

OOF Generation For Devices Using Edge Sensitive Byte Alignment Algorithms.

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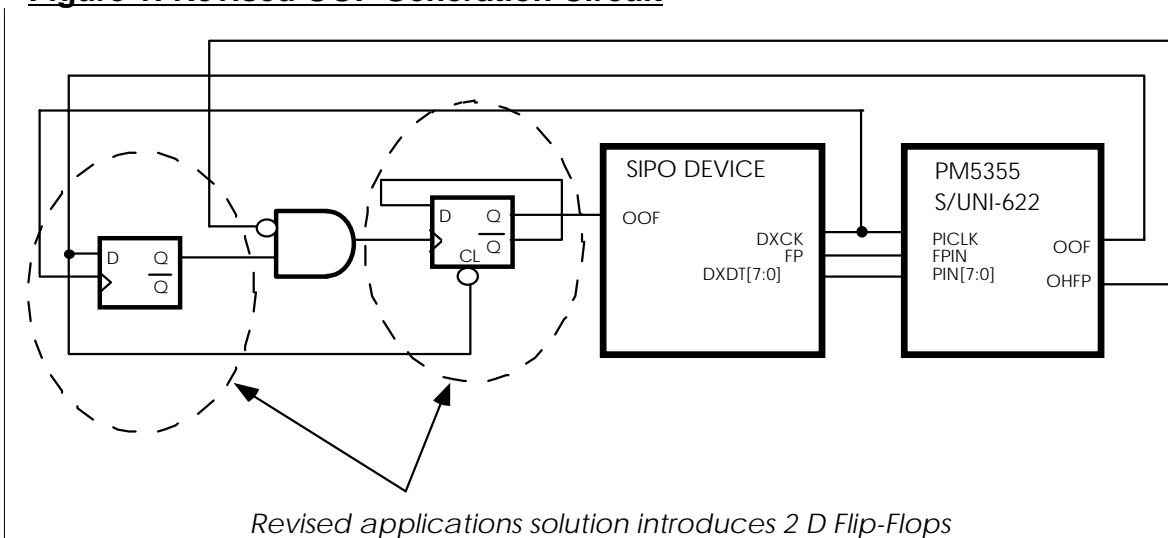
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OOF GENERATION CIRCUIT FOR DEVICES EXPECTING AN EDGE SENSITIVE INPUT

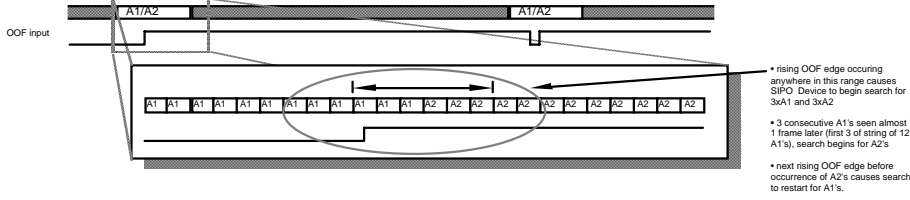
The edge sensitive OOF input of the SIPO Device is incompatible with the PM5355 S/UNI-622's level sensitive OOF output. The SIPO expects a rising edge on its OOF input to trigger the search for a valid byte alignment. In case of a received frame mimic pattern the SIPO can lock on to an invalid frame alignment (generated by a mimic framing pattern). In this case the PM5355 will not go into frame and will continue to assert its OOF output. In order for the SIPO to trigger again to find the real frame alignment a second rising edge is required on its OOF input. Since the PM5355 does not generate a second rising edge, the circuit illustrated in Figure 1 must be implemented.

Figure 1: Revised OOF Generation Circuit



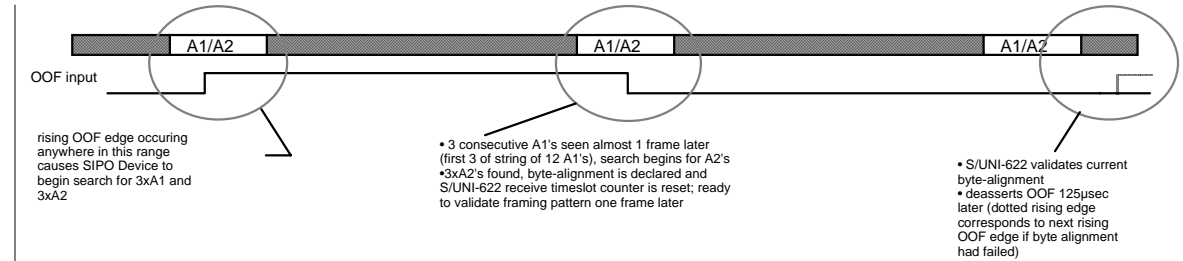
A previous OOF generation circuit, consisting of a logical AND of the OOF and OHFP outputs of the PM5355 connected to the OOF input of the SIPO, did not account for the possibility of the OHFP signal going high while a valid framing sequence was being processed by the SIPO Device. This action, illustrated in Figure 2, did not allow the system to find frame because an OOF rising edge was generated on the SIPO's OOF input when a valid frame was detected.

Figure 2: Result of OHFP Assertion During Valid Frame Sequence



The new circuitry solves the above problem by pulsing the SIPO's OOF input every other time. The timing of the revised circuitry is illustrated in Figure 3.

Figure 3: OOF Timing with new circuitry



LIST OF PMC-SIERRA COMPONENTS AFFECTED

All PMC-Sierra PHY layer devices have a level sensitive OOF output. The specific OC-12 components that may be affected are:

1. PM5355 S/UNI-622
2. PM5312 STTX - note that the illustrations above may be used to describe an applications solution for the STTX. In the case of the STTX, substitute the STTX for the S/UNI-622 and substitute ROFP for OHFP.

REFERENCES

- 1) PMC-Sierra, Inc., PM5355 S/UNI-622 Data Sheet, Issue 2, April, 1996.
- 2) PMC-Sierra, Inc., PM5312 STTX Data Sheet, Issue 4, Apr 11, 1995.

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