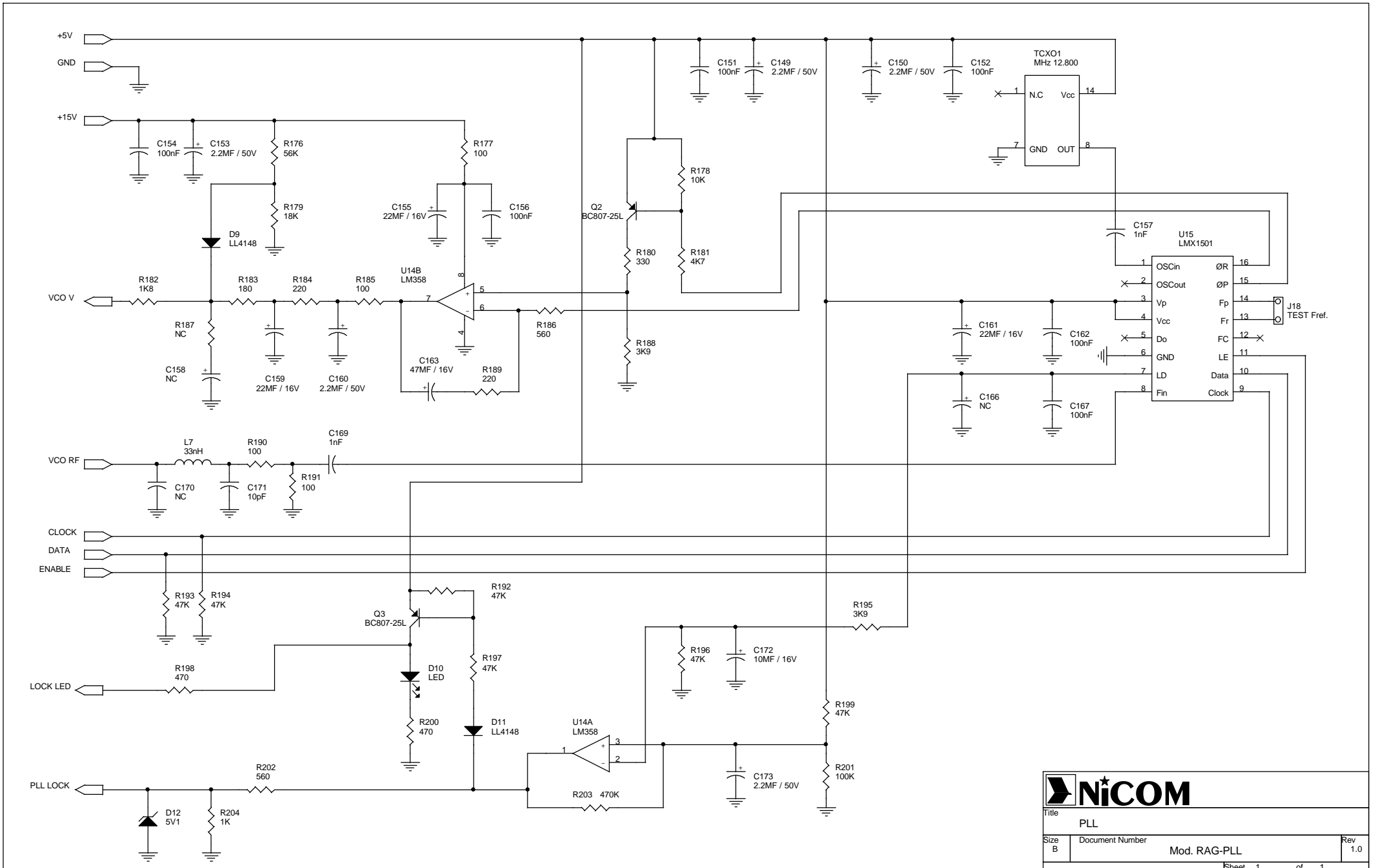



	
Title MUTING	
Size B	Document Number Mod. RAG-MUTE
	Rev 1.0
Sheet 1 of 1	

RAG1-B MICROCONTROLLER ELECTRICAL SCHEMATIC



RAG1-B PLL ELECTRICAL SCHEMATIC



		Title	
		PLL	
Size	Document Number	Mod. RAG-PLL	
B		Rev	1.0
Sheet 1		of 1	

Part List Schematic : RAG-1B

Rif.	Value	Remarks	Description	Code
C1	39pF		SMD Multilayer Ceramic Capacitor	
C2	39pF		SMD Multilayer Ceramic Capacitor	
C3	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C4	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C5	10pF		SMD Multilayer Ceramic Capacitor	
C6	1pF		SMD Multilayer Ceramic Capacitor	
C7	7-50pF		SMD Trimmer Capacitor	
C8	4.7pF		SMD Multilayer Ceramic Capacitor	
C9	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C10	100nF		SMD Multilayer Ceramic Capacitor	
C11	100nF		SMD Multilayer Ceramic Capacitor	
C12	100nF		SMD Multilayer Ceramic Capacitor	
C14	100nF		SMD Multilayer Ceramic Capacitor	
C15	220pF		SMD Multilayer Ceramic Capacitor	
C16	100pF		SMD Multilayer Ceramic Capacitor	
C17	680pF		SMD Multilayer Ceramic Capacitor	
C18	100pF		SMD Multilayer Ceramic Capacitor	
C19	47pF		SMD Multilayer Ceramic Capacitor	
C20	8.2pF		SMD Multilayer Ceramic Capacitor	
C21	56pF		SMD Multilayer Ceramic Capacitor	
C22	560pF		SMD Multilayer Ceramic Capacitor	
C23	10pF		SMD Multilayer Ceramic Capacitor	
C24	2.7pF		SMD Multilayer Ceramic Capacitor	
C25	3.9pF		SMD Multilayer Ceramic Capacitor	
C26	68pF		SMD Multilayer Ceramic Capacitor	
C27	150pF		SMD Multilayer Ceramic Capacitor	
C28	12pF		SMD Multilayer Ceramic Capacitor	
C29	3.3pF		SMD Multilayer Ceramic Capacitor	
C30	220pF		SMD Multilayer Ceramic Capacitor	
C31	NC			
C32	56pF		SMD Multilayer Ceramic Capacitor	
C33	2.2pF		SMD Multilayer Ceramic Capacitor	
C34	1.5pF		SMD Multilayer Ceramic Capacitor	
C35	47pF		SMD Multilayer Ceramic Capacitor	
C36	33pF		SMD Multilayer Ceramic Capacitor	
C37	10pF		SMD Multilayer Ceramic Capacitor	
C38	4.7pF		SMD Multilayer Ceramic Capacitor	
C39	2.7nF		SMD Multilayer Ceramic Capacitor	
C40	3.3nF		SMD Multilayer Ceramic Capacitor	
C41	33nF		SMD Multilayer Ceramic Capacitor	
C42	330pF		SMD Multilayer Ceramic Capacitor	
C43	470pF		SMD Multilayer Ceramic Capacitor	
C44	39nF		SMD Multilayer Ceramic Capacitor	
C45	180pF		SMD Multilayer Ceramic Capacitor	
C46	120pF		SMD Multilayer Ceramic Capacitor	
C47	330pF		SMD Multilayer Ceramic Capacitor	
C48	2.2nF		SMD Multilayer Ceramic Capacitor	
C49	82pF		SMD Multilayer Ceramic Capacitor	
C50	15pF		SMD Multilayer Ceramic Capacitor	

Rif.	Value	Remarks	Description	Code
C51	2.2nF		SMD Multilayer Ceramic Capacitor	
C52	NC			
C53	10pF		SMD Multilayer Ceramic Capacitor	
C54	330pF		SMD Multilayer Ceramic Capacitor	
C55	68pF		SMD Multilayer Ceramic Capacitor	
C56	180pF		SMD Multilayer Ceramic Capacitor	
C57	27pF		SMD Multilayer Ceramic Capacitor	
C58	150pF		SMD Multilayer Ceramic Capacitor	
C59	100pF		SMD Multilayer Ceramic Capacitor	
C60	120pF		SMD Multilayer Ceramic Capacitor	
C61	2.2nF		SMD Multilayer Ceramic Capacitor	
C62	150pF		SMD Multilayer Ceramic Capacitor	
C63	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C64	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C65	100nF		SMD Multilayer Ceramic Capacitor	
C66	100nF		SMD Multilayer Ceramic Capacitor	
C67	100nF		SMD Multilayer Ceramic Capacitor	
C68	100nF		SMD Multilayer Ceramic Capacitor	
C69	100nF		SMD Multilayer Ceramic Capacitor	
C70	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C71	100nF		SMD Multilayer Ceramic Capacitor	
C72	100nF		SMD Multilayer Ceramic Capacitor	
C73	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C74	100nF		SMD Multilayer Ceramic Capacitor	
C75	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C76	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C77	15pF		SMD Multilayer Ceramic Capacitor	
C78	10pF		SMD Multilayer Ceramic Capacitor	
C79	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C80	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C81	82pF		SMD Multilayer Ceramic Capacitor	
C82	4.7nF		SMD Multilayer Ceramic Capacitor	
C83	6.8nF		SMD Multilayer Ceramic Capacitor	
C84	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C85	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C86	1nF		SMD Multilayer Ceramic Capacitor	
C87	1nF		SMD Multilayer Ceramic Capacitor	
C88	4.7pF		SMD Multilayer Ceramic Capacitor	
C89	1nF		SMD Multilayer Ceramic Capacitor	
C90	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C91	100nF		SMD Multilayer Ceramic Capacitor	
C92	100nF		SMD Multilayer Ceramic Capacitor	
C93	1nF		SMD Multilayer Ceramic Capacitor	
C94	4.7pF		SMD Multilayer Ceramic Capacitor	
C95	100nF		SMD Multilayer Ceramic Capacitor	
C96	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C97	100nF		SMD Multilayer Ceramic Capacitor	
C98	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C99	100nF		SMD Multilayer Ceramic Capacitor	
C100	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C101	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C102	10MF	35V	SMD Aluminium Electrolytic Capacitor	

Rif.	Value	Remarks	Description	Code
C103	47nF		SMD Multilayer Ceramic Capacitor	
C104	100pF		SMD Multilayer Ceramic Capacitor	
C105	0.47MF	63V	SMD Aluminium Electrolytic Capacitor	
C106	2.2MF	50V	SMD Multilayer Ceramic Capacitor	
C107	100nF		SMD Multilayer Ceramic Capacitor	
C108	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C109	220nF		SMD Multilayer Ceramic Capacitor	
C110	10MF	25V	SMD Tantalum Capacitor	
C111	10MF	25V	SMD Tantalum Capacitor	
C112	10MF	25V	SMD Tantalum Capacitor	
C113	47MF	16V	SMD Tantalum Capacitor	
C114	47MF	16V	SMD Tantalum Capacitor	
C115	470nF		SMD Multilayer Ceramic Capacitor	
C116	1nF		SMD Multilayer Ceramic Capacitor	
C117	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C118	100nF		SMD Multilayer Ceramic Capacitor	
C119	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C120	100nF		SMD Multilayer Ceramic Capacitor	
C121	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C122	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C123	100nF		SMD Multilayer Ceramic Capacitor	
C124	100nF		SMD Multilayer Ceramic Capacitor	
C125	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C126	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C127	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C128	100nF		SMD Multilayer Ceramic Capacitor	
C129	100nF		SMD Multilayer Ceramic Capacitor	
C130	100nF		SMD Multilayer Ceramic Capacitor	
C131	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C132	100nF		SMD Multilayer Ceramic Capacitor	
C133	33pF		SMD Multilayer Ceramic Capacitor	
C134	33pF		SMD Multilayer Ceramic Capacitor	
C135	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C136	100MF	25V	SMD Aluminium Electrolytic Capacitor	
C137	100nF		SMD Multilayer Ceramic Capacitor	
C138	100nF		SMD Multilayer Ceramic Capacitor	
C139	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C140	100nF		SMD Multilayer Ceramic Capacitor	
C141	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C142	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C143	39pF		SMD Multilayer Ceramic Capacitor	
C144	39pF		SMD Multilayer Ceramic Capacitor	
C145	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C146	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C147	39pF		SMD Multilayer Ceramic Capacitor	
C148	39pF		SMD Multilayer Ceramic Capacitor	
C149	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C150	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C151	100nF		SMD Multilayer Ceramic Capacitor	
C152	100nF		SMD Multilayer Ceramic Capacitor	
C153	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C154	100nF		SMD Multilayer Ceramic Capacitor	

Rif.	Value	Remarks	Description	Code
C155	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C156	100nF		SMD Multilayer Ceramic Capacitor	
C157	1nF		SMD Multilayer Ceramic Capacitor	
C158	NC			
C159	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C160	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C161	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C162	100nF		SMD Multilayer Ceramic Capacitor	
C163	47MF	16V	SMD Aluminium Electrolytic Capacitor	
C164	2.2nF		SMD Multilayer Ceramic Capacitor	
C165	82pF		SMD Multilayer Ceramic Capacitor	
C166	NC			
C167	100nF		SMD Multilayer Ceramic Capacitor	
C168	39pF		SMD Multilayer Ceramic Capacitor	
C169	1nF		SMD Multilayer Ceramic Capacitor	
C170	NC			
C171	10pF		SMD Multilayer Ceramic Capacitor	
C172	10MF	16V	SMD Aluminium Electrolytic Capacitor	
C173	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C175	47MF	16V	SMD Aluminium Electrolytic Capacitor	
C176	47MF	16V	SMD Aluminium Electrolytic Capacitor	
C177	1nF		SMD Multilayer Ceramic Capacitor	
C178	100nF		SMD Multilayer Ceramic Capacitor	
C179	100nF		SMD Multilayer Ceramic Capacitor	
C180	1nF		SMD Multilayer Ceramic Capacitor	
C181	100pF		SMD Multilayer Ceramic Capacitor	
C182	1nF		SMD Multilayer Ceramic Capacitor	
C183	6.8pF		SMD Multilayer Ceramic Capacitor	
C184	1nF		SMD Multilayer Ceramic Capacitor	
C185	1nF		SMD Multilayer Ceramic Capacitor	
C186	33pF		SMD Multilayer Ceramic Capacitor	
C187	1nF		SMD Multilayer Ceramic Capacitor	
C188	100nF		SMD Multilayer Ceramic Capacitor	
C189	22pF		SMD Multilayer Ceramic Capacitor	
C190	10pF		SMD Multilayer Ceramic Capacitor	
C191	1nF		SMD Multilayer Ceramic Capacitor	
C192	100pF		SMD Multilayer Ceramic Capacitor	
C193	39pF		SMD Multilayer Ceramic Capacitor	
C194	100MF	16V	SMD Aluminium Electrolytic Capacitor	
C195	100nF		SMD Multilayer Ceramic Capacitor	
C196	100nF		SMD Multilayer Ceramic Capacitor	
C197	100nF		SMD Multilayer Ceramic Capacitor	
C198	100nF		SMD Multilayer Ceramic Capacitor	
C199	100nF		SMD Multilayer Ceramic Capacitor	
C200	100nF		SMD Multilayer Ceramic Capacitor	
C201	100nF		SMD Multilayer Ceramic Capacitor	
C202	100nF		SMD Multilayer Ceramic Capacitor	
C203	100nF		SMD Multilayer Ceramic Capacitor	
C204	22nF		SMD Multilayer Ceramic Capacitor	
C205	1nF		SMD Multilayer Ceramic Capacitor	
C206	1nF		SMD Multilayer Ceramic Capacitor	
C207	22nF		SMD Multilayer Ceramic Capacitor	

Rif.	Value	Remarks	Description	Code
C208	47MF	16V	SMD Aluminium Electrolytic Capacitor	
C209	100nF		SMD Multilayer Ceramic Capacitor	
C210	3.3pF		SMD Multilayer Ceramic Capacitor	
C211	100nF		SMD Multilayer Ceramic Capacitor	
C212	220pF		SMD Multilayer Ceramic Capacitor	
C213	220pF		SMD Multilayer Ceramic Capacitor	
C214	100nF		SMD Multilayer Ceramic Capacitor	
C215	100nF		SMD Multilayer Ceramic Capacitor	
C216	470pF		SMD Multilayer Ceramic Capacitor	
C217	47MF	16V	SMD Aluminium Electrolytic Capacitor	
C218	22MF	16V	SMD Aluminium Electrolytic Capacitor	
C219	100nF		SMD Multilayer Ceramic Capacitor	
C220	1nF		SMD Multilayer Ceramic Capacitor	
C221	100nF		SMD Multilayer Ceramic Capacitor	
C222	100nF		SMD Multilayer Ceramic Capacitor	
C223	100nF		SMD Multilayer Ceramic Capacitor	
C224	1nF		SMD Multilayer Ceramic Capacitor	
C225	10nF		SMD Multilayer Ceramic Capacitor	
C226	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C227	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C228	100nF		SMD Multilayer Ceramic Capacitor	
C229	100nF		SMD Multilayer Ceramic Capacitor	
C230	1nF		SMD Multilayer Ceramic Capacitor	
C231	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
C232	100nF		SMD Multilayer Ceramic Capacitor	
C233	220nF		SMD Multilayer Ceramic Capacitor	
C234	1MF	50V	SMD Aluminium Electrolytic Capacitor	
C235	10MF	35V	SMD Aluminium Electrolytic Capacitor	
C236	100nF		SMD Multilayer Ceramic Capacitor	
C237	1.5nF		SMD Multilayer Ceramic Capacitor	
C238	39pF		SMD Multilayer Ceramic Capacitor	
C239	39pF		SMD Multilayer Ceramic Capacitor	
C240	39pF		SMD Multilayer Ceramic Capacitor	
C241	39pF		SMD Multilayer Ceramic Capacitor	
C242	39pF		SMD Multilayer Ceramic Capacitor	
C243	39pF		SMD Multilayer Ceramic Capacitor	
C244	39pF		SMD Multilayer Ceramic Capacitor	
C245	39pF		SMD Multilayer Ceramic Capacitor	
C246	NC			
C247	2.2MF	50V	SMD Aluminium Electrolytic Capacitor	
L1	22uH		SMD Inductor	
L2	10uH		SMD Power Inductor	
L3	10uH		SMD Power Inductor	
L4	10uH		SMD Power Inductor	
L5	22uH		SMD Inductor	
L6	22uH		SMD Inductor	
L7	33nH		SMD Inductor	
L8	470nH		SMD Inductor	
L9	820nH		SMD Inductor	
L10	22uH		SMD Inductor	
L11	22uH		SMD Inductor	

Rif.	Value	Remarks	Description	Code
L12	22uH		SMD Inductor	
L13	22uH		SMD Inductor	
L14	22uH		SMD Inductor	
L15	470nH		SMD Inductor	
R1	1K2	1/4W	SMD Thick Film Resistor	
R2	2K2	1/4W	SMD Thick Film Resistor	
R3	4K7	1/4W	SMD Thick Film Resistor	
R4	2K	1/4W	SMD Thick Film Resistor	
R5	4K7	1/4W	SMD Thick Film Resistor	
R6	560	1/4W	SMD Thick Film Resistor	
R7	3K3	1/4W	SMD Thick Film Resistor	
R8	47	1/4W	SMD Thick Film Resistor	
R9	47K	1/4W	SMD Thick Film Resistor	
R10	100K	1/4W	SMD Thick Film Resistor	
R11	100K	1/4W	SMD Thick Film Resistor	
R12	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R13	560K	1/4W	SMD Thick Film Resistor	
R14	56K	1/4W	SMD Thick Film Resistor	
R15	10K	1/4W	SMD Thick Film Resistor	
R16	33	1/4W	SMD Thick Film Resistor	
R17	33	1/4W	SMD Thick Film Resistor	
R18	10K	1/4W	SMD Thick Film Resistor	
R19	10K	1/4W	SMD Thick Film Resistor	
R20	10K	1/4W	SMD Thick Film Resistor	
R21	10K	1/4W	SMD Thick Film Resistor	
R22	10K	1/4W	SMD Thick Film Resistor	
R23	10K	1/4W	SMD Thick Film Resistor	
R24	10K	1/4W	SMD Thick Film Resistor	
R25	10K	1/4W	SMD Thick Film Resistor	
R26	10K	1/4W	SMD Thick Film Resistor	
R27	NC	1/4W	SMD Thick Film Resistor	
R28	2M7	1/4W	SMD Thick Film Resistor	
R29	10K	1/4W	SMD Thick Film Resistor	
R30	1M5	1/4W	SMD Thick Film Resistor	
R31	5K6	1/4W	SMD Thick Film Resistor	
R32	470K	1/4W	SMD Thick Film Resistor	
R33	10K	1/4W	SMD Thick Film Resistor	
R34	10K	1/4W	SMD Thick Film Resistor	
R35	10K	1/4W	SMD Thick Film Resistor	
R36	8M2	1/4W	SMD Thick Film Resistor	
R37	1M	1/4W	SMD Thick Film Resistor	
R38	180K	1/4W	SMD Thick Film Resistor	
R39	2K2	1/4W	SMD Thick Film Resistor	
R40	220K	1/4W	SMD Thick Film Resistor	
R41	18K	1/4W	SMD Thick Film Resistor	
R42	330K	1/4W	SMD Thick Film Resistor	
R43	33K	1/4W	SMD Thick Film Resistor	
R44	10K	1/4W	SMD Thick Film Resistor	
R45	10K	1/4W	SMD Thick Film Resistor	
R46	10K	1/4W	SMD Thick Film Resistor	
R47	10K	1/4W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R48	82K	1/4W	SMD Thick Film Resistor	
R49	10K	1/4W	SMD Thick Film Resistor	
R50	10K	1/4W	SMD Thick Film Resistor	
R51	10K	1/4W	SMD Thick Film Resistor	
R52	10K	1/4W	SMD Thick Film Resistor	
R53	15K	1/4W	SMD Thick Film Resistor	
R54	10K	1/4W	SMD Thick Film Resistor	
R55	680K	1/4W	SMD Thick Film Resistor	
R56	1M	1/4W	SMD Thick Film Resistor	
R57	18K	1/4W	SMD Thick Film Resistor	
R58	10K	1/4W	SMD Thick Film Resistor	
R59	10K	1/4W	SMD Thick Film Resistor	
R60	5K6	1/4W	SMD Thick Film Resistor	
R61	47K	1/4W	SMD Thick Film Resistor	
R62	1K2	1/4W	SMD Thick Film Resistor	
R63	82K	1/4W	SMD Thick Film Resistor	
R64	180K	1/4W	SMD Thick Film Resistor	
R65	10K	1/4W	SMD Thick Film Resistor	
R66	3K3	1/4W	SMD Thick Film Resistor	
R67	100	1/4W	SMD Thick Film Resistor	
R68	33	1/4W	SMD Thick Film Resistor	
R69	33	1/4W	SMD Thick Film Resistor	
R70	33	1/4W	SMD Thick Film Resistor	
R71	33	1/4W	SMD Thick Film Resistor	
R72	47	1/4W	SMD Thick Film Resistor	
R73	1K5	1/4W	SMD Thick Film Resistor	
R74	47	1/4W	SMD Thick Film Resistor	
R75	8K2	1/4W	SMD Thick Film Resistor	
R76	3K3	1/4W	SMD Thick Film Resistor	
R77	100K	1/4W	SMD Thick Film Resistor	
R78	10K	1/4W	SMD Thick Film Resistor	
R79	100K	1/4W	SMD Thick Film Resistor	
R80	10K	1/4W	SMD Thick Film Resistor	
R81	10K	1/4W	Carbon Skeleton Trimmer Resistor	
R82	3K3	1/4W	SMD Thick Film Resistor	
R83	3K9	1/4W	SMD Thick Film Resistor	
R84	4K7	1/4W	SMD Thick Film Resistor	
R85	47	1/4W	SMD Thick Film Resistor	
R86	1M8	1/4W	SMD Thick Film Resistor	
R87	100K	1/4W	SMD Thick Film Resistor	
R88	10K	1/4W	SMD Thick Film Resistor	
R89	100K	1/4W	Carbon Skeleton Trimmer Resistor	
R90	12K	1/4W	SMD Thick Film Resistor	
R91	10K	1/4W	SMD Thick Film Resistor	
R92	680	1/4W	SMD Thick Film Resistor	
R93	10K	1/4W	SMD Thick Film Resistor	
R94	10K	1/4W	SMD Thick Film Resistor	
R95	47	1/4W	SMD Thick Film Resistor	
R96	100K	1/4W	SMD Thick Film Resistor	
R97	10K	1/4W	SMD Thick Film Resistor	
R98	15K	1/4W	SMD Thick Film Resistor	
R99	10K	1/4W	Carbon Skeleton Trimmer Resistor	

Rif.	Value	Remarks	Description	Code
R100	47K	1/4W	SMD Thick Film Resistor	
R101	22K	1/4W	SMD Thick Film Resistor	
R102	1K	1/4W	SMD Thick Film Resistor	
R103	10K	1/4W	SMD Thick Film Resistor	
R104	33	1/4W	SMD Thick Film Resistor	
R105	15K	1/4W	SMD Thick Film Resistor	
R106	1K	1/4W	SMD Thick Film Resistor	
R107	10K	1/4W	SMD Thick Film Resistor	
R108	10K	1/4W	Carbon Skeleton Trimmer Resistor	
R109	47K	1/4W	SMD Thick Film Resistor	
R110	22K	1/4W	SMD Thick Film Resistor	
R111	33	1/4W	SMD Thick Film Resistor	
R112	33	1/4W	SMD Thick Film Resistor	
R113	33	1/4W	SMD Thick Film Resistor	
R114	560K	1/4W	SMD Thick Film Resistor	
R115	6K8	1/4W	SMD Thick Film Resistor	
R116	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R117	22	1/4W	SMD Thick Film Resistor	
R118	22	1/4W	SMD Thick Film Resistor	
R119	1M8	1/4W	SMD Thick Film Resistor	
R120	100K	1/4W	SMD Thick Film Resistor	
R121	10K	1/4W	SMD Thick Film Resistor	
R122	560K	1/4W	SMD Thick Film Resistor	
R123	220K	1/4W	SMD Thick Film Resistor	
R124	8M2	1/4W	SMD Thick Film Resistor	
R125	20K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R126	68K	1/4W	SMD Thick Film Resistor	
R127	100K	1/4W	SMD Thick Film Resistor	
R128	4K7	1/4W	SMD Thick Film Resistor	
R129	150K	1/4W	SMD Thick Film Resistor	
R130	33K	1/4W	SMD Thick Film Resistor	
R131	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R132	10K	1/4W	SMD Thick Film Resistor	
R133	100K	1/4W	SMD Thick Film Resistor	
R134	220K	1/4W	SMD Thick Film Resistor	
R135	470K	1/4W	SMD Thick Film Resistor	
R136	2K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R137	100K	1/4W	SMD Thick Film Resistor	
R138	10K	1/4W	SMD Thick Film Resistor	
R139	10K	1/4W	SMD Thick Film Resistor	
R140	33K	1/4W	SMD Thick Film Resistor	
R141	27K	1/4W	SMD Thick Film Resistor	
R142	270K	1/4W	SMD Thick Film Resistor	
R143	8K2	1/4W	SMD Thick Film Resistor	
R144	4K7	1/4W	SMD Thick Film Resistor	
R145	1K2	1/4W	SMD Thick Film Resistor	
R146	1K2	1/4W	SMD Thick Film Resistor	
R147	680	1/4W	SMD Thick Film Resistor	
R148	560	1/4W	SMD Thick Film Resistor	
R149	10K	1/4W	SMD Thick Film Resistor	
R150	10K	1/4W	SMD Thick Film Resistor	
R151	10K	1/4W	SMD Thick Film Resistor	

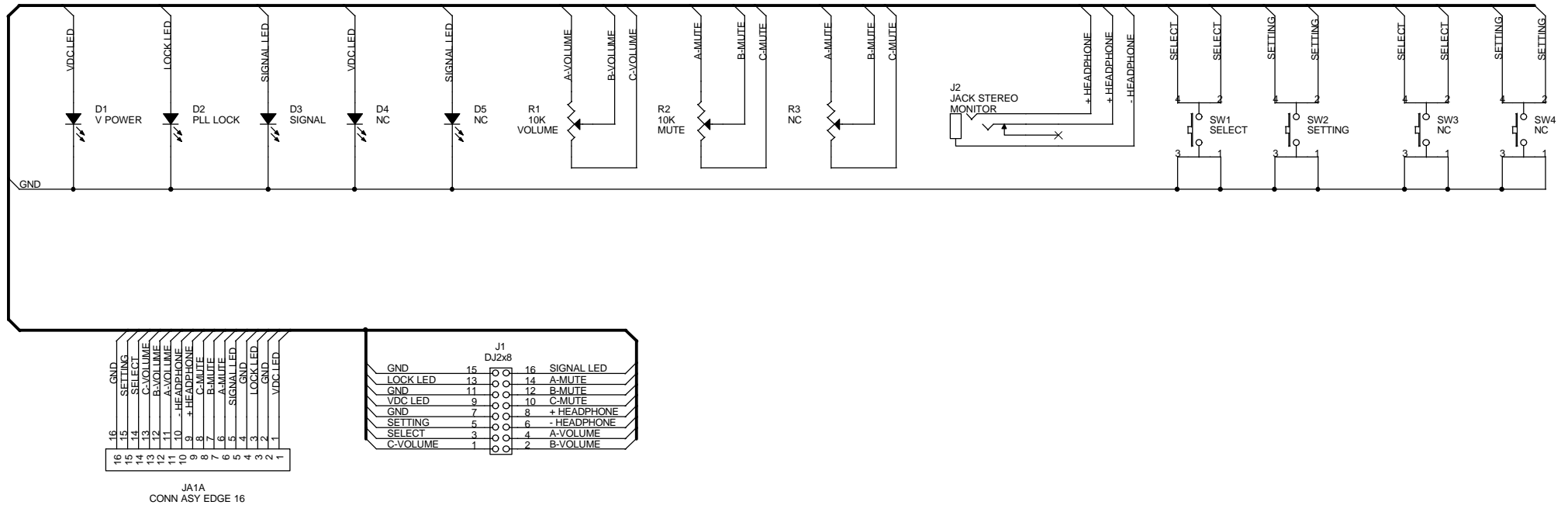
Rif.	Value	Remarks	Description	Code
R152	10K	1/4W	SMD Thick Film Resistor	
R153	10K	1/4W	SMD Thick Film Resistor	
R154	10K	1/4W	SMD Thick Film Resistor	
R155	10K	1/4W	SMD Thick Film Resistor	
R156	10K	1/4W	SMD Thick Film Resistor	
R157	1K	1/4W	SMD Thick Film Resistor	
R158	10K	1/4W	SMD Thick Film Resistor	
R159	10K	1/4W	SMD Thick Film Resistor	
R160	10K	1/4W	SMD Thick Film Resistor	
R161	10K	1/4W	SMD Thick Film Resistor	
R162	NC			
R163	NC			
R164	NC			
R165	10K	1/4W	SMD Thick Film Resistor	
R166	1K5	1/4W	SMD Thick Film Resistor	
R167	10K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R168	1K2	1/4W	SMD Thick Film Resistor	
R169	6K8	1/4W	SMD Thick Film Resistor	
R170	6K8	1/4W	SMD Thick Film Resistor	
R171	6K8	1/4W	SMD Thick Film Resistor	
R172	6K8	1/4W	SMD Thick Film Resistor	
R173	6K8	1/4W	SMD Thick Film Resistor	
R174	6K8	1/4W	SMD Thick Film Resistor	
R175	6K8	1/4W	SMD Thick Film Resistor	
R176	56K	1/4W	SMD Thick Film Resistor	
R177	100	1/4W	SMD Thick Film Resistor	
R178	10K	1/4W	SMD Thick Film Resistor	
R179	18K	1/4W	SMD Thick Film Resistor	
R180	330	1/4W	SMD Thick Film Resistor	
R181	4K7	1/4W	SMD Thick Film Resistor	
R182	1K8	1/4W	SMD Thick Film Resistor	
R183	180	1/4W	SMD Thick Film Resistor	
R184	220	1/4W	SMD Thick Film Resistor	
R185	100	1/4W	SMD Thick Film Resistor	
R186	560	1/4W	SMD Thick Film Resistor	
R187	NC	1/4W	SMD Thick Film Resistor	
R188	3K9	1/4W	SMD Thick Film Resistor	
R189	220	1/4W	SMD Thick Film Resistor	
R190	100	1/4W	SMD Thick Film Resistor	
R191	100	1/4W	SMD Thick Film Resistor	
R192	47K	1/4W	SMD Thick Film Resistor	
R193	47K	1/4W	SMD Thick Film Resistor	
R194	47K	1/4W	SMD Thick Film Resistor	
R195	3K9	1/4W	SMD Thick Film Resistor	
R196	47K	1/4W	SMD Thick Film Resistor	
R197	47K	1/4W	SMD Thick Film Resistor	
R198	470	1/4W	SMD Thick Film Resistor	
R199	47K	1/4W	SMD Thick Film Resistor	
R200	470	1/4W	SMD Thick Film Resistor	
R201	100K	1/4W	SMD Thick Film Resistor	
R202	560	1/4W	SMD Thick Film Resistor	
R203	470K	1/4W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R204	1K	1/4W	SMD Thick Film Resistor	
R205	120	1/4W	SMD Thick Film Resistor	
R206	220	1/4W	SMD Thick Film Resistor	
R207	220	1/4W	SMD Thick Film Resistor	
R208	18K	1/4W	SMD Thick Film Resistor	
R209	22K	1/4W	SMD Thick Film Resistor	
R210	82	1/4W	SMD Thick Film Resistor	
R211	56	1/4W	SMD Thick Film Resistor	
R212	680	1/4W	SMD Thick Film Resistor	
R213	15K	1/4W	SMD Thick Film Resistor	
R214	4K7	1/4W	SMD Thick Film Resistor	
R215	220	1/4W	SMD Thick Film Resistor	
R216	3K9	1/4W	SMD Thick Film Resistor	
R217	10	1/4W	SMD Thick Film Resistor	
R218	220	1/4W	SMD Thick Film Resistor	
R219	220	1/4W	SMD Thick Film Resistor	
R220	220	1/4W	SMD Thick Film Resistor	
R221	47K	1/4W	SMD Thick Film Resistor	
R222	47K	1/4W	SMD Thick Film Resistor	
R223	6K8	1/4W	SMD Thick Film Resistor	
R224	330	1/4W	SMD Thick Film Resistor	
R225	200K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R226	200K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R227	12K	1/4W	SMD Thick Film Resistor	
R228	12K	1/4W	SMD Thick Film Resistor	
R229	12K	1/4W	SMD Thick Film Resistor	
R230	47	1/4W	SMD Thick Film Resistor	
R231	1K	1/4W	SMD Thick Film Resistor	
R232	1K	1/4W	SMD Thick Film Resistor	
R233	NC	1/4W	SMD Thick Film Resistor	
R234	330	1/4W	SMD Thick Film Resistor	
R235	390	1/4W	SMD Thick Film Resistor	
R236	330	1/4W	SMD Thick Film Resistor	
R237	100K	1/4W	SMD Thick Film Resistor	
R238	220	1/4W	SMD Thick Film Resistor	
R239	330	1/4W	SMD Thick Film Resistor	
R240	330	1/4W	SMD Thick Film Resistor	
R241	330	1/4W	SMD Thick Film Resistor	
R242	47	1/4W	SMD Thick Film Resistor	
R243	100K	1/4W	SMD Thick Film Resistor	
R244	330	1/4W	SMD Thick Film Resistor	
R245	27K	1/4W	SMD Thick Film Resistor	
R246	270	1/4W	SMD Thick Film Resistor	
R247	10K	1/4W	SMD Thick Film Resistor	
R248	100	1/4W	SMD Thick Film Resistor	
R249	27K	1/4W	SMD Thick Film Resistor	
R250	27K	1/4W	SMD Thick Film Resistor	
R251	27K	1/4W	SMD Thick Film Resistor	
R252	12K	1/4W	SMD Thick Film Resistor	
R253	180	1/4W	SMD Thick Film Resistor	
R254	180	1/4W	SMD Thick Film Resistor	
R255	6K8	1/4W	SMD Thick Film Resistor	

Rif.	Value	Remarks	Description	Code
R256	12K	1/4W	SMD Thick Film Resistor	
R257	10K	1/4W	SMD Thick Film Resistor	
R258	4K7	1/4W	SMD Thick Film Resistor	
R259	1K	1/4W	SMD Thick Film Resistor	
R260	10K	1/4W	SMD Thick Film Resistor	
R261	2K2	1/4W	SMD Thick Film Resistor	
R262	220K	1/4W	SMD Thick Film Resistor	
R263	2K	1/4W	SMD Cermet Skeleton Trimmer Resistor	
R264	200	1/4W	SMD Cermet Skeleton Trimmer Resistor	
D1	LM335		Special Function Integrated Circuit	
D2	LL4148		SMD Low Power Signal Diode	
D3	MMBS340T3		SMD Switching High Speed Diode	
D4	-15V		SMD Light Emitting Diode	
D5	+15V		SMD Light Emitting Diode	
D6	+9V		SMD Light Emitting Diode	
D7	+5V		SMD Light Emitting Diode	
D9	LL4148		SMD Low Power Signal Diode	
D10	LED		SMD Light Emitting Diode	
D11	LL4148		SMD Low Power Signal Diode	
D12	5V1		SMD Diode Zener	
D13	6.2V		SMD Diode Zener	
D14	LL4148		SMD Low Power Signal Diode	
D15	12V		SMD Diode Zener	
D16	LL4148		SMD Low Power Signal Diode	
D17	5V1		SMD Diode Zener	
D18	LL4148		SMD Low Power Signal Diode	
D19	LL4148		SMD Low Power Signal Diode	
D20	LL4148		SMD Low Power Signal Diode	
Q1	BC807-25L		SMD Low Power Bipolar Transistor	
Q2	BC807-25L		SMD Low Power Bipolar Transistor	
Q3	BC807-25L		SMD Low Power Bipolar Transistor	
Q4	BFR93L		SMD RF Bipolar Transistor	
Q5	BFR93L		SMD RF Bipolar Transistor	
Q6	BFR93L		SMD RF Bipolar Transistor	
Q7	MMBFJ310		SMD JFET	
Q8	MMBFJ310		SMD JFET	
Q9	MMBFJ310		SMD JFET	
Q10	MMBFJ310		SMD JFET	
Q11	BFR93L		SMD RF Bipolar Transistor	
Q12	BC817-25L		SMD Low Power Bipolar Transistor	
Q13	BC807-25L		SMD Low Power Bipolar Transistor	
Q14	BC807-25L		SMD Low Power Bipolar Transistor	
Q15	BC817-25L		SMD Low Power Bipolar Transistor	
Q16	BC817-25L		SMD Low Power Bipolar Transistor	
U1	LF347		SMD FET Operational Amplifier	
U2	LF347		SMD FET Operational Amplifier	
U3	LF347		SMD FET Operational Amplifier	
U4	LF347		SMD FET Operational Amplifier	
U5	LM386		Special Function Integrated Circuit	

Rif.	Value	Remarks	Description	Code
U6	LM358		SMD Operational Amplifier	
U7	LT1374CR		Special Function Integrated Circuit	
U8	78M09		Fixed Voltage Regulator	
U9	78M05		Fixed Voltage Regulator	
U10	ADC0834CCWM		Special Function Integrated Circuit	
U11	MAX810L		Special Function Integrated Circuit	
U12	HIN232ACBN		Special Function Integrated Circuit	
U13	T89C51RD2		Special Function Integrated Circuit	
U14	LM358		SMD Operational Amplifier	
U15	LMX1501		Special Function Integrated Circuit	
U16	TDA1599T		Special Function Integrated Circuit	
U17	SA614AD		Special Function Integrated Circuit	
U18	LM358		SMD Operational Amplifier	
Y1	11.0592MHz		SMD Quartz Crystal	
Y2	59.300MHz		SMD Quartz Crystal	
TCXO1	MHz 12.800		SMD Crystal Oscillator Module	
RL1	VGH B 001 12		Relay	
TR1	10.7 MHz		RF Transformer	
TR2	10.7 MHz		RF Transformer	
TR3	10.7 MHz		RF Transformer	
TR4	10.7 MHz		RF Transformer	
LCD1	DISPLAY V20350		Male PCB Mounting Header	
M1	BSL-1X		RF Mixer	
P1	DB9		Male Connector DB9	
FL1	70 MHz FILTER		RF Filter	
FC1	FILTER 10.7MHz		Ceramic Filter	
FC2	FILTER 10.7MHz		Ceramic Filter	
FC3	FILTER 10.7MHz		Ceramic Filter	
FC4	FILTER 10.7MHz		Ceramic Filter	
FC5	FILTER 10.7MHz		Ceramic Filter	
FC6	FILTER 10.7MHz		Ceramic Filter	
J1	MPX		BNC Panel Connector - 50 Ohm	
J2	OUT 10.7 MHz		SMB PCB Jack - 50 Ohm	
J3	MONO		Audio Connector - XLR Style Palastic	
J4	INPUT 70 MHz		SMB PCB Jack - 50 Ohm	
J5	DC 15V			
J6	SCA1		BNC Panel Connector - 50 Ohm	
J7	SCA2		BNC Panel Connector - 50 Ohm	
J8	VCO V		SMB PCB Jack - 50 Ohm	
J9	RF INPUT		SMB PCB Jack - 50 Ohm	
J10	RS-232		PCB Pin Strip Header	
J11	FP		PCB Pin Strip Header	

RAG1-B FRONT PANEL BOARD ELECTRICAL SCHEMATIC



TSL910 POWER SUPPLY



75W Single Output Switching Power Supply

LRS-75 series



■ Features

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 second
- No load power consumption<0.3W
- Miniature size and 1U low profile
- High operating temperature up to 70°C
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Compliance to IEC/EN 60335-1(PD3) and IEC/EN61558-1, -2-16 for household appliances
- Operating altitude up to 5000 meters (Note.7)
- Withstand 5G vibration test
- High efficiency, long life and high reliability
- LED indicator for power on
- Over voltage category III
- 100% full load burn-in test
- 3 years warranty

■ Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances

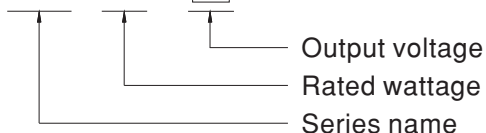
■ Description

LRS-75 series is a 75W single-output enclosed type power supply with 30mm of low profile design. Adopting the full range 85~264VAC input, the entire series provides an output voltage line of 5V, 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 91.5%, the design of metallic mesh case enhances the heat dissipation of LRS-75 that the whole series operates from -30°C through 70°C under air convection without a fan. Delivering an extremely low no load power consumption (less than 0.3W), it allows the end system to easily meet the worldwide energy requirement. LRS-75 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as TUV EN60950-1, EN60335-1, EN61558-1/-2-16, UL60950-1 and GB4943. LRS-75 series serves as a high price-to-performance power supply solution for various industrial applications.

■ Model Encoding

LRS - 75 - 5



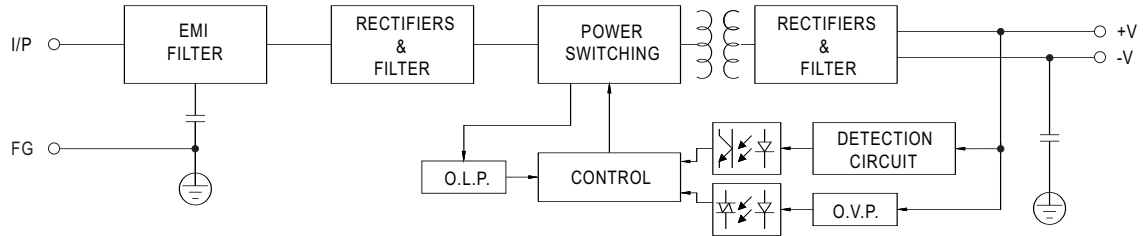


SPECIFICATION

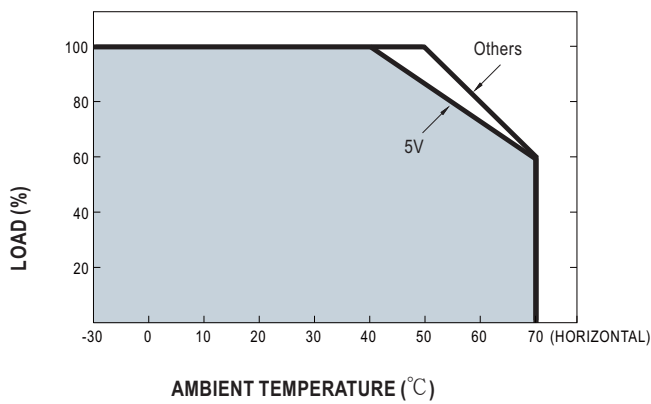
MODEL		LRS-75-5	LRS-75-12	LRS-75-15	LRS-75-24	LRS-75-36	LRS-75-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	14A	6A	5A	3.2A	2.1A	1.6A
	CURRENT RANGE	0 ~ 14A	0 ~ 6A	0 ~ 5A	0 ~ 3.2A	0 ~ 2.1A	0 ~ 1.6A
	RATED POWER	70W	72W	75W	76.8W	75.6W	76.8W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	120mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	32.4 ~ 39.6V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 30ms/230VAC 500ms,30ms/115VAC at full load					
HOLD UP TIME (Typ.)	60ms/230VAC 12ms/115VAC at full load						
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 373VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	86.5%	89%	89%	90%	91.5%	91.5%
	AC CURRENT (Typ.)	1.4A/115VAC 0.85A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 65A/230VAC					
	LEAKAGE CURRENT	<0.75mA / 240VAC					
PROTECTION	OVER LOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	18.75 ~ 21.75V	28.8 ~ 33.6V	41.4 ~ 48.6V	55.2 ~ 64.8V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes					
	OVER VOLTAGE CATEGORY	III; Compliance to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters					
SAFETY & EMC (Note 8)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, EN60335-1, EN61558-1/-2-16, CCC GB4943.1, BSMI CNS14336-1, EAC TP TC 004, AS/NZS 60950.1(by CB) approved					
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25°C / 70% RH					
	EMC EMISSION	Compliance to EN55032 (CISPR32) Class B, EN55014, EN61000-3-2,-3, GB/T 9254, BSMI CNS13438, EAC TP TC 020					
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), heavy industry level, criteria A, EAC TP TC 020					
	MTBF	681.2K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	99*97*30mm (L*W*H)					
	PACKING	0.25Kg ; 45pcs/ 12.25Kg/ 0.77CUFT					
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Line regulation is measured from low line to high line at rated load.</p> <p>5. Load regulation is measured from 0% to 100% rated load.</p> <p>6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.</p> <p>7. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft).</p> <p>8. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com)</p>						

■ Block Diagram

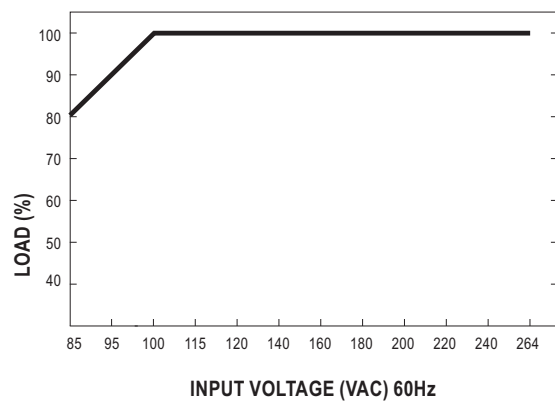
fosc : 65KHz



■ Derating Curve

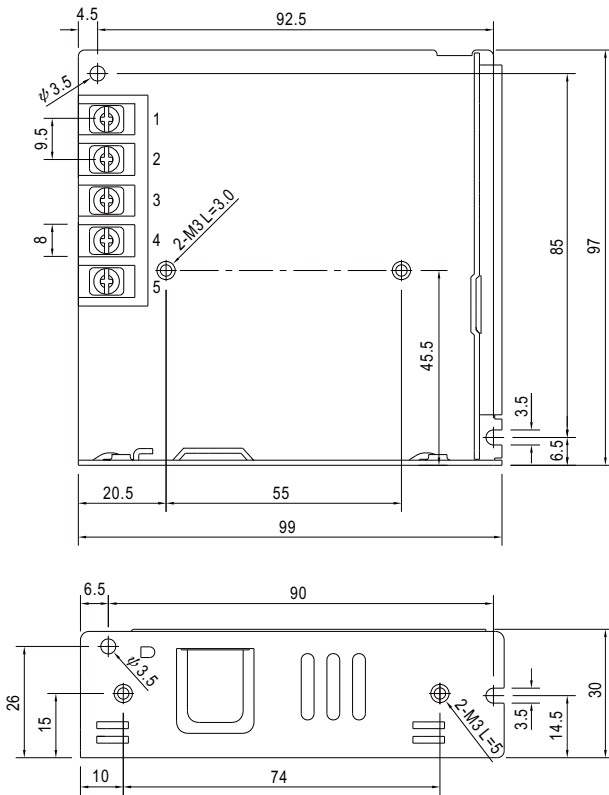


■ Static Characteristics



■ Mechanical Specification

Case No.240A Unit:mm



Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG \perp		

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>

RSL 900B POWER SUPPLY



35W Single Output Switching Power Supply

LRS-35 series



■ Features

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 second
- No load power consumption < 0.2W
- Miniature size and 1U low profile
- High operating temperature up to 70°C
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Compliance to IEC/EN 60335-1(PD3) and IEC/EN61558-1, -2-16 for household appliances
- Operating altitude up to 5000 meters (Note.8)
- Withstand 5G vibration test
- High efficiency, long life and high reliability
- LED indicator for power on
- Over voltage category III
- 100% full load burn-in test
- 3 years warranty

■ Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances

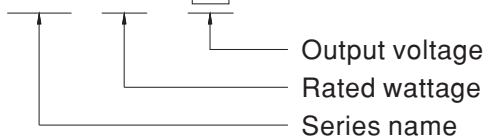
■ Description

LRS-35 series is a 35W single-output enclosed type power supply with 30mm of low profile design. Adopting the full range 85~264VAC input, the entire series provides an output voltage line of 5V, 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 89%, the design of metallic mesh case enhances the heat dissipation of LRS-35 that the whole series operates from -30°C through 70°C under air convection without a fan. Delivering an extremely low no load power consumption (less than 0.2W), it allows the end system to easily meet the worldwide energy requirement. LRS-35 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as TUV EN60950-1, EN60335-1, EN61558-1/-2-16, UL60950-1 and GB4943. LRS-35 series serves as a high price-to-performance power supply solution for various industrial applications.

■ Model Encoding

LRS - 35 - 5

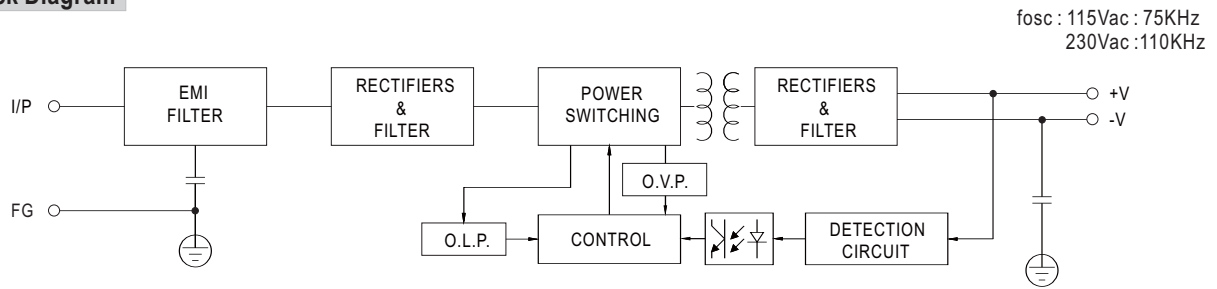




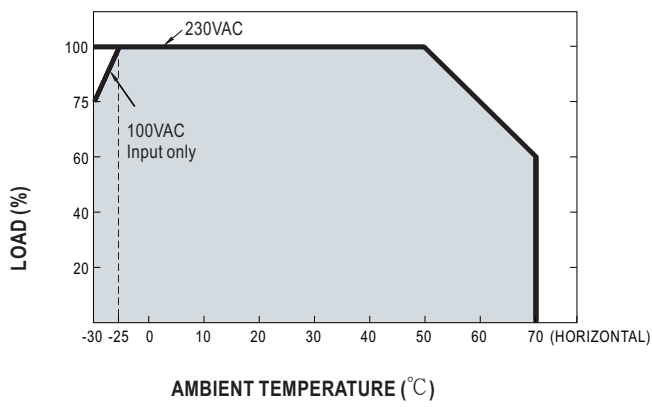
SPECIFICATION

MODEL		LRS-35-5	LRS-35-12	LRS-35-15	LRS-35-24	LRS-35-36	LRS-35-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	7A	3A	2.4A	1.5A	1A	0.8A
	CURRENT RANGE	0 ~ 7A	0 ~ 3A	0 ~ 2.4A	0 ~ 1.5A	0 ~ 1A	0 ~ 0.8A
	RATED POWER	35W	36W	36W	36W	36W	38.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	32.4 ~ 39.6V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 30ms/230VAC 2000ms,30ms/115VAC at full load					
HOLD UP TIME (Typ.)	30ms/230VAC 12ms/115VAC at full load						
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 373VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	82%	86%	86%	88%	88%	89%
	AC CURRENT (Typ.)	0.7A/115VAC 0.42A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 45A/230VAC					
	LEAKAGE CURRENT	<0.75mA / 240VAC					
PROTECTION	OVER LOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.9V	13.8 ~ 16.2V	18.75 ~ 21.75V	28.8 ~ 33.6V	41.4 ~ 48.6V	55.2 ~ 64.8V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes					
	OVER VOLTAGE CATEGORY	III; According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters					
SAFETY & EMC (Note 9)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, EN60335-1, EN61558-1/-2-16, CCC GB4943.1, BSMI CNS14336-1, EAC TP TC 004, AS/NZS 60950.1(by CB) approved					
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH					
	EMC EMISSION	Compliance to EN55032 (CISPR32) Class B, EN55014, EN61000-3-2,-3, GB/T 9254, BSMI CNS13438, EAC TP TC 020					
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), heavy industry level, criteria A, EAC TP TC 020					
	MTBF	763.6K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	99*82*30mm (L*W*H)					
	PACKING	0.23Kg ; 60pcs/14.8Kg/0.88CUFT					
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Line regulation is measured from low line to high line at rated load.</p> <p>5. Load regulation is measured from 0% to 100% rated load.</p> <p>6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.</p> <p>7. 5V when the load factor 0~50%, the switching power less is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.</p> <p>8. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft).</p> <p>9. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com)</p>						

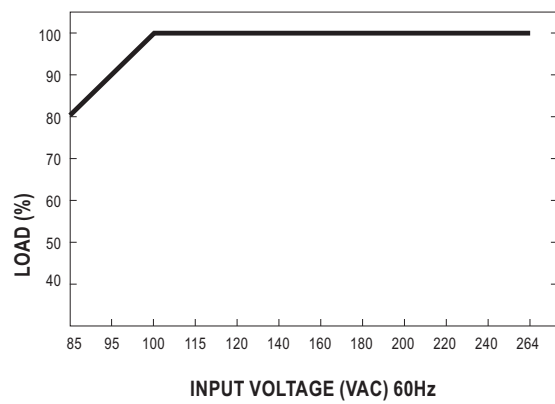
■ Block Diagram



■ Derating Curve

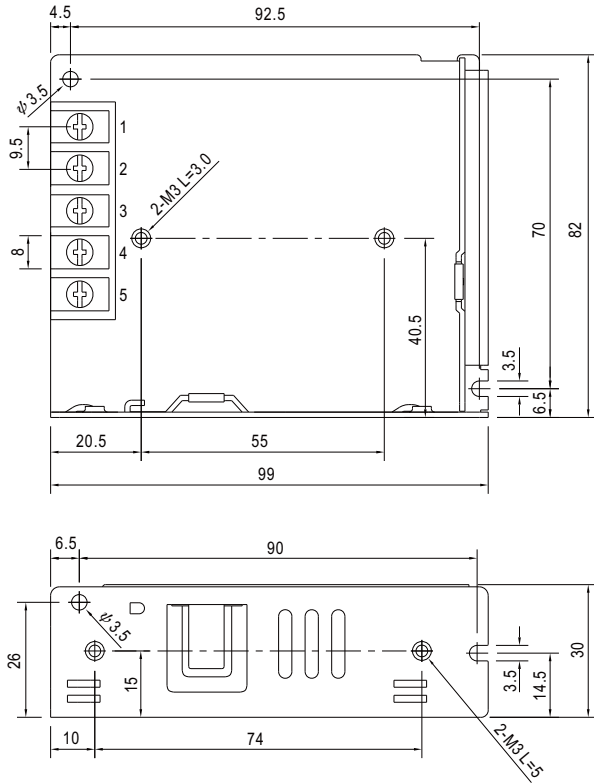


■ Static Characteristics



■ Mechanical Specification

Case No.239A Unit:mm



Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG \perp		

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>



CONDITIONS OF SALE AND WARRANTY

1. Any goods (at your request) not collected/dispatched, shall be stored at your expense and risk. Such goods may be sold or disposed of 30 days after the invoice date to cover the price and cost incurred thereby.
2. Delivery/ completion shall be affected by agreement or any reasonable extension thereof, and no claim(s) shall lie against NicomUSA, Inc. for any reason save for negligence by NicomUSA, Inc.
3. Each and every Installment delivery shall be considered as a separate contract and shall be subject to full payment prior to any further delivery(ies)
4. Delivery shall be FOB San Diego, California. Shipment to chosen address plus insurance shall be at consignee's expense
5. Any price increases affecting the quoted price prior to delivery shall be increased accordingly.
6. All quoted prices at NicomUSA's Inc. sole discretion are subject to change/variation by virtue of any condition beyond their control. The price shall not include packing costs for shipping purposes or any taxes, duties, or transportation costs
7. Any damage to the goods must be reported to the carrier in writing on the shipping receipt. Any discrepancy/damage discovered subsequent to delivery shall be reported to NicomUSA, Inc. within 5 business days of its receipt.
8. NicomUSA, Inc. extends to the original end user purchaser all original manufacturers warranties which are non-transferable and all manufacturers' warranties will be supported by NicomUSA, Inc. to ensure precise and speedy service when possible.
9. NicomUSA, Inc. shall not be liable for damages of whatsoever nature arising out of connection with the product or its use thereof.
10. NICOMUSA's WARRANTY DOES NOT INCLUDE THE FOLLOWING
 - a) Any unauthorized repairs/modifications
 - b) Repair of unit whose seal has been broken without Nicom's authorization
 - c) Incidental/consequential damages as a result of any defect
 - d) Nominal non-incidentals defects
 - e) Free replacement of semiconductors (transistors, mosfets) and vacuum tubes, which are not covered under any warranty, as well as labor charges to replace them.
 - f) Replacement of power supply and fans after the first year
 - g) Shipment costs including Insurance of the unit or replacement unit/parts from customer to NicomUSA and vice-versa
11. Warranty shall commence as of the Invoice/shipment date and for the period of 3 years. Any and all warranty work will take place at NicomUSA's facility
12. To claim your rights under this warranty:
 - A. Contact the dealer or distributor if unit was purchased through them and if your dealer is not able to assist you then contact Nicom directly or through our website to fill out a return authorization form to obtain a return authorization number.
 - B. When you receive the return authorization number, you can return the unit. Pack the unit(s) carefully for shipment and assume carton will be dropped several times during transportation. If equipment is received inadequately packed, there will be a charge for re-packing for re-shipment, The risk of loss is assumed by you (NicomUSA, Inc. is not responsible for damage or loss) until the package is received at NicomUSA Inc. 1690 Cactus Rd. San Diego CA 92154

DO NOT RETURN ANY UNITS WITHOUT A RETURN AUTHORIZATION NUMBER, AS IT WILL NOT BE ACCEPTED

 - C. Please note in warranty returns where no fault is found with the unit, there will be a \$150 minimum labor charge plus return freight. Any unit(s) submitted for repair and not be paid for 30 days after submission will become the property of NicomUSA, Inc.
13. Terms shown on the front of invoice are from date of invoice and not contingent upon delivery. In the event buyer fails to fulfill the terms of payment hereunder, buyer promises to pay all costs and expenses of collection and reasonable attorney's fees incurred by NicomUSA, Inc. on account of collection, whether or not suit is filed thereon. NicomUSA, Inc. Reserves the right to charge interest on all bills not paid at maturity.
14. AS a condition of purchase conducting business with NicomUSA, Inc., the parties agree that should any dispute arise under such transaction for any reason, that venue and jurisdiction, therefore, shall be San Diego Superior Court, Central Court District or Municipal Court of the County of San Diego, San Diego Judicial District.
15. Interest shall accrue at the rate of 2% per month on all balances incurred for whatever reason remaining unpaid thirty (30) days from the date of invoice.
16. If a buyer has consigned goods to NicomUSA, Inc. for repair within or outside of a warranty product, buyer may lease/rent replacement good AS IS from NicomUSA, Inc... If available. Buyer agrees that any and all of its goods in possession of NicomUSA, Inc. for whatever purpose, shall constitute retained security for the timely return of said rental goods as well as timely payment for repair services performed by NicomUSA, Inc. who at its option, may require a deposit paid for any rental goods leased to buyer. Said deposit may be used by NicomUSA, Inc. as satisfaction of any amounts owed to it by buyer in the event of buyer's failure to make any payment required in a timely fashion