WHAT IS CLAIMED IS:

1. A system-in-package comprising:

a photonic integrated circuit (PIC) comprising an electro-absorption modulator (EAM) electrically connected to a first landing pad at a surface of the PIC;

an electronic integrated circuit (EIC) stacked on the surface of the PIC, the EIC comprising an electrical component electrically connected to a second landing pad at a surface of the EIC facing the surface of the PIC; and

a copper pillar physically connecting the first landing pad to the second landing pad,

wherein the first landing pad, the copper pillar, and the second landing pad provide at least a portion of an electrical interconnect between the EAM and the electrical component, and when viewed from the EIC towards the PIC, the EAM of the PIC is offset from the first landing pad,

wherein the EAM comprises a diode junction, a cathode, and an anode,

wherein the electrical component is a driver of the EAM, and

wherein, when viewed from the EIC towards the PIC, a center of the EAM is offset from a nearest edge of the first landing pad by about a distance in a range from 1 μm to 10 μm.

2. The system-in-package of claim 1, wherein a parasitic capacitance between the first landing pad and the EAM is less than a pre-determined threshold level of tolerance, and wherein the pre-determined threshold level of tolerance is where the parasitic capacitance causes the EAM to lose modulation fidelity.

3. The system-in-package of claim 1, wherein the copper pillar is electrically connected to the cathode of the EAM.

4. The system-in-package of claim 1, further comprising a substrate supporting the PIC, and wherein the anode of the EAM is electrically connected to a bias trace routed to the substrate.

5. The system-in-package of claim 1, wherein the distance is in a range from 5 μm and 8μm.

6. The system-in-package of claim 1, wherein the EAM is about 100 μm or less in length from an input optical port to an output optical port.

7. The system-in-package of claim 1, wherein the copper pillar has a lateral dimension of 30 μm or less.

8. The system-in-package of claim 7, wherein the first landing pad is shaped as a polygon or a circle.

9. The system-in-package of claim 1, wherein the copper pillar contacts the first landing pad at a center of the first landing pad.

10. The system-in-package of claim 1, wherein the copper pillar contacts the first landing pad away from the center of the first landing pad.

11. The system-in-package of claim 7, wherein the first landing pad has a maximum lateral dimension of 50 μm or less.

12. The system-in-package of claim 1, wherein, the driver and the modulator are spaced apart by about 2 mm or less.

13. The system-in-package of claim 1, wherein the PIC further comprises a photodiode and the EIC further comprises a trans-impedance amplifier electrically connected to the photodiode via a second electrical interconnect comprising a second copper pillar between the PIC and the EIC, the modulator and the photodiode being components of a bidirectional photonic link in the PIC.

14. The system-in-package of claim 13, wherein the bidirectional photonic link comprises a first waveguide connecting the modulator to a fiber array unit and a second waveguide connecting the photodiode to the fiber array unit.

15. The system-in-package of claim 13, wherein the first and second electrical interconnects each have a length of 100 μm or less.