

## **DS-3/E3 Layout Recommendations**

XRT71D0x  
XRT73Lxx  
XRT75L/VLxx  
XRT75R03  
XRT75R06  
XRT75R12  
XRT79L7x

### **Power and Ground**

- Decoupling capacitors should be placed as close to the power supply pins as possible. It is recommended to have at least one capacitor for two digital power supply pins.
- Analog RxVdd, TxVdd and JaVdd should be subdivided/isolated into power groups and each should have ferrite chokes filtering with low DC resistance.
- Provide ample power and ground planes
- The power and ground planes on the inner board layers should not extend under the transformers and line-side circuitry. This minimizes the chance of a voltage break down during a power surge.
- Connect all ground pins to the same inner-layer ground plane. (Do not split the ground plane.)
- Each IC power and ground pin should be connected to its respective plane by a separate via, if possible.

### **Transmit and Receive**

- Differential pairs such as TTIP/TRING and RTIP/RRING should be routed close together with the same approximate trace lengths.
- The trace lengths from the transmit and receive ports to the transformers and connectors should be minimized as much as the PCB architecture will allow.
- Analog signals should be isolated from digital traces or minimized as much as possible.
- The receiver termination (two 37.4 Ohm resistors) and transmit source build-out (two 31.6 or 37.4 Ohm resistors) should be located as close to the IC as possible.