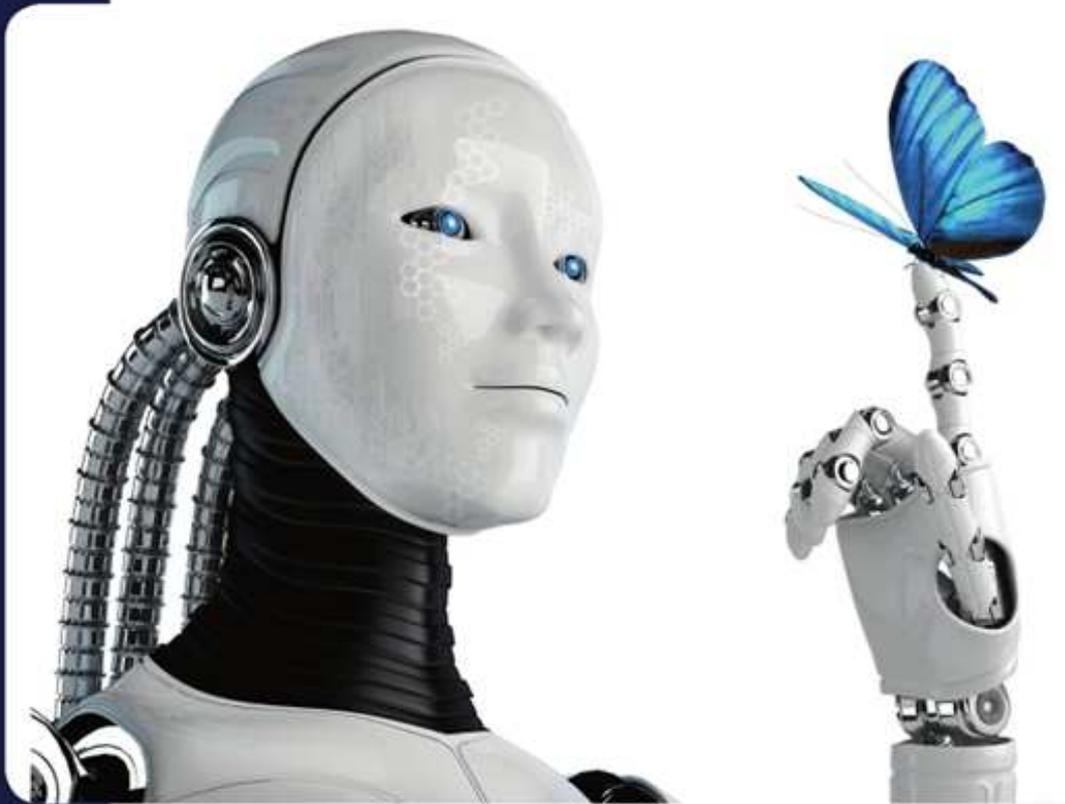


# Newsletter June, 2018



# ICR



## Hot Issue

- Expansion of RRA scope of accreditation
- LED lighting 90% trading suspension
- ISO17021-3:2017 Transition Plan
- Nvidia halts testing of autonomous vehicle following Toyota
- Reliability test and Evaluation for Lead-free Soldering
- Mm-Wave for Automotive Car Radar



# Expansion of RRA scope of accreditation




- 연구원소개
- 전파업무
- 전파자료실
- 소식과 소통광장
- 전파바로알기
- 정보공개

- 전파업무
  - 적합성평가제도
    - 적합성평가제도개요
    - 신규적합성평가현황
    - 적합성평가현황검색
    - 부적합방송통신기자재현황
    - 지정시험기관개요
    - MRA안내
  - 방송통신기술기준
  - 국가표준
  - 전자파흡수율
  - 전자파적합표준시험
  - 우주전파환경
  - 구체현령어목

## 지정시험기관개요

지정시험기관이란 방송통신기자재의 적합성평가를 위해 기술기준의 적합성여부를 시험하는 기관으로 전파법 제 58조의 5 (시험기관지정 등)에 명시된 근거에 의해 지정기관인 국립전파연구원으로부터 관련 규정에 따라 지정을 받아 시험업무에 종사하는 기관을 말합니다.

지정시험기관의 자정에 관한 세부적인 규정은 전파법시행령 제 77조의 8 및 방송통신기자재등 시험기관지정 및 관리에 관한 고시(국립전파연구원 고시)에서 지정절차 및 방법 등을 구체적으로 정하고 있습니다.

### 지정시험기관 현황

지정번호 DesignationNo.	시험기관명 Name of testlaboratory	지정 분야 Designated area	지정시험 항목 Designated exam items	주소/전화/팩스 Address/Tel(T)/Fax(F)	홈페이지 Website
KR0165	주식회사 아이씨알	EMC, 전자파강도, 국외, 무선	<a href="#">VIEW</a>	주소 : 경기도 김포시 양촌읍 황금3로7번길 112, (학운리) tel : 02-6351-9002 fax : 02-6351-9007	http://www.icrqa.com

ICR informs you that we have expended the RRA scope of accreditation including **EMC, EMC RF and EMC intensity.**



# LED lighting 90% trading suspension

There is a controversy over the evaluation of the electromagnetic compatibility of LED lighting fixtures and the **Procurement Service** announced that it will implement a policy to **discontinue transactions** on **unapproved items**, and the procurement market is expected to be affected.

It is estimated that more than 12,000 products (estimated by industry), which account for about **90% of all products**, will be **excluded from nationwide market shopping malls** because they do not receive the electromagnetic compatibility registration certificate, and the business planned by local governments and public institutions will become uncertain to be.

Recently, the Public Procurement Service has received complaints that most of the LED lights sold at the nationwide marketplace are in violation of the Electromagnetic Compatibility Law.

Source : <http://www.electimes.com/article.php?aid=1525832246157233008>



# LED lighting 90% trading suspension

As a result of requesting the National Radio Research Institute to interpret the controversial legislation, it has been decided that, even if the applicant has not submitted the electromagnetic registration certificate or has been tested by the Industrial Standardization Act (KS), it is not exempted. I received a reply saying that it was illegal.

On the basis of this, each local procurement office sent a letter to the companies registered in the country marketplace and announced that **from 14th**, it will take measures to **stop the transaction** of unregistered items of conformity assessment.

Based on the results collected by each provincial office by 11th, unapproved items will be excluded from the nationwide market shopping mall starting from the 14<sup>th</sup>.

Source : <http://www.electimes.com/article.php?aid=1525832246157233008>



# LED lighting 90% trading suspension

If the certificate is obtained by the test certification body, it will be **re-registered within one month**. If the company sells products that have not been certified since the 14th, it is the Procurement Office's position that administrative sanctions will be implemented.

However, the lighting industry is strongly opposed by claiming that it would be subject to exemption if it had been subjected to the electromagnetic compatibility test under the KS standard. The companies will submit petitions directly to the government and prepare administrative remarks, saying that they will actively respond.

An official from the Public Procurement Service said, "We only confirm the contents of the law as the law enforcement agency and carry out the related matters." Based on the information received from the National Radio Research Institute, I will make follow-up measures through the results of the counties in the province. "

Source : <http://www.electimes.com/article.php?aid=1525832246157233008>



# ISO17021–3:2017 Transition Plan

In March 2017, **ISO17021-3:2017**(Competence requirements for **auditing and certification** of quality management systems) is **revised and issued**.

Followings are the changed **competence requirements**.

- **fundamental concepts**
- **the role of leadership in an organization and its impact on the QMS**
- **application of risk based thinking including the determination of risks and opportunities**
- **context of the organization**
- **the provision of externally provided processes, products and services**



# ISO17021–3:2017 Transition Plan

Followings are the transition plan of ICR.

- Establish the documented system, that is conform to ISO 17021-3:2017, **by 29<sup>th</sup> June 2018.**
- Complete **the internal personnel competence evaluation**, based on the established documented system, **by 6<sup>th</sup> July 2018.**
- Apply **new auditor competence evaluation**, based on the established documented system, **from 1<sup>st</sup> August 2018.**
- The auditor competence evaluation, based on the established documented system, for **the auditors, who are already registered to ICR**, starts **from 1<sup>st</sup> August 2018** and completes **by 5<sup>th</sup> October 2018.**

# Nvidia halts testing of autonomous vehicle following Toyota



NVIDIA has announced that it will **stop testing its own DRIVE autonomous vehicle driving system.**

NVIDIA has officially confirmed and explained that NVIDIA will halt the road test for autonomous vehicles in the wake of an Autobahn Uber car crash in Arizona last week.

NVIDIA decided to stop all the schedules and watch the results, stressing that they wanted to know more about the incident.



# Nvidia halts testing of autonomous vehicle following Toyota



Apart from the fact that the suspension decision is both rational in both political and practical terms, there is some uncertainty as to how NVIDIA's involvement in **Uber vehicle accidents and countermeasures** last week following the accident to be.

At a GTC press conference yesterday afternoon, NVIDIA chief executive Jensen Huang gave details of the accident at a detailed explanation in the context of NVIDIA's position.

On the hardware side, NVIDIA confirmed that Uber vehicles were using **NVIDIA GPUs**, but not their drive platforms.

# Nvidia halts testing of autonomous vehicle following Toyota



This is consistent with earlier reports that NVIDIA hardware was installed in an accident vehicle.

Uber has been using NVIDIA GPUs in autonomous driving since 2016 (including Arizona), long before it announced a closer partnership with NVIDIA at the CES 2018 event.

So, Uber's existing test vehicles use NVIDIA's commercial GPUs with other processors, which run Uber's own software stack.

This is different from using NVIDIA's drive platform, where the drive platform utilizes only NVIDIA's processor (SoC and GPU) and NVIDIA's drive software package runs on these processors.

# Nvidia halts testing of autonomous vehicle following Toyota



Nvidia, one of the early leaders in the field of autonomous navigation, is certainly advantageous to avoid negative disputes, especially in crashes.

So it's important to distinguish between the GPU and the drive platform, and this collision is related to NVIDIA's sensor combination, the hardware fault tolerance level, or any of the neural network-based software stacks that are most important for taking action on these data It is not.

However, it also means NVIDIA is excluded from the scope of the study.

This was not the case with NVIDIA's platform, so the investigation is on its own in Uber, which is why NVIDIA did not actively take the position.

# Nvidia halts testing of autonomous vehicle following Toyota



In the meantime, NVIDIA is driving test vehicles manually on public roads and continues to train data collection and neural networks.

This incident is not a good opportunity for anyone, but it is an interesting time for NVIDIA.

NVIDIA has developed a simulator system for the training of neural networks such as autonomous vehicles, and is moving toward commercializing self-propelled vehicles through DRIVE Sim and Constellation System, which will be launched later this year.

Tests in real-world situations are likely to resume soon, but it is not yet clear whether NVIDIA is already ready to use these prototypes internally for practical training.

However, what this Uber vehicle accident means is that **simulated training** has become a more **valuable business** area and will be of considerable benefit to NVIDIA

# Reliability test and Evaluation for Lead-free Soldering



According to the application of lead-free soldering of electric components of HYUNDAI Motors, ICR provides services for reliability testing and evaluation of related standards.

## Lead-free Soldering Standard of HYHUNDAI Motors

**ES90000-01** (Visual inspection standard of soldering part)

**ES90000-02** (Delamination criteria of semiconductor devices)

**ES90000-04** (Lead-free soldering standard for reliability test)

**ES95400-10** (Reliability test standard for electric components)

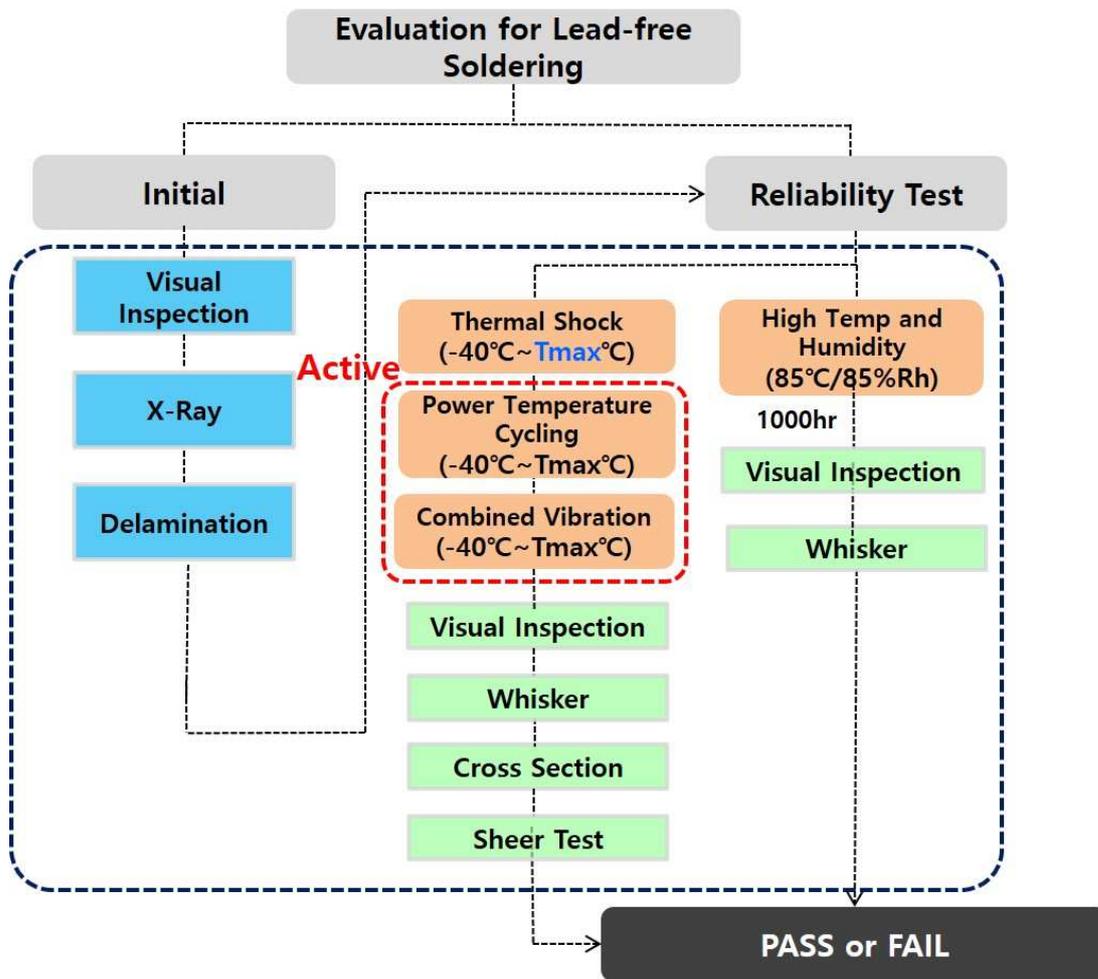
## General Requirement for Lead-free Soldering

The lead content of all parts and plating materials used in solder and electric component should be **less than 0.09 wt% (900 ppm)**



# Reliability test and Evaluation for Lead-free Soldering

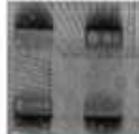
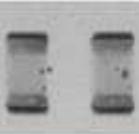
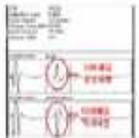
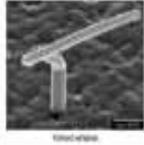
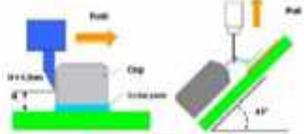
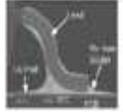
## Test Procedure for Lead-free Soldering (According to ES90000-04)





# Reliability test and Evaluation for Lead-free Soldering

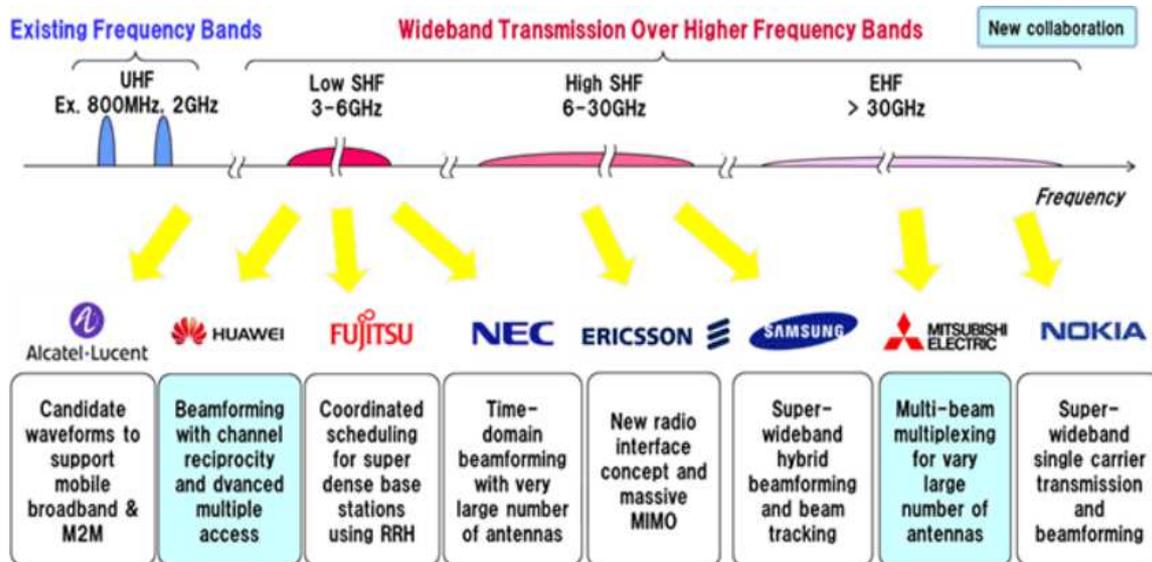
## Lead-free Soldering related Equipment and Test Acceptance Criteria

<p><b>외관검사</b></p> <p>목적 : 외관 접합상태의 판정 장비 : 육안 및 현미경</p>   <p>ES90000-01</p>	<p><b>X-Ray 검사</b></p> <p>목적 : 내부 Void 확인 장비 : X-Ray</p> <p>전체 Void 면적 솔더링 면적 20% 미만</p> <p>단일 Void 면적 솔더링 면적 10% 미만</p>  
<p><b>초음파 검사</b></p> <p>목적 : 반도체 내부 박리 검사 장비 : SAM (초음파 검사 장비)</p>   <p>ES90000-02</p>	<p><b>휘스커 검사</b></p> <p>목적 : 휘스커에 대한 내성 검사 장비 : SEM, 현미경</p>   <p>휘스커 길이 40<math>\mu</math>m 이하</p>
<p><b>기계적 강도 시험</b></p> <p>목적 : 솔더 접합강도 평가 장비 : 솔더이탈력시험기</p>  <p>초기 대비 물성 저하율 비교</p>	<p><b>단면 검사</b></p> <p>목적 : 내부 Crack 파악 장비 : 샘플준비기, SEM-EDS</p>   <p>금속화합물 유무 솔더크랙</p>

# mm-Wave for 5G Telecommunication

## 5G Telecommunication Standard

Such as Artificial Intelligence, Drone, Virtual Machine, they require high frequency more than 20 GHz frequency band which we call it mm-Wave.



5G Telecommunication Standard Frequency Band Allocation



# mm-Wave for 5G Telecommunication

In 2018 Pyeong-Chang Olympic, Korean network provider demonstrates first 5G telecommunication in the world.

Also, Korean 5G standard will be released in end of 2018. So as Europe, The states and Japan also try to make the standard such date.

In 2020 Tokyo Olympic, 5G might be commercialized. It will effect world wide and very important for every companies who cares for telecommunication.

ICR can help you to test 5G mm-Wave also can help 2G, 3G, LTE and wireless standards as well.

**If you need any question then, Please contact  
[kskim@icrqa.com](mailto:kskim@icrqa.com).**

# mm-Wave for Automotive Car Radar

## Car to Car, Vehicle to Infrastructre, Car to X

For the safety, communication, emergency and auto-pilot of the car. These kind of high technologies require various frequency band.



## Automotive communication Application List



# mm-Wave for Automotive Car Radar

Ex) Forward car radar uses 78 GHz which we call mm-Wave, also needs to be tested up to 154 GHz in Korea and Europe. For the states, requires up to 234 GHz which is more hard.

And also, to use V2V and C2X technology those require 5 GHz frequency band and 10 MHz BW. Likewise, to use E-call it requires GSM or LTE technologies.

ICR can help you to test 5G mm-Wave also can help 2G, 3G, LTE and wireless standards as well.

**If you need any question then, Please contact**  
**[kskim@icrqa.com](mailto:kskim@icrqa.com)**



[www.icrqa.com](http://www.icrqa.com)

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