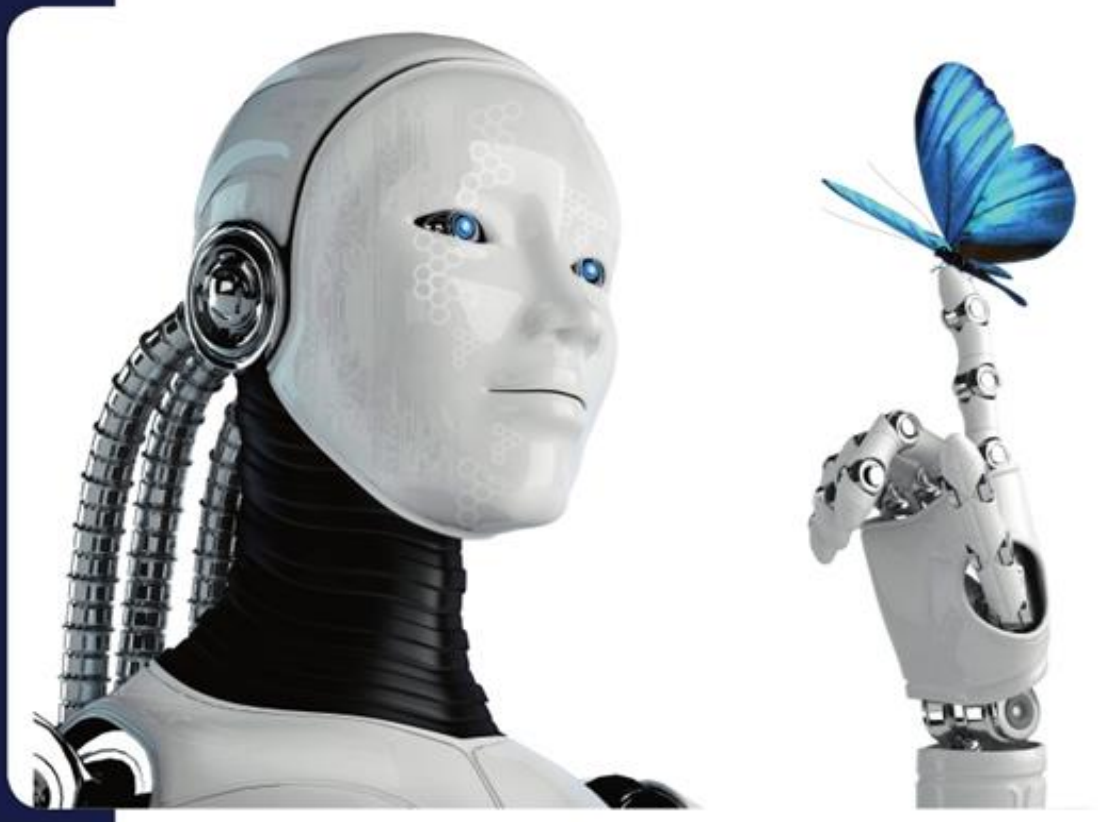
# Newsletter
# January, 2025

ICR



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# Hot Issue

1. Signing of the MoU between ICR and ITRI
2. The 2024 ICR Auditors Seminar was held successfully
3. Test method for unlicensed test equipments
4. EN IEC 61000-3-2
   Limits for harmonic current emissions


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# Signing of the MoU between ICR and ITRI

## ▣ ITRI (Industrial Technology Research Institute)

ITRI, established in 1973, is a government sponsored organization in Taiwan. With 6,000 researchers conducting technological innovation, industrial applications, and government-led research across various fields, including explosion-proof equipment.

Since 2011, ITRI has been issuing **testing and certification (TS Mark) for explosion-proof equipment in Taiwan.** It also hosts annual explosion-proof seminars by inviting domestic and international experts to improve explosion-proof technology.


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# Signing of the MoU between ICR and ITRI

## ▣ Signing of MoU between ICR and ITRI

On December 19, 2024, the ICR signed the MoU with ITRI for technological cooperation and joint research in the field of explosion-proof technology.

Through this MoU, **IECEx CoC of ICR can be converted to Taiwan Ex certification(TS Mark).** Both organizations have agreed to actively collaborate on technology exchange and provide technical support for clients entering the Taiwanese market.

### TS Mark
(Taiwan Safety Mark)

The standard mark for certifying the quality and safety of Taiwanese products includes Ex equipment.

▣ **ICR** as an **IECEx ExTL** and Certification Body (**ExCB**), provides comprehensive explosion-proof services for **IECEx** and **TS mark**.


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# The 2024 Auditors Seminar was held successfully

## ▣ Successful Seminar for ISO Auditors

**ICR** successfully held a two-part seminar for ISO auditors on December 13 and 20, 2024. Over 100 ISO auditors participated in the event, discussing various topics aimed at strengthening work competencies and staying updated on the latest trends in certification and accreditation bodies. The seminar was designed to enhance **auditors' knowledge and practical skills**, and it also included training on ESG certification, further elevating their professionalism.


[ Sim Sang-woo, Certification Director of ICR ]

# The 2024 Auditors Seminar was held successfully

## ▣ Purpose and Background of the 2024 ICR Auditor Seminar

**ICR** organized its first auditor seminar in seven years, focusing on strengthening auditors' competencies. The event aimed to improve operational efficiency through updated guidance on certification audit proposals and audit report revisions. Training sessions on **ESG and ISO certification were also provided**, deepening the expertise of auditors. The seminar emphasized quality improvement in audits and enhancing customer trust as its core values. It aimed to boost the practical work skills of auditors, laying the groundwork for increasing competitiveness as **a global certification body**.

# The 2024 Auditors Seminar was held successfully

## ▣ Key Activities and Training Content

- professional development training programs and presentations.

| Detailed Agenda |
| --- |
| Seminar Welcome Address and Introduction to ICR |
| Introduction to ICR IT Business Division |
| Introduction of ICR System Certification Center Staff and Key Responsibilities |
| Guidance on Revising Certification Audit Proposals |
| Guidance on Revising Audit Reports |
| New Auditor Registration, Code Assignment, and ICR Certification Standards |
| ESG Evaluation and Trends in Mutual Recognition of ISO Certifications |
| Trends in ISO Certification Standards |
| Q & A |


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# The 2024 Auditors Seminar was held successfully

## ▣ The Auditors Seminar




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# The 2024 Auditors Seminar was held successfully

## ▣ Achievements and Results

The seminar actively collected auditors' opinions and shared various work-related and ESG topics, contributing to the **improvement** of their **practical skills.** Over 100 auditors attended the event and received certificates of completion and commemorative gifts. The subsequent dinner provided an active space for **networking and communication**, fostering a stronger foundation for cooperation among auditors.

## ▣ Future Plans and Vision

**ICR** is committed to regularly holding seminars to enhance certification credibility and ensure robust certification services. The company will continue to work alongside auditors to deliver **high-quality certification services**, support customer companies in increasing profits, and promote sustainable growth. Through these efforts, ICR aims to establish itself as a trusted global certification body and a reliable partner in mutual growth with client companies.


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# Test method for unlicensed test equipments

## ▣ Simplification of Test Method for Wireless Chargers

Tested at actual operating voltage without varying the rated voltage if a constant voltage circuit is installed.

- Test the wireless charger using a KC certified switching adapter, Determined to specify adapter photos and product specifications on the test report "In countries such as Europe and the United States, wireless chargers are being tested at actual operating voltages."

## ▣ Application of testing methods when using multiple types of radio waves

Whether the test method can be applied in the same way because the technical standards of wireless facilities for household wireless stations are hardly different from those for simple wireless stations.

- In the case of digital time-division multiple access method or frequency-division access method of radio station wireless facilities, the test of radio wave type is tested only for one radio wave type.

# Test method for unlicensed test equipments

**▶ Test Method for Conformity Evaluation of Wireless Facilities ◀**
**(KS X 3123)**

Testing of radio forms for simple radio station (including industrial and public use) radio equipment with digital time-division multiple access or digital frequency-division multiple access shall be tested for only one radio type.

## ▣ 13.56 MHz RFID

In the 13.56 MHz RFID field strength test, the resolution bandwidth (RBW) is 200 Hz and the calibration factor is not applied.

## ▣ 2.4 GHz Band Frequency Map Diffusion Spectrum Method

When testing the occupied frequency bandwidth of wireless devices using the 2.4 GHz band frequency diagram diffusion spectrum method, the required frequency bandwidth shall be applied to the narrow value of the occupied frequency bandwidth or channel interval of the wireless device to be tested.

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# EN IEC 61000-3-2

## Limits for harmonic current emissions

## (Equipment input current ≤ 16 A per phase)

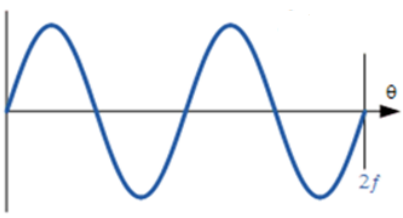
### ▣ EN IEC 61000-3-2

This standard specifies the **harmonic current** allowance for equipment with an input current of **16 A or less** in public low-voltage distribution networks.

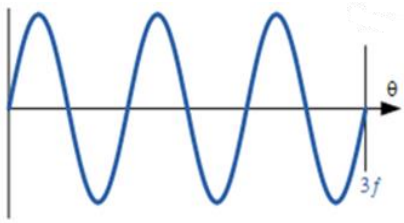
### ▣ What is harmonics?

Harmonics are physical electrical quantities that are **integer multiples** of the fundamental frequency, such as **twice, three times, four times.** Harmonics are generally referred to up to the 50th order, and anything above that is classified as high frequency or noise.

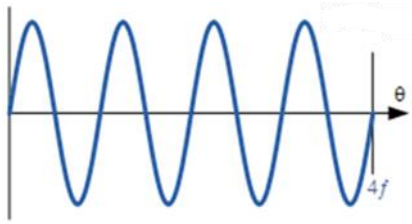
As power electronics technology advances, harmonics inevitably occur.




2nd Harmonic




3rd Harmonic




4th Harmonic

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# EN IEC 61000-3-2

## Limits for harmonic current emissions

## (Equipment input current ≤ 16 A per phase)

### ▣ The causes of harmonics

It is caused by distortion of voltage and current due to nonlinear load operation. In power systems, most harmonics occur in equipment that uses electroic equipment for power conversion.

### ▣ The effect of harmonics

If there are many or high harmonic components in the voltage and current, it can reduce the quality of the power supply and cause overheating and abnormal conditions.

**▶ Example**

| Equipment name | The effect of harmonics |
|---|---|
| **Transformer** | Heat generation due to increased iron loss and copper loss caused by harmonic currents |
| **MCCB** | Malfunction below rated capacity due to excessive harmonic current |


Transforme

MCCB

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# EN IEC 61000-3-2

## Limits for harmonic current emissions

## (Equipment input current ≤ 16 A per phase)

### ▣ The allowable harmonic current limit

#### ▶Odd harmonics

| Harmonics order(h) | Allowable harmonic current (A) |
|---|---|
| 3 | 2.30 |
| 5 | 1.14 |
| 7 | 0.77 |
| 9 | 0.40 |
| 11 | 0.33 |
| 13 | 0.21 |
| 15 ≤ h ≤ 39 | $0.15\frac{15}{h}$ |

#### ▶Even harmonics

| Harmonics order(h) | Allowable harmonic current (A) |
|---|---|
| 2 | 1.08 |
| 4 | 0.43 |
| 6 | 0.30 |
| 8 ≤ h ≤ 40 | $0.23\frac{8}{h}$ |

# EN IEC 61000-3-2

## Limits for harmonic current emissions

## (Equipment input current ≤ 16 A per phase)

### ▣ Equipment and test photos

▣ **ICR** has test equipment for **EN IEC 61000-3-2 standard** and can perform **on-site testing.**


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