

REVEL CONCERTA B10

500-Watt 10” Powered Subwoofer



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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, or the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
15. Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. The mains plug of the power supply cord shall remain readily operable.
18. Do not expose batteries to excessive heat such as sunshine, fire or the like.



CAUTION

RISK OF ELECTRIC SHOCK. DO NOT OPEN.



THE LIGHTNING FLASH WITH AN ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE PRODUCT.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

For Products That Transmit and Receive RF Energy:

FCC Regulations (USA Only) FCC Information For Users

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference;
and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radio and Television Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and then on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver.
- Connect the equipment to a different outlet so that the equipment and receiver are on different branch circuits.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: Changes or modifications not expressly approved by Harman could void the user's authority to operate the equipment.

IC Statement and Warning (Canada Only)

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

For Canadian Model

This Class B digital apparatus complies with Canadian ICES-003.

Modèle pour les Canadien

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

For Products with Radio Receivers That Can Use an External Antenna:

CATV or Antenna Grounding

If an outside antenna or cable system is connected to this product, be certain that it is grounded so as to provide some protection against voltage surges and static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements of the grounding electrode.

Note to CATV System Installer:

This reminder is provided to call the CATV (cable TV) system installer's attention to article 820-40 of the NEC, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible.

For CD/DVD/Blu-ray Disc™ Players:

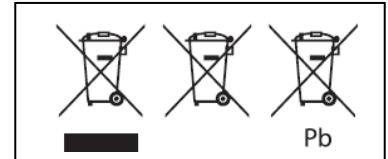
CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
LUOKAN 1 LASER LAITE
KLASS 1 LASER APPARAT
CLASSE 1 PRODUIT LASER

Caution:

This product uses a laser system. To prevent direct exposure to the laser beam, do not open the cabinet enclosure or defeat any of the safety mechanisms provided for your protection.

DO NOT STARE INTO THE LASER BEAM. To ensure proper use of this product, please read the owner's manual carefully and retain it for future use. Should the unit require maintenance or repair, please contact your local Harman Kardon service center. Refer servicing to qualified personnel only.

For Products That Include Batteries:



Instructions for Users on Removal and Disposal of Used Batteries.

CAUTION

Risk of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Alkaline batteries are considered nonhazardous. Rechargeable batteries (i.e., nickel cadmium, nickel metalhydride, lithium and lithium-ion) are considered hazardous household materials and may pose an unnecessary health and safety risk.

In the European Union and other locations, it is illegal to dispose of any battery with household trash. All batteries must be disposed of in an environmentally sound manner. Contact your local waste management officials for information regarding the environmentally sound collection, recycling and disposal of used batteries.

To remove the batteries from your equipment or remote control, reverse the procedure described for inserting batteries in the owner's manual.

For products with a built-in battery that lasts for the lifetime of the product, removal may not be possible for the user. In this case, recycling or recovery centers handle the dismantling of the product and the removal of the battery. If, for any reason, it becomes necessary to replace such a battery, this procedure must be performed by authorized service centers.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES.

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.



1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical change sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.

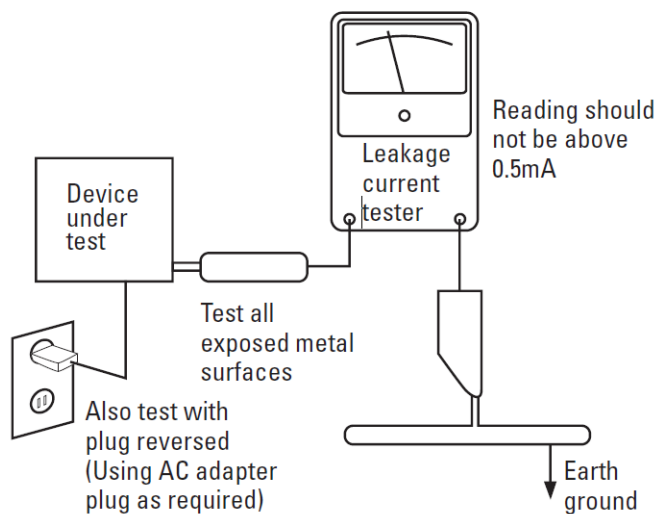
Components identified with the IEC symbol  in the parts list are of special significance to safety. When replacing a component identified with,  use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

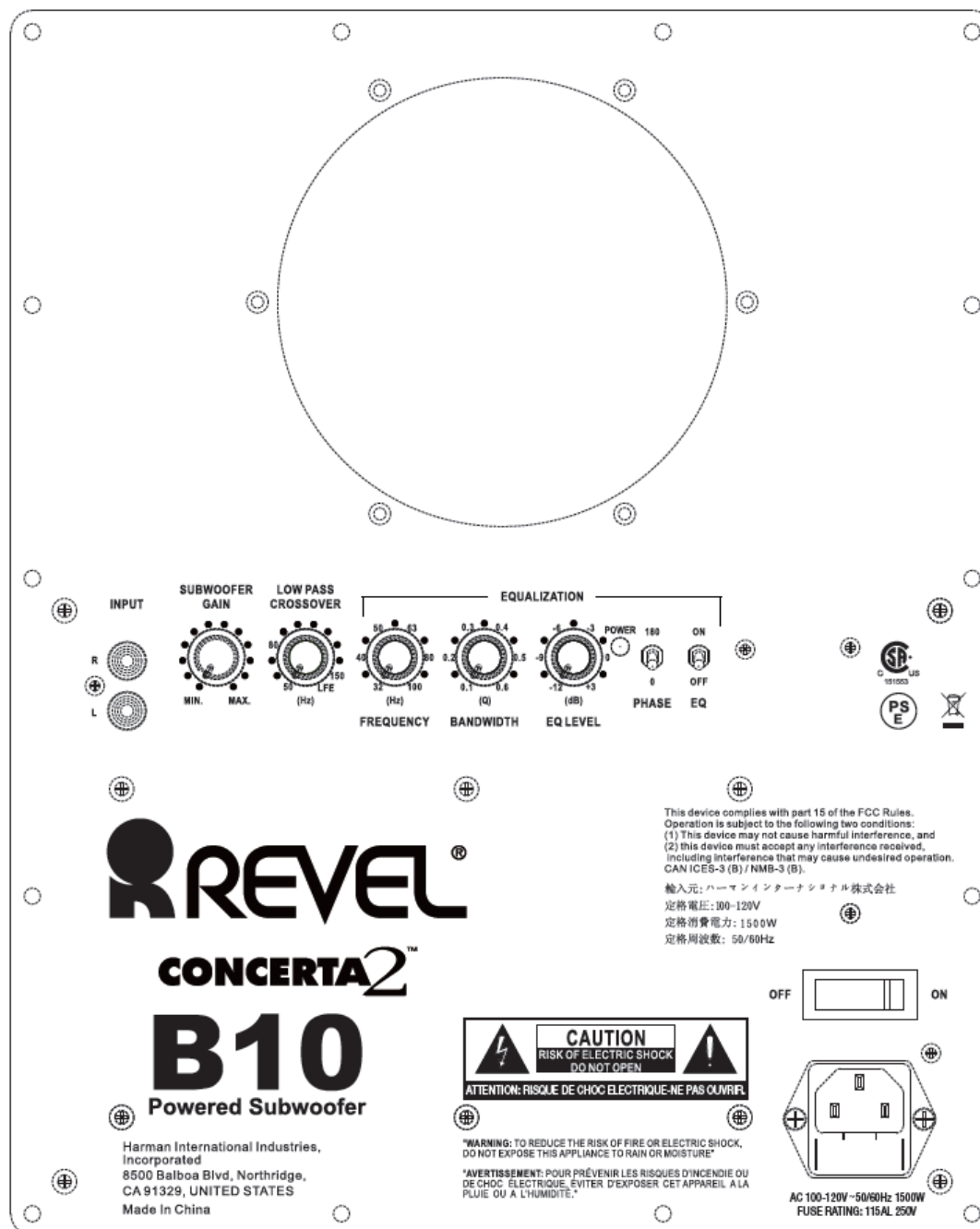
LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester between the earth ground and all exposed metal parts of the appliance (input/output terminals, screw heads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.



SUBWOOFER OPERATION

The rear panel of the Concerta2 B10 subwoofer, shown in Figure 14, contains all of the available connectors and controls. The Input section of the rear panel was discussed in the “Making Connections” section, earlier in this manual. The subwoofer controls are discussed in this section.

Power Indicator LED

The Power Indicator LED identifies the current state of the B10 subwoofer. The subwoofer has three different powered states:

Red: Standby – the B10 automatically enters Standby if no signal is detected from the system for 10 minutes.

Green: On – as soon as a signal is detected, the B10 powers on.

No Light: Off - the main power switch is in the off position or unit is unplugged.

SUBWOOFER PLACEMENT

Below 300Hz, loudspeaker and listener locations have a profound impact on the way sound is reproduced. All rooms have “standing waves,” by which certain frequencies are emphasized or diminished. Their complex patterns can combine to introduce tremendous sound coloration at low frequencies.

The Concerta2 B10's Equalization controls can help to compensate for these effects, but no electronic system alone can fully compensate for the dramatic effects of room acoustics. Every room has locations where “nulls” at specific frequencies occur. These cancellations of the sound are like “black holes,” which no amount of equalization can fill. The best results are always achieved through careful placement of both the loudspeakers and the listening position. Preferable placement can be determined through the use of computer modeling programs, or by trial-and-error measurements. For optimal results, find the best loudspeaker and listener locations first, then use the B10 Equalization controls for fine-tune adjustments.

To help determine good locations for the subwoofer(s) and the listener(s), it is recommended that you make high-resolution in-room response measurements. Your authorized Revel dealer can make the appropriate measurements, using suitable equipment to ensure optimal results.

Note: Many sound-measurement devices are not accurate enough to properly measure low-frequency performance in a listening room, since room boundaries can often cause modes (standing waves) with very narrow-band peaks and dips. Check with your authorized Revel dealer to confirm that your measurement equipment is suitable for accurate, high-resolution measurements.

SUBWOOFER PLACEMENT CONSIDERATIONS

When using subwoofers within the limited confines of a typical home theater room, the reflections, standing waves and absorptions generated within the room will create peaks and dips in the bass response that can vary greatly depending on where the listeners are located in the room – a listener seated in one location may hear an overabundance of bass created by a response peak at that location, while another listener only a few feet away may hear a considerable lack of bass created by a response dip at that location.

The subwoofers' locations within the room (along with the room's dimensions) also have a profound effect on the creation of these bass response peaks and dips. Careful subwoofer placement alone cannot compensate for all bass response peaks and dips throughout a room, but careful subwoofer placement can eliminate or significantly reduce the largest response dips.

It is important to reduce response dips throughout the room as much as possible via proper subwoofer placement because equalization cannot be used to compensate for large response dips. For example, using equalization in an attempt to restore a 13dB response dip requires that the subwoofer amplifier delivers twenty times the power at that frequency. This can quickly overdrive the subwoofer amplifier into clipping, which will significantly degrade audio quality.

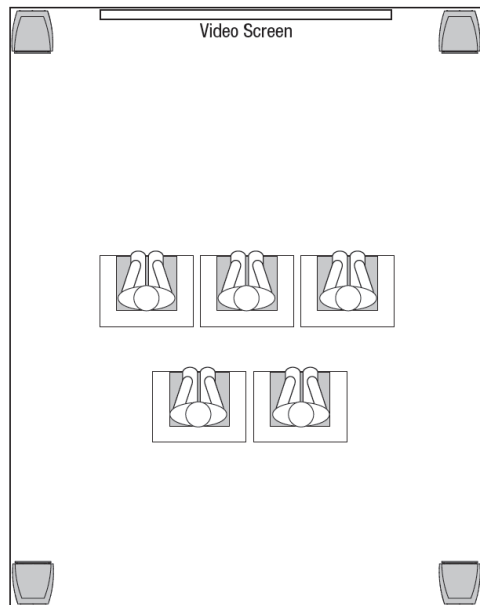
In almost any room, placing the subwoofers in corners will produce the fewest large bass response dips and will also produce the most large bass response peaks.

We strongly recommend that you install multiple subwoofers regardless of the room's size. Installing a single subwoofer will result in the least consistent bass performance throughout the room. Using multiple subwoofers can cancel some room modes at the various listening locations, resulting in much more consistent low frequency sound quality throughout the listening area. Additionally, it is often impossible to locate a single subwoofer such that large response dips, which cannot usually be corrected via equalization, are not present.

The use of two or more properly placed subwoofers can almost always eliminate such dips in response.

PLACING FOUR SUBWOOFERS

When installing four subwoofers, place each one in a room corner. In rooms with more than four corners, use the four corners closest to the listening area.

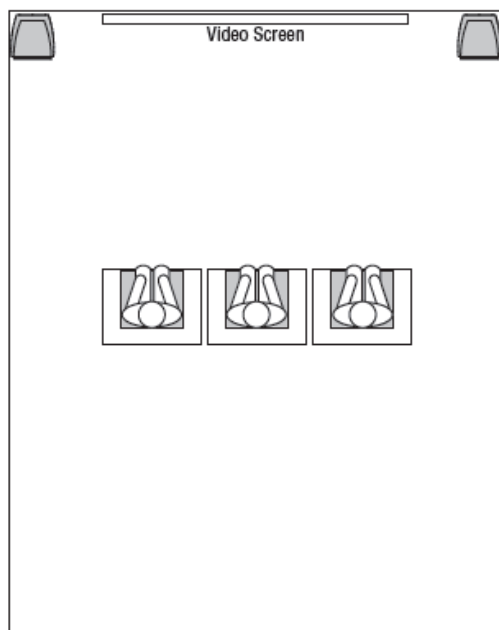


PLACING TWO SUBWOOFERS

Placement of two subwoofers will be determined by your room's seating arrangement.

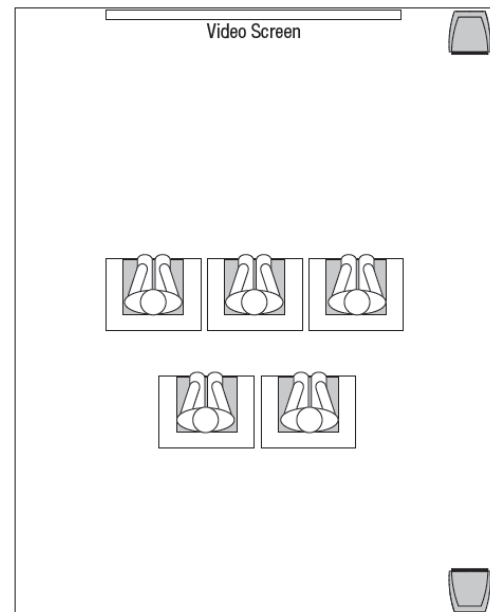
ROOMS WITH A SINGLE ROW OF SEATING

Placing the subwoofers in the two front corners will produce the most consistent bass performance throughout a single row of seating.



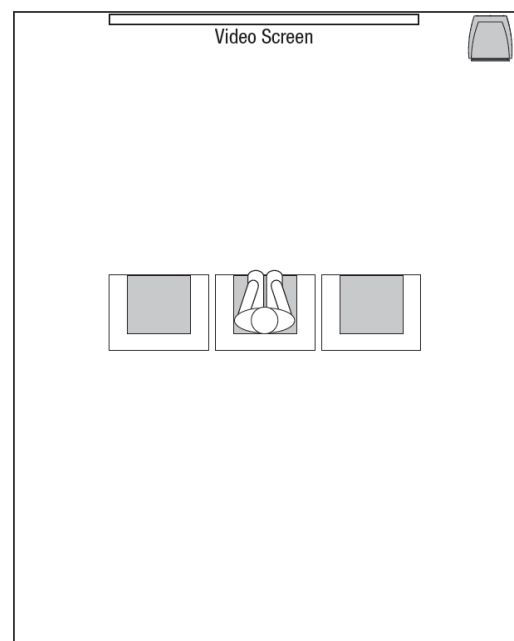
ROOMS WITH MULTIPLE SEATING ROWS

Placing one subwoofer in a front corner and the other subwoofer in the rear corner on the same side will produce the most consistent bass performance throughout multiple seating rows.



PLACING A SINGLE SUBWOOFER

When installing a single subwoofer, be prepared to experiment with different locations to find the one that produces the best results throughout your room's seating area. As in the previous examples, placing the subwoofer in a corner will produce the fewest number of deep response dips, which cannot be corrected with equalization.



Since listening and speaker locations are equally important, the trial-and-error process can be time-consuming. However, the sonic rewards are well worth the time spent determining the ideal placement locations. Remember that peaks (below the subwoofer crossover frequency) can be minimized or eliminated by the proper adjustment of the Concerta2 B10's Equalization controls, but dips cannot be corrected via equalization. Therefore, the most important objective is to find locations that result in the minimum number (and severity) of dips. Contact your authorized Revel dealer for assistance in determining the proper placement of your Revel loudspeakers and subwoofers.

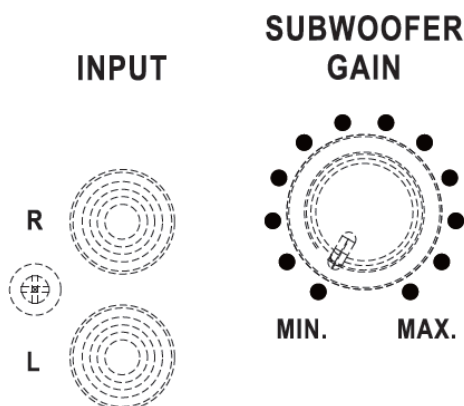
After placing the B10 subwoofer(s), begin playback of a familiar music or film source that has substantial bass content. Listen from the primary listening position, increasing the overall volume of the system to a comfortable level. Adjust the Subwoofer Level (volume) control until you obtain the desired blend of bass. Also, test the subwoofer level by playing a recording of a deep male voice. Setting the subwoofer level (or crossover frequency) too high results in unnaturally "thick" or "boomy" vocal reproduction. Bass response should not overpower the room, and should be adjusted to achieve a harmonious blend across the entire audible range.

If you are using a multichannel receiver or processor with a subwoofer output, it's preferable to use the Subwoofer Level adjustment on the processor. Set the B10 Level control to the indicated "LFE" position.

Note: Setting the level of the subwoofer in relation to the left and right front speakers is of critical importance because it is essential that the subwoofer integrate smoothly with the entire system. Setting the level too high results in an overpowering bass response. Setting the level too low negates the benefits of the B10 subwoofer.

MAKING CONNECTIONS

CAUTION: Never make or break connections unless all system components are powered off.

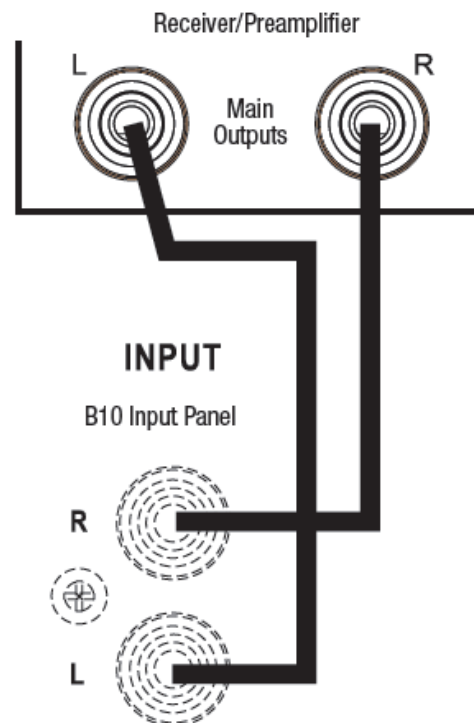


The B10 subwoofer input connectors are located on the rear panel.

Some processors incorrectly label the subwoofer output as LFE; others offer both an LFE and a Subwoofer output. If there is no labeled subwoofer output, use the LFE output. If the output has labeled connections for both LFE and Subwoofer, use the Subwoofer output.

The L (Left) and R (Right) connectors on the rear panel of the B10 can be used with 2-channel applications, where there is no dedicated subwoofer output available. These inputs can be crossed-over by the adjustable Low-Pass Crossover control on the rear panel. Having the low-pass filter enabled helps offset the fact that most 2-channel systems do not perform any high-pass filtering on the main speakers, minimizing the advantages of using a subwoofer.

2-CHANNEL APPLICATIONS – CONNECTING TO THE MAIN OUTPUTS

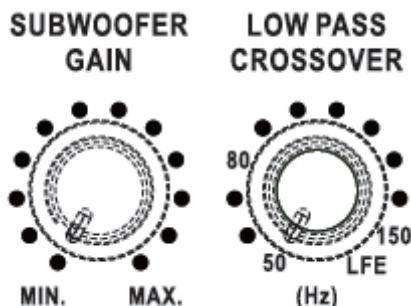


CONNECTION TO MAIN OUTPUTS

1. Connect an RCA patch cable between the left main output on the receiver/preamplifier INPUT connector on the B10 rear panel, as shown above.
2. Connect an RCA patch cable between the right main output on the receiver/preamplifier INPUT connector on the B10 rear panel.

Note: This configuration applies to receivers with preamplifier outputs or to preamplifier/power amplifier configurations in which there are two sets of Main outputs. If the receiver has jumpers from the Pre- or Main-Out to the Amp in connectors or if the preamplifier has only one set of Main-Out connectors, a Y-adaptor should be used to send the same signal to both the main power amplifier and the subwoofer(s). Tape Out or Record Out connectors cannot be used.

LOW-PASS FREQUENCY CONTROL



Adjusts the variable 50Hz – 150Hz low-pass crossover, which determines the highest frequency at which the B10 reproduces sounds. Set the crossover to a lower frequency setting, between 50Hz and 100Hz, when using larger main loudspeakers that can comfortably reproduce some low-frequency sound.

With a lower frequency setting, the B10 subwoofer concentrates on reproducing the deep bass required by contemporary music and film soundtracks. Set the crossover to a higher frequency, between 100Hz and 150Hz, for smaller bookshelf loudspeakers that do not extend to the lower bass frequencies.

If the frequency control is set too high, the bass sounds “boomy” and can overpower the overall sound of the listening room. If the frequency control is set too low, some low frequency sound may be difficult to hear, or may be absent altogether.

Note: This control does not limit the frequency range of the main speakers in the system. The objective of adjusting the Low-Pass Frequency control is to ensure that all frequencies are reproduced while minimizing any overlap between the subwoofers and the main speakers. Having both the subwoofer and main speakers reproduce the same frequencies should be avoided, as it results in very irregular response, since some frequencies are reinforced when they happen to be in phase while others are canceled because they are out of phase. When set to “LFE” the crossover is in by-pass mode and all crossover settings are now set by the Processor or AVR.

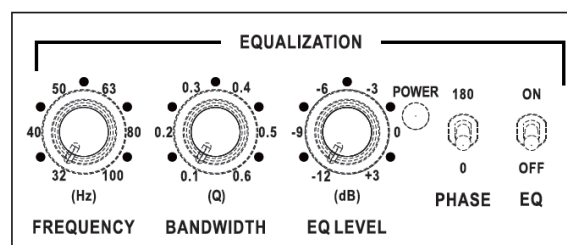
PHASE SWITCH



Compensates for the absolute phase of the subwoofer's output relative to the front speakers. Some associated electronics can invert the absolute phase. Use this switch to correct such occurrences. Proper phase adjustment can also depend on variables such as subwoofer placement and listener position. Use this switch, shown in Figure 16, to maximize bass output at the primary listening position.

- Select the 0° setting to set the B10 acoustic output in phase • (0 degrees) with the input.
- Select the 180° setting to invert the B10 acoustic output • (180 degrees) relative to the input.

EQUALIZATION CONTROLS



Optimizes the subwoofer's response for your specific listening room. The parametric equalizer includes variable controls to adjust Frequency, Bandwidth and Level, as shown in Figure 18.

Note: Specific measurement equipment is required to properly adjust the Equalization controls. Your authorized Revel dealer can make the appropriate measurements, using suitable equipment to ensure optimal results. To use these controls you first must set the EQ switch to “ON”.

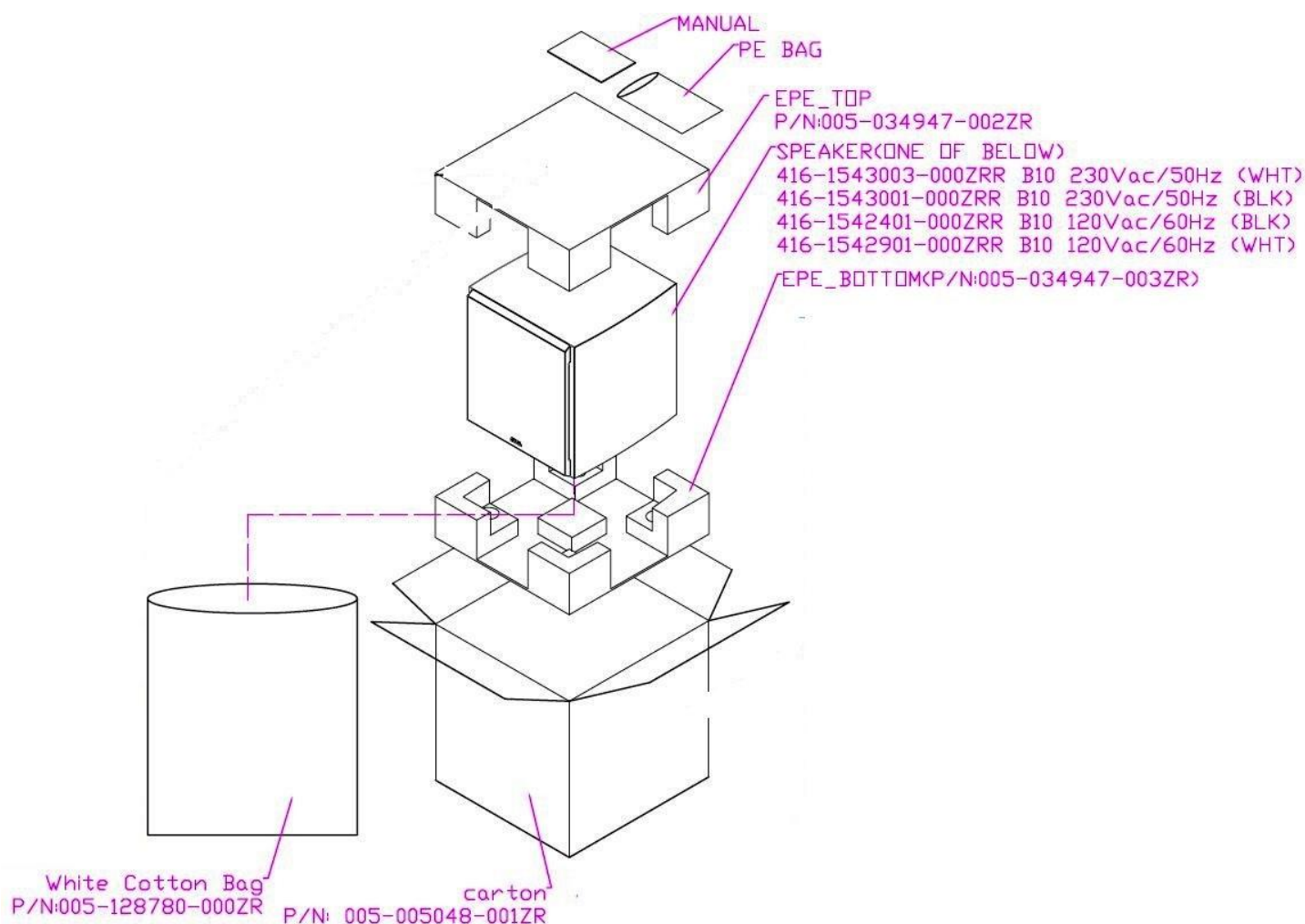
POWER SWITCH

Connects or disconnects power from the AC input cord. During periods of intermittent use, the Power Switch can be left on. Turn off the Power Switch for extended periods of nonuse.

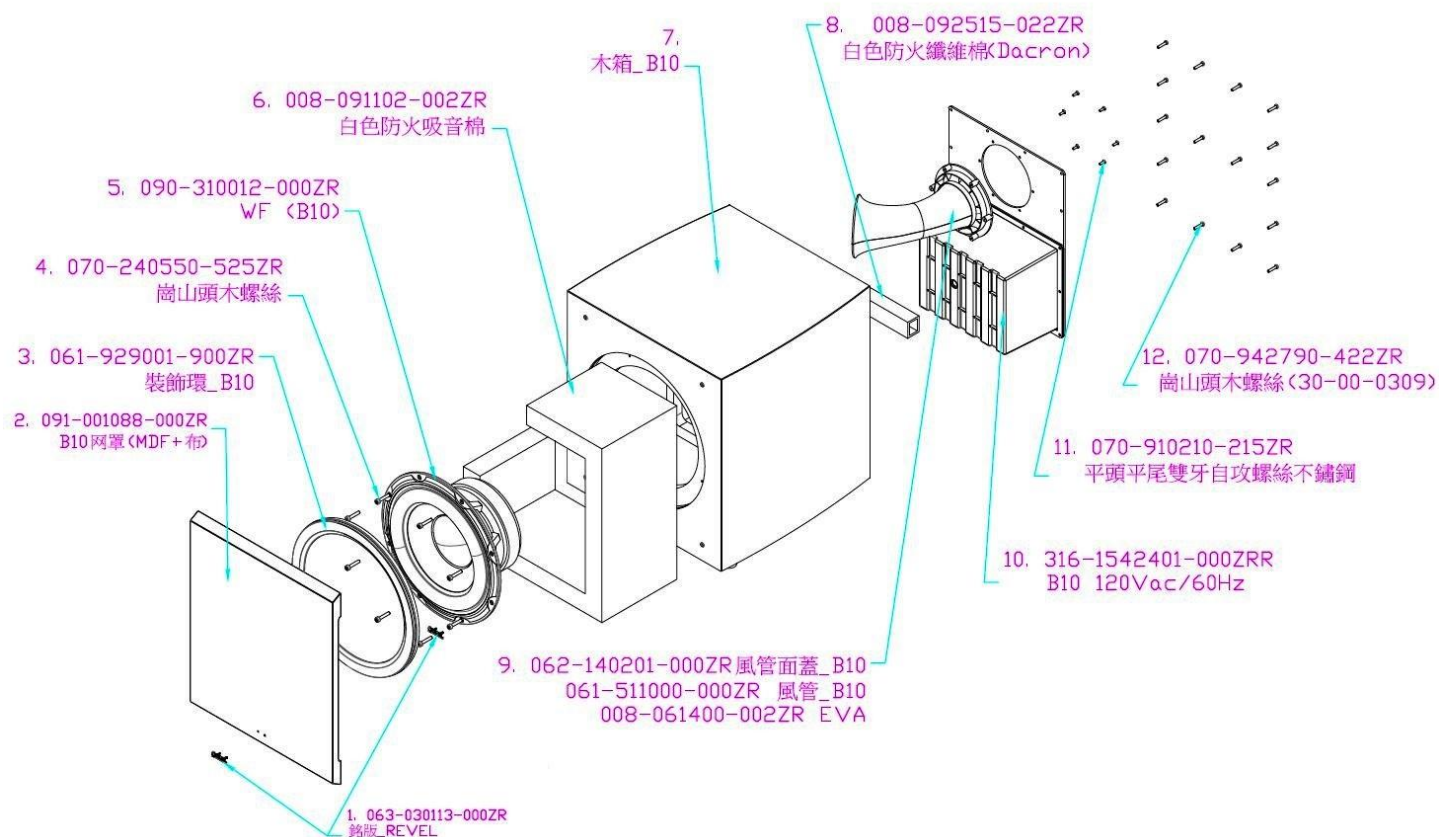
SPECIFICATIONS

| | |
|--------------------------------|--|
| Frequency Response | +/-0.5dB in the pass-band |
| Low Frequency | -3dB at 35Hz |
| Extension (Anechoic) | -6dB at 32Hz -10dB at 29Hz |
| Maximum Amplifier Output | 20Hz – 150Hz with no more than 0.1% THD, 800W, 1500 peak |
| Low-Pass Crossover Frequencies | 50Hz – 150Hz, 24dB/octave, continuously variable |
| Power Requirements | 100 – 120V, 50/60Hz 220 – 240V, 50/60Hz 7AMP |
| Power Consumption | 0.5W (standby) |
| Height | 16.45" (41.8cm), including feet |
| Width | 14.83" (37.7cm) |
| Depth | 15.45" (39.2cm) with grille |
| Weight | 47 lb (21.3kg) |

Features, specifications and appearance are subject to change without notice.



| Part Number | Description | Qty |
|------------------|---------------------------------|-----|
| 005-005048-001ZR | Carton | 1 |
| | Owner's Manual | 1 |
| 005-034947-002ZR | End pad, TOP, EPE/Cardboard | 1 |
| 005-034947-003ZR | End pad, BOTTOM, EPE/Cardboard | 1 |
| 005-128780-000ZR | White Cotton Bag | 1 |
| | Barcode/Serial number Label, BK | 2 |
| | Barcode/Serial number Label, WH | 2 |
| | Plastic bag, speaker | 1 |
| | Treaded spike feet kit (4x) | 1 |
| | PE Bag for Owner's Manual | 1 |
| | | |



| ITEM | Model/color | Part number | Description | qty |
|------|-------------|--------------------|----------------------------|-----|
| 1 | | 063-03113-000ZR | REVEL Logo | 2 |
| 2 | B10BK | 091-001088-000ZR | Grille, Black | 1 |
| | B10WH | | Grille, White | 1 |
| 3 | | 061-929001-900ZR | Trim ring | 1 |
| 4 | | 070-240550-525ZR | Screws, woofer mouning | 8 |
| 5 | | 090-310012-000ZR | Woofer, 10in | 2 |
| 6 | | 008-091102-002ZR | Dacron | A/R |
| 7 | B10BK | | Cabinet, Black | 1 |
| | B10WH | | Cabinet, White | 1 |
| 8 | | 008-092515-22ZR | Dacron | A/R |
| 9 | | 062-140201-000ZR | Port | 1 |
| | | 061-511000-000ZR | Port | 1 |
| | | 008-061400-002ZR | EVA foam | 1 |
| 10 | | 316-154401-0000ZRR | Amplifier, 100VAC/60Hz | 1 |
| 11 | | 070-010210-215ZR | Screws, port mounting | 6 |
| 12 | | 070-942790-422ZR | Screws, amplifier mounting | 16 |
| | | | | |

| Part Number | Description |
|-------------------|--|
| 005-005048-002ZR | Outside Carton |
| 005-020203-001ZR | Ziplock Bag (82002-0203) 2"x3"x0.08mm PN:BG00001 |
| 005-021230-000ZR | PEBag 5"x12"x0.08mm |
| 005-034947-002ZR | EPE Front Cover_B10 490x470x125mm+20KGEPE |
| 005-034947-003ZR | EPE Back Cover_B10(wi/ Hole) 490x470x125mm+20KGEPE |
| 005-128780-000ZR | Cloth Bag 790x870mm |
| 021-100202-121ZR | MOF Resistor 10R 2W J FK TYPE |
| 021-120401-220ZR | MOF Resistor 1K2 1W J FK TYPE |
| 021-220503-020ZR | MOF Resistor 22K 3WS J FK TYPE |
| 024-000097-100MZR | SMD Resistor (CRCW12060000Z0EAC) 0R 1/4W F 1206 TAPING |
| 024-000097-120ZR | SMDResistor PN:1206J000 0R 1/4W J 1206 TAPING |
| 024-000098-100ZR | SMDResistor 0R 1/8W J 0805 TAPING |
| 024-000098-100ZR | SMDResistor 0R 1/8W J 0805 TAPING |
| 024-100201-100ZR | SMD Resistor 10R 1W F 2512 TAPING |
| 024-100297-120ZR | SMD Resistor 10R 1/4W J 1206 TAPING |
| 024-100298-101ZR | SMD Resistor 10R 1/8W F 0805 TAPING |
| 024-100298-120LZR | SMD Resistor (03-010SM) 10R 1/8W J 0805 TAPING |
| 024-100298-120ZR | SMD Resistor 10R 1/8W J 0805 TAPING |
| 024-100397-100ZR | SMD Resistor PN:1206F101 100R 1/4W F 1206 TAPING |
| 024-100398-101ZR | SMD Resistor (A11368-10001) 100R 1/8W F 0805 TAPING |
| 024-100398-120LZR | SMD Resistor (03-110SM) 100R 1/8W J 0805 TAPING |
| 024-100498-100ZR | SMD Resistor (A11368-10011) 1K 1/8W F 0805 TAPING |
| 024-100498-120ZR | SMD Resistor 1K 1/8W J 0805 TAPING |
| 024-100498-120ZR | SMD Resistor 1K 1/8W J 0805 TAPING |
| 024-100597-120ZR | SMD Resistor 10K 1/4W J 1206 TAPING |
| 024-100598-100ZR | SMD Resistor 10K 1/8W F 0805 TAPING |
| 024-100598-100ZR | SMD Resistor 10K 1/8W F 0805 TAPING |
| 024-100598-120LZR | SMD Resistor (03-310SM) 10K 1/8W J 0805 TAPING |
| 024-100598-120ZR | SMD Resistor 10K 1/8W J 0805 TAPING |
| 024-100598-120ZR | SMD Resistor 10K 1/8W J 0805 TAPING |
| 024-100697-120ZR | SMD Resistor 100K 1/4W J 1206 TAPING |
| 024-100698-100ZR | SMD Resistor 100K 1/8W F 0805 TAPING |
| 024-100698-120LZR | SMD Resistor (03-410SM) 100K 1/8W J 0805 TAPING |
| 024-100698-120ZR | SMD Resistor 100K 1/8W J 0805 TAPING |
| 024-120698-120ZR | SMD Resistor 120K 1/8W J 0805 TAPING |
| 024-121498-100ZR | SMD Resistor 1K21 1/8W F 0805 TAPING |
| 024-150598-100ZR | SMD Resistor 15K 1/8W F 0805 TAPING |
| 024-150598-100ZR | SMD Resistor 15K 1/8W F 0805 TAPING |
| 024-150598-120ZR | SMD Resistor 15K 1/8W J 0805 TAPING |
| 024-180598-100ZR | SMD Resistor 18K 1/8W F 0805 TAPING |
| 024-196498-100ZR | SMD Resistor 1K96 1/8W F 0805 TAPING |

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| 024-200398-120ZR | SMD Resistor 200R 1/8W J 0805 TAPING |
| 024-200498-100ZR | SMD Resistor 2K 1/8W F 0805 TAPING |
| 024-200498-120ZR | SMD Resistor 2K 1/8W J 0805 TAPING |
| 024-200598-100ZR | SMD Resistor (A11368-20021) 20K 1/8W F 0805 TAPING |
| 024-220297-100ZR | SMD Resistor 22R 1/4W F 1206 TAPING |
| 024-220498-100ZR | SMD Resistor 2K2 1/8W 0805 F TAPING |
| 024-220598-100ZR | SMD Resistor 22K 1/8W F 0805 TAPING |
| 024-220598-100ZR | SMD Resistor 22K 1/8W F 0805 TAPING |
| 024-220698-120ZR | SMD Resistor 220K 1/8W J 0805 TAPING |
| 024-220797-120ZR | SMD Resistor 2M2 1/4W J 1206 TAPING |
| 024-249598-100ZR | SMD Resistor 24K9 1/8W F 0805 TAPING |
| 024-270498-120ZR | SMD Resistor 2K7 1/8W J 0805 TAPING |
| 024-300398-121ZR | SMD Resistor 300R 1/4W J 1206 TAPING |
| 024-300401-120ZR | SMD Resistor 3K 1W J 2512 TAPING |
| 024-309498-100ZR | SMD Resistor (13091-7001) 3K09 1/8W F 0805 TAPING |
| 024-330298-100ZR | SMD Resistor 33R 1/8W F 0805 TAPING |
| 024-330498-120ZR | SMD Resistor 3K3 1/8W J 0805 TAPING |
| 024-330598-100LZR | SMD Resistor 33K 1/8W F 0805 TAPING |
| 024-330598-100ZR | SMD Resistor 33K 1/8W F 0805 TAPING |
| 024-330698-120ZR | SMD Resistor 330K 1/8W J 0805 TAPING |
| 024-365498-100LZR | SMD Resistor(RE-136502-30) 3K65 1/8W F 0805 TAPING |
| 024-390398-100ZR | SMD Resistor 390R 1/8W F 0805 TAPING |
| 024-464501-100ZR | SMD Resistor 46K4 1W F 2512 TAPING |
| 024-470198-120ZR | SMD Resistor 4R7 1/8W J 0805 TAPING |
| 024-470298-120ZR | SMD Resistor 47R 1/8W J 0805 TAPING |
| 024-470298-120ZR | SMD Resistor 47R 1/8W J 0805 TAPING |
| 024-470398-100ZR | SMD Resistor 470R 1/8W F 0805 TAPING |
| 024-470398-120ZR | SMD Resistor 470R 1/8W J 0805 TAPING |
| 024-470498-100ZR | SMD Resistor 4K7 1/8W F 0805 TAPING |
| 024-470498-100ZR | SMD Resistor 4K7 1/8W F 0805 TAPING |
| 024-470498-120ZR | SMD Resistor 4K7 1/8W J 0805 TAPING |
| 024-470597-120ZR | SMD Resistor 47K 1/4W J 1206 TAPING |
| 024-470598-100ZR | SMD Resistor 47K 1/8W F 0805 TAPING |
| 024-470598-100ZR | SMD Resistor 47K 1/8W F 0805 TAPING |
| 024-470598-120ZR | SMD Resistor 47K 1/8W J 0805 TAPING |
| 024-470598-120ZR | SMD Resistor 47K 1/8W J 0805 TAPING |
| 024-470598-120ZR | SMD Resistor 47K 1/8W J 0805 TAPING |
| 024-470601-120BZRR | SMD Resistor 470K 1W J 2512 TAPING |
| 024-510598-120ZR | SMD Resistor 51K 1/8W J 0805 TAPING |
| 024-560398-120ZR | SMD Resistor 560R 1/8W J 0805 TAPING |
| 024-634498-100ZR | SMD Resistor 6K34 1/8W F 0805 TAPING |
| 024-680101-100ZR | SMD Resistor 6R8 1W F 2512 TAPING |
| 024-680197-120ZR | SMD Resistor 6R8 1/4W J 1206 TAPING |
| 024-680398-120ZR | SMD Resistor 680R 1/8W J 0805 TAPING |

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| 024-820498-120ZR | SMD Resistor 8K2 1/8W J 0805 TAPING |
| 024-887498-100ZR | SMD Resistor 8K87 1/8W F 0805 TAPING |
| 025-010300-000ZR | Thermister PN:NTSE103KZ072 K L:50mm |
| 025-020200-000ZR | Thermister (59-028) PN:SCK202R515MSY 2R5 15A |
| 025-050500-200ZR | NTC PN:SCK05052MSY 5Ω/2A 5ψ |
| 026-100495-003ZR | SVR 1KB PN:GF063P1 102M |
| 026-200595-053ZR | VR PN:RD097111B00F-20K1B 20KB |
| 026-200595-054ZR | VR PN:RD097111P02J-20K1B 20KB |
| 031-010044-101ZR | SMD Capacitor 1nF/50V K 0805 X7R TAPING |
| 031-100143-100ZR | SMD Capacitor 0u001/50V J 0805 NPO TAPING |
| 031-100143-105ZR | SMD Capacitor 0u01/50V J 0805 X7R TAPING |
| 031-100143-105ZR | SMD Capacitor 0u01/50V J 0805 X7R TAPING |
| 031-100144-103AZR | SMD Capacitor 0u001/50V K 0805 X7R TAPING |
| 031-100163-102ZR | SMD Capacitor 0u001/100V J 0805 NPO TAPING |
| 031-100164-100LZR | SMD Capacitor 0u01/100V K 0805 X7R TAPING |
| 031-100194-102ZR | SMD Capacitor 0u001/500V K 0805 X7R TAPING |
| 031-100194-102ZR | SMD Capacitor 0u001/500V K 0805 X7R TAPING |
| 031-100243-106CZR | SMD Capacitor(CA-010002-30)WALSIN 10pF/50V J 0805 NPO TAPING |
| 031-100243-107ZR | SMD Capacitor 0u1/50V J 0805 X7R TAPING |
| 031-100243-107ZR | SMD Capacitor 0u1/50V J 0805 X7R TAPING |
| 031-100243-107ZR | SMD Capacitor 0u1/50V J 0805 X7R TAPING |
| 031-100243-107ZR | SMD Capacitor 0u1/50V J 0805 X7R TAPING |
| 031-100244-100ZR | SMD Capacitor 0u01/50V K 0805 X7R TAPING |
| 031-100343-100ZR | SMD Capacitor 100pF/50V J 0805 NPO TAPING |
| 031-100363-101ZR | SMD Capacitor 100pF/100V J 0805 NPO TAPING |
| 031-100364-104CZR | SMD Capacitor 0u1/100V K 0805 X7R TAPING |
| 031-100441-100AZR | SMD Capacitor 1000pF/50V J 0805 NPO |
| 031-100444-107ZR | SMD Capacitor 1uF/50V K 0805 X7R TAPING |
| 031-100615-100VZR | SMD Electrolytic Capacitor 100uF/16V M 6.3x5.5mm |
| 031-100815-110ZR | SMD Electrolytic Capacitor(CS1C100M-CRC54) 10uF/16V M SM |
| 031-100824-103ZRR | SMD Tantalum Capacitor:(B CASE) TAPING PN:293D106X9025B2TE3 10uF/25V |
| 031-100825-100AUZR | SMD Electrolytic Capacitor 105°C 10uF/25V M 4x5.5 CK TAPING |
| 031-200243-102ZR | SMD Capacitor 20pF/50V J 0805 NPO TAPING |
| 031-220243-100ZR | SMD Capacitor 22pF/50V J 0805 NPO TAPING |
| 031-220323-100ZR | SMD Capacitor 0u22/25V J 0805 X7R TAPING |
| 031-220383-100ZR | SMD Capacitor 220pF/250V NPO J 0805 TAPING |
| 031-220714-100ZR | SMD Tantalum Capacitor: TAPING PN:TAJA225K016R 2u2/16V K 1206 |
| 031-220915-101ZR | SMD Electrolytic Capacitor (CS Series) 220uF/16V M 6.3x7.7 |
| 031-330444-300ZR | SMD Capacitor 3300pF/50V K 0805 X7R TAPING |
| 031-470244-102AZR | SMD Capacitor 0u047/50V K 0805 X7R TAPING |
| 031-470394-100ZR | SMD Capacitor 470pF/1KV K 1206 X7R TAPING |
| 031-470414-104ZR | SMD Capacitor 4u7/16V K 0805 X5R TAPING |
| 031-470414-104ZR | SMD Capacitor 4u7/16V K 0805 X5R TAPING |

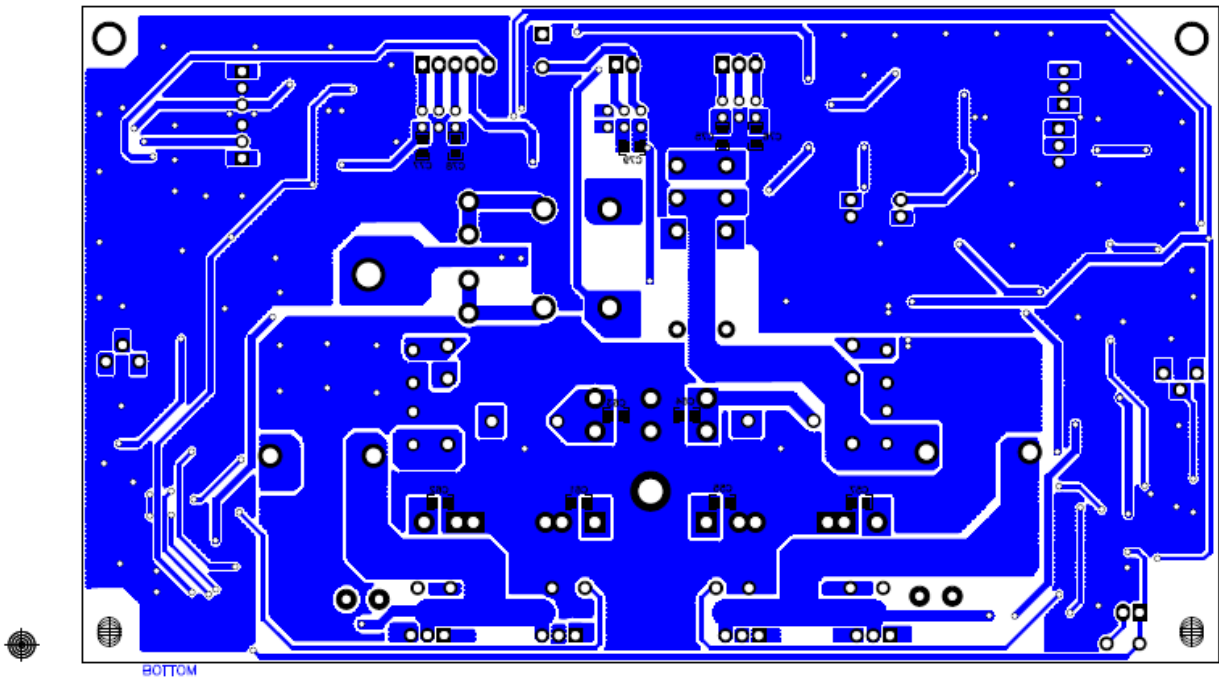
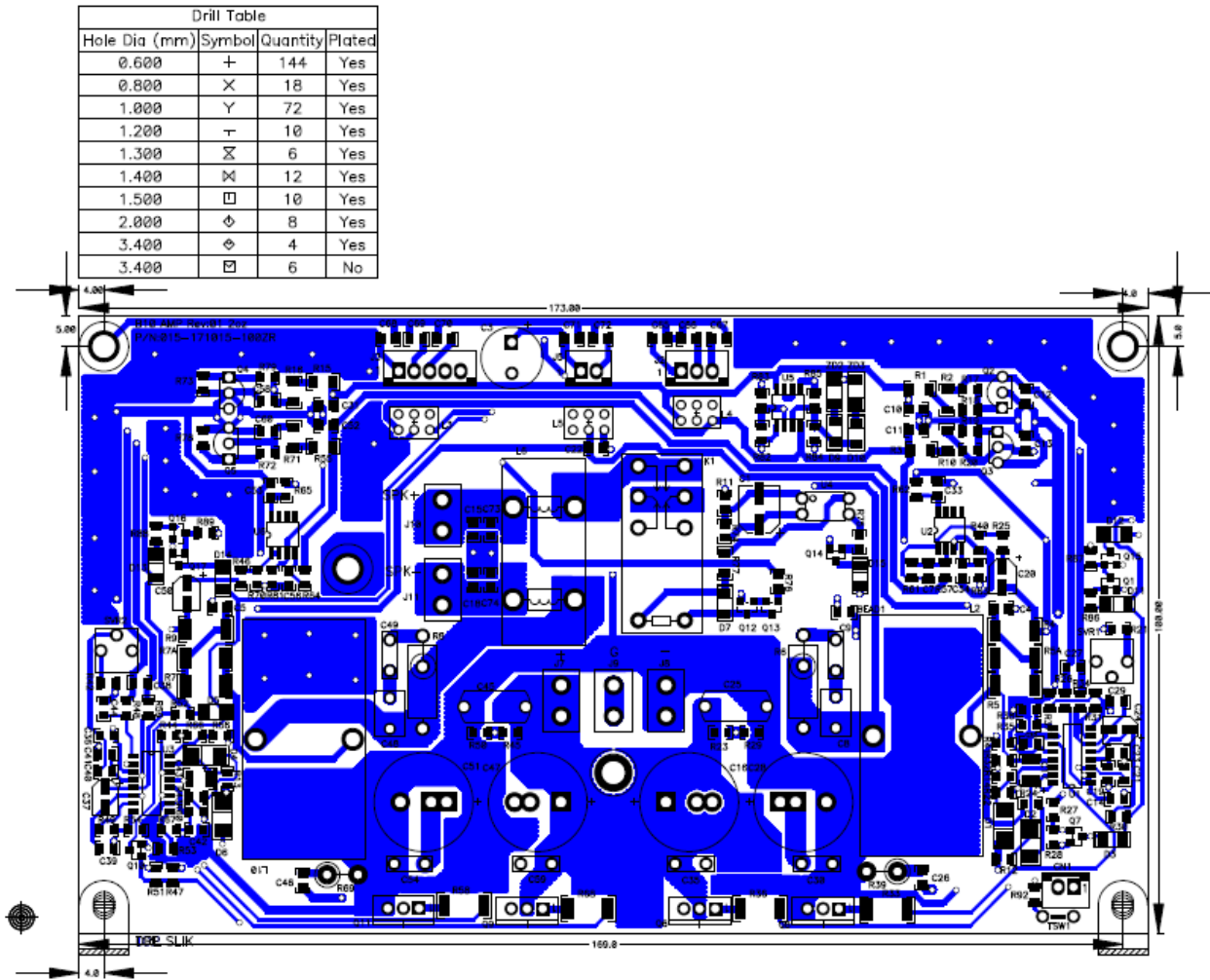
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| 031-470515-106AUZR | SMD Electrolytic Capacitor 85°C 47uF/16V M 5x5.4 (CS Series) |
| 031-470515-108AUZR | SMD NP Electrolytic Capacitor 47uF/16V M 6.3x7.7 TAPING(CN Series) |
| 031-470724-101CZRR | SMD Capacitor 4u7/25V K 0805 X5R TAPING |
| 031-560544-100ZR | SMD Capacitor 0u056/50V K 0805 X7R TAPING |
| 031-680283-100CZRR | SMD Capacitor 68pF/250V NPO J 0805 TAPING |
| 032-220363-301UZR | MINI BOX Capacitor 0u22/100V J P:5 (CL71) TAPING |
| 032-220784-300ZR | Plastic Capacitor 2u2/250V PN:ECQ-E2225KB |
| 034-100450-300GZR | Electrolytic Capacitor 1uF/50V M (R)5x11 P:5 TAPING |
| 034-100465-300GZR | Electrolytic Capacitor 1uF/100V M (R)0511 P:5 TAPING |
| 034-100625-201ZRR | Electrolytic Capacitor TAPING (SC) 105°C 100uF/25V M (R)6.3x11 P:2.5 |
| 034-100625-300ZR | Electrolytic Capacitor TAPING 100uF/25V M (R)6.3x11 P:5 |
| 034-100635-300ZR | Electrolytic Capacitor TAPING 100uF/35V M (R)0811 P:5 |
| 034-100715-200GZR | Electrolytic Capacitor 1000uF/16V M(R)1016 P:5(SL Series) |
| 034-100795-203AZR | Electrolytic Capacitor 105°C(13-810F) 1000uF/200V M (R)2550 P:10(HP) |
| 034-100995-205ZR | Electrolytic Capacitor 105°C 100uF/200V M(R) 1625 P:7.5 |
| 034-220635-300QZR | Electrolytic Capacitor TAPING (13-722) 220uF/35V M (R)1012 P:5.0(RK Series) |
| 034-220845-300ZR | Electrolytic Capacitor: TAPING (HER MEI) 22uF/50V M(R)0511 P:2.5(LL Series) |
| 034-470425-300ZR | Electrolytic Capacitor (SK Series) 4u7/25V M (R)0511 P:5 TAPING |
| 034-470525-301ZR | Electrolytic Capacitor 47uF/25V M (R)0511 P:5 TAPING |
| 034-470615-301QZR | Electrolytic Capacitor: TAPING (13-747) 470uF/16V M (R)0812 P:5(RK Series) |
| 034-470794-200ZR | Electrolytic Capacitor 85°C 4700uF/80V M (R)25x50 |
| 034-470965-200QZR | Electrolytic Capacitor:P:7.5 470uF/100V M (R)16x31.5(TM Series) |
| 035-100363-304ZR | MINI BOX Capacitor (20104-2702) 0u1/100V J P:5 (CL71) TAPING |
| 035-100363-304ZR | MINI BOX Capacitor (20104-2702) 0u1/100V J P:5 (CL71) TAPING |
| 035-100763-300UZR | MINI BOX Capacitor 1uF/100V J P:5 (CL71) TAPING |
| 035-220394-201ZRR | PE Capacitor 12.5x5.5x10.5 (CARLI 0u22/450V K DF:1% MTF P:10mm |
| 036-470294-200ZRR | PP Capacitor 10.5x5x11 47nF/275Vac K0.1 MPX P:7.5mm |
| 039-100495-206ZRR | Y1Capacitor P:10 M PN:CD85-E2GA102MYAS 1000p/400V |
| 039-220495-200ZR | Y1Capacitor P:10 MPN:CD12-E2GA222MYGSA 2200p/400 |
| 039-470694-200ZRR | X2Capacitor:0u47/275V K(PN:SMXYG474KD3XXAB1523 P:15 |
| 039-680395-200ZR | Y1Capacitor M P:10PN:CD75-E2GA681MYAS 680p/400V |
| 042-000131-000ZR | High Frequency Transformer PN:YT-29190-1 EE-13V |
| 042-010225-000ZR | TRANSFORMER PN:YT-18551-1 (ESA-743) |
| 042-010279-000ZRR | Transformer PN:YT-23597-4 |
| 043-000033-000ZR | COIL PN:YT-17276 COMMON CHOKE |
| 043-200502-000ZRR | EMI Filter PN:YT-22675 |
| 043-200503-000ZR | COIL PN:YT22599-3 20uH |
| 043-220503-000ZR | Color Coder Resistor PN:AL0410-220KT 22uH |
| 043-500701-000ZR | INDUCTOR PN:YT-29639 5mH |
| 043-918500-000ZRR | INDUCTOR PN:YT-22613-7 |

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| 044-470401-100ZR | SMD INDUCTOR PN:PDC04034R7MZF 4.7uH TAPING |
| 044-600100-100ZR | SMD BEAD PN:201209-601 600R 0805 TAPING |
| 050-020410-000ZR | LED: COMMON ANODE PN:BL-BST204 5mm RED/EEN |
| 051-003200-100ZRR | TRANSISTOR: TAPING (IR) PN:IRFP32N50KPBF N-CH TO-247 |
| 051-004400-000ZR | Transistor NPN PN:HMPSA44 TO-92 (HSMC) |
| 051-130001-000ZR | Transistor NPN PN:TS13003ACK B0G TO-126 |
| 051-422700-000ZRR | MOSFET N-CHANNEL (IR) PN:IRFB4227PbF TO-220AB |
| 052-001501-000ZR | Bridge Rectifier PN:D15XBN20 15A/200V |
| 052-003000-000ZRR | Bridge Rectifier PN:US30KB80R |
| 053-043109-100ZR | Regulator IC PN:TL431A3 0.5% TO-92 TAPING |
| 053-606900-000ZR | POWER IC:DIP PN:STR-A6069H DIP-8 |
| 053-781204-000ZR | IC:DIP, Regulator PN:L7812CV TO-220 (ST) |
| 053-781503-000ZR | IC:DIP, Regulator PN:NJM7815FA-#ZZZB TO-220F(JRC |
| 053-791502-000ZR | IC:DIP, Regulator PN:NJM7915FA-#ZZZB TO-220F(JRC |
| 054-000100-100ZR | SMD DIODE: (30-ES1D) PN:ES1D 200V 1A TAPING(PANJIT) |
| 054-000108-100ZR | SMD DIODE: TAPING PN:US1J 1A/600V SMA DO-214AC |
| 054-000146-100ZR | SMD SUPER FAST DIODE(CITC) PN:B1JWG-S SOD-123S TAPING |
| 054-000607-100ZR | SMD BRIDGE DIODE PN:B6S 0.5A/600V TAPING |
| 054-001644-100ZR | SMD DIODE (06-23-0002) PN:SS16 DO-214 |
| 054-001649-100ZR | SMD SCHOTTKY DIODE (WY) PN:SS16 1A/60V SMA TAPING |
| 054-002422-100ZR | SMD IC EEPROM PN:AT24C128C-SSHM-T TAPING |
| 054-007200-100ZR | SMD IC (50072-0151) PN:TL072CDR SO-8 TAPING (TI) |
| 054-043106-100ZR | SMD Regulator IC: TAPING PN:TL431N3A 0.5% SOT-23 REF-1 |
| 054-111721-100ZR | SMD Regulator IC PN:PS1117-3.3-T43 SOT-223 TAPI |
| 054-170100-100ALZR | SMD IC (G208-1480-XR00) PN:ADAU1701JSTZ(ANALOG DEVICES |
| 054-207200-100ZRR | GS SMD IC:(SENSOR) (JRC) PN:NJM2072M-TE1-#ZZZB TAPING |
| 054-209201-100ZR | SMD IC(52092-3816) PN:IRS2092SPBF SOIC-16 (IR) |
| 054-273700-100ZRR | SMD IC (JRC) PN:NJM2737M TAPING |
| 054-320500-100ZR | SMD IC (53205-3032) ST PN:STM32F051C8T6 LQFP-48 |
| 054-340101-100ZR | SMD P-CHANNEL MOSFET(UTC) PN:UT3401G-AE3-R SOT-23 |
| 054-352500-000ZR | SMD IC:(ST) PN:SG3525AP SO16 NARROW |
| 054-390405-100HZR | SMD TRANSISTOR PN:MMBT3904 SOT23 TAPING |
| 054-390418-100ZR | SMD TRANSISTOR PN:PMBT3904 SOT23 TAPING (NXP) |
| 054-390602-100ZR | SMD TRANSISTOR (PNP) PN:2N3906 SOT-23 (43906-0200) |
| 054-414801-100ZR | SMD DIODE: PN:RLS4148 LLDS TAPING (ROHM) |
| 054-414810-100ZR | SMD DIODE PN:1N4148W SOD-123 TAPING |
| 054-414810-100ZR | SMD DIODE PN:1N4148W SOD-123 TAPING |
| 054-524100-100ZR | SMD ZENER DIODE: PN:MMSZ5241B 11V SOD-123 TAPIN |
| 054-524202-100BZRR | SMD DIODE 1/2W TAPING(DIODE PN:MMSZ5242B-7-F SOD-123 12V |
| 054-525600-100ZR | SMD ZENER DIODE: PN:MMSZ5256B 30V SOD-123 TAPIN |
| 054-540106-100ZR | SMD Transistor (PNP) PN:MMBT5401 SOT23 TAPING |
| 054-555103-100ZR | SMD Transistor(NPN) PN:MMBT5551 SOT23 TAPING |

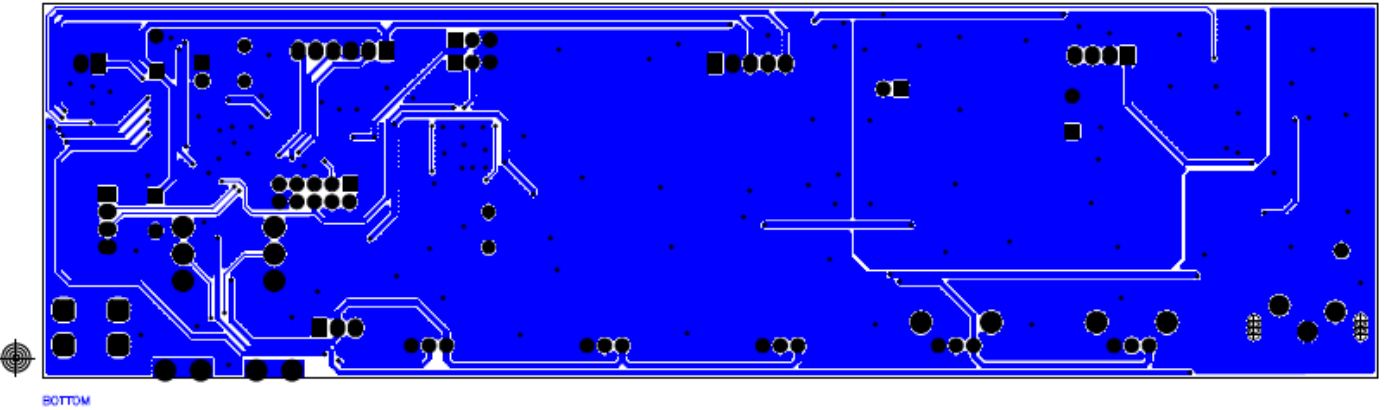
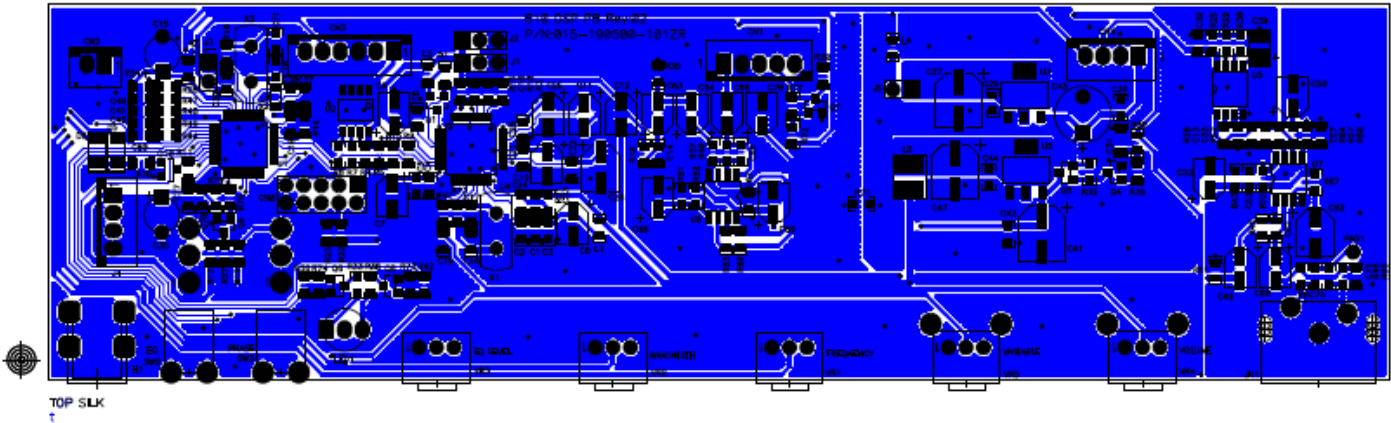
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| 054-555103-100ZR | SMD Transistor(NPN) PN:MMBT5551 SOT23 TAPING |
| 054-555103-100ZR | SMD Transistor(NPN) PN:MMBT5551 SOT23 TAPING |
| 054-555103-100ZR | SMD Transistor(NPN) PN:MMBT5551 SOT23 TAPING |
| 057-000167-000ZR | CRYSTAL TYPE:49US/ 12.288MHZ 50ppm |
| 057-000178-000ZRR | Coupler PN:LTV-814 (LITE-ON) |
| 057-000203-000ZR | CRYSTAL PN:XS8.000M20P6030 8MHZ 49US |
| 057-081703-000ZR | Optical Coupler PN:LTV-817-B DIP4PIN |
| 061-001052-000ZR | Knob PN:49001-W D:15.1 H:14.5 |
| 061-514001-000ZR | B10 Port Tube ϕ 135x228.9mm |
| 061-700090-900ZR | Ceramic Washer 16x21mm t:2mm |
| 075-352802-700ZR | Panel (B10/110V) AL 345.16x277 t:3.2mm |
| 086-031618-007ZR | USA Power Cord #16() 105°C BLK L:1829mmSJT 16A/3C |
| 090-310012-000ZR | WF (B10) 10 inch 4R PN:N5110G |
| 091-001082-000ZR | Cabinet_B10 376.5x392.5x418mm (BLK) |
| 091-001088-001ZR | B10Grille (MDF+Cloth) 397.8x343x19.2mm RC-816-10 (BLK) |

| 120V WHT | |
|---------------------|--------------------------------------|
| 091-001083-000ZR | Cabinet _B10 WHT |
| 091-001117-001ZR | WHT Grille (MDF+BLK Cloth+WHT Cloth) |
| 230V BLK & 230V WHT | |
| 034-470895-205ZR | Electrolytic Capacitor 105°C |
| 039-470394-204ZR | Y1Capacitor K P:10 (TDK) |
| 075-352803-700ZR | Panel(B10/230V) BLK |
| 086-000020-004ZR | EU Power Cord KE-23+KE-24 |
| 086-030018-010ZR | China Power Cord |

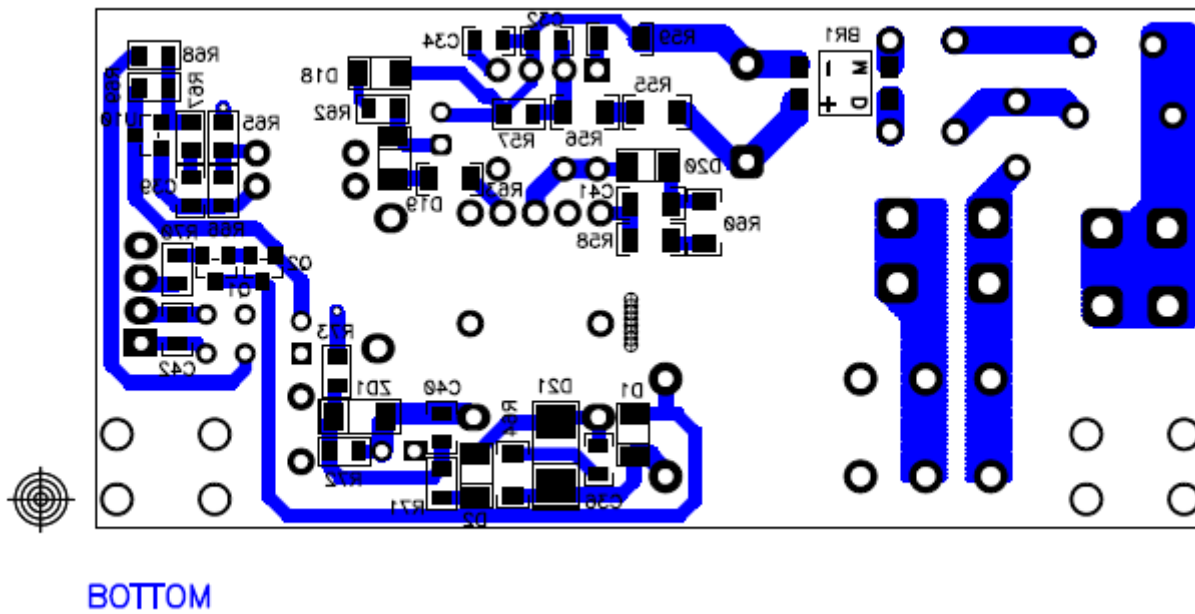
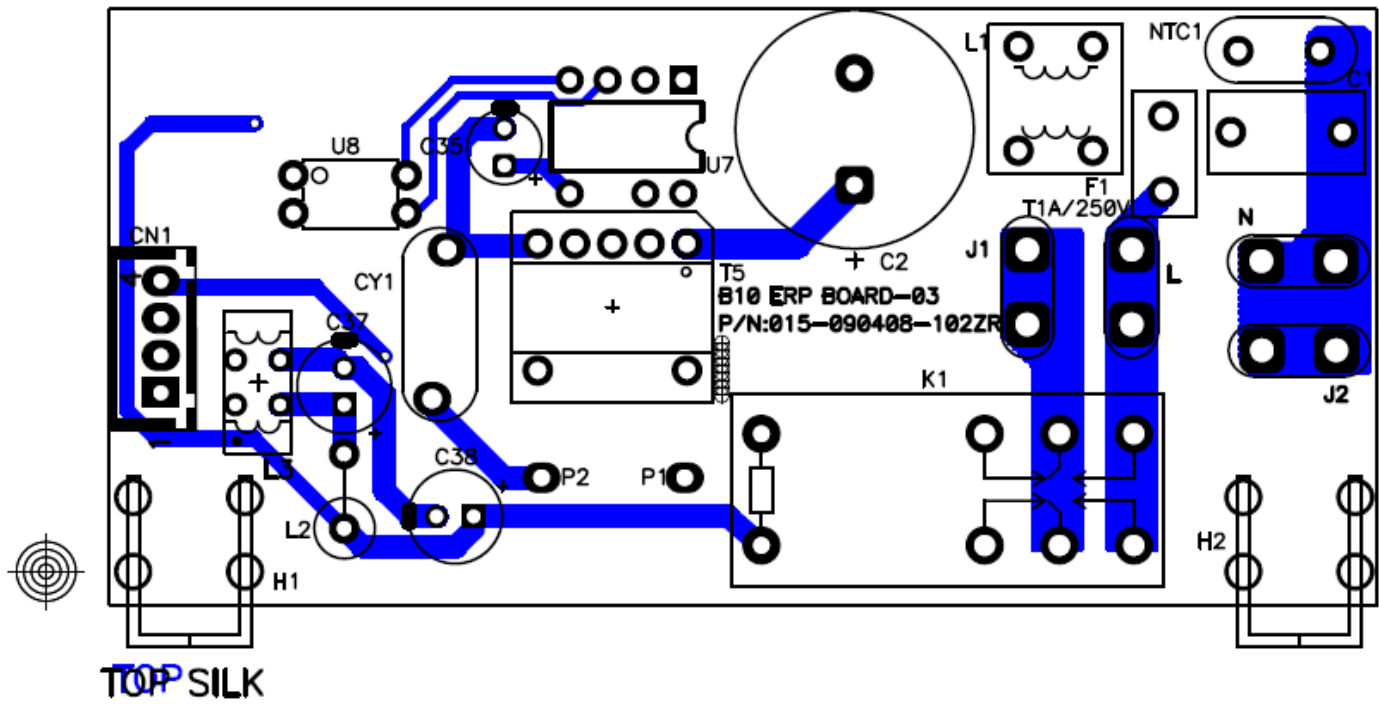
AMPLIFIER PCB ASSEMBLY



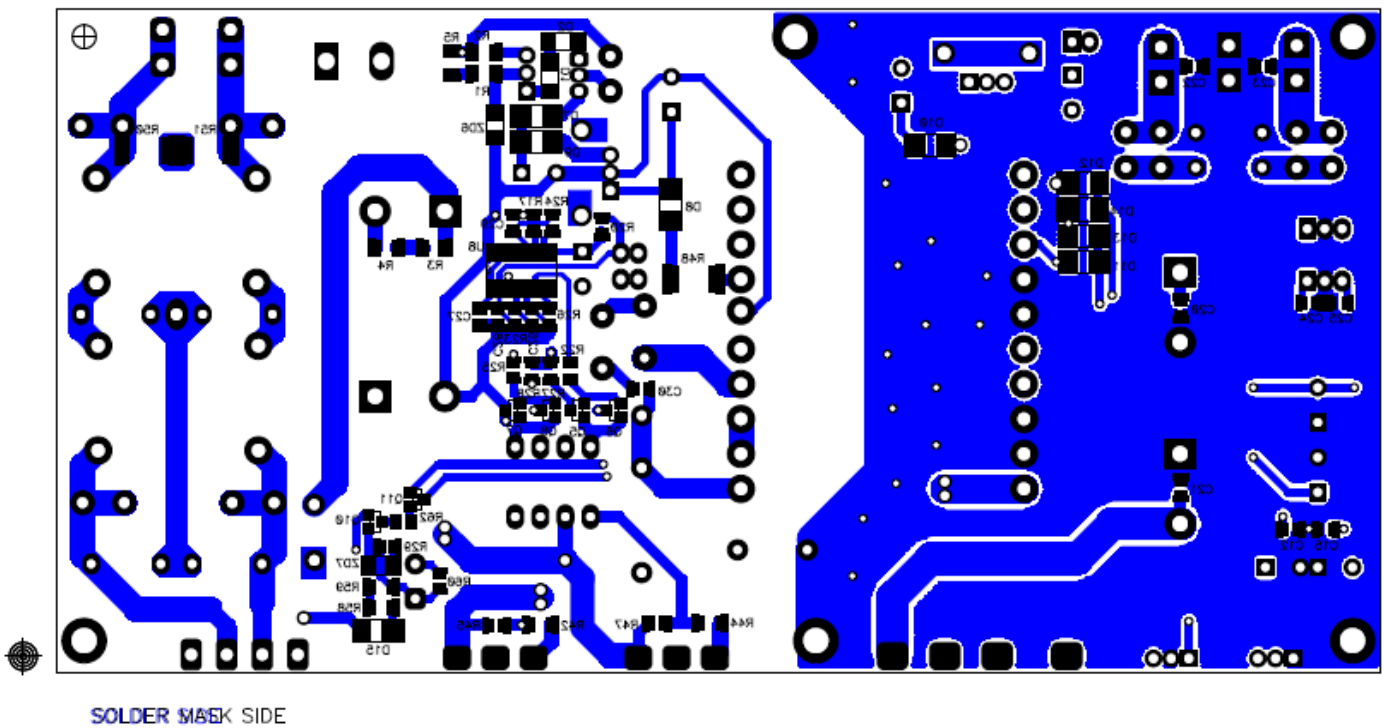
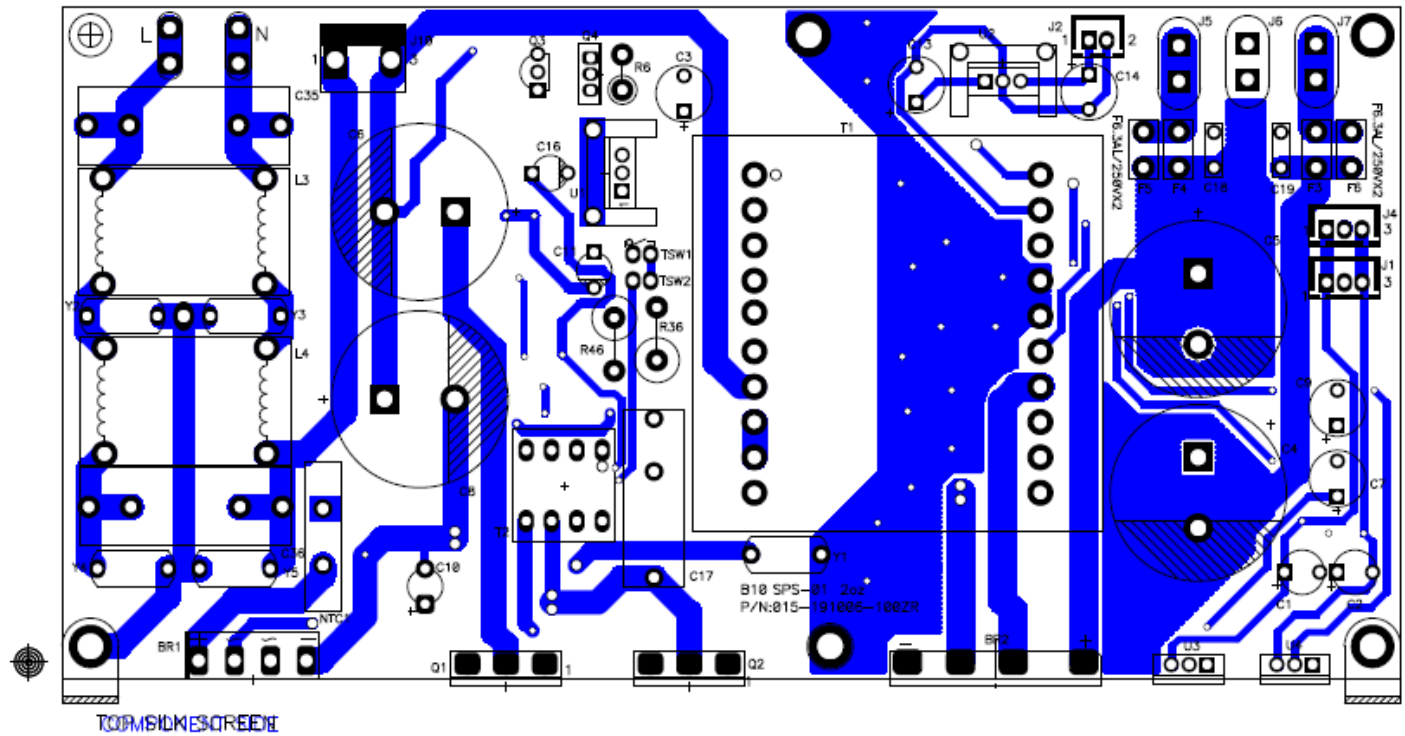
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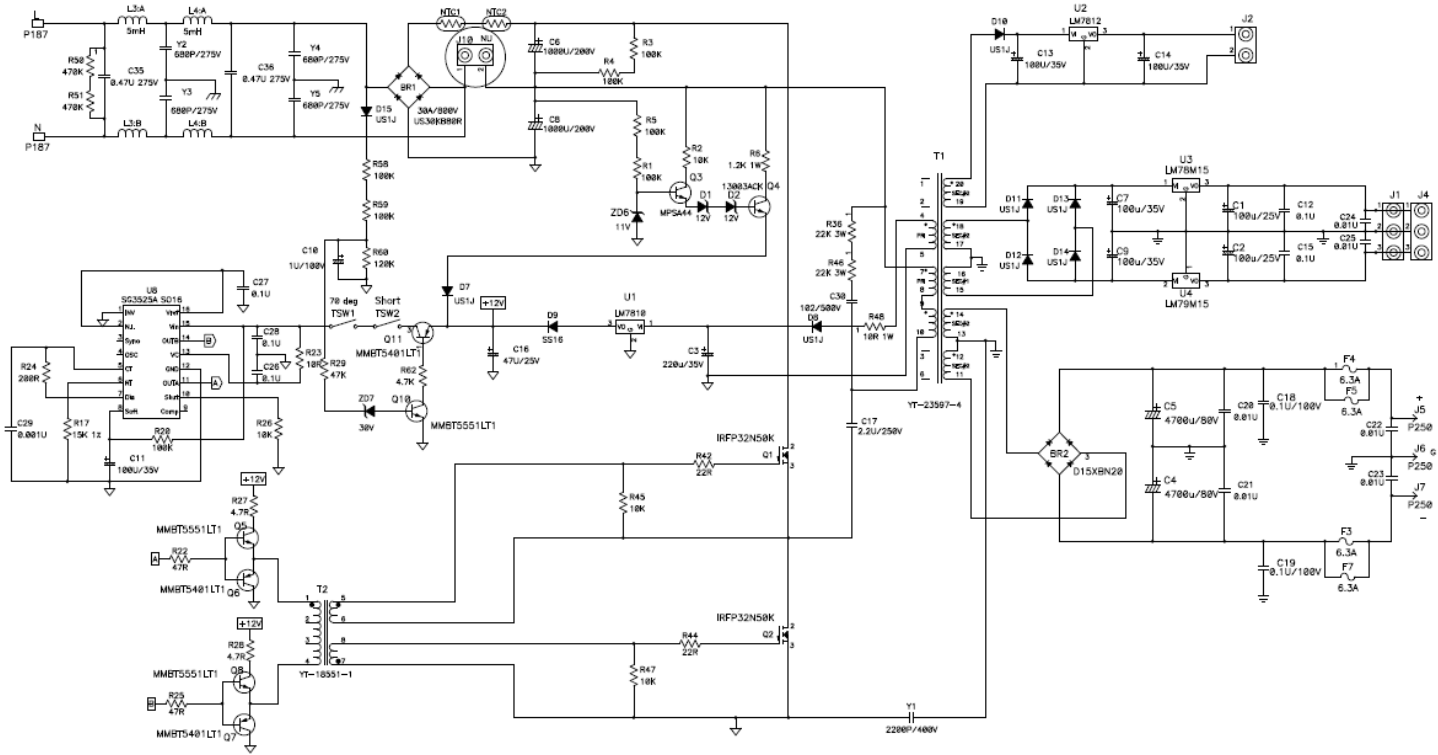
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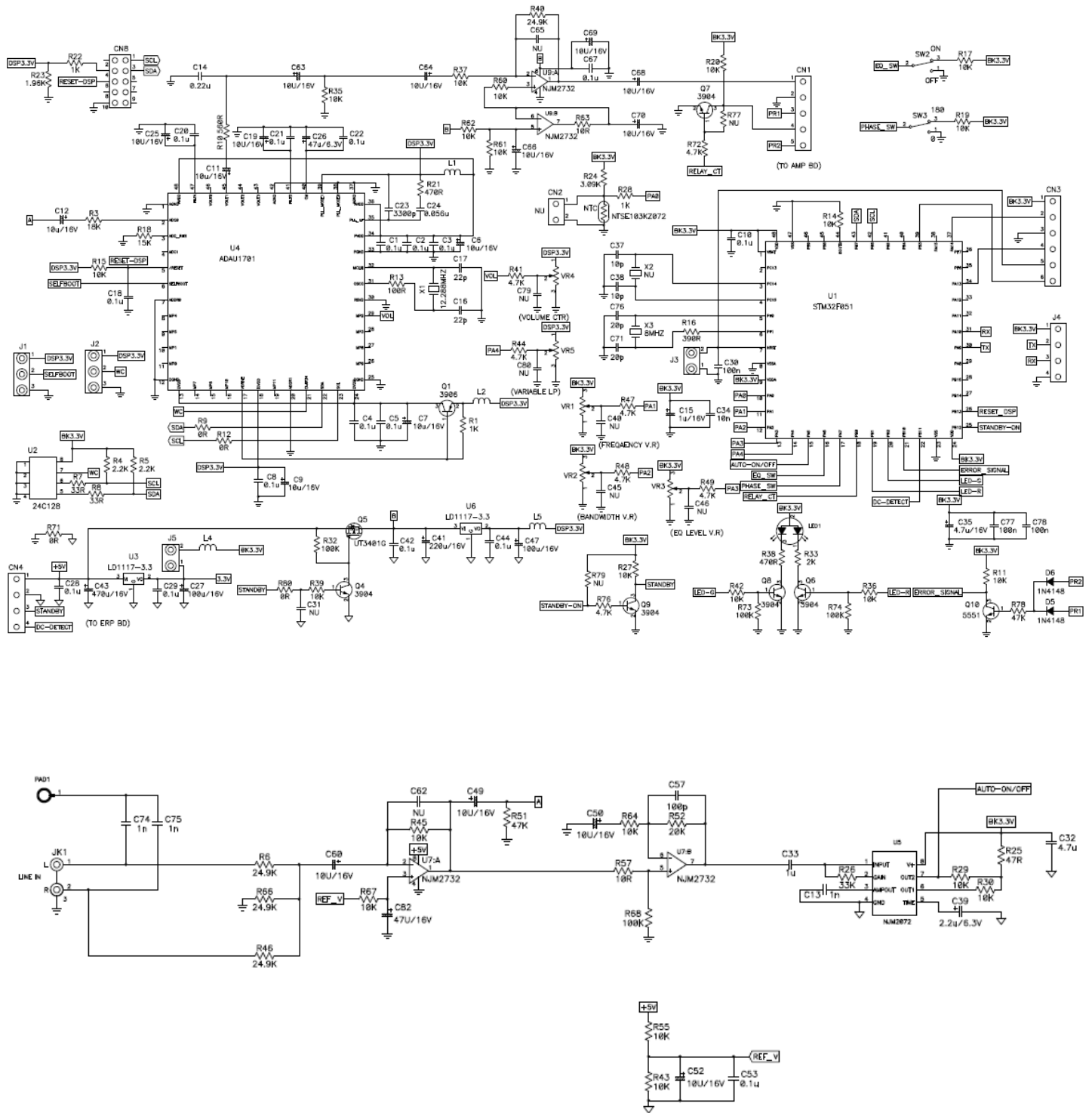


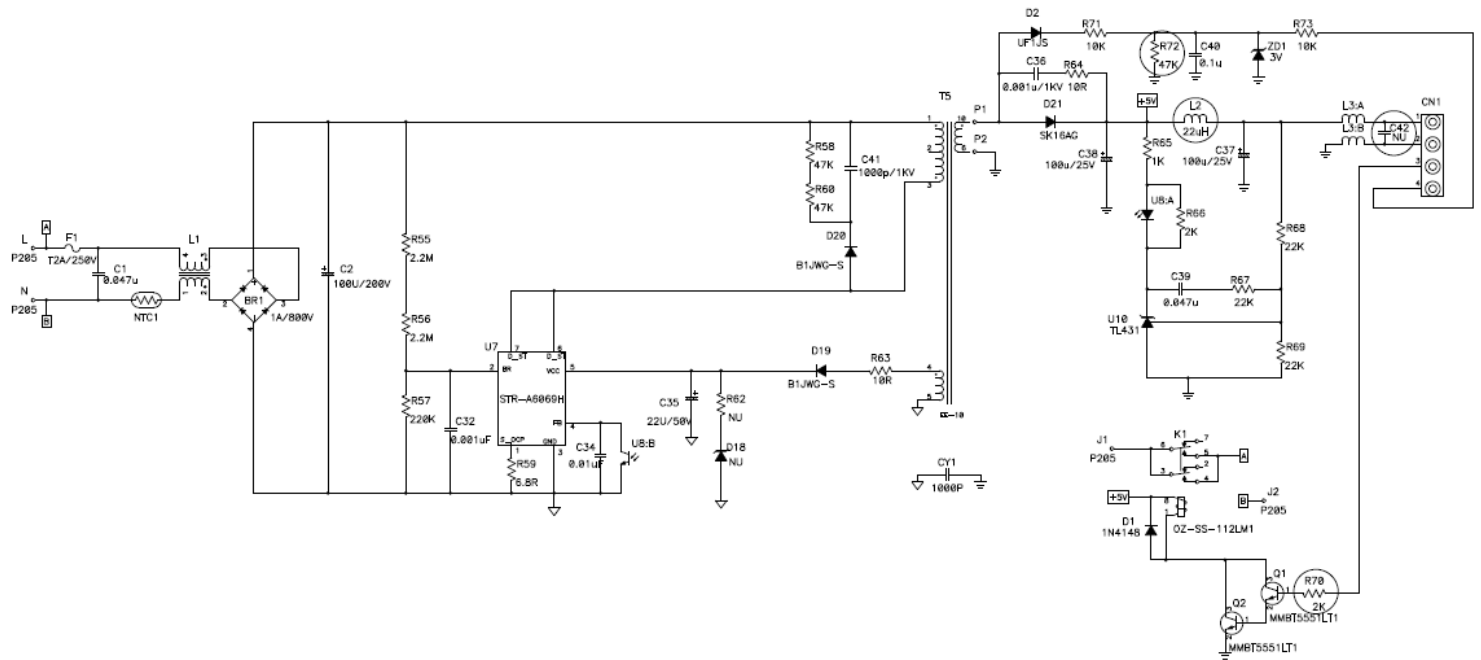
SPS PCB ASSEMBLY



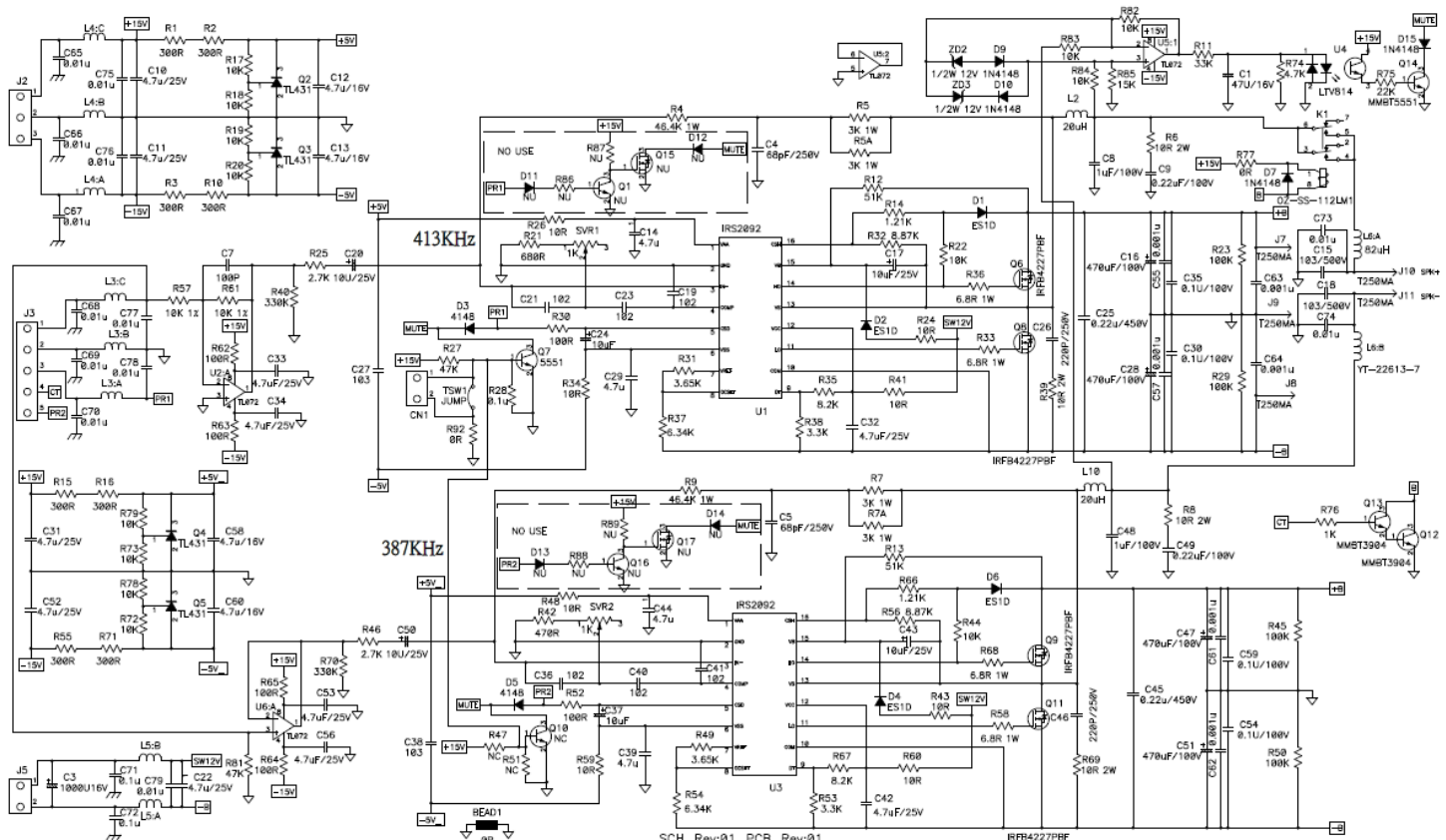
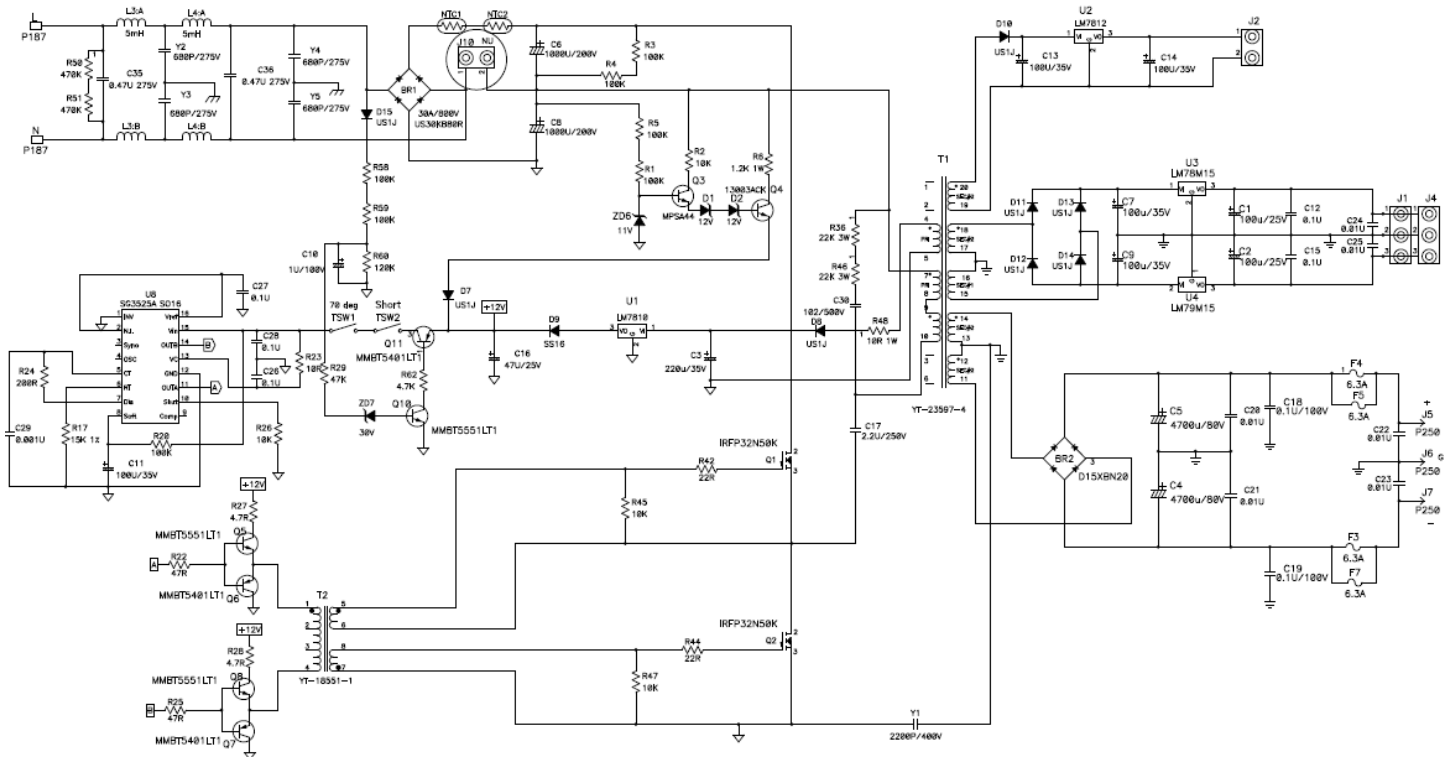
SCHEMATIC DIAGRAM B10 120V

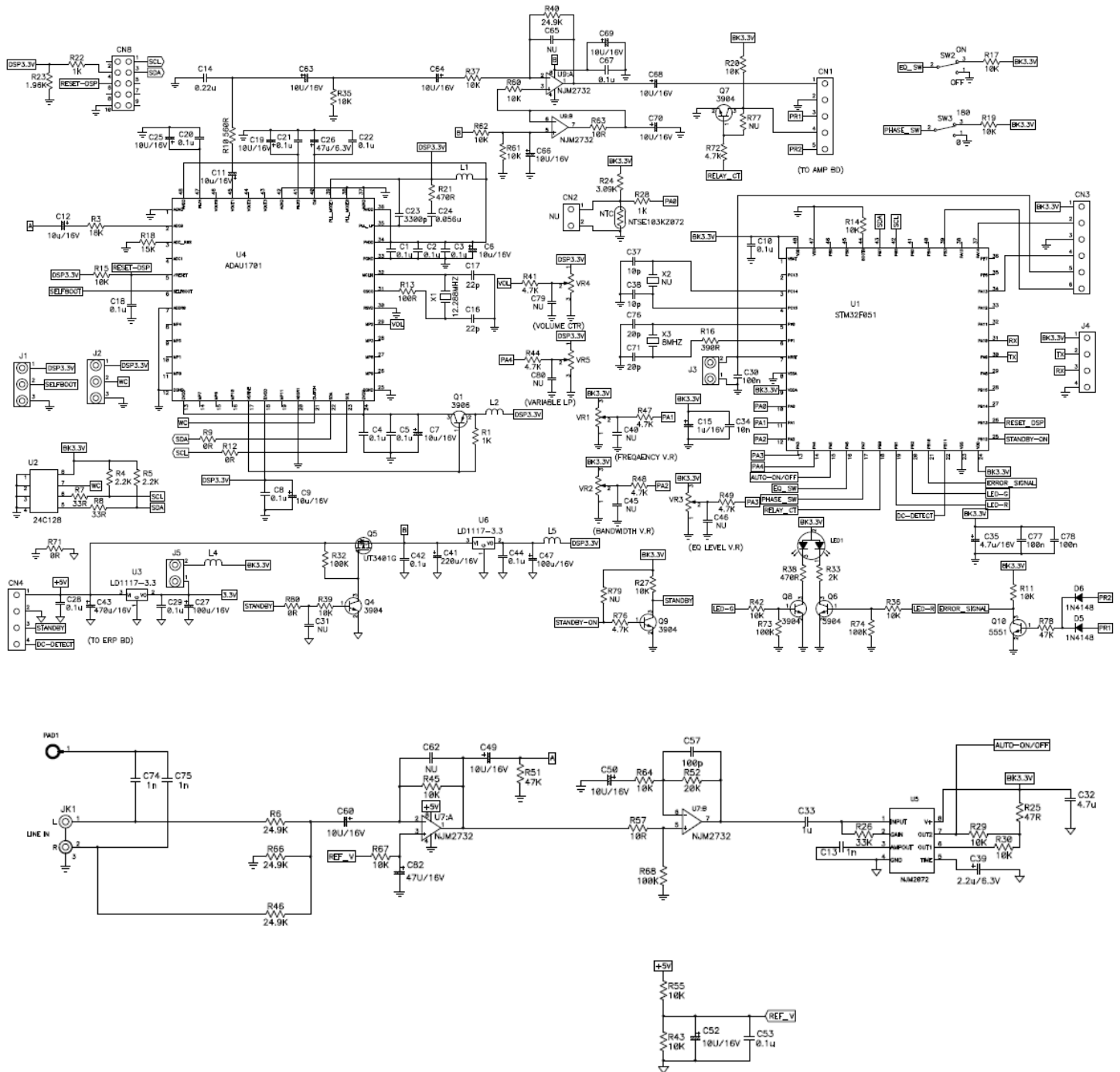


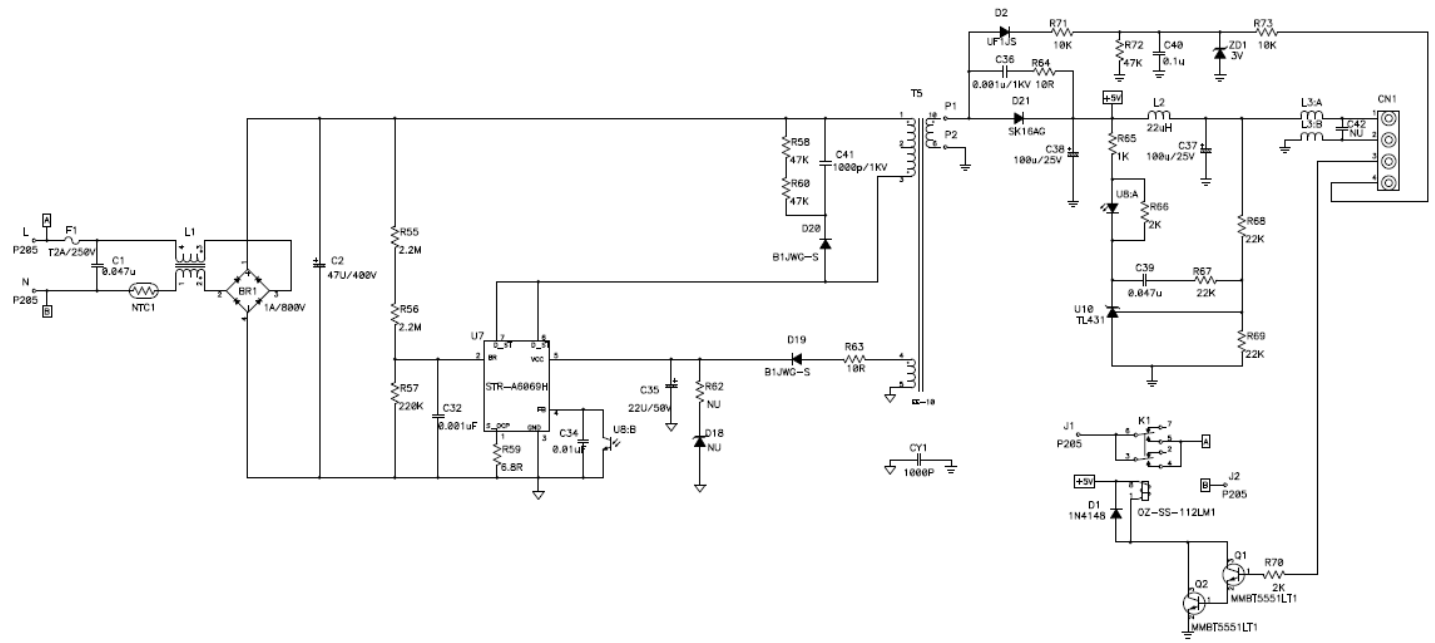




SCHEMATIC DIAGRAM B10 230V







The diagram illustrates the system architecture, centered around the **DSP Board** (enclosed in a dashed box). The **DSP Board** contains the following components:

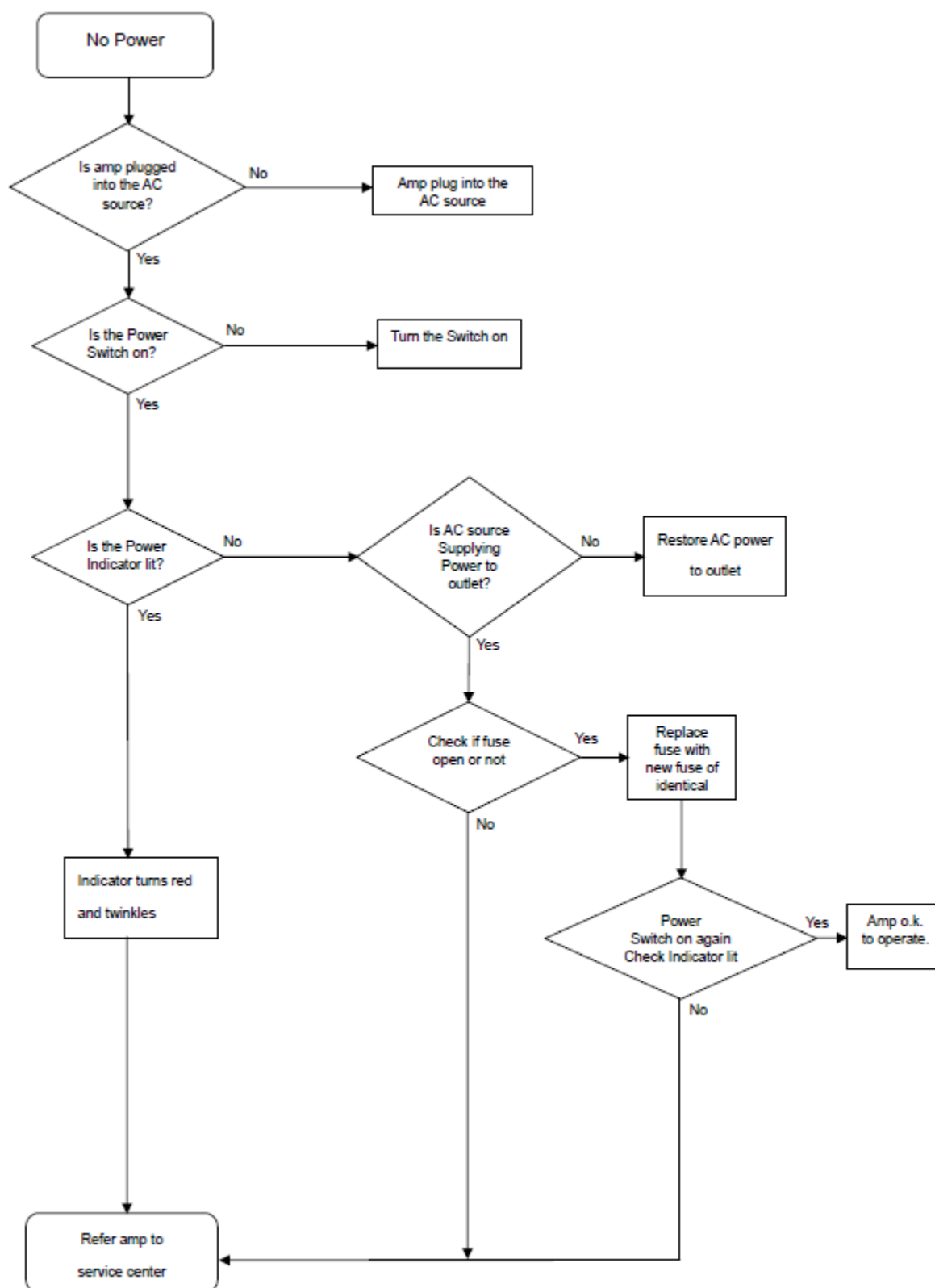
- ADC (Analog-to-Digital Converter)**: Two units, one for **Analog Input** and one for **Analog Output**.
- DAC (Digital-to-Analog Converter)**: One unit for **Analog Output**.
- DSP (ADAU-1701)**: The central digital signal processor.
- EEPROM (24C256)**: Non-volatile memory.
- I2C**: Inter-Integrated Circuit interface.
- GPIO**: General Purpose Input/Output pins.
- MCU (STM32F051)**: Microcontroller Unit.
- SWD**: Serial Wire Debug interface.
- UART**: Universal Asynchronous Receiver/Transmitter.
- ADC (Analog-to-Digital Converter)**: Five units for **Temperature Sensor**, **Variable LP**, **Frequency**, **Bandwidth**, and **EQ Level**.
- GPIO OUT** and **GPIO IN**: General Purpose Input/Output pins.

The **DSP Board** is connected to the following external components:

- Operator**: A computer connected via **USB** to the **DSP writer**, **MCU writer**, and **UART Converter**.
- Signal Sensor (NJM2072)**: Connected to the **Analog Input** of the **DSP**.
- Amplifier Board**: Connected to the **Analog Output** of the **DSP** and the **LED**.
- SPS Board**: Connected to the **I2C** and **GPIOs** of the **DSP**.
- ERP Board**: Connected to the **I2C** and **GPIOs** of the **DSP**.
- Power Switch**: Connected to the **GPIOs** of the **DSP**.
- AC INLET**: Connected to the **GPIOs** of the **DSP**.
- EQ Switch** and **Phase Switch**: Connected to the **GPIOs** of the **DSP**.

TROUBLESHOOTING FLOW CHART

No Power



TROUBLESHOOTING FLOW CHART

No Sound

