

The Comtest G.fast EMI Suppressor is a Common Mode EMI Filter designed and specifically built for G.fast (212Mhz). This dongle will reduce or eliminate the effects of EMI on G.fast services.



Twisted Pairs | Differential Signaling

Differential signaling is used in telecommunication utilizing twisted pairs. One of the main advantages of differential signaling is an increased resistance to electromagnetic noise. However, resistance to electromagnetic noise is achieved only if twisted pairs are balanced. Both Tip and Ring receive interfering signals with the same amplitude and phase so when twisted pairs are transferring signals in differential mode (signal on Tip minus signal on Ring), the perfect balance will result in any coupled signals on tip and ring being cancelled.

In the real world, rarely are twisted pairs balanced. As a result, interfering signals on Tip and Ring are not the same in amplitude and phase resulting in coupled signals on Tip and Ring not being cancelled. The Common Mode EMI Filter provides high insertion loss of coupled signals (Electromagnetic interference signals between Tip and ground or Ring and ground) without adversely affecting the G.fast signal (differential mode – Tip to Ring). This reduces the effect of EMI on G.fast signals, having a dramatic improvement in customer experience.

The EMI dongle is designed with good matching impedance resulting in good return loss as shown on Figure 3.

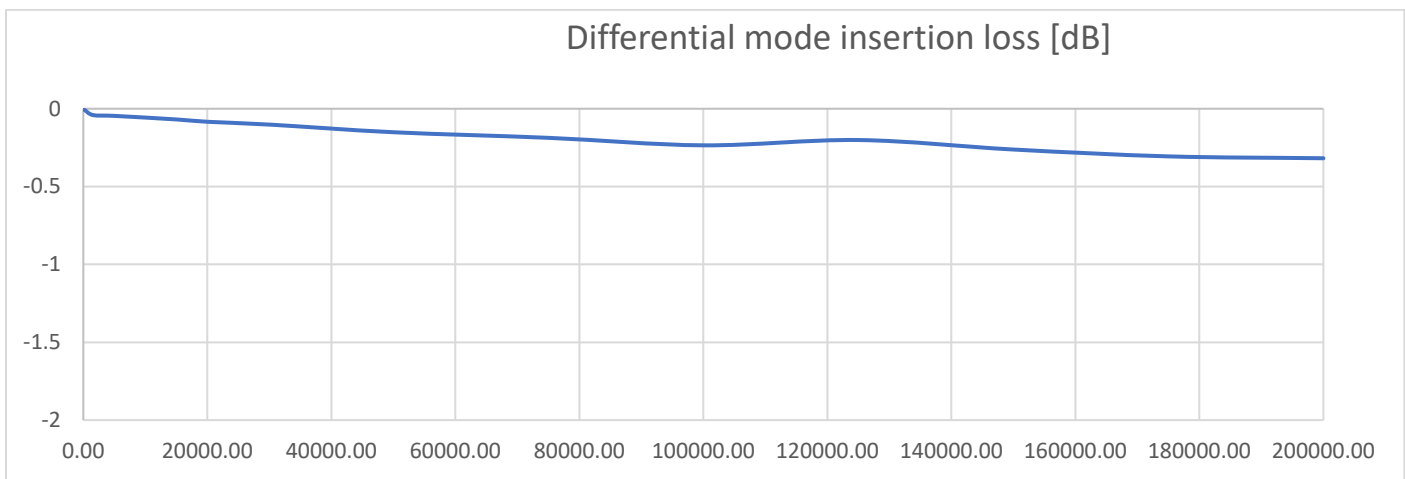


Figure 1: Differential mode insertion loss

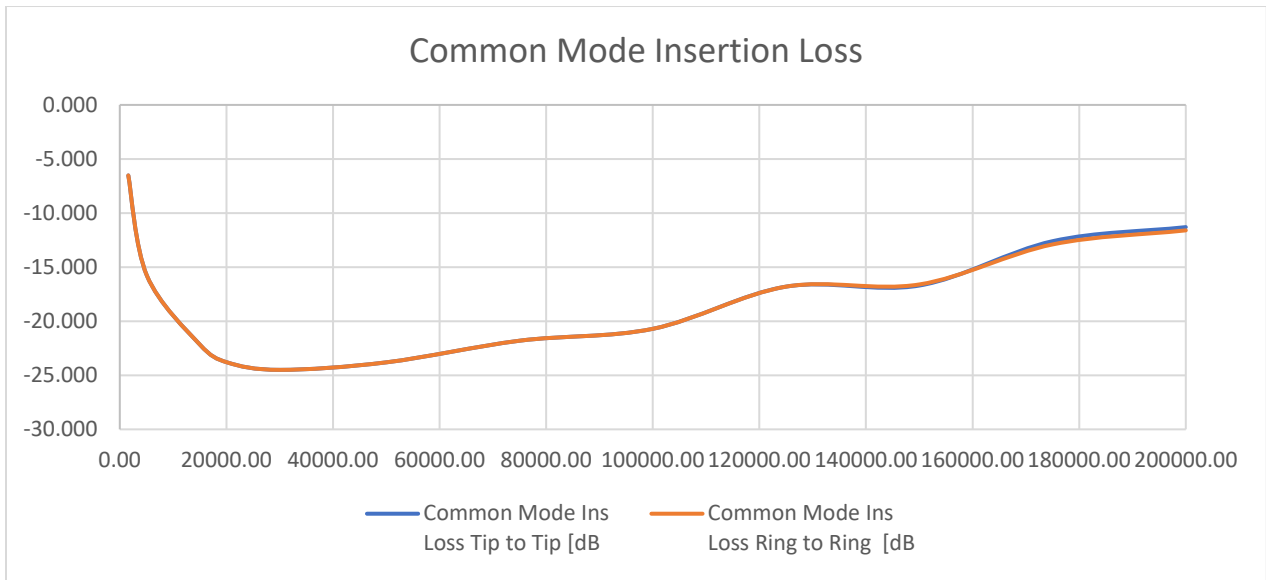


Figure 2: Common mode insertion loss.

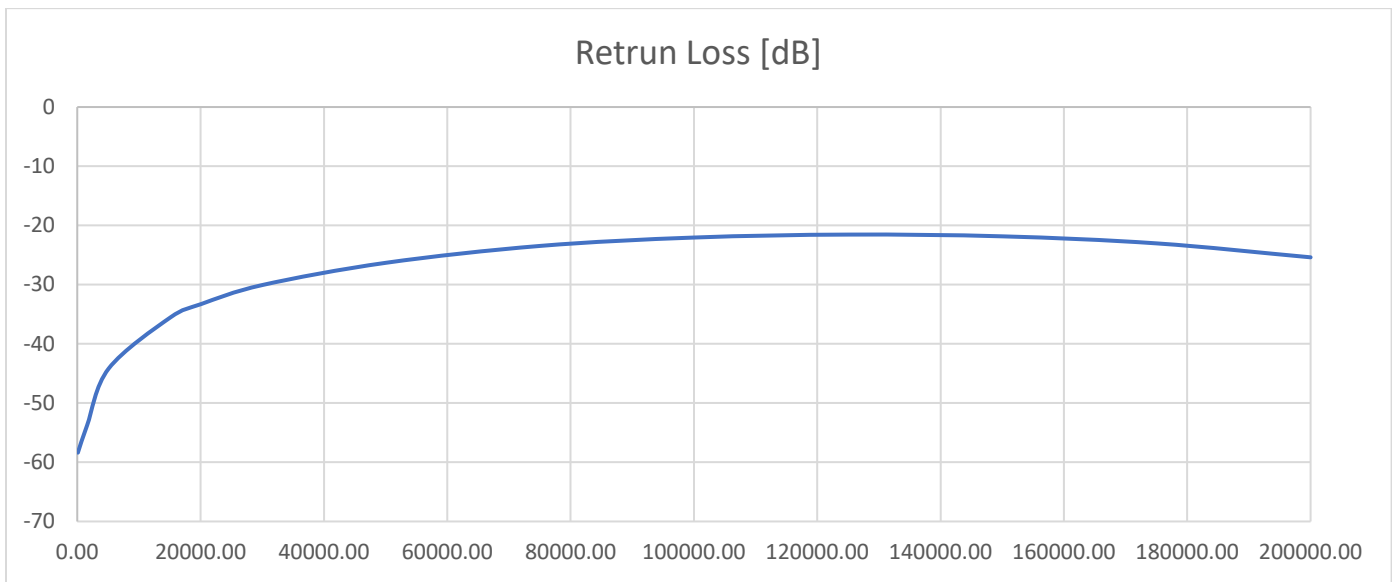


Figure 3: Return loss of EMI dongle