Hall A

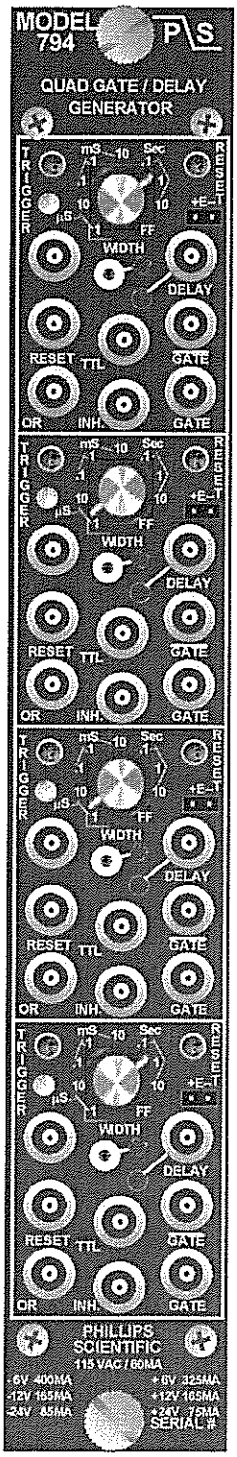
Phillips Scientific

Quad Gate/Delay Generator

NIM MODEL 794

FEATURES

* Four Independent Gate/Delay Channels
* Wide Range, 50 nSec to over 10 Seconds
* NIM, TTL Inputs; NIM, TTL, ECL Outputs
* Deadtimeless Operation
* Set/Reset Flip-Flop Mode
* Remote Programming via a 0 Volt to 10 Volt Input
* Easily Configured as an Oscillator or a Pulser
* Provides Bin Gate for Host NIMBIN



GENERAL DESCRIPTION

The Quad Gate/Delay Generator, Model 794, complies fully with the NIM specification TID-20893 and is packaged in a single width module. In monostable mode, Gate/Delay periods may be adjusted either locally or remotely from less than 50nSec to more than 10 seconds. Each channel also operates in a Set/Reset flip-flop mode. A bright LED indicates an active gate condition. Versatile input and output structures provide compatibility with NIM, ECL, and TTL standards. Further flexibility is afforded by programming jumpers mounted on the printed circuit board. These jumpers allow selected inputs and outputs to be assigned alternate logic functions or polarities.

Time-Base Section

The model 794 time-base circuit is non-updating and exhibits essentially no deadtime. Monostable Gate/Delay periods are selected by a combination of the RANGE switch and an analog programming input. A monitor test point provides a 0 to 1 Volt output which is proportional to the Gate/Delay period. Setting the Gate/Delay period with an oscilloscope is easily accomplished by pushing the TRIGGER pushbutton. Depressing this switch for more than 0.5 seconds causes the time-base to retrigger at a 1 KHz rate. In the bistable mode, the Gate/Delay period is equal to the interval between the arrival of the trigger and reset functions. The DELAY output always occurs at the trailing edge of the GATE output and it's output width may be adjusted by a front panel potentiometer.

Input Section

There are three ways to trigger the Model 794: (1) TRIGGER Input; (2) OR Input; (3) TRIGGER pushbutton. These functions are enabled in both monostable and bistable modes.

(1), The TRIGGER input is compatible with both positive TTL levels and negative NIM logic. This input presents a high impedance to positive signals and 50 ohms to negative signals. The time-base triggers on the leading edge of the input pulse regardless of its logic type. The gate period is independent of the TRIGGER pulse width.

Phillips Scientific

"A THEORY DEVELOPMENT COMPANY"
150 Hilltop Road * Ramsey, NJ 07446 * (201) 934-8015 * Fax (201) 934-8269

Input Section *(Continued)*

(2), OR is a negative NIM logic input which is configured with program jumpers. The OR input is always logically OR'ed with the time base output. Assuming a quiescent time base, the GATE output width is equal to the OR input width. A program jumper enables an alternate OR mode in which the OR input also triggers the time-base. This mode produces a GATE output equal to the width of the OR input or the preset time, whichever is greater. An additional jumper allows OR to be a high impedance or 50 ohms. Note that the high impedance OR input allows multiple channels or multiple modules to be easily daisy-chained and triggered from a single source.

(3), The TRIGGER pushbutton offers two operating modes for manual triggering. In the single trigger pulse mode, a single output is produced by pushing and releasing the switch in less than 0.5 seconds. In retrigger mode, by pushing and holding the switch for more than 0.5 seconds produces a continuous pulse train of 1 KHz as long as the pusbutton is depressed.

In the bistable (FF) position, when the channel is triggered or SET, it remains in that state until reset by the negative NIM compatible RESET input or the RESET pushbutton. The TRIGGER and OR inputs are inhibited from setting the channel when RESET is present. The RESET input is enabled only in the bistable mode.

INHIBIT is a negative NIM compatible input. All outputs are forced to their quiescent state whenever INHIBIT is present. GATE transitions resulting from INHIBIT do not generate DELAY outputs.

A special feature of the Model 794 is the ANALOG PROGRAMMING input. Enabled by program jumpers, each input accepts 0 to +10 Volt levels and produces a 5% to 105% adjustment of the selected range. The analog voltage is received differentially to relieve the noise and common mode offsets associated with long cable runs.

Output Section

Each channel has five (5) outputs. GATE, complemented GATE, and DELAY are negative NIM current source outputs governed by the trigger rules described above. TTL is a TTL compatible output which can be assigned to either the GATE or DELAY function. A second jumper associated with TTL provides a true or complement feature. ECL is a differential ECL output conforming to CERN Note EP 79-01 and is jumper programmed to be identical to either GATE or DELAY outputs.

Bin Gate Description

The model 794 is capable of driving the bin gate of the host bin. A switch mounted on the rear panel enables or disables the BIN GATE feature. Individual channels are selected to supply this gate signal via program jumpers. More than one channel may be selected resulting in a Bin Gate which is the logical OR of the selected channels.

MANUAL CONTROL SUMMARY

Range Switch :

A ten position rotary switch selects one of eight full scale times for the monostable range. The remaining two positions are for bi-stable (FF) mode. RANGE positions are: 1µSec, 10µSec, 0.1mSec, 1mSec, 10mSec, 0.1 Sec, 1 Sec, 10 Sec, and two Flip-Flop positions.

Trigger Pushbutton :

Provides a manual trigger function. Single trigger mode is implemented by pressing and releasing in less than 0.5 Seconds. Retrigger mode is implemented by pressing and holding for more than 0.5 Sec. A LED indicates a triggered condition.

Reset Pushbutton :

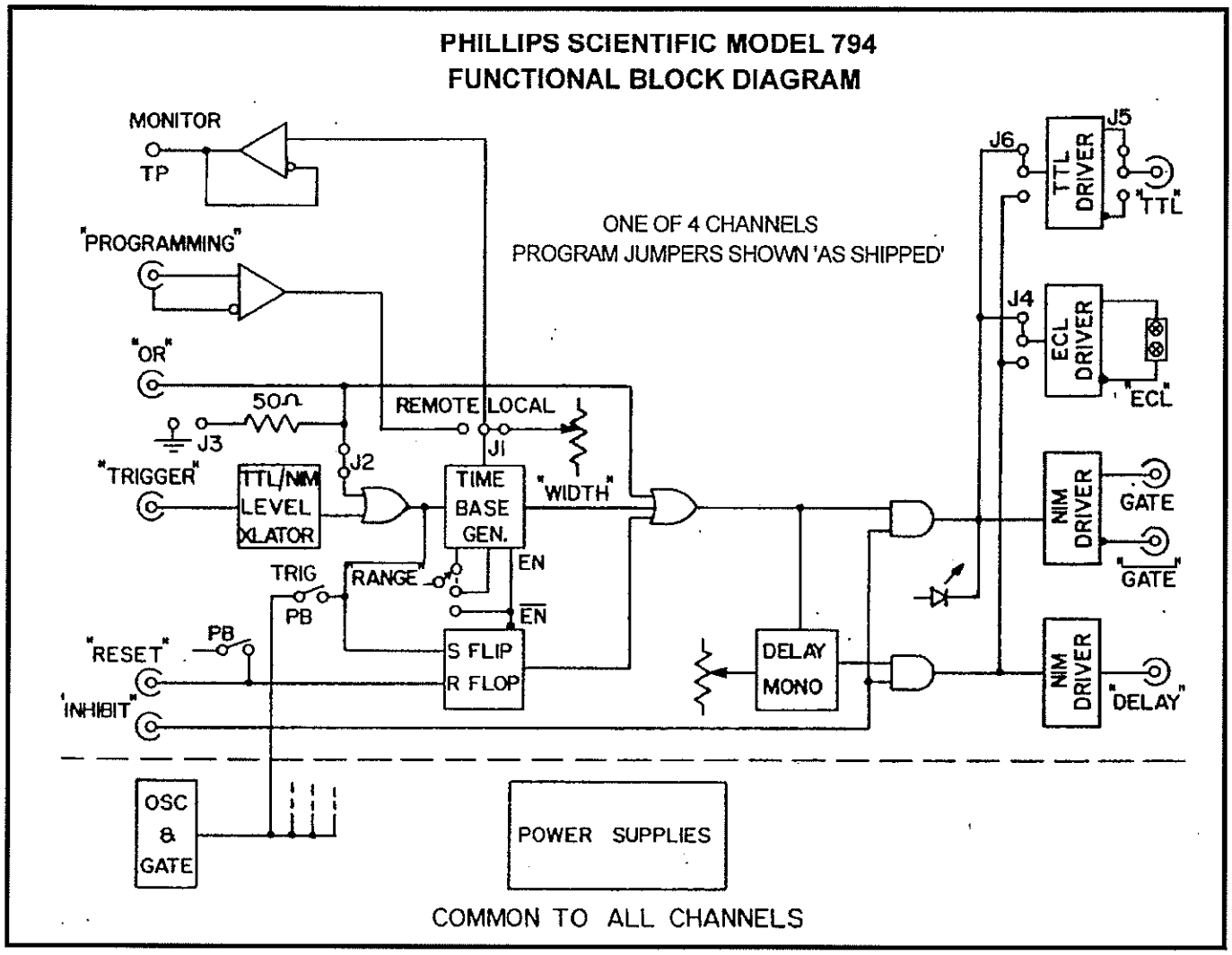
Provides a manual reset function.

Gate Width Potentiometer :

A 15-turn screwdriver adjustment controls the monostable time-base from approximately 5% to 105% of the selected range in local programming mode. The potentiometer is disabled in remote programming and bistable modes.

Delay Output Width :

A 15-turn screwdriver adjustment controls the width of the delay output from 10nSec to 100nSec. Ocurrs at the trailing edge of the GATE time.



INPUT CHARACTERISTICS

Trigger :

LEMO style connector; 1 K ohm impedance for positive TTL logic levels; 50 ohm for negative NIM logic; Positive LOGIC 0: less than +0.5 Volt; LOGIC 1: greater than +1.5 Volt. Negative NIM logic levels; LOGIC 0: less than ±1mA, (±50mV), LOGIC 1: -14mA, (-700mVolt).

OR :

LEMO style connector; Negative NIM level input, LOGIC 0 = ±50mVolts, LOGIC 1 = -700mVolts.
A jumper allows selection of 50 ohm or 1 K ohm input impedance;
"OR is shipped as high impedance input OR".

Inhibit :

LEMO style connector; Negative NIM input levels; 50 ohm impedance. Forces all outputs to their quiescent state.

Reset :

LEMO style connector; Negative NIM input levels; 50 ohms; Enabled only in bistable mode.

Analog Remote Programming :

Isolated ground LEMO style connector; High impedance, differentially received; An external analog input allows remote programming from 5% to 105% of selected range with 0 to +10 Volt input.
Maximum input voltage: Differential = -6 Volt to +12 Volts.
Common Mode = ±6 Volts.
Recommended Input Voltage: Differential = 0 to +10.0 Volts.
Common Mode = ±0.5 Volt.

OUTPUT CHARACTERISTICS

Gate :

Negative NIM current source output; –16mA, (–800mV into 50 ohms). Output duration equals the RANGE SWITCH setting in conjunction with the GATE WIDTH control setting.

$\overline{\text{Gate}}$:

Negative NIM current source output; The complement of GATE output.

Delay :

Negative NIM output pulse; Begins at the trailing edge of GATE output; Width is adjustable from 10nSec to 100nSec.

TTL :

A TTL logic level output; Capable of driving a single 50 ohm load or up to 60 standard TTL inputs. LOGICAL 1 = 2.7 Volt min. @ 45mA max; LOGIC 0 = 0.5 Volt max. @ –100mA max; The TTL output can be jumper selected to be GATE, DELAY or their complements.

"TTL is shipped as GATE".

ECL Outputs :

ECL is a two pin header; 0.025" posts on 0.1" centers. Output is a differential 100 ohm line driver. Jumper selected to be GATE, DELAY or their complements.

ECL + : Quiescently LOGIC 0 = –1.7 Volt typ. LOGIC 1 = –0.90 Volt typ.

ECL – : Quiescently LOGIC 0 = –0.90 Volt typ. LOGIC 1 = –1.7 Volt typ.

"ECL is shipped as GATE".

PERFORMANCE SUMMARY

Propagation Delay :

TRIGGER to:	RESET to:
GATE = 11nSec max.	GATE = 11nSec max.
TTL = 20nSec max.	TTL = 20nSec max.
ECL = 11nSec max.	ECL = 11nSec max.
OR to:	**INHIBIT to:**
GATE = 8nSec max.	GATE = 6nSec max.
TTL = 15nSec max.	TTL = 15nSec max.
ECL = 8nSec max.	ECL = 8nSec max.

Dead Time :

The channel may be retriggered immediately upon the completion of the GATE output transition.

Time Jitter :

Less than 0.03% of range.

Temperature Stability :

Less than 400 ppm/ °C from 20 °C to 50 °C.

Power Supply Rejection :

GATE width will not change by more than 0.04% of setting for ±5% change in any power supply.

Power Supply Requirements :

+ 6V @ 325 mA	+12V @ 165 mA	+24V @ 75 mA
– 6V @ 400 mA	–12V @ 165 mA	–24V @ 85 mA
	115 VAC @ 60 mA	

Note: All currents are within NIM specification limits permitting a full powered bin to be operated without overloading.

Operating Temperature :

0 °C to 70 °C ambient.

Packaging :

Standard single width NIM module in accordance with TID-20893 and Section ND-524.

Quality Control :

36 hour cycled burn-in with switched power cycles.

Phillips Scientific "A THEORY DEVELOPMENT COMPANY"
150 Hilltop Road * Ramsey, NJ 07446 * (201) 934-8015 * Fax (201) 934-8269

MODEL 794 QUAD GATE/DELAY GENERATOR

(Front Panel Description)

Standard # 1 NIM Packaging in accordance with TID-20893

Manual Trigger Pushbutton; Hold In for Repetitive Pulse.

An LED Indicates a Trigger.

NIM/TTL Trigger Input; NIM=50 ohm, TTL=1K ohm.

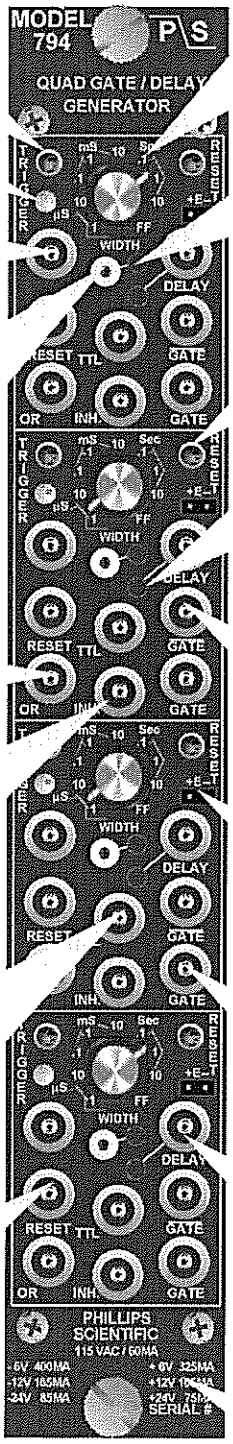
Gate Vernier Monitor Test Point; Provides a DC Voltage Proportional to the Actual Gate Width Setting. (50mV to 1.050 V Range)

OR / Trigger Input; NIM Logic, Jumper for 50 ohm or 1K ohm.

Fast Inhibit Input; Accepts Normal NIM Input Level 50 ohm Impedance

TTL Output; Jumpered for Gate or Delay Outputs. Drives +2 Volts into 50 ohms or 60 Standard TTL Loads.

Fast Reset Input; Accepts Normal NIM Input Level 50 ohm Impedance



Main Time-Base Range Switch; Selects One of Eight Gate/Delay Time Ranges or Flip-Flop Mode.

GATE Output Width Vernier; 15-Turn Screwdriver Adjustment, Variable from 5% to 105% of Range.

Manual Reset Pushbutton; Reset for Flip-Flop Mode.

Delayed Output Width Control; 15-Turn Screwdriver Adjustment Variable from 10nS to 110nSec.

Complemented NIM GATE Output; Quiescently -16mA (-800 mV) and 0 mA (0 Volts) during Output.

Differential ECL Output Header; Drives 100 ohm Twisted Pairs, Jumper for GATE or DELAY Out.

One Normal NIM GATE Output; -16mA (-800 mV into 50 ohms), Width Equals Switch and Vernier.

One Delayed NIM Output; -16mA (-800 mV into 50 ohms), Output Width 10nS to 110nSec.

NIM Voltage and Current Requirements

Notes:

1). An Internal Jumper Permits the GATE Output from Any Channel to Inhibit the Bin via the Rear Bin Connector.

2). Four Rear Panel LEMO Connectors, Provide Remote Analog Programming of the GATE Outputs.

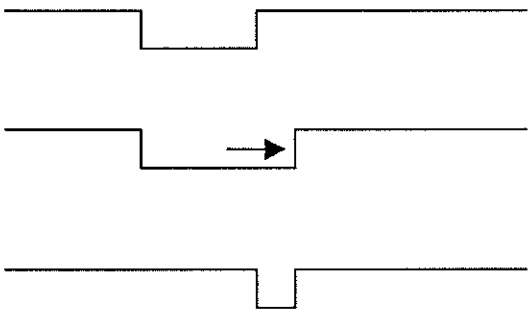
MODEL 794 QUAD GATE / DELAY UNIT

Serial No: 13459

WITH NEW EXTENDED WIDTH JUMPER OPTION IN EACH CHANNEL

Jumper (JE) not installed - Normal gate width, delay occurs after gate pulse

Jumper (JE) installed - Gate width is extended to include delay width



Normal gate pulse

Extended width gate pulse

Delay pulse

This unit has been shipped

____ *with* jumpers installed.

✓ *without* jumpers installed

(User may change jumper settings.)

6/99

Phillips Scientific
"A THEORY DEVELOPMENT COMPANY"
150 Hilltop Road • Ramsey, NJ 07446 • (201) 934-8015 • Fax (201) 934-8269

MODEL 794 Serial Number: 13459

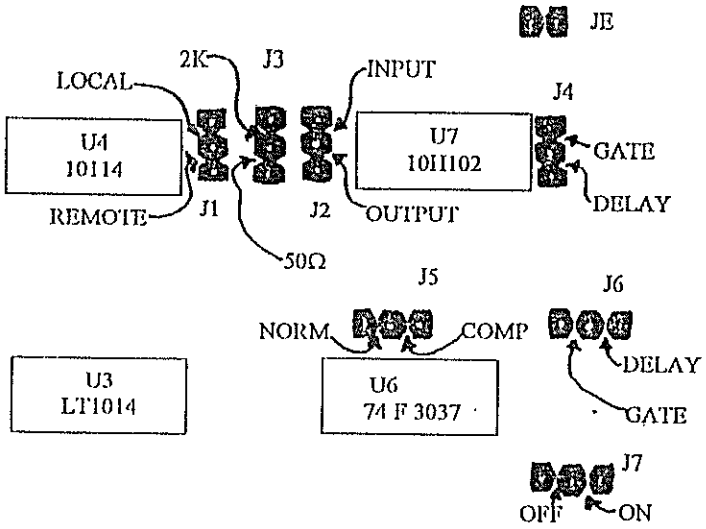
Date: 8/26/99

Technician: Nayana

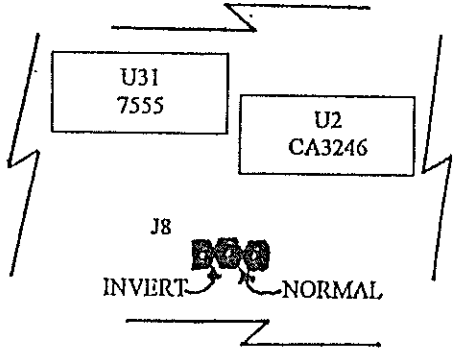
Test	Channel A	Channel B	Channel C	Channel D
Delay Output	√	√	√	√
Gate Output	√	√	√	√
$\overline{\text{Gate}}$ Output	√	√	√	√
TTL Gate	√	√	√	√
$\overline{\text{TTL}}$ Gate (J5)	√	√	√	√
TTL Delay (J6)	√	√	√	√
$\overline{\text{TTL}}$ Delay (J5)	√	√	√	√
ECL Gate	√	√	√	√
$\overline{\text{ECL}}$ Gate	√	√	√	√
ECL Delay (J4)	√	√	√	√
Bin Gate (J7)	√	√	√	√
$\overline{\text{Bin}}$ Gate (J8)	√	√	√	√
Flip/Flop Trigger Pushbutton	√	√	√	√
Flip/Flop Reset Pushbutton	√	√	√	√
Flip/Flop Trigger Input	√	√	√	√
Inhibit Input	√	√	√	√
Reset Input	√	√	√	√
Output "OR" (J2)	√	√	√	√
Input "OR" (J3)	√	√	√	√
JE Normal / Extended	√	√	√	√

Jumper Assembly	Channel A	Channel B	Channel C	Channel D	Location
J1 Local / Remote	√	√	√	√	Local
J2 Input "OR" or Output "OR"	√	√	√	√	Input
J3 50 / 2K ohm	√	√	√	√	2K ohm
J4 ECL Gate / Delay	√	√	√	√	Gate
J5 TTL Normal / Complement	√	√	√	√	Normal
J6 TTL Gate / Delay	√	√	√	√	Gate
J7 Bin Gate Enable / Disable	√	√	√	√	Disabled
J8 Bin Normal / Complement	√	√	√	√	Normal
JE Extended Gate Width / Normal Gate Width	√	√	√	√	Normal

PROGRAM JUMPER CONTROL



LOCATED IN REAR OF MODULE

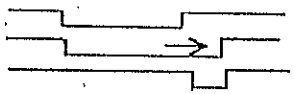


PROGRAM JUMPER SUMMARY

J1	Selects gate width control via the front panel pot or rear panel programmable input
J2	Selects "INPUT OR" mode or "OUTPUT OR" mode
J3	Selects '50 OHM' or 'HI Z' "OR INPUT"
J4	Assigns "ECL" output to gate or delay
J5	Assigns "TTL" output to normal or complement
J6	Assigns "TTL" output to gate or delay
J7	Connects the channel to the "BIN GATE" driver
J8	Selects 'NORMAL' or 'INVERTED' bin gate
JE	Extended width jumper

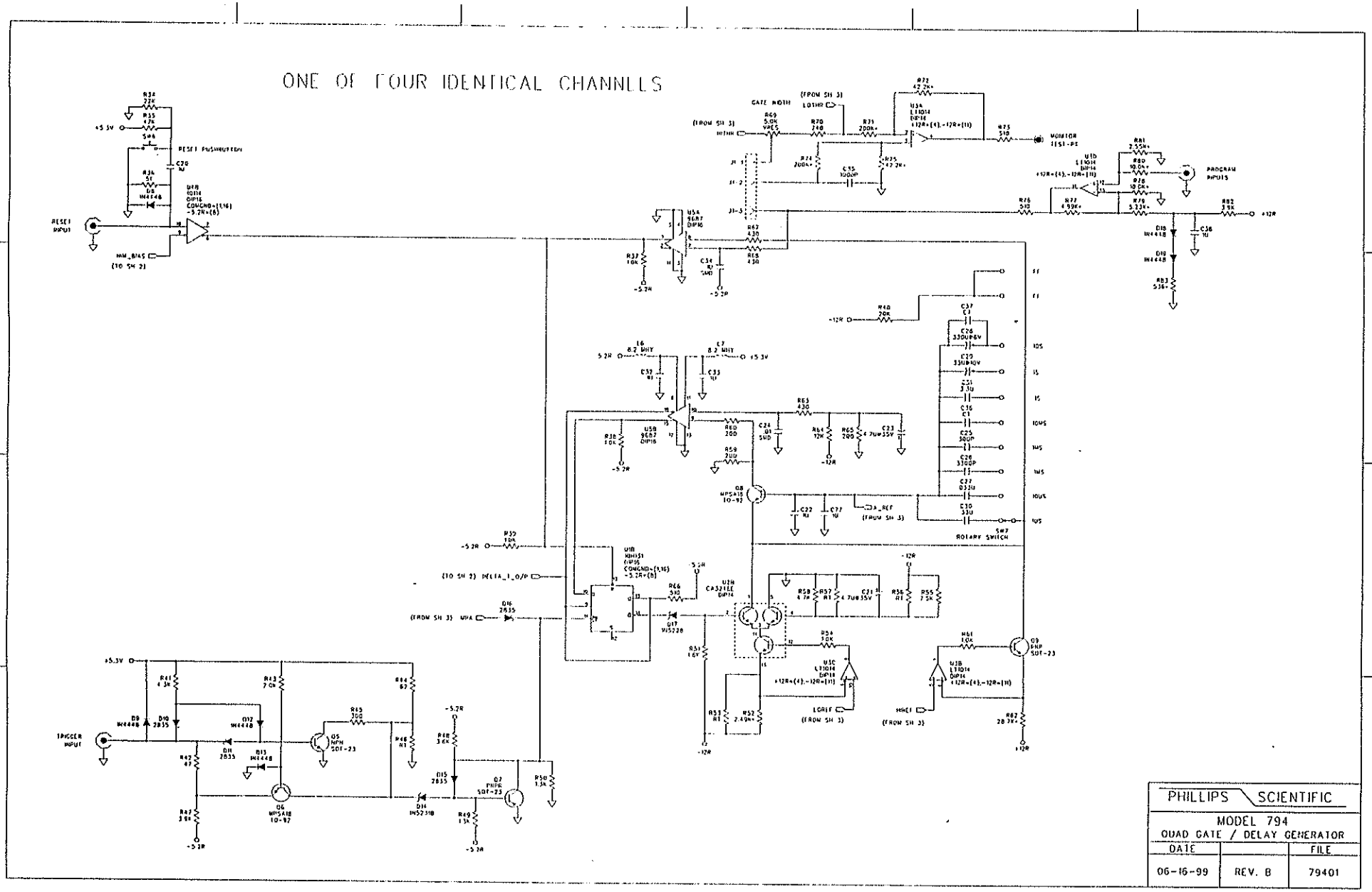
Jumper out- Normal gate width (delay pulse occurs after gate width)

Jumper in - Gate width is extended to include delay width

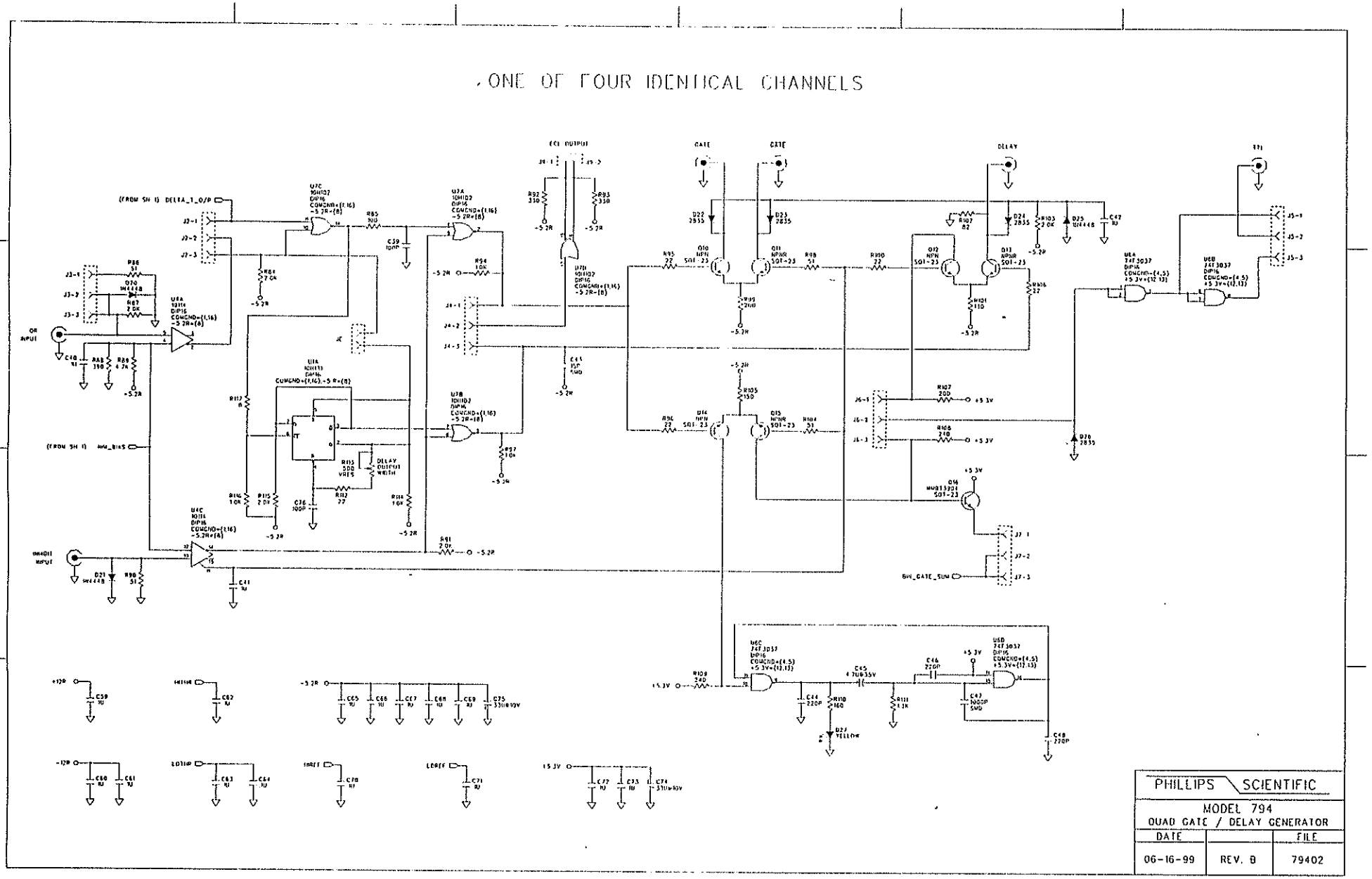


Gate pulse normal (jumper out)
Gate pulse extended (jumper in)
Delay pulse

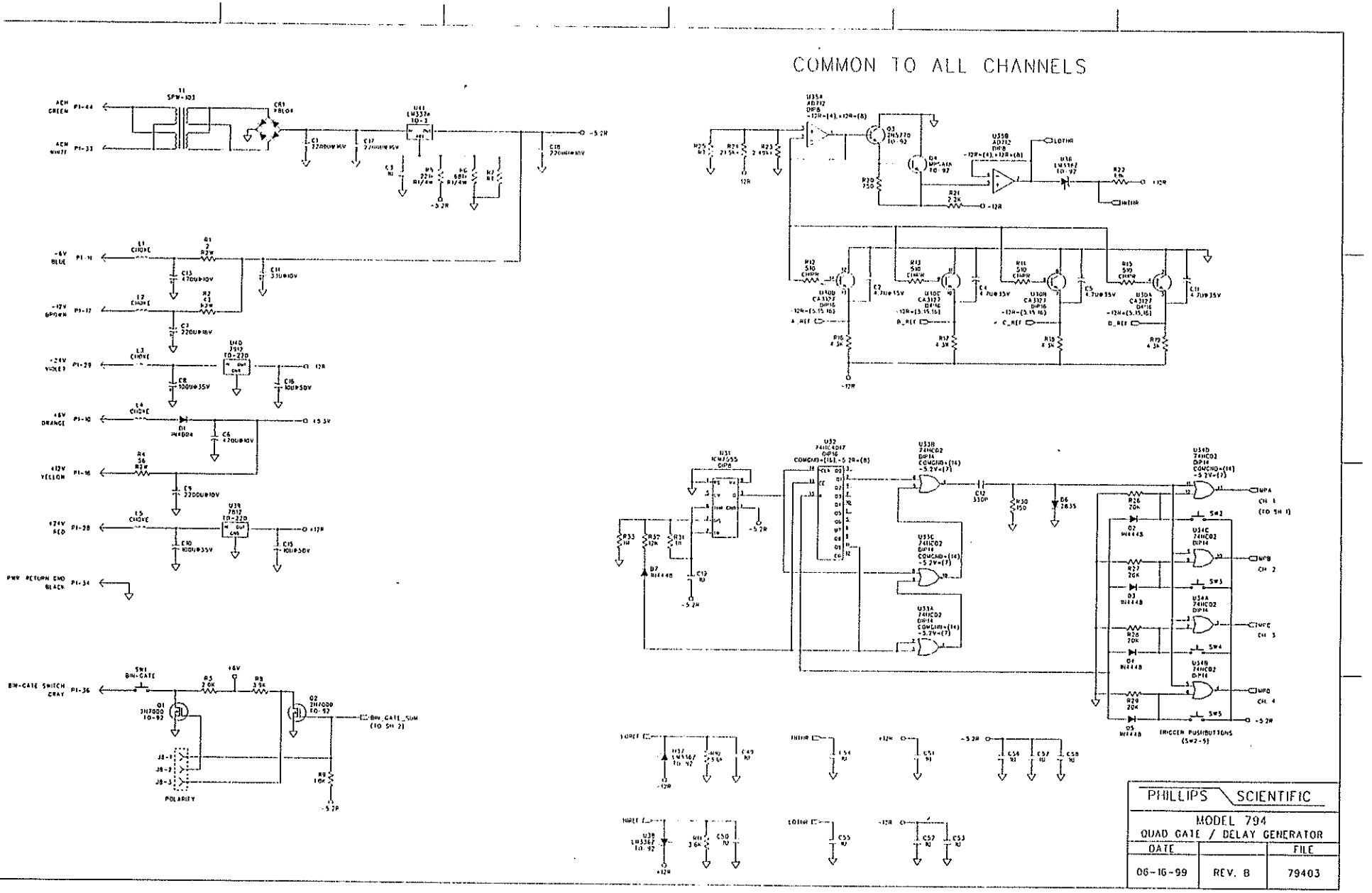
MODEL 794
GATE DELAY GENERATOR
SHEET 4 OF 4


ONE OF FOUR IDENTICAL CHANNELS
PHILLIPS SCIENTIFIC
MODEL 794
QUAD GATE / DELAY GENERATOR
DATE
06-16-99
REV. B
FILE
79401

ONE OF FOUR IDENTICAL CHANNELS



PHILLIPS SCIENTIFIC		
MODEL 794 QUAD GATE / DELAY GENERATOR		
DATE		FILE
06-16-99	REV. B	79402


COMMON TO ALL CHANNELS
PHILLIPS SCIENTIFIC
MODEL 794
QUAD GATE / DELAY GENERATOR
DATE
06-16-99
REV. B
FILE
79403

MODEL 794 PART LIST Rev. B

Ident.	Qty.	Part Number	Description
R1	1	00342R00	2 ohm 5% MOF 2w resistor
R2	1	003443R0	43 ohm 5% MOF 2w resistor
R3	1	00102001	2.0K ohm 5% CF 1/8 resistor
R4	1	003456R0	56 ohm 5% MOF 2w resistor
R5	1	00652210	221 ohm 1% RN 1/4 resistor
R6	1	00656810	681 ohm 1% RN 1/4 resistor
R7	1	00000000	Resistor Trim
R8	1	00103901	3.9K ohm 5% CF 1/8 resistor
R9	1	00101001	1.0K ohm 5% CF 1/8 resistor
R10	1	00103601	3.6K ohm 5% CF 1/8 resistor
R11	1	00103601	3.6K ohm 5% CF 1/8 resistor
R12	1	00715100	510 ohm 5% SMD 1/8 resistor
R13	1	00715100	510 ohm 5% SMD 1/8 resistor
R14	1	00715100	510 ohm 5% SMD 1/8 resistor
R15	1	00715100	510 ohm 5% SMD 1/8 resistor
R16	1	00104301	4.3K ohm 5% CF 1/8 resistor
R17	1	00104301	4.3K ohm 5% CF 1/8 resistor
R18	1	00104301	4.3K ohm 5% CF 1/8 resistor
R19	1	00104301	4.3K ohm 5% CF 1/8 resistor
R20	1	00107500	750 ohm 5% CF 1/8 resistor
R21	1	00102201	2.2K ohm 5% CF 1/8 resistor
R22	1	00101101	1.1K ohm 5% CF 1/8 resistor
R23	1	00252491	2.49K ohm 1% MF 1/8 resistor
R24	1	00252152	21.5K ohm 1% MF 1/8 resistor
R25	1	00000000	Resistor Trim
R26	1	00102002	20K ohm 5% CF 1/8 resistor
R27	1	00102002	20K ohm 5% CF 1/8 resistor
R28	1	00102002	20K ohm 5% CF 1/8 resistor
R29	1	00102002	20K ohm 5% CF 1/8 resistor
R30	1	00101500	150 ohm 5% CF 1/8 resistor
R31	1	001030R0	30 ohm 5% CF 1/8 resistor
R32	1	00101202	12K ohm 5% CF 1/8 resistor
R33	1	00101004	1.0M ohm 5% CF 1/8 resistor
R34	4	00102202	22K ohm 5% CF 1/8 resistor
R35	4	00104702	47K ohm 5% CF 1/8 resistor
R36	4	001051R0	51 ohm 5% CF 1/8 resistor
R37	4	00101001	1.0K ohm 5% CF 1/8 resistor
R38	4	00101001	1.0K ohm 5% CF 1/8 resistor
R39	4	00101001	1.0K ohm 5% CF 1/8 resistor
R40	4	00102002	20K ohm 5% CF 1/8 resistor
R41	4	00104301	4.3K ohm 5% CF 1/8 resistor
R42	4	001047R0	47 ohm 5% CF 1/8 resistor
R43	4	00102001	2.0K ohm 5% CF 1/8 resistor
R44	4	001062R0	62 ohm 5% CF 1/8 resistor
R45	4	00103000	300 ohm 5% CF 1/8 resistor
R46	4	00000000	Resistor Trim
R47	4	00103901	3.9K ohm 5% CF 1/8 resistor
R48	4	00103601	3.6K ohm 5% CF 1/8 resistor
R49	4	00101301	4.3K ohm 5% CF 1/8 resistor
R50	4	00101301	4.3K ohm 5% CF 1/8 resistor
R51	4	00101601	4.6K ohm 5% CF 1/8 resistor
R52	4	00252491	2.49K ohm 1% MF 1/8 resistor
R53	4	00000000	Resistor Trim
R54	4	00101001	1.0K ohm 5% CF 1/8 resistor
R55	4	00107501	7.5K ohm 5% CF 1/8 resistor
R56	4	00000000	Resistor Trim
R57	4	00000000	Resistor Trim

Ident.	Qty.	Part Number	Description
R58	4	00104701	4.7K ohm 5% CF 1/8 resistor
R59	4	00102000	200 ohm 5% CF 1/8 resistor
R60	4	00102000	200 ohm 5% CF 1/8 resistor
R61	4	00101001	1.0K ohm 5% CF 1/8 resistor
R62	4	00252872	28.7K ohm 1% MF 1/8 resistor
R63	4	00104300	430 ohm 5% CF 1/8 resistor
R64	4	00101202	12K ohm 5% CF 1/8 resistor
R65	4	00102000	200 ohm 5% CF 1/8 resistor
R66	4	00105100	510 ohm 5% CF 1/8 resistor
R67	4	00104300	430 ohm 5% CF 1/8 resistor
R68	4	00104300	430 ohm 5% CF 1/8 resistor
R69	4	05105001	5.0K ohm 15 turn 3/4 Rect. Pot
R70	4	00102400	240 ohm 5% CF 1/8 resistor
R71	4	00252003	200K ohm 1% MF 1/8 resistor
R72	4	00254222	42.2K ohm 1% MF 1/8 resistor
R73	4	00105100	510 ohm 5% CF 1/8 resistor
R74	4	00252003	200K ohm 1% MF 1/8 resistor
R75	4	00254222	42.2K ohm 1% MF 1/8 resistor
R76	4	00105100	510 ohm 5% CF 1/8 resistor
R77	4	00254991	4.99K ohm 1% MF 1/8 resistor
R78	4	00251002	10.0K ohm 1% MF 1/8 resistor
R79	4	00255231	5.23K ohm 1% MF 1/8 resistor
R80	4	00251002	10.0K ohm 1% MF 1/8 resistor
R81	4	00252551	2.55K ohm 1% MF 1/8 resistor
R82	4	00103901	3.9K ohm 5% CF 1/8 resistor
R83	4	00255360	536 ohm 1% MF 1/8 resistor
R84	4	00102001	2.0K ohm 5% CF 1/8 resistor
R85	4	00101000	100 ohm 5% CF 1/8 resistor
R86	4	001051R0	51 ohm 5% CF 1/8 resistor
R87	4	00102001	2.0K ohm 5% CF 1/8 resistor
R88	4	00103900	390 ohm 5% CF 1/8 resistor
R89	4	00104701	4.7K ohm 5% CF 1/8 resistor
R90	4	001051R0	51 ohm 5% CF 1/8 resistor
R91	4	00102001	2.0K ohm 5% CF 1/8 resistor
R92	4	00103300	330 ohm 5% CF 1/8 resistor
R93	4	00103300	330 ohm 5% CF 1/8 resistor
R94	4	00101001	1.0K ohm 5% CF 1/8 resistor
R95	4	001022R0	22 ohm 5% CF 1/8 resistor
R96	4	001022R0	22 ohm 5% CF 1/8 resistor
R97	4	00101001	1.0K ohm 5% CF 1/8 resistor
R98	4	001051R0	51 ohm 5% CF 1/8 resistor
R99	4	00102000	200 ohm 5% CF 1/8 resistor
R100	4	001022R0	22 ohm 5% CF 1/8 resistor
R101	4	00101300	130 ohm 5% CF 1/8 resistor
R102	4	001082R0	82 ohm 5% CF 1/8 resistor
R103	4	00102001	2.0K ohm 5% CF 1/8 resistor
R104	4	001051R0	51 ohm 5% CF 1/8 resistor
R105	4	00101500	150 ohm 5% CF 1/8 resistor
R106	4	001022R0	22 ohm 5% CF 1/8 resistor
R107	4	00102000	200 ohm 5% CF 1/8 resistor
R108	4	00102400	240 ohm 5% CF 1/8 resistor
R109	4	00102400	240 ohm 5% CF 1/8 resistor
R110	4	00101600	160 ohm 5% CF 1/8 resistor
R111	4	00101301	4.3K ohm 5% CF 1/8 resistor
R112	4	001022R0	22 ohm 5% CF 1/8 resistor
R113	4	05105000	500 ohm 15 turn 3/4 Rect. Pot
R114	4	00101001	1.0K ohm 5% CF 1/8 resistor

Ident.	Qty.	Part Number	Description
R115	4	00102001	2.0K ohm 5% CF 1/8 resistor
R116	4	00101001	1.0K ohm 5% CF 1/8 resistor
R117	4	00100000	0 ohm 5% CF 1/8 resistor
C1	1	10622207	2200 mfd @ 16v al el capacitor
C2	1	10844704	4.7 mfd @ 35v al el capacitor
C3	1	10151003	.1 mfd cer mono capacitor
C4	1	10844704	4.7 mfd @ 35v al el capacitor
C5	1	10844704	4.7 mfd @ 35v al el capacitor
C6	1	10614706	470 mfd @ 10v al el capacitor
C7	1	10522206	220 mfd @ 16v al el capacitor
C8	1	10541006	100 mfd @ 35v al el capacitor
C9	1	10612207	2200 mfd @ 10v al el capacitor
C10	1	10541006	100 mfd @ 35v al el capacitor
C11	1	10844704	4.7 mfd @ 35v al el capacitor
C12	1	10153300	330 pfd cer mono capacitor
C13	1	10614706	470 mfd @ 10v al el capacitor
C14	1	10813305	33 mfd @ 10v tan capacitor
C15	1	10551005	10 mfd @ 50v al el capacitor
C16	1	10551005	10 mfd @ 50v al el capacitor
C17	1	10622207	2200 mfd @ 16v al el capacitor
C18	1	10612207	2200 mfd @ 10v al el capacitor
C19	1	10151003	.1 mfd cer mono capacitor
C20	4	10151003	.1 mfd cer mono capacitor
C21	4	10844704	4.7 mfd @ 35v tan capacitor
C22	4	10151003	.1 mfd cer mono capacitor
C23	4	10844704	4.7 mfd @ 35v tan capacitor
C24	4	10121002	.01 mfd SMD cer capacitor
C25	4	10203006	300 pfd NPO 5% cer mono capacitor
C26	4	10203301	3300 pfd NPO 5% cer mono capacitor
C27	4	10203302	.033 mfd NPO 5% cer mono capacitor
C28	4	10813306	330 mfd @ 6v tan capacitor
C29	4	11803310	33 mfd @ 10v 5% tan capacitor
C30	4	13500334	.033 mfd polycarbon capacitor
C31	4	13500335	3.3 mfd polycarbon capacitor
C32	4	10151003	.1 mfd cer mono capacitor
C33	4	10151003	.1 mfd cer mono capacitor
C34	4	10121003	.1 mfd SMD cer capacitor
C35	4	10151001	1000 pfd cer mono capacitor
C36	4	10000000	Capacitor Trim
C37	4	10000000	Capacitor Trim
C38	4	10151003	.1 mfd cer mono capacitor
C39	4	10151000	100 pfd cer mono capacitor
C40	4	10151003	.1 mfd cer mono capacitor
C41	4	10151003	.1 mfd cer mono capacitor
C42	4	10151003	.1 mfd cer mono capacitor
C43	4	101215P0	15 pfd SMD cer capacitor
C44	4	10152200	220 pfd cer mono capacitor
C45	4	10844704	4.7 mfd @ 35v tan capacitor
C46	4	10152200	220 pfd cer mono capacitor
C47	4	10121001	1000 pfd SMD cer capacitor
C48	4	10152200	220 pfd cer mono capacitor
C49	1	10151003	.1 mfd cer mono capacitor
C50	1	10151003	.1 mfd cer mono capacitor
C51	1	10151003	.1 mfd cer mono capacitor
C52	1	10151003	.1 mfd cer mono capacitor
C53	1	10151003	.1 mfd cer mono capacitor

Ident.	Qty.	Part Number	Description
C54	1	10151003	.1 mfd cer mono capacitor
C55	1	10151003	.1 mfd cer mono capacitor
C56	1	10151003	.1 mfd cer mono capacitor
C57	1	10151003	.1 mfd cer mono capacitor
C58	1	10151003	.1 mfd cer mono capacitor
C59	4	10151003	.1 mfd cer mono capacitor
C60	4	10151003	.1 mfd cer mono capacitor
C61	4	10151003	.1 mfd cer mono capacitor
C62	4	10151003	.1 mfd cer mono capacitor
C63	4	10151003	.1 mfd cer mono capacitor
C64	4	10151003	.1 mfd cer mono capacitor
C65	4	10151003	.1 mfd cer mono capacitor
C66	4	10151003	.1 mfd cer mono capacitor
C67	4	10151003	.1 mfd cer mono capacitor
C68	4	10151003	.1 mfd cer mono capacitor
C69	4	10151003	.1 mfd cer mono capacitor
C70	4	10151003	.1 mfd cer mono capacitor
C71	4	10151003	.1 mfd cer mono capacitor
C72	4	10151003	.1 mfd cer mono capacitor
C73	4	10151003	.1 mfd cer mono capacitor
C74	4	10813305	33 mfd @ 10v tan capacitor
C75	4	10813305	33 mfd @ 10v tan capacitor
C76	4	10151000	100 pfd cer mono capacitor
C77	4	10151003	.1 mfd cer mono capacitor
D1	1	20004004	1N4004 diode
D2	1	20004448	1N4448 diode
D3	1	20004448	1N4448 diode
D4	1	20004448	1N4448 diode
D5	1	20004448	1N4448 diode
D6	1	20202835	Schottky diode
D7	1	20004448	1N4448 diode
D8	4	20004448	1N4448 diode
D9	4	20004448	1N4448 diode
D10	4	20202835	Schottky diode
D11	4	20202835	Schottky diode
D12	4	20004448	1N4448 diode
D13	4	20004448	1N4448 diode
D14	4	20255231	1N5231B 5.1V zener diode
D15	4	20202835	Schottky diode
D16	4	20202835	Schottky diode
D17	4	20255228	1N5228 3.9V zener diode
D18	4	20004448	1N4448 diode
D19	4	20004448	1N4448 diode
D20	4	20004448	1N4448 diode
D21	4	20004448	1N4448 diode
D22	4	20202835	Schottky diode
D23	4	20202835	Schottky diode
D24	4	20202835	Schottky diode
D25	4	20004448	1N4448 diode
D26	4	20202835	Schottky diode
D27	4	21000001	HLMP-1440 LED (Y)
Q1	1	24007000	2N7000 FET
Q2	1	24007000	2N7000 FET
Q3	1	24005770	2N5770 NPN transistor
Q4	1	2400SA18	MPSA18 NPN transistor

Ident.	Qty.	Part Number	Description
Q5	4	2420NPN0	NPN (SMD) (R2) transistor
Q6	4	2400SA18	MPSA18 NPN transistor
Q7	4	2420PNP0	PNP (SMD) reverse transistor
Q8	4	2400SA18	MPSA18 NPN transistor
Q9	4	2420PNP0	PNP (SMD) (MD) transistor
Q10	4	2420NPN0	NPN (SMD) (R2) transistor
Q11	4	2420NPNR	NPN (SMD) reverse transistor
Q12	4	2420NPN0	NPN (SMD) (R2) transistor
Q13	4	2420NPNR	NPN (SMD) reverse transistor
Q14	4	2420NPN0	NPN (SMD) (R2) transistor
Q15	4	2420NPNR	NPN (SMD) reverse transistor
Q16	4	24203904	MMBT3904 NPN (SMD) transistor
L1	1	15000000	Power Inductor
L2	1	15000000	Power Inductor
L3	1	15000000	Power Inductor
L4	1	15000000	Power Inductor
L5	1	15000000	Power Inductor
L6	4	15000001	8.2 mhy choke
L7	4	15000001	8.2 mhy choke
U1	4	3510H131	10H131 IC
U2	4	30503246	CA32436E IC
U3	4	30201014	LT1014CN IC
U4	4	3510114P	MC10114P IC
U5	4	30509687	9687OSID Honeywell Comp
U6	4	32F03037	74F3037 IC
U7	4	3510H102	10H102P IC
U30	1	30503127	CA3127E IC
U31	1	30507555	ICM7555 IC
U32	1	32HC4017	74HC4017N IC
U33	1	32HC0002	74HC02N IC
U34	1	32HC0002	74HC02N IC
U35	1	3020712J	AD712JN Op-Amp IC
U36	1	3010336Z	LM336Z - 5.0 TO-92 regulator
U37	1	3010336Z	LM336Z - 5.0 TO-92 regulator
U38	1	3010336Z	LM336Z - 5.0 TO-92 regulator
U39	1	3010812T	7812T TO-220 regulator
U40	1	3010912T	7912T TO-220 regulator
U41	1	3010337K	LM337K TO-3 regulator
CR1	1	2030BL04	KBL04 Bridge Rectifier
T1	1	15500003	SPW-103 Power Transformer
J1	4	40301003	SR 1x3 header
J2	4	40301003	SR 1x3 header
J3	4	40301003	SR 1x3 header
J4	4	40301003	SR 1x3 header
J5	4	40301003	SR 1x3 header
J6	4	40301003	SR 1x3 header
J7	4	40301003	SR 1x3 header
J8	1	40301003	SR 1x3 header
J9	4	40306002	2 pin WW header
JE	4	40301001	SR 1x2 header

MODEL 794 PART LIST Rev. B

Ident.	Qty.	Part Number	Description
	2	40000008	8 Pin DIP Socket
	10	40000014	14 Pin DIP Socket
	22	40000016	16 Pin DIP Socket
	4	40021P02	1x2 Strip Socket
	32	40100000	Lemo Connector
	32	40100001	Lemo Lock Washer
	12	40100002	Lemo Solder Lug
	32	40100003	Lemo Spanner Nut
	20	40100005	Lemo Shield
	4	40100007	Lemo PC mt Connector
	1	40200000	NIM Connector Block
	1	40200001	NIM Connector Shield
	10	40200002	NIM Elect. Pin Male
	2	40200003	NIM Female Guide Pin
	1	40200004	NIM Male Guide Pin
	1	40200005	NIM Male Guide Pin Gold Plate
	1	40200006	#4 Lock Washer Gold Plate
	1	40200007	#4-40 Hex Nut Gold Plate
	4	40950001	Test Point
	2	40950002	Solder Lug
SW1	1	50000000	Slide Switch DPDT
SW2-5	4	50002001	Push Button Switch non-off
SW6	4	50002001	Push Button Switch non-off
SW7	4	50005003	Rotary Switch 10 position
	4	50005004	Knob for Switch
	1	5800794R	Back Panel
	1	58000103	Right Side Cover
	1	58000104	Left Side Cover
	2	58000105	Square Rail
	2	58000106	Round Rail
	1	58007940	Front Panel
	7	65144006	4-40 x 3/8" Round Head Phillips Screw
	1	65944004	4-40 x 1/4" Round Head Fillister Screw
	1	67504400	4-40 Kep Nut
	1	68000601	1/16" Nylon Shoulder Washer
	3	68000602	1/8" Nylon Shoulder Washer
	4	68000605	Shoulder Washer for Model 794
	4	72020000	Shaft Coupler
	2	73000000	3/16" Rivet
	2	73010000	Stand Off
	2	73010001	Captive Screw
	4	73020001	1/8" Fiberglass Rod
	2	73030000	Mounting Bracket for 794-1 Bd
	1	75000000	TO-3 Insulating Washer
	1	75000002	TO-3 Insulating Cover
	1	85007940	Model 794 Printed Circuit Board
	1	85007941	Model 794-1 Printed Circuit Board