Broadcast Electronics
4100 North 24th Street, Quincy, Illinois 62305 USA • Phone (217) 224-9600 • Fax (217) 224-9607 • www.bdcast.com • bdcast@bdcast.com

SR–30 RPU RECEIVER

SR–40A RPU RECEIVER

Marti Electronics

SR-30
SR-40A
RPU Receiver

597-8104 rev B
March 24, 2011

Marti Electronics

SR-30
SR-40A
RPU Receiver

The information in this publication is subject to improvement and change without notice. Although every effort is made to ensure the accuracy of the information in this manual, Broadcast Electronics accepts no responsibility for any errors or omissions. Broadcast Electronics reserves the right to modify and improve the design and specifications of the equipment in this manual without notice. Any modifications shall not adversely affect performance of the equipment so modified.

Proprietary Notice

Trademarks

Copyright

Information in this manual is subject to change without notice and does not represent a commitment on the part of Marti Electronics.
Marti Electronics may make improvements and/or changes in this manual or in the product described herein at any time.
This product could include technical inaccuracies or typographical errors.

Marti Electronics
Product Warranty (One-Year Limited)

Broadcast Electronics (BE) hereby warrants all new Marti Electronics branded products, including STL systems, manufactured by BE, against any defects in material or workmanship at the time of delivery thereof, or that develop under normal use within a period of one (1) year, from the date of shipment.

BE reserves the right to repair equipment under warranty with new or refurbished equipment or parts. BE's sole responsibility with respect to any equipment or parts not conforming to this warranty is to replace or repair such equipment upon the return thereof F.O.B. to BE's factory in Quincy, Illinois, U.S.A. In the event of replacement pursuant to the foregoing warranty, only the unexpired portion of the warranty from the time of the original purchase will remain in effect for any such replacement.

This warranty shall exclude the following products, component parts and/or assemblies:

(a) Transmitter power output tubes shall only carry the original manufacturer's or supplier's standard warranty in effect on their original shipment date.

(b) All computers, computer peripherals, cables, hard disk drives, etc., shall only carry the manufacturer's or supplier's standard warranty in effect on their original shipment date.

(c) "Components", defined as separate and individual parts (e.g. transistors, integrated circuits, capacitors, resistors, inductors, fans, etc), resold by BE from another manufacturer or supplier, shall only carry a 90 day warranty, effective the date of shipment. Any such 'Components' being returned for warranty claim must be (1) returned in their original packaging and (2) must be in new, unused condition.
BE is unable to process or resolve component defects or performance concerns on components that have been soldered, installed, wired or in any way altered from new their new condition.

(d) "Resale Equipment", defined as equipment purchased from another manufacturer or supplier, then resold by BE, shall only carry such manufacturer's or supplier's standard warranty in effect as of the original shipment date.. All warranty claims against any and all 'resale equipment' sold by BE must be filed directly with the original equipment manufacturer. BE is unable to process or resolve equipment defects or performance concerns on products or services not manufactured by BE.

This warranty shall not extend to claims resulting from any acts of God, terrorism, war, defects or failures caused by Purchaser or user abuse or misuse, operator error, or unauthorized attempts to repair or alter the equipment in any way.

Under no circumstances shall BE be responsible for indirect, incidental or consequential damages, including, but not limited to transportation costs, non-authorized repair or service costs, downtime costs, costs for substituting equipment or loss of anticipated profits or revenue, incurred by Purchaser, whether based in contract, tort or for negligence or breach of statutory duty or otherwise.

The terms of the foregoing warranty shall be null and void if the equipment has been altered or repaired without specific written authorization from BE, or if not installed according to BE's instruction manuals, including, but not limited to, the absence of proper grounding, surge (TVSS) protection on the AC circuit panel or proper lightning protection/grounding on all output circuits, or if equipment is operated under environmental conditions or circumstances other than those specifically described in BE's product literature or instruction manual which accompany the

equipment. **The warranty shall be voided if the product or subassembly is equipped with a tamper seal and that tamper seal is broken.** BE shall not be liable for any expense of any nature whatsoever incurred by the original user without prior written consent of BE. The warranty provided herein shall terminate at the end of the period set forth above. **This warranty extends only to the original Purchaser and is not transferable.** There are no third party beneficiaries of any of the provisions of this warranty. If the equipment is described as "used" equipment, it is sold as is and where is and no warranty applies unless authorized in writing.

EXCEPT AS SET FORTH HEREIN, AS TO TITLE AND AS SPECIFICALLY REQUIRED BY LAW, THERE ARE NO OTHER WARRANTIES, OR ANY AFFIRMATIONS OF FACT OR PROMISES BY BE, WITH REFERENCE TO THE EQUIPMENT, OR TO MERCHANTABILITY, FITNESS FOR A PARTICULAR APPLICATION, SIGNAL COVERAGE, INFRINGEMENT, OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION OF THE EQUIPMENT ON THE FACE HEREOF.

IMPORTANT INFORMATION

EQUIPMENT LOST OR DAMAGED IN TRANSIT -

When delivering the equipment to you, the truck driver or carrier's agent will present a receipt for your signature. Do not sign it until you have:

1) Inspected the containers for visible signs of damage and 2) Counted the containers and compared with the amount shown on the shipping papers. If a shortage or evidence of damage is noted, insist that notation to that effect be made on the shipping papers before you sign them.

Further, after receiving the equipment, unpack it and inspect thoroughly for concealed damage. If concealed damage is discovered, immediately notify the carrier, confirming the notification in writing, and secure an inspection report. This item should be unpacked and inspected for damage WITHIN 15 DAYS after receipt. Claims for loss or damage will not be honored without proper notification of inspection by the carrier.

RF PRODUCT TECHNICAL ASSISTANCE, REPAIR SERVICE, PARTS -

Technical assistance is available from Broadcast Electronics by letter, prepaid telephone or E-mail. Equipment requiring repair or overhaul should be sent by common carrier, prepaid, insured, and well protected. If proper shipping materials are not available, contact the RF Technical Services Department for a shipping container. Do not mail the equipment. We can assume no liability for inbound damage, and necessary repairs become the obligation of the shipper. Prior arrangement is necessary. Contact the RF Technical Services Department for a Return Authorization.

Emergency and warranty replacement parts may be ordered from the following address. Be sure to include the equipment model number, serial number, part description, and part number. Non-emergency replacement parts may be ordered directly from the Broadcast Electronics stock room at the number shown below.

RF TECHNICAL SERVICES -

Telephone: +1 (217) 224-9617
E-Mail: rfservice@bdcast.com
Fax: +1 (217) 224-6258

FACILITY CONTACTS -

Broadcast Electronics, - Quincy Facility
4100 N. 24th St. P.O. BOX 3606
Quincy, Illinois 62305
Telephone: +1 (217) 224-9600
Fax: +1 (217) 224-6258
General E-Mail: bdcast@bdcast.com
Web Site: www.bdcast.com

PARTS -

Telephone: +1 (217) 224-9617
E-Mail: parts@bdcast.com

RETURN, REPAIR, AND EXCHANGES -

Do not return any merchandise without our written approval and Return Authorization. We will provide special shipping instructions and a code number that will assure proper handling and prompt issuance of credit. Please furnish complete details as to circumstances and reasons when requesting return of merchandise. All returned merchandise must be sent freight prepaid and properly insured by the customer.

MODIFICATIONS -

Broadcast Electronics, reserves the right to modify the design and specifications of the equipment in this manual without notice. Any modifications shall not adversely affect performance of the equipment so modified.

SAFETY PRECAUTIONS

PLEASE READ AND OBSERVE ALL SAFETY PRECAUTIONS!!

ALL PERSONS WHO WORK WITH OR ARE EXPOSED TO POWER TUBES, POWER TRANSISTORS, OR EQUIPMENT WHICH UTILIZES SUCH DEVICES MUST TAKE PRECAUTIONS TO PROTECT THEMSELVES AGAINST POSSIBLE SERIOUS BODILY INJURY. EXERCISE EXTREME CARE AROUND SUCH PRODUCTS. UNINFORMED OR CARELESS OPERATION OF THESE DEVICES CAN RESULT IN POOR PERFORMANCE, DAMAGE TO THE DEVICE OR PROPERTY, SERIOUS BODILY INJURY, AND POSSIBLY DEATH.

DANGEROUS HAZARDS EXIST IN THE OPERATION OF POWER TUBES AND POWER TRANSISTORS -

The operation of power tubes and power transistors involves one or more of the following hazards, any one of which, in the absence of safe operating practices and precautions, could result in serious harm to personnel.

A. **HIGH VOLTAGE -** Normal operating voltages can be deadly. Additional information follows.

B. **RF RADIATION -** Exposure to RF radiation may cause serious bodily injury possibly resulting in Blindness or death. Cardiac pacemakers may be affected. Additional information follows.

C. **HOT SURFACES -** Surfaces of air-cooled radiators and other parts of tubes can reach temperatures of several hundred degrees centigrade and cause serious burns if touched. Additional information follows.

D. **RF BURNS -** Circuit boards with RF power transistors contain high RF potentials. Do not operate an RF power module with the cover removed.

HIGH VOLTAGE –

Many power circuits operate at voltages high enough to kill through electrocution. Personnel should always break the primary AC Power when accessing the inside of the transmitter.

RADIO FREQUENCY RADIATION -

Exposure of personnel to RF radiation should be minimized, personnel should not be permitted in the vicinity of open energized RF generating circuits, or RF transmission systems (waveguides, cables, connectors, etc.), or energized antennas. It is generally accepted that exposure to "high levels" of radiation can result in severe bodily injury including blindness. Cardiac pacemakers may be affected.

The effect of prolonged exposure to "low level" RF radiation continues to be a subject of investigation and controversy. It is generally agreed that prolonged exposure of personnel to RF radiation should be limited to an absolute minimum. It is also generally agreed that exposure should be reduced in working areas where personnel heat load is above normal. A 10 mW/cm^2 per one tenth hour average level has been adopted by several U.S. Government agencies including the Occupational Safety and Health Administration (OSHA) as the standard protection guide for employee work environments. An even stricter standard is recommended by the American National Standards Institute which recommends a 1.0 mW/cm^2 per one tenth hour average level exposure between 30 Hz and 300 MHz as the standard employee protection guide (ANSI C95.1-1982).

RF energy must be contained properly by shielding and transmission lines. All input and output RF connections, such as cables, flanges and gaskets must be RF leak proof. Never operate a power tube without a properly matched RF energy absorbing load attached. Never look into or expose any part of the body to an antenna or open RF generating tube or circuit or RF transmission system while energized. Monitor the tube and RF system for RF radiation leakage at regular intervals and after servicing.

HOT SURFACES –

The power components in the transmitter are cooled by forced-air and natural convection. When handling any components of the transmitter after it has been in operation, caution must always be taken to ensure that the component is cool enough to handle without injury.

Table of Contents

SR-30 / SR-40A RPU Receivers
1 Introduction

The *Marti* SRPT-30 and SRPT-40A Transmitters with companion SR-30/SR-40A Receivers, form a high quality FM, synthesized, point-to-point, line of sight, radio communications link for remote broadcast applications. The SR-30 receiver is a dual channel unit that can be programmed on any 2 frequencies within a 50 MHz band. The SR-40A receiver is frequency agile within a 50 MHz band. Complex systems can be built from basic SRPT-30/SRPT-40A transmitters and SR-30/SR-40A receivers having multiple relay (repeaters), bi-directional (full duplex), and automatic switching standby features. Each SR-30 and SR-40A RPU receiver is offered in a wide range of band models. Refer to the SPECIFCATIONS & ORDERING section for a listing of available frequency ranges.

The SR-30/SR-40A receivers operate from: 1) an 85 to 264 VAC, 47 to 63 Hz or 2) a +10 to +14 VDC source. A meter and selector switch is provided for monitoring, signal level, decode level, power supply voltage, and the program output level. A front panel attenuation switch allows the input level to be adjusted to minimize any IMD products. Additional front panel controls include: 1) a program output level control, 2) a squelch control, 3) an F1/F2 switch on SR-30 models, and 4) an execute switch on SR-40A models. The SR-30/SR-40A front panel indicators include: 1) MAX signal, 2) ATT signal, 3) UNSQUELCHED, 4) POWER, 5) AFC LOCK, and 6) F1/F2 on SR-30 models.

SR-30/SR-40A Features:

- **Mechanical design – Allows each unit to be portable or rack mounted**
- **Wideband operation - 50 MHz**
- **SR-30 Models – Two channel operation within a 50 MHz band**
- **SR-40A Models – Frequency agile within a 50 MHz band**
- **Switching power supply operates on any AC voltage from 85V to264V, 47 to 63 Hz**
- **External +10 to +14 VDC operation**
- **Frequency synthesized dual stage RF converter module with Automatic Frequency Control (AFC)**
- **Front panel signal attenuation control – used to minimize IMD products**
- **Front panel squelch control**
- **Front panel headphone control and receptacle**
- **A microcontroller programmed to perform the following functions:**
  - **Front-panel switch and indicator control**
  - **AFC lock control**
  - **Metering control**
  - **Auto recovery from loss of ac/dc power**
- **Subaudible tone decoder available for signaling, automation control, or automatic repeater**
- **Squelch relay with contacts available for external switching**

1.1 SPECIFICATIONS & ORDERING

Frequency Bands:	See **ORDERING INFORMATION** below.
Type of technology to produce operating frequency:	Phase-locked loop; synthesized
Frequency Agility and Accuracy	Frequency programmable in 100 Hz increments with an accuracy (1) ± ?%

Operating Temp. Range:	-10ºC to +50ºC
Frequency Stability (over operating temperature range):	0.0001%
Signal–to–Noise @ 100 uV Input: **36 kHz BW @ 5.4 kHz Dev** **25 kHz BW @ 3.6 kHz Dev** **10 kHz BW @ 1.2 kHz Dev**	 Greater than 57 dB. Greater than 53 dB. Greater than 44 dB.
Frequency Response:	± 1.5 dB of the specified bandwidth
Distortion:	2% or less of the specified bandwidth
Spurious Response:	-90 dB
RF Input Impedance:	50 ohms
RF Connector:	Type N-Female
Output Level:	-10 to +11 dBm
Output Impedance:	Balanced, 600 Ohms, 15-pin D-Type connector
Sensitivity:	0.5 microvolts for 20 dB signal-to-noise 2 microvolts for 30 dB signal-to-noise 4 microvolts for 40 dB signal-to-noise 100 microvolts for maximum signal–to–noise, typically 57 dB or greater.
Metering/Indicators:	Illuminated meter indicates: 1) signal level, 2) decode level, 3) power supply level, and 4) mono program output level. LEDs – MAX Signal, ATT Signal, UNSQUELCHED, POWER supply, AFC LOCK, and F1/F2 on SR–30 Models.
Front Panel Controls:	SIGNAL ATTENUATION, MONO PROGRAM OUTPUT LEVEL, SQUELCH LEVEL, meter selection control, HEADPHONE level control.
Power Requirements:	85 to 264 VAC, 47 to 63 Hz External DC operation on - +10 to +14 VDC
Approximate AC Current Requirements:	1.5 Amps
Accessory Connector:	15-pin D connector
Weight:	Net 67 pounds. (3.0 kilograms).
Dimensions:	3.5 in. high x 12 in. wide x 15 in. deep. (8.9 cm. high x 30.5 cm. wide x 38.1 cm. deep.)
Regulatory:	FCC, DOC

1.1.1 ORDERING INFORMATION

MARTI PART #	Description
SR30–150–025	SR–30 RPU Receiver, 135 to 182 MHz, 2 Channel, 25 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–150–036	SR–30 RPU Receiver, 135 to 182 MHz, 2 Channel, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–240–025	SR–30 RPU Receiver, 215 to 265 MHz, 2 Channel, 25 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–240–036	SR–30 RPU Receiver, 215 to 265 MHz, 2 Channel, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–330–036	SR–30 RPU Receiver, 300 To 350 MHz, 2 Channel, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–450–020	SR–30 RPU Receiver, 430 To 480 MHz, 2 Channel, 20 KHz Receive Bandwidth (TSL), 110/220VAC 50/60 Hz Operation.
SR30–450–025	SR–30 RPU Receiver, 430 To 480 MHz, 2 Channel, 25 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–450–036	SR–30 RPU Receiver, 430 To 480 MHz, 2 Channel, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR30–450–050	SR–30 RPU Receiver, 430 To 480 MHz, 2 Channel, 50 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–150–025	SR–40A RPU Receiver, 135 to 182 MHz, Frequency Agile, 25 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–150–036	SR–40A RPU Receiver, 135 to 182 MHz, Frequency Agile, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–240–025	SR–40A RPU Receiver, 215 to 265 MHz, Frequency Agile, 25 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–240–036	SR–40A RPU Receiver, 215 to 265 MHz, Frequency Agile, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–330–036	SR–40A RPU Receiver, 300 To 350 MHz, Frequency Agile, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–450–025	SR–40A RPU Receiver, 430 To 480 MHz, Frequency Agile, 25 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–450–036	SR–40A RPU Receiver, 430 To 480 MHz, Frequency Agile, 36 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.
SR40A–450–050	SR–40A RPU Receiver, 430 To 480 MHz, Frequency Agile, 50 KHz Receive Bandwidth, 110/220VAC 50/60 Hz Operation.

1.2 Available OPTIONS for the SR-30/SR-40A Receivers

Marti No.	Description
700-250-13	Kit, Rack Mounting

1.3 UNPACKING & INSPECTING

This equipment was factory tested, inspected, packed, and delivered to the carrier with utmost care. Do not accept shipment from carrier, which shows damage or shortage until the carrier's agent endorses a statement of the irregularity on the face of the carrier's receipt. Without documentary evidence, a claim cannot be filed.

Unpack equipment immediately up-on receipt and thoroughly inspect for concealed damage. If damage is discovered, stop further unpacking and request immediate inspection by local agent of carrier. A written report of the agent's findings, with his signature is necessary to support claim. Check your shipment against the shipping papers for possible shortage. Do not discard any packing material until all items are accounted for. Small items are often thrown away with packing material.

Packing material should be retained until equipment testing is completed. Any equipment returned to the factory should be packed in original cartons, insured, and pre-paid.

2 Installation

IMPORTANT NOTICE

This equipment must be operated in a well-ventilated rack cabinet.

Install rack-mounted equipment in a well-ventilated, well-grounded, and shielded rack cabinet. Do not locate solid-state equipment in a rack above tube-type equipment, which produces high temperatures.

Problems can also be avoided by locating this unit away from other equipment, which has transformers that produce strong magnetic fields. These fields can induce hum and noise into the Marti equipment thus reducing performance. Strong radio frequency (RF) fields should be avoided where possible. Extensive shielding and filtering has been incorporated into this equipment to permit operation in moderate RF environments. All equipment racks, cabinets, etc. should be bonded together by wide copper grounding strap to ensure that all system elements are at RF ground potential.

2.1 STANDARD CONNECTIONS

1. Connect the receiving antenna coax to the ANTENNA TYPE N port on the rear–panel using a type–N male connector. A short flexible jumper, 20 inches maximum, may be used between the ANTENNA port and the Heliax. Marti Part No. 585–017 Double–Shielded, Low–Loss RG–214/U jumper is recommended.

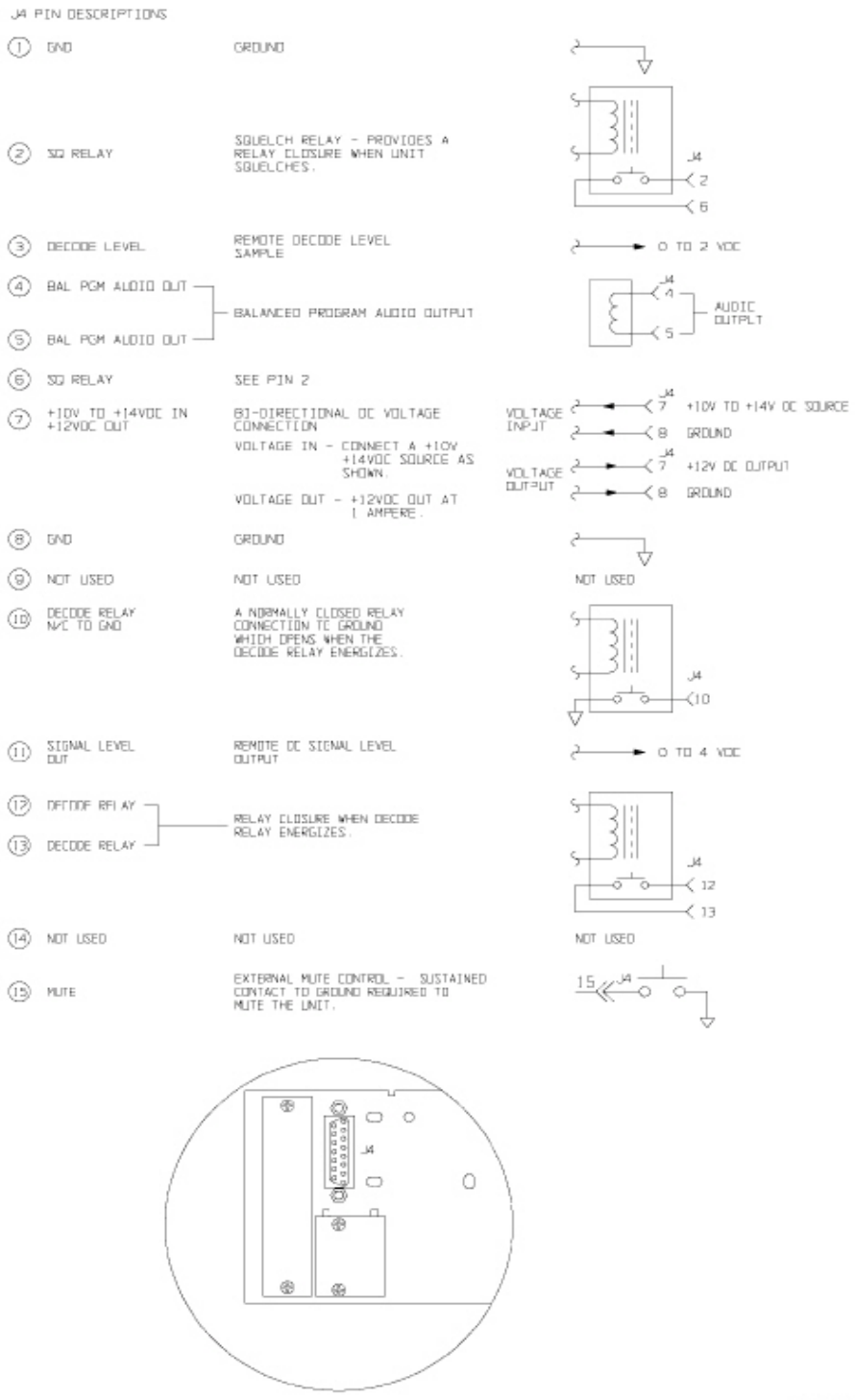
2. Balanced program audio output is located at accessory connector J4–4 and J4–5 (refer to Figure 1). The output level can be adjusted from –10 to +11 dBm. Refer to the accessory kit and locate the 15–Pin D–Type mating connector. Connect shielded audio cable to J4–4 and J4–5. If unbalanced audio is desired, connect the cable between J4–4 (signal) and J4–1 (ground). Once the audio cable is installed, connect the mating connector to the J4 receptacle on the rear–panel.

CAUTION

IF DC OPERATION IS REQUIRED, DO NOT APPLY MORE THAN +14V TO THE UNIT.

3. Ensure the receiver rear–panel ON/OFF switch is OFF. Connect the rear–panel AC line receptacle to an 85 to 264V, 47 to 63 Hz AC power source. **USE ONLY A 3–PRONG GROUNDED OUTLET RECEPTACLE FOR SAFETY.** The unit can also be operated from a +10V to +14V external dc supply. If DC operation is required, refer to Figure 1 and connect: 1) the positive wire to J4–7 and 2) ground to J4–8.

4. The receiver is equipped with a rear–panel ground terminal. Connect a ground wire between earth ground and the GND terminal on the receiver rear panel.



597–8104–1

FIGURE 1. ACCESSORY/REMOTE CONNECTIONS

2.2 Mobile Repeater Connections

A mobile repeater installation requires one of the following Receiver to Transmitter cables:

- For an RPT–15 Transmitter, use Cable No. 585–037–2 with 4 Amp fuse.
- For an SRPT–30/40A Transmitter, 12–15 VDC operation, use Cable No. 585–139.
- For SRPT–30/40A Transmitter, 15–30 VDC operation, use Cable No. 585–140.

A mobile repeater installation also requires one of the following mobile mounting brackets:

- For an SR–30/SR–40A receiver, use Mobile Mounting Bracket 700–252.
- For an RPT–15 Transmitter, use Mobile Mounting Bracket 700–252.
- For an RPT–30 Transmitter, use Mobile Mounting Bracket 700–251.

1. Locate the SR–30/SR–40A Receiver and RPT–Series Transmitter in the vehicle and secure with appropriate mounting brackets.

2. The transmitter and receiver must have individual ground (black wire) connection to bare metal of vehicle body. Scrape paint from body at point of connection, drill hole and secure ground terminals with metal screws. Connect red fused wire to the appropriate 12 volt DC source on vehicle.

3. Install vehicle antennas per their instructions.

4. Connect receiving and transmitting antennas. Then connect receiver to transmitter cable listed above between accessory connector of transmitter and receiver.

5. With system operating, adjust line level input gain pot on transmitter (Input 4 of RPT–30 or AUX pot of RPT–15) for about 3 dB compression with program material.

3 ANTENNAS

CAUTION & WARNING

You can be killed if an antenna comes in contact with electric power lines or exposed electrical wiring. For your safety use extreme caution when installing antennas. Keep away from power lines.

Personnel must not be near the antenna when radiating. Locate antenna as far as possible from people and equipment susceptible to RF radiation. Do not mount antenna directly on transmitter. Refer to ANSI C95.1 "Limits on Non–Ionizing Radiation."

3.1 BASE STATION ANTENNA INSTALLATION CHECKLIST

The following suggestions are offered to help those responsible for antenna installations avoid costly errors in assembly and adjustment. Marti Electronics, Inc. assumes no responsibility for the installation and performance of antenna systems associated with its equipment. The following suggestions are not intended to be a complete step–by–step procedure, simply a listing of some of the most frequently reported errors in antenna system installation.

3.1.1 Antenna Assembly

Follow the manufacturer's instructions carefully. If no instructions were included with the antenna, call or write the antenna manufacturer for instructions. Antennas which have phasing or stacking cables must be assembled care- fully to avoid phase reversal or signal cancellation.

3.1.2 Transmission Line Connector Assembly

Do not use RG–58U or RG–8U cable for RPU station antennas! They have too much loss at VHF and UHF frequencies. Follow the instructions furnished by the manufacturer when cutting coaxial cable. Inspect the cable ends for small metal fragments which can short–circuit the line inside the connector assembly. Check the line for a short– circuit condition after each connector is installed by using an ohmmeter. Pressurized line should be checked for several days under pressure before installation on a tower to ensure that there are no leaks in the line or fittings

3.1.3 Moisture Proofing Coax Connectors and Fittings

Extreme care must be exercised with coaxial cable before and after connectors have been installed to ensure that moisture does not enter the line. Foam dielectric line can take on moisture by absorption which is difficult to detect and remedy. Therefore, keep the line dry while in storage with ends tightly capped. Coaxial splices, connectors, and fittings to be located outside should be made mechanically tight, then coated with a weather–proofing material over at least two layers of vinyl plastic electrical tape. Moisture problems in antenna systems are usually traced back to connectors which have NOT been properly taped. The Marti K–1 Grounding and Weatherproofing Kit is recommended for use in each new antenna installation.

3.1.4 Location and Grounding of Coaxial Cable

Keep the RPU receiver coaxial cable as far from the broadcast transmitter and its coaxial cable as possible. DO NOT STRAP RECEIVER CABLE TO THE MAIN ANTENNA CABLE AT ANY POINT. PLACE THE RECEIVER ANTENNA COAXIAL CABLE ON THE OPPOSITE SIDE OF THE TOWER FROM THE MAIN ANTENNA CABLE. Maintain maximum separation between these cables at all points, including the distance from tower base to transmitter building as well as inside the building.

3.1.5 System Grounding

It is essential that the RPU antenna system be properly grounded for safety and proper operation.

3.1.6 Antenna Installation and Adjustment

The polarization of the transmit and receive antennas of the RPU system must be the same! This means that if the transmitting antenna is vertical, the receiving antenna must also be vertical. Each antenna should be attached to the tower using the proper side mount or top mount hardware. If an RF wattmeter is available, each antenna and transmission line can be checked for VSWR when the transmitter is supplying power to it. The VSWR should be less than 1.5 to 1 (1.5:1). IF THE ANTENNA SYSTEM FAILS TO GIVE THE PREDICTED SIGNAL STRENGTH LEVEL, THE FOLLOWING ITEMS SHOULD BE CHECKED:

1. Check for correct assembly of antenna.

2. Check that antennas have same polarity.

3. Check VSWR of both transmit and receive antennas. VSWR should be less than 1.5:1.

4. Check for obstructions in the path such as trees and man–made structures. The base antenna must be high enough to provide a line–of–sight path to the remote transmitting antenna.

4 OPERATION

4.1 CONTROLS AND INDICATORS

4.1.1 SIGNAL ATTENUATION CONTROL

The SIGNAL ATTENUATION control adjusts a variable attenuator at the input of the converter. This control is designed to minimize the reception of unwanted signals during interference conditions. These conditions are due to extremely high intermodulation from a combination of neighboring signal frequencies. This unwanted signal can be reduced or eliminated by attenuating the received signal using the SIGNAL ATTENUATION control. However, the desired signal will also be attenuated and may result in degraded audio performance.

The SIGNAL ATTENUATION MAX SIG and ATT indicators present the state of the attenuator. When the MAX SIG indicator is illuminated, the attenuator is off (maximum input signal level). When the ATT indicator is illuminated, the attenuator is reducing (attenuating) the input signal level. The level of signal attenuation is indicated by operating the front panel multimeter switch to SIGNAL LEVEL (ATT).

To raise the attenuation level, depress the SIGNAL ATTENUATION , ▲ section of the control. The ATT indicator will illuminate and the input signal level will be lowered as viewed on the multimeter. To lower the attenuation level, depress the SIGNAL ATTENUATION ' ▼ section of the control. The input signal level will raise as viewed on the multimeter.

Typically, the control is adjusted to provide maximum signal to the receiver. As a result, the MAX SIG indicator will illuminate. Adjust the control only to reduce unwanted signals during extreme interference conditions.

4.1.2 MONO PROGRAM LEVEL CONTROL

The audio output level is adjusted using the MONO PROGRAM LEVEL control. The audio level can be adjusted from –10 dBm to +11 dBm. Observe the audio level by operating the multimeter switch to MONO PROGRAM LEVEL.

To adjust the output level, operate the multimeter switch to MONO PROGRAM LEVEL. To raise the output level, depress the MONO PROGRAM LEVEL , ▲ section of the control. To lower the output level, depress the MONO PROGRAM LEVEL ' ▼ section of the control. Adjust the audio level until the desired output level is displayed on the multimeter.

The control can be operated using two methods. If the control is depressed and held, the level will change rapidly. If the control is momentarily depressed, the level will change in approximately 0.150 dB increments.

4.1.3 SQUELCH LEVEL CONTROL

The level at which the receiver will squelch is controlled by the SQUELCH LEVEL control. The UNSQUELCHED indicator illuminates to indicate the receiver is unsquelched. The squelch level is raised by depressing the SQUELCH LEVEL , ▲ section of the control. The squelch level is lowered by depressing the SQUELCH LEVEL ▼ section of the control. To adjust the control, proceed as follows:

1. Operate the multimeter switch to SIGNAL LEVEL (ATT).

2. Depress and hold the SQUELCH LEVEL ' ▼ section of the control for approximately 10 seconds. This will lower the squelch point to the lowest level.

3. Lower the input signal level to the desired squelch point as viewed on the multimeter.

4. Depress the SQUELCH LEVEL , ▲ section of the control until the UNSQUELCHED indicator extinguishes.

5. Return the signal level to the normal level.

4.1.4 MULTIMETER

The SR–30/SR–40A is equipped with a multimeter. The multimeter is controlled by the meter select switch. The following text presents a description of the multimeter switch positions. To use the multimeter, operate the switch to the desired position and view the indication on the meter. The green values on each meter scale present nominal values.

SIGNAL LEVEL (ATT) – Displays the input signal level in microvolts. The nominal level is 100 uV. The signal level will be accurate only when the MAX SIG indicator is illuminated. For example, if the ATT indicator is illuminated and the meter indicates 100 uV, the actual signal level is less than 100 uV due to the attenuation.

DECODE LEVEL – Displays the decode level in volts peak–to–peak. The nominal level is 2V p–p. POWER SUPPLY – Displays the dc power supply voltage. The nominal level is +12V dc.

MONO PROGRAM LEVEL – Displays the audio output level in dBm. The nominal level is +8 dBm.

4.1.5 POWER INDICATOR

An indication that power is applied to the unit is provided by the POWER indicator. The POWER indicator will illuminate when power is applied to the unit.

4.1.6 AFC LOCK INDICATOR

The AFC LOCK indicator illuminates to indicate the receiver is locked to the selected frequency. The indicator will flash to indicate the receiver has become unlocked from the selected frequency.

4.1.7 SR–30 FREQUENCY SELECT F1/F2

The SR–30 operating frequency is controlled by the FREQUENCY SELECT switch. Indicators F1 and F2 illuminate to indicate the unit is operating on the F1 frequency or the F2 frequency. To change the operating frequency, proceed as follows:

1. Depress the FREQUENCY SELECT switch.

The AFC LOCK indicator will flash quickly to indicate the unit has changed frequencies. The unit will toggle to the opposite frequency as indicated by the F1/F2 indicators.

4.1.8 SR–40A frequency select

The SR–40A operating frequency is controlled by the FREQUENCY SELECT switches and the EXECUTE switch. The operating frequency is selected using the 9 FREQUENCY SELECT pushwheel switches. The EXECUTE button is used to assign the frequency once selected. To change the operating frequency, proceed as follows:

1. Determine the 9 digit operating frequency. Use the 9 FREQUENCY SELECT switches to enter the operating frequency.

2. Depress the EXECUTE switch.

The AFC LOCK indicator will flash quickly to indicate the unit has changed frequencies.

4.1.9 HEADPHONE RECEPTACLE/LEVEL CONTROL

The receiver audio can be monitored using the front–panel headphone receptacle and level control. A 1/4" inch stereo headphone receptacle is provided for headphone monitoring. A 40 Ohm or greater headphone impedance is required. Adjust the headphone level using the HEADPHONE LEVEL control.

4.2 INITIAL START–UP AND OPERATION

The following text presents initial start–up and operating procedures.

1. Apply power to the unit.

The POWER indicator will illuminate. The AFC LOCK indicator will illuminate when the unit locks to a frequency. The UNSQUELCHED indicator will illuminate if the unit signal level is above the squelch point. The MAX SIG level indicator will illuminate if no attenuation is applied. The ATT indicator will illuminate if attenuation is applied.

2. To change the operating frequency, proceed as follows:

A. For SR–30 units, proceed as follows:

1. Depress the FREQUENCY SELECT switch.

The unit will toggle from one frequency to the opposite frequency as indicated by the F1/F2 indicators. The AFC LOCK indicator will flash quickly to indicate the unit has changed frequencies.

2. To change to the opposite frequency, wait approximately 1 second, then depress the FREQUENCY SELECT switch.

B. For SR–40A units, proceed as follows:

1. Determine the 9 digit operating frequency. Use the 9 FREQUENCY SELECT switches to enter the frequency.

2. Depress the EXECUTE switch.

The AFC LOCK indicator will flash quickly to indicate the unit has changed frequencies.

3. If squelch adjustment is required, use the SQUELCH LEVEL control to adjust the unit to the desired squelch point.

4. To view the program audio on the multimeter, operate the multimeter switch to MONO PROGRAM LEVEL.

The audio will appear on the multimeter.

5. Adjust the program audio output level to the desired level using the MONO PROGRAM LEVEL control.

6. Use the multimeter to monitor the SIGNAL LEVEL, DECODE LEVEL, POWER SUPPLY LEVEL, or MONO PROGRAM LEVEL as required.

7. To monitor the program audio, insert a stereo headphone jack into the HEADPHONE receptacle. Adjust the headphone level using the HEADPHONE LEVEL control.

5 THEORY OF OPERATION

Refer to block diagram 597–8104–2 in the SCHEMATIC AND ASSEMBLY DRAWINGS section as required for the following discussion.

5.1 Converter, 913–2132–150/–240/–330/–450/–950

The received RF signal is applied to the converter circuit board. This circuit board is: 1) assembled for specific bands of operation and 2) can accept a 50 MHz (30 MHz for 950 MHz units) wide group of frequencies within the specific band. The received signal passes through pre–selector filter FL1. Following the filter, the signal is routed to a second filter network consisting of FL2, FL3, FL4, FL5, FL6, FL7, FL8, and FL9. This network consists of filter sections divided into 12.5 MHz segments. As determined by the operating frequency, the RF signal is routed to the appropriate filter section. Once filtered, the signal is routed to 2 frequency synthesized PLL down converter circuits. The first PLL circuit converts the signal to 70.7 MHz The second PLL circuit converts the signal to a 10.7 MHz output. The output of the second PLL circuit is then routed to the IF bandpass filter.

Control of the converter is provided by microprocessor U1. This microprocessor is also used to control all of the operating functions of the unit.

5.2 IF Bandpass Filter, 800–207

The IF signal output of the converter is impedance matched to the IF bandpass filter which provides the selectivity or channel bandwidth of the receiver. Several IF filters are available for various bandwidth requirements. The output of the bandpass filter is impedance matched to the following stage.

5.3 IF Amplifier/Detector, 800–208

The IF amplifier chain consists of two discrete transistor stages coupled by ceramic filters to an integrated circuit. IC–1 contains high–gain FM limiters, quadrature detection, audio preamplification and wide range signal level metering. IF symmetry at the IC input is compensated by L1 and C19.

5.4 Audio Amplifier, 800–228

Audio from the FM detector first passes through notch filter IC1B, to remove the subaudible encoding tone. This signal is then fed into the IC1A de–emphasis circuit. The feedback circuit of this op–amp has a fixed 75 micro- second loop with an additional 75 microseconds selected by Q1 to provide noise–reduction on weak signals of 1.5 microvolts or less. Q1 is switched on by the microprocessor on the converter circuit board. Following the de– emphasis circuit the signal passes through two stages of Butterworth low–pass filtering (IC2A and IC2B), then to a dual op–amp for the audio output (IC3A and IC3B). Diodes D1 and D2 rectify the output audio for level metering. A

600/600 ohm transformer isolates the output op–amp from the line. One op–amp of IC3 drives the line output, the other drives the headphone receptacle.

5.5 Tone Decoder, 800–229

Pre–emphasized audio from the FM detector at connector pin 5 is fed into the inverting input of IC1A, which functions as a low–pass filter/amplifier. Since subaudible tones in the band of 25–29 Hz are to be selected from the wide–band audio, the low–pass filter/amplifier attenuates the higher frequencies at a slope of about

6 dB/octave. The output of the low–pass filter/amplifier feeds a second order positive feedback bandpass filter consisting of IC1B and IC1C. This is a very narrow–band filter having a 3 dB bandwidth of ±0.1 Hz. and is tuned to the exact subaudible tone frequency by potentiometer R7. The subaudible tone selected by these filters is rectified by diodes D4 and D5. This rectified tone is filtered by C7 and applied to voltage comparator IC2. When this voltage exceeds the reference voltage setting of R16 the comparator output goes high, turning on transistor Q1 and pulling in relay K1. Relay contacts are available at accessory connector J4 for low current switching and signaling.

5.6 Input/Output Filter, 800–193AD

All input/output circuits connected to the accessory connector as well as the AC line input have radio–frequency filters. The filter circuitry is located on I/O Filter Schematic 800–193AD.

5.7 Front Panel Circuit Board Assembly, 953–2130–001/–002

The front panel circuit board contains three switching power supply circuits, decode circuitry for the SR–40A frequency programming switches, the metering circuitry, and a digital–to–analog converter (DAC) circuit. +12V dc from the switching power supply is applied to the front panel circuit board. U13, U14, and U24 use this voltage to create the following dc voltages: 1) +5V, 2) +14V, and 3) –12V. The +14V supply is routed to the IF detector, audio, and decode circuit boards. On SR–40A units, the frequency programming information is converted to serial data and routed to the microprocessor by a decode circuit consisting of U1, U2, U3, U4, and U20. A DAC consisting of U16, U17, U18, U19, U22, and U23 is used to control the program audio output level. The DAC is controlled by the microprocessor.

6 TEST EQUIPMENT

Distortion Analyzer	Krohn–Hite Model 6801
Oscillator	Krohn–Hite Model 4500
Attenuator Set	Hewlett–Packard Model 3500
Frequency Counter	Hewlett–Packard Model 5383A (option
Digital Multimeter	Beckman Model 3030
Analog Multimeter	Triplett Model 630
RF Attenuator	adjustable 0–110 dB
RF Signal Generator	Marconi Model 2022C
Spectrum Analyzer	Hewlett–Packard Model 8558B
Oscilloscope	Tektronix Model 2215

7 TOOLS FOR ALIGNMENT

Tuning Tool	GC 9300, GC 9440, Spectrol 8T000, Sprague– Goodman
Screwdriver	Xcelite R184, 1/8” x 4”

8 TUNE–UP AND ADJUSTMENTS

NOTICE

This equipment was thoroughly tested and inspected at the factory prior to shipment. Adjustments should rarely be necessary in the field and should only be attempted by highly trained technicians familiar with this type of equipment. Laboratory grade test equipment is required and is listed under TEST EQUIPMENT AND TOOLS.

The following text presents the adjustment procedures for the SR–30/SR–40A receivers. Do not adjust any other controls in the unit. Refer to component locator 597–8104–3 in the SCHEMATIC AND ASSEMBLY DRAW- INGS section as required for the following procedures.

8.1 IF Amplifier/Detector Circuit Board Adjustments

WARNING

AC LINE VOLTAGE IS PRESENT ON THE POWER SUPPLY TERMINAL STRIPS.
DO NOT TOUCH THE TERMINAL STRIPS DURING THE FOLLOWING ADJUSTMENT.

1. Connect the RF signal generator to the ANTENNA input. Adjust the signal generator for; 1) the desired operating frequency, 2) an output level of 4 mV, and 3) no modulation.
2. Connect a voltmeter between IC1–13 and ground.
3. Adjust coil L1 for a +5.0 v dc indication on the multimeter.
4. Connect a voltmeter between J1–3 and ground.
5. Adjust potentiometer R18 for a +4.0V dc indication on the multimeter.
6. Connect the distortion analyzer to the receiver audio output at J4.
7. Adjust the RF signal generator for: 1) an output level of 100 uV and 2) modulation using a 400 Hz tone with a 5.4 KHz deviation. The deviation will vary depending on the bandwidth of the unit.
8. Adjust the primary and secondary coils of T1 for minimum distortion and maximum output level on the analyzer.
9. Remove the test equipment.

8.2 Decode Board Circuit Board Adjustments

WARNING

AC LINE VOLTAGE IS PRESENT ON THE POWER SUPPLY TERMINAL STRIPS.
DO NOT TOUCH THE TERMINAL STRIPS DURING THE FOLLOWING ADJUSTMENT.

1. Connect an RF signal from an encoded Marti transmitter adjusted for proper encode frequency and modulation level as an encode signal source to the receiver.
2. Operate the multimeter to DECODE LEVEL.
3. Adjust SENSITIVITY control R1 for approximately 2 volts p–p on the front panel meter.
4. Adjust DECODE FREQUENCY control R7 for maximum signal on the front panel meter.
5. Re–adjust SENSITIVITY control R1 for approximately 2 volts p–p on the front panel meter.
6. Adjust relay control R16 so that relay K1 just closes at this level.
7. Remove the test equipment.

8.3 POWER SUPPLY/METER CALIBRATION

1. Connect a voltmeter between TP–17 and ground on the front panel circuit board.

WARNING

AC LINE VOLTAGE IS PRESENT ON THE POWER SUPPLY TERMINAL STRIPS. DO NOT TOUCH THE TERMINAL STRIPS DURING THE FOLLOWING ADJUSTMENT.

2. Adjust SVR1 on the power supply for a +12V dc indication on the multimeter.
3. Operate the multimeter switch to POWER SUPPLY.
4. Adjust R65 on the front panel circuit board for a 12V indication on the multimeter.
5. Remove the test equipment.

9 SR 30 BILL OF MATERIAL

This bill of material uses an indented structure to show relationships of parts into sub assemblies. Example; all BOM LEVEL 2 parts are contained in the BOM LEVEL 1 part immediately above it.

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
0	SR30-xxx-xxx	SR-30,xxx-xxx MHZ,RPU REC,xx KHZ REC BW,110/220V		
..1	339-0031	FILTER/SWITCH, 4 AMP, AC ENTRY	1	
..1	400-0600	STRIP,QUIET SHIELD,6.00x.197	1	
..1	402-0005	PRESS CLIP,NYLON W/ADHESIVE BACK	5	
..1	402-0006	MT,ADH BACKED,FOR CBL TIES	2	
..1	420-0817	ASSY,FEMALE SCREWLOCK 205817-1	4	
..1	420-2105	SCREW,2-56X.312,S.S. PH SC	2	
..1	420-3706	SCREW,M3 X 6,PHILLIPS PAN HEAD,SS	2	
..1	420-4103	SCREW,4-40X.187,S.S. PH	2	
..1	420-4105	SCREW,4-40X.312,S.S. PH	2	
..1	421-0102	10-32 KEP NUT	1	
..1	421-1111	RIV,1/8X.422L .126-.187GR CLOS	8	
..1	421-4008	4-40 KEP NUT	2	
..1	421-8028	NUT,JAM,1/2-28 UNEF-2B	1	
..1	422-6106	SCREW,SEMS 6-32 X 3/8 PAN PH. ST."	2	
..1	423-4002	#4 LOCK S.S. SPLIT	4	
..1	423-9002	WASH,INT TOOTH,1/2	1	
..1	469-0021	FINGER STOCK,LAIRD 97-550,24 LONG"	1.156	
..1	469-0022	FINGER STOCK,LAIRD 97-654,12 LONG"	0.1	
..1	471-5347	ENCLOSURE,CONVERTER,MARTI SR SERIES RECEIVERS (NOTE)	1	
..1	471-5348	PANEL,REAR,SR30/SR40A	1	
..1	471-5349	COVER,SR30/SR40A	1	
..1	471-5350	CHASSIS,SR30/SR40A	1	
..1	471-5385	FILLER,REAR,SRPT-30	1	
..1	500-022	Screw, 6-32 x 3/8 phillips pan head M/S nickel plated"	2	
..1	500-188	Screw, 4-40 x 3/8 phillips,flat head,black oxide"	2	
..1	500-210	Screw,SEMS 4-40x1/4 Phil Pan Head MS Blk Zinc(external lock)	67	
..1	510-090	Cable Ties, 4 Panduit PANPLT1M-M MS3367-4-9"	2	
..1	510-132	Handle Assy., black w/black plated steel hdwe #1879-376-370	1	
..1	510-205	BUMPER, BRUCE PLASTICS 0772-0014 BLACK	8	
..1	513-036	STANDOFF,1/4HEX x 0.5"LONG,4-40,M/F"	2	
..1	540-0018	POWER SUPPLY, 40 WATT, 12 VOLT	1	
..1	594-0503	LABEL, DANGER-HAZARDOUS VOLTAGE	2	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	594-0505	LABEL, WARNING-ONLY AUTHORIZED PERSONNEL	1	
..1	700-226-26	Shield, Rec. Audio Board	1	
..1	800-193AD	SR30/SR40A/SR20M/SR20C I/O PCB (SBCM)	1	
....2	270-102	Cap,monolithic,1000pf 50v 5%KemetC1206C102J5GACTR marked	13	C1,C2,C3,C4,C5,C6, C7,C8,C9,C10,C11, C15,C16
....2	270-220	Cap, monolithic chip, 22 pf 50v 5% KEMET C1206C220J5GACTR	3	C12,C13,C14
....2	310-014	TRANSFORMER, AUDIO, MIDCOM 671-9041 TECATE VFT 950-0394	1	T1
....2	330-018	INDUCTOR, 10 uH, 10%	14	L1,L2,L3,L4,L5,L7,L8 ,L9,L11,L12,L13,L14, L15,L16
....2	330-019	INDUCTOR, 2.5 TURN, HIGH FREQUENCY SUPPRESSION	2	L6,L10
....2	340-0004	SW,JUMPER PROGRAMMABLE	5	JP1,JP1,JP2,JP1, JP1
....2	500-162	Screw, 4-40 x 7/16 phillips pan head MS zinc plated"	2	
....2	550-123	Connector, 10 pin header (cut from 550-162)	1	P1
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.417	
....2	550-136	Connector, 6 pin Molex header (cut from 550-162)	2	P2,P3
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.25	
....2	550-170	Connector, D-Sub 15 pin angle	1	J4
....2	550-184	Connector, 1 dual pin header (cut from 550-316)	1	JP2
......3	550-316	HEADER, BREAKAWAY 40x2, 0.1 SPACING"	0.025	
....2	550-185	Connector, 5 dual pin header (cut from 550-316) (note)	1	JP1
......3	550-316	HEADER, BREAKAWAY 40x2, 0.1 SPACING"	0.125	
....2	550-186	Connector, 3 pin Molex header (cut from 550-162)	1	P4
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.125	
....2	800-193B	PC Board, I/O Filter STL-10 R-10	1	PCB
..1	800-208AC	IF Amplifier AR/CR	1	
....2	360-032	FILTER, CERAMIC, 10.7MHZ	2	CF1,CF2
....2	800-208A	IF AMPLIFIER, AR/CR, GENERIC	1	
......3	100-1041	RES,1K OHM,1/4W,1%	1	R5
......3	100-1051	RES,10K OHM,1/4W,1%	2	R19,R20
......3	100-1531	RES,150 OHM,1/4W,1%	2	R1,R2
......3	103-2241	RES,2.21K OHM,1/4W,1%,METAL	3	R6,R8,R15
......3	103-3324	RES,3.32K OHM,1/4W,1%,METAL	2	R3,R9
......3	103-4741	RES,4.75K OHM,1/4W,1%,METAL	1	R16

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	103-4753	RES,475 OHM,1/4W,1%,METAL	2	R7,R12
.....3	145-431	Resistor, 432 ohm 1/4 watt 1% metal film Mepco SFR25	3	R4,R10,R14
.....3	145-470	Resistor, 47.5 ohm 1/4 watt 1% metal film Mepco SFR25	3	R11,R13,R17
.....3	177-5050	RES,TRMR,50K,10%,TOP ADJ 3299Y	1	R18
.....3	217-103	CAP,0.1UF 250VDC 5%,POLY FILM	3	C9,C12,C14
.....3	217-104	CAPACITOR, .01 UF 50V GMV DISC	10	C1,C2,C3,C4,C5,C6, C7,C8,C10,C16
.....3	219-220	CAPACITOR, ELECTROLYTIC 22uF RADIAL 35V	1	C13
.....3	219-221	CAPACITOR, ELECTROLYTIC 220uF 25V RADIAL	1	C11
.....3	255-390C	Capacitor, 39pF 5% 200V ceramic dipped C322C390J2G5CA	1	C15
.....3	255-470C	CAP, 47pF 5% 200V CERAMIC DIPPED	1	C18
.....3	256-131	CAPACITOR, 130 pF 5% 50V NPO DISC	1	C17
.....3	290-521	CAP, VARIABLE, 5-25 pf	1	C19
.....3	299-470	CAP, TANTALUM, 4.7 UF 16V	1	C20
.....3	350-030	INDUCTOR, 3.0 - 7 UH W/SHIELD CAN #47271-023	1	L1
.....3	350-123	Detector, SNY-074-1919A (235SU1)	1	T1
.....3	401-235	INTEGRATED CIRCUIT, SANYO LA1235	1	IC1
.....3	417-1604	SKT,16-PIN,DIP	1	1C1
.....3	440-245-1	TRANSISTOR, 2N2857	2	Q1,Q2
.....3	550-084	CONNECTOR,PHONO JACK,PCB MOUNT	1	J1
.....3	550-138	Connector, 8 pin Molex header (cut from 550-162)	1	P1
.....4	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.333	
.....3	800-208B	PC Board, IF 10.7 MHz R Receiver	1	PCB
..1	800-229A	AR-10/CR-10 Decode Board	1	
....2	100-1041	RES,1K OHM,1/4W,1%	1	R6
....2	100-1051	RES,10K OHM,1/4W,1%	1	R13
....2	101-104	Potentiometer, 100K ohm cermet Bourns 3309P-1-104	1	R1
....2	101-502	POT,5K,SINGLE TURN,HORIZONTAL PCB MOUNT	1	R16
....2	103-1007	RES,1 MEG OHM,1/4W,1%,METAL	1	R23
....2	103-1062	RES,100K OHM,1/4W,1%,METAL	3	R2,R4,R17
....2	103-1823	RES,182 OHM,1/4W,1%,METAL	1	R15
....2	103-2211	RES,22.1K OHM,1/4W,1%,METAL	1	R8
....2	103-4731	RES,475K OHM,1/4W,1%,METAL	1	R11
....2	103-4741	RES,4.75K OHM,1/4W,1%,METAL	2	R19,R20
....2	104-203	Potentiometer, 20K ohm cermet 64Y203 top adjust	1	R7
....2	145-225	Resistor, 2.21 meg ohm 1/4 watt 1% metal film (2.21 Meg 1%)	1	R3
....2	145-470	Resistor, 47.5 ohm 1/4 watt 1% metal film Mepco SFR25	1	R14

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	145-683	Resistor, 68k ohm 1/4 watt 1% metal film Mepco SFR25	1	R9
....2	145-684-1	Resistor, 681k ohm 1/4 watt 1%	2	R10,R24
....2	145-822	Resistor, 8.25k ohm 1/4 watt 1% metal film Mepco SFR25	1	R12
....2	200-0009	DIODE,ZENER,1N 4739A	1	D6
....2	203-4148	DIODE,1N4148	2	D4,D5
....2	211-3904	TSTR,2N3904	1	
....2	215-103	CAPACITOR, .01 uFD 2.5% 100V POLYPRO	1	C2
....2	215-473	CAPACITOR, .047 uFD 2.5% 100V POLYPRO	2	C4,C5
....2	219-200	CAPACITOR ELECTROLYTIC 22UF 25V	5	C3,C6,C7,C9,C10
....2	219-251	CAP,ELECTROLYTIC,220uF 25V,AXIAL,-20/+50%	1	C13
....2	226-274	Cap.,.27 mf 100v 10% polypro CD MTC1P27K OR Bishop C21B274K	1	C1
....2	400-293	IC, DUAL DIFFERENTIAL COMPARATOR	1	IC2
....2	400-740	IC, JFET INPUT OPAMP, TL084CN	1	IC1
....2	410-754	Diode, zener Motorola 1N754A 6.3v	1	D3
....2	412-494	DIODE, GERMANIUM 1N270 (note)	1	D1
....2	414-007	DIODE, RECITIFIER,1N4007	1	D8
....2	550-123	Connector, 10 pin header (cut from 550-162)	1	P1
.....3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.417	
....2	550-161	IC Socket, 16 pin Aries 16-3518-11	1	XK1
....2	570-035-1	Relay, Aromat HB2E-DC12V	1	K1
....2	800-229B	PC Board, Decode RPU Receiver	1	PCB
..1	913-2134	ASSY,PCB,BW SELECTABLE AUDIO BD.(SBCM)	1	
....2	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	12	C1,C2,C12,C13,C14, C17,C18,C43,C44, C45,C46,C47
....2	006-2285-500	CAP,ELECTRO,220UF,20%,50V,SMD	1	C49
....2	007-0683	CAP CERAMIC, 0.068uF, 50v, SMD, 0805	1	C31
....2	007-1003-050	CAP,1000PF,0805,5%,50V	3	C8,C30,C42
....2	007-1034	CAP,CER,0.01uF,50V,10%,SMD	3	C7,C15,C16
....2	007-1034-026	CAP,CER,10000 PF,1%,25V,1206,SMD	1	C6
....2	007-1203-500	CAP, CER, 1200 PF, 50V, 5%, SMD	3	C10,C29,C41
....2	007-1204-050	CAP,.012UF,0805,5%,50V	1	C19
....2	007-1503-050	CAP,1500PF,0805,5%,50V	3	C11,C28,C40
....2	007-1504-050	CAP,.015UF,0805,5%,50V	1	C36
....2	007-1803-050	CAP,1800PF,0805,5%,50V	2	C27,C39

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	007-1804-050	CAP,.018UF,0805,5%,50V	1	C35
....2	007-2203-050	CAP,2200PF,0805,5%,50V	2	C9,C24
....2	007-2204-050	CAP,.022UF,0805,5%,50V	2	C34,C48
....2	007-2703-050	CAP,2700PF,0805,5%,50V	1	C23
....2	007-2704-050	CAP,.027UF,0805,5%,50V	1	C33
....2	007-3314	CAP, CER, 3300PF, 50V, 5%, SMD	3	C22,C26,C38
....2	007-3904-050	CAP,.039UF,0805,5%,50V	1	C32
....2	007-3923-050	CAP,CER,3900 PF,1%,50V,1206,SMD	1	C3
....2	007-4704-050	CAP,4700PF,0805,5%,50V	1	C21
....2	007-4724-051	CAP,CER,4700 PF,1%,50V,1206,SMD	2	C4,C5
....2	007-5603-050	CAP,5600PF,0805,5%,50V	2	C25,C37
....2	007-6213-500	CAP,CER,620pF,50V,5%,SMD	2	C50,C51
....2	007-6803-050	CAP,6800PF,0805,5%,50V	1	C20
....2	102-0100	RES,CHIP,10.0 OHMS,1/10W,1%,SMD	1	R28
....2	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	1	R13
....2	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	1	R24
....2	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	4	R11,R23,R25,R27
....2	102-1004	RES,CHIP,1.00M OHMS,1/10W,1%,SMD	3	R4,R5,R6
....2	102-1214	RES, CHIP, 1.21K OHM, 1/10W, 1%	1	R29
....2	102-1825	RES,CHIP,18.2 K OHM,1/10W,1%	1	R22
....2	102-2001	RES,CHIP,2.00K OHMS,1/10W,1%,SMD	1	R18
....2	102-2212	RES,CHIP,22.1K OHMS,1/10W,1%,SMD	1	R26
....2	102-2492	RES,CHIP,24.9K OHMS,1/10W,1%,SMD	1	R10
....2	102-2741	RES,CHIP,2.74K OHMS,1/10W,1%,SMD	1	R16
....2	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	2	R17,R30
....2	102-4731	RES,475K OHM,1/10W,1%,SMD	2	R2,R7
....2	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	1	R3
....2	102-4755	RES,CHIP,47.5K OHM,1/10W,1%	1	R12
....2	102-4991	RES,CHIP,49.9 OHMS,1/10W,1%,SMD	1	R1
....2	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R8
....2	102-7501	RES,7.5K OHMS,1/10W,1%,SMD	2	R14,R15
....2	102-8252	RES,82.5K OHM,1/10W,1%	1	R20
....2	102-9094	RES,CHIP,9.09K OHM,1/10W,1%	1	R21
....2	198-1054	TRMR,10K OHMS,TOP ADJ,SMD (N)	1	R9
....2	198-2024	TRMR,2K OHMS,TOP ADJUST,10 TURN,SMD	1	R19
....2	200-8462	DIODE,ZENER,6.2 VOLT,SMT	1	D1
....2	216-5484	TSTR,JFET,N-CHANNEL,MMBF5484,SMT	1	Q1
....2	224-1877	IC,HDPHONE AMP,DUAL,LM1877M-9,14-PIN,SMD	1	U3

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	340-0004	SW,JUMPER PROGRAMMABLE	4	P1,P2,P3,P4
....2	513-2134	PCB,MACH,BW SELECTABLE AUDIO BD.	1	
....2	550-138	Connector, 8 pin Molex header (cut from 550-162)	2	J5,J6
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.333	
....2	550-326-16	Connector, Dual Row Header, 16-Pin (cut from 550-326)	4	J1,J2,J3,J4
......3	550-326	CONN, DUAL ROW HEADER, 80-PIN	0.2	
....2	DB38003	IC,Lin TLO72 Dual OPAMP SO8 TI TL072CD	2	U1,U2
..1	943-2133	ASSY,WIRE HARNESS,SR-30/40A (SBCM)	1	
....2	402-0051	TY-RAP, W/FLAG	18	
....2	410-1489	LUG,TERM #6 SPADE #16-22	5	
....2	417-0096	PLUG,POLARIZING	4	
....2	417-0131	CONN,16 PIN 609-1630 ANSLEY	1	
....2	417-0142	PIN,.050 DIA 26-22 745254-3	10	
....2	417-1500	PLUG,15 PIN	1	
....2	417-2026	CONN, POLARIZED WIREMOUNT SOCKET, .100 PITCH"	1	
....2	417-2116	CONN,POLARIZED,WIRE,.1 IN,16-PIN	1	
....2	418-0034	PLUG,BNC DUAL CRIMP 1-227079-6	1	
....2	418-0609	CONN,25 PIN RIBBON CABLE	1	
....2	418-0615	CONN,15-PIN D-TYPE,RIBBON CABLE	1	
....2	418-2600	CONN,26-PIN,RIBBON	1	
....2	500-128	Eyelet, GS4-4 brass	3	
....2	512-020	TERMINAL,NICHIFU TMDN #125-250-03FA TERMINAL	3	
....2	550-122	CONNECTOR, 10 PIN MOLEX HOUSING 09-50-8100	2	
....2	550-133	CONNECTOR, PHONE PLUG 3C1215	3	
....2	550-135	Connector, 6 pin Molex housing 09-50-8060	2	
....2	550-137	Connector, 8 pin Molex housing 09-50-8080	3	
....2	550-327	Connector, Crimp Terminal Pin Molex 08-52-0112	54	
....2	580-033-1	Coax RG-188A/U Teflon 95% Shield M4256 TFE Tape Wrap	1.19	
....2	580-088	Shielded Wire, 16-C-22-SPJ White/Red 1 Cond. 22/19x34 pvc	13.33	
....2	600-0016	CBL,FLAT,16-COND,28GA	1.33	
....2	600-0026	CBL,FLAT,26-COND,28GA	2.33	
....2	601-1800	WIRE,AWG18 19/30 BLK	1.75	
....2	601-2209	WIRE,AWG22,19/34 WHT	45.13	
..1	953-2130-001	ASSY,SR-30 FRONT PANEL (SBCM)	1	
....2	193-0500	POT,500 OHMS,PCB MOUNT,LINEAR,HD AUDIO	1	R87
....2	310-0080	METER,MULTI,2 IN,SR-30/SR-40A	1	M1

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	323-2124	LED INDICATOR,GRN,RECTANGULAR	6	D1,D2,D3,D4,D5,D7
....2	323-3124	IND,LED,YEL	1	D6
....2	417-0311	JACK,SWCRFT #N-112B 3COND.	1	J14
....2	471-5351	PANEL,FRONT,SR30	1	
....2	500-210	Screw,SEMS 4-40x1/4 Phil Pan Head MS Blk Zinc(external lock)	7	
....2	510-005	Polytube, Manhatten#AF155A-20-yel	0.5	
....2	510-212	CONTROL KNOBS, #45KNO23	2	
....2	913-2130-003	ASSY,PCB,SR-30/40A FRONT PANEL (SBCM)	1	
.....3	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	4	C59,C62,C66,C69
.....3	007-1022	CAP,CER,100pF,50V,2%,SMD	1	C72
.....3	007-1024	CAP,CER,.001uF,50V,10%,SMD	2	C64,C71
.....3	007-1044	CAP,CER,0.1uF,50V,10%,SMD note	28	C1,C2,C3,C4,C5,C6, C7,C8,C9,C10,C11, C14,C15,C16,C17, C18,C19,C20,C21, C22,C23,C24,C25, C26,C27,C57,C77, C78
.....3	007-1054	CAP,CER,1uF,50V,10%,SMD	4	C58,C61,C65,C68
.....3	007-1512	CAP,CER,15pF,50V,2%,SMD	3	C50,C51,C52
.....3	007-1512-500	CAP,CER,150pF,50V,2%,SMD	4	C53,C54,C55,C56
.....3	007-3923	CAP,CER,390pF,100V,5%,SMD	2	C63,C70
.....3	007-6213-500	CAP,CER,620pF,50V,5%,SMD	1	C48
.....3	070-1054	CAP,TANT,1uF,35V,10%,SMD	16	C28,C29,C34,C35, C36,C37,C38,C39, C40,C41,C42,C43, C44,C45,C46,C47
.....3	070-2265-L25	CAP,TANT,22 MFD,20%,25V, E CASE,LOW ESR,SMD	5	C33,C60,C67,C73, C74
.....3	101-1003	RES,CHIP,100.0 K OHM,1%,1/8W,1206,SMD	1	R99
.....3	102-0000	RES,CHIP,0 OHM,0805,SMD	1	R69
.....3	102-1000	RES,CHIP,100 OHMS,1/10W,1%,SMD	2	R57,R83
.....3	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	14	R33,R34,R35,R36, R37,R38,R71,R80, R81,R82,R72,R73, R76,R78
.....3	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	3	R91,R92,R97
.....3	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	1	R70
.....3	102-1102	RES,CHIP,11.0K OHMS,1/10W,1%,SMD	1	R77
.....3	102-1212	RES,CHIP,12.1K OHMS,1/10W,1%,SMD	1	R94
.....3	102-1582	RES,CHIP,15.8 K, 1/10 W, 1%	1	R95
.....3	102-1780	RES,CHIP,178 OHMS,1/10W,1%,SMD	7	R39,R40,R41,R42, R43,R44,R45
.....3	102-2002	RES,CHIP,20.0K OHMS,1/10W,1%,SMD	1	R86
.....3	102-2323	RES,23.2K OHMS,1/10W,1%,SMD	1	R79
.....3	102-2431	RES,CHIP,2.43K OHMS,1/10W,1%,SMD	1	R74
.....3	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	1	R64
.....3	102-3012	RES,CHIP,30.1K,1/10W,1%,SMD	2	R93,R102

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-4532	RES,CHIP,45.3K OHMS,1/10W,1%,SMD	2	R84,R88
.....3	102-4711	RES,CHIP,475 OHMS,1/10W,1%,SMD	7	R46,R47,R48,R49, R50,R51,R52
.....3	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	40	R1,R2,R3,R4,R5,R6, R7,R8,R9,R10,R11, R12,R13,R14,R15, R16,R17,R18,R19, R20,R21,R22,R23, R24,R25,R26,R27, R28,R29,R30,R31, R32,R59,R60,R61, R62,R63,R66,R67, R68
.....3	102-5041	RES,4.99K OHM,1/10W,1%	2	R89,R96
.....3	102-5231	RES,5.23K OHM,1/10W,1%	1	R75
.....3	102-6041	RES,6.04K OHMS,1/10W,1%,SMD	1	R58
.....3	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R101
.....3	102-8164	RES, CHIP, 8.66K OHM, 1/10W, 1% ,CR21-8661F-T	1	R90
.....3	102-9095	RES,90.9K OHM,1/10W,1%,SMD	1	R85
.....3	102-9311	RES,9.31K OHMS,1/10W,1%,SMD	1	R100
.....3	185-162K	RES,162K OHM,1%,0.25W,1206	1	R98
.....3	185-68.1	Resistor, SMT, size 1206, 68.1 ohms, Dale CRCW1206-68.1	4	R53,R54,R55,R56
.....3	197-1034	TRMR,10K OHMS,SIDE ADJ,5 TURN,SMD	1	R65
.....3	204-0130	SCHOTTKY BARRIER RECTIFIER 1 AMP 30V CASE 403A SMD	2	D9,D12
.....3	204-0340	DIODE,RECTIFIER,SCHOTTKY,MBRS340T3,403-03 CASE,SMD	1	D14
.....3	204-0914	DIODE,SWITCHING,MMBD914LT1,SMD	2	D10,D13
.....3	224-0333	SWITCH,QUAD,ADG333ABRS,20-PIN SSOP,SMD	2	U22,U23
.....3	224-5206	DIG POT,6 CH,10K,AD5206BRU10,24-PIN TSSOP,SMD	1	U21
.....3	227-1576	VR, LT1576IS8, SWITCHER, 1.5A, SMD	2	U13,U14
.....3	270-0066	REL,DPDT,12VDC,DIP	1	K1
.....3	270-101	Cap., monolithic chip, 100 pf 50v 5% Kemet C1206C101J5GAC	1	C75
.....3	270-682	CAPACITOR, SMT, 1206, 6800 PF, 5%	1	C76
.....3	340-0004	SW,JUMPER PROGRAMMABLE	1	P12
.....3	340-0167	SWITCH,PUSHBUTTON,GREEN,RECTANGULAR	1	S3
.....3	340-0169	SWITCH,ROCKER,PCB MOUNTING,SMALL BLACK RECTANGULAR CAP	3	S11,S12,S13
.....3	350-197	INDUCTOR, SMT, POWER, 1uH	2	L2,L4
.....3	350-201	INDUCTOR, SMT, 1812, 82NH	1	L6
.....3	360-0125	IND, 68 UH, 1.5A, SMD	2	L1,L3
.....3	366-0010-001	IND,10UH,1.5A	1	L5
.....3	400-106	IC, Inverter, Open-drain Gate	4	U8,U9,U10,U11

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	400-196	IC, SMT, 1.5A STEP-UP REGULATOR	1	U24
.....3	401-164	IC, SMT, 8-Bit Ser In, Par Out SR Phillips 74HC164D	2	U5,U6
.....3	401-165	IC, 8-Bit Ser/Par In, Ser Out SR Phillips 74HC165D	5	U1,U2,U3,U4,U20
.....3	401-275	IC,SMT,OP-AMP,LOW NOISE,HIGH AUDIO BW	5	U15,U16,U17,U18, U19
.....3	401-374	IC, OCTAL D FLIP-FLOP W 3-ST OUT	2	U7,U12
.....3	411-914	DIODE, SMD 1N4148	1	D15
.....3	413-1206	CHIP,TEST POINT,1206,SMD	15	TP1,TP2,TP4,TP5, TP6,TP8,TP10,TP11 ,TP12,TP13,TP14, TP15,TP16,TP17, TP18
.....3	417-0003	CONN,HEADER 3 PIN	1	J12
.....3	417-0182	CONN,HDR,26 PIN,LATCHED	1	J2
.....3	417-0200	CONN,HEADER 20 PIN	0.2	J11
.....3	418-120	DIODE, SMT, 1A, SCHOTTKY RECTIFIER	1	D16
.....3	418-1601	CONN,MALE,16-PIN,LATCH,PCB MT	2	J1,J4
.....3	418-1601-001	CONN,MALE,16-PIN,LONG LATCH,PCB MT	1	J13
.....3	418-2602-001	CONN,HEADER,26 PIN,LATCH/EJECT,PCB	1	J3
.....3	418-451	Diode, SMT, Zener, 5.1V Motorola BZX84C5V1LT1	1	D11
.....3	426-4008	STOFF,PEM 4-40 KFSE-440-12	2	
.....3	439-041	TRANSISTOR, SMT, GENERAL PURPOSE, NPN	8	Q1,Q2,Q3,Q4,Q5,Q6 ,Q7,Q9
.....3	510-196	SUBMINIATURE LAMP, LUMEX IFL-LX2162-16T	2	B1,B2
.....3	513-2130	PCB,BLANK,SR30/SR-40A FRONT PANEL	1	
.....3	530-059	SWITCH, ROTARY	1	S2
....2	943-2130-001	ASSY,WIRE HARNESS,HEADPHONE,MARTI REC,FRONT PANEL (SBCM)	1	
.....3	402-0051	TY-RAP, W/FLAG	1	
.....3	417-0138	HSNG,MOD IV 4 POS 87499-7 AMP	1	
.....3	417-8766	CONTACT,CRIMP,MOD-IV 87809-1	3	
.....3	580-050	Wire, UL1061 22/7 OS-1 White/Red	0.25	
.....3	580-053	Wire, UL1061 22/7 OTC White/Black	0.25	
.....3	601-2209	WIRE,AWG22,19/34 WHT	0.25	
..1	973-0100	KIT,ACCESSORY,SR30	1	
....2	550-030	CONNECTOR, D-SUB 15 PIN FEMALE	1	
....2	550-180	Connector, locking hood Keltron HD-15-10	1	
....2	580-116	Power Cord, Black Detachable Power Dynamics	1	
....2	973-9999	KIT,BIND+MAN,SR30/SR40A	1	
.....3	597-8104	INSTRUCTION MANUAL, SR 30/SR 40A RPU RECEIVER	1	
.....3	597-9996	MAN,COVER,MARTI REAR	1	
.....3	597-9997	MAN,COVER,MARTI FRONT, W/WINDOW	1	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	598-0013	BINDER,MARTI,1 IN,BLUE,W CD POCKET	1	

10 SR 40A BILL OF MATERIAL

This bill of material uses an indented structure to show relationships of parts into sub assemblies. Example; all BOM LEVEL 2 parts are contained in the BOM LEVEL 1 part immediately above it.

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
0	SR40A-xxx-xxx	SR40A,xxx-xxx MHZ,RPU REC,xx KHZ REC BW,110/220V		
..1	339-0031	FILTER/SWITCH, 4 AMP, AC ENTRY	1	
..1	400-0600	STRIP,QUIET SHIELD,6.00x.197	1	
..1	402-0005	PRESS CLIP,NYLON W/ADHESIVE BACK	5	
..1	420-0817	ASSY,FEMALE SCREWLOCK 205817-1	4	
..1	420-2105	SCREW,2-56X.312,S.S. PH SC	2	
..1	420-3706	SCREW,M3 X 6,PHILLIPS PAN HEAD,SS	2	
..1	420-4105	SCREW,4-40X.312,S.S. PH	2	
..1	421-0102	10-32 KEP NUT	1	
..1	421-1111	RIV,1/8X.422L .126-.187GR CLOS	8	
..1	421-4008	4-40 KEP NUT	2	
..1	421-8028	NUT,JAM,1/2-28 UNEF-2B	1	
..1	422-6106	SCREW,SEMS 6-32 X 3/8 PAN PH. ST."	2	
..1	423-9002	WASH,INT TOOTH,1/2	1	
..1	469-0021	FINGER STOCK,LAIRD 97-550,24 LONG"	1.156	
..1	469-0022	FINGER STOCK,LAIRD 97-654,12 LONG"	0.1	
..1	471-5347	ENCLOSURE,CONVERTER,MARTI SR SERIES RECEIVERS (NOTE)	1	
..1	471-5348	PANEL,REAR,SR30/SR40A	1	
..1	471-5349	COVER,SR30/SR40A	1	
..1	471-5350	CHASSIS,SR30/SR40A	1	
..1	471-5385	FILLER,REAR,SRPT-30	1	
..1	500-022	Screw, 6-32 x 3/8 phillips pan head M/S nickel plated"	2	
..1	500-188	Screw, 4-40 x 3/8 phillips,flat head,black oxide"	2	
..1	500-210	Screw,SEMS 4-40x1/4 Phil Pan Head MS Blk Zinc(external lock)	69	
..1	510-132	Handle Assy., black w/black plated steel hdwe #1879-376-370	1	
..1	510-205	BUMPER, BRUCE PLASTICS 0772-0014 BLACK	8	
..1	513-036	STANDOFF,1/4HEX x 0.5"LONG,4-40,M/F"	2	
..1	540-0018	POWER SUPPLY, 40 WATT, 12 VOLT	1	
..1	594-0503	LABEL, DANGER-HAZARDOUS VOLTAGE	2	
..1	594-0505	LABEL, WARNING-ONLY AUTHORIZED PERSONNEL	1	
..1	700-226-26	Shield, Rec. Audio Board	1	
..1	800-193AD	SR30/SR40A/SR20M/SR20C I/O PCB	1	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
		(SBCM)		
....2	270-102	Cap,monolithic,1000pf 50v 5%KemetC1206C102J5GACTR marked	13	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C15,C16
....2	270-220	Cap, monolithic chip, 22 pf 50v 5% KEMET C1206C220J5GACTR	3	C12,C13,C14
....2	310-014	TRANSFORMER, AUDIO, MIDCOM 671-9041 TECATE VFT 950-0394	1	T1
....2	330-018	INDUCTOR, 10 uH, 10%	14	L1,L2,L3,L4,L5,L7,L8,L9,L11,L12,L13,L14,L15,L16
....2	330-019	INDUCTOR, 2.5 TURN, HIGH FREQUENCY SUPPRESSION	2	L6,L10
....2	340-0004	SW,JUMPER PROGRAMMABLE	5	JP1,JP1,JP2,JP1,JP1
....2	500-162	Screw, 4-40 x 7/16 phillips pan head MS zinc plated"	2	
....2	550-123	Connector, 10 pin header (cut from 550-162)	1	P1
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.417	
....2	550-136	Connector, 6 pin Molex header (cut from 550-162)	2	P2,P3
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.25	
....2	550-170	Connector, D-Sub 15 pin angle	1	J4
....2	550-184	Connector, 1 dual pin header (cut from 550-316)	1	JP2
......3	550-316	HEADER, BREAKAWAY 40x2, 0.1 SPACING"	0.025	
....2	550-185	Connector, 5 dual pin header (cut from 550-316) (note)	1	JP1
......3	550-316	HEADER, BREAKAWAY 40x2, 0.1 SPACING"	0.125	
....2	550-186	Connector, 3 pin Molex header (cut from 550-162)	1	P4
......3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.125	
....2	800-193B	PC Board, I/O Filter STL-10 R-10	1	PCB
..1	800-208AC	IF Amplifier AR/CR	1	
....2	360-032	FILTER, CERAMIC, 10.7MHZ	2	CF1,CF2
....2	800-208A	IF AMPLIFIER, AR/CR, GENERIC	1	
......3	100-1041	RES,1K OHM,1/4W,1%	1	R5
......3	100-1051	RES,10K OHM,1/4W,1%	2	R19,R20
......3	100-1531	RES,150 OHM,1/4W,1%	2	R1,R2
......3	103-2241	RES,2.21K OHM,1/4W,1%,METAL	3	R6,R8,R15
......3	103-3324	RES,3.32K OHM,1/4W,1%,METAL	2	R3,R9
......3	103-4741	RES,4.75K OHM,1/4W,1%,METAL	1	R16
......3	103-4753	RES,475 OHM,1/4W,1%,METAL	2	R7,R12
......3	145-431	Resistor, 432 ohm 1/4 watt 1% metal film Mepco SFR25	3	R4,R10,R14

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	145-470	Resistor, 47.5 ohm 1/4 watt 1% metal film Mepco SFR25	3	R11,R13,R17
.....3	177-5050	RES,TRMR,50K,10%,TOP ADJ 3299Y	1	R18
.....3	217-103	CAP,0.1UF 250VDC 5%,POLY FILM	3	C9,C12,C14
.....3	217-104	CAPACITOR, .01 UF 50V GMV DISC	10	C1,C2,C3,C4,C5, C6,C7,C8,C10,C16
.....3	219-220	CAPACITOR, ELECTROLYTIC 22uF RADIAL 35V	1	C13
.....3	219-221	CAPACITOR, ELECTROLYTIC 220uF 25V RADIAL	1	C11
.....3	255-390C	Capacitor, 39pF 5% 200V ceramic dipped C322C390J2G5CA	1	C15
.....3	255-470C	CAP, 47pF 5% 200V CERAMIC DIPPED	1	C18
.....3	256-131	CAPACITOR, 130 pF 5% 50V NPO DISC	1	C17
.....3	290-521	CAP, VARIABLE, 5-25 pf	1	C19
.....3	299-470	CAP, TANTALUM, 4.7 UF 16V	1	C20
.....3	350-030	INDUCTOR, 3.0 - 7 UH W/SHIELD CAN #47271-023	1	L1
.....3	350-123	Detector, SNY-074-1919A (235SU1)	1	T1
.....3	401-235	INTEGRATED CIRCUIT, SANYO LA1235	1	IC1
.....3	417-1604	SKT,16-PIN,DIP	1	1C1
.....3	440-245-1	TRANSISTOR, 2N2857	2	Q1,Q2
.....3	550-084	CONNECTOR,PHONO JACK,PCB MOUNT	1	J1
.....3	550-138	Connector, 8 pin Molex header (cut from 550-162)	1	P1
.....4	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.333	
.....3	800-208B	PC Board, IF 10.7 MHz R Receiver	1	PCB
..1	800-229A	AR-10/CR-10 Decode Board	1	
....2	100-1041	RES,1K OHM,1/4W,1%	1	R6
....2	100-1051	RES,10K OHM,1/4W,1%	1	R13
....2	101-104	Potentiometer, 100K ohm cermet Bourns 3309P-1-104	1	R1
....2	101-502	POT,5K,SINGLE TURN,HORIZONTAL PCB MOUNT	1	R16
....2	103-1007	RES,1 MEG OHM,1/4W,1%,METAL	1	R23
....2	103-1062	RES,100K OHM,1/4W,1%,METAL	3	R2,R4,R17
....2	103-1823	RES,182 OHM,1/4W,1%,METAL	1	R15
....2	103-2211	RES,22.1K OHM,1/4W,1%,METAL	1	R8
....2	103-4731	RES,475K OHM,1/4W,1%,METAL	1	R11
....2	103-4741	RES,4.75K OHM,1/4W,1%,METAL	2	R19,R20
....2	104-203	Potentiometer, 20K ohm cermet 64Y203 top adjust	1	R7
....2	145-225	Resistor, 2.21 meg ohm 1/4 watt 1% metal film (2.21 Meg 1%)	1	R3
....2	145-470	Resistor, 47.5 ohm 1/4 watt 1% metal film Mepco SFR25	1	R14
....2	145-683	Resistor, 68k ohm 1/4 watt 1% metal film Mepco SFR25	1	R9

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	145-684-1	Resistor, 681k ohm 1/4 watt 1%	2	R10,R24
....2	145-822	Resistor, 8.25k ohm 1/4 watt 1% metal film Mepco SFR25	1	R12
....2	200-0009	DIODE,ZENER,1N 4739A	1	D6
....2	203-4148	DIODE,1N4148	2	D4,D5
....2	211-3904	TSTR,2N3904	1	
....2	215-103	CAPACITOR, .01 uFD 2.5% 100V POLYPRO	1	C2
....2	215-473	CAPACITOR, .047 uFD 2.5% 100V POLYPRO	2	C4,C5
....2	219-200	CAPACITOR ELECTROLYTIC 22UF 25V	5	C3,C6,C7,C9,C10
....2	219-251	CAP,ELECTROLYTIC,220uF 25V,AXIAL,-20/+50%	1	C13
....2	226-274	Cap.,.27 mf 100v 10% polypro CD MTC1P27K OR Bishop C21B274K	1	C1
....2	400-293	IC, DUAL DIFFERENTIAL COMPARATOR	1	IC2
....2	400-740	IC, JFET INPUT OPAMP, TL084CN	1	IC1
....2	410-754	Diode, zener Motorola 1N754A 6.3v	1	D3
....2	412-494	DIODE, GERMANIUM 1N270 (note)	1	D1
....2	414-007	DIODE, RECITIFIER,1N4007	1	D8
....2	550-123	Connector, 10 pin header (cut from 550-162)	1	P1
.....3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.417	
....2	550-161	IC Socket, 16 pin Aries 16-3518-11	1	XK1
....2	570-035-1	Relay, Aromat HB2E-DC12V	1	K1
....2	800-229B	PC Board, Decode RPU Receiver	1	PCB
..1	913-2134	ASSY,PCB,BW SELECTABLE AUDIO BD.(SBCM)	1	
....2	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	12	C1,C2,C12,C13, C14,C17,C18,C43, C44,C45,C46,C47
....2	006-2285-500	CAP,ELECTRO,220UF,20%,50V,SMD	1	C49
....2	007-0683	CAP CERAMIC, 0.068uF, 50v, SMD, 0805	1	C31
....2	007-1003-050	CAP,1000PF,0805,5%,50V	3	C8,C30,C42
....2	007-1034	CAP,CER,0.01uF,50V,10%,SMD	3	C7,C15,C16
....2	007-1034-026	CAP,CER,10000 PF,1%,25V,1206,SMD	1	C6
....2	007-1203-500	CAP, CER, 1200 PF, 50V, 5%, SMD	3	C10,C29,C41
....2	007-1204-050	CAP,.012UF,0805,5%,50V	1	C19
....2	007-1503-050	CAP,1500PF,0805,5%,50V	3	C11,C28,C40
....2	007-1504-050	CAP,.015UF,0805,5%,50V	1	C36
....2	007-1803-050	CAP,1800PF,0805,5%,50V	2	C27,C39
....2	007-1804-050	CAP,.018UF,0805,5%,50V	1	C35
....2	007-2203-050	CAP,2200PF,0805,5%,50V	2	C9,C24
....2	007-2204-050	CAP,.022UF,0805,5%,50V	2	C34,C48
....2	007-2703-050	CAP,2700PF,0805,5%,50V	1	C23
....2	007-2704-050	CAP,.027UF,0805,5%,50V	1	C33
....2	007-3314	CAP, CER, 3300PF, 50V, 5%, SMD	3	C22,C26,C38

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	007-3904-050	CAP,.039UF,0805,5%,50V	1	C32
....2	007-3923-050	CAP,CER,3900 PF,1%,50V,1206,SMD	1	C3
....2	007-4704-050	CAP,4700PF,0805,5%,50V	1	C21
....2	007-4724-051	CAP,CER,4700 PF,1%,50V,1206,SMD	2	C4,C5
....2	007-5603-050	CAP,5600PF,0805,5%,50V	2	C25,C37
....2	007-6213-500	CAP,CER,620pF,50V,5%,SMD	2	C50,C51
....2	007-6803-050	CAP,6800PF,0805,5%,50V	1	C20
....2	102-0100	RES,CHIP,10.0 OHMS,1/10W,1%,SMD	1	R28
....2	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	1	R13
....2	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	1	R24
....2	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	4	R11,R23,R25,R27
....2	102-1004	RES,CHIP,1.00M OHMS,1/10W,1%,SMD	3	R4,R5,R6
....2	102-1214	RES, CHIP, 1.21K OHM, 1/10W, 1%	1	R29
....2	102-1825	RES,CHIP,18.2 K OHM,1/10W,1%	1	R22
....2	102-2001	RES,CHIP,2.00K OHMS,1/10W,1%,SMD	1	R18
....2	102-2212	RES,CHIP,22.1K OHMS,1/10W,1%,SMD	1	R26
....2	102-2492	RES,CHIP,24.9K OHMS,1/10W,1%,SMD	1	R10
....2	102-2741	RES,CHIP,2.74K OHMS,1/10W,1%,SMD	1	R16
....2	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	2	R17,R30
....2	102-4731	RES,475K OHM,1/10W,1%,SMD	2	R2,R7
....2	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	1	R3
....2	102-4755	RES,CHIP,47.5K OHM,1/10W,1%	1	R12
....2	102-4991	RES,CHIP,49.9 OHMS,1/10W,1%,SMD	1	R1
....2	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R8
....2	102-7501	RES,7.5K OHMS,1/10W,1%,SMD	2	R14,R15
....2	102-8252	RES,82.5K OHM,1/10W,1%	1	R20
....2	102-9094	RES,CHIP,9.09K OHM,1/10W,1%	1	R21
....2	198-1054	TRMR,10K OHMS,TOP ADJ,SMD (N)	1	R9
....2	198-2024	TRMR,2K OHMS,TOP ADJUST,10 TURN,SMD	1	R19
....2	200-8462	DIODE,ZENER,6.2 VOLT,SMT	1	D1
....2	216-5484	TSTR,JFET,N-CHANNEL,MMBF5484,SMT	1	Q1
....2	224-1877	IC,HDPHONE AMP,DUAL,LM1877M-9,14-PIN,SMD	1	U3
....2	340-0004	SW,JUMPER PROGRAMMABLE	4	P1,P2,P3,P4
....2	513-2134	PCB,MACH,BW SELECTABLE AUDIO BD.	1	
....2	550-138	Connector, 8 pin Molex header (cut from 550-162)	2	J5,J6
.....3	550-162	Connector, 24 pin break-away (straight) Molex 26-48-6248	0.333	
....2	550-326-16	Connector, Dual Row Header, 16-Pin (cut from 550-326)	4	J1,J2,J3,J4

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	550-326	CONN, DUAL ROW HEADER, 80-PIN	0.2	
....2	DB38003	IC,Lin TLO72 Dual OPAMP SO8 TI TL072CD	2	U1,U2
..1	943-2133	ASSY,WIRE HARNESS,SR-30/40A (SBCM)	1	
....2	402-0051	TY-RAP, W/FLAG	18	
....2	410-1489	LUG,TERM #6 SPADE #16-22	5	
....2	417-0096	PLUG,POLARIZING	4	
....2	417-0131	CONN,16 PIN 609-1630 ANSLEY	1	
....2	417-0142	PIN,.050 DIA 26-22 745254-3	10	
....2	417-1500	PLUG,15 PIN	1	
....2	417-2026	CONN, POLARIZED WIREMOUNT SOCKET, .100 PITCH"	1	
....2	417-2116	CONN,POLARIZED,WIRE,.1 IN,16-PIN	1	
....2	418-0034	PLUG,BNC DUAL CRIMP 1-227079-6	1	
....2	418-0609	CONN,25 PIN RIBBON CABLE	1	
....2	418-0615	CONN,15-PIN D-TYPE,RIBBON CABLE	1	
....2	418-2600	CONN,26-PIN,RIBBON	1	
....2	500-128	Eyelet, GS4-4 brass	3	
....2	512-020	TERMINAL,NICHIFU TMDN #125-250-03FA TERMINAL	3	
....2	550-122	CONNECTOR, 10 PIN MOLEX HOUSING 09-50-8100	2	
....2	550-133	CONNECTOR, PHONE PLUG 3C1215	3	
....2	550-135	Connector, 6 pin Molex housing 09-50-8060	2	
....2	550-137	Connector, 8 pin Molex housing 09-50-8080	3	
....2	550-327	Connector, Crimp Terminal Pin Molex 08-52-0112	54	
....2	580-033-1	Coax RG-188A/U Teflon 95% Shield M4256 TFE Tape Wrap	1.19	
....2	580-088	Shielded Wire, 16-C-22-SPJ White/Red 1 Cond. 22/19x34 pvc	13.33	
....2	600-0016	CBL,FLAT,16-COND,28GA	1.33	
....2	600-0026	CBL,FLAT,26-COND,28GA	2.33	
....2	601-1800	WIRE,AWG18 19/30 BLK	1.75	
....2	601-2209	WIRE,AWG22,19/34 WHT	45.13	
..1	953-2130-002	ASSY,SR-40A FRONT PANEL (SBCM)	1	
....2	193-0500	POT,500 OHMS,PCB MOUNT,LINEAR,HD AUDIO	1	R87
....2	310-0080	METER,MULTI,2 IN,SR-30/SR-40A	1	M1
....2	323-2124	LED INDICATOR,GRN,RECTANGULAR	4	D1,D4,D5,D7
....2	323-3124	IND,LED,YEL	1	D6
....2	340-0168	SWITCH,PUSHWHEEL,SUBMINIATURE,PANELMOUNT	9	S4,S5,S6,S7,S8,S9,S10,S11,S12
....2	417-0311	JACK,SWCRFT #N-112B 3COND.	1	J14
....2	471-5352	PANEL,FRONT,SR40A	1	
....2	500-210	Screw,SEMS 4-40x1/4 Phil Pan Head MS Blk Zinc(external lock)	7	
....2	510-005	Polytube, Manhatten#AF155A-20-yel	0.5	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	510-212	CONTROL KNOBS, #45KNO23	2	
....2	530-086	Switch, Dip, 4 Position, Right Angle, Apem DA04T	1	S1
....2	913-2130-003	ASSY,PCB,SR-30/40A FRONT PANEL (SBCM)	1	
.....3	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	4	C59,C62,C66,C69
.....3	007-1022	CAP,CER,100pF,50V,2%,SMD	1	C72
.....3	007-1024	CAP,CER,.001uF,50V,10%,SMD	2	C64,C71
.....3	007-1044	CAP,CER,0.1uF,50V,10%,SMD note	28	C1,C2,C3,C4,C5, C6,C7,C8,C9,C10, C11,C14,C15,C16, C17,C18,C19,C20, C21,C22,C23,C24, C25,C26,C27,C57, C77,C78
.....3	007-1054	CAP,CER,1uF,50V,10%,SMD	4	C58,C61,C65,C68
.....3	007-1512	CAP,CER,15pF,50V,2%,SMD	3	C50,C51,C52
.....3	007-1512-500	CAP,CER,150pF,50V,2%,SMD	4	C53,C54,C55,C56
.....3	007-3923	CAP,CER,390pF,100V,5%,SMD	2	C63,C70
.....3	007-6213-500	CAP,CER,620pF,50V,5%,SMD	1	C48
.....3	070-1054	CAP,TANT,1uF,35V,10%,SMD	16	C28,C29,C34,C35, C36,C37,C38,C39, C40,C41,C42,C43, C44,C45,C46,C47
.....3	070-2265-L25	CAP,TANT,22 MFD,20%,25V, E CASE,LOW ESR,SMD	5	C33,C60,C67,C73, C74
.....3	101-1003	RES,CHIP,100.0 K OHM,1%,1/8W,1206,SMD	1	R99
.....3	102-0000	RES,CHIP,0 OHM,0805,SMD	1	R69
.....3	102-1000	RES,CHIP,100 OHMS,1/10W,1%,SMD	2	R57,R83
.....3	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	14	R33,R34,R35,R36, R37,R38,R71,R80, R81,R82,R72,R73, R76,R78
.....3	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	3	R91,R92,R97
.....3	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	1	R70
.....3	102-1102	RES,CHIP,11.0K OHMS,1/10W,1%,SMD	1	R77
.....3	102-1212	RES,CHIP,12.1K OHMS,1/10W,1%,SMD	1	R94
.....3	102-1582	RES,CHIP,15.8 K, 1/10 W, 1%	1	R95
.....3	102-1780	RES,CHIP,178 OHMS,1/10W,1%,SMD	7	R39,R40,R41,R42, R43,R44,R45
.....3	102-2002	RES,CHIP,20.0K OHMS,1/10W,1%,SMD	1	R86
.....3	102-2323	RES,23.2K OHMS,1/10W,1%,SMD	1	R79
.....3	102-2431	RES,CHIP,2.43K OHMS,1/10W,1%,SMD	1	R74
.....3	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	1	R64
.....3	102-3012	RES,CHIP,30.1K,1/10W,1%,SMD	2	R93,R102
.....3	102-4532	RES,CHIP,45.3K OHMS,1/10W,1%,SMD	2	R84,R88

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-4711	RES,CHIP,475 OHMS,1/10W,1%,SMD	7	R46,R47,R48,R49, R50,R51,R52
.....3	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	40	R1,R2,R3,R4,R5, R6,R7,R8,R9,R10, R11,R12,R13,R14, R15,R16,R17,R18, R19,R20,R21,R22, R23,R24,R25,R26, R27,R28,R29,R30, R31,R32,R59,R60, R61,R62,R63,R66, R67,R68
.....3	102-5041	RES,4.99K OHM,1/10W,1%	2	R89,R96
.....3	102-5231	RES,5.23K OHM,1/10W,1%	1	R75
.....3	102-6041	RES,6.04K OHMS,1/10W,1%,SMD	1	R58
.....3	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R101
.....3	102-8164	RES, CHIP, 8.66K OHM, 1/10W, 1% ,CR21-8661F-T	1	R90
.....3	102-9095	RES,90.9K OHM,1/10W,1%,SMD	1	R85
.....3	102-9311	RES,9.31K OHMS,1/10W,1%,SMD	1	R100
.....3	185-162K	RES,162K OHM,1%,0.25W,1206	1	R98
.....3	185-68.1	Resistor, SMT, size 1206, 68.1 ohms, Dale CRCW1206-68.1	4	R53,R54,R55,R56
.....3	197-1034	TRMR,10K OHMS,SIDE ADJ,5 TURN,SMD	1	R65
.....3	204-0130	SCHOTTKY BARRIER RECTIFIER 1 AMP 30V CASE 403A SMD	2	D9,D12
.....3	204-0340	DIODE,RECTIFIER,SCHOTTKY,MBRS340T3,403-03 CASE,SMD	1	D14
.....3	204-0914	DIODE,SWITCHING,MMBD914LT1,SMD	2	D10,D13
.....3	224-0333	SWITCH,QUAD,ADG333ABRS,20-PIN SSOP,SMD	2	U22,U23
.....3	224-5206	DIG POT,6 CH,10K,AD5206BRU10,24-PIN TSSOP,SMD	1	U21
.....3	227-1576	VR, LT1576IS8, SWITCHER, 1.5A, SMD	2	U13,U14
.....3	270-0066	REL,DPDT,12VDC,DIP	1	K1
.....3	270-101	Cap., monolithic chip, 100 pf 50v 5% Kemet C1206C101J5GAC	1	C75
.....3	270-682	CAPACITOR, SMT, 1206, 6800 PF, 5%	1	C76
.....3	340-0004	SW,JUMPER PROGRAMMABLE	1	P12
.....3	340-0167	SWITCH,PUSHBUTTON,GREEN,RECTANGULAR	1	S3
.....3	340-0169	SWITCH,ROCKER,PCB MOUNTING,SMALL BLACK RECTANGULAR CAP	3	S11,S12,S13
.....3	350-197	INDUCTOR, SMT, POWER, 1uH	2	L2,L4
.....3	350-201	INDUCTOR, SMT, 1812, 82NH	1	L6
.....3	360-0125	IND, 68 UH, 1.5A, SMD	2	L1,L3
.....3	366-0010-001	IND,10UH,1.5A	1	L5
.....3	400-106	IC, Inverter, Open-drain Gate	4	U8,U9,U10,U11
.....3	400-196	IC, SMT, 1.5A STEP-UP REGULATOR	1	U24

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	401-164	IC, SMT, 8-Bit Ser In, Par Out SR Phillips 74HC164D	2	U5,U6
.....3	401-165	IC, 8-Bit Ser/Par In, Ser Out SR Phillips 74HC165D	5	U1,U2,U3,U4,U20
.....3	401-275	IC,SMT,OP-AMP,LOW NOISE,HIGH AUDIO BW	5	U15,U16,U17,U18, U19
.....3	401-374	IC, OCTAL D FLIP-FLOP W 3-ST OUT	2	U7,U12
.....3	411-914	DIODE, SMD 1N4148	1	D15
.....3	413-1206	CHIP,TEST POINT,1206,SMD	15	TP1,TP2,TP4,TP5, TP6,TP8,TP10, TP11,TP12,TP13, TP14,TP15,TP16, TP17,TP18
.....3	417-0003	CONN,HEADER 3 PIN	1	J12
.....3	417-0182	CONN,HDR,26 PIN,LATCHED	1	J2
.....3	417-0200	CONN,HEADER 20 PIN	0.2	J11
.....3	418-120	DIODE, SMT, 1A, SCHOTTKY RECTIFIER	1	D16
.....3	418-1601	CONN,MALE,16-PIN,LATCH,PCB MT	2	J1,J4
.....3	418-1601-001	CONN,MALE,16-PIN,LONG LATCH,PCB MT	1	J13
.....3	418-2602-001	CONN,HEADER,26 PIN,LATCH/EJECT,PCB	1	J3
.....3	418-451	Diode, SMT, Zener, 5.1V Motorola BZX84C5V1LT1	1	D11
.....3	426-4008	STOFF,PEM 4-40 KFSE-440-12	2	
.....3	439-041	TRANSISTOR, SMT, GENERAL PURPOSE, NPN	8	Q1,Q2,Q3,Q4,Q5, Q6,Q7,Q9
.....3	510-196	SUBMINIATURE LAMP, LUMEX IFL-LX2162-16T	2	B1,B2
.....3	513-2130	PCB,BLANK,SR30/SR-40A FRONT PANEL	1	
.....3	530-059	SWITCH, ROTARY	1	S2
....2	943-2130-001	ASSY,WIRE HARNESS,HEADPHONE,MARTI REC,FRONT PANEL (SBCM)	1	
.....3	402-0051	TY-RAP, W/FLAG	1	
.....3	417-0138	HSNG,MOD IV 4 POS 87499-7 AMP	1	
.....3	417-8766	CONTACT,CRIMP,MOD-IV 87809-1	3	
.....3	580-050	Wire, UL1061 22/7 OS-1 White/Red	0.25	
.....3	580-053	Wire, UL1061 22/7 OTC White/Black	0.25	
.....3	601-2209	WIRE,AWG22,19/34 WHT	0.25	
..1	973-0100-001	KIT,ACCESSORY,SR40A	1	
....2	550-030	CONNECTOR, D-SUB 15 PIN FEMALE	1	
....2	550-180	Connector, locking hood Keltron HD-15-10	1	
....2	580-116	Power Cord, Black Detachable Power Dynamics	1	
....2	973-0102	KIT,RACK MOUNT,SRPT-30/40A,SR-30/40A	1	
.....3	420-0000	SCREW,W/CAPT WASH 10-32X1/2BLK (NOTE	4	
.....3	471-5378	BRACKET, SRPT-30/40A, RPT-30 RACK MOUNT *NOTE*	2	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
....2	973-9999	KIT,BIND+MAN,SR30/SR40A	1	
......3	597-8104	INSTRUCTION MANUAL, SR 30/SR 40A RPU RECEIVER	1	
......3	597-9996	MAN,COVER,MARTI REAR	1	
......3	597-9997	MAN,COVER,MARTI FRONT, W/WINDOW	1	
......3	598-0013	BINDER,MARTI,1 IN,BLUE,W CD POCKET	1	

11 Wideband Converters and Filters

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	800-207-20	Filter, assembly 20 KHz	1	
....2	255-161	CAPACITOR, 160 PF 300V 5% SIVLER MICA	1	C2A
....2	255-241	Capacitor, 240 pf 500v 5% silver mica CD10FD241J03	1	C2B
....2	255-271C	CAPACITOR, 270pF 5% 200V CERAMIC DIPPED	1	C3
....2	255-361	Capacitor, 360pF 300v 5% silver mica CD10FA361J03	1	C4
....2	255-750	CAPACITOR, 75 pF 5% NPO DISC	1	C1
....2	350-025	INDUCTOR, 1.5 - 3 UH WITH SHIELD CAN #47271-021	1	L2
....2	350-030	INDUCTOR, 3.0 - 7 UH W/SHIELD CAN #47271-023	1	L1
....2	360-038	Filter, 20 KHz 10.7 MHz Toyocom T14B01-M	1	FL1
....2	550-084	CONNECTOR,PHONO JACK,PCB MOUNT	2	J1,J2
....2	580-005	Buss Wire, #22AWG Solid Tinned Copper	0.022	C5
....2	800-207B	PC Board, IF Filter R Receiver	1	PCB

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	800-207-25	FILTER, ASSEMBLY 25 KHZ	1	
....2	215-151C	Capacitor, 150pF 5% 200V ceramic dipped C322C151J2G5CA	1	C1
....2	255-050	CAPACITOR, 5 pF 5% NPO DISC	1	C4A
....2	255-102C	Cap,1000 pf COG 200V Ceramic Dip Kemet C322C102J2G5CA 5%	1	C2
....2	255-161	CAPACITOR, 160 PF 300V 5% SIVLER MICA	1	C4B
....2	255-271C	CAPACITOR, 270pF 5% 200V CERAMIC DIPPED	1	C3
....2	350-025	INDUCTOR, 1.5 - 3 UH WITH SHIELD CAN #47271-021	2	L1,L2
....2	360-026	FILTER, 25 KHZ 10.7 MHZ	1	FL1
....2	500-199	Keps nut 4 x 40 zinc 4CNKEOZ	2	
....2	550-084	CONNECTOR,PHONO JACK,PCB MOUNT	2	J1,J2
....2	580-005	Buss Wire, #22AWG Solid Tinned Copper	0.04	
....2	800-207B	PC Board, IF Filter R Receiver	1	PCB

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	800-207-30	Filter, assembly 30/36 KHz	1	
....2	255-161	CAPACITOR, 160 PF 300V 5% SIVLER MICA	1	C2B
....2	255-241	Capacitor, 240 pf 500v 5% silver mica CD10FD241J03	1	C2A
....2	255-271C	CAPACITOR, 270pF 5% 200V CERAMIC DIPPED	1	C3
....2	255-361	Capacitor, 360pF 300v 5% silver mica CD10FA361J03	1	C4
....2	255-750	CAPACITOR, 75 pF 5% NPO DISC	1	C1
....2	330-021	INDUCTOR, 3.3uH AXIAL LEAD CHOKE	1	C5
....2	350-025	INDUCTOR, 1.5 - 3 UH WITH SHIELD CAN #47271-021	1	L2
....2	350-030	INDUCTOR, 3.0 - 7 UH W/SHIELD CAN #47271-023	1	L1
....2	360-024T	Filter, 30 KHz	1	FL1
....2	550-084	CONNECTOR,PHONO JACK,PCB MOUNT	2	J1,J2
....2	800-207B	PC Board, IF Filter R Receiver	1	PCB

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	800-207-50	Filter, assembly 50 KHz	1	
....2	215-301	CAPACITOR, 300 PF 2.5% 100V POLYPRO	2	C2A,C2B
....2	255-100	CAPACITOR, 10 PF 5% NPO DISC	1	C3A
....2	255-101C	Capacitor, 100pf 5% 200V ceramic dipped C317C101J2G5CA	1	C1
....2	255-161	CAPACITOR, 160 PF 300V 5% SIVLER MICA	1	C4B
....2	255-750	CAPACITOR, 75 pF 5% NPO DISC	1	C3B
....2	350-025	INDUCTOR, 1.5 - 3 UH WITH SHIELD CAN #47271-021	2	L1,L2
....2	360-027	FILTER, 50KHZ 10.7 MHZ	1	FL1
....2	500-199	Keps nut 4 x 40 zinc 4CNKEOZ	2	
....2	550-084	CONNECTOR,PHONO JACK,PCB MOUNT	2	J1,J2
....2	580-005	Buss Wire, #22AWG Solid Tinned Copper	0.04	
....2	800-207B	PC Board, IF Filter R Receiver	1	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	913-2132-150	ASSY,DUAL WIDE-BAND CONVERTER,150 MHZ (NOTE)	1	
....2	270-120	CAP, SMT, 12PF, 100V	3	C61,C62,C63
....2	350-200	INDUCTOR, SMT, 1812, 56NH	2	L11,L12
....2	350-202	IND, SMT, 1812, 39 NH	2	L10,L13
....2	360-0140	FILTER, HELICAL BANDPASS, F=140M	2	FL2,FL3
....2	360-0175	FILTER, HELICAL BANDPASS, F=175M	2	FL6,FL7
....2	361-0145	FILTER, HELICAL BANDPASS, F=145M	2	FL4,FL5
....2	361-0160	FILTER, HELICAL BANDPASS, F=160M	1	FL1
....2	361-0162	FILTER, HELICAL BANDPASS, F=162M	2	FL8,FL9
....2	400-246	IC, VCO, 195-245 MHZ	1	U31
....2	407-0503	EMI SHIELD,MARTI CONVERTER INPUT	1	
....2	427-0061	CONNECTOR, N, PCB, STRAIGHT, PNL MTG	1	J4
....2	913-2132	ASSY,PCB,DUAL WIDE-BAND CONVERTER (SBCM)	1	
.....3	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	9	C94,C95,C88, C105,C130,C124, C125,C89,C156
.....3	006-4775-350	CAP,ELECTRO,47UF,20%,35V,SMD	1	C134
.....3	007-0470-006	CAP,470pF,50v,10%,0603	2	C137,C121
.....3	007-1022	CAP,CER,100pF,50V,2%,SMD	3	C120,C117,C118
.....3	007-1024	CAP,CER,.001uF,50V,10%,SMD	1	C115
.....3	007-1044	CAP,CER,0.1uF,50V,10%,SMD note	14	C1,C4,C5,C6,C7, C8,C13,C14,C15, C16,C17,C111, C119,C34
.....3	007-1813-050	CAP,CER,180 PFD,5%,50V,1206,SMD	1	C102
.....3	007-3300	CAP,CER,3.3PF,50V,.25pF,SMD	1	C116
.....3	007-3312	CAP,CER,33pF,50V,2%,SMD	4	C2,C3,C110,C114
.....3	007-4700-500	CAP,CER,4.7pF,50V,.25pF,SMD	1	C113
.....3	011-7.3728	Crystal,SMT,7.3728 MHz, 50ppm, Epson MA-506-7.3728M-C2	1	X1
.....3	012-280-1	TCXO, SMT, 12.800 MHZ, 1PPM	1	U29

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	070-1054	CAP,TANT,1uF,35V,10%,SMD	36	C18,C9,C10,C23, C24,C25,C31,C32 ,C29,C47,C50, C51,C53,C54,C57 ,C58,C70,C71, C66,C67,C78,C79 , C73,C74,C87, C145,C96,C98, C93,C131,C126, C128,C90,C123, C42,C154
.....3	070-1064	CAP,TANT,10uF,35V,20%,SMD	1	C138
.....3	070-1084	CAP,TANT,100uF,16V,10%,SMD	1	C112
.....3	070-2204	CAP,TANT,22uF,25V,10%,SMD	2	C11,C12
.....3	070-2265-L25	CAP,TANT,22 MFD,20%,25V, E CASE,LOW ESR,SMD	2	C139,C140
.....3	070-6854	TANT CAP, 6.8 UF, 16V, SIZE C	1	C108
.....3	101-0100	RES,THICK FILM,100,1/8W,SMD	2	R13,R14
.....3	102-1000	RES,CHIP,100 OHMS,1/10W,1%,SMD	8	R19,R178,R179, R181,R185,R188, R189,R162
.....3	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	16	R2,R163,R149, R164,R165,R192, R177,R183,R187, R70,R61,R160, R55,R56,R57,R58
.....3	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	15	R18,R26,R27, R199,R148,R176, R193,R60,R63, R171,R64,R156, R157,R54,R202
.....3	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	5	R170,R158,R159, R168,R169
.....3	102-1004	RES,CHIP,1.00M OHMS,1/10W,1%,SMD	1	R53
.....3	102-1102	RES,CHIP,11.0K OHMS,1/10W,1%,SMD	1	R201
.....3	102-1103	Res Chip 110K 1/10W 1%,SMD	1	R198
.....3	102-1400	RES,CHIP,1.4K OHMS,1/10W,1%,SMD	1	R28
.....3	102-1500	RES,CHIP,150 OHMS,1/10W,1%,SMD	37	R32,R33,R34,R35 ,R44,R45,R46, R47,R75,R76,R77 ,R78,R85,R86, R87,R88,R95,R96 ,R97,R98,R116, R117,R118,R119, R108,R109,R110, R111,R137,R138, R139,R140,R123, R124,R125,R126, R175
.....3	102-1582	RES,CHIP,15.8 K, 1/10 W, 1%	1	R21
.....3	102-1623	Res,Chip 162K 1/10W 1% SMD	1	R196

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-1744	RES,1.74K OHM,1/10W,1%	1	R190
.....3	102-1802	Res Chip 18.2 ohm 1/10W 1% SMD	6	R99,R100,R101, R127,R128,R129
.....3	102-2000	RES,CHIP,200 OHM,1/10 W,1% SMD	1	R184
.....3	102-2001	RES,CHIP,2.00K OHMS,1/10W,1%,SMD	1	R22
.....3	102-2201	RES,CHIP,22.1 OHM,1/10W,1%	3	R79,R80,R71
.....3	102-2214	RES,CHIP,2.21K OHM,1/10W,1%	1	R23
.....3	102-2490	RES,CHIP,24.9 OHM,1/10W,1%	4	R102,R103,R130, R132
.....3	102-2491	RES,CHIP,2.49K,1/10W,1%,SMD	1	R67
.....3	102-2741	RES,CHIP,2.74K OHMS,1/10W,1%,SMD	14	R37,R43,R74,R84 ,R94,R115,R107, R136,R122,R144, R146,R30,R20, R204
.....3	102-3010	RES, CHIP, 301 OHMS, 1/10W, 1%, SMD	1	R66
.....3	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	2	R24,R29
.....3	102-3321	RES,CHIP,3.32K OHMS,1/10W,1%,SMD	2	R3,R69
.....3	102-3832	RES, CHIP, 38.3 KOHMS, 1/10W, 1%, SMD	1	R203
.....3	102-3901	RES,CHIP,3.9K OHMS,1/10W,1%,SMD	1	R65
.....3	102-3902	Res, Chip 39.2 ohms 1/10W 1% SMD	2	R104,R131
.....3	102-3925	RES,CHIP,39.2 K OHM,1/10 W,1%	1	R197
.....3	102-4221	RES,CHIP,4.22K,1/10W,1%,SMD	18	R36,R38,R41,R42 ,R72,R73,R82, R83,R92,R93, R113,R114,R120, R121,R105,R106, R134,R135
.....3	102-4302	Res,Chip 43.2 ohms 1/10W 1% SMD	1	R81
.....3	102-4421	RES,CHIP,4.42K OHMS,1/10W,1%,SMD	1	R25
.....3	102-4750	RES,CHIP,475 OHMS,1/10W,1%,SMD	2	R150,R191
.....3	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	32	R1,R4,R5,R6,R7, R8,R9,R10,R11, R12,R15,R16,R17 ,R141,R151,R142, R152,R194,R195, R39,R40,R166, R167,R172,R173, R143,R59,R161, R48,R50,R51,R52
.....3	102-4990	RES,499 OHM,1/10W,1%	1	R68
.....3	102-4991	RES,CHIP,49.9 OHMS,1/10W,1%,SMD	1	R180
.....3	102-5112	RES,CHIP,51.1 OHM,1/10W,1%	2	R112,R133

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-5143	RES,5.1K OHMS,1/10W,1%,SMD	6	R145,R147,R182, R186,R31,R205
.....3	102-6040	RES,604 OHM,1/10W,1%	1	R174
.....3	102-6341	RES,CHIP,6.34K,1/10W,1%,SMD	2	R154,R155
.....3	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R200
.....3	102-7680	RES,CHIP,768 OHMS,1/10W,1%,SMD	1	R62
.....3	198-2024	TRMR,2K OHMS,TOP ADJUST,10 TURN,SMD	1	R153
.....3	204-0914	DIODE,SWITCHING,MMBD914LT1, SMD	4	D2,D3,D4,D5
.....3	204-3102	DIODE,MMBV3102LT1,SMD	1	D7
.....3	204-5000	VOLTAGE,REFERENCE,5.0V,SMD	1	D1
.....3	210-0093	TRANSISTOR,BFR93A,SOT-23,SMD	2	Q23,Q24
.....3	216-0064	TSTR SMT Darlington PNP	1	Q26
.....3	216-0310	TSTR,MMBFU310LT1,SMD	1	Q22
.....3	220-1020	IC, RF Switch SP4T Absorptive	2	U12,U17
.....3	220-4052-002	IC,4052 DUAL 4-CH MUX,SMD	1	U5
.....3	220-4521	IC Digital Attenuator o-31 db	1	U11
.....3	220-4527	Freq Mixer 50-1000 MHz +17 DBM LO	2	U18,U22
.....3	220-4611	IC, DIG ATTEN, 0-31 DB, 0.5 DB STEPS	1	U15
.....3	220-8065	IC, HIGH SPEED FET OP-AMP	1	U33
.....3	220-9832	IC, 25 MHZ DDS	1	U30
.....3	221-0006	RF Amp GALI-4 SMD Wideband 50 Ohm	9	U10,U13,U19,U20 ,U21,U23,U24, U25,U26
.....3	221-4110	RF PLL FREQUENCY SYNTHESIZER	1	U28
.....3	221-4111	IC PLL SYN DM Prescalers 1.2GHz	1	U27
.....3	224-0333	SWITCH,QUAD,ADG333ABRS,20-PIN SSOP,SMD	1	U16
.....3	224-0809	IC,MCU RESET,MAX809L,4.63V,SOT-23,SMD	1	U2
.....3	270-101	Cap., monolithic chip, 100 pf 50v 5% Kemet C1206C101J5GAC	1	C141
.....3	270-102	Cap,monolithic,1000pf 50v 5%KemetC1206C102J5GACTR marked	37	C20,C21,C22,C27 ,C30,C36,C41, C45,C48,C49,C52 ,C55,C56,C59, C60,C65,C68,C69 ,C72,C75,C76, C77,C80,C81,C92 C97,C136,C143, C144,C84,C85, C127,C122,C64, C38,C39,C37

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	270-103	Cap, Monolithic chip 10000pF 10% XR7 Kemet C1206C103J5RACTR	12	C26,C28,C46,C82 ,C99,C83,C129, C133,C146,C148, C40,C101
.....3	270-104	Capacitor, Monolithic Chip 100000pF 1% C1206C104J5RAC Kemet	12	C86,C135,C91, C107,C132,C147, C149,C100,C150, C152,C153,C155
.....3	270-682	CAPACITOR, SMT, 1206, 6800 PF, 5%	1	C142
.....3	298-106	Cap., Tantalum, SMT, Size B, 10uF, 16V,Kemet T491B106K016AS	2	C106,C103
.....3	298-157	Capacitor,Tantalum,SMT,size X,150uF,16V Kemet T491X157K016AS	3	C44,C109,C43
.....3	330-024	Inductor, 10uH SMT DN12103JTR-ND DELEVAN 5%	16	L3,L8,L9,L30,L31, L16,L17,L18,L20, L21,L19,L22,L25, L26,L2,L5
.....3	350-201	INDUCTOR, SMT, 1812, 82NH	1	L29
.....3	360-0600	FILTER, HELICAL BANDPASS, F=60.0M	2	FL10,FL11
.....3	360-0707	FILTER, HELICAL BANDPASS, F=70.7M	1	FL12
.....3	366-0010-001	IND,10UH,1.5A	2	L27,L28
.....3	366-0246	Inductor SMT 246 NH 5%,Maxi Spring	1	L23
.....3	366-0680	IND,CER,680NH,5%,SMD	4	L1,L4,L14,L15
.....3	366-2700	IND,1008LS 2.7UH,10%,SMD	1	L24
.....3	400-196	IC, SMT, 1.5A STEP-UP REGULATOR	1	U37
.....3	400-295	IC,OP-AMP, GENERAL PURPOSE, OP295GS	2	U14,U34
.....3	401-164	IC, SMT, 8-Bit Ser In, Par Out SR Phillips 74HC164D	2	U6,U7
.....3	401-275	IC,SMT,OP-AMP,LOW NOISE,HIGH AUDIO BW	4	U3,U4,U32,U36
.....3	401-317	IC, SMT, Regulator,Adjustable, 1.5 Amps,National LM317AEMP	1	U38
.....3	401-374	IC, OCTAL D FLIP-FLOP W 3-ST OUT	2	U8,U9
.....3	407-0502	EMI SHIELD,MODIFIED 59-CBSAFN-1.0x1.75x.50	1	
.....3	413-1206	CHIP,TEST POINT,1206,SMD	3	TP1,TP2,TP3
.....3	415-840	Diode, Zener, SMT, 13V, Vishay BZX84C13TR	2	D6,D8
.....3	417-0090	KEYING PLUG 206509-1 AMP	4	
.....3	417-0265	CONN,BNC,JACK,THREADED,PC EDGE MOUNT,LOW PROFILE	1	J5
.....3	417-8915	CONN, 15 PIN, D, FEMALE, R.A. FILTERED	2	J1,J3
.....3	417-8925	CONN, 25 PIN,D, FEMALE, R.A. FILTERED	1	J2

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	418-120	DIODE, SMT, 1A, SCHOTTKY RECTIFIER	1	D9
.....3	418-447	Diode, SMT, Zener, 4.7V, Motorola BZX84C4V7LT1	4	D10,D11,D12,D13
.....3	420-141	Transistor, SMT, Darlington, NPN, Mototrola MMBTA14LT1	15	Q1,Q2,Q4,Q11, Q12,Q13,Q14, Q15,Q16,Q17, Q18,Q19,Q20, Q25,Q27
.....3	431-4400	SOCKET,44-PIN,PLCC,SMD note	1	
.....3	439-041	TRANSISTOR, SMT, GENERAL PURPOSE, NPN	2	Q21,Q3
.....3	513-2132	PCB,BLANK,DUAL WIDE BAND CONVERTER	1	
.....3	973-2132-U1	KIT,SOFTWARE,SR30/SR40A/SR20 C/SR20M,U1	1	U1
.....4	224-8535-001	IC,MCU,ATMEGA8535,44-PIN PLCC,SMD	1	U1

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	913-2132-240	ASSY,DUAL WIDE-BAND CONVERTER,240 MHZ (NOTE)	1	
....2	270-608-1	CAP, SMT, 6.8 PF, 100V	3	C61,C62,C63
....2	350-203	IND, SMT, 1812, 33 NH	2	L11,L12
....2	350-205	IND, SMT, 1812, 22 NH	2	L10,L13
....2	360-0221	FILTER, HELICAL BANDPASS, F=221M	2	FL2,FL3
....2	360-0234	FILTER, HELICAL BANDPASS, F=234M	2	FL4,FL5
....2	360-0240	FILTER, HELICAL BANDPASS, F=240M	1	FL1
....2	360-0246	FILTER, HELICAL BANDPASS, F=246M	2	FL8,FL9
....2	360-0259	FILTER, HELICAL BANDPASS, F=259M	2	FL6,FL7
....2	400-325	IC, VCO, 275-325 MHZ	1	U31
....2	407-0503	EMI SHIELD,MARTI CONVERTER INPUT	1	
....2	427-0061	CONNECTOR, N, PCB, STRAIGHT, PNL MTG	1	J4
....2	913-2132	ASSY,PCB,DUAL WIDE-BAND CONVERTER (SBCM)	1	
.....3	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	9	C94,C95,C88, C105,C130,C124 ,C125,C89,C156
.....3	006-4775-350	CAP,ELECTRO,47UF,20%,35V,SMD	1	C134
.....3	007-0470-006	CAP,470pF,50v,10%,0603	2	C137,C121
.....3	007-1022	CAP,CER,100pF,50V,2%,SMD	3	C120,C117,C118
.....3	007-1024	CAP,CER,.001uF,50V,10%,SMD	1	C115
.....3	007-1044	CAP,CER,0.1uF,50V,10%,SMD note	14	C1,C4,C5,C6,C7, C8,C13,C14,C15, C16,C17,C111, C119,C34
.....3	007-1813-050	CAP,CER,180 PFD,5%,50V,1206,SMD	1	C102
.....3	007-3300	CAP,CER,3.3PF,50V,.25pF,SMD	1	C116
.....3	007-3312	CAP,CER,33pF,50V,2%,SMD	4	C2,C3,C110, C114
.....3	007-4700-500	CAP,CER,4.7pF,50V,.25pF,SMD	1	C113
.....3	011-7.3728	Crystal,SMT,7.3728 MHz, 50ppm, Epson MA-506-7.3728M-C2	1	X1
.....3	012-280-1	TCXO, SMT, 12.800 MHZ, 1PPM	1	U29
.....3	070-1054	CAP,TANT,1uF,35V,10%,SMD	36	C18,C9,C10,C23, C24,C25,C31, C32,C29,C47, C50,C51,C53, C54,C57,C58, C70,C71,C66, C67,C78,C79, C73,C74,C87, C145,C96,C98, C93,C131,C126, C128,C90,C123, C42,C154
.....3	070-1064	CAP,TANT,10uF,35V,20%,SMD	1	C138
.....3	070-1084	CAP,TANT,100uF,16V,10%,SMD	1	C112
.....3	070-2204	CAP,TANT,22uF,25V,10%,SMD	2	C11,C12

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	070-2265-L25	CAP,TANT,22 MFD,20%,25V, E CASE,LOW ESR,SMD	2	C139,C140
.....3	070-6854	TANT CAP, 6.8 UF, 16V, SIZE C	1	C108
.....3	101-0100	RES,THICK FILM,100,1/8W,SMD	2	R13,R14
.....3	102-1000	RES,CHIP,100 OHMS,1/10W,1%,SMD	8	R19,R178,R179, R181,R185,R188 ,R189,R162
.....3	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	16	R2,R163,R149, R164,R165,R192 ,R177,R183, R187,R70,R61, R160,R55,R56, R57,R58
.....3	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	15	R18,R26,R27, R199,R148,R176 ,R193,R60,R63, R171,R64,R156, R157,R54,R202
.....3	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	5	R170,R158,R159 ,R168,R169
.....3	102-1004	RES,CHIP,1.00M OHMS,1/10W,1%,SMD	1	R53
.....3	102-1102	RES,CHIP,11.0K OHMS,1/10W,1%,SMD	1	R201
.....3	102-1103	Res Chip 110K 1/10W 1%,SMD	1	R198
.....3	102-1400	RES,CHIP,1.4K OHMS,1/10W,1%,SMD	1	R28
.....3	102-1500	RES,CHIP,150 OHMS,1/10W,1%,SMD	37	R32,R33,R34, R35,R44,R45, R46,R47,R75, R76,R77,R78, R85,R86,R87, R88,R95,R96, R97,R98,R116, R117,R118,R119 ,R108,R109, R110,R111,R137 ,R138,R139, R140,R123,R124 ,R125,R126, R175
.....3	102-1582	RES,CHIP,15.8 K, 1/10 W, 1%	1	R21
.....3	102-1623	Res,Chip 162K 1/10W 1% SMD	1	R196
.....3	102-1744	RES,1.74K OHM,1/10W,1%	1	R190
.....3	102-1802	Res Chip 18.2 ohm 1/10W 1% SMD	6	R99,R100,R101, R127,R128,R129
.....3	102-2000	RES,CHIP,200 OHM,1/10 W,1% SMD	1	R184
.....3	102-2001	RES,CHIP,2.00K OHMS,1/10W,1%,SMD	1	R22
.....3	102-2201	RES,CHIP,22.1 OHM,1/10W,1%	3	R79,R80,R71
.....3	102-2214	RES,CHIP,2.21K OHM,1/10W,1%	1	R23
.....3	102-2490	RES,CHIP,24.9 OHM,1/10W,1%	4	R102,R103,R130 ,R132
.....3	102-2491	RES,CHIP,2.49K,1/10W,1%,SMD	1	R67

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-2741	RES,CHIP,2.74K OHMS,1/10W,1%,SMD	14	R37,R43,R74, R84,R94,R115, R107,R136,R122 ,R144,R146,R30, R20,R204
.....3	102-3010	RES, CHIP, 301 OHMS, 1/10W, 1%, SMD	1	R66
.....3	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	2	R24,R29
.....3	102-3321	RES,CHIP,3.32K OHMS,1/10W,1%,SMD	2	R3,R69
.....3	102-3832	RES, CHIP, 38.3 KOHMS, 1/10W, 1%, SMD	1	R203
.....3	102-3901	RES,CHIP,3.9K OHMS,1/10W,1%,SMD	1	R65
.....3	102-3902	Res, Chip 39.2 ohms 1/10W 1% SMD	2	R104,R131
.....3	102-3925	RES,CHIP,39.2 K OHM,1/10 W,1%	1	R197
.....3	102-4221	RES,CHIP,4.22K,1/10W,1%,SMD	18	R36,R38,R41, R42,R72,R73, R82,R83,R92, R93,R113,R114, R120,R121,R105 ,R106,R134, R135
.....3	102-4302	Res,Chip 43.2 ohms 1/10W 1% SMD	1	R81
.....3	102-4421	RES,CHIP,4.42K OHMS,1/10W,1%,SMD	1	R25
.....3	102-4750	RES,CHIP,475 OHMS,1/10W,1%,SMD	2	R150,R191
.....3	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	32	R1,R4,R5,R6,R7, R8,R9,R10,R11, R12,R15,R16, R17,R141,R151, R142,R152,R194 ,R195,R39,R40, R166,R167,R172 ,R173,R143,R59, R161,R48,R50, R51,R52
.....3	102-4990	RES,499 OHM,1/10W,1%	1	R68
.....3	102-4991	RES,CHIP,49.9 OHMS,1/10W,1%,SMD	1	R180
.....3	102-5112	RES,CHIP,51.1 OHM,1/10W,1%	2	R112,R133
.....3	102-5143	RES,5.1K OHMS,1/10W,1%,SMD	6	R145,R147,R182 ,R186,R31,R205
.....3	102-6040	RES,604 OHM,1/10W,1%	1	R174
.....3	102-6341	RES,CHIP,6.34K,1/10W,1%,SMD	2	R154,R155
.....3	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R200
.....3	102-7680	RES,CHIP,768 OHMS,1/10W,1%,SMD	1	R62
.....3	198-2024	TRMR,2K OHMS,TOP ADJUST,10 TURN,SMD	1	R153
.....3	204-0914	DIODE,SWITCHING,MMBD914LT1,SMD	4	D2,D3,D4,D5
.....3	204-3102	DIODE,MMBV3102LT1,SMD	1	D7
.....3	204-5000	VOLTAGE,REFERENCE,5.0V,SMD	1	D1
.....3	210-0093	TRANSISTOR,BFR93A,SOT-23,SMD	2	Q23,Q24
.....3	216-0064	TSTR SMT Darlington PNP	1	Q26
.....3	216-0310	TSTR,MMBFU310LT1,SMD	1	Q22
.....3	220-1020	IC, RF Switch SP4T Absorptive	2	U12,U17
.....3	220-4052-002	IC,4052 DUAL 4-CH MUX,SMD	1	U5
.....3	220-4521	IC Digital Attenuator o-31 db	1	U11

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	220-4527	Freq Mixer 50-1000 MHz +17 DBM LO	2	U18,U22
.....3	220-4611	IC, DIG ATTEN, 0-31 DB, 0.5 DB STEPS	1	U15
.....3	220-8065	IC, HIGH SPEED FET OP-AMP	1	U33
.....3	220-9832	IC, 25 MHZ DDS	1	U30
.....3	221-0006	RF Amp GALI-4 SMD Wideband 50 Ohm	9	U10,U13,U19, U20,U21,U23, U24,U25,U26
.....3	221-4110	RF PLL FREQUENCY SYNTHESIZER	1	U28
.....3	221-4111	IC PLL SYN DM Prescalers 1.2GHz	1	U27
.....3	224-0333	SWITCH,QUAD,ADG333ABRS,20-PIN SSOP,SMD	1	U16
.....3	224-0809	IC,MCU RESET,MAX809L,4.63V,SOT-23,SMD	1	U2
.....3	270-101	Cap., monolithic chip, 100 pf 50v 5% Kemet C1206C101J5GAC	1	C141
.....3	270-102	Cap,monolithic,1000pf 50v 5%KemetC1206C102J5GACTR marked	37	C20,C21,C22, C27,C30,C36, C41,C45,C48, C49,C52,C55, C56,C59,C60, C65,C68,C69, C72,C75,C76, C77,C80,C81, C92,C97,C136, C143,C144,C84, C85,C127,C122, C64,C38,C39, C37
.....3	270-103	Cap, Monolithic chip 10000pF 10% XR7 Kemet C1206C103J5RACTR	12	C26,C28,C46, C82,C99,C83, C129,C133,C146 ,C148,C40,C101
.....3	270-104	Capacitor, Monolithic Chip 100000pF 1% C1206C104J5RAC Kemet	12	C86,C135,C91, C107,C132,C147 ,C149,C100, C150,C152,C153 ,C155
.....3	270-682	CAPACITOR, SMT, 1206, 6800 PF, 5%	1	C142
.....3	298-106	Cap., Tantalum, SMT, Size B, 10uF, 16V,Kemet T491B106K016AS	2	C106,C103
.....3	298-157	Capacitor,Tantalum,SMT,size X,150uF,16V Kemet T491X157K016AS	3	C44,C109,C43
.....3	330-024	Inductor, 10uH SMT DN12103JTR-ND DELEVAN 5%	16	L3,L8,L9,L30,L31 ,L16,L17,L18,L20 ,L21,L19,L22,L25 ,L26,L2,L5
.....3	350-201	INDUCTOR, SMT, 1812, 82NH	1	L29
.....3	360-0600	FILTER, HELICAL BANDPASS, F=60.0M	2	FL10,FL11
.....3	360-0707	FILTER, HELICAL BANDPASS, F=70.7M	1	FL12
.....3	366-0010-001	IND,10UH,1.5A	2	L27,L28
.....3	366-0246	Inductor SMT 246 NH 5%,Maxi Spring	1	L23
.....3	366-0680	IND,CER,680NH,5%,SMD	4	L1,L4,L14,L15
.....3	366-2700	IND,1008LS 2.7UH,10%,SMD	1	L24

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	400-196	IC, SMT, 1.5A STEP-UP REGULATOR	1	U37
.....3	400-295	IC,OP-AMP, GENERAL PURPOSE, OP295GS	2	U14,U34
.....3	401-164	IC, SMT, 8-Bit Ser In, Par Out SR Phillips 74HC164D	2	U6,U7
.....3	401-275	IC,SMT,OP-AMP,LOW NOISE,HIGH AUDIO BW	4	U3,U4,U32,U36
.....3	401-317	IC, SMT, Regulator,Adjustable, 1.5 Amps,National LM317AEMP	1	U38
.....3	401-374	IC, OCTAL D FLIP-FLOP W 3-ST OUT	2	U8,U9
.....3	407-0502	EMI SHIELD,MODIFIED 59-CBSAFN-1.0x1.75x.50	1	
.....3	413-1206	CHIP,TEST POINT,1206,SMD	3	TP1,TP2,TP3
.....3	415-840	Diode, Zener, SMT, 13V, Vishay BZX84C13TR	2	D6,D8
.....3	417-0090	KEYING PLUG 206509-1 AMP	4	
.....3	417-0265	CONN,BNC,JACK,THREADED,PC EDGE MOUNT,LOW PROFILE	1	J5
.....3	417-8915	CONN, 15 PIN, D, FEMALE, R.A. FILTERED	2	J1,J3
.....3	417-8925	CONN, 25 PIN,D, FEMALE, R.A. FILTERED	1	J2
.....3	418-120	DIODE, SMT, 1A, SCHOTTKY RECTIFIER	1	D9
.....3	418-447	Diode, SMT, Zener, 4.7V, Motorola BZX84C4V7LT1	4	D10,D11,D12, D13
.....3	420-141	Transistor, SMT, Darlington, NPN, Mototrola MMBTA14LT1	15	Q1,Q2,Q4,Q11, Q12,Q13,Q14, Q15,Q16,Q17, Q18,Q19,Q20, Q25,Q27
.....3	431-4400	SOCKET,44-PIN,PLCC,SMD note	1	
.....3	439-041	TRANSISTOR, SMT, GENERAL PURPOSE, NPN	2	Q21,Q3
.....3	513-2132	PCB,BLANK,DUAL WIDE BAND CONVERTER	1	
.....3	973-2132-U1	KIT,SOFTWARE,SR30/SR40A/SR20C/SR 20M,U1	1	U1
.....4	224-8535-001	IC,MCU,ATMEGA8535,44-PIN PLCC,SMD	1	U1

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	913-2132-330	ASSY,DUAL WIDE-BAND CONVERTER,330 MHZ (NOTE)	1	
....2	270-407-1	Capacitor,SMT,size 1206,4.7pF,COG,100V Kemet C1206C479C1GAC	3	C61,C62,C63
....2	350-192	INDUCTOR, 12.5nH, SMT, 1206	2	L10,L13
....2	350-194	INDUCTOR, 18.5nH, SMT, 1206	2	L11,L12
....2	360-0306	FILTER, HELICAL BANDPASS, F=306M	2	FL2,FL3
....2	360-0319	FILTER, HELICAL BANDPASS, F=319M	2	FL4,FL5
....2	360-0325	FILTER, HELICAL BANDPASS, F=325M	1	FL1
....2	360-0331	FILTER, HELICAL BANDPASS, F=331M	2	FL8,FL9
....2	360-0344	FILTER, HELICAL BANDPASS, F=344M	2	FL6,FL7
....2	400-410	IC, VCO, 360-410 MHZ	1	U31
....2	407-0503	EMI SHIELD,MARTI CONVERTER INPUT	1	
....2	427-0061	CONNECTOR, N, PCB, STRAIGHT, PNL MTG	1	J4
....2	913-2132	ASSY,PCB,DUAL WIDE-BAND CONVERTER (SBCM)	1	
.....3	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	9	C94,C95,C88,C105, C130,C124,C125, C89,C156
.....3	006-4775-350	CAP,ELECTRO,47UF,20%,35V,SMD	1	C134
.....3	007-0470-006	CAP,470pF,50v,10%,0603	2	C137,C121
.....3	007-1022	CAP,CER,100pF,50V,2%,SMD	3	C120,C117,C118
.....3	007-1024	CAP,CER,.001uF,50V,10%,SMD	1	C115
.....3	007-1044	CAP,CER,0.1uF,50V,10%,SMD note	14	C1,C4,C5,C6,C7,C8, C13,C14,C15,C16, C17,C111,C119,C34
.....3	007-1813-050	CAP,CER,180 PFD,5%,50V,1206,SMD	1	C102
.....3	007-3300	CAP,CER,3.3PF,50V,.25pF,SMD	1	C116
.....3	007-3312	CAP,CER,33pF,50V,2%,SMD	4	C2,C3,C110,C114
.....3	007-4700-500	CAP,CER,4.7pF,50V,.25pF,SMD	1	C113
.....3	011-7.3728	Crystal,SMT,7.3728 MHz, 50ppm, Epson MA-506-7.3728M-C2	1	X1
.....3	012-280-1	TCXO, SMT, 12.800 MHZ, 1PPM	1	U29
.....3	070-1054	CAP,TANT,1uF,35V,10%,SMD	36	C18,C9,C10,C23, C24,C25,C31,C32, C29,C47,C50,C51, C53,C54,C57,C58, C70,C71,C66,C67, C78,C79,C73,C74, C87,C145,C96,C98, C93,C131,C126, C128,C90,C123,C42, C154
.....3	070-1064	CAP,TANT,10uF,35V,20%,SMD	1	C138
.....3	070-1084	CAP,TANT,100uF,16V,10%,SMD	1	C112

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	070-2204	CAP,TANT,22uF,25V,10%,SMD	2	C11,C12
.....3	070-2265-L25	CAP,TANT,22 MFD,20%,25V, E CASE,LOW ESR,SMD	2	C139,C140
.....3	070-6854	TANT CAP, 6.8 UF, 16V, SIZE C	1	C108
.....3	101-0100	RES,THICK FILM,100,1/8W,SMD	2	R13,R14
.....3	102-1000	RES,CHIP,100 OHMS,1/10W,1%,SMD	8	R19,R178,R179, R181,R185,R188, R189,R162
.....3	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	16	R2,R163,R149,R164, R165,R192,R177, R183,R187,R70,R61, R160,R55,R56,R57, R58
.....3	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	15	R18,R26,R27,R199, R148,R176,R193, R60,R63,R171,R64, R156,R157,R54, R202
.....3	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	5	R170,R158,R159, R168,R169
.....3	102-1004	RES,CHIP,1.00M OHMS,1/10W,1%,SMD	1	R53
.....3	102-1102	RES,CHIP,11.0K OHMS,1/10W,1%,SMD	1	R201
.....3	102-1103	Res Chip 110K 1/10W 1%,SMD	1	R198
.....3	102-1400	RES,CHIP,1.4K OHMS,1/10W,1%,SMD	1	R28
.....3	102-1500	RES,CHIP,150 OHMS,1/10W,1%,SMD	37	R32,R33,R34,R35, R44,R45,R46,R47, R75,R76,R77,R78, R85,R86,R87,R88, R95,R96,R97,R98, R116,R117,R118, R119,R108,R109, R110,R111,R137, R138,R139,R140, R123,R124,R125, R126,R175
.....3	102-1582	RES,CHIP,15.8 K, 1/10 W, 1%	1	R21
.....3	102-1623	Res,Chip 162K 1/10W 1% SMD	1	R196
.....3	102-1744	RES,1.74K OHM,1/10W,1%	1	R190
.....3	102-1802	Res Chip 18.2 ohm 1/10W 1% SMD	6	R99,R100,R101, R127,R128,R129
.....3	102-2000	RES,CHIP,200 OHM,1/10 W,1% SMD	1	R184
.....3	102-2001	RES,CHIP,2.00K OHMS,1/10W,1%,SMD	1	R22
.....3	102-2201	RES,CHIP,22.1 OHM,1/10W,1%	3	R79,R80,R71
.....3	102-2214	RES,CHIP,2.21K OHM,1/10W,1%	1	R23
.....3	102-2490	RES,CHIP,24.9 OHM,1/10W,1%	4	R102,R103,R130, R132
.....3	102-2491	RES,CHIP,2.49K,1/10W,1%,SMD	1	R67
.....3	102-2741	RES,CHIP,2.74K OHMS,1/10W,1%,SMD	14	R37,R43,R74,R84, R94,R115,R107, R136,R122,R144, R146,R30,R20,R204
.....3	102-3010	RES, CHIP, 301 OHMS, 1/10W, 1%, SMD	1	R66
.....3	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	2	R24,R29

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-3321	RES,CHIP,3.32K OHMS,1/10W,1%,SMD	2	R3,R69
.....3	102-3832	RES, CHIP, 38.3 KOHMS, 1/10W, 1%, SMD	1	R203
.....3	102-3901	RES,CHIP,3.9K OHMS,1/10W,1%,SMD	1	R65
.....3	102-3902	Res, Chip 39.2 ohms 1/10W 1% SMD	2	R104,R131
.....3	102-3925	RES,CHIP,39.2 K OHM,1/10 W,1%	1	R197
.....3	102-4221	RES,CHIP,4.22K,1/10W,1%,SMD	18	R36,R38,R41,R42, R72,R73,R82,R83, R92,R93,R113,R114, R120,R121,R105, R106,R134,R135
.....3	102-4302	Res,Chip 43.2 ohms 1/10W 1% SMD	1	R81
.....3	102-4421	RES,CHIP,4.42K OHMS,1/10W,1%,SMD	1	R25
.....3	102-4750	RES,CHIP,475 OHMS,1/10W,1%,SMD	2	R150,R191
.....3	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	32	R1,R4,R5,R6,R7,R8, R9,R10,R11,R12, R15,R16,R17,R141, R151,R142,R152, R194,R195,R39,R40, R166,R167,R172, R173,R143,R59, R161,R48,R50,R51, R52
.....3	102-4990	RES,499 OHM,1/10W,1%	1	R68
.....3	102-4991	RES,CHIP,49.9 OHMS,1/10W,1%,SMD	1	R180
.....3	102-5112	RES,CHIP,51.1 OHM,1/10W,1%	2	R112,R133
.....3	102-5143	RES,5.1K OHMS,1/10W,1%,SMD	6	R145,R147,R182, R186,R31,R205
.....3	102-6040	RES,604 OHM,1/10W,1%	1	R174
.....3	102-6341	RES,CHIP,6.34K,1/10W,1%,SMD	2	R154,R155
.....3	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R200
.....3	102-7680	RES,CHIP,768 OHMS,1/10W,1%,SMD	1	R62
.....3	198-2024	TRMR,2K OHMS,TOP ADJUST,10 TURN,SMD	1	R153
.....3	204-0914	DIODE,SWITCHING,MMBD914LT1,SMD	4	D2,D3,D4,D5
.....3	204-3102	DIODE,MMBV3102LT1,SMD	1	D7
.....3	204-5000	VOLTAGE,REFERENCE,5.0V,SMD	1	D1
.....3	210-0093	TRANSISTOR,BFR93A,SOT-23,SMD	2	Q23,Q24
.....3	216-0064	TSTR SMT Darlington PNP	1	Q26
.....3	216-0310	TSTR,MMBFU310LT1,SMD	1	Q22
.....3	220-1020	IC, RF Switch SP4T Absorptive	2	U12,U17
.....3	220-4052-002	IC,4052 DUAL 4-CH MUX,SMD	1	U5
.....3	220-4521	IC Digital Attenuator o-31 db	1	U11
.....3	220-4527	Freq Mixer 50-1000 MHz +17 DBM LO	2	U18,U22
.....3	220-4611	IC, DIG ATTEN, 0-31 DB, 0.5 DB STEPS	1	U15
.....3	220-8065	IC, HIGH SPEED FET OP-AMP	1	U33
.....3	220-9832	IC, 25 MHZ DDS	1	U30
.....3	221-0006	RF Amp GALI-4 SMD Wideband 50 Ohm	9	U10,U13,U19,U20, U21,U23,U24,U25,U 26
.....3	221-4110	RF PLL FREQUENCY SYNTHESIZER	1	U28

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	221-4111	IC PLL SYN DM Prescalers 1.2GHz	1	U27
.....3	224-0333	SWITCH,QUAD,ADG333ABRS,20-PIN SSOP,SMD	1	U16
.....3	224-0809	IC,MCU RESET,MAX809L,4.63V,SOT-23,SMD	1	U2
.....3	270-101	Cap., monolithic chip, 100 pf 50v 5% Kemet C1206C101J5GAC	1	C141
.....3	270-102	Cap,monolithic,1000pf 50v 5%KemetC1206C102J5GACTR marked	37	C20,C21,C22,C27, C30,C36,C41,C45, C48,C49,C52,C55, C56,C59,C60,C65, C68,C69,C72,C75, C76,C77,C80,C81, C92,C97,C136,C143, C144,C84,C85,C127, C122,C64,C38,C39, C37
.....3	270-103	Cap, Monolithic chip 10000pF 10% XR7 Kemet C1206C103J5RACTR	12	C26,C28,C46,C82, C99,C83,C129,C133, C146,C148,C40, C101
.....3	270-104	Capacitor, Monolithic Chip 100000pF 1% C1206C104J5RAC Kemet	12	C86,C135,C91,C107, C132,C147,C149, C100,C150,C152, C153,C155
.....3	270-682	CAPACITOR, SMT, 1206, 6800 PF, 5%	1	C142
.....3	298-106	Cap., Tantalum, SMT, Size B, 10uF, 16V,Kemet T491B106K016AS	2	C106,C103
.....3	298-157	Capacitor,Tantalum,SMT,size X,150uF,16V Kemet T491X157K016AS	3	C44,C109,C43
.....3	330-024	Inductor, 10uH SMT DN12103JTR-ND DELEVAN 5%	16	L3,L8,L9,L30,L31, L16,L17,L18,L20,L21 ,L19,L22,L25,L26,L2, L5
.....3	350-201	INDUCTOR, SMT, 1812, 82NH	1	L29
.....3	360-0600	FILTER, HELICAL BANDPASS, F=60.0M	2	FL10,FL11
.....3	360-0707	FILTER, HELICAL BANDPASS, F=70.7M	1	FL12
.....3	366-0010-001	IND,10UH,1.5A	2	L27,L28
.....3	366-0246	Inductor SMT 246 NH 5%,Maxi Spring	1	L23
.....3	366-0680	IND,CER,680NH,5%,SMD	4	L1,L4,L14,L15
.....3	366-2700	IND,1008LS 2.7UH,10%,SMD	1	L24
.....3	400-196	IC, SMT, 1.5A STEP-UP REGULATOR	1	U37
.....3	400-295	IC,OP-AMP, GENERAL PURPOSE, OP295GS	2	U14,U34
.....3	401-164	IC, SMT, 8-Bit Ser In, Par Out SR Phillips 74HC164D	2	U6,U7
.....3	401-275	IC,SMT,OP-AMP,LOW NOISE,HIGH AUDIO BW	4	U3,U4,U32,U36
.....3	401-317	IC, SMT, Regulator,Adjustable, 1.5 Amps,National LM317AEMP	1	U38
.....3	401-374	IC, OCTAL D FLIP-FLOP W 3-ST OUT	2	U8,U9
.....3	407-0502	EMI SHIELD,MODIFIED 59-CBSAFN-1.0x1.75x.50	1	

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	413-1206	CHIP,TEST POINT,1206,SMD	3	TP1,TP2,TP3
.....3	415-840	Diode, Zener, SMT, 13V, Vishay BZX84C13TR	2	D6,D8
.....3	417-0090	KEYING PLUG 206509-1 AMP	4	
.....3	417-0265	CONN,BNC,JACK,THREADED,PC EDGE MOUNT,LOW PROFILE	1	J5
.....3	417-8915	CONN, 15 PIN, D, FEMALE, R.A. FILTERED	2	J1,J3
.....3	417-8925	CONN, 25 PIN,D, FEMALE, R.A. FILTERED	1	J2
.....3	418-120	DIODE, SMT, 1A, SCHOTTKY RECTIFIER	1	D9
.....3	418-447	Diode, SMT, Zener, 4.7V, Motorola BZX84C4V7LT1	4	D10,D11,D12,D13
.....3	420-141	Transistor, SMT, Darlington, NPN, Mototrola MMBTA14LT1	15	Q1,Q2,Q4,Q11,Q12, Q13,Q14,Q15,Q16, Q17,Q18,Q19,Q20, Q25,Q27
.....3	431-4400	SOCKET,44-PIN,PLCC,SMD note	1	
.....3	439-041	TRANSISTOR, SMT, GENERAL PURPOSE, NPN	2	Q21,Q3
.....3	513-2132	PCB,BLANK,DUAL WIDE BAND CONVERTER	1	
.....3	973-2132-U1	KIT,SOFTWARE,SR30/SR40A/SR20C/SR20M,U1	1	U1
.....4	224-8535-001	IC,MCU,ATMEGA8535,44-PIN PLCC,SMD	1	U1

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
..1	913-2132-450	ASSY,DUAL WIDE-BAND CONVERTER,450 MHZ (NOTE)	1	
....2	270-407-1	Capacitor,SMT,size 1206,4.7pF,COG,100V Kemet C1206C479C1GAC	3	C61,C62,C63
....2	350-192	INDUCTOR, 12.5nH, SMT, 1206	2	L10,L13
....2	350-194	INDUCTOR, 18.5nH, SMT, 1206	2	L11,L12
....2	360-0436	FILTER, HELICAL BANDPASS, F=436M	2	FL2,FL3
....2	360-0449	FILTER, HELICAL BANDPASS, F=449M	2	FL4,FL5
....2	360-0455	FILTER, HELICAL BANDPASS, F=455M	1	FL1
....2	360-0461	FILTER, HELICAL BANDPASS, F=461M	2	FL8,FL9
....2	360-0474	FILTER, HELICAL BANDPASS, F=474M	2	FL6,FL7
....2	400-420	IC, VCO, 370-420 MHZ	1	U31
....2	407-0503	EMI SHIELD,MARTI CONVERTER INPUT	1	
....2	427-0061	CONNECTOR, N, PCB, STRAIGHT, PNL MTG	1	J4
....2	913-2132	ASSY,PCB,DUAL WIDE-BAND CONVERTER (SBCM)	1	
.....3	006-1085	CAP,ELECTRO,100 UF,10%,35V,SMD	9	C94,C95,C88,C105 ,C130,C124,C125, C89,C156
.....3	006-4775-350	CAP,ELECTRO,47UF,20%,35V,SMD	1	C134
.....3	007-0470-006	CAP,470pF,50v,10%,0603	2	C137,C121
.....3	007-1022	CAP,CER,100pF,50V,2%,SMD	3	C120,C117,C118
.....3	007-1024	CAP,CER,.001uF,50V,10%,SMD	1	C115
.....3	007-1044	CAP,CER,0.1uF,50V,10%,SMD note	14	C1,C4,C5,C6,C7, C8,C13,C14,C15, C16,C17,C111, C119,C34
.....3	007-1813-050	CAP,CER,180 PFD,5%,50V,1206,SMD	1	C102
.....3	007-3300	CAP,CER,3.3PF,50V,.25pF,SMD	1	C116
.....3	007-3312	CAP,CER,33pF,50V,2%,SMD	4	C2,C3,C110,C114
.....3	007-4700-500	CAP,CER,4.7pF,50V,.25pF,SMD	1	C113
.....3	011-7.3728	Crystal,SMT,7.3728 MHz, 50ppm, Epson MA-506-7.3728M-C2	1	X1
.....3	012-280-1	TCXO, SMT, 12.800 MHZ, 1PPM	1	U29
.....3	070-1054	CAP,TANT,1uF,35V,10%,SMD	36	C18,C9,C10,C23, C24,C25,C31,C32, C29,C47,C50,C51, C53,C54,C57,C58, C70,C71,C66,C67, C78,C79,C73,C74, C87,C145,C96,C98 ,C93,C131,C126, C128,C90,C123, C42,C154
.....3	070-1064	CAP,TANT,10uF,35V,20%,SMD	1	C138

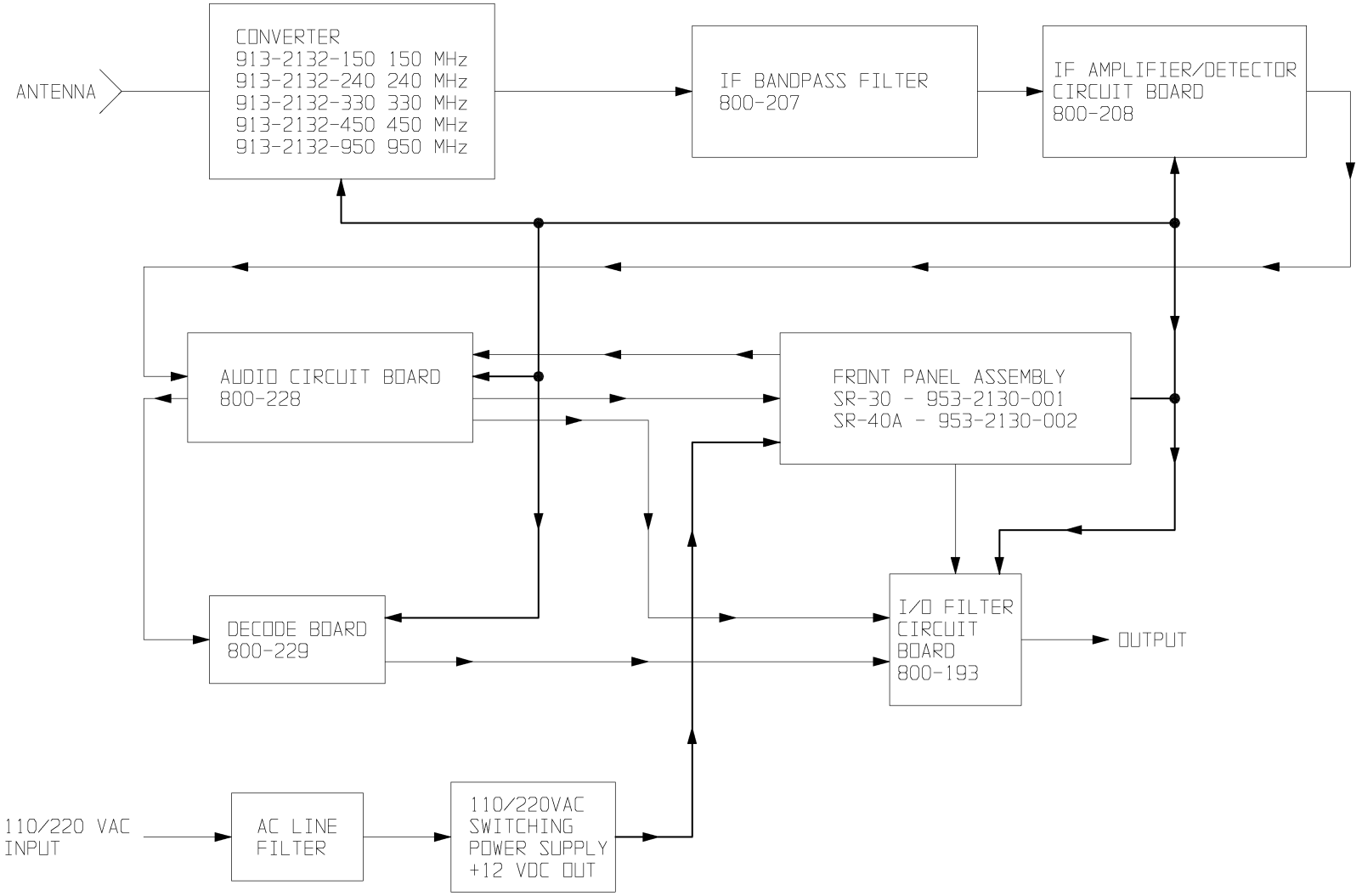
BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	070-1084	CAP,TANT,100uF,16V,10%,SMD	1	C112
.....3	070-2204	CAP,TANT,22uF,25V,10%,SMD	2	C11,C12
.....3	070-2265-L25	CAP,TANT,22 MFD,20%,25V, E CASE,LOW ESR,SMD	2	C139,C140
.....3	070-6854	TANT CAP, 6.8 UF, 16V, SIZE C	1	C108
.....3	101-0100	RES,THICK FILM,100,1/8W,SMD	2	R13,R14
.....3	102-1000	RES,CHIP,100 OHMS,1/10W,1%,SMD	8	R19,R178,R179, R181,R185,R188, R189,R162
.....3	102-1001	RES,CHIP,1.00K OHMS,1/10W,1%,SMD	16	R2,R163,R149, R164,R165,R192, R177,R183,R187, R70,R61,R160,R55 ,R56,R57,R58
.....3	102-1002	RES,CHIP,10.0K OHMS,1/10W,1%,SMD	15	R18,R26,R27,R199 ,R148,R176,R193, R60,R63,R171,R64 ,R156,R157,R54, R202
.....3	102-1003	RES,CHIP,100K OHMS,1/10W,1%,SMD	5	R170,R158,R159, R168,R169
.....3	102-1004	RES,CHIP,1.00M OHMS,1/10W,1%,SMD	1	R53
.....3	102-1102	RES,CHIP,11.0K OHMS,1/10W,1%,SMD	1	R201
.....3	102-1103	Res Chip 110K 1/10W 1%,SMD	1	R198
.....3	102-1400	RES,CHIP,1.4K OHMS,1/10W,1%,SMD	1	R28
.....3	102-1500	RES,CHIP,150 OHMS,1/10W,1%,SMD	37	R32,R33,R34,R35, R44,R45,R46,R47, R75,R76,R77,R78, R85,R86,R87,R88, R95,R96,R97,R98, R116,R117,R118, R119,R108,R109, R110,R111,R137, R138,R139,R140, R123,R124,R125, R126,R175
.....3	102-1582	RES,CHIP,15.8 K, 1/10 W, 1%	1	R21
.....3	102-1623	Res,Chip 162K 1/10W 1% SMD	1	R196
.....3	102-1744	RES,1.74K OHM,1/10W,1%	1	R190
.....3	102-1802	Res Chip 18.2 ohm 1/10W 1% SMD	6	R99,R100,R101, R127,R128,R129
.....3	102-2000	RES,CHIP,200 OHM,1/10 W,1% SMD	1	R184
.....3	102-2001	RES,CHIP,2.00K OHMS,1/10W,1%,SMD	1	R22
.....3	102-2201	RES,CHIP,22.1 OHM,1/10W,1%	3	R79,R80,R71
.....3	102-2214	RES,CHIP,2.21K OHM,1/10W,1%	1	R23
.....3	102-2490	RES,CHIP,24.9 OHM,1/10W,1%	4	R102,R103,R130, R132
.....3	102-2491	RES,CHIP,2.49K,1/10W,1%,SMD	1	R67
.....3	102-2741	RES,CHIP,2.74K OHMS,1/10W,1%,SMD	14	R37,R43,R74,R84, R94,R115,R107, R136,R122,R144, R146,R30,R20, R204

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	102-3010	RES, CHIP, 301 OHMS, 1/10W, 1%, SMD	1	R66
.....3	102-3011	RES,CHIP,3.01K OHMS,1/10W,1%,SMD	2	R24,R29
.....3	102-3321	RES,CHIP,3.32K OHMS,1/10W,1%,SMD	2	R3,R69
.....3	102-3832	RES, CHIP, 38.3 KOHMS, 1/10W, 1%, SMD	1	R203
.....3	102-3901	RES,CHIP,3.9K OHMS,1/10W,1%,SMD	1	R65
.....3	102-3902	Res, Chip 39.2 ohms 1/10W 1% SMD	2	R104,R131
.....3	102-3925	RES,CHIP,39.2 K OHM,1/10 W,1%	1	R197
.....3	102-4221	RES,CHIP,4.22K,1/10W,1%,SMD	18	R36,R38,R41,R42, R72,R73,R82,R83, R92,R93,R113, R114,R120,R121, R105,R106,R134, R135
.....3	102-4302	Res,Chip 43.2 ohms 1/10W 1% SMD	1	R81
.....3	102-4421	RES,CHIP,4.42K OHMS,1/10W,1%,SMD	1	R25
.....3	102-4750	RES,CHIP,475 OHMS,1/10W,1%,SMD	2	R150,R191
.....3	102-4751	RES,CHIP,4.75K OHMS,1/10W,1%,SMD	32	R1,R4,R5,R6,R7, R8,R9,R10,R11, R12,R15,R16,R17, R141,R151,R142, R152,R194,R195, R39,R40,R166, R167,R172,R173, R143,R59,R161, R48,R50,R51,R52
.....3	102-4990	RES,499 OHM,1/10W,1%	1	R68
.....3	102-4991	RES,CHIP,49.9 OHMS,1/10W,1%,SMD	1	R180
.....3	102-5112	RES,CHIP,51.1 OHM,1/10W,1%	2	R112,R133
.....3	102-5143	RES,5.1K OHMS,1/10W,1%,SMD	6	R145,R147,R182, R186,R31,R205
.....3	102-6040	RES,604 OHM,1/10W,1%	1	R174
.....3	102-6341	RES,CHIP,6.34K,1/10W,1%,SMD	2	R154,R155
.....3	102-6811	RES,CHIP,6.81K,1/10W,1%,SMD	1	R200
.....3	102-7680	RES,CHIP,768 OHMS,1/10W,1%,SMD	1	R62
.....3	198-2024	TRMR,2K OHMS,TOP ADJUST,10 TURN,SMD	1	R153
.....3	204-0914	DIODE,SWITCHING,MMBD914LT1,SMD	4	D2,D3,D4,D5
.....3	204-3102	DIODE,MMBV3102LT1,SMD	1	D7
.....3	204-5000	VOLTAGE,REFERENCE,5.0V,SMD	1	D1
.....3	210-0093	TRANSISTOR,BFR93A,SOT-23,SMD	2	Q23,Q24
.....3	216-0064	TSTR SMT Darlington PNP	1	Q26
.....3	216-0310	TSTR,MMBFU310LT1,SMD	1	Q22
.....3	220-1020	IC, RF Switch SP4T Absorptive	2	U12,U17
.....3	220-4052-002	IC,4052 DUAL 4-CH MUX,SMD	1	U5
.....3	220-4521	IC Digital Attenuator o-31 db	1	U11
.....3	220-4527	Freq Mixer 50-1000 MHz +17 DBM LO	2	U18,U22
.....3	220-4611	IC, DIG ATTEN, 0-31 DB, 0.5 DB STEPS	1	U15
.....3	220-8065	IC, HIGH SPEED FET OP-AMP	1	U33
.....3	220-9832	IC, 25 MHZ DDS	1	U30

BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	221-0006	RF Amp GALI-4 SMD Wideband 50 Ohm	9	U10,U13,U19,U20, U21,U23,U24,U25, U26
.....3	221-4110	RF PLL FREQUENCY SYNTHESIZER	1	U28
.....3	221-4111	IC PLL SYN DM Prescalers 1.2GHz	1	U27
.....3	224-0333	SWITCH,QUAD,ADG333ABRS,20-PIN SSOP,SMD	1	U16
.....3	224-0809	IC,MCU RESET,MAX809L,4.63V,SOT-23,SMD	1	U2
.....3	270-101	Cap., monolithic chip, 100 pf 50v 5% Kemet C1206C101J5GAC	1	C141
.....3	270-102	Cap,monolithic,1000pf 50v 5%KemetC1206C102J5GACTR marked	37	C20,C21,C22,C27, C30,C36,C41,C45, C48,C49,C52,C55, C56,C59,C60,C65, C68,C69,C72,C75, C76,C77,C80,C81, C92,C97,C136, C143,C144,C84, C85,C127,C122, C64,C38,C39,C37
.....3	270-103	Cap, Monolithic chip 10000pF 10% XR7 Kemet C1206C103J5RACTR	12	C26,C28,C46,C82, C99,C83,C129, C133,C146,C148, C40,C101
.....3	270-104	Capacitor, Monolithic Chip 100000pF 1% C1206C104J5RAC Kemet	12	C86,C135,C91, C107,C132,C147, C149,C100,C150, C152,C153,C155
.....3	270-682	CAPACITOR, SMT, 1206, 6800 PF, 5%	1	C142
.....3	298-106	Cap., Tantalum, SMT, Size B, 10uF, 16V,Kemet T491B106K016AS	2	C106,C103
.....3	298-157	Capacitor,Tantalum,SMT,size X,150uF,16V Kemet T491X157K016AS	3	C44,C109,C43
.....3	330-024	Inductor, 10uH SMT DN12103JTR-ND DELEVAN 5%	16	L3,L8,L9,L30,L31, L16,L17,L18,L20, L21,L19,L22,L25, L26,L2,L5
.....3	350-201	INDUCTOR, SMT, 1812, 82NH	1	L29
.....3	360-0600	FILTER, HELICAL BANDPASS, F=60.0M	2	FL10,FL11
.....3	360-0707	FILTER, HELICAL BANDPASS, F=70.7M	1	FL12
.....3	366-0010-001	IND,10UH,1.5A	2	L27,L28
.....3	366-0246	Inductor SMT 246 NH 5%,Maxi Spring	1	L23
.....3	366-0680	IND,CER,680NH,5%,SMD	4	L1,L4,L14,L15
.....3	366-2700	IND,1008LS 2.7UH,10%,SMD	1	L24
.....3	400-196	IC, SMT, 1.5A STEP-UP REGULATOR	1	U37
.....3	400-295	IC,OP-AMP, GENERAL PURPOSE, OP295GS	2	U14,U34
.....3	401-164	IC, SMT, 8-Bit Ser In, Par Out SR Phillips 74HC164D	2	U6,U7
.....3	401-275	IC,SMT,OP-AMP,LOW NOISE,HIGH AUDIO BW	4	U3,U4,U32,U36

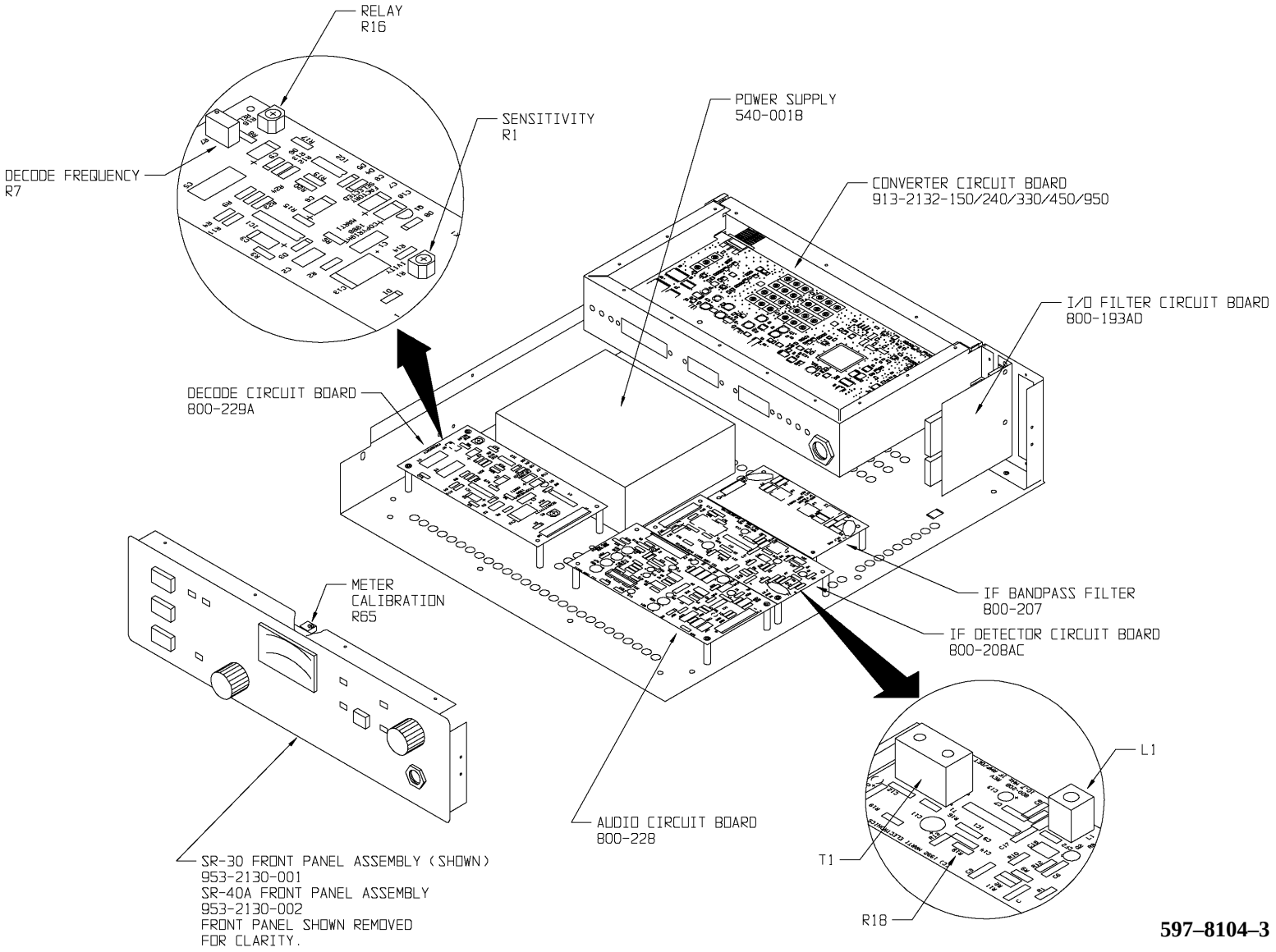
BOM LEVEL	PART NO.	DESCRIPTION	QTY	REF. DES.
.....3	401-317	IC, SMT, Regulator,Adjustable, 1.5 Amps,National LM317AEMP	1	U38
.....3	401-374	IC, OCTAL D FLIP-FLOP W 3-ST OUT	2	U8,U9
.....3	407-0502	EMI SHIELD,MODIFIED 59-CBSAFN-1.0x1.75x.50	1	
.....3	413-1206	CHIP,TEST POINT,1206,SMD	3	TP1,TP2,TP3
.....3	415-840	Diode, Zener, SMT, 13V, Vishay BZX84C13TR	2	D6,D8
.....3	417-0090	KEYING PLUG 206509-1 AMP	4	
.....3	417-0265	CONN,BNC,JACK,THREADED,PC EDGE MOUNT,LOW PROFILE	1	J5
.....3	417-8915	CONN, 15 PIN, D, FEMALE, R.A. FILTERED	2	J1,J3
.....3	417-8925	CONN, 25 PIN,D, FEMALE, R.A. FILTERED	1	J2
.....3	418-120	DIODE, SMT, 1A, SCHOTTKY RECTIFIER	1	D9
.....3	418-447	Diode, SMT, Zener, 4.7V, Motorola BZX84C4V7LT1	4	D10,D11,D12,D13
.....3	420-141	Transistor, SMT, Darlington, NPN, Mototrola MMBTA14LT1	15	Q1,Q2,Q4,Q11, Q12,Q13,Q14,Q15, Q16,Q17,Q18,Q19, Q20,Q25,Q27
.....3	431-4400	SOCKET,44-PIN,PLCC,SMD note	1	
.....3	439-041	TRANSISTOR, SMT, GENERAL PURPOSE, NPN	2	Q21,Q3
.....3	513-2132	PCB,BLANK,DUAL WIDE BAND CONVERTER	1	
.....3	973-2132-U1	KIT,SOFTWARE,SR30/SR40A/SR20C/SR20M,U1	1	U1
.....4	224-8535-001	IC,MCU,ATMEGA8535,44-PIN PLCC,SMD	1	U1

12 SCHEMATICS



597–8104–2

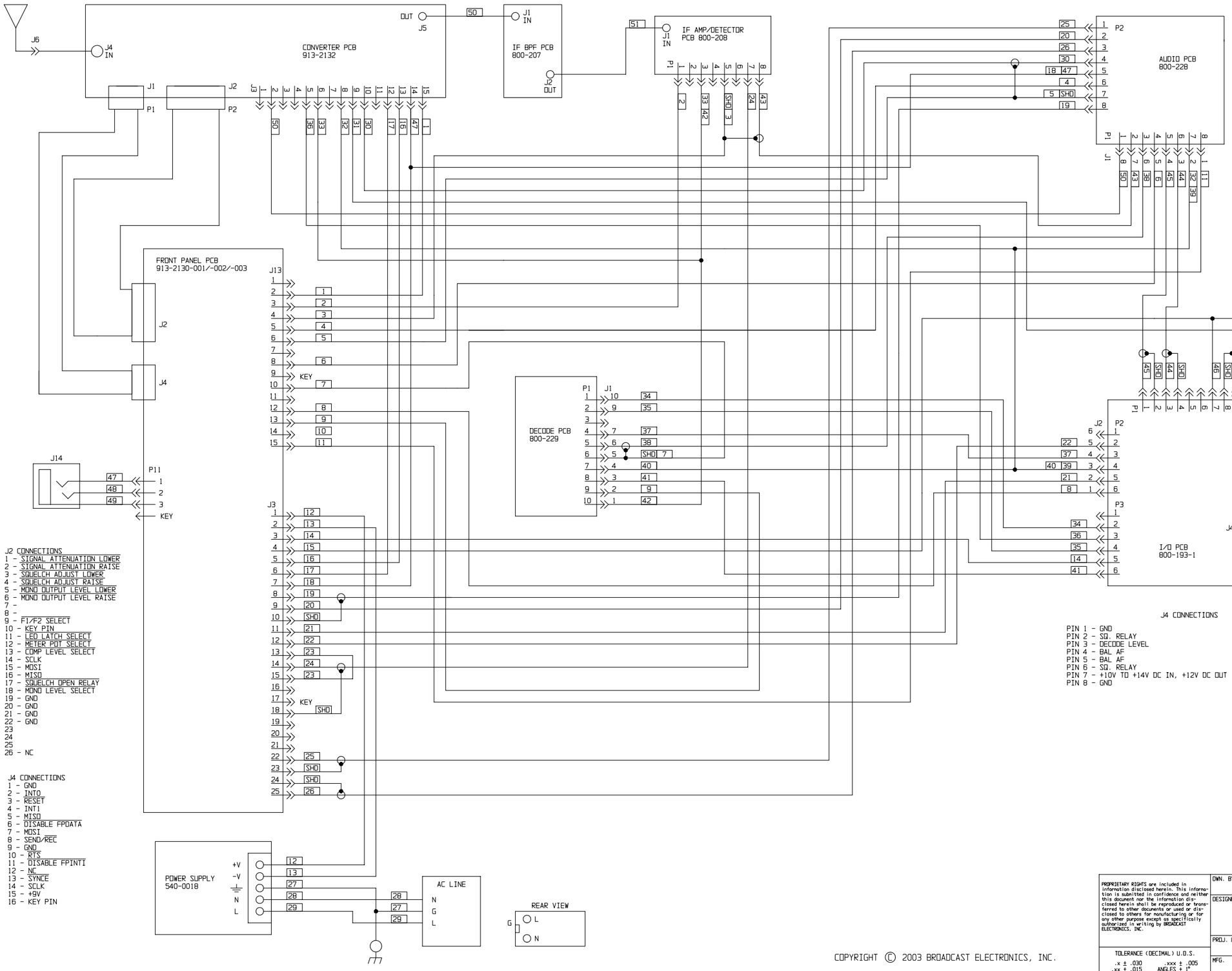
SR–30/SR–40A BLOCK DIAGRAM



597–8104–3

COMPONENT LOCATOR AND ADJUSTMENT CONTROLS

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	7-30-03	Updated, move wire 36			
A	12-17-03	Updated, move #46, 18, add wire #47, Engineering Release per ECN			11083



J2 CONNECTIONS
1 - SIGNAL ATTENUATION LOWER
2 - SIGNAL ATTENUATION RAISE
3 - SQUELCH ADJUST LOWER
4 - SQUELCH ADJUST RAISE
5 - MOND OUTPUT LEVEL LOWER
6 - MOND OUTPUT LEVEL RAISE
7 -
8 -
9 - F1/F2 SELECT
10 - KEY PIN
11 - LED LATCH SELECT
12 - METER POT SELECT
13 - COMP LEVEL SELECT
14 - SCLK
15 - MOSI
16 - MISO
17 - SQUELCH OPEN RELAY
18 - MOND LEVEL SELECT
19 - GND
20 - GND
21 - GND
22 - GND
23
24
25
26 - NC

J4 CONNECTIONS
1 - GND
2 - INTO
3 - RESET
4 - INT1
5 - MISO
6 - DISABLE FPDATA
7 - MOSI
8 - SEND/REC
9 - GND
10 - RTS
11 - DISABLE FPINT1
12 - NC
13 - SYNCE
14 - SCLK
15 - +9V
16 - KEY PIN

J4 CONNECTIONS

PIN 1 - GND
PIN 2 - SQ. RELAY
PIN 3 - DECODE LEVEL
PIN 4 - BAL AF
PIN 5 - BAL AF
PIN 6 - SQ. RELAY
PIN 7 - +10V TO +14V DC IN, +12V DC OUT
PIN 8 - GND
PIN 9 - NC
PIN 10 - DECODE RELAY N/C TO GND
PIN 11 - SIG LEVEL OUT
PIN 12 - DECODE RELAY
PIN 13 - DECODE RELAY
PIN 14 - NC
PIN 15 - MUTE

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

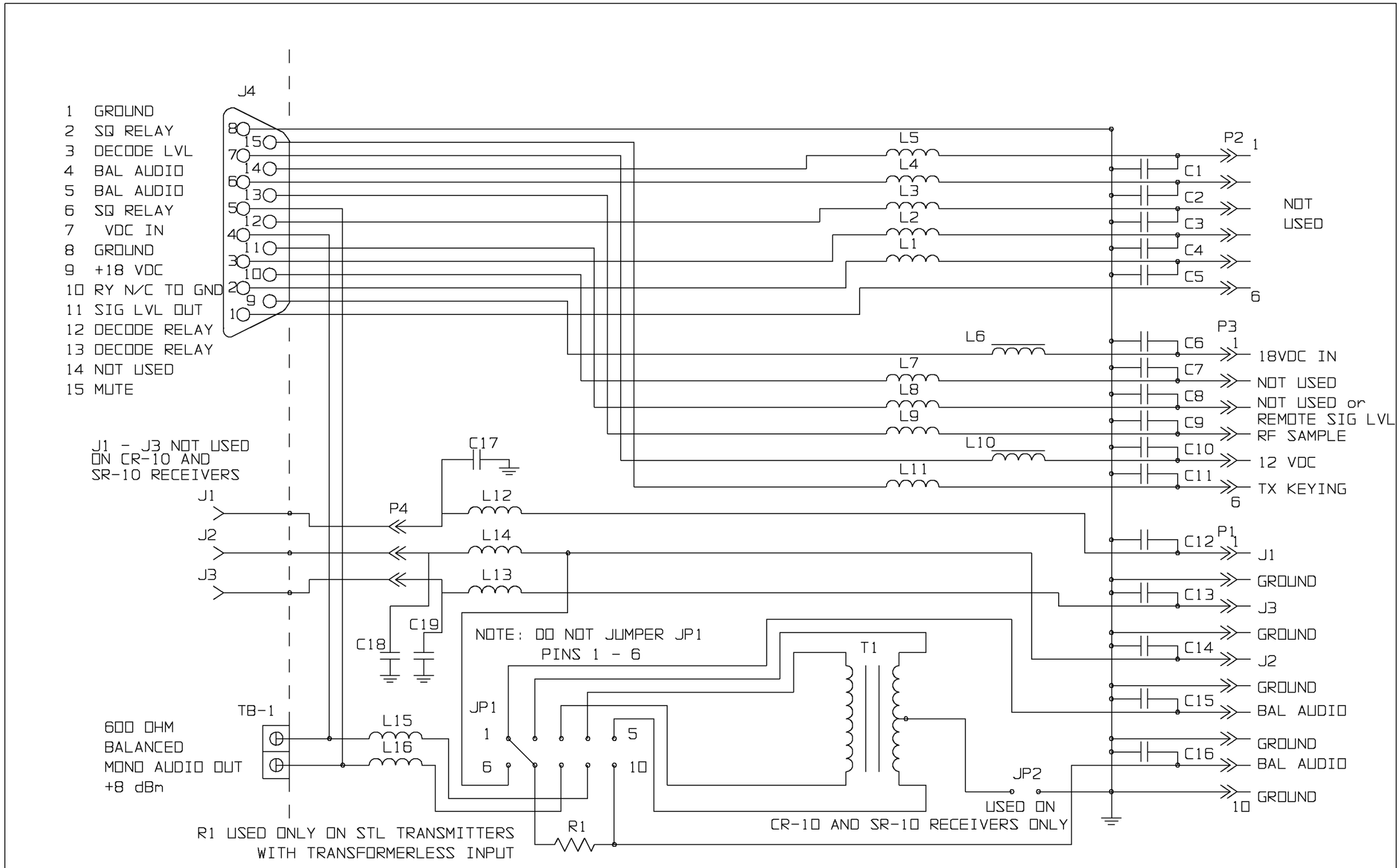
DWN. BY	MSE 6-09-03	MATERIAL	
DESIGNER(S)		FINISH	
PROJ. LEADER		SEE DWG RA592-0000	
MFG.		NEXT ASSY.	

BROADCAST ELECTRONICS INC.
4100 N.24TH ST.,P.O.BOX 3606 QUINCY,IL 62305 217/224-9600
TELEX 250142 CABLE BROADCAST FAX 217/224-9607

TITLE: WIRING DIAGRAM, SR40A/SR30

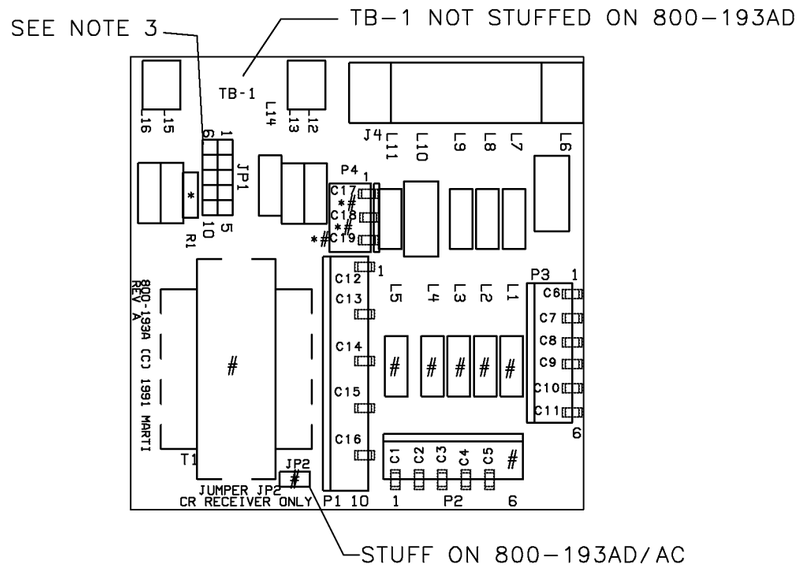
TYPE	SIZE	DWG. NO.	REV
S	D	SR40A-150/240/330/450/950 SR30-150/240/330/450/950	A

MODEL: SR40A/SR30 SCALE: NTS SHEET 1 OF 1



MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 800-193 5-26-00	TITLE INPUT/OUTPUT BOARD

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
A	9-9-03	ADDED 800-193AD ASSEMBLY AND NOTES	KT		11028



NOTES:

1) * INDICATES PARTS NOT STUFFED ON 800-193AC/AD (C17,C18,C19,R1)
2) # INDICATES PARTS NOT STUFFED ON 800-193AS (C17,C18,C19,L1,L2,L3,L4,L5, JP2,P2,T1)
3) JUMPERS ON JP1 ARE AS FOLLOWS:
   FOR 800-193AC/AD 2-7,3-8,4-9 & 5-10
   FOR 800-193AS 7-8 & 9-10

TOLERANCE (DECIMAL) U.O.S.
.X ± .030 .XXX ± .005
.XX ± .015 ANGLES + 1°

DWN. BY
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL
FINISH
NEXT ASSY.

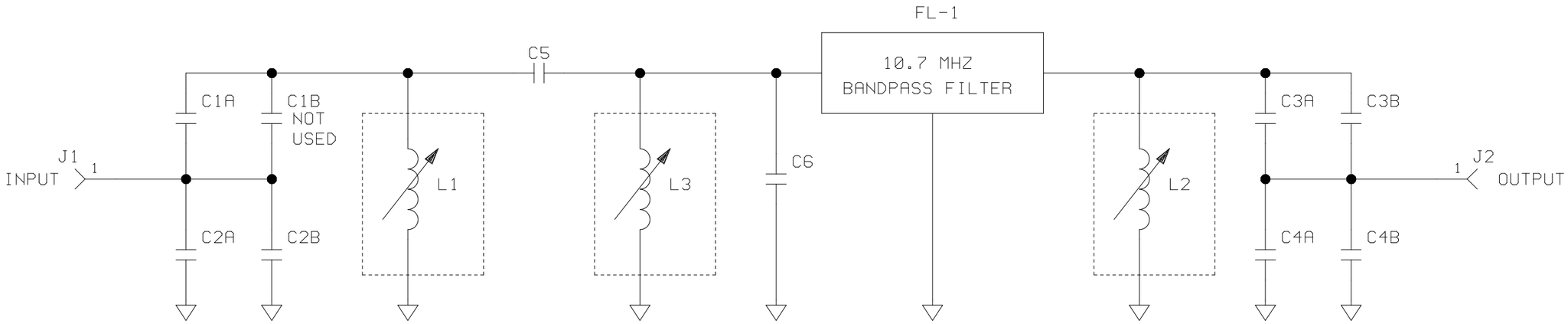
BE® BROADCAST ELECTRONICS INC.
4100 N. 24TH ST. P.O.BOX 3606 QUINCY,IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: INPUT FILTER BOARD

TYPE	SIZE	DWG No.	REV
	B	800-193AC/AS/AD	A

MODEL | SCALE 1/1 | SHEET 1 OF 1

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
2	7-11-01	REDRAWN IN CAD	KT		-----
A	11-27-02	ADDED TABLE WITH CORRECTED VALUES	KT	EJ	10841
B	11-14-03	ADDED 800-207-250	KT		11073



PART#	800-207-20	800-207-200	800-207-25	800-207-30	800-207-50	800-207-250
C1A	75pF	130pF	150pF	75pF	100pF	160pF
C2A	160pF	NOT USED	1000pF	240pF	300pF	NOT USED
C2B	240pF	300pF	NOT USED	160pF	300pF	150pF
C3A	270pF	NOT USED	270pF	270pF	10pF	240pF
C3B	NOT USED	240pF	NOT USED	NOT USED	75pF	NOT USED
C4A	360pF	240pF	5pF	360pF	NOT USED	240pF
C4B	NOT USED	NOT USED	160pF	NOT USED	160pF	NOT USED
C5	BUSS WIRE	BUSS WIRE	BUSS WIRE	3.3uH	BUSS WIRE	47pF
L1	3-7uH	1.5-3uH	1.5-3uH	3-7uH	1.5-3uH	1.5-3uH
L2	1.5-3uH	1.5-3uH	1.5-3uH	1.5-3uH	1.5-3uH	1.5-3uH
FL-1	360-038	360-016-1	360-025	360-024T	360-027	360-037
L3	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	1.5-3uH
C6	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	130pF

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 7-11-01
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOM 800-207
FINISH
NEXT ASSY.

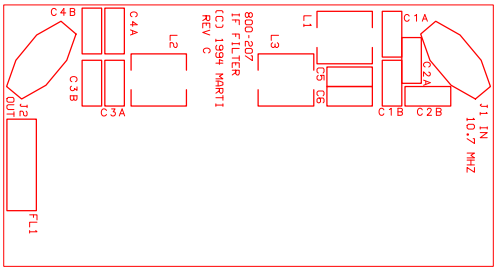
MARTI ELECTRONICS INC.
421 MARTI DRIVE, CLEBURNE, TX 76031
817/645-9163 FAX 817/641-3869

TITLE: IF FILTER BOARD

TYPE	SIZE	DWG. NO.	REV
S	B	800-207-20/200/25/30/50/250	B

MODEL | SCALE NONE | SHEET 1 OF 1

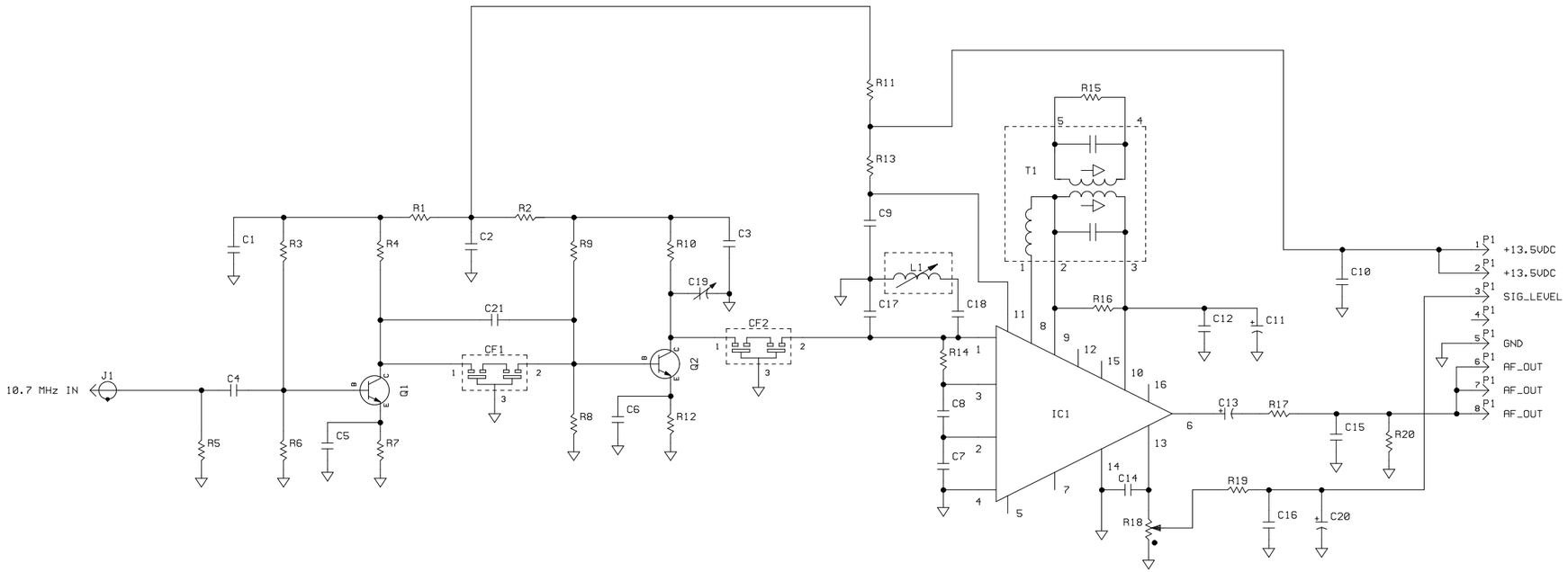
REV	DATE	DESCCIPTION	DRAFTER	APPROVED	ECN
9439	3-9-94	REDRAWN IN CAD	KT	EJ	----
A	12-2-02	ADDED TABLE TO SHOW CORRECT PARTS	KT	EJ	10841
B	11-14-03	ADDED ASSEMBLY 800-207-250	KT		11073
C	4-23-07	CHG'D 255-101 TO 255-101C	JTB		11482



PART	800-207-20	800-207-200	800-207-25	800-207-30	800-207-50	800-207-250
C1A	255-750	256-131	215-151C	255-750	255-101	255-161
C2A	255-161	NOT USED	255-102C	255-241	215-301	NOT USED
C2B	255-241	256-301	NOT USED	255-161	215-301	256-151
C3A	255-271	NOT USED	255-271	255-271C	255-100	255-241
C3B	NOT USED	255-241	NOT USED	NOT USED	255-750	NOT USED
C4A	255-361	255-241	255-050	255-361	NOT USED	255-241
C4B	NOT USED	NOT USED	255-161	NOT USED	255-161	NOT USED
C5	580-005	580-005	580-005	330-021	580-005	255-470C
L1	350-030	350-025	350-025	350-030	350-025	350-025
L2	350-025	350-025	350-025	350-025	350-025	350-025
FL1	360-038	360-016-1	360-025	360-024T	360-027	360-037
L3	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	256-131
C6	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	350-025

MARTI ELECTRONICS	800-207-20/200/25/30/50/250 REV C	IF FILTER BOARD

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
A	5-4-04	CHGD R18 TO 177-5050	KT		11114



COPYRIGHT © 2001 MARTI ELECTRONICS

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 7-11-01
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOM 800-208
FINISH
NEXT ASSY.

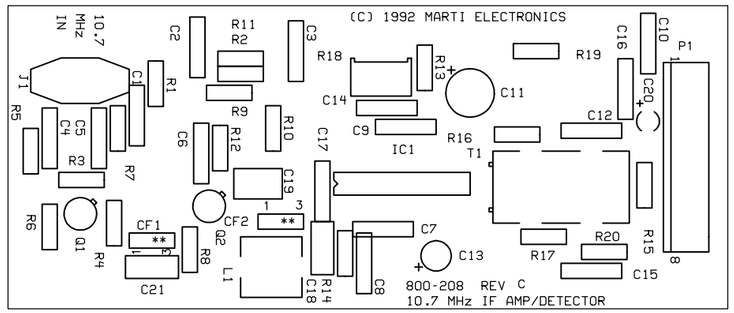
MARTI ELECTRONICS INC.
421 MARTI DRIVE, CLEBURNE, TX 76031
817/645-9163 FAX 817/641-3869

TITLE 10.7 MHz IF AMP/DETECTOR

TYPE S | SIZE D | DWG. NO. 800-208 | REV A

MODEL | SCALE | SHEET 1 OF 1

REV	DATE	DESCIPTION	DRAFTER	APPROVED	ECN
9440	9-19-01	REDRAWN IN CAD	KT	EJ	----
A	8-5-02	CHGD PAD SIZE FOR C13	KT	EJ	10741
B	4-9-03	GENERIC ASSEMBLY 800-208A ADDED	KT	EJ	10947
C	5-4-04	CHGD R18 & ADDED DETAIL "A"	KT		11114



DETAIL "A"

** PARTS INSTALLED IN AC/AD/AE LEVELS
SEE TABLE & DETAIL "A"

800-208AC	CF1 & CF2	360-032
800-208AD	CF1 & CF2	360-033
800-208AE	CF1 & CF2	360-035

MARTI ELECTRONICS	800-208A/AC/AD/AE REV C	10.7 MHz IF AMP/DETECTOR

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
A	9-12-01	REDRAWN IN CAD	KT		----

NOTCH FILTER
C27
C26
R24
C28
R26
R25
R28
C29
R27
R29
IC1/A
N/R
SIGNAL IN
GND
+13.5VDC
P1
R1
C4
R23
C24
R22
D3
C25
DE-EMPHASIS
Q1
C32
R30
C31
C30
C2
C3
R31
IC1/B
C1
C5
R2
R3
R7
C10
R8
C9
R6
IC2/B
C11
C12
C13
P2
TO PGM
LEVEL CONTROL
ON METER BOARD
800-192
LOW-PASS FILTER
C8
C7
R4
R5
C6
IC2/A
AUDIO OUT
TO METER
+13.5VDC
GND
AUDIO OUT
C18
R11
R9
C14
R10
IC3/A
AUDIO AMP
C23
R20
C22
R19
D1
R17
C19
R13
R14
C17
R18
D2
R15
R12
C16
IC3/B
C20
R16
C21
C15
IC3/C
IC3/D

COPYRIGHT © 2001 MARTI ELECTRONICS

PROPRIETARY RIGHTS are included in information disclosed herein. This information is submitted in confidence and neither this document nor the information disclosed herein shall be reproduced or transferred to other documents or used or disclosed to others for manufacturing or for any other purpose except as specifically authorized in writing by MARTI ELECTRONICS, INC.

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1

DWN. BY KT 9-11-01
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOMS 800-228A*
FINISH
NEXT ASSY.

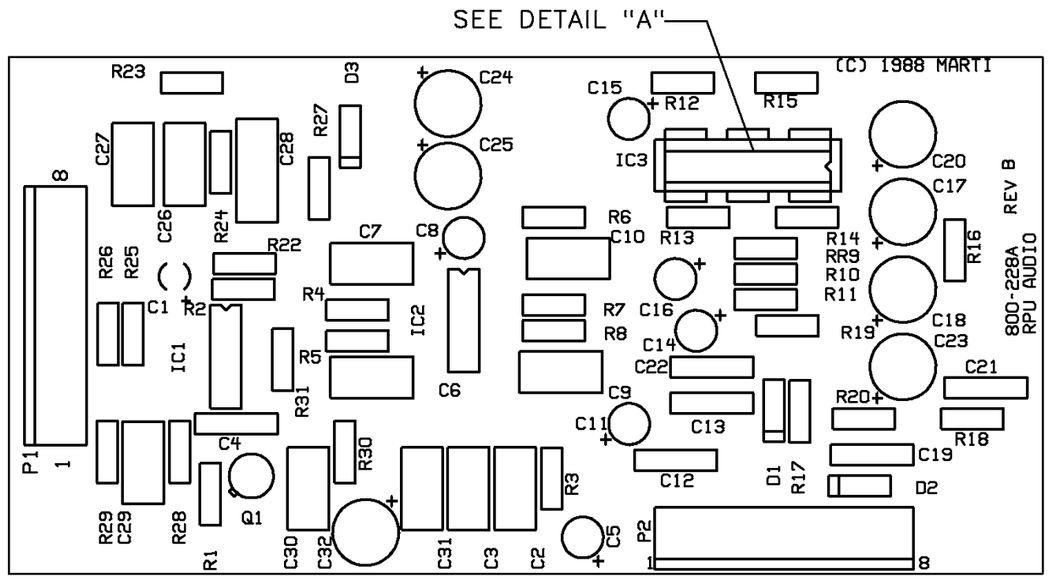
MARTI ELECTRONICS INC.
4100 INTL PLAZA, SUITE 532,Ft. WORTH, TX 76109
817/735-8134 FAX 817/735-8340

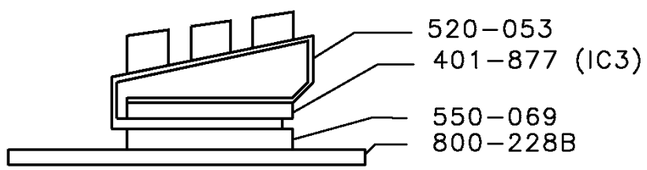
TITLE CR-10 AUDIO BOARD

TYPE S | SIZE D | DWG. NO. 800-228A/10/10S/12/ 800-228A/15/3/5/8/8S | REV A

MODEL | SCALE | SHEET 1 OF 1

REV	DATE	DESCRIPTION	DRAFTER	ECN	APPROVED
9530	9-12-01	REDRAWN IN CAD	KT	----	EJ
A	8-23-02	ADDED BOARD NUMBER	KT	10711	EJ
B	9-6-02	ADDED DETAIL "A"	KT	10748	

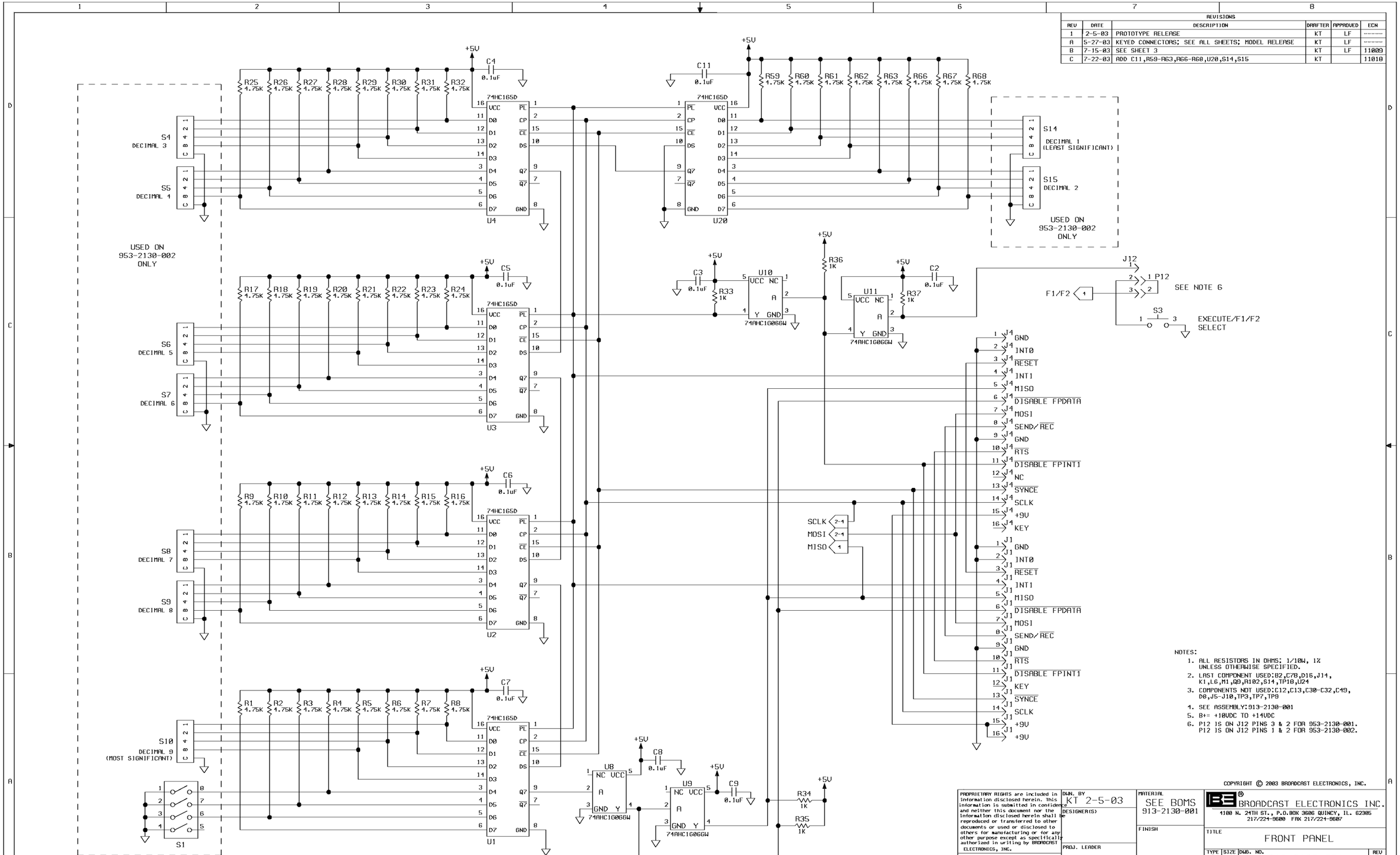




DETAIL "A"

MERTI ELECTRONICS	800-228A/10/10S/12/15/3/5/8/8S REV B	CR-10 AUDIO BOARD

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-5-03	PROTOTYPE RELEASE	KT	LF	--------
A	5-27-03	KEYED CONNECTORS; SEE ALL SHEETS; MODEL RELEASE	KT	LF	--------
B	7-15-03	SEE SHEET 3	KT	LF	11009
C	7-22-03	ADD C11,R59-R63,R66-R68,U20,S14,S15	KT		11018



NOTES:

1. ALL RESISTORS IN OHMS; 1/10W, 1% UNLESS OTHERWISE SPECIFIED.
2. LAST COMPONENT USED:B2,C78,D16,J14, K1,L6,M1,Q9,R102,S14,TP10,U24
3. COMPONENTS NOT USED:C12,C13,C30-C32,C49, D8,J5-J10,TP3,TP7,TP9
4. SEE ASSEMBLY:913-2130-001
5. B+= +10VDC TO +14VDC
6. P12 IS ON J12 PINS 3 & 2 FOR 953-2130-001. P12 IS ON J12 PINS 1 & 2 FOR 953-2130-002.

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-5-03
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOMS 913-2130-001
FINISH
NEXT ASSY.

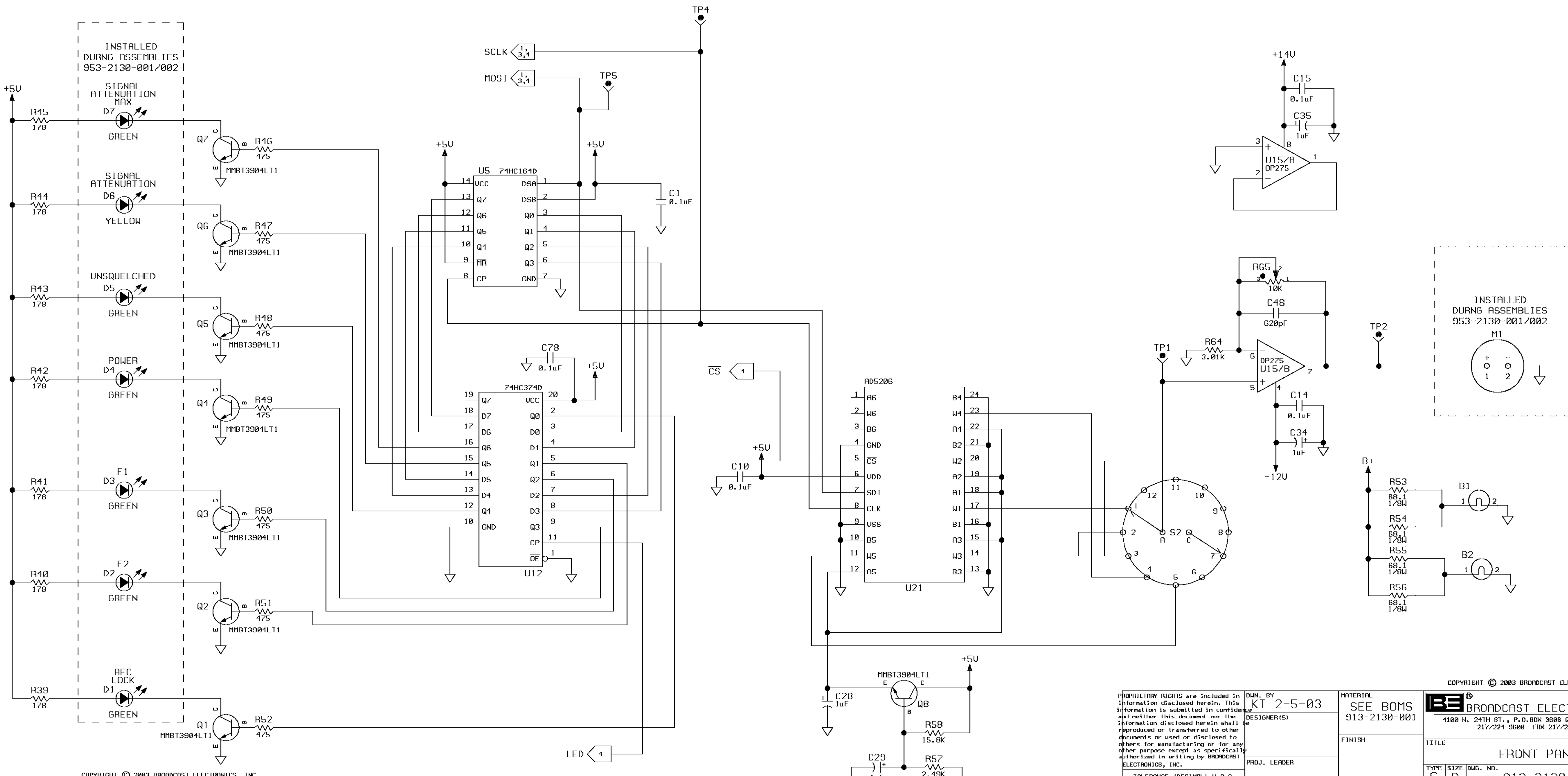
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3806 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: FRONT PANEL

TYPE	SIZE	DWG. NO.	REV
S	B	913-2130-001	C

MODEL SR-30/40A | SCALE NONE | SHEET 1 OF 4

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-5-03	PROTOTYPE RELEASE	KT	LF	-----
A	5-27-03	DEL C11-C13,C30-C32,C49,D8,R59-R63,R66-R68,TP3,U20 CHGD R58; ADDED NOTES; MODEL RELEASE	KT		-----



INSTALLED
DURNG ASSEMBLIES
953-2130-001/002
+5V
R45 178
SIGNAL ATTENUATION MAX
D7 GREEN
R44 178
SIGNAL ATTENUATION
D6 YELLOW
R43 178
UNSQUELCHED
D5 GREEN
R42 178
POWER
D4 GREEN
R41 178
F1
D3 GREEN
R40 178
F2
D2 GREEN
R39 178
AFC LOCK
D1 GREEN
Q7 Q6 Q5 Q4 Q3 Q2 Q1
MMBT3904LT1
R46 475
R47 475
R48 475
R49 475
R50 475
R51 475
R52 475
SCLK
MOSI
TP4
TP5
U5 74HC164D
VCC Q7 Q6 Q5 Q4 MR CP
DSA DSB Q0 Q1 Q2 Q3 GND
C1 0.1uF
C78 0.1uF
74HC374D
U12
Q7 D7 D6 Q6 Q5 D5 D4 Q4 GND
VCC Q0 D0 D1 Q1 Q2 D2 D3 Q3 CP OE
LED
CS
C10 0.1uF
AD5206
U21
A6 W6 B6 GND CS VDD SDI CLK VSS B5 W5 A5
B4 W4 A4 B2 W2 A2 A1 W1 B1 A3 W3 B3
MMBT3904LT1
Q8
C28 1uF
R58 15.8K
C29 1uF
R57 2.49K
+14V
C15 0.1uF
C35 1uF
U15/A OP275
R65 10K
C48 620pF
R64 3.01K
OP275 U15/B
TP1
TP2
C14 0.1uF
C34 1uF
-12V
S2
M1
B+
R53 68.1 1/8W
R54 68.1 1/8W
R55 68.1 1/8W
R56 68.1 1/8W
B1
B2

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-5-03
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOMS 913-2130-001
FINISH
NEXT ASSY.

BE® BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE FRONT PANEL

TYPE	SIZE	DWG. NO.	REV
S	B	913-2130-001	C

MODEL SR-30/40A | SCALE NONE | SHEET 2 OF 4

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-5-03	PROTOTYPE RELEASE	KT	LF	------
A	5-27-03	DEL J5-J10,P7-P10; CHGD R69,R72-R77,R79,R85,R86	KT	LF	------
B	7-15-03	CHGD C72 FROM 15pF TO 100pF	KT	LF	11009

TP8
MONO_IN
R69 19.9K
R70 1K
R71 1K
U16/A OP275
C17 0.1uF
C36 1uF
R72 7.68K
C72 100pF
R73 1.87K
C50 15pF
R74 2.49K
U16/B OP275
C18 0.1uF
C37 1uF
-12V
+14V
+5V
MOSI
SCLK
U6 74HC164D
C16 0.1uF
C77 0.1uF
74HC374D
U7
MONO
AD6333A
U22
C19 0.1uF
C38 1uF
R75 10K
U17/A OP275
C21 0.1uF
C40 1uF
R76 7.15K
C51 15pF
C20 0.1uF
C39 1uF
R77 31.6K
R78 10K
C52 15pF
U17/B OP275
C22 0.1uF
C41 1uF
TP6
R79 6.98K
U18/A OP275
C23 0.1uF
C42 1uF
R80 1K
C53 150pF
R81 1K
C56 150pF
R84 14.3K
U18/B OP275
C25 0.1uF
C44 1uF
AD6333A
U23
C24 0.1uF
C43 1uF
R85 33.2K
U19/A OP275
C27 0.1uF
C46 1uF
R82 1K
C54 150pF
C26 0.1uF
C45 1uF
R86 56.2K
R83 1K
C55 150pF
U19/B OP275
C57 0.1uF
C47 1uF
TP10
MONO_OUT

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-5-03
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOMS 913-2130-001
FINISH
NEXT ASSY.

BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9687

TITLE: FRONT PANEL

TYPE	SIZE	DWG. NO.	REV
S	D	913-2130-001	C

MODEL SR-30/40A | SCALE NONE | SHEET 3 OF 4

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	12-5-03	PROTOTYPE RELEASE	KT	LF	------
A	5-27-03	CHGD R94,R102, NETS OF J2; ADDED NOTES	KT		------

SIGNAL ATTENUATION LOWER — J2 1 — S12 3
SIGNAL ATTENUATION RAISE — J2 2 — S12 2
SQUELCH ADJUST LOWER — J2 3 — S13 3
SQUELCH ADJUST RAISE — J2 4 — S13 2
MONO OUTPUT LEVEL LOWER — J2 5 — S11 3
MONO OUTPUT LEVEL RAISE — J2 6 — S11 2

J2 7
J2 8
F1/F2 SELECT — J2 9 — 1 F1/F2
KEY — J2 10
LED LATCH SELECT — J2 11 — 2 LED
METER POT SELECT — J2 12 — 2 CS
NC — J2 13
SCLK — J2 14 — 1-3 SCLK
MOSI — J2 15 — 1-3 MOSI
MISO — J2 16 — TP11 MISO — 4
SQUELCH OPEN RELAY — J2 17
MONO LEVEL SELECT — J2 18 — 3 MONO
GND — J2 19
J2 20
J2 21
J2 22
J2 23
J2 24
J2 25
NC — J2 26

D9 MBRS130LT3 — L1 68uH — C60 22uF — C61 1uF — L2 1uH — C62 100uF — TP12 — TP13 — -12V
C58 1uF — D10 MMBD914LT1
+5V — C59 100uF — -12V
U13 LT1576: 1 VSW, 2 VIN, 3 BOOST, 4 GND, 8 SHDN, 7 FB/SENSE, 6 VC, 5 BIAS
R88 15.3K — R89 4.99K — C63 390pF — R92 10K — C64 0.001uF
R90 8.66K — R91 10K — D11 BZX84C5V1LT1 5.1V — -12V

INSTALLED DURNG ASSEMBLIES 953-2130-001/002
J14 — P11 J11: 1, 2, 3, 4 KEY — R87 500

TP17 — B+ — D14 MBR340T3 — TP16
J3 1 +12VDC FROM PS
J3 2 GND PS IN
J3 3 +12VDC BATTERY
J3 4 GND FROM BATTERY
J3 5 B+ TO CONVERTER
J3 6 GND TO CONVERTER
J3 7 -12VDC TO CONVERTER
J3 8 HEADPHONE AUDIO
J3 9 HEADPHONE RETURN
J3 10 GND
J3 11
J3 12
J3 13
J3 14
J3 15 GND
J3 16
J3 17 KEY
J3 18 GND
J3 19
J3 20
J3 21 GND
MONO_IN — 2 — J3 22 MONO LEVEL IN
J3 23 GND
J3 24 GND
MONO_OUT — 2 — J3 25 MONO LEVEL OUT
J3 26 GND

B+ — D15 1N4148 — MMBT3904LT1 Q9 — R38 1K
K1: 16, 1, 8, 6, 9, 4, 13, 11

D12 MBRS130LT3 — L3 68uH — C67 22uF — C68 1uF — L4 1uH — +5V — TP14 — C69 100uF — TP15
C65 1uF — D13 MMBD914LT1
B+ — C66 100uF
U14 LT1576: 1 VSW, 2 VIN, 3 BOOST, 4 GND, 8 SHDN, 7 FB/SENSE, 6 VC, 5 BIAS
R95 15.8K — R96 4.99K — C70 390pF — R97 10K — C71 0.001uF
R93 30.1K — R94 12.1K

B+ — R98 162K — R102 30.1K — C33 22uF
L5 10uH — U24 LT1961: 1 VIN, 2 VSW, 3 GND, 4 GND, 8 SYNC, 7 VC, 6 FB, 5 SHDN
C75 100pF — C76 6800pF — R101 6.81K
D16 UPS120TR — R99 100K — R100 9.31K — +14V
L6 82nH — C73 22uF — C74 22uF

TP18 — +14V — J13 1, 2, 3, 4, 5, 6, 7, 8, KEY 9, 10, 11, 12, 13, 14, 15, 16

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY: KT 2-5-03
DESIGNER(S):
PROJ. LEADER:
MFG.

MATERIAL: SEE BOMS 913-2130-001
FINISH:
NEXT ASSY.

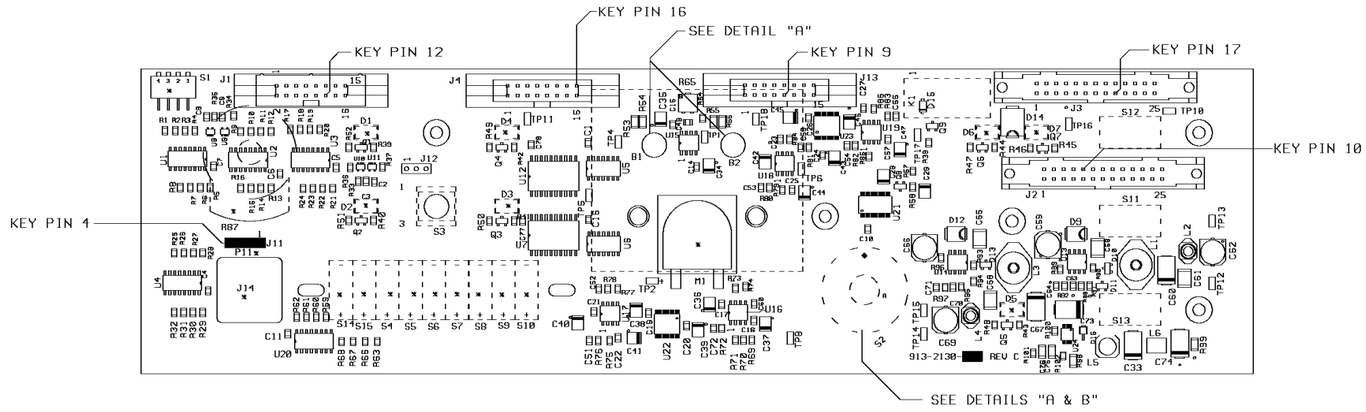
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3686 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

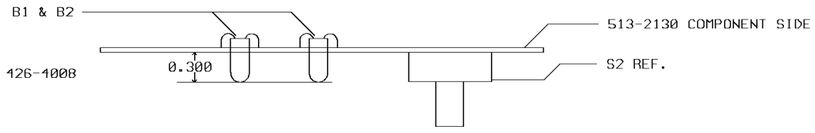
TITLE: FRONT PANEL

TYPE	SIZE	DWG. NO.	REV
S	D	913-2130-001	C

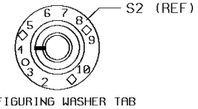
MODEL SR-30/40A | SCALE NONE | SHEET 4 OF 4

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-14-03	PROTOTYPE RELEASE	KT	LF	-----
A	5-30-03	KEYED CONNECTORS; DEL C11-C13,C30-C32,C49,D8, J5-J10,P7-P10,R59-R63,R66-R68,TP3,U20; CHGD R58, R69,R72-R77,R79,R85,R86,R94,R102, J1 PIN OUT	KT	LF	-----
B	7-15-03	KEYED J11; CHGD C72 FROM 007-1512 TO 007-1022	KT	LF	11009
C	7-23-03	ADD C11,R59-R63,R66-R68,S14,S15,U20	KT	LF	11018





DETAIL "A"



DETAIL "B"

NOTES:

1) DASHED OUTLINE PARTS ARE STUFFED ON SOLDER SIDE (D1-D7,K1,M1,S2-S13,R87)
2) S4-S10 ARE USED ON 953-2130-002 ONLY.
3) D2 & D4 ARE USED ON 953-2130-001 ONLY.
4) * INDICATES COMPONENTS STUFFED DURING ASSEMBLIES 953-2130-001/002 (D1-D7,J14, M1,P11,R87,S1,S4-S10,S14,S15)

TOLERANCE (DECIMAL) U.O.S.
.X ± .030 .XXX ± .005
.XX ± .015 ANGLES ± 1°

DWN. BY KT 2-14-03
DESIGNER(S)
PROJ. LEADER
MFG.

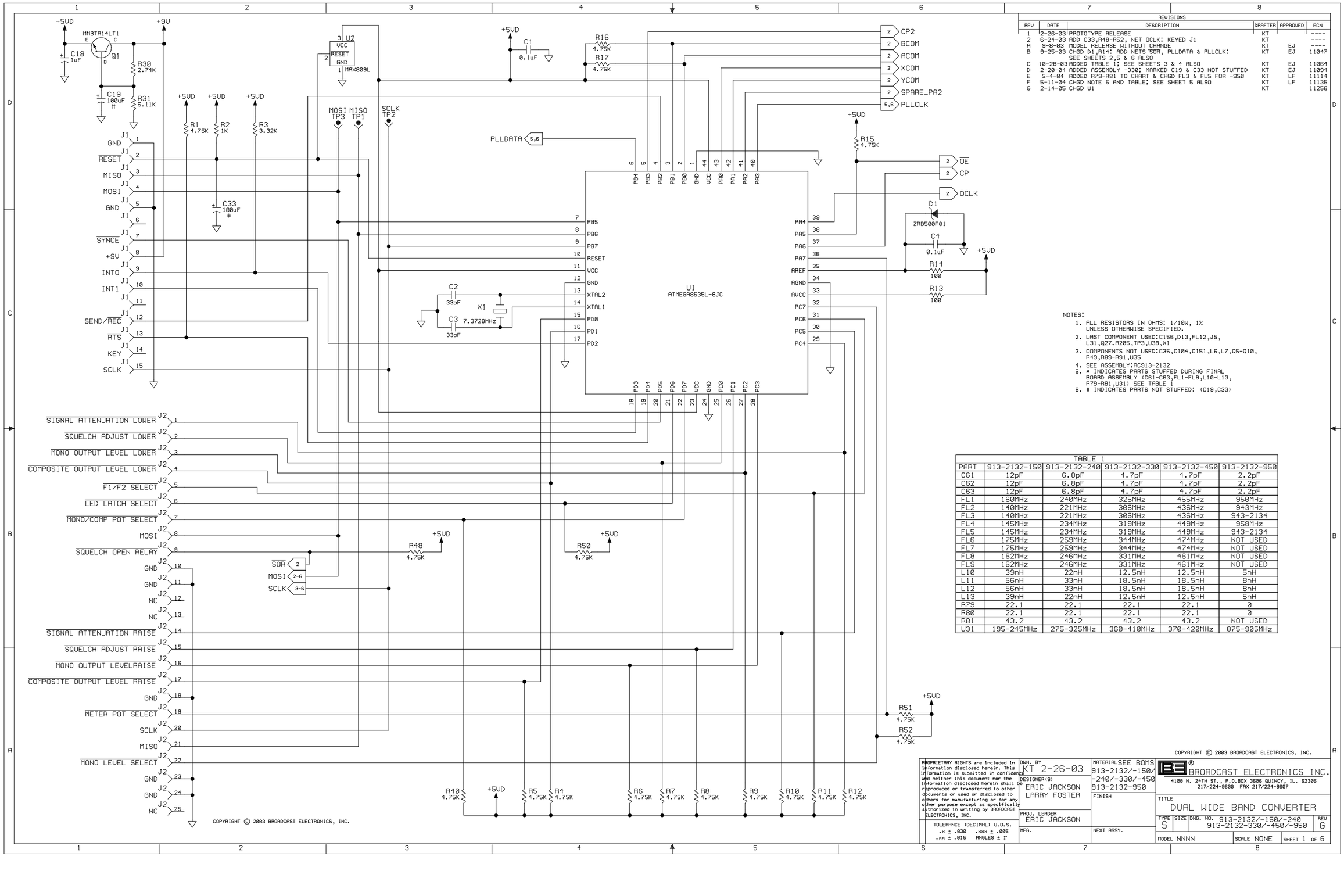
MATERIAL SEE BOMS 913-2130-001
FINISH
NEXT ASSY.

BROADCAST ELECTRONICS INC.
4100 N. 24TH ST. P.O.BOX 3606 QUINCY,IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: FRONT PANEL

TYPE	SIZE	DWG No.	REV
A	C	913-2130-001	C

MODEL SR-30/40A | SCALE 1/1 | SHEET 1 OF 1



REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-26-03	PROTOTYPE RELEASE	KT		----
2	6-24-03	ADD C33,R48-R52, NET OCLK; KEYED J1	KT		----
A	9-8-03	MODEL RELEASE WITHOUT CHANGE	KT	EJ	----
B	9-25-03	CHGD D1,R14: ADD NETS SDR, PLLDATA & PLLCLK: SEE SHEETS 2,5 & 6 ALSO	KT	EJ	11047
C	10-28-03	ADDED TABLE 1: SEE SHEETS 3 & 4 ALSO	KT	EJ	11064
D	2-20-04	ADDED ASSEMBLY -330; MARKED C19 & C33 NOT STUFFED	KT	EJ	11094
E	5-4-04	ADDED R79-R81 TO CHART & CHGD FL3 & FL5 FOR -950	KT	LF	11114
F	5-11-04	CHGD NOTE 5 AND TABLE; SEE SHEET 5 ALSO	KT	LF	11135
G	2-14-05	CHGD U1	KT		11258

NOTES:
1. ALL RESISTORS IN OHMS; 1/10W, 1% UNLESS OTHERWISE SPECIFIED.
2. LAST COMPONENT USED:C156,D13,FL12,J5, L31,Q27,R285,TP3,U38,X1
3. COMPONENTS NOT USED:C35,C104,C151,L6,L7,Q5-Q10, R49,R89-R91,U35
4. SEE ASSEMBLY:AC913-2132
5. * INDICATES PARTS STUFFED DURING FINAL BOARD ASSEMBLY (C61-C63,FL1-FL9,L10-L13, R79-R81,U31) SEE TABLE 1
6. # INDICATES PARTS NOT STUFFED: (C19,C33)

TABLE 1

PART	913-2132-150	913-2132-240	913-2132-330	913-2132-450	913-2132-950
C61	12pF	6.8pF	4.7pF	4.7pF	2.2pF
C62	12pF	6.8pF	4.7pF	4.7pF	2.2pF
C63	12pF	6.8pF	4.7pF	4.7pF	2.2pF
FL1	160MHz	240MHz	325MHz	455MHz	950MHz
FL2	140MHz	221MHz	306MHz	436MHz	943MHz
FL3	140MHz	221MHz	306MHz	436MHz	943-2134
FL4	145MHz	234MHz	319MHz	449MHz	958MHz
FL5	145MHz	234MHz	319MHz	449MHz	943-2134
FL6	175MHz	259MHz	344MHz	474MHz	NOT USED
FL7	175MHz	259MHz	344MHz	474MHz	NOT USED
FL8	162MHz	246MHz	331MHz	461MHz	NOT USED
FL9	162MHz	246MHz	331MHz	461MHz	NOT USED
L10	39nH	22nH	12.5nH	12.5nH	5nH
L11	56nH	33nH	18.5nH	18.5nH	8nH
L12	56nH	33nH	18.5nH	18.5nH	8nH
L13	39nH	22nH	12.5nH	12.5nH	5nH
R79	22.1	22.1	22.1	22.1	0
R80	22.1	22.1	22.1	22.1	0
R81	43.2	43.2	43.2	43.2	NOT USED
U31	195-245MHz	275-325MHz	360-410MHz	370-420MHz	875-905MHz

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-26-03
DESIGNER(S) ERIC JACKSON, LARRY FOSTER
PROJ. LEADER ERIC JACKSON
MFG.

MATERIAL SEE BOMS 913-2132/-150/-240/-330/-450 913-2132-950
FINISH
NEXT ASSY.

BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: DUAL WIDE BAND CONVERTER

TYPE S | SIZE | DWG. NO. 913-2132/-150/-240 913-2132-330/-450/-950 | REV G

MODEL NNNN | SCALE NONE | SHEET 1 OF 6

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-26-03	PROTOTYPE RELEASE	KT	EJ	----
2	6-24-03	CHGD C11,C12,R19-R23,R25; ADD C34,C35,D10-D13,U14, R55-R58,R160,R161,Q3; KEYED J3; CHGD NETS	KT	EJ	----
B	9-25-03	CHGD C11,C12,R19,R22,R23,R25-R27,R53,U14; ADD R202; DEL C35, NR NET; TIED R160 TO U9, ADD SDR	KT	EJ	11047

J3 NOISE REDUCTION
J3 KEY
J3 SIGNAL LEVEL DC OUT
J3 SIGNAL IN
J3 SUBCARRIER/DECODE LEVEL OUT
J3 SUBCARRIER/DECODE LEVEL IN
J3 MONO AUDIO OUT
J3 MONO AUDIO IN
J3 COMPOSITE IN
J3 PS GROUND FROM FRONT PANEL
J3 B+ FROM FRONT PANEL
J3 -12V FROM FRONT PANEL
J3 GROUND
SPARE_PA2
R161 4.75K
R160 1K
Q3 MMBT3904
R202 10K
B+
-12V
+14.5V
+5VD
R53 1MEG
R18 10K
R19 100
U3/A OP275GS
C5 0.1uF
R54 10K
R20 2.74K
R21 15.8K
U3/B OP275GS
C6 0.1uF
R55 1K
R56 1K
C9 1uF
C10 1uF
D10 BZX84C4V7LT1 4.7V
D11 BZX84C4V7LT1 4.7V
R29 3.01K
R28 1.4K
C13 0.1uF
4052
U5
LBSYNLD
WBSYNLD
BCOM
ACOM
XCOM
YCOM
R22 2K
R23 2.21K
D2 MMBD914LT1
U4/A OP275GS
C7 0.1uF
D3 MMBD914LT1
R26 10K
C11 22uF
R57 1K
D12 BZX84C4V7LT1 4.7V
U14/A OP295GS
C34 0.1uF
R24 3.01K
R25 4.42K
D5 MMBD914LT1
U4/B OP275GS
C8 0.1uF
D4 MMBD914LT1
R27 10K
C12 22uF
R58 1K
D13 BZX84C4V7LT1 4.7V
U14/B OP295GS
MOSI
WBSYNLE
IFATTN
REFADJ
CP2
74HC164D U6
74HC374D U8
C14 0.1uF
C15 0.1uF
OCLK
ATTNLE
LBFLSD
LBSYNFL
LBSYNLE
74HC164D U7
74HC374D U9
C16 0.1uF
C17 0.1uF
SEGINSLCT0
SEGINSLCT1
SEGOUTSLCT0
SEGOUTSLCT1
CP
OE
SDR

TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-26-03
DESIGNER(S) ERIC JACKSON, LARRY FOSTER
PROJ. LEADER ERIC JACKSON
MFG.

MATERIAL SEE BOMS 913-2132/-150/-240/-330/-450 913-2132-950
FINISH
NEXT ASSY.

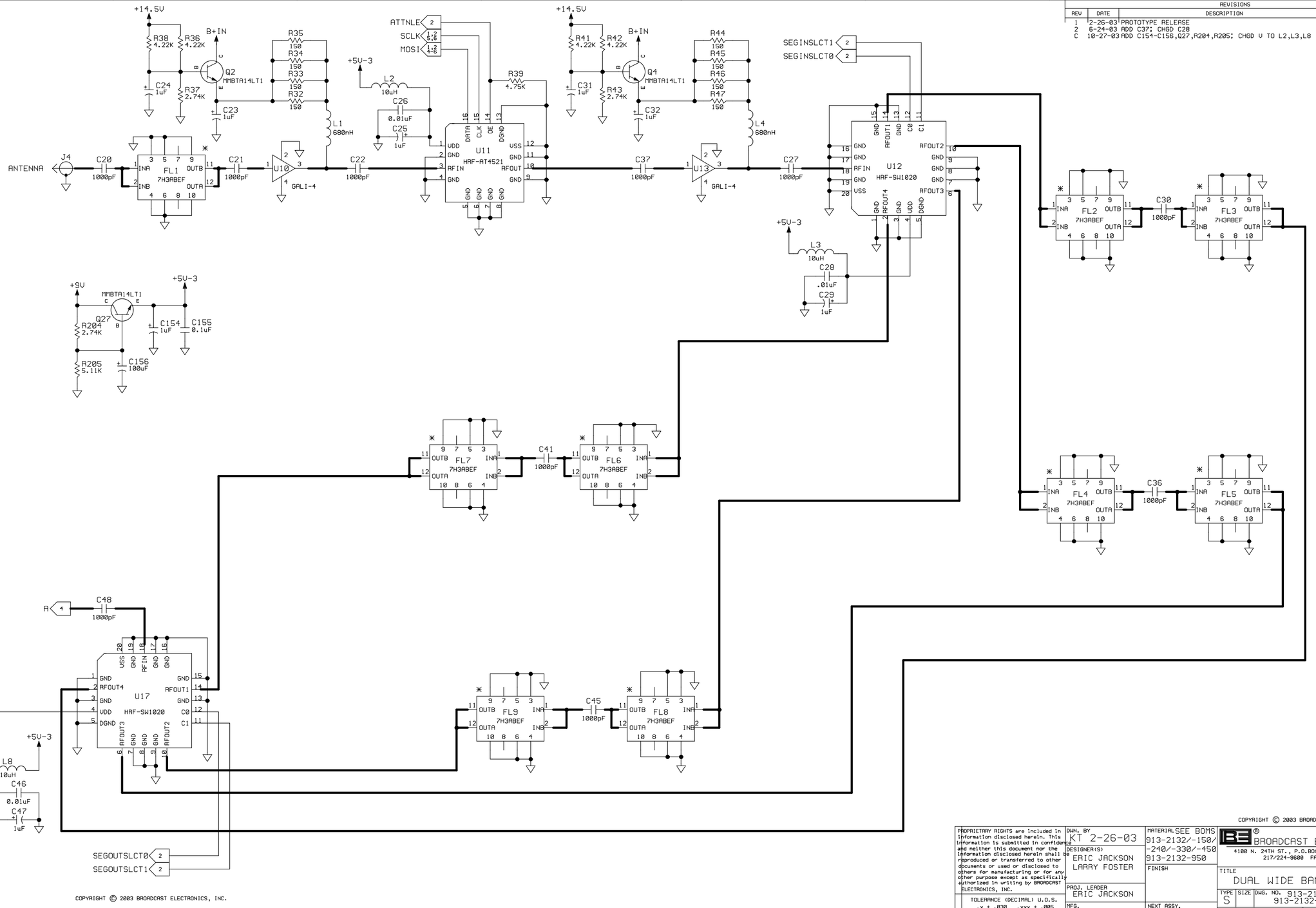
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: DUAL WIDE BAND CONVERTER

TYPE S | SIZE | DWG. NO. 913-2132/-150/-240 913-2132-330/-450/-950 | REV G

MODEL NNNN | SCALE NONE | SHEET 2 OF 6

REVISIONS				
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-26-03	PROTOTYPE RELEASE	KT	EJ	----
2	6-24-03	ADD C37; CHGD C28	KT	EJ	----
C	10-27-03	ADD C154-C156,Q27,R204,R205; CHGD V TO L2,L3,L8	KT	EJ	11064



TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-26-03
DESIGNER(S) ERIC JACKSON, LARRY FOSTER
PROJ. LEADER ERIC JACKSON
MFG.

MATERIAL SEE BOMS 913-2132/-150/-240/-330/-450 913-2132-950
FINISH
NEXT ASSY.

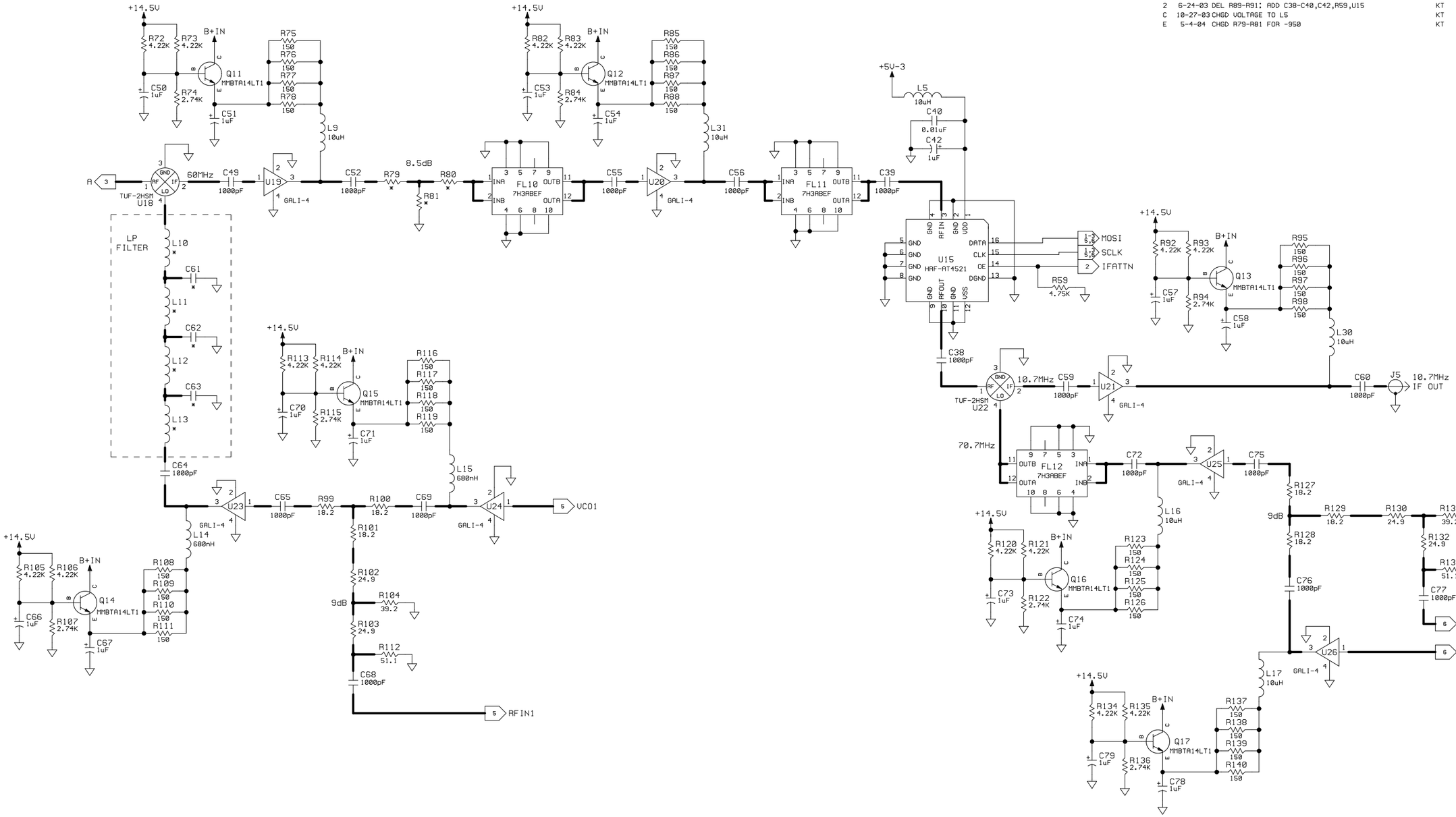
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: DUAL WIDE BAND CONVERTER

TYPE S | SIZE | DWG. NO. 913-2132/-150/-240 913-2132-330/-450/-950 | REV G

MODEL NNNN | SCALE NONE | SHEET 3 OF 6

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-26-03	PROTOTYPE RELEASE	KT	EJ	----
2	6-24-03	DEL R89-R91; ADD C38-C40,C42,R59,U15	KT	EJ	----
C	10-27-03	CHGD VOLTAGE TO L5	KT	EJ	11064
E	5-4-04	CHGD R79-R81 FOR -950	KT	LF	11114



TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-26-03
DESIGNER(S) ERIC JACKSON, LARRY FOSTER
PROJ. LEADER ERIC JACKSON
MFG.

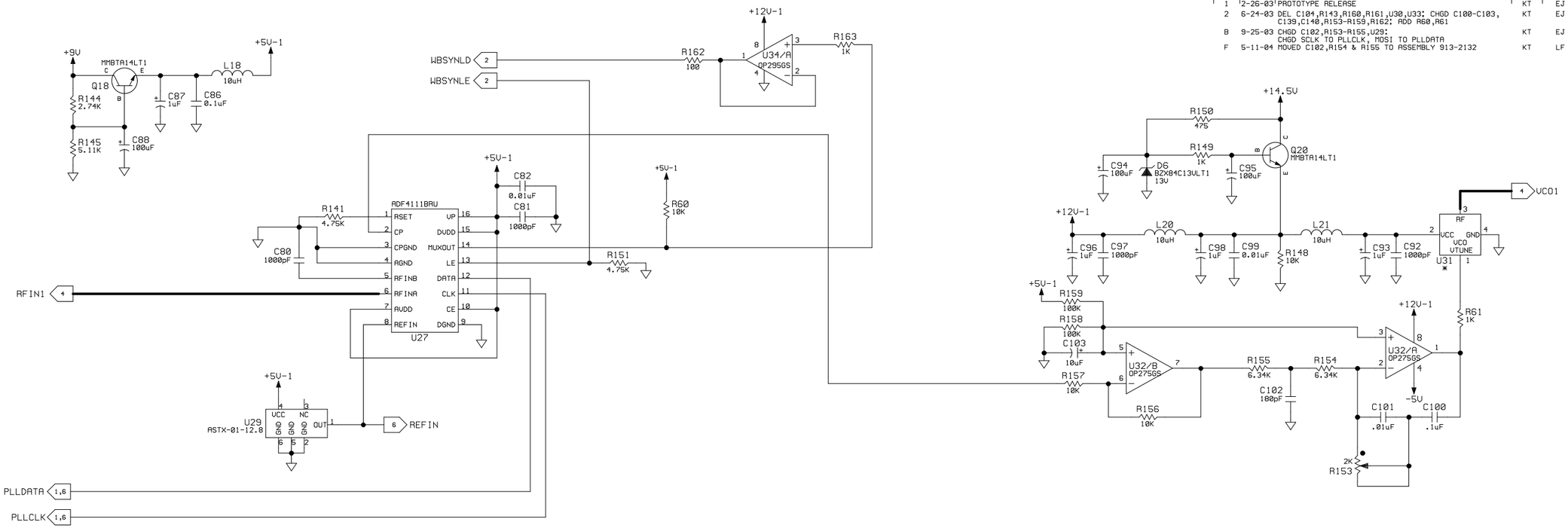
MATERIAL SEE BOMS
913-2132/-150/-240/-330/-450
913-2132-950
FINISH
NEXT ASSY.

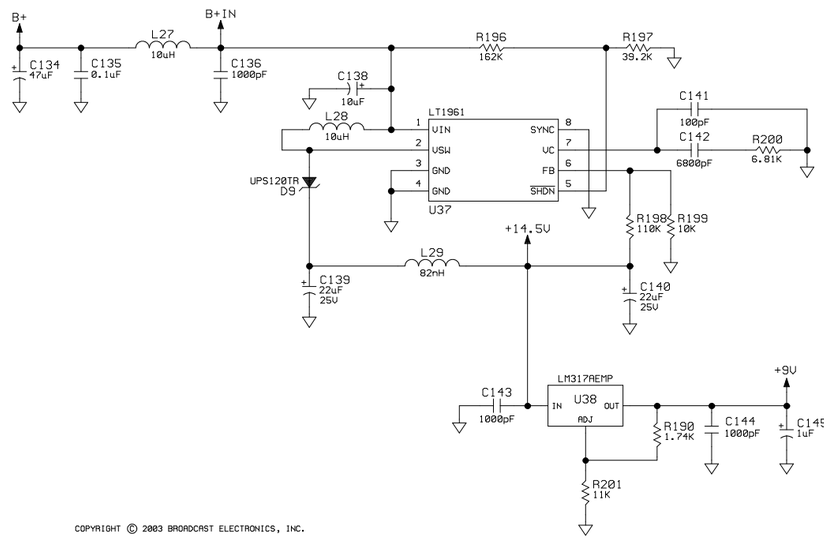
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE
DUAL WIDE BAND CONVERTER

TYPE S | SIZE | DWG. NO. 913-2132/-150/-240 913-2132-330/-450/-950 | REV G
MODEL NNNN | SCALE NONE | SHEET 4 OF 6

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-26-03	PROTOTYPE RELEASE	KT	EJ	----
2	6-24-03	DEL C104,R143,R160,R161,U30,U33; CHGD C100-C103, C139,C140,R153-R159,R162; ADD R60,R61	KT	EJ	----
B	9-25-03	CHGD C102,R153-R155,U29: CHGD SCLK TO PLLCLK, MOSI TO PLLDATA	KT	EJ	11047
F	5-11-04	MOVED C102,R154 & R155 TO ASSEMBLY 913-2132	KT	LF	11135





TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY: KT 2-26-03
DESIGNER(S): ERIC JACKSON, LARRY FOSTER
PROJ. LEADER: ERIC JACKSON
MFG.

MATERIAL: SEE BOMS 913-2132/-150/-240/-330/-450 913-2132-950
FINISH
NEXT ASSY.

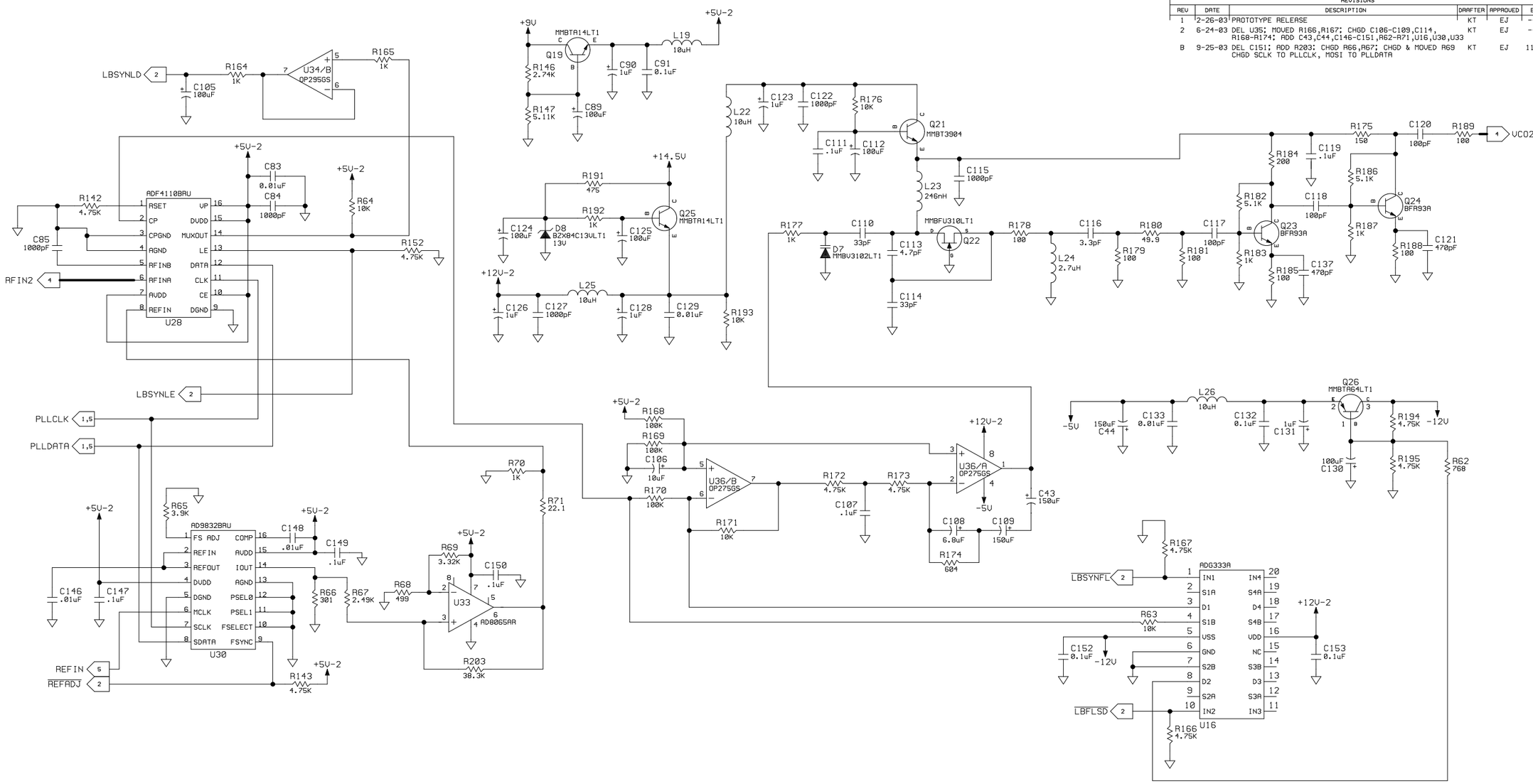
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: DUAL WIDE BAND CONVERTER

TYPE S | SIZE | DWG. NO. 913-2132/-150/-240 913-2132-330/-450/-950 | REV G

MODEL NNNN | SCALE NONE | SHEET 5 OF 6

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	2-26-03	PROTOTYPE RELEASE	KT	EJ	----
2	6-24-03	DEL U35; MOVED R166,R167; CHGD C106-C109,C114, R168-R174; ADD C43,C44,C146-C151,R62-R71,U16,U30,U33	KT	EJ	----
B	9-25-03	DEL C151; ADD R203; CHGD R66,R67; CHGD & MOVED R69 CHGD SCLK TO PLLCLK, MOSI TO PLLDATA	KT	EJ	11047



TOLERANCE (DECIMAL) U.O.S.
.x ± .030 .xxx ± .005
.xx ± .015 ANGLES ± 1°

DWN. BY KT 2-26-03
DESIGNER(S) ERIC JACKSON, LARRY FOSTER
PROJ. LEADER ERIC JACKSON
MFG.

MATERIAL SEE BOMS 913-2132/-150/-240/-330/-450 913-2132-950
FINISH
NEXT ASSY.

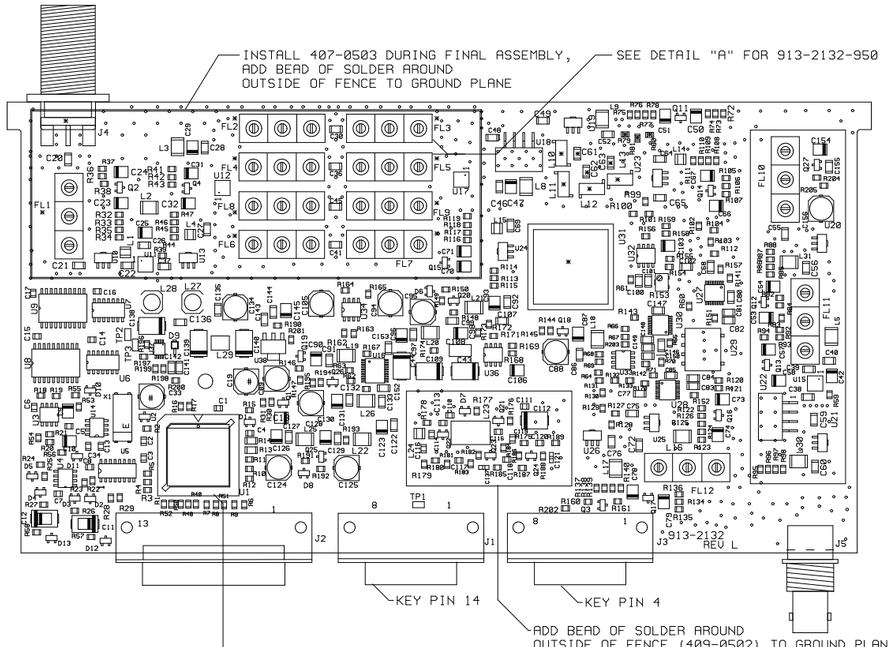
BROADCAST ELECTRONICS INC.
4100 N. 24TH ST., P.O.BOX 3606 QUINCY, IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: DUAL WIDE BAND CONVERTER

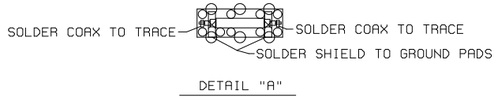
TYPE S | SIZE | DWG. NO. 913-2132/-150/-240 913-2132-330/-450/-950 | REV G
MODEL NNNN | SCALE NONE | SHEET 6 OF 6

TABLE 1					
PART	913-2132-150	913-2132-240	913-2132-330	913-2132-450	913-2132-950
C61	270-120	270-608-1	270-407-1	270-407-1	270-202
C62	270-120	270-608-1	270-407-1	270-407-1	270-202
C63	270-120	270-608-1	270-407-1	270-407-1	270-202
FL1	361-0160	360-0240	360-0325	360-0455	360-0950
FL2	360-0140	360-0221	360-0306	360-0436	360-0943
FL3	360-0140	360-0221	360-0306	360-0436	943-2134
FL4	361-0145	360-0234	360-0319	360-0449	360-0958
FL5	361-0145	360-0234	360-0319	360-0449	943-2134
FL6	360-0175	360-0259	360-0344	360-0474	NOT USED
FL7	360-0175	360-0259	360-0344	360-0474	NOT USED
FL8	361-0162	360-0246	360-0331	360-0461	NOT USED
FL9	361-0162	360-0246	360-0331	360-0461	NOT USED
L10	350-202	350-205	350-192	350-192	350-198
L11	350-200	350-203	350-194	350-194	350-199
L12	350-200	350-203	350-194	350-194	350-199
L13	350-201	350-205	350-192	350-192	350-198
R79	102-2201	102-2201	102-2201	102-2201	102-0000
R80	102-2201	102-2201	102-2201	102-2201	102-0000
R81	102-4302	102-4302	102-4302	102-4302	NOT USED
U31	400-246	400-325	400-410	400-420	400-905

REVISIONS					
REV	DATE	DESCRIPTION	DRAFTER	APPROVED	ECN
1	3-6-03	PROTOTYPE RELEASE	KT	EJ	----
2	7-2-03	SEVERAL CHANGES ACROSS BOARD	KT	EJ	----
A	9-8-03	MODEL RELEASE WITHOUT CHANGE	KT	EJ	----
B	9-26-03	ADD R202,R203; DEL C35,C151; CHGD C11,C12,C102, D1,R14,R19,R22,R23,R25-R27,R53,R66,R67,R153-R155, U14,U29; CHGD & MOVED R69; ADDED NOTES	KT	EJ	11047
C	10-28-03	ADD C154-C156,Q27,R204,R205,407-0503	KT	EJ	11064
D	11-11-03	FIXED D1	KT	EJ	11074
E	2-20-04	ADDED -330 ASSEMBLY: MARKED C19 & C33 NOT STUFFED	KT	LF	11094
F	5-4-04	CHGD FL3,FL5 & R79-R81 FOR 913-2132-950	KT	LF	11114
G	5-11-04	ADDED SOFTWARE NOTE	KT	LF	11125
H	5-11-04	MOVED C102,R154 & R155 TO ASSEMBLY 913-2132	KT	LF	11135
J	1-20-05	UPDATED SOFTWARE 973-2132-U1 TO VER 5	KT	LF	11245
K	2-14-05	CHGD U1	KT	LF	11258
L	5-19-05	CHGD SOLDERMASK TO ALLOW BETTER FLOW SOLDER	KT		11292



NOTES:
1) * INDICATES PARTS STUFFED DURING FINAL BOARD ASSEMBLY (C61-C63,C102,FL1-FL9, J4,L10-L13,R79-R81,R154,R155,U31) SEE TABLE 1
2) # INDICATES PARTS NOT STUFFED: (C19,C33)



DETAIL "A"

TOLERANCE (DECIMAL) U.O.S.
.X ± .030 .XXX ± .005
.XX ± .015 ANGLES + 1°

DWN. BY KT 3-4-03
DESIGNER(S)
PROJ. LEADER
MFG.

MATERIAL SEE BOMS 913-2132/-150/-240/-330/-450 913-2132-950
FINISH
NEXT ASSY.

BROADCAST ELECTRONICS INC.
4100 N. 24TH ST. P.O.BOX 3606 QUINCY,IL. 62305
217/224-9600 FAX 217/224-9607

TITLE: DUAL WIDE BAND CONVERTER

TYPE	SIZE	DWG No.	REV
A	C	913-2132/-150/-240 913-2132-330/-450/-950	L

MODEL NNNN | SCALE 1/1 | SHEET 1 OF 1

COPYRIGHT © 2003 BROADCAST ELECTRONICS, INC.