## Components and Modules

### Test Requirements

- **Identification and Characterization Verification**
  - **IC Capacitors**: Transistor (MOSFET, IGBT, SiC, GaN)
  - **Circuit design optimization**: Switching loss
  - **Whole-circuit transient validation**: Magnetic device loss
  - **Loop response optimization**: Output ripple test

### Tektronix Solutions

- **The 370B Semiconductor Parametric Curve Tracer**
  - Parametric Curve Tracer
  - It is difficult to accurately measure the characteristics under different conditions. The test items have been recognized by the power supply industry.
  - It is recommended to test tiny ripple signals in a very small range. How much ripple needs to be controlled is based on the micro ripple signal test function providing the micro signal testing function.
  - High-precision multi-channel power analyzer can evaluate power supply quality, waveform, and more. It can be used to test the micro ripple signal and more.

### Power Supply Converter Design Procedures

1. **Components Selection and Characteristics Verification**
   - Transistor (MOSFET, IGBT, SiC, GaN)
   - Circuit design optimization
   - Switching loss
   - Whole-circuit transient validation
   - Magnetic device loss
   - Loop response optimization

2. **Power Supply Prototype Design and Test**
   - Switching loss
   - Magnetic device loss
   - Output ripple test

3. **Power Supply Quality Analysis**
   - Efficiency test
   - Harmonic test
   - Power supply standard test
   - EMC certification
   - Burn-in test

### Final Products/System

- **Power supply needs to pass the CE certification of the Industry. Consider the most important evaluation contents. The CE EMC certification standard is very important.**

The fact that products of different manufacturers call for a long burn-in test and low use efficiency can be improved, especially for new ones, where the production cost is higher. Therefore, using different production technologies and different software to design output ripple test functions for power supplies has become very important. The efficiency of power supply evaluation? How to control the feedback loop really is.

When a product design is in completion, effectiveness of the most important evaluation index is the quality of the power supply quality? How is the standing power quality? Standard consistency test at one point? Every function analysis is very important for the standing power quality? Standard consistency test at one point?

The traditional method is to use a spectrum analyzer to perform frequency analysis. For non-sinusoidal signals, it is recommended to use a high-performance spectrum analyzer. The power supply industry generally requires more than 20 harmonic testing capabilities.

To recommend an EMC conformance laboratory, the best approach is to choose a professional EMC tester. Establishing an EMC conformance laboratory is a common approach in the industry.

### Tektronix Products

- **Tektronix MSO5 series oscilloscope features a new generation of high-precision testing accuracy, up to 4 channels, an analyzer with up to 0.04% test accuracy is equipped with professional EMCVU software in addition to switching loss, interference capability, helping professionals to test results.**

- **Tektronix RSA series of real-time spectrum analyzers**
  - Supports up to 80 channels a time spectrum analyzers with high-priced pre-consistency test standard may be able to pass the CE certification of the Industry. Consider the most important evaluation contents. The CE EMC certification standard is very important.

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