ERICSSON

EDACS™ 900
MASTER OSCILLATOR ASSEMBLY
19D902127G1

TABLE OF CONTENTS

SPECIFICATIONS*

OUTPUT LEVEL	-6dBm minimum
REFERENCE FREQUENCY	17.6125 MHz +0.5 MHz
CURRENT DRAIN	1.5 Amperes maximum
VOLTAGE	24 Volts DC ±20%
TEMPERATURE RANGE	-30°C to +60°C
OUTPUT PORTS	20

*These specifications are intended primarily for use by service personnel. Refer to the appropriate Specification Sheet for complete specifications.

ERICSSON

Ericsson GE Mobile Communications Inc.
Mountain View Road • Lynchburg, Virginia 24502

Printed in U.S.A.

DESCRIPTION

The EDACS 900 Master Oscillator is a self-contained, high stability reference oscillator that supplies the 17.6125 MHz reference frequency to the transmitter and receiver frequency synthesizers. One master oscillator provides reference frequencies for up to 20 trunked repeater stations at the repeater site.

The oscillator shelf contains two identical oscillator circuits to provide high reliability. Should the primary oscillator fail, the standby oscillator is automatically activated to provide continuous operation.

Two separate power supplies are used to supply the oscillator shelf for additional reliability.

CIRCUIT ANALYSIS

Two identical high stability oscillator modules, U5 and U6, are connected in a cold standby arrangement. Should primary oscillator U6 fail, standby oscillator U5 is activated to provide continuous operation. As the basic oscillator circuits are the same, only the primary oscillator circuit will be described. In addition, operation of the switching and alarm circuits, as well as circuits common to both oscillators are included

Regulator U3, pass transistor Q9 and Zener diode VR4 provide a closely regulated 12-volt supply for oscillator module U6. The 17.6125 MHz output at U6-1 is coupled through diode switch D5 and D6 to the input of an RF buffer/amplifier circuit (Q3 and Q4) that provides approximately 30 dB of gain. The output of Q4 is applied to four current mode drivers, U8, U9, U10 and U11. Each of these driver stages drives five outputs. The output jacks (J1 through J20) are mounted on the rear of the oscillator shelf, and provide a -6 dBm signal at 17.6125 MHz.

The output at U6-1 is also applied to a level monitor circuit consisting of amplifier Q5, rectifier Q6 and D8,and comparator U7C. U7D provides the voltage reference for the level monitor circuit. R72 adjusts the level that switches operation from primary oscillator U6 (OSC-1) to secondary oscillator U5 (OSC-2).

When U6 is operating properly, the output at comparator output U7C-8 is approximately 1.2 volt. This keeps switching transistors Q5 off and Q10 on, and allows the OSC 1 indicator LED to turn on. When Q10 is on, regulator U3 is turned off, keeping secondary oscillator U5 turned off. If U6 should fail, the comparator circuit switches the output at U7C-8 to approximately 10 volts. This turns on Q7 and turns off Q10, allowing secondary oscillator U5 to start operating. The output of the OSC-2 comparator goes low, turning on the yellow OSC 2 indicator LED.

The OSC-2 output is coupled through the RF buffer/amplifier stage and applied to the driver stages which provide up to 20 outputs for the repeater stations.

The alarm and oscillator detector outputs are connected to J24 to allow remote sensing of the oscillator board status. A test switch is located in the front panel to allow manual testing of the standby oscillator circuitry. This lead is also connected to J22-3 to allow remote testing of the circuit.

Supply voltage for the oscillator board is provided by the 24 volt power supply. The supply voltage is applied at J23 through steering diodes D14 and D15 from two different power supplies for reliability. The 24-volt input powers the four 12-volt regulators on the oscillator board. Regulators U1 and U2 outputs are paralleled through diodes D1 and D2 for added reliability.

An alarm circuit consisting of Q11, Q12, Q13 and diodes D18 and D19 provides a visual alarm on the front panel, and activates a remote alarm output at J22-4. This alarm is activated if either regulator U1 or U2 fails, or if both oscillators should fail.

If U1 or U2 fails, Q11 or Q12 will turn on. This lights the red ALARM indicator and turns on Q14 to provide a "low" alarm output at J22-4.

Should both oscillators stop running, the outputs at U7B-7 and U7C-8 will switch to approximately 10 volts. These voltages will reverse bias D18 and D19, causing Q13 to turn on. Turning on Q13 also turns on Q12, lighting the red alarm LED. This also turns on Q14 applying a "low" to J22-4 for the remote alarm circuit.

ADJUSTMENT PROCEDURE

Alarm adjust potentiometers R2 and R72 are the only two adjustments on the Master Oscillator board, and will not normally require adjustment. However, if it becomes necessary to replace parts due to component failure or other reasons, adjust R2 and R72 as follows:

1. Apply power to the Master Oscillator shelf and let the oscillators warm up for about 5 minutes.
2. Turn both R2 and R72 fully counterclockwise. The Green Osc-1 indicator (D10) and The Yellow OSC-2 indicator (D11) should be OFF, and the Red ALARM indicator (D9) should be ON.
3. Turn R2 fully clockwise. The Yellow OSC-2 indicator should turn ON, and the Red ALARM indicator should turn OFF.
4. Connect a 10-ohm resistor with short leads from pin 1 of U5 (or C11) to ground on U5. The Yellow OSC-2 indicator should be ON, and the Red ALARM indicator should be OFF. Then turn R2 counterclockwise until the OSC-2 Yellow indicator turns OFF and the Red ALARM indicator turns ON. Now remove the 10-ohm resistor. The Yellow OSC-2 indicator should turn ON and the Red ALARM indicator should turn OFF.
5. Next, turn R72 fully clockwise. The Green OSC-1 indicator should turn ON, and the Yellow and Red indicators should turn OFF.
6 Connect the 10-ohm resistor (with short leads) from pin 1 of U6 (or C29) to ground on U6. The Green OSC-1 indicator should be ON and the Red ALARM indicator should be OFF. Next, turn R72 counterclockwise until the Green OSC-1 indicator turns OFF. The Yellow OSC-2 indicator and the Red ALARM indicator should be ON. Then remove the 10-ohm resistor. The Yellow OSC-2 indicator and the Red ALARM indicator should be OFF, and the Green OSC-1 indicator should be ON.

SYSTEM CHECKS:

1. After setting R2 and R72, measure the frequency and output power. The frequency should be 17.6125 MHz ±0.5 Hz and the output power at all ports should be greater than -6 dBm (into 50 ohms).

CAUTION

Normal test equipment is not stable enough to measure the absolute frequency of the master oscillator. A National Bureau of Standards must be used to correctly measure the frequency. Do not adjust the frequency unless proper equipment is available.

2. Depress the Test Switch (or short across J21-1 and J21-2). With the Test Switch depressed or shorted, the remote monitor DC voltage at J22-2 should be 9 to 10 Volts. The Green OSC-1 indicator should be OFF, the Yellow OSC-2 indicator should be ON, and the Red ALARM indicator should be OFF.
3. Repeat the frequency and output checks (Step 1 of System Checks) for the standby oscillator.

900 MHz MASTER OSCILLATOR
19D902127G1
ISSUE 2

SYMBOL	GE PART NO.	DESCRIPTION
A1		MASTER OSCILLATOR BOARD 19D902100G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1 and C2	19A701225P4	Electrolytic: 330 uF ±10%, 25 VDCW.
C3 and C4	19A701225P2	Electrolytic: 10 uF +50-10%, 25 VDCW.
C5 thru C8	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C9	19A700121P2	Ceramic: 0.01 uF ± 20%, 50 VDCW.
C10	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C11	7489162P41	Silver mica: 390 pF ±5%, 500 VDCW; sim to Sprague Type 118.
C12 thru C25	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C26 thru C28	19A703314P4	Electrolytic: 47 uF -10+50% tol, 16 VDCW; sim to Panasonic LS Series.
C29	7489162P41	Silver mica: 390 pF ±5%, 500 VDCW; sim to Sprague Type 118.
C30 thru C37	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C38	19A700121P2	Ceramic: 0.01 uF ± 20%, 50 VDCW.
C39 thru C45	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C46	19A700233P2	Ceramic: 150 pF ±20%, 50 VDCW.
C47	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C48	19A700233P2	Ceramic: 150 pF ±20%, 50 VDCW.
C49	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C50 thru C53	19A700121P2	Ceramic: 0.01 uF ± 20%, 50 VDCW.
C54	19A116192P14	Ceramic: 0.1 uF ±20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
C55	19A700121P2	Ceramic: 0.01 uF ± 20%, 50 VDCW.
		- - - - - - - - - - DIODES - - - - - - - - - -
D1 and D2	7324ADP1041	Silicon: Rectifier; sim to 1N4004.
D3 thru D6	19A116052P2	Silicon, fast recovery; sim to Hewlett Packard 5082-2811.
D7 and D8	19A700028P1	Silicon: 75 mA, 75 PIV; sim to 1N4148.
D9	19A134354P1	Optoelectronic: Red; sim to HP 5082-4655.
D10	19A134354P3	Optoelectronic: Green; sim to HP 5082-4955.
D11	19A134354P2	Optoelectronic: Yellow; sim to HP 5082-4555.
D12 and D13	7324ADP1041	Silicon: Rectifier; sim to 1N4004.
D14 and D15	19A702977P1	Diode, Silicon, SCHOTTKY: sim to IN5822.
D16 and D17	19A134354P3	Optoelectronic: Green; sim to HP 5082-4955.
D18 and D19	19A700028P1	Silicon: 75 mA, 75 PIV; sim to 1N4148.
		- - - - - - - - - - JACKS - - - - - - - - - -
J1 thru J20	19A705812P1	Connector, RF SMB Series: sim to AMP No. 221111-1.
J21	19A704852P28	Printed wire: 2 contacts rated @ 7.5 amps.
J22	19A704852P30	Printed wire: 4 contacts rated @ 2 1/2 amps; sim to Molex 22-29-2041.
J23	19A116659P55	Connector, printed wiring: 3 contacts rated at 5 amps; sim to Molex 09-65-1031.
J24* and J25*	19A704852P2	Connector: 3 Pin Male Header.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19A115031P1	Choke, RF: 120 mH ±10%.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P24* and P25*	19A702104P2	Connector: Shorting Jumper, Gold Plated. (Housing Color: White). Added by REV. A.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1 thru Q6	19A702503P2	Silicon, NPN: sim to 2N4401.
Q7	19A700023P2	Silicon, NPN: sim to 2N3904.
Q8 and Q9	19A116118P1	Transistor, silicon; NPN. Part of Heat Sink Assembly (item 11).
Q10	19A700023P2	Silicon, NPN: sim to 2N3904.
Q11 and Q12	19A700022P2	Silicon, PNP: sim to 2N3906.
Q13 and Q14	19A700023P2	Silicon, NPN: sim to 2N3904.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	19A701250P266	Metal film: 4.75K ohms ±1%, 1/4 w.
R2	19B800779P8	Variable, cermet: 4.7K ohms ±25%, .5 w.
R3	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R4	19A701250P351	Metal film: 33.2K ohms ±1%, 250 VDCW, 1/4 w.
R5	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R6	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R7	19A701250P52	Metal film: 34 ohms ±1%, 250 VDCW, 1/4 w.
R8	19A701250P151	Metal film: 332 ohms ±1%, 250 VDCW, 1/4 w.
R9	19A701250P534	Metal film: 22.1K ohms ±1%, 1/4 w.
R10	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R11 and R12	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R13 and R14	19A701250P243	Metal film: 2.74K ohms ±1%, 1/4 w.
R15	19A701250P401	Metal film: 100K ohms ±1%, 1/4 w.
R16	19A701250P351	Metal film: 33.2K ohms ±1%, 250 VDCW, 1/4 w.
R17	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R18	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R19	19A701250P52	Metal film: 34 ohms ±1%, 250 VDCW, 1/4 w.
R20	19A701250P151	Metal film: 332 ohms ±1%, 250 VDCW, 1/4 w.
R21	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R22	19A701250P266	Metal film: 4.75K ohms ±1%, 1/4 w.
R23	19A701250P109	Metal film: 121 ohms ±1%, 250 VDC.
R24 and R25	19A701250P334	Metal film: 22.1K ohms ±1%, 1/4 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
R26	19A701250P1	Metal film: 10 ohms ±1%, 1/4 w.
R27 and R28	19A701250P334	Metal film: 22.1K ohms ±1%, 1/4 w.
R29	19A701250P1	Metal film: 10 ohms ±1%, 1/4 w.
R30 thru R49	19A701250P65	Metal film: 46.4 ohms ±1%, 250 VDC, 1/4 w.
R50 thru R53	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R54	19A701250P158	Metal film: 392 ohms ±1%, 1/4 w.
R55 and R56	19A701250P247	Metal film: 2.74K ohms ±1%, 1/4 w.
R57 and R58	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R59	19A701250P251	Metal film: 3320 ohms ±1%, 1/4 w.
R60	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R61	19A701250P351	Metal film: 33.2K ohms ±1%, 250 VDCW, 1/4 w.
R62	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R63	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R64	19A701250P52	Metal film: 34 ohms ±1%, 250 VDCW, 1/4 w.
R65	19A701250P151	Metal film: 332 ohms ±1%, 250 VDCW, 1/4 w.
R66	19A701250P334	Metal film: 22.1K ohms ±1%, 1/4 w.
R67	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R68 and R69	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R70	19A701250P158	Metal film: 392 ohms ±1%, 1/4 w.
R71	19A701250P268	Metal film: 4.75K ohms ±1%, 1/4 w.
R72	19B800779P8	Variable, cermet: 4.7K ohms ±25%, .3 w.
R73	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R74	19A701250P401	Metal film: 100K ohms ±1%, 1/4 w.
R75	19A701250P147	Metal film: 301 ohms ±1%, 1/4 w.
R77 and R78	19A701250P218	Metal film: 1.5K ohms ±1%, 1/4 w.
R79 and R80	19A701250P334	Metal film: 22.1K ohms ±1%, 1/4 w.
R81	19A701250P1	Metal film: 10 ohms ±1%, 1/4 w.
R82 and R83	19A701250P334	Metal film: 22.1K ohms ±1%, 1/4 w.
R84	19A701250P1	Metal film: 10 ohms ±1%, 1/4 w.
R85	19A700113P162	Composition: 1.0 ohms ± 5%, 1/2 w.
R86	19A701250P66	Metal film: 47.5 ohms ±1%, 1/4 w.
R87	19A701250P258	Metal film: 3.92K ohms ±1%, 1/4 w.
R88	19A701250P272	Metal film: 49K ohms ±1%, 250 VDCW, 1/4.
R89	19A701250P201	Metal film: 1K ohms ±1%, 250 VDCW, 1/4 w.
R90	19A701250P181	Metal film: 681 ohms ±1%, 250 VDC, 1/4 w.
R91	19A700113P162	Composition: 1.0 ohms ± 5%, 1/2 w.
R92	19A701250P66	Metal film: 47.5 ohms ±1%, 1/4 w.
R93	19A701250P258	Metal film: 3.92K ohms ±1%, 1/4 w.
R94	19A701250P272	Metal film: 49K ohms ±1%, 250 VDCW, 1/4.
R95	19A701250P181	Metal film: 681 ohms ±1%, 250 VDC, 1/4 w.
R96	19A701250P234	Metal film: 2.21K ohms ±1%, 250 VDCW, 1/4.
R97	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R98	19A701250P234	Metal film: 2.21K ohms ±1%, 250 VDCW, 1/4.
R99	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R100* and R101*	19A116279P233	Metal film: 2150 ohms ± 2%, 1/2 w.
R102 thru R106	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R107	19A701250P234	Metal film: 2.21K ohms ±1%, 250 VDCW, 1/4.
R108	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R109	19A701250P234	Metal film: 2.21K ohms ±1%, 250 VDCW, 1/4.
R110	19A701250P301	Metal film: 10K ohms ± 1%, 1/4 w.
R111* thru R114*	19A701250P65	Metal film: 46.4 ohms ±1%, 250 VDC, 1/4 w. Added by REV. A.
		- - - - - - - - INTEGRATED CIRCUITS - - - - - - - -
U1 and U2	19A134717P2	Positive Voltage Regulator: sim to UA7812U. Part of Heat Sink Assembly (item 11).
U3 and U4	19A705533P1	Linear, Negative or Positive VOLTAGE REGULATOR:
U5 and U6	19A705569P1	Oven Controlled Crystal Oscillator; 17.6125 MHz.
U7	19A701789P1	Linear: Quad Op Amp; sim to LM324.
U8 thru U11	19A705544P1	Current Amplifier: sim to National.
		- - - - - - - - VOLTAGE REGULATORS - - - - - - - -
VR1 and VR2	19A700025P5	Silicon, zener: 400 mW max; sim to BZX55-C4V7.
VR3 and VR4	19A700025P13	Silicon, zener: 400 mW max; sim to BZX55-C18.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
5	19A700034P4	Nut, hex: No. M3 x 0.5HH.
6	19A700033P5	Lock washer, external tooth: No. 3.
10	19J706152P3	Strap: sim to Panduit Corp. SST-1.
11	19B801537G1	Heat Sink Assembly. Includes:
12	19B801557P1	Insulation sheet.
13	19A702364P110	Machine Screw, TORX Drive: M2 x .4 x 10
14	19A700034P2	Hexnut: M.2 x 4.
15	19A700033P1	Lock washer, external tooth: No. 2.
		- - - - - - - - - - - CABLES - - - - - - - - - - -
W1 thru W20		CABLE ASSEMBLY 19B801529G6
	19B800560P2	RF Cable.
	19A705512P3	Connector, RF SMB series: sim to AMP 228213-1.
	19A115938P1	Connector, coaxial: (BNC Series); sim to Amphenol 31-318. (Used in G6).
W21		CABLE ASSEMBLY 19B801526G1
		- - - - - - - - - - - JACKS - - - - - - - - - - -
J1	19B209288P3	Shell.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P22	19A700041P30	Shell.
P23	19A116659P14	Shell.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A704779P26	Connector, printed wiring: sim to Molex 08-55-0101.
	19A116781P4	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08 50-0107.
	19B209288P29	Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141.
	19B209288P1	Contact, electrical: wire size No. 14-20 AWG; sim to Molex 02-09-1101.
	19J706152P5	Retainer strap: sim to Panduit Corp. SST-1.

SYMBOL	GE PART NO.	DESCRIPTION
W22		CABLE ASSEMBLY 19B801545G1
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P21	19A700041P28	Shell.
		- - - - - - - - - - - SWITCHES - - - - - - - - -
S1	7481654P1	Pushbutton: red, single pole, normally open, 1/2 amp at 115 VAC; sim to Grayhill 10XY2042.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A704779P26	Connector, printed wiring: sim to Molex 08-55-0101.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19B902136G1	Chassis Assembly.
	19C851677P1	Cover.
	19B801544P1	Angle mount.
	19B801544P2	Angle mount.
	N193P1204B6	Screw, thread forming: No. 6-20 X 1/4. (Used to secure cover).
	19A701863P17	Cable clamp. (Used to secure W21).
	4033394P1	Nut, knurled: thd. size No. 15/32-32. (Used to secure S1).
	7115130P11	Lockwasher: 15/32; sim to Shakeproof 1222-1. (Used to secure S1).
	7115195P2	Hex nut: 15/32. (Used to secure S1).
	N80P13005B6	Machine screw, panhead: No. 6-32 x 5/16.
	N80P16007B6	Machine screw, pan head: No. 8-40 X 3/8. (Used to secure cover).
	N403P19B6	Lockwasher: No. 10. (Used to secure cover).
	N210P16B6	Nut, steel: No. 10-32. (Used to secure cover).
	N404P13B6	Lockwasher, internal tooth: No. 6.
	7127662P2	Flatwasher: 5/8 OD. (Used to secure S1).
	19A705710P1	Nameplate, CAUTION.

PRODUCTION CHANGES

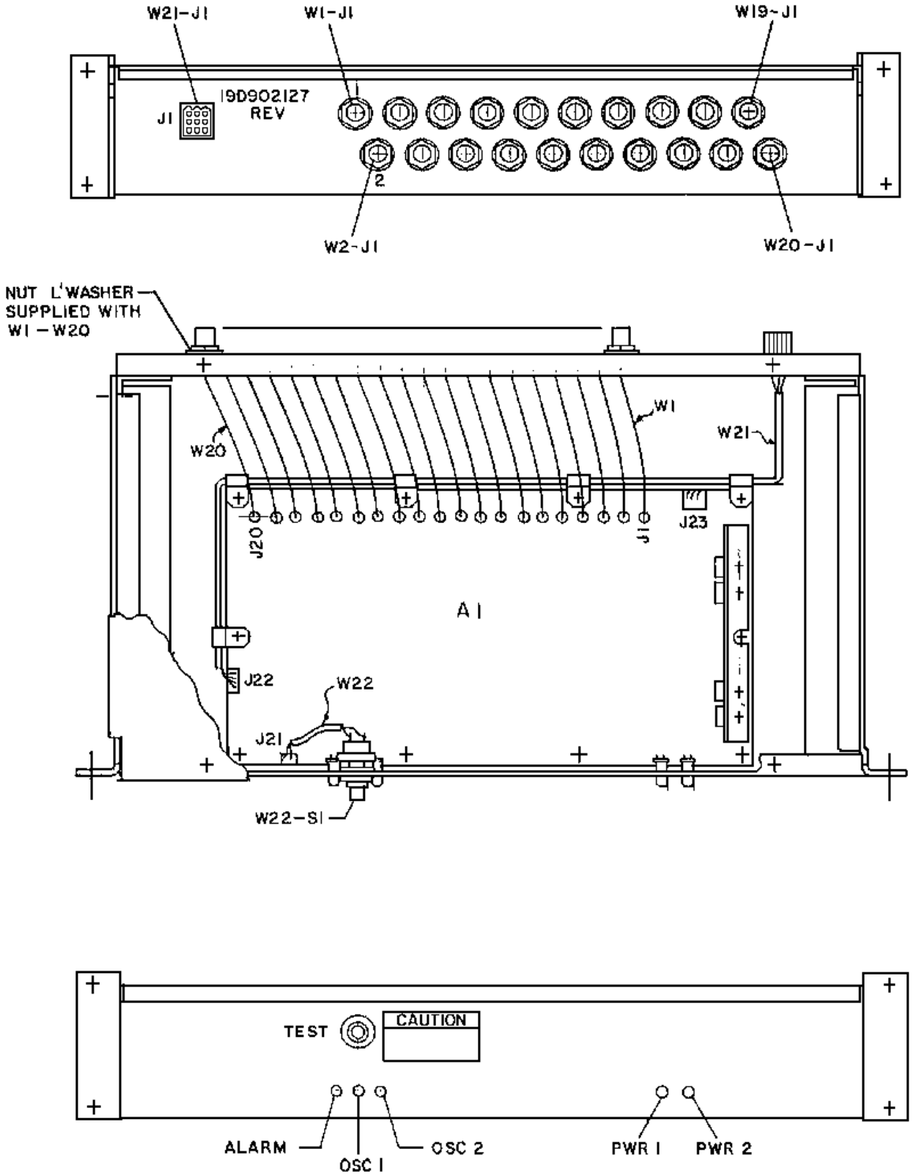
Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for the descriptions of parts affected by these revisions.

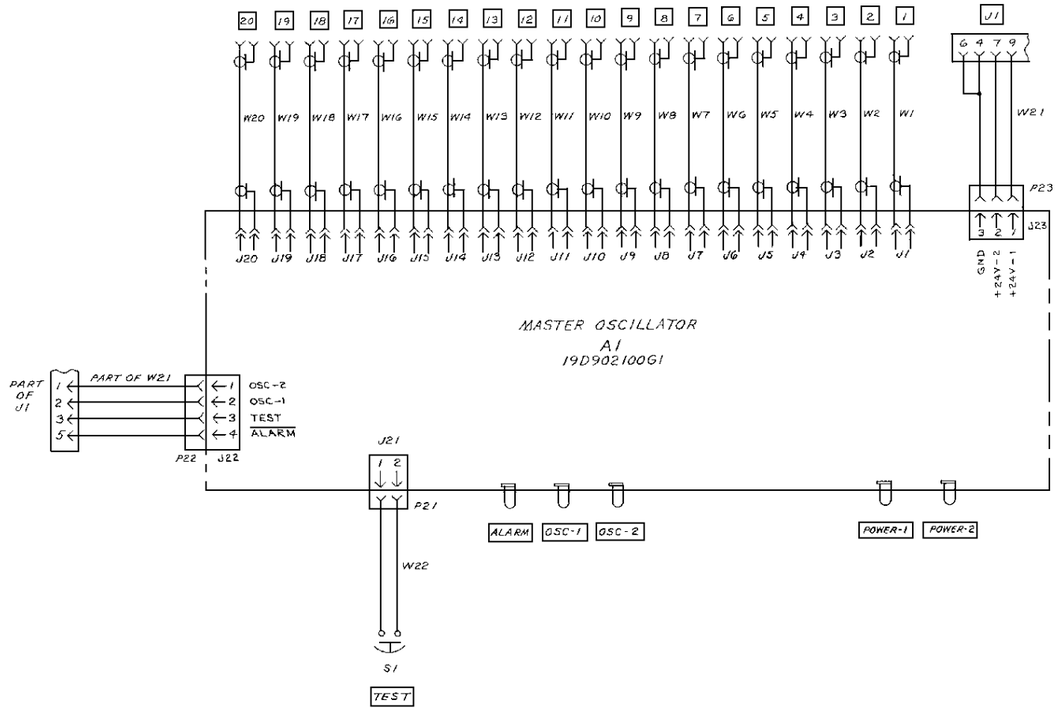
REV. A 900 MHz MASTER OSCILLATOR BOARD 19D902136G1

To improve producibility; changed jacks J24 and J25, added plugs P24 and P25, changed resistors R100 and R101, and added R111 thru R114. Old part numbers were:

J24 and J25 19A704852P28 Connector printed wire.

R100 and R101 19A701250P234 Metal film, 2.21K ohms ±1%, ¼ w.

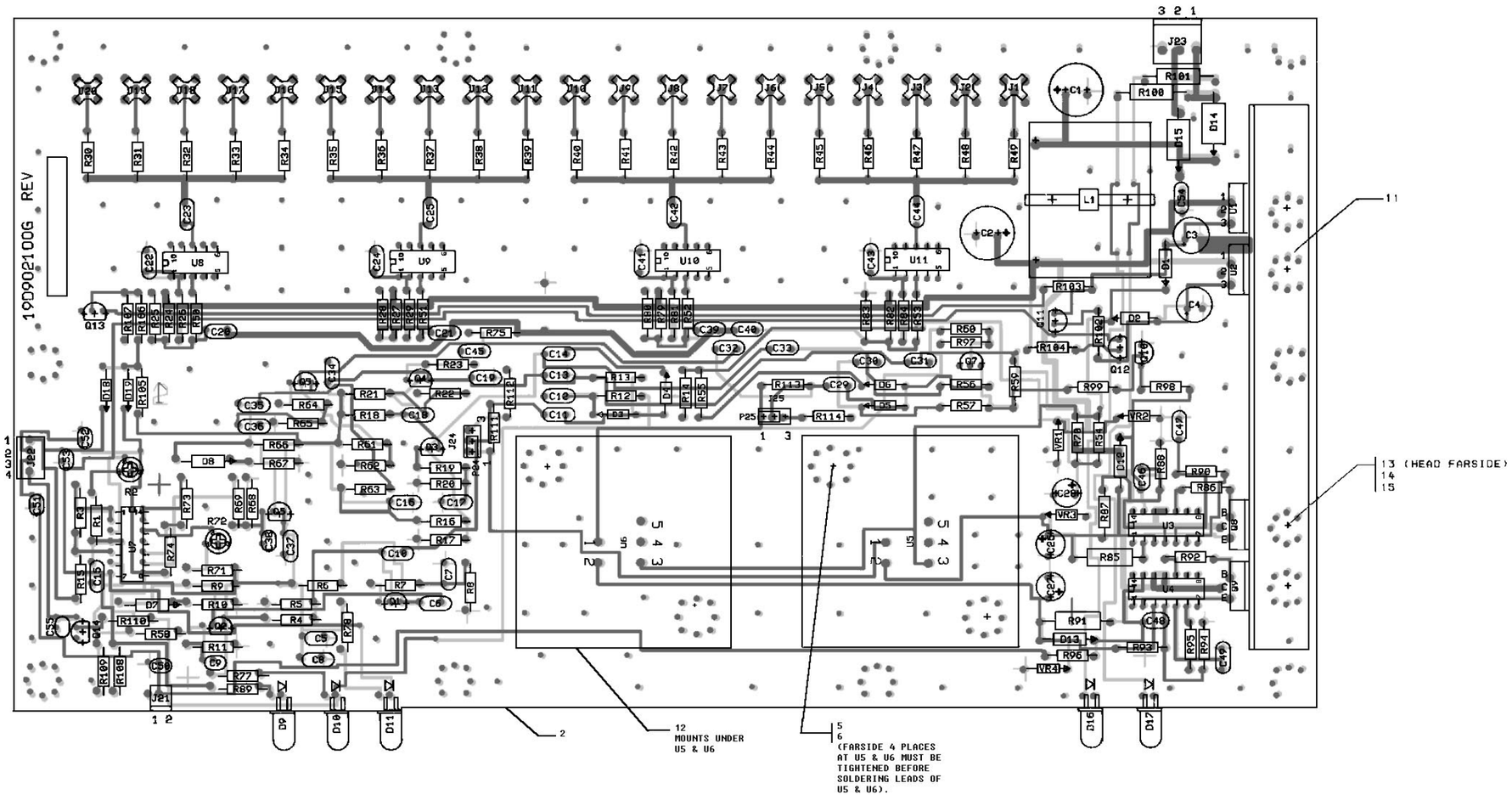




EDACS 900
MASTER OSCILLATOR PANEL
19D902127G1

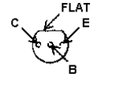
(19D902138, Sh. 1, Rev. 1)

COMPONENT SIDE



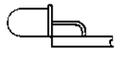
(19D902100, Sh. 1, Rev. 1)
(19A705492, Sh. 2, Rev. 2)
(19A705492, Sh. 4, Rev. 1)

LEAD
FOR Q1-Q7 & Q10-Q14

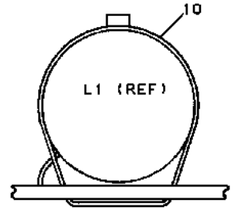


IN-LINE
TOP VIEW

NOTE: CASE SHAPE IS DETERMINNG FACTOR FOR LEAD IDENTIFICATION

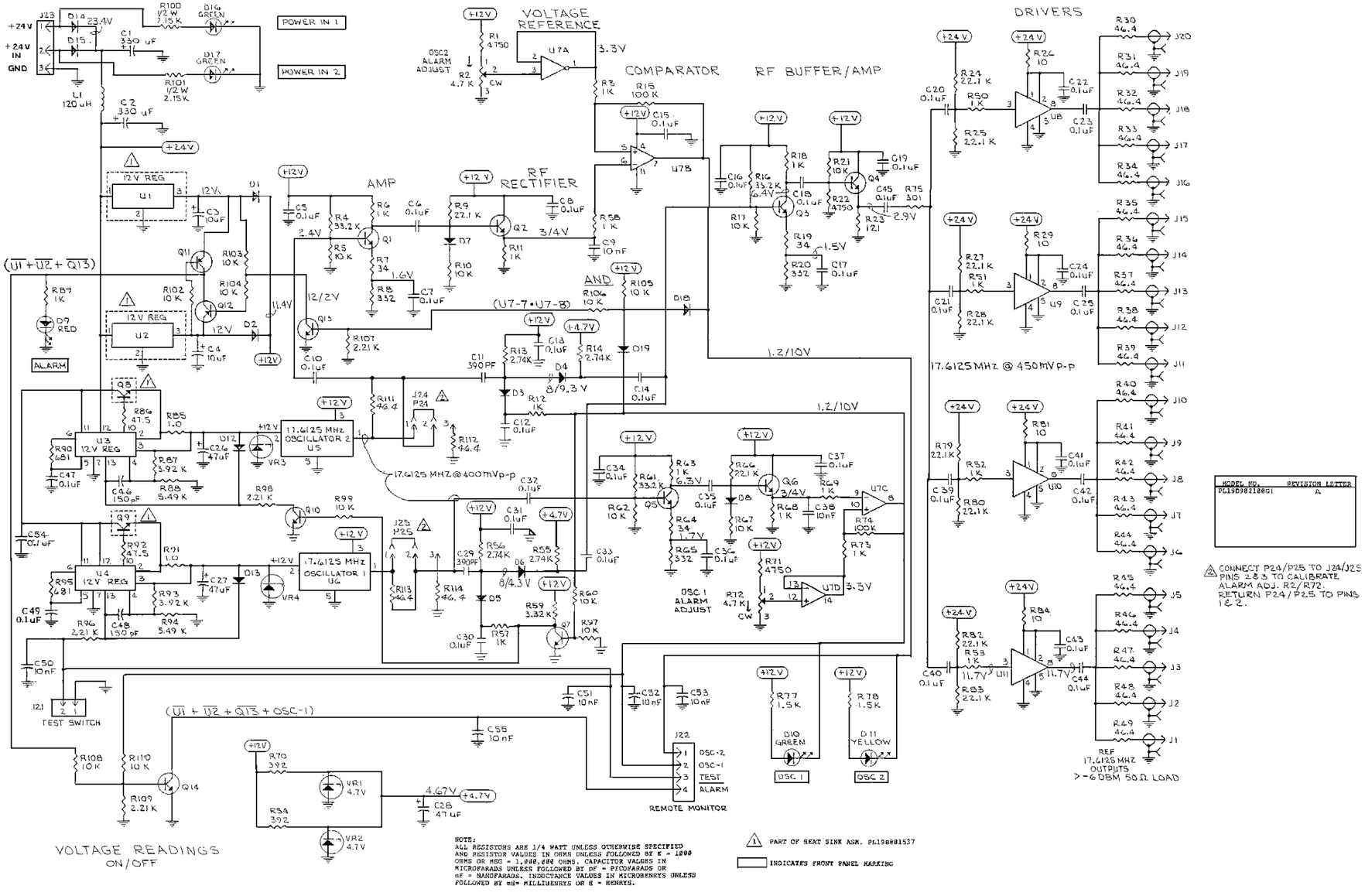


TYP. LEAD FORMING FOR
D9,D10,D11,D16,& D17



MOUNTING FOR L1

EDACS 900
OSCILLATOR BOARD
19D902100G1

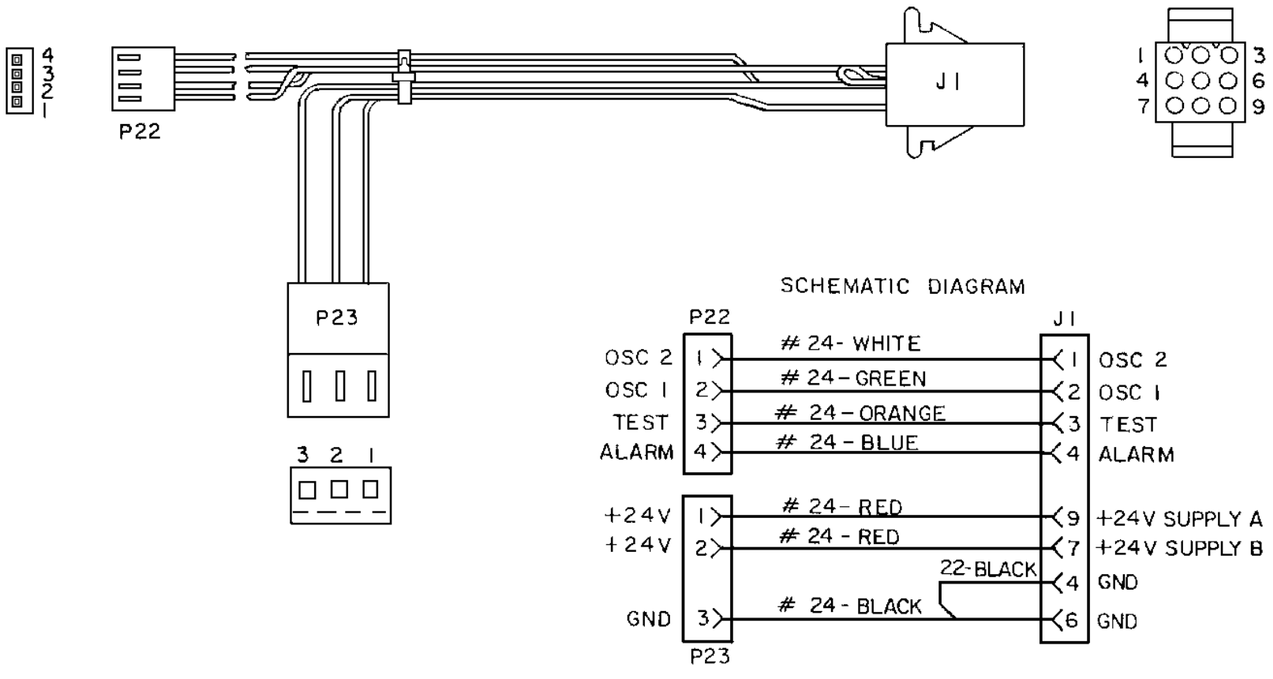


EDACS 900
OSCILLATOR BOARD
19D902100G1

(19D902109, Sh. 1, Rev. 2)

MASTER OSCILLATOR

OUTLINE DIAGRAM

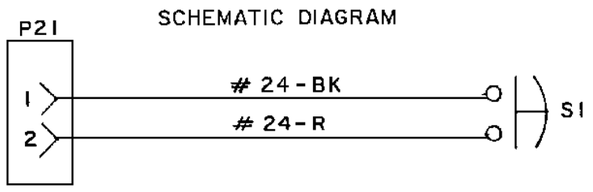


SCHEMATIC DIAGRAM

TEST SWITCH CABLE

OUTLINE DIAGRAM

SCHEMATIC DIAGRAM



SERVICE SHEET
MASTER OSCILLATOR CABLE
TEST SWITCH CABLE

(19B801526 Rev. 1, and 19B801545 Rev. 1)