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Contents

Contribution

Metrological Traceability In EMC Testing

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Modern society is now permeated with all kinds of electronic devices such as IoT devices, exemplified by the smartphone. As these devices continue to evolve in speed and sophistication, the range of frequencies they use is also expanding. Miniaturization and densification increase device susceptibility to electromagnetic interference, making it more difficult to implement EMC measures to secure product reliability and safety. EMC testing is becoming increasingly important to accurately assess the impacts of such complex electromagnetic environments.

In EMC testing, assessments are made based on international standards such as IEC/CISPR, and it is essential to guarantee the reliability of measurement results. Consistency of measurement results for the same product must be ensured within the uncertainty range, even for measurements conducted at different testing laboratories. To achieve this, it is extremely important to align the scales; that is, calibrate the measuring instruments by comparing their readings with known baseline values. EMC testing uses a variety of radio-frequency (RF) measuring instruments such as power meters, spectrum analyzers, EMI test receivers, and vector network analyzers. Basic metrological standards for RF measurement include: RF power standards defining absolute power, RF attenuation standards for verifying the accuracy of dynamic-range measurements such as power amplifiers and spectrum analyzers, and RF impedance (S-parameter) standards used as baselines for reflection-and-transmission-coefficient analyzers such as vector network analyzers. Additionally, to determine electromagnetic field strength in a free space, the antenna factor of the antenna to be used must be accurately defined. In Japan, national measurement standards concerning these matters are developed and provided by the National Metrology Institute of Japan (NMIJ) at the National Institute of Advanced Industrial Science and Technology (AIST). The national measurement standards (for specified standard instruments) are defined based on Japan's Measurement Act. Here, I would like to outline in simple terms how these standards are defined.

For RF power, a calorimeter-type power meter is specified as the standard instrument. This device enables accurate determination of absolute values for RF power by converting the incident power to heat through absorption in a load, and performing comparison with the DC power required to emit an equivalent amount of heat. RF attenuation standards are achieved by using RF attenuation measuring system via the intermediate-frequency substitution method. Through heterodyne frequency conversion, RF attenuation is converted to a value in the kilohertz range and compared to the voltage ratio of an extremely stable multistage inductive voltage divider calibrated to low-frequency electrical standards, thereby accurately determining attenuation.

RF impedance standards are defined using coaxial lines called “airlines” that use air as a dielectric. Standards such as for reflection coefficients and S-parameters are established based on RF theory. Because the characteristic impedance can be accurately determined from the mechanical dimensions of the central conductor’s outer diameter and the outer conductor’s inner diameter, traceable dimension measurements are taken using a length standard such as a gauge block. For antenna factors, standard instruments are specified for dipole antennas (mainly used for site validation such as at testing laboratories), broad-band antennas (such as biconical or log-periodic antennas used for electromagnetic interference testing), and loop antennas (used in magnetic-field measurements). Antenna factors are calibrated using the three-antenna method, which is based on transmission-coefficient measurements between transmit and receive antennas using a combination of three antennas. Alternatively, antenna factors are calibrated using the substitution method that uses comparative measurements of a standard antenna with known characteristics.

The reliability of the RF measuring instruments you use is guaranteed by a hierarchy of metrological-traceability systems with national measurement standards at the top. Your measuring instruments are likely calibrated through the instrument manufacturer or a calibration service provider. Before issuing calibration certificates, these companies compare the physical quantities being tested with higher-level standards, and ensure that the measurement results can be traced back to the national measurement standards through an unbroken chain of calibration. This system ensures high reliability in EMC testing.

In recent years, we have seen the accelerated development of various technologies using millimeter and terahertz waves, including next-generation wireless communication technologies such as Beyond 5G (which includes 6G). Against this backdrop, the requirements of EMC testing are expected to change dramatically. Going forward, we must tackle all kinds of challenges relating not only to the expansion of target frequency ranges for testing, but also the establishment of entirely new test methods. We intend to continue developing advanced measurement techniques and enhancing metrological standards, thus strengthening the foundations of international reliability and competitiveness in the industry.

Hitoshi Iida

March 1993	Graduated from the Faculty of Electro-Communications, Department of Electronic Engineering, The University of Electro-Communications
March 1995	Completed the Master’s Program in Electronic Engineering, Graduate School of Electro-Communications, The University of Electro-Communications
April 1995	Joined Yokogawa Electric Corporation
April 2004 to present	Joined the National Institute of Advanced Industrial Science and Technology

Ph.D. (engineering)

Committee Activities

● Council

Date	June 30, 2026
Agenda items	● Agenda item 1 FY 2025 business report ● Agenda item 2 FY 2025 settlement of accounts (draft) ● Agenda item 3 Selection of director (draft)
Decisions and reported items	● Agenda item 1 Approved ● Agenda item 2 Approved ● Agenda item 3 Approved ● Reported item 1 FY 2026 business plan ● Reported item 2 FY 2026 budget

● Board

Date	June 11, 2026
Agenda items	● Agenda item 1 FY 2025 business report (draft) ● Agenda item 2 FY 2025 settlement of accounts (draft) ● Agenda item 3 Selection of Steering Committee members ● Agenda item 4 Calling of the ordinary board meeting
Decisions and reported items	● Agenda item 1 Approved ● Agenda item 2 Approved ● Agenda item 3 Approved ● Agenda item 4 Approved

● Steering Committee

Date	May 28 and June 17, 2026	
Agenda items	● Agenda item 1	Topics of the 61st board meeting: "FY 2025 business report (draft)", "FY 2025 settlement of accounts (draft)", "Selection of Steering Committee members"
	● Agenda item 2	New members (April to May)
Decisions and reported items	● Agenda item 1	Agenda items for the board of directors were approved.
	● Agenda item 2	Approved
	● Reported item 1	Activity reports for the period from April to May were made by the dedicated subcommittees (International Relations, Technical, Market Sampling Test, Public Relations, Education).
	● Reported item 2	Secretariat work (member entry and withdrawal trends, the number of registrations of product conformity, income and expenditure records, etc.)
	● Reported item 3	Report on APEMC 2026 Kuala Lumpur, Malaysia Symposium
	● Reported item 4	"Guidance for Rules for Market Sampling Tests" (English version)
	● Reported item 5	Report on lecture at the Hokuriku Clean Reception Environment Promotion Council
	● Reported item 6	Report on participation in COMPUTEX TAIPEI 2026

● Technical Subcommittee

Date	May 18, 2026	
Agenda items	● Agenda item 1	FY 2026 activity plan and results of the Technical Subcommittee
	● Agenda item 2	Activities for promoting standardization of mains cable termination conditions
	● Agenda item 3	Verification of antenna-height scanning in pre-scan measurements for radiated emission measurements above 1 GHz
	● Agenda item 4	Verification and RRT of voltage/current ratios regarding improved transformer-coupled AANs
	● Agenda item 5	Verification of NSA method using hybrid antennas
Continuing agenda items	● Agenda items 1, 2, 3, 4, and 5	
Decisions and reported items	● Reported item 1	Presentation including two papers relating to VHF-LISN at the APEMC 2026 Symposium Workshop (see page 12)

● International Relations Subcommittee

Date	April 11, May 20, and June 10, 2026	
Agenda items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3	World ITE/MME-related standards survey Preparations for the holding of the International Forum Revision of activities of the International Relations Subcommittee
Continuing agenda items	● Agenda item 1 ● Agenda item 2	Information was collected from members who conducted a joint investigation on each country's status of adopting CISPR 32 and CISPR 35. Going forward, this information will be confirmed. The overall schedule for the face-to-face exhibition to be held around March 2027 was confirmed. Consideration of countries from which to invite speakers is underway. Three speakers are planned.
Decisions and reported items	● Reported item 1 ● Reported item 2	We have received CQC's answers to our questions about China's EMC-related regulations sent in last fiscal year's overseas survey. The answers have been confirmed and published on the VCCI Council website. Starting in FY 2026, a new Chair has been appointed from NEC Corporation, and a new Vice Chair has been appointed from Fujifilm Business Innovation Corp.

● Market Sampling Test Subcommittee

Date	April 9, May 13, and June 5, 2026	
Agenda items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3 ● Agenda item 4 ● Agenda item 5	Summary of the FY 2025 market sampling test reports Summary of the FY 2025 document inspection reports Policies on the FY 2026 market sampling tests Notes on commissioned testing Status of FY 2026 market sampling tests and document inspections
Decisions and reported items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3 ● Agenda item 4 ● Agenda item 5	A report was given summarizing the FY 2025 sampling tests. Up to 67 products have been selected, and 65 products (excluding 2 canceled products) have been tested. Judgments were passed for 64 of the products in the April Subcommittee meeting. The judgment of 1 "failed-tentative" product will be carried over into FY 2026. For the FY 2025 document inspections, up to 54 documents were selected, of which 49 have been inspected (excluding canceled documents). Note that 1 document that underwent a preliminary screening has been canceled. The draft policy for FY 2026 market sampling tests was deliberated on and subsequently approved. Notes on performing sampling tests were deliberated on and approved. The notes were also approved to be sent to commissioned testing laboratories. Up to 26 products have been selected for the FY 2026 sampling tests so far. A judgment was passed for 1 pending ("failed-tentative" survey in progress) product tested in FY 2025. Up to 21 documents have been selected for inspections, and both preliminary screening and inspections have been completed for 10 documents.

● Public Relations Subcommittee

Date	May 15 and June 12, 2026
Agenda items	● Agenda item 1 On COMPUTEX TAIPEI 2026 ● Agenda item 2 On the double-sided pamphlet explaining VHF-LISN ● Agenda item 3 On TECHNO-FRONTIER ● Agenda item 4 On the redesign of on-site presenter vests
Continuing agenda items	● Agenda item 3 Booth design, display panels, and on-site presenters are being confirmed. ● Agenda item 4 A draft vest design has been confirmed and will go into production.
Decisions and reported items	● Agenda item 1 Report on participation (see page 22) ● Agenda item 2 A final confirmation has been completed for the front and back of the pamphlet. The pamphlet is planned to be distributed at future exhibitions and similar events.

● Education Subcommittee

Date	April 9 and June 12, 2026
Agenda items	● Agenda item 1 Confirmation of status of preparations for FY 2026 education and training ● Agenda item 2 FY 2026 textbook revisions ● Agenda item 3 Results of FY 2026 education and training
Continuing agenda items	● Agenda items 1, 2, and 3
Decisions and reported items	● Agenda item 1 - In FY 2026, the following four classes were established and held: (1) The basic technique of EMI measurement [held once in the first half and twice in the second half of the fiscal year; held three times total] (2) The basic of electromagnetic waves, EMI measurement technique [held once in the first half and once in the second half of the fiscal year; held twice total] (3) The level up of the EMI measurement technique [held once in the second half of the fiscal year] (4) The EMI measurement instrumentation uncertainty [held once in the second half of the fiscal year] ● Agenda item 2 - Regarding the textbook revisions for "The basic technique of EMI measurement" and "The basic of electromagnetic waves, EMI measurement technique": The contents of new guidance documents were reflected, and corrections were made based on feedback from the previous fiscal year's questionnaire. - Discussion is underway regarding textbook revisions for "The level up of the EMI measurement technique" and "The EMI measurement instrumentation uncertainty". ● Agenda item 3 - "The basic technique of EMI measurement" (held on June 5) was held in hybrid format combining online (livestream) and face-to-face formats. Certificates of attendance were given to all 13 attendees.

● Registration Committee for Measurement Facilities

Date	April 13, 2026
Agenda items	● Reviewed the results of deliberations by the Measurement Facility Examination WG.
Decisions and reported items	● Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 17 companies Radiated emission measurement facilities below 1 GHz: 8 AC mains port conducted emission measurement facilities: 5 Wired network port conducted emission measurement facilities: 6 Radiated emission measurement facilities above 1 GHz: 7 Applications returned with comments: None Applications carried over to the next meeting: None
Date	May 25, 2026
Agenda items	● Reviewed the results of deliberations by the Measurement Facility Examination WG.
Decisions and reported items	● Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 21 companies Radiated emission measurement facilities below 1 GHz: 13 AC mains port conducted emission measurement facilities: 11 Wired network port conducted emission measurement facilities: 11 Radiated emission measurement facilities above 1 GHz: 10 Applications returned with comments: None Applications carried over to the next meeting: None
Date	June 15, 2026
Agenda items	● Reviewed the results of deliberations by the Measurement Facility Examination WG.
Decisions and reported items	● Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 17 companies Radiated emission measurement facilities below 1 GHz: 14 AC mains port conducted emission measurement facilities: 6 Wired network port conducted emission measurement facilities: 6 Radiated emission measurement facilities above 1 GHz: 10 Applications returned with comments: None Applications carried over to the next meeting: None

8th instalment

My First Encounter with EMC and My International Standardization Activities at CISPR

Amemiya EMC Consulting Representative
Fujio Amemiya

1. Introduction

So far in this series, *My First Encounter with EMC*, I have outlined the EMC issues I encountered after joining NTT's Musashino ECL in 1973, and being appointed to work on the new mini telephone (701P) at the Telephone Laboratory. I also covered the EMC issues I encountered during my R&D work on a digital telephone in preparation for the coming ISDN age, which involved frequent trips to conduct field experiments at sites with poor electromagnetic environments.

From here on, we will shift focus toward the latter half of the title of this series, *My International Standardization Activities at CISPR*. Thanks to my involvement in resolving EMC issues in the aforementioned telephones, I went on to participate as an expert in the international standardization activities at IEC/CISPR. In this article, I will first cover the background leading up to these activities.

2. From cell-phone research to digital-telephone research

Since joining NTT's Musashino ECL, I have been conducting fundamental research into reducing the size and weight, and improving the power efficiency of cell phones as shown at the 1973 live demonstration at Osaka Expo. However, due to an organizational restructuring soon after the expansion of the Yokosuka laboratory, all groups at the Telephone Laboratory (to which I belonged), except for the Speech Quality Research Group, were transferred to the Yokosuka laboratory. From then on, the topic of my research commercialization changed to the system design of digital telephones. The Director of the Telephone Laboratory explained the lead-up to this change in the following two points:

(a) Now that the Wave Propagation Laboratory was in charge of cell-phone research commercialization, the Telephone Laboratory would provide assistance relating to the telephones' acoustic design as necessary.

(b) Going forward, we would be focusing on R&D relating to the digitization of telecommunication networks, so we would need to study the digitization of telecommunications terminals. First, we would need to assign personnel to research basic telephone digitization, and then identify and organize the specific research topics so we could quickly begin researching the fundamentals.

Point (a) aside, I agreed with point (b), but I wasn't sure how substantive the results would be if I were working by myself. In response, I recall suggesting that my supervisor and colleagues hold regular meetings to identify and organize research topics and give status reports, which the Director approved.

Next, in the preliminary stage of my research on this topic, I studied research trends relating to digital telephones among common carriers in other countries, and scoured the literature on relevant IEEE technologies. Unfortunately, I could not find any references for telephone systems designed to handle all signals and information exchanged between dialing and ringing sides digitally.

Then, I considered what research topics would need to be pursued and refined for digital-telephone development while listing topics to be researched by the Telephone Laboratory, and topics that would need to be contracted out to other laboratories. Going through this process, I was reminded of the sheer number of new issues to be studied in the field of digital-telephone development alone. There was also the need to build an inter-terminal ("End to End", hereinafter, "E2E") digital-communication network enabling digital telephones to be installed in customer homes. It struck me just how much work this would require: a comprehensive revision of the signaling, transmission, and power-supply methods of exchanges serving digital telephones, and R&D on E2E digital-communication networks through close collaboration among departments researching relevant exchange, transmission, and communication circuits, power, and equipment on customer premises.

Regarding said inter-department collaboration: While I saw the need for collaboration meetings to facilitate technical exchanges at the working level among those responsible for specific research, I suspected in some cases, there would be disputes around the division of roles (research topics) across laboratories. I was concerned that such disputes could not be resolved through exchanges at the working level. Sure enough, my concerns were realized when a dispute over the collaboration format arose at one such meeting that could not be resolved at the working (R&D) level. To make a long story short, the matter was escalated to the level of senior research specialists from each laboratory, and I attended a collaboration meeting to assist with explanations given by the Telephone Laboratory's senior specialist. If I recall, the meeting then turned to many other matters, and the lead research departments and cooperating research departments were determined and agreed upon for each research topic. After that, the R&D personnel for each project debated and coordinated amongst themselves. Once all of this was done, our research-commercialization activities began in earnest.

3. How I began participating in the IEC's International Special Committee on Radio Interference (CISPR)

Now, let's fast-forward to the time I was conducting R&D for the aforementioned digital telephone, during which we developed several digital-telephone prototypes. As mentioned previously in this series, we visited sites with poor electromagnetic environments; one near an AM-broadcast antenna (Kuki, Saitama), and another near a shortwave-broadcast antenna (Nagara, Chiba), to conduct field tests of the prototype's electromagnetic immunity. In the fifth instalment of this series, I recounted how we investigated and solved a strange case where radiated disturbances from the electronic telephone undergoing research for commercialization purposes entered a neighboring TV receiver, causing significant noise.

After a lengthy investigation and discussion of solutions to the EMC issue in that telephone, I was transferred from the Yokosuka laboratory's Telephone Laboratory to the Musashino ECL's Provisional Model Systems Laboratory. There, I was in charge of field inspections involving building, operating, and assessing NTT's companywide project, the "INS Model System", for about two years. Based on my experience with this project, I later participated in a booth at "Telecom'87", a four-yearly exhibition held in Geneva showcasing the latest digital-communication technology from countries all over the world. My role there was to build the system for a live demonstration of NTT's digital communication systems at the booth, and to create pamphlets for locals in Geneva explaining the demonstration system. (There were dozens of types of pamphlets covering the entire system, exchanges, terminal devices, and so on.) After that, I stayed in Geneva for about a month, where my job was to explain how the system was built to observers at the exhibition venue, and to observe (mainly as a technical survey) exhibition systems from other countries. On returning to Japan, I was tasked with managing all the equipment that was exhibited in Geneva. This included returning terminal devices, network devices, and so on to their respective R&D departments, and writing up reports. After completing these duties, I went on standby, awaiting the personnel announcements planned for the end of FY 1987.

At this time, I was extremely torn over whether to return to my old workplace, the Yokosuka laboratory's Telephone Laboratory, or to consider a transfer somewhere new. However, one day near the end of the fiscal year, I was invited to transfer to the Telecommunications EMC Laboratory in the Telecommunications Quality Research Department of NTT's Telecommunication Networks Laboratories to work on EMC in telecommunications. The Laboratory said they'd like nothing better than for me to leverage my experience with EMC in telephones at the EMC Study Group while paving the way forward into international standardization. I figured I could be of use there, given my track record working on numerous improvements and solutions to EMC in telephones, and agreed to transfer the Telecommunications EMC Laboratory. This would be my first time joining an EMC research-commercialization team at a laboratory that had mainly done research commercialization for EMC in telecommunication lines, as someone who had done R&D for EMC in telecommunications-terminal devices.

Later, around the time I began to see a future for myself at this new post, the Director announced a new policy. The reasoning behind it was as follows: For many years now, we had been conducting standardization activities by dispatching experts to ITU-T's SG5 (in charge of international standards for EMC test methods and lightning-surge test methods for telecommunications systems and equipment). Given this, we also needed to dispatch an expert to IEC/CISPR deliberations on international standardization, in the very least to directly determine the status of CISPR deliberations on emissions through telecommunication lines. Not only that; we needed to start documenting our research findings as contributions to be submitted for deliberation, and take a leading role in standardization.

I was fully on board with this policy, and asked what kind of process I would need to go through to join CISPR standardization conferences as an expert. The Director was unsure, but promised to find out soon, after which NTT came to an internal agreement to begin my registration procedures immediately.

Long story short, thanks to the help of a standardization affiliate at NTT, I was approved by the (then) Ministry of Posts and Telecommunications (Radio Monitoring and Control Section, Radio Department) to join CISPR's international standardization activities as an expert. Specifically, I would be participating as an expert at CISPR/G, the group in charge of IT-device-emission limits, measurement methods, immunity limit values, and test methods.

Then, from December 3, 1988 to December 6, I attended the meetings of CISPR/G WG1, WG2, and WG3 (currently CISPR/I MT7 and MT/8) held in a conference room at the company Philips in Eindhoven, The Netherlands. A week before these CISPR meetings, I went to Amsterdam and met up with Prof. Ideguchi (the expert for both ITU-T/SG5 and CISPR/G at the time), who had participated in ITU-T/SG5's standardization meeting in Geneva. We attended all the meetings of CISPR/G WG1, WG2, and WG3, with Dr. Ideguchi as a member, and me as an observer. At this time, the experts from each country spoke in English, and statements from those of us who were not native English speakers were met with a great jumble of explanations and comments from the natives. Honestly, it was difficult at times to clearly follow and understand what other experts were saying in their reports and proposals, even when the relevant contributed documents (in English) had been submitted in advance. I remember feeling rather shaken at having plunged into this daunting new world.

4. Afterword

In this instalment of the series, I have reported a summary of events leading up to my first time participating CISPR's international standardization activities.

From the next instalment onward, I will discuss topics relating to the CISPR/G meeting at the Philips conference room in Eindhoven, The Netherlands in December 1988 and the status of deliberations at the working groups (WGs) in question. This will be followed by discussion of the revisions to CISPR 22 (IT equipment (ITE) emission standards) and CISPR 24 (ITE immunity standards) deliberated on at the meeting.

Fujio Amemiya

1967 Majored in Electrical Engineering Group, School of Engineering, Tohoku University

1971 Graduated from the Electronic Communication Department, School of Engineering, Tohoku University

1973 Completion of Master's Programs in Electrical and Telecommunications engineering at the Graduate School of Engineering, Tohoku University

1973 Joined the Customer Premises Developmental Research Department, Telephone Laboratory, Musashino ECL (Electrical Communication Laboratories), Nippon Telegraph and Telephone Public Corporation and researched electronic telephone circuits

1977 Transferred to NTT's Yokosuka ECL and researched digital telephones

1985 Transferred to NTT's Musashino ECL and operated and evaluated an experimental ISDN system

1988 Transferred to NTT's Telecommunication Networks Laboratories, began researching telecommunications EMC and worked on CISPR standardization

1992 Transferred to NTT Technical Assistance & Support Center and worked on EMC failure countermeasures in telecommunications equipment and devices, and CISPR standardization

1996 Transferred to NTT's Telecommunication Networks Laboratory, researched ITS communication networks, and worked on CISPR standardization

2000 Transferred to NTT Advanced Technology Corporation, provided consulting for EMC testing, evaluation, and countermeasures, and worked on CISPR standardization

2019 Left NTT Advanced Technology Corporation, founded "Amemiya EMC Consulting", and joined VCCI as Technical Adviser (his present position)

Report on APEMC 2026 Kuala Lumpur, Malaysia Symposium

Technical Subcommittee

At this fiscal year's APEMC 2026 Kuala Lumpur, Malaysia, we held a Workshop presentation on VHF-LISN as a main topic of deliberation on the revisions to CISPR 32 Ed. 3. We also held a Technical session where we presented our two submitted papers. The purpose of attending the symposium was to collect information by attending the Keynote speeches, Workshops & Tutorials, Special sessions, Technical sessions, and Poster presentation sessions.

Venue	: Kuala Lumpur Convention Centre (KLCC)
Symposium period	: May 4 (Mon) to 7 (Thu), 2026
Period of participation	: May 4 (Mon) to 7 (Thu), 2026
Participants	: Nozomi Miyake, member of the Technical Subcommittee (NEC Corporation) Kunihiro Osabe, Technical Adviser of the Technical Subcommittee Hidenori Muramatsu, Secretariat of the Technical Subcommittee Shinichi Okuyama, Secretariat of the Technical Subcommittee

Overview of the symposium

This year's program was composed of three Keynote speeches, 16 Workshops & Tutorials, 11 Special sessions, 16 Technical sessions, three Poster presentation sessions, and the Exhibition.

289 papers were submitted, of which 225 were adopted, resulting in a 77% adoption rate. Of the submitted papers, 126 (43.6%) were from China and 21 (7.3%) were from Japan. Other papers included those from Singapore, Taiwan, Italy, and Indonesia, spanning over 20 countries and regions.

There was also a session reflecting on APEMC's 20-year history, in part because 20 years had passed since EMC Zurich held in Singapore in 2006, the event that formed the foundation for APEMC. It was mentioned that during those 20 years, the symposium had been held in Japan a total of three times: in Tokyo in 2014, in Sapporo in 2019, and in Okinawa in 2024.

On May 4, Mr. Osabe, Technical Adviser of VCCI Council, held a Workshop presentation titled "New developments in EMC Standard CISPR 32 for emission measurements on multimedia equipment". On May 6, Technical Subcommittee member Ms. Miyake and Technical Adviser Mr. Okuyama held presentations at the "EMC Measurement" Technical session.

1. Presentation at the Workshop (see "4. Workshop & Tutorial overview")

- Title : Use of a mains cable termination device, VHF-LISN, to ensure the reproducibility in radiated emission measurement
- Presenter : Kunihiro Osabe, Technical Adviser, Technical Subcommittee
- Overview : This presentation session explained the new additions to the upcoming third revision to the CISPR 32 emission standard for multimedia equipment. One topic discussed at the presentation was VHF-LISN as mains cable termination devices, which would ensure the reproducibility of radiated emission measurements. Explanations were based on the background to the proposal to standardize mains cable termination using VHF-LISN, and results of inter-site correlation testing by CISPR SC-A's JAHG 6 to verify the validity of termination using our proposed balanced VHF-LISN published in CISPR 16-1-4.
  At the end, speakers also explained the guidance document "Guidance for Performing Radiated Emission Measurement in the Condition of EUT Mains Cable Terminated with Balanced VHF-LISN" issued by VCCI last year, and gave an introduction to VCCI's activities.
- Q&A : Due to time constraints, questions had to be omitted from the Workshop, but several of those who had participated in the Workshop had the following kinds of exchanges at other sessions:
  Q1: Does VCCI recommend use of the balanced VHF-LISN published in CISPR 16-1-4?
  A1: Yes. Use of balanced VHF-LISN for termination creates the strictest conditions, and is optimal for conformity evaluation.
  C1: We support termination using VHF-LISN. The presentation was informative regarding problems with CMAD termination using a 3-wire mains cable.
  C2: We found the presentation on the effects of VHF-LISN on inter-site correlation easy to understand.
- Impressions : This Workshop was proposed by CISPR SC-A/WG2 convener and SC-I expert member Mr. Medler, and was structured as a concise summary of topics being deliberated on for the third revision to CISPR 32. We were able to hear participants' impressions during the symposium, and found it a very meaningful experience.

2. Presentations at the Technical session

(1) Presentation 1

- Title : Enhancing Reproducibility of Conducted Emission Measurements Using Improved Transformer-Type AAN: Round Robin Test with Laptop PC
- Presenter : Nozomi Miyake, member of the Technical Subcommittee
- Overview : This presentation concerned the verification performed to improve the reproducibility of measurements of conducted emissions from wired network ports. Because improved transformer-type AANs had been proposed to address an issue in conventional transformer-type AANs (fluctuations in voltage/current conversion factor due to EUT impedance fluctuations), a round-robin test was conducted across five sites using actual laptop PCs. The results confirmed that effects on voltage/current conversion factor due to differences across test environments were minimized, improving measurement reproducibility.
- Q&A : Q1: Even when using improved transformer-type AANs, there is a 3-dB difference between the mean and theoretical values for the voltage/current conversion factor at the five sites. Going forward, do you plan to improve on this difference between actual measured values and theoretical values?

  A1: We are currently analyzing the causes behind this difference between the mean and theoretical values. We will discuss proposals for improvement when our analysis is complete.

  Q2: The circuit diagrams supposedly show the flow of common-mode current, but don't they actually show the differential-mode current?

  A2: These show the current converted from differential mode to common mode. Fluctuations in voltage/current conversion factor occur only in the case of common-mode current converted from differential mode. Meanwhile, in the case of common-mode current due to common-mode excitation, both conventional and improved-type AANs yield the same measurement results.

  Q3: We understand this verification assumes that cables use RJ45 connectors. Aren't the AAN circuit diagrams for 4-wire cables?

  A3: The circuit diagrams show four pairs of balanced-pair wires, so the AANs in question are for eight wires; that is, two wires times four pairs.

  Q4: Can we assume that common-mode impedance is 150 Ω even for AC power lines and USB cables?

  A4: Common-mode impedance is 150 Ω for wired network ports, and is different for AC power supply lines and USB cables.

- Impressions : This was the fourth paper presentation since we first proposed improved transformer-type AANs at EMC Europe 2022. Until now, we have presented verification results using actual devices based on prior verification using simulated EUT. This time, through a round-robin test across five test sites, we successfully showed that reproducibility improves even in different test environments. The presentation included a lively Q&A session, where we saw a high level of interest in improved transformer-type AANs.

(2) Presentation 2

- Title : Study on Ensuring Measurement Reproducibility for Floor Standing Equipment by VHF-LISN
- Presenter : Shinichi Okuyama, Secretariat, Technical Subcommittee
- Overview : VHF-LISN has been standardized in CISPR 16-1-4 Ed. 5. As the next step of this standardization, radiated-emission-measurement methods using VHF-LISN are being deliberated on for the next revision to CISPR 16-2-3. In past international round-robin tests, the effect of VHF-LISN on measurement reproducibility had been confirmed in a tabletop-equipment setup. This time, a verification was performed to test whether a similar effect would be found in a floor-standing equipment setup. The results confirmed that VHF-LISN could ensure measurement reproducibility even for floor-mounted devices.
- Q&A : Q1: Can you show us the impedance-calibration results for the VHF-LISN?
  A1: These are explained in the section on calibration results in the presentation materials.
  Q2: Can VHF-LISN be used as is for measurements at 300 MHz or above?
  A2: Yes, they can.
  Q3: In the measurement results from the round-robin test, emission levels seem to be higher than when no VHF-LISN is used. Do the measurement results also differ?
  A3: The measurement results differ depending on the test site's power outlet and differences in termination impedance due to the VHF-LISN.
- Impressions : This was a timely presentation in view of deliberation trends regarding the CISPR standard. The presentation began by showing the audience a mockup VHF-LISN, which was used to explain the structure and use of VHF-LISN. We believe this helped attendees imagine the workings of an actual VHF-LISN. After the presentation, some attendees held the mockup in their hands and took pictures. Thanks to the presentation, many people took interest in VHF-LISN and VCCI's activities.

3. Keynote overview

(1) Keynote 1

- Title : Beyond Low-Pass: The Evolution of Guided-Wave Technologies Toward All-Pass Integrated Circuits and Systems
- Presenter : Dr. Ke Wu
- Affiliation : Institute for Wireless Intelligence (IWS), Chengdu, China
- Overview : With advancements in 6G technology, RF and microwave electronics and photonics technology have expanded from the millimeter-wave to the terahertz range. This speech outlined various types of transmission lines and waveguiding structures, and presented the limits of microstrip technology and EMC issues in high-density integration. The speech also discussed the possibilities of integrated architecture enabling DC-to-THz ultra-high-speed, ultra-wide-band, all-pass transmission via integration methods using metal and dielectric waveguides.

(2) Keynote 2

-Title : The Importance of the Research in Advanced Electromagnetics for 5G and 6G Wireless Communication Systems: An Industry View
- Presenter : Mr. Renato Lombardi
- Affiliation : Huawei Italy Research Center
- Overview : This speech summarized how shifts in demand due to the advancement from 5G to 6G impact wireless technology. In the context of frequency utilization spanning the low- and mid-frequency bands through the millimeter-wave and sub-THz bands, and Massive MIMO, the speech raised issues caused by rising frequencies such as increasing antenna complexity, rising cost, loss, and bandwidth issues. Regarding newly emerging issues such as the coexistence of IMT-5G and stationary-satellite communication, the speech discussed the importance of the latest electromagnetic research, including metasurfaces and new beam-forming technologies.

(3) Keynote 3

-Title : Wearable Device's EMC
- Presenter : Prof. Jianqing WANG
- Affiliation : Nagoya Institute of Technology
- Overview : This speech discussed devices such as wearable electrocardiographs and wearable robot hands combining vital-sign sensors and intra-body communication technologies. The speech summarized the basic mechanism of EMI in wearable devices caused by external electromagnetic fields from the perspective of conversion from common mode to differential mode. Measures to be taken in the design stage were presented, as well as immunity-testing systems for wearable devices.

4. Workshop & Tutorial overview

(1) WS 6: New developments in EMC Standard CISPR 32 for emission measurements on multimedia equipment

-The following shows the titles, presenters, and affiliations.

WS 6: New developments in EMC Standard CISPR 32 for emission measurements on multimedia equipment Session Organizer(s): Jens Medler, Zarismail Abd
Overview on the proposed changes in upcoming CISPR 32 ED3 *Jens Medler, R&S Munich* **Two alternatives for emission measurements above 1 GHz: E-Field in FSOATS versus Power in RVC** *Joerg Petzold, OVGU Magdeburg* **APD measurement function for adequate interference weighting above 1 GHz** *Yasushi Matsumoto, National Institute of Information and Communications Technology* *Jens Medler, R&S Munich* **Reliable and fast measurements with FFT measuring receivers** *Albert Lee, R&S Singapore* **Use of a mains cable termination device, VHF-LISN, to ensure the reproducibility in radiated emission measurement** *Kunihiro Osabe, Co-convenor of JAHG-6, CISPR SC-A, VCCI Council* **Regulatory requirements for IT and multimedia equipment to be marketed in Malaysia** *Zarismail Abd Rahman, Testing Services Department, SIRIM QAS International Sdn Bhd*

- Overview : Speakers presented an overview of all topics being considered for the next revision to CISPR 32, and the main topics among them: RVCs, APD, FFT, and VHF-LISN. The speakers also discussed regulatory demands on IT and multimedia equipment at factories in Malaysia.
- Impressions : The speakers summarized topics under deliberation for the next revision, as well as future challenges, in a way that was very easy to understand. The speeches also included details about each individual topic, which we hope will prove useful to the future activities of the Technical Subcommittee.

5. Special session overview

(1) SS-10: Reverberation Chambers

-Title : Impact of a Large Enclosure on Reverberation Chambers: A Full-Wave Simulation Study
- Presenters : Mr. P. Tili, Mr. J. Ali, Mr. L. Bastianelli, Mr. A. de Leo, Mr. F. Moglie, and Mr. V. M. Primiani
- Affiliation : Dep. of Information Engineering, Universit`a Politecnica delle Marche Ancona, Italy
- Overview : This paper showed preliminary full-wave-simulation-analysis results for reverberation chambers (RCs) containing large enclosures that have openings and lossy materials inside. The paper investigated how changes in the availability of large structures, opening size, and radio-wave absorber materials affect main RC characteristics. This showed that changes in RC characteristics were consistent across all frequency ranges under analysis, but we unfortunately did not see any data from actual devices.

- Impressions : We attended six paper presentations at this session, but felt they did not venture beyond the realm of speculation based on simulation results. We believe that measuring the RMS value of disturbance power emitted by an entire device using RC is the correct method of radiated disturbance measurement from entire devices. However, current radiated-emission-measurement methods assess electric-field levels in one direction, and set limits based on interference with devices in that direction. We suspect that actual devices must be used to compare the difference (margin) from electric-field strength limits obtained from current radiated emission measurements, and difference from disturbance-power limits obtained from RC measurements, and assess RC-measurement validity based on the results.

6. Technical session overview

(1) TC-01: EMC Standards

- Title : Verification and Analysis of CISPR Quasi-Peak Detector Pulse Response Characteristics Based on Time-Domain Simulation
- Presenter : Mr. Yanwen Zhang
- Affiliation : Southeast University (China)
- Overview : This paper reported the results of building and verifying a digital model of the pulse response characteristics of a quasi-peak (QP) detector based on Band B of the CISPR 16-1-1 standard. Responses from a time-domain simulation built in MATLAB were compared and verified against measurement values from an actual EMI receiver and against limits stipulated in standards, using both absolute and relative calibration. The resulting simulated values fell within standard-limit ranges in both cases, demonstrating the model's high accuracy and reliability, and showing the model's utility for future EMI prediction and analysis.
- Impressions : Building the accurate digital model of a QP detector presented in this paper into an EMI simulation could enable prediction of conducted-emission measurement results in the design stage, allowing advance measures to be taken for conformity with CISPR 32. As a result, we felt that the ability to reduce the risk of exceeding limits in conducted emission measurements of prototypes could be useful to members developing multimedia equipment.

(2) APEMC @20

- Title : Er-Ping Li's Two-decade Journey with APEMC—in Pursuit of Harmony, Compatibility, and Excellence
- Presenters : Prof. Er-Ping Li's, other
- Affiliation : The Innovative Institute of Electromagnetic Information and Electronic Integration (EIEI) Zhejiang University, China

- Overview : Although research on electromagnetic compatibility (EMC) had been conducted in various countries in the Asia-Pacific region since the beginning of the 2000s, there had never been an international conference bringing together all regions.
The turning point came in 2005, when Pan-Pacific EMC (PPEMC) was held in Awaji Island, Japan. Researchers from Japan, China, South Korea, and Singapore gathered there, showcasing the diversity and interdisciplinarity of the EMC field. After that, EMC Zurich marked an important milestone, evolving into a large-scale international conference attracting about 450 participants from over 40 countries. The presenter explained that this conference sparked the decision to establish APEMC (Asia-Pacific EMC) in 2008 as an international conference specific to the Asia-Pacific region. This session covered the advancement of EMC technology and technological trends that made numerical analysis and virtual modeling possible by around 2010. From 2015 to 2018, filtering technologies (EBG/DGS) were developed to meet the needs of high-speed electronic devices, growing ever more advanced going into the 2020s. The presentation noted that in view of AI and deep learning, EMC had changed from a simple assessment technology to a field closely linked to advanced system design.
- Impressions : Going forward, AI-driven design, photonics-electronics conversion, and model-based EMC prediction will become important aspects of EMC. We expect the focus of EMC to shift from testing toward measures taken during the design stage. However, these topics concern methods of improving speed and efficiency, and we felt that further study and research are needed regarding measurement methods and challenges arising from new technologies.

7. Poster presentation session overview

(1) Poster presentation session 3

- Title : Experimental Evaluation of Q-Factor Consistency in a Transparent Reverberation Cavity
- Presenter : Mr. Takayuki Matsumuro
- Affiliation : Advanced Telecommunications Research Institute International
- Overview : Recent advances in transparent conductive film have enabled the manufacture of high-visibility electromagnetic shielding enclosures. This research tested transparent cavities from the perspective of Q-factors to assess their reverberation characteristics. The Q-factors obtained from attenuation constants showed very good agreement, and indicating that Q-factors could also be estimated for transparent cavities using methods based on S-parameters.
- Impressions : This was one of many papers that have been presented on research relating to RVCs (reverberation chambers). While conventional RVCs use metal-shielded chambers, this research used high-conductivity transparent film instead of the metal wall, verifying the possibility of developing RVCs allowing visual inspection of the interior. Q-factors are an indicator of how efficiently a cavity (electromagnetic resonator) stores energy, and how slowly the energy is lost. The presentation explained how the Q-factors were estimated based on the experiment results.

8. Exhibition

Exhibition period: May 5 (Tue) to 7 (Thu), 2026

The exhibition was held in Conference Hall 1 of the APEMC 2026 venue, and 19 companies held exhibits relating to EMC. There were no exhibits from Japan.

9. Impressions

At the Technical session, VCCI Council presented two initiatives as a topic relating to "New developments in EMC Standard CISPR 32 for emission measurements on multimedia equipment". These included the status of international standardization of VHF-LISN, and verification in preparation for the next revision to CISPR 32. This resulted in many technical questions and comments from the audience. We also had many visitors to our booth.

Next year, APEMC 2027 is planned to be held in Jeju, South Korea in May 2027. VCCI Council plans to continue considering issues in measurement methods and questions and comments received at paper presentations, conducting and verifying experiments, and actively submitting papers to the symposium while sharing opinions and exchanging information with experts.

Workshop presentations

Mr. Osabe
(Technical Adviser of the Technical Subcommittee)

All Workshop lecturers

Paper presentations

Ms. Miyake
(member of the Technical Subcommittee)

Mr. Okuyama
(Secretariat of the Technical Subcommittee)

Scene of the venue

Venue entrance

Exhibition venue

Report on Participation in COMPUTEX TAIPEI 2026

Public Relations Subcommittee

Exhibition name	: COMPUTEX TAIPEI 2026
URL	: https://www.computextaipei.com.tw/en/index.html
Sponsor	: Taiwan External Trade Development Council (TAITRA) Taipei Computer Association (TCA)
Exhibition period	: June 2 (Tue) to 5 (Fri), 2026
Venue	: Three venues: Taipei Nangang Exhibition Center Halls 1 & 2 (TaiNEX 1 & 2), and Taipei World Trade Center Hall 1
Participants	: Takuya Yamazaki, Vice Chair of the Public Relations Subcommittee (Hitachi, Ltd.) (present from June 2 to 4) Takahiro Suzuki, member of the Public Relations Subcommittee (NEC Platforms) (present from June 4 to 5) Akira Oda, Executive Director (present from June 4 to 5) Hironari Koga, Secretary General (present from June 1 to 5) Shinichi Okuyama, Secretariat of the Technical Subcommittee (present from June 1 to 5) Naoko Hori, Secretariat of the Public Relations Subcommittee (present from June 1 to 5)
Scale of exhibition	: About 1,500 participating companies with about 6,000 booths
Number of visitors	: 111,312 (from 152 countries and regions) (reference: 2025: 86,000; 2024: 85,000)

1. Purpose of exhibiting at COMPUTEX TAIPEI

COMPUTEX TAIPEI is the largest ICT exhibition in Asia, attracting many buyers from overseas. Taiwan's ICT industry occupies a major position in the global supply chain, and is attended by numerous buyers and industry affiliates from all over the world. This exhibition was an excellent opportunity to conduct PR and raise awareness of VCCI's roles and activities. VCCI held a booth in the "InnoVEX area", largely populated by startups, to conduct PR and invite new Taiwanese and Chinese ICT vendors to become VCCI members. As of May 2026, VCCI Council has 148 Taiwanese member companies.

2. Exhibition

During the period of the exhibition (June 2 to 5), VCCI exhibited in the InnoVEX area on the fourth floor of Taipei Nangang Exhibition Center Hall 2 (TaiNEX 2).

3. Report on the VCCI Council exhibit

We held an advance briefing with our on-site interpreter, Ms. Louise Lin, going over VCCI Council's activities and the benefits of membership, and she provided active support for VCCI's PR activities. She also prepared the following materials and gave explanations at the booth, distributing the materials along with various novelty gifts:

- Introduction to the VCCI Council (triple-folded pamphlet) (Taiwanese, English)
- VHF-LISN mockup and introductory materials (Taiwanese, English, Japanese)
- "Do you know this mark?" (Taiwanese)

4. This year's activities and results

4.1 Overview of the COMPUTEX TAIPEI 2026 exhibition

This exhibition, the largest of its kind in Asia, was themed around the concept of "AI Together". As previously, it was held in Taipei Nangang Exhibition Center Hall 1 (TaiNEX 1) and Hall 2 (TaiNEX 2). However, this year, an additional "AI and robotics zone" was set up in Taipei World Trade Center Hall 1.

During the four-day period of the exhibition, 111,312 ICT buyers and industry affiliates attended from 152 countries and regions of the world including Japan, the US, Italy, Israel, and Australia. In the InnoVEX area, where VCCI had its booth, 500 new startups attended from 25 countries, an 11% increase (50 more companies) since last year.

The President and CEO of Qualcomm, and CEOs from Intel, Marvell, and NXP among others were invited to the keynote speech, and the Taiwanese President and Premier gave speeches at the opening ceremony. In addition, other industry partners were invited from a variety of fields to emphasize Taiwan's future importance as a reliable key partner on the global stage thanks to its technical capabilities in AI development, and comprehensive industrial ecosystem.

4.2 VCCI Council's PR activities

We provided pamphlets in Taiwanese, English, and Japanese, and distributed introductory materials explaining the VCCI mark and VHS-LISN along with novelty mesh pouches. We gave explanations in Taiwanese through our on-site interpreter, promoting Taiwanese IT vendors' understanding of VCCI. We asked them, "Do you know the VCCI mark?" and to those who showed interest or approached us themselves, we explained the information in our pamphlets and spoke about VCCI Council's activities. We received business cards from those who showed active interest, so that we could follow up with them later.

We also visited about 40 companies' (largely Taiwanese and Chinese startups') booths exhibiting hardware on all four floors of Halls 1 and 2, and actively approached attendees, distributing novelty gifts and giving explanations.

4.3 Response to and results of PR activities

This year, VCCI's exhibit was located on the fourth floor in Hall 2 of the venue, near the event space, but we did not simply wait for visitors to approach us; we actively went around visiting startups.

We visited about 40 companies booths, and found that most companies had either obtained or were aware of the CE and FCC compliance marks. After this year's exhibit, VCCI received feedback from companies saying that they would refer to this information going forward, while taking into account costs and parent companies' intentions, and companies considering expansion into Japan said they would consider the matter.

4.4 Other

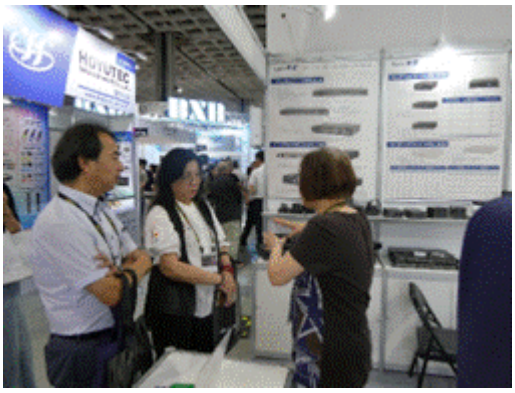
A wall of our exhibit booth exhibited posters in Taiwanese explaining the VCCI mark, the history of VCCI Council, and relevant global trends, providing a good opportunity to familiarize visitors with VCCI and the VCCI mark. Because our booth was located in a corner, we enjoyed good visibility, and we noticed many visitors coming to pick up our novelty gifts.

5. Impressions

Because the COMPUTEX TAIPEI exhibition is growing in scale and attracting more attention every year, it is an effective way to make in-person pitches to many startups in a short time. Going forward, we will consider also exhibiting at other exhibitions, and continue our global PR activities.

In addition to Taiwanese and other foreign nationals, we attracted a number of Japanese visitors. Some VCCI members approached us, a reminder of COMPUTEX TAIPEI's high profile as an exhibition.

VCCI booth



Visiting another booth

Results of FY 2025 Market Sampling Tests

Market Sampling Test Subcommittee

As of June 30, 2026

Planned number of market sampling tests	Purchase-based	65

Terms of sampling tests	Selected samples	Cancelled (Not shipped, etc.)	Testable samples	Test completed (breakdown below)	Judgment			
					Passed	Failed - tentative		
						Finally passed	Finally failed	Pending
Grand total	67	2	65	65	63	1	1	0

Loan-based testing total		67	2	65	65	63	1	1	0
Term (breakdown)	1st Quarter	23	2	21	21	21	–	–	–
	2nd Quarter	23	0	23	23	22	–	1#	–
	3rd Quarter	16	0	16	16	15	1	–	–
	4th Quarter	5	0	5	5	5	–	–	–

#: Pending submission of requested correction report

FY 2025 total	Passed	Failed	Pending
	64	1	0

Document inspection	Planned number of market sampling tests	Selected samples	Cancelled (withdrawal, etc.)	Inspectable samples	Pre-check completed	Judgment canceled	Judgment completed	Judgment	
								Cleared	Problems identified
	50	54	4	50	50	1	49	46	3

Status on FY 2026 Market Sampling Tests

Market Sampling Test Subcommittee

As of June 30, 2026

Planned number of market sampling tests	Purchase-based	65

Terms of sampling tests	Selected samples	Cancelled (Not shipped, etc.)	Testable samples	Test completed (breakdown below)	Judgment			
					Passed	Failed - tentative		
						Finally passed	Finally failed	Pending
Grand total	26	0	23	5	5	0	0	0

Loan-based testing total		26	0	23	5	5	0	0	0
Term (breakdown)	1st Quarter	26	–	23	5	5	–	–	–
	2nd Quarter	–	–	–	–	–	–	–	–
	3rd Quarter	–	–	–	–	–	–	–	–
	4th Quarter	–	–	–	–	–	–	–	–

FY 2026 total	Passed	Failed	Pending
	5	0	0

Document inspection	Planned number of market sampling tests	Selected samples	Cancelled (withdrawal, etc.)	Inspectable samples	Pre-check completed	Judgment completed	Judgment	
							Cleared	Problems identified
	50	21	–	15	14	10	10	–

Report from the Secretariat

● List of Members (April 2026- June 2026)

New members

Membership	Member No.	Company name	Country or region
Regular	4499	FUJITSU TERMINAL SOLUTIONS LIMITED	JAPAN
Regular	4509	Panasonic Electric Works Co., Ltd.	JAPAN
Regular	4511	DAIKO TSUSAN CO., LTD.	JAPAN
Regular	4513	Star Seeds Digital Co., Ltd.	JAPAN
Regular	4515	PSI Inc.	JAPAN
Regular	4522	DAIICHI TECHNO CO., LTD.	JAPAN
Regular	4525	BUNKA CO., LTD.	JAPAN
Regular	4535	RiTENSE Co., Ltd.	JAPAN
Supporting	4510	ADVANCED RESEARCH & CONSULTING CORP.	JAPAN
Supporting	4514	Tokyo Metropolitan Industrial Technology Research Institute	JAPAN
Regular	4500	CARNA AI ASIA CO.,Ltd.	KOREA
Regular	4502	AHA Co., Ltd.	KOREA
Regular	4503	Huber+Suhner Cube Optics AG	GERMANY
Regular	4505	Lysora Technology Inc.	USA
Regular	4506	Tripleplay Services Limited	U.K.
Regular	4507	Boyd Thermal Business Solutions, LLC	USA
Regular	4508	Dongguan Lianzhou Electronic Technology Co., Ltd.	CHINA
Regular	4512	Techvision Intelligent Technology Co., Ltd.	CHINA
Regular	4517	KORNIC GLORY CO., Ltd.	KOREA
Regular	4519	Powercast Corporation	USA
Regular	4521	Buffalo Games, LLC.	USA
Regular	4523	SiMa Technologies Inc.	USA
Regular	4524	Kodak Alaris LLC	USA
Regular	4528	Nkia Co., Ltd.	KOREA
Regular	4529	HIENT POWER TECHNOLOGY Co., Ltd.	CHINA
Regular	4530	SOLTECH INFONET INC.	KOREA
Regular	4536	KTEC GLOBAL Co., Ltd.	CHINA
Supporting	4504	Stancer Testing-Lab Inc.	CANADA
Supporting	4516	DEKRA TESTING AND CERTIFICATION (SUZHOU) CO., LTD.	CHINA
Supporting	4526	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.	CHINA
Supporting	4527	PT Nemko Indonesia Assurance	INDONESIA#

#: New member country

Company name change

Membership	Member No.	Company name	Country or region	Old company name
Regular	375	JANOME Corporation	JAPAN	Janome Sewing Machine Co., Ltd.
Regular	1275	NTT DOCOMO BUSINESS, Inc.	JAPAN	NTT Communications Corporation
Regular	2867	TOPPAN Inc.	JAPAN	TOPPAN Edge Inc.
Regular	3426	AAEON Technology Co., Ltd.	JAPAN	V-net AAEON Corporation Limited
Regular	4240	Panasonic Corporation	JAPAN	Panasonic Entertainment & Communication Co., Ltd.
Regular	4499	FUJITSU TERMINAL SOLUTIONS LIMITED	JAPAN	Fujitsu Frontech Systems Co., Ltd.
Supporting	352	Nagano Prefectural General Industrial Technology Center	JAPAN	Nagano Prefectural General Industrial Technology Center Precision. Electronics & Aviation Technology Department
Regular	577	Tandberg Data Norge AS	NORWAY	Overland Storage, Inc. dba Overland-Tandberg
Regular	1182	Marvell Semiconductor Inc.	USA	Marvell Technology Inc.
Regular	3530	ARRIS / Aurora Networks	USA	ARRIS
Regular	3752	STE iDirect, Inc.	USA	ST Engineering iDirect, Inc. dba iDirect
Regular	3780	Ericsson Enterprise Wireless Solutions, Inc.	USA	Ericsson Enterprise Solutions, Inc.
Regular	3956	ZT GROUP INT'L, INC. dba ZT Systems	USA	ZT GROUP INT'L, INC.
Regular	4068	LIG Accuver	KOREA	Innowireless Co., Ltd.
Regular	4354	Hunan Fullriver Information Technology Co., LTD.	CHINA	Hunan Fullriver High Technology Co., LTD.
Regular	4451	Tenstorrent USA Inc.	USA	Tenstorrent AI ULC

Note: Please fill out and submit “Form 9 Change Notification” on the website when a company name has been changed.

● FY 2026 Schedule of VCCI Events and Training Seminars

April	May	June •COMPUTEX TAIPEI •Release VCCI Dayori No. 161
July •TECHNO-FRONTIER 2026	August •Release Annual Report	September •Release VCCI Dayori No. 162
October •CEATEC 2026	November	December •Release VCCI Dayori No. 163
January	February •Technical Symposium (plan)	March •Release VCCI Dayori No. 164

● Status of Registration of Product Conformity

April 2026 – June 2026 (Product names are examples and are not limiting)

Classification of MME (Product types are not limited to only the following examples.)				Classification code		April 2026			May 2026			June 2026		
				Class A	Class B	Class A	Class B	Total	Class A	Class B	Total	Class A	Class B	Total
ITE	Computer	Large	Super computer, Server, etc.	A 2	a 2	24	1	25	13	0	13	20	1	21
		Stationary	Workstation, Desktop PC, etc.	B 2	b 2	4	13	17	9	12	21	4	26	30
		Portable	Laptop PC, Tablet PC, etc.	C 2	c 2	0	75	75	0	43	43	0	34	34
		Other computers	Wearable computers, Wearable device, Smart watch, Smart glass, etc.	E 2	e 2	1	1	2	1	2	3	1	1	2
	Peripheral / Terminal	Memory device	HDD, SSD, USB Memory, Media drive, Disk device, NAS, DAS, SAN, etc.	G 2	g 2	9	13	22	10	15	25	16	12	28
		Printer device	Printer including multifunction machine, etc. (portable)	H 2	h 2	4	9	13	6	1	7	5	9	14
		Display device	CRT display, Monitor, Projector, etc.	J 2	j 2	13	79	92	3	80	83	4	60	64
		Other I/0 devices	Image scanner, OCR, Pen tablet, Stylus pen, etc.	M 2	m 2	0	1	1	1	4	5	0	10	10
		General purpose terminal	Display controller terminal, etc.	N 2	n 2	2	1	3	0	0	0	0	0	0
		Special purpose terminal	POS, Terminal for finance, insurance, etc.	Q 2	q 2	8	3	11	4	2	6	3	4	7
		Other peripheral	PCI Card, Graphics Card, Mouse, Keyboard, Cradle, etc.	R 2	r 2	5	25	30	6	23	29	7	32	39
		Copying machine/ Multifunction copying machine	Copying machine, Multifunction copying machine, etc. (Stationary)	S 2	s 2	0	0	0	2	2	4	1	2	3
	Communications equipment	Terminal equipment	Mobile phone, Smart phone, PHS phone, etc.	T 2	t 2	0	4	4	0	8	8	0	0	0
			Telephone device such as PBX, FAX, Key telephone systems, Cordless phone, etc.	U 2	u 2	0	0	0	0	0	0	3	0	3
		Network-related equipment	Communication line connecting device including Modem, Digital transmission unit, DSU, TA, Media converter, etc.	V 2	v 2	2	0	2	3	0	3	1	0	1
			LAN-related device, including Router, HUB, etc. Local switch, etc.	W 2	w 2	78	24	102	57	12	69	42	16	58
		Other communication equipment	Other communication equipment	X 2	x 2	11	8	19	15	0	15	10	5	15
Broadcast receiver equipment			TV, Radio, Tuner, Video recorder, Set-top box, etc.		k 2		0	0		1	1		0	0
Audio equipment			Speaker, Amplifier, IC recorder, Digital audio player, Headset, DTM, AI speaker, etc.	L 2	l 2	0	3	3	4	3	7	0	7	7
Video equipment		Video equipment	Digital video camera, Web camera, Network camera, Video player, Photo frame, Digital camera, Drive recorder, etc.	I 2	i 2	7	14	21	4	6	10	2	4	6
		Other video equipment	VR goggles, Scan converter, etc.	P 2	p 2	0	2	2	0	0	0	1	0	1
Entertainment lighting control equipment			Entertainment lighting control equipment, etc.	Z 2	z 2	0	0	0	0	0	0	0	0	0
Other MME	Entertainment / Education equipment	Electronic stationery	Electronic dictionary, e-book reader, Translator, Calculator, etc.	D 2	d 2	0	0	0	0	0	0	0	14	14
		Electronic toy	Game console, Game pad, toy drone, etc.	Y 2	y 2	0	1	1	0	11	11	0	4	4
		Other Entertainment / Education equipment	Navigator, AI robot, etc.	F 2	f 2	0	0	0	0	0	0	1	1	2
	Other MME		MME other than the above	O 2	o 2	5	3	8	3	2	5	8	1	9
Total						173	280	453	141	227	368	129	243	372

● Registration Status of Measurement and Other Facilities

The following table indicates the status on registration of measuring facilities in the most recent three months.
Facilities listed here are only those made open by members of application for registration in principle.
Members with those facilities whose valid period expired are kindly advised to contact VCCI to inform of the status they are in. Status to choose from are, renewal application being filed, new application being filed, waiting for the next issue to carry, or terminating the registration (all facilities are posted in the web site).
Facilities in Japan are listed in Japanese.

List of newly registered or renewed facilities (April 2026- June 2026)

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
Eurofins TA Technology (Shanghai) Co., Ltd.	966-1 Laboratory	-	-	-	-	-	G-20265	April 12, 2029	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
Eurofins TA Technology (Shanghai) Co., Ltd.	966-1 Laboratory	-	-	-	✓	-	R-20279	April 12, 2029	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
Shenzhen BALUN Technology Co., Ltd.	Yanluo-CE TEL	-	-	-	-	-	T-20229	April 12, 2029	Building 2, Intelligent Connected Vehicle Industrial Park, No. 55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen, GuangDong Province, P. R. China
Xingsheng Certification Service (Suzhou) Co., Ltd.	AC2	-	-	-	-	-	G-20264	April 12, 2029	Building 1, Xinjiacun Industrial Zone, Changqiao Subdistrict, Wuzhong District, Suzhou, Jiangsu, China
Xingsheng Certification Service (Suzhou) Co., Ltd.	AC2	-	-	-	✓	-	R-20277	April 12, 2029	Building 1, Xinjiacun Industrial Zone, Changqiao Subdistrict, Wuzhong District, Suzhou, Jiangsu, China
Xingsheng Certification Service (Suzhou) Co., Ltd.	AC1	-	-	-	-	✓	R-20278	April 12, 2029	Building 1, Xinjiacun Industrial Zone, Changqiao Subdistrict, Wuzhong District, Suzhou, Jiangsu, China
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-1076-1)	-	-	-	-	-	G-20268	May 24, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-1076-1)	-	-	-	-	✓	R-20280	May 24, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-CE-1)						T-20231	May 24, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-CE-1)	-	-	-	-	-	C-20229	May 24, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-10m-1)	-	-	-	-	-	G-20267	May 24, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-1076-1)	-	-	-	✓	-	R-20281	May 24, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
ICR Co., Ltd.	ICR Shield Room (Telecommunication)	-	-	-	-	-	T-20230	May 24, 2029	112, Hwanggeum 3-ro 7beon-gil,Yangchon-eup Gimpo-si, Gyeonggi-do Korea (10048)
3CTest Ltd	Anechoic Chamber 3	-	-	-	✓	-	R-20275	May 24, 2029	Silverstone Technology Park, Silverstone Circuit, Northamptonshire, United Kingdom
3CTest Ltd	Anechoic Chamber 3	-	-	-	-	-	G-20226	May 24, 2029	Silverstone Technology Park, Silverstone Circuit, Northamptonshire, United Kingdom
Xingsheng Certification Service (Hefei) Co., Ltd.	SR1-Shielded Room (Wired network ports)	-	-	-	-	-	T-20233	June 14, 2029	Room B02, Quality Control Building B, Huntkey Science Park, No.716, Qingtan Road, Economic and Technological Development Zone, Hefei, Anhui, China
Xingsheng Certification Service (Hefei) Co., Ltd.	SR1-Shielded Room (AC mains power port)	-	-	-	-	-	C-20231	June 14, 2029	Room B02, Quality Control Building B, Huntkey Science Park, No.716, Qingtan Road, Economic and Technological Development Zone, Hefei, Anhui, China
Xingsheng Certification Service (Hefei) Co., Ltd.	AC1-10 m Semianechoic chamber (Below 1 GHz)	-	-	-	-	✓	R-20283	June 14, 2029	Room B02, Quality Control Building B, Huntkey Science Park, No.716, Qingtan Road, Economic and Technological Development Zone, Hefei, Anhui, China
Xingsheng Certification Service (Hefei) Co., Ltd.	AC2-3 m Semianechoic chamber (Above 1 GHz)	-	-	-	-	-	G-20269	June 14, 2029	Room B02, Quality Control Building B, Huntkey Science Park, No.716, Qingtan Road, Economic and Technological Development Zone, Hefei, Anhui, China
Xingsheng Certification Service (Hefei) Co., Ltd.	AC2-3 m Semianechoic chamber (Below 1 GHz)	-	-	-	✓	-	R-20282	June 14, 2029	Room B02, Quality Control Building B, Huntkey Science Park, No.716, Qingtan Road, Economic and Technological Development Zone, Hefei, Anhui, China
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-10m-1)	-	-	-	-	-	C-20230	June 14, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)
Wendell Industrial Co., Ltd.	Wendell EMC & RF Laboratory (W09-10m-1)	-	-	-	-	-	T-20232	June 14, 2029	No. 26, Qinghe St., Tucheng Dist., New Taipei City 236032, Taiwan (R.O.C.)

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
一般財団法人 日本自動車研究所	ロボット安全試験センター EMC試験関連エリア	-	-	-	-	-	C-20228	June 14, 2029	茨城県つくば市学園南2-8-5
一般財団法人 日本自動車研究所	ロボット安全試験センター EMC試験関連エリア	-	-	-	✓	✓	R-20276	June 14, 2029	茨城県つくば市学園南2-8-5
一般財団法人 日本自動車研究所	ロボット安全試験センター EMC試験関連エリア	-	-	-	-	-	G-27286	June 14, 2029	茨城県つくば市学園南2-8-5
ソニーグローバル マニュファクチャリング＆オペレーションズ株式会社	10 m 電波半無響室 Φ2mTT	-	-	-	-	-	G-20270	June 14, 2029	愛知県額田郡幸田町 坂崎雀ケ入１

R: Radiated EMI measurement facilities below 1 GHz
C: AC mains port conducted EMI measurement facilities
T: Wired network port conducted EMI measurement facilities
G: Radiated EMI measurement facilities above 1 GHz

Closing words

As someone who enjoys DIY, I've tried my hand at all kinds of projects in the past. By extension, I even took up rose cultivation. My initial forays were low-effort; store-bought potted plants that I pretty much only watered now and then. Still, their flowers bloomed in the spring and fall, offering me plenty of enjoyment. Even in a small garden, brightly colored blossoms can bring a little cheer to your day...
I remember how checking on my roses every morning became a delightful part of my daily routine.

Over time, I started tending to my roses more and more, and to my surprise, they began to respond in kind. I came to appreciate their hidden depths. Every species and individual plant varies in its sun and shade preference, temperature tolerance, watering schedule and water needs, fertilization method, and so on, all of which greatly affect their condition. I also learned about the uses of light versus heavy pruning, post-pruning care, addressing root-boundness during dormancy, and many other particulars of rose cultivation, and experienced firsthand how these factors added up, collectively bringing about those magnificent blooms. It was fascinating how the slightest change in conditions could affect the results, and experimentation itself became a source of further enjoyment.

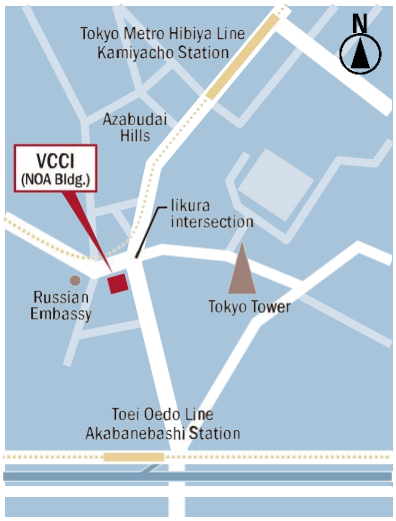
I even challenged myself to propagating cuttings using pruned branches. I made many mistakes, and things often didn't go as planned, but the joy of seeing a plant successfully take root was something out of this world. It also made me happy to give plants I'd grown to people who appreciated them, adding a whole new dimension to the hobby.

Eventually, I was transferred to a distant office for work, and my family took over the gardening. Every time I returned to visit, I'd check on my roses and find them somehow sadder and less vigorous than before. One by one, the pots fell in number, until finally, the very last rose bush dried up.

I don't blame my family, but it was a sobering reminder of the great responsibility and difficulty of nurturing life. At the same time, I realized my care had been more attentive than I'd given myself credit for.

Even now, when rose season comes around, my thoughts naturally turn to those hours spent tending to my roses, and their vibrant beauty. I'd like to give it another try someday, within achievable bounds, and enjoy taking my time growing roses again... That's what's been on my mind today.

(A.K.)



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