



PROVIDING 100-, 1,000-, and 10,000-SECOND GATE TIMES FOR THE MODEL 524C/D COUNTER

The Model 526C Period Multiplier is normally used with the 524C/D Counters to make more accurate measurements of low frequencies. Circuitry in the 526C permits measurement of the average time of 1, 10, 1,000 or 10,000 periods of the unknown signal. This is done by gating "ON" the 524C/D counting circuits for 1, 10, 100, 1,000 or 10,000 cycles of the unknown frequency.

Additional versatility in 524C/D applications may be obtained by using the 526C unit to provide accurately controlled gate times for other purposes. For example, gate times longer than those normally available in the 524C/D may be desired for totalizing random events, or for frequency measurement in cases where excessive noise, slight variations in signal frequency, or other factors make direct measurement of frequency more desirable than period measurement.

Display time can be minimized by pushing the reset button, which resets all the decade dividers in the 526C to a count of nine. The next 1 cps pulse from pin

2 of V247 will open the count gate except when the 524C/D function switch is in the 10 period average position. In this position display time may still be undesirably long, since the 524C/D's final decade divider Z203 (prior to gate circuitry) resets to a count of 8. A reset count of 9 may be achieved by modifying Z203; however, it is recommended that the reset of Z203 be left at the count of 8 for normal 524C/D operation.

To modify Z203, interchange the connections of R803 and R808 so that pin 7 of V801 is returned through R803 to ground, and pin 2 of V801 is returned through R808 to the reset bus.

A 1 cps pulse, conveniently available from the 524C/D itself, can be used as the input to the 526C to provide gate times of 100, 1,000 or 10,000 seconds.

PROCEDURE

- 1) Take an accurately timed 1 cps from cathode resistor R474 of the 1 cps phantastron divider of the 524C/D. (Pin 2 of V247 to ground)*
- 2) Apply the 1 cps pulse through a 0.5 μf blocking capacitor to the SIGNAL INPUT jack of the 524C/D.
- 3) Apply the unknown signal (frequency to be measured) to the STD. FREQ. OUTPUT jack. Set FREQUENCY STANDARD switch to INTERNAL, and TIME UNIT selector to EXT.
- 4) Then, with FUNCTION SELECTOR on PERIOD or 10 PERIOD AVERAGE, the gate time is controlled by setting of the 526C Period Multiplier.

EXAMPLES

- 1) 10 period average setting on 524C/D and 1000 setting on 526C provides 10,000 second gate.
- 2) Period setting on 524C/D and 100 setting on 526C provides 100 second gate.

Basic accuracy of the 524C/D is retained for the longer gate times since the 1 cps signal is derived directly from the highly stable oscillator of the 524C/D Counter. The 1 cps pulse may be obtained from any suitable oscillator which provides the desired accuracy.

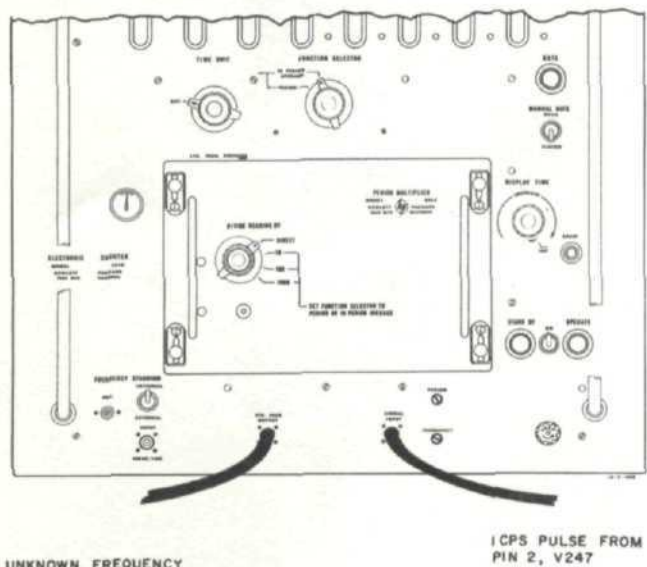


Figure 1. Using the 526C Period Multiplier Unit to Provide Longer Gate Times for the 524C/D Electronic Counters

* If the 524C/D is equipped with a Digital Recorder Adapter Kit, the 1 cps pulse can be obtained from the output connector of the kit.

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