

466
MOD 157T

This manual insert describes the features of MOD 157T as it applies to the 466 Oscilloscope. The instrument has a rear-panel A Sweep +Sawtooth output in lieu of B Sweep +Gate output. Amplitude is approximately 1 V per division.

SAWTOOTH AMPLIFIER. A direct-coupled inverting amplifier has been added, providing a positive-going output ramp corresponding to each operation of Sweep Generator A (before magnification or positioning), approximately +1 V for each division of sweep deflection (Mag X1).

Output. The rear-panel B +GATE circuit has been deleted, and the A +Sawtooth output signal is provided via this BNC connector

CHARACTERISTICS

A +SAWTOOTH OUT

Amplitude. Output amplitude of the +Sawtooth out is 1 V $\pm 5\%$ per division of A sweep deflection (unmagnified); typically 11 V p-p for the 10.5 to 11 division sweep length, in most operating modes. If the A TRIG HOLDOFF control is set to B ENDS A in the MIX, A INTEN or B DLY'D mode, the amplitude will be less, as determined by the start time and duration of Sweep B.

Offset. Quiescent dc level between sweeps is internally adjustable from 0 V to -5.5 V and is initially set to 0 V (± 0.5 V).

Source Impedance. Output impedance of the +Sawtooth Output signal is 1 k Ω $\pm 10\%$, providing up to 11 mA p-p signal output into its impedance loads. The amplifier is not damaged by passive external loading down to 0 ohms.

CALIBRATION

Calibrate the instrument as outlined in the instruction manual then check for the following ratings:

466 - Set controls as follows:

| | |
|---------------------|------|
| HORIZONTAL DISPLAY | A |
| TRIG MODE | AUTO |
| A TRIGGER HOLDOFF | ccw |
| A and B TIME/DIV | 1 ms |
| DELAY TIME POSITION | .20 |

Test Scope - Set controls as follows:

VERTICAL

| | |
|----------------|----|
| INPUT SELECTOR | DC |
| VOLT/DIV | 5 |

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HORIZONTAL

| | |
|---------------|------|
| TRIG MODE | AUTO |
| TRIG SOURCE | INT |
| TRIG COUPLING | AC |
| TIME/DIV | 5 ms |

1. Connect a 50Ω BNC cable between the A Sawtooth connector at the rear of the 466 instrument and the Vertical Input of the test scope.
2. Rotate the Level Set control (R1354) on the Sawtooth Output board (located just forward of the power transformer) through its range, and check the sawtooth display on the test scope for a baseline level shift from approximately +0.5 volts to -5.5 volts; also check for a sawtooth amplitude of 11 volts.
3. Adjust the Level Set control for a baseline level of 0 volts.
4. Install a 50Ω termination at the Vertical Input of the test scope and change the VOLTS/DIV to 0.2; check for a sawtooth amplitude of .55 volts.

PARTS LIST
Electrical

CAPACITORS

| | | | |
|-------|-----|-------------|------------------------------|
| C1350 | Add | 201-0609-00 | 1 pF, Cer, 500 V, ± .1 pi |
| C1352 | Add | 283-0177-00 | 1.0 μF, Cer, 25 V, -20% +80% |
| C1356 | Add | 283-0024-00 | 0.1 μF, Cer, 30 V, -20% +80% |

DIODES

| | | | |
|--------|-----|-------------|-----------------|
| CR1350 | Add | 152-0141-02 | Silicon, 1N4152 |
| CR1356 | Add | 152-0141-02 | Silicon, 1N4152 |
| CR1357 | Add | 152-0141-02 | Silicon, 1N4152 |

TRANSISTORS

| | | | |
|-------|-----|-------------|-----------------------|
| Q1350 | Add | 151-0216-00 | Silicon, PNP, MPS6523 |
| Q1352 | Add | 151-0301-00 | Silicon, PNP, 2N2907 |
| Q1354 | Add | 151-0302-00 | Silicon, NPN, 2N2222A |

RESISTORS

| | | | |
|-------|-----|-------------|-----------------------|
| R1350 | Add | 321-0316-00 | 19.1 kΩ, 1/8 W, 1% |
| R1351 | Add | 321-0346-00 | 39.2 kΩ, 1/8 W, 1% |
| R1352 | Add | 321-0316-00 | 19.1 kΩ, 1/8 W, 1% |
| R1353 | Add | 321-0367-00 | 64.9 kΩ, 1/8 W, 1% |
| R1354 | Add | 311-1556-00 | 50 kΩ, Var, 1/2 W, 5% |
| R1355 | Add | 315-0102-00 | 1 kΩ, 1/4 W, 5% |

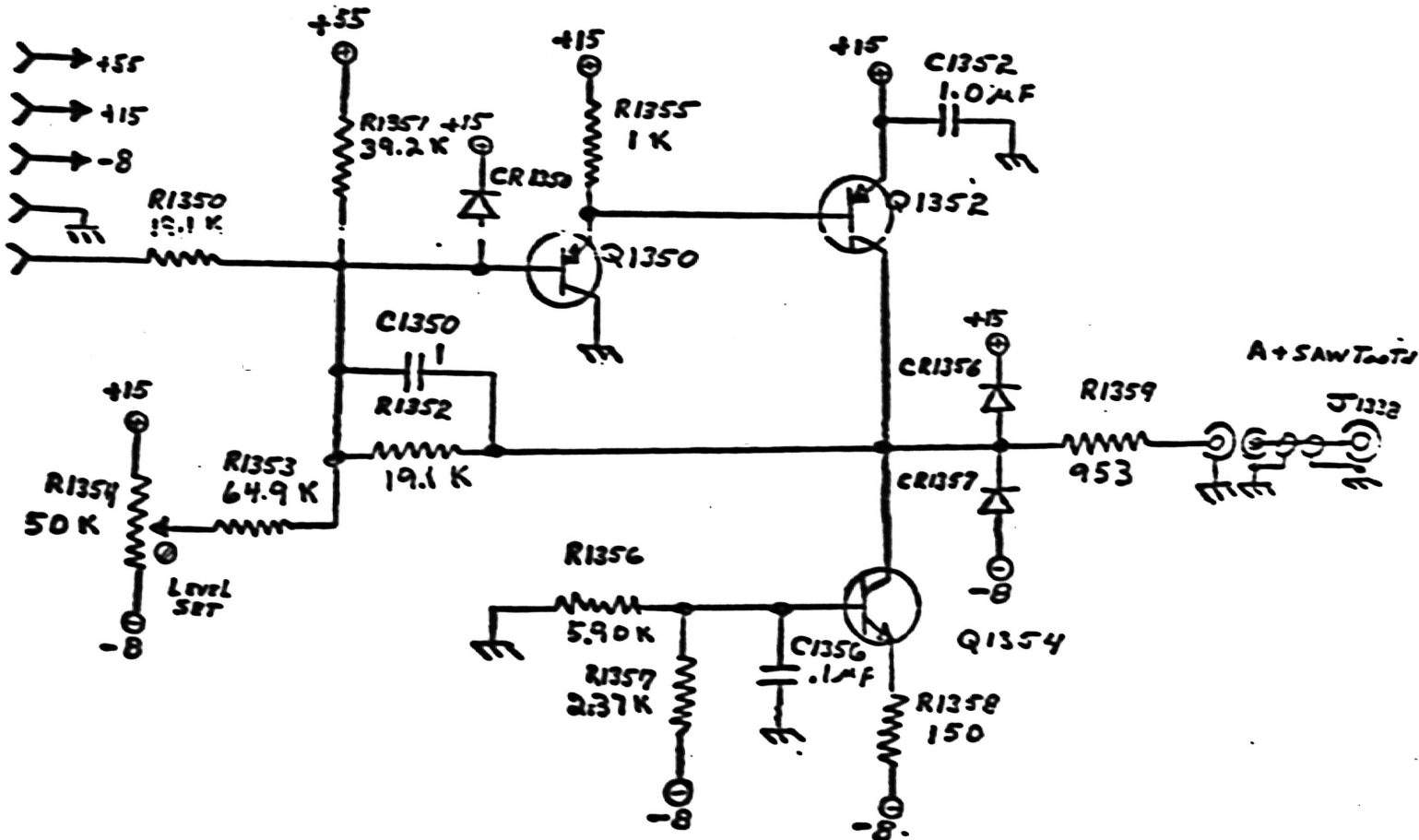
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RESISTORS continued

| | | | |
|-------|-----|-------------|-----------------------------|
| R1356 | Add | 321-0267-00 | 5.90 k Ω , 1/8 W, 1% |
| R1357 | Add | 321-0229-00 | 2.37 k Ω , 1/8 W, 1% |
| R1358 | Add | 321-0114-00 | 150 Ω , 1/8 W, 1% |
| R1359 | Add | 321-0191-00 | 953 Ω , 1/8 W, 1% |

Mechanical

| | | | |
|---|-----|----|-------------|
| ♦Sawtooth Out Circuit Board, film #M1101B | Add | 1 | 037-6183-00 |
| Connector, terminal pin | Add | 5 | 131-0608-00 |
| Socket, pin | Add | 10 | 136-0252-04 |
| Tag, connector, ID, film #7052-1 | Add | 1 | 034-0539-00 |
| Holder, terminal, 5-slot, brown | Add | 1 | 352-0163-01 |



PARTIAL SWEEP iZ AXIS LOGK

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