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761015

TEST AND MEASURING EQUIPMENT

Cd 911

### PM 3240(X) - PM 3244 - PM 3260

Optional addition of a Main Time-Base Gate Output  
Delayed Time-base Gate Output  
External Z-modulation Input  
(Suitable for Logic Analyzers)

Already published: Cd 857, Cd 867, Cd 869, Cd 850, Cd 855, Cd 863, Cd 868, Cd 869,  
Cd 879, Cd 880, Cd 905.

This Service Information replaces Cd 850 and Cd 857

### GENERAL

The relevant BNC connectors can be mounted in any of the five holes provided to this end in the rear frame of the oscilloscope. Only in the rear cover plate holes must be drilled.

All three options may be mounted on a printed-wiring board which is available at the Commercial Dept. T&M S&I, Eindhoven.

#### 1. Main time-base gate output PM 3240(X) - PM 3244

Replace resistor R868 (on the time-base board next to the ALT pulse output) by a series circuit consisting of a 5,36-kOhm-resistor and a 261-Ohm-resistor. The 261-Ohm-resistor must be mounted at the collector side of transistor TS858. From the junction of both series resistors a 1-kOhm-resistor and a coaxial 50-Ohm-cable lead the signal to the emitter-follower on the additional printed-wiring board. The emitter-follower is mounted on to the additional printed-wiring board in accordance with figures 1 and 4. The output of the emitter-follower is connected to the BNC connector via a coaxial 50-Ohm-cable.

#### Required material:

1 resistor 5,36 kOhm, MR25	5322 116 54597
1 resistor 261 Ohm, MR25	5322 116 54502
3 resistors 1 kOhm, MR25	5322 116 54549
1 transistor BC549C	5322 130 44246
coaxial 50-Ohm-cable (per metre)	5322 320 10003
1 BNC connector	5322 267 10004

#### Output signal:

The output signal consists of positive pulses of approx. 6 V.

## 2. Delayed time-base gate output PM 3240(X) - PM 3244

Replace resistor R1063 (on the time-base board next to contact 7 of Stocko plug BU808) by a series circuit consisting of a 5,36-kOhm-resistor and a 261-Ohm-resistor. The 261-Ohm-resistor must be mounted at the collector side of transistor TS1053. From the junction of both series resistors a 1-kOhm-resistor and a coaxial 50-Ohm-cable lead the signal to the emitter-follower on the additional printed-wiring board. The emitter-follower is mounted on to the additional printed-wiring board in accordance with figures 2 and 4. The output of the emitter-follower is connected to the BNC connector via a coaxial 50-Ohm-cable.

### Required material:

1 resistor 5,36 kOhm, MR25	5322 116 54597
1 resistor 261 Ohm, MR25	5322 116 54502
3 resistors 1 kOhm, MR25	5322 116 54549
1 transistor BC549C	5322 130 44246
coaxial 50-Ohm-cable (per metre)	5322 320 10003
1 BNC connector	5322 267 10004

### Output signal:

The output signal consists of positive pulses of approx. 6 V.

## 3. External Z-modulation input PM 3240(X) - PM 3244

The Z-modulation circuitry is mounted on to the additional printed wiring board in accordance with figures 3 and 4. The output of the Z-modulation circuit is connected to the emitter of transistor TS1302 on the Z unit of the oscilloscope via a coaxial 50-Ohm-cable. The BNC connector to be mounted on the rear of the oscilloscope is connected to the input of the Z-modulation circuit via a 50-Ohm-cable.

### Required material:

1 resistor 560 kOhm, CR37	4822 110 53181
1 resistor 680 kOhm, CR37	4822 110 53183
1 resistor 10 MOhm, CR37	4822 110 53214
1 resistor 33,2 kOhm, MR25	5322 116 50482
1 resistor 33,2 Ohm, MR25	5322 116 50527
1 resistor 1 kOhm, MR25	5322 116 54549
1 resistor 750 Ohm, MR25	5322 116 54536
2 capacitors 10 nF, cer. plate	4822 122 30043
1 capacitor 27 nF, cer. plate	4822 122 30045
1 capacitor 33 pF, cer. plate	4822 122 31067
1 transistor BC549C	5322 130 44246
1 transistor BC559	5322 130 40963
coaxial 50-Ohm-cable (per metre)	5322 320 10003
1 BNC connector	5322 267 10004

### Input characteristics

Input impedance	approx. 1 MOhm//15 pF
Blanking	by positive input signal
Complete blanking at maximum trace brilliance	by a positive input signal of approx 4,5 V

### Adjustments

After completion of the mounting procedure, the spot intensity must be readjusted in accordance with the adjusting procedure in the relevant manual.

#### 4. Main time-base gate output PM 3260

Replace resistor R813 (on the main time-base board near the STAB preset potentiometer R806) by a series circuit consisting of a 100-Ohm-resistor and the original 8,25-kOhm-resistor. The 100-Ohm-resistor must be mounted at the collector side of transistor TS802. From the junction of both series-resistors, a 1-kOhm-resistor and a coaxial 50-Ohm-cable lead the signal to the emitter-follower on the additional printed-wiring board. The emitter-follower is mounted on to the additional printed-wiring board in accordance with figures 5 and 8. The output of the emitter-follower is connected to the BNC connector via a coaxial 50-Ohm-cable.

##### Required material:

1 resistor 100 Ohm, MR25	5322 116 54469
3 resistors 1 kOhm, MR25	5322 116 54549
1 transistor BC549C	5322 130 44246
coaxial 50-Ohm-cable (per metre)	5322 320 10003
1 BNC connector	5322 267 10004

##### Output signal:

The output signal consists of positive pulses of approx. 6 V.

#### 5. Delayed time-base gate output PM 3260

Replace resistor R1213 (on the delayed time-base board near STAB preset potentiometer R1206 and integrated circuit IC1001) by a series circuit consisting of a 100-Ohm-resistor and the original 8,25-kOhm-resistor. The 100-Ohm-resistor must be mounted at the collector side of transistor TS1202. From the junction of both series resistors, a 1-kOhm-resistor and a coaxial 50-Ohm-cable lead the signal to the emitter-follower on the additional printed-wiring board. The emitter-follower is mounted on to the additional printed-wiring board in accordance with figures 6 and 8. The output of the emitter-follower is connected to the BNC connector via a coaxial 50-Ohm-cable.

##### Required material:

1 resistor 100 Ohm, MR25	5322 116 54469
3 resistors 1 kOhm, MR25	5322 116 54549
1 transistor BC549C	5322 130 44246
coaxial 50-Ohm-cable (per metre)	5322 320 10003
1 BNC connector	5322 267 10004

##### Output signal:

The output signal consists of positive pulses of approx. 6 V.

#### 6. External Z-modulation input PM 3260

The Z-modulation circuitry is mounted on to the additional printed-wiring board in accordance with figures 7 and 8. The output of the Z-modulation circuit is connected to the emitter of transistor TS504 on the Final X and Z amplifier board of the oscilloscope via a coaxial 50-Ohm-cable. The BNC connector to be mounted on the rear of the oscilloscope is connected to the input of the Z-modulation circuit via a 50-Ohm-cable.

*Required material:*

1 resistor 560 kOhm, CR37	4822 110 53181
1 resistor 680 kOhm, CR37	4822 110 53183
1 resistor 10 MOhm, CR37	4822 110 53214
1 resistor 40,2 kOhm, MR25	5322 116 50474
1 resistor 33,2 Ohm, MR25	5322 116 50527
1 resistor 866 Ohm, MR25	5322 116 54543
1 resistor 909 Ohm, MR25	5322 116 54545
1 resistor 1,4 kOhm, MR25	5322 116 54562
2 capacitors 10 nF, cer, plate	4822 122 30043
1 capacitor 27 pF, cer. plate	4822 122 30045
1 capacitor 33 pF, cer. plate	4822 122 31067
1 transistor BC549C	5322 130 44246
1 transistor BC559	5322 130 40963
coaxial 50-Ohm-cable (per metre)	5322 320 10003
1 BNC connector	5322 267 10004

*Input characteristics:*

Input impedance	approx. 1 MOhm//15 pF
Blanking	by positive input signal
Complete blanking at maximum trace brilliance	by a positive input signal of approx. 4,5 V

*Adjustments:*

After completion of the mounting procedure, the spot intensity must be readjusted in accordance with the adjusting procedure in the manual.

**7. Location of the additional p.w. board in PM 3240(X) - PM 3244**

The additional board can be screwed to the aluminium side strip of the oscilloscope next to the Z-unit, as indicated in figure 9.

In some models, this space is partly occupied by the graticule illumination unit. In this case, the latter must be mounted at the other side of the oscilloscope, next to the e.h.t. unit; this has also been indicated in figure 9.

**8. Location of the additional p.w. board in PM 3260**

The additional board can be screwed to the screening plate of the two time-base units, as indicated in figure 10. The board must be positioned in such way that the components face the inside of the oscilloscope.

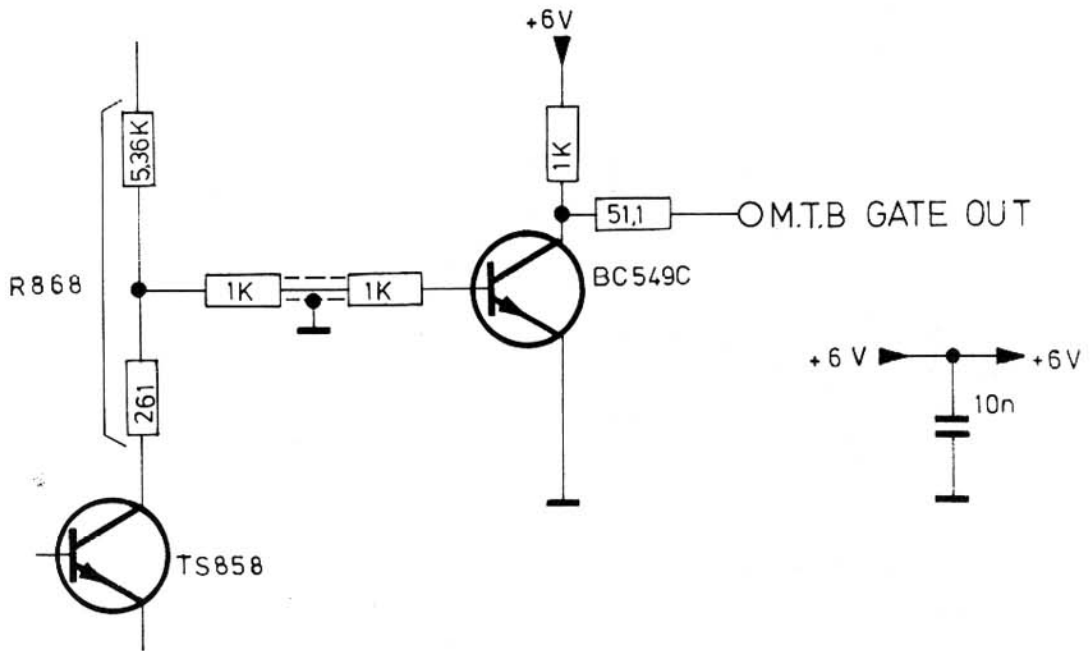


Fig. 1. Main time-base gate output PM 3240(X) - PM 3244

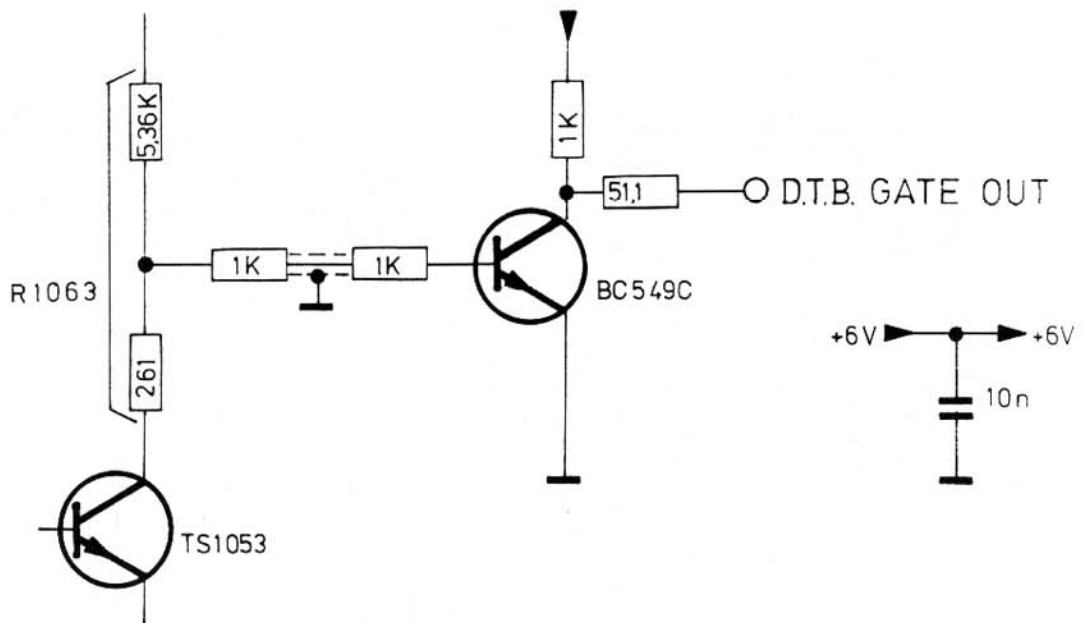


Fig. 2. Delayed time-base gate output PM 3240(X) - PM 3244

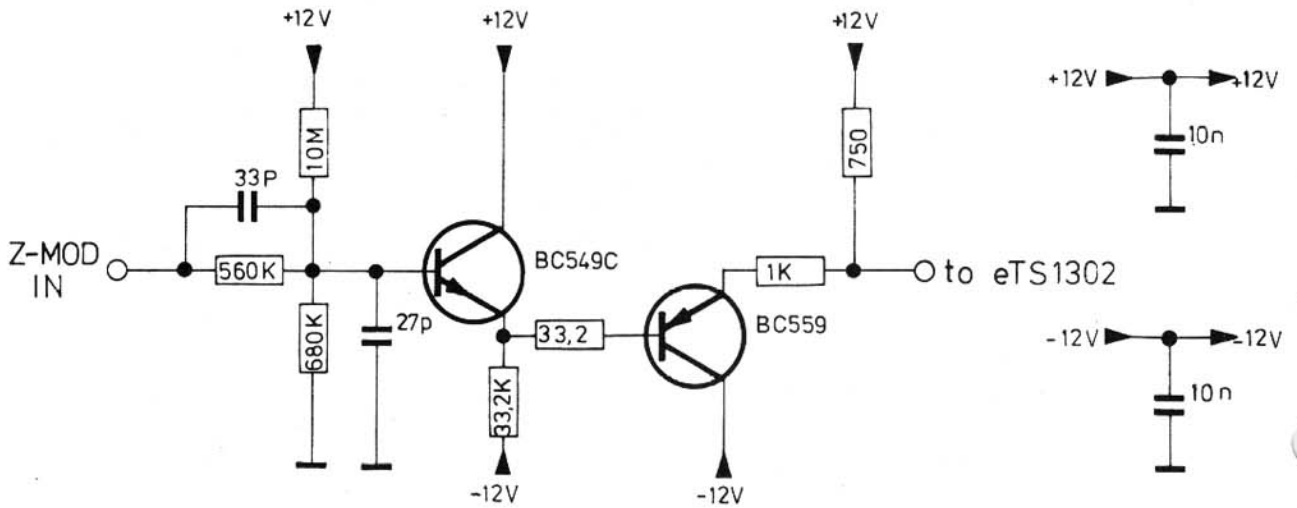


Fig. 3. Ext. Z-mod. input PM 3240(X) - PM 3244

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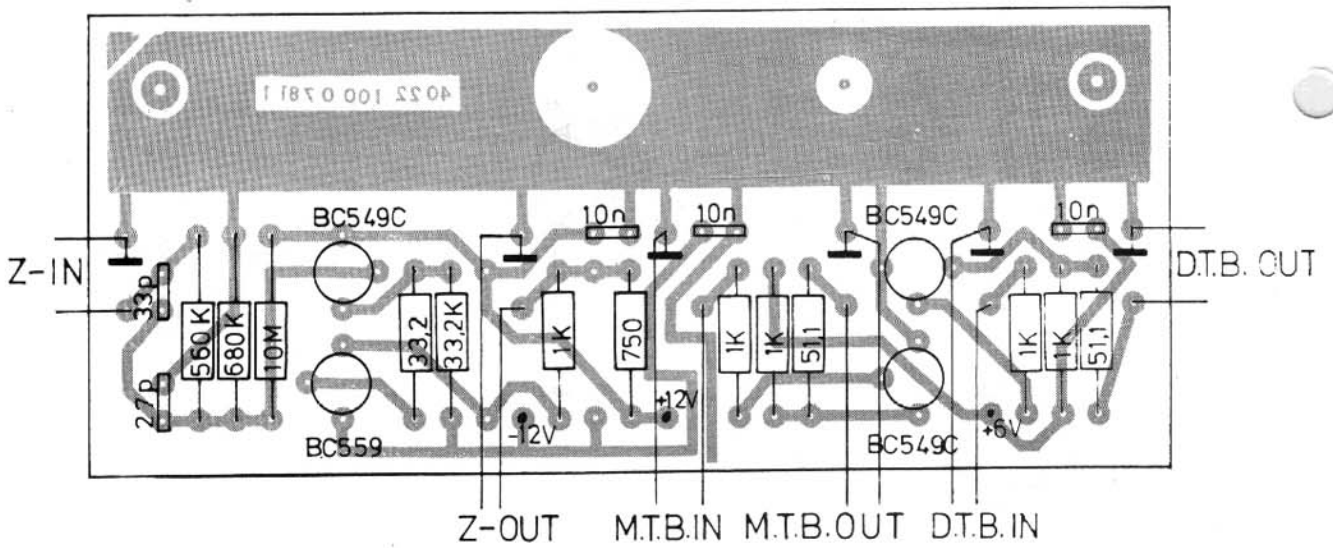


Fig. 4. Additional p.w. board with parts PM 3240(X) - PM 3244

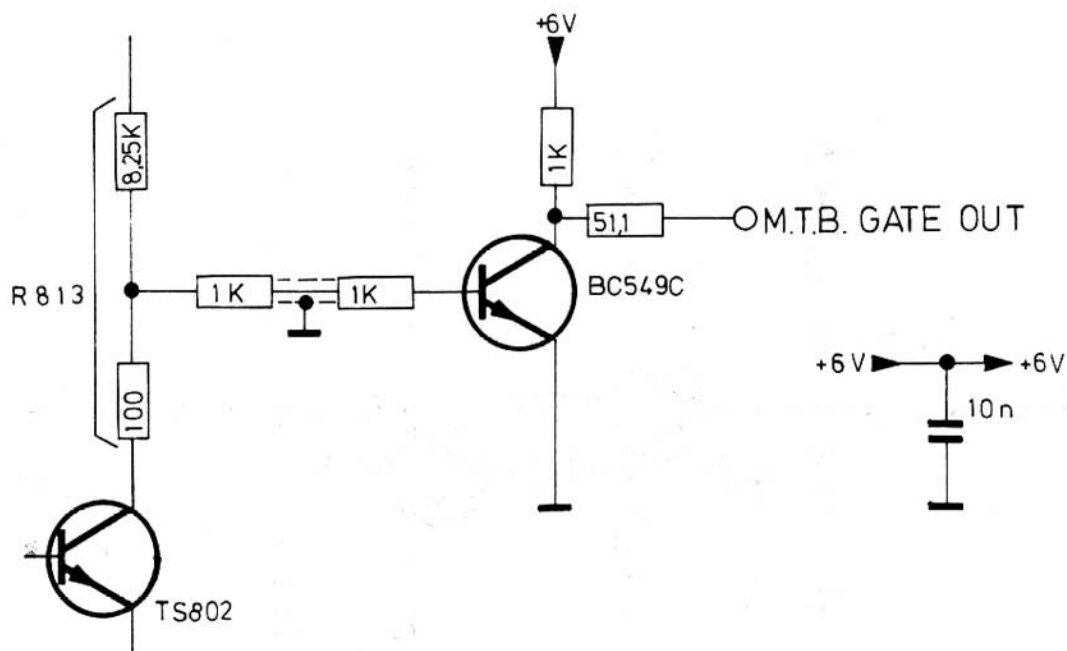


Fig. 5. Main time-base gate output PM 3260

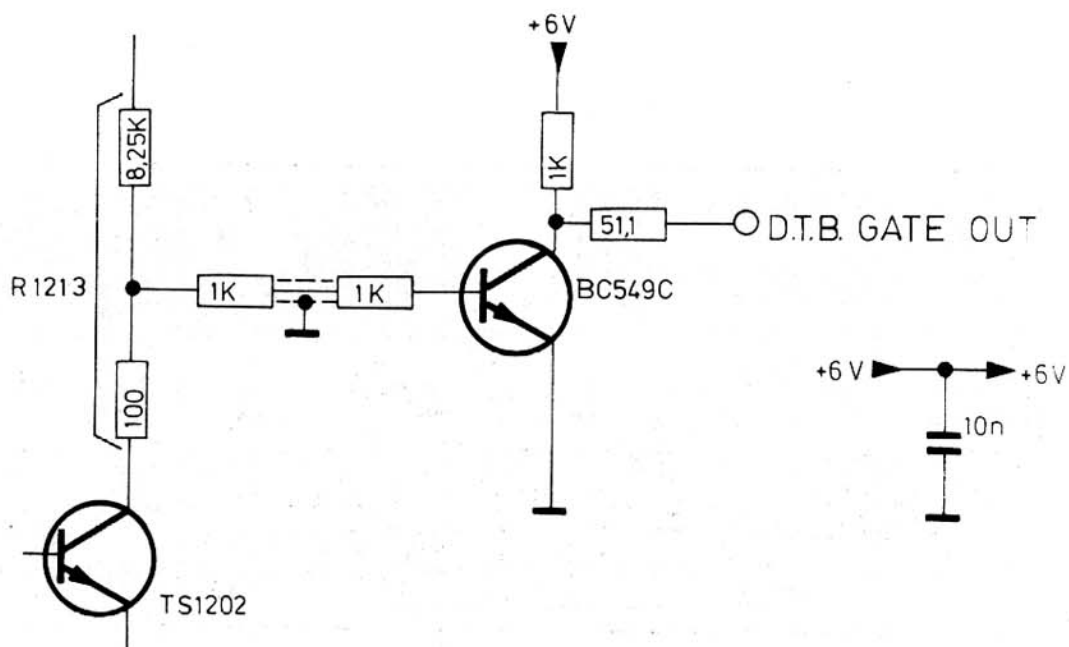


Fig. 6. Delayed time-base gate output PM 3260

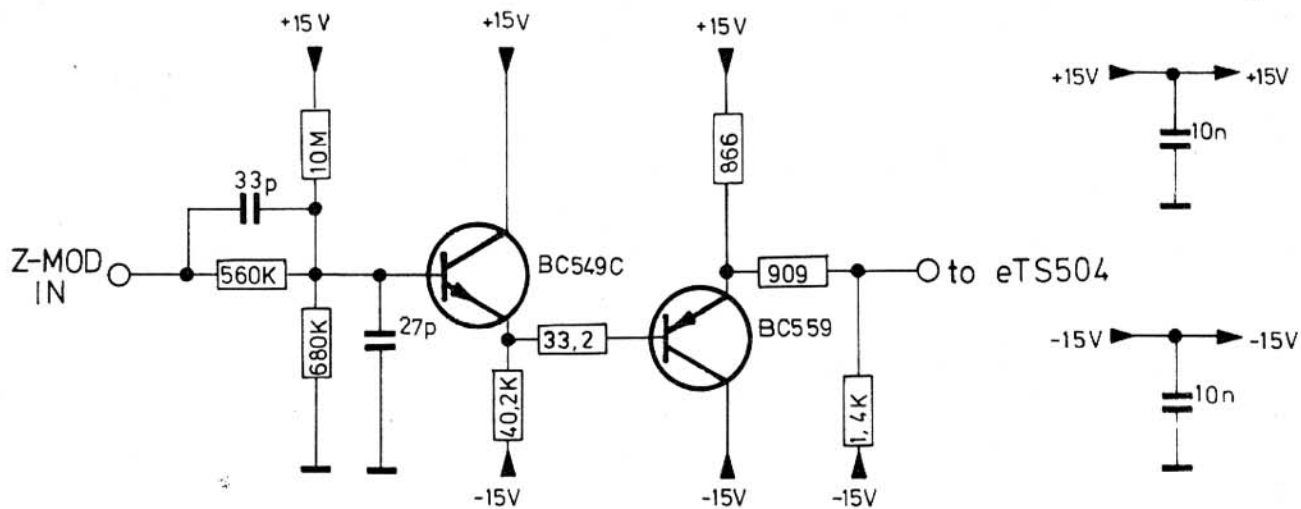


FIG.7 EXT. Z-MOD INPUT PM3260

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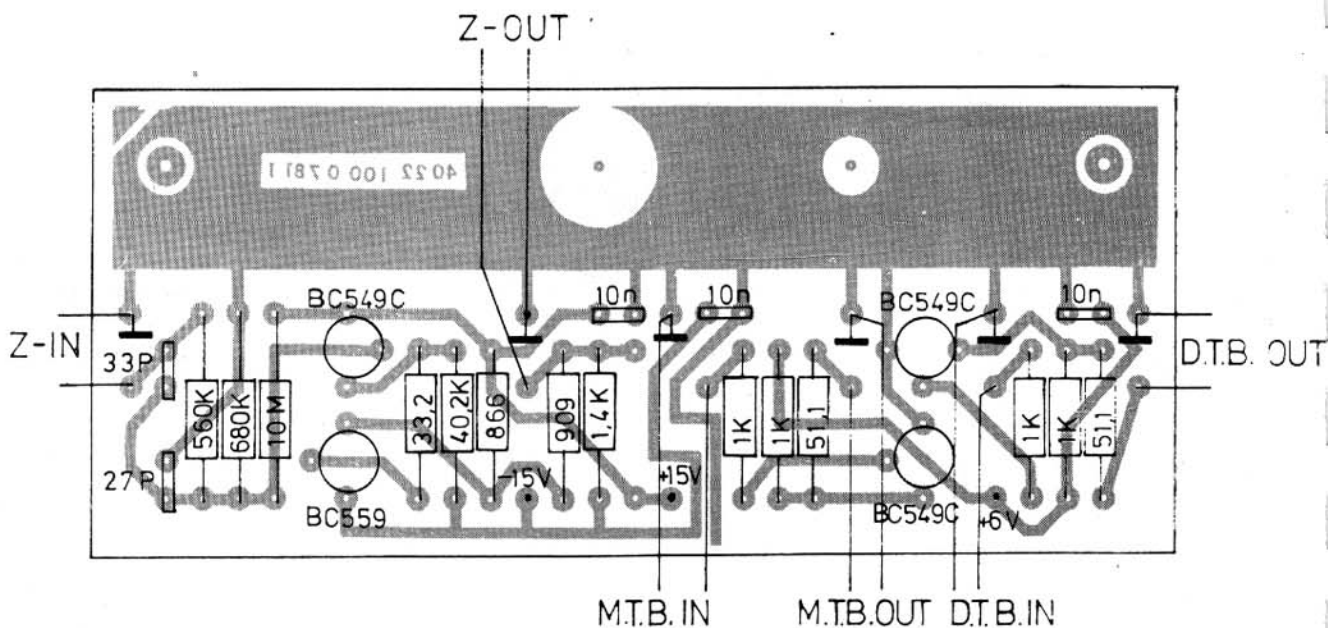


Fig. 8. Additional p.w. board with parts PM 3260



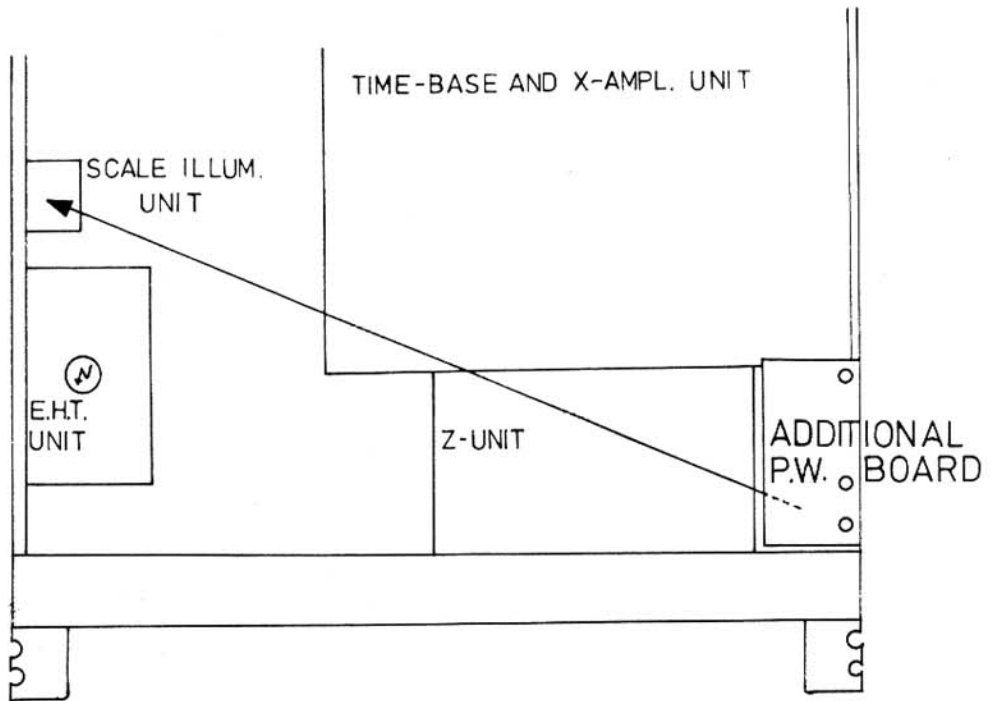


Fig. 9. Location of the additional board in PM 3240(X) - PM 3244

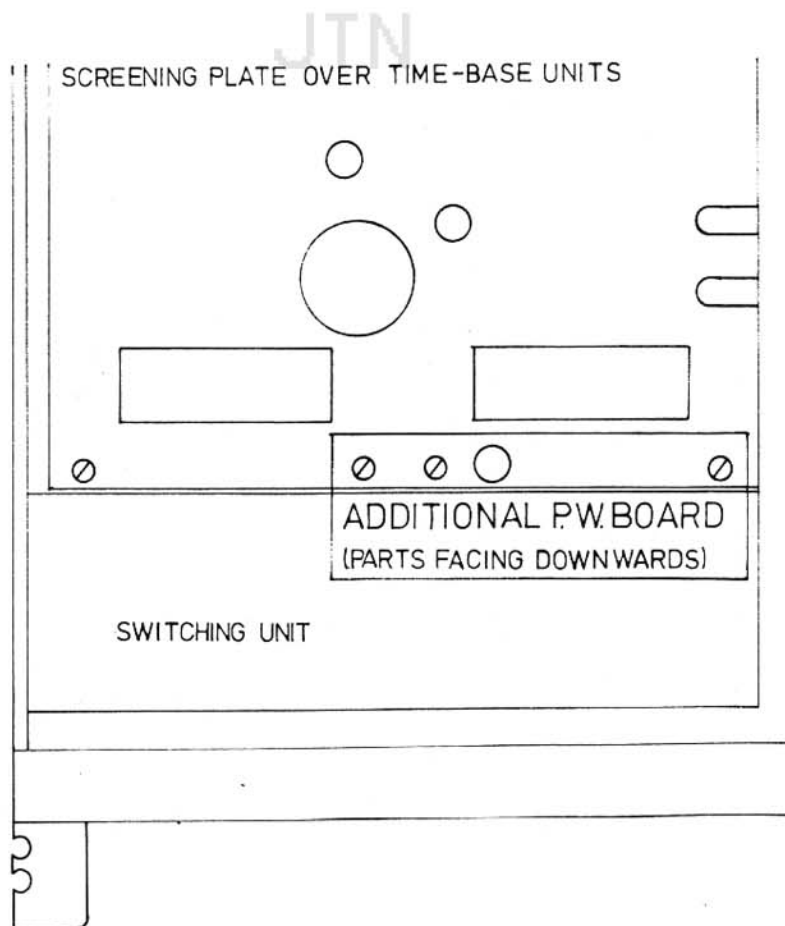


Fig. 10. Location of the additional board in PM 3260