

Tech Tip: QuadraPaddle Bandwidth

The Virginia Panel QuadraPaddle contacts and modules have been successfully used in applications of ethernet transmission for 10/100/1000baseT connected to a RJ45 connector. Testing of the QuadraPaddle connector module and contact by use of a Tektronix CSA803 Digital Sampling Oscilloscope and validation based on Time Dome Reflection Measurements has shown a low end bandwidth of 700MHz when wired using a 50 Ohm environment cabling (Figure 1). This is based on standard accepted value of a -3dB rolloff for signal degradation. The contacts and module have shown -3dB rolloff response of 1.2 GHz as de-embedded from the overall response measurement of the connection system (Figure 2). Based on this data and known application usage of the QuadraPaddle product, it is feasible for the application. For high speed applications the cable must be installed and terminated properly. Incorrect installation techniques include kinking the cable or bending it with too tight of a radius. Incorrect termination techniques include untwisting the wire pairs or stripping the outer jacket back too far.

ATTENUATION (S21)



Figure 1. (-3dB at 0.70GHz)



Figure 2. 16" Blue cable female Z-Trace to male VP to female Z-Trace with cable and Z-Trace connectors de-embedded (-3 dB at 1.2 GHz)