

8112A-04B

S E R V I C E N O T E

SUPERSEDES: 8112A-04A

HP 8112A Pulse Generator 50 MHz

Serial Numbers: 0000G00000 / 2851G09530

Recommended Replacement (P/N 1DD6-0002) of A1 U200, U220 and U240 Timing ICs Require Modifications

To Be Performed By: HP-Qualified Personnel

Parts Required:

HP Part No.	Description	Qty.
1DD6-0002	Rate IC	3
0698-3445	R-FXD 348 1%	1
0160-3875	C-FXD 22 PF	3

Additional part for serial numbers 0000G00000 / 2136G00780

HP P/N 0698-3279, R-FXD 4.99 k 1%, Qty 1

Additional parts for serial numbers 0000G00000 / 2136G00730:

HP Part No.	Description	Qty.
0698-3441	R-FXD 215 1%	3
0698-3160	R-FXD 31.6 k 1%	3
0698-4037	R-FXD 46.6 1%	1
0160-0575	C-FXD 0.047 UF	6
1901-1068	Schottky Diode	6

Continued

DATE: 28 June 1993

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

MODIFICATION AVAILABLE

ACTION CATEGORY:	AGREEABLE TIME	<input type="checkbox"/> PERFORMANCE ENHANCEMENT <input checked="" type="checkbox"/> SERVICE/RELIABILITY ENHANCEMENT
LOCATION CATEGORY:	<input type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE <input checked="" type="checkbox"/> HP LOCATION	AVAILABLE UNTIL:
AUTHOR: PW	ENTITY: B100	ADDITIONAL INFORMATION:

Situation:

The replacement part for Timing IC A1 U200, U220, and U240 requires modification of the -5.2 V power supply. The new Timing IC needs -5.4 V power supply, so that the Timing IC operates at ambient temperatures deg celcius.

Solution/Action:**Caution:**

Boards are sensitive to electrostatic discharge (ESD). Please use standard ESD precautions whenever the unit's cover is removed!

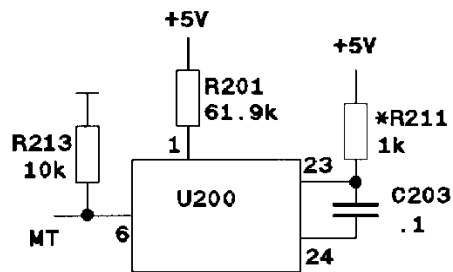
Instruments with serial number 0000G00000 to 2136G00730

HP part number 5180-2410 is used for A1 U200, U220, and U240. All three ICs have to be replaced by 1DD6-0002, even if only one IC is defective. Perform the following modification steps:

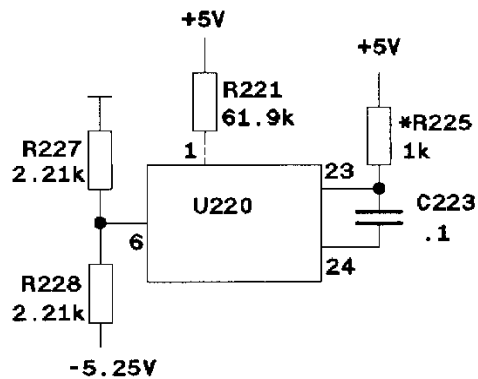
- 1) Delete A1 C203, C223, and C243.
 - 2) Delete A1 R213, R227, R228, R246, and R247.
 - 3) Replace A1 R211, R225, and R244 with 0698-2441 R-FXD 215 ohms.
 - 4) On the component side of the board:
 - Connect C204, C224, and C244, 0160-0575 C-FXD 0.047, from each Timing IC's pin 6 to -5.4 V (-5.25 V).
 - Connect C205, C225, and C246, 0160-0575 C-FXD 0.047, from each Timing IC's pin 24 to ground (GND).
 - 5) Backloading:
 - a) Connect CR200,201,CR220,221, and CR240,241, 1901-1068 Schottky Diode, from U200, U220, and U240 Timing IC's pin 23 to GND, respectively (cathodes connected to GND!).
 - b) Connect R214, R229, and R249, 0698-3160 R-FXD 31.6 kohms, from U200, U220, and U240 Timing IC's pin 1 to GND.
 - 6) a) Replace A1 R15 with 0698-3279 R-FXD 4.99 kohms.
 - b) In series to A1 R15, 4.99 kohms resistor, mount a 0698-3445 R-FXD 348 ohms resistor (R30). Into the two holes of A1 R15 the two in series connected resistors have to be soldered.
 - c) Conect A1 U2B pin 2 to the new solder point of R15 and R30. Pin 3 of U2B has to be connected now to the A1 R10/C13 connection/solder point.
 - 7) Replace A1 C200, C220, and C240 with 0160-3875 22 pF.
 - 8) Delete A3 W1 Jumper.
- If min width adjustment gives troubles, then:
- 9) Delete A1 C245.
 - 10) Replace A1 R243 with 0698-4037 R-FXD 46.6 ohms.

5180-2410

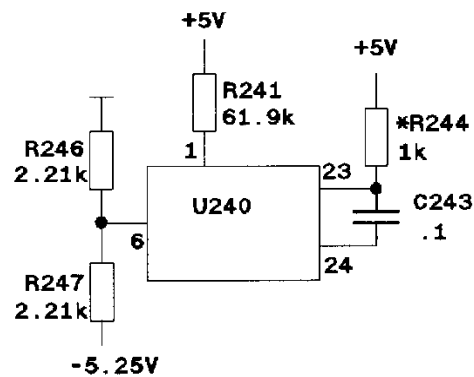
Period



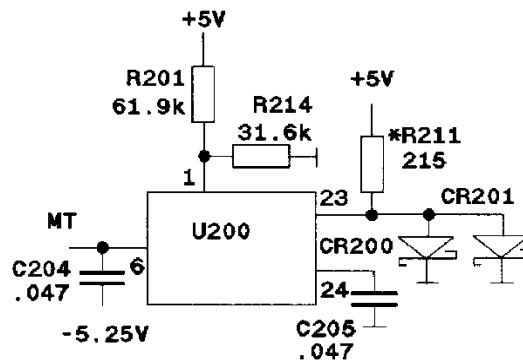
Delay



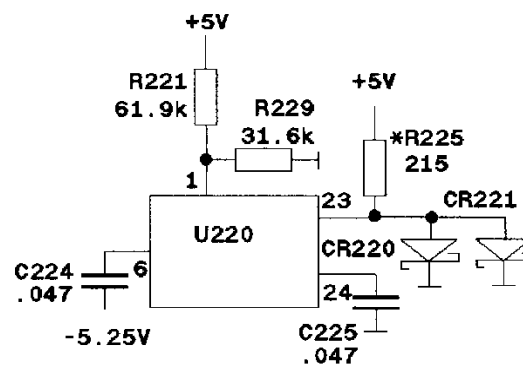
Width



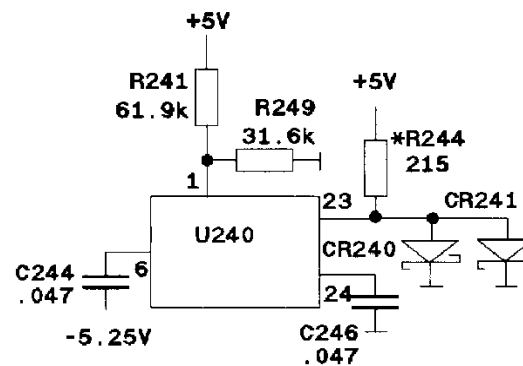
1DD6-0002



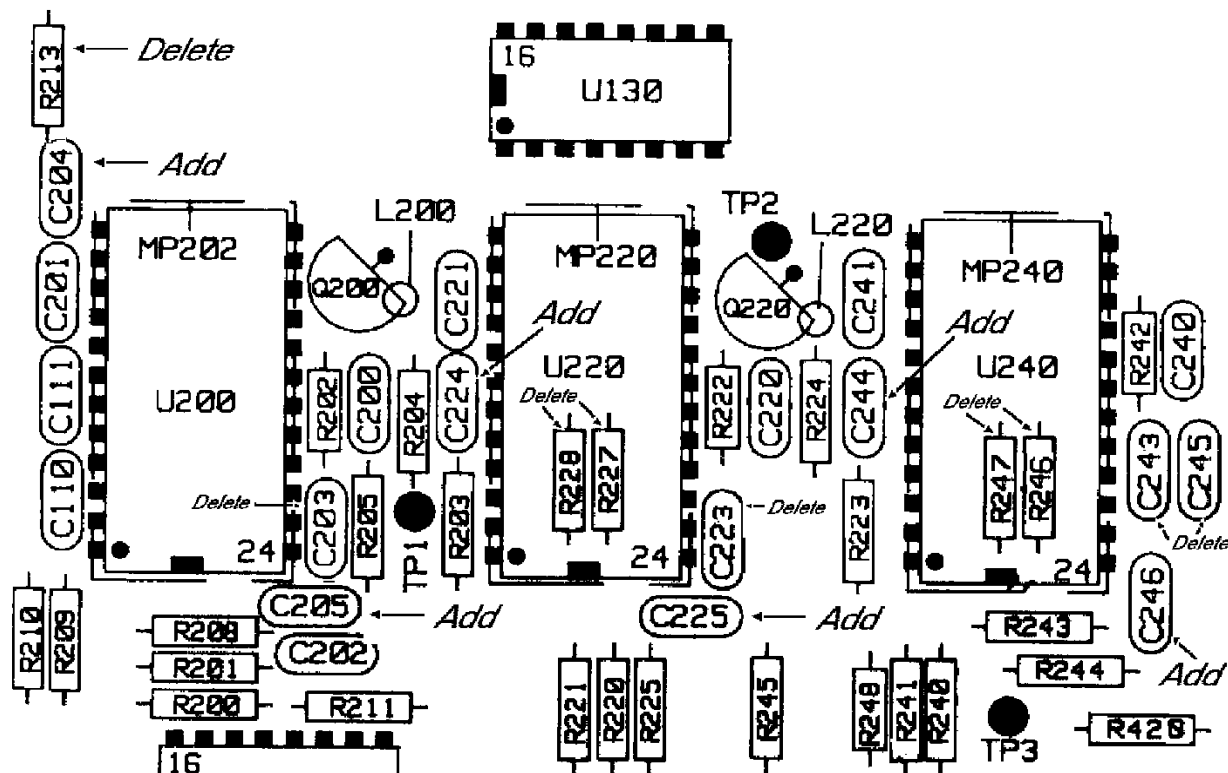
backload: R214, CR200 and CR201
add on component-side: C204 and C205



backload: R229, CR220 and CR221
add on component-side: C224 and C225



backload: R249, CR240 and CR241
add on component-side: C244 and C246



For instruments with serial number 2136G00731 to 2851G09530:

HP part number 1826-0984 is used for A1 U200, U220, and U240. When replaced by 1DD6-0002 the following modification steps have to be performed.

- 1) Replace A1 R30 with 0698-3445 R-FXD 348 ohms.

In instruments with serial number 2136G00731 to 2136G00780 the resistor R30 has to be added, please perform the following steps:

- 1a) Replace A1 R15 with 0698-3279 R-FXD 4.99 kohms.
- 1b) In series to A1 R15, 4.99 kohms resistor, mount a 0698-3445 R-FXD 438 ohms resistor (R30). Into the two holes of A1 R15 the two in series connected resistors have to be soldered.
- 1c) Connect A1 U2B pin 2 to the new solder point of R15 and R30. Pin3 of U2B has to be connected now to the A1 R10/C13 connection/solder point.
- 2) Replace A1 C200, C220, and/or C240 with 0160-3875 22 pF, when U200, U220, and/or U240 has to be replaced by p/n 1DD6-0002, as needed.

Adjust A1 R12 to achieve -5.4 V +/- 10 mV.

Check the +5 V power supply for 5.05 V +/- 50 mV.

Re-adjust A1 R12 to get the best compromise for both supply voltages.

Finally perform the appropriate adjustments and a complete performance test.