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**Eye Pattern of Metal Shell Micro-Circular Assemblies**

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**1. SCOPE**

This report is a summary of eye pattern testing performed on a metal shell micro-circular assemblies part number 1604515-1, 1604448-1, 1604213-1 and 1604446-1. The test file number for this testing is EMEB033312-003. This documentation is on file at the EME Laboratory.

**2. EQUIPMENT**

- Tektronix TDS8000 Oscilloscope Mainframe S/N B010526
- Tektronix 80E04 TDR Modules (2)
- Advantest D3186 Pulse Pattern Generator S/N 101003390
- Huber Suhner Succoflex Cables (4) Set "A"

**3. TEST SAMPLES**

Metal shell micro-circular assemblies part numbers 1604515-1, 1604448-1, 1604213-1 and 1604446-1 with three inch leads. Each assembly with two, three inch .086 semi-rigid test probes on adjacent pins of assemblies 1604515-1 and 1604213-1 and the corresponding pins on assemblies 1604448-1 and 1604446-1.

**4. PROCEDURE**

The semi-rigid test probes were soldered to two adjacent top solder cups of assemblies 1604515-1 and the corresponding solder cups of assemblies 1604448-1. The outer jackets of each of the two semi-rigid leads were soldered together near the connector assembly and a ground wire was run from an open solder cup to the semi-rigid jacket. This process was repeated for both of the mating connectors. A scope trigger signal was taken from the 1/32 clk signal on the Advantest D3186 generator to the external trigger input on the TDS8000. The connector assemblies 1604515-1 and 1604448-1 were then connected together. The Advantest pattern generator was then set for 2<sup>7</sup> bit pattern and 480 Mb/s with levels set differentially at plus and minus .5 volts. The TDS8000 was then set for eye pattern measurements and the Huber Suhner cables were connected from the first test sample 1604515-1 (semi-rigid SMA's) to the 80E04 TDR modules. The second set of Huber Suhner cables were then connected from the second test sample 1604448-1 to the Advantest pattern generator differential outputs and an eye pattern was captured with 1601 waveforms. The above procedure was then repeated for part numbers 1604213-1 and 1604446-1.

The waveforms were captured and results are shown in Figures 1 and 2. A mask was created for the eye patterns using the USB 2.0 specification, Template 4 (page 136 in the USB specification) and laid within the resultant eye pattern. The results show that the waveforms are well within the limits established by the mask.

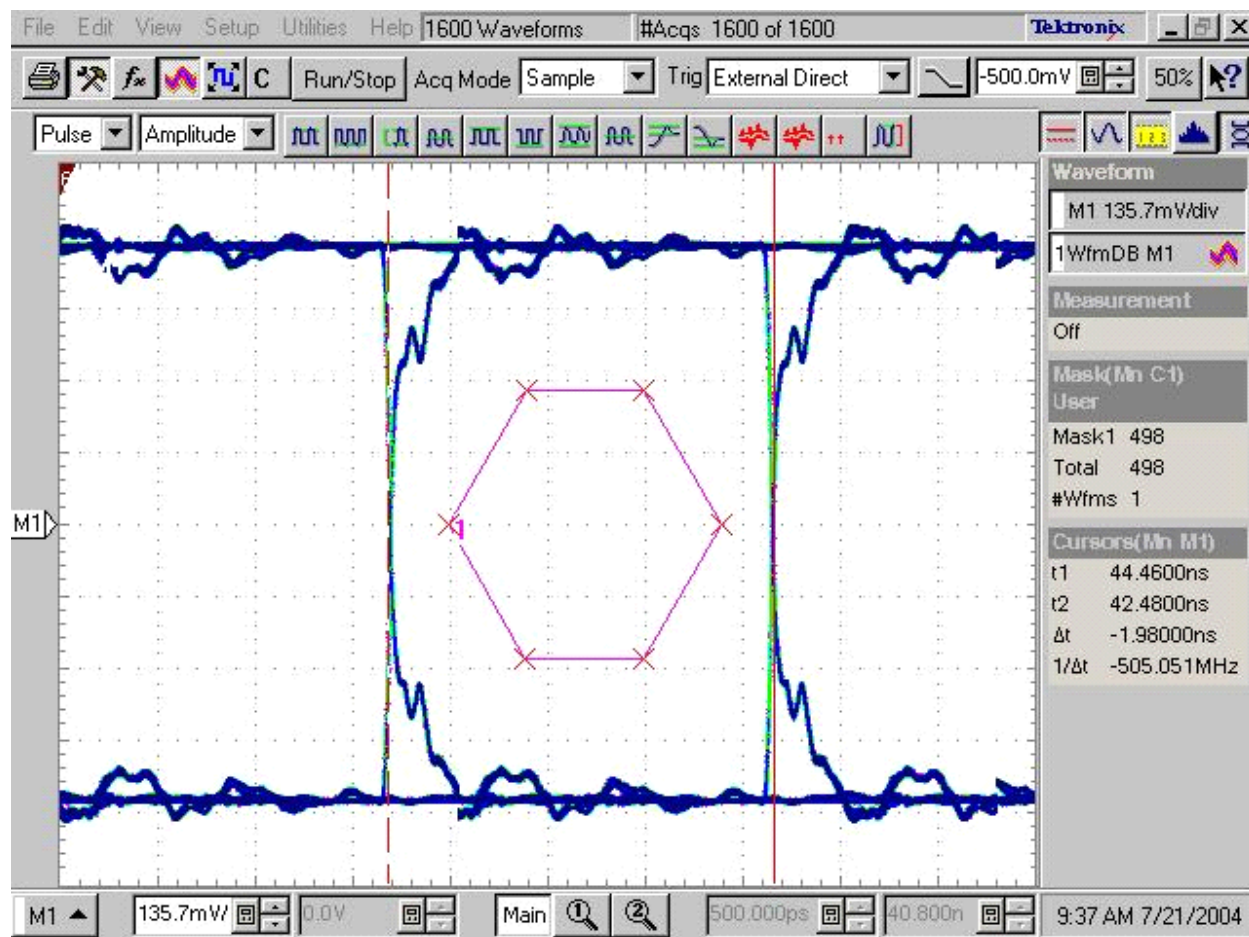


Figure 1  
Eye Pattern With Mask for Part Numbers 1604515-1 and 1604448-1

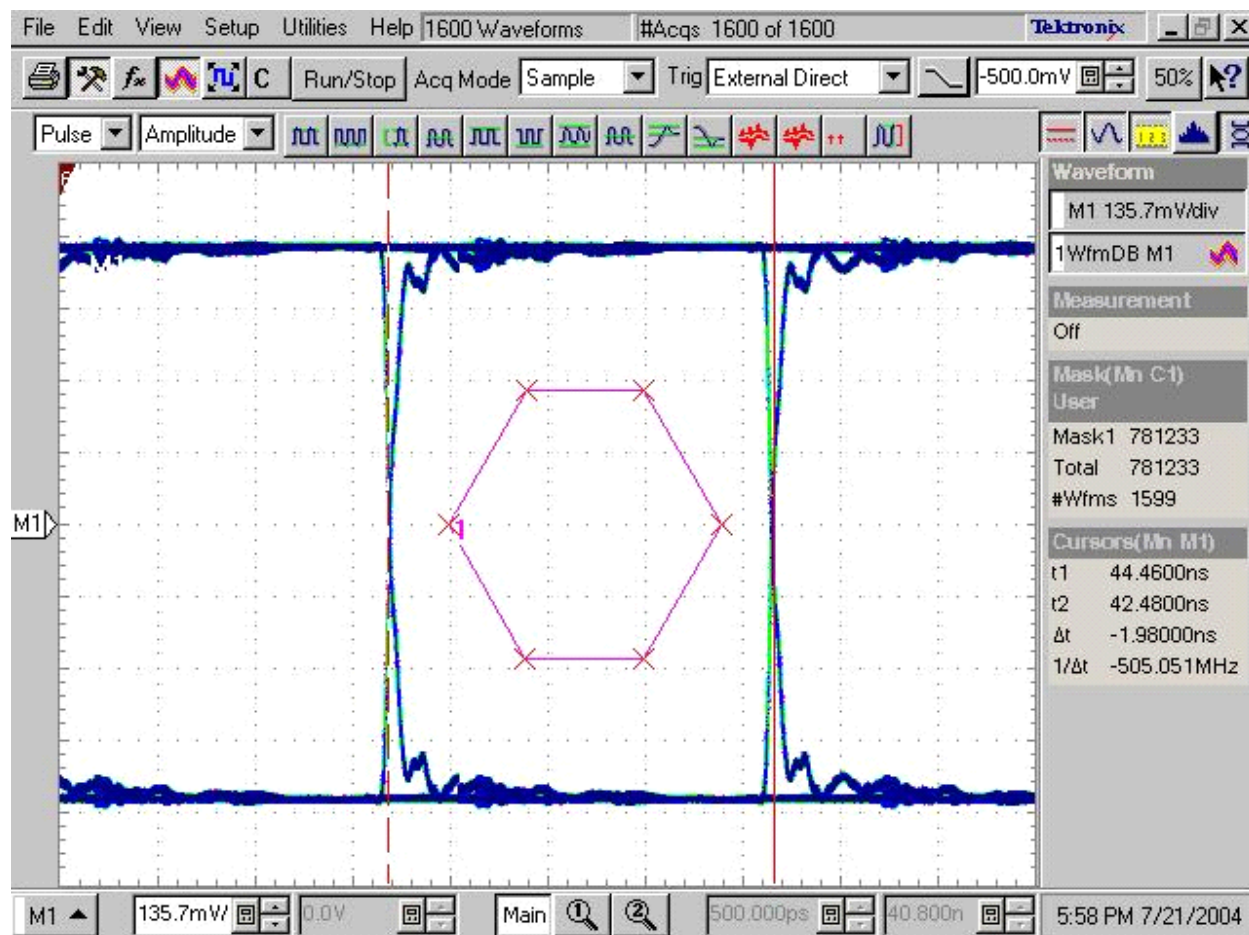


Figure 2  
Eye Pattern With Mask for Part Numbers 1604513-1 and 1604446-1