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# Application Note


## Charge Device Model (CDM) Pogo Pin Influences

The Orion3 CDM test system comes standard with a round 0.53mm diameter pogo pin . This pogo pin was selected to allow conformance to the waveforms specified in the relevant industry standards. Changing to smaller or worse case a pointed pogo pin will affect the waveform and in most cases put them out of specification parameters.

The Standards bodies, like the Joint JEDEC/ESDA JS-002 committee are aware of the issues with trying to perform Field Induced CDM testing on devices when the pogo pin diameter is perhaps larger than the ball spacing on the device. Presently, the standard still requires you to test in this condition with the hope that the alignment will allow proper testing of the device. The Orion's mechanism is more than capable of aligning to these fine pitch devices, however when using Field Induced (air discharge) testing there is no guarantee that the discharge will occur from the desired pin.

Having said the above, we've developed a contact method of testing, which allows the use of even pointed pogo pins, as the contact is made to the device prior to it being charged and then discharged while still in contact. This eliminates the air discharge, issues with repeatability and as mentioned allows the use of smaller diameter or pointed pogo pins. The Joint JEDEC/ESDA working group is working on a number of alternative contact methods but the acceptance of these methods as an alternative test method may still be a few years away.

There is a slightly smaller diameter pogo pin 0.41mm , which has been shown to work well enough in many cases, as to not affect the waveform during testing however we can't guarantee the waveform performance using this pogo pin.

The use of a pointed pin is not advised, as this will affect the waveform performance and the ability to meet the requirements of the standard. In this family of pogo pins, there a pointed pogo  available, however as mentioned above the waveform performance will be compromised and we can't guarantee the waveform performance using this pogo pin type.