53131A-08

S E R V I C E N O T E

Supersedes:
None

53131A - 225 MHz Counter

Serial Numbers: **MY47000000/MY99999999**
SG47000000/SG99999999

Behavior of the 53131A/53132A Counter LED trigger indicator and input sensitivity differs from earlier units.

Parts Required:

P/N	Description	Qty.

None

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **INFORMATION ONLY**	
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ADDITIONAL INFORMATION:	

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Agilent Technologies

Situation:

The comparator used on the input of channels 1 and 2 was discontinued by the manufacturer and Agilent redesigned the 531XXA counters to use a different comparator, resulting in two changes in behavior: The LED trigger indicator and the input sensitivity.

The LED trigger indicator above the channel input indicates whether the counter is triggering on the input signal. As a result, the behavior of the LED trigger indicator on units with the new comparator may differ from what is listed in the manual:

Serial Number	Signal Level	Indicator Behavior
<MY47000000/SG47000000	Signal is too High Signal is too Low Counter is triggering	Indicator remains on Indicator remains off Indicator flashes
>MY47000000/SG47000000	Signal is too High Signal is too Low Counter is triggering	Indicator remains on Indicator flashes (~2/second) Indicator flashes

The new comparator is more sensitive at lower frequencies. In some applications, the increased sensitivity may allow the counter to trigger on noise, especially when making low frequency measurements. If the additional sensitivity is not suited to your application, the following steps may be used to decrease the sensitivity so the counter does not trigger on signal or environmental noise.

Both of these effects may be observed when the unit is powered on and no signal is attached to either channel. At power-on, the counter is set to measure frequency on channel 1 with the highest sensitivity and auto trigger level. With no signal attached, the increased sensitivity may allow the counter to trigger on environmental noise. The indicator above channel 1 will flash as the counter is triggering and a reading will be displayed. Follow the steps in the Solution/Action section (below) to decrease the sensitivity so the counter does not trigger on environmental noise. The indicator above channel 2 will also flash (~2/second) because without a signal attached to the channel, the signal is too low (see table above).

Solution/Action:

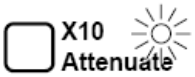
To decrease the sensitivity of channels 1 and 2 so the counter does not trigger on signal or environmental noise:

1. **Reduce the Sensitivity setting to LO**. The default setting at reset and power-on is HI.
   Remote Interface: SENS:EVEN1:HYST:REL 100 will set the sensitivity to LO.
   Front Panel: To set the sensitivity to LO
   - Press the Trigger/Sensitivity key on the front panel above the channel until the display shows SENSITIVITY:
   - Press the right arrow (to the right of the display) until the display reads SENSITIVITY: LO
   - Press the ENTER key (to the right of the display) to finalize the change.

2. **Set a discrete trigger level**. The default setting at reset and power-on is auto level.
   Remote Interface: SENS:EVEN1:LEV <volt> will set the trigger level to <volt>
   Front Panel:
   - Press the Trigger/Sensitivity key on the front panel above the channel until the display shows AUTO TRG:
   - Press the right arrow (to the right of the display) until the display reads AUTO TRG: OFF
   - Press the Trigger/Sensitivity key to show the current trigger level. Use the arrow keys to adjust the value.
   - Press the ENTER key (to the right of the display) to finalize the change.

3. **Enable the 100 kHz filter** when measuring signals less than 100 kHz.
   Remote Interface: INP1:FILT ON will turn on the 100 kHz filter.
   Front Panel: Press the 100kHz Filter key on the front panel below the channel so the indicator is on.

4. **For large signals, use the x10 attenuator** to reduce the signal and noise by 10.
   Remote Interface: INP:ATT1 10
   Front Panel: . Press the x10 Attenuate key on the front panel below the channel so the indicator is on.



Note: The programming commands are for Channel 1 measurements. The same commands may be used with Channel 2 by replacing the "1" with "2"