INSTRUCTION MANUAL
FOR
TYPES DMS-107 AND DMS-107-1
DEMODULATORS

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WARNING

This equipment employs voltages which are dangerous and may be fatal if contacted. Extreme caution should be exercised in working with the equipment with any of the protective covers removed.

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Table 1-1. Types DMS-107 and DMS-107-1 Demodulators, Specifications

Tuning Range	100 kHz to 10 MHz in one band
Types of Reception	AM, FM, CW, and Pulse
Input Impedance	50-75 ohms
Input Level Range	30 mV to 1V peak-to-peak
IF Center Frequency	21.4 MHz
IF Bandwidths:	
DMS-107	20, 50, 100, 300, and 500 kHz, 1, 2, and 3 MHz
DMS-107-1	20, 50, 100, 300, and 500 kHz, 1, 3, and 5.5 MHz
Predetection IF Output	100 mV, minimum, into 50-ohm load
Video Output Level	2V, peak-to-peak into 91-ohm load
Audio Outputs	100 mW, minimum, into 600-ohm load, and heaphones jack
Video Amplifier Response	70 Hz to 4 MHz at 3-dB points
Local Oscillator Output	100 mV, minimum, into 50-ohm load
External Local Oscillator Input	1V, rms, into 50 ohms
Signal Monitor Output	21.4 MHz center frequency
Input Power	115 or 230 Vac, 50-400 Hz
Power Consumption	10 watts, approximately
Dimensions	19 inches wide, 3.5 inches high, and 18 inches deep, approximately
Weight	18.5 lbs., approximately

SECTION I

GENERAL DESCRIPTION

1.1 ELECTRICAL CHARACTERISTICS

1.1.1 The CEI Types DMS-107 and DMS-107-1 Demodulators are all solid state units designed to detect AM, FM, CW, and Pulse signals obtained from the output of various wideband tape recorders such as the RCA TR-22A and the Ampex 901. The Type DMS-107 Demodulator incorporates IF bandwidths of 20, 50, 100, 300, and 500 kHz, plus 1, 2, and 3 MHz; the DMS-107-1 employs the same five narrow bandwidths but incorporates wide IF bandwidths of 1, 3, and 5.5 MHz. Both units are tunable over an input frequency range of 100 kHz to 10 MHz in a single band. Incoming signals within this range are converted up to 21.4 MHz prior to demodulation. Extensive use has been made of integrated circuits throughout for high reliability and a substantial reduction in size. A rear-apron connector allows the units to be operated with an external local oscillator for improved accuracy and stability. Selection of the desired local oscillator, either internal or external, is by means of a front-panel switch. The internal local oscillator can be locked to a desired frequency using the digital automatic frequency control (DAFC) capability of an associated CEI frequency counter such as the DRO-302A. In addition to providing a six-digit display of the tuned frequency, the counter will hold the associated demodulator within ±100 Hz of the set frequency for an indefinite period. Automatic and manual gain control of the demodulators is available in all modes with the exception of CW. Additional front panel controls provide a means of adjusting the gain and the frequency as well as the desired IF bandwidth.

1.1.2 Signal outputs from the demodulators include a predetection IF output, an analog tuning voltage output from a potentiometer linked to the gear train, a video output, an AGC output, an FM video output, and a 600-ohm audio output. The audio signal is available at a front panel headphone jack as well as a rear-apron terminal board. Pertinent specifications for the DMS-107 and DMS-107-1 Demodulators are listed in Table 1-1.

1.2 MECHANICAL CHARACTERISTICS

1.2.1 A front view of a typical DMS-107 Demodulator is shown in Figure 1-1. Mounted on the front panel are the following controls and indicators: LO SELECT, MODE, BANDWIDTH SELECT and POWER switches, LEVEL ADJUST, VIDEO GAIN, AUDIO GAIN and FINE TUNING controls, the main tuning knob and tape dial, and the SIGNAL LEVEL and TUNING meters.

1.2.2 The rear apron of a typical DMS-107, shown in Figure 1-2, mounts the following BNC-type connectors: RF INPUT, 0.1-10 MHz J1; SM OUTPUT J2; LO

OUTPUT J3; EXT LO INPUT J4; DAFC J5; IF OUTPUT J6; ANALOG OUTPUT J7; VIDEO OUTPUT J8; FM DET OUTPUT J9; and AGC OUTPUT J11. Also mounted on the rear apron are terminal board TB1, line fuses F1 and F2, the 115/230 Vac power selector switch S5, and the permanently connected power cord. The front panel, main chassis, rear apron and top and bottom dust covers of the demodulators are constructed of aluminum. The front panel is finished with grey enamel and is overlaid with a black-anodized etched bezel. The DMS-107 and DMS-107-1 Demodulators are composed of 15 subassemblies. Two of these, the input mixer A1, and the IF output amplifier A2, are constructed on silver-plated brass chassis which have been gold-flashed to prevent tarnishing. The local oscillator assembly A3, is housed in an aluminum chassis which is 5/32 inches thick for maximum shielding. The eight IF amplifiers, the audio and video amplifiers, and the two power supply modules are constructed on etched circuit boards which plug into receptacles on the main chassis. In addition, the main chassis contains an extender card which enables a technician to raise the IF amplifier boards above the chassis level for maintenance purposes. Critical dimensions of a typical DMS-107 are: 19 inches wide, 3.5 inches high, and 18.95 inches deep including the handles. The units weigh approximately 18.5 pounds.

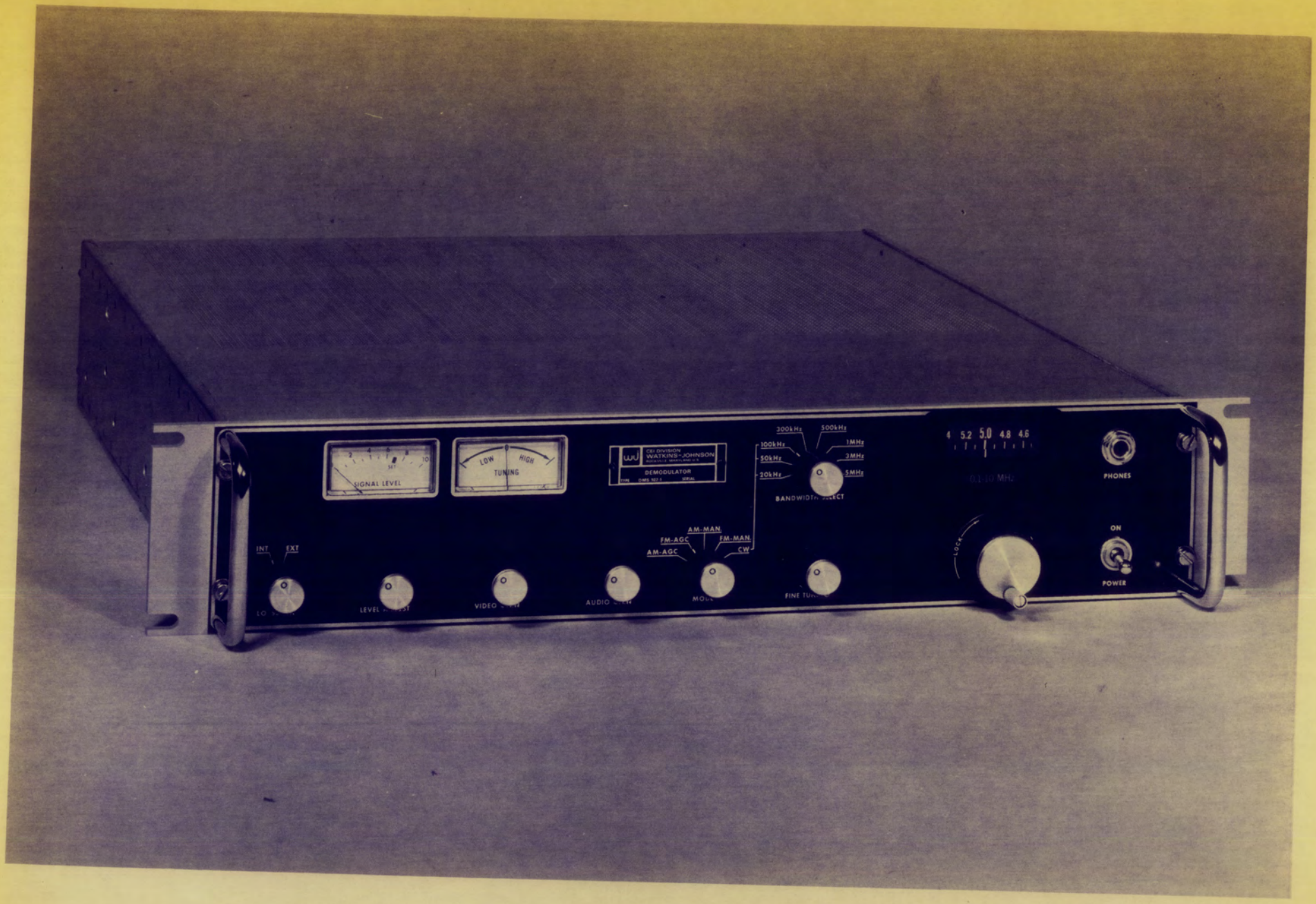

FIGURE 1-1. TYPE DMS-107-1 DEMODULATOR, FRONT VIEW

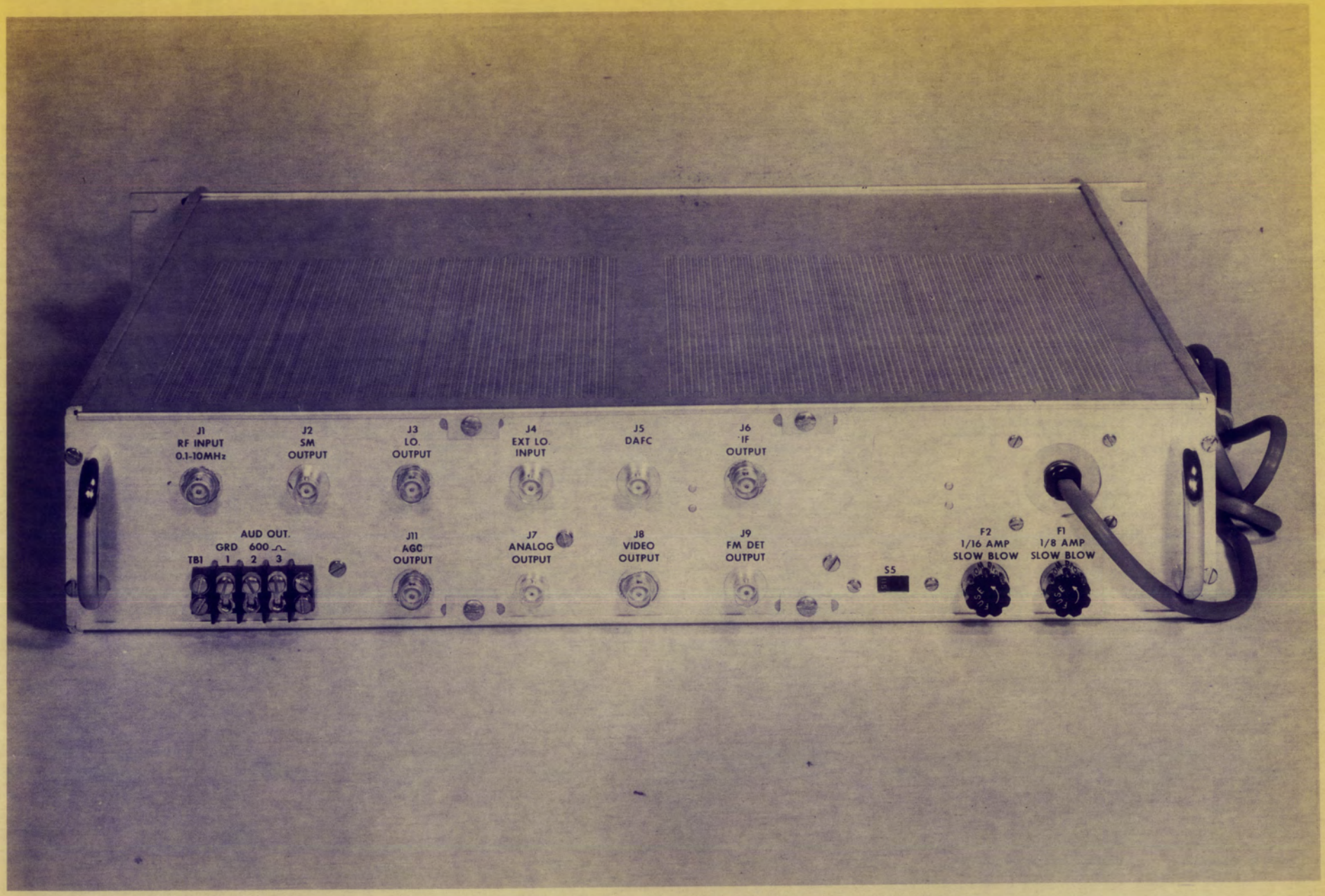

FIGURE 1-2. TYPE DMS-107-1 DEMODULATOR, REAR VIEW

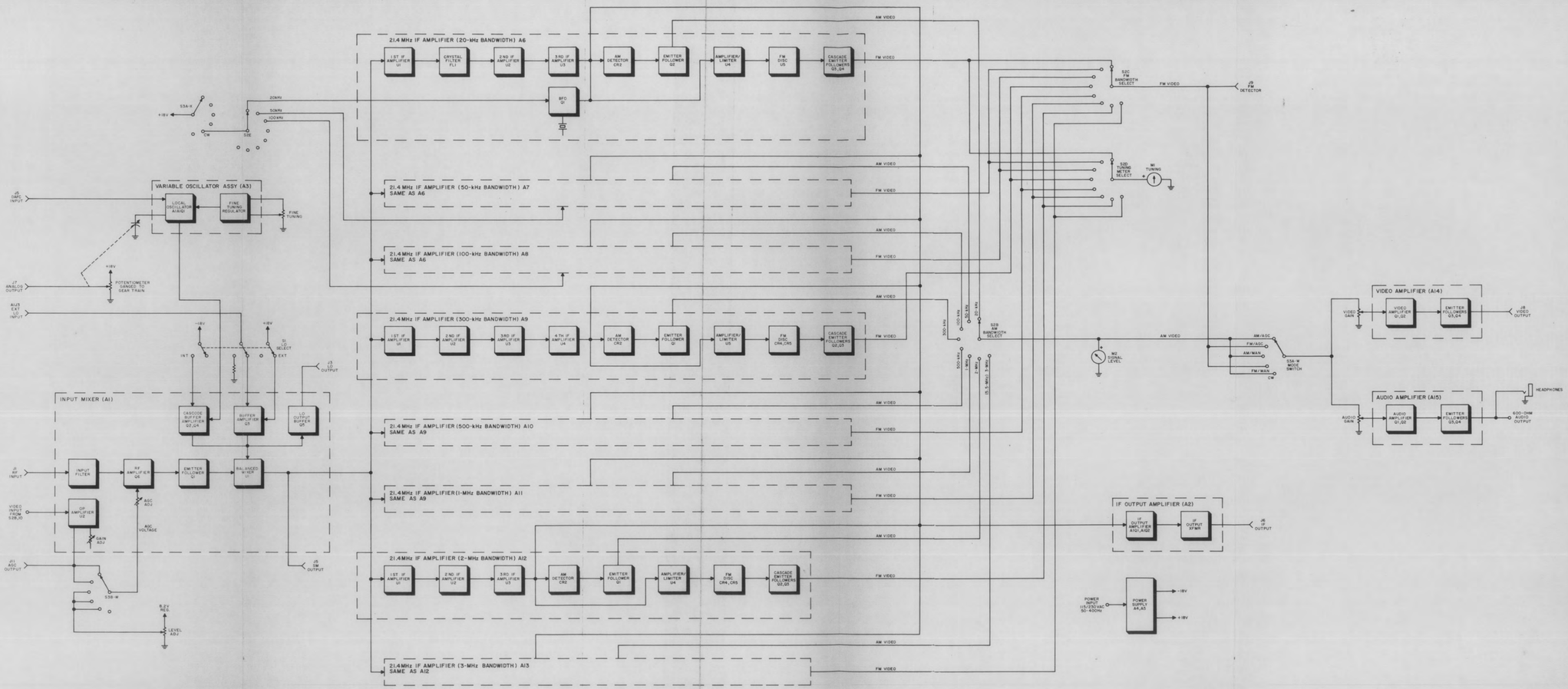

Figure 2-1. Types DMS-107 and DMS-107-1 Demodulators, Functional Block Diagram

SECTION II

CIRCUIT DESCRIPTION

2.1 GENERAL

The following paragraphs contain complete electrical and functional descriptions of the circuits in the DMS-107 and DMS-107-1 Demodulators. The unit numbering system is used for electrical components which means that parts on subassemblies and modules carry a prefix before the usual class letter and number of the item (such as A2C1 and A7R1). These subassembly prefixes are omitted in the electrical descriptions except in those cases where confusion might result from their omission. Reference should be made to the functional block diagram, Figure 2-1, and the schematic diagrams, Figure 6-1 through 6-8, at the rear of this manual.

2.2 FUNCTIONAL DESCRIPTION

2.2.1 The DMS-107 and DMS-107-1 Demodulators are single-conversion units designed to demodulate input signals in the 100-kHz to 10-MHz frequency range. These signals are supplied by associated wideband tape recorders. The output center frequency from the tape recorders is converted up to 21.4 MHz before demodulation.

2.2.2 Incoming signals to the demodulators are fed from jack J1 to a wideband, fixed-tuned, low-pass filter having a 10-MHz roll-off. A dual, insulated-gate, field effect transistor (A1Q6) is used to amplify the signals from the input filter. This stage is gain controlled by the application of AGC voltage to gate number 2. Amplified output signals are coupled to emitter follower A1Q1 which, in turn, feeds them to the balanced mixer, A1U1. This module heterodynes the IF input with either the internal local oscillator signal or with an external LO depending on the setting of the front-panel LO SELECT switch S1. The internal local oscillator, A3A1A1Q1, is operated at a frequency 21.4 MHz above the incoming signal. Tuning of the internal LO is by means of a variable capacitor which is mechanically ganged to the gear train. Output signals from the internal LO are fed to the input mixer chassis. These signals are amplified by a cascode circuit consisting of A1Q2 and A1Q4. Transformer coupling is used between the cascode amplifier and the balanced mixer input. A portion of the LO signal is fed through buffer amplifier A1Q5, to the rear-apron LO output connector, J3. External LO signals are connected to jack A1J3 and fed through buffer amplifier A1Q3 to the balanced mixer when the EXT position is selected by switch S1. Sum and difference frequencies produced by the mixing action are taken from the balanced mixer and fed to the IF amplifier inputs and to the signal monitor output jack A1J5. Since the input networks in the IF amplifiers are tuned to the difference frequency of 21.4 MHz, only this frequency is passed.

2.2.3 The nine IF amplifiers utilized by the DMS-107 and DMS-107-1 Demodulators can be arranged in three groups: narrow bandwidths, medium bandwidths, and wide bandwidths. The narrow category includes the 20, 50, and 100 kHz bandwidths. Bandwidths of 300 kHz, 500 kHz, and 1 MHz can be placed in the medium group. The wide category includes the 2, 3, and 5.5 MHz bandwidths. Close similarities exist between the IF amplifiers in each group. Therefore only one IF strip from each group will be discussed in detail in both the electrical and functional explanations.

2.2.4 The 21.4-MHz IF output signal from the balanced mixer is simultaneously fed to the input of all the IF strips in the demodulators. The desired bandwidth is selected by switch S2 on the front panel. This switch performs several functions: it applies +18V to the circuits in the selected amplifier; it connects the AM or FM video signal from the selected strip to its respective position on a section of the MODE switch; it connects the TUNING meter to the selected FM video output; and it routes operating voltage to the BFO circuits in the 20, 50, and 100 kHz bandwidth IF amplifiers when the CW mode is selected.

2.2.5 Incoming signals to the 20-kHz bandwidth IF strip are coupled to the input amplifier stage, A6U1. This integrated circuit incorporates a cascode network operating as a linear amplifier. Amplified output signals from A6U1 are fed through a single-tuned network to bandpass filter FL1. This component sets the overall bandwidth of this narrowband IF strip. Two additional integrated circuits, A6U2 and A6U3 amplify the IF signal before feeding it to the detector. A second single-tuned circuit is located between these two amplifiers. Intermediate frequency signals developed across the single-tuned circuit at the output of A6U3 are demodulated by A6CR2 and fed through emitter follower A6Q2 to section S2B of the IF BANDWIDTH switch. A portion of the predetected IF signal is fed through a diode switch to the IF output amplifier, A2. This same predetection IF signal is also coupled to a fourth integrated circuit, A6U4, which functions as an amplifier and limiter preceding the FM detector. A single-tuned circuit couples the limited signal from A6U4 to the self-contained crystal discriminator, A6U5. Demodulated FM signals are fed through cascaded emitter followers A6Q3 and A6Q4 to section S2C of the BANDWIDTH SELECT switch. The FM video signal is subsequently fed to rear-apron jack J9 and to the FM positions on MODE switch section S3A-W. This switch selects the desired signal (and gain control mode) and feeds it to the audio and video amplifiers.

2.2.6 Selection of the 300-kHz bandwidth results in the amplification of the 21.4-MHz signal by four IF stages, A9U1 through A9U4. Double-tuned circuits are employed between the integrated circuits to set the overall bandwidth. A single-tuned network develops the output signal from A9U4 and feeds it to the AM detector, A9CR2. Predetection IF signals obtained from this same network are fed to the IF output amplifier, A2, and to amplifier/limiter, A9U5. Demodulated AM signals are coupled through emitter follower A9Q1 to the BANDWIDTH SELECT and MODE

switches. FM signals are amplified and limited by A9U5 and fed to the discriminator which includes diodes CR4 and CR5. Cascade emitter followers A9Q2 and A9Q3 feed the FM video output to the BANDWIDTH SELECT and MODE switches.

2.2.7 The 2-MHz bandwidth IF strip, A12, (DMS-107 only) employs three integrated circuits A12U1 through A12U3 which function as linear IF amplifiers. The bandwidth is set by two triple-tuned networks located between the first two IF stages and a single-tuned network at the output of A12U3. Predetection IF signals are taken from the latter circuit and fed to the IF output amplifier, A2, and to A12U4, the FM amplifier/limiter. Diode A12CR2 demodulates AM signals and feeds them through A12Q1, an emitter follower, to switches S2 and S3. A Foster-Seeley discriminator including diodes A12CR4 and A12CR5 demodulates the FM signal and feeds it through cascaded emitter followers A12Q2 and A12Q3 to the 2-MHz position on switches S2C and S2D.

2.2.8 Switch section S2D applies the selected FM video signal to the front-panel TUNING meter while switch section S2B applies the selected AM signal to the SIGNAL STRENGTH meter and to the AM positions on MODE switch section S3A-W. The latter switch selects the desired signal, either AM, FM, or CW, and feeds it to the AUDIO and VIDEO GAIN controls.

2.2.9 The audio and video amplifier modules (A14 and A15) are functionally identical. Each utilizes a voltage amplifier, Q1 and Q2, driving complementary symmetry emitter followers Q3 and Q4. The audio module also includes an output transformer to provide the 600-ohm output impedance. Audio signals are fed to the front panel PHONES jack and to terminal board TB1 on the rear apron. Video output signals are fed to jack J8 on the rear apron.

2.2.10 Predetection IF signals from the selected strip are fed to the input of IF output amplifier, A2. This module consists of a pair of transistors, A2A1Q1 and A2A1Q2, operating in a cascode circuit. Transformer coupling is used between the amplifier and the rear-apron IF OUTPUT connector J6.

2.2.11 The power supply for the DMS-107 and DMS-107-1 Demodulators consists of various main chassis components plus power supply regulators A4 and A5 which supply -18V and +18V respectively.

2.3 TYPE 79586 INPUT MIXER

The schematic diagram for the input mixer is Figure 6-1; its reference designation prefix is A1. The input mixer consists of a single etched circuit board mounted within a brass chassis. The board carries the reference designation prefix A1A1. Incoming signals from associated wideband tape recorders are fed to the input mixer from rear-apron connector J1 through cable W1.

2.3.1 Input Filter and Amplifier. - Preceding the input filter circuit is a 16-dB resistive pad made up of R39, R58, and R59 which attenuates the incoming signal. Following the attenuator is a three-pole, broadband low-pass filter consisting of capacitors C18 through C20 and inductors L1 through L3. The filter has a 10-MHz roll-off frequency and attenuates any signals above this point. Resistor R48 provides the proper load to set the desired circuit Q. Blocking capacitor C26 couples the input signal to gate number 1 (pin 3) of broadband amplifier Q6. This stage is a dual, insulated-gate, field effect type (IGFET) operating in a common source circuit. It is gain-controlled by the application of AGC voltage to gate number 2 (pin 2). The AGC network, located on the input mixer board, is described in paragraph 2.3.6. Amplified output signals developed across drain load resistor R55 are coupled through dc-blocking capacitor C1 to emitter follower Q1. This stage acts as a low-impedance source driver for the balanced mixer. Coupling between Q1 and the mixer is by means of C8.

2.3.2 Local Oscillator Selection. - The DMS-107 and DMS-107-1 Demodulators are designed to operate with an internal local oscillator or an external oscillator source. When the LO SELECT switch is placed in the INT position the following occurs: section S1A-W connects the external source to ground through resistor R13 on the main chassis; section S1A-X applies +18V to pin B of jack J12 which activates the internal LO transistor A3A1A1Q1 ;switch section S1A-Y applies -18V to the local oscillator amplifier circuit, turning it on.

2.3.3 Local Oscillator Amplifier and Balanced Mixer. - The internal local oscillator signal is fed to the input mixer chassis through jack J2. It is coupled through dc-blocking capacitor C2 to the base of Q2. This transistor operates in conjunction with Q4 in a cascode circuit. Capacitor C4 and resistor R9 feed back out-of-phase signal voltage from the collector to the base of Q2 to set the amplifier gain. Transformer T1 matches the high output impedance of Q4 to the lower input impedance of the balanced mixer U1, and functions as the output load for the cascode circuit. The mixer is a completely self-contained, sealed module which heterodynes the selected local oscillator signal with the input from the associated tape recorder. It completely suppresses the RF and LO inputs producing only the sum and difference of the two. Since the succeeding IF amplifiers are tuned to the difference frequency of 21.4 MHz, only this frequency is passed. The IF output from U1 is fed through a 3-dB resistive pad, consisting of R27, R28, and R29 to the input of all the IF amplifiers included in the demodulators. A portion of the IF signal is fed to the signal monitor output jack, J5 through a 9-to-1 voltage divider, R37 and R39.

2.3.4 External LO Buffer Amplifier. - Transistor Q3 functions as a local oscillator buffer amplifier for the external source. Placing switch S1 in the EXT position results in external LO signals being applied to Q3 through jack J3 on the mixer chassis, a 25-dB pad made up of R6, R7, and R8, and dc-blocking capacitor C5. The value of R8 is factory selected to compensate for gain variations of

different 2N5109 transistors. Transformer T1 forms the collector load for Q3 when the external LO source is used.

2.3.5 Local Oscillator Output Buffer. - A portion of the selected LO signal is taken from the secondary of transformer T1 and coupled to the base of LO output buffer stage, Q5, through blocking capacitor C13. A ten-to-one voltage divider, R23 and R24, drops the LO signal amplitude prior to applying it to Q5. Factory selection of R24 also compensates for gain variations in the buffer transistors. Amplified LO signals developed across the primary of transformer T2 are coupled through this component and a 5-dB pad (R34, R35, R36) to LO output connector J6 on the mixer chassis. Cable W4 then feeds it to rear-apron LO OUTPUT jack J3.

2.3.6 AGC Amplifier. - Gain control voltage for mixer input stage Q6 in the AM-AGC or FM-AGC modes is provided by the circuit containing IC U2. This semiconductor device receives AM video signals from the AM detector circuit in the selected IF amplifier, senses the amplitude and supplies a dc voltage change which is applied to gate number 2 (pin 2) of the IGFET. These video signals are fed to the input mixer through terminal E1. Resistor R40 isolates the AGC network from the detector circuits to prevent loading. Filtering of the video input is provided by C22. Silicon diode CR1 supplies an additional 0.6-volt delay in the AGC loop in addition to the 1.2-volt dropped by the AM detectors and the base-emitter junctions of the emitter followers in the AM video output circuits of each IF amplifier. This diode also prevents any negative biasing voltage present on the AM video output emitter follower circuits from reaching the IC. An operational amplifier is used to supply the AGC output signal. Incoming signals are applied to the inverting input with output signals taken from pin 6. The gain of the IC is set by the feedback signal provided from the junction of dividing resistors R42 and R45. The dc offset and consequently the bias level at pin 6 is adjusted by potentiometer R43. The gain control signal, a decreasing voltage with increasing signal strength, is applied to pin 2 of Q6 through C7, isolation resistor R53, and potentiometer R43. The latter control provides a means of adjusting the gain of Q6 to compensate for differences in electrical characteristics of various 3N140 transistors.

2.4 TYPE 71272 VARIABLE OSCILLATOR ASSEMBLY

The schematic diagram for the entire oscillator assembly is shown in Figure 6-3; reference designation prefix A3 has been assigned. Two separate components make up the assembly: the type 7755 local oscillator and the type 8587 gear train. The local oscillator schematic diagram is Figure 6-4; it carries the reference designation prefix A3A1. An exploded view of the gear train is shown in Figure 5-3; the gear train is subassembly A3A2 of the variable oscillator.

2.4.1 Type 7755 Local Oscillator. - The majority of the oscillator components are mounted on an etched board inside the oscillator assembly. This board carries

the reference designation prefix A3A1A1. Tuning of the oscillator over the frequency range of 21.5 MHz to 31.4 MHz is by means of the main tuning capacitor, C1, with variable capacitor C2 functioning as its trimmer. Transistor A1Q1 operates in a modified Clapp configuration with regenerative emitter-to-base feedback provided by A1C7. Variable inductor L1 is the main tank circuit inductor with A1L1 functioning as its trimmer. Vernier tuning of the oscillator is done by means of the front-panel FINE TUNING potentiometer, R10, and varactor A1CR2 on the local oscillator board. The capacitance of this semiconductor device varies inversely with the reverse voltage applied across it. Fine tuning voltage is supplied by the network consisting of Zener diode A1VR1, capacitor A1C1 and diode A1CR1. The Zener diode provides regulation of the positive supply voltage while A1C1 acts as a filter. Silicon diode A1CR1 provides temperature compensation for varactor A1CR2. The negative temperature coefficient of the silicon diode counteracts a tendency of the varactor capacitance to increase at elevated temperatures. Digital automatic frequency control voltage from an associated frequency counter is fed to the oscillator through rear-apron connector J5 and feedthrough capacitor A3A1C6. Oscillator output signals are taken from the junction of capacitors C8 and C9 and fed to connector A3A1J1. These capacitors form part of a voltage divider that taps down the tank circuit to prevent loading of the oscillator. Cable W2 feeds the oscillator signals to the input mixer chassis (see paragraph 2.3.3).

2.4.2 Type 8587 Gear Train. - An exploded view of the gear train is shown in Figure 5-3. Mounted on the gear train is a precision helipot, A2R1, that provides an analog tuning voltage output which is applied to jack J7 on the rear apron..

2.5 TYPE 72277 21.4-MHz IF AMPLIFIER (20 kHz BW)

2.5.1 IF Amplifiers and Crystal Filter. - Figure 6-7 is the schematic diagram for this IF amplifier; reference designation prefix A6 has been assigned. Incoming 21.4-MHz IF signals are coupled through module pin 20B and capacitor C1 to pin one of U1, the first of three integrated circuit IF amplifier stages. Each IC contains a cascode circuit operating as a linear amplifier. Output signals are taken from pin six of U1 which is tuned to the center frequency by inductor L2. A capacitive voltage divider formed by C7 and C8 matches the output impedance of the tuned circuit to the input impedance of bandpass filter FL1. This is a crystal filter that sets the bandwidth of the amplifier at 20 kHz. Additional amplification of the IF signal is provided by IC's U2 and U3. The output of each of these amplifiers is also adjusted to the IF center frequency by single-tuned circuits, containing in this case inductors L3 and L5, respectively. Resistors R3, R9, and R14 in series with the outputs of U1, U2, and U3, act as parasitic suppressors.

2.5.2 AM Detector and AM Output Emitter Follower. - Amplified output signals from U3 are coupled through dc-blocking capacitor C25 to AM detector diode CR2. This semiconductor demodulates the IF signal and applies it to emitter follower Q2. Capacitor C30 filters the detector output. Silicon diode CR1 clamps the base of Q2 at 0.6 volts to compensate for the base-emitter voltage drop of the transistor.

This is done so that the AM video output will be zero-volts with no signal input. Clamp voltage is applied to the diode through R16 and L5. Note that the clamp voltage appears on both sides of the detector so that its operation is not affected. Video output signals from emitter follower Q2 are filtered by L6 and C37 to remove any remaining 21.4-MHz IF component from the video output. AM output signals are fed from module pin 16A to the 20 kHz position on switch S2B. Resistor R26 functions as both a parasitic suppressor and current limiter to protect Q2 in the event the AM output is shorted to ground.

2.5.3 Predetection IF Output. - Predetection IF output signals are taken from the junction of voltage dividing capacitors C27 and C28 and fed through diode CR3 and blocking capacitor C31, to module pin 21A. When any IF bandwidth other than the 20-kHz wide strip is selected, diode CR3 is reverse biased and appears as an open circuit in the predetection path. This is done so that the selected predetection signal is not affected by the tuned circuits in any other IF amplifier. The reverse bias voltage is applied to the anode of CR3 through module pin 19A and resistor R19. When the 20-kHz bandwidth is selected, +18 volts is applied to CR3 through module pin 18A and resistor R17 turning the diode on. Predetection IF signals from this strip are then passed to the IF output amplifier, A2.

2.5.4 Beat Frequency Oscillator. Transistor Q1 operates in an ultraudion Colpitts crystal oscillator circuit at a frequency of 21.4 MHz. Regenerative feedback from collector to base is through crystal Y1 which also supplies the 90-degree phase shift necessary to sustain oscillation. The BFO is turned on when the CW mode is selected in conjunction with the 20 kHz IF bandwidth. Operating voltage is applied to the circuit through module pin 4B, decoupling resistor R12 and biasing resistor R25. Oscillator output signals are taken from the collector and coupled to the IF signal path through a capacitive voltage divider made up of C22 and C23, and coupling capacitor C21. The divider sets the signal amplitude while C21 provides the desired degree of coupling without loading the IF tank circuit.

2.5.5 FM Limiter and Discriminator. - A capacitive voltage divider made up of C27 and C28 taps down the final IF tank circuit to provide the input signal to the FM limiter and discriminator. Integrated circuit U4 functions as an FM amplifier/limiter. Incoming 21.4-MHz IF signals are coupled through dc-blocking capacitor C36 and parasitic suppressor R27 to the high level input, pin 1. Limiting action within the IC removes any amplitude variations from the IF signal so that the input to the discriminator varies only in frequency. A single-tuned circuit consisting of inductor L7 and capacitors C40 and C41 develops the output signal from U4. These signals are taken from the junction of the two capacitors and fed to the FM discriminator, U5. This is a completely self-contained, sealed module that demodulates the incoming FM signals and feeds them to the base of emitter follower Q3. Capacitor C48 filters the discriminator output. Emitter follower Q3, a PNP transistor, is direct-coupled to Q4, an NPN transistor, in a non-inverting cascade configuration. The FM video output signal is developed across R35 and a low-pass filter made up of L9 and C49. This circuit removes any 21.4-MHz component

remaining in the FM video output. From module pin 12A, the FM signal is fed to the 20-kHz position on IF BANDWIDTH switch section S2C. In addition, a portion of the video output is fed to the front-panel TUNING meter through section S2D.

2.6 TYPES 72278 AND 72279 21.4-MHz IF AMPLIFIERS

The schematic diagram for the type 72278, 50-kHz bandwidth IF strip is Figure 6-8; its reference designation prefix is A7. The type 72279 IF strip has a bandwidth of 100 kHz. Its schematic diagram is Figure 6-9 and it carries the reference designation prefix A8. With the exception of the bandwidth of crystal filter (FL1), these IF strips are electrically and functionally identical to the 20-kHz bandwidth IF amplifier described in paragraph 2.5.

2.7 TYPE 72280 21.4-MHz IF AMPLIFIER (300 kHz BW)

Figure 6-10 is the schematic diagram for this IF strip; A9 is its reference designation prefix.

2.7.1 IF Amplifiers and AM Detector. - Four type MC-1550G integrated circuits, U1 through U4, function as IF amplifiers. Three double-tuned, LC networks are used to set the overall 300-kHz bandwidth. Potentiometer R7 connected to IC U2 provides a means of adjusting the IF gain during initial alignment and test. Capacitive voltage dividers are used to match the output impedance of each double-tuned circuit to the input impedance of each IC. Amplified output signals developed across the single-tuned circuit following U4 are demodulated by diode CR2, filtered by capacitor C40, and fed through emitter follower Q1 and module pin 16A, to the 300-kHz position on switch section S2B.

2.7.2 Predetection IF Output and FM Limiter. - Predetection IF output signals are supplied through module pin 21A. This output, which is taken from the junction of capacitive voltage dividers C35 and C36, is fed through switching diode CR3 and capacitor C41 to the IF output amplifier, A2. Diode CR3 and its associated components in this IF strip performs the same functions as diode A6CR3 and associated parts as described in paragraph 2.5.3. Input signals to the FM limiter, U5, are taken from the predetection circuit and coupled through parasitic suppressor R31 and blocking capacitor C45 to pin 1. Integrated circuit U5 removes amplitude variations from the input signal and feeds it from pin 6 through R35 and C51 to the FM discriminator.

2.7.3 FM Discriminator. - The FM discriminator is a modified Foster-Seeley circuit. Limited 21.4-MHz IF signals are fed through inductor L15 to the primary of discriminator transformer T1, both of which are tuned to the center frequency. Only a small percentage of the limiter output appears across the transformer primary due to the dividing action of L15 and the parallel combination of L16 and the primary winding. Capacitor C53 couples the RF reference voltage from the input to the secondary of T1. The secondary is electrically center-tapped by capacitors C54 and C55. Diodes CR4 and CR5 demodulate the FM signal and feed it through

cascaded emitter followers Q2 and Q3 to module pin 12A. A low-pass filter made up of L17 and C59 removes any remaining 21.4 MHz component from the video output. Resistor R44 functions as a parasitic suppressor. Video output signals from pin 12A are fed to the 300-kHz position on switch sections S2C and S2D.

2.8 TYPES 72281 and 72282 21.4-MHz IF AMPLIFIERS

The schematic diagram for the type 72281 IF amplifier is Figure 6-11; A10 is its reference designation prefix. This IF strip has a bandwidth of 500 kHz. The type 72282 IF amplifier schematic diagram is Figure 6-12; this 1 MHz bandwidth strip carries the reference designation prefix A11. Both of these IF amplifiers are functionally identical to the 300-kHz bandwidth IF strip. The values of some of the components in the bandwidth determining networks have been changed to provide the wider response.

2.9 TYPE 72283 21.4-MHz IF AMPLIFIER (2 MHz BW)

This IF amplifier carries the reference designation prefix A12 and is used only in the DMS-107. Figure 6-13 is the schematic diagram for the module.

2.9.1 IF Amplifiers and Bandpass Networks. - Amplification of the 21.4-MHz IF signals is provided by linear amplifier integrated circuits U1 through U3. The first and second IF stages are coupled by a triple-tuned bandpass network containing inductors L2, L3, and L4. A similar network is employed between IF stages U2 and U3. Amplified output signals from U3 are developed across a single-tuned circuit containing inductor L11. The resultant response produced by the combination of the two triple-tuned circuits and the single-tuned network is 2-MHz wide at the 3-dB points.

2.9.2 AM Detector and Output Emitter Follower. - Diode CR2 demodulates the amplified output signals from U3. These AM video signals are then filtered by C32 and fed through emitter follower Q1 to module pin 16A. Filter components L12 and C36 remove any remaining IF signal from the video output. Silicon diode CR1 clamps the base of Q1 to compensate for the 0.6 volt base-emitter voltage drop.

2.9.3 Predetection IF Output and FM Limiter. - A capacitive voltage divider made up of C29, C30, and C31, provides a predetection IF signal at the junction of C29 and C30 which is fed through switching diode CR3 and capacitor C37 to module pin 21A. A portion of this predetection signal is also fed through parasitic suppressor R38 and blocking capacitor C51 to pin 1 of the FM limiter IC, U4. This integrated circuit removes the amplitude variations from the IF input and then feeds it to the FM discriminator.

2.9.4 FM Discriminator and Output Emitter Follower. - Demodulation of FM input signals is by means of a modified Foster-Seeley circuit containing diodes CR4 and CR5. The limited output from U4 is fed to the discriminator through an

inductive voltage divider made up of L16 and the parallel combination of L15 and the primary of transformer T1. Reference signals for the discriminator transformer secondary are coupled from the input through C45. Inductor L16 and the transformer are both tuned to the IF center frequency. Demodulated FM signals are filtered by C48 and fed through cascaded emitter followers Q2 and Q3 plus inductor L18 and parasitic suppressor R35 to module pin 12A. The inductor and its distributed capacity filter any remaining 21.4-MHz RF component from the FM video output.

2.10 TYPES 72284 AND 72312 21.4-MHz IF AMPLIFIERS

The bandwidth of the type 72284 IF amplifier is 3 MHz; Figure 6-14 is the schematic diagram for the subassembly. The reference designation prefix A13 has been assigned for the DMS-107 whereas A12 is the reference designation prefix in the DMS-107-1. The type 72312 IF strip has a bandwidth of 5.5 MHz; A13 is its reference designation prefix. This module is used only in the DMS-107-1. Both IF strips are functionally identical to the 2-MHz bandwidth amplifier described in paragraph 2.9. The values of some of the components in the bandwidth determining networks have been changed to provide the wider response.

2.11 TYPE 7366 VIDEO AMPLIFIER

The video amplifier carries the reference designation prefix A14; Figure 6-16 is the schematic diagram for the module. It consists of an NPN transistor, Q1, dc-coupled to Q2, a PNP transistor. These two stages provide the necessary voltage gain to drive complementary symmetry emitter followers Q3 and Q4. The latter two transistors are biased to operate Class B. Negative dc feedback to set the overall gain of the amplifier is taken at the junction of emitter resistor R11 and R12 and fed to the emitter of Q1 through R6. This resistor in conjunction with R5 determines the amount of feedback. The tolerance of both parts is 1 percent to prevent variations in gain between various 7366 video amplifiers. Silicon diodes CR1 and CR2 determine the idling currents of Q3 and Q4, and eliminate crossover distortion while preventing thermal runaway. Since the transistors and diodes are made of the same material they exhibit the same temperature coefficient of voltage characteristics. A rise in temperature lowers the base-emitter voltage drop of the transistors tending to make them conduct harder. However, the diode voltage drop decreases by the same amount so that the voltage applied to the bases also decreases, holding the collector current nearly constant. Resistors R11 and R12 are included in the emitter circuits of Q3 and Q4 to provide additional feedback with low-input signal levels. These resistors eliminate distortion introduced by the difference between the voltage drops of CR1 and CR2 and the base-emitter junctions of Q3 and Q4. With little or no input signal the drop across the resistors is a few tenths of a volt. Large input signals would cause the drop to become excessive except that CR3 and CR4 become forward biased and limit the drop to approximately 0.6 volt. The low-impedance output of the complementary symmetry emitter followers is matched to the higher impedance output terminals by means of R13. This

resistor has the additional effect of preventing amplifier damage if the output terminal is accidentally shorted to ground. Resistor R14 provides a dischange path to ground for C6 if the amplifier is operated without a dc load. Capacitor C3 provides additional drive for Q4 through R9 during the negative-going portion of the input signal. The bases of Q3 and Q4 are coupled through capacitor C4 to equalize the input signal level to the two stages. The output signal from the module is fed to the rear-apron VIDEO OUTPUT jack, J8.

2.12 TYPE 7440 AUDIO AMPLIFIER

The schematic diagram for the audio module is Figure 6-7; its reference designation prefix is A5. The module consists of NPN transistor, Q1, dc-coupled to Q2, a PNP transistor. These two stages provide the necessary voltage gain to drive complementary symmetry emitter followers Q3 and Q4. The latter two transistors are biased to operated Class B. Negative dc feedback to set the overall gain of the amplifier is taken at the junction of emitter resistors R11 and R12 and fed to the emitter of Q1 through R7. This resistor in conjunction with R5 determines the amount of feedback. The tolerance of both parts is 1 percent to prevent variations in gain between various 7440 audio amplifiers. Silicon diodes CR1 and CR2 determine the idling currents of Q3 and Q4, and eliminate crossover distortion while preventing thermal runaway. Since the transistors and diodes are made of the same material they exhibit the same temperature coefficient of voltage characteristics. A rise in temperature lowers the base-emitter voltage drop of the transistors tending to make them conduct harder. However, the diode voltage drop decreases by the same amount so that the voltage applied to the bases also decrease, holding the collector current nearly constant. Resistors R11 and R12 are included in the emitter circuits of Q3 and Q4 to provide additional feedback with low-input signal levels. These resistors eliminate distortion introduced by the difference between the voltage drops of diodes CR1 and CR2 and the base-emitter junctions of Q3 and Q4. With little or no input signal the drop across the resistors is a few tenths of a volt. Large input signals would cause the drop to become excessive except that CR3 and CR4 become foward biased and limit the drop to approximately 0.6 volt. The low-impedance output of the complementary symmetry emitter follower is matched to the higher impedance output terminals by means of R13. Additional negative feedback to stabilize the amplifier is produced by the current flow through the primary of output transformer T1 and resistor R6. The audio signal from pin 6 is fed to the front-panel PHONES jack, J10. The 600-ohm audio signal is fed to rear-apron terminal board TB1, pins 2 and 3.

2.13 TYPE 72300 IF OUTPUT AMPLIFIER

The schematic diagram for this subassembly is Figure 6-2; the reference designation prefix A2 has been assigned. Predetection 21.4-MHz IF signals are fed directly to the amplifier from the selected IF strip. From jack J1 they are fed through blocking capacitor A1C1 to the base of IF amplifier A1Q1. Resistor A1R1 terminates the input. Transistor A1Q1 is directly coupled to A1Q2 in a

conventional cascode configuration. The amount of ac degeneration and consequently the gain of the amplifier, is set by selecting a value for resistor R6 which will produce a 100-mV minimum output with a 30-mV input to any of the selected IF amplifiers. Output transformer A1T1, the collector load for A1Q2, provides the 50-ohm output impedance and develops an amplified output signal which is fed to jack J2. Cable W5 and plug P9 feed the predetection output to rear-apron connector J6.

2.14 POWER SUPPLY

The power supply for the types DMS-107 and DMS-107-1 Demodulators consists of various main chassis components plus modules A4 and A5. The 115/230 Vac, 50-400 Hz ac input is fed from plug FL1P1 through line filter FL1, line fuse F1, and power switch S4 to the two primary windings of power transformer T1. Rear-apron mounted power selector switch S5 connects the primary windings in parallel for 115-volt operation and in series for 230-volt operation. Overload protection for the units when the latter input power is used is provided by fuse F2. The power transformer has two secondary windings. One of these, 5-6-7, supplies 25 Vac for the two power supply regulators. The remaining winding, 8-9, supplies 5.0 Vac for the dial lamps.

2.14.1 Type 76160 -18V Power Supply Regulator. - The schematic diagram for this plug-in module is Figure 6-5; reference designation prefix A4 has been assigned. Transistor Q1 functions as a series regulator whose conduction is controlled by Q2, a voltage amplifier. Transistors Q3 and Q4 are connected in a differential amplifier configuration. The base of Q4 is held at a fixed potential by Zener diode CR2. The base of Q3 is connected to the regulated output through a sampling network consisting of fixed resistors R5 and R7, and potentiometer R6. The signals at the bases of the two stages are summed in the common emitter circuit to produce a signal at the collector of Q3 that is the difference between the two inputs. Thus, any fluctuation in the output voltage is sensed by Q3, amplified and inverted and fed to the base of Q2. For example, if the output voltage rises (becomes more negative) Q3 will conduct harder, causing an increased voltage drop across R2 and R3. This lowers the forward bias voltage and the current flow through Q2. As a result, the current flow through Q1 is reduced, returning the output voltage to its nominal value. Resistor R4 connects the base of Q3 to the input side of the regulator so that voltage fluctuations at this point can be sensed and compensated for by the gain of the differential amplifier. A differential amplifier is used in the comparison circuit so that variations in base-emitter voltage due to temperature changes in one transistor will tend to cancel similar changes in the other. This configuration also permits the reference diode, CR2, to be placed in the base circuit rather than the emitter, as is the case with a one-stage error amplifier. Less current flows through the diode, resulting in a more stable reference voltage.

2.14.2 Type 76162 +18V Power Supply Regulator. - Figure 6-6 is the schematic diagram for this board; A5 is its reference designation prefix. The operation of this regulator is similar to the -18V board. Polarities of the diodes, transistors,

and capacitors has been reversed to supply the positive voltage. Transistor Q2 functions as an emitter follower in this case to amplify the low current output of Q3. This configuration is used to supply sufficient current drive for the low input impedance at the base of Q1.

SECTION III

INSTALLATION AND OPERATION

3.1 INSTALLATION

The types DMS-107 and DMS-107-1 Demodulators are designed for mounting in a standard 19-inch rack. The units require 3.5 inches of vertical space and will extend approximately 18.0 inches back into the rack. Critical dimensions of a typical unit are shown in Figure 3-1.

3.1.1 Power Connection. - Before the power plug is connected to a 115/230 Vac, 50-400 Hz source, ensure that the power selector switch, S5, on the rear-apron is in the proper position and that the power switch on the front panel is in the OFF position. The third pin of the power plug grounds the unit. If a three pin receptacle is not available, use the three-to-two pin adapter provided.

3.1.2 RF Input Connection. - Connect the source of 0.1 to 10-MHz RF signals to RF INPUT jack, J1, on the rear apron.

3.1.3 External Local Oscillator Connection. - An external local oscillator signal can be connected to jack J4 marked EXT LO INPUT on the rear apron.

3.1.4 DAFC Connection. - Digital automatic frequency control voltage from an associated counter can be connected to rear apron DAFC jack, J5.

3.1.5 Signal Monitor Output. - 21.4-MHz IF signals suitable for connection to a signal monitor are available at jack J2 on the rear apron.

3.1.6 Local Oscillator Output. - The 21.5 to 31.4-MHz oscillator signals from either the internal or external sources is available at LO OUTPUT connector J3 on the rear apron.

3.1.7 Analog Tuning Voltage Output. - A precision potentiometer mounted on the local oscillator tuning assembly provides an analog tuning voltage which is fed to ANALOG OUTPUT jack, J7.

3.1.8 Predetection IF Output Signals. - Amplified predetection IF signals from the selected IF amplifier are available at IF OUTPUT connector J6.

3.1.9 Video Output. - Rear apron connector J8 provides a maximum video output of 2 volts, peak-to-peak across a 91-ohm load.

3.1.10 FM Video Output Signals. - FM video signals from the FM detector in the selected IF amplifier are available at jack J9 on the rear apron.

3.1.11 Audio Output. - Audio output signals are supplied to the front-panel phones jack, J10, and to terminal board TB1 on the rear apron. The latter output is a 600-ohm signal which appears across pins 2 and 3 of the terminal board.

3.2 OPERATION

The controls and indicators found on the front panel of a typical DMS-107 Demodulator are described in the following paragraphs. These controls and indicators are shown in Figure 1-1.

3.2.1 Power Switch. - The demodulators are energized when this switch is placed in the ON position.

3.2.2 LO Select Switch. - When this switch is placed in the INT position, local oscillator signals are supplied by the internal circuit. External LO signals are employed in the conversion process when the EXT position is selected.

3.2.3 Bandwidth Switch. - The BANDWIDTH SELECT switch sets the IF bandwidth of a DMS-107 at 20 kHz, 50 kHz, 100 kHz, 300 kHz, 500 kHz, 1 MHz, 2 MHz, or 3 MHz. This same switch on the DMS-107-1 also selects one of the above bandwidths except that a 5.5-MHz IF strip is employed instead of a 2-MHz wide amplifier.

3.2.4 Mode Select Switch. - Set the MODE switch to the AM-AGC, FM-AGC, AM-MAN, FM-MAN, or CW positions before the demodulator is tuned. When the AM-MAN, FM-MAN, or CW modes are selected, the gain of the unit is controlled by the LEVEL ADJUST control. In addition, when the CW mode is selected, either the 20 kHz, 50 kHz, or 100 kHz bandwidth IF amplifiers must be used.

3.2.5 Level Adjust Control. - The overall gain of the demodulators is set by the LEVEL ADJUST potentiometer when the AM-MAN, FM-MAN, or CW modes are selected. The gain of the units is controlled by internal circuitry when any other mode is selected.

3.2.6 Video Gain Control. - The amplitude of the video signal present at jack J8 is adjusted by the VIDEO GAIN control.

3.2.7 Audio Gain Control. - The gain of audio output signals present at the front panel PHONES jack and at pins 2 and 3 of terminal board TB1 is adjusted by the AUDIO GAIN potentiometer.

3.2.8 Fine Tuning Control. - Vernier tuning of the demodulator is accomplished with the FINE TUNING control on the front panel. This control has a range of 15 kHz, minimum, at 1 MHz and 40 kHz, minimum, at 10 MHz.

3.2.9 Signal Level Meter. - The relative amplitude of incoming signals is presented by the SIGNAL LEVEL meter. This meter is calibrated from 0 to 10. The optimum level at which an incoming signal amplitude should be set is indicated by the SET mark on the meter face.

3.2.10 Tuning Meter. - The TUNING meter will indicate zero when an FM signal is properly centered in the bandpass of the selected IF amplifier.

3.2.11 Main Tuning Knob and Tape Dial. - Tuning of the demodulators over the frequency range of 100 kHz to 10 MHz is by means of the main tuning knob and tape dial. The frequency range sign and the tape dial lights will be illuminated when power is applied to the unit.

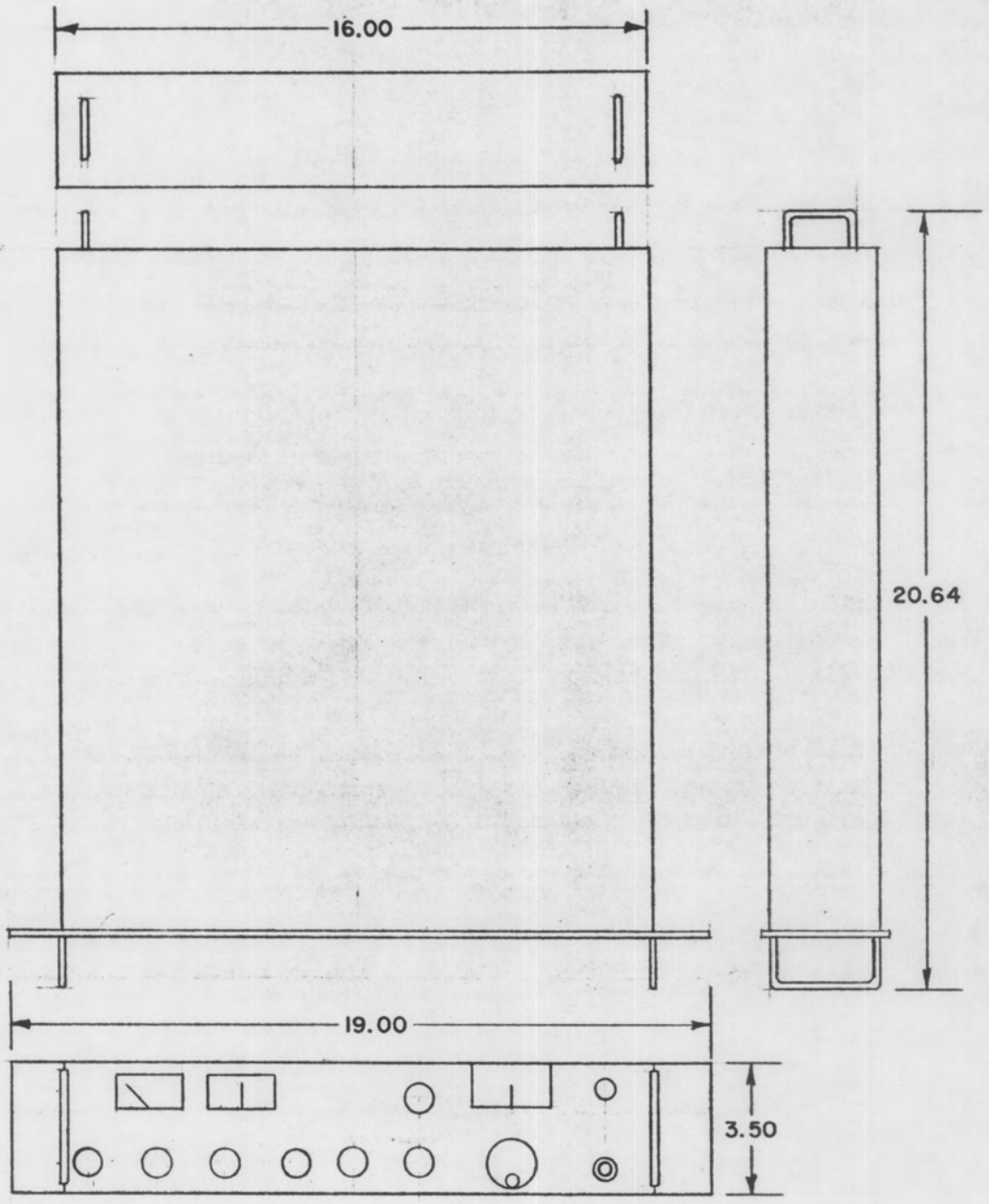

Figure 3-1. Types DMS-107 and DMS-107-1 Demodulators, Critical Dimensions

SECTION IV

MAINTENANCE

4.1 GENERAL

The DMS-107 and DMS-107-1 Demodulators are designed to operate for extended periods of time with little more than routine maintenance. No special procedures are required beyond keeping the unit clean. Down time will be minimized if the maintenance technician is familiar with Section II in which the circuits are described and with the schematic diagrams at the rear of the manual. Field maintenance should consist of the replacement of fuses and plug-in modules. All other maintenance should be carried out in a well equipped shop and performed by trained and experienced personnel.

4.2 PLUG-IN MODULES

The plug-in modules can be easily removed by simply loosening the hold-down clamp and pulling them upward. The numbers stenciled on the main chassis adjacent to the receptacle pins correspond to the numbers indicated on the schematic diagrams at the points where the connecting leads pass through the lines outlining each module. Modules having different bandwidths and/or functions are keyed to prevent them from being damaged as a result of being placed in the wrong receptacle. All plug-in modules have their type numbers etched on the back. Reference to this number and to the main chassis schematic diagrams will locate their reference designation prefixes and thus their proper location in the unit.

4.3 TROUBLESHOOTING

Initial troubleshooting of the demodulators should be directed toward localizing the problem to a specific subassembly. In the case of the plug-in modules, substitution of a spare known to be good will usually cure the trouble. If spare modules are not available, then the signal tracing method should be used. Feed an RF signal within the 0.1 to 10-MHz range at a level between 30 mV and 1 V peak-to-peak into the RF INPUT connector, J1. Tune the demodulator to the signal and, using a wideband oscilloscope, check for an output at A1J4, and A3A1J1. In addition, while selecting each IF amplifier, check for an output at connector J6 on the rear apron. If an output is present at these points, then the input mixer, variable oscillator, the eight IF strips and IF output amplifier can be eliminated from consideration. This leaves the audio and video amplifiers which can be checked by conventional methods. Once the defective module or subassembly is located than voltage and resistance measurements will usually pinpoint the faulty part. Typical transistor and IC pin voltages are listed in Table 4-1.

4.4 MAINTENANCE OF GEAR TRAIN ASSEMBLY

Figure 5-3 is an exploded view of the gear train used in the DMS-107 and DMS-107-1 Demodulators. The assembly relies on stops and a slip clutch on the gear train to halt tuning at the high and low ends of the tuning range. The occasional application of a few drops of light oil to the shaft bearings is all that is required to insure proper operation.

4.4.1 Dial Lamp Replacement. - To replace a burned out dial lamp proceed as follows:

(1) Remove the black screws that secure the dial escutcheon to the front panel; remove the escutcheon.

(2) Remove the light bar (item number 3 on Figure 5-3), by first removing the retaining screws.

(3) Carefully pull the light bar and light board away from the gear train.

(4) Rotate the light board up and detach it from the light bar by removing the screws.

(5) Unsolder the burned out lamp and replace with a new unit. Use a low-heat iron to prevent damage to the printed circuit pattern.

(6) Replace the light board and light bar by reversing steps (1) through (4) above.

4.4.2 Alignment of Dial Tape. - The calibrated steel tape used as the tuning dial is geared to the tuning assembly in such a manner that it is highly unlikely that it will ever get out of position. However, to check the alignment or to mechanically reposition the dial tape proceed as follows:

(1) Rotate the tuning knob counterclockwise until tape movement stops. The mark to the right of the arrow should be aligned with the dial pointer. If it is not, proceed to step (2).

(2) Remove the top dust cover from the unit and loosen the setscrew on the tape drive (item 15 on Figure 5-3).

(3) By hand, move the dial tape, independent of the gear train to align the mark with the pointer. Tighten the setscrew. After any mechanical re-alignment of the tape, perform the dial calibration procedures described in paragraph 4.5.5.

4.5 ALIGNMENT PROCEDURES

4.5.1 General. - The alignment procedures described in the following paragraphs are suitable when making periodic performance checks, or when making adjustments after replacing integrated circuits, transistors, or other critical components. Only those controls specifically referred to within a series of steps given for aligning a particular circuit, affect the alignment of that circuit. Those controls not mentioned in any one series of steps may be left in any position. The alignment of the demodulators should be performed only with well maintained test equipment and only by technicians thoroughly familiar with the units. If the results specified in the following procedures cannot be obtained then a factory alignment is necessary.

4.5.2 Test Equipment Required. - The following equipments or their equivalent are required to perform the complete alignment of a DMS-107 or DMS-107-1:

(1) Sweep Generator, Telonic SM-2000 with internal 21.4 MHz marker.

(2) Sweep Generator, Plug-In Head, Telonic 3006.

(3) Signal Generator, Hewlett-Packard 608C.

(4) Frequency Counter, Hewlett-Packard Type 5245L,

(5) Oscilloscope, Tektronix 503.

(6) VTVM, RCA WV-98C.

(7) Assorted cables, connectors and alignment tools.

4.5.3 Power Supply Adjustments. - Prior to performing any adjustments within the demodulators, make the following checks:

(1) Connect the VTVM between pin 14 of XA4 and ground.

(2) Adjust the meter to read negative dc volts, and use 50-volt scale.

(3) With all subassemblies in place, energize the unit and, if necessary, adjust A4R6 on the board for a -18 volt reading on the VTVM.

(4) Turn off the power to the demodulator, and disconnect the VTVM from XA4, reconnect it to XA5, pin 12 and adjust controls for positive dc volts.

(5) Energize the unit and, if necessary, adjust A5R7 on this board for a +18 volt reading on the VTVM. Again turn off the power and remove the connections.

4.5.4 Fine Tuning Voltage Adjustment. - Before the dial calibration can be performed the fine tuning voltage must be properly set. Proceed as follows:

(1) Connect the VTVM leads between feed through capacitor A3A1C5 on the tuning assembly and ground; adjust the meter to read dc volts.

(2) Place demodulator LO SELECT switch in INT position.

(3) Energize the unit and adjust the FINE TUNING control for a 7.45-volt reading on the VTVM.

4.5.5 Dial Calibration. - Proceed as follows:

(1) Perform the fine tuning voltage adjustment described in paragraph 4.5.4.

(2) Connect the LO OUTPUT jack, J3, on the rear apron to the input of the frequency counter.

(3) Tune the demodulator to 0.1 MHz. The counter should read 21.5 MHz, ±0.40 MHz. If not, adjust capacitor A3A1C2 until this reading is obtained.

(4) Tune the demodulator to 10.0 MHz. The counter should read 31.4 MHz, ±0.6 MHz. If not, obtain the difference between the actual counter reading and 31.4 MHz. Divide this difference by two and adjust inductor A3A1L1 so that the counter reading moves toward 31.4 MHz by that amount.

(5) Tune the demodulator to 0.1 MHz and if necessary, readjust A3A1C2 for a 21.5 MHz, ±0.40 MHz reading.

(6) Repeat steps (4) and (5) until the dial indications and the counter readings are within the tolerance specified.

(7) Check the dial readings versus local oscillator frequency at 1-MHz intervals from 0.1 MHz to 10 MHz. If the readings and/or dial indications are not within 2%, repeat the entire calibration procedure.

4.5.6 Alignment of Narrow Bandwidth IF Amplifiers. - The alignment procedures for the 20-kHz, 50-kHz, and 100-kHz bandwidth IF amplifiers are identical; therefore only the 20-kHz bandwidth is presented in detail.

4.5.6.1 AM Alignment. - Proceed as follows:

(1) Connect equipment as shown in Figure 4-1.

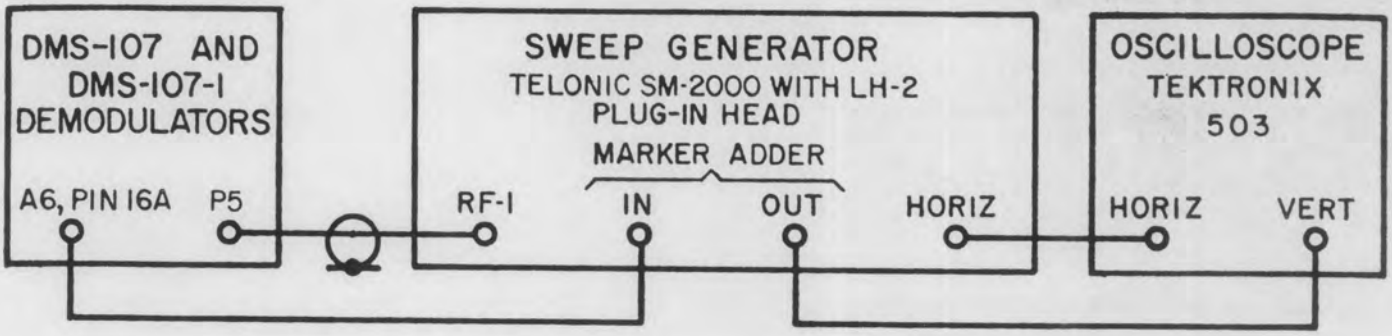

Figure 4-1. Equipment Setup, IF Amplifier Alignment.

(2) Place demodulator LO SELECT switch in INT position, BANDWIDTH SELECT in 20 kHz position MODE switch in AM-MAN, and rotate LEVEL ADJUST control fully clockwise.

(3) Set sweep generator output frequency to 21.4 MHz.

(4) Adjust sweep generator and oscilloscope controls to display a response curve.

(5) Adjust inductors (A6)L5, (A6)L3, and (A6)L2 for a maximum amplitude, symmetrical response having a 20, 50, or 100-kHz bandwidth at the 3-dB points. Readjust (A6)L5 for minimum ripple. A typical narrowband AM response is shown in Figure 4-2.

4.5.6.2 FM Alignment. - Proceed as follows:

(1) Connect equipment as shown in Figure 4-1 except that the sweep generator MARKER ADDER INPUT is connected to FM DET jack, J9, on the rear apron.

(2) Set demodulator controls as described in paragraph 4.5.6.1 step (2) except that the MODE switch should be placed in FM-MAN.

(3) Adjust sweep generator and oscilloscope controls to display an "S" response curve.

(4) Adjust inductor (A6)L7 for amplitude symmetry and zero crossing of the "S" curve. A typical narrowband FM response is shown in Figure 4-3.

4.5.7 Alignment of Medium Bandwidth IF Amplifiers. - The alignment procedures for the three medium bandwidth IF amplifiers, the 300-kHz, 500-kHz, and 1-MHz units are identical therefore only the 300-kHz alignment will be presented in detail.

4.5.7.1 AM Alignment. - Proceed as follows:

(1) Connect equipment as shown in Figure 4-1.

(2) Set demodulator controls as described in paragraph 4.5.6.1 except that the BANDWIDTH SELECT switch should be placed in the 300 kHz position.

(3) Set output of sweep generator to 21.4 MHz and turn internal 21.4-MHz marker on.

(4) Adjust sweep generator and oscilloscope controls to display a response curve.

(5) Adjust inductors (A9)L2, (A9)L9, (A9)L8, (A9)L6, (A9)L5, (A9)L3, and (A9)L2, in the order given, for a maximum amplitude, symmetrical response centered about the 21.4-MHz marker. A typical AM response is shown in Figure 4-4. Check for 300-kHz, 500-kHz, or 1-MHz bandwidth at the 3-dB points.

4.5.7.2 FM Alignment. - Proceed as follows:

(1) Connect equipment as shown in Figure 4-1 except that the sweep generator MARKER ADDER INPUT is connected to FM DET jack, J9, on the rear apron.

(2) Set demodulator controls as described in paragraph 4.5.6.1 step (2) except that the MODE switch should be placed in the FM-MAN position and the BANDWIDTH SELECT switch placed in the 300 kHz position.

(3) Adjust sweep generator and oscilloscope controls to display an "S" response curve. Turn sweep generator internal 21.4-MHz marker on.

(4) Adjust inductor (A9)L15 for amplitude symmetry and transformer (A9)T1 for zero crossing of the "S" curve about the 21.4-MHz marker. Atypical medium bandwidth FM response is shown in Figure 4-5.

4.5.8 Alignment of Wide Bandwidth IF Amplifiers. - The alignment procedures for the 2-MHz, 3-MHz, and 5.5-MHz bandwidth IF amplifiers is identical, therefore only the alignment of the 2-MHz unit will be presented in detail.

4.5.8.1 AM Alignment. - Proceed as follows:

(1) Connect equipment as shown in Figure 4-1; turn sweep generator internal 21.4-MHz marker on.

(2) Set demodulator controls as described in paragraph 4.5.6.1 except that the BANDWIDTH SELECT switch should be placed in the 2 MHz position.

(3) Adjust sweep generator and oscilloscope controls to display a response curve.

(4) Adjust inductors (A12)L11, (A12)L8, (A12)L7, (A12)L6, (A12)L4, (A12)L3, and (A12)L2 for a maximum amplitude symmetrical response centered about the 21.4-MHz marker. A typical wideband AM response is shown in Figure 4-6.

4.5.8.2 FM Alignment. - Proceed as follows:

(1) Connect equipment as shown in Figure 4-1 except that the sweep generator MARKER ADDER INPUT is connected to the FM DET jack, J9, on the rear apron.

(2) Set demodulator controls as described in paragraph 4.5.6.1, step (2), except that the BANDWIDTH SELECT switch should be placed in the 2 MHz position, and the MODE switch should be placed in the FM-MAN position.

(3) Adjust sweep generator and oscilloscope controls to display an "S" response curve; turn sweep generator internal 21.4-MHz marker on.

(4) Adjust inductor (A12)L16 for amplitude symmetry and transformer (A12)T1 for zero crossing of the "S" curve, centered about the 21.4-MHz marker. A typical wideband FM response is shown in Figure 4-7.

4.5.9 Input Mixer Adjustment. - The manual and AGC gain controls located in the input mixer assembly, A1, are factory adjusted once all IF amplifiers are properly aligned. These settings should not be changed unless it is determined that the output level from one or more IF amplifiers is below the SET position as indicated on the front-panel SIGNAL LEVEL meter. Perform the gain adjustments for the IF amplifiers as described in paragraph 4.5.10 before changing the input mixer gain controls. The local oscillator must also be functioning properly before the following adjustments are made.

(1) Connect the output of the HP608C signal generator to RF INPUT jack, J1.

(2) Set signal generator output frequency to 5.0 MHz; adjust output level to approximately -16.5 dBm (30 mV), CW mode.

(3) Tune demodulator to 5.0 MHz; place LO SELECT control in INT position, MODE switch in AM-MAN, LEVEL

ADJUST fully clockwise, and BANDWIDTH SELECT switch in position to activate an IF strip that is known to be properly aligned and adjusted.

(4) Note the reading on the SIGNAL LEVEL meter; if it is not at the "SET" position, adjust potentiometer A1R52 on the input mixer board to obtain this reading.

(5) Place the demodulator MODE switch in the AM-AGC position.

(6) Note the SIGNAL LEVEL meter reading; it should again be at the "SET" position. If not, adjust potentiometer A1R43 to obtain this reading.

4.5.10 IF Gain Adjustment. - The gain of all the IF amplifiers has been factory adjusted to provide an equal input level to the video and audio amplifiers. These gain adjustments should not be changed unless an integrated circuit or transistor has been replaced in a particular IF strip. Proceed as follows:

(1) Connect the output of the HP608C signal generator to RF INPUT jack, J1, on the demodulator rear apron.

(2) Set output frequency of signal generator to 5.0 MHz, output level to approximately -16.5 dBm (30 mV), CW mode.

(3) Tune the demodulator to 5.0 MHz; place LO SELECT switch in INT position, MODE switch in AM-MAN, and rotate LEVEL ADJUST control fully clockwise. Select an IF bandwidth that is known to be operational and properly adjusted.

(4) The SIGNAL LEVEL meter should indicate a "SET" level. If it does not, select an operational IF strip that will provide this reading. If none of the IF amplifiers will provide a "SET" reading perform the Input Mixer adjustments described in paragraph 4.5.9 and return to step (5).

(5) Place the BANDWIDTH SELECT switch in the position for the IF strip that was repaired and note the SIGNAL LEVEL reading. If it is not at the "SET" position adjust the particular gain control potentiometer on the IF strip to obtain this reading. For example, on the 20-kHz bandwidth strip, adjust A6R7. On the 2-MHz bandwidth IF amplifier, adjust A12R1.

Table 4-1. Types DMS-107 and DMS-107-1 Demodulators, Typical Transistor Element Voltages

Reference Designation	Type	Integrated Circuit Pin Numbers									
		1	2	3	4	5	6	7	8	9	10
		Field Effect Transistor Pins							Transistor Elements		
		Drain	Gate 2	Gate 1	Source				Emitter	Base	Collector
A1U1	μA741C		1.12	1.53	-17.9		16.6	17.2			
A1Q1	2N5109								7.44	8.18	17.1
A1Q2	2N5109								-13.7	-13.0	-1.74
A1Q3*	2N5109								3.81	4.58	14.0
A1Q4	2N5109								-0.74	0.0	13.1
A1Q5	2N5109								4.10	4.82	17.6
A1Q6	3N140	17.1	3.20	0.94	1.49						
A2Q1	2N5109								-13.6	-12.9	4.0
A2Q2	3N5109								4.55	5.28	17.1
A3A1A1Q1	2N3933								-1.84	-1.11	17.9
A4Q1	2N3055								-25.6	-25.0	-18.0
A4Q2	2N4037								-18.0	-18.6	-25.0
A4Q3	2N4037								-6.63	-7.19	-18.6
A4Q4	2N4037								-6.63	-7.23	-17.4
A5Q1	2N3055								18.0	18.5	24.1
A5Q2	2N4074								18.5	19.10	24.1
A5Q3	2N4074								6.90	7.45	19.10
A5Q4	2N4074								6.90	7.51	17.4

Table 4-1. Types DMS-107 and DMS-107-1 Demodulators, Typical Transistor Element Voltages (Continued)

Reference Designation	Type	Integrated Circuit Pin Numbers									
		1	2	3	4	5	6	7	8	9	10
		Field Effect Transistor Pins							Transistor Elements		
		Drain	Gate 2	Gate 1	Source				Emitter	Base	Collector
A6-A8U1	MC-1550G	0.94	0.18	0.18	0.94		15.1		8.17	15.2	8.14
A6-A8U2	MC-1550G	0.15	0.44	0.44	1.22		15.8		8.64	15.9	8.62
A6-A8U3	MC-1550G	0.76			0.76		16.9		8.64	17.1	8.61
A6-A8U4	F-771	2.04					15.5				11.3
A6-A8Q1**	2N3933								0.0	-0.98	6.65
A6-A8Q2	2N4074								-0.18	0.43	17.3
A6-A8Q3#	2N3251								0.64	0.0	-17.8
A6-A8Q4#	2N4070								0.05	0.64	17.8
A9-A11U1	MC-1550G	0.82	0.04	0.04	0.82		13.3		7.18	13.3	7.15
A9-A11U2	MC-1550G	0.87	0.09	0.09	0.87		13.6		7.37	13.7	7.35
A9-A11U3	MC-1550G	0.77			0.76		15.7		8.33	15.8	8.29
A9-A11U4	MC-1550G	0.76			0.76		16.9		9.01	17.0	8.97
A9-A11U5	F-719		-0.08				17.5				13.5
A9-A11Q1									-0.13	0.46	17.4
A9-A11Q2#									0.78	0.64	-17.3
A9-A11Q3#									0.08	0.68	0.63
A12, A13U1	MC-1550G	1.14	0.35	0.35	1.14		14.3		7.77	14.4	7.74
A12, A13U2	MC-1550G	0.85			0.77		14.6		7.82	14.8	7.78
A12, A13U3	MC-1550G	0.78			0.78		14.9		7.85	15.1	7.80
A12, A13U4	F-771	2.22	2.22				17.5				12.5
A12, A13Q1	2N4074								-0.05	4.64	17.3
A12, A13Q2	2N3251								0.65	1.55	-18.0
A12, A13Q3	2N4074								0.03	0.65	17.7

Table 4-1. Types DMS-107 and DMS-107-1 Demodulators, Typical Transistor Element Voltages (Continued)

		Integrated Circuit Pin Numbers									
		1	2	3	4	5	6	7	8	9	10
		Field Effect Transistor Pins							Transistor Elements		
Reference Designation	Type	Drain	Gate 2	Gate 1	Source				Emitter	Base	Collector
A14Q1	2N3904								1.43	2.06	17.0
A14Q2	2N3906								17.8	17.0	9.0
A14Q3	2N3904								8.2	9.0	18.0
A14Q4	2N3906								7.93	7.25	0.0
A15Q1	2N4074								0.83	1.40	17.3
A15Q2	2N3251								18.0	17.2	10.5
A15Q3	2N2270								9.95	10.5	18.0
A15Q4	2N4037								0.0	8.77	9.41

TEST CONDITIONS: All readings are positive dc with respect to chassis, unless otherwise noted. Readings taken with WV-98B VTVM. Control Settings: LO SELECT to INT; MODE to AM MAN; IF BANDWIDTH to position of unit under test; FINE TUNING midrange; and LEVEL ADJUST fully clockwise.

NOTE: *LO SELECT in EXT position.
**MODE SELECT in CW position.
#MODE SELECT in FM position.

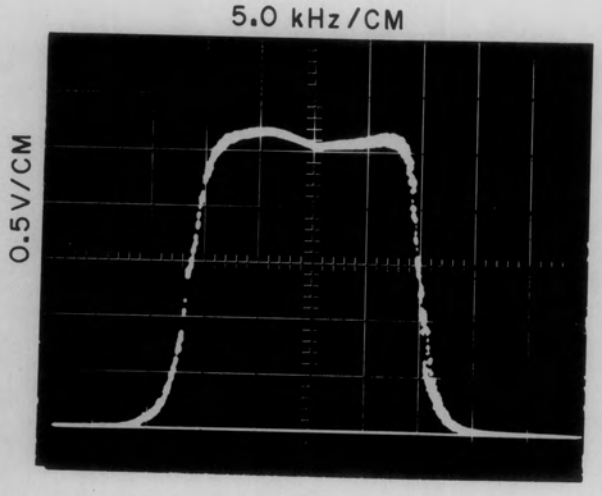

Figure 4-2. Typical Response, Narrow Bandwidth IF Amplifiers, AM Alignment.

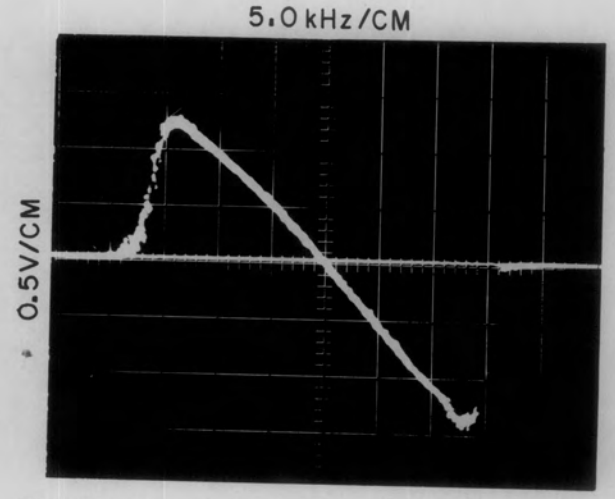

Figure 4-3. Typical Response, Narrow Bandwidth IF Amplifiers, FM Alignment.

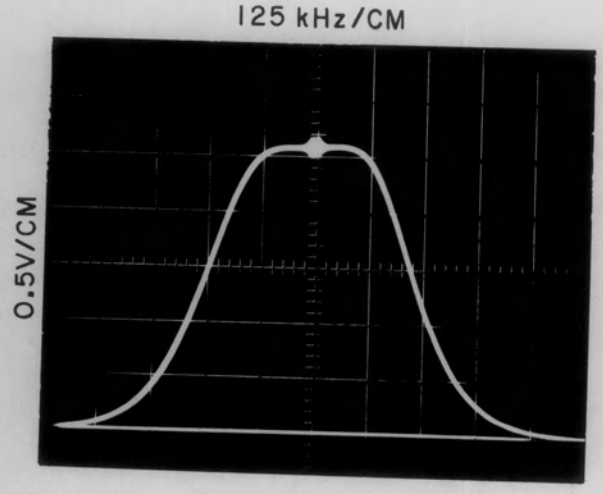

Figure 4-4. Typical Response, Medium Bandwidth IF Amplifiers, AM Alignment.

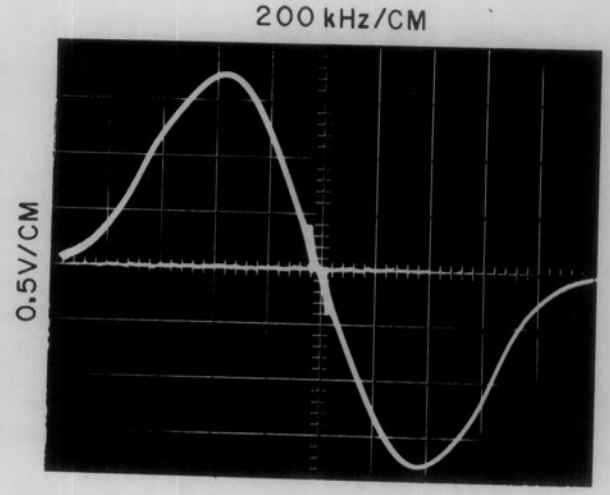

Figure 4-5. Typical Response, Medium Bandwidth IF Amplifiers, FM Alignment.

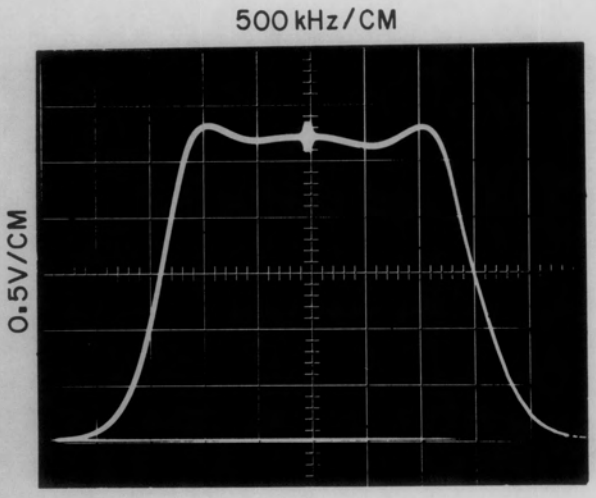

Figure 4-6. Typical Response, Wide Bandwidth IF Amplifiers, AM Alignment.

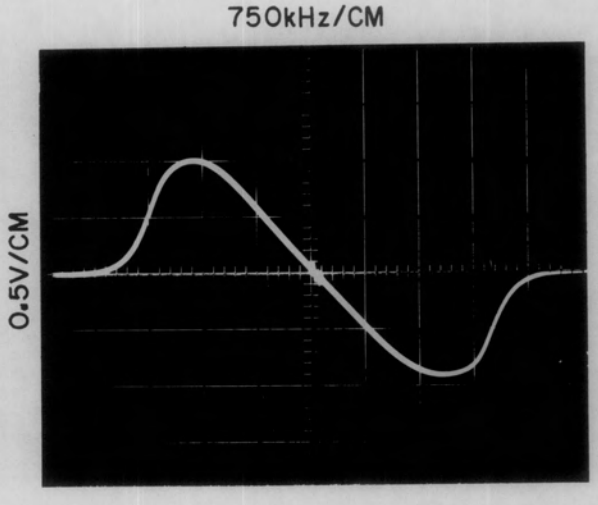

Figure 4-7. Typical Response, Wide Bandwidth IF Amplifiers, FM Alignment.

SECTION V

REPLACEMENT PARTS LIST

5.1 UNIT NUMBERING METHOD

The unit numbering method of assigning reference designations (electrical symbol numbers) has been used to identify assemblies, subassemblies (and modules), and parts. An example of the unit method follows:

Read from right to left as: First (1) resistor (R) of first (1) subassembly (A)

As shown on the main chassis schematic, components which are an integral part of the main chassis have no subassembly designation.

5.2 REFERENCE DESIGNATION PREFIX

Partial reference designations have been used on the equipment and on the illustrations in this manual. The partial reference designations consist of the class letter(s) and identifying item number. The complete reference designations may be obtained by placing the proper prefix before the partial reference designations. Prefixes are provided on drawings and illustrations following the notation "REF DESIG PREFIX".

5.3 LIST OF MANUFACTURERS

Mfr. Code	Name and Address	Mfr. Code	Name and Address
01121	Allen-Bradley Company 1201 South 2nd Street Milwaukee, Wisconsin 53204	07263	Fairchild Camera & Instrument Corp., Semiconductor Division 313 Frontage Road Mountain View, California 94040
02735	Radio Corporation of America Solid State and Receiving Tube Division, Route 202 Somerville, New Jersey 08876	07688	Joint Electron Device Engineering Council Washington, D. C.
04713	Motorola Semiconductor Products Incorporated 5005 East McDowell Road Phoenix, Arizona 85008	14632	Watkins-Johnson Company CEI Division 6006 Executive Boulevard Rockville, Maryland 20852

Mfr. Code	Name and Address
18915	The Bircher Corporation Industrial Division 745 Monterey Pass Road Monterey Park, Calif. 91754
23783	British Radio Electronics, Ltd. 1742 Wisconsin Avenue, N. W. Washington, D. C. 20007
27193	Cutler-Hammer, Inc. Special Products Division 4201 North 27th Street Milwaukee, Wisconsin 53216
27956	Relcom 2164 East Middlefield Road Mountain View, Calif. 94040
28480	Hewlett-Packard Company 1501 Page Mill Road Palo Alto, California 94304
56289	Sprague Electric Company Marshall Street North Adams, Mass. 01247
71279	Cambridge Thermionic Corp. 445 Concord Avenue Cambridge, Mass. 02138
71744	Chicago Miniature Lamp Works 4433 Ravenswood Avenue Chicago, Illinois 60640
71785	Cinch Manufacturing Company Howard B. Jones Division 1026 South Homan Avenue Chicago, Illinois 60624
72136	Electro Motive Manufacturing Co., Inc. South Park & John Streets Willimantic, Conn. 06226
72982	Erie Technological Products, Inc. 644 West 12th Street Erie, Pennsylvania 16512
73138	Beckman Instruments, Inc. Helipot Division 2500 Harbor Boulevard Fullerton, California 92634
73899	JFD Electronics Company Div. of Stratford Retreat House 15th at 62nd Street Brooklyn, New York 11219
74306	Piezo Crystal Company 100 K Street Carlisle, Pennsylvania 17013
74868	Amphenol Corporation Amphenol RF Division 33 East Franklin Street Danbury, Connecticut 06810
81312	Winchester Electronics Division Litton Industries, Incorporated Main Street & Hillside Avenue Oakville, Connecticut 06779
81349	Military Specifications
82389	Switchcraft, Incorporated 5527 North Elston Avenue Chicago, Illinois 60630

Mfr. Code	Name and Address
91293	Johanson Manufacturing Co. P. O. Box 329 Boonton, New Jersey 07005
91418	Radio Materials Company 4242 West Bryn Mawr Avenue Chicago, Illinois 60646
99800	Delevan Electronics Corporation 270 Quaker Road East Aurora, New York 14052
99848	Wilco Corporation 4030 West 10th Street P. O. Box 22248 Indianapolis, Indiana 46222

5.4 PARTS LIST

When ordering replacement parts from CEI, specify the type and serial number of the equipment, and the reference designation and description of each part ordered. The Manufacturers and Manufacturer Part Numbers listed are included as a guide to the user of the equipment in the field and do not necessarily agree with the parts installed in the equipment. Except in those cases specifically noted, the replacement part may be obtained from any manufacturer as long as the physical and electrical parameters of the part selected agree with the original part.

NOTE

As improved semiconductors become available it is the policy of CEI to incorporate them in proprietary products. For this reason some transistors and diodes installed in an equipment may not agree with those specified in the parts lists and schematic diagrams of this manual. However, the semiconductors designated in the manual may be substituted in every case with satisfactory results.

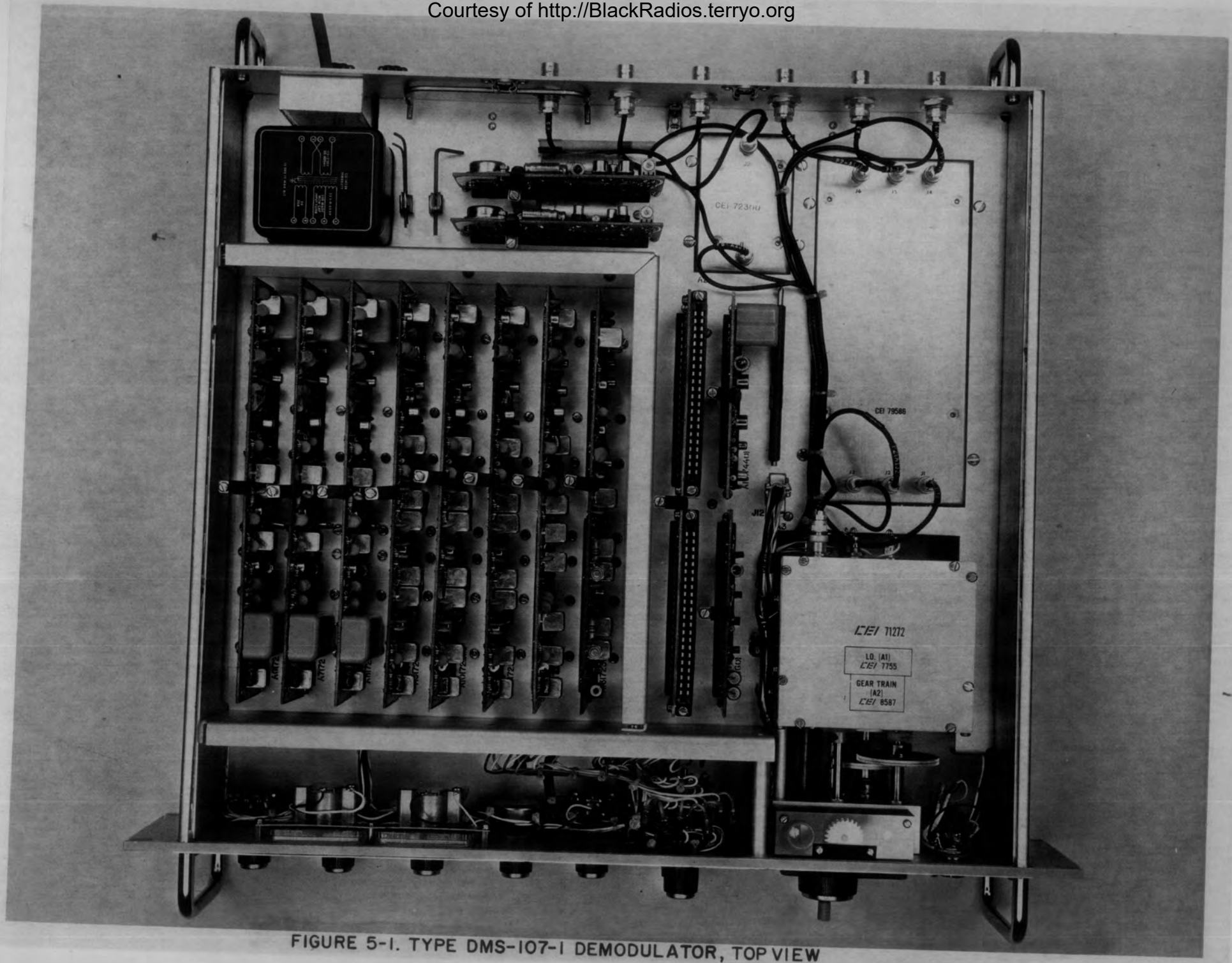

FIGURE 5-1. TYPE DMS-107-1 DEMODULATOR, TOP VIEW

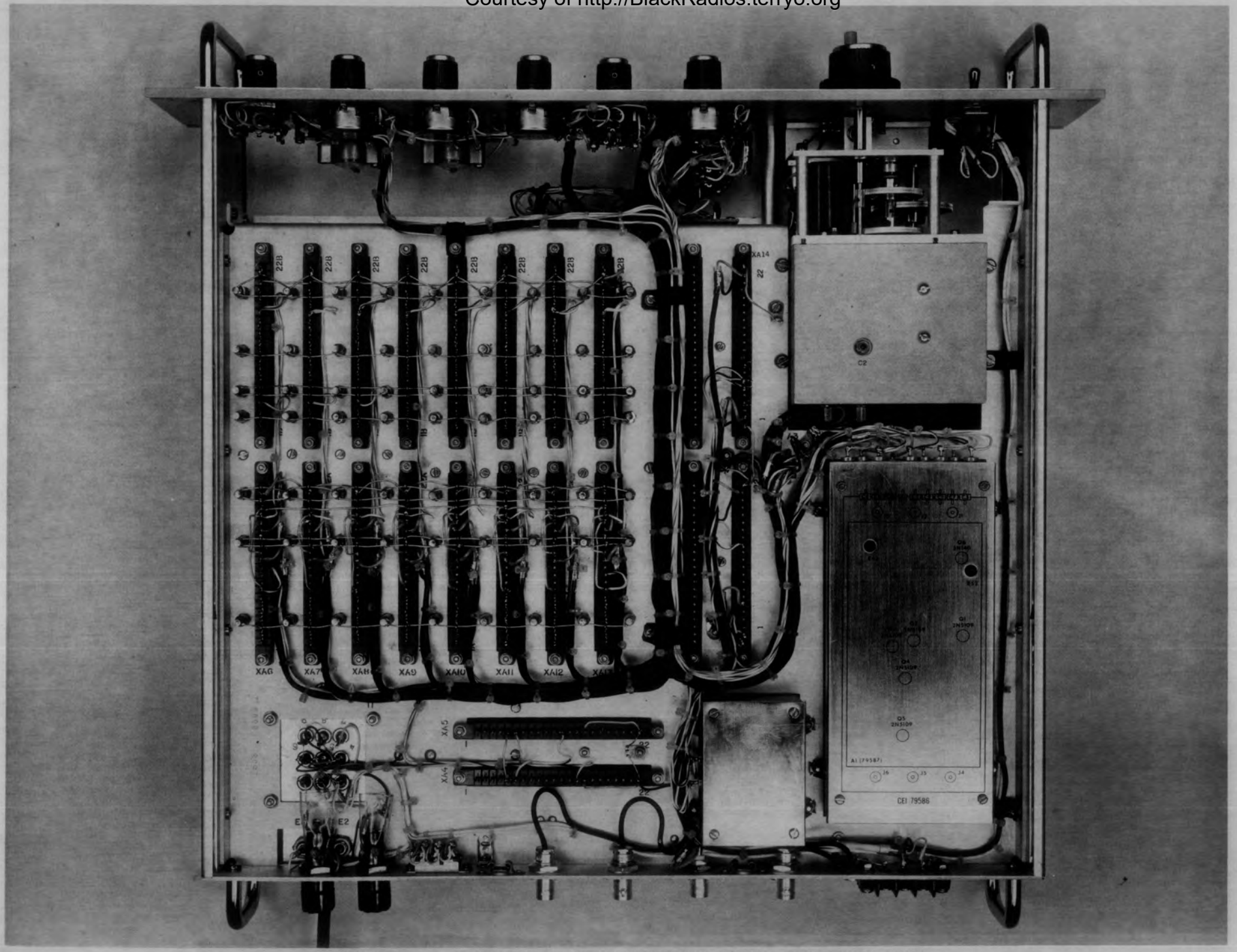

FIGURE 5-2. TYPE DMS-107-1 DEMODULATOR, BOTTOM VIEW.

Type 8587 Gear Train

Ref Desig	Description	Qty Per Assy	Vendor Part No.	Vendor Code
1	LIGHT BOARD	1	14004	14632
2	LAMP, INCANDESCENT (DS1, DS2, DS3)	REF	CM8-725	71744
3	LIGHT BAR	1	13963	14632
4	GUIDE PLATE	1	14122-1	14632
5	ANGLE PLATE SUBASSEMBLY	1	21411-1	14632
6	BEARING	4	SFR-1883MM	83086
7	BEARING	2	SFR-33MM	83086
8	BEARING	4	SFR2-63MM	83086
9	GEAR, PINION	2	12124	14632
10	NOT USED			
11	TENSION SPRING	1	13944	14632
12	SUPPORT PLATE	1	14179-1	14632
13	TAPE CHAMBER	1	31358-1	14632
14	CALIBRATED TAPE	1	32262	14632
15	GEAR, TAPE DRIVE	1	14065	14632
16	SHAFT	1	13908-6	14632
17	COVER	1	14044	14632
18	ANGLE PLATE	1	14043	14632
19	SPACER	3	20757-15	14632
20	SHAFT	1	12974-3	14632
21	GEAR, SPUR	1	20191-8	14632
22	RESISTOR, VARIABLE, PRECISION	REF	7223-962-1	73138
23	SHAFT, TUNING ASSEMBLY	1	21414-1	14632
24	GROUNDING CLIP	1	14308-1	14632
25	GEAR, ANTI-BACKLASH	1	20466-16	14632
26	SHAFT	1	1002-87	14632
27	SPACER	2	1451-1	14632
28	SPRING, FRICTION WASHER	AR	7754	04941
29	BEARING, THRUST	1	TT-504	70417

Ref Desig	Description	Qty Per Assy	Vendor Part No.	Vendor Code
30	GEAR, ANTI-BACKLASH	1	20466-15	14632
31	SHAFT ASSEMBLY	1	14190-1	14632
32	GEAR, ANTI-BACKLASH	1	20184-5	14632
33	SPACER, SHIM	AR	SSS-33	01351
34	REAR PLATE	1	21412-1	14632
35	STOP PLATE	1	15983-1	14632
36	STOP WASHER	5	13863-1	14632
37	STOP RETAINER ASSEMBLY	1	13865-1	14632
38	RETAINING RING	1	5100-18	79136
39	RETAINING RING	4	5100-25	79136
40	2-56 x 1/8 LONG SETSCREW	AR	AN565DC2-2	88044
41	4-40 x 1/8 LONG SETSCREW	AR	AN565DC4-2	88044
42	2-56 x 1/4 LONG PAN HEAD MACHINE SCREW	AR	MS35233-3	96906
43	2-56 x 3/16 LONG PAN HEAD MACHINE SCREW	AR	MS35233-2	96906
44	NOT USED			
45	4-40 x 5/16 LONG PAN HEAD MACHINE SCREW	AR	MS35233-14	96906
46	6-32 x 1/4 LONG PAN HEAD MACHINE SCREW	AR	MS35233-26	96906
47	6-32 x 3/8 LONG SOCKET HEAD CAP SCREW	AR	MS24674-2	96906
48	#2 SPLIT LOCK WASHER	AR	MS35338-77	96906
49	#4 SPLIT LOCK WASHER	AR	MS35338-78	96906
50	#6 SPLIT LOCK WASHER	AR	MS35338-79	96906
51	#2 FLAT WASHER	AR	MS15795-302	96906
52	#6 FLAT WASHER	AR	MS15795-306	96906
53	CLAMP, SYNCHRO MOUNTING	3	C2	00328
54	GEAR, SPUR	1	20465-2	14632
55	GEAR, ANTI-BACKLASH	1	20466-7	14632

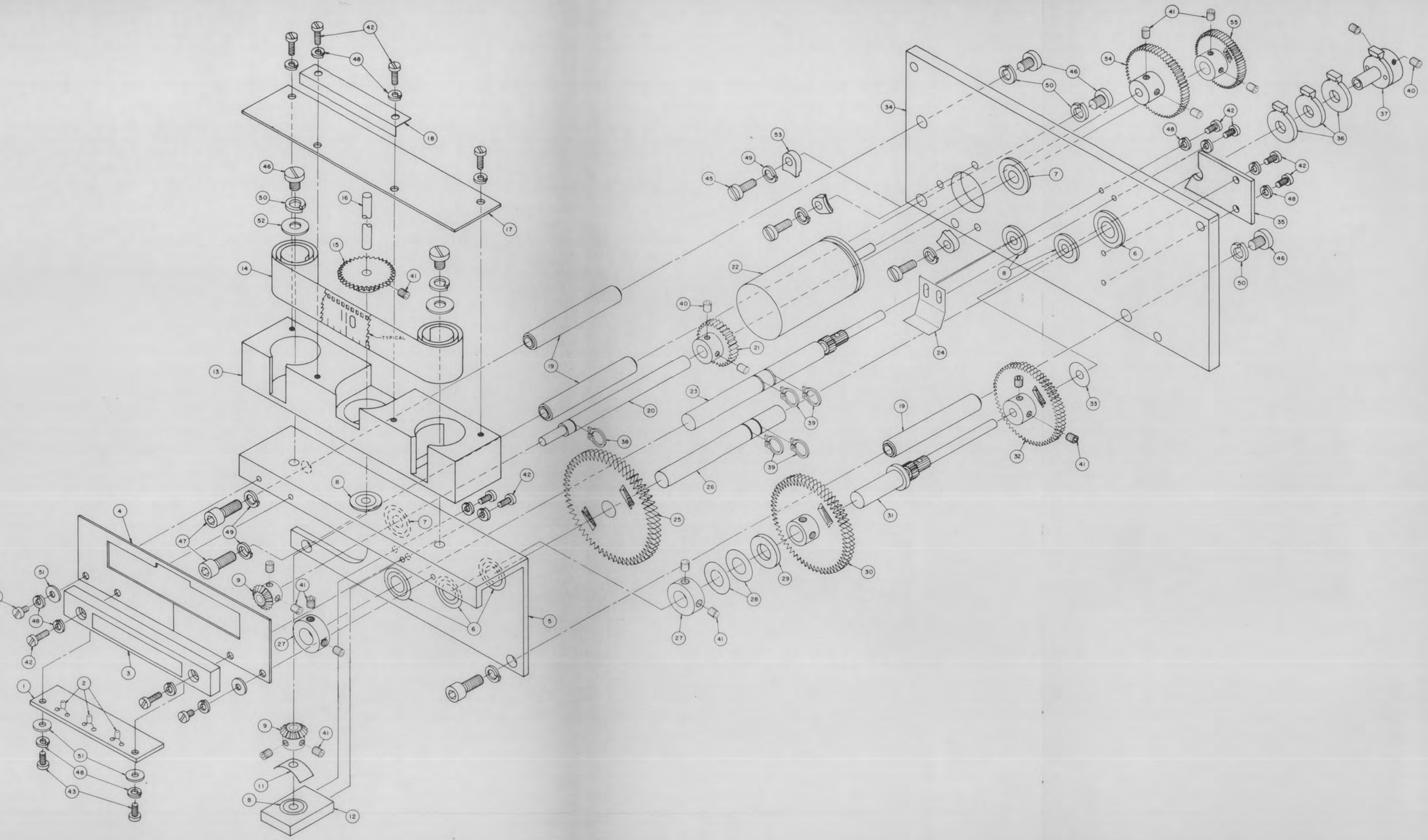

Figure 5-3. Type 8587 Gear Train, Exploded View

PARTS LIST

PAGE 1 OF 6

DMS-107	DEMODULATOR	6639
TYPE NUMBER	TITLE	SCHEMATIC

ORIGINAL JOB NO. 2658			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa DATE 7-22-69

APPROVED FOR PRODUCTION

R. Teg DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5213	A	8/1/69						
5308 5454								
5520	B	12/4/69						
10001 10604	C	5/26/72						

UIPMENT DESCRIPTION DMS-107 DEMODULATOR DATE July 15, 1969

e 2 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	INPUT MIXER		1	79586	14632
	IF OUTPUT AMPLIFIER ASSEMBLY		1	72300	14632
	VARIABLE OSCILLATOR ASSEMBLY		1	71272	14632
	-18V POWER SUPPLY REGULATOR BOARD		1	76160	14632
	+18V POWER SUPPLY REGULATOR BOARD		1	76162	14632
	21.4 MHz IF AMPLIFIER (20 kHz BW)		1	72277	14632
	21.4 MHz IF AMPLIFIER (50 kHz BW)		1	72278	14632
	21.4 MHz IF AMPLIFIER (100 kHz BW)		1	72279	14632
	21.4 MHz IF AMPLIFIER (300 kHz BW)		1	72280	14632
	21.4 MHz IF AMPLIFIER (500 kHz BW)		1	72281	14632
	21.4 MHz IF AMPLIFIER (1 MHz BW)		1	72282	14632
	21.4 MHz IF AMPLIFIER (2 MHz BW)		1	72283	14632
	21.4 MHz IF AMPLIFIER (3 MHz BW)		1	72284	14632
	VIDEO AMPLIFIER		1	7366	14632
	AUDIO AMPLIFIER		1	7440	14632
	NOT USED				
	CAPACITOR, CERAMIC, DISC: 0.1 μF, -20+80%, 25V	130019	1	DFJ-3	73899
	CAPACITOR, ELECTROLYTIC, ALUMINUM: 100 μF, -10+75%, 50V	250047	2	39D107G050EJ4	56289
	Same as C3				
	FUSE, 3AG, SLOW-BLOW: 1/8A	130139	1	F02B250V1/8A	81349
	FUSE, 3AG, SLOW-BLOW: 1/16A	130138	1	F02B250V1/16A	81349

UIPMENT DESCRIPTION DMS-107 DEMODULATOR DATE July 15, 1969

BY R. Teg

e 3

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	FILTER, POWER	140033	1	JN33-694A	56289
	CONNECTOR, JACK, BNC SERIES, Part of W1	220086	9	17825	74868
	Same as J1, Part or W4				
	Same as J1, Part of W3				
	Same as J1				
	Same as J1				
	Same as J1, Part of W5				
	CONNECTOR, RECEPTACLE, BNC SERIES	180146	1	UG-1094/U	81349
	Same as J1				
	Same as J1				
	CONNECTOR, PHONE JACK	140061	1	L-11	82389
	Same as J1				
	CONNECTOR, RECEPTACLE, MULTIPIN	120439	1	SLE-14SNSS	81312
	METER, TUNING	210254	1	14549	14632
	METER, SIGNAL LEVEL		1	15691	14632

UIPMENT DESCRIPTION DMS-107 DEMODULATOR DATE July 15, 1969

e 4 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	CONNECTOR, PLUG, MB SERIES, Part of W1	260005	9	44950	74868
	Same as P1, Part of W2				
	Same as P1, Part of W2				
	Same as P1				
	Same as P1				
	Same as P1, Part of W3				
	Same as P1, Part of W4				
	Same as P1				
	Same as P1, Part of W5				
	RESISTOR, FIXED, COMPOSITION: 6.8 kΩ, 5%, 1/4W	160132	2	RC07GF682J	81349
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	81349
	Same as R1				
	RESISTOR, FIXED, COMPOSITION: 56 kΩ, 5%, 1/4W	160077	2	RC07GF563J	81349
	RESISTOR, FIXED, COMPOSITION: 68 kΩ, 5%, 1/4W	160079	1	RC07GF683J	81349
	Same as R4				
	RESISTOR, FIXED, COMPOSITION: 27 kΩ, 5%, 1/4W	160146	1	RC07GF273J	81349
	RESISTOR, FIXED, COMPOSITION: 15 kΩ, 5%, 1/4W	160140	1	RC07GF153J	81349
	RESISTOR, FIXED, COMPOSITION: 22 kΩ, 5%, 1/4W	160144	1	RC07GF223J	81349
	RESISTOR, VARIABLE, COMPOSITION: 50 kΩ, 10%, 2W	170187	1	RV4NAYSD503A	81349
	RESISTOR, FIXED, COMPOSITION: 150 kΩ, 5%, 1/4W	160087	1	RC07GF154J	81349
	RESISTOR, FIXED, COMPOSITION: 56 Ω, 5%, 1/4W	160023	2	RC07GF560J	81349

UIPMENT DESCRIPTION DMS-107 DEMODULATOR DATE July 15, 1969

ge 5 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
3	Same as R12				
4	NOT USED				
5	RESISTOR, VARIABLE, COMPOSITION: 10 kΩ, 10%, 2W	170182	1	RV4NAYSD103A	81349
6	RESISTOR, VARIABLE, COMPOSITION: 1 kΩ, 10%, 2W	170176	1	RV4NAYSD102A	81349
	RESISTOR, VARIABLE, COMPOSITION: 25 kΩ, 10%, 2W	170184	1	RV4NAYSD253A	81349
	RESISTOR, FIXED, COMPOSITION: 180 Ω, 5%, 1/4W	160035	1	RC07GF181J	81349
	RESISTOR, FIXED, COMPOSITION: 1 kΩ, 5%, 1/4W	160112	1	RC07GF102J	81349
	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 1/4W	160045	1	RC07GF471J	81349
	RESISTOR, FIXED, COMPOSITION: 6.2 kΩ, 5%, 1/4W	160131	1	RC07GF622J	81349
	Same as R2				
	RESISTOR, FIXED, COMPOSITION: 8.2 kΩ, 5%, 1/4W	160134	1	RC07GF822J	81349
	RESISTOR, FIXED, COMPOSITION: 3.9 kΩ, 5%, 1/4W	160126	1	RC07GF392J	81349
	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349
	SWITCH, ROTARY: 1 Section, 4 Pole, 2 Position		1	1128-42	14632
	SWITCH, ROTARY: 5 Section, 5 Pole, 12 Position		1	16910-1	14632
	SWITCH, ROTARY: 2 Section,4 Pole, 6 Position		1	1128-03	14632
	SWITCH, TOGGLE, SPST	300040	1	8280-K16	27193
	SWITCH, SLIDE, DPDT	200015	1	46256-LF	82389

QUIPMENT DESCRIPTION DMS-107 DEMODULATOR DATE July 15, 1969

ge 6 BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	TRANSFORMER		1	14238	14632
1	TERMINAL BOARD	250227	1	353-18-03-001	71785
1	VOLTAGE REGULATOR	190109	1	1N756A	07688
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632

PARTS LIST
PAGE 1 OF 6

DMS-107-1 — TYPE NUMBER

DEMODULATOR — TITLE

6640 — SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER Geo. Costa — DATE 10-13-69

APPROVED FOR PRODUCTION

R. Irg — DATE 10/14/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5520	A	1/12/70						
10001	B	1/26/72						
10604	C	5/26/72						

IPMENT DESCRIPTION DMS-107-1 DEMODULATOR DATE September 3, 1969

2 BY R. Teg

F IG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	INPUT MIXER		1	79586	14632
	IF OUTPUT AMPLIFIER ASSEMBLY		1	72300	14632
	VARIABLE OSCILLATOR ASSEMBLY		1	71272	14632
	-18V POWER SUPPLY REGULATOR BOARD		1	76160	14632
	+18V POWER SUPPLY REGULATOR BOARD		1	76162	14632
	21.4 MHz IF AMPLIFIER (20 kHz BW)		1	72277	14632
	21.4 MHz IF AMPLIFIER (50 kHz BW)		1	72278	14632
	21.4 MHz IF AMPLIFIER (100 kHz BW)		1	72279	14632
	21.4 MHz IF AMPLIFIER (300 kHz BW)		1	72280	14632
	21.4 MHz IF AMPLIFIER (500 kHz BW)		1	72281	14632
	21.4 MHz IF AMPLIFIER (1 MHz BW)		1	72282	14632
	21.4 MHz IF AMPLIFIER (3 MHz BW)		1	72284	14632
	21.4 MHz IF AMPLIFIER (5.5 MHz BW)		1	72312	14632
	VIDEO AMPLIFIER		1	7360	14632
	AUDIO AMPLIFIER		1	7440	14632
	NOT USED				
	CAPACITOR, CERAMIC, DISC: 0.1 μF, -20+80%, 25V	130019	1	DFI-3	73899
	CAPACITOR, ELECTROLYTIC, ALUMINUM: 100 μF, -10+75%, 50V	250047	2	39D107G050EJ4	56289
	Same as C3				
	FUSE, 3AG, SLOW-BLOW: 1/8A	130139	1	F02B250V1/8A	81349
	FUSE, 3AG, SLOW-BLOW: 1/16A	130138	1	F02B250V1/16A	81349

IPMENT DESCRIPTION DMS-107-1 DEMODULATOR DATE September 3, 1969

e 3 BY R. Teg

F IG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	FILTER, POWER	140033	1	JN33-694A	56289
	CONNECTOR, JACK, BNC SERIES, Part of W1	220086	10	17825	74868
	Same as J1, Part or W4				
	Same as J1, Part of W3				
	Same as J1				
	Same as J1				
	Same as J1, Part of W5				
	Same as J1				
	Same as J1				
	Same as J1				
	CONNECTOR, PHONE JACK	140061	1	L-11	82389
	Same as J1				
	CONNECTOR, RECEPTACLE, MULTIPIN	120439	1	SLE-14SNSS	81312
	METER, TUNING	210254	1	14549	14632
	METER, SIGNAL LEVEL		1	15691	14632

IPMENT DESCRIPTION DMS-107-1 DEMODULATOR DATE September 3, 1969

4 BY R. Teg

F IG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	CONNECTOR, PLUG, MB SERIES, Part of W1	260005	9	44950	74868
	Same as P1, Part of W2				
	Same as P1, Part of W2				
	Same as P1				
	Same as P1				
	Same as P1, Part of W3				
	Same as P1, Part of W4				
	Same as P1				
	Same as P1, Part of W5				
	RESISTOR, FIXED, COMPOSITION: 6.8 kΩ, 5%, 1/4W	160132	2	RC07GF682J	81349
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	81349
	Same as R1				
	RESISTOR, FIXED, COMPOSITION: 56 kΩ, 5%, 1/4W	160077	2	RC07GF563J	81349
	RESISTOR, FIXED, COMPOSITION: 68 kΩ, 5%, 1/4W	160079	1	RC07GF683J	81349
	Same as R4				
	RESISTOR, FIXED, COMPOSITION: 15 kΩ, 5%, 1/4W	160140	1	RC07GF153J	81349
	RESISTOR, FIXED, COMPOSITION: 12 kΩ, 5%, 1/4W	160138	1	RC07GF123J	81349
	RESISTOR, FIXED, COMPOSITION: 22 kΩ, 5%, 1/4W	160144	1	RC07GF223J	81349
	RESISTOR, VARIABLE, COMPOSITION: 50 kΩ, 10%, 2W	170187	1	RV4NAYSD503A	81349
	RESISTOR, FIXED, COMPOSITION: 150 kΩ, 5%, 1/4W	160087	1	RC07GF154J	81349
	RESISTOR, FIXED, COMPOSITION: 56 Ω, 5%, 1/4W	160023	2	RC07GF560J	81349

IPMENT DESCRIPTION DMS-107-1 DEMODULATOR DATE September 3, 1969

5 BY R. Teg

F IG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	Same as R12				
	NOT USED				
	RESISTOR, VARIABLE, COMPOSITION: 10 kΩ, 10%, 2W	170182	1	RV4NAYSD103A	81349
	RESISTOR, VARIABLE, COMPOSITION: 1 kΩ, 10%, 2W	170176	1	RV4NAYSD102A	81349
	RESISTOR, VARIABLE, COMPOSITION: 25 kΩ, 10%, 2W	170184	1	RV4NAYSD253A	81349
	RESISTOR, FIXED, COMPOSITION: 180 Ω, 5%, 1/4W	160035	1	RC07GF181J	81349
	RESISTOR, FIXED, COMPOSITION: 1 kΩ, 5%, 1/4W	160112	1	RC07GF102J	81349
	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 1/4W	160045	1	RC07GF471J	81349
	RESISTOR, FIXED, COMPOSITION: 6.2 kΩ, 5%, 1/4W	160131	1	RC07GF622J	81349
	Same as R2				
	RESISTOR, FIXED, COMPOSITION: 8.2 kΩ, 5%, 1/4W	160134	1	RC07GF822J	81349
	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349
	RESISTOR, FIXED, COMPOSITION: 1.8 kΩ, 5%, 1/4W	160118	1	RC07GF182J	81349
	SWITCH, ROTARY: 1 Section, 4 Pole, 2 Position		1	1128-42	14632
	SWITCH, ROTARY: 5 Section, 5 Pole, 12 Position		1	16910-1	14632
	SWITCH, ROTARY: 2 Section,4 Pole, 6 Position		1	1128-03	14632
	SWITCH, TOGGLE, SPST	300040	1	8280-K16	27193
	SWITCH, SLIDE, DPDT	200015	1	46256-LF	82389

UIPMENT DESCRIPTION DMS-107-1 DEMODULATOR DATE September 3, 1969
e 6 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	TRANSFORMER		1	14238	14632
	TERMINAL BOARD	250227	1	353-18-03-001	71785
	VOLTAGE REGULATOR	190109	1	1N756A	07688
	VOLTAGE REGULATOR	190107	2	1N753A	07688
	Same as VR2				
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632
	CABLE & CONNECTOR ASSEMBLY		Ref.		14632

PARTS LIST

PAGE 1 OF 2

79586	INPUT MIXER	5574
TYPE NUMBER	TITLE	SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A1		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa DATE 7-22-69

APPROVED FOR PRODUCTION

K. Ty DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE

UIPMENT DESCRIPTION 79586 - INPUT MIXER DATE July 2, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
A1	INPUT MIXER P.C. BOARD		1	15810	14632
C1	CAPACITOR, CERAMIC, FEEDTHRU: 1000 pF, GMV, 500V	130135	8	FA5C-102W	01121
C2	Same as C1				
C3	Same as C1				
C4	Same as C1				
C5	Same as C1				
C6	Same as C1				
C7	Same as C1				
8	Same as C1				
	CONNECTOR, RECEPTACLE, MB SERIES	260008	6	46025	56289
	Same as J1				
	Same as J1				
	Same as J1				
	Same as J1				
	Same as J1				

PARTS LIST

PAGE 1 OF 7

15810	INPUT MIXER PC BOARD	5574
TYPE NUMBER	TITLE	SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A1A1		
DMS-107-1	A1A1		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa DATE 7-22-69

APPROVED FOR PRODUCTION

R. Tig DATE 7/22/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5486 5519	A	12/4/69						

UIPMENT DESCRIPTION 15810 - INPUT MIXER PC BOARD

DATE July 2, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C1	CAPACITOR, CERAMIC, DISC: 0.1 μF, -20+80%, 25V	130019	9	DFJ-3	73899
C2	Same as C1				
C3	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	9	C023B101E502M	56289
C4	Same as C3				
C5	Same as C1				
C6	CAPACITOR, ELECTROL., TANTALUM: 1 μF, 10%, 35V	120050	2	CS13BF105K	81349
C7	Same as C3				
C8	Same as C6				
C9	Same as C3				
C10	CAPACITOR, MICA, DIPPED: 150 pF, 5%, 500V	120100	2	CM05FD151J03	81349
C11	Same as C3				
C12	Same as C3				
C13	Same as C1				
C14	Same as C3				
C15	CAPACITOR, MICA, DIPPED: 200 pF, 5%, 500V	120103	1	CM05FD201J03	81349
C16	Same as C3				
C17	Same as C3				
C18	CAPACITOR, MICA, DIPPED: 240 pF, 5%, 500V	120105	2	CM05FD241J03	81349
C19	CAPACITOR, MICA, DIPPED: 390 pF, 5%, 500V	120111	2	CM05FD391J03	81349
C20	Same as C19				
C21	Same as C18				
C22	CAPACITOR, ELECTROL., TANTALUM: 10 μF, 10%, 35V	120061	1	CS13BF106K	81349
C23	Same as C1				

UIPMENT DESCRIPTION 15810 - INPUT MIXER PC BOARD DATE July 2, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C24	Same as C1				
C25	Same as C1				
C26	CAPACITOR, CERAMIC, DISC: 0.01 μF, 20%, 100V	120043	2	C023B101F103M	56289
C27	Same as C26				
C28	Same as C1				
C29	Same as C10				
C30	Same as C1				
R1	DIODE	190099	1	1N462A	07688
1	COIL, FIXED		2	1131-28	14632
2	COIL, FIXED		1	1131-26	14632
3	Same as L1				
4	COIL, FIXED: 9100 μH		1	2500-74	99800
1	TRANSISTOR	110334	5	2N5109	07688
2	Same as Q1				
3	Same as Q1				
4	Same as Q1				
5	Same as Q1				

QUIPMENT DESCRIPTION 15810 - INPUT MIXER PC BOARD

DATE July 2, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
Q6	TRANSISTOR	250209	1	3N140	07688
R1	RESISTOR, FIXED, COMPOSITION: 5.6 kΩ, 5%, 1/4W	160130	2	RC07GF562J	81349
R2	Same as R1				
R3	RESISTOR, FIXED, COMPOSITION: 5.1 kΩ, 5%, 1/4W	160129	2	RC07GF512J	81349
R4	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	2	RC07GF222J	81349
R5	RESISTOR, FIXED, COMPOSITION: 12 Ω, 5%, 1/4W	160008	3	RC07GF120J	81349
R6	RESISTOR, FIXED, COMPOSITION: 56 Ω, 5%, 1/4W	160023	3	RC07GF560J	81349
R7	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	2	RC07GF511J	81349
R8*	Same as R6				
R9	RESISTOR, FIXED, COMPOSITION: 1 kΩ, 5%, 1/4W	160112	2	RC07GF102J	81349
R10	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	1	RC07GF470J	81349
R11	RESISTOR, FIXED, COMPOSITION: 390 Ω, 5%, 1/4W	160043	1	RC07GF391J	81349
R12	RESISTOR, FIXED, COMPOSITION: 150 Ω, 5%, 1/4W	160033	4	RC07GF151J	81349
R13	Same as R3				
R14	Same as R4				
R15*	RESISTOR, FIXED, COMPOSITION: 5.6 Ω, 5%, 1/4W	160075	1	RC07GF5R6J	81349
R16	RESISTOR, FIXED, COMPOSITION: 10 Ω, 5%, 1/4W	160006	3	RC07GF100J	81349
R17	Same as R12				
R18	RESISTOR, FIXED, COMPOSITION: 22 Ω, 5%, 1/4W	160013	1	RC07GF220J	81349
R19	RESISTOR, FIXED, COMPOSITION: 39 Ω, 5%, 1/4W	160019	2	RC07GF390J	81349
R20	Same as R5				

QUIPMENT DESCRIPTION 15810 - INPUT MIXER PC BOARD DATE July 2, 1969

 BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
R21	Same as R19				
R22	Same as R12				
R23	Same as R9				
R24*	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	6	RC07GF101J	81349
R25	RESISTOR, FIXED, COMPOSITION: 8.2 kΩ, 5%, 1/4W	160134	1	RC07GF822J	81349
R26	RESISTOR, FIXED, COMPOSITION: 3.6 kΩ, 5%, 1/4W	160125	1	RC07GF362J	81349
R27	RESISTOR, FIXED, COMPOSITION: 300 Ω, 5%, 1/4W	160040	2	RC07GF301J	81349
R28	RESISTOR, FIXED, COMPOSITION: 18 Ω, 5%, 1/4W	160011	1	RC07GF180J	81349
R29	Same as R27				
R30	Same as R16				
R31	RESISTOR, FIXED, COMPOSITION: 240 Ω, 5%, 1/4W	160038	1	RC07GF241J	81349
R32	Same as R5				
R33	Same as R16				
R34	RESISTOR, FIXED, COMPOSITION: 180 Ω, 5%, 1/4W	160035	2	RC07GF181J	81349
R35	RESISTOR, FIXED, COMPOSITION: 30 Ω, 5%, 1/4W	160016	1	RC07GF300J	81349
R36	Same as R34				
R37	Same as R7				
R38	Same as R6				
R39	Same as R24				
R40	RESISTOR, FIXED, COMPOSITION: 6.8 kΩ, 5%, 1/4W	160132	1	RC07GF682J	81349
R41	RESISTOR, FIXED, COMPOSITION: 56 kΩ, 5%, 1/4W	160077	1	RC07GF563J	81349
R42	RESISTOR, FIXED, COMPOSITION: 18 kΩ, 5%, 1/4W	160142	1	RC07GF183J	81349
R43	RESISTOR, VARIABLE, FILM: 100 kΩ, 30%, 1/2W		1	62PR100K	73138

EQUIPMENT DESCRIPTION 15810 - INPUT MIXER PC BOARD

DATE July 2, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG COD
R44	RESISTOR, FIXED, COMPOSITION: 470 kΩ, 5%, 1/4W	160099	1	RC07GF474J	8134
R45	RESISTOR, FIXED, COMPOSITION: 1 MΩ, 5%, 1/4W	160306	1	RC07GF105J	8134
R46	Same as R24				
R47	Same as R24				
R48	RESISTOR, FIXED, COMPOSITION: 75 Ω, 5%, 1/4W	160026	1	RC07GF750J	81349
R49	RESISTOR, FIXED, COMPOSITION: 330 kΩ, 5%, 1/4W	160041	1	RC07GF334J	81349
R50	RESISTOR, FIXED, COMPOSITION: 20 kΩ, 5%, 1/4W	160143	1	RC07GF203J	81349
R51	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	1	RC07GF103J	81349
R52	RESISTOR, VARIABLE, FILM: 20 kΩ, 30%, 1/2W		1	62PR20K	73138
R53	RESISTOR, FIXED, COMPOSITION: 68 kΩ, 5%, 1/4W	160079	1	RC07GF683J	81349
R54	Same as R24				
R55	RESISTOR, FIXED, COMPOSITION: 560 Ω, 5%, 1/4W	160047	1	RC07GF561J	81349
R56	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	1	RC07GF331J	81349
R57	Same as R12				
R58	RESISTOR, FIXED, COMPOSITION: 220 Ω, 5%, 1/4W	160037	1	RC07GF221J	81349
R59	Same as R24				
RA1	RADIATOR, TRANSISTOR	250156	5	3AL635-2R	18915
RA2	Same as RA1				
RA3	Same as RA1				
RA4	Same as RA1				
RA5	Same as RA1				

EQUIPMENT DESCRIPTION 15810 - INPUT MIXER PC BOARD

DATE July 2, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
T1	TRANSFORMER				
T2	Same as T1		2	20937-21	1463
U1	MIXER, BALANCED				
U2	INTEGRATED CIRCUIT	140147	1	M6	27956
		120386	1	U5B7741393	07263
*	Nominal value, final value to be factory selected.				

PARTS LIST

PAGE 1 OF 2

72300 — TYPE NUMBER

IF OUTPUT AMPLIFIER ASSEMBLY — TITLE

32268 — SCHEMATIC

ORIGINAL JOB NO. 2658

USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A2		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER G. Costa — DATE 6-30-69

APPROVED FOR PRODUCTION

R. Tey — DATE 6/30/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE

UIPMENT DESCRIPTION 72300 IF OUTPUT AMPLIFIER ASSEMBLY

DATE April 23, 1969

BY R. Teg

e 2

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	IF AMPLIFIER ASSEMBLY		1	15614	14632
	CAPACITOR, CERAMIC, FEEDTHRU: 1000 pF, GMV, 500V	130135	2	FA5C-102W	01121
	Same as C1				
	CONNECTOR, RECEPTACLE, MB SERIES	260008	2	46025	74868
	Same as J1				

UNICATION ELECTRONICS INCORPORATED

PARTS LIST

PAGE 1 OF 2

71272 — TYPE NUMBER

VARIABLE OSCILLATOR ASSEMBLY — TITLE

32263 — SCHEMATIC

ORIGINAL JOB NO. 2658			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A3		
DMS-107-1	A3		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER G. Costa — DATE 6-30-69

APPROVED FOR PRODUCTION

VR Teg — DATE 6/30/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
11468	A	7/12/72						

UIPMENT DESCRIPTION 71272 VARIABLE OSCILLATOR ASSEMBLY

DATE May 14, 1969

e 2

BY R. Teg

.	DESCRIPTION	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	LOCAL OSCILLATOR	1	7755	14632
	GEAR TRAIN	1	8587	14632
	CONNECTOR, PLUG, MULTIPIN, Part of W1	1	SLE-14P	81312
	CABLE AND CONNECTOR ASSEMBLY	Ref.		14632

MUNICATION ELECTRONICS INCORPORATED

PARTS LIST

PAGE 1 OF 2

7755 — TYPE NUMBER

LOCAL OSCILLATOR — TITLE

41177 — SCHEMATIC

ORIGINAL JOB NO. 2658

USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A3A1		
DMS-107-1	A3A1		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER G. Costa — DATE 6-30-69

APPROVED FOR PRODUCTION

R. Tey — DATE 6/30/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5460	A	12/4/69						

QUIPMENT DESCRIPTION 7755 LOCAL OSCILLATOR

DATE April 23, 1969

BY R. Teg

M.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
1	LO BOARD		1	15430	14632
	CAPACITOR, VARIABLE, AIR: 6.5-62.36 pF, 500V	120177	1	C28-341, 20/.012in.	23783
	CAPACITOR, VARIABLE, GLASS: 1-28 pF, 100V	140114	1	MC603	73899
	CAPACITOR, CERAMIC, FEEDTHUR: 1000 pF, 20% , 500V	120150	5	CK70AW102M	81349
	Same as C3				
	Same as C3				
	Same as C3				
	Same as C3				
	CONNECTOR, RECEPTACLE, MB SERIES	260008	1	46025	74868
	COIL, VARIABLE	210054	1	1472-3	14632

CEI DIVISION WATKINS-JOHNSON ROCKVILLE, MARYLAND U S A	TITLE +18V REGULATED POWER SUPPLY PRINTED CIRCUIT ASSEMBLY	TYPE NO. 76162	PL 76162	REV B
CODE IDENT 14632	DRAWN BY T. Shafer 9-8-71	CHECKED 9-8-71 M F Mayhew	ELECT. ENGR R L Clay Dept Mgr	MECH ENGR 9-10-71 K Raachien.	SHT 1 OF 3 SHTS

APPLICATION

REVISIONS

SED ON	REF DESIG	LETTER	ECN NO.	DESCRIPTION	DATE	APPROVED
SEE SHEET 1A		B	8826	REVISED & RETYPED ON NEW FORMAT	9-8-71	M F Mayhew

ORIGINAL JOB NO. 44317

RECORD OF REVISION STATUS OF EACH SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

CEI DIVISION WATKINS-JOHNSON ROCKVILLE, MARYLAND U.S.A.	TITLE +18V REGULATED POWER SUPPLY PRINTED CIRCUIT ASSEMBLY	TYPE NO. 76162	PL 76162	REV B

CODE IDENT	DRAWN BY	CHECKED	ELECT. ENGR	MECH ENGR	SHT 1A OF 3 SHTS
14632	SHAFER				

APPLICATION		APPLICATION		APPLICATION		APPLICATION	
USED ON	REF DESIG	USED ON	REF DESIG	USED ON	REF DESIG	USED ON	REF DESIG
77	A12	DMS-109	A9				
77-2	A12	DMS-105	A15				
77-3	A12	DMS-105-2	A15				
26	A15	DMS-105-3	A15				
FC-212	A8	DMS-105-4	A15				
32	A4	DMS-105-5	A15				
T-205	A6S-105A-2	DMS-105A-2	A15				
77-1	A12	DMS-105A-3	A15				
D-102	A3						
-201	A2						
-210	A6						
-222-50	A3						
-222-100	A3						
-101	A10						
-117	A13						
D-204	A3						
S-107	A5						
S-107-1	A5						

V REGULATED POWER SUPPLY P.C. ASSY | TYP...MBE... 76162 | DRA... | CHEC... | ...EC ENGR | ... ENGR | PL76162 | ...EET 2 | 8

CONTROL UMBER	QTY REQD PER ASSY LEVEL	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	QTY PER EQPT	REFERENCE DESIGNATION	REFER FOR ASSEMBLY	ITEM/ FIND NO.	PFAO	FAB LOC	DEL TO
	X	14632	31770	+18V REG POWER SUP SCHEMATIC	X			0010	R		REF
	1	14632	76162-P1	+18V REG POWER SUP P.C. DETAIL	1			0020	F	PCS	PCL
0095	3	13103	7717-115DAP	TRANSIPAD	3			0030	O		PCL
0049	1	56289	39D207G050FJ4	CAP/ELEC/ALUM 200UF M10P75PCT 50V	1	C1		0040	O		PCL
0033	1	56289	30D106G050CB2	CAP/ELEC/ALUM 10UF M10P75PCT 50V	1	C2		0050	O		PCL
0032	1	56289	30D106G025BB2	CAP/ELEC/ALUM 10UF M10P75PCT 25V	1	C3		0060	O		PCL
0063	1	81349	CS13BE156K	CAP/ELEC/TANT 15UF 10PCT 20V	1	C4		0070	O		PCL
121	1	04713	MDA940A3	DIODE	1	CR1		0080	O		PCL
108	1	80131	1N754A	DIODE ZENER 6.8V SILICON	1	CR2		0090	O		PCL
099	1	80131	1N462A	DIODE	1	CR3		0100	O		PCL
152	1	80131	2N3055	TRANSISTOR	1	Q1		0110	O		PCL
099	2	96906	MS35233-28	SCREW/MACH PAN HD 6-32X3/8	2			0120	O		PCL
160	2	96906	MS15795-805	WASHER/FLAT	2			0130	O		PCL
258	2	96906	MS35338-136	WASHER/LOCK	2			0140	O		PCL
093	2	96906	MS35649-264	NUT/PLAIN-HEX	2			0150	O		PCL

V REGULATED POWER SUPPLY P.C. ASSY | TYP MBE | DRA HECI | EC ENGR | H ENGR | PL76162 | EET 3 | B

CONTROL NUMBER	QTY REQD PER ASSY LEVEL	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	QTY PER EQPT	REFERENCE DESIGNATION	REFER FOR ASSEMBLY	ITEM/ FIND NO.	PFAO	FAB LOC	DEL TO
0167	1	80131	2N4074 SEE 110170	TRANSISTOR SUPERCEDED BY 2N2222A C/N 110170	3	Q2		0160	O		PCL
	1			S/A Q2	-	Q3		0170			
	1			S/A Q2	-	Q4		0180			
0021	1	81349	RCR07G470JS	RES/FIXED/COMPO 47 OHMS 5PCT .25W	1	R1		0190	O		PCL
0132	1	81349	RCR07G682JS	RES/FIXED/COMPO 6.8K 5PCT .25W	2	R2		0200	O		PCL
				S/A R2	-	R3		0210			
0091	1	81349	RCR07G224JS	RES/FIXED/COMPO 220K 5PCT .25W	1	R4		0220	O		PCL
0112	1	81349	RCR07G102JS	RES/FIXED/COMPO 1K 5PCT .25W	1	R5		0230	O		PCL
0130	1	81349	RCR07G562JS	RES/FIXED/COMPO 5.6K 5PCT .25W	1	R6		0240	O		PCL
0052	1	73138	62PAR1K	RES/VAR/FILM 1K 30PCT .5W	1	R7		0250	O		PCL
0126	1	81349	RCR07G392JS	RES/FIXED/COMPO 3.9K 5PCT .25W	1	R8		0260	O		PCL
0118	1	81349	RCR07G182JS	RES/FIXED/COMPO 1.8K 5PCT .25W	1	R9		0270	O		PCL
0037	1	81349	RCR07G221JS	RES/FIXED/COMPO 220 OHMS 5PCT .25W	1	R10		0280	O		PCL
0128	1	81349	RCR07G472JS	RES/FIXED/COMPO 4.7K 5PCT .25W	1	R11		0290	O		PCL

CEI DIVISION WATKINS-JOHNSON ROCKVILLE, MARYLAND U S A	TITLE -18V REGULATED POWER SUPPLY BOARD P.C. ASSY	TYPE NO. 76160	PL76160	REV C
CODE IDENT 14632	DRAWN BY T. Shafer 9-29-71	CHECKED 9-29-71 M7 Mayhew	ELECT. ENGR 9-30-71 L. Costa	MECH ENGR 10/2/71	SHT 1 OF 4 SHTS

APPLICATION

SED ON	REF DESIG
SEE SHEET 1A	

REVISIONS

LETTER	ECN NO.	DESCRIPTION	DATE	APPROVED
A	8807	REV & RETYPED ON NEW FORMAT	9-29-71	M7 Mayhew
B	9208	REVISED ITEM 0070.	10-21-71	
C	10911	ADDED ITEMS 0121,0122,0123,0124	3/28/72	

ORIGINAL JOB NO. 44317

RECORD OF REVISION STATUS OF EACH SHEET

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

CEI DIVISION WATKINS-JOHNSON ROCKVILLE MARYLAND U.S.A.	TITLE -18 V REGULATED POWER SUPPLY BOARD P.C. ASSY	TYPE NO. 76160	PL76160	REV C	
CODE IDENT 14632	DRAWN BY T. Shafer 9-29-71	CHECKED	ELECT. ENGR	MECH ENGR	SHT 1A OF 4 SHTS

APPLICATION		APPLICATION		APPLICATION		APPLICATION	
USED ON	REF DESIG	USED ON	REF DESIG	USED ON	REF DESIG	USED ON	REF DESIG
977	A11						
977-1	A11						
977-2	A11						
977-3	A11						
526	A14						
D-102	A4						
G-101	A11						
P-117	A14						
MS-105	A14						
MS-105-2	A14						
S-105-3	A14						
S-105-4	A14						
MS-105-5	A14						
MS-107	A14						
MS-107-1	A14						
S-105A-2	A14						
S-105A-3	A14						
S-105A-7	A14						

V REGULATED POWER SUPPLY BOARD P.C. ASSY | TYPE NUMBER 76160 | DATE RUN 04/13/72 | ELEC ENGR | MECH ENGR | PL 76160 | SHEET 2 | REV C

I CONTROL NUMBER	QTY REQD PER ASSY LEVEL	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	QTY PER EQPT	REFERENCE DESIGNATION	REFER FOR ASSEMBLY	ITEM/ FIND NO.	P F A O	FAB LOC	DEL TO
	X	14632	31142	-18V REGULATED POWER SUPPLY SCHEMATIC	X			0010	K		
	1	14632	76160-P1	-18V REGULATED POWER SUPPLY P.C. DETAIL	1			0020			
0090	3	13103	7717-22DAP	TRANSIPAD	3			0030	O		PCL
0049	1	56289	39D207G050FJ4	CAP/ELEC/ALUM 200UF M10P75 50V	1	C1		0040	O		PCL
0033	1	56289	30D106G050CB2	CAP/ELEC/ALUM 10UF M10P75 50V	1	C2		0050	O		PCL
0032	1	56289	30D106G025BB2	CAP/ELEC/ALUM 10UF M10P75 25V	1	C3		0060	O		PCL
103	1	81349	CM05FD201J03	CAP/MICA/DIPPED 200PF 5PCT 500V	1	C4		0070	O		PCL
070	1	81349	CS13BE476K	CAP/ELEC/TANT 47UF 10PCT 20V	1	C5		0080	O		PCL
122	1	04713	MDA950A3	DIODE	1	CR1		0090	O		PCL
108	1	80131	1N754A	DIODE ZENER 6.8V SILICON	1	CR2		0100	O		PCL
099	1	80131	1N462A	DIODE	1	CR3		0110	O		PCL
152	1	80131	2N3055	TRANSISTOR	1	Q1		0120	O		PCL
099	.2	96906	MS51957-28	SCREW/MACH PAN HD CROSS RECESSED 6-32X3/8 CRES	2			0121			
160	.2	96906	MS15795-805	WASHER/FLAT NO 6 .156 ID .312 OD .035 THICKNESS CRES	2			0122			

V REGULATED POWER SUPPLY BOARD P.C. ASSY	TYPE NUMBER 76160	DATE RUN 04/13/72	ELEC ENGR	MECH ENGR	PL 76160	SHEET 3	REV C

I CONTROL NUMBER	QTY REQD PER ASSY LEVEL	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	QTY PER EQPT	REFERENCE DESIGNATION	REFER FOR ASSEMBLY	ITEM/ FIND NO.	PFAO	FAB LOC	DEL TO
0258	.2	96906	MS35338-136	WASHER/LOCK NO 6 .146 ID .253 OD .037 THICKNESS CRES 302	2			0123			
0093	.2	96906	MS35649-264	NUT/PLAIN-HEX 6-32X5/16 ACRFLT	2			0124			
0166	1	80131	2N4037	TRANSISTOR	3	Q2		0130	O		PCL
	1			S/A Q2	-	Q3		0140			
	1			S/A Q2	-	Q4		0150			
0045	1	81349	RCR07G471JS	RES/FIXED/COMPO 470 OHMS 5PCT .25W	1	R1		0160	O		PCL
0132	1	81349	RCR07G682JS	RES/FIXED/COMPO 6.8K 5PCT .25W	2	R2		0170	O		PCL
	1			S/A R2	-	R3		0180			
0087	1	81349	RCR07G154JS	RES/FIXED/COMPO 150K 5PCT .25W	1	R4		0190	O		PCL
0130	1	81349	RCR07G562JS	RES/FIXED/COMPO 5.6K 5PCT .25W	1	R5		0200	O		PCL
0052	1	73138	62PAR1K	RES/TRIM/FILM 1K 10PCT .5W	1	R6		0210	O		PCL
0126	1	81349	RCR07G392JS	RES/FIXED/COMPO 3.9K 5PCT .25W	1	R7		0220	O		PCL
0120	1	81349	RCR07G222JS	RES/FIXED/COMPO 2.2K 5PCT .25W	2	R8		0230	O		PCL
0037	1	81349	RCR07G221JS	RES/FIXED/COMPO 220 OHMS 5PCT .25W	1	R9		0240	O		PCL

V REGULATED POWER SUPPLY BOARD P.C. ASSY | TYPE NUMBER 76160 | DATE RUN 04/13/72 | ELEC ENGR | MECH ENGR | PL 76160 | SHEET 4 | REV C

I CONTROL NUMBER	QTY REQD PER ASSY LEVEL	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	QTY PER EQPT	REFERENCE DESIGNATION	REFER FOR ASSEMBLY	ITEM/ FIND NO.	P F A O	FAB LOC	DEL TO
	1			S/A R8	-	R10		0250			

ARTS LIST
AGE 1 OF 7

72277
TYPE NUMBER

21.4 MHz IF AMPLIFIER (20 kHz BW)
TITLE

6620
SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A6		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa DATE 7-22-69

APPROVED FOR PRODUCTION

R. Teg DATE 7/24/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE

PMENT DESCRIPTION 72277 - 21.4 MHz IF AMPLIFIER (20 kHz BW) DATE July 1, 69

2 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	33	C023B101E502M	56289
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 30 pF, 5%, 500V	120083	1	CM05ED300J03	81349
	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	2	CM05FD101J03	81349
9	Same as C1				
10	Same as C1				
11	Same as C1				
12	Same as C1				
C13	Same as C1				
C14	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	2	CM05ED220J03	81349
C15	CAPACITOR, MICA, DIPPED: 220 pF, 5%, 500V	120104	1	CM05FDFD221J03	81349
C16	Same as C1				
C17	Same as C1				
C18	Same as C1				
C19	Same as C1				
C20	Same as C1				
C21	CAPACITOR, CERAMIC, TUBULAR: 4.7 pF, ±0.25 pF, 500V	250092	1	301-000-C0H0-479C	72982
C22	CAPACITOR, MICA, DIPPED: 43 pF, 5%, 500V	120087	1	CM05ED430J03	81349
	CA, DIPPED: 470 pF, 5%, 500V	130053	1	DM15-471J03	72136

IPMENT DESCRIPTION 72277 - 21.4 MHz IF AMPLIFIER (20 kHz BW)

DATE July 1, 1969

BY R. Teg

3

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, MICA, DIPPED: 68 pF, 5%, 500V	120092	1	CM05ED680J03	81349
	CAPACITOR, CERAMIC, DISC: 1000 pF, GMV, 500V	180028	1	SM(1000pF, GMV)	91418
	Same as C1				
	CAPACITOR, MICA, DIPPED: 15 pF, 5%, 500V	120077	1	CM05CD150J03	81349
	CAPACITOR, MICA, DIPPED: 200 pF, 5%, 500V	120103	1	CM05FD201J03	81349
	Same as C1				
	Same as C8				
	Same as C14				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
0	CAPACITOR, MICA, DIPPED: 39 pF, 5%, 500V	120086	1	CM05ED390J03	81349
	CAPACITOR, MICA, DIPPED: 33 pF, 5%, 500V	120084	1	CM05ED330J03	81349
2	Same as C1				
3	Same as C1				
	Same as C1				
5	Same as C1				
6	Same as C1				

UIPMENT DESCRIPTION 72277 - 21.4 MHz IF AMPLIFIER (20 kHz BW)

DATE July 1, 1969

BY R. Teg

e 4

DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
Same as C1				
CAPACITOR, MICA, DIPPED: 150 pF, 5%, 500V	120100	1	CM05FD151J03	81349
Same as C1				
DIODE	190099	1	1N462A	07688
DIODE		2	5082-2800	28480
Same as CR2				
FILTER, BAND-PASS: 21.4 MHz, C. F. 20 kHz BW		1	9680035	74306
COIL, FIXED: 47 μH		5	1025-60	99800
COIL, VARIABLE		4	7107-17	71279
Same as L2				
Same as L1				
Same as L2				
Same as L1				
Same as L2				
Same as L1				
Same as L1				

IPMENT DESCRIPTION 72277 - 21.4 MHz IF AMPLIFIER (20 kHz BW) DATE July 1, 1969

BY R. Teg

5

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	TRANSISTOR	220165	1	2N3933	07688
	TRANSISTOR	220167	2	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688
	Same as Q2				
	RESISTOR, FIXED, COMPOSITION: 24 Ω, 5%, 1/4W	160014	1	RC07GF240J	81349
	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	3	RC07GF331J	81349
	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	9	RC07GF470J	81349
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 8.2 kΩ, 5%, 1/4W	160134	1	RC07GF822J	81349
	Same as R2				
	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
	Same as R2				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	4	RC07GF103J	81349
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	10	RC07GF101J	81349
	RESISTOR, FIXED, COMPOSITION: 470 kΩ, 5%, 1/4W	160099	1	RC07GF474J	81349
	Same as R3				
	Same as R12				
	Same as R10				

UIPMENT DESCRIPTION 72277 - 21.4 MHz IF AMPLIFIER (20 kHz BW) DATE July 1, 1969

e 6 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	81349
	RESISTOR, FIXED, COMPOSITION: 20 kΩ, 5%, 1/4W	160143	1	RC07GF203J	81349
	Same as R10				
	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	1	RC07GF511J	81349
	Same as R3				
	Same as R12				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	2	RC07GF472J	81349
	Same as R10				
	Same as R12				
	Same as R12				
	Same as R12				
	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	1	RC07GF331J	81349
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 1.1 kΩ, 5%, 1/4W	160113	1	RC07GF112J	81349
	RESISTOR, FIXED, COMPOSITION: 6.8 MΩ, 5%, 1/4W	160323	1	RC07GF685J	81349
	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RC07GF473J	81349
	Same as R3				
	Same as R24				
	Same as R12				
	Same as R12				
	Same as R12				
	Same as R12				

UIPMENT DESCRIPTION 72277 - 21.4 MHz IF AMPLIFIER (20 kHz BW) DATE July 1, 1969

e 7 BY R. Teg

.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	INTEGRATED CIRCUIT		3	MC-1550G	04713
	Same as U1				
	Same as U1				
	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263
	FILTER, DISCRIMINATOR: 21.4 MHz C. F. 20 kHz BW		1	8680038	74306
	CRYSTAL, QUARTZ: 21.4 MHz	300211	1	97803-01	14632

PARTS LIST

PAGE 1 OF 7

72278
TYPE NUMBER

21.4 MHz IF AMPLIFIER (50 kHz BW)
TITLE

6621
SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A7		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa DATE 7-22-69

APPROVED FOR PRODUCTION

R. Tay DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE

UIPMENT DESCRIPTION 72278 - 21.4 MHz IF AMPLIFIER (50 kHz BW) DATE July 1, 1969

e 2 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	33	C023B101E502M	56289
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 30 pF, 5%, 500V	120083	1	CM05ED300J03	81349
	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	2	CM05FD101J03	81349
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	2	CM05ED220J03	81349
	CAPACITOR, MICA, DIPPED: 220 pF, 5%, 500V	120104	1	CM05FD221J03	81349
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, CERAMIC, TUBULAR: 4.7 pF, ±0.25 pF, 500V	250092	1	301-000-C0H0-479C	72982
	CAPACITOR, MICA, DIPPED: 43 pF, 5%, 500V	120087	1	CM05ED430J03	81349
	CAPACITOR, MICA, DIPPED: 470 pF, 5%, 500V	130053	1	DM15-471J	72136

UIPMENT DESCRIPTION 72278 - 21.4 MHz IF AMPLIFIER (50 kHz BW) DATE July 1, 1969

BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, MICA, DIPPED: 68 pF, 5%, 500V	120092	1	CM05ED680J03	81349
	CAPACITOR, CERAMIC, DISC: 1000 pF, GMV, 500V	180028	1	SM(1000pF, GMV)	91418
	Same as C1				
	CAPACITOR, MICA, DIPPED: 15 pF, 5%, 500V	120077	1	CM05CD150J03	81349
	CAPACITOR, MICA, DIPPED: 200 pF, 5%, 500V	120103	1	CM05FD201J03	81349
	Same as C1				
	Same as C8				
	Same as C14				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 39 pF, 5%, 500V	120086	1.	CM05ED390J03	81349
	CAPACITOR, MICA, DIPPED: 33 pF, 5%, 500V	120084	1	CM05ED330J03	81349
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				

UIPMENT DESCRIPTION 72278 - 21.4 MHz IF AMPLIFIER (50 kHz BW) DATE July 1, 1969

4 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	Same as C1				
	CAPACITOR, MICA, DIPPED: 51 pF, 5%, 500V	120089	1	CM05ED510J03	81349
	Same as C1				
	DIODE	190099	1	1N462A	07688
	DIODE		2	5082-2800	28480
	Same as CR2				
	FILTER, BAND-PASS: 21.4 MHz, 50 kHz BW		1	9680036	74306
	COIL, FIXED: 47 μH		5	1025-60	99800
	COIL, VARIABLE		4	7107-17	71279
	Same as L2				
	Same as L1				
	Same as L2				
	Same as L1				
	Same as L2				
	Same as L1				
	Same as L1				

UIPMENT DESCRIPTION 72278 - 21.4 MHz IF AMPLIFIER (50 kHz BW) DATE July 1, 1969

BY

.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	TRANSISTOR	220165	1	2N3933	07688
	TRANSISTOR	220167	2	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688
	Same as Q2				
	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160102	1	RC07GF330J	81349
	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	4	RC07GF331J	81349
	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	9	RC07GF470J	81349
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	5	RC07GF103J	81349
	Same as R2				
	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
	Same as R2				
	Same as R3				
	Same as R5				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	10	RC07GF101J	81349
	RESISTOR, FIXED, COMPOSITION: 470 kΩ, 5%, 1/4W	160099	1	RC07GF474J	81349
	Same as R3				
	Same as R12				
	Same as R5				

UIPMENT DESCRIPTION 72278 - 21.4 MHz IF AMPLIFIER (50 kHz BW) DATE July 1, 1969

e 6 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	81349
	RESISTOR, FIXED, COMPOSITION: 20 kΩ, 5%, 1/4W	160143	1	RC07GF203J	81349
	Same as R5				
	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	1	RC07GF511J	81349
	Same as R3				
	Same as R12				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	2	RC07GF472J	81349
	Same as R5				
	Same as R12				
	Same as R12				
	Same as R12				
	Same as R2				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 1.1 kΩ, 5%, 1/4W	160113	1	RC07GF112J	81349
	RESISTOR, FIXED, COMPOSITION: 6.8 MΩ, 5%, 1/4W	160323	1	RC07GF685J	81349
	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RC07GF473J	81349
	Same as R3				
	Same as R24				
	Same as R12				
	Same as R12				
	Same as R12				
	Same as R12				

QUIPMENT DESCRIPTION 72278 - 21.4 MHz IF AMPLIFIER (50 kHz BW) DATE July 1, 1969

BY R. Teg

M.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	INTEGRATED CIRCUIT		3	MC-1550G	04713
	Same as U1				
	Same as U1				
	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263
	FILTER, DISCRIMINATOR: 21.4 MHz C.F. 50 kHz BW		1	8680039	74306
	CRYSTAL, QUARTZ: 21.4 MHz	300211	1	97803-01	14632
	Nominal value, final value to be factory selected.				

PARTS LIST

72279 — TYPE NUMBER

21.4 MHz IF AMPLIFIER (100 kHz BW) — TITLE

6619 — SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A8		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa — DATE 7-22-69

APPROVED FOR PRODUCTION

R Tg — DATE 7/24/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE

IPMENT DESCRIPTION 72279 - 21.4 MHz IF AMPLIFIER (100 kHz BW) DATE July 1, 1969

BY R. Teg

2

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	33	C023B101E502M	56289
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 27 pF, 5%, 500V	120082	1	CM05ED270J03	81349
	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	2	CM05FD101J03	81349
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	2	CM05ED220J03	81349
	CAPACITOR, MICA, DIPPED: 220 pF, 5%, 500V	120104	1	CM05FD221J03	81349
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, CERAMIC, TUBULAR: 4.7 pF, ±0.25 pF, 500V	250092	1	301-000-C0H0-479C	72982
	CAPACITOR, MICA, DIPPED: 43 pF, 5%, 500V	120087	1	CM05ED430J03	81349
	CAPACITOR, MICA, DIPPED: 470 pF, 5%, 500V	130053	1	DM15-471J	72136

QUIPMENT DESCRIPTION 72279 - 21.4 MHz IF AMPLIFIER (100 kHz BW) DATE July 1, 1969

BY R. Teg

M.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
4	CAPACITOR, MICA, DIPPED: 68 pF, 5%, 500V	120092	1	CM05ED680J03	81349
5	CAPACITOR, CERAMIC, DISC: 1000 pF, GMV, 500V	180028	1	SM(1000pF, GMV)	91418
6	Same as C1				
7	CAPACITOR, MICA, DIPPED: 15 pF, 5%, 500V	120077	1	CM05CD150J03	81349
8	CAPACITOR, MICA, DIPPED: 200 pF, 5%, 500V	120103	1	CM05FD201J03	81349
	Same as C1				
	Same as C8				
	Same as C14				
	Same as C1				
	Same as C1				
	Same as C1'				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 39 pF, 5%, 500V	120086	1	CM05ED390J03	81349
	CAPACITOR, MICA, DIPPED: 33 pF, 5%, 500V	120084	1	CM05ED330J03	81349
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				

EQUIPMENT DESCRIPTION 72279 - 21.4 MHz IF AMPLIFIER (100 kHz BW)

DATE July 1, 1969

BY R. Teg

SYM. NO.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
C47	Same as C1				
C48	CAPACITOR, MICA, DIPPED: 24 pF, 5%, 500V	120081	1	CM05ED240J03	81349
C49	Same as C1				
R1	DIODE	190099	1	1N462A	07688
R2	DIODE		2	5082-2800	28480
R3	Same as CR2				
L1	FILTER, BAND-PASS: 21.4 MHz, 100 kHz BW		1	9680037	74306
	COIL, FIXED: 47 μH		5	1025-60	99800
	COIL, VARIABLE		4	7107-17	71279
	Same as L2				
	Same as L1				
	Same as L2				
	Same as L1				
	Same as L2				
	Same as L1				
	Same as L1				

QUIPMENT DESCRIPTION 72279 - 21.4 MHz IF AMPLIFIER (100 kHz BW) DATE July 1, 1969

BY R. Teg

M.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	TRANSISTOR	220165	1	2N3933	07688
	TRANSISTOR	220167	2	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688
	Same as Q2				
	RESISTOR, FIXED, COMPOSITION: 75 Ω, 5%, 1/4W	160026	1	RC07GF750J	81349
	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	5	RC07GF331J	81349
	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	9	RC07GF470J	81349
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 8.2 kΩ, 5%, 1/4W	160134	1	RC07GF822J	81349
	Same as R2				
	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
	Same as R2				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	4	RC07GF103J	81349
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	10	RC07GF101J	81349
	RESISTOR, FIXED, COMPOSITION: 470 kΩ, 5%, 1/4W	160099	1	RC07GF474J	81349
	Same as R3				
	Same as R12				
	Same as R10				

QUIPMENT DESCRIPTION 72279 - 21.4 MHz IF AMPLIFIER (100 kHz BW) DATE July 1, 1969

 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
7	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	81349
8	RESISTOR, FIXED, COMPOSITION: 20 kΩ, 5%, 1/4W	160143	1	RC07GF203J	81349
9	Same as R10				
0	Same as R2				
	Same as R3				
	Same as R12				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	2	RC07GF472J	81349
	Same as R10				
	Same as R12				
	Same as R12				
	Same as R12				
	Same as R2				
	Same as R3				
	RESISTOR, FIXED, COMPOSITION: 1.1 kΩ, 5%, 1/4W	160113	1	RC07GF112J	81349
	RESISTOR, FIXED, COMPOSITION: 6.8 MΩ, 5%, 1/4W	160323	1	RC07GF685J	81349
	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RC07GF473J	81349
	Same as R3				
	Same as R24				
	Same as R12				
	Same as R12				
	Same as R12				
	Same as R12				

QUIPMENT DESCRIPTION 72279 - 21.4 MHz IF AMPLIFIER (100 kHz BW) DATE July 1, 1969

BY R. Teg

M.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	INTEGRATED CIRCUIT		3	MC-1550G	04713
	Same as U1				
	Same as U1				
	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263
	FILTER, DISCRIMINATOR: 21.4 MHz, 100 kHz BW		1	8680040	74306
	CRYSTAL, QUARTZ: 21.4 MHz	300211	1	97803-01	14632

PARTS LIST
PAGE 1 OF 8

72280	21.4 MHz IF AMPLIFIER (300 kHz BW)	6630
TYPE NUMBER	TITLE	SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A9		
DMS-107-1	A9		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Caetta DATE 7-22-69

APPROVED FOR PRODUCTION

R. Thy DATE 7/22/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5401	A	12/4/69						

PMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW) DATE July 7, 1969

BY R. Teg

	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	36	C023B101E502M	56289
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 82 pF, 5%, 500V	120094	3	CM05ED820J03	81349
	CAPACITOR, CERAMIC, TUBULAR: 1.5 pF, ±0.1 pF, 500V	250074	3	301-000-C0K0-159B	72982
	CAPACITOR, MICA, DIPPED: 91 pF, 5%, 500V	120095	3	CM05FD910J03	81349
	CAPACITOR, MICA, DIPPED: 1000 pF, 5%, 500V	130062	3	DM15-102J	72136
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C7				
	Same as C8				
	Same as C9				
	Same as C10				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				

IPMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW) DATE July 7, 1969

 BY R. Teg

F G	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
47	Same as C1				
48	Same as C1				
49	Same as C1				
50	Same as C1				
51	Same as C1				
52	CAPACITOR, MICA, DIPPED: 47 pF, 5%, 500V	120088	2	CM05ED470J03	81349
53	Same as C52				
54	CAPACITOR, MICA, DIPPED: 120 pF, 5%, 500V	120098	2	CM05FD121J03	81349
55	Same as C54				
56	Same as C41				
57	Same as C1				
58	Same as C1				
59	CAPACITOR, CERAMIC, DISC: 2200 pF, 10%, 200V	110407	1	CK06CW222K	81349
1	DIODE	190099	1	1N462A	07688
2	DIODE	120402	4	5082-2800	28480
3	Same as CR2				
4	Same as CR2				
5	Same as CR2				

IPMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW) DATE July 7, 1969

 BY R. Teg

F IG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
24	Same as C1				
25	Same as C7				
26	Same as C8				
27	Same as C9				
28	Same as C10				
29	Same as C1				
30	Same as C1				
31	Same as C1				
2	Same as C1				
3	Same as C1				
4	Same as C1				
5	CAPACITOR, MICA, DIPPED: 10 pF, 5%, 500V	120075	1	CM05CD100D03	81349
6	CAPACITOR, MICA, DIPPED: 130 pF, 5%, 500V	120099	1	CM05FD131J03	81349
7	Same as C1				
8	Same as C1				
9	Same as C1				
0	CAPACITOR, MICA, DIPPED: 470 pF, 5%, 500V	130053	1	DM15-471J	72136
1	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	2	CM05ED220J03	81349
2	Same as C1				
3	Same as C1				
	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	1	CM05FD101J03	81349
5	Same as C1				
6	Same as C1				

UIPMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW) DATE July 7, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
L1	COIL, FIXED: 47 μH		10	1025-60	99800
L2	COIL, VARIABLE		6	7107-11	71279
L3	Same as L2				
L4	Same as L1				
L5	Same as L2				
L6	Same as L2				
7	Same as L1				
8	Same as L2				
9	Same as L2				
10	Same as L1				
11	Same as L1				
12	COIL, VARIABLE		1	7107-19	71279
13	Same as L1				
14	Same as L1				
15	COIL, VARIABLE		1	7107-13	71279
16	COIL, FIXED		1	1131-87	14632
17	Same as L1				
18	Same as L1				
19	Same as L1				
	TRANSISTOR	220167	2	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688

UIPMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW) DATE July 7, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
Q3	Same as Q1				
R1	RESISTOR, FIXED, COMPOSITION: 30 Ω, 5%, 1/4W	160016	1	RC07GF300J	81349
R2	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	10	RC07GF470J	81349
R3	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	2	RC07GF331J	81349
R4	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	8	RC07GF473J	81349
R5	Same as R4				
R6	Same as R4				
R7	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
R8	Same as R2				
R9	Same as R3				
R10	Same as R4				
R11	Same as R2				
R12	NOT USED				
R13	Same as R2				
R14	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	7	RC07GF101J	81349
R15	Same as R4				
R16	Same as R4				
R17	Same as R2				
R18	Same as R2				
R19	Same as R14				
R20	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	81349

QUIPMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW)

DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
R21	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	81349
R22	Same as R20				
R23	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	1	RC07GF511J	81349
R24	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	2	RC07GF472J	81349
R25	NOT USED				
R26	Same as R14				
R27	Same as R2				
R28	Same as R24				
R29	Same as R14				
R30	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160017	3	RC07GF330J	81349
R31	Same as R2				
R32	RESISTOR, FIXED, COMPOSITION: 51 Ω, 5%, 1/4W	160022	1	RC07GF510J	81349
R33	RESISTOR, FIXED, COMPOSITION: 150 Ω, 5%, 1/4W	160033	1	RC07GF151J	81349
R34	Same as R14				
R35	Same as R2				
R36	Same as R14				
R37	RESISTOR, FIXED, COMPOSITION: 100 kΩ, 5%, 1/4W	160083	2	RC07GF104J	81349
R38	Same as R37				
R39	Same as R4				
R40	Same as R2				
R41	Same as R14				
R42	Same as R2				
R43	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349

QUIPMENT DESCRIPTION 72280 - 21.4 MHz IF AMPLIFIER (300 kHz BW) DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
R44	Same as R30				
R45	Same as R4				
T1	TRANSFORMER		1	22348-1	14632
U1	INTEGRATED CIRCUIT		4	MC-1550G	04713
U2	Same as U1				
U3	Same as U1				
U4	Same as U1				
U5	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263

PARTS LIST

PAGE 1 OF 8

72281 — TYPE NUMBER

21.4 MHz IF AMPLIFIER (500 kHz BW) — TITLE

6629 — SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A10		
DMS-107-1	A10		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa — DATE 7-22-69

APPROVED FOR PRODUCTION

V. Ng — DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
10065	A	1/26/72						
11556	B	7/12/72						

UIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW) DATE July 7, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C1	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	36	C023B101E502M	56289
C2	Same as C1				
C3	Same as C1				
C4	Same as C1				
C5	Same as C1				
C6	Same as C1				
C7	CAPACITOR, MICA, DIPPED: 82 pF, 5%, 500V	120094	3	CM05ED820J03	81349
C8	CAPACITOR, CERAMIC, TUBULAR: 2.4 pF, ±0.25 pF, 500V	250081	3	301-000-C0H0-249C	72982
C9	CAPACITOR, MICA, DIPPED: 91 pF, 5%, 500V	120095	3	CM05FD910J03	81349
C10	CAPACITOR, MICA, DIPPED: 1000 pF, 5%, 100V	130062	2	DM15-102J	72136
C11	Same as C1				
C12	Same as C1				
C13	Same as C1				
C14	Same as C1				
C15	Same as C1				
C16	Same as C7				
C17	Same as C8				
C18	Same as C9				
C19	Same as C10				
C20	Same as C1				
C21	Same as C1				
C22	Same as C1				
C23	Same as C1				

UIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW) DATE July 7, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C24	Same as C1				
C25	Same as C7				
C26	Same as C8				
C27	Same as C9				
C28	CAPACITOR, MICA, DIPPED: 750 pF, 5%, 300V	130059	1	DM15-751J	72136
C29	Same as C1				
C30	Same as C1				
C31	Same as C1				
C32	Same as C1				
C33	Same as C1				
C34	Same as C1				
C35	CAPACITOR, MICA, DIPPED: 10 pF, 5%, 500V	120075	1	CM05CD100D03	81349
C36	CAPACITOR, MICA, DIPPED: 130 pF, 5%, 500V	120099	1	CM05FD131J03	81349
C37	Same as C1				
C38	Same as C1				
C39	Same as C1				
C40	CAPACITOR, MICA, DIPPED: 470 pF, 5%, 500V	130053	1	DM15-471J	72136
C41	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	2	CM05ED220J03	81349
C42	Same as C1				
C43	Same as C1				
C44	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	1	CM05FD101J03	81349
C45	Same as C1				
C46	Same as C1				

QUIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW) DATE July 7, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C47	Same as C1				
C48	Same as C1				
C49	Same as C1				
C50	Same as C1				
C51	Same as C1				
C52	CAPACITOR, MICA, DIPPED: 47 pF, 5%, 500V	120088	2	CM05ED470J03	81349
C53	Same as C52				
C54	CAPACITOR, MICA, DIPPED: 120 pF, 5%, 500V	120098	2	CM05FD121J03	81349
C55	Same as C54				
C56	Same as C41				
C57	Same as C1				
C58	Same as C1				
C59	CAPACITOR, CERAMIC, DISC: 2200 pF, 10%, 200V	110407	1	CK06CW222K	81349
R1	DIODE	190099	1	1N462A	07688
R2	DIODE	120402	4	5082-2800	28480
R3	Same as CR2				
R4	Same as CR2				
R5	Same as CR2				

UIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW) DATE July 7, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
L1	COIL, FIXED: 47 μH		10	1025-60	99800
L2	COIL, VARIABLE		6	7107-11	71279
L3	Same as L2				
L4	Same as L1				
L5	Same as L2				
L6	Same as L2				
L7	Same as L1				
L8	Same as L2				
L9	Same as L2				
L10	Same as L1				
L11	Same as L1				
L12	COIL, VARIABLE		1	7107-19	71279
L13	Same as L1				
L14	Same as L1				
L15	COIL, VARIABLE		1	7107-13	71279
L16	COIL, FIXED		1	1131-87	14632
L17	Same as L1				
L18	Same as L1				
L19	Same as L1				
Q1	TRANSISTOR	220167	2	2N4074	07688
Q2	TRANSISTOR	220153	1	2N3251	07688

QUIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW)

DATE July 7, 1969

BY R. Teg

REF ESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG COD
Q3	Same as Q1				
R1	RESISTOR, FIXED, COMPOSITION: 22 Ω, 5%, 1/4W	160013	1	RC07GF220J	81349
R2	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	12	RC07GF470J	81349
R3	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	2	RC07GF331J	81349
R4	RESISTOR, FIXED, COMPOSITION: 15 kΩ, 5%, 1/4W	160140	6	RC07GF153J	81349
R5	Same as R2				
R6	Same as R4				
R7	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
R8	Same as R2				
R9	Same as R3				
R10	Same as R4				
R11	Same as R2				
R12	NOT USED				
R13	Same as R2				
R14	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	7	RC07GF101J	81349
R15	Same as R4				
R16	Same as R4				
R17	Same as R2				
R18	Same as R2				
R19	Same as R14				
R20	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	81349

QUIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW)

DATE July 7, 1969

BY R. Teg

REF ESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
R21	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	81349
R22	Same as R20				
R23	RESISTOR, FIXED, COMPOSITION: 270 Ω, 5%, 1/4W	160039	1	RC07GF271J	81349
R24	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	2	RC07GF472J	81349
R25	NOT USED				
R26	Same as R14				
R27	Same as R2				
R28	Same as R24				
R29	Same as R14				
R30	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160017	2	RC07GF330J	81349
R31	Same as R2				
R32	RESISTOR, FIXED, COMPOSITION: 51 Ω, 5%, 1/4W	160022	1	RC07GF510J	81349
R33	RESISTOR, FIXED, COMPOSITION: 150 Ω, 5%, 1/4W	160033	1	RC07GF151J	81349
R34	Same as R14				
R35	Same as R2				
R36	Same as R14				
R37	RESISTOR, FIXED, COMPOSITION: 100 kΩ, 5%, 1/4W	160083	2	RC07GF104J	81349
R38	Same as R37				
R39	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RC07GF473J	81349
R40	Same as R2				
R41	Same as R14				
R42	Same as R2				
R43	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349

QUIPMENT DESCRIPTION 72281 - 21.4 MHz IF AMPLIFIER (500 kHz BW) DATE July 7, 1969

BY R. Teg

REF ESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
R44	Same as R30				
R45	Same as R4				
T1	TRANSFORMER				
			1	22348-1	14632
U1	INTEGRATED CIRCUIT				
U2	Same as U1		4	MC-1550G	04713
U3	Same as U1				
U4	Same as U1				
U5	INTEGRATED CIRCUIT				
		120433	1	U5F7719393	07263

PARTS LIST
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72282
TYPE NUMBER

21.4 MHz IF AMPLIFIER (1 MHz BW)
TITLE

6637
SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A11		
DMS-107-1	A11		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Coates DATE 7-22-69

APPROVED FOR PRODUCTION

R. Tolg DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5335	A	9/24/69						
5514	B	12/4/69						

UIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW) DATE July 7, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C1	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	36	C023B101E502M	56289
C2	Same as C1				
C3	Same as C1				
C4	Same as C1				
C5	Same as C1				
C6	Same as C1				
C7	CAPACITOR, MICA, DIPPED: 82 pF, 5%, 500V	120094	3	CM05ED820J03	81349
C8	CAPACITOR, CERAMIC, TUBULAR: 4.3 pF, ±0.25 pF, 500V	250090	3	301-000-C0H0-439C	72982
C9	CAPACITOR, MICA, DIPPED: 91 pF, 5%, 500V	120095	3	CM05FD910J03	81349
C10	CAPACITOR, MICA, DIPPED: 750 pF, 5%, 500V	130059	3	DM15-751J	72136
C11	Same as C1				
C12	Same as C1				
C13	Same as C1				
C14	Same as C1				
C15	Same as C1				
C16	Same as C7				
C17	Same as C8				
C18	Same as C9				
C19	Same as C10				
C20	Same as C1				
C21	Same as C1				
C22	Same as C1				
C23	Same as C1				

QUIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW) DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
C24	Same as C1				
C25	Same as C7				
C26	Same as C8				
C27	Same as C9				
C28	Same as C10				
C29	Same as C1				
C30	Same as C1				
C31	Same as C1				
C32	Same as C1				
C33	Same as C1				
C34	Same as C1				
C35	CAPACITOR, MICA, DIPPED: 12 pF, 5%, 500V	120076	2	CM05CD120J03	81349
C36	CAPACITOR, MICA, DIPPED: 150 pF, 5%, 500V	120100	1	CM05FD151J03	81349
C37	Same as C1				
C38	Same as C1				
C39	Same as C1				
C40	CAPACITOR, MICA, DIPPED: 220 pF, 5%, 500V	120104	1	CM05FD221J03	81349
C41	CAPACITOR, MICA, DIPPED: 30 pF, 5%, 500V	120083	1	CM05ED300J03	81349
C42	Same as C1				
C43	Same as C1				
C44	CAPACITOR, CERAMIC, DISC: 2200 pF, 10%, 200V	110407	2	CK06CW222K	81349
C45	Same as C1				
C46	Same as C1				

QUIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW) DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C47	Same as C1				
C48	Same as C1				
C49	Same as C1				
C50	Same as C1				
C51	Same as C1				
C52	Same as C35				
C53	CAPACITOR, MICA, DIPPED: 47 pF, 5%, 500V	120088	1	CM05ED470j03	81349
C54	CAPACITOR, MICA, DIPPED: 62 pF, 5%, 500V	120071	2	CM05ED620J03	81349
C55	Same as C54				
C56	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	1	CM05ED220J03	81349
57	Same as C1				
58	Same as C1				
59	Same as C44				
R1	DIODE	190099	1	1N462A	07688
R2	DIODE		4	5082-2800	28480
R3	Same as CR2				
R4	Same as CR2				
5	Same as CR2				

UIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW) DATE July 7, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
L1	COIL, FIXED: 47 μH		10	1025-60	99800
L2	COIL, VARIABLE		6	7107-11	71279
L3	Same as L2				
L4	Same as L1				
L5	Same as L2				
L6	Same as L2				
L7	Same as L1				
L8	Same as L2				
L9	Same as L2				
L10	Same as L1				
L11	Same as L1				
L12	COIL, VARIABLE		1	7107-19	71279
L13	Same as L1				
L14	Same as L1				
L15	COIL, VARIABLE		1	7107-17	71279
L16	COIL, FIXED		1	1131-91	14632
L17	Same as L1				
L18	Same as L1				
L19	Same as L1				
1	TRANSISTOR	220167	2	2N4074	07688
2	TRANSISTOR	220153	1	2N3251	07688

EQUIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW) DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
Q3	Same as Q1				
R1	RESISTOR, FIXED, COMPOSITION: 10 Ω, 5%, 1/4W	160006	1	RC07GF100J	8134
R2	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	12	RC07GF470J	8134
R3	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	2	RC07GF331J	8134
R4	RESISTOR, FIXED, COMPOSITION: 3.9 kΩ, 5%, 1/4W	160126	6	RC07GF392J	8134
R5	Same as R2				
R6	Same as R4				
R7	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
R8	Same as R2				
R9	Same as R3				
R10	Same as R4				
R11	Same as R2				
R12	NOT USED				
R13	Same as R2				
R14	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	7	RC07GF101J	81349
R15	Same as R4				
R16	Same as R4				
R17	Same as R2				
R18	Same as R2				
R19	Same as R14				
R20	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	3	RC07GF103J	81349

EQUIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW)

DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
R21	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	8134
R22	Same as R20				
R23	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	1	RC07GF511J	8134
R24	Same as R20				
R25	NOT USED				
R26	Same as R14				
R27	Same as R2				
R28	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	3	RC07GF472J	81349
R29	Same as R14				
R30	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160017	2	RC07GF330J	81349
R31	Same as R2				
R32	RESISTOR, FIXED, COMPOSITION: 51 Ω, 5%, 1/4W	160022	1	RC07GF510J	81349
R33	RESISTOR, FIXED, COMPOSITION: 150 Ω, 5%, 1/4W	160033	1	RC07GF151J	81349
R34	Same as R14				
R35	Same as R2				
R36	Same as R14				
R37	Same as R28				
R38	Same as R28				
R39	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	3	RC07GF473J	81349
R40	Same as R2				
R41	Same as R14				
R42	Same as R2				
R43	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349

EQUIPMENT DESCRIPTION 72282 - 21.4 MHz IF AMPLIFIER (1 MHz BW)

DATE July 7, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MF CO
R44	Same as R30				
R45	Same as R4				
R46	Same as R39				
R47	Same as R39				
T1	TRANSFORMER				
			1	22348-2	1463
U1	INTEGRATED CIRCUIT				
U2	Same as U1		4	MC-1550G	04713
U3	Same as U1				
U4	Same as U1				
U5	INTEGRATED CIRCUIT				
		120433	1	U5F7719393	07263

PARTS LIST

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72283 — TYPE NUMBER

21.4 MHz IF AMPLIFIER (2 MHz BW) — TITLE

6626 — SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A12		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa — DATE 7-23-69

APPROVED FOR PRODUCTION

R Terry — DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5505 5513	A	12/4/69						

QUIPMENT DESCRIPTION 72283 - 21.4 MHz IF AMPLIFIER (2 MHz BW)

DATE July 23, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
C1	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	31	C023B101E502M	5628
C2	Same as C1				
C3	Same as C1				
C4	Same as C1				
C5	Same as C1				
C6	Same as C1				
C7	CAPACITOR, MICA, DIPPED: 20 pF, 5%, 500V	120079	2	CM05ED200J03	81349
C8	CAPACITOR, CERAMIC, TUBULAR: 2.4 pF, ±0.25 pF, 500V	250081	2	301-000-C0J0-249C	72982
C9	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	3	CM05ED220J03	81349
C10	CAPACITOR, MICA, DIPPED: 220 pF, 5%, 500V	120104	2	CM05FD221J03	81349
C11	CAPACITOR, MICA, DIPPED: 27 pF, 5%, 500V	120082	2	CM05ED270J03	81349
C12	CAPACITOR, MICA, DIPPED: 180 pF, 5%, 500V	120102	2	CM05ED181J03	81349
C13	Same as C1				
C14	Same as C1				
C15	Same as C1				
C16	Same as C1				
C17	Same as C1				
C18	Same as C7				
C19	Same as C8				
C20	Same as C9				
C21	Same as C10				
C22	Same as C11				
C23	Same as C12				

EQUIPMENT DESCRIPTION 72283 - 21.4 MHz IF AMPLIFIER (2 MHz BW) DATE July 23, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG COD
C24	Same as C1				
C25	Same as C1				
C26	Same as C1				
C27	Same as C1				
C28	Same as C1				
C29	CAPACITOR, MICA, DIPPED: 10 pF, ±0.5 pF, 500V	120075	3	CM05CD100D03	8134
C30	CAPACITOR, MICA, DIPPED: 130 pF, 5%, 500V	120099	1	CM05FD131J03	8134
C31	Same as C1				
C32	Same as C29				
C33	Same as C1				
C34	Same as C1				
C35	Same as C1				
C36	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	1	CM05FD101J03	81349
C37	CAPACITOR, MICA, DIPPED: 43 pF, 5%, 500V	120087	1	CM05ED430J03	81349
C38	Same as C1				
C39	Same as C1				
C40	Same as C1				
C41	Same as C1				
C42	Same as C1				
C43	Same as C1				
C44	Same as C29				
C45	CAPACITOR, MICA, DIPPED: 47 pF, 5%, 500V	120088	3	CM05ED470J03	81349
C46	Same as C45				

QUIPMENT DESCRIPTION 72283 - 21.4 MHz IF AMPLIFIER (2 MHz BW) DATE July 23, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
C47	Same as C45				
C48	Same as C9				
C49	Same as C1				
C50	Same as C1				
C51	Same as C1				
C52	Same as C1				
C53	Same as C1				
CR1	DIODE				
CR2	DIODE	190099	1	1N462A	07688
CR3	Same as CR2	120402	2	5082-2800	28480
CR4	DIODE				
CR5	Same as CR4	190095	2	1N198A	07688
	COIL, FIXED: 47 μH				
	COIL, VARIABLE		9	1025-60	99800
	Same as L2		7	7107-17	71279
	Same as L2				
	Same as L1				
	Same as L2				
	Same as L2				
	Same as L2				

EQUIPMENT DESCRIPTION 72283 - 21.4 MHz IF AMPLIFIER (2 MHz BW)

DATE July 23, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
L9	Same as L1				
L10	Same as L1				
L11	COIL, VARIABLE				
L12	Same as L1		1	7107-19	7127
L13	Same as L1				
L14	Same as L1				
L15	COIL, FIXED: 0.47 μH				
L16	Same as L2	230006	2	201-11	99848
L17	Same as L1				
L18	Same as L1				
L19	Same as L15				
Q1	TRANSISTOR				
Q2	TRANSISTOR	220167	2	2N4074	07688
Q3	Same as Q1	220153	1	2N3251	07688
R1	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W				
R2	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	280122	1	62PAR100	73138
R3	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160021	8	RC07GF470J	81349
R4	RESISTOR, FIXED, COMPOSITION: 2.7 kΩ, 5%, 1/4W	160041	3	RC07GF331J	81349
R5	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160122	1	RC07GF272J	81349
R6	Same as R2	160029	6	RC07GF101J	81349

EQUIPMENT DESCRIPTION 72283 - 21.4 MHz IF AMPLIFIER (2 MHz BW)

DATE July 23, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MF CO
R7	Same as R3				
R8	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	2	RC07GF222J	813
R9	Same as R5				
R10	Same as R2				
R11	Same as R3				
R12	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	8134
R13	RESISTOR, FIXED, COMPOSITION: 15 kΩ, 5%, 1/4W	160129	1	RC07GF153J	8134
R14	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	8134
R15	Same as R12				
R16	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	1	RC07GF511J	8134
R17	Same as R5				
R18	Same as R2				
R19	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	1	RC07GF472J	8134
R20	Same as R5				
R21	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160017	2	RC07GF330J	81349
R22	RESISTOR, FIXED, COMPOSITION: 51 Ω, 5%, 1/4W	160022	1	RC07GF510J	81349
R23	Same as R5				
R24	RESISTOR, FIXED, COMPOSITION: 220 Ω, 5%, 1/4W	160037	1	RC07GF221J	81349
R25	Same as R5				
R26	RESISTOR, FIXED, COMPOSITION: 1.8 kΩ, 5%, 1/4W	160118	2	RC07GF182J	81349
R27	Same as R26				
R28	RESISTOR, FIXED, COMPOSITION: 33 kΩ, 5%, 1/4W	160148	2	RC07GF333J	81349
R29	Same as R28				

EQUIPMENT DESCRIPTION 72283 - 21.4 MHz IF AMPLIFIER (2 MHz BW)

DATE July 9, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
R30	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RC07GF473J	813
R31	Same as R2				
R32	NOT USED				
R33	Same as R2				
R34	Same as R8				
R35	Same as R21				
R36	RESISTOR, FIXED, COMPOSITION: 51 kΩ, 5%, 1/4W	160076	1	RC07GF513J	81349
R37	Same as R2				
R38	Same as R2				
T1	TRANSFORMER		1	22348-3	14632
U1	INTEGRATED CIRCUIT		3	MC-1550G	04713
U2	Same as U1				
U3	Same as U1				
U4	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263

PARTS LIST
PAGE 1 OF 7

72284
TYPE NUMBER

21.4 MHz IF AMPLIFIER (3 MHz BW)
TITLE

6627
SCHEMATIC

ORIGINAL JOB NO.			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A13		
DMS-107-1	A12		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER L. Pasta DATE 7-22-69

APPROVED FOR PRODUCTION

R. Tg DATE 7/23/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
5511 5516	A	12/4/69						

UIPMENT DESCRIPTION 72284 - 21.4 IF AMPLIFIER (3 MHz BW) DATE July 9, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
1	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	28	C023B101E502M	56289
2	Same as C1				
3	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	CAPACITOR, MICA, DIPPED: 20 pF, 5%, 500V	120079	2	CM05ED200J03	81349
	CAPACITOR, CERAMIC, TUBULAR: 3 pF, ±0.25 pF, 500V	250084	2	301-000-C0J0-309C	72982
	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	3	CM05ED220J03	81349
0	CAPACITOR, MICA, DIPPED: 180 pF, 5%, 500V	120102	2	CM05FD181J03	81349
1	CAPACITOR, MICA, DIPPED: 36 pF, 5%, 500V	120085	2	CM05ED360J03	81349
2	CAPACITOR, MICA, DIPPED: 75 pF, 5%, 500V	120093	2	CM05ED750J03	81349
3	Same as C1				
4	Same as C1				
5	Same as C1				
6	Same as C1				
	Same as C1				
	Same as C7				
	Same as C8				
	Same as C9				
	Same as C10				
	Same as C11				
	Same as C12				

UIPMENT DESCRIPTION 72284 - 21.4 MHz IF AMPLIFIER (3 MHz BW) DATE July 9, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
24	Same as C1				
25	Same as C1				
6	Same as C1				
7	Same as C1				
8	Same as C1				
9	CAPACITOR, MICA, DIPPED: 10 pF, ±0.5 pF, 500V	120075	2	CM05CD100D03	81349
0	CAPACITOR, MICA, DIPPED: 130 pF, 5%, 500V	120099	1	CM05FD150J03	81349
1	Same as C1				
2	CAPACITOR, MICA, DIPPED: 15 pF, 5%, 500V	120077	2	CM05CD150J03	81349
3	Same as C1				
4	Same as C1				
5	Same as C1				
6	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	2	CM05FD101J03	81349
7	CAPACITOR, MICA, DIPPED: 43 pF, 5%, 500V	120087	1	CM05ED430J03	81349
8	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C36				
	Same as C1				
	Same as C29				
	Same as C32				
	CAPACITOR, MICA, DIPPED: 30 pF, 5%, 500V	120083	2	CM05ED300J03	81349

MENT DESCRIPTION 72284 - 21.4 MHz IF AMPLIFIER (3 MHz BW) DATE July 9, 1969

BY R. Teg

4

	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	Same as C46				
	Same as C9				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	Same as C1				
	DIODE	190099	1	1N462A	07688
	DIODE	120402	2	5082-2800	28480
	Same as CR2				
	DIODE	190095	2	1N198A	07688
	Same as CR4				
	COIL, FIXED: 47 μH		10	1025-60	99800
	COIL, VARIABLE		7	7107-17	71279
	Same as L2				
	Same as L2				
	Same as L1				
	Same as L2				
	Same as L2				
	Same as L2				
	Same as L1				
	Same as L1				

PMENT DESCRIPTION 72284 - 21.4 MHz IF AMPLIFIER (3 MHz BW) DATE July 9, 1969

BY R. Teg

e 5

G	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	COIL, VARIABLE		1	7107-19	71279
	Same as L1				
	Same as L1				
	Same as L1				
	COIL, FIXED: 0.47 μH	230006	1	201-11	99848
	Same as L2				
	Same as L1				
	Same as L1				
	Same as L1				
	TRANSISTOR	220167	2	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688
	Same as Q1				
	RESISTOR, VARIABLE, FILM: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	8	RC07GF470J	81349
	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	3	RC07GF331J	81349
	RESISTOR, FIXED, COMPOSITION: 2.7 kΩ, 5%, 1/4W	160122	1	RC07GF272J	81349
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	6	RC07GF101J	81349
	Same as R_2				
	Same as R3				

UIPMENT DESCRIPTION 72284 - 21.4 MHz IF AMPLIFIER (3 MHz BW) DATE July 9, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
3	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349
	Same as R5				
0	Same as R2				
1	Same as R3				
2	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	81349
3	RESISTOR, FIXED, COMPOSITION: 5.1 kΩ, 5%, 1/4W	160129	1	RC07GF512J	81349
4	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	1	RC07GF332J	81349
5	Same as R12				
6	RESISTOR, FIXED, COMPOSITION: 510 Ω, 5%, 1/4W	160046	1	RC07GF511J	81349
7	Same as R5				
8	Same as R2				
9	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	2	RC07GF472J	81349
0	Same as R5				
	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160017	1	RC07GF330J	81349
	RESISTOR, FIXED, COMPOSITION: 51 Ω, 5%, 1/4W	160022	1	RC07GF510J	81349
	Same as R5				
	RESISTOR, FIXED, COMPOSITION: 220 Ω, 5%, 1/4W	160037	1	RC07GF221J	81349
	Same as R5				
	RESISTOR, FIXED, COMPOSITION: 1.8kΩ, 5%, 1/4W	160118	2	RC07GF182J	81349
	Same as R26				
	RESISTOR, FIXED, COMPOSITION: 16 kΩ, 5%, 1/4W	160141	2	RC07GF163J	81349
	Same as R28				
	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RC07GF473J	81349

UIPMENT DESCRIPTION 72284 - 21.4 MHz IF AMPLIFIER (3 MHz BW) DATE July 9, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
31	Same as R2				
32	NOT USED				
33	Same as R2				
34	Same as R19				
35	RESISTOR, FIXED, COMPOSITION: 22 Ω, 5%, 1/4W	160013	1	RC07GF220J	81349
36	RESISTOR, FIXED, COMPOSITION: 5.6 kΩ, 5%, 1/4W	160130	1	RC07GF562J	81349
37	Same as R2				
38	Same as R2				
	TRANSFORMER		1	22348-4	14632
	INTEGRATED CIRCUIT		3	MC-1550G	04713
	Same as U1				
	Same as U1				
	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263

PARTS LIST

PAGE 1 OF 7

72312 — TYPE NUMBER

21.4 MHz IF AMPLIFIER (5.5 MHz BW) — TITLE

6641 — SCHEMATIC

ORIGINAL JOB NO. 2658			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107-1	A13		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER L. Costa — DATE 10-13-69

APPROVED FOR PRODUCTION

R. Tey — DATE 10/14/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
11490	A	7/12/72						

UIPMENT DESCRIPTION 72312 21.4 MHz IF AMPLIFIER (5.5 MHz BW) DATE October 8, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C1	CAPACITOR, CERAMIC, DISC: 1000 pF, GMV, 500V	180028	4	SM(1000pF, GMV)	91418
C2	CAPACITOR, CERAMIC, DISC: 5000 pF, 20%, 100V	120042	12	C023B101E502M	56289
C3	Same as C2				
C4	CAPACITOR, MICA, DIPPED: 39 pF, 5%, 500V	120086	2	CM05ED390J03	81349
C5	CAPACITOR, VARIABLE, AIR: .8-10 pF, 250V	240184	2	2951	92193
C6	CAPACITOR, MICA, DIPPED: 68 pF, 5%, 500V	120092	2	CM05ED680J03	81349
C7	CAPACITOR, MICA, DIPPED: 100 pF, 5%, 500V	120096	3	CM05FD101J03	81349
C8	Same as C2				
C9	Same as C2				
C10	Same as C4				
C11	Same as C5				
C12	Same as C6				
C13	Same as C7				
C14	Same as C1				
C15	Same as C1				
C16	CAPACITOR, CERAMIC, DISC: 0.01 μF, 20%, 100V	120043	2	C023B101F103M	56289
C17	Same as C16				
C18	Same as C2				
C19	Same as C1				
C20	Same as C2				
C21	Same as C7				
C22	Same as C2				
C23	CAPACITOR, CERAMIC, TUBULAR: 10 pF, ±0.5 pF, 500V	250104	1	301-000-C0H0-100D	72982

QUIPMENT DESCRIPTION 72312 21.4 MHz IF AMPLIFIER (5.5 MHz BW) DATE October 8, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C24	CAPACITOR, MICA, DIPPED: 120 pF, 5%, 500V	120098	1	CM05FD121J03	81349
C25	CAPACITOR, MICA, DIPPED: 12 pF, 5%, 500V	120076	1	CM05CD120J03	81349
C26	CAPACITOR, MICA, DIPPED: 10 pF, ±0.5 pF, 500V	120075	3	CM05CD100D03	81349
C27	Same as C26				
C28	CAPACITOR, MICA, DIPPED: 22 pF, 5%, 500V	120080	2	CM05ED200J03	81349
C29	Same as C28				
C30	Same as C2				
C31	Same as C2				
C32	CAPACITOR, MICA, DIPPED: 47 pF, 5%, 500V	120088	1	CM05ED470J03	81349
C33	Same as C26				
C34	Same as C2				
C35	Same as C2				
C36	Same as C2				
R1	DIODE	190099	1	1N462A	07688
R2	DIODE	120402	4	5082-2800	28480
R3	Same as CR2				
R4	Same as CR2				
R5	Same as CR2				

QUIPMENT DESCRIPTION 72312 21.4 MHz IF AMPLIFIER (5.5 MHz BW) DATE October 8, 1969

BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
L1	COIL, VARIABLE		4	7107-14	71279
L2	COIL, FIXED: 15 μH	180170	1	1537-40	99800
L3	Same as L1				
L4	Same as L1				
L5	COIL, FIXED: 12 μH		1	1537-38	99800
L6	Same as L1				
L7	COIL, VARIABLE	120470	1	7107-19	71279
L8	COIL, VARIABLE	120468	1	7107-17	71279
L9	COIL, FIXED: 47 μH		3	1025-60	99800
L10	Same as L9				
L11	Same as L9				
1	TRANSISTOR	220165	3	2N3933	07688
2	Same as Q1				
3	Same as Q1				
	TRANSISTOR	220167	2	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688
	Same as Q4				

QUIPMENT DESCRIPTION 72312 21.4 MHz IF AMPLIFIER (3.5 MHz BW), DATE October 8, 1969

BY R. Teg

REF DESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG CODE
R1	RESISTOR, FIXED, COMPOSITION: 15 kΩ, 5%, 1/4W	160140	2	RCR07G153JS	81349
R2	RESISTOR, FIXED, COMPOSITION: 4.7 kΩ, 5%, 1/4W	160128	6	RCR07G472JS	81349
R3	RESISTOR, FIXED, COMPOSITION: 680 Ω, 5%, 1/4W	160108	1	RCR07G681JS	81349
R4	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	7	RCR07G470JS	81349
R5	RESISTOR, FIXED, COMPOSITION: 2.7 Ω, 5%, 1/4W	160067	2	RCR07G2R7JS	81349
R6	RESISTOR, VARIABLE, COMPOSITION: 100 Ω, 30%, 1/2W	280122	1	62PAR100	73138
R7	RESISTOR, FIXED, COMPOSITION: 820 Ω, 5%, 1/4W	160110	2	RCR07G821JS	81349
R8	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	6	RCR07G101JS	81349
R9	RESISTOR, FIXED, COMPOSITION: 1 kΩ, 5%, 1/4W	160112	4	RCR07G102JS	81349
R10	Same as R1				
R11	Same as R2				
R12	Same as R9				
R13	Same as R4				
R14	Same as R5				
R15	Same as R7				
R16	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 1/4W	160045	1	RCR07G471JS	81349
R17	Same as R9				
R18	RESISTOR, FIXED, COMPOSITION: 120 Ω, 5%, 1/4W	160031	1	RCR07G121JS	81349
R19	RESISTOR, FIXED, COMPOSITION: 12 kΩ, 5%, 1/4W	160138	2	RCR07G123JS	81349
R20	RESISTOR, FIXED, COMPOSITION: 2.7 kΩ, 5%, 1/4W	160122	1	RCR07G272JS	81349
R21	Same as R4				
R22	RESISTOR, FIXED, COMPOSITION: 270 Ω, 5%, 1/4W	160039	1	RCR07G271JS	81349
R23	RESISTOR, FIXED, COMPOSITION: 22 Ω, 5%, 1/4W	160013	1	RCR07G220JS	81349

QUIPMENT DESCRIPTION 72312 21.4 MHz IF AMPLIFIER (5.5 MHz BW) DATE October 8, 1969

BY R. Teg

REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
R24	RESISTOR, FIXED, COMPOSITION: 33 Ω, 5%, 1/4W	160017	1	RCR07G330JS	81349
R25	RESISTOR, FIXED, COMPOSITION: 5.6 kΩ, 5%, 1/4W	160130	2	RCR07G562JS	81349
R26	RESISTOR, FIXED, COMPOSITION: 3.3 kΩ, 5%, 1/4W	160124	3	RCR07G332JS	81349
R27	RESISTOR, FIXED, COMPOSITION: 6.8 kΩ, 5%, 1/4W	160132	1	RCR07G682JS	81349
R28	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RCR07G103JS	81349
R29	Same as R25				
R30	Same as R4				
R31	Same as R4				
R32	Same as R2				
33	RESISTOR, FIXED, COMPOSITION: 560 Ω, 5%, 1/4W	160047	1	RCR07G561JS	81349
34	Same as R2				
35	Same as R19				
36	Same as R8				
37	Same as R8				
38	Same as R2				
39	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	2	RCR07G222JS	81349
0	Same as R39				
1	Same as R12				
2	Same as R8				
3	Same as R26				
4	Same as R28				
5	RESISTOR, FIXED, COMPOSITION: 47 kΩ, 5%, 1/4W	160152	1	RCR07G473JS	81349
6	Same as R4				

UIPMENT DESCRIPTION 72312 21.4 MHz IF AMPLIFIER (5.5 MHz BW) DATE October 8, 1969

 BY R. Teg

EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
R47	Same as R4				
R48	Same as R2				
R49	Same as R8				
R50	Same as R8				
R51	Same as R26				
R52	RESISTOR, FIXED, COMPOSITION: 330 Ω, 5%, 1/4W	160041	1	RCR07G331JS	81349
T1	TRANSFORMER		1	22348-5	14632
U1	INTEGRATED CIRCUIT	120433	1	U5F7719393	07263
U2	INTEGRATED CIRCUIT		1	CA3028B	02735
VR1	VOLTAGE REGULATOR	190107	1	1N753A	07688

PARTS LIST

PAGE 1 OF 3

7366	VIDEO AMPLIFIER	32114
TYPE NUMBER	TITLE	SCHEMATIC

ORIGINAL JOB NO. 2658			
USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A14		
205	A4		

ENGINEER DATE

APPROVED FOR SAMPLE

ENGINEER R. L. Hooper DATE 5-15-69

APPROVED FOR PRODUCTION

R. Troy DATE 5/15/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE

UIPMENT DESCRIPTION 7366 VIDEO AMPLIFIER DATE April 23, 1969

 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, ELECTROL., TANTALUM: 2.2 μF, 10%, 35V	120053	1	CS13BF225K	81349
	CAPACITOR, ELECTROL., TANTALUM: 1.0 μF, 10%, 35V	120050	4	CS13BF105K	81349
	CAPACITOR, ELECTROL., TANTALUM: 22 μF, 105, 35V	120067	1	CS13BF226K	81349
	Same as C2				
	Same as C2				
	CAPACITOR, ELECTROL., TANTALUM: 100 μF, 10%, 30V	200096	1	109D107X9030T2	56289
	Same as C2				
	DIODE	190099	2	1N462A	07688
	Same as CR1				
	DIODE	190114	2	1N914A	07688
	Same as CR3				
	TRANSISTOR	220163	2	2N3904	07688
	TRANSISTOR	220164	2	2N3906	07688
	Same as Q1				
	Same as Q2				
	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 1/4W	160045	1	RC07GF471J	81349
	RESISTOR, FIXED, FILM: 150 kΩ, 1%, 1/4W	170106	1	RN60D1503F	81349

QUIPMENT DESCRIPTION 7366 VIDEO AMPLIFIER DATE April 23, 1969

BY R. Teg

M.	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	RESISTOR, FIXED, FILM: 24.3 kΩ, 1%, 1/4W	170091	1	RN60D2432F	81349
	RESISTOR, FIXED, COMPOSITION: 1 kΩ, 5%, 1/4W	160112	3	RC07GF102J	81349
	RESISTOR, FIXED, FILM: 681 Ω, 1%, 1/4W	170134	1	RN60D6810F	81349
	RESISTOR, FIXED, FILM: 4.75 kΩ, 1%, 1/4W	170072	1	RN60D4751F	81349
	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	4	RC07GF470J	81349
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	1	RC07GF101J	81349
	Same as R4				
	Same as R4				
	Same as R7				
	Same as R7				
	Same as R7				
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	1	RC07GF103J	81349
	RESISTOR, FIXED, COMPOSITION: 20 kΩ, 5%, 1/4W	160143	1	RC07GF203J	81349

PARTS LIST
PAGE 1 OF 3

7360	VIDEO AMPLIFIER	31944
TYPE NUMBER	TITLE	SCHEMATIC

ORIGINAL JOB NO. 2503

USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
MP-101-5	A3, A4		

ENGINEER Ralph E. Sleeper DATE Aug 16, 1968
APPROVED FOR SAMPLE

ENGINEER Ralph E. Sleeper DATE Aug 16, 1968
APPROVED FOR PRODUCTION

K. T. DATE 11/16/68
PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
4530	A	10/4/68						

IPMENT DESCRIPTION 7360 VIDEO AMPLIFIER DATE August 13, 1968

BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, ELECTROL., TANTALUM: 1.0μF, 10%, 35V	120050	5	CS13BF105K	81349
	CAPACITOR, ELECTROL., ALUMINUM: 25μF, -10+75%, 12V	250035	2	30D256G012BB2	56289
	Same as C2				
	Same as C1				
	CAPACITOR, ELECTROL., TANTALUM: 22 μF, 10%, 35V	120067	1	CS13BF226K	81349
	Same as C1				
	Same asC1				
	Same as C1				
	DIODE	190099	2	1N462A	80131
	Same as CR1				
	DIODE	190114	2	1N914A	80131
	Same as CR3				
	TRANSISTOR	220163	2	2N3904	80131
	TRANSISTOR	220164	2	2N3906	80131
	Same as Q1				
	Same as Q2				

UIPMENT DESCRIPTION 7360 VIDEO AMPLIFIER

DATE August 13, 1968

3

BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 1/4W	160045	1	RC07GF471J	81349
	RESISTOR, FIXED, FILM: 232 kΩ, 1%, 1/4W	170043	1	RN60D2323F	81349
	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	2	RC07GF103J	81349
	RESISTOR, FIXED, COMPOSITION: 1 kΩ, 5%, 1/4W	160112	3	RC07GF102J	81349
	RESISTOR, FIXED, FILM: 24.3 kΩ, 1%, 1/4W	170091	1	RN60D2432F	81349
	RESISTOR, FIXED, FILM: 681 Ω, 1%, 1/4W	170134	1	RN60D6810F	81349
	RESISTOR, FIXED, FILM: 4.75 kΩ, 1%, 1/4W	170072	1	RN60D4751F	81349
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	1	RC07GF101J	81349
	Same as R4				
	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	4	RC07GF470J	81349
	Same as R4				
	Same as R10				
	Same as R10				
	Same as R10				
	Same as R3				

PARTS LIST

PAGE 1 OF 3

7440 — TYPE NUMBER

AUDIO AMPLIFIER — TITLE

32113 — SCHEMATIC

ORIGINAL JOB NO. 2658

USED ON	APPLICABLE PREFIX	USED ON	APPLICABLE PREFIX
DMS-107	A15		
DMS-107-1	A15		
DMS-109	A6		

ENGINEER — DATE

APPROVED FOR SAMPLE

ENGINEER R. L. Hooper DATE 5-15-69

APPROVED FOR PRODUCTION

R Ing DATE 5/15/69

PREPARED BY

REVISIONS

ECN	LTR	DATE	ECN	LTR	DATE	ECN	LTR	DATE
6031	A	5/4/71						

UIPMENT DESCRIPTION 7440 AUDIO AMPLIFIER DATE April 23, 1969

e 2 BY R. Teg

	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
	CAPACITOR, CERAMIC, DISC: 0.1 μF, +80-20%, 50V	120474	1	8131-100-651-104M	72982
	CAPACITOR, ELECTROL., TANTALUM: 22 μF, 10%, 15V	120066	1	CS13BD226K	81349
	CAPACITOR, ELECTROL., TANTALUM: 100 μF, 10%, 20V	120073	1	CS13BE107K	81349
	CAPACITOR, ELECTROL., TANTALUM: 1.0 μF, 10%, 35V	120050	1	CS13BF105K	81349
	DIODE	190099	4	1N462A	07688
	Same as CR1				
	Same as CR1				
	Same as CR1				
	TRANSISTOR	220167	1	2N4074	07688
	TRANSISTOR	220153	1	2N3251	07688
	TRANSISTOR	220197	1	2N2270	07688
	TRANSISTOR	220166	1	2N4037	07688
	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 1/4W	160045	2	RC07GF471J	81349
	RESISTOR, FIXED, FILM: 274 kΩ, 1%, 1/4W	170044	1	RN60D2743F	81349
	RESISTOR, FIXED, FILM: 24.3 kΩ, 1%, 1/4W	170091	1	RN60D2432F	81349
	RESISTOR, FIXED, COMPOSITION: 2.2 kΩ, 5%, 1/4W	160120	1	RC07GF222J	81349
	RESISTOR, FIXED, FILM: 681 Ω, 1%, 1/4W	170134	1	RN60D6810F	81349

QUIPMENT DESCRIPTION 7440 AUDIO AMPLIFIER

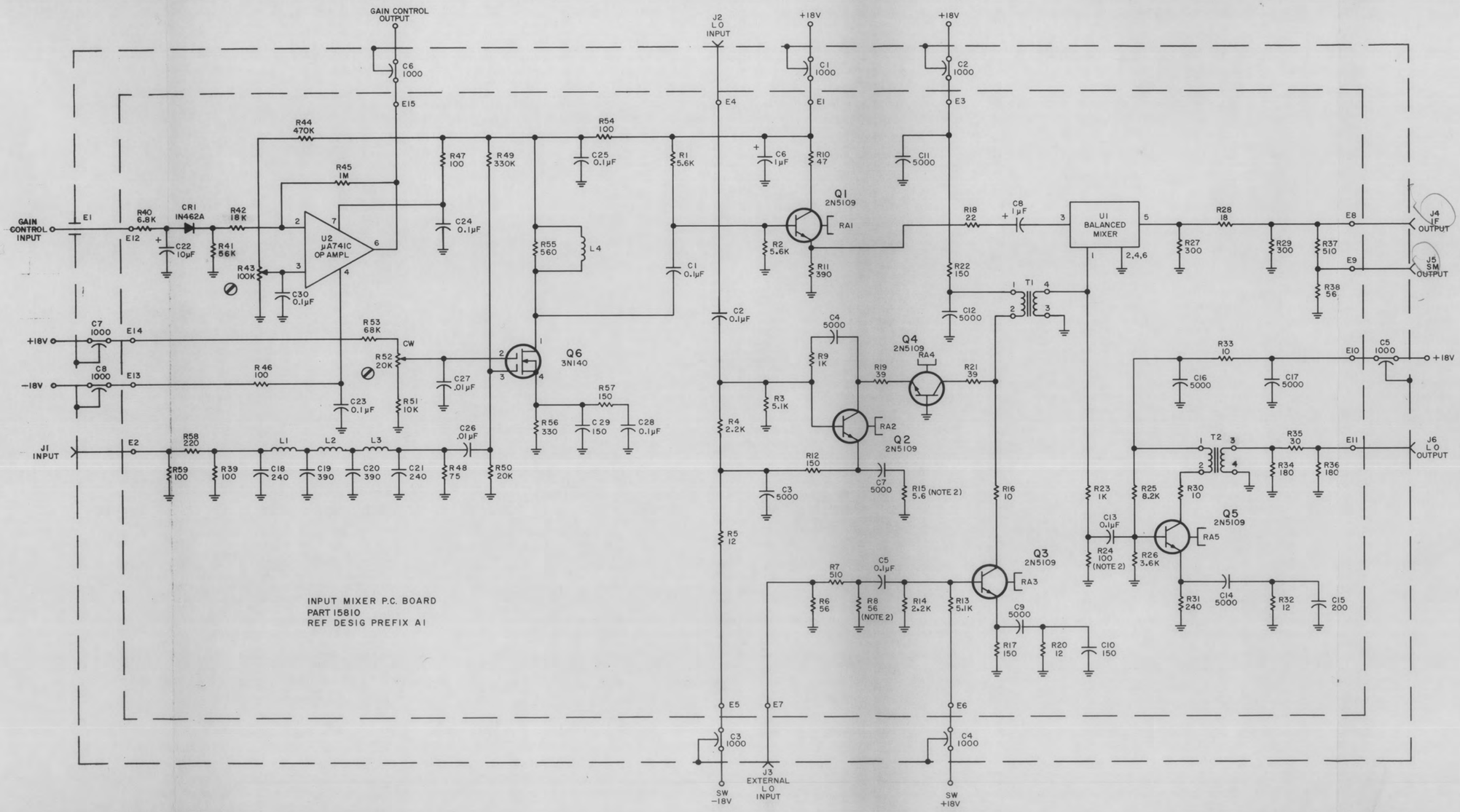
DATE April 23, 1969

BY R. Teg

M. .	DESCRIPTION	CEI Control	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME/CODE
5	RESISTOR, FIXED, COMPOSITION: 2.7 Ω, 5%, 1/4W	160122	1	RC07GF272J	81349
	RESISTOR, FIXED, FILM: 10 kΩ, 1%, 1/4W	170081	1	RN60D1002F	81349
	RESISTOR, FIXED, COMPOSITION: 100 Ω, 5%, 1/4W	160029	1	RC07GF101J	81349
	RESISTOR, FIXED, COMPOSITION: 1.0 kΩ, 5%, 1/4W	160112	2	RC07GF102J	81349
0	Same as R9				
1	RESISTOR, FIXED, COMPOSITION: 47 Ω, 5%, 1/4W	160021	2	RC07GF470J	81349
2	Same as R11				
3	Same as R1				
	TRANSFORMER		1	14006	14632

SECTION VI

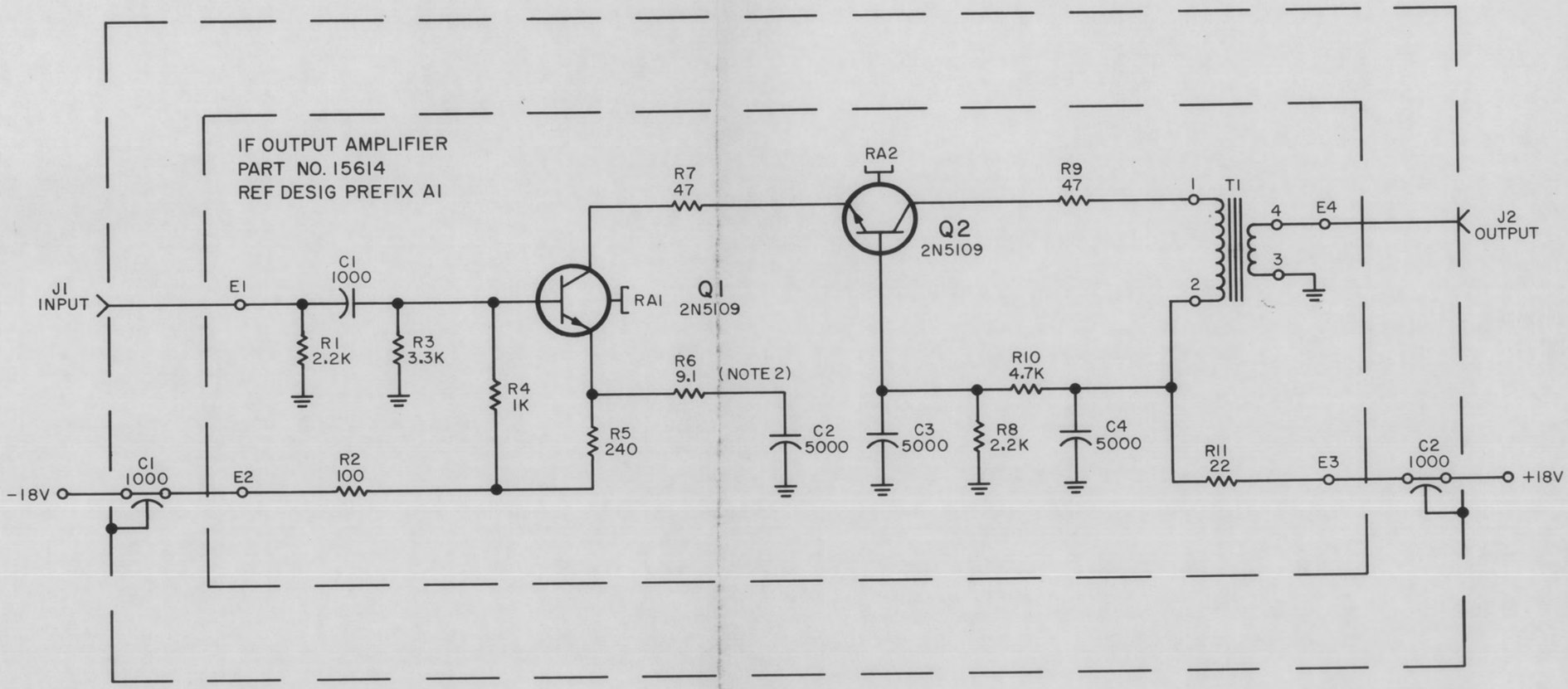
SCHEMATIC DIAGRAMS



-50 to -60 dBm absolute in 50Ω

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. RESISTORS INSERTED IN SOLDER TERMINALS. VALUES SHOWN ARE NOMINAL. FINAL VALUE TO BE FACTORY SELECTED.
3. FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   a) CW INDICATES CLOCKWISE ROTATION.
   b) ⊘ INDICATES SCREWDRIVER ADJUSTMENT.

Figure 6-1. Type 79586 Input Mixer, Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. NOMINAL VALUE; FINAL VALUE TO BE FACTORY SELECTED.

Figure 6-2. Type 72300 IF Output Amplifier, Schematic Diagram

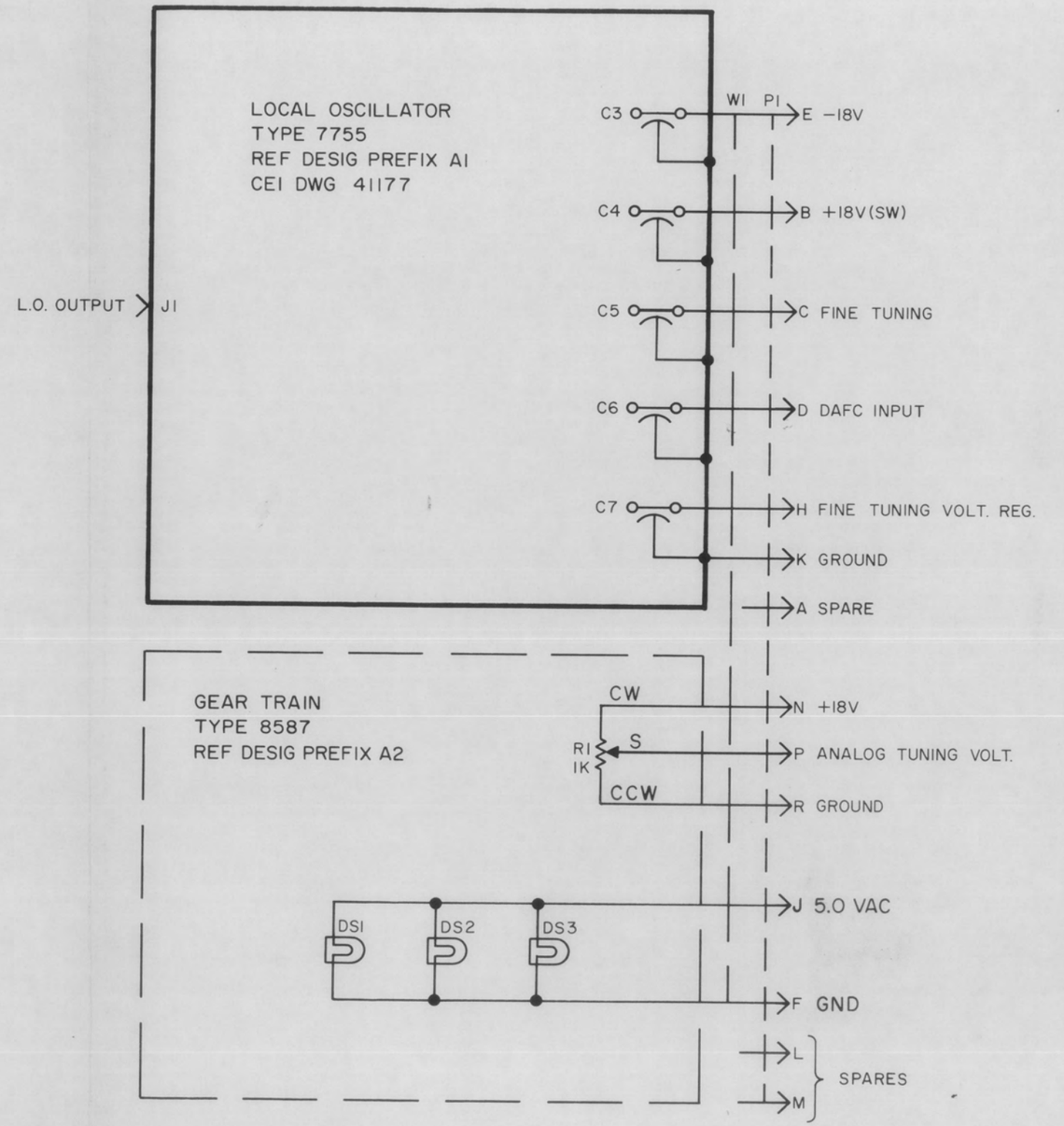
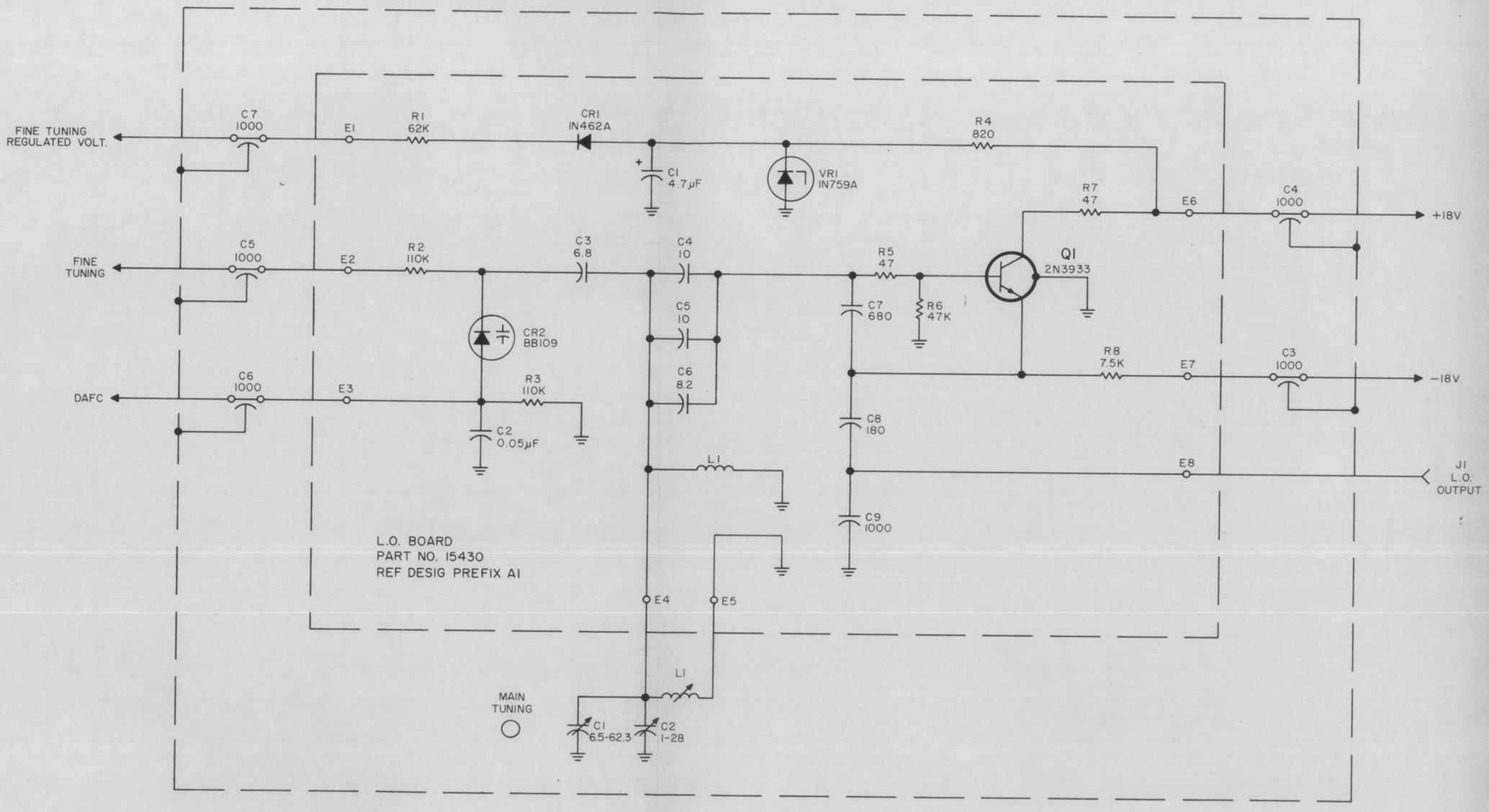


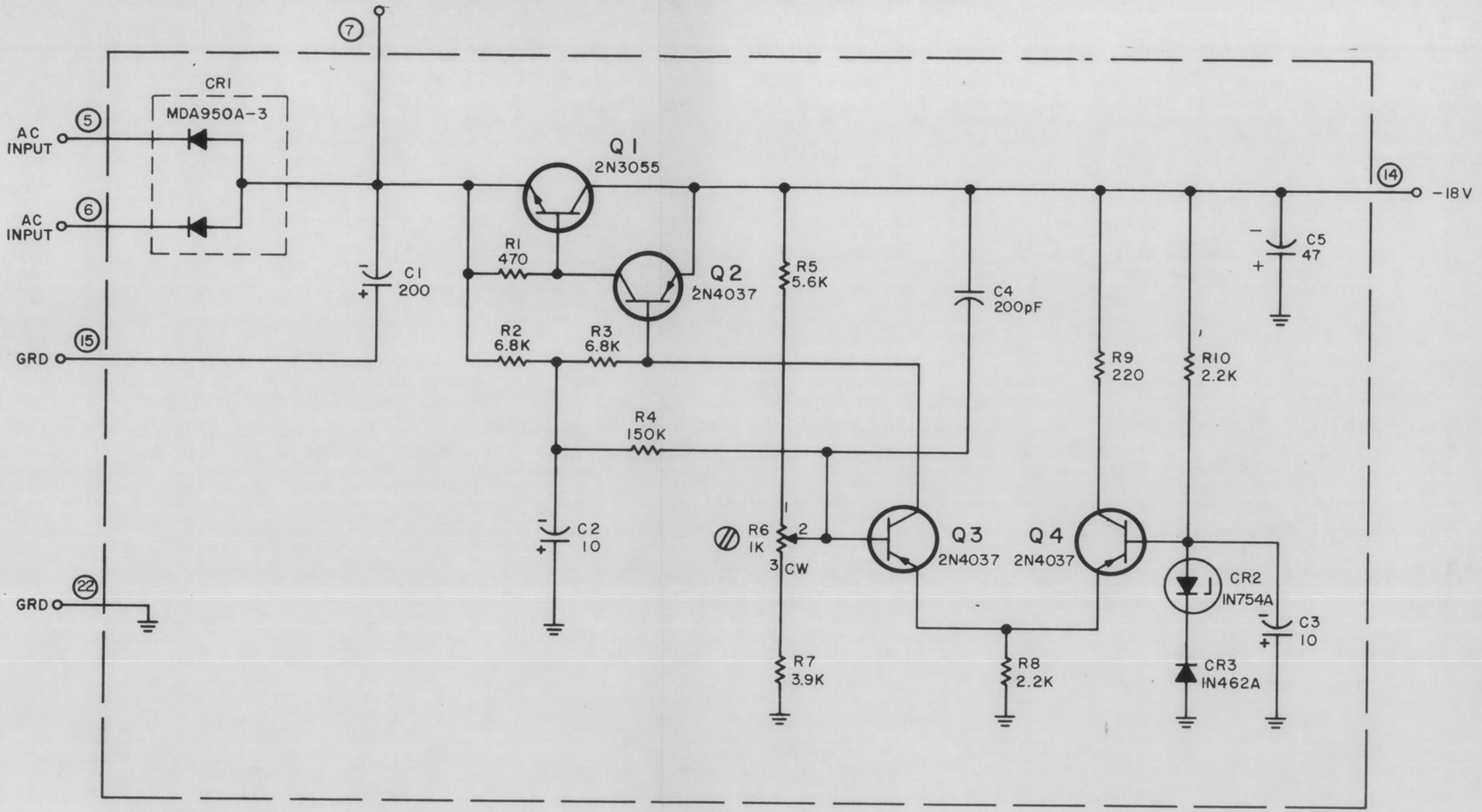
Figure 6-3. Type 71272 Variable Oscillator Assembly, Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. ◯ INDICATES FRONT PANEL CONTROL.

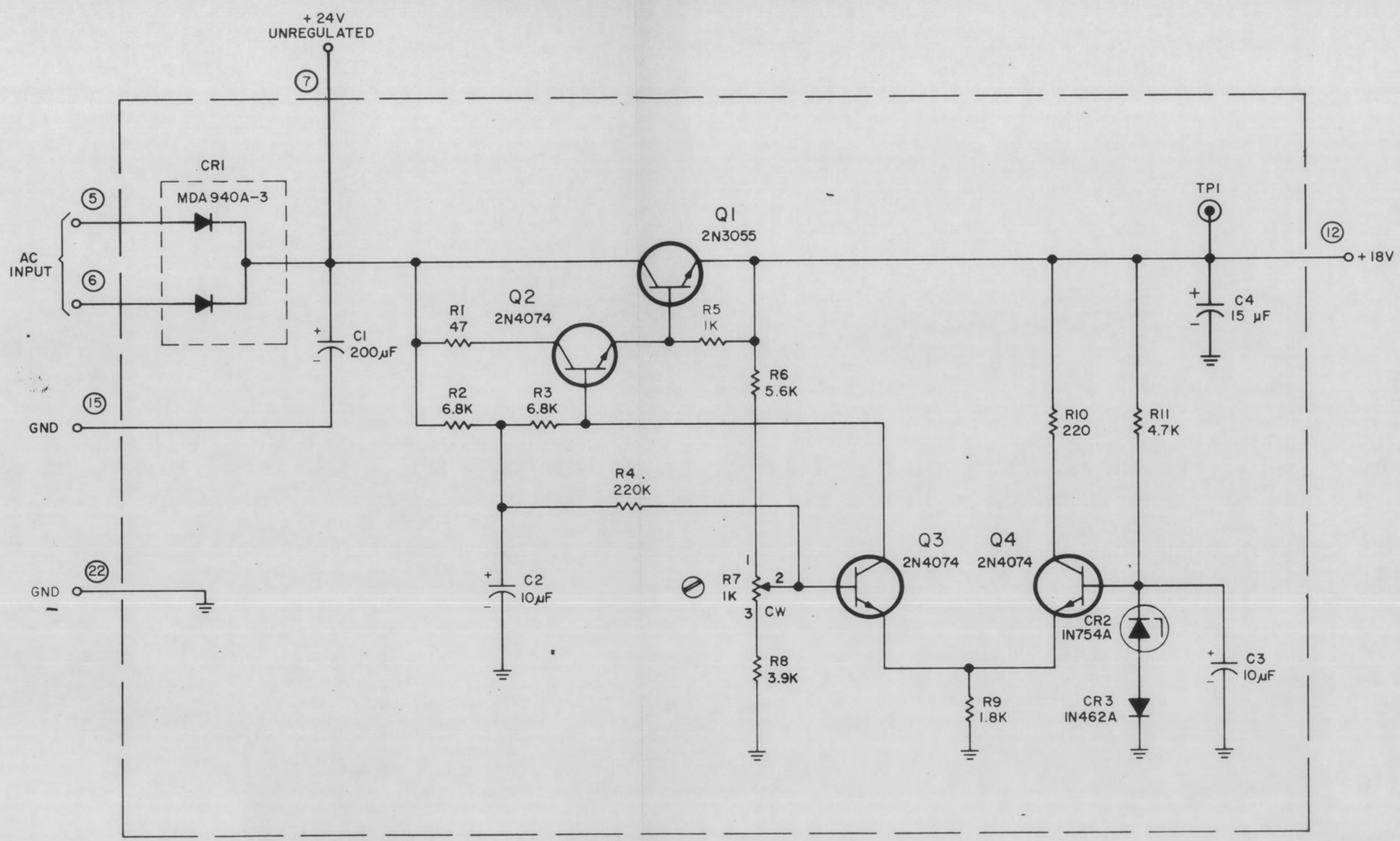
Figure 6-4. Type 7755 Local Oscillator, Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   B. CAPACITANCE IS MEASURED IN μF.
2. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   CW INDICATES CLOCKWISE ROTATION
   ⊘ INDICATES SCREWDRIVER ADJUSTMENT.
3. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS.

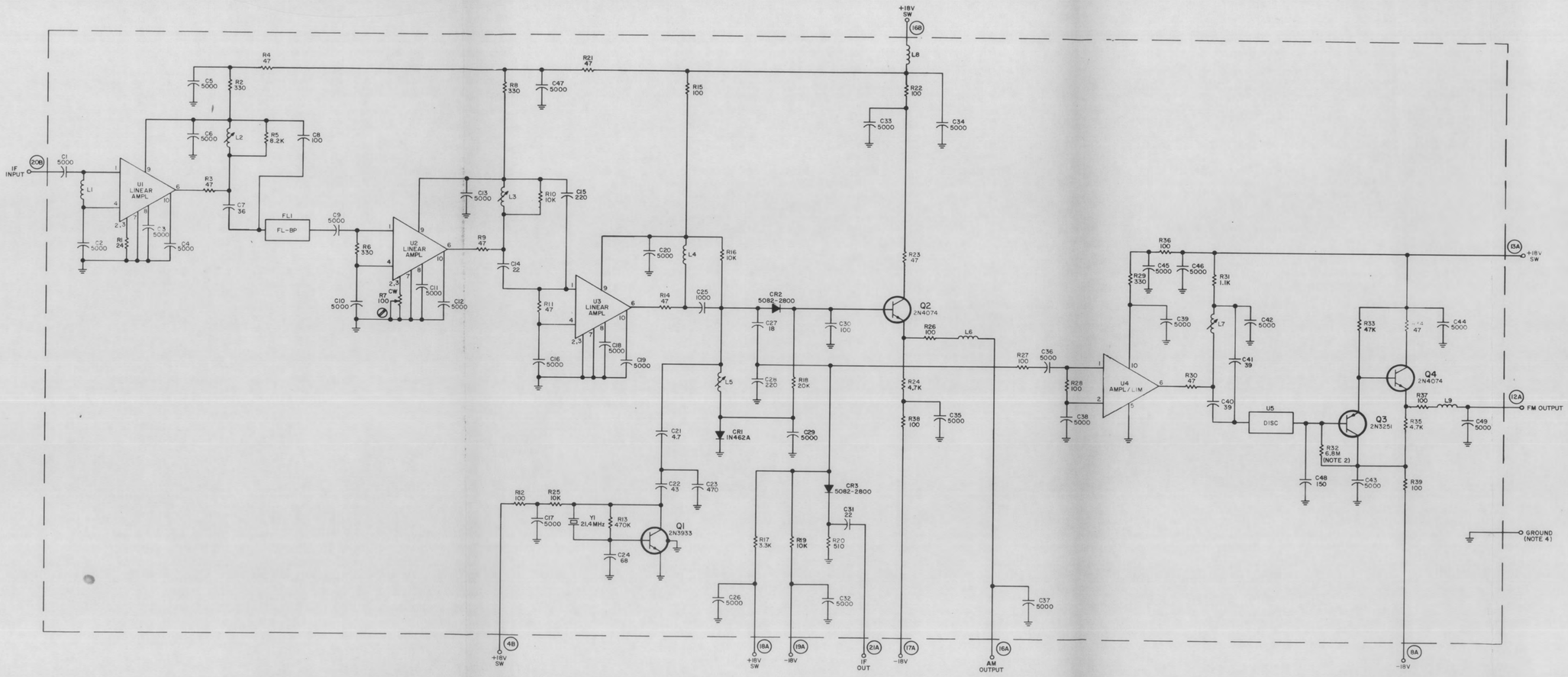
Figure 6-5. Type 76160 -18V Power Supply Regulator Board, Schematic Diagram



NOTES:

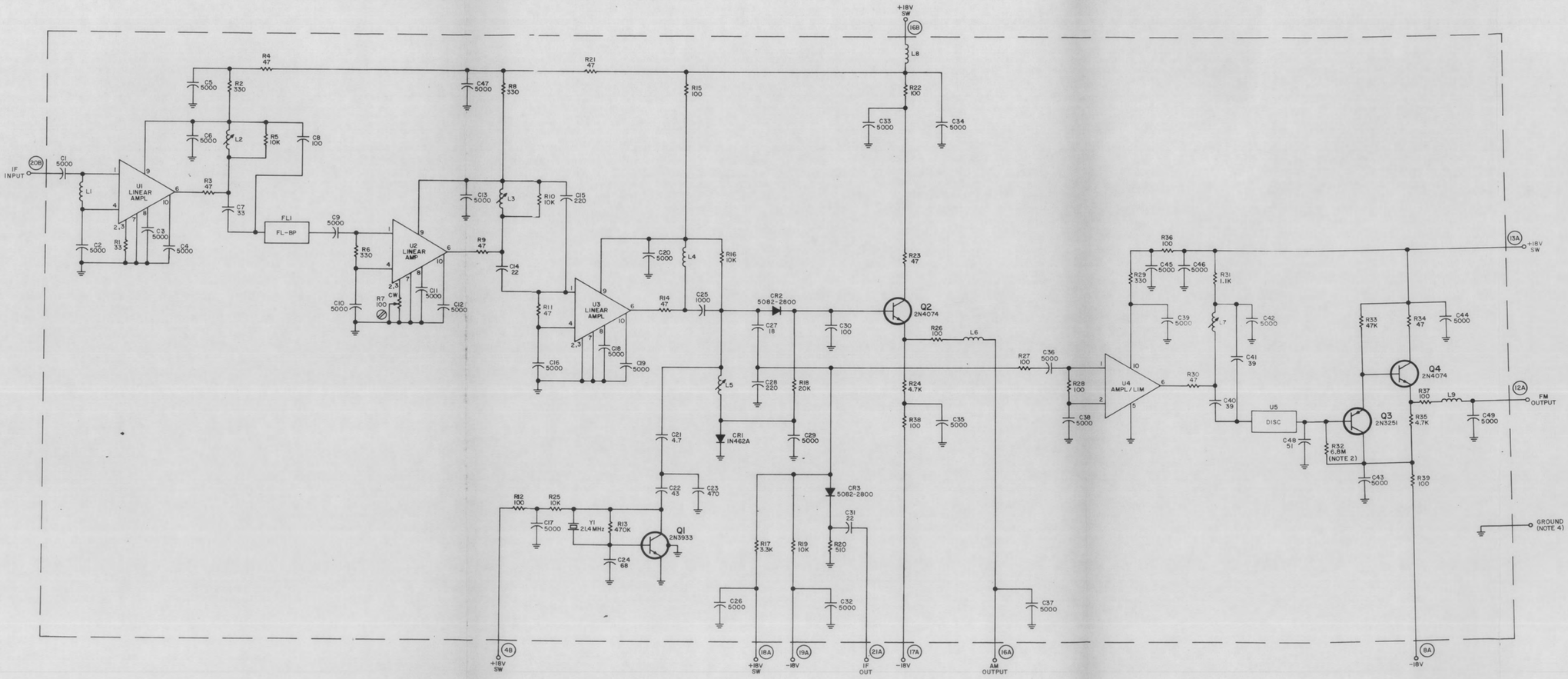
1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE IS MEASURED OHMS, ±5%, 1/4 W
2. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS
3. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS
   CW INDICATES CLOCKWISE ROTATION
   ⊘ INDICATES SCREWDRIVER ADJUSTMENT

Figure 6-6. Type 76162 +18V Power Supply Regulator Board, Schematic Diagram



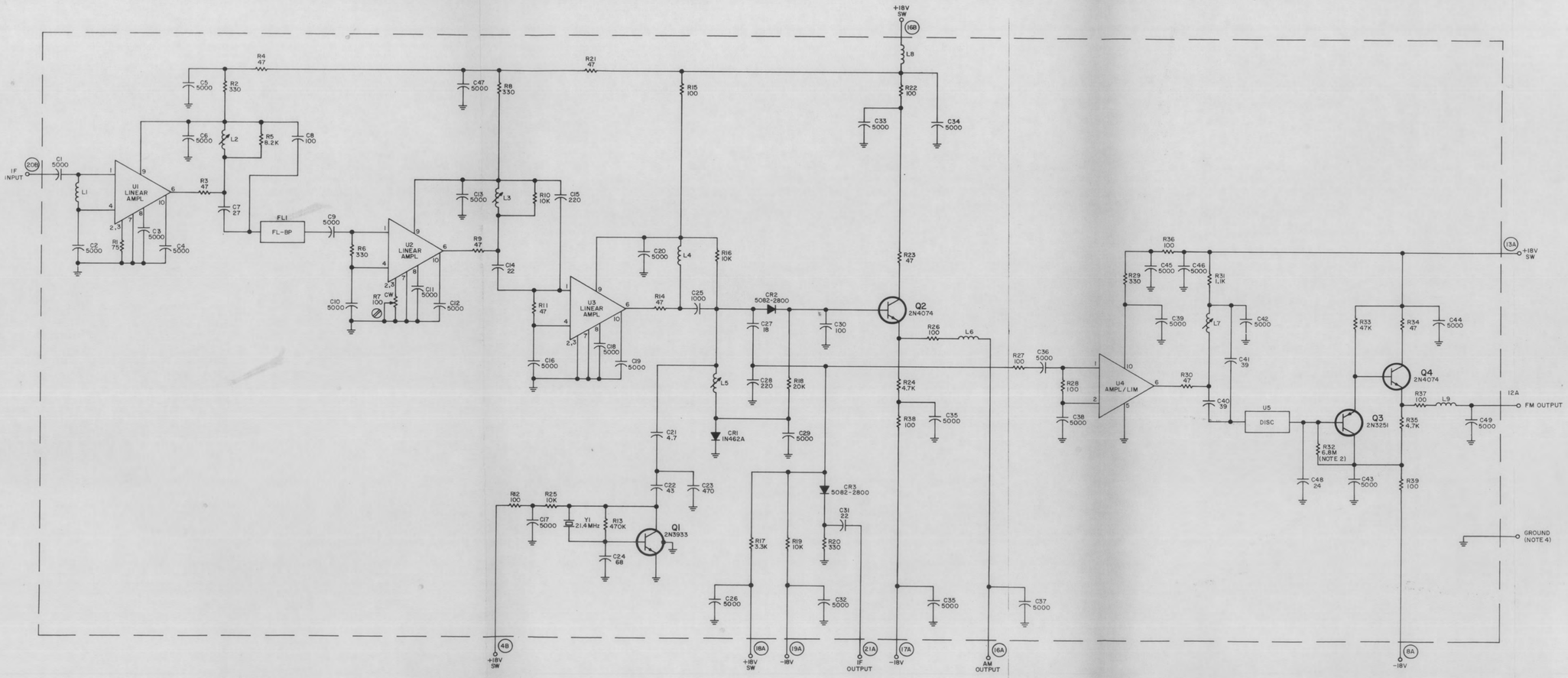
NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. NOMINAL VALUE, FINAL VALUE TO BE FACTORY SELECTED.
3. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   a) CW INDICATES CLOCKWISE ROTATION OF CONTROL KNOB.
   b) ⊘ INDICATES SCREWDRIVER ADJUSTMENT.
4. GROUND PINS FOR PC BOARD ARE AS FOLLOWS:
   1A THRU 7A, 14A, 15A, 20A, 22A,
   1B, 2B, 3B, 5B, THRU 15B, 17B, 18B, 19B, 21B, 22B

Figure 6-7. Type 72277 21.4-MHz IF Amplifier (20 kHz BW), Schematic Diagram



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. NOMINAL VALUE, FINAL VALUE TO BE FACTORY SELECTED.
3. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   CW INDICATES CLOCKWISE ROTATION OF CONTROL KNOB.
   ⊘ INDICATES SCREWDRIVER ADJUSTMENT.
4. GROUND PINS FOR PC BOARD ARE AS FOLLOWS:
   1A THRU 7A, 14A, 15A, 20A, 22A
   1B, 2B, 3B, 5B THRU 15B, 17B, 18B, 19B, 21B, 22B

Figure 6-8. Type 72278 21.4-MHz IF Amplifier (50 kHz BW), Schematic Diagram



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. NOMINAL VALUE, FINAL VALUE TO BE FACTORY SELECTED.
3. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   CW INDICATES CLOCKWISE ROTATION OF CONTROL KNOB.
   ⊘ INDICATES SCREWDRIVER ADJUSTMENT.
4. GROUND PINS FOR PC BOARD ARE AS FOLLOWS:
   1A THRU 7A, 14A, 15A, 20A, 22A
   1B, 2B, 3B, 5B THRU 15B, 17B, 18B, 19B, 21B, 22B

Figure 6-9. Type 72279 21.4-MHz IF Amplifier (100 kHz BW), Schematic Diagram

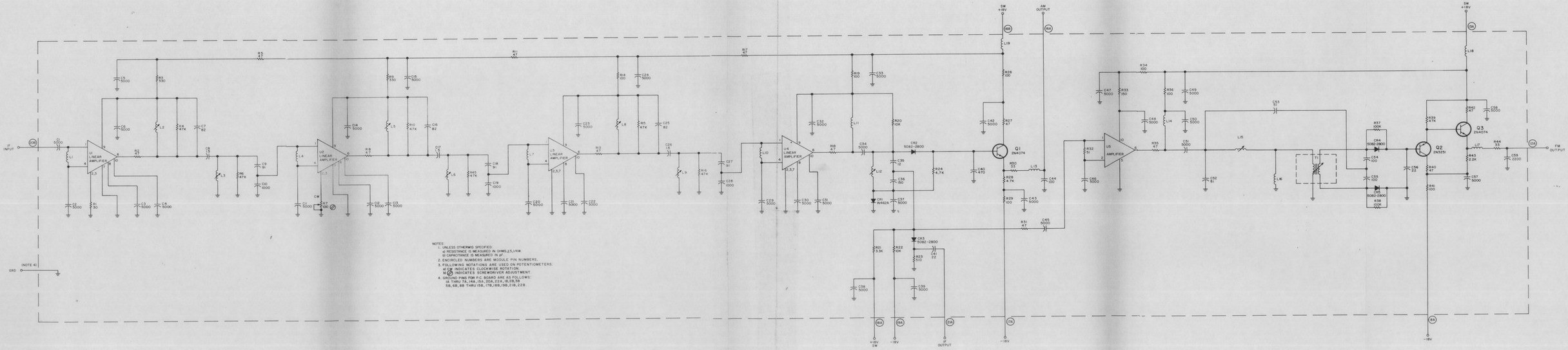
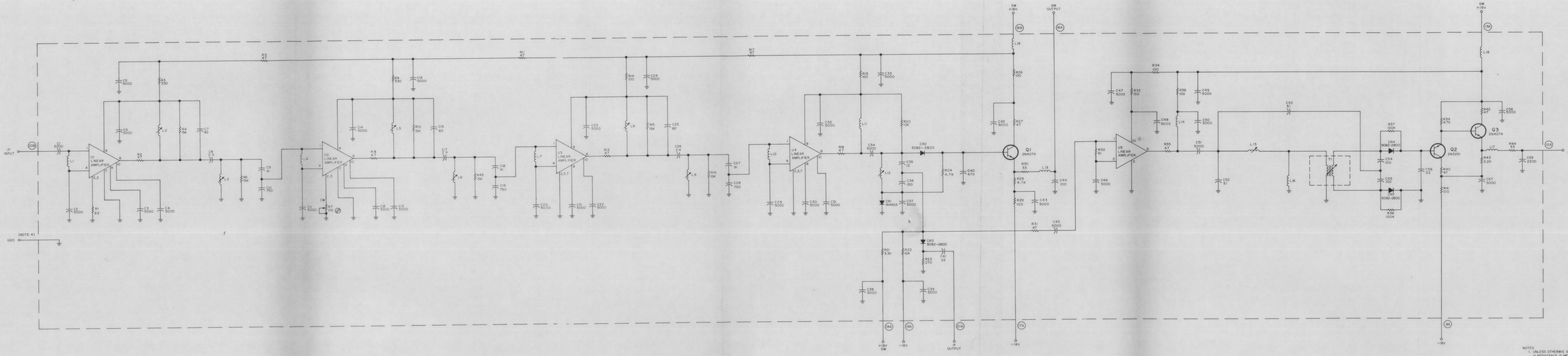
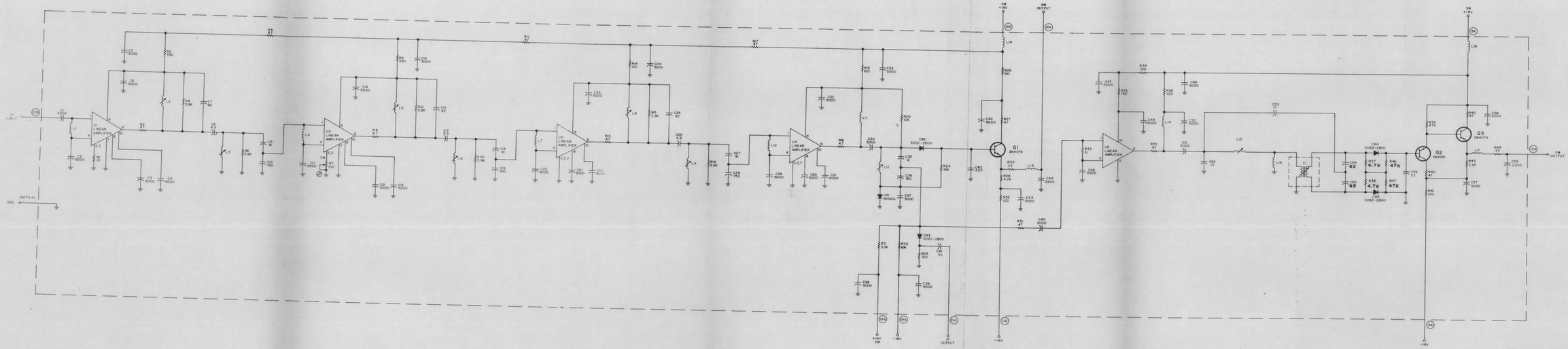


Figure 6-10. Type 72280 21.4-MHz IF Amplifier (300 kHz BW), Schematic Diagram



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5, 1/4W
   b) CAPACITANCE IS MEASURED IN pF.
2. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS.
3. FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   a) ⊕ INDICATES CLOCKWISE ROTATION.
   b) ⊘ INDICATES SCREWDRIVER ADJUSTMENT.
4. GROUND PINS FOR P.C. BOARD ARE AS FOLLOWS:
   1A THRU 7A, 14A, 15A, 20A, 22A, 1B, 2B, 3B
   39, 4B, 8B THRU 15B, 17B, 18B, 19B, 21B, 22B.

Figure 6-11. Type 72281 21.4-MHz IF Amplifier (500 kHz BW), Schematic Diagram



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W
   b) CAPACITANCE IS MEASURED IN pF
2. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS.
3. FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   a) CW INDICATES CLOCKWISE ROTATION.
   b) ⊘ INDICATES SCREWDRIVER ADJUSTMENT.
4. GROUND PINS FOR P.C. BOARD ARE AS FOLLOWS:
   1A THRU 7A, 14A, 15A, 20A, 22A, 8, 28, 38
   5B, 6B, 8B THRU 15B, 17B, 18B, 19B, 21B, 22B.

Figure 6-12. Type 72282 21.4-MHz IF Amplifier (1 MHz BW), Schematic Diagram

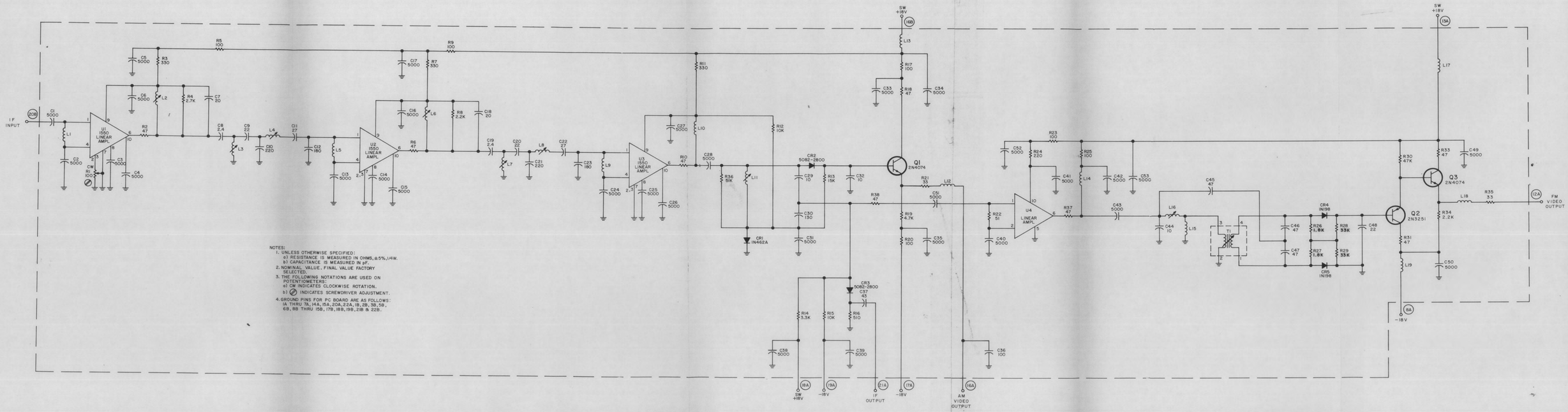
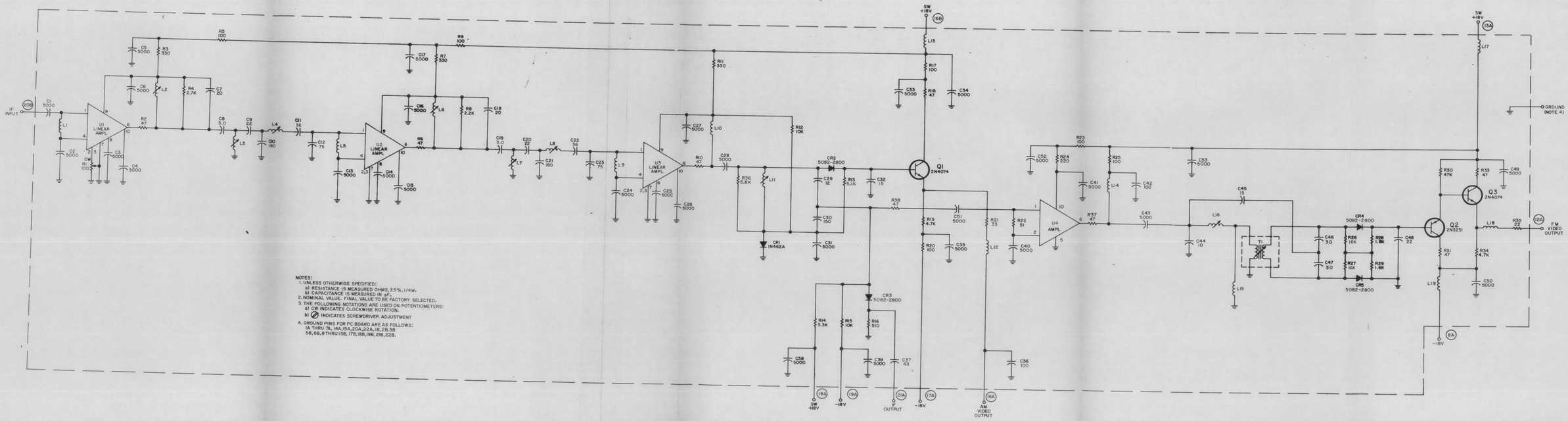


Figure 6-13. Type 72283 21.4-MHz IF Amplifier (2 MHz BW), Schematic Diagram

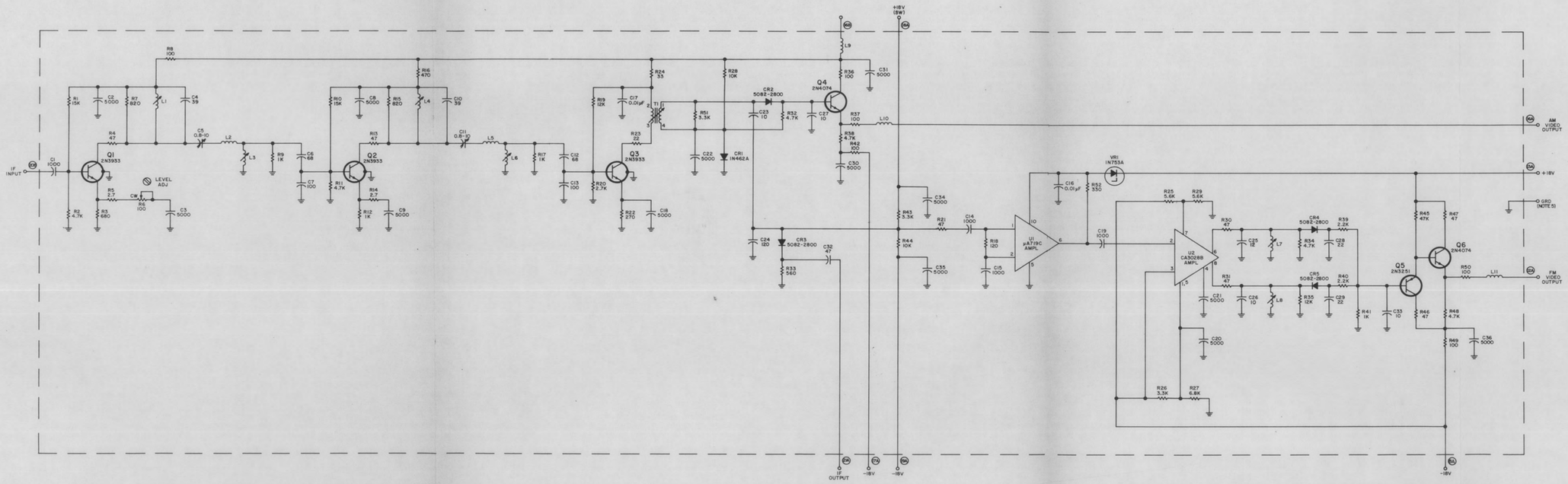
REF DESIG PREFIX A13

REF DESIG PREFIX A12
(DMS-107-1)



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. NOMINAL VALUE. FINAL VALUE TO BE FACTORY SELECTED.
3. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   a) CW INDICATES CLOCKWISE ROTATION.
   b) ⊘ INDICATES SCREWDRIVER ADJUSTMENT
4. GROUND PINS FOR PC BOARD ARE AS FOLLOWS:
   1A THRU 7A, 14A, 15A, 20A, 22A, 1B, 2B, 3B
   5B, 6B, 8 THRU 15B, 17B, 18B, 19B, 21B, 22B.

Figure 6-14. Type 72284 21.4-MHz IF Amplifier (3 MHz BW), Schematic Diagram



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN pF.
2. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS.
3. FOR U1 PIN ARRANGEMENT SEE DETAIL A.

DETAIL A

BOTTOM VIEW

4. FOR U2 PIN ARRANGEMENT SEE DETAIL B.

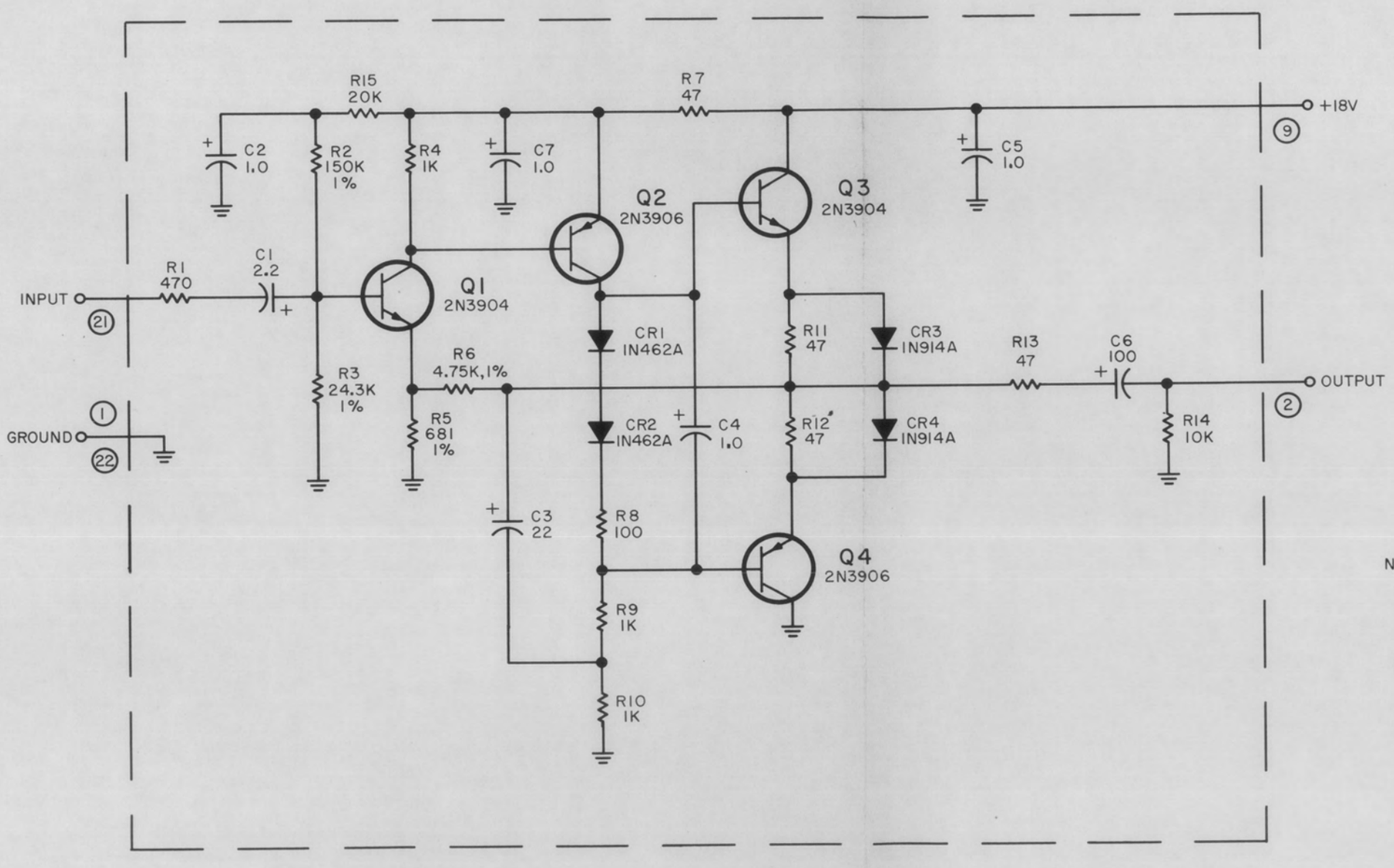
DETAIL B

BOTTOM VIEW

5. GROUND PINS FOR PC BOARD ARE AS FOLLOWS:
   A1 THRU A7, A4, A5, 15A, 20A, 22A, 1B, 2B, 3B, 5B, 6B, 8B THRU 15B, 17B, 18B, 19B, 21B & 22B.
6. THE FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
   a) CW INDICATES CLOCKWISE ROTATION.
   b) ⊘ INDICATES SCREWDRIVER ADJUST.

(DMS-107-1 ONLY)

Figure 6-14A. Type 72312 21.4-MHz IF Amplifier, (5.5 MHz BW) Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
   b) CAPACITANCE IS MEASURED IN μF.
2. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS.

Figure 6-15. Type 7366 Video Amplifier, Schematic Diagram

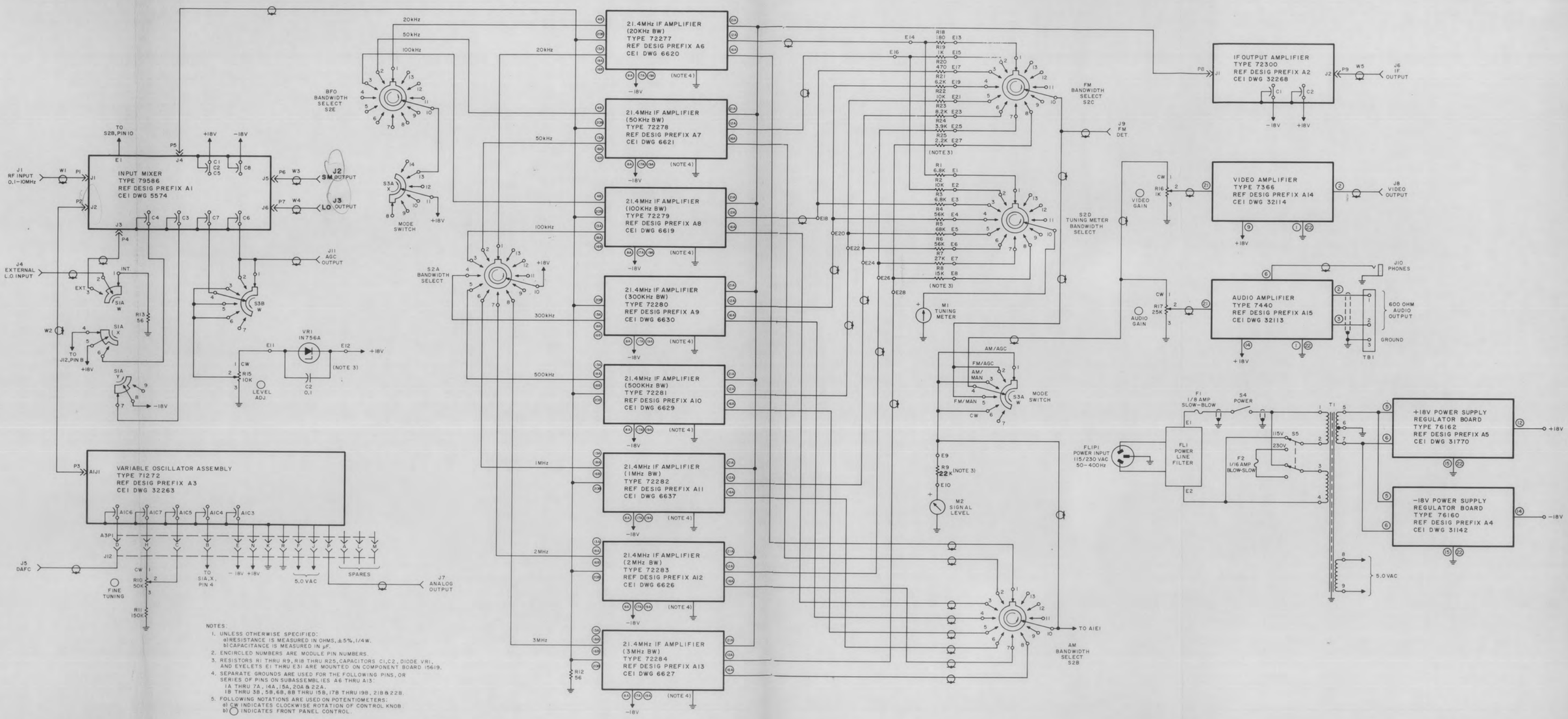


Figure 6-17. Type DMS-107 Demodulator, Main Chassis Schematic Diagram

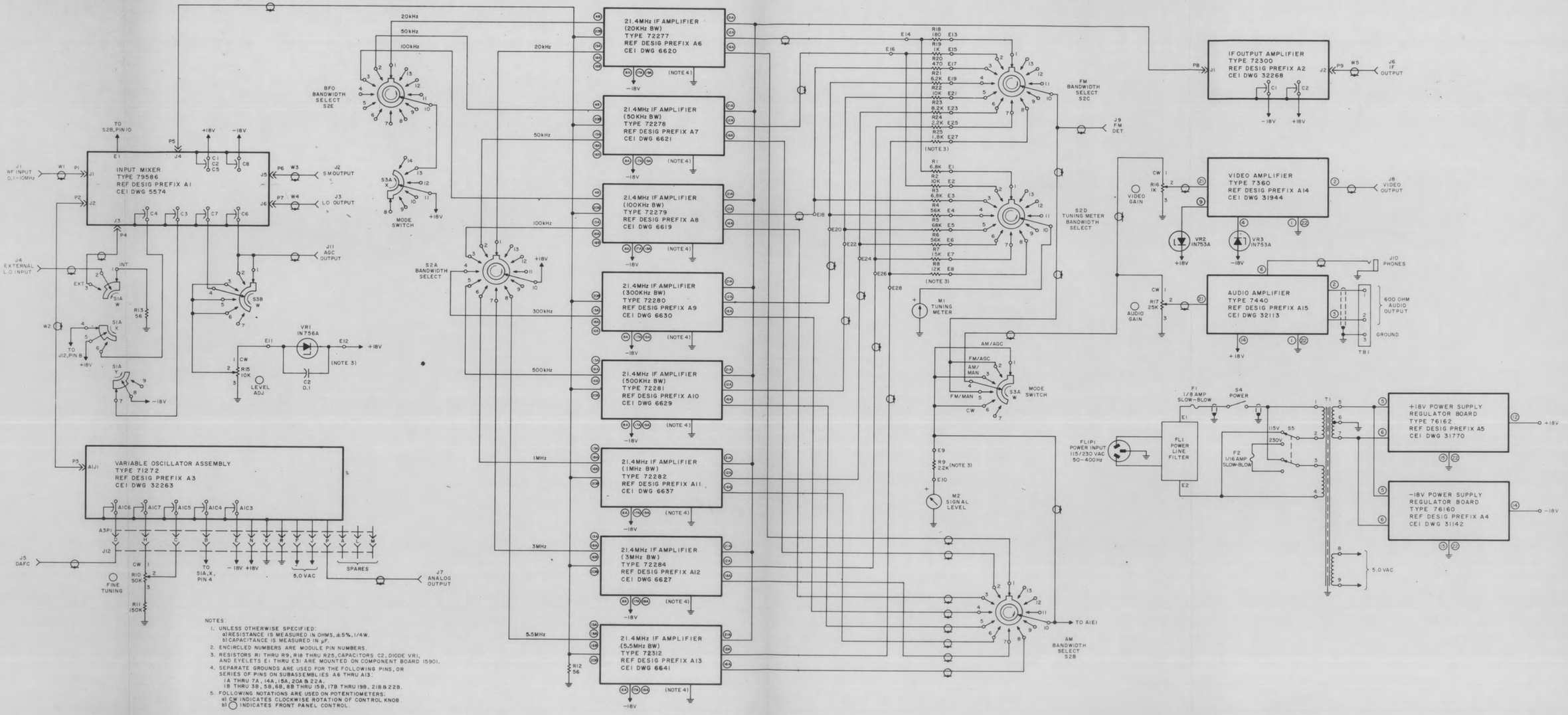


Figure 6-18. Type DMS-107-1 Demodulator, Main Chassis Schematic Diagram