

Your power testing solution.

ITECH

Low power consumption test (nA level)

Introduction

With the rapid development of microelectronics technology and the improvement of design level, the integration degree and operation capacity of the chip have increased significantly. This leads to a sharp increase in the power consumption of the chip. Therefore, the low-power design and testing of chips is particularly important. Some of the electronic products in our life, such as IoT devices and portable battery-powered products, must also be tested for low power consumption in order to ensure a longer working condition.



Low Power Testing

- ✧ Quiescent currents are getting lower and lower: μA sleep current, even nA level leakage current

- ✧ Complicated signal and dynamic current variation range : μA level sleep current to hundreds of mA or even several amperes emission current
- ✧ Narrow current pulse widths, typically in the hundreds of microseconds to milliseconds range.
- ✧ Requires high sampling rates and long time continuous measurements

Test solutions for low-power consumption devices

➤ Conventional solution 1

---1 Power supply + 1 digital multimeter

Low power consumption tests often feature as fast dynamic characteristics, which requires the power supply used for testing to have high precision and fast response. In addition, considering that the readback of the power supply is usually slow, in order to avoid missing the sudden change of current, a digital multimeter is required too for data collection during the test.

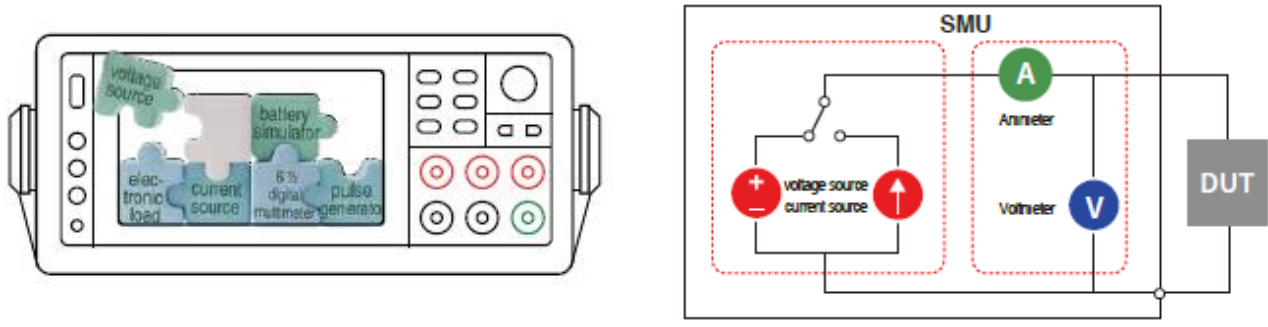
➤ Conventional solution 2

--- 1 Power analyzer + 1 high precision power supply/source meter

It's very expensive using a power analyzer to analyze and record data instead of the function of a digital multimeter. And sometimes it requires additional cost of paid software for testing.

➤ **ITECH simplified solution**

--- Only IT2800 SMU is needed



No additional instrument needed, only 1 unit IT2800SMU can complete the tasks of power supplying, data acquisition and analysis. So it is not only price competitive, but also simplifies the your test processes. The resolution of IT2800SMU is up to 10fA/100nV, and the sampling rate reaches 10us. It has three display modes: Graph view, Scope view and Record view. Under the Record view mode, in addition to the basic functions, we can also edit the formulas of the collected items. At the same time, parameters such as the maximum and average values of each item of data can be displayed directly.

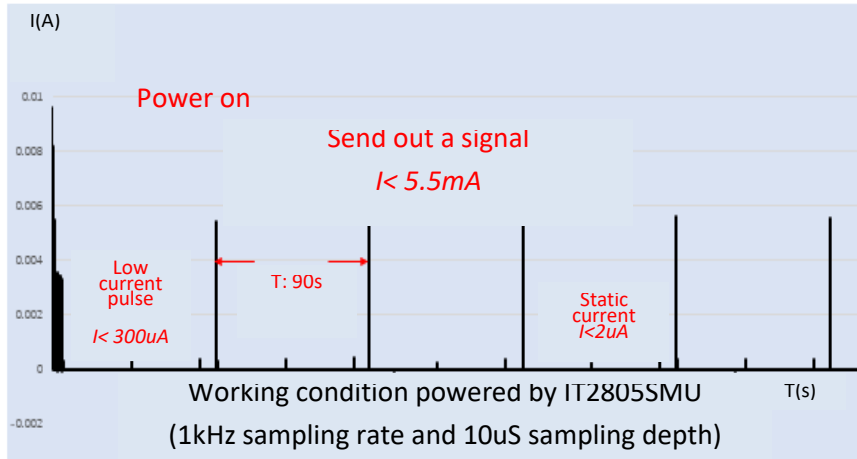
Case study

Automated testing for low-power consumption of sensor modules.

After the sensor module is powered on, the bluetooth chip controls the antenna to send out a signal every 90 seconds. If the average current in each period is less than 3uA, then the product is told qualified.

➤ Testing requirements:

The power supply should have high precision up to nA level with fast dynamic response. And the data readback should reach up to 1kHz.



The Record view mode of IT2800 high-precision SMU can directly display the waveform changes of parameters such as voltage and current while recording data, and give parameters such as maximum, minimum value and average value of the data within this period. Meanwhile, ITECH provides programming manuals for easier system integration and secondary development. In addition, we provide PV2800 remote control software to help to capture the voltage and current during high-

speed operation, and turn the data into easy-to-observe curves, which is more convenient for R&D and testing processes.

IT2800 High Precision Source Measure Unit

FEATURE

- 5 inch touch display supports both graphical and numerical view modes.
- Combing the capabilities of six devices in one: Voltage Source, Current Source, 6 ½ Digital Multimeter (DCV,DCI, ohms), Battery Simulator, electronic load and Pulse Generator
- Integrating 4-quadrant sourcing & measuring capabilities, and supporting Two-wire & Four-wire measurement
- Resolution up to 10fA/100nV, sampling rate up to 10us.
- Three graphic display modes: Graph View, Scope View and Record View.
- Built-in battery simulator function, suitable for IOT low power precision measurement
- Sweep Capability: Linear/Log/ Pulsed-line AR/Pulsed-Log and LIST
- Multi-channel and simultaneous operation design, with parallel testing capability
- Built-in resistance, power, and Math measurement features
- With GUARD output function, suitable for low current measurement
- Front USB port used for data storage, screen capture, or test configuration import
- Built-in Digital IO/USB/LAN communication interface

Model	Voltage	Current	Power	Channels
IT2801	1000V	1A	20W	Φ 1
IT2805	200V	1.5A	20W	Φ 1
IT2806	200V	3A DC/ 10A Pulse	20W	Φ 1



For more information, pls. visit www.itechate.com or send email to info@itechate.com .

We are always here for you.

