

1983 -

INSTRUCTION MANUAL
RECEIVER
AR-10, BR-10, CR-10

MARTI

W A R N I N G

THIS EQUIPMENT MUST BE OPERATED WITH A 3-PHASE GROUNDED OUTLET RECEPTACLE. FAILURE TO USE A PROPERLY GROUNDED OUTLET MAY RESULT IN IMPROPER OPERATION OR SAFETY HAZARD.

LIMITED WARRANTY

Marti Electronics, Inc. agrees to repair or replace within a one (1) year period and without charge, any equipment or parts which are defective as to workmanship or material and which are returned to Marti at its factory, transportation prepaid and properly insured, provided:

- (a) Notice of the claimed defect is given Marti within one (1) year from date of original shipment and goods are returned in accordance with Marti instructions.
- (b) Equipment, accessories, tubes and batteries not manufactured by Marti are subject to only such adjustments as Marti may obtain from the supplier thereof.
- (c) This warranty does not apply to equipment which has been altered, improperly handled, or damaged in any way.
- (d) In the event that Marti is required to demonstrate equipment capability either as to specifications or defects in parts or workmanship and where it is found that the equipment meets specifications, Marti shall be entitled to collect all reasonable expenses from the Buyer including but not limited to, travel, per diem living expenses and hourly wage rates which have been established by Marti and which are in effect at the time.

Marti further guarantees that any radio transmitter described herein will deliver specified radio frequency power output at the antenna lead when connected to a suitable load, but such guarantee shall not be construed as a guarantee of any definite coverage or range of said apparatus. The guarantee of these paragraphs is void if equipment is altered or repaired by others than Marti or its authorized service representative, unless specifically authorized in writing by Marti. No other warranties, expressed or implied, shall be applicable to any equipment sold hereunder, and the foregoing shall constitute the Buyer's sole right and remedy under the agreements contained in this paragraph. In no event shall Marti have any liability for consequential damage, or for loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause.

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AR-10, BR-10, CR-10 RECEIVER INSTRUCTION MANUAL

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INTRODUCTION

The Marti AR-10, BR-10 and CR-10 Series Base Station Receivers are high quality dual frequency crystal controlled superheterodynes designed for broadcast remote pickup and ENG service. They are engineered to deliver top performance on today's congested RPU frequency bands. In contrast to modern land mobile equipment in which bandwidth, distortion, noise and audio response have been sacrificed for interference rejection, Marti has carefully tailored IF bandwidth, skirt selectivity, band pass ripple and audio low pass filtering to produce optimum frequency response, noise, distortion and interference rejection for each of the broadcast remote pick-up channels now available. This requires the best computer designed ten-pole IF filters, active high pass and multi-pole low pass audio filters complimented by Marti's exclusive automatic noise reduction circuitry.

The dramatic difference between two-way mobile audio quality and Marti audio quality has been the key to Marti's dominance of the broadcast remote pickup market over two decades.

Features of these Receiver include:

- Squelch relay with contacts available for external switching.
- Subaudible tone decoder available for signaling, automation control, or automatic repeater.
- Low pass filters designed to eliminate overshoot on complex audio waveforms.
- Double balanced mixer.
- Four IF bandwidths available to meet domestic and international requirements.
- Computer designed bandpass filter for high selectivity with low distortion.
- Test meter on front panel indicates signal level*, audio level*, subaudible tone level*, supply voltage, L.O. level and mixer level. Additional test points inside receiver. *Model AR-10
- Dual frequency capability built in.
- Automatic noise reduction circuit.

INTRODUCTION CONTINUED

- Accessory plug for external DC power, remote control, remote metering, etc.
- Low power consumption for operation on AC, solar cell, battery or other single polarity DC source.
- Terminal strip for balanced 600 ohm audio output.

MODEL AR-10 BROADCAST REMOTE PICKUP

PORTABLE - MOBILE/REPEAT RECEIVER

The Marti AR-10 is a compact VHF-UHF FM broadcast quality receiver. For mobile repeater applications, this receiver contains a subaudible decoder which, when activated by the encoded signal from an RPT-2 hand-carried portable transmitter, will automatically turn on a Marti RPT-15, RPT-25/40 or RPT-30 transmitter. The remote broadcast is thus relayed from the hand-carried portable to the distant radio station by way of the mobile repeater.

This receiver, with the RPT-2 transmitter can provide a radio link from a remote broadcast site to the nearest available telephone. The system then functions as a powerful wireless broadcast microphone which can feed a telephone line, audio mixer, recorder, or transmitter. The AR-10 has a built in monitor speaker, test meter, dual frequency capability, tone decoder, noise reduction, and AC power supply. It also operates from a 12 volt powered vehicle or external 12-14 volt battery.

AR-10, BR-10, CR-10 SPECIFICATIONS

Frequency Range.....	400-480, 280-340, 200-260 & 140-180 MHz.		
Dual Frequency.....	Provision for Dual Frequency. Separation 2% Max.		
Sensitivity.....	0.5 Microvolts for 20 db. S/N.		
Input Impedance.....	50 ohms. UG-58 A/U Connector		
Frequency Stability.....	±.00025% -10°C to +50°C		
Selectivity.....	<u>Filter</u>	<u>3DB</u>	<u>60 DB</u>
	F 50	50 KHz	100 KHz
	F 36	36 KHz	60 KHz
	F 25	25 KHz	42 KHz
	F 10	5 KHz	15 KHz
Spurious Response.....	-90 db		
Audio Output (Line Level) AR-10.....	Balanced 600 ohms, -9 dbm.. Barrier strip. Unbalanced 600 ohms. +4 dbm. at 15 pin connector.		
Audio Output (BR-10, CR-10).....	Balanced 600 ohms, -10 dbm. Barrier strip.		
Monitor Output (AR-10, CR-10).....	Built in Monitor Amp. (0.5 watts) Monitor speaker and level control. Headset monitor jack mutes speaker (AR-10 only)		
Subaudible Tone Decoder.....	800-229 Decode Board provides relay closure upon receipt of 27 Hz. ±0.1 Hz. Tone.		
Front Panel Controls.....	Frequency select switch, line level adjust, meter switch, squelch adjust, monitor speak- er level, (power switch, headset jack. AR-10 only).		
Power Requirements.....	120/220* VAC, 50/60 Hz. 10 Watts 13.5V DC 300 MA.		
AC Power Supply.....	Precision, electronically regulated with current limiting.		
Metering (AR-10).....	RF signal level, audio output level, de- code level.		
Metering (BR-10, CR-10).....	RF signal level, audio output level, sub. level, +13 V.DC supply, L.O. level, mixer level. LED indicators for power and open squelch.		
Dimensions (AR-10).....	3½" High x 9" Wide x 13½" Deep.		
Dimensions (BR-10, CR-10).....	3½" High x 19" Wide x 12" Deep.		
Weight (AR-10).....	Net 5½ pounds Domestic packed 10 pounds		
Weight (BR-10, CR-10).....	Net 10 pounds. Domestic packed 17 pounds		

* AVAILABLE ON 200 VAC, 50 Hz. UPON REQUEST.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

UNPACKING AND INSPECTION

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 upon receipt and thoroughly inspect for concealed damage. If damage is discovered, cease 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.

INSTALLATION

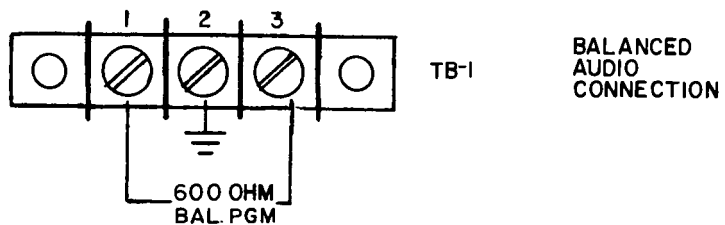
Install rack-mounted equipment in a well-ventilated, well grounded and shielded rack cabinet. Do not locate solid-state equipment in a rack above tube-type equipment which produces high temperatures.

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. Also, strong radio frequency fields should be avoided where possible. Extensive shielding and filtering have been incorporated into this equipment to permit operation in moderate RF environment. All equipment racks, cabinets, etc. should be bonded together by wide copper grounding strap to insure that all system elements are at the same ground potential.

INSTALLATION CONTINUED

CONNECTING BR-10 AND CR-10 RECEIVER

1. Program audio output is connected to TB-1 Terminals 1 and 3. Use shielded wire with shield grounded to center terminal of TB-1. Program audio level available is +10 DBM, 600 ohms balanced and isolated from ground. Balanced audio output is also available at pins 4 and 5 of accessory connector J4.
2. The accessory connector J4 has several uses such as receiver muting, automatic repeater, remote signaling or switching by subaudible tone and external DC power. Connection instructions are furnished with these accessories.
3. Connect BR-10 and CR-10 receiving antenna coax to J6. This requires a type "N" male connector. A short flexible jumper (20" Max.) may be used between J6 and semiflexible coax. Marti Part No. 585-017 double shielded, low-loss RG214/U jumper is recommended.
4. Connect "AC Line" receptacle on back of receiver to 115V AC power source with special cord set supplied. Use only 3 prong grounded outlet receptacles for safety.



Receiver to Transmitter Cable required for Mobile Repeater using AR-10.

- For RPT-15 Transmitter, Cable No. 585-037-2 with 4 Amp Fuse
- For RPT-30 Transmitter, Cable No. 585-037-2 with 8 Amp Fuse
- For RPT-25/40 Transmitter, Cable No. 585-001-1

1. Locate the AR-10 Receiver and RPT-Series Transmitter in the vehicle and secure with appropriate mounting brackets. Mounting brackets required:
 - For RPT-30 Mobile Mounting Bracket 700-251
 - For RPT-15, AR-10 Mobile Mounting Bracket 700-252
 - For RPT-25/40 Mobile Mounting Brakcet 700-136
2. 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 appropriate 12V. DC source on vehicle.
3. Install vehicle antenna(s) 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 25, 30, 40 or "Aux" Post of RPT-15) for about 3 DB compression with program material.

BASE STATION ANTENNA INSTALLATION CHECK LIST

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.

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 carefully to avoid phase reversal or signal cancellation.

TRANSMISSION LINE CONNECTOR ASSEMBLY

Do not use RG-58U or RG-8U cable for base 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 end for small metal fragments which can short circuit the line inside the connector assembly. Check the line for short circuit after each connector is installed by using an ohm meter. Pressurized line should be checked for several days under pressure before installation on a tower to insure that there are no leaks in the line or fittings.

MOISTURE PROOFING COAX CONNECTORS AND FITTINGS

Extreme care must be exercised with coaxial cable before and after connectors have been installed to insure that moisture does not enter the line. Foam dielectric line can take on moisture absorption. When this is allowed to happen, it 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 such as "SCOTCHKOTE" over at least two layers of "SCOTCH 88" 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 Weather-proofing Kit is recommended for use in each new antenna installation.

LOCATION AND GROUNDING OF COAXIAL CABLE

1. 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 TRANSMITTING 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.

SYSTEM GROUNDING

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

ANTENNA INSTALLATION AND ADJUSTMENT

The polarization of the transmit and receive antennas must be the same. This means that if the transmitting antenna is vertical, the receiving antenna must also be vertical. The antenna should be attached to the tower using the proper side mount or top mount hardware. If an RF watt meter is available, the antenna and transmission line can be checked for VSWR with a transmitter supplying power to it. The VSWR should be less than 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 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.

OPERATING INSTRUCTIONS AR-10, BR-10, CR-10 RECEIVERS

PROGRAM LEVEL ADJUST BR-10, CR-10

The audio output level of the receiver is set from the front panel by use of a small screwdriver through the opening marked PGM. LEVEL. ADJ. Position test meter switch to PGM. LEVEL while making adjustment. Zero VU on the PGM. LEVEL test meter is approximately +10 DBM at the output terminals of TB-1. On Model AR-10 adjust LINE LEVEL pot. 0 VU on meter is approximately -9 DBM at TB-1 terminals.

SQUELCH ADJUST

The receiver Squelch Adj. pot is factory set to operate at a received signal level of approximately 0.5 microvolts. This level can be changed by increasing or decreasing the pot setting. Very sensitive settings of the squelch pot should be avoided, since noise or other signals could open the squelch. The "Squelch Open" panel lamp provides a visual indication of the squelch operation (BR-10, CR-10 only).

F1-F2 SWITCH

Either frequency of a dual frequency receiver may be selected by the F1-F2 switch. CAUTION: SINGLE FREQUENCY RECEIVERS MUST BE SWITCHED TO F1 AT ALL TIMES.

POWER ON

The "Power On" lamp glows when the 13.5V DC regulated power supply is operating (BR-10, CR-10). On Model AR-10, meter illumination indicates power on.

TEST METER

The Test Meter, with its selector switch, allows monitoring important receiver parameters as follows;

1. SIG. LEVEL - The RF signal level at the receiver input J6 is displayed in "SIG. LEVEL" position of the meter switch. The following table gives typical signal levels in microvolts for various VU values.
(AR-10, BR-10
CR-10)

METER READING	SIGNAL STRENGTH
-15VU	1.0 Microvolts
-2VU	10 Microvolts
0VU	100 Microvolts
+2VU	250 Microvolts

2. PGM LEVEL - The audio level at the 600 ohm balanced output terminals is displayed in this switch position. (AUDIO AR-10) 0 VU is approximately -9 DBM. Peak values of 0 VU should not be exceeded with program audio. See PGM. LEVEL ADJ.
3. SUB LEVEL - This is the received subaudible tone level. A transmitter with 1 KHz tone deviation will indicate approximately 0 VU on the BR-10, CR-10 SUB LEVEL and on the AR-10 DECODE LEVEL meter.
(AR-10,
BR-10,
CR-10)
4. 13 V. SUPPLY - When switched to this position, the meter reads +1.5 VU for the internal 13.5 V. regulated supply.
5. L.O. LEVEL- The local oscillator level at TP-1 of the converter.
6. MIXER - This is test point TP-2 in the converter local oscillator chain nearest the double balanced mixer. The "Mixer" meter indication is therefore a reliable check on mixer operation.

NOTE: For nominal meter values, see the Factory Test Data Sheet which is included in the book. 4, 5 and 6 refer to BR-10, CR-10.

THEORY OF OPERATION AR-10, BR-10, CR-10

Refer to Block Diagram Drawing No. 702-062 and Schematic Diagrams.

CONVERTER 800-212, 213

The received RF signal is applied to the converter module. After passing through a three section pre-selector, the signal is coupled to Gate No. 1 of a dual gate MOS-FET RF amplifier. The output of this amplifier is impedance matched to double balanced mixer X-1. The output of the local oscillator frequency multiplier is also impedance matched to the L.O. port of mixer X-1. The third port of the double balanced mixer X-1 is the 10.7 MHz. converter output.

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.

IF AMPLIFIER - DETECTOR 800-208

The IF amplifier chain consists of two discrete transistor stages coupled by ceramic filters to an integrated circuit. This (IC-1) contains high gain FM limiters, quadrature detection, audio pre-amplification and wide range signal level metering. IF symmetry at the IC input is compensated by L1 and C19. The IF amplifier-detector board has outputs to the audio amplifier, decode, metering and power supply /squelch boards.

AUDIO AMPLIFIER 800-225

Audio from the FM detector first passes through a notch filter (IC1B) to remove the subaudible encoding tone. This signal is then fed into the de-

emphasis circuit (IC1A). The feedback circuit of this op-amp has a fixed 75 uS loop with an additional 75 uS selected by Q1 to provide noise reduction on weak signals of 1.5 microvolts or less. Q1 is switched on by the output of comparator IC-2A on power supply/squelch board 800-219. 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. On AR-10 and CR-10, one op-amp of IC3 drives the line output, the other op-amp drives the monitor speaker.

TONE DECODER 800-229

Pre-emphasized audio from the FM detector at connector pin 5 is fed into the inverting input of IC-1A, 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 IC-1B and IC-1C. 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 IC-2. 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.

POWER SUPPLY/SQUELCH 800-219

The power supply consists of a bridge rectifier (D1, D2, D3, D4), filtered by C5 and regulator IC-3. R8 and R9 set the output voltage and D5 and D6 protect IC-3

from reverse voltage. Zener diode D7 provides a shunt regulated reference voltage for the comparators (IC-2) for instances when the receiver is operated from external un-regulated DC supplies.

Both the signal squelch (IC-2B) and the noise reduction (IC-2A) comparators have the signal level metering voltage applied to the appropriate input. Signal squelch comparator IC-2B output is connected to relay driver Q2. The collector of Q2 also operates the "squelch open" LED on the receiver panel. Squelch adjustment is provided by potentiometer R5 (meter/control board 800-192) which divides the comparator reference voltage through R11 and R12.

Signal level voltage is also connected to meter driver amplifier IC-1. "SIGNAL LEVEL" position of the test meter is calibrated by R2.

INPUT/OUTPUT FILTERS 800-193 BR-10, CR-10

All input/output circuits connected to accessory connector J4 as well as the AC line input have radio frequency filters.

TOOLS AND TEST EQUIPMENT FOR RPT TRANSMITTER AND R-10 RECEIVER

Model #43 Bird Wattmeter.

Bird 1 Watt Element 100-250 MHz. and 400-1000 MHz.

Bird 50 Watt Element 100-250 MHz. and 400-1000 MHz.

Microwave Associates Model 44003 50 Watt RF Load.

GC 9300 Tuning Tool.

GC 9440 Tuning Tool.

JFD 5284 Tuning Tool.

Sprague-Goodman GTT-5 Tuning Tool.

Screwdriver, Slot 1/8" x 4" Xcelite R184.

Kron-Hite Oscillator Model #4500

Hewlett Packard Attenuator Set Model #3500.

Hewlett Packard Frequency Counter Model #5383A (Option ool).

Wavetek Model 4101 Automatic Modulation Meter.

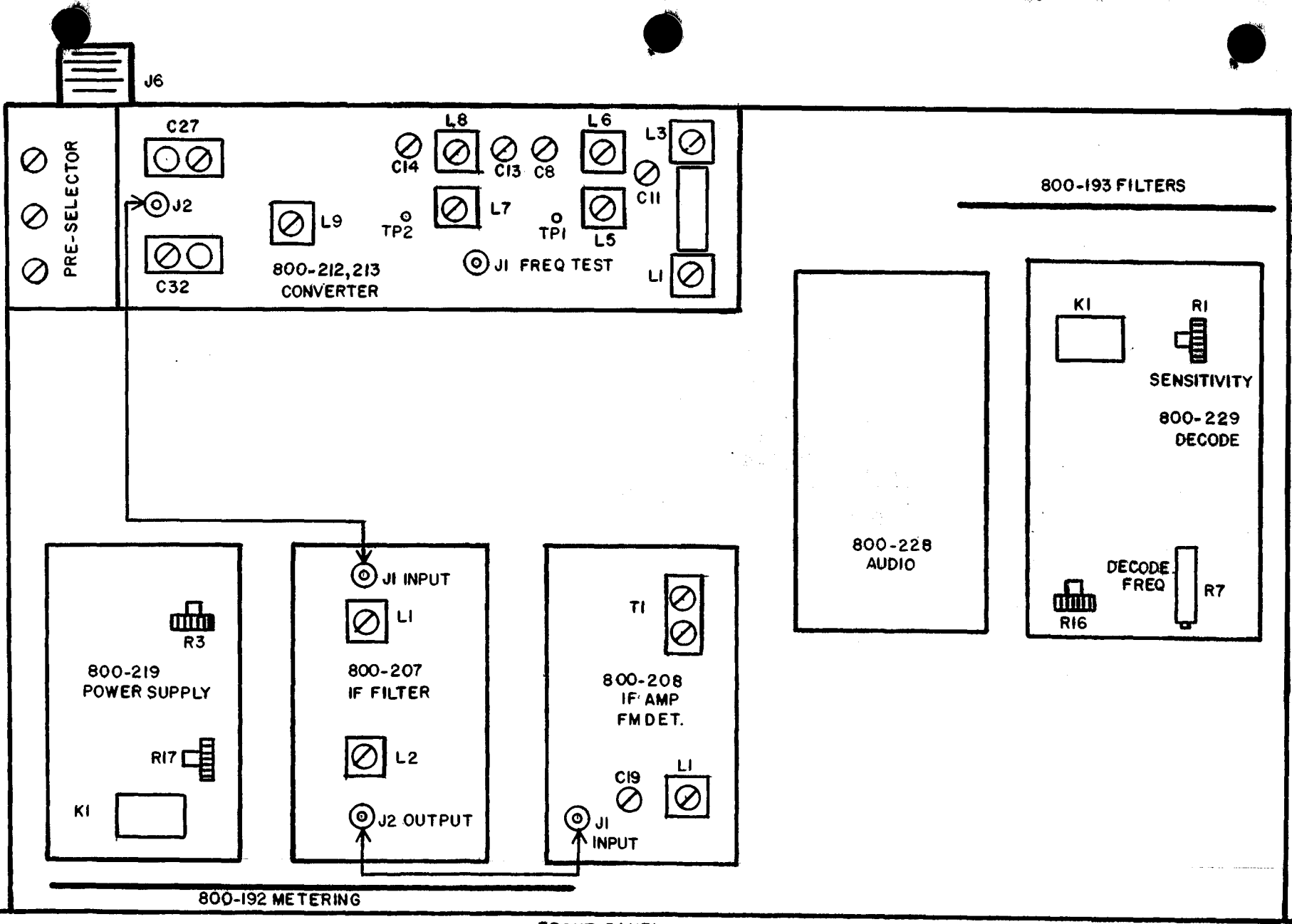
Multimeter, Digital, Beckman Model #3030.

Multimeter, Analog, Triplet Model #630.

Adjustable RF Attenuator 0-110 DB.

Hewlett-Packard Model #8558B Spectrum Analyzer.

Hewlett-Packard Model #8654B Signal Generator.

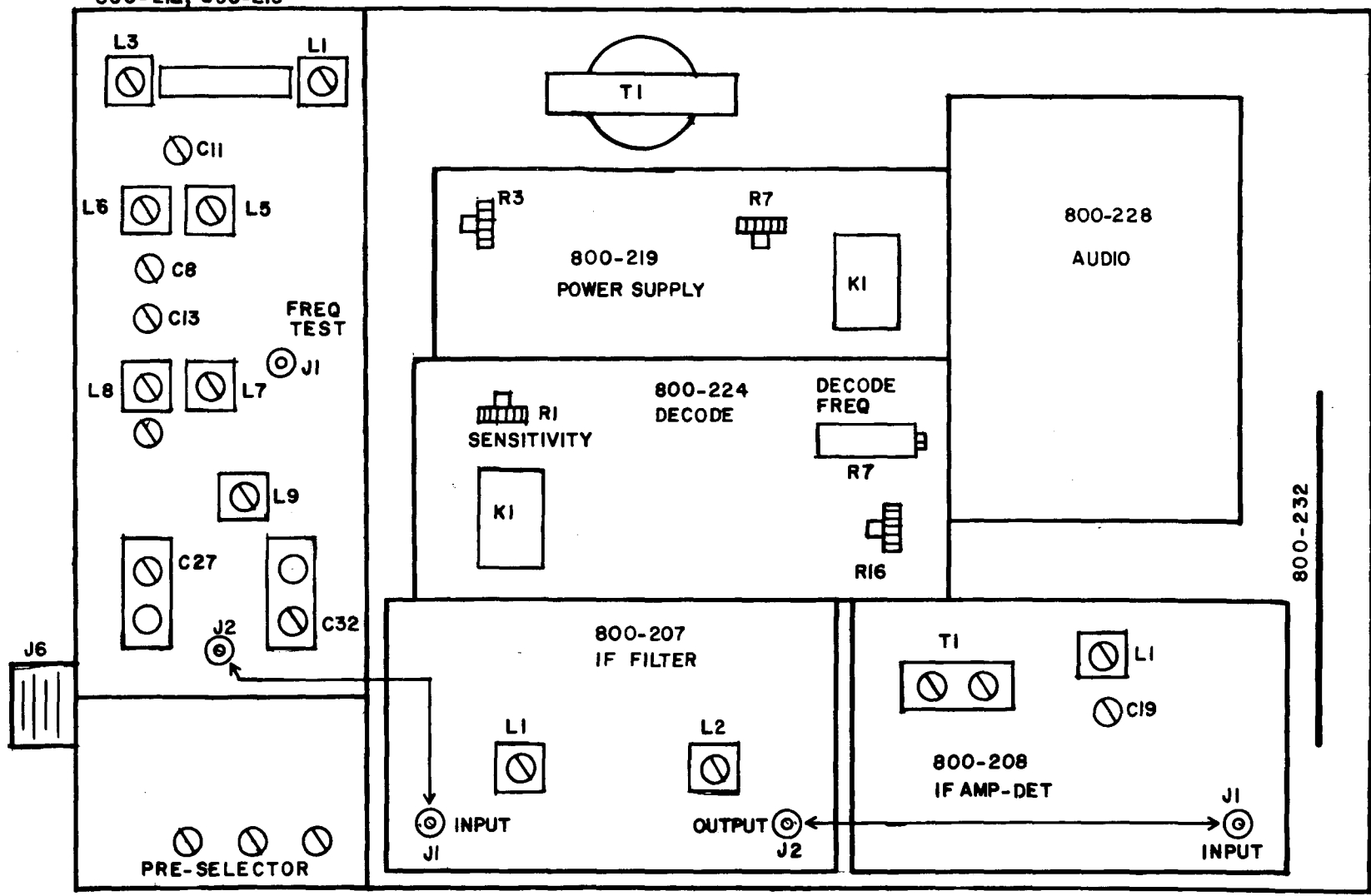


FRONT PANEL

14

MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 702-063	REV.	DATE 7/30/84	APPROVED	USED ON BR-10 CR-10	TITLE ADJUSTMENT LOCATION DIAGRAM
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CONVERTER
800-212, 800-213



15

800-232

FACTORY TEST DATA

CUSTOMER: _____ ADDRESS: _____

FREQ.#1 _____ FREQ.#2 _____ DATE: _____

R-10 RECEIVER

SERIAL:# _____

Test Meter Readings:

Sig. Level:

1 uV. _____

10 uV. _____

100 uV. = 0 VU _____

Sub Level 0 Vu. _____

+13V. Supply _____

L.O. Level _____

Mixer _____

Response O.K. _____

Distortion O.K. _____

Noise Level _____

Squelch Set At _____

Signature: _____

TUNE-UP PROCEDURE AND ADJUSTMENTS

NOTICE: This equipment was thoroughly tested and inspected at the factory prior to shipment. The actual equipment performance was recorded on the factory test data sheet which is a part of this book. Adjustments should rarely be necessary in the field and should only be attempted by highly trained technicians familiar with this type equipment. Laboratory grade test equipment is required and is listed under "Tools and Equipment Required." For location of adjustments and test points in the BR-10, CB Receiver, refer to "Adjustment Location Diagram" 702-063; for AR-10 refer to Drawing 702-066. On AR-10, use 0-3V. DC multimeter at indicated test point (TP) instead of "Meter Switch" below.

CONVERTER 800-212 and 800-213

1. Set local oscillator on exact frequencies by adjusting L1 (and L2 if desired frequency) while observing the frequency on a 225 MHz counter plugged into J1.

THE CORRECT FREQUENCY AT J1 CAN BE CALCULATED
BY THE FORMULA IN THE FOLLOWING TABLE:

<u>OPERATING FREQUENCY (F)</u>	<u>CONVERTER TYPE</u>	<u>MEASURED FREQUENCY AT J1</u>	<u>OVERTON CRYSTAL FORMULA</u>
140-180 MHz	800-212	F-10.7	$\frac{F-10.7}{3}$
200-260	800-212	$\frac{F-10.7}{2}$	$\frac{F-10.7}{4}$
280-340	800-213	F-10.7	$\frac{F-10.7}{6}$
400-480	800-213	$\frac{F-10.7}{2}$	$\frac{F-10.7}{8}$

Unplug counter from J1 before doing adjustment 2.

2. Switch meter to "L.O. LEVEL". Tune L5 and L6 for maximum reading. Do not tune trimmer capacitor - they are factory adjustments. (TP-1)
3. Switch meter to "Mixer" and tune L7 and L8 for maximum reading. (TP-2)
4. Switch meter to "Sig. Level", reduce received signal level at J6 for a 1/3 scale reading on Sig. Level meter. Tune the three gold capacitors on top of Pre-selector for maximum signal level. On 800-213 board tune C27 and C32 for maximum signal level. On 800-212 board tune L9 for maximum signal level.

IF FILTER 800-207

1. With a received signal of 1/3 scale on Sig. Level Meter, tune L1 and L2 for maximum signal. NOTE: These adjustments are factory set for minimum distortion and should not be tuned in the field.

IF AMPLIFIER/DETECTOR 800-208

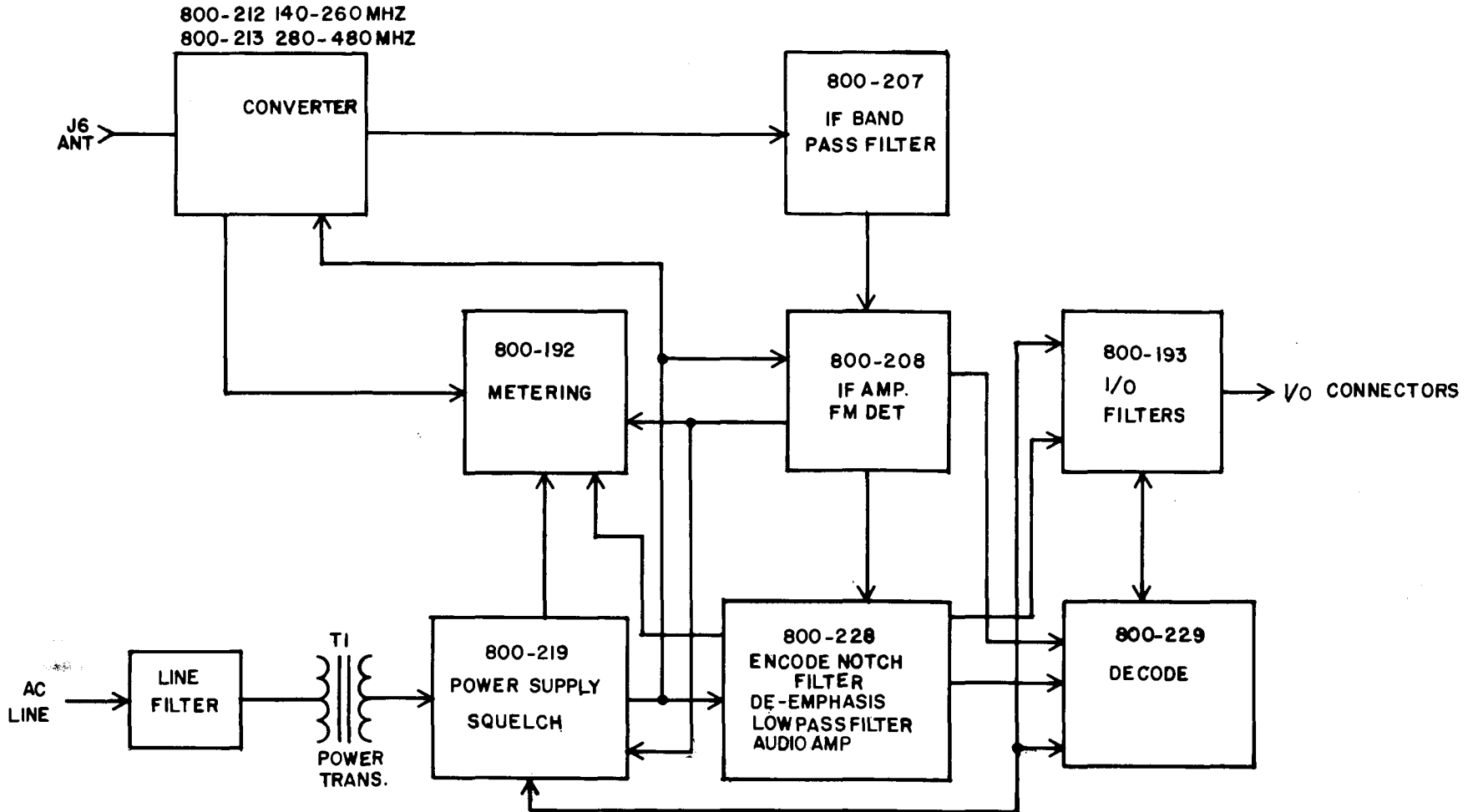
1. With a received signal of 1/3 scale on Sig. Level Meter, tune L1 and C19 for maximum signal.
2. Check transmitter and receiver frequency. Make adjustments if necessary.
3. Modulate transmitter 100% at 400 Hz using Ultra Low Distortion Audio Generator.
4. Set receiver PGM LEVEL ADJ. for +8 DBM output (-8 DBM, AR-10) across a 600 ohm load.
5. Tune primary of T1 (the slug nearest the IC) for maximum audio output level. Tune secondary slug of T1 for a dip (minimum) audio output level. Repeat several times since adjustments interact.
6. Connect automatic nulling distortion meter to receiver output. Attenuate RF signal level at J6 for a Sig. Level of 100 microvolts (0 VU on test meter scale). With transmitter modulated as before, slightly re-tune T1 primary and secondary for minimum distortion.

DECODE BOARD 800-229

1. Using an encoded Marti Transmitter adjusted for proper encode frequency and modulation level as an encoded signal source, place BR-10 meter switch in Sub. Level (decode on AR-10) position. Adjust Sensitivity Pot R1 for a reading of 0 VU on the meter.
2. Adjust Decode Frequency Pot R7 for maximum reading on Sub. Level meter.
3. Set Sensitivity Pot R1 to -5VU on the meter. Adjust Pot R16 so that Relay K1 just closes at this level.
4. Re-adjust R1 for reading of 0 VU on the meter.

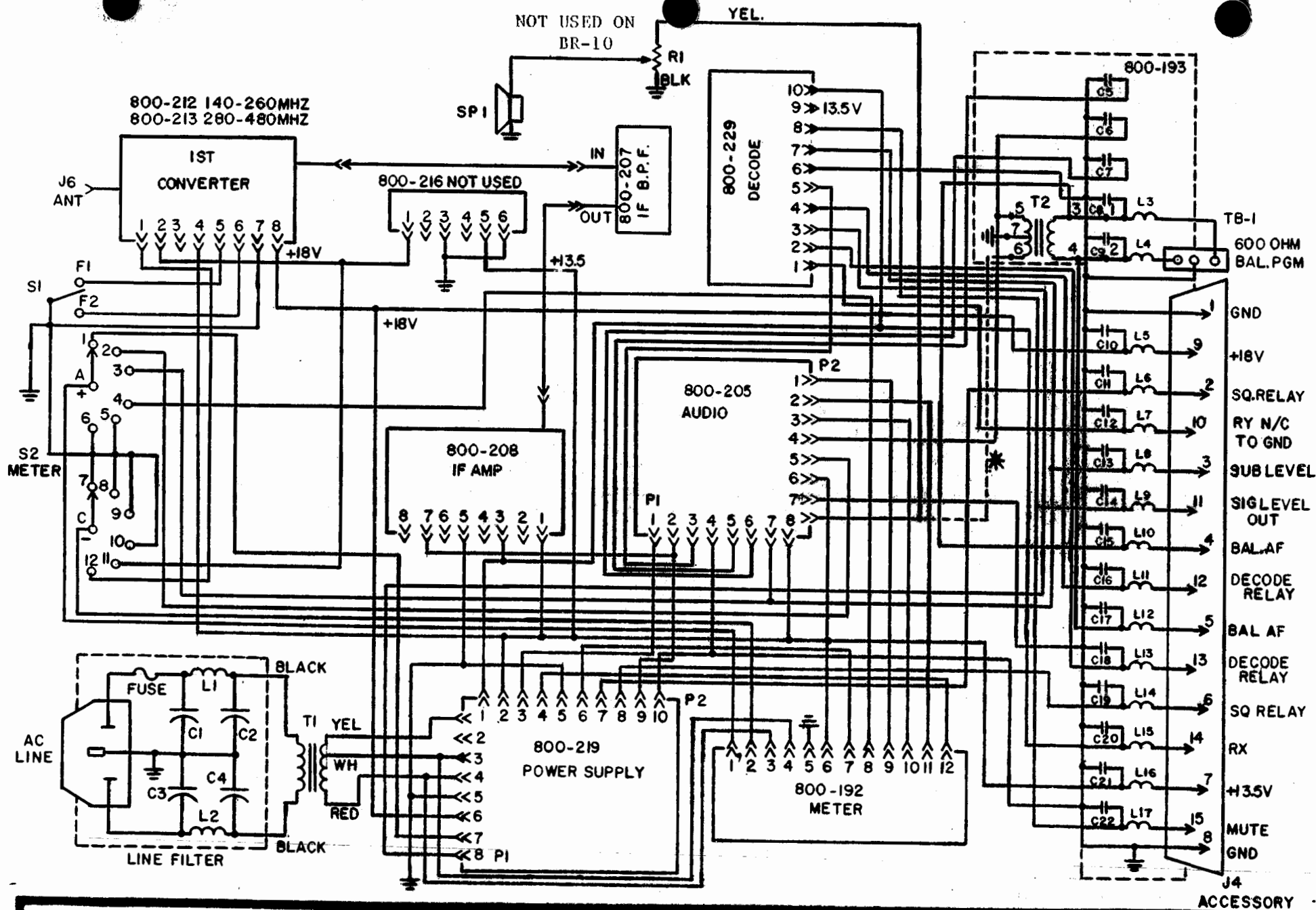
POWER SUPPLY BOARD 800-219

1. Place test meter switch in "13V. Supply" position. The meter should read +1 VU which is 13.5 volts ± 0.25 volts. On AR-10, use multimeter to measure 13.5V between chassis and red wire in any board connector.
2. Feed an RF signal generator into J6 and set to exact receiver frequency at 100 microvolt level. Adjust R1 for a reading of 0 VU on the test meter in Sig. Level switch position.
3. Set RF signal generator modulation to correct FM deviation at 1000 Hz. Adjust PGM. Level for 0 VU on PGM. Level meter. Reduce RF signal level to 1.5 microvolts. Adjust R17 to the setting that produces a sudden drop of 2 VU on the PGM. Level meter.



REFER TO SCHEMATIC DIAGRAM FOR EACH BLOCK BY NUMBER

MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 702-062	REV.	DATE 7/30/84	APPROVED	USED ON AR-10, BR-10 & CR-10	TITLE BLOCK DIAGRAM
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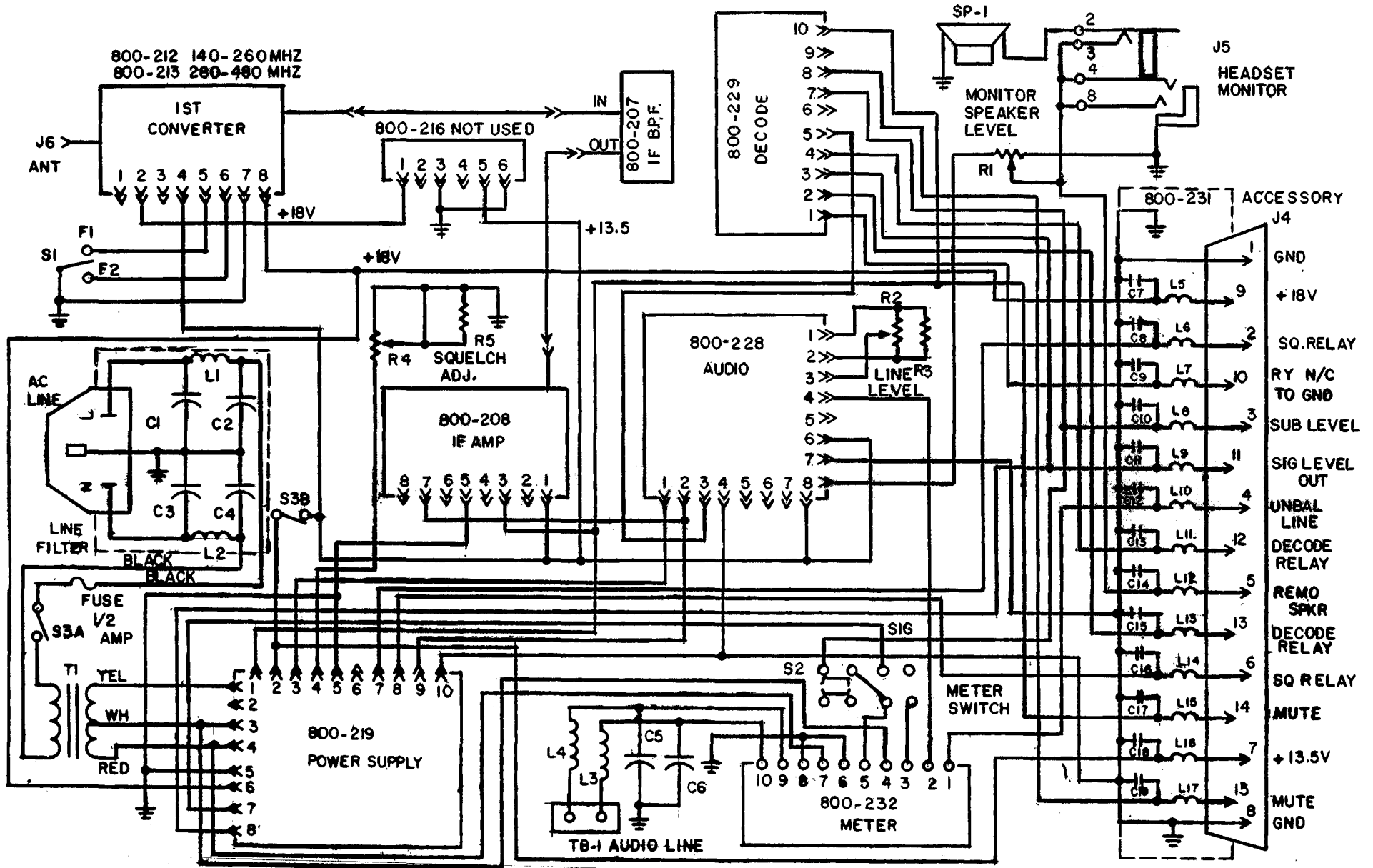
MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 74031	DRAWING NO. 702-061	REV.	DATE 7/10/84	APPROVED	USED ON BR-10 CR-10	TITLE MAIN FRAME
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PART LIST
 MAIN FRAME
 RECEIVER BR-10 CR-10

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C1-C4	297-201	Capacitor, .0022uF 20% Type AU Disc
C5-C9	253-471	Capacitor, 470pF 50V 10% Y5P Disc
C10-C14	268-102	Capacitor, .001uF 500V Z5U Disc
C15	253-471	Capacitor, 470pF 50V 10% Y5P Disc
C16-C17	268-102	Capacitor, .001uF 500V Z5U Disc
C18	253-471	Capacitor, 470pF 50V 10% Y5P Disc
C19-C22	268-102	Capacitor, .001uF 500V Z5U Disc
F1	510-010	Fuse, 1 amp 3AG
L1-L2	330-019	Inductor, VK20010-3B
L3-L17	330-018	Inductor, 10uH
R1	100-534	Potentiometer, 500 ohm Linear Taper
SP1	560-018	Speaker, 8 ohm
T1	320-041	Transformer, Power #16219
T2	310-014	Transformer, Audio #3494

*1 Dotted line only in BR-10, omit solid line to speaker.

*2 Center tap of audio transformer is not connected to ground in BR-10.

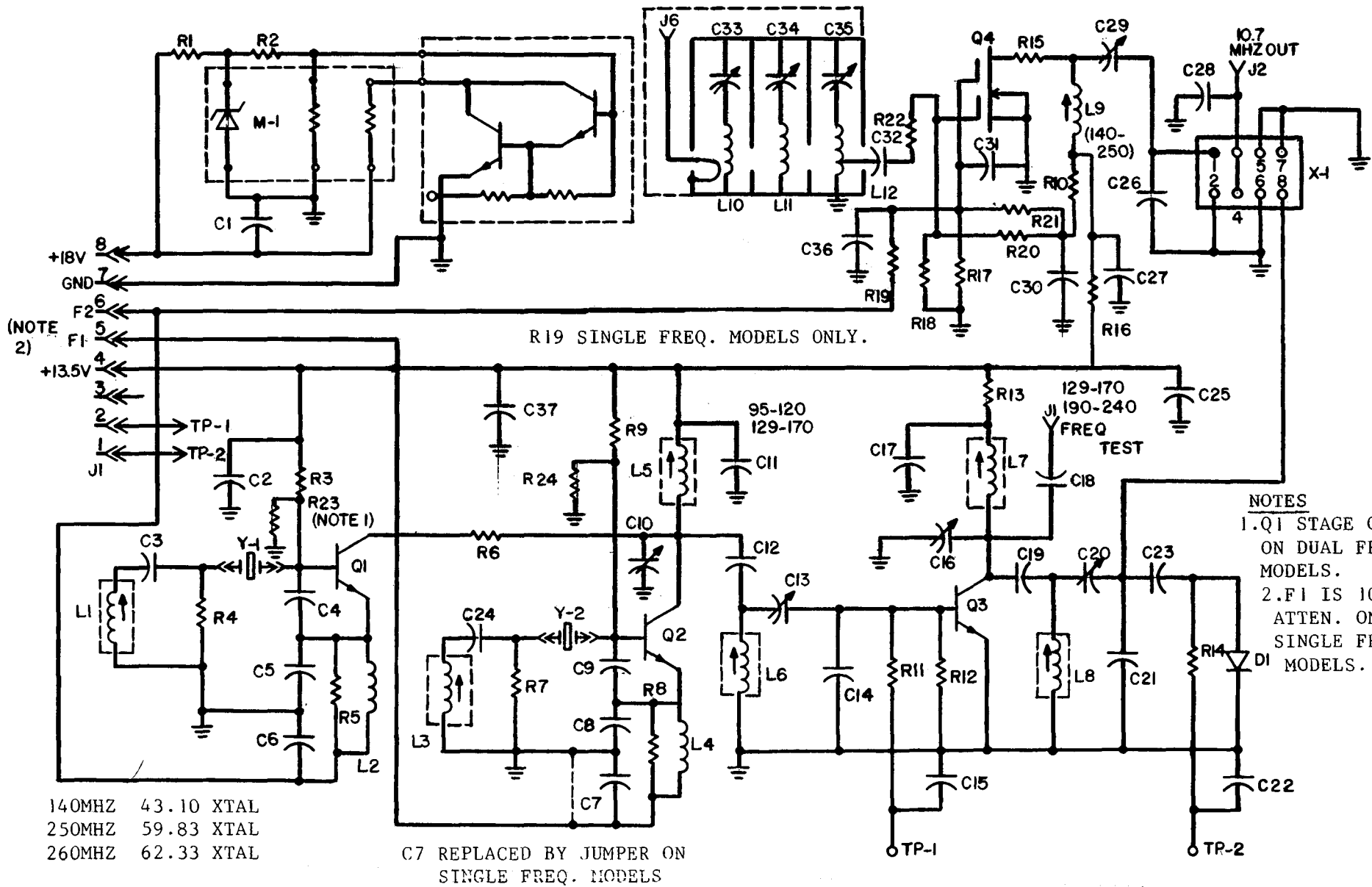


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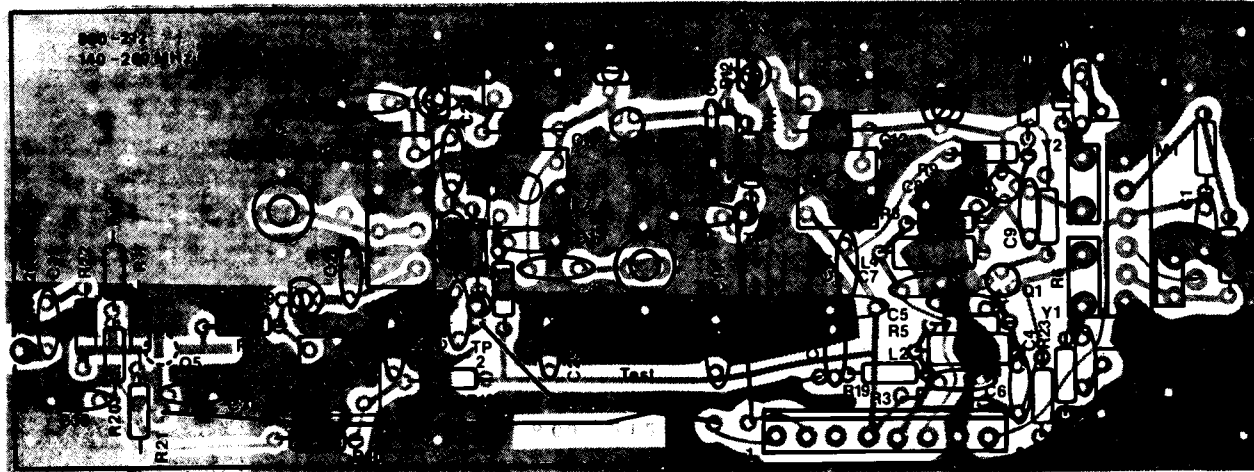
MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO.	REV.	DATE	APPROVED	USED ON	TITLE
	702-065		1/17/85		AR-10	MAIN FRAME AR-10 RECEIVER

PARTS LIST
 MAIN FRAME
 RECEIVER AR-10

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C1-C4	297-201	Capacitor, .0022uF 20% Type AU Disc
C5-C6	256-471	Capacitor, 470pF 50V 10% X5F Disc
C7-C19	253-471	Capacitor, 470pF 50V 5% Y5P Disc
F1	510-010	Fuse, 1 amp 3AG
J4	550-031	Connector, DA-15P
J5	550-142	Stereo Phone Jack
L1-L2	330-019	Inductor, VK20010-3B
L3-L17	330-018	Inductor, 10uH
R1	100-534	Potentiometer, 500 ohm Linear Taper
R2	100-103	Potentiometer, 10K ohm
R3	145-103	Resistor, 10K ohm $\frac{1}{4}$ W 5%
R4	100-103	Potentiometer, 10K ohm
R5	145-152	Resistor, 1500 ohm $\frac{1}{4}$ W 5%
S1	530-001	Switch, DPDT #11A-1255
S2	530-018	Switch, DPTT #11D-1049
S3	530-001	Switch, DPDT #11A-1255
T1	320-041	Transformer, Power #16219
TB1	511-040	Terminal Block #72202



MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO.	REV.	DATE	APPROVED	USED ON	TITLE
	800-212	10/86	3/27/84		AR-10, BR-10 CR-10 & R-10	140-260MHZ CONVERTER



MARTI <i>Electronics, Inc.</i> PO BOX 661 CLEBURNE, TX 76031	DRAWING NO.	REV.	DATE	APPROVED	USED ON	TITLE
	800-212-1		10/15/86		AR-10, BR-10 CR-10 & R-10	CONVERTER PARTS LOCATOR

PARTS LIST
 CONVERTER 140-260 MHz
 MARTI NO. 800-212

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>BAND MHz</u>
C1	217-104	Capacitor, .01uF 25V GMV Disc	
C2	217-103	Capacitor, .1uF 100V 10% Mylar	
C3	255-120	Capacitor, 12pF 50V 5% NPO Disc	140-170
C3	255-220	Capacitor, 22pF 50V 5% NPO Disc	200-260
C4	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C5	255-750	Capacitor, 75pF 50V 5% NPO Disc	
C6	217-104	Capacitor, .01uF 25V GMV Disc	
C7	217-104	Capacitor, .01uF 25V GMV Disc	
C8	255-750	Capacitor, 75pF 50V 5% NPO Disc	
C9	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C10	290-522	Capacitor, Variable 2.8-10pF	140-170
C10	290-521	Capacitor, Variable 5.0-25pF	200-260
C11	217-103	Capacitor, .1uF 100V 10% Mylar	
C12	255-030	Capacitor, 3pF 5% Type QC	140-170
C12	255-010	Capacitor, 1pF 5% Type QC	200-260
C13	290-521	Capacitor, Variable 5.0-25pF	
C14	255-180	Capacitor, 18pF 50V 5% NPO Disc	140-170
C14	255-470-1	Capacitor, 47pF 300V 5% Silver Mica	200-260
C15	268-102	Capacitor, .001uF 500V Z5U Disc	
C16	290-522	Capacitor, Variable 2.8-10pF	
C17	268-102	Capacitor, .001uF 500V Z5U Disc	
C18	255-050	Capacitor, 5pF 50V 5% NPO Disc	
C19	255-010	Capacitor, 1pF 5% Type QC	
C20	290-522	Capacitor, Variable 2.8-10pF	
C21	255-030-1	Capacitor, 3pF 50V 5% NPO Disc	
C22	268-102	Capacitor, .001uF 500V Z5U Disc	
C23	255-100	Capacitor, 10pF 50V 5% NPO Disc	
C24	255-120	Capacitor, 12pF 50V 5% NPO Disc	140-170
C24	255-020	Capacitor, 22pF 50V 5% NPO Disc	200-260
C25	268-102	Capacitor, .001uF 500V Z5U Disc	
C26	255-180	Capacitor, 18pF 50V 5% NPO Disc	
C27	268-102	Capacitor, .001uF 500V Z5U Disc	
C28		Not Used	
C29	290-522	Capacitor, Variable 2.8-10pF	
C30	268-102	Capacitor, .001uF 500V Z5U Disc	
C31	268-102	Capacitor, .001uF 500V Z5U Disc	
C32	268-102	Capacitor, .001uF 500V Z5U Disc	
C33	230-100	Capacitor, Variable .8-8pF	
C34	230-100	Capacitor, Variable .8-8pF	
C35	230-100	Capacitor, Variable .8-8pF	
C36	268-102	Capacitor, .001uF 500V Z5U Disc	
C37	268-102	Capacitor, .001uF 500V Z5U Disc	
D1	412-494	Diode, 1N270	
L1	350-044	Inductor, Variable 1-2uH	
L2	330-007	Inductor, Fixed 1uH 5%	
L3	350-044	Inductor, Variable 1-2uH	

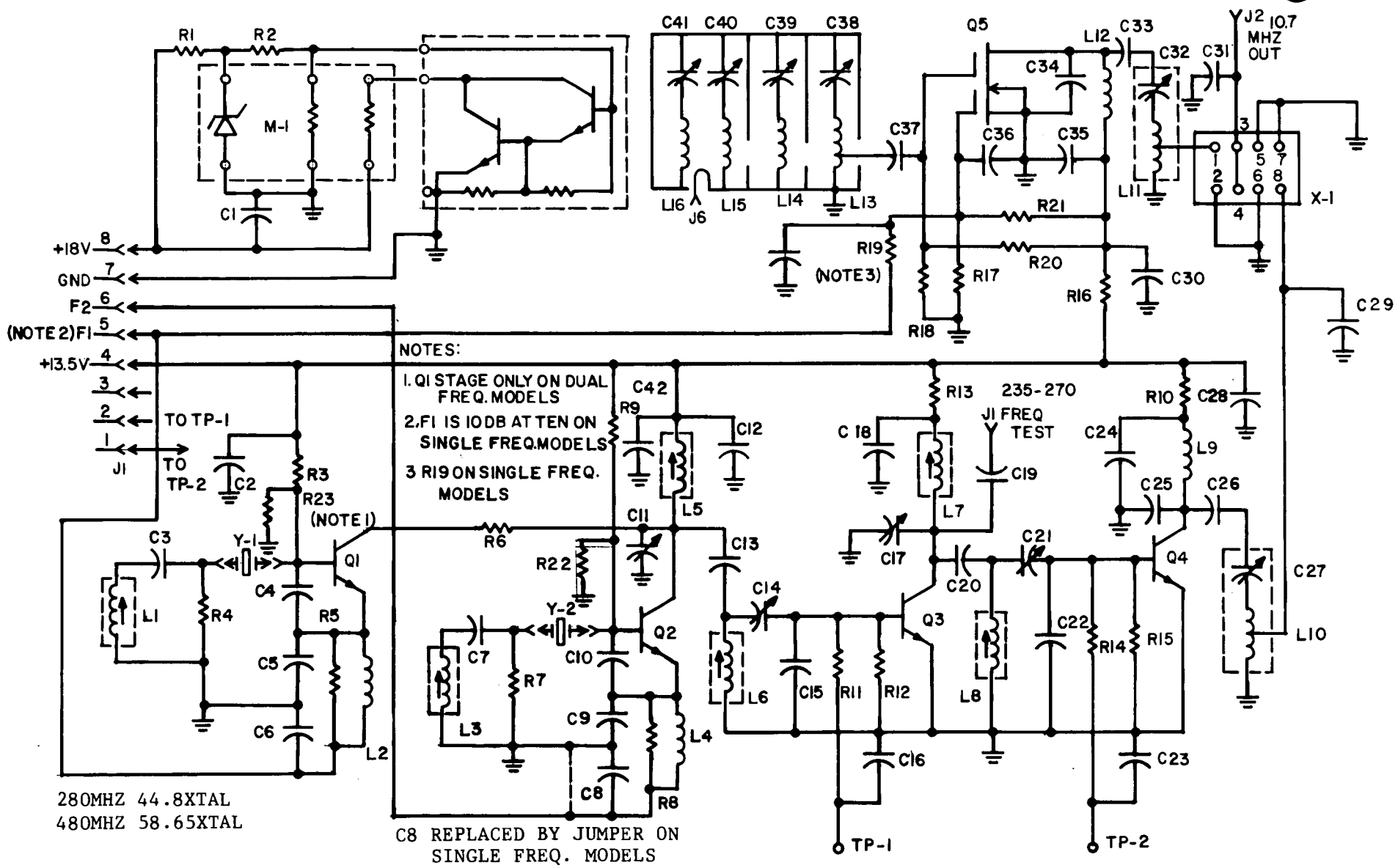
PARTS LIST
 CONVERTER 140-260 MHz
 MARTI NO. 800-212

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>BAND MHz</u>
L4	330-007	Inductor, Fixed 1uH	
L5	350-043	Inductor, Variable 4½ Turn Yellow	140-170
L5	350-040	Inductor, Variable 6½ Turn Blue	200-260
L6	350-043	Inductor, Variable 4½ Turn Yellow	140-170
L6	350-040	Inductor, Variable 6½ Turn Blue	200-260
L7	350-043	Inductor, Variable 4½ Turn Yellow	140-170
L7	350-039	Inductor, Variable 2½ Turn Red	200-260
L8	350-043	Inductor, Variable 4½ Turn Yellow	140-170
L8	350-039	Inductor, Variable 2½ Turn Red	200-260
L9	350-043	Inductor, Variable 4½ Turn Yellow	140-170
L9	350-039	Inductor, Variable 2½ Turn Red	200-260
L10	350-129	Inductor, 8 Turn 16AWG	140-170
L10	350-130	Inductor, 5 Turn 14AWG	200-260
L11	350-129	Inductor, 8 Turn 16AWG	140-170
L11	350-130	Inductor, 5 Turn 14AWG	200-260
L12	350-129	Inductor, 8 Turn 16AWG	140-170
L12	350-130	Inductor, 5 Turn 14AWG	200-260
L13	350-132	Inductor, 3/8" ID 20AWG	
M1	520-052	Module, Temp. Control	
Q1	440-245	Transistor, SRF3017	
Q2	440-245	Transistor, SRF3017	
Q3	440-245	Transistor, SRF3017	140-170
Q3	420-090	Transistor, BFY-90	200-260
Q4	428-837	Transistor, NE08837	
R1	145-681	Resistor, 680 ohm ¼W 5%	
R2	145-332-1	Resistor, 3300 ohm ¼W 2% Corning	
R3	145-683	Resistor, 68K ohm ¼W 5%	
R4	145-152	Resistor, 1500 ohm ¼W 5%	140-170
R4	145-392	Resistor, 3900 ohm ¼W 5%	200-260
R5	145-331	Resistor, 330 ohm ¼W 5%	
R6	145-030	Resistor, 3.3 ohm ¼W 5%	
R7	145-152	Resistor, 1500 ohm ¼W 5%	140-170
R7	145-392	Resistor, 3900 ohm ¼W 5%	200-260
R8	145-331	Resistor, 330 ohm ¼W 5%	
R9	145-683	Resistor, 68K ohm ¼W 5%	
R10	145-470	Resistor, 47 ohm ¼W 5%	
R11	145-272	Resistor, 2700 ohm ¼W 5%	140-170
R11	145-103	Resistor, 10K ohm ¼W 5%	200-260
R12	145-102	Resistor, 1000 ohm ¼W 5%	
R13	145-331	Resistor, 330 ohm ¼W 5%	140-170
R13	145-470	Resistor, 47 ohm ¼W 5%	200-260
R14	145-562	Resistor, 5600 ohm ¼W 5%	140-170
R14	145-272	Resistor, 2700 ohm ¼W 5%	200-260
R15	145-300	Resistor, 30 ohm ¼W 5%	
R16	145-470	Resistor, 47 ohm ¼W 5%	
R17	145-562	Resistor, 5600 ohm ¼W 5%	

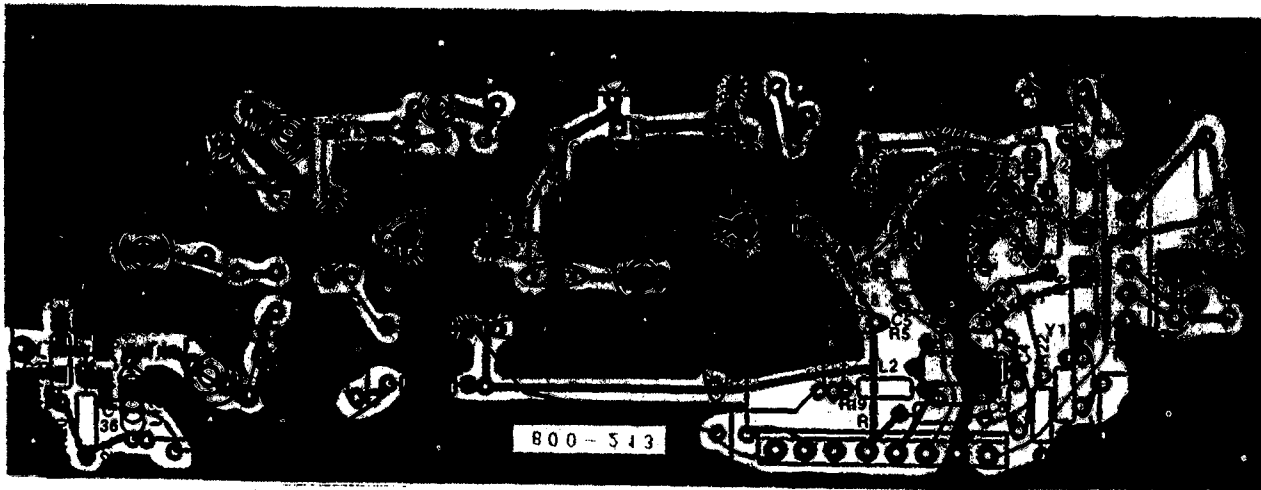
PARTS LIST
CONVERTER 140-260 MHz
MARTI NO. 800-212

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>BAND MHz</u>
R18	145-223	Resistor, 22K ohm $\frac{1}{4}$ W 5%	
R19		Not Used	
R20	145-474	Resistor, 470K ohm $\frac{1}{4}$ W 5%	
R21	145-682-1	Resistor, 6800 ohm $\frac{1}{4}$ W 2% Corning	
R22	145-300	Resistor, 30 ohm $\frac{1}{4}$ W 5%	
R23	145-683	Resistor, 68K ohm $\frac{1}{4}$ W 5%	
R24	145-683	Resistor, 68K ohm $\frac{1}{4}$ W 5%	
X-1	350-124	Double Balanced Mixer SBL-1	
Y-1		Crystal, Quartz Overtone	
Y-2		Crystal, Quartz Overtone	

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MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-213	REV. 10/85	DATE 4/23/84	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE 280-480MHZ CONVERTER
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MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-213-1	REV.	DATE 10/15/86	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE CONVERTER PARTS LOCATOR
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PARTS LIST
 CONVERTER 280-480 MHz
 MARTI NO. 800-213

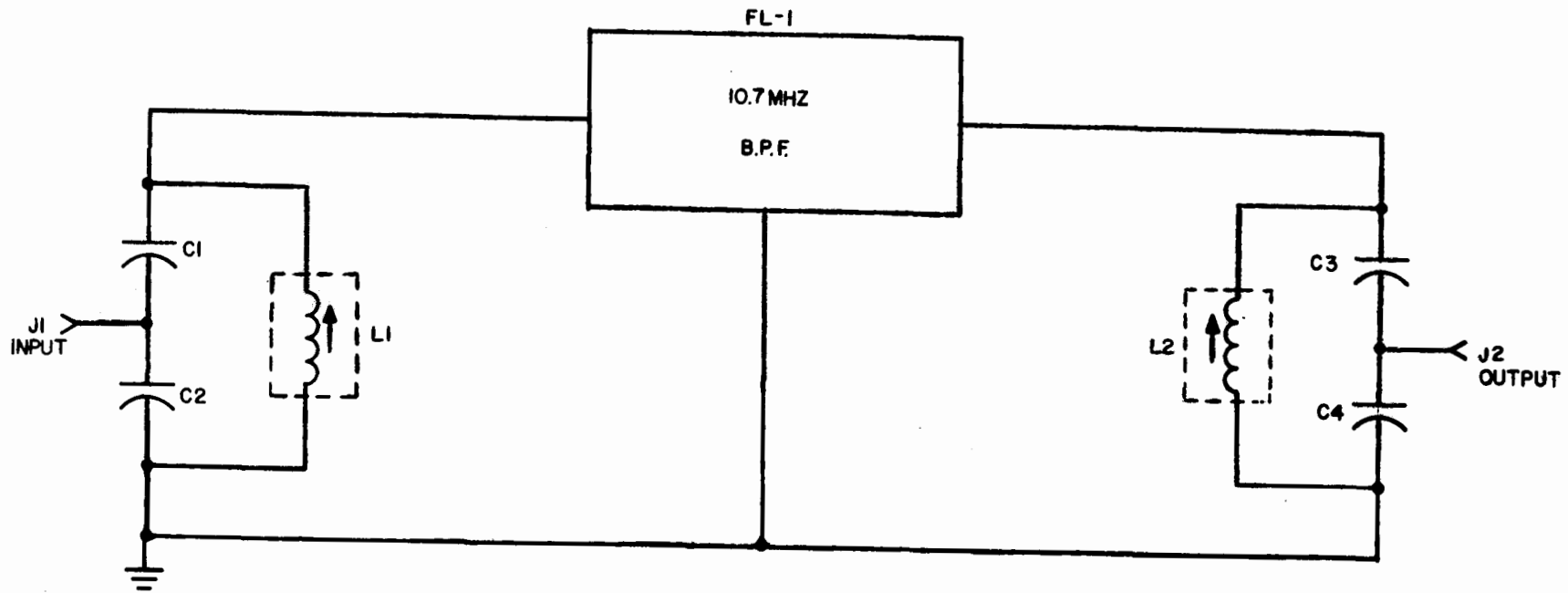
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>BAND M</u>
C1	217-104	Capacitor, .01uF 25V GMV Disc	
C2	217-103	Capacitor, .1uF 100V 10% Mylar	
C3	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C4	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C5	255-750	Capacitor, 75pF 50V 5% NPO Disc	
C6	217-104	Capacitor, .01uF 25V GMV Disc	
C7	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C8	217-104	Capacitor, .01uF 25V GMV Disc	
C9	255-750	Capacitor, 75pF 50V 5% NPO Disc	
C10	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C11	290-521	Capacitor, Variable 5.0-25pF	
C12	217-103	Capacitor, .1uF 100V 10% Mylar	
C13	255-010	Capacitor, 1pF 5% Type QC	
C14	290-521	Capacitor, Variable 5.0-25pF	
C15	255-270	Capacitor, 27pF 50V 5% NPO Disc	280-38
C15	255-470-1	Capacitor, 47pF 300V 5% Silver Mica	380-48
C16	268-102	Capacitor, .001uF 500V Z5U Disc	
C17	290-522	Capacitor, Variable 2.8-10pF	
C18	268-102	Capacitor, .001uF 500V Z5U Disc	
C19	255-050	Capacitor, 5pF 50V 5% NPO Disc	
C20	255-010	Capacitor, 1pF 5% Type QC	
C21	290-522	Capacitor, Variable 2.8-10pF	
C22	255-150	Capacitor, 15pF 50V 5% NPO Disc	
C23	268-102	Capacitor, .001uF 500V Z5U Disc	
C24	268-102	Capacitor, .001uF 500V Z5U Disc	
C25	270-407	Capacitor, 4.7pF 50V 5% Monolithic Chip	
C26	270-102	Capacitor, 1000pF 50V 5% Monolithic Chip	
C27	290-522	Capacitor, Variable 2.8-10pF	
C28	268-102	Capacitor, .001uF 500V Z5U Disc	
C29	270-407	Capacitor, 4.7pF 50V 5% Monolithic Chip	
C30	268-102	Capacitor, .001uF 500V Z5U Disc	
C31		Not Used	
C32	290-522	Capacitor, Variable 2.8-10pF	
C33	270-102	Capacitor, 1000pF 50V 5% Monolithic Chip	
C34	270-407	Capacitor, 4.7pF 50V 5% Monolithic Chip	
C35	270-102	Capacitor, 1000pF 50V 5% Monolithic Chip	
C36	270-102	Capacitor, 1000pF 50V 5% Monolithic Chip	
C37	270-102	Capacitor, 1000pF 50V 5% Monolithic Chip	
C38	230-100	Capacitor, Variable .8-8pF	
C39	230-100	Capacitor, Variable .8-8pF	
C40	230-100	Capacitor, Variable .8-8pF	
C41	230-100	Capacitor, Variable .8-8pF	
C42	268-102	Capacitor, .001uF 500V Z5U Disc	
C43	268-102	Capacitor, .001uF 500V Z5U Disc	
L1	350-044	Inductor, Variable 1-2uH	
L2	330-007	Inductor, Fixed 1uH	
L3	350-044	Inductor, Variable 1-2uH	
L4	330-007	Inductor, Fixed 1uH	
L5	350-040	Inductor, Variable 6½ Turn Blue	

PARTS LIST
 CONVERTER 280-480 MHz
 MARTI NO. 800-213

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>BAND M</u>
L6	350-040	Inductor, Variable 6½ Turn Blue	
L7	350-039	Inductor, Variable 2½ Turn Red	
L8	350-039	Inductor, Variable 2½ Turn Red	
L9	330-018	Inductor, Fixed 10uH	280-380
L9	350-121	Inductor, 10 Turn 27 AWG	380-480
L10		Inductor, 5 Turn 18 AWG	280-380
L10	350-127	Inductor, 3 Turn 16 AWG	380-480
L11		Inductor, 4 Turn 18 AWG	280-380
L11	350-127	Inductor, 3 Turn 16 AWG	380-480
L12	350-121	Inductor, 10 Turn 27 AWG	
L13	700-239	Inductor, Stripline	280-380
L13	700-232	Inductor, Stripline	380-480
L14	700-239	Inductor, Stripline	280-380
L14	700-232	Inductor, Stripline	380-480
L15	700-239	Inductor, Stripline	280-380
L15	700-232	Inductor, Stripline	380-480
L16	350-136	Inductor, 14 AWG	
L17	350-135	Inductor, 16 AWG	
M-1	520-052	Module, Temp. Control	
Q1	440-245	Transistor, SRF3017	
Q2	440-245	Transistor, SRF3017	
Q3	440-245	Transistor, SRF3017	
Q4	420-090	Transistor, BFY-90	
Q5	428-837	Transistor, NEO8837	
R1	145-681	Resistor, 680 ohm ¼W 5%	
R2	145-332-1	Resistor, 3300 ohm ¼W 2% Corning	
R3	145-683	Resistor, 68K ohm ¼W 5%	
R4	145-152	Resistor, 1500 ohm ¼W 5%	
R5	145-331	Resistor, 330 ohm ¼W 5%	
R6	145-030	Resistor, 3.3 ohm ¼W 5%	
R7	145-152	Resistor, 1500 ohm ¼W 5%	
R8	145-331	Resistor, 330 ohm ¼W 5%	
R9	145-683	Resistor, 68K ohm ¼W 5%	
R10	145-470	Resistor, 47 ohm ¼W 5%	280-380
R10	145-331	Resistor, 330 ohm ¼W 5%	380-480
R11	145-103	Resistor, 10K ohm ¼W 5%	
R12	145-102	Resistor, 1000 ohm ¼W 5%	
R13	145-470	Resistor, 47 ohm ¼W 5%	280-380
R13	145-331	Resistor, 330 ohm ¼W 5%	380-480
R14	145-103	Resistor, 10K ohm ¼W 5%	280-380
R14	145-223	Resistor, 22K ohm ¼W 5%	380-480
R15	145-272	Resistor, 2700 ohm ¼W 5%	
R16	145-470	Resistor, 47 ohm ¼W 5%	
R17	145-562	Resistor, 5600 ohm ¼W 5%	
R18	145-223	Resistor, 22K ohm ¼W 5%	
R19		Not Used	

PARTS LIST
CONVERTER 280-480 MHz
MARTI No. 800-213

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>BAND MHz</u>
R20	145-474	Resistor, 470K ohm $\frac{1}{4}$ W 5%	
R21	145-222	Resistor, 2200 ohm $\frac{1}{4}$ W 5%	
R22	145-683	Resistor, 68K ohm $\frac{1}{4}$ W 5%	
R23	145-683	Resistor, 68K ohm $\frac{1}{4}$ W 5%	
X-1	350-124	Double Balanced Mixer SBL-1	
Y-1		Crystal, Quartz Overtone	
Y-2		Crystal, Quartz Overtone	



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MARTI Electronics, Inc.
 PO BOX 661 CLEBURNE, TX 76031

DRAWING NO.
800-207

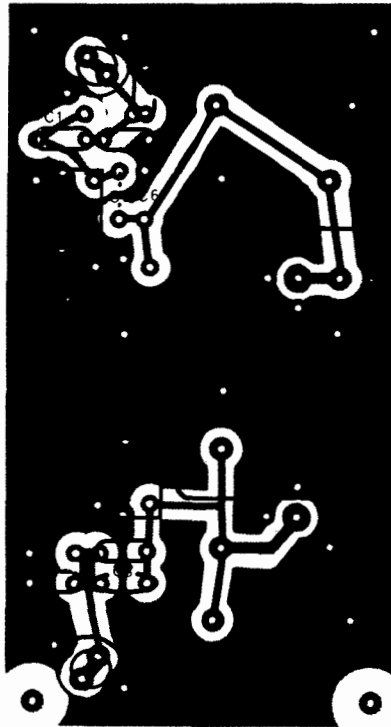
REV.

DATE
11/21/83

APPROVED

USED ON
AR-10, BR-10
CR-10 & R-10

TITLE
IF FILTER BOARD



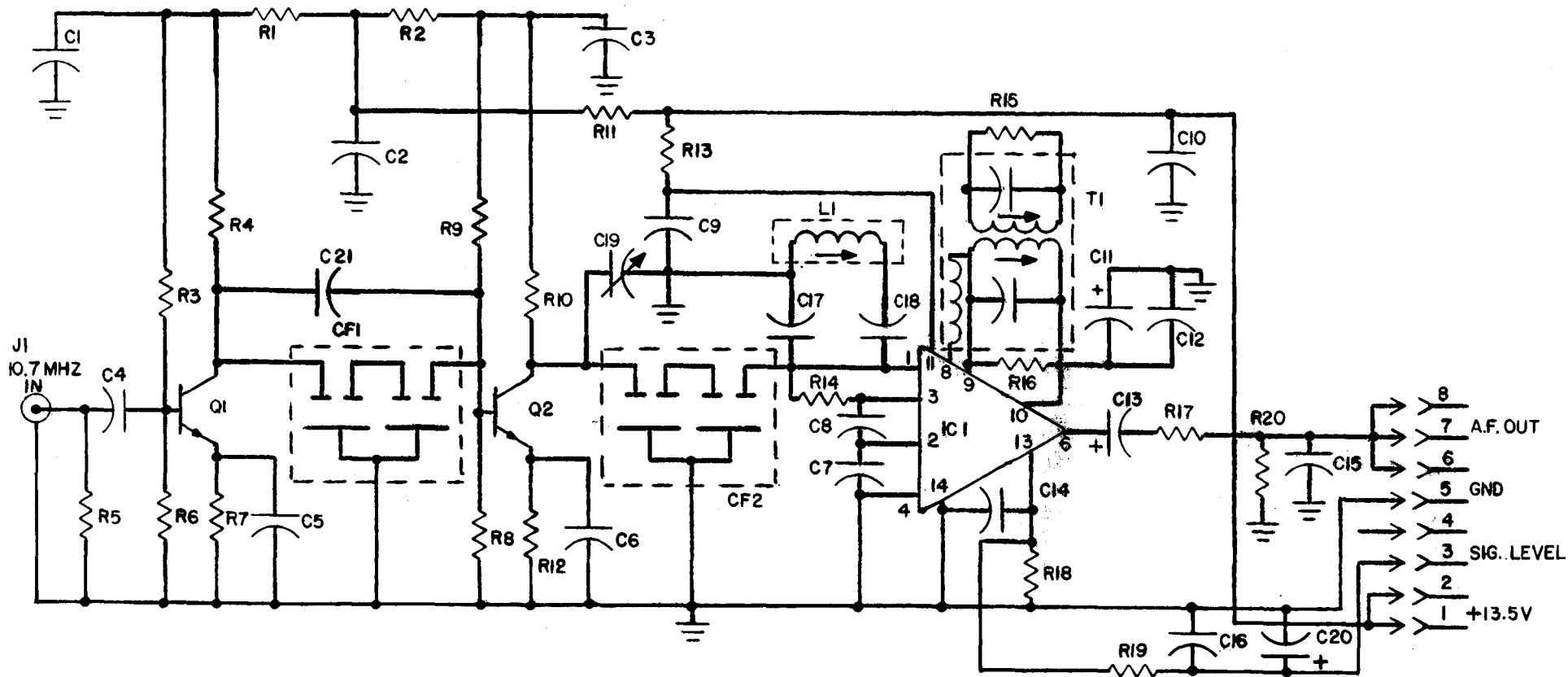
MARTI <i>Electronics, Inc.</i> PO BOX 661 CLEBURNE, TX 76031	DRAWING NO 800-207-1	REV.	DATE 10/15/86	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE IF FILTER PARTS LOCATOR
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PARTS LIST
 I.F. FILTER BOARD
 MARTI NO. 800-207

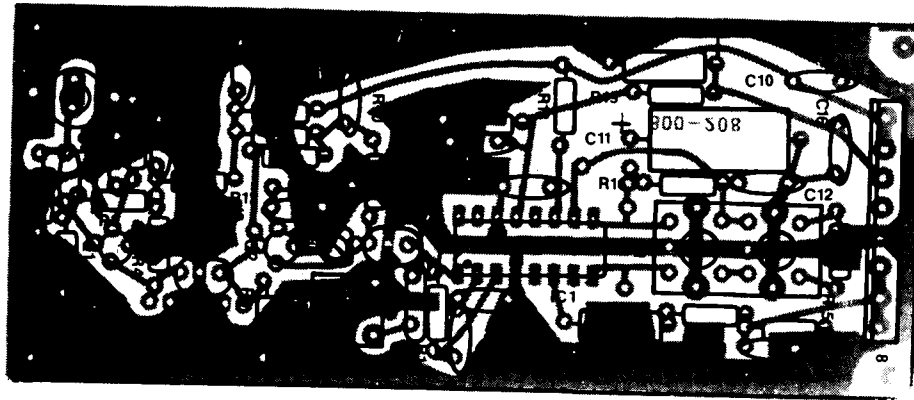
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
<u>F 8 FILTER 8 KHz BW.</u>		
C1	255-101	Capacitor, 100pF 300V 5% Silver Mica
C1	255-470-1	Capacitor, 47pF 300V 5% Silver Mica
C2	255-471	Capacitor, 470pF 300V 5% Silver Mica
C3	255-271	Capacitor, 270pF 300V 5% Silver Mica
C3	255-470-1	Capacitor, 47pF 300V 5% Silver Mica
C4	256-750	Capacitor, 75pF 300V 5% Silver Mica
FL-1	360-029	8 KHz Crystal Filter
L1	350-025	Inductor, 1.5-3uH #387-3
L2	350-025	Inductor, 1.5-3uH #387-3
<u>F25 FILTER 25 KHz BW.</u>		
C1	215-151	Capacitor, 150pF 33V 2.5% Polystyrene
C2	215-102	Capacitor, 1000pF 33V 2.5% Polystyrene
C3	255-471	Capacitor, 470pF 300V 5% Silver Mica
C4	255-050	Capacitor, 5pF 50V 5% NPO Disc
C4	255-161	Capacitor, 160pF 300V 5% Silver Mica
FL-1	360-026	25 KHz Crystal Filter
L1	350-025	Inductor, 1.5-3uH #387-3
L2	350-025	Inductor, 1.5-3uH #387-3
<u>F36 FILTER 36 KHz BW.</u>		
C1	256-680	Capacitor, 68pF 300V 5% Silver Mica
C2	255-241	Capacitor, 240pF 300V 5% Silver Mica
C2	255-361	Capacitor, 360pF 300V 5% Silver Mica
C3	256-680	Capacitor, 68pF 300V 5% Silver Mica
C3	255-150	Capacitor, 15pF 50V 5% NPO Disc
C4	255-161	Capacitor, 160pF 300V 5% Silver Mica
FL-1	360-024	36 KHz Crystal Filter
L1	350-030	Inductor, 3-7uH #387-7
L2	350-030	Inductor, 3-7uH #387-7
<u>F50 FILTER 50 KHz BW.</u>		
C1	255-101	Capacitor, 100pF 300V 5% Silver Mica
C2	215-301	Capacitor, 300pF 33V 2.5% Polystyrene
C2	215-301	Capacitor, 300pF 33V 2.5% Polystyrene
C3	255-100	Capacitor, 10pF 50V 5% NPO Disc
C3	256-750	Capacitor, 75pF 300V 5% Silver Mica
C4	255-161	Capacitor, 160pF 300V 5% Silver Mica
FL-1	360-027	50 KHz Crystal Filter
L1, L2	350-030	Inductor, 3-7uH #387-7

PARTS LIST
 I.F. FILTER BOARD
 MARTI NO. 800-207

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
<u>F75 FILTER 75 KHz BW.</u>		
C1	256-151	Capacitor, 150pF 50V 5% NPO Disc
C1	290-521	Capacitor, Variable 5.0-25pF
C2	256-151	Capacitor, 150pF 50V 5% NPO Disc
C2	290-521	Capacitor, Variable 5.0-25pF
C3	255-241	Capacitor, 240pF 300V 5% Silver Mica
C3	290-521	Capacitor, Variable 5.0-25pF
C4	255-271	Capacitor, 270pF 300V 5% Silver Mica
C4	290-521	Capacitor, Variable 5.0-25pF
C5	255-470-1	Capacitor, 47pF 300V 5% Silver Mica
C6	256-131	Capacitor, 130pF 50V 5% NPO Disc
FL-1	360-025A	75 KHz Crystal Filter
L1	350-025	Inductor, 1.5-3uH #387-3
L2	350-025	Inductor, 1.5-3uH #387-3
L3	350-025	Inductor, 1.5-3uH #387-3
<u>F85 FILTER 85 KHz BW.</u>		
C1	256-151	Capacitor, 150pF 50V 5% NPO Disc
C1	290-521	Capacitor, Variable 5.0-25pF
C2	256-151	Capacitor, 150pF 50V 5% NPO Disc
C2	290-521	Capacitor, Variable 5.0-25pF
C3	255-241	Capacitor, 240pF 300V 5% Silver Mica
C3	290-521	Capacitor, Variable 5.0-25pF
C4	255-271	Capacitor, 270pF 300V 5% Silver Mica
C4	290-521	Capacitor, Variable 5.0-25pF
C5	255-470-1	Capacitor, 47pF 300V 5% Silver Mica
C6	256-131	Capacitor, 130pF 50V 5% NPO Disc
FL-1	360-025B	85 KHz Crystal Filter
L1	350-025	Inductor, 1.5-3uH #387-3
L2	350-025	Inductor, 1.5-3uH #387-3
L3	350-025	Inductor, 1.5-3uH #387-3
<u>F200 FILTER 200 KHz BW.</u>		
C1	256-131	Capacitor, 130pF 50V 5% NPO Disc
C2	256-301	Capacitor, 300pF 50V 5% NPO Disc
C3	255-241	Capacitor, 240pF 300V 5% Silver Mica
C4	255-241	Capacitor, 240pF 300V 5% Silver Mica
FL-1	360-016-1	200 KHz Filter
L1	350-025	Inductor, 1.5-3uH #387-3
L2	350-025	Inductor, 1.5-3uH #387-3



MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-208	REV. 10/86	DATE 9/26/83	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE 10.7 MHZ-IF AMPLIFIER/DETECTOR
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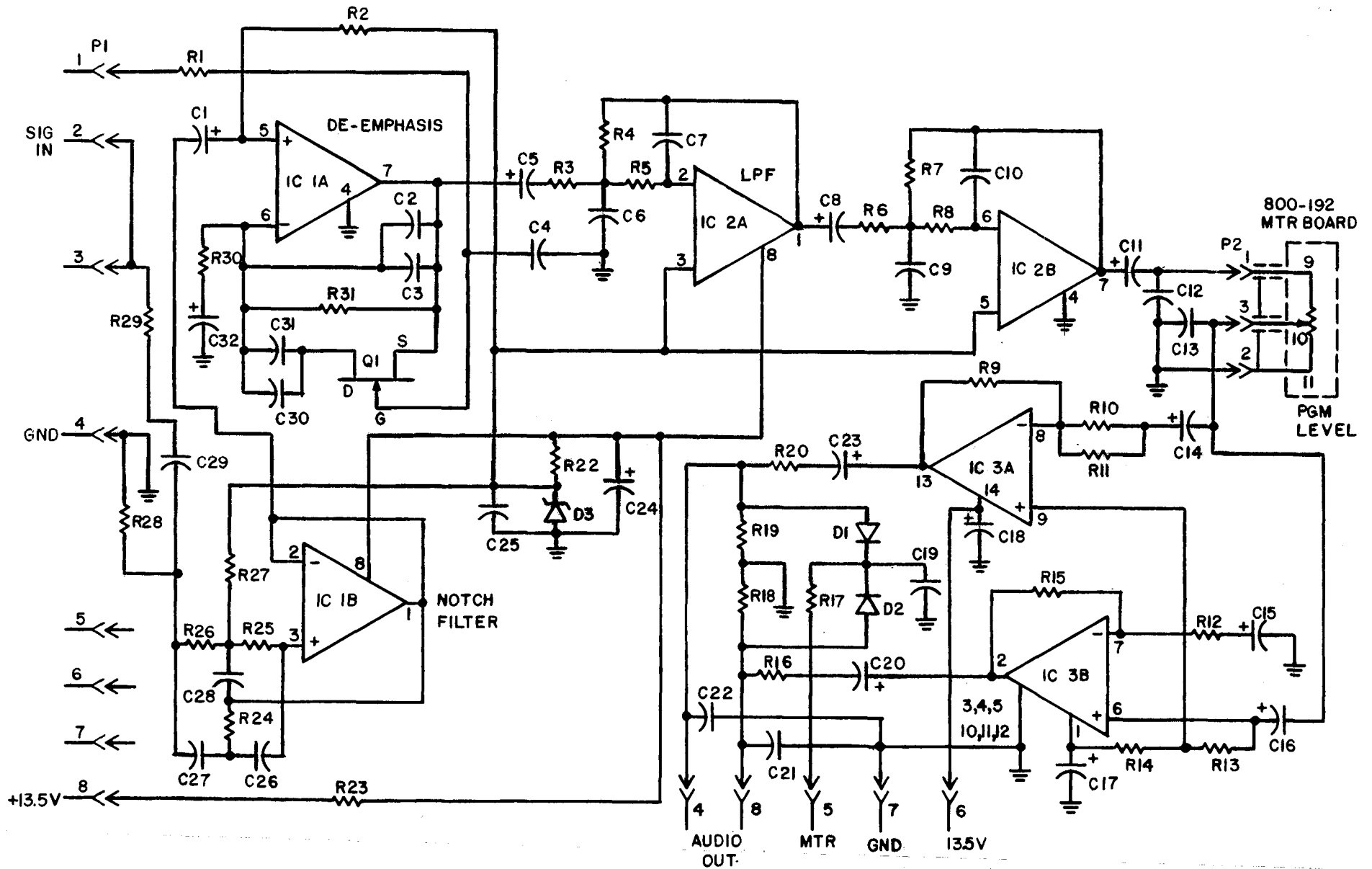
MARTI <i>Electronics, Inc.</i> PO BOX 661 CLEBURNE, TX 76031	DRAWING NO 800-208-1	REV.	DATE 9/84	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE IF AMPLIFIER PARTS LOCATOR
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PARTS LIST
 10.7 MHz IF AMP/DETECTOR
 MARTI NO. 800-208

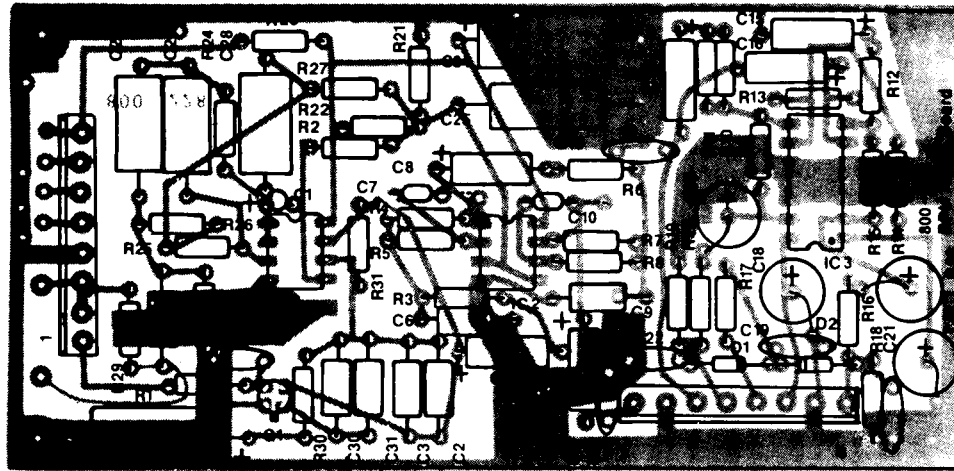
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C1	217-104	Capacitor, .01uF 25V GMV Disc
C2	217-104	Capacitor, .01uF 25V GMV Disc
C3	217-104	Capacitor, .01uF 25V GMV Disc
C4	217-104	Capacitor, .01uF 25V GMV Disc
C5	217-104	Capacitor, .01uF 25V GMV Disc
C6	217-104	Capacitor, .01uF 25V GMV Disc
C7	217-104	Capacitor, .01uF 25V GMV Disc
C8	217-104	Capacitor, .01uF 25V GMV Disc
C9	217-103	Capacitor, .1uF 100V 10% Mylar
C10	217-104	Capacitor, .01uF 25V GMV Disc
C11	219-121	Capacitor, 150uF 25V Electrolytic
C12	217-103	Capacitor, .1uF 100V 10% Mylar
C13	219-200	Capacitor, 22uF 25V Electrolytic
C14	217-103	Capacitor, .1uF 100V 10% Mylar
C15	295-390	Capacitor, 39pF 50V 5% NPO Disc
C16	217-104	Capacitor, .01uF 25V GMV Disc
C17	256-131	Capacitor, 130pF 50V 5% NPO Disc
C18	255-470-1	Capacitor, 47pF 300V 5% Silver Mica
C19	290-521	Capacitor, Variable 5.0-25pF
C20	299-470	Capacitor, 4.7uF 16V 10% Tantalum
C21	255-471	Capacitor, 470pF 300V 5% Silver Mica
CF1	360-028	Filter, Ceramic SFJ 10.7 MA-2
CF2	360-028	Filter, Ceramic SFJ 10.7 MA-2
IC1	401-235	Integrated Circuit, LA1235
L1	350-030	Inductor, 3-7uH 387-7
Q1	440-245	Transistor, SRF3017
Q2	440-245	Transistor, SRF3017
R1	145-182-1	Resistor, 1800 ohm $\frac{1}{4}$ W 2% Corning
R2	145-182-1	Resistor, 1800 ohm $\frac{1}{4}$ W 2% Corning
R3	145-332	Resistor, 3300 ohm $\frac{1}{4}$ W 5%
R4	145-431	Resistor, 430 ohm $\frac{1}{4}$ W 5%
R5	145-102	Resistor, 1000 ohm $\frac{1}{4}$ W 5%
R6	145-222	Resistor, 2200 ohm $\frac{1}{4}$ W 5%
R7	145-471	Resistor, 470 ohm $\frac{1}{4}$ W 5%
R8	145-222	Resistor, 2200 ohm $\frac{1}{4}$ W 5%
R9	145-332	Resistor, 3300 ohm $\frac{1}{4}$ W 5%
R10	145-431	Resistor, 430 ohm $\frac{1}{4}$ W 5%
R11	145-470	Resistor, 47 ohm $\frac{1}{4}$ W 5%
R12	145-471	Resistor, 470 ohm $\frac{1}{4}$ W 5%
R13	145-470	Resistor, 47 ohm $\frac{1}{4}$ W 5%
R14	145-431	Resistor, 430 ohm $\frac{1}{4}$ W 5%
R15	145-222	Resistor, 2200 ohm $\frac{1}{4}$ W 5%
R16	145-472	Resistor, 4700 ohm $\frac{1}{4}$ W 5%

PARTS LIST
10.7 MHz IF AMP/DETECTOR
MARTI NO. 800-208

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
R17	145-470	Resistor, 47 ohm $\frac{1}{2}$ W 5%
R18	145-473	Resistor, 47K ohm $\frac{1}{2}$ W 5%
R19	145-103	Resistor, 10K ohm $\frac{1}{2}$ W 5%
R20	145-103	Resistor, 10K ohm $\frac{1}{2}$ W 5%
T1	350-123	Detector Coil



MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-228	REV.	DATE 6/26/84	APPROVED	USED ON AR-10, BR-10 & CR-10	TITLE AUDIO BOARD
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MARTI <i>Electronics, Inc.</i> PO BOX 661 CLEBURNE, TX 76031	DRAWING NO 800-228-1	REV.	DATE 9/84	APPROVED	USED ON AR-10, BR-10 & CR-10	TITLE AUDIO BOARD PARTS LOCATOR
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PARTS LIST
 AUDIO BOARD
 MARTI NO. 800-228

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C1	299-470	Capacitor, 4.7uF 16V 10% Tantalum
C2	215-102	Capacitor, 1000pF 33V 2.5% Polystyrene
C3	215-202	Capacitor, 2000pF 33V 2.5% Polystyrene
C4	217-104	Capacitor, .01uF 25V GMV Disc
C5	219-200	Capacitor, 22uF 25V Electrolytic
C6, C9	Vary in value according to cutoff frequency of the low-pass filter	
C6, C9	215-202	Capacitor, 2000pF 33V 2.5% Polystyrene 3000Hz, LPF
	215-122	Capacitor, 1200pF 33V 2.5% Polystyrene 8000Hz, LPF
	215-102	Capacitor, 1000pF 33V 2.5% Polystyrene 10,500Hz, LPF
	215-102	Capacitor, 1000pF 33V 2.5% Polystyrene 12,500Hz, LPF
	215-102	Capacitor, 1000pF 33V 2.5% Polystyrene 15,000Hz, LPF
C7	215-151	Capacitor, 150pF 33V 2.5% Polystyrene
C8	219-200	Capacitor, 22uF 25V Electrolytic
C10	215-151	Capacitor, 150pF 33V 2.5% Polystyrene
C11	219-200	Capacitor, 22uF 25V Electrolytic
C12	253-471	Capacitor, 470pF 50V Y5P Disc
C13	253-471	Capacitor, 470pF 50V Y5P Disc
C14	219-200	Capacitor, 22uF 25V Electrolytic
C15	219-080	Capacitor, 10uF 25V Electrolytic
C16	219-200	Capacitor, 22uF 25V Electrolytic
C17	219-121	Capacitor, 150uF 25V Electrolytic
C18	219-251	Capacitor, 220uF 25V Electrolytic
C19	253-471	Capacitor, 470pF 50V Y5P Disc
C20	219-251	Capacitor, 220uF 25V Electrolytic
C21	268-203	Capacitor, .02uF 50V GMV Disc
C22	268-203	Capacitor, .02uF 50V GMV Disc
C23	219-251	Capacitor, 220uF 25V Electrolytic
C24	219-121	Capacitor, 150uF 25V Electrolytic
C25	219-121	Capacitor, 150uF 25V Electrolytic
C26	215-502	Capacitor, 5000pF 50V 5% Polystyrene
C27	215-502	Capacitor, 5000pF 50V 5% Polystyrene
C28	215-103	Capacitor, 10000pF 33V 2.5% Polystyrene
C29	215-392	Capacitor, 3900pF 33V 2.5% Polystyrene
C30	215-102	Capacitor, 1000pF 33V 2.5% Polystyrene
C31	215-202	Capacitor, 2000pF 33V 2.5% Polystyrene
C32	219-121	Capacitor, 150uF 25V Electrolytic
D1	410-914	Diode, 1N4148
D2	410-914	Diode, 1N4148
D3	410-754	Diode, 1N754A
IC1	400-072	Integrated Circuit, TL072CP
IC2	400-072	Integrated Circuit, TL072CP
IC3	400-377	Integrated Circuit, LM377N

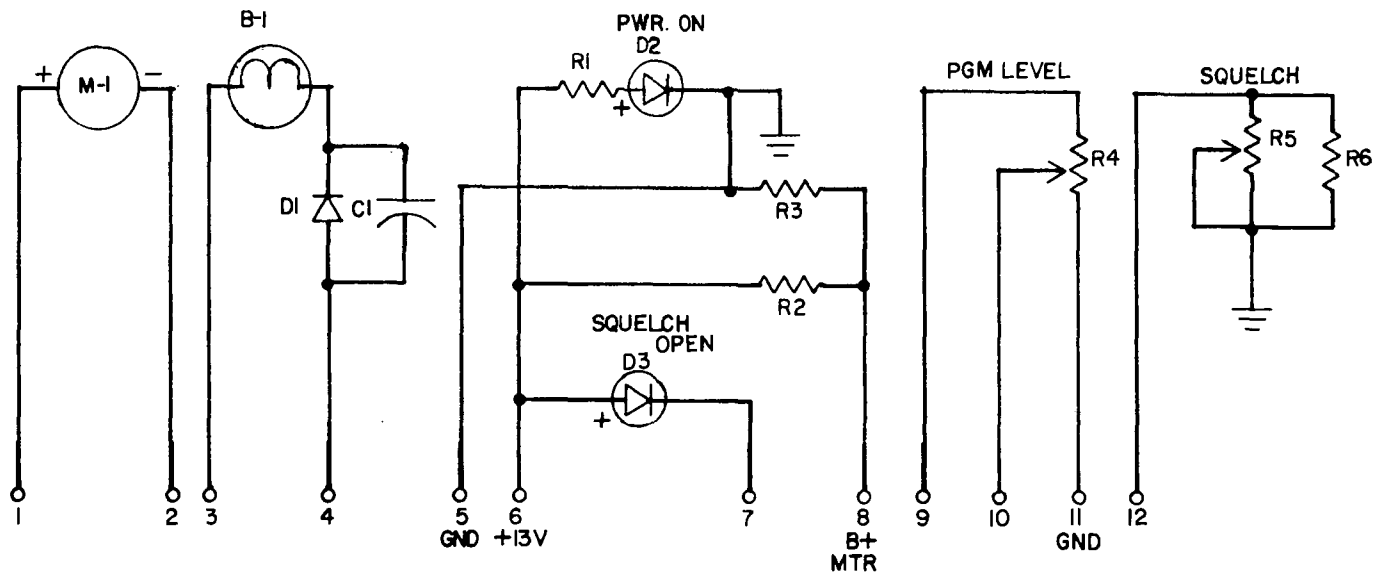
PARTS LIST
 AUDIO BOARD
 MARTI NO. 800-228

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
Q1	423-822	Transistor, 2N3822
R1	145-473	Resistor, 47K ohm $\frac{1}{4}$ W 5%
R2	145-104	Resistor, 100K ohm $\frac{1}{4}$ W 5%
R3-R8	Vary in value according to the cutoff frequency of the low-pass filter	
<u>For 3000 Hz Cutoff</u>		
R3, R6	145-683	Resistor, 68K ohm $\frac{1}{4}$ W 5%
R4, R7	145-204	Resistor, 200K ohm $\frac{1}{4}$ W 5%
R5, R8	145-513	Resistor, 51K ohm $\frac{1}{4}$ W 5%
<u>For 8000 Hz Cutoff</u>		
R3, R6	145-433	Resistor, 43K ohm $\frac{1}{4}$ W 5%
R4, R7	145-753	Resistor, 75K ohm $\frac{1}{4}$ W 5%
R5, R8	145-273	Resistor, 27K ohm $\frac{1}{4}$ W 5%
<u>For 10,500 Hz Cutoff</u>		
R3, R6	145-433	Resistor, 43K ohm $\frac{1}{4}$ W 5%
R4, R7	145-563	Resistor, 56K ohm $\frac{1}{4}$ W 5%
R5, R8	145-249-1	Resistor, 24.9K ohm $\frac{1}{4}$ W 1% Corning
<u>For 12,500 Hz Cutoff</u>		
R3, R6	145-393	Resistor, 39K ohm $\frac{1}{4}$ W 5%
R4, R7	145-473	Resistor, 47K ohm $\frac{1}{4}$ W 5%
R5, R8	145-223	Resistor, 22K ohm $\frac{1}{4}$ W 5%
<u>For 15,000 Hz Cutoff</u>		
R3, R6	145-333	Resistor, 33K ohm $\frac{1}{4}$ W 5%
R4, R7	145-393	Resistor, 39K ohm $\frac{1}{4}$ W 5%
R5, R8	145-183	Resistor, 18K ohm $\frac{1}{4}$ W 5%
R9	145-104-1	Resistor, 100K ohm $\frac{1}{4}$ W 2% Corning
R10	145-223-1	Resistor, 22K ohm $\frac{1}{4}$ W 2% Corning
R11	145-104	Resistor, 100K ohm $\frac{1}{4}$ W 5%
R12	145-223-1	Resistor, 22K ohm $\frac{1}{4}$ W 2% Corning
R13	145-104	Resistor, 100K ohm $\frac{1}{4}$ W 5%
R14	145-030	Resistor, 3.3 ohm $\frac{1}{4}$ W 5%
R15	145-104-1	Resistor, 100K ohm $\frac{1}{4}$ W 2% Corning
R16	145-100	Resistor, 10 ohm $\frac{1}{4}$ W 5%
R17	145-123	Resistor, 12K ohm $\frac{1}{4}$ W 5%
R18	145-122-1	Resistor, 1200 ohm $\frac{1}{4}$ W 2% Corning
R19	145-182-1	Resistor, 1800 ohm $\frac{1}{4}$ W 2% Corning
R20	145-100	Resistor, 10 ohm $\frac{1}{4}$ W 5%
R21		Not Used
R22	145-102	Resistor, 1000 ohm $\frac{1}{4}$ W 5%
R23	145-470	Resistor, 47 ohm $\frac{1}{4}$ W 5%
R24	145-474-1	Resistor, 475K ohm $\frac{1}{4}$ W 1% Corning
R25	145-105-1	Resistor, 1meg ohm $\frac{1}{4}$ W 2% Corning
R26	145-105-1	Resistor, 1meg ohm $\frac{1}{4}$ W 2% Corning
R27	145-105-1	Resistor, 1meg ohm $\frac{1}{4}$ W 2% Corning

PARTS LIST
AUDIO BOARD
MARTI NO. 800-228

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
R28	145-474-1	Resistor, 475K ohm $\frac{1}{2}$ W 1% Corning
R29	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R30	145-102	Resistor, 1000 ohm $\frac{1}{2}$ W 5%
R31	145-249-1	Resistor, 24.9K ohm $\frac{1}{2}$ W 1% Corning

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MARTI Electronics, Inc.
PO BOX 661 CLEBURNE, TX 76031

DRAWING NO.
800-192

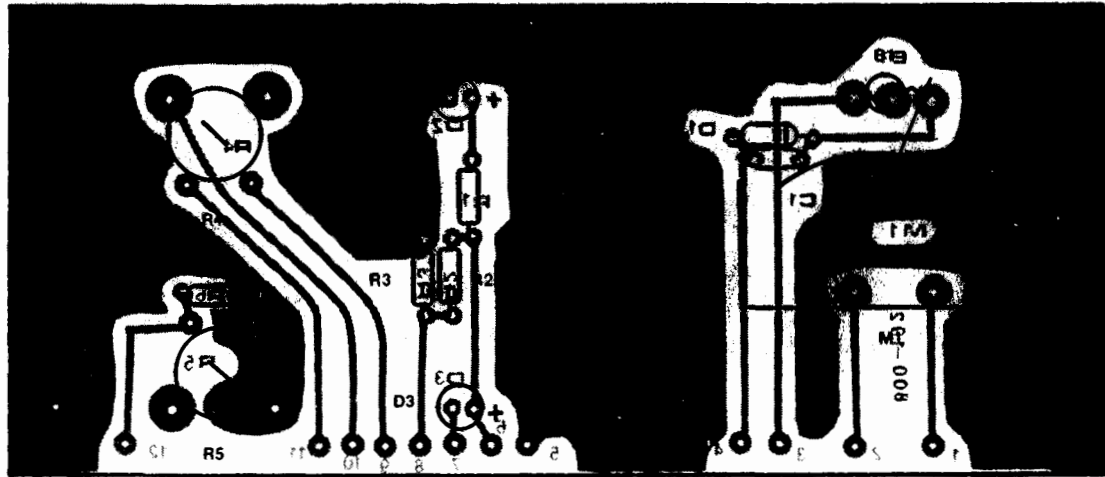
REV.

DATE
9-16-83

APPROVED

USED ON
BR-10
CR-10 & R-10

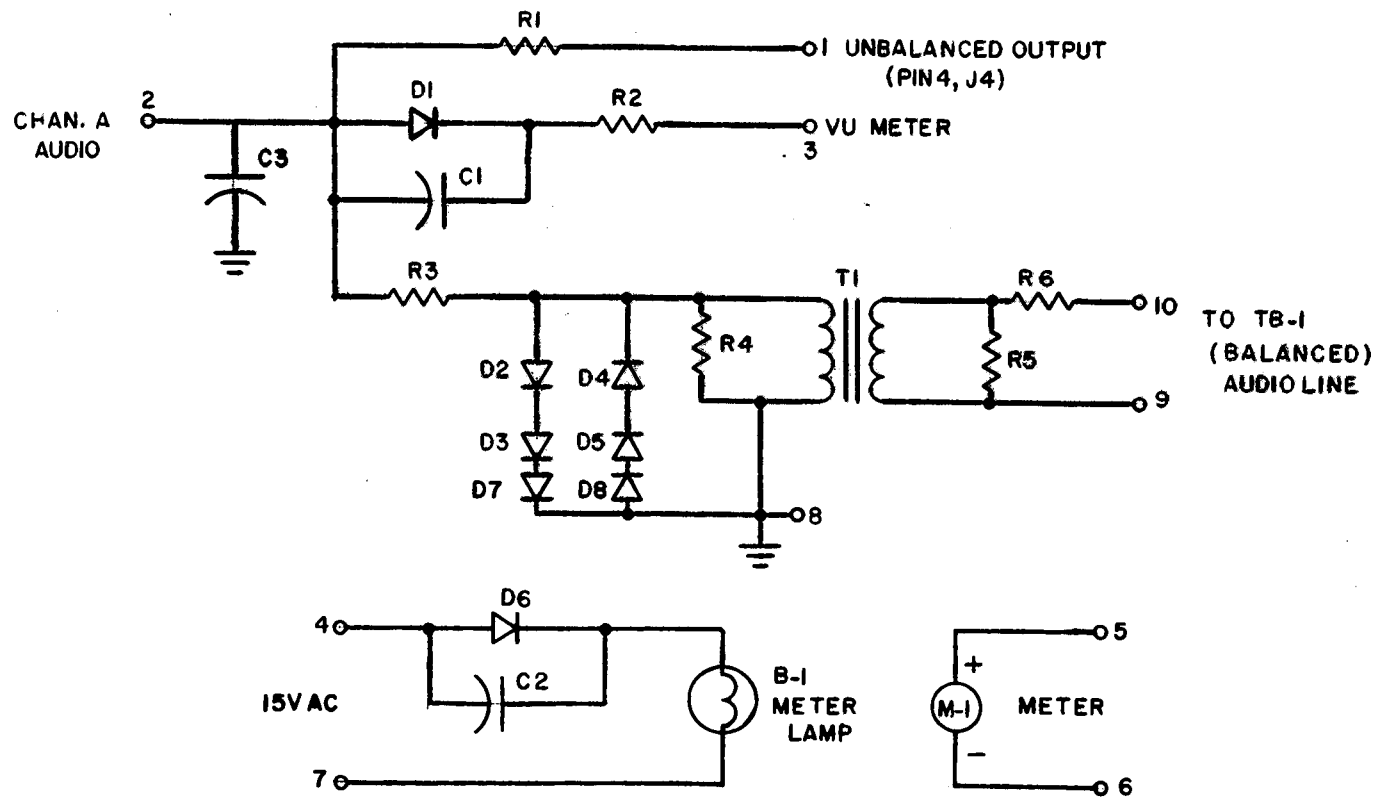
TITLE
METER/CONTROL BOARD

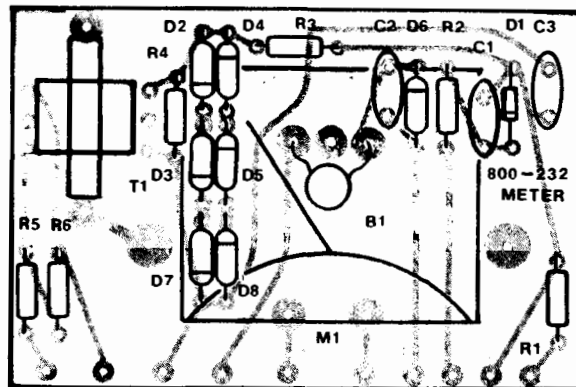


MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO 800-192-1	REV.	DATE 9/84	APPROVED	USED ON BR-10, CR-10 BR-10	TITLE METER BOARD PARTS LOCATOR
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PARTS LIST
METER BOARD
MARTI NO. 800-192

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
B-1	510-196	Subminiature Lamp
C1	217-104	Capacitor, .01uF 25V GMV Disc
D1	414-007	Diode, 1N4007
D2	410-951	Diode, LED TIL220
D3	410-951	Diode, LED TIL220
M-1	030-039	Meter, VU
R1	145-471	Resistor, 470 ohm $\frac{1}{4}$ W 5%
R2	145-473	Resistor, 47K ohm $\frac{1}{4}$ W 5%
R3	145-431	Resistor, 430 ohm $\frac{1}{4}$ W 5%
R4	100-523	Potentiometer, 5K ohm Trimmer
R5	100-523	Potentiometer, 5K ohm Trimmer
R6	145-222	Resistor, 2200 ohm $\frac{1}{4}$ W 5%

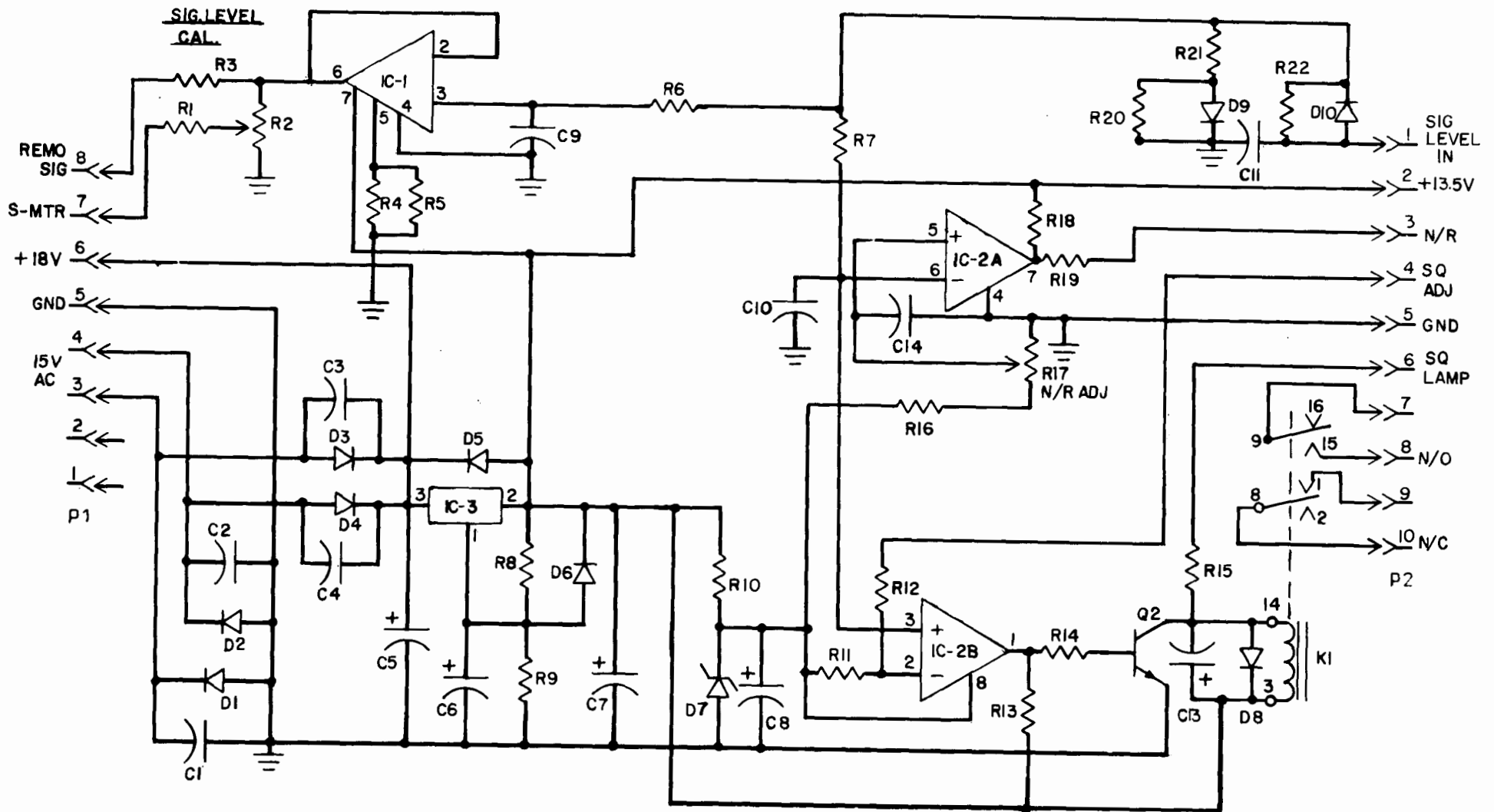




MARTI <i>Electronics, Inc.</i> PO BOX 661 CLEBURNE, TX 76031	DRAWING NO 800-232-1	REV.	DATE 10/15/86	APPROVED	USED ON AR-10	TITLE METER BOARD PARTS LOCATOR
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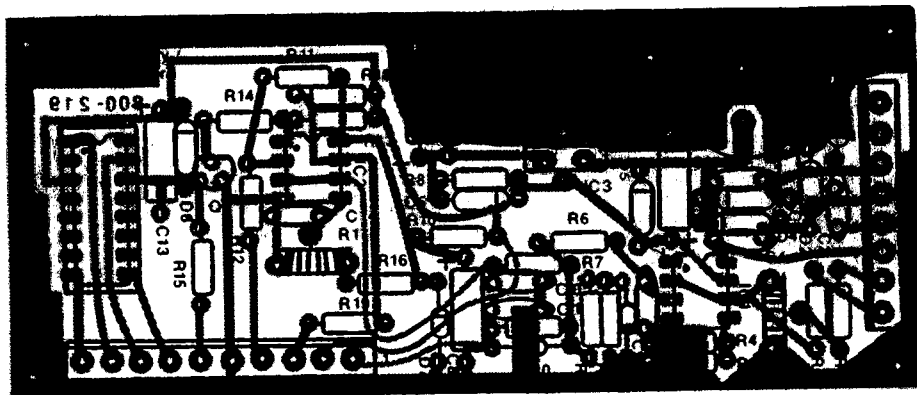
PARTS LIST
 METER BOARD AR-10
 MARTI NO. 800-232

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
B-1	510-196	Subminiature Lamp
C1	268-102	Capacitor, .001uF 500V Z5U Disc
C2	268-102	Capacitor, .001uF 500V Z5U Disc
C3	268-203	Capacitor, .02uF 50V GMV Disc
D1	410-914	Diode, 1N4148
D2	414-007	Diode, 1N4007
D3	414-007	Diode, 1N4007
D4	414-007	Diode, 1N4007
D5	414-007	Diode, 1N4007
D6	414-007	Diode, 1N4007
D7	414-007	Diode, 1N4007
D8	414-007	Diode, 1N4007
M-1	030-034	Meter, VU
R1	145-102	Resistor, 1000 ohm $\frac{1}{4}$ W 5%
R2	145-272	Resistor, 2700 ohm $\frac{1}{4}$ W 5%
R3	145-122-1	Resistor, 1200 ohm $\frac{1}{4}$ W 2% Corning
R4	145-272	Resistor, 2700 ohm $\frac{1}{4}$ W 5%
R5	145-680	Resistor, 68 ohm $\frac{1}{4}$ W 5%
R6	145-272	Resistor, 2700 ohm $\frac{1}{4}$ W 5%
T1	310-013	Transformer



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MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-219	REV.	DATE 9/27/83	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE POWER SUPPLY/SQUELCH BOARD
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MARTI <i>Electronics, Inc.</i> PO BOX 661 CLEBURNE, TX 76031	DRAWING NO 800-219-1	REV.	DATE 9/84	APPROVED	USED ON AR-10, BR-10 CR-10 & R-10	TITLE POWER SUPPLY PARTS LOCATOR
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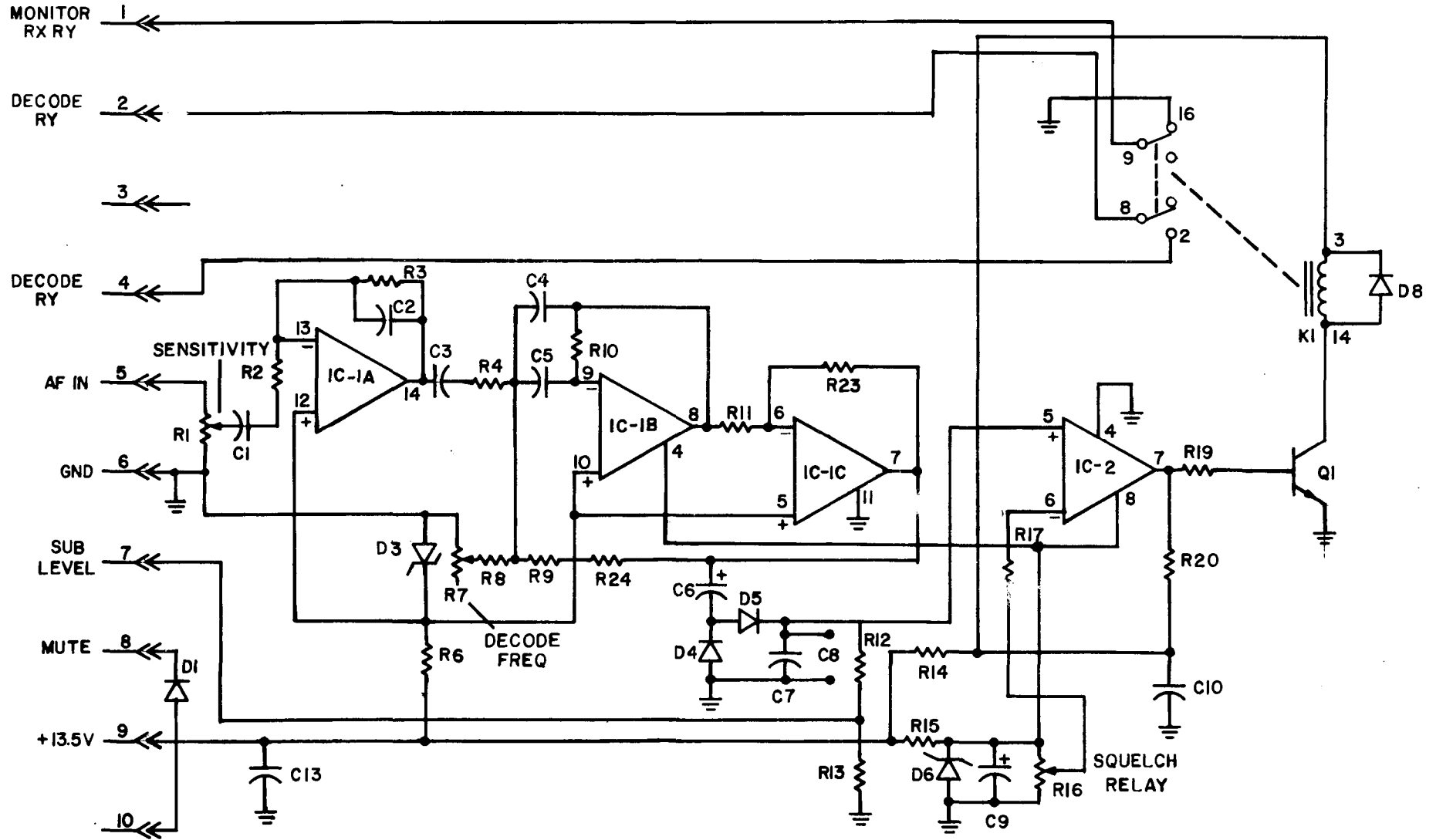
PARTS LIST
 POWER SUPPLY BOARD
 MARTI NO. 800-219

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C1	268-102	Capacitor, .001uF 500V Z5U Disc
C2	268-102	Capacitor, .001uF 500V Z5U Disc
C3	268-102	Capacitor, .001uF 500V Z5U Disc
C4	268-102	Capacitor, .001uF 500V Z5U Disc
C5	219-332	Capacitor, 3300uF 25V Electrolytic
C6	219-200	Capacitor, 22uF 25V Electrolytic
C7	219-200	Capacitor, 22uF 25V Electrolytic
C8	219-200	Capacitor, 22uF 25V Electrolytic
C9	217-103	Capacitor, .1uF 100V 10% Mylar
C10	217-103	Capacitor, .1uF 100V 10% Mylar
C11	217-103	Capacitor, .1uF 100V 10% Mylar
C12		Not Used
C13	219-080	Capacitor, 10uF 25V Electrolytic
C14	217-103	Capacitor, .1uF 100V 10% Mylar
D1	414-007	Diode, 1N4007
D2	414-007	Diode, 1N4007
D3	414-007	Diode, 1N4007
D4	414-007	Diode, 1N4007
D5	414-007	Diode, 1N4007
D6	414-007	Diode, 1N4007
D7	410-110	Diode, 1N4741 11V 5% Zener
D8	414-007	Diode, 1N4007
D9	410-914	Diode, 1N4148
D10	410-914	Diode, 1N4148
IC1	400-091	Integrated Circuit, TL091CP
IC2	400-293	Integrated Circuit, LM393P
IC3	400-317	Integrated Circuit, LM317T
J1	550-138	Connector, 8 pin
J2	550-123	Connecotr, 10 pin
K1	570-035	Relay, HB2E-DC12V
Q1		Not Used
Q2	425-301	Transistor, 2N3904
R1	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R2	100-501	Potentiometer, 500 ohm Trimmer
R3	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R4	145-100	Resistor, 10 ohm $\frac{1}{2}$ W 5%
R5	145-220	Resistor, 22 ohm $\frac{1}{2}$ W 5%
R6	145-102	Resistor, 1000 ohm $\frac{1}{2}$ W 5%
R7	145-102	Resistor, 1000 ohm $\frac{1}{2}$ W 5%
R8	145-241-1	Resistor, 240 ohm $\frac{1}{2}$ W 2% Corning
R9	145-232	Resistor, 2.32K ohm 1% Corning
R10	145-101	Resistor, 100 ohm $\frac{1}{2}$ W 5%
R11	145-103	Resistor, 10K ohm $\frac{1}{2}$ W 5%
R12	145-471	Resistor, 470 ohm $\frac{1}{2}$ W 5%

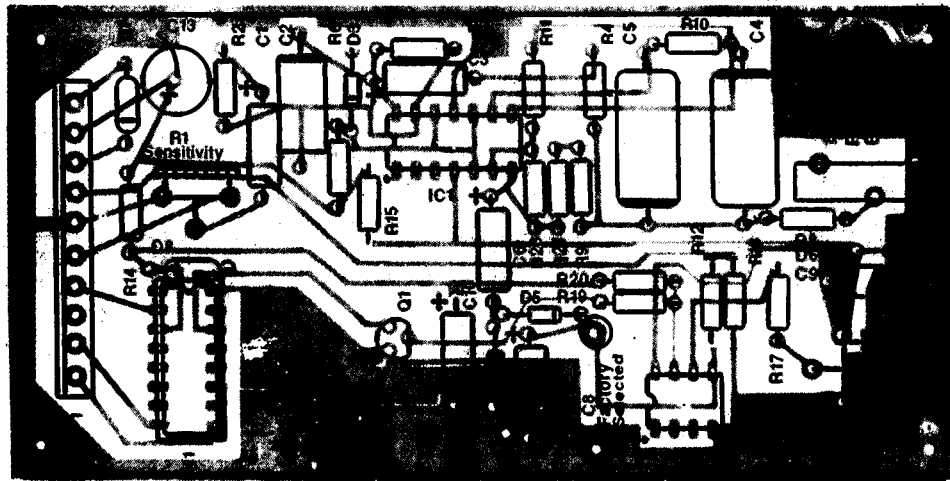
PARTS LIST
POWER SUPPLY BOARD
MARTI NO. 800-219

<u>LIST</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
R13	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R14	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R15	145-471	Resistor, 470 ohm $\frac{1}{2}$ W 5%
R16	145-103	Resistor, 10K ohm $\frac{1}{2}$ W 5%
R17	100-522	Potentiometer, 5K ohm Trimmer
R18	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R19	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R20	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%
R21	145-333	Resistor, 33K ohm $\frac{1}{2}$ W 5%

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MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-229	REV. 10/86	DATE 7/17/84	APPROVED	USED ON AR-10, BR-10 & CR-10	TITLE DECODE BOARD
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MARTI Electronics, Inc. PO BOX 661 CLEBURNE, TX 76031	DRAWING NO. 800-229-1	REV.	DATE 10/15/86	APPROVED	USED ON AR-10, BR-10 & CR-10	TITLE DECODE BOARD PARTS LOCATOR
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PARTS LIST
 DECODE BOARD
 MARTI NO. 800-229

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C1	219-200	Capacitor, 22uF 25V Electrolytic
C2	215-103	Capacitor, 10000pF 33V 2.5% Polystyrene
C3	219-200	Capacitor, 22uF 25V Electrolytic
C4	215-473	Capacitor, 47000pF 33V 2.5% Polystyrene
C5	215-473	Capacitor, 47000pF 33V 2.5% Polystyrene
C6	219-200	Capacitor, 22uF 25V Electrolytic
C7	219-200	Capacitor, 22uF 25V Electrolytic
C8		Factory Selected
C9	219-200	Capacitor, 22uF 25V Electrolytic
C10	219-200	Capacitor, 22uF 25V Electrolytic
C11		Not Used
C12		Not Used
C13	219-251	Capacitor, 220uF 25V Electrolytic
D1	414-007	Diode, 1N4007
D2		Not Used
D3	410-754	Diode, 1N754A
D4	410-914	Diode, 1N4148
D5	410-914	Diode, 1N4148
D6	410-910	Diode, 1N4739A
D7		Not Used
D8	414-007	Diode, 1N4007
IC1	400-740	Integrated Circuit, TL084CN
IC2	400-293	Integrated Circuit, LM393P
K1	570-035	Relay, HB2-DC12V
Q1	425-301	Transistor, 2N3904
R1	100-104-1	Potentiometer, 100K ohm Trimmer
R2	145-104-1	Resistor, 100K ohm $\frac{1}{2}$ W 2% Corning
R3	145-225	Resistor, 2.2meg ohm $\frac{1}{2}$ W 5%
R4	145-104-1	Resistor, 100K ohm $\frac{1}{2}$ W 2% Corning
R5		Not Used
R6	145-102	Resistor, 1000 ohm $\frac{1}{2}$ W 5%
R7	100-203	Potentiometer, 20K Cermet
R8	145-223-1	Resistor, 22K ohm $\frac{1}{2}$ W 2% Corning
R9	145-683-1	Resistor, 68K ohm $\frac{1}{2}$ W 2% Corning
R10	145-684-1	Resistor, 681K ohm $\frac{1}{2}$ W 1% Corning
R11	145-474-1	Resistor, 475K ohm $\frac{1}{2}$ W 1% Corning
R12	145-822	Resistor, 8200 ohm $\frac{1}{2}$ W 5%
R13	145-103	Resistor, 10K ohm $\frac{1}{2}$ W 5%
R14	145-470	Resistor, 47 ohm $\frac{1}{2}$ W 5%
R15	145-181	Resistor, 180 ohm $\frac{1}{2}$ W 5%
R16	100-522	Potentiometer, 5K ohm Trimmer
R17	145-104	Resistor, 100K ohm $\frac{1}{2}$ W 5%
R18		Not Used
R19	145-472	Resistor, 4700 ohm $\frac{1}{2}$ W 5%

PARTS LIST
DECODE BOARD
MARTI NO. 800-229

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
R20	145-472	Resistor, 4700 ohm $\frac{1}{4}$ W 5%
R21		Not Used
R22		Not Used
R23	145-105-1	Resistor, 1meg ohm $\frac{1}{4}$ W 2% Corning
R24	145-684-1	Resistor, 681K ohm $\frac{1}{4}$ W 1% Corning