

## LAN Trace Routing Guidelines

Parameter	Trace Routing
Signal length allowance for the COM Express Carrier Board	5.0 inches from the COM Express Module to the magnetics Module
Maximum signal length between isolation magnetics Module and RJ45 connector on the Carrier Board	1.0 inch
Differential Impedance	95 $\Omega$ +/-20%
Single-ended Impedance	55 $\Omega$ +/-15%
Trace width (W)	5mils (microstrip routing) (*)
Spacing between differential pairs (intra-pair) (S)	7mils (microstrip routing) (*)
Spacing between RX and TX pairs (inter-pair) (s)	Min. 50mils
Spacing between differential pairs and high-speed periodic signals	Min. 300mils
Spacing between differential pairs and low-speed non periodic signals	Min. 100mils
Length matching between differential pairs (intra-pair)	Max. 5mils
Length matching between RX and TX pairs (inter-pair)	Max. 30mils
Spacing between digital ground and analog ground plane (between the magnetics Module and RJ45 connector)	Min. 60mils
Spacing from edge of plane	Min. 40mils
Via Usage	Max. of 2 vias on TX path Max. of 2 vias on RX path