LBI-31268F

ERICSSON

Mobile Communications

MPI™ DESK CHARGER
19A149832P1 AND 19D900654G2

Maintenance Manual

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SPECIFICATIONS

Input Voltage	121V @ 60 Hz	220V @ 50 Hz
Charge Time (hours)	14	14
Charge Currents	45 milliamperes	45 milliamperes
Output	12 Volts DC	12 Volts DC

DESK CHARGER **AC/DC CONVERTER**

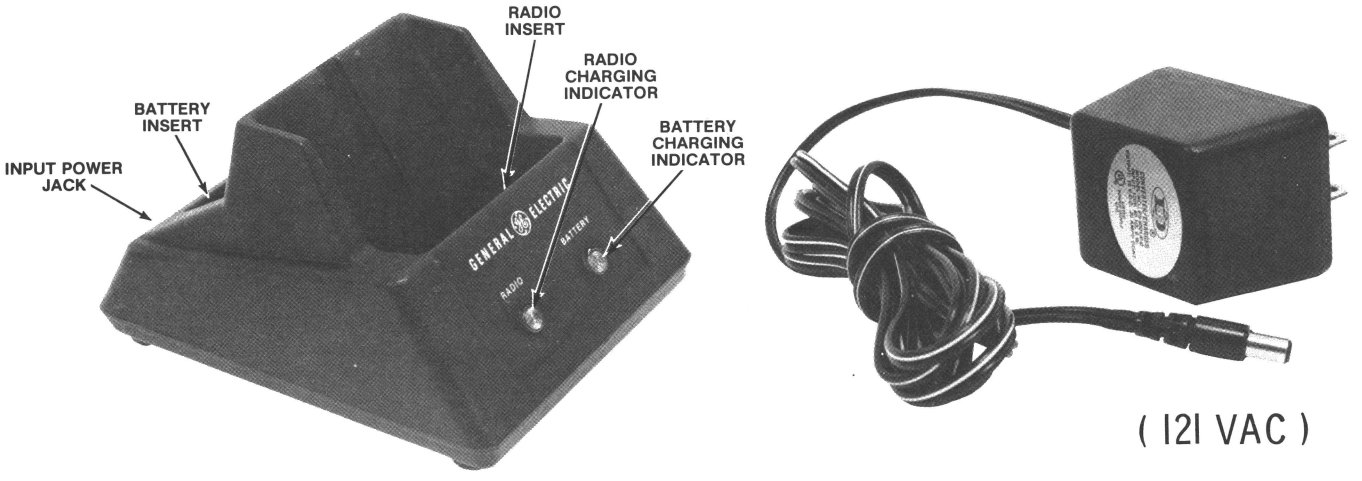

Figure 1 - Charger and AC/DC Converter

DESCRIPTION

Ericsson GE Desk Chargers 19A149832P1 (for later models), or 19D900654G1 (for earlier models) are required for recharging the nickel-cadmium battery pack in the MPI personal radio. The chargers may be used interchangeably.

Both desk chargers will provide a continuous C/10 charge rate to completely recharge a discharged battery pack in 14 hours. The chargers are also capable of recharging the battery in the MPI radio and a spare battery pack at the same time.

Power for the chargers is provided by a 121-volt, 50/60 Hz AD/DC converter.

OPERATION

Two amber indicators on the charger indicate when the battery pack is making contact with the charging terminals and the battery pack is charging (See Figure 1).

NOTE

Temperature characteristics of nickel-cadmium batteries prevent a full charge at temperature extremes. For a maximum charge, recharge the battery at room temperatures of between 65° to 85° Fahrenheit whenever possible.

To use the desk charger, connect the AC/DC converter to an appropriate voltage source (depending upon the charger option). Then connect the cable to the input jack on the back of the charger. Next, place the radio into the charging insert with the speaker facing the front of the charger, or place the battery pack into the battery insert. The AMBER LED indicator labeled RADIO or BATTERY will light, indicating the battery pack is being charged. To charge the battery pack to 100% capacity, let it remain in the charging insert for at least 14 hours.

CIRCUIT ANALYSIS

The 14-hour desk charger consists of an AC/DC converter and two charging circuits. References to symbol numbers mentioned in the following text can be found on the Schematic and Outline Diagram or Parts List (See Table of Contents).

Twelve volts from the AC/DC converter is applied to the two charging circuits.

When power is applied to the charger, the 12 Volt DC converter output is applied to the base of charging transistors Q1 and Q2. The DC voltage is also applied to the anode of H1 and H2.

Placing a radio or battery pack into the charging insert completes the ground return path. This turns on the charging transistor and lights the LED indicator. Resistors R13 and R14 are current-limiting resistors for H1 and H2. Charging current for the battery is coupled through D3 to charging contacts E1 and E3.

Disassembly

To gain access to the desk charger circuitry for servicing, remove the four Phillips-head screws in the bottom of the charger which will allow removal of the four rubber bumpers and bottom covers.

To remove the printed circuit board, remove the single screw holding the board to the housing. Next, unplug the terminals (P1 through P4) from the charging contacts and slide the Jack (J1) free of the housing. Then move the board toward the rear of the charger until the indicator LED's snap free from their lenses, and lift the charging assembly out of the housing.

Troubleshooting

Should a difficult service problem arise, the following Quick checks should aid the service technician in locating the difficulty.

Symptom	Procedure
Battery will not charge	1. Check to see if LED Inidicator is on (RADIO OR BATTERY). 2. If an LED indicator is on, try a known good battery pack. 3. If only one LED indicator is on, insure proper contact between the charging contacts of the defective charging circuit and the battery terminals.

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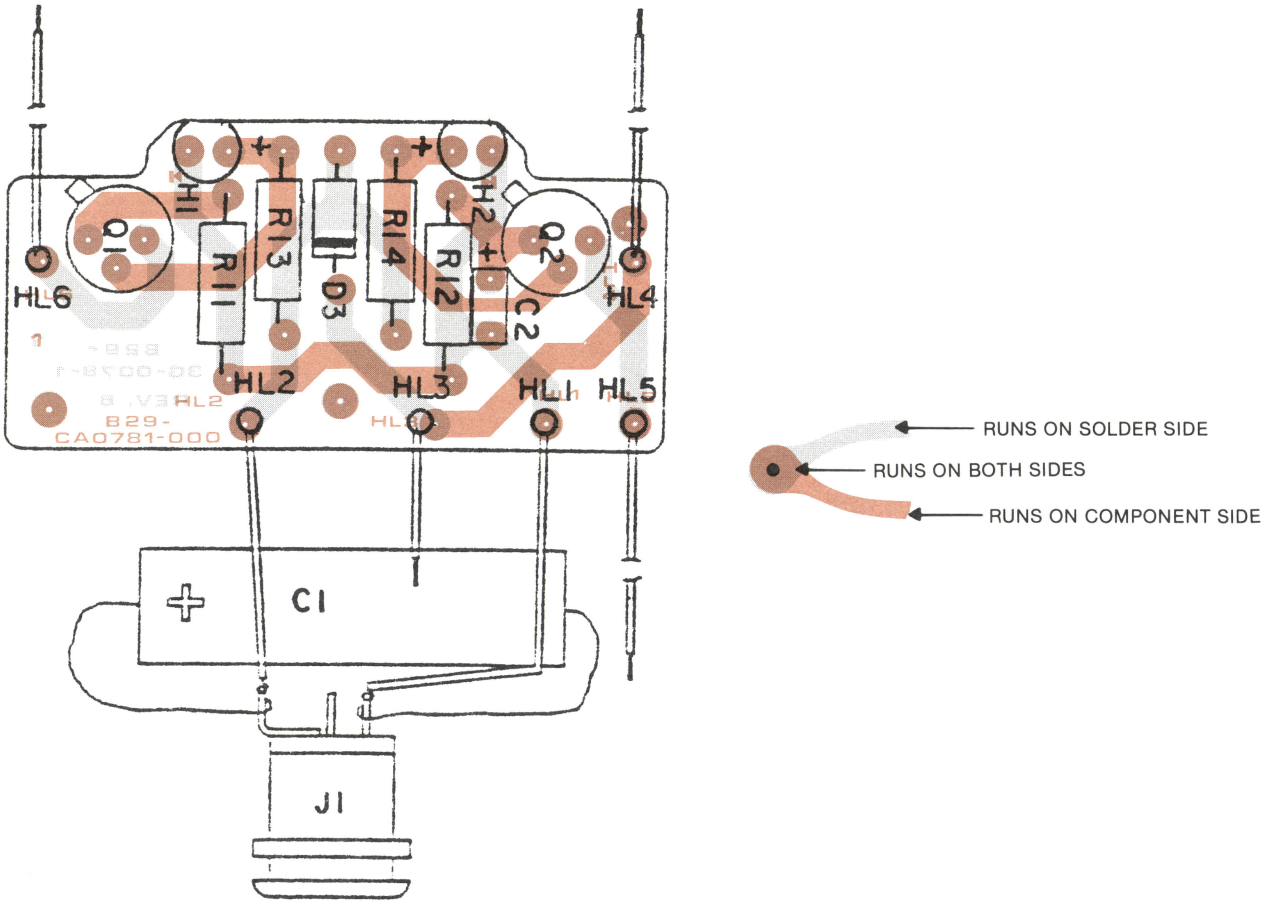
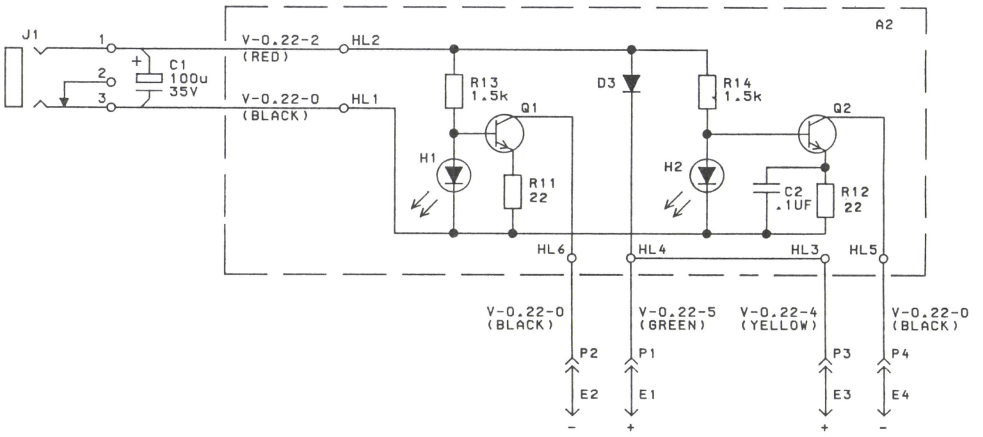


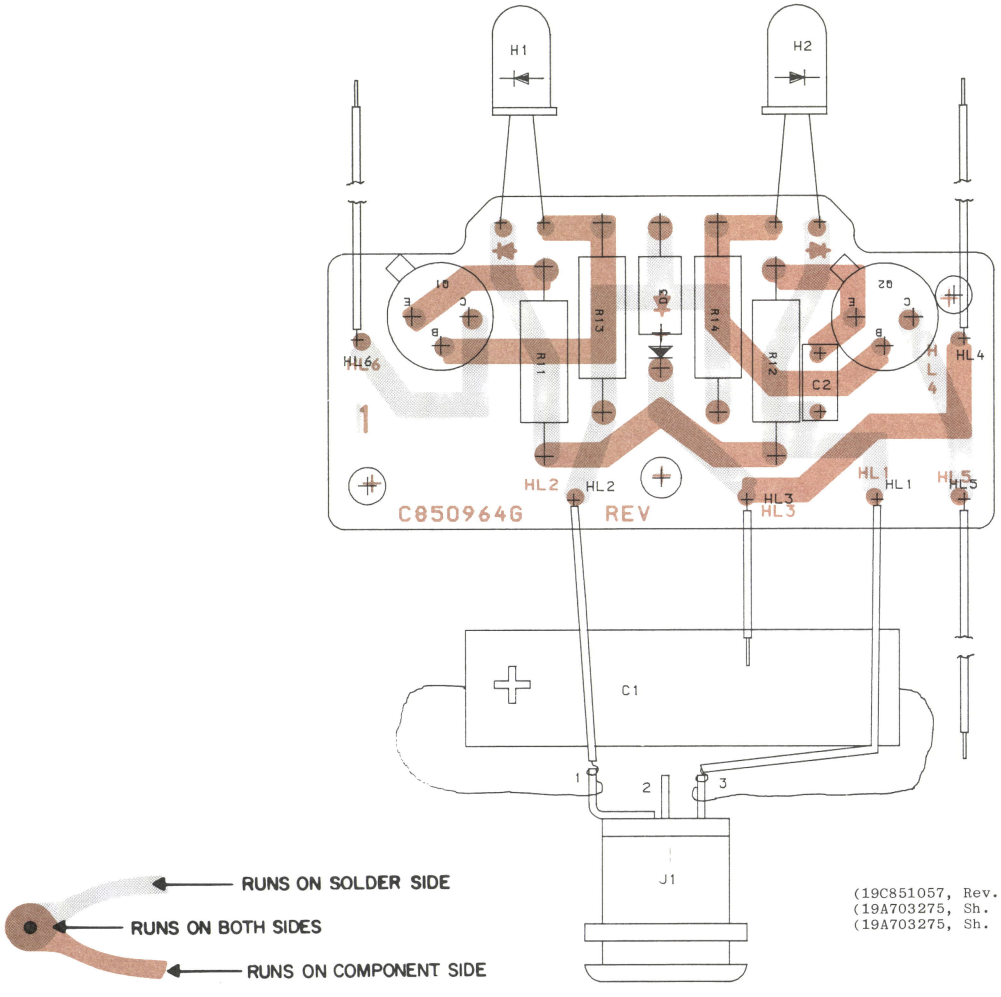
(RC-8105)
(B29-CA0781-000)
(B29-3G-0078, Rev. B)



DESK CHARGER
19A149832P1

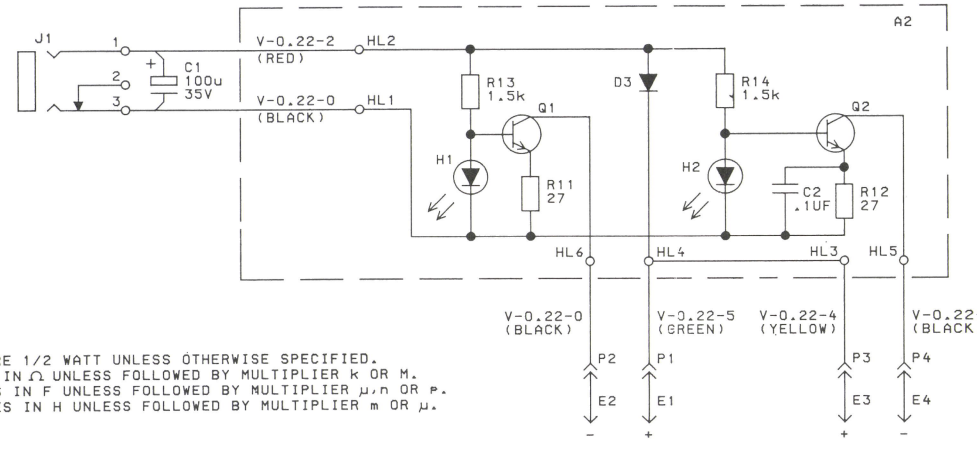
RC-8134

OUTLINE DIAGRAM



(19C851057, Rev. 3)
(19A703275, Sh. 1, Rev. 1)
(19A703275, Sh. 2, Rev. 1)

SCHEMATIC DIAGRAM



ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.
RESISTOR VALUES IN Ω UNLESS FOLLOWED BY MULTIPLIER k OR M.
CAPACITOR VALUES IN F UNLESS FOLLOWED BY MULTIPLIER μ, n OR p.
INDUCTANCE VALUES IN H UNLESS FOLLOWED BY MULTIPLIER m OR μ.

(19C851058, Rev. 3)

DESK CHARGER
19D900654G1

PARTS LIST

MPI DESK CHARGER
19A149832P1
ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
		NOTE: WHEN ORDERING REPLACEMENT PARTS, ALL PART NUMBERS SHOULD BE PRECEDED BY THE FOLLOWING PREFIX: B29/.
		HOUSING ASSEMBLY CA0780-000
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	03-0574-01	Electrolytic: 100 uF ±10%, 35 VDCW.
		- - - - - - - - - - - LEDS - - - - - - - - - - -
H1 and H2	18-0026-01	Led, yellow, defused, circular.
		- - - - - - - - - - - WIRES - - - - - - - - - - -
HL1	32-0031-01	Insu-wire (roll form), stranded Triton AWG #24. black.
HL2	32-0041-01	Insu-wire (roll form), stranded Triton AWG #24 red.
HL3	32-0038-02	Insu-wire (roll form), stranded Triton AWG #24 yellow.
HL4	32-0033-01	Insu-wire (roll form), stranded Triton AWG #24 green.
HL5	32-0031-01	Insu-wire (roll form), stranded Triton AWG #24 black.
HL6	32-0031-01	Insu-wire (roll form), stranded Triton, AWG #24 black.
		- - - - - - - - - - CONNECTORS - - - - - - - - - -
J1	3F-002-0006-1	Power connector.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	53-0005-01	Self-tapping screw, P-Tite, M3.0 x L 8.0, binding head.
	5A-0057-1	Contacts.
	6A-0233-1	Panel light lens, orange.
	6A-0234-1	Bottom cover, phenolic.
	6A-0237-1	Housing - charger.
	6C-0013-1	Rubber foot.
		PCB ASSEMBLY CA0781-000
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C2	-03-0114-01	Monolythic: .1 uF ±10%, 50 VDCW.
		- - - - - - - - - - - DIODES - - - - - - - - - - -
D3	05-0006-01	Rectifier/bridge, 100 V 1.0A, 1N4001.
		- -
Q1 and Q2	06-0129-01	Transistor: 2N3053, sim to Motorola.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R11 and R12	09-0432-01	Carbon film: 22 ohms ±5%, 1/2 w.
R13 and R14	09-0433-01	Carbon film: 1.5K ohms ±5%, 1/2 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	92-0009-01	Teflon tube, clear ID 1.0 x L 0 x T .30. (Used with H1 and H2).
	92-0018-00	Glass tube, white ID 1.0 x L 2 x T .60. (Used with Q1 and Q2).
	CA0789-000	Adaptor assembly.
	12-0007-00	Adaptor: 120 Vac I/P, 15 Vdc 270 mA min.

PARTS LIST

CONSTANT CURRENT DESK CHARGER
19D900654G2
ISSUE 6

SYMBOL	GE PART NO.	DESCRIPTION
A2		CHARGER BOARD 19C850964G3
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A115680P25	Electrolytic: 100 uF ±10%, 35 VDCW; sim to Mallory Type TTX.
C2	19A116192P14	Ceramic: 0.1 uF + or -20%, 50 VDCW; sim to Erie USCC CW20C104-M2.
		- - - - - - - - - - - DIODES - - - - - - - - - - -
D3	T324ADP1041	Silicon: Rectifier; sim to 1N4004.
		- - - - - - - - - - - LEDS - - - - - - - - - - -
H1 and H2	19A134354P2	Optoelectronic: Yellow; sim to HP 5082-4555.
		- - - - - - - - - - - JACKS - - - - - - - - - - -
J1	19B800783P1	Receptacle, power: sim to Hosiden HECO-317-01-010.
		- - - - - - - - - - TRANSISTORS - - - - - - - - -
Q1 and Q2	19A115300P2	Silicon, NPN; sim to Type 2N3053.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R11 and R12	19A700113P25	Composition: 27 ohms + or - 5%, 1/2 w.
R13 and R14	19A700113P67	Composition: 1.5K ohms + or - 5%, 1/2 w.
		- - - - - - - - - - TERMINALS - - - - - - - - - -
E1 thru E4	19A702793P2	Contact.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19C850862G1	Housing.
	19B800868P1	Cover.
	19A702382P1	Rubber bumper.
	19J706212P203	Screw, thd. forming: No. 4 x 7.94MM. (Used to secure rubber bumpers).
	19A134521P3	Lens: amber. (Used with D1 and D2).
	19A702569P1	Faceplate.
	19A701332P4	Insulator, washer: nylon.
		ASSOCIATED PARTS
	19B800850P1	AC/DC Converter: 121 V. ±10% VAC input, 12 VDC output; sim to Dormeyer PS8001P.
	19B800888P1	AC/DC Converter: 220 V. ±10% VAC input, 12 VDC output; sim to DCA Pack Model XPF-1250B1.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

This addendum provides a correction to the text, and production changes for the 19D900654G2 Desk Charger.

Any reference in this manual to a 19D900654**G1** Desk Charger should be replaced by 19D900654**G2**.

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 - DESK CHARGER 19D900654G2
To prevent charger from oscillating in the RF broadcast band when charging two batteries. Added C2 in parallel with R12.

REV. B - DESK CHARGER 19D900654G2
To improve charging of 10-Volt battery packs. Changed P1-P4 and E1-E4.