

### 7.3.11.3 Procedure for Using SYNC

This procedure must be used to put the device in SYNC mode.

1. Use the flowchart to determine the SYNC category.
2. Make determinations for OSCin and using SYNC based on the category.
  1. If Category 4, SYNC cannot be performed in this setup.
  2. If category 3, ensure that the maximum  $f_{OSC}$  frequency for SYNC is not violated and there are hardware accommodations to use the SYNC pin.
3. Determine the value of IncludedDivide:
  1. If OUTA\_MUX is not channel divider and OUTB\_MUX is not channel divider or SysRef, then IncludedDivide = 1.
  2. Otherwise, IncludedDivide =  $2 \times \text{SEG1}$ . In the case that the channel divider is 2, then IncludedDivide=4.
4. If not done already, divide the N-divider and fractional values by IncludedDivide to account for the IncludedDivide.
5. Program the device with the VCO\_PHASE\_SYNC = 1. Note that this does not count as applying a SYNC to device (for category 2).
6. Apply the SYNC, if required:
  1. If category 2, VCO\_PHASE\_SYNC can be toggled from 0 to 1. Alternatively, a rising edge can be sent to the SYNC pin and the timing of this is not critical.
  2. If category 3, the SYNC pin must be used, and the timing must be away from the rising edge of the OSCin signal. Toggling the SYNC pin runs VCO calibration when FCAL\_EN = 1. If FCAL\_EN = 0 then SYNC pin does not function.

### 7.3.11.4 SYNC Input Pin

The SYNC input pin can be driven either in CMOS or LVDS mode. However, if not using SYNC mode (VCO\_PHASE\_SYNC = 0), then the INPIN\_IGNORE bit must be set to one, otherwise it causes issues with lock detect. If the pin is desired for to be used and VCO\_PHASE\_SYNC = 1, then set INPIN\_IGNORE = 0. LVDS or CMOS mode may be used. LVDS works to 250 mVPP, but is not ensured in production.