



# ApplicationFocus

## Probe Cards



# Inspection and measurement of Probe Cards

A probe card is a mechanical interface between an electronic test system and a semiconductor wafer. The advanced types of probe card - can test an entire 12" wafer with a single touchdown. The thousands of probe tips on the card need to contact the wafer with a high degree of precision in

all three axes (X, Y and Z) simultaneously. Because of this requirement, the probe tip position and geometry is critical to the proper function of the probe card. A stable and highly accurate platform is necessary to perform these complex measurements.

## System Challenge

Traditional inspection methods are limited by the following disadvantages:

- Small sizes of the probe tips require high magnification for proper measurement
- Slight positional deviations make it difficult to accurately measure the probe tip
- Probe location randomness makes writing measuring programs difficult and time consuming
- Inspection can take hours because of time required to create new inspection teaching files

## Nikon's Solution

### NEXIV VMZ-R3020 Vision Systems with Automeasure Software

- With Cast steel construction and as standard 0.01 $\mu$ m resolution Nikon linear encoders in all axes
- High magnification options from 1200X to 4800X for precise part measurements
- Automeasure "Pattern Matching" capability to accommodate positional errors
- Auto Focus and Through-The-Lens laser for accurate Z-height measurement
- "Program from CAD" to reduce teaching file creation time from hours down to minutes

CNC Video Measuring Systems

# NEXIV

