Instruction Manual

R-15C
Studio-Transmitter-Link
Receiver

MARTI

WARNING

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

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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.

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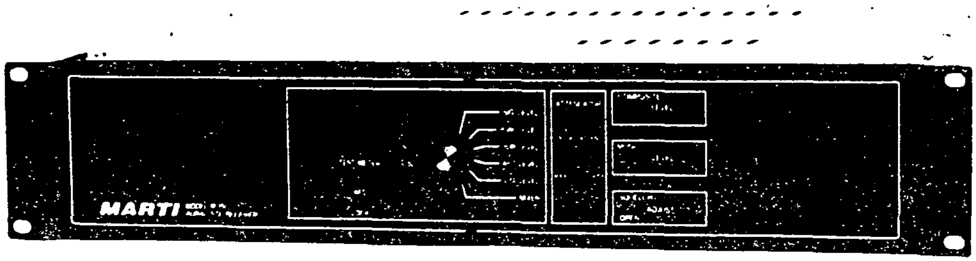
Introduction



The *Marti* STL-15C **Transmitter** with companion **R-15C Receiver**, form a high quality, frequency synthesized, point-to-point, line of sight, radio communications link. These systems are available in frequency bands from 140 MHz to 960 MHz and may be factory configured for operation from various power sources. Depending upon available channel bandwidth, these systems can transmit one of the following:

- **Composite FM Stereo audio with two subcarriers***
- **Monophonic audio with two subcarriers**
- **Digital stereo audio (requires external modems)**
- **Multi-channel audio or data (requires external MUX)**
- **Digital data (requires external modems)**

Complex systems can be built from basic STL-15C transmitters and R-15C receivers having multiple relay (repeaters), bi-directional (full duplex), and automatic switching hot standby features.

Composite system specifications

Stereo separation:	55 dB or better 50 Hz - 15 KHz with 250 KHz IF Filter 50 dB with 200 KHz IF Filter
Frequency response:	Composite channel ±0.2 dB 30 Hz - 53 KHz Wide band channel ±0.3 dB 30 Hz - 100 KHz

Distortion:	0.2% or less 30 Hz - 15 KHz (demodulated, de-emphasized, LP filtered left or right channel)
Noise:	more than 72 dB below 100% modulation (demodulated, de-emphasized, LP filtered left or right channel)
Emission:	194 KF8E (without subcarrier) 280 KF8E (with 1 subcarrier) 490 KF8E (with 2 subcarriers)

* 940 - 960 MHz system, 500 KHz channels. Narrower bandwidths at reduced specifications.

Monophonic system specifications

Frequency response:	±0.25 dB 30 Hz - 15 KHz
Distortion:	0.2% or less 30 Hz - 15 KHz
Noise:	more than 72 dB below 100% modulation (75 μs de-emphasis)
Emission:	194 KF8E (mono channel with subcarrier)
Pre-emphasis	Adjustable 0, 25, 50, or 75 microseconds

Model R-15C
Aural STL Receiver

Specifications

Frequency range:	140 - 180 MHz	R-15C/150
	200 - 260 MHz	R-15C/215
	280 - 340 MHz	R-15C/300
	400 - 480 MHz	R-15C/450
	890 - 960 MHz	R-15C/950

Sensitivity:	Composite stereo demodulated, de-emphasized, LP filtered, or monaural 3 microvolts input for 50 dB signal/noise ratio 9 microvolts input for 60 dB signal/noise ratio 75 microvolts input for ultimate signal/noise ratio (typically 75 dB or better
RF Input Impedance and Connector:	50 ohms, type UG-58 (N female)
Selectivity:	IF filter bandwidth is determined by the subcarrier(s) on the system and interference conditions. Minimum necessary bandwidth is selected from options:

Filter	3 dB	60 dB (bandwidth, KHz)
F200	190	450
F250	220	530
F450	280	900

Spurious Response:	-90 dB, 140-480 MHz; -70 dB, 890-960 MHz
Frequency Stability:	± .00025%, -20°C to +50°C
Frequency Synthesizer:	Frequency selected by 16 DIP switches, maximum resolution 12.5 KHz
Monophonic Audio Output:	Balanced 600 ohms, level adjustable -30 dBm to +10 dBm at front panel, transformer isolated and floating (may be strapped for transformerless output) barrier strip terminals. Response 30 Hz - 15 KHz ± 0.25 dB.
Composite Audio Output:	Level adjustable 1.8 v P-P to 3.5 v P-P at front panel, unbalanced BNC connector; composite frequency response 30 Hz - 53 KHz ±0.2 dB.
Subcarrier Outputs:	Two unbalanced outputs, BNC connectors, selectable high pass filtering for monophonic or composite stereo modes. Subcarrier output levels are 2 - 3 v. P-P for 10% subcarrier insertion at the STL-15C transmitter. Subcarrier high pass filter cut-off frequency is 25 KHz in "mono mode" and 80 KHz in "composite mode."
Digital Output:	The J2 "Composite Output" BNC connector can be converted to a "Digital" output by connecting an alternate shielded wire by changing two pins in a cable connector. The "Digital" output is unfiltered, unprocessed baseband having a 3 v. P-P level and a response of 30 Hz - 200 KHz.
Front Panel Controls:	10 dB Attenuator, Composite Level Adjust, Mono Level Adjust, Squelch Adjust, and Meter Switch.

Metering and Indicators:	**Test meter** reads **Signal Level, Program Level** (mono or composite), **Subcarrier Level, AFC Level, Local Oscillator Level,** and **Mixer Level.** LED's indicate **AFC Lock, Composite Mode, Mono Mode,** and **Squelch Open.**
Automatic Changeover:	Provision for automatic changeover by addition of ARS-2 Automatic Receiver Switcher.
Accessory connector:	15 pin D connector on rear panel provides filtered access to **+13.5 v regulated bus, +18 v unregulated supply, Squelch relay contacts.**
Power Requirements:	120/220/240 VAC*, 50/60 Hz, 20 watts or 11 - 14 VDC negative ground or 22 - 28 VDC** negative ground at 600 ma. (900 ma. initial warmup.
AC Fuse Rating:	For 120 v. use **0.5 Amp fuse** For 220 v. use **0.25 Amp fuse**
Dimensions:	3.5 inches High x 19 inches Wide x 13 inches Deep 8.89 cm High x 48.26 cm Wide x 33.02 cm Deep
Weight:	Net 9 pounds. Domestic packed 13 pounds. Net 4.1 kilograms. Export packed 5.9 kilograms.

*** Voltage must be specified with order.**
**** Requires APS-28/18 Power Supply.**

Specifications subject to change without notice

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 upon 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.

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. Strong radio-frequency (RF) fields should be avoided where possible. Extensive shielding and filtering have 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.

Receiver connections for Composite Stereo operation

(Refer to Drawing 702-096)

1. The composite signal output of the R-15C Receiver is the BNC jack labeled "**J2 COMPOSITE**". The composite output is connected to the composite signal input of the FM transmitter exciter by a short length of RAG-58 coaxial cable.

2. A subcarrier demodulator or remote control (operating above 92 KHz) can be connected to "**J1 SUBCARRIER NO. 1**" and/or "**J3 SUBCARRIER NO. 2**" output BNC jack. The ability of the STL-15C system to transmit subcarriers depends upon the channel bandwidth available. The R-15C receiver IF filter selectivity must be compatible with the available interference free channel bandwidth. Using 50 KHz deviation for 100% modulation, the approximate bandwidth required for various sub carriers follows:

Subcarrier Frequency	Receiver IF Bandwidth (3dB)
67 KHz	234 KHz
92 KHz	284 KHz
110 KHz	320 KHz
180 KHz	460 KHz

Actual bandwidth may require an additional 10% to 15% to allow for the modulation on the subcarrier itself. With the severe STL channel crowding with resulting interference prevalent around large markets, subcarriers above 110 KHz are not recommended.

3. The accessory connector has several uses such as remote control, automatic switching, and external DC power. Connection instructions are furnished with these accessories.

4. Connect STL receiving antenna coax to "**J6 ANTENNA**". This requires a type N male connector. A short flexible jumper (20" max.) may be used between J6 and semi-flexible coax. **Marti Part No. 585-017** double shielded, low-loss RG 214/U jumper is recommended.

5. Connect AC line receptacle on back of the receiver to a 115 volt AC power source with special cord set supplied. **USE ONLY 3-PRONG GROUNDED OUTLET RECEPTACLES FOR SAFETY.**

WARNING

This equipment must be operated with a 3-prong, grounded, 115 volt, AC outlet receptacle! Failure to use a properly grounded outlet could result in a safety hazard or faulty equipment performance!

(See next page for receiver connections for monophonic operation.)

R-15C Receiver connections for Monophonic operation

(Refer to Drawing 702-096)

1. Monophonic program audio output is available at "600 ohm balanced" audio output screw terminals, **TB-1**. Use shielded wire. Program audio output level is +10 dBm max, 600 ohms balanced, and isolated from ground. For dual channel stereo, repeat instructions at second receiver. Audio processing requirements will be discussed in the "OPERATION" section of this manual.

2. Connect a remote control or subcarrier demodulator to the jack marked, **"J1"**. The subcarrier load may be 600 to 5K ohms impedance, and the output level is approximately one (1) volt RMS. Systems factory supplied with 250 KHz IF bandwidth will carry subcarriers up to 92 KHz. For other subcarrier frequencies or narrow IF bandwidth systems contact the factory. A second subcarrier system can be connected to "J3". If a dual channel stereo STL is used, connect one subcarrier generator to "**J1**" or "**J3**" on each channel's transmitter and receiver.

3. The accessory connector has several uses such as automatic switching, and external DC power. Connection instructions are furnished with these accessories.

4. Connect STL receiving antenna coax to, **J6 ANTENNA**. This requires a type N male connector. A short flexible jumper (20" max.) may be used between **J6** and semi-flexible coax. Marti **Part No. 585-017** double shielded, low-loss RG-214/U jumper is recommended.

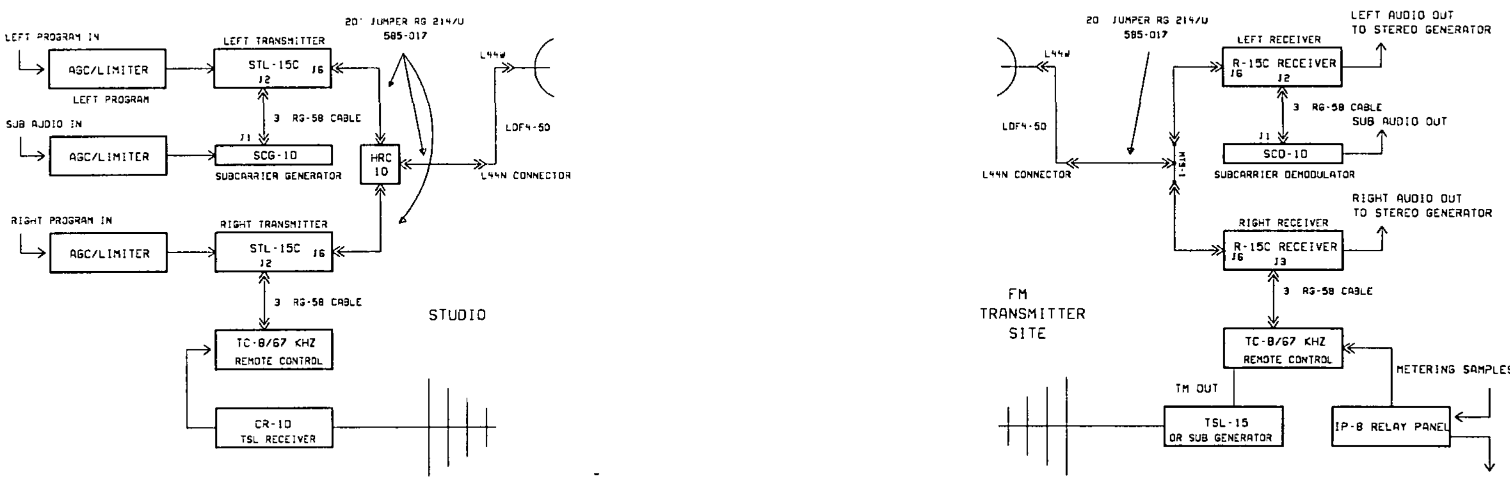
5. For dual channel stereo, use **Model MTS-1 Receiver Combiner** between **J6** of each receiver. Use a **Part No. 585-017** jumper between the **ANTENNA** connector of the **MTS-1** and the semi-rigid coax. Refer to **Drawing 702-096.**

6. Connect AC line receptacle on back of the receiver to a 115 volt AC power source with special cord set supplied. **USE ONLY 3-PRONG GROUNDED OUTLET RECEPTACLES FOR SAFETY.**

WARNING

This equipment must be operated with a 3-prong, grounded, 115 volt, AC outlet receptacle! Failure to use a properly grounded outlet could result in a safety hazard or faulty equipment performance!

COMPOSITE STEREO



DUAL CHANNEL STEREO

FOR DETAILED INSTRUCTIONS READ EQUIPMENT INSTRUCTION MANUALS
FOR MONO OPERATION OMIT LEFT TRANSMITTER, RECEIVER, HRC-10 AND MTS-1

MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 7/28/93 702-096	TITLE COMPOSITE & DUAL CHANNEL STEREO STL SYSTEM BLOCK DIAGRAM

Antennas

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. Errors are frequently made in assembly of the RF feed dipole in multi-element grid parabola antennas. The feed dipole elements must be installed in the same plane as the reflector grids. In other words, if the reflector grid elements are horizontal, the feed dipole elements must also be horizontal. Cross polarization of grid and feed dipole will result in total loss of antenna gain!

Transmission Line Connector Assembly

Do not use RG-58 U or RG-8 U cable with antennas! They have too much loss at VHF and UHF frequencies. Use low-loss foam dielectric solid copper outer shielded and jacketed coaxial cable of 1/2" to 1-5/8" diameter. 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.

Moisture Proofing Coax Connectors

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 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.

Location and Grounding of Coaxial Cable

Keep the STL 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.

System Grounding

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

Antenna Installation and Adjustment

The polarization of the transmit and receive antennas of the STL 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. Each antenna should be attached to the tower to allow for final adjustment in azimuth heading and vertical tilt. After visual adjustment of the antennas, the transmitter and receiver can be used to make the final adjustments of the antennas. With the transmitter driving one antenna, the receiving antenna is adjusted for maximum signal (indicated on the receiver) in both horizontal and vertical directivity. CAUTION: Antennas have a "major" and several "minor" lobes in their directivity patterns. A common error is to peak the antenna on a minor lobe, resulting in a signal level of only a fraction of the major lobe signal. This error can be avoided only by swinging the antenna through a large angle so that all lobes are evaluated and the major lobe clearly determined. After one antenna is adjusted, the transmitter and receiver locations are reversed, to allow adjustment of the other antenna. If an RF watt meter 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. Grid reflector antennas must have the drive dipole parallel with reflector grid bars.**
2. **Check that antennas have same polarity.**
3. **Check orientation of antennas in both horizontal and vertical directions.**
4. **Check VSWR of both transmit and receive antennas. VSWR should be less than 1.5:1.**
5. **Check Fresnel zone clearance along radio path.**
6. **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.**

Operation

Control Functions and Panel Indicator Lamps

COMPOSITE LEVEL

When selected by internal jumper plugs, the "COMPOSITE LEVEL" lamp will be illuminated. Composite output is adjustable over a range of 1.8 to 3.5 volts P-P.

MONO LEVEL

When selected by internal jumper plugs, the "MONO LEVEL" lamp will be illuminated. Balanced 600 ohm mono level is adjustable over a range of -40 to +10 dBm.

SQUELCH ADJUST

The **SQUELCH ADJUST** pot is used to set the minimum level of received signal required to "open" the audio squelch of the receiver. This level is factory set to 4 microvolts, but may be changed if necessary. The squelch should be set to open when receiving the signal from the STL-15C transmitter, and close and remain closed at all times when the transmitter is "OFF". Very sensitive (low level) settings should be avoided to prevent the squelch from opening on noise or other signals.

ATTENUATOR

The RF input sensitivity of the R-15C receiver can be attenuated by placing the **"ATTENUATOR"** switch in "10 dB ATTEN." position. This may be desirable when the received signal is very strong in order to bring the "SIG. LEVEL" meter indication on scale and to make the squelch relay less susceptible to noise and interfering signals. On long transmission paths and fading signal conditions, "MAX SENSITIVITY" setting is required.

AFC LOCK LIGHT

The **AFC LOCK** light should be illuminated at all times the receiver is operating. This indicates the VCO of the frequency synthesizer is locked to the reference oscillator. The receiver squelch relay will not open unless the **AFC LOCK** light is on.

Test Meter

An illuminated **TEST METER** and selector switch are built into the R-15C receiver to permit monitoring of critical parameters. These are:

1. **"SIGNAL LEVEL"** - The received signal strength indication (RSSI) is displayed in relative values on the "VU" scale of the meter when switched to "SIG. LEVEL". Typical RSSI values and conditions are shown in the following table:

Sig. Level Meter Reading	Attenuator Switch Setting	Signal Strength (microvolts)
-7 VU	max sensitivity	5
-3.5 VU	max sensitivity	10
-1 VU	max sensitivity	50
0 VU	max sensitivity	100
+1.5 VU	max sensitivity	250
0 VU	10 dB ATTEN	500

See Receiver Test Report on page 17

2. **"PGM LEVEL"** - The recovered audio level (mono or composite) is displayed on the upper "VU" scale of the meter. This indication may be useful in initial set-up under test tone conditions. "Composite" or "mono" levels may be observed while adjustments are being made. The program level meter is not a peak reading meter and is useful for test tone measurements. Complex program audio will be indicated at about 6 dB below actual peak values. The modulation of the STL link is set at the **"PEAK MODULATION"** bar graph meter of the STL-15C transmitter. "Composite" or "mono" levels out of the R-15C receiver are set for correct modulation of the broadcast transmitter as indicated on the station's modulation monitor.

3. **"SUB LEVEL"** - Received subcarrier level is indicated in this switch position. If 10% subcarrier injection is used at the STL-15C transmitter, a "SUB LEVEL" indication of approximately "0" VU is indicated.

4. **"AFC LEVEL"** - Indicates the AFC error correction voltage in the phase-locked loop. This reading should be "**0 VU**" ±1.5 VU. Level errors greater than ±1.5 VU call for adjustment of VCO center frequency. See section:

Tune Up and Adjustments

5. **"L. O. LEVEL"** - The local oscillator (L.O.) level meter reading is normally -5 VU to -3 VU.
6. **"MIXER"** - The mixer meter reading is normally - 3 VU to +3 VU.

It is prudent to record all meter readings at the time the equipment is initially installed to aid in future trouble shooting.

INTERNALLY SELECTED OPTIONS

The R-15C receiver has several options selected by jumper plugs. Refer to section titled:

Tune Up and Adjustments

FREQUENCY PROGRAMMING

The R-15C receiver frequency synthesizer is programmed by 16 switches located on the **R-15C Frequency Synthesizer Board, 800-291**. Refer to section titled:

Tune Up and Adjustments

System Performance Tests

The STL-15C transmitter, R-15 receiver with the associated antenna system can be tested and compared with factory test data included in this manual. The following procedures should be followed in order to obtain reliable and accurate results.

Before audio tests or subcarrier tests are begun check the receiver "SIG. LEVEL" METER for required minimum signal. A conversion from VU to microvolts is given under OPERATION in the R-15 receiver manual. For a 950 MHz. system using 50 KHz FM deviation, typical noise levels are:

1 µv for 20 dB S/N ratio
3 µv for 50 dB S/N ratio
10 µv for 60 dB S/N ratio
20 µv for 70 dB S/N ratio
50+ µv for ULTIMATE
(Demodulated left or right channel de-emphasized and low-pass filtered.)

For the above system with 20% subcarrier injection, the following noise level on the subcarrier (Marti SCG-10 - SCD-10 System) was measured: (no modulation main or sub)

10 µv for 40 dB Subcarrier S/N ratio
20 µv for 47 dB Subcarrier S/N ratio
30 µv for 50 dB Subcarrier S/N ratio
150 µv for ULTIMATE

With ultimate S/N ratio, main to sub crosstalk should be -40 to -45 dB (using Marti SCG-10 - SCD-10 Subcarrier System).

NOISE (monophonic mode)

Noise measurements should be made first, since high noise levels will influence distortion readings. Also ground loops in the audio oscillator to transmitter connections and distortion analyzer to receiver connections must be resolved before testing begins. The influence of high RF fields upon the test equipment must be determined and corrected before accurate measurements can be made. NOTE: NOISE AND DISTORTION MEASUREMENTS ARE MADE WITH SUBCARRIER AND REMOTE CONTROL INPUT SIGNALS REMOVED. System signal to noise ratio is determined while modulating the transmitter 100% at 400 Hz. A level of +8 dBm across the balanced audio input terminals of TB-1 will produce a reading of 100% modulation on the "PEAK MODULATION" indicator. Set Receiver "MONO LEVEL" pot for +10 dBm output into the distortion analyzer. If the distortion analyzer has a high impedance input, add a 600 ohm load resistor to match the receiver. Establish +10 dBm on the audio voltmeter of the analyzer as the reference level for 100% modulation. Next, remove the audio signal from the transmitter input and measure noise level below reference (100% modulation). This reading should compare with that published under **SYSTEM SPECIFICATIONS** in this manual.

DISTORTION (monophonic mode)

Harmonic distortion is usually measured at 100% modulation and at several frequencies. If pre-emphasis processing is used in the transmitter with corresponding de-emphasis in the receiver, it is normal for available audio level at the receiver to drop with increasing frequency according to the de-emphasis curve selected. At 15 KHz, there is sufficient level to operate most modern distortion analyzers. Distortion levels should be within specifications. If distortion is out of specs, check system noise, check for test equipment ground loops, RFI, and transmitter/receiver operating frequency. If either unit is off frequency, the FM modulation sidebands are not centered within the IF filter bandpass, which can cause audio distortion.

FREQUENCY RESPONSE (monophonic mode)

If the STL-15C System is switched to flat processing, frequency response can be measured as if the signal were being sent over straight wires. If pre-emphasis processing is used (especially 75 µs) allowance must be made in the transmitter audio input level to prevent over-modulation at test frequencies above 400 Hz. The simplest and fastest method is to set the transmitter audio input level for 100% modulation at 400 Hz., then attenuate this level 20 dB. Set receiver output level to -10 dBm as the reference, then sweep the audio band for response. Response should be within **SYSTEM SPECIFICATIONS**.

COMPOSITE (STEREO) SEPARATION, NOISE, DISTORTION AND FREQUENCY RESPONSE. (composite mode)

This procedure consists of feeding a stereo encoder (generator) capable of more than 60 dB separation (50 Hz - 15 KHz) into the composite input of the STL-15C transmitter and connecting a stereo decoder (monitor) to the composite output of the R-15C receiver. The actual test procedure may vary with different decoders (monitors). Therefore the procedure prescribed in the decoder (monitor) instruction manual should be followed.

Theory of Operation

The Marti R-15C is a synthesized double-conversion superheterodyne receiver. When used with the companion STL-15C transmitter a high quality point-to-point radio link can be assembled for transmission of composite stereo audio, monophonic audio, digital data (by means of modems) or other communications.

Since the general theory of operation of superheterodyne receivers is well known, we will briefly describe the function of each board (subsystem) of the R-15C receiver. Refer to block diagram 702-100 for signal flow, and to the individual schematic diagrams for circuit details.

1st CONVERTER, 800-211, 800-212, 800-213

The received RF signal is applied to the 1st converter module. After passing through a three-section preselector, the signal is coupled to Gate No. 1 of a GaAs dual-gate RF amplifier. The output of this amplifier is impedance matched to Double-Balanced Mixer X-1. The output of the Local Oscillator frequency multipliers is also impedance matched to the local oscillator port of mixer X-1. The third port of the double-balanced mixer X-1 is the converter output. The 1st converter output is in the 70 - 78 MHz range.

SECOND CONVERTER / IF AMP / DETECTOR, 800-293

The 50 ohm output from the 1st converter is connected to J3 of this board by a short coaxial cable. J-FET Q4 raises the impedance for the two-section band pass filter which is tuned to the 70 - 78 MHz output of the first converter. This signal is amplified by dual-gate FET Q5, again filtered by L7/C48 then fed to the gate of Q6. J-FET Q6 is a source follower driving the 50 ohm RF input of double balanced mixer X1. The L.O. drive from **Synthesizer Board, 800-291**, is connected to the L.O. port of mixer X1 via connector J5. The 10.7 MHz frequency difference between the RF and L.O. signals appear at the IF port of mixer X1 which is connected to J4. The 10.7 MHz signal is routed through **IF Bandpass Filter Board, 800-207**, and back to J1 of **Second Converter/IF Amp/ Detector Board, 800-293**, for amplification by Q1 and Q2 with filtering by CF1 and CF2. IC5 combines the functions of IF amplifier/limiter, quadrature detector, and receive signal strength indicator (signal level metering). The wide band output of Q5 appears at Pin 6, and is connected to IC1 - IC4 for pre-processing of the composite, mono, and subcarrier signals, and for level metering.

AUDIO BOARD, 800-294

Audio Board, 800-294 processes composite and mono audio for the R-15C and is programmable (by jumper plugs) for composite stereo or monaural signal processing.

Using "jumper plugs" the user may select "HI-SUB" for subcarrier operation in composite mode or "LO-SUB" for subcarrier operation in mono mode. When changing mode of operation jumper plugs are also provided to switch the front panel LED mode indicators and level metering. **See the NOTE on Schematic, 800-294 to set jumpers properly!**

COMPOSITE PROCESSING:

Composite processing entails low pass filtering, delay equalization, and high pass filtering (for subcarriers). Low pass filtering achieves a flat amplitude response to 53 KHz with a "brick-wall" cut-off using elliptic filters. Group delay, introduced by the low pass filter, is equalized using active all-pass filters and achieves a flat group delay across a frequency band of 50 Hz to 53 KHz. High pass filtering, using elliptic filters, has a "brick-wall" cut-off at 80 KHz. with a flat response beyond 80 KHz. The output, as indicated on schematic 800-294, is labeled "HI-SUB".

MONO PROCESSING:

Mono processing entails de-emphasis, low pass filtering, amplification, and high pass filtering (for subcarriers). User options provide for selection of 75 µs, 50 µs, 25 µs, or 0 µs de-emphasis. Active Butterworth low pass filtering achieves a flat amplitude response to 15 KHz rolling off sharply above 15 KHz. Active Butterworth high pass filtering provides a sharp roll-off at 25 KHz with flat amplitude response above 25 KHz for subcarriers.

Output of the high pass filters is labeled "LO-SUB" on Schematic, 800-294. See instructions on this schematic for selection of "mode", de-emphasis, and subcarrier

FREQUENCY SYNTHESIZER, 800-291

The R-15C receiver frequency is synthesized at the second conversion local oscillator frequency, which is 10.7 MHz below (or above) the first converter output frequency. Using the 944 - 952 MHz band as an example, the first converter output would be 70 - 78 MHz. To convert to the second IF frequency of 10.7 MHz, the synthesizer must generate the required frequency in the range of 59.30 to 67.30 MHz (F-10.7) or 80.70 to 88.70 MHz (F+10.7). **Programming instructions for the synthesizer are on page 19.**

The frequency synthesizer consists of a Phase-Locked Loop (IC5), a Voltage-Controlled Oscillator (Q2), a Pre-scaler (IC4), a Reference Frequency (Y1), and a Loop Filter (IC2A). The PLL is a programmable device with the reference frequency generated by a crystal oscillator. The loop filter is an active type and the pre-scaler is used to pre-scale the VCO frequency to make it compatible to the PLL. The PLL performs three major functions:

1. compares the phase of the pre-scaled VCO frequency (further processed inside the device) with the frequency of resolution and produces outputs that are used by the loop filter to produce a DC voltage to control the VCO frequency.

2. controls the pre-scaler by selecting its divisor.

3. generates the frequency of resolution, internally, using the crystal oscillator.

The PLL has 16 programming pins that are used to select a VCO frequency and produce a lock. The program to select a particular VCO frequency is selected by 16 dip switches. An extremely stable crystal oscillator and noiseless loop filter make the synthesizer ultra stable. The output of the phase-locked VCO (Q2) is buffered by IC3, low pass filtered and connected to J1 (L.O. out). A short coaxial cable connects with J5 (L.O. in) of Board, 800-293.

INPUT OUTPUT FILTERS, 800-193A

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

POWER SUPPLY/ SQUELCH, 800-219A

The power supply consists of a bridge rectifier, D1, D2, D3, D4 filter 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 unregulated DC supplies.

The signal squelch IC-2B comparator has 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 R1 located on METER/CONTROL BOARD, 800-295 which divides the comparator reference voltage through R11 and R12.

The signal level voltage is inhibited (shorted to ground) when the frequency synthesizer AFC LOCK light is **NOT** "ON", thus muting all receiver signal outputs.

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

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 001)
Digital Multimeter	Beckman Model 3030
Analog Multimeter	Triplett Model 630
RF Attenuator	Kay Model 437A (adjustable 0-110 dB)
RF Signal Generator	Marconi Model 2022C
Stereo Monitor	Belar Model FMS-2
Stereo Generator	Aphex Model AX400
Oscilloscope	Tektronix Model 2215

Tools for Alignment

Type of Tool	Manufacturer's No.	Marti Part No.
Tuning Tool	GC 9300	930-037
Tuning Tool	GC 9440	930-069
Tuning Tool	Spectrol 8T000	930-100
Tuning Tool	Sprague-Goodman	930-062
Tuning Tool	Johanson 8762	930-096 (yellow)
Tuning Tool	Johanson 8766	930-076 (blue)

The **STL-15C/R-15C Alignment Tool Kit (Marti Part No. 704-175)** containing all the above tools may be obtained from the factory for $19.83.

R-15C Receiver Test Report

Customer: ______________________________

Address: ______________________________

Frequency: ______________

R-15C Serial No: ______________

MODE: ☐ Composite ☐ Mono

STL-15C Serial No: ______________

IF Bandwidth: ______________

TEST METER READINGS (VU scale)

Signal Level:

10 microvolts ______________

50 microvolts ______________

100 microvolts ______________

250 microvolts ______________

500 microvolts ______________
(with front panel 10 dB pad switched "IN")

Program Level: ______________

Subcarrier Level: ______________

AFC Level: ______________

L. O. Level: ______________

Mixer: ______________

Squelch open at: ______ microvolts

SYSTEM DATA

Monophonic System:

Frequency Response: ± ________ dB
30 Hz - 15 KHz

Distortion (THD): ________ %
30 Hz - 15 KHz

Noise: − ________ dB
(below 50 KHz deviation)

De/Preemphasis set: ________ us.

Composite System:

Stereo Separation: ☐
Better than 55 dB
100 Hz - 15 KHz

Distortion (THD): ________ %
(L or R channel) @ 400 Hz

Noise: − ________ dB
(below 50 KHz deviation, L or R)

Composite system measurements are made using an Aphex Model AX 400 Stereo Generator feeding the STL-15C transmitter, and a Belar Model FMS-2 Stereo Monitor as a stereo demodulator for the composite output of the R-15C receiver.

Date: ______________________

Signature: ______________________

R-15C Tune-Up and Adjustments

Refer to Location of Adjustments Drawing No. 702-099 and appropriate schematic diagrams for each module.

This equipment was thoroughly tested and inspected at the factory prior to shipment. The actual equipment performance was recorded on the factory test report (R-15C RECEIVER TEST REPORT) found on page 17. Adjustments should rarely be necessary in the field and should be attempted only by highly trained technicians familiar with this type equipment.. Laboratory grade test equipment is required and is listed under "TEST EQUIPMENT FOR STL-15C TRANSMITTERS and R-15C RECEIVERS" (page 16). For location of adjustments and test points in the R-15C receiver refer to Adjustment Location Diagram, 702-099, on page 26.

1st CONVERTER, 800-211, 212, & 213

1. Set the local oscillator on exact frequency by adjusting L1 while observing the frequency on a 225 MHz counter plugged into J1. See **TABLE 1.** below in order to determine the correct frequency at J1.

NOTE: Unplug the counter from J1 before doing Step 2.

FOR 800-211 CONVERTER ONLY

2. Tune L2 and L4 for maximum negative voltage at TP-1. Use the 3 volt DC scale of a sensitive multimeter. Do NOT tune C7, C8, C13, C14 - they are factory adjustments only!

3. Tune L5 and L6 for maximum voltage at TP-2.

4. Tune C18 for maximum voltage at TP-3.

5. Reduce received signal level at J6 for a 1/3 scale reading on SIG. LEVEL METER. Tune C23, C29, C33, C34, and C35 for maximum signal level.

FOR 800-212 and 800-213 CONVERTERS ONLY

2. Switch METER to "L.O. LEVEL". Tune L5 and L6 for maximum reading. DO NOT TUNE TRIMMER CAPACITORS—THEY ARE FACTORY ADJUSTMENTS ONLY!!! (TP-1)

3. Switch METER to "MIXER" and tune L7 and L8 for maximum reading. (TP-2)

4. Switch METER to "SIG. LEVEL", reduce signal level at J6 for a 1/3 scale reading on SIG. LEVEL METER. Tune the three gold capacitors on top of the 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.

I.F. FILTER, 800-207-250

There are no user adjustments on this board.

AUDIO PROCESSING BOARD, 800-293

This module has been thoroughly tested and adjusted at the factory. Only movement of jumper plugs to change between "COMPOSITE MODE", and "MONO MODE", and de-emphasis options should be necessary in the field.

Refer to Drawings 702-099 (page 26) for JP (jumper plug) locations and 800-294 (page 58) for NOTES on JP programming.

Monophonic mode:

To select monophonic (single program audio channel) mode, place jumper plugs at positions 2, 4, 5, and 7. The "MONO LEVEL" pot on the front panel is now used to set the mono output level at TB-1.

De-Emphasis: In mono mode the user can select de-emphasis of 0, 25, 50 or 75 microseconds. The U.S. standard is 75 microseconds, the European is 50 microseconds, and some users prefer zero or 25 microseconds for various reasons. ***The emphasis selection must be the same for the transmitter and receiver.***

De-Emphasis (microseconds)	Jumper Plug(s)
0	remove 9 & 10
25	9 only
50	10 only
75	9 & 10

Factory Calibration of De-Emphasis (mono mode)

1. Set pre-emphasis jumper plugs on STL-15C transmitter Processor Board, 800-285 to 75 micro-seconds as shown on Drawing 800-285 of the STL-15C instruction book.

2. Select 75 microseconds on R-15C Board 800-294 by inserting jumper plugs 9 and 10.

3. Modulate transmitter 100% at exactly 15 KHz. Set receiver PGM LEVEL ADJUST for exactly - 7 dBm on an accurate audio voltmeter at terminals TB-1.

4. Lower the audio signal generator frequency to exactly 400 KHz at the exact same level into the STL-15C.

5. The R-15C receiver audio output level meter should read +10 dBm ±0.25 dB. If not, adjust R22 on the receiver Audio Board, 800-294, for exactly +10 dBm output.

Composite Mode:

To select "COMPOSITE" stereo mode, place jumper plugs (JP) at positions 1, 3, 6, and 8. The "COMPOSITE LEVEL" pot on the front panel now controls the composite output at J2.

2nd CONVERTER / IF AMPLIFIER / DETECTOR, 800-293

2nd Converter/Pre-selector: (Adjustments necessary when changing receiver frequency)

1. Place test meter in "SIG LEVEL" position.

2. Adjust the RF input level (J6) for approximately 1/3 scale reading.

3. Adjust C43, C46, and C48 for maximum signal level.

Other adjustments on the 800-293 Board are factory set and do **NOT** require field adjustment.

PROGRAMMING THE FREQUENCY SYNTHESIZER, 800-291

Read "THEORY OF OPERATION" of frequency synthesizer, 800-291 on page 14.

On the 944-952 MHz band, the first converter, 800-211B, is tuned to the center frequency of 948 MHz, and at this center frequency converts to 74.0 MHz. The second converter on Board 800-293 converts to the 10.7 MHz IF frequency, which requires that the Synthesizer Board, 800-291, generate a L.O. frequency of 59.3-67.3 MHz. This is done by selection of 16 "DIP" switches located on Board 800-291 as follows:

1. Look up desired frequency on the enclosed list of frequencies. (The same frequency as transmitter STL-15C). Frequencies are available in 12.5 KHz steps. Frequencies between steps can be obtained by shifting the reference oscillator (see [5] below).

2. Position switches according to the frequency table. Double-check switch positions to avoid error.

3. Place "TEST METER" switch in "AFC LEVEL" position. With synthesizer operating and "locked" indicated by the green "AFC LOCK" light, the "AFC LEVEL" should be zero (0) VU ±1.5 VU. If the newly selected frequency differs from the original frequency by several megahertz, the VCO frequency should be adjusted for a "0 VU" AFC level as follows:

   (a). Remove cover of the VCO box (located next to J1 on 800-291 board).

   (b). Using an insulated adjustment tool such as Marti Part No. 930-100, adjust the variable capacitor C36 (see Drawing 702-099) for the "0 VU" reading. The plates of capacitor C36 should be between 10% - 30% of maximum (fully meshed). If not, set C36 in this position and adjust L6 for "0 VU" on the meter by using an insulated slug tuning tool such as Marti No. 930-069.

   (c). Replace box cover being careful to properly engage all shield contact fingers.

4. If desired, the synthesized frequency can be measured at J1 using a frequency counter. The frequency should be the "L.O." frequency corresponding to the "Channel" frequency selected. Any error can be corrected by adjustment of C11 through the hole in the cover of the

reference oscillator box cover on Board, 800-291. See Drawing 702-099 for location. Use insulated adjustment tool 730-069 or equivalent.

NOTE: The SQUELCH RELAY of the R-15C receiver will not open until the "AFC LOCK" light is on.

5. When the receiver operating frequency is changed more than 0.1%, the first converter adjustments, as well as C43, C46, and C48, of the pre-selector on Board 800-293 must be "peaked" (tuned for maximum "SIG LEVEL") in order to maintain performance.

TABLE 1.

The correct frequency at J1 can be calculated by the formulas in the following table:

Operating Frequency (F)	Converter Type	Measured Frequency at J1	Overtone Crystal Formula
140-180 MHz.	800-212	(F+74)/3	(F+74)/6
200-260 MHz.	800-212	(F+74)/3	(F+74)/6
280-340 MHz.	800-213	(F+74)/2	(F+74)/8
400-480 MHz.	800-213	(F-74)/2	(F-74)/8
890-960 MHz.	800-211	(F-74)/4	(F-74)/16
944-952 MHz.	800-211	218.5 MHz.	

Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
940 MHz			
940000	55300	0 0 1 0 1 0 0 0	0 0 1 0 0 0 1 0
940025	55325	0 0 1 0 1 0 0 0	0 0 1 0 0 0 1 1
940050	55350	0 0 1 0 1 0 0 0	0 0 1 0 0 1 1 0
940075	55375	0 0 1 0 1 0 0 0	0 0 1 0 0 1 1 1
940100	55400	0 0 1 0 1 0 1 0	0 0 1 0 0 0 0 0
940125	55425	0 0 1 0 1 0 1 0	0 0 1 0 0 0 0 1
940150	55450	0 0 1 0 1 0 1 0	0 0 1 0 0 1 0 0
940175	55475	0 0 1 0 1 0 1 0	0 0 1 0 0 1 0 1
940200	55500	0 0 1 0 1 0 1 0	0 0 1 0 0 0 1 0
940225	55525	0 0 1 0 1 0 1 0	0 0 1 0 0 0 1 1
940250	55550	0 0 1 0 1 0 1 0	0 0 1 0 0 1 1 0
940275	55575	0 0 1 0 1 0 1 0	0 0 1 0 0 1 1 1
940300	55600	0 1 1 0 1 0 0 0	0 0 1 0 0 0 0 0
940325	55625	0 1 1 0 1 0 0 0	0 0 1 0 0 0 0 1
940350	55650	0 1 1 0 1 0 0 0	0 0 1 0 0 1 0 0
940375	55675	0 1 1 0 1 0 0 0	0 0 1 0 0 1 0 1
940400	55700	0 1 1 0 1 0 0 0	0 0 1 0 0 0 1 0
940425	55725	0 1 1 0 1 0 0 0	0 0 1 0 0 0 1 1
940450	55750	0 1 1 0 1 0 0 0	0 0 1 0 0 1 1 0
940475	55775	0 1 1 0 1 0 0 0	0 0 1 0 0 1 1 1
940500	55800	0 1 1 0 1 0 1 0	0 0 1 0 0 0 0 0
940525	55825	0 1 1 0 1 0 1 0	0 0 1 0 0 0 0 1
940550	55850	0 1 1 0 1 0 1 0	0 0 1 0 0 1 0 0
940575	55875	0 1 1 0 1 0 1 0	0 0 1 0 0 1 0 1
940600	55900	0 1 1 0 1 0 1 0	0 0 1 0 0 0 1 0
940625	55925	0 1 1 0 1 0 1 0	0 0 1 0 0 0 1 1
940650	55950	0 1 1 0 1 0 1 0	0 0 1 0 0 1 1 0
940675	55975	0 1 1 0 1 0 1 0	0 0 1 0 0 1 1 1
940700	56000	0 0 0 1 1 0 0 0	0 0 1 0 0 0 0 0
940725	56025	0 0 0 1 1 0 0 0	0 0 1 0 0 0 0 1
940750	56050	0 0 0 1 1 0 0 0	0 0 1 0 0 1 0 0
940775	56075	0 0 0 1 1 0 0 0	0 0 1 0 0 1 0 1
940800	56100	0 0 0 1 1 0 0 0	0 0 1 0 0 0 1 0
940825	56125	0 0 0 1 1 0 0 0	0 0 1 0 0 0 1 1
940850	56150	0 0 0 1 1 0 0 0	0 0 1 0 0 1 1 0
940875	56175	0 0 0 1 1 0 0 0	0 0 1 0 0 1 1 1
940900	56200	0 0 0 1 1 0 1 0	0 0 1 0 0 0 0 0
940925	56225	0 0 0 1 1 0 1 0	0 0 1 0 0 0 0 1
940950	56250	0 0 0 1 1 0 1 0	0 0 1 0 0 1 0 0
940975	56275	0 0 0 1 1 0 1 0	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
941 MHz			
941000	56300	0 0 0 1 1 0 1 0	0 0 1 0 0 0 1 0
941025	56325	0 0 0 1 1 0 1 0	0 0 1 0 0 0 1 1
941050	56350	0 0 0 1 1 0 1 0	0 0 1 0 0 1 1 0
941075	56375	0 0 0 1 1 0 1 0	0 0 1 0 0 1 1 1
941100	56400	0 1 0 1 1 0 0 0	0 0 1 0 0 0 0 0
941125	56425	0 1 0 1 1 0 0 0	0 0 1 0 0 0 0 1
941150	56450	0 1 0 1 1 0 0 0	0 0 1 0 0 1 0 0
941175	56475	0 1 0 1 1 0 0 0	0 0 1 0 0 1 0 1
941200	56500	0 1 0 1 1 0 0 0	0 0 1 0 0 0 1 0
941225	56525	0 1 0 1 1 0 0 0	0 0 1 0 0 0 1 1
941250	56550	0 1 0 1 1 0 0 0	0 0 1 0 0 1 1 0
941275	56575	0 1 0 1 1 0 0 0	0 0 1 0 0 1 1 1
941300	56600	0 1 0 1 1 0 1 0	0 0 1 0 0 0 0 0
941325	56625	0 1 0 1 1 0 1 0	0 0 1 0 0 0 0 1
941350	56650	0 1 0 1 1 0 1 0	0 0 1 0 0 1 0 0
941375	56675	0 1 0 1 1 0 1 0	0 0 1 0 0 1 0 1
941400	56700	0 1 0 1 1 0 1 0	0 0 1 0 0 0 1 0
941425	56725	0 1 0 1 1 0 1 0	0 0 1 0 0 0 1 1
941450	56750	0 1 0 1 1 0 1 0	0 0 1 0 0 1 1 0
941475	56775	0 1 0 1 1 0 1 0	0 0 1 0 0 1 1 1
941500	56800	0 0 1 1 1 0 0 0	0 0 1 0 0 0 0 0
941525	56825	0 0 1 1 1 0 0 0	0 0 1 0 0 0 0 1
941550	56850	0 0 1 1 1 0 0 0	0 0 1 0 0 1 0 0
941575	56875	0 0 1 1 1 0 0 0	0 0 1 0 0 1 0 1
941600	56900	0 0 1 1 1 0 0 0	0 0 1 0 0 0 1 0
941625	56925	0 0 1 1 1 0 0 0	0 0 1 0 0 0 1 1
941650	56950	0 0 1 1 1 0 0 0	0 0 1 0 0 1 1 0
941675	56975	0 0 1 1 1 0 0 0	0 0 1 0 0 1 1 1
941700	57000	0 0 1 1 1 0 1 0	0 0 1 0 0 0 0 0
941725	57025	0 0 1 1 1 0 1 0	0 0 1 0 0 0 0 1
941750	57050	0 0 1 1 1 0 1 0	0 0 1 0 0 1 0 0
941775	57075	0 0 1 1 1 0 1 0	0 0 1 0 0 1 0 1
941800	57100	0 0 1 1 1 0 1 0	0 0 1 0 0 0 1 0
941825	57125	0 0 1 1 1 0 1 0	0 0 1 0 0 0 1 1
941850	57150	0 0 1 1 1 0 1 0	0 0 1 0 0 1 1 0
941875	57175	0 0 1 1 1 0 1 0	0 0 1 0 0 1 1 1
941900	57200	0 1 1 1 1 0 0 0	0 0 1 0 0 0 0 0
941925	57225	0 1 1 1 1 0 0 0	0 0 1 0 0 0 0 1
941950	57250	0 1 1 1 1 0 0 0	0 0 1 0 0 1 0 0
941975	57275	0 1 1 1 1 0 0 0	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
942 MHz			
942000	57300	0 1 1 1 1 0 0 0	0 0 1 0 0 0 1 0
942025	57325	0 1 1 1 1 0 0 0	0 0 1 0 0 0 1 1
942050	57350	0 1 1 1 1 0 0 0	0 0 1 0 0 1 1 0
942075	57375	0 1 1 1 1 0 0 0	0 0 1 0 0 1 1 1
942100	57400	0 1 1 1 1 0 1 0	0 0 1 0 0 0 0 0
942125	57425	0 1 1 1 1 0 1 0	0 0 1 0 0 0 0 1
942150	57450	0 1 1 1 1 0 1 0	0 0 1 0 0 1 0 0
942175	57475	0 1 1 1 1 0 1 0	0 0 1 0 0 1 0 1
942200	57500	0 1 1 1 1 0 1 0	0 0 1 0 0 0 1 0
942225	57525	0 1 1 1 1 0 1 0	0 0 1 0 0 0 1 1
942250	57550	0 1 1 1 1 0 1 0	0 0 1 0 0 1 1 0
942275	57575	0 1 1 1 1 0 1 0	0 0 1 0 0 1 1 1
942300	57600	0 0 0 0 0 0 0 1	0 0 1 0 0 0 0 0
942325	57625	0 0 0 0 0 0 0 1	0 0 1 0 0 0 0 1
942350	57650	0 0 0 0 0 0 0 1	0 0 1 0 0 1 0 0
942375	57675	0 0 0 0 0 0 0 1	0 0 1 0 0 1 0 1
942400	57700	0 0 0 0 0 0 0 1	0 0 1 0 0 0 1 0
942425	57725	0 0 0 0 0 0 0 1	0 0 1 0 0 0 1 1
942450	57750	0 0 0 0 0 0 0 1	0 0 1 0 0 1 1 0
942475	57775	0 0 0 0 0 0 0 1	0 0 1 0 0 1 1 1
942500	57800	0 0 0 0 0 0 1 1	0 0 1 0 0 0 0 0
942525	57825	0 0 0 0 0 0 1 1	0 0 1 0 0 0 0 1
942550	57850	0 0 0 0 0 0 1 1	0 0 1 0 0 1 0 0
942575	57875	0 0 0 0 0 0 1 1	0 0 1 0 0 1 0 1
942600	57900	0 0 0 0 0 0 1 1	0 0 1 0 0 0 1 0
942625	57925	0 0 0 0 0 0 1 1	0 0 1 0 0 0 1 1
942650	57950	0 0 0 0 0 0 1 1	0 0 1 0 0 1 1 0
942675	57975	0 0 0 0 0 0 1 1	0 0 1 0 0 1 1 1
942700	58000	0 1 0 0 0 0 0 1	0 0 1 0 0 0 0 0
942725	58025	0 1 0 0 0 0 0 1	0 0 1 0 0 0 0 1
942750	58050	0 1 0 0 0 0 0 1	0 0 1 0 0 1 0 0
942775	58075	0 1 0 0 0 0 0 1	0 0 1 0 0 1 0 1
942800	58100	0 1 0 0 0 0 0 1	0 0 1 0 0 0 1 0
942825	58125	0 1 0 0 0 0 0 1	0 0 1 0 0 0 1 1
942850	58150	0 1 0 0 0 0 0 1	0 0 1 0 0 1 1 0
942875	58175	0 1 0 0 0 0 0 1	0 0 1 0 0 1 1 1
942900	58200	0 1 0 0 0 0 1 1	0 0 1 0 0 0 0 0
942925	58225	0 1 0 0 0 0 1 1	0 0 1 0 0 0 0 1
942950	58250	0 1 0 0 0 0 1 1	0 0 1 0 0 1 0 0
942975	58275	0 1 0 0 0 0 1 1	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
943 MHz			

943000	58300	0 1 0 0 0 0 1 1	0 0 1 0 0 0 1 0
943025	58325	0 1 0 0 0 0 1 1	0 0 1 0 0 0 1 1
943050	58350	0 1 0 0 0 0 1 1	0 0 1 0 0 1 1 0
943075	58375	0 1 0 0 0 0 1 1	0 0 1 0 0 1 1 1
943100	58400	0 0 1 0 0 0 0 1	0 0 1 0 0 0 0 0
943125	58425	0 0 1 0 0 0 0 1	0 0 1 0 0 0 0 1
943150	58450	0 0 1 0 0 0 0 1	0 0 1 0 0 1 0 0
943175	58475	0 0 1 0 0 0 0 1	0 0 1 0 0 1 0 1
943200	58500	0 0 1 0 0 0 0 1	0 0 1 0 0 0 1 0
943225	58525	0 0 1 0 0 0 0 1	0 0 1 0 0 0 1 1
943250	58550	0 0 1 0 0 0 0 1	0 0 1 0 0 1 1 0
943275	58575	0 0 1 0 0 0 0 1	0 0 1 0 0 1 1 1
943300	58600	0 0 1 0 0 0 1 1	0 0 1 0 0 0 0 0
943325	58625	0 0 1 0 0 0 1 1	0 0 1 0 0 0 0 1
943350	58650	0 0 1 0 0 0 1 1	0 0 1 0 0 1 0 0
943375	58675	0 0 1 0 0 0 1 1	0 0 1 0 0 1 0 1
943400	58700	0 0 1 0 0 0 1 1	0 0 1 0 0 0 1 0
943425	58725	0 0 1 0 0 0 1 1	0 0 1 0 0 0 1 1
943450	58750	0 0 1 0 0 0 1 1	0 0 1 0 0 1 1 0
943475	58775	0 0 1 0 0 0 1 1	0 0 1 0 0 1 1 1
943500	58800	0 1 1 0 0 0 0 1	0 0 1 0 0 0 0 0
943525	58825	0 1 1 0 0 0 0 1	0 0 1 0 0 0 0 1
943550	58850	0 1 1 0 0 0 0 1	0 0 1 0 0 1 0 0
943575	58875	0 1 1 0 0 0 0 1	0 0 1 0 0 1 0 1
943600	58900	0 1 1 0 0 0 0 1	0 0 1 0 0 0 1 0
943625	58925	0 1 1 0 0 0 0 1	0 0 1 0 0 0 1 1
943650	58950	0 1 1 0 0 0 0 1	0 0 1 0 0 1 1 0
943675	58975	0 1 1 0 0 0 0 1	0 0 1 0 0 1 1 1
943700	59000	0 1 1 0 0 0 1 1	0 0 1 0 0 0 0 0
943725	59025	0 1 1 0 0 0 1 1	0 0 1 0 0 0 0 1
943750	59050	0 1 1 0 0 0 1 1	0 0 1 0 0 1 0 0
943775	59075	0 1 1 0 0 0 1 1	0 0 1 0 0 1 0 1
943800	59100	0 1 1 0 0 0 1 1	0 0 1 0 0 0 1 0
943825	59125	0 1 1 0 0 0 1 1	0 0 1 0 0 0 1 1
943850	59150	0 1 1 0 0 0 1 1	0 0 1 0 0 1 1 0
943875	59175	0 1 1 0 0 0 1 1	0 0 1 0 0 1 1 1
943900	59200	0 0 0 1 0 0 0 1	0 0 1 0 0 0 0 0
943925	59225	0 0 0 1 0 0 0 1	0 0 1 0 0 0 0 1
943950	59250	0 0 0 1 0 0 0 1	0 0 1 0 0 1 0 0
943975	59275	0 0 0 1 0 0 0 1	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
944 MHz			
944000	59300	0 0 0 1 0 0 0 1	0 0 1 0 0 0 1 0
944025	59325	0 0 0 1 0 0 0 1	0 0 1 0 0 0 1 1
944050	59350	0 0 0 1 0 0 0 1	0 0 1 0 0 1 1 0
944075	59375	0 0 0 1 0 0 0 1	0 0 1 0 0 1 1 1
944100	59400	0 0 0 1 0 0 1 1	0 0 1 0 0 0 0 0
944125	59425	0 0 0 1 0 0 1 1	0 0 1 0 0 0 0 1
944150	59450	0 0 0 1 0 0 1 1	0 0 1 0 0 1 0 0
944175	59475	0 0 0 1 0 0 1 1	0 0 1 0 0 1 0 1
944200	59500	0 0 0 1 0 0 1 1	0 0 1 0 0 0 1 0
944225	59525	0 0 0 1 0 0 1 1	0 0 1 0 0 0 1 1
944250	59550	0 0 0 1 0 0 1 1	0 0 1 0 0 1 1 0
944275	59575	0 0 0 1 0 0 1 1	0 0 1 0 0 1 1 1
944300	59600	0 1 0 1 0 0 0 1	0 0 1 0 0 0 0 0
944325	59625	0 1 0 1 0 0 0 1	0 0 1 0 0 0 0 1
944350	59650	0 1 0 1 0 0 0 1	0 0 1 0 0 1 0 0
944375	59675	0 1 0 1 0 0 0 1	0 0 1 0 0 1 0 1
944400	59700	0 1 0 1 0 0 0 1	0 0 1 0 0 0 1 0
944425	59725	0 1 0 1 0 0 0 1	0 0 1 0 0 0 1 1
944450	59750	0 1 0 1 0 0 0 1	0 0 1 0 0 1 1 0
944475	59775	0 1 0 1 0 0 0 1	0 0 1 0 0 1 1 1
944500	59800	0 1 0 1 0 0 1 1	0 0 1 0 0 0 0 0
944525	59825	0 1 0 1 0 0 1 1	0 0 1 0 0 0 0 1
944550	59850	0 1 0 1 0 0 1 1	0 0 1 0 0 1 0 0
944575	59875	0 1 0 1 0 0 1 1	0 0 1 0 0 1 0 1
944600	59900	0 1 0 1 0 0 1 1	0 0 1 0 0 0 1 0
944625	59925	0 1 0 1 0 0 1 1	0 0 1 0 0 0 1 1
944650	59950	0 1 0 1 0 0 1 1	0 0 1 0 0 1 1 0
944675	59975	0 1 0 1 0 0 1 1	0 0 1 0 0 1 1 1
944700	60000	0 0 1 1 0 0 0 1	0 0 1 0 0 0 0 0
944725	60025	0 0 1 1 0 0 0 1	0 0 1 0 0 0 0 1
944750	60050	0 0 1 1 0 0 0 1	0 0 1 0 0 1 0 0
944775	60075	0 0 1 1 0 0 0 1	0 0 1 0 0 1 0 1
944800	60100	0 0 1 1 0 0 0 1	0 0 1 0 0 0 1 0
944825	60125	0 0 1 1 0 0 0 1	0 0 1 0 0 0 1 1
944850	60150	0 0 1 1 0 0 0 1	0 0 1 0 0 1 1 0
944875	60175	0 0 1 1 0 0 0 1	0 0 1 0 0 1 1 1
944900	60200	0 0 1 1 0 0 1 1	0 0 1 0 0 0 0 0
944925	60225	0 0 1 1 0 0 1 1	0 0 1 0 0 0 0 1
944950	60250	0 0 1 1 0 0 1 1	0 0 1 0 0 1 0 0
944975	60275	0 0 1 1 0 0 1 1	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
945 MHz			
945000	60300	0 0 1 1 0 0 1 1	0 0 1 0 0 0 1 0
945025	60325	0 0 1 1 0 0 1 1	0 0 1 0 0 0 1 1
945050	60350	0 0 1 1 0 0 1 1	0 0 1 0 0 1 1 0
945075	60375	0 0 1 1 0 0 1 1	0 0 1 0 0 1 1 1
945100	60400	0 1 1 1 0 0 0 1	0 0 1 0 0 0 0 0
945125	60425	0 1 1 1 0 0 0 1	0 0 1 0 0 0 0 1
945150	60450	0 1 1 1 0 0 0 1	0 0 1 0 0 1 0 0
945175	60475	0 1 1 1 0 0 0 1	0 0 1 0 0 1 0 1
945200	60500	0 1 1 1 0 0 0 1	0 0 1 0 0 0 1 0
945225	60525	0 1 1 1 0 0 0 1	0 0 1 0 0 0 1 1
945250	60550	0 1 1 1 0 0 0 1	0 0 1 0 0 1 1 0
945275	60575	0 1 1 1 0 0 0 1	0 0 1 0 0 1 1 1
945300	60600	0 1 1 1 0 0 1 1	0 0 1 0 0 0 0 0
945325	60625	0 1 1 1 0 0 1 1	0 0 1 0 0 0 0 1
945350	60650	0 1 1 1 0 0 1 1	0 0 1 0 0 1 0 0
945375	60675	0 1 1 1 0 0 1 1	0 0 1 0 0 1 0 1
945400	60700	0 1 1 1 0 0 1 1	0 0 1 0 0 0 1 0
945425	60725	0 1 1 1 0 0 1 1	0 0 1 0 0 0 1 1
945450	60750	0 1 1 1 0 0 1 1	0 0 1 0 0 1 1 0
945475	60775	0 1 1 1 0 0 1 1	0 0 1 0 0 1 1 1
945500	60800	0 0 0 0 1 0 0 1	0 0 1 0 0 0 0 0
945525	60825	0 0 0 0 1 0 0 1	0 0 1 0 0 0 0 1
945550	60850	0 0 0 0 1 0 0 1	0 0 1 0 0 1 0 0
945575	60875	0 0 0 0 1 0 0 1	0 0 1 0 0 1 0 1
945600	60900	0 0 0 0 1 0 0 1	0 0 1 0 0 0 1 0
945625	60925	0 0 0 0 1 0 0 1	0 0 1 0 0 0 1 1
945650	60950	0 0 0 0 1 0 0 1	0 0 1 0 0 1 1 0
945675	60975	0 0 0 0 1 0 0 1	0 0 1 0 0 1 1 1
945700	61000	0 0 0 0 1 0 1 1	0 0 1 0 0 0 0 0
945725	61025	0 0 0 0 1 0 1 1	0 0 1 0 0 0 0 1
945750	61050	0 0 0 0 1 0 1 1	0 0 1 0 0 1 0 0
945775	61075	0 0 0 0 1 0 1 1	0 0 1 0 0 1 0 1
945800	61100	0 0 0 0 1 0 1 1	0 0 1 0 0 0 1 0
945825	61125	0 0 0 0 1 0 1 1	0 0 1 0 0 0 1 1
945850	61150	0 0 0 0 1 0 1 1	0 0 1 0 0 1 1 0
945875	61175	0 0 0 0 1 0 1 1	0 0 1 0 0 1 1 1
945900	61200	0 1 0 0 1 0 0 1	0 0 1 0 0 0 0 0
945925	61225	0 1 0 0 1 0 0 1	0 0 1 0 0 0 0 1
945950	61250	0 1 0 0 1 0 0 1	0 0 1 0 0 1 0 0
945975	61275	0 1 0 0 1 0 0 1	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
946 MHz			
946000	61300	0 1 0 0 1 0 0 1	0 0 1 0 0 0 1 0
946025	61325	0 1 0 0 1 0 0 1	0 0 1 0 0 0 1 1
946050	61350	0 1 0 0 1 0 0 1	0 0 1 0 0 1 1 0
946075	61375	0 1 0 0 1 0 0 1	0 0 1 0 0 1 1 1
946100	61400	0 1 0 0 1 0 1 1	0 0 1 0 0 0 0 0

946125	61425	0 1 0 0 1 0 1 1	0 0 1 0 0 0 0 1
946150	61450	0 1 0 0 1 0 1 1	0 0 1 0 0 1 0 0
946175	61475	0 1 0 0 1 0 1 1	0 0 1 0 0 1 0 1
946200	61500	0 1 0 0 1 0 1 1	0 0 1 0 0 0 1 0
946225	61525	0 1 0 0 1 0 1 1	0 0 1 0 0 0 1 1
946250	61550	0 1 0 0 1 0 1 1	0 0 1 0 0 1 1 0
946275	61575	0 1 0 0 1 0 1 1	0 0 1 0 0 1 1 1
946300	61600	0 0 1 0 1 0 0 1	0 0 1 0 0 0 0 0
946325	61625	0 0 1 0 1 0 0 1	0 0 1 0 0 0 0 1
946350	61650	0 0 1 0 1 0 0 1	0 0 1 0 0 1 0 0
946375	61675	0 0 1 0 1 0 0 1	0 0 1 0 0 1 0 1
946400	61700	0 0 1 0 1 0 0 1	0 0 1 0 0 0 1 0
946425	61725	0 0 1 0 1 0 0 1	0 0 1 0 0 0 1 1
946450	61750	0 0 1 0 1 0 0 1	0 0 1 0 0 1 1 0
946475	61775	0 0 1 0 1 0 0 1	0 0 1 0 0 1 1 1
946500	61800	0 0 1 0 1 0 1 1	0 0 1 0 0 0 0 0
946525	61825	0 0 1 0 1 0 1 1	0 0 1 0 0 0 0 1
946550	61850	0 0 1 0 1 0 1 1	0 0 1 0 0 1 0 0
946575	61875	0 0 1 0 1 0 1 1	0 0 1 0 0 1 0 1
946600	61900	0 0 1 0 1 0 1 1	0 0 1 0 0 0 1 0
946625	61925	0 0 1 0 1 0 1 1	0 0 1 0 0 0 1 1
946650	61950	0 0 1 0 1 0 1 1	0 0 1 0 0 1 1 0
946675	61975	0 0 1 0 1 0 1 1	0 0 1 0 0 1 1 1
946700	62000	0 1 1 0 1 0 0 1	0 0 1 0 0 0 0 0
946725	62025	0 1 1 0 1 0 0 1	0 0 1 0 0 0 0 1
946750	62050	0 1 1 0 1 0 0 1	0 0 1 0 0 1 0 0
946775	62075	0 1 1 0 1 0 0 1	0 0 1 0 0 1 0 1
946800	62100	0 1 1 0 1 0 0 1	0 0 1 0 0 0 1 0
946825	62125	0 1 1 0 1 0 0 1	0 0 1 0 0 0 1 1
946850	62150	0 1 1 0 1 0 0 1	0 0 1 0 0 1 1 0
946875	62175	0 1 1 0 1 0 0 1	0 0 1 0 0 1 1 1
946900	62200	0 1 1 0 1 0 1 1	0 0 1 0 0 0 0 0
946925	62225	0 1 1 0 1 0 1 1	0 0 1 0 0 0 0 1
946950	62250	0 1 1 0 1 0 1 1	0 0 1 0 0 1 0 0
946975	62275	0 1 1 0 1 0 1 1	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
947 MHz			
947000	62300	0 1 1 0 1 0 1 1	0 0 1 0 0 0 1 0
947025	62325	0 1 1 0 1 0 1 1	0 0 1 0 0 0 1 1
947050	62350	0 1 1 0 1 0 1 1	0 0 1 0 0 1 1 0
947075	62375	0 1 1 0 1 0 1 1	0 0 1 0 0 1 1 1
947100	62400	0 0 0 1 1 0 0 1	0 0 1 0 0 0 0 0
947125	62425	0 0 0 1 1 0 0 1	0 0 1 0 0 0 0 1
947150	62450	0 0 0 1 1 0 0 1	0 0 1 0 0 1 0 0
947175	62475	0 0 0 1 1 0 0 1	0 0 1 0 0 1 0 1
947200	62500	0 0 0 1 1 0 0 1	0 0 1 0 0 0 1 0
947225	62525	0 0 0 1 1 0 0 1	0 0 1 0 0 0 1 1
947250	62550	0 0 0 1 1 0 0 1	0 0 1 0 0 1 1 0
947275	62575	0 0 0 1 1 0 0 1	0 0 1 0 0 1 1 1
947300	62600	0 0 0 1 1 0 1 1	0 0 1 0 0 0 0 0
947325	62625	0 0 0 1 1 0 1 1	0 0 1 0 0 0 0 1
947350	62650	0 0 0 1 1 0 1 1	0 0 1 0 0 1 0 0
947375	62675	0 0 0 1 1 0 1 1	0 0 1 0 0 1 0 1
947400	62700	0 0 0 1 1 0 1 1	0 0 1 0 0 0 1 0
947425	62725	0 0 0 1 1 0 1 1	0 0 1 0 0 0 1 1
947450	62750	0 0 0 1 1 0 1 1	0 0 1 0 0 1 1 0
947475	62775	0 0 0 1 1 0 1 1	0 0 1 0 0 1 1 1
947500	62800	0 1 0 1 1 0 0 1	0 0 1 0 0 0 0 0
947525	62825	0 1 0 1 1 0 0 1	0 0 1 0 0 0 0 1
947550	62850	0 1 0 1 1 0 0 1	0 0 1 0 0 1 0 0
947575	62875	0 1 0 1 1 0 0 1	0 0 1 0 0 1 0 1
947600	62900	0 1 0 1 1 0 0 1	0 0 1 0 0 0 1 0
947625	62925	0 1 0 1 1 0 0 1	0 0 1 0 0 0 1 1
947650	62950	0 1 0 1 1 0 0 1	0 0 1 0 0 1 1 0
947675	62975	0 1 0 1 1 0 0 1	0 0 1 0 0 1 1 1
947700	63000	0 1 0 1 1 0 1 1	0 0 1 0 0 0 0 0
947725	63025	0 1 0 1 1 0 1 1	0 0 1 0 0 0 0 1

947750	63050	0 1 0 1 1 0 1 1	0 0 1 0 0 1 0 0
947775	63075	0 1 0 1 1 0 1 1	0 0 1 0 0 1 0 1
947800	63100	0 1 0 1 1 0 1 1	0 0 1 0 0 0 1 0
947825	63125	0 1 0 1 1 0 1 1	0 0 1 0 0 0 1 1
947850	63150	0 1 0 1 1 0 1 1	0 0 1 0 0 1 1 0
947875	63175	0 1 0 1 1 0 1 1	0 0 1 0 0 1 1 1
947900	63200	0 0 1 1 1 0 0 1	0 0 1 0 0 0 0 0
947925	63225	0 0 1 1 1 0 0 1	0 0 1 0 0 0 0 1
947950	63250	0 0 1 1 1 0 0 1	0 0 1 0 0 1 0 0
947975	63275	0 0 1 1 1 0 0 1	0 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
948 MHz			
948000	63300	0 0 1 1 1 0 0 1	0 0 1 0 0 0 1 0
948025	63325	0 0 1 1 1 0 0 1	0 0 1 0 0 0 1 1
948050	63350	0 0 1 1 1 0 0 1	0 0 1 0 0 1 1 0
948075	63375	0 0 1 1 1 0 0 1	0 0 1 0 0 1 1 1
948100	63400	0 0 1 1 1 0 1 1	0 0 1 0 0 0 0 0
948125	63425	0 0 1 1 1 0 1 1	0 0 1 0 0 0 0 1
948150	63450	0 0 1 1 1 0 1 1	0 0 1 0 0 1 0 0
948175	63475	0 0 1 1 1 0 1 1	0 0 1 0 0 1 0 1
948200	63500	0 0 1 1 1 0 1 1	0 0 1 0 0 0 1 0
948225	63525	0 0 1 1 1 0 1 1	0 0 1 0 0 0 1 1
948250	63550	0 0 1 1 1 0 1 1	0 0 1 0 0 1 1 0
948275	63575	0 0 1 1 1 0 1 1	0 0 1 0 0 1 1 1
948300	63600	0 1 1 1 1 0 0 1	0 0 1 0 0 0 0 0
948325	63625	0 1 1 1 1 0 0 1	0 0 1 0 0 0 0 1
948350	63650	0 1 1 1 1 0 0 1	0 0 1 0 0 1 0 0
948375	63675	0 1 1 1 1 0 0 1	0 0 1 0 0 1 0 1
948400	63700	0 1 1 1 1 0 0 1	0 0 1 0 0 0 1 0
948425	63725	0 1 1 1 1 0 0 1	0 0 1 0 0 0 1 1
948450	63750	0 1 1 1 1 0 0 1	0 0 1 0 0 1 1 0
948475	63775	0 1 1 1 1 0 0 1	0 0 1 0 0 1 1 1
948500	63800	0 1 1 1 1 0 1 1	0 0 1 0 0 0 0 0
948525	63825	0 1 1 1 1 0 1 1	0 0 1 0 0 0 0 1
948550	63850	0 1 1 1 1 0 1 1	0 0 1 0 0 1 0 0
948575	63875	0 1 1 1 1 0 1 1	0 0 1 0 0 1 0 1
948600	63900	0 1 1 1 1 0 1 1	0 0 1 0 0 0 1 0
948625	63925	0 1 1 1 1 0 1 1	0 0 1 0 0 0 1 1
948650	63950	0 1 1 1 1 0 1 1	0 0 1 0 0 1 1 0
948675	63975	0 1 1 1 1 0 1 1	0 0 1 0 0 1 1 1
948700	64000	0 0 0 0 0 0 0 0	1 0 1 0 0 0 0 0
948725	64025	0 0 0 0 0 0 0 0	1 0 1 0 0 0 0 1
948750	64050	0 0 0 0 0 0 0 0	1 0 1 0 0 1 0 0
948775	64075	0 0 0 0 0 0 0 0	1 0 1 0 0 1 0 1
948800	64100	0 0 0 0 0 0 0 0	1 0 1 0 0 0 1 0
948825	64125	0 0 0 0 0 0 0 0	1 0 1 0 0 0 1 1
948850	64150	0 0 0 0 0 0 0 0	1 0 1 0 0 1 1 0
948875	64175	0 0 0 0 0 0 0 0	1 0 1 0 0 1 1 1
948900	64200	0 0 0 0 0 0 1 0	1 0 1 0 0 0 0 0
948925	64225	0 0 0 0 0 0 1 0	1 0 1 0 0 0 0 1
948950	64250	0 0 0 0 0 0 1 0	1 0 1 0 0 1 0 0
948975	64275	0 0 0 0 0 0 1 0	1 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
949 MHz			
949000	64300	0 0 0 0 0 0 1 0	1 0 1 0 0 0 1 0
949025	64325	0 0 0 0 0 0 1 0	1 0 1 0 0 0 1 1
949050	64350	0 0 0 0 0 0 1 0	1 0 1 0 0 1 1 0
949075	64375	0 0 0 0 0 0 1 0	1 0 1 0 0 1 1 1
949100	64400	0 1 0 0 0 0 0 0	1 0 1 0 0 0 0 0
949125	64425	0 1 0 0 0 0 0 0	1 0 1 0 0 0 0 1
949150	64450	0 1 0 0 0 0 0 0	1 0 1 0 0 1 0 0
949175	64475	0 1 0 0 0 0 0 0	1 0 1 0 0 1 0 1
949200	64500	0 1 0 0 0 0 0 0	1 0 1 0 0 0 1 0
949225	64525	0 1 0 0 0 0 0 0	1 0 1 0 0 0 1 1

949250	64550	0 1 0 0 0 0 0 0	1 0 1 0 0 1 1 0
949275	64575	0 1 0 0 0 0 0 0	1 0 1 0 0 1 1 1
949300	64600	0 1 0 0 0 0 1 0	1 0 1 0 0 0 0 0
949325	64625	0 1 0 0 0 0 1 0	1 0 1 0 0 0 0 1
949350	64650	0 1 0 0 0 0 1 0	1 0 1 0 0 1 0 0
949375	64675	0 1 0 0 0 0 1 0	1 0 1 0 0 1 0 1
949400	64700	0 1 0 0 0 0 1 0	1 0 1 0 0 0 1 0
949425	64725	0 1 0 0 0 0 1 0	1 0 1 0 0 0 1 1
949450	64750	0 1 0 0 0 0 1 0	1 0 1 0 0 1 1 0
949475	64775	0 1 0 0 0 0 1 0	1 0 1 0 0 1 1 1
949500	*64800*	*0 0 1 0 0 0 0 0*	*1 0 1 0 0 0 0 0*
949525	64825	0 0 1 0 0 0 0 0	1 0 1 0 0 0 0 1
949550	64850	0 0 1 0 0 0 0 0	1 0 1 0 0 1 0 0
949575	64875	0 0 1 0 0 0 0 0	1 0 1 0 0 1 0 1
949600	64900	0 0 1 0 0 0 0 0	1 0 1 0 0 0 1 0
949625	64925	0 0 1 0 0 0 0 0	1 0 1 0 0 0 1 1
949650	64950	0 0 1 0 0 0 0 0	1 0 1 0 0 1 1 0
949675	64975	0 0 1 0 0 0 0 0	1 0 1 0 0 1 1 1
949700	65000	0 0 1 0 0 0 1 0	1 0 1 0 0 0 0 0
949725	65025	0 0 1 0 0 0 1 0	1 0 1 0 0 0 0 1
949750	65050	0 0 1 0 0 0 1 0	1 0 1 0 0 1 0 0
949775	65075	0 0 1 0 0 0 1 0	1 0 1 0 0 1 0 1
949800	65100	0 0 1 0 0 0 1 0	1 0 1 0 0 0 1 0
949825	65125	0 0 1 0 0 0 1 0	1 0 1 0 0 0 1 1
949850	65150	0 0 1 0 0 0 1 0	1 0 1 0 0 1 1 0
949875	65175	0 0 1 0 0 0 1 0	1 0 1 0 0 1 1 1
949900	65200	0 1 1 0 0 0 0 0	1 0 1 0 0 0 0 0
949925	65225	0 1 1 0 0 0 0 0	1 0 1 0 0 0 0 1
949950	65250	0 1 1 0 0 0 0 0	1 0 1 0 0 1 0 0
949975	65275	0 1 1 0 0 0 0 0	1 0 1 0 0 1 0 1
Channel	L.O.	DIP Switch S1	DIP Switch S2
Freq. (KHz)	Freq. (KHz)	1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16
950 MHz			
950000	65300	0 1 1 0 0 0 0 0	1 0 1 0 0 0 1 0
950025	65325	0 1 1 0 0 0 0 0	1 0 1 0 0 0 1 1
950050	65350	0 1 1 0 0 0 0 0	1 0 1 0 0 1 1 0
950075	65375	0 1 1 0 0 0 0 0	1 0 1 0 0 1 1 1
950100	65400	0 1 1 0 0 0 1 0	1 0 1 0 0 0 0 0
950125	65425	0 1 1 0 0 0 1 0	1 0 1 0 0 0 0 1
950150	65450	0 1 1 0 0 0 1 0	1 0 1 0 0 1 0 0
950175	65475	0 1 1 0 0 0 1 0	1 0 1 0 0 1 0 1
950200	65500	0 1 1 0 0 0 1 0	1 0 1 0 0 0 1 0
950225	65525	0 1 1 0 0 0 1 0	1 0 1 0 0 0 1 1
950250	65550	0 1 1 0 0 0 1 0	1 0 1 0 0 1 1 0
950275	65575	0 1 1 0 0 0 1 0	1 0 1 0 0 1 1 1
950300	65600	0 0 0 1 0 0 0 0	1 0 1 0 0 0 0 0
950325	65625	0 0 0 1 0 0 0 0	1 0 1 0 0 0 0 1
950350	65650	0 0 0 1 0 0 0 0	1 0 1 0 0 1 0 0
950375	65675	0 0 0 1 0 0 0 0	1 0 1 0 0 1 0 1
950400	65700	0 0 0 1 0 0 0 0	1 0 1 0 0 0 1 0
950425	65725	0 0 0 1 0 0 0 0	1 0 1 0 0 0 1 1
950450	65750	0 0 0 1 0 0 0 0	1 0 1 0 0 1 1 0
950475	65775	0 0 0 1 0 0 0 0	1 0 1 0 0 1 1 1
950500	65800	0 0 0 1 0 0 1 0	1 0 1 0 0 0 0 0
950525	65825	0 0 0 1 0 0 1 0	1 0 1 0 0 0 0 1
950550	65850	0 0 0 1 0 0 1 0	1 0 1 0 0 1 0 0
950575	65875	0 0 0 1 0 0 1 0	1 0 1 0 0 1 0 1
950600	65900	0 0 0 1 0 0 1 0	1 0 1 0 0 0 1 0
950625	65925	0 0 0 1 0 0 1 0	1 0 1 0 0 0 1 1
950650	65950	0 0 0 1 0 0 1 0	1 0 1 0 0 1 1 0
950675	65975	0 0 0 1 0 0 1 0	1 0 1 0 0 1 1 1
950700	66000	0 1 0 1 0 0 0 0	1 0 1 0 0 0 0 0
950725	66025	0 1 0 1 0 0 0 0	1 0 1 0 0 0 0 1
950750	66050	0 1 0 1 0 0 0 0	1 0 1 0 0 1 0 0
950775	66075	0 1 0 1 0 0 0 0	1 0 1 0 0 1 0 1
950800	66100	0 1 0 1 0 0 0 0	1 0 1 0 0 0 1 0
950825	66125	0 1 0 1 0 0 0 0	1 0 1 0 0 0 1 1
950850	66150	0 1 0 1 0 0 0 0	1 0 1 0 0 1 1 0

950875	66175	0 1 0 1 0 0 0 0	1 0 1 0 0 1 1 1
950900	66200	0 1 0 1 0 0 1 0	1 0 1 0 0 0 0 0
950925	66225	0 1 0 1 0 0 1 0	1 0 1 0 0 0 0 1
950950	66250	0 1 0 1 0 0 1 0	1 0 1 0 0 1 0 0
950975	66275	0 1 0 1 0 0 1 0	1 0 1 0 0 1 0 1
Channel	L.O.	DIP Switch S1	DIP Switch S2
Freq. (KHz)	Freq. (KHz)	1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16
951 MHz			
951000	66300	0 1 0 1 0 0 1 0	1 0 1 0 0 0 1 0
951025	66325	0 1 0 1 0 0 1 0	1 0 1 0 0 0 1 1
951050	66350	0 1 0 1 0 0 1 0	1 0 1 0 0 1 1 0
951075	66375	0 1 0 1 0 0 1 0	1 0 1 0 0 1 1 1
951100	66400	0 0 1 1 0 0 0 0	1 0 1 0 0 0 0 0
951125	66425	0 0 1 1 0 0 0 0	1 0 1 0 0 0 0 1
951150	66450	0 0 1 1 0 0 0 0	1 0 1 0 0 1 0 0
951175	66475	0 0 1 1 0 0 0 0	1 0 1 0 0 1 0 1
951200	66500	0 0 1 1 0 0 0 0	1 0 1 0 0 0 1 0
951225	66525	0 0 1 1 0 0 0 0	1 0 1 0 0 0 1 1
951250	66550	0 0 1 1 0 0 0 0	1 0 1 0 0 1 1 0
951275	66575	0 0 1 1 0 0 0 0	1 0 1 0 0 1 1 1
951300	66600	0 0 1 1 0 0 1 0	1 0 1 0 0 0 0 0
951325	66625	0 0 1 1 0 0 1 0	1 0 1 0 0 0 0 1
951350	66650	0 0 1 1 0 0 1 0	1 0 1 0 0 1 0 0
951375	66675	0 0 1 1 0 0 1 0	1 0 1 0 0 1 0 1
951400	66700	0 0 1 1 0 0 1 0	1 0 1 0 0 0 1 0
951425	66725	0 0 1 1 0 0 1 0	1 0 1 0 0 0 1 1
951450	66750	0 0 1 1 0 0 1 0	1 0 1 0 0 1 1 0
951475	66775	*0 0 1 1 0 0 1 0*	*1 0 1 0 0 1 1 1*
951500	66800	0 1 1 1 0 0 0 0	1 0 1 0 0 0 0 0
951525	66825	0 1 1 1 0 0 0 0	1 0 1 0 0 0 0 1
951550	66850	0 1 1 1 0 0 0 0	1 0 1 0 0 1 0 0
951575	66875	0 1 1 1 0 0 0 0	1 0 1 0 0 1 0 1
951600	66900	0 1 1 1 0 0 0 0	1 0 1 0 0 0 1 0
951625	66925	0 1 1 1 0 0 0 0	1 0 1 0 0 0 1 1
951650	66950	0 1 1 1 0 0 0 0	1 0 1 0 0 1 1 0
951675	66975	0 1 1 1 0 0 0 0	1 0 1 0 0 1 1 1
951700	67000	0 1 1 1 0 0 1 0	1 0 1 0 0 0 0 0
951725	67025	0 1 1 1 0 0 1 0	1 0 1 0 0 0 0 1
951750	67050	0 1 1 1 0 0 1 0	1 0 1 0 0 1 0 0
951775	67075	0 1 1 1 0 0 1 0	1 0 1 0 0 1 0 1
951800	67100	0 1 1 1 0 0 1 0	1 0 1 0 0 0 1 0
951825	67125	0 1 1 1 0 0 1 0	1 0 1 0 0 0 1 1
951850	67150	0 1 1 1 0 0 1 0	1 0 1 0 0 1 1 0
951875	67175	0 1 1 1 0 0 1 0	1 0 1 0 0 1 1 1
951900	67200	0 0 0 0 1 0 0 0	1 0 1 0 0 0 0 0
951925	67225	0 0 0 0 1 0 0 0	1 0 1 0 0 0 0 1
951950	67250	0 0 0 0 1 0 0 0	1 0 1 0 0 1 0 0
951975	67275	0 0 0 0 1 0 0 0	1 0 1 0 0 1 0 1
Channel	L.O.	DIP Switch S1	DIP Switch S2
Freq. (KHz)	Freq. (KHz)	1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16

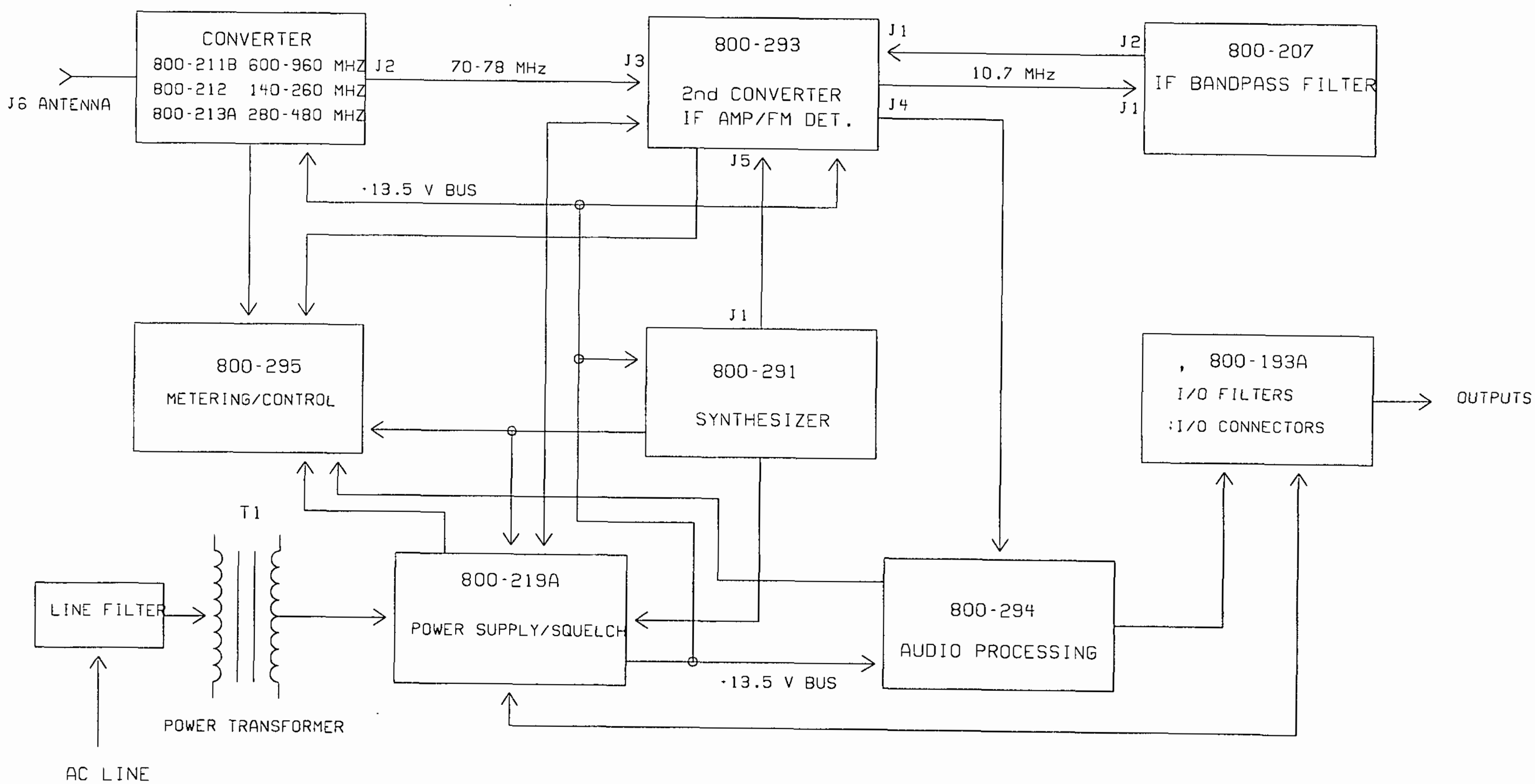
946125	61425	0 1 0 0 1 0 1 1	0 0 1 0 0 0 0 1
946150	61450	0 1 0 0 1 0 1 1	0 0 1 0 0 1 0 0
946175	61475	0 1 0 0 1 0 1 1	0 0 1 0 0 1 0 1
946200	61500	0 1 0 0 1 0 1 1	0 0 1 0 0 0 1 0
946225	61525	0 1 0 0 1 0 1 1	0 0 1 0 0 0 1 1
946250	61550	0 1 0 0 1 0 1 1	0 0 1 0 0 1 1 0
946275	61575	0 1 0 0 1 0 1 1	0 0 1 0 0 1 1 1
946300	61600	0 0 1 0 1 0 0 1	0 0 1 0 0 0 0 0
946325	61625	0 0 1 0 1 0 0 1	0 0 1 0 0 0 0 1
946350	61650	0 0 1 0 1 0 0 1	0 0 1 0 0 1 0 0
946375	61675	0 0 1 0 1 0 0 1	0 0 1 0 0 1 0 1
946400	61700	0 0 1 0 1 0 0 1	0 0 1 0 0 0 1 0
946425	61725	0 0 1 0 1 0 0 1	0 0 1 0 0 0 1 1
946450	61750	0 0 1 0 1 0 0 1	0 0 1 0 0 1 1 0
946475	61775	0 0 1 0 1 0 0 1	0 0 1 0 0 1 1 1
946500	61800	0 0 1 0 1 0 1 1	0 0 1 0 0 0 0 0
946525	61825	0 0 1 0 1 0 1 1	0 0 1 0 0 0 0 1
946550	61850	0 0 1 0 1 0 1 1	0 0 1 0 0 1 0 0
946575	61875	0 0 1 0 1 0 1 1	0 0 1 0 0 1 0 1
946600	61900	0 0 1 0 1 0 1 1	0 0 1 0 0 0 1 0
946625	61925	0 0 1 0 1 0 1 1	0 0 1 0 0 0 1 1
946650	61950	0 0 1 0 1 0 1 1	0 0 1 0 0 1 1 0
946675	61975	0 0 1 0 1 0 1 1	0 0 1 0 0 1 1 1
946700	62000	0 1 1 0 1 0 0 1	0 0 1 0 0 0 0 0
946725	62025	0 1 1 0 1 0 0 1	0 0 1 0 0 0 0 1
946750	62050	0 1 1 0 1 0 0 1	0 0 1 0 0 1 0 0
946775	62075	0 1 1 0 1 0 0 1	0 0 1 0 0 1 0 1
946800	62100	0 1 1 0 1 0 0 1	0 0 1 0 0 0 1 0
946825	62125	0 1 1 0 1 0 0 1	0 0 1 0 0 0 1 1
946850	62150	0 1 1 0 1 0 0 1	0 0 1 0 0 1 1 0
946875	62175	0 1 1 0 1 0 0 1	0 0 1 0 0 1 1 1
946900	62200	0 1 1 0 1 0 1 1	0 0 1 0 0 0 0 0
946925	62225	0 1 1 0 1 0 1 1	0 0 1 0 0 0 0 1
946950	62250	0 1 1 0 1 0 1 1	0 0 1 0 0 1 0 0
946975	62275	0 1 1 0 1 0 1 1	0 0 1 0 0 1 0 1

Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
947 MHz			
947000	62300	0 1 1 0 1 0 1 1	0 0 1 0 0 0 1 0
947025	62325	0 1 1 0 1 0 1 1	0 0 1 0 0 0 1 1
947050	62350	0 1 1 0 1 0 1 1	0 0 1 0 0 1 1 0
947075	62375	0 1 1 0 1 0 1 1	0 0 1 0 0 1 1 1
947100	62400	0 0 0 1 1 0 0 1	0 0 1 0 0 0 0 0
947125	62425	0 0 0 1 1 0 0 1	0 0 1 0 0 0 0 1
947150	62450	0 0 0 1 1 0 0 1	0 0 1 0 0 1 0 0
947175	62475	0 0 0 1 1 0 0 1	0 0 1 0 0 1 0 1
947200	62500	0 0 0 1 1 0 0 1	0 0 1 0 0 0 1 0
947225	62525	0 0 0 1 1 0 0 1	0 0 1 0 0 0 1 1
947250	62550	0 0 0 1 1 0 0 1	0 0 1 0 0 1 1 0
947275	62575	0 0 0 1 1 0 0 1	0 0 1 0 0 1 1 1
947300	62600	0 0 0 1 1 0 1 1	0 0 1 0 0 0 0 0
947325	62625	0 0 0 1 1 0 1 1	0 0 1 0 0 0 0 1
947350	62650	0 0 0 1 1 0 1 1	0 0 1 0 0 1 0 0
947375	62675	0 0 0 1 1 0 1 1	0 0 1 0 0 1 0 1
947400	62700	0 0 0 1 1 0 1 1	0 0 1 0 0 0 1 0
947425	62725	0 0 0 1 1 0 1 1	0 0 1 0 0 0 1 1
947450	62750	0 0 0 1 1 0 1 1	0 0 1 0 0 1 1 0
947475	62775	0 0 0 1 1 0 1 1	0 0 1 0 0 1 1 1
947500	62800	0 1 0 1 1 0 0 1	0 0 1 0 0 0 0 0
947525	62825	0 1 0 1 1 0 0 1	0 0 1 0 0 0 0 1
947550	62850	0 1 0 1 1 0 0 1	0 0 1 0 0 1 0 0
947575	62875	0 1 0 1 1 0 0 1	0 0 1 0 0 1 0 1
947600	62900	0 1 0 1 1 0 0 1	0 0 1 0 0 0 1 0
947625	62925	0 1 0 1 1 0 0 1	0 0 1 0 0 0 1 1
947650	62950	0 1 0 1 1 0 0 1	0 0 1 0 0 1 1 0
947675	62975	0 1 0 1 1 0 0 1	0 0 1 0 0 1 1 1
947700	63000	0 1 0 1 1 0 1 1	0 0 1 0 0 0 0 0
947725	63025	0 1 0 1 1 0 1 1	0 0 1 0 0 0 0 1
947750	63050	0 1 0 1 1 0 1 1	0 0 1 0 0 1 0 0
947775	63075	0 1 0 1 1 0 1 1	0 0 1 0 0 1 0 1
947800	63100	0 1 0 1 1 0 1 1	0 0 1 0 0 0 1 0
947825	63125	0 1 0 1 1 0 1 1	0 0 1 0 0 0 1 1
947850	63150	0 1 0 1 1 0 1 1	0 0 1 0 0 1 1 0
947875	63175	0 1 0 1 1 0 1 1	0 0 1 0 0 1 1 1
947900	63200	0 0 1 1 1 0 0 1	0 0 1 0 0 0 0 0
947925	63225	0 0 1 1 1 0 0 1	0 0 1 0 0 0 0 1
947950	63250	0 0 1 1 1 0 0 1	0 0 1 0 0 1 0 0
947975	63275	0 0 1 1 1 0 0 1	0 0 1 0 0 1 0 1

Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
948 MHz			
948000	63300	0 0 1 1 1 0 0 1	0 0 1 0 0 0 1 0
948025	63325	0 0 1 1 1 0 0 1	0 0 1 0 0 0 1 1
948050	63350	0 0 1 1 1 0 0 1	0 0 1 0 0 1 1 0
948075	63375	0 0 1 1 1 0 0 1	0 0 1 0 0 1 1 1
948100	63400	0 0 1 1 1 0 1 1	0 0 1 0 0 0 0 0
948125	63425	0 0 1 1 1 0 1 1	0 0 1 0 0 0 0 1
948150	63450	0 0 1 1 1 0 1 1	0 0 1 0 0 1 0 0
948175	63475	0 0 1 1 1 0 1 1	0 0 1 0 0 1 0 1
948200	63500	0 0 1 1 1 0 1 1	0 0 1 0 0 0 1 0
948225	63525	0 0 1 1 1 0 1 1	0 0 1 0 0 0 1 1
948250	63550	0 0 1 1 1 0 1 1	0 0 1 0 0 1 1 0
948275	63575	0 0 1 1 1 0 1 1	0 0 1 0 0 1 1 1
948300	63600	0 1 1 1 1 0 0 1	0 0 1 0 0 0 0 0
948325	63625	0 1 1 1 1 0 0 1	0 0 1 0 0 0 0 1
948350	63650	0 1 1 1 1 0 0 1	0 0 1 0 0 1 0 0
948375	63675	0 1 1 1 1 0 0 1	0 0 1 0 0 1 0 1
948400	63700	0 1 1 1 1 0 0 1	0 0 1 0 0 0 1 0
948425	63725	0 1 1 1 1 0 0 1	0 0 1 0 0 0 1 1
948450	63750	0 1 1 1 1 0 0 1	0 0 1 0 0 1 1 0
948475	63775	0 1 1 1 1 0 0 1	0 0 1 0 0 1 1 1
948500	63800	0 1 1 1 1 0 1 1	0 0 1 0 0 0 0 0
948525	63825	0 1 1 1 1 0 1 1	0 0 1 0 0 0 0 1
948550	63850	0 1 1 1 1 0 1 1	0 0 1 0 0 1 0 0
948575	63875	0 1 1 1 1 0 1 1	0 0 1 0 0 1 0 1
948600	63900	0 1 1 1 1 0 1 1	0 0 1 0 0 0 1 0
948625	63925	0 1 1 1 1 0 1 1	0 0 1 0 0 0 1 1
948650	63950	0 1 1 1 1 0 1 1	0 0 1 0 0 1 1 0
948675	63975	0 1 1 1 1 0 1 1	0 0 1 0 0 1 1 1
948700	64000	0 0 0 0 0 0 0 0	1 0 1 0 0 0 0 0
948725	64025	0 0 0 0 0 0 0 0	1 0 1 0 0 0 0 1
948750	64050	0 0 0 0 0 0 0 0	1 0 1 0 0 1 0 0
948775	64075	0 0 0 0 0 0 0 0	1 0 1 0 0 1 0 1
948800	64100	0 0 0 0 0 0 0 0	1 0 1 0 0 0 1 0
948825	64125	0 0 0 0 0 0 0 0	1 0 1 0 0 0 1 1
948850	64150	0 0 0 0 0 0 0 0	1 0 1 0 0 1 1 0
948875	64175	0 0 0 0 0 0 0 0	1 0 1 0 0 1 1 1
948900	64200	0 0 0 0 0 0 1 0	1 0 1 0 0 0 0 0
948925	64225	0 0 0 0 0 0 1 0	1 0 1 0 0 0 0 1
948950	64250	0 0 0 0 0 0 1 0	1 0 1 0 0 1 0 0
948975	64275	0 0 0 0 0 0 1 0	1 0 1 0 0 1 0 1

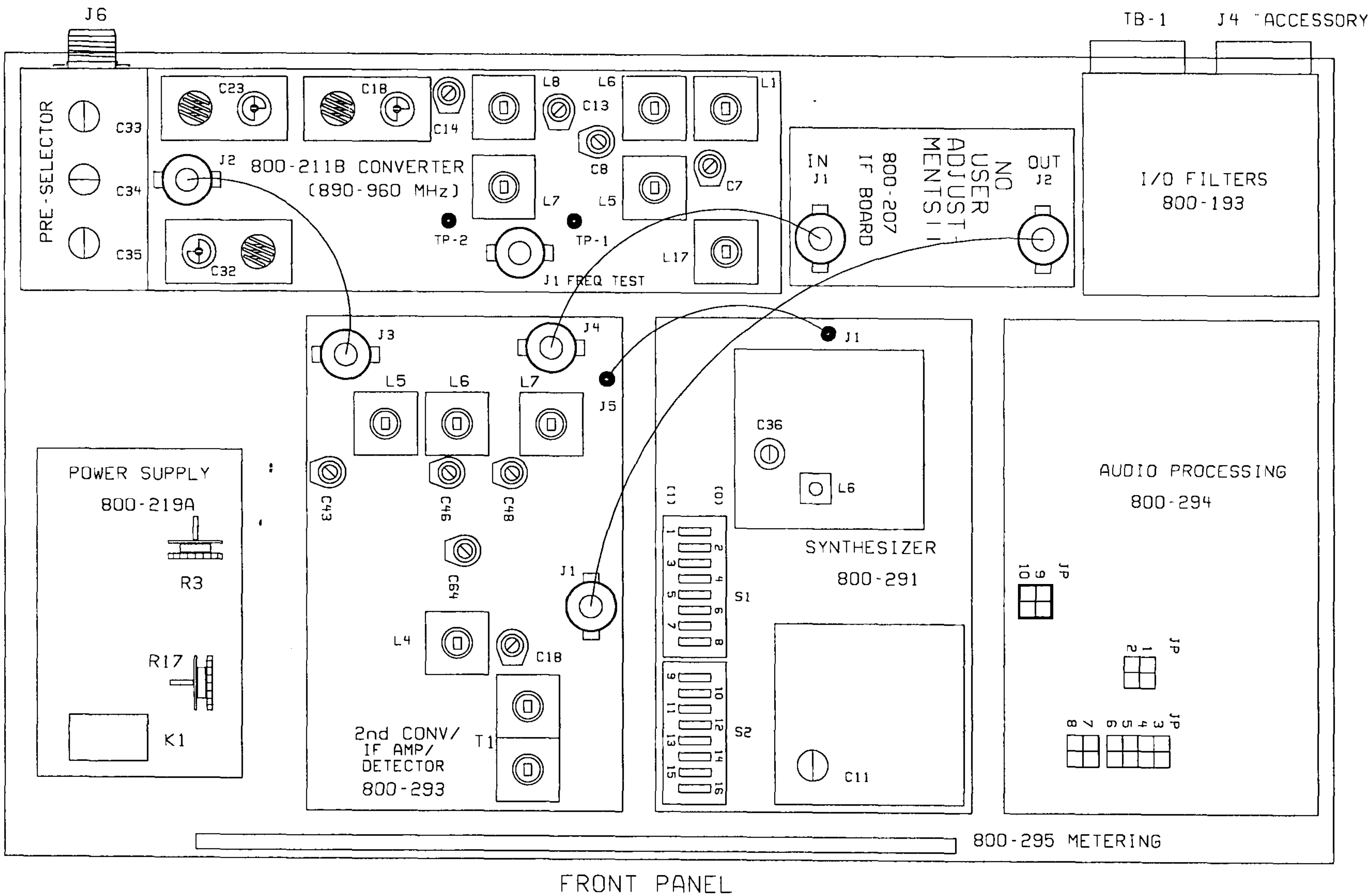
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
949 MHz			
949000	64300	0 0 0 0 0 0 1 0	1 0 1 0 0 0 1 0
949025	64325	0 0 0 0 0 0 1 0	1 0 1 0 0 0 1 1
949050	64350	0 0 0 0 0 0 1 0	1 0 1 0 0 1 1 0
949075	64375	0 0 0 0 0 0 1 0	1 0 1 0 0 1 1 1
949100	64400	0 1 0 0 0 0 0 0	1 0 1 0 0 0 0 0
949125	64425	0 1 0 0 0 0 0 0	1 0 1 0 0 0 0 1
949150	64450	0 1 0 0 0 0 0 0	1 0 1 0 0 1 0 0
949175	64475	0 1 0 0 0 0 0 0	1 0 1 0 0 1 0 1
949200	64500	0 1 0 0 0 0 0 0	1 0 1 0 0 0 1 0
949225	64525	0 1 0 0 0 0 0 0	1 0 1 0 0 0 1 1

949250	64550	0 1 0 0 0 0 0 0	1 0 1 0 0 1 1 0
949275	64575	0 1 0 0 0 0 0 0	1 0 1 0 0 1 1 1
949300	64600	0 1 0 0 0 0 1 0	1 0 1 0 0 0 0 0
949325	64625	0 1 0 0 0 0 1 0	1 0 1 0 0 0 0 1
949350	64650	0 1 0 0 0 0 1 0	1 0 1 0 0 1 0 0
949375	64675	0 1 0 0 0 0 1 0	1 0 1 0 0 1 0 1
949400	64700	0 1 0 0 0 0 1 0	1 0 1 0 0 0 1 0
949425	64725	0 1 0 0 0 0 1 0	1 0 1 0 0 0 1 1
949450	64750	0 1 0 0 0 0 1 0	1 0 1 0 0 1 1 0
949475	64775	0 1 0 0 0 0 1 0	1 0 1 0 0 1 1 1
949500	64800	0 0 1 0 0 0 0 0	1 0 1 0 0 0 0 0
949525	64825	0 0 1 0 0 0 0 0	1 0 1 0 0 0 0 1
949550	64850	0 0 1 0 0 0 0 0	1 0 1 0 0 1 0 0
949575	64875	0 0 1 0 0 0 0 0	1 0 1 0 0 1 0 1
949600	64900	0 0 1 0 0 0 0 0	1 0 1 0 0 0 1 0
949625	64925	0 0 1 0 0 0 0 0	1 0 1 0 0 0 1 1
949650	64950	0 0 1 0 0 0 0 0	1 0 1 0 0 1 1 0
949675	64975	0 0 1 0 0 0 0 0	1 0 1 0 0 1 1 1
949700	65000	0 0 1 0 0 0 1 0	1 0 1 0 0 0 0 0
949725	65025	0 0 1 0 0 0 1 0	1 0 1 0 0 0 0 1
949750	65050	0 0 1 0 0 0 1 0	1 0 1 0 0 1 0 0
949775	65075	0 0 1 0 0 0 1 0	1 0 1 0 0 1 0 1
949800	65100	0 0 1 0 0 0 1 0	1 0 1 0 0 0 1 0
949825	65125	0 0 1 0 0 0 1 0	1 0 1 0 0 0 1 1
949850	65150	0 0 1 0 0 0 1 0	1 0 1 0 0 1 1 0
949875	65175	0 0 1 0 0 0 1 0	1 0 1 0 0 1 1 1
949900	65200	0 1 1 0 0 0 0 0	1 0 1 0 0 0 0 0
949925	65225	0 1 1 0 0 0 0 0	1 0 1 0 0 0 0 1
949950	65250	0 1 1 0 0 0 0 0	1 0 1 0 0 1 0 0
949975	65275	0 1 1 0 0 0 0 0	1 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
950 MHz			
950000	65300	0 1 1 0 0 0 0 0	1 0 1 0 0 0 1 0
950025	65325	0 1 1 0 0 0 0 0	1 0 1 0 0 0 1 1
950050	65350	0 1 1 0 0 0 0 0	1 0 1 0 0 1 1 0
950075	65375	0 1 1 0 0 0 0 0	1 0 1 0 0 1 1 1
950100	65400	0 1 1 0 0 0 1 0	1 0 1 0 0 0 0 0
950125	65425	0 1 1 0 0 0 1 0	1 0 1 0 0 0 0 1
950150	65450	0 1 1 0 0 0 1 0	1 0 1 0 0 1 0 0
950175	65475	0 1 1 0 0 0 1 0	1 0 1 0 0 1 0 1
950200	65500	0 1 1 0 0 0 1 0	1 0 1 0 0 0 1 0
950225	65525	0 1 1 0 0 0 1 0	1 0 1 0 0 0 1 1
950250	65550	0 1 1 0 0 0 1 0	1 0 1 0 0 1 1 0
950275	65575	0 1 1 0 0 0 1 0	1 0 1 0 0 1 1 1
950300	65600	0 0 0 1 0 0 0 0	1 0 1 0 0 0 0 0
950325	65625	0 0 0 1 0 0 0 0	1 0 1 0 0 0 0 1
950350	65650	0 0 0 1 0 0 0 0	1 0 1 0 0 1 0 0
950375	65675	0 0 0 1 0 0 0 0	1 0 1 0 0 1 0 1
950400	65700	0 0 0 1 0 0 0 0	1 0 1 0 0 0 1 0
950425	65725	0 0 0 1 0 0 0 0	1 0 1 0 0 0 1 1
950450	65750	0 0 0 1 0 0 0 0	1 0 1 0 0 1 1 0
950475	65775	0 0 0 1 0 0 0 0	1 0 1 0 0 1 1 1
950500	65800	0 0 0 1 0 0 1 0	1 0 1 0 0 0 0 0
950525	65825	0 0 0 1 0 0 1 0	1 0 1 0 0 0 0 1
950550	65850	0 0 0 1 0 0 1 0	1 0 1 0 0 1 0 0
950575	65875	0 0 0 1 0 0 1 0	1 0 1 0 0 1 0 1
950600	65900	0 0 0 1 0 0 1 0	1 0 1 0 0 0 1 0
950625	65925	0 0 0 1 0 0 1 0	1 0 1 0 0 0 1 1
950650	65950	0 0 0 1 0 0 1 0	1 0 1 0 0 1 1 0
950675	65975	0 0 0 1 0 0 1 0	1 0 1 0 0 1 1 1
950700	66000	0 1 0 1 0 0 0 0	1 0 1 0 0 0 0 0
950725	66025	0 1 0 1 0 0 0 0	1 0 1 0 0 0 0 1
950750	66050	0 1 0 1 0 0 0 0	1 0 1 0 0 1 0 0
950775	66075	0 1 0 1 0 0 0 0	1 0 1 0 0 1 0 1
950800	66100	0 1 0 1 0 0 0 0	1 0 1 0 0 0 1 0
950825	66125	0 1 0 1 0 0 0 0	1 0 1 0 0 0 1 1
950850	66150	0 1 0 1 0 0 0 0	1 0 1 0 0 1 1 0
950875	66175	0 1 0 1 0 0 0 0	1 0 1 0 0 1 1 1
950900	66200	0 1 0 1 0 0 1 0	1 0 1 0 0 0 0 0
950925	66225	0 1 0 1 0 0 1 0	1 0 1 0 0 0 0 1
950950	66250	0 1 0 1 0 0 1 0	1 0 1 0 0 1 0 0
950975	66275	0 1 0 1 0 0 1 0	1 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16
951 MHz			
951000	66300	0 1 0 1 0 0 1 0	1 0 1 0 0 0 1 0
951025	66325	0 1 0 1 0 0 1 0	1 0 1 0 0 0 1 1
951050	66350	0 1 0 1 0 0 1 0	1 0 1 0 0 1 1 0
951075	66375	0 1 0 1 0 0 1 0	1 0 1 0 0 1 1 1
951100	66400	0 0 1 1 0 0 0 0	1 0 1 0 0 0 0 0
951125	66425	0 0 1 1 0 0 0 0	1 0 1 0 0 0 0 1
951150	66450	0 0 1 1 0 0 0 0	1 0 1 0 0 1 0 0
951175	66475	0 0 1 1 0 0 0 0	1 0 1 0 0 1 0 1
951200	66500	0 0 1 1 0 0 0 0	1 0 1 0 0 0 1 0
951225	66525	0 0 1 1 0 0 0 0	1 0 1 0 0 0 1 1
951250	66550	0 0 1 1 0 0 0 0	1 0 1 0 0 1 1 0
951275	66575	0 0 1 1 0 0 0 0	1 0 1 0 0 1 1 1
951300	66600	0 0 1 1 0 0 1 0	1 0 1 0 0 0 0 0
951325	66625	0 0 1 1 0 0 1 0	1 0 1 0 0 0 0 1
951350	66650	0 0 1 1 0 0 1 0	1 0 1 0 0 1 0 0
951375	66675	0 0 1 1 0 0 1 0	1 0 1 0 0 1 0 1
951400	66700	0 0 1 1 0 0 1 0	1 0 1 0 0 0 1 0
951425	66725	0 0 1 1 0 0 1 0	1 0 1 0 0 0 1 1
951450	66750	0 0 1 1 0 0 1 0	1 0 1 0 0 1 1 0
951475	66775	0 0 1 1 0 0 1 0	1 0 1 0 0 1 1 1
951500	66800	0 1 1 1 0 0 0 0	1 0 1 0 0 0 0 0
951525	66825	0 1 1 1 0 0 0 0	1 0 1 0 0 0 0 1
951550	66850	0 1 1 1 0 0 0 0	1 0 1 0 0 1 0 0
951575	66875	0 1 1 1 0 0 0 0	1 0 1 0 0 1 0 1
951600	66900	0 1 1 1 0 0 0 0	1 0 1 0 0 0 1 0
951625	66925	0 1 1 1 0 0 0 0	1 0 1 0 0 0 1 1
951650	66950	0 1 1 1 0 0 0 0	1 0 1 0 0 1 1 0
951675	66975	0 1 1 1 0 0 0 0	1 0 1 0 0 1 1 1
951700	67000	0 1 1 1 0 0 1 0	1 0 1 0 0 0 0 0
951725	67025	0 1 1 1 0 0 1 0	1 0 1 0 0 0 0 1
951750	67050	0 1 1 1 0 0 1 0	1 0 1 0 0 1 0 0
951775	67075	0 1 1 1 0 0 1 0	1 0 1 0 0 1 0 1
951800	67100	0 1 1 1 0 0 1 0	1 0 1 0 0 0 1 0
951825	67125	0 1 1 1 0 0 1 0	1 0 1 0 0 0 1 1
951850	67150	0 1 1 1 0 0 1 0	1 0 1 0 0 1 1 0
951875	67175	0 1 1 1 0 0 1 0	1 0 1 0 0 1 1 1
951900	67200	0 0 0 0 1 0 0 0	1 0 1 0 0 0 0 0
951925	67225	0 0 0 0 1 0 0 0	1 0 1 0 0 0 0 1
951950	67250	0 0 0 0 1 0 0 0	1 0 1 0 0 1 0 0
951975	67275	0 0 0 0 1 0 0 0	1 0 1 0 0 1 0 1
Channel Freq. (KHz)	L.O. Freq. (KHz)	DIP Switch S1 1 2 3 4 5 6 7 8	DIP Switch S2 9 10 11 12 13 14 15 16

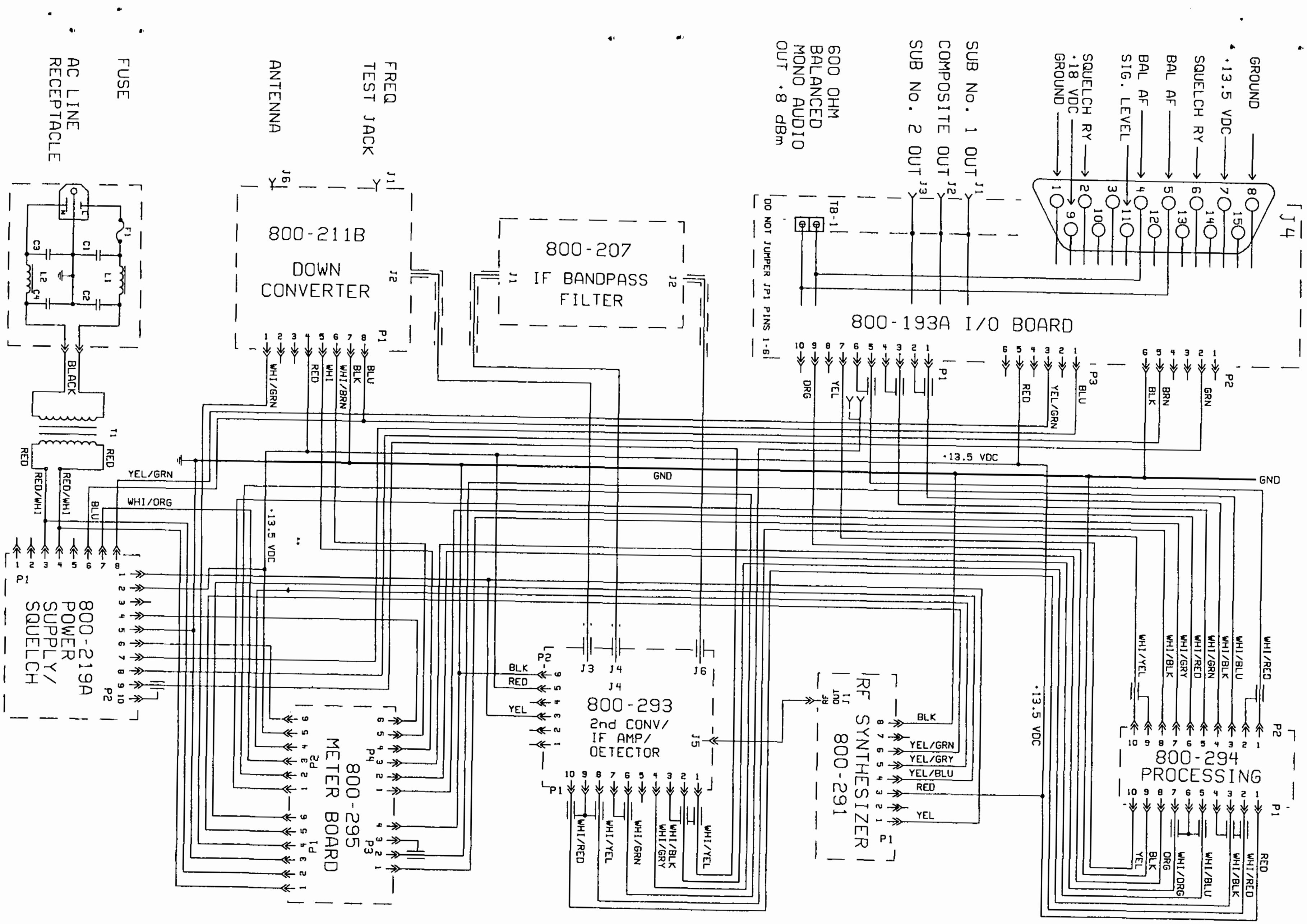


REFER TO SCHEMATIC DIAGRAM FOR EACH BLOCK BY NUMBER

MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 7/8/93 702-100	TITLE R-15C RECEIVER BLOCK DIAGRAM



MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 7/23/93 702-099	TITLE R-15C ADJUSTMENT LOCATIONS

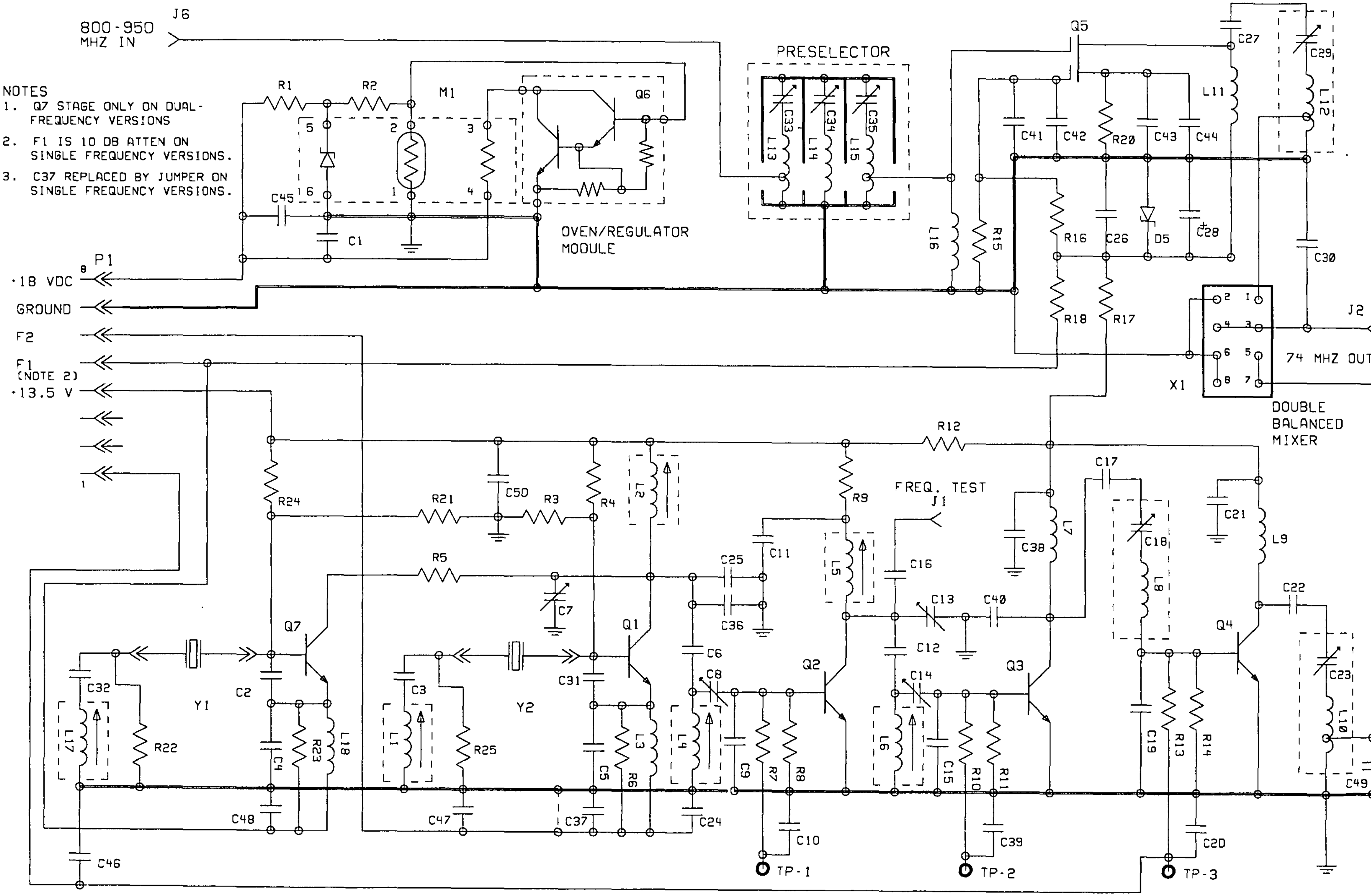


MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 8/18/93 702-095	TITLE R-15C MAIN FRAME

Parts List
Main Frame
MARTI 702-095 06-23-93

Item	Marti No.	Description
C1	297-201	Capacitor, .0022 mfd, Type AU disc
C2	297-201	Capacitor, .0022 mfd, Type AU disc
C3	297-201	Capacitor, .0022 mfd, Type AU disc
C4	297-201	Capacitor, .0022 mfd, Type AU disc
F1		Fuse,
L1	330-019	Inductor, VK20010-3B
L2	330-019	Inductor, VK20010-3B
T1	320-046L	Transformer, Power 110 volt AC primary
	320-046AL	Transformer, Power 220 volt AC primary

NOTES
1. Q7 STAGE ONLY ON DUAL-FREQUENCY VERSIONS
2. F1 IS 10 DB ATTEN ON SINGLE FREQUENCY VERSIONS.
3. C37 REPLACED BY JUMPER ON SINGLE FREQUENCY VERSIONS.

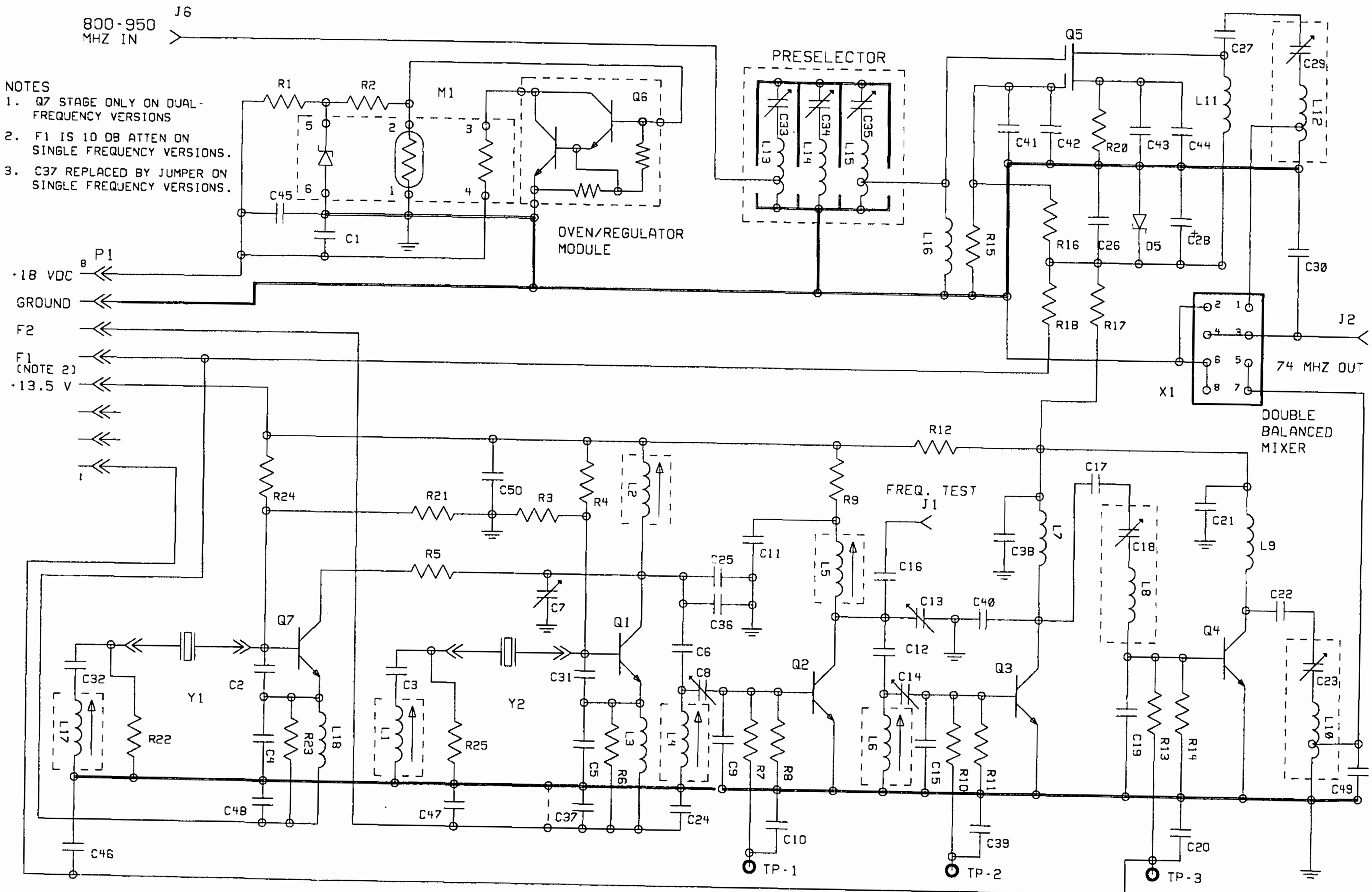


MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. 800-211 COPYRIGHT 7/28/93	TITLE 890 - 950 MHZ CONVERTER

Parts List
Main Frame
MARTI 702-095 06-23-93

Item	Marti No.	Description
C1	297-201	Capacitor, .0022 mfd, Type AU disc
C2	297-201	Capacitor, .0022 mfd, Type AU disc
C3	297-201	Capacitor, .0022 mfd, Type AU disc
C4	297-201	Capacitor, .0022 mfd, Type AU disc
F1		Fuse,
L1	330-019	Inductor, VK20010-3B
L2	330-019	Inductor, VK20010-3B
T1	320-046L	Transformer, Power 110 volt AC primary
	320-046AL	Transformer, Power 220 volt AC primary

NOTES
1. Q7 STAGE ONLY ON DUAL-FREQUENCY VERSIONS
2. F1 IS 10 DB ATTEN ON SINGLE FREQUENCY VERSIONS.
3. C37 REPLACED BY JUMPER ON SINGLE FREQUENCY VERSIONS.



MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. 800-211 COPYRIGHT 7/28/93	TITLE 890 - 950 MHZ CONVERTER

Parts List
R-10/950 SF Converter Board
MARTI 800-211 07-29-93

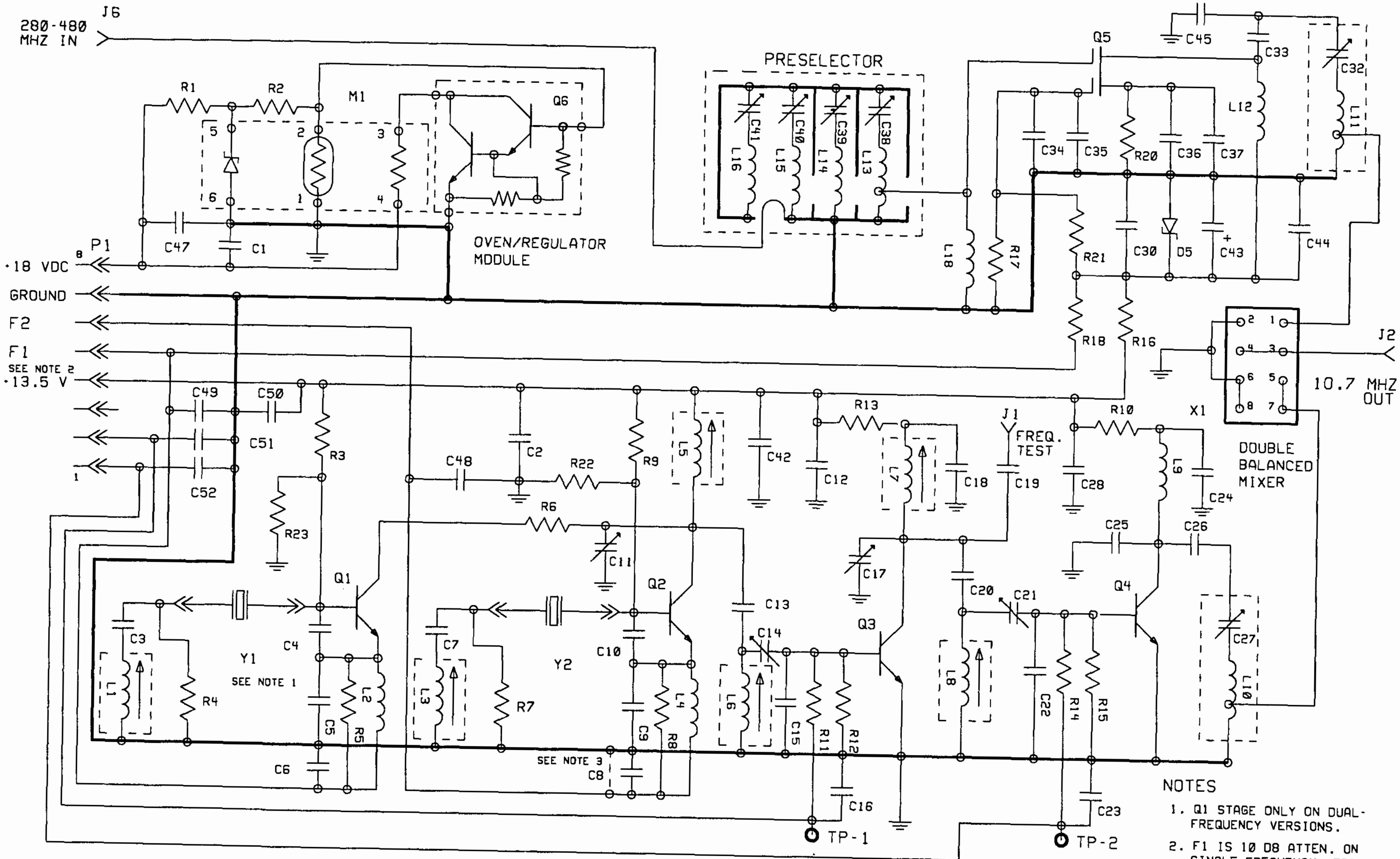
Item	Marti No.	Description
C01	217-104	Capacitor, .01 mf 50v GMV disc
C02	NOT USED	
C03	255-150	Capacitor, 15 pf 5% NPO disc
C04	NOT USED	
C05	255-750	Capacitor, 75 pf 5% NPO disc
C06	255-010	Capacitor, 1 pf 5% type QC
C07	290-521	Capacitor, variable, 5-25 pf GKU-25000
C08	290-521	Capacitor, variable, 5-25 pf GKU-25000
C09	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C10	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C11	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C12	255-004	Capacitor, .43 pf 5% type QC
C13	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C14	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C15	255-150	Capacitor, 15 pf 5% NPO disc
C16	255-050	Capacitor, 5 pf 5% NPO disc
C17	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C18	230-103	Capacitor, variable, vertical 1.3-5.4 pf T
C19	255-100	Capacitor, 10 pf 5% NPO disc
C20	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C21	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C22	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C23	230-103	Capacitor, variable, vertical 1.3-5.4 pf T
C24	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C25	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C26	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C27	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C28	219-200	Capacitor, electrolytic 22uF 25V
C29	230-103	Capacitor, variable, vertical 1.3-5.4 pf T
C30	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C31	255-150	Capacitor, 15 pf 5% NPO disc
C32	NOT USED	
C33	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C34	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C35	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C36	217-103	Capacitor, .1 mf 100v 10% mylar
C37	JUMPERED	
C38	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C39	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C40	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C41	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C42	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C43	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C44	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C45	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C46	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C47	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C48	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C49	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C50	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
D1	NOT USED	

Parts List
R-10/950 SF Converter Board
MARTI 800-211 07-29-93

Item	Marti No.	Description
D2	NOT USED	
D3	NOT USED	
D4	NOT USED	
D5	410-754	Diode, zener Motorola 1N754A 6.3v
J1	550-084	Connector, Phono Jack, Molex 15-24-0503
J2	550-084	Connector, Phono Jack, Molex 15-24-0503
L01	350-044	Inductor, 1.0 - 2 uH w/shield can #47271
L02	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L03	330-007	Inductor, 1 uH Delevan #1840-10
L04	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L05	350-039	Inductor, 2 1/2 turn red #144-02J12S
L06	350-039	Inductor, 2 1/2 turn red #144-02J12S
L07	350-121	Inductor, 10 turn .15 uH #70-03
L08	350-163	Inductor, 3 turn 18AWG
L09	350-121	Inductor, 10 turn .15 uH #70-03
L10	350-139P	Inductor, 16 AWG 950 MHz silver
L11	350-121	Inductor, 10 turn .15 uH #70-03
L12	350-139P	Inductor, 16 AWG 950 MHz silver
L13	700-238	Inductor, 950 MHz Stripline
L14	700-238	Inductor, 950 MHz Stripline
L15	700-238	Inductor, 950 MHz Stripline
L16	350-121	Inductor, 10 turn .15 uH #70-03
L17	NOT USED	
L18	NOT USED	
M1	520-052A	Receiver Converter Oven
Q1	440-245	Transistor, SRF3017
Q2	420-090	Transistor, BFY90
Q3	420-090	Transistor, BFY90
Q4	420-090	Transistor, BFY90
Q5	420-966	Transistor, CF300A Telefunken GaAs FET
Q6	part of M1	
Q7	NOT USED	
R01	145-681	Resistor, 680 ohm 1/4 watt 5% metal film
R02	145-332-1	Resistor, 3.3k ohm 1/4 watt 2% RL07S332G
R03	145-683	Resistor, 68k ohm 1/4 watt 5% metal film
R04	145-683	Resistor, 68k ohm 1/4 watt 5% metal film
R05	NOT USED	
R06	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R07	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R08	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R09	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R10	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R11	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R12	145-220	Resistor, 22 ohm 1/4 watt 5% metal film
R13	145-562-1	Resistor, 5.6k ohm 1/4 watt 2% RL07S562G
R14	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R15	145-752	Resistor, 7.5k ohm 1/4 watt 5% metal film
R16	145-123	Resistor, 12k ohm 1/4 watt 5% metal film
R17	145-271	Resistor, 270 ohm 1/4 watt 5% metal film
R18	145-121-1	Resistor, 120 ohm 1/4 watt 2% RL07S121G
R19	NOT USED	

Parts List
R-10/950 SF Converter Board
MARTI 800-211 07-29-93

Item	Marti No.	Description
R20	145-101	Resistor, 100 ohm 1/4 watt 5% metal film
R21	NOT USED	
R22	NOT USED	
R23	NOT USED	
R24	NOT USED	
R25	145-152	Resistor, 1.5k ohm 1/4 ohm 5% metal film
X1	350-125	Mixer, SBL-1X
Y1	520-040	Crystal socket, CS-109-07
	520-041	Clip, transistor, Atlee 100-200-1-2 cad pl
	520-052A	Receiver Converter Oven
	800-211B	PC Board, Converter R Receiver
	550-173	Connector, 2 pin Molex Header
	350-046	Coil Cans 20k #47271-012



NOTES

1. Q1 STAGE ONLY ON DUAL-FREQUENCY VERSIONS.
2. F1 IS 10 DB ATTEN. ON SINGLE FREQUENCY VERSIONS.
3. C8 REPLACE BY JUMPER ON SINGLE FREQUENCY VERSIONS.

MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. 800-213 COPYRIGHT 7/15/93	TITLE 280-480 MHZ CONVERTER

Parts List
300 MHz SF Converter Board
MARTI 800-213 07-26-93

Item	Marti No.	Description
C01	217-104	Capacitor, .01 mf 50v GMV disc
C02	217-103	Capacitor, .1 mf 100v 10% mylar
C03	NOT USED	
C04	NOT USED	
C05	NOT USED	
C06	NOT USED	
C07	255-220	Capacitor, 22 pf 5% NPO disc
C08	JUMPERED	
C09	255-750	Capacitor, 75 pf 5% NPO disc
C10	255-100	Capacitor, 10 pf 5% NPO disc
C11	290-521	Capacitor, variable, 5-25 pf GKU-25000
C12	217-103	Capacitor, .1 mf 100v 10% mylar
C13	255-020	Capacitor, 2 pf 5% type QC
C14	290-521	Capacitor, variable, 5-25 pf GKU-25000
C15	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C16	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C17	290-521	Capacitor, variable, 5-25 pf GKU-25000
C18	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C19	255-050	Capacitor, 5 pf 5% NPO disc
C20	255-010	Capacitor, 1 pf 5% type QC
C21	290-521	Capacitor, variable, 5-25 pf GKU-25000
C22	255-220	Capacitor, 22 pf 5% NPO disc
C23	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C24	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C25	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C26	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C27	290-521	Capacitor, variable, 5-25 pf GKU-25000
C28	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C29	NOT USED	
C30	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C31	NOT USED	
C32	290-521	Capacitor, variable, 5-25 pf GKU-25000
C33	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C34	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C35	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C36	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C37	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C38	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C39	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C40	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C41	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C42	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C43	219-200	Capacitor, electrolytic 22uF 25V
C44	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C45	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C46	NOT USED	
C47	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C48	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C49	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C50	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C51	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%

Parts List
300 MHz SF Converter Board
MARTI 800-213 07-26-93

Item	Marti No.	Description
C52	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
D1	NOT USED	
D2	NOT USED	
D3	NOT USED	
D4	NOT USED	
D5	410-470	Diode, zener, 1N4732 4.7v
L01	NOT USED	
L02	NOT USED	
L03	350-044	Inductor, 1.0 - 2 uH w/shield can #47271
L04	330-007	Inductor, 1 uH Delevan #1840-10
L05	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L06	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L07	350-039	Inductor, 2 1/2 turn red #144-02J12S
L08	350-039	Inductor, 2 1/2 turn red #144-02J12S
L09	350-121	Inductor, 10 turn .15 uH #70-03
L10	350-162	Inductor, 5 turn 18 AWG
L11	350-161	Inductor, 4 turn 18 AWG
L12	330-020	Inductor, .33 uH
L13	700-232	Strip Line, Brass (straight)
L14	700-239	Strip Line, R-10/300 Pre-Selector
L15	700-232	Strip Line, Brass (straight)
L16	350-136	Inductor, 14 AWG 450 MHz
L17	350-135	Inductor, 16 AWG 450 MHz
L18	350-121	Inductor, 10 turn .15 uH #70-03
M1	520-052A	Receiver Converter Oven
Q1	NOT USED	
Q2	440-245	Transistor, SRF3017
Q3	440-245	Transistor, SRF3017
Q4	440-245	Transistor, SRF3017
Q5	441-137	Transistor, NE25337 FET K-205
R01	145-681	Resistor, 680 ohm 1/4 watt 5% metal film
R02	145-332-1	Resistor, 3.3k ohm 1/4 watt 2% RL07S332G
R03	NOT USED	
R04	NOT USED	
R05	NOT USED	
R06	NOT USED	
R07	145-152	Resistor, 1.5k ohm 1/4 ohm 5% metal film
R08	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R09	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R10	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R11	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R12	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R13	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R14	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R15	145-272	Resistor, 2.7k ohm 1/4 watt 5% metal film
R16	145-431	Resistor, 430 ohm 1/4 watt 5% metal film
R17	145-562	Resistor, 5.6k ohm 1/4 watt 5% metal film
R18	145-680-C	Resistor, 68 ohm 1/4 watt 5% carbon comp
R19	NOT USED	
R20	145-101	Resistor, 100 ohm 1/4 watt 5% metal film
R21	145-123	Resistor, 12k ohm 1/4 watt 5% metal film

Parts List
300 MHz SF Converter Board
MARTI 800-213 07-26-93

Item	Marti No.	Description
R22	NOT USED	
R23	NOT USED	
X1	350-124	Mixer, SBL-1
	550-165	Connector, 4 pin Molex Header
	520-052A	Receiver Converter Oven
	700-246	Fingerstock, adhesive backed #97-515-02
	800-213B	PC Board, Converter R Receiver
	350-046	Coil Cans 20k #47271-012
	520-040	Crystal socket, CS-109-07
	520-041	Clip, transistor, Atlee 100-200-1-2 cad pl
	550-084	Connector, Phono Jack, Molex 15-24-0503

Parts List
450 MHz SF Converter Board
MARTI 800-213 07-26-93

Item	Marti No.	Description
C01	217-104	Capacitor, .01 mf 50v GMV disc
C02	217-103	Capacitor, .1 mf 100v 10% mylar
C03	NOT USED	
C04	NOT USED	
C05	NOT USED	
C06	217-104	Capacitor, .01 mf 50v GMV disc
C07	255-150	Capacitor, 15 pf 5% NPO disc
C08	JUMPERED	
C09	255-750	Capacitor, 75 pf 5% NPO disc
C10	255-150	Capacitor, 15 pf 5% NPO disc
C11	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C12	217-103	Capacitor, .1 mf 100v 10% mylar
C13	255-010	Capacitor, 1 pf 5% type QC
C14	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C15	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C16	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C17	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C18	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C19	255-050	Capacitor, 5 pf 5% NPO disc
C20	255-010	Capacitor, 1 pf 5% type QC
C21	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C22	255-150	Capacitor, 15 pf 5% NPO disc
C23	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C24	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C25	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C26	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C27	290-521	Capacitor, variable, 5-25 pf GKU-25000
C28	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C29	NOT USED	
C30	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C31	NOT USED	
C32	290-521	Capacitor, variable, 5-25 pf GKU-25000
C33	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C34	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C35	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C36	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C37	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C38	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C39	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C40	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C41	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C42	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C43	219-200	Capacitor, electrolytic 22uF 25V
C44	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C45	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C46	NOT USED	
C47	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C48	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C49	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C50	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C51	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%

Parts List
450 MHz SF Converter Board
MARTI 800-213 07-26-93

Item	Marti No.	Description
C52	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
D1	NOT USED	
D2	NOT USED	
D3	NOT USED	
D4	NOT USED	
D5	410-754	Diode, zener Motorola 1N754A 6.3v
L01	NOT USED	
L02	NOT USED	
L03	350-044	Inductor, 1.0 - 2 uH w/shield can #47271
L04	330-007	Inductor, 1 uH Delevan #1840-10
L05	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L06	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L07	350-039	Inductor, 2 1/2 turn red #144-02J12S
L08	350-039	Inductor, 2 1/2 turn red #144-02J12S
L09	350-121	Inductor, 10 turn .15 uH #70-03
L10	350-127	Inductor, 3 turn 16 AWG 3/16 ID
L11	350-127	Inductor, 3 turn 16 AWG 3/16 ID
L12	350-121	Inductor, 10 turn .15 uH #70-03
L13	700-239	Strip Line, R-10/300 Pre-Selector
L14	700-239	Strip Line, R-10/300 Pre-Selector
L15	700-239	Strip Line, R-10/300 Pre-Selector
L16	350-136	Inductor, 14 AWG 450 MHz
L17	350-135	Inductor, 16 AWG 450 MHz
L18	350-121	Inductor, 10 turn .15 uH #70-03
Q1	NOT USED	
Q2	440-245	Transistor, SRF3017
Q3	440-245	Transistor, SRF3017
Q4	440-245	Transistor, SRF3017
Q5	420-966	Transistor, CF300A Telefunken GaAs FET
R01	145-681	Resistor, 680 ohm 1/4 watt 5% metal film
R02	145-332-1	Resistor, 3.3k ohm 1/4 watt 2% RL07S332G
R03	NOT USED	
R04	NOT USED	
R05	NOT USED	
R06	NOT USED	
R07	145-152	Resistor, 1.5k ohm 1/4 ohm 5% metal film
R08	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R09	145-683	Resistor, 68k ohm 1/4 watt 5% metal film
R10	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R11	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R12	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R13	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R14	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
R15	145-272	Resistor, 2.7k ohm 1/4 watt 5% metal film
R16	145-221	Resistor, 220 ohm 1/4 watt 5% metal film
R17	145-752	Resistor, 7.5k ohm 1/4 watt 5% metal film
R18	145-151	Resistor, 150 ohm 1/4 watt 5% metal film
R19	NOT USED	
R20	145-101	Resistor, 100 ohm 1/4 watt 5% metal film
R21	145-123	Resistor, 12k ohm 1/4 watt 5% metal film
R22	NOT USED	

Parts List
450 MHz SF Converter Board
MARTI 800-213 07-26-93

Item	Marti No.	Description
R23	145-683	Resistor, 68k ohm 1/4 watt 5% metal film
X1	350-124	Mixer, SBL-1
Y2	520-040	Crystal socket, CS-109-07
	350-046	Coil Cans 20k #47271-012
	800-213B	PC Board, Converter R Receiver
	700-246	Fingerstock, adhesive backed #97-515-02
	520-052A	Receiver Converter Oven
	520-041	Clip, transistor, Atlee 100-200-1-2 cad pl
	550-084	Connector, Phono Jack, Molex 15-24-0503
	550-165	Connector, 4 pin Molex Header

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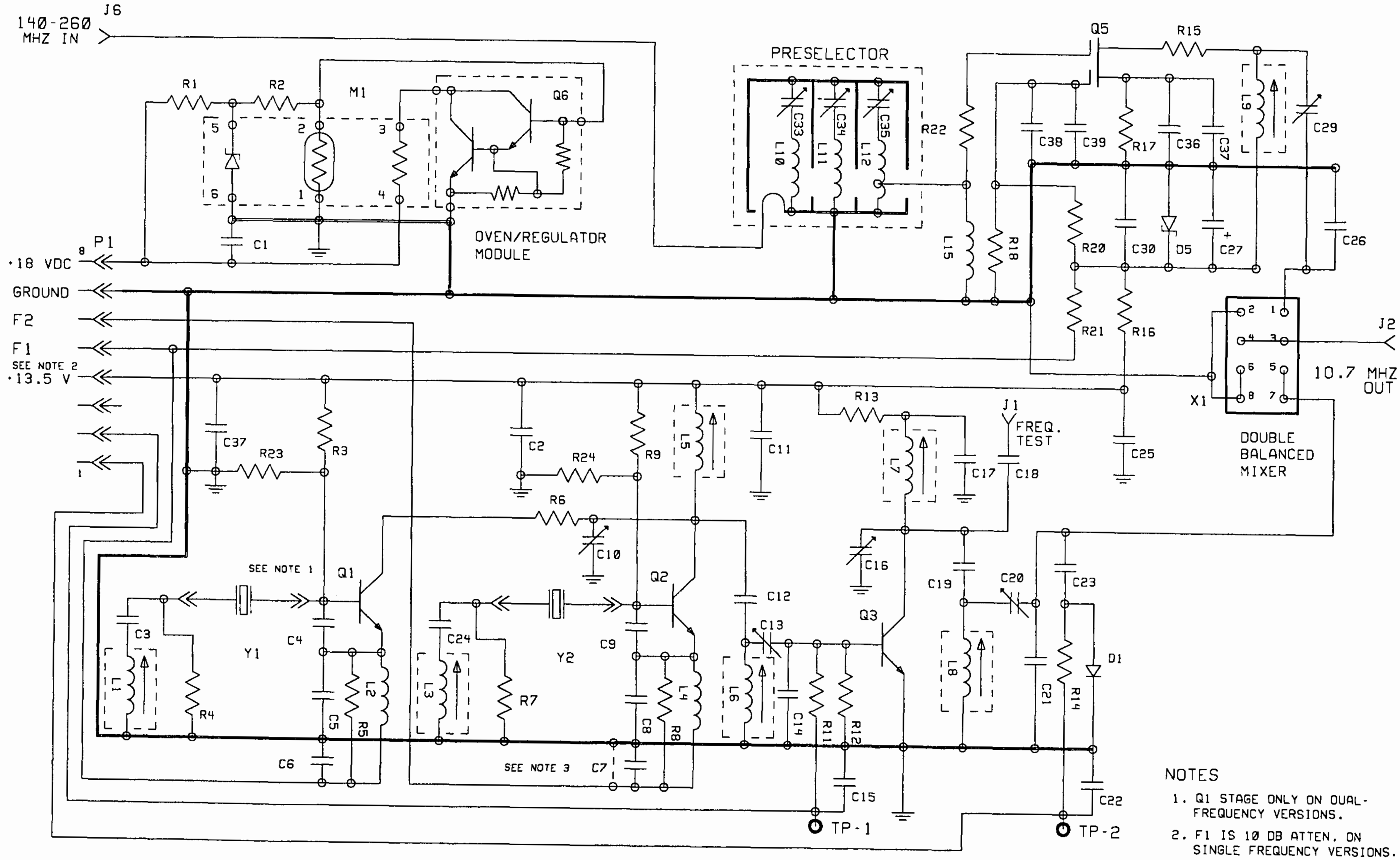

NOTES

1. Q1 STAGE ONLY ON DUAL-FREQUENCY VERSIONS.
2. F1 IS 10 DB ATTEN. ON SINGLE FREQUENCY VERSIONS.
3. C7 REPLACED BY JUMPER ON SINGLE FREQUENCY VERSIONS.

MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. 800-212 COPYRIGHT 7/28/93	TITLE 140-260 MHZ CONVERTER

Parts List
150 MHz SF Converter Board
MARTI 800-212 07-26-93

Item	Marti No.	Description
C01	217-104	Capacitor, .01 mf 50v GMV disc
C02	217-103	Capacitor, .1 mf 100v 10% mylar
C03	NOT USED	
C04	NOT USED	
C05	NOT USED	
C06	NOT USED	
C07	JUMPERED	
C08	255-750	Capacitor, 75 pf 5% NPO disc
C09	255-150	Capacitor, 15 pf 5% NPO disc
C10	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C11	217-103	Capacitor, .1 mf 100v 10% mylar
C12	255-030	Capacitor, 3 pf 5% type QC
C13	290-521	Capacitor, variable, 5-25 pf GKU-25000
C14	255-180	Capacitor, 18 pf 5% NPO disc
C15	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C16	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C17	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C18	255-050	Capacitor, 5 pf 5% NPO disc
C19	255-010	Capacitor, 1 pf 5% type QC
C20	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C21	255-030-1	Capacitor, 3 pf 5% NPO disc
C22	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C23	255-100	Capacitor, 10 pf 5% NPO disc
C24	255-120	Capacitor, 12 pf 5% NPO disc
C25	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C26	255-180	Capacitor, 18 pf 5% NPO disc
C27	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C28	NOT USED	
C29	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C30	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C31	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C32	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C33	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C34	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C35	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C36	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C37	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C38	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
D1	412-494	Diode, Germanium, 1N270
J1	550-084	Connector, Phono Jack, Molex 15-24-0503
J2	550-084	Connector, Phono Jack, Molex 15-24-0503
L01	NOT USED	
L02	NOT USED	
L03	350-044	Inductor, 1.0 - 2 uH w/shield can #47271
L04	330-007	Inductor, 1 uH Delevan #1840-10
L05	350-043	Inductor, 4 1/2 turn yellow
L06	350-043	Inductor, 4 1/2 turn yellow
L07	350-043	Inductor, 4 1/2 turn yellow
L08	350-043	Inductor, 4 1/2 turn yellow
L09	350-043	Inductor, 4 1/2 turn yellow
L10	350-129	Inductor, 8 turn 16 AWG 5/16 ID

Parts List
150 MHz SF Converter Board
MARTI 800-212 07-26-93

Item	Marti No.	Description
L11	350-129	Inductor, 8 turn 16 AWG 5/16 ID
L12	350-129	Inductor, 8 turn 16 AWG 5/16 ID
Q1	NOT USED	
Q2	440-245	Transistor, SRF3017
Q3	440-245	Transistor, SRF3017
Q4	428-837	Transistor, BF966S 3SK88
R01	145-681	Resistor, 680 ohm 1/4 watt 5% metal film
R02	145-332-1	Resistor, 3.3k ohm 1/4 watt 2% RL07S332G
R03	NOT USED	
R04	NOT USED	
R05	NOT USED	
R06	NOT USED	
R07	145-152	Resistor, 1.5k ohm 1/4 ohm 5% metal film
R08	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R09	145-683	Resistor, 68k ohm 1/4 watt 5% metal film
R10	145-470-C	Resistor, 47 ohm 1/4 watt 5% carbon comp
R11	145-272	Resistor, 2.7k ohm 1/4 watt 5% metal film
R12	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R13	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R14	145-152	Resistor, 1.5k ohm 1/4 ohm 5% metal film
R15	145-300	Resistor, 30 ohm 1/4 watt 5% metal film
R16	145-470-C	Resistor, 47 ohm 1/4 watt 5% carbon comp
R17	145-562	Resistor, 5.6k ohm 1/4 watt 5% metal film
R18	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
R19	145-241-1	Resistor, 240 ohm 1/4 watt 2% RL07S241G
R20	145-474	Resistor, 470k ohm 1/4 watt 5% metal film
R21	145-682-1	Resistor, 6.8k ohm 1/4 watt 2% RL07S682G
R22	145-030-C	Resistor, 3.3 ohm 1/4 watt 5% carbon comp
X1	350-124	Mixer, SBL-1
Y2	520-040	Crystal socket, CS-109-07
	550-165	Connector, 4 pin Molex Header
	511-038	Terminal, #1238
	800-212B	PC Board, Converter R Receiver
	520-052A	Receiver Converter Oven

Parts List
215 MHz SF Converter Board
MARTI 800-212 07-26-93

Item	Marti No.	Description
C01	217-104	Capacitor, .01 mf 50v GMV disc
C02	217-103	Capacitor, .1 mf 100v 10% mylar
C03	NOT USED	
C04	NOT USED	
C05	NOT USED	
C06	NOT USED	
C07	JUMPERED	
C08	255-750	Capacitor, 75 pf 5% NPO disc
C09	255-150	Capacitor, 15 pf 5% NPO disc
C10	290-521	Capacitor, variable, 5-25 pf GKU-25000
C11	217-103	Capacitor, .1 mf 100v 10% mylar
C12	255-010	Capacitor, 1 pf 5% type QC
C13	290-521	Capacitor, variable, 5-25 pf GKU-25000
C14	255-470-1	Capacitor, 47 pf 300v 5% silver mica
C15	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C16	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C17	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C18	255-050	Capacitor, 5 pf 5% NPO disc
C19	255-010	Capacitor, 1 pf 5% type QC
C20	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C21	255-030-1	Capacitor, 3 pf 5% NPO disc
C22	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C23	255-100	Capacitor, 10 pf 5% NPO disc
C24	255-220	Capacitor, 22 pf 5% NPO disc
C25	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C26	255-180	Capacitor, 18 pf 5% NPO disc
C27	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C28	NOT USED	
C29	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C30	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C31	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C32	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C33	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C34	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C35	230-100	Capacitor, variable, trimmer 8-8 pf JMC#52
C36	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C37	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
D1	412-494	Diode, Germanium, 1N270
J1	550-084	Connector, Phono Jack, Molex 15-24-0503
J2	550-084	Connector, Phono Jack, Molex 15-24-0503
L01	NOT USED	
L02	NOT USED	
L03	350-044	Inductor, 1.0 - 2 uH w/shield can #47271
L04	330-007	Inductor, 1 uH Delevan #1840-10
L05	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L06	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L07	350-039	Inductor, 2 1/2 turn red #144-02J12S
L08	350-039	Inductor, 2 1/2 turn red #144-02J12S
L09	350-039	Inductor, 2 1/2 turn red #144-02J12S
L10	350-129	Inductor, 8 turn 16 AWG 5/16 ID
L11	350-129	Inductor, 8 turn 16 AWG 5/16 ID

Parts List
215 MHz SF Converter Board
MARTI 800-212 07-26-93

Item	Marti No.	Description
L12	350-129	Inductor, 8 turn 16 AWG 5/16 ID
Q1	NOT USED	
Q2	440-245	Transistor, SRF3017
Q3	420-090	Transistor, BFY90
Q4	428-837	Transistor, BF966S 3SK88
R01	145-681	Resistor, 680 ohm 1/4 watt 5% metal film
R02	145-332-1	Resistor, 3.3k ohm 1/4 watt 2% RL07S332G
R03	NOT USED	
R04	NOT USED	
R05	NOT USED	
R06	NOT USED	
R07	145-392	Resistor, 3.9k ohm 1/4 watt 5% metal film
R08	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R09	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R10	145-470-C	Resistor, 47 ohm 1/4 watt 5% carbon comp
R11	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R12	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R13	145-470-C	Resistor, 47 ohm 1/4 watt 5% carbon comp
R14	145-272	Resistor, 2.7k ohm 1/4 watt 5% metal film
R15	145-300	Resistor, 30 ohm 1/4 watt 5% metal film
R16	145-470-C	Resistor, 47 ohm 1/4 watt 5% carbon comp
R17	NOT USED	
R18	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
R19	145-271	Resistor, 270 ohm 1/4 watt 5% metal film
R20	145-474	Resistor, 470k ohm 1/4 watt 5% metal film
R21	145-682-1	Resistor, 6.8k ohm 1/4 watt 2% RL07S682G
R22	145-030-C	Resistor, 3.3 ohm 1/4 watt 5% carbon comp
X1	350-124	Mixer, SBL-1
Y2	520-040	Crystal socket, CS-109-07
	520-052A	Receiver Converter Oven
	145-562	Resistor, 5.6k ohm 1/4 watt 5% metal film
	550-165	Connector, 4 pin Molex Header
	800-212B	PC Board, Converter R Receiver

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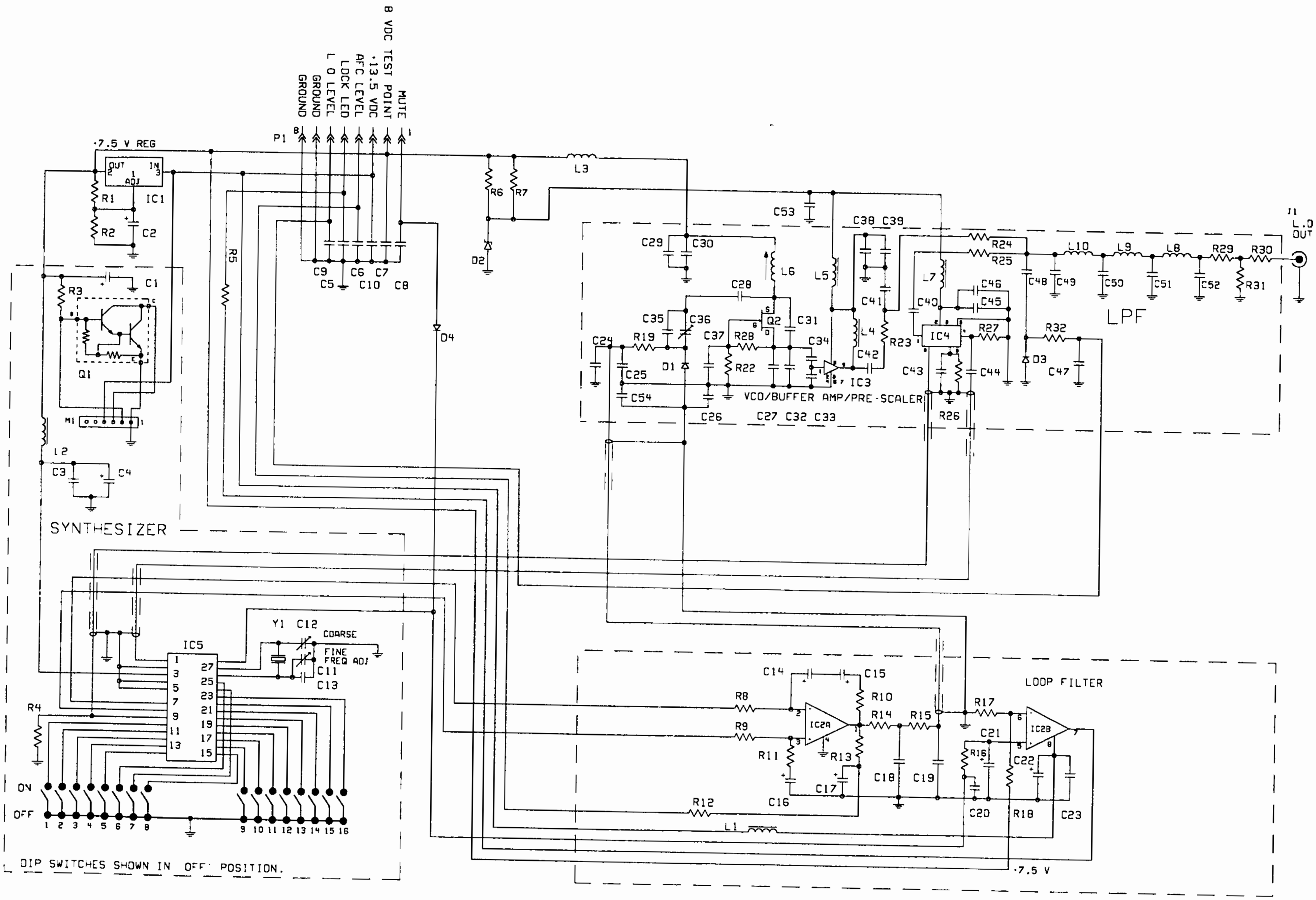


MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 5/6/93 800-291	TITLE R-15C FREQUENCY SYNTHESIZER

Parts List
R-15C VCO/Synthesizer Board
MARTI 800-291 07-26-93

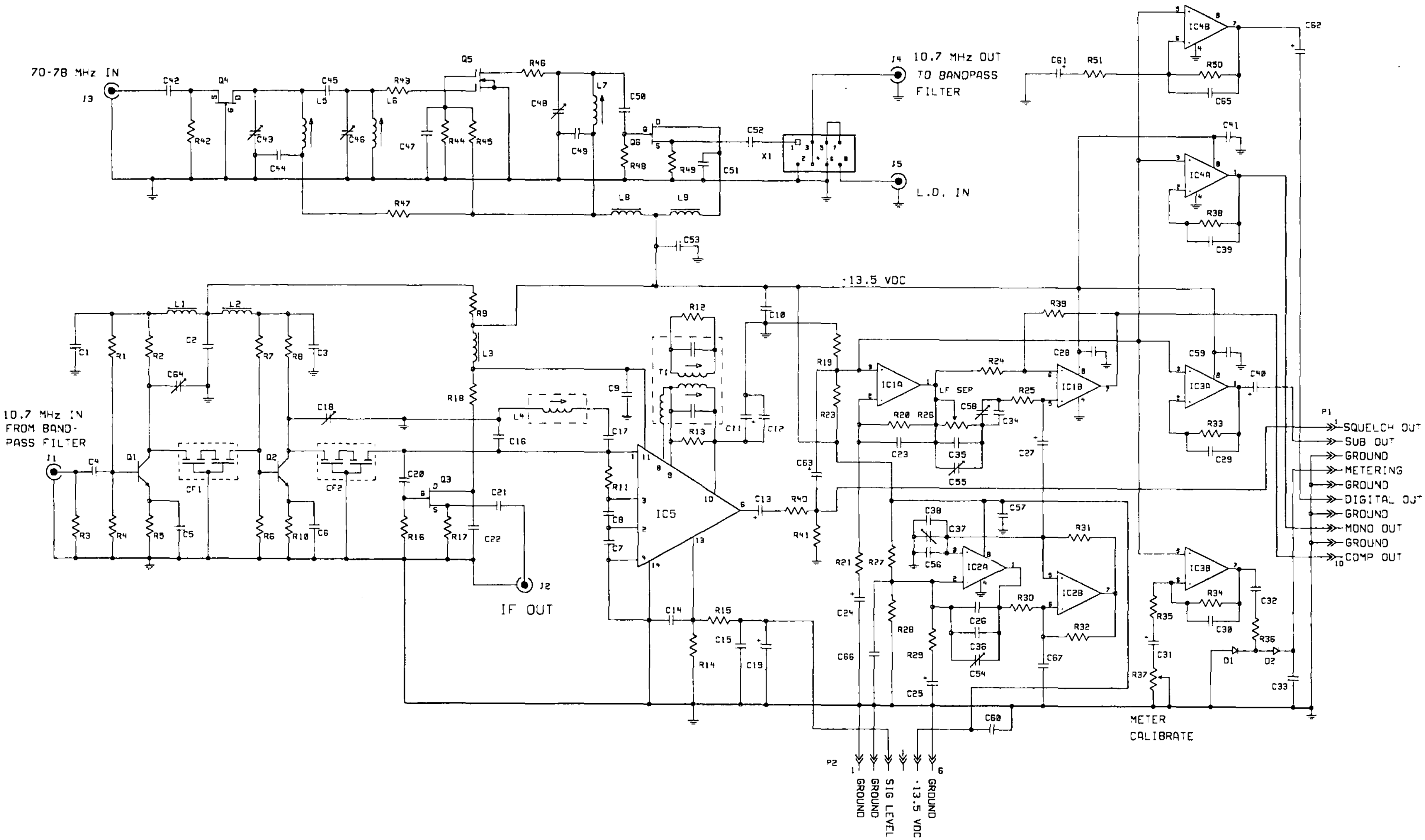
Item	Marti No.	Description
C01	219-220	Capacitor, electrolytic 22uF 25V radial
C02	299-470	Capacitor, tantalum, 4.7 mf 16v ECS-F1CE47
C03	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C04	219-470	Capacitor, electrolytic 47uF 16V radial
C05	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C06	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C07	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C08	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C09	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C10	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C11	290-523	Capacitor, variable, 3.5-36 pf GXA-36000
C12	290-523	Capacitor, variable, 3.5-36 pf GXA-36000
C13	SELECTED	
C14	299-330	Capacitor, tantalum 33uF 16V ECS-F1CE336K
C15	299-330	Capacitor, tantalum 33uF 16V ECS-F1CE336K
C16	299-151	Capacitor, tantalum, 15 mf 25v ECS-F1EE156
C17	219-220	Capacitor, electrolytic 22uF 25V radial
C18	217-103	Capacitor, .1 mf 100v 10% mylar
C19	217-103	Capacitor, .1 mf 100v 10% mylar
C20	217-103	Capacitor, .1 mf 100v 10% mylar
C21	299-220	Capacitor, tantalum, 2.2 mf 25v ECS-F1EE22
C22	219-220	Capacitor, electrolytic 22uF 25V radial
C23	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C24	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C25	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C26	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C27	270-330	Capacitor, monolithic chip, 33 pf 50v 5%
C28	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C29	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C30	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C31	270-470	Capacitor, monolithic chip, 47 pf 50v 5%
C32	270-101	Capacitor, monolithic chip, 100 pf 50v 5%
C33	Selected	
C34	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C35	270-407	Capacitor, monolithic chip, 4.7 pf 50v 5%
C36	230-610	Capacitor, variable 4.5-65pF
C37	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C38	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C39	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C40	270-101	Capacitor, monolithic chip, 100 pf 50v 5%
C41	270-470	Capacitor, monolithic chip, 47 pf 50v 5%
C42	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C43	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C44	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C45	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C46	217-104	Capacitor, .01 mf 50v GMV disc
C47	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C48	270-220	Capacitor, monolithic chip, 22 pf 50v 5%
C49	270-680	Capacitor, monolithic chip, 68 pf 50v 5%
C50	270-101	Capacitor, monolithic chip, 100 pf 50v 5%
C51	270-101	Capacitor, monolithic chip, 100 pf 50v 5%

Parts List
R-15C VCO/Synthesizer Board
MARTI 800-291 07-26-93

Item	Marti No.	Description
C52	270-680	Capacitor, monolithic chip, 68 pf 50v 5%
C53	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C54	270-103	Capacitor, monolithic chip 10000pF 10% XR7
D1	410-109	Diode, SMV1201-16 hyper-abrupt tuning
D2	410-470	Diode, zener, 1N4732 4.7v
D3	410-305	Diode, MMBD101L chip
D4	414-007	Diode, Fagor 1N4007
IC1	400-317	Integrated Circuit, National LM317T
IC2	405-532	Integrated Circuit, Signetics NE5532AN
IC3	401-678	Integrated Circuit, UPC 1678G (MMIC)
IC4	400-503	Integrated Circuit, Fujitsu MB503PF Pre-Sc
IC5	400-145	Integrated Circuit, MC145152-P2 (PLL)
L01	330-012	Inductor, 15 uH #70-27
L02	330-012	Inductor, 15 uH #70-27
L03	330-012	Inductor, 15 uH #70-27
L04	330-012	Inductor, 15 uH #70-27
L05	330-012	Inductor, 15 uH #70-27
L06	330-023	Inductor, #146-04J08
L07	330-012	Inductor, 15 uH #70-27
L08	330-022	Inductor, .1uH #90-01
L09	330-022	Inductor, .1uH #90-01
L10	330-022	Inductor, .1uH #90-01
M1	520-052AC	R-15C Synthesizer Oven
Q1	part of M1	
Q2	421-310	Transistor, Siliconix SST-310
R01	145-241-1	Resistor, 240 ohm 1/4 watt 2% RL07S241G
R02	145-122-1	Resistor, 1.2k ohm 1/4 watt 2% RLO7S122G
R03	145-182-1	Resistor, 1.8k ohm 1/4 watt 2% RL07S182G
R04	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R05	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R06	145-680	Resistor, 68 ohm 1/4 watt 5% metal film
R07	145-680	Resistor, 68 ohm 1/4 watt 5% metal film
R08	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R09	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R10	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R11	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R12	145-683	Resistor, 68k ohm 1/4 watt 5% metal film
R13	145-273	Resistor, 27k ohm 1/4 watt 5% carbon film
R14	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R15	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R16	145-473	Resistor, 47k ohm 1/4 watt 5% metal film
R17	145-393	Resistor, 39k ohm 1/4 watt 5% carbon film
R18	145-273	Resistor, 27k ohm 1/4 watt 5% carbon film
R19	185-103	Resistor, #263-10K ohm 1/8 watt 5% chip
R20	NOT USED	
R21	NOT USED	
R22	185-151	Resistor, #263-150 ohm 1/8 watt 5% chip
R23	185-100	Resistor, #263-10 ohm 1/8 watt 5% chip
R24	185-100	Resistor, #263-10 ohm 1/8 watt 5% chip
R25	185-101	Resistor, #263-100 ohm 1/8 watt 5% chip
R26	185-104	Resistor, #263-100K ohm 1/8 watt 5% chip

Parts List
R-15C VCO/Synthesizer Board
MARTI 800-291 07-26-93

Item	Marti No.	Description
R27	185-102	Resistor, #263-1K ohm 1/8 watt 5% chip
R28	185-151	Resistor, #263-150 ohm 1/8 watt 5% chip
R29	185-100	Resistor, #263-10 ohm 1/8 watt 5% chip
R30	185-100	Resistor, #263-10 ohm 1/8 watt 5% chip
R31	185-131	Resistor, #263-130 ohm 1/8 watt 5% chip
R32	185-103	Resistor, #263-10K ohm 1/8 watt 5% chip
S1	530-060	Switch, 8 position DIP 571-4356405
S2	530-060	Switch, 8 position DIP 571-4356405
Y1	011-280	Crystal, 12.8 MHz, Fundamental AT cut, HC-
	500-010	Screw, 4-40 x 3/8" phillips pan head M/S n
	550-070	IC Socket, 8 pin E-CAM
	550-137	Connector, 8 pin Molex Housing #09-50-8080
	550-190	IC Socket, 28 pin DIP #151-9028
	700-262	Formed Cover, #50-CBS 2" x 2" less standof
	800-291B	PC Board, VCO/Synthesizer
	550-068	IC Socket, 16 pin
	520-040	Crystal socket, CS-109-07
	550-193	Connector, KSM S.FL2-R-SMT surface mount
	520-051	Heatsink, Thermalloy 6030B-TT
	500-055	Lockwasher, #4 internal tooth small patter
	513-031	Insulator, Sil-Pad K6-54 TO-220 .147 hole
	513-031-1	Shoulder Washer #7721-7PPS for TO-220 insu



MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 8/6/93 800-293	TITLE 2nd CONVERTER/IF AMP./DETECTOR

Parts List
R-15C IF Amp/FM Detector
MARTI 800-293 08-25-93

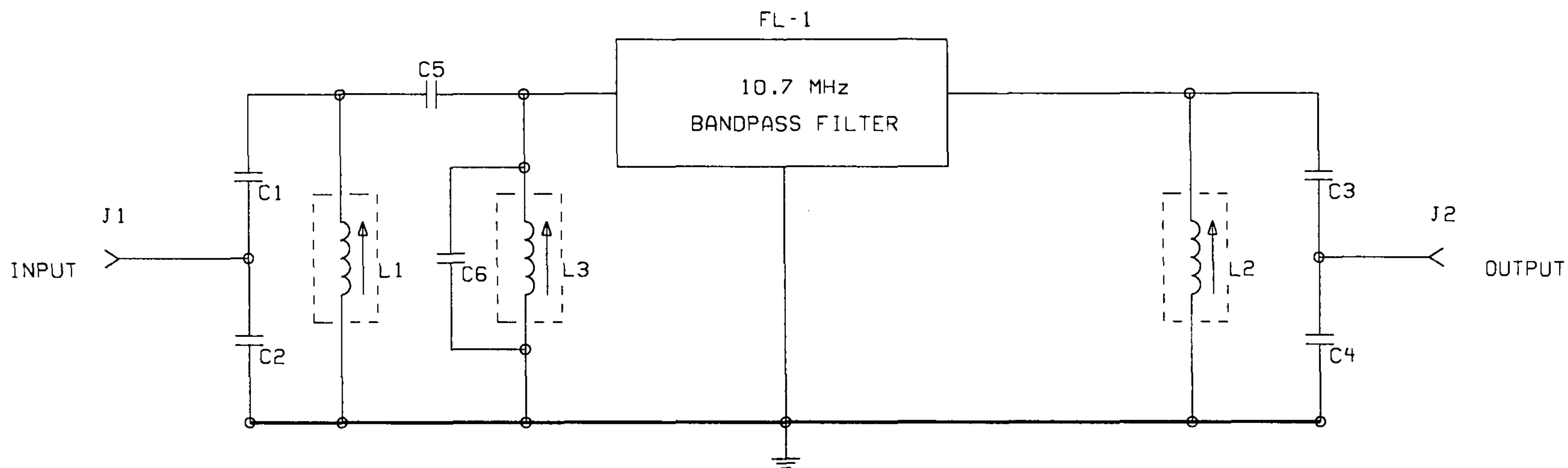
Item	Marti No.	Description
C01	217-104	Capacitor, .01 mf 50v GMV disc
C02	217-104	Capacitor, .01 mf 50v GMV disc
C03	217-104	Capacitor, .01 mf 50v GMV disc
C04	217-104	Capacitor, .01 mf 50v GMV disc
C05	268-203	Capacitor, .02 mf 50v Z5U disc
C06	268-203	Capacitor, .02 mf 50v Z5U disc
C07	217-104	Capacitor, .01 mf 50v GMV disc
C08	217-104	Capacitor, .01 mf 50v GMV disc
C09	217-103	Capacitor, .1 mf 100v 10% mylar
C10	217-104	Capacitor, .01 mf 50v GMV disc
C11	219-221	Capacitor, electrolytic 220uF 25V radial
C12	217-103	Capacitor, .1 mf 100v 10% mylar
C13	219-102	Capacitor, electrolytic 1000uF 16V radial
C14	217-103	Capacitor, .1 mf 100v 10% mylar
C15	217-104	Capacitor, .01 mf 50v GMV disc
C16	256-131	Capacitor, 130 pf 5% 50V NPO disc
C17	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C18	290-525	Capacitor, variable trimmer 9-50 pF #24AA0
C19	299-470	Capacitor, tantalum, 4.7 mf 16v ECS-F1CE47
C20	NOT USED	
C21	268-203	Capacitor, .02 mf 50v Z5U disc
C22	268-203	Capacitor, .02 mf 50v Z5U disc
C23	295-390	Capacitor, 39 pf 5% NPO disc
C24	219-102	Capacitor, electrolytic 1000uF 16V radial
C25	219-102	Capacitor, electrolytic 1000uF 16V radial
C26	215-301	Capacitor, 300 pf 2.5% 100v polypropylene
C27	219-470	Capacitor, electrolytic 47uF 16V radial
C28	217-103	Capacitor, .1 mf 100v 10% mylar
C29	295-390	Capacitor, 39 pf 5% NPO disc
C30	295-390	Capacitor, 39 pf 5% NPO disc
C31	219-100	Capacitor, electrolytic 10uF 25V radial
C32	217-103	Capacitor, .1 mf 100v 10% mylar
C33	215-242	Capacitor, .0024 mfd 2.5% 100v polypropyle
C34	NOT USED	
C35	255-030-1	Capacitor, 3 pf 5% NPO disc
C36	215-153	Capacitor, .015 mfd 2.5% 100v polypropylen
C37	NOT USED	
C38	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C39	295-390	Capacitor, 39 pf 5% NPO disc
C40	219-102	Capacitor, electrolytic 1000uF 16V radial
C41	217-103	Capacitor, .1 mf 100v 10% mylar
C42	217-104	Capacitor, .01 mf 50v GMV disc
C43	290-521	Capacitor, variable, 5-25 pf GKU-25000
C44	268-203	Capacitor, .02 mf 50v Z5U disc
C45	270-010	Capacitor, monolithic chip, 1pF 50V 5%
C46	290-521	Capacitor, variable, 5-25 pf GKU-25000
C47	217-104	Capacitor, .01 mf 50v GMV disc
C48	290-521	Capacitor, variable, 5-25 pf GKU-25000
C49	268-203	Capacitor, .02 mf 50v Z5U disc
C50	217-104	Capacitor, .01 mf 50v GMV disc
C51	268-203	Capacitor, .02 mf 50v Z5U disc
C52	217-104	Capacitor, .01 mf 50v GMV disc

Parts List
R-15C IF Amp/FM Detector
MARTI 800-293 08-25-93

Item	Marti No.	Description
C53	268-203	Capacitor, .02 mf 50v Z5U disc
C54	NOT USED	
C55	290-522	Capacitor, variable, 2.8-10 pf GKU-10000
C56	NOT USED	
C57	217-103	Capacitor, .1 mf 100v 10% mylar
C58	290-525	Capacitor, variable trimmer 9-50 pF #24AA0
C59	217-103	Capacitor, .1 mf 100v 10% mylar
C60	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C61	219-102	Capacitor, electrolytic 1000uF 16V radial
C62	219-102	Capacitor, electrolytic 1000uF 16V radial
C63	219-102	Capacitor, electrolytic 1000uF 16V radial
C64	290-525	Capacitor, variable trimmer 9-50 pF #24AA0
C65	295-390	Capacitor, 39 pf 5% NPO disc
C66	255-161	Capacitor, 160 pf 300v 5% silver mica
C67	270-270	Capacitor, monolithic chip, 27 pf 50v 5%
CF1	360-033	Filter, ceramic SFE10.7MX-A Murata-Erie
CF2	360-033	Filter, ceramic SFE10.7MX-A Murata-Erie
D1	412-494	Diode, Germanium, 1N270
D2	412-494	Diode, Germanium, 1N270
IC1	402-604	Integrated Circuit, Op-Amp OPA-2604AP
IC2	402-604	Integrated Circuit, Op-Amp OPA-2604AP
IC3	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC4	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC5	401-235	Integrated Circuit, Sanyo LA1235
L1	330-012	Inductor, 15 uH #70-27
L2	330-012	Inductor, 15 uH #70-27
L3	145-470	Resistor, 47 ohm 1/4 watt 5% metal film
L4	350-030	Inductor, 3.0 - 7 uH w/shield can #47271-
L5	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L6	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L7	350-040	Inductor, 6 1/2 turn blue #144-06J12S
L8	330-012	Inductor, 15 uH #70-27
L9	330-012	Inductor, 15 uH #70-27
Q1	440-245	Transistor, SRF3017
Q2	440-245	Transistor, SRF3017
Q3	420-310	Transistor, Siliconix J-310 FET
Q4	420-310	Transistor, Siliconix J-310 FET
Q5	430-211	Transistor, MFE211
Q6	420-310	Transistor, Siliconix J-310 FET
R01	145-332	Resistor, 3.3k ohm 1/4 watt 5% metal film
R02	145-431	Resistor, 430 ohm 1/4 watt 5% metal film
R03	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R04	145-222	Resistor, 2.2k ohm 1/4 watt 5% metal film
R05	145-471	Resistor, 470 ohm 1/4 watt 5% metal film
R06	145-222	Resistor, 2.2k ohm 1/4 watt 5% metal film
R07	145-332	Resistor, 3.3k ohm 1/4 watt 5% metal film
R08	145-431	Resistor, 430 ohm 1/4 watt 5% metal film
R09	145-470	Resistor, 47 ohm 1/4 watt 5% metal film
R10	145-471	Resistor, 470 ohm 1/4 watt 5% metal film
R11	145-431	Resistor, 430 ohm 1/4 watt 5% metal film
R12	145-222	Resistor, 2.2k ohm 1/4 watt 5% metal film
R13	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film

Parts List
R-15C IF Amp/FM Detector
MARTI 800-293 08-25-93

Item	Marti No.	Description
R14	145-473	Resistor, 47k ohm 1/4 watt 5% metal film
R15	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R16	145-104-1	Resistor, 100k ohm 1/4 watt 2% RL07S104G
R17	145-101-C	Resistor, 100 ohm 1/4 watt 5% carbon comp
R18	NOT USED	
R19	145-363-1	Resistor, 36k ohm 1/4 watt 2% RL07S363G
R20	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R21	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R22	NOT USED	
R23	145-363-1	Resistor, 36k ohm 1/4 watt 2% RL07S363G
R24	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R25	145-153-C	Resistor, 15K ohm 1/4 watt 5% carbon comp
R26	104-105	Potentiometer, 1meg ohm cermet trimmer ver
R27	145-184-1	Resistor, 180k ohm 1/4 watt 2% RL07S184G
R28	145-184-1	Resistor, 180k ohm 1/4 watt 2% RL07S184G
R29	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R30	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R31	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R32	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R33	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R34	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R35	145-101	Resistor, 100 ohm 1/4 watt 5% metal film
R36	145-122-1	Resistor, 1.2k ohm 1/4 watt 2% RLO7S122G
R37	101-502	Potentiometer, 5K ohm cermet RVG0911V513A
R38	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R39	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R40	145-470	Resistor, 47 ohm 1/4 watt 5% metal film
R41	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R42	145-101-C	Resistor, 100 ohm 1/4 watt 5% carbon comp
R43	145-300	Resistor, 30 ohm 1/4 watt 5% metal film
R44	145-102-1	Resistor, 1k ohm 1/4 watt 2% RL07S102G
R45	145-364-1	Resistor, 360k ohm 1/4 watt 5% carbon film
R46	145-300	Resistor, 30 ohm 1/4 watt 5% metal film
R47	145-470-C	Resistor, 47 ohm 1/4 watt 5% carbon comp
R48	145-102-1	Resistor, 1k ohm 1/4 watt 2% RL07S102G
R49	145-101-C	Resistor, 100 ohm 1/4 watt 5% carbon comp
R50	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R51	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
T1	350-123	Detector, SNY-074-1919A (235SU1)
X1	350-124	Mixer, SBL-1
	550-068	IC Socket, 16 pin
	550-084	Connector, Phono Jack, Molex 15-24-0503
	550-070	IC Socket, 8 pin E-CAM
	550-193	Connector, KSM S.FL2-R-SMT surface mount
	800-293B	PC Board, IF Amp/FM Detector
	550-136	Connector, 6 pin Molex Header
	550-125	Connector, 5 pin Molex Header



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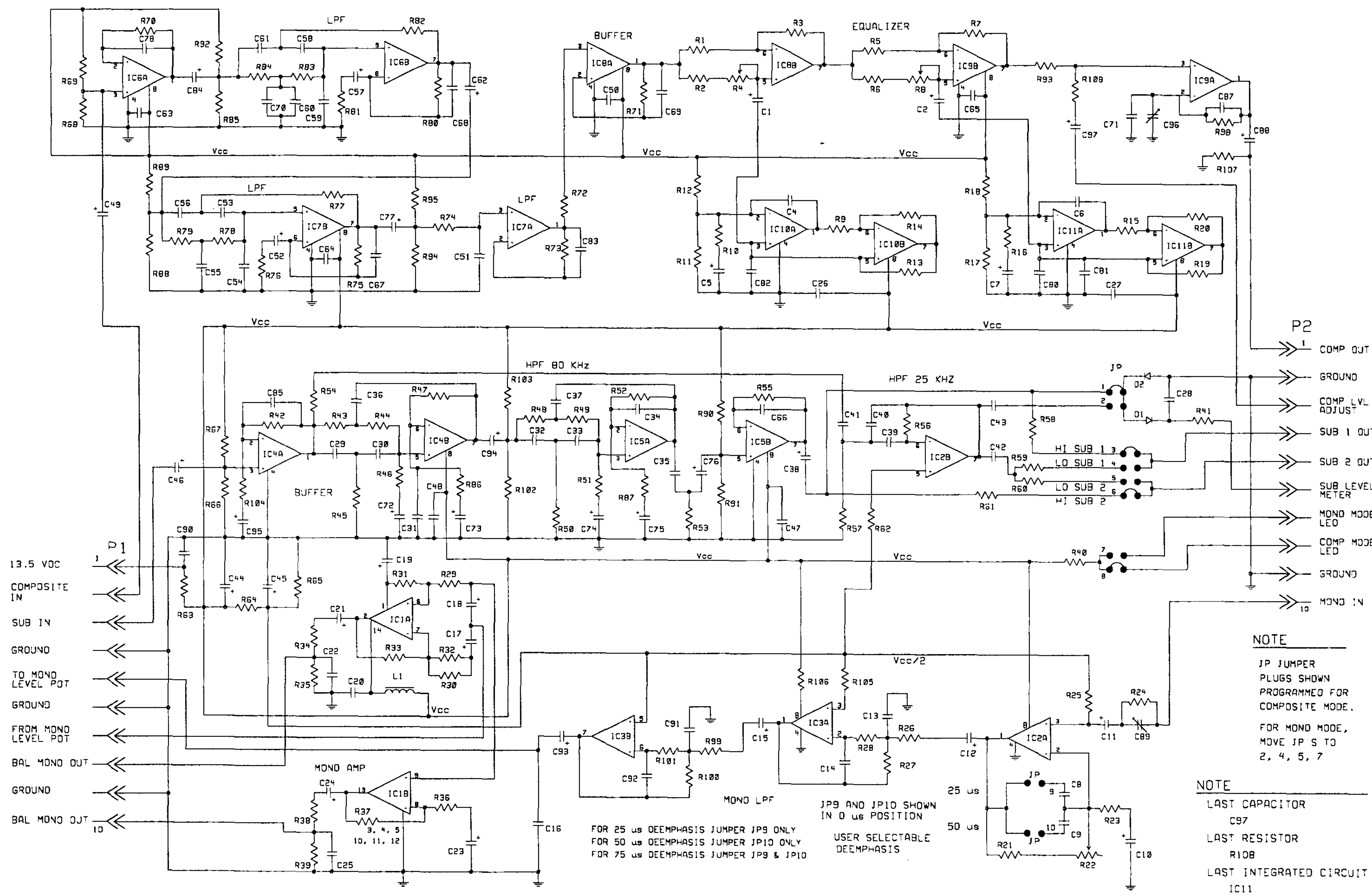
MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 6/22/93 800-207-250	TITLE IF BANDPASS FILTER

Parts List
Filter, assembly 250 KHz
MARTI 800-207 07-26-93

Item	Marti No.	Description
C1	255-161	Capacitor, 160 pf 300v 5% silver mica
C2	256-151	Capacitor, 150 pf 5% NPO disc
C3	255-241	Capacitor, 240 pf 300v 5% silver mica
C4	255-241	Capacitor, 240 pf 300v 5% silver mica
C5	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C6	256-131	Capacitor, 130 pf 5% 50V NPO disc
FL1	360-037	Filter, LC 250 KHz Model 1562
J1	550-084	Connector, Phono Jack, Molex 15-24-0503
J2	550-084	Connector, Phono Jack, Molex 15-24-0503
L1	350-025	Inductor, 1.5 - 3 uH w/shield can #47271-0
L2	350-025	Inductor, 1.5 - 3 uH w/shield can #47271-0
L3	350-025	Inductor, 1.5 - 3 uH w/shield can #47271-0
	800-207B	PC Board, IF Filter R Receiver



MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 8/5/93 800-294	TITLE R-15C AUDIO PROCESSING

Parts List
R-15C Audio Processing Board
MARTI 800-294 08-25-93

Item	Marti No.	Description
C01	219-102	Capacitor, electrolytic 1000uF 16V radial
C02	219-102	Capacitor, electrolytic 1000uF 16V radial
C03	NOT USED	
C04	215-622	Capacitor, .0062 mfd 2.5% 100v polypropyle
C05	219-102	Capacitor, electrolytic 1000uF 16V radial
C06	215-682	Capacitor, .0068uF 2.5% 100V polypropylene
C07	219-102	Capacitor, electrolytic 1000uF 16V radial
C08	215-202	Capacitor, .002 mfd 2.5% 100v polypropylen
C09	215-102	Capacitor, .001 mfd 2.5% 100v polypropylen
C10	219-221	Capacitor, electrolytic 220uF 25V radial
C11	219-220	Capacitor, electrolytic 22uF 25V radial
C12	219-100	Capacitor, electrolytic 10uF 25V radial
C13	215-301	Capacitor, 300 pf 2.5% 100v polypropylene
C14	256-151	Capacitor, 150 pf 5% NPO disc
C15	219-220	Capacitor, electrolytic 22uF 25V radial
C16	253-471	Capacitor, 470 pf 50v 10% Y5P disc
C17	219-220	Capacitor, electrolytic 22uF 25V radial
C18	219-220	Capacitor, electrolytic 22uF 25V radial
C19	219-220	Capacitor, electrolytic 22uF 25V radial
C20	217-103	Capacitor, .1 mf 100v 10% mylar
C21	219-221	Capacitor, electrolytic 220uF 25V radial
C22	253-471	Capacitor, 470 pf 50v 10% Y5P disc
C23	219-100	Capacitor, electrolytic 10uF 25V radial
C24	219-221	Capacitor, electrolytic 220uF 25V radial
C25	253-471	Capacitor, 470 pf 50v 10% Y5P disc
C26	217-103	Capacitor, .1 mf 100v 10% mylar
C27	217-103	Capacitor, .1 mf 100v 10% mylar
C28	215-242	Capacitor, .0024 mfd 2.5% 100v polypropyle
C29	255-271C	Capacitor, 270pF 5% 200V ceramic dipped
C30	255-271C	Capacitor, 270pF 5% 200V ceramic dipped
C31	255-270	Capacitor, 27 pf 5% NPO disc
C32	255-271C	Capacitor, 270pF 5% 200V ceramic dipped
C33	255-271C	Capacitor, 270pF 5% 200V ceramic dipped
C34	255-220	Capacitor, 22 pf 5% NPO disc
C35	255-241	Capacitor, 240 pf 300v 5% silver mica
C36	215-701	Capacitor, 700 pf 2.5% 100V polypropylene
C37	255-271C	Capacitor, 270pF 5% 200V ceramic dipped
C38	219-470	Capacitor, electrolytic 47uF 16V radial
C39	215-701	Capacitor, 700 pf 2.5% 100V polypropylene
C40	255-220	Capacitor, 22 pf 5% NPO disc
C41	215-701	Capacitor, 700 pf 2.5% 100V polypropylene
C42	226-104	Capacitor, .1 mf 100v 10% film
C43	215-392	Capacitor, .0039 mfd 2.5% 100v polypropyle
C44	219-221	Capacitor, electrolytic 220uF 25V radial
C45	219-221	Capacitor, electrolytic 220uF 25V radial
C46	219-470	Capacitor, electrolytic 47uF 16V radial
C47	217-103	Capacitor, .1 mf 100v 10% mylar
C48	217-103	Capacitor, .1 mf 100v 10% mylar
C49	219-102	Capacitor, electrolytic 1000uF 16V radial
C50	217-103	Capacitor, .1 mf 100v 10% mylar
C51	215-102	Capacitor, .001 mfd 2.5% 100v polypropylen
C52	219-102	Capacitor, electrolytic 1000uF 16V radial

Parts List
R-15C Audio Processing Board
MARTI 800-294 08-25-93

Item	Marti No.	Description
C53	255-750	Capacitor, 75 pf 5% NPO disc
C54	255-270	Capacitor, 27 pf 5% NPO disc
C55	255-271C	Capacitor, 270pF 5% 200V ceramic dipped
C56	256-151	Capacitor, 150 pf 5% NPO disc
C57	219-102	Capacitor, electrolytic 1000uF 16V radial
C58	255-750	Capacitor, 75 pf 5% NPO disc
C59	255-390C	Capacitor, 39pF 5% 200V ceramic dipped
C60	256-151	Capacitor, 150 pf 5% NPO disc
C61	256-131	Capacitor, 130 pf 5% 50V NPO disc
C62	219-102	Capacitor, electrolytic 1000uF 16V radial
C63	217-103	Capacitor, .1 mf 100v 10% mylar
C64	217-103	Capacitor, .1 mf 100v 10% mylar
C65	217-103	Capacitor, .1 mf 100v 10% mylar
C66	255-390C	Capacitor, 39pF 5% 200V ceramic dipped
C67	255-390C	Capacitor, 39pF 5% 200V ceramic dipped
C68	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C69	255-390C	Capacitor, 39pF 5% 200V ceramic dipped
C70	255-470C	Capacitor, 47pF 5% 200V ceramic dipped
C71	256-680C	Capacitor, 68pF 5% 200V ceramic dipped
C72	219-470	Capacitor, electrolytic 47uF 16V radial
C73	219-470	Capacitor, electrolytic 47uF 16V radial
C74	219-470	Capacitor, electrolytic 47uF 16V radial
C75	219-470	Capacitor, electrolytic 47uF 16V radial
C76	219-470	Capacitor, electrolytic 47uF 16V radial
C77	219-102	Capacitor, electrolytic 1000uF 16V radial
C78	255-270	Capacitor, 27 pf 5% NPO disc
C79	NOT USED	
C80	255-361	Capacitor, 360 pf 300v 5% silver mica
C81	215-102	Capacitor, .001 mfd 2.5% 100v polypropylen
C82	255-361	Capacitor, 360 pf 300v 5% silver mica
C83	255-161	Capacitor, 160 pf 300v 5% silver mica
C84	219-102	Capacitor, electrolytic 1000uF 16V radial
C85	256-680C	Capacitor, 68pF 5% 200V ceramic dipped
C86	NOT USED	
C87	255-390C	Capacitor, 39pF 5% 200V ceramic dipped
C88	219-102	Capacitor, electrolytic 1000uF 16V radial
C89	290-525	Capacitor, variable trimmer 9-50 pF #24AA0
C90	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C91	215-202	Capacitor, .002 mfd 2.5% 100v polypropylen
C92	256-151	Capacitor, 150 pf 5% NPO disc
C93	219-220	Capacitor, electrolytic 22uF 25V radial
C94	219-470	Capacitor, electrolytic 47uF 16V radial
C95	219-470	Capacitor, electrolytic 47uF 16V radial
C96	290-525	Capacitor, variable trimmer 9-50 pF #24AA0
C97	219-102	Capacitor, electrolytic 1000uF 16V radial
D01	412-494	Diode, Germanium, 1N270
D02	412-494	Diode, Germanium, 1N270
IC01	401-877	Integrated Circuit, National LM1877N-9
IC02	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC03	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC04	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC05	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260

Parts List
R-15C Audio Processing Board
MARTI 800-294 08-25-93

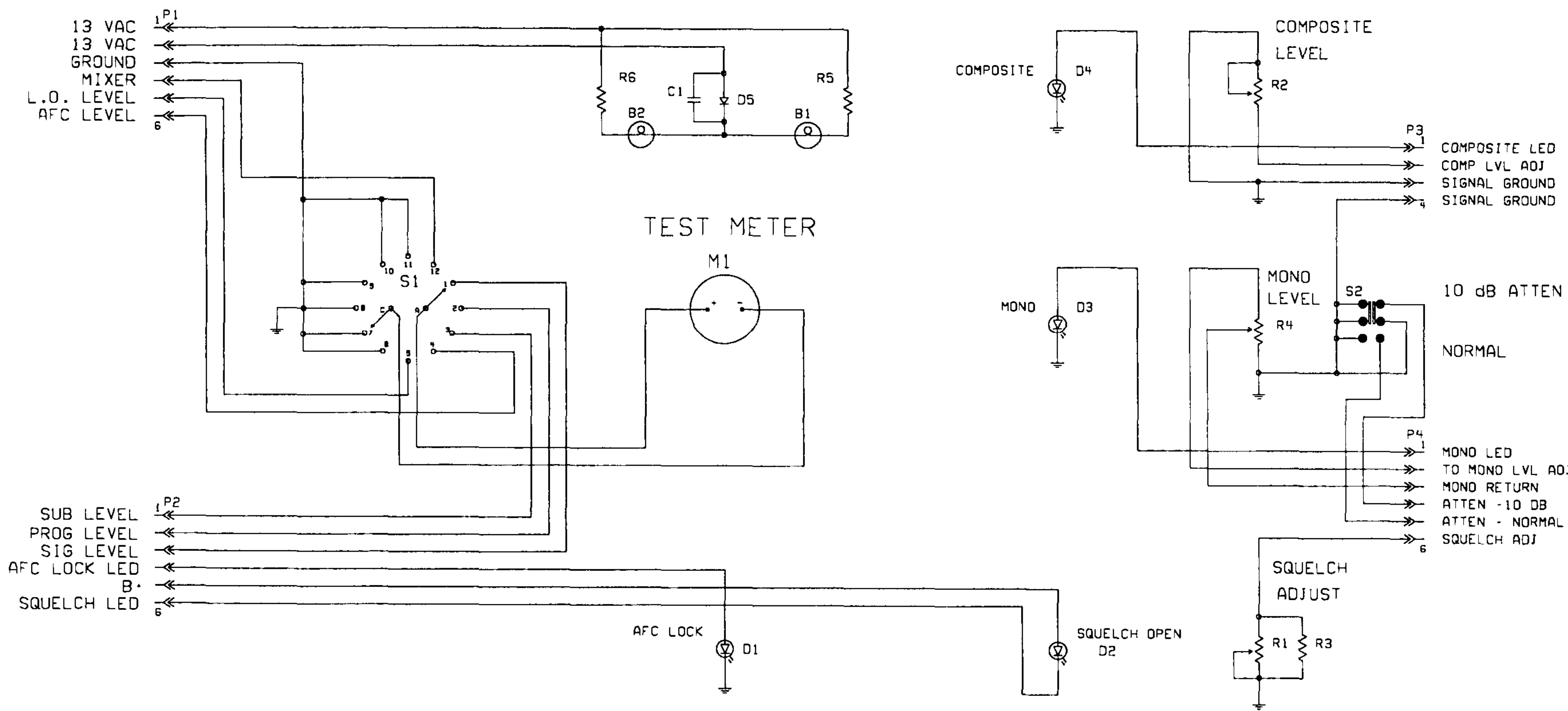
Item	Marti No.	Description
IC06	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC07	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC08	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC09	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC10	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
IC11	400-275	Integrated Circuit, OP-Amp OP275GP/OPA-260
L01	330-012	Inductor, 15 uH #70-27
R001	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R002	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R003	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R004	104-203	Potentiometer, 20K ohm cermet trimmer vert
R005	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R006	145-102-1	Resistor, 1k ohm 1/4 watt 2% RL07S102G
R007	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R008	104-502	Potentiometer, 5K ohm cermet trimmer verti
R009	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R010	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R011	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R012	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R013	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R014	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R015	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R016	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R017	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R018	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R019	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R020	145-202-1	Resistor, 2k ohm 1/4 watt 2% RL07S202G
R021	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
R022	105-502	Potentiometer, 5K ohm cermet trimmer 1 tur
R023	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R024	145-184-1	Resistor, 180k ohm 1/4 watt 2% RL07S184G
R025	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R026	145-473-1	Resistor, 47k ohm 1/4 watt 2% RLO7S473G
R027	145-473-1	Resistor, 47k ohm 1/4 watt 2% RLO7S473G
R028	145-223-1	Resistor, 22k ohm 1/4 watt 2% RL07S223G
R029	145-104-1	Resistor, 100k ohm 1/4 watt 2% RL07S104G
R030	145-104-1	Resistor, 100k ohm 1/4 watt 2% RL07S104G
R031	145-332-1	Resistor, 3.3k ohm 1/4 watt 2% RL07S332G
R032	145-223-1	Resistor, 22k ohm 1/4 watt 2% RL07S223G
R033	145-104-1	Resistor, 100k ohm 1/4 watt 2% RL07S104G
R034	145-220-1	Resistor, 22 ohm 1/4 watt 2% RL07S220G
R035	145-122-1	Resistor, 1.2k ohm 1/4 watt 2% RLO7S122G
R036	145-223-1	Resistor, 22k ohm 1/4 watt 2% RL07S223G
R037	145-104-1	Resistor, 100k ohm 1/4 watt 2% RL07S104G
R038	145-220-1	Resistor, 22 ohm 1/4 watt 2% RL07S220G
R039	145-122-1	Resistor, 1.2k ohm 1/4 watt 2% RLO7S122G
R040	145-471	Resistor, 470 ohm 1/4 watt 5% metal film
R041	145-333	Resistor, 33k ohm 1/4 watt 5% metal film
R042	145-122-1	Resistor, 1.2k ohm 1/4 watt 2% RLO7S122G
R043	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G
R044	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G
R045	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G

Parts List
R-15C Audio Processing Board
MARTI 800-294 08-25-93

Item	Marti No.	Description
R046	145-562-1	Resistor, 5.6k ohm 1/4 watt 2% RL07S562G
R047	145-333-1	Resistor, 33K ohm 1/4 watt 2% RL07S333G
R048	145-153-1	Resistor, 15k ohm 1/4 watt 2% RL07S153G
R049	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G
R050	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R051	145-562-1	Resistor, 5.6k ohm 1/4 watt 2% RL07S562G
R052	145-333-1	Resistor, 33K ohm 1/4 watt 2% RL07S333G
R053	145-562-1	Resistor, 5.6k ohm 1/4 watt 2% RL07S562G
R054	145-100	Resistor, 10 ohm 1/4 watt 5% metal film
R055	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R056	145-474-1	Resistor, 475k ohm 1/4 watt 1% RN55D4753F
R057	145-562-1	Resistor, 5.6k ohm 1/4 watt 2% RL07S562G
R058	145-471-1	Resistor, 470 ohm 1/4 watt 2% RL07S471G
R059	145-471-1	Resistor, 470 ohm 1/4 watt 2% RL07S471G
R060	145-471-1	Resistor, 470 ohm 1/4 watt 2% RL07S471G
R061	145-471-1	Resistor, 470 ohm 1/4 watt 2% RL07S471G
R062	145-030	Resistor, 3.3 ohm 1/4 watt 5% metal film
R063	145-030	Resistor, 3.3 ohm 1/4 watt 5% metal film
R064	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
R065	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
R066	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R067	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R068	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R069	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R070	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R071	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R072	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R073	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R074	145-222-1	Resistor, 2.2k ohm 1/4 watt 5% RL07S222G
R075	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R076	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R077	145-682-1	Resistor, 6.8k ohm 1/4 watt 2% RL07S682G
R078	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G
R079	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R080	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R081	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R082	145-682-1	Resistor, 6.8k ohm 1/4 watt 2% RL07S682G
R083	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R084	145-123-1	Resistor, 12k ohm 1/4 watt 2% RL07S123G
R085	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R086	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R087	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R088	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R089	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R090	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R091	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R092	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R093	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R094	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R095	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R096	NOT USED	
R097	NOT USED	

Parts List
R-15C Audio Processing Board
MARTI 800-294 08-25-93

Item	Marti No.	Description
R098	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R099	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G
R100	145-183-1	Resistor, 18k ohm 1/4 watt 2% RL07S183G
R101	145-822-1	Resistor, 8.2K ohm 1/4 watt 2% RL07S822G
R102	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R103	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R104	145-103-1	Resistor, 10k ohm 1/4 watt 2% RL07S103G
R105	145-104	Resistor, 100k ohm 1/4 watt 5% metal film
R106	145-030	Resistor, 3.3 ohm 1/4 watt 5% metal film
R107	145-472-1	Resistor, 4.7K ohm 1/4 watt 2% RL07S472G
R108	145-471	Resistor, 470 ohm 1/4 watt 5% metal film
	550-070	IC Socket, 8 pin E-CAM
	550-191	Connector, 2 Dual Pin Header
	800-294B	PC Board, Audio Processing
	550-125	Connector, 5 pin Molex Header
	550-182	Open Top Two Circuit Shunt Molex #15-38-10
	550-069	IC Socket, 14 pin

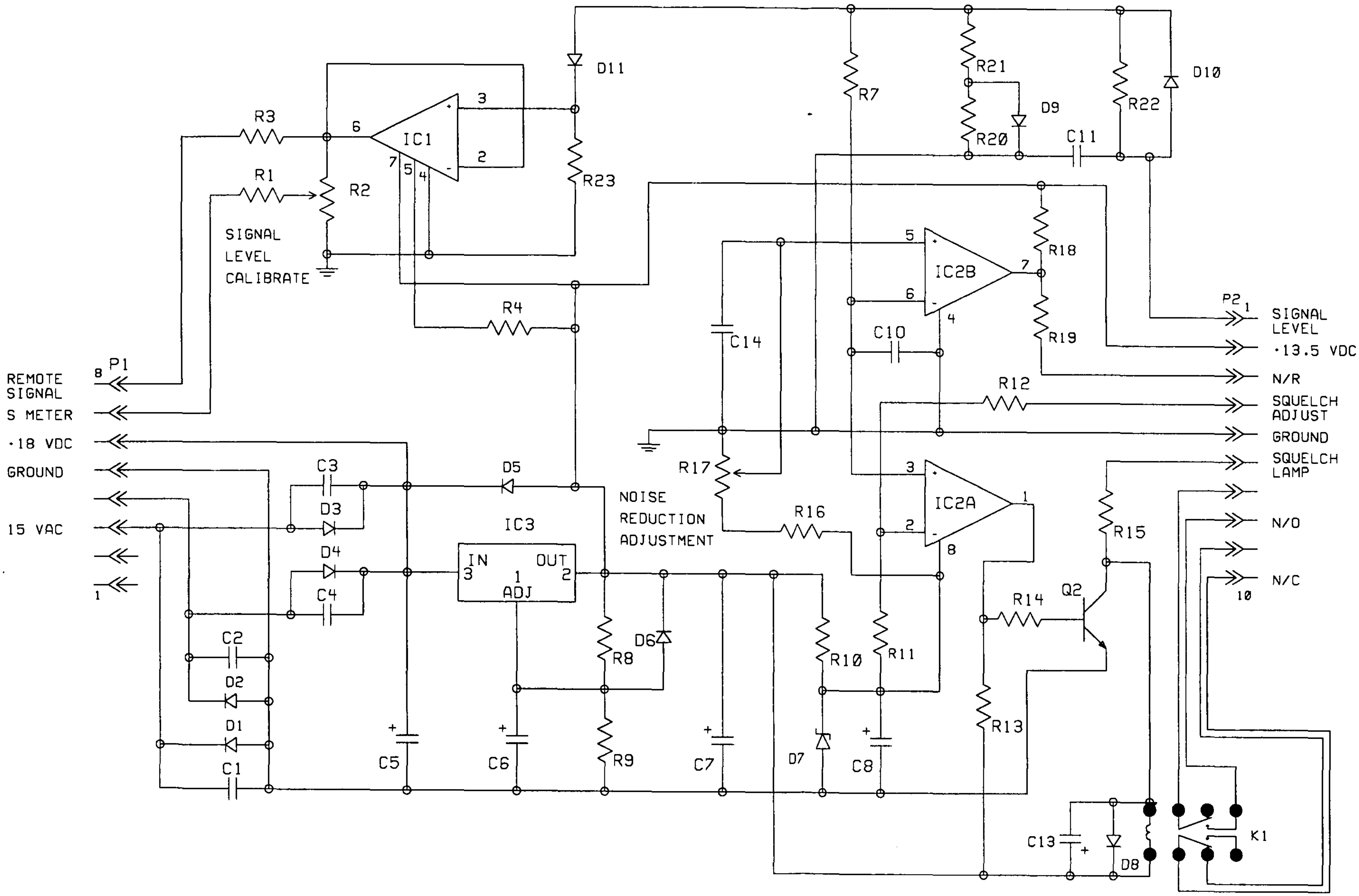


FRONT PANEL LED INDICATORS

MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 8/5/93 800-295	TITLE R-15C METER BOARD

Parts List
R-15C Metering Board
MARTI 800-295 08-25-93

Item	Marti No.	Description
B1	510-196	Subminiature Lamp, #IFL-LX2182
B2	510-196	Subminiature Lamp, #IFL-LX2182
C1	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
D1	410-255	LED, Green rectangular #351-6221
D2	410-155	LED, Red rectangular #35BL510
D3	410-113	LED, Yellow rectangular #351-6231
D4	410-113	LED, Yellow rectangular #351-6231
D5	414-007	Diode, Fagor 1N4007
M1	030-044M	Meter, HS13 VU (black)
P1	550-149	Connector, 6 pin Molex Angle Header
P2	550-149	Connector, 6 pin Molex Angle Header
P3	550-158	Connector, 4 pin Molex Angle Header
P4	550-149	Connector, 6 pin Molex Angle Header
R1	101-502	Potentiometer, 5K ohm cermet RVG0911V513A
R2	104-203	Potentiometer, 20K ohm cermet trimmer vert
R3	145-222	Resistor, 2.2k ohm 1/4 watt 5% metal film
R4	101-502	Potentiometer, 5K ohm cermet RVG0911V513A
R5	145-100	Resistor, 10 ohm 1/4 watt 5% metal film
R6	145-100	Resistor, 10 ohm 1/4 watt 5% metal film
S1	530-059	Switch, rotary #10WA135
S2	530-058	Switch, slide DPDT Switchcraft 11A1871
	800-295B	PC Board, R-15C Metering
	513-033	Spacer, 4-40 x 13/16" hex threaded Concord
	500-055	Lockwasher, #4 internal tooth small patter
	500-010	Screw, 4-40 x 3/8" phillips pan head M/S n
	500-120	Eyelet, MR24-CA-0 copper



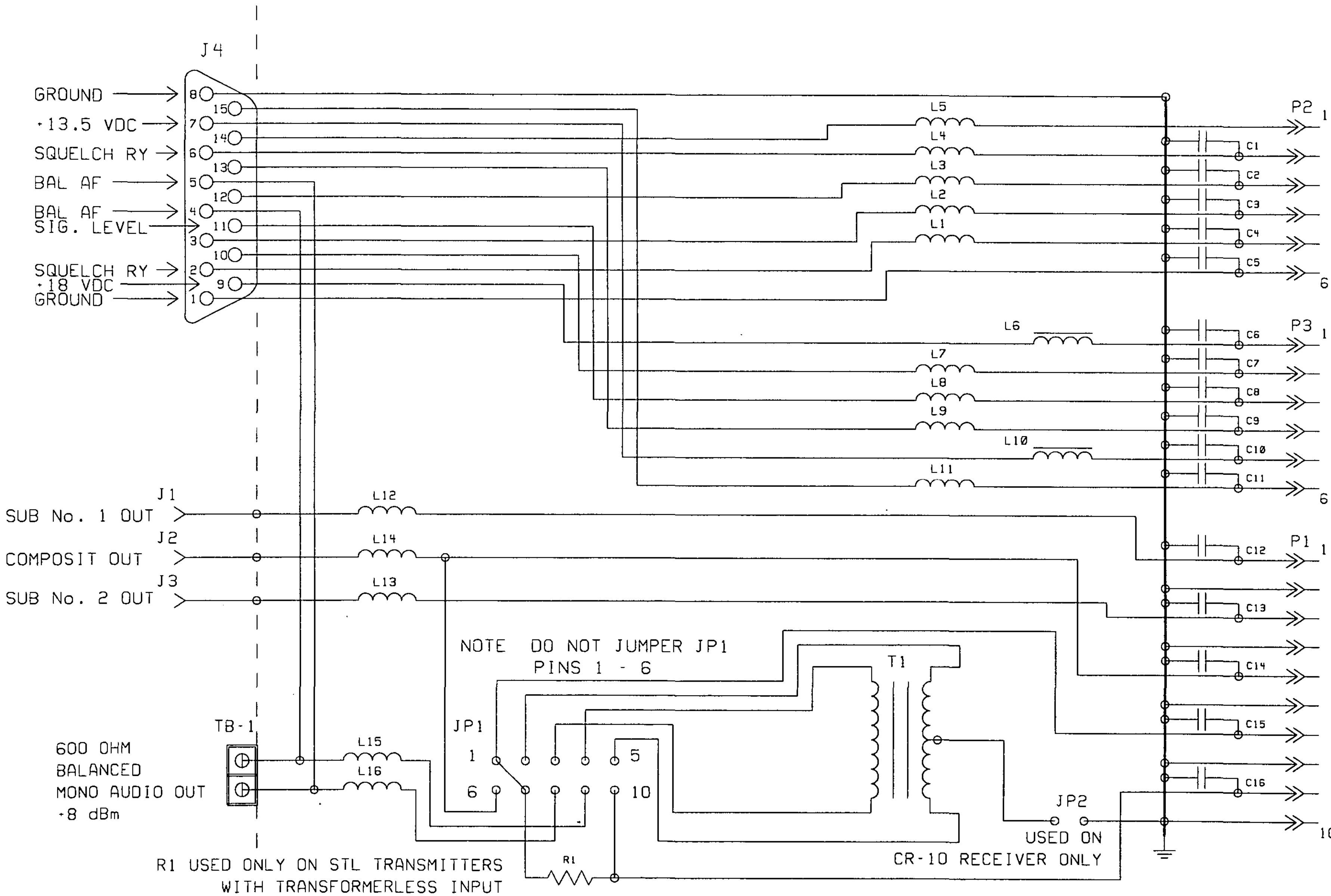
MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 6/23/93 800-219A	TITLE POWER SUPPLY/SQUELCH BOARD

Parts List
R-15C Power Supply
MARTI 800-219 07-29-93

Item	Marti No.	Description
C01	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C02	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C03	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C04	268-102	Capacitor, .001 mf 50v Z5U disc -20+80%
C05	219-472	Capacitor, electrolytic 4700uF 25V
C06	219-200	Capacitor, electrolytic 22uF 25V
C07	219-200	Capacitor, electrolytic 22uF 25V
C08	219-200	Capacitor, electrolytic 22uF 25V
C09	NOT USED	
C10	217-103	Capacitor, .1 mf 100v 10% mylar
C11	217-103	Capacitor, .1 mf 100v 10% mylar
C12	NOT USED	
C13	219-080	Capacitor, electrolytic 10uF 25V
C14	217-103	Capacitor, .1 mf 100v 10% mylar
D01	414-007	Diode, Fagor 1N4007
D02	414-007	Diode, Fagor 1N4007
D03	414-007	Diode, Fagor 1N4007
D04	414-007	Diode, Fagor 1N4007
D05	414-007	Diode, Fagor 1N4007
D06	414-007	Diode, Fagor 1N4007
D07	410-110	Diode, zener, 1N4741A 11v
D08	414-007	Diode, Fagor 1N4007
D09	410-914	Diode, 1N4148
D10	410-914	Diode, 1N4148
D11	410-914	Diode, 1N4148
IC1	400-091A	Integrated Circuit, TI TLC271CP
IC2	400-293	Integrated Circuit, TI LM393P
IC3	400-317	Integrated Circuit, National LM317T
J1	550-165	Connector, 4 pin Molex Header
J2	550-125	Connector, 5 pin Molex Header
K1	570-035-1	Relay, Aromat HB2E-DC12V
Q1	NOT USED	
Q2	425-301	Transistor, Motorola 2N3904
R01	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R02	100-501	Potentiometer, 500 ohm cermet trimmer
R03	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R04	145-433	Resistor, 43k ohm 1/4 watt 5% carbon film
R05	NOT USED	
R06	NOT USED	
R07	145-102	Resistor, 1k ohm 1/4 watt 5% metal film
R08	145-241-1	Resistor, 240 ohm 1/4 watt 2% RL07S241G
R09	145-232	Resistor, 2.32k ohm 1/4 watt 1% metal film
R10	145-101	Resistor, 100 ohm 1/4 watt 5% metal film
R11	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R12	145-331	Resistor, 330 ohm 1/4 watt 5% metal film
R13	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R14	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R15	145-471	Resistor, 470 ohm 1/4 watt 5% metal film
R16	145-103	Resistor, 10k ohm 1/4 watt 5% metal film
R17	100-522	Potentiometer, 5k ohm cermet trimmer
R18	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film

Parts List
R-15C Power Supply
MARTI 800-219 07-29-93

Item	Marti No.	Description
R19	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R20	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R21	145-333	Resistor, 33k ohm 1/4 watt 5% metal film
R22	145-472	Resistor, 4.7k ohm 1/4 watt 5% metal film
R23	145-223	Resistor, 22k ohm 1/4 watt 5% metal film
	520-051	Heatsink, Thermalloy 6030B-TT
	550-070	IC Socket, 8 pin E-CAM
	800-219B	PC Board, Power Supply R Receiver
	550-070	IC Socket, 8 pin E-CAM
	550-161	IC Socket, 16 pin Aromat #AXS-1016137



MARTI ELECTRONICS CLEBURNE, TX 76033-0661	DRAWING NO. COPYRIGHT 7/28/93 800-193A	TITLE INPUT/OUTPUT BOARD

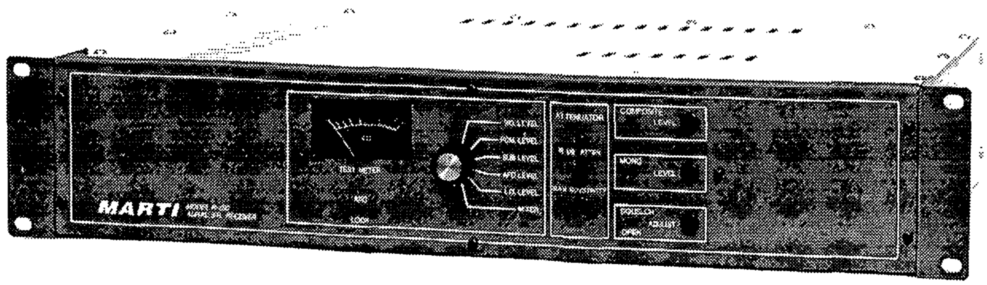
Parts List
R-10 Input Filter Board
MARTI 800-193 07-26-93

Item	Marti No.	Description
C01	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C02	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C03	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C04	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C05	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C06	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C07	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C08	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C09	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C10	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C11	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C12	270-220	Capacitor, monolithic chip, 22 pf 50v 5%
C13	270-220	Capacitor, monolithic chip, 22 pf 50v 5%
C14	270-220	Capacitor, monolithic chip, 22 pf 50v 5%
C15	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
C16	270-102	Capacitor, monolithic chip, 1000 pf 50v 5%
J1	550-170	Connector, D-Sub 15 pin Angle DN15P-R
JP1	550-192	Connector, 3 Dual Pin Header
JP1	550-191	Connector, 2 Dual Pin Header
JP2	550-184	Connector, 1 Dual Pin Header
L01	330-018	Inductor, 10 uH 43LQ105-1
L02	330-018	Inductor, 10 uH 43LQ105-1
L03	330-018	Inductor, 10 uH 43LQ105-1
L04	330-018	Inductor, 10 uH 43LQ105-1
L05	330-018	Inductor, 10 uH 43LQ105-1
L06	330-019	Inductor, Ferroxcube #VK20010-3B
L07	330-018	Inductor, 10 uH 43LQ105-1
L08	330-018	Inductor, 10 uH 43LQ105-1
L09	330-018	Inductor, 10 uH 43LQ105-1
L10	330-019	Inductor, Ferroxcube #VK20010-3B
L11	330-018	Inductor, 10 uH 43LQ105-1
L12	330-018	Inductor, 10 uH 43LQ105-1
L13	330-018	Inductor, 10 uH 43LQ105-1
L14	330-018	Inductor, 10 uH 43LQ105-1
L15	330-018	Inductor, 10 uH 43LQ105-1
L16	330-018	Inductor, 10 uH 43LQ105-1
P1	550-125	Connector, 5 pin Molex Header
P1	550-125	Connector, 5 pin Molex Header
P2	550-136	Connector, 6 pin Molex Header
P3	550-136	Connector, 6 pin Molex Header
T1	310-014M	Transformer, audio, #671-9041
TB1	511-043B	Terminal, 2 point w/brackets
	550-182	Open Top Two Circuit Shunt Molex #15-38-10
	500-004	Screw, 4-40 x 1/4" phillips pan head M/S n
	550-182	Open Top Two Circuit Shunt Molex #15-38-10
	550-182	Open Top Two Circuit Shunt Molex #15-38-10
	550-186	Connector, 3 Pin Molex Header
	550-182	Open Top Two Circuit Shunt Molex #15-38-10
	550-182	Open Top Two Circuit Shunt Molex #15-38-10
	800-193B	PC Board, I/O Filter STL-10 R-10

MARTI

R-15C/100

FM RECEIVER 88 - 108 MHz



R-15C/100

The Model R-15C/100 is a synthesized 87.5 - 108 MHz professional-quality receiver. It is of totally shielded, filtered, rack-mounted construction with manually tuned RF pre-selection to avoid problems in high-level RF locations. (Additional pre-selectors may be required in relay applications.) Separate outputs are provided for 600 ohm balanced mono audio, unbalanced composite, and subcarriers.

R-15C Features

- Synthesized (12.5 KHz steps), manual tuned pre-selectors.
- Excellent noise and distortion specs.
- High selectivity IF filters.
- 10 dB selectable input attenuator.
- Two year limited warranty.
- Selectable 0, 25, 50, 75 µs de-emphasis in mono mode.
- Balanced 600 ohm, +10 dBm mono audio output. (adjustable)
- BNC connector for 3.5 v P-P composite output. (adjustable)
- Metering and LED indicators for all important operating parameters.
- Squelch relay mutes all outputs with contacts for other switching.

List Price $1895.00

Items Required for Typical Receiver Installation

1	R-15C receiver
1	High gain Yagi antenna cut to receiver frequency. (The height of this antenna determines receiving distance.)
X	ft. of 50 ohm semi-rigid coaxial cable (LDF4-50) with connectors.
2	flex jumper cables for connecting receiver and antenna to semi-rigid coaxial cable.
1	installation kit K1 for bonding and weatherproofing connectors exposed to moisture.

R-15C Receiver Specifications

Frequency Range...........	87.5 - 108 MHz
Sensitivity.......................	2.2 microvolts for 50 dB S/N ratio (de-emphasized, main channel) 7.1 microvolts for 60 dB S/N ratio
Input Impedance............	50 ohms
Frequency Stability.........	±.00025%, -20° C to +50° C
Selectivity.......................	Filter -3 dB -60 dB F250 122 KHz 380 KHz
De-emphasis..................	Adjustable 0, 25, 50, 75 µs (mono only)
Spurious Response........	- 80 dB
Audio Output..................	Balanced 600 ohms, +10 dBm, barrier strip. BNC connector for Composite output
Frequency Response.....	±0.1 dB 30 Hz - 55 KHz (composite output)
Noise..............................	-80 dB
Distortion........................	0.1 % THD
Composite Output Level.	3.5 volts peak-to-peak (adjustable)
Power Requirements......	120/220 VAC*, 50/60 Hz, 13.5 VDC, .8 Amps. *(Specify operating voltage)
AC Power Supply...........	Internal, precision, electronically regulated with current limiting
Automatic Changeover...	Provision for automatic changeover by adding an ARS-15A and an additional receiver
Accessory Connector.....	15 pin connector on rear panel provides filtered I/O, remote control, changeover, and external DC power
Metering........................	Illuminated test meter indicates RF signal level, audio output level, subcarrier output level, +13 v DC supply, L.O. level, mixer level. LED indicators for power, open squelch, composite mode, and AFC lock
Panel Controls................	10 dB attenuation switch, mono level adjust, squelch adjust, meter switch, composite level adjust
RF Connector.................	UG-58 (type N female)
Dimensions....................	3-1/2" x 19" x 12" (HWD) (8.9 cm x 48.3 cm x 30.5 cm)
Weight............................	Net 8 lbs. Domestic packed 12 lbs. Net 3.63 kg. Export packed 5.45 kg.

MARTI *The performance-value leader in Broadcast Equipment*

Marti Electronics, P.O. Box 661 Cleburne, Texas 76033-0661 (817) 645-9163 FAX (817) 641-3869