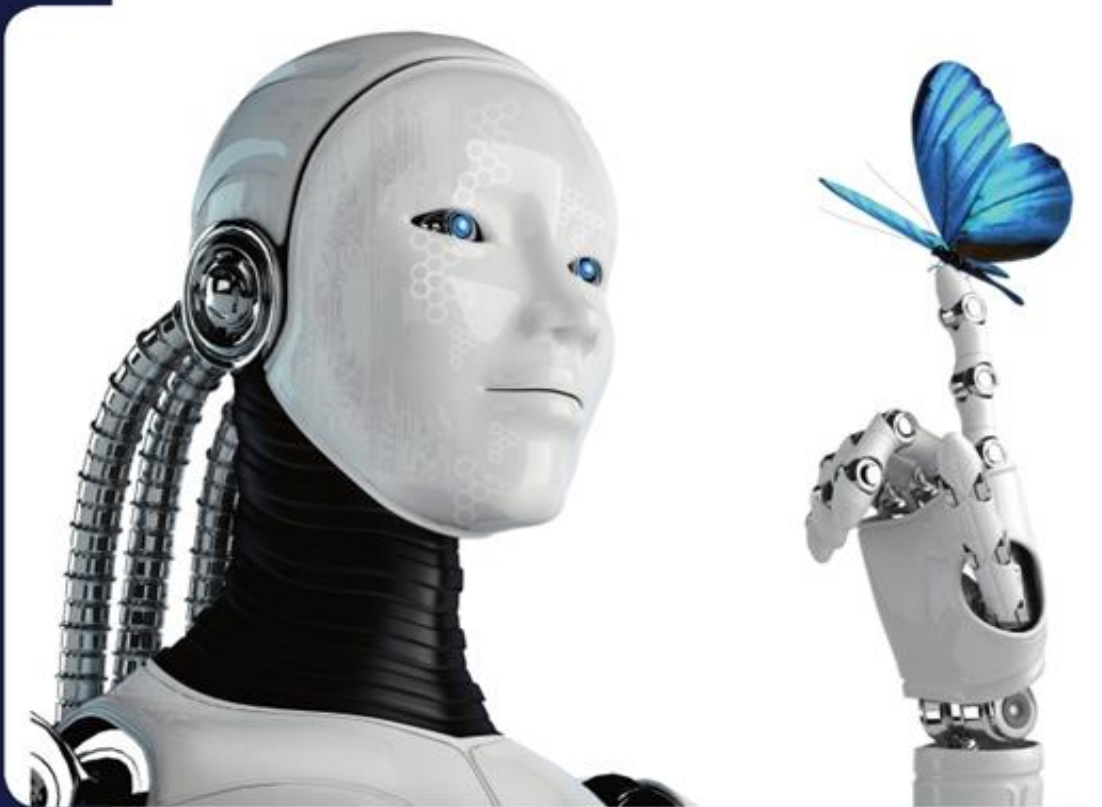


# Newsletter October, 2024



# ICR



# Hot Issue

1. **Military EMC team  
RS103 Test equipment introduction**
2. **SEMI F47 Additional test criteria for equipment  
supplied to Samsung Electronics**
3. **How to set effective KPI and measure  
performance in an ISO management system**



# Military EMC team

## RS103 Test equipment introduction

### ■ Introducing Test Equipment for Military EMC, RS103 Testing.

The ICR Military EMC team has acquired **MIL-STD-461E/F/G RS103 18 GHz to 40 GHz test equipment** capable of performing high frequency range and 200V/m testing.

### ■ ICR has the following equipments.

#### ▶ Signal Generator SMB100A

- Frequency Range : 100 kHz to 40 GHz
- Output Level : < 0.13 dB (@ 30.0 GHz)



#### ▶ Amplifier TE01KI-C-0004

- Frequency Range : (18 to 26.5) GHz
- Output Level : < 53.01 dBm



#### ▶ Amplifier TE01AI-C-0004

- Frequency Range : (26.5 to 40) GHz
- Output Level : < 53.01 dBm



# Military EMC team

## RS103 Test equipment introduction

### ▶ Laser Powered Field Probe FL7040

- Frequency Range : 2 MHz ~ 40GHz
- Operating Range: 2 ~ 1000 V/m



### ▶ Transmit Antenna ATH18G27

- Frequency Range : 18 GHz ~ 26.5 GHz
- Power Input : 350 W CW



### ▶ Transmit Antenna ATH26G40

- Frequency Range : 26.5 to 40 GHz
- Power Input : 240 W CW



 **Inquiries**

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# SEMI F47 Additional test criteria for equipments supplied to Samsung Electronics



## ■ SEMI F47

SEMI F47 is a **voltage sag immunity standard for semiconductor manufacturing equipment** specified by the International Semiconductor Equipment and Materials Association and is the standard that semiconductor manufacturing equipment must withstand under voltage sag conditions.

A voltage sag is a short-term reduction in AC mains power, and defines the voltage sag immunity required for semiconductor processing, processing, measurement and automated test equipments.

## ► Based on SEMI specified % step voltage sag

Sag depth	Duration at 50 Hz	Duration at 60 Hz	Duration time
50 %	10 cycles	12 cycles	0.2 sec
70 %	25 cycles	30 cycles	0.5 sec
80 %	50 cycles	60 cycles	1 sec

# SEMI F47 Additional test criteria for equipments supplied to Samsung Electronics



## ■ Additional testing of Samsung Electronics' equipments

As decided through SEMI committee meeting, from 2024, if the equipment contains RF generator inside the equipment or receives RF signals, **Standby mode must be added** to the existing Idle mode and Run mode for testing.

Idle mode	Standby mode	Run mode
Power only supply status (Equipment operating X)	Equipment operation status excluding RF matching	Equipment operation status including RF matching

## ■ ICR is conducting testing by applying the change that added Standby mode.

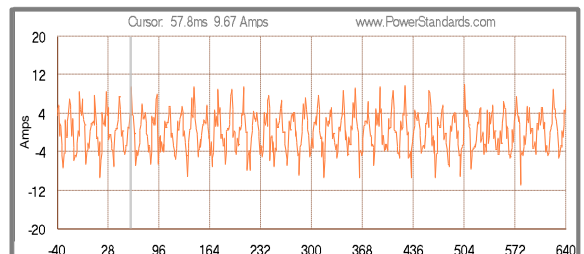
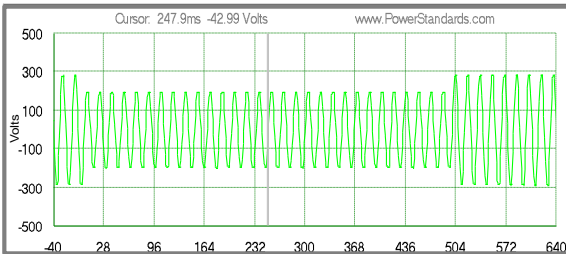
# SEMI F47 Additional test criteria for equipments supplied to Samsung Electronics



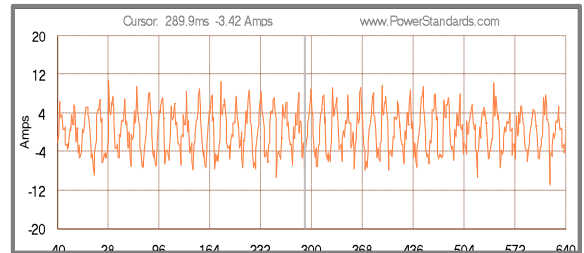
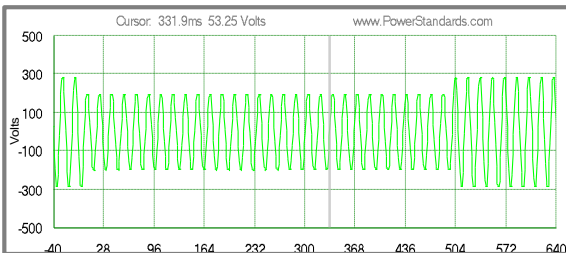
## ■ Idle mode, Standby mode, Run mode 70 % voltage, load waveform example

(The difference between the Idle mode and Standby mode load waveforms (right) in the example is minimal, but there may be differences depending on the test environment and equipments.)

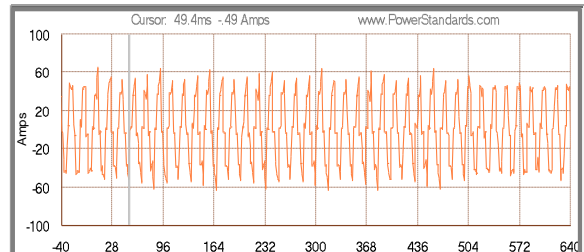
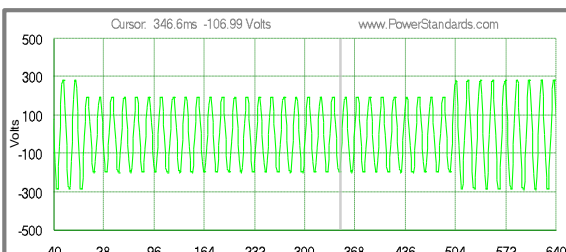
### ▶ 1) Idle mode



### ▶ 2) Standby mode



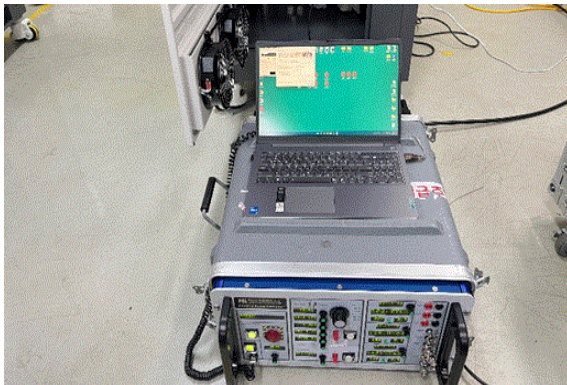
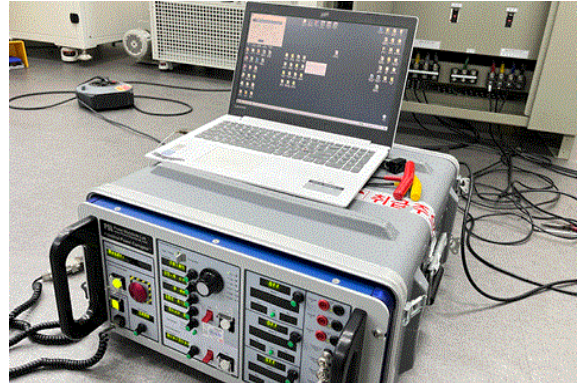
### ▶ 3) Run mode



# SEMI F47 Additional test criteria for equipments supplied to Samsung Electronics



## ■ SEMI F47 test equipment and testing photos



■ **ICR** has equipment capable of performing **additional SEMI F47 testing on equipment supplied to Samsung Electronics** and can conduct **on-site testing**.

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# How to set effective KPI and measure performance in an ISO management system



## ■ Key Tool for Measuring Performance in ISO Management Systems: Setting KPI

Companies that have implemented ISO management systems (such as ISO 9001, ISO 14001, and ISO 45001) must continuously evaluate and improve performance. A key tool in this process is the **KPI (Key Performance Indicator)**. KPI are essential for tracking performance in alignment with organizational goals. Let's learn how to set effective KPIs in an ISO management system and use them to continuously improve performance.

## ■ Importance of KPI

KPI are measurable figures that clearly show whether the management system is achieving its goals. By **setting KPI aligned with management objectives**, organizations can easily assess whether they are meeting the requirements of each standard and whether continuous improvement is being achieved.

Scheme	Key KPI
Quality Management System	Customer satisfaction, defect rate, on-time delivery rate
Environmental Management System	Energy consumption, waste emission, carbon emission
Occupational Health and Safety Management System	Accident rate, injury occurrence rate, safety inspection frequency

# How to set effective KPI and measure performance in an ISO management system



## ■ How to Set Effective KPIs

When setting KPIs, applying **the SMART principles** helps to establish more specific and achievable goals.

SMART	Description
<b>S</b> pecific	Ensure that the KPI is clear and specific.
<b>M</b> easurable	The KPI must be quantifiable, and the results should be clearly assessable.
<b>A</b> chievable	Set KPIs that are realistically attainable with the organization's resources and capabilities.
<b>R</b> elevant	The KPI should align with the organization's goals and strategies and directly relate to ISO standard requirements.
<b>T</b> ime-bound	KPIs must have a set deadline to track progress.

It's important to set KPIs that align with the key areas of each management system.

## ► For example

- 1) **ISO 9001** : quality improvement is a key goal, so **customer satisfaction and defect rates** might be important KPIs.
- 2) **ISO 14001** : environmental protection and sustainability is the goal, so you might set KPIs that **measure energy usage or waste disposal efficiency**.

# How to set effective KPI and measure performance in an ISO management system



## ■ Methods for Measuring and Analyzing Performance

Once KPIs are set, performance measurement and analysis are crucial. The measurement results are used to objectively evaluate the performance of the management system and confirm the outcomes of improvement activities.

### ▶ 1) Data Collection

To measure KPIs effectively, it is essential to collect relevant data accurately and systematically. Collected data serve as the foundational material for evaluating whether the management system meets its KPI targets.

### ▶ 2) Performance Analysis

Performance analysis involves evaluating the management system's performance based on the collected data. By comparing KPI targets with actual results, organizations can assess whether the performance meets expectations or identify areas needing improvement.

### ▶ 3) Implementation of Improvement Actions

If KPI targets are not met, it is necessary to analyze the cause and implement improvement actions. This is a key part of continuous improvement, a core requirement of ISO management systems.

# How to set effective KPI and measure performance in an ISO management system



## ■ Promote continuous improvement activities

The ultimate goal of ISO management systems is continuous improvement. KPIs help evaluate performance and drive ongoing improvement activities based on the results.

Particularly through regular performance reviews and goal resets, organizations can respond flexibly to changing environments and enhance the effectiveness of their management systems.

## ■ ISO Management System Certification Inquiry

**ICR System Certification Center** provides ISO international standard certification services **not only in Korea but also in the global market** based on competent professional auditors and long experience in operating certification bodies.

If you are interested in obtaining ISO certification, please feel free to contact us!

 **Inquiries**

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