

### 1. Introduction

The SerDes modules require external resistors (REXT) as reference for internal bias current and impedance calibration circuitry. The resistor value is  $1.43K \pm 1\%$ . This document provides recommendations for REXT resistor placement and routing.

### 2. REXT Layout Guidelines

1. Avoid long routes - place each resistor close to the chip.
2. Do not place/align REXT near a REXT resistor from an adjacent octal (i.e., keep separate).
3. Treat A/B lines as a pair (i.e., route such that each line is on the same layer, with similar trace widths, minimum loop creation, and no test points/stubs).
4. Avoid routing near high-speed signal traces, noise sources, and paths of large return currents.
5. Optionally a  $0.1 \mu F$  decoupling capacitor from REXTB to GND can be connected to each REXT resistor to reduce high frequency noise into the SerDes circuits.

### 3. Reference

Please check another document PCB Layout Review Guide page 3 for detail of REXTB via location.