Most reliable VI source! An essential tool for “zero test escape” and improvement of the test accuracy and UPH!

With the maturation of manufacturing processes and the pursuit of economies of scale, more and more analog chips are being manufactured using 12-inch wafers. This has led to higher demands for multi-site testing in wafer testing, with the current standard starting at 8 sites. At this point, the stability of analog VI sources is crucial. It is well known that VI sources can experience drift due to changes in temperature and humidity, as well as prolonged use, leading to deviations in accuracy and causing incidents such as erroneous testing and trim errors, which we refer to as "test escapes" This can result in a series of issues that can cause significantly affect the overall semiconductor businesses!

The VI source from SineTest Technology features **patented real-time accuracy self-checking on the board**, helping to prevent major test issues in production testing. **It eliminates the concerns about test escapes**, allowing your test machine to work accurately and stable all the time.

Practical Example: Utilizing FOVI on-board real-time self-checking functions in wafer testing to prevent test escapes (**test escape prevention**).

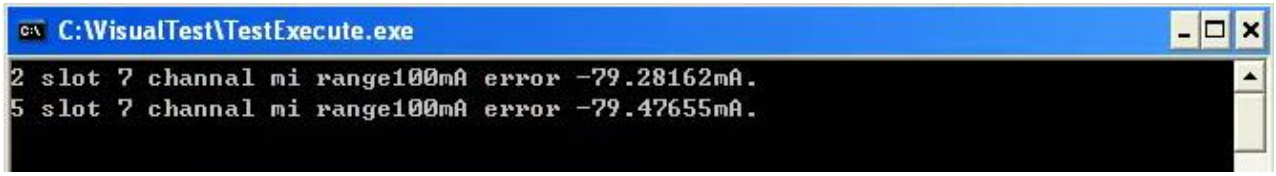
FOVI is our eight-channel general-purpose VI source (±50V/300mA, 1A pulse), which integrates two self-checking functions: selftest(int SiteNo); VsmTest(double volt, int SiteNo), capable of conducting full self-checking of a specific VI channel and single-voltage point self-checking (such as real-time inspection of trim voltage). The self-checking accuracy of selftest is 0.1%, while VsmTest has an accuracy of 0.05%.

Sample program: (part code)

```
FOVI V2,V1,V3,TV;
QTMU TMU1;
CBIT K1,K2,KF6,KF1,KF2,KF3,KF4,KF5,KF7,KF8;
BOOL CTESTFUN::OnUserLoad( )
{     parallel_type = GetParallelType( );
          V2.Locate(2,1,1);
          V1.Locate(2,2,1);
          V3.Locate(2,3,1);
          TV.Locate(2,4,1);
      V2.selftest( ); // check the full range voltage and current with 0.1 accuracy of the VI
      V1.selftest( ); // check the full range voltage and current with 0.1 accuracy of the VI
      V3.selftest( ); // check the full range voltage and current with 0.1 accuracy of the VI
      TV.selftest( ); // check the full range voltage and current with 0.1 accuracy of the VI
}
STT_TESTFUNC vcu(CFunction *pFunction, int nSiteNo, int nTestFlag, vcu_params* ours)
{
      V2.fv(0,Range_1V,Range_100mA,100,-100,Fast,R_Close);
      V1.fv(0,Range_5V,Range_100mA,100,-100,Fast,R_Close);
```

```
        V3.fv(0,Range_10V,Range_100uA,0.1,-0.1,Fast,R_Close);
        delayms(1);
        V1.VsmTest(5.0); // check the voltage 5.0V with 0.05% accuracy of the VI
        V2.VsmTest(1.0); // check the voltage 1.0V with 0.05% accuracy of the VI
        delayms(2);
        V1.fv(5.0);
        V3.fv(5);
        delayms(3);
        V2.fv(1.0);
  //
}
```

If there's a deviation in the full-range self-check selftest(), it will prompt out the following message:



As an example, full-range SelfTest detected -80mA, with a set accuracy of ±0.1%. The qualified data range is (-80.08mA, -79.92mA), but the test results show that two channels of the VI source have currents exceeding the specification, measuring at -79.28162mA and -79.47655mA, resulting in an error and requiring correction.

If there's a deviation in the single-point self-check VsmTest(), it will prompt out the following message:

For instance, when VsmTest checks for 5.0V voltage with a set accuracy of ±0.05%, the qualified data range is (4.9975V, 5.0025V). However, the actual measured value is 5.003112V, which exceeds the specified range, triggering a warning.

Similarly, when VsmTest checks for 1.0V voltage with a set accuracy of ±0.05%, the qualified data range is (0.9995V, 1.0005V). But the actual measured value is 0.999375V, exceeding the set 0.05%, resulting in a warning prompt.

If users have particularly high accuracy requirements, they can set the accuracy to ±0.03% (customized). This means demanding that the VI source maintains a voltage deviation of no more than ±0.3mV when working for an extended period. Our VI source can also meet such stringent accuracy requirements.

This feature is not only useful for wafer testing of analog chips but also applicable in any situation requiring high testing accuracy, such as automotive standard testing, where VI sources need to maintain high accuracy for extended periods.

This features is also available in VI source such as FVI16 (16-channel VI source)/FPVI120 etc.,
If you want to know more info please go to: www.sinetest.com