VCCI DAYORI

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Contents

New Year's Greetings

President, VCCI Council
Atsuo Hirai

As we enter the new year of 2026, I extend my warmest greetings to you all.

In December last year, the VCCI Council (formerly, Voluntary Control Council for Information Technology Equipment (VCCI)) celebrated its 40th founding anniversary. I am sincerely grateful to all relevant government agencies for their many years of guidance and support, and to our members for their understanding and patronage. I also extend my deepest respect to our associates and senior colleagues for their dedication to VCCI's activities during this time.

In recent years, information and communications technologies such as generative AI, quantum communication, and Beyond 5G have made remarkable progress, and these technological innovations are proving to be a great step toward creating a new society for all of humanity. Among these, advancements in communication technologies show ever-greater promise, not only for connecting remote peoples, but for providing relief to areas experiencing major disasters, helping to alleviate medical and educational disparities, and helping to build a safe, secure society.

For example, through VCCI's participation in "CEATEC 2025" held last October based on the theme "Innovation for All", we encountered knowledge on how to manifest our future society "Society 5.0" and lead the way in the age of AI. A diverse range of ideas were presented for building a next-generation innovation ecosystem, providing an excellent opportunity for the roughly 100,000 visitors to experience innovation firsthand. The Osaka, Kansai expo also set "achieving Japan's national strategy Society 5.0" as one of its main goals, offering many visitors from around the world an experience of society in the not-so-distant future.

Going forward, VCCI will remain steadfast and committed to maintaining clean electromagnetic environments that form the foundation of these kinds of next-generation technologies, especially wireless communication. As for international standards for emissions from multimedia equipment, CISPR 32 Edition 2, formulated by the International Special Committee on Radio Interference (CISPR), is now mainstream. It will soon be ten years since VCCI published and implemented its new Rules for Voluntary Control Measures based on these international standards in November 2016, ahead of the rest of the world. I am truly grateful to our members for their understanding and smooth implementation of these Rules. VCCI also played a central role in the proposal to CISPR to use VHF-LISN devices as mains-cable termination devices to improve the reproducibility

of radiated disturbance measurements of AC power supplies. This proposal was adopted by CISPR 16-1-4 Edition 5 and published as the new international standard in October last year. We plan to distribute information on the effectiveness of these devices at future symposiums in Japan and overseas. We are now actively participating in CISPR conferences discussing the publication of CISPR 32 Edition 3, aiming for international standardization around the end of 2026.

Additionally, by participating in COMPUTEX TAIPEI 2025 and tutorial presentations in APEMC 2025 Taipei, Taiwan, VCCI was able to present information on its past initiatives on the international stage. We took this opportunity to hold a technical exchange meeting with the Taiwanese public institution BSMI and the industry group CTCA, where we promoted mutual understanding and more extensive information sharing. At IEEE EMC+SIPI 2025 in the US, and EMC Europe 2025 in France, we presented papers and further strengthened our international partnerships.

Ever since its founding, VCCI has been working to prevent electromagnetic interference through voluntary control; that is, voluntary conformity declarations and display of the VCCI mark by VCCI members. The foundation of VCCI's activities lies in the trust inspired by the VCCI mark. For this reason, we consider registration systems such as for measurement facilities, and market sampling tests, to be key business areas. In FY 2025, we have worked to improve the sampling methods of market sampling tests and foster trust with general consumers.

I sincerely hope that VCCI can continue to count on your understanding and support, and pray that 2026 proves to be a year of great social and economic progress for our country. I wish you all a happy new year.

Contribution

Power Electronics and EMC Challenges In the Era of Wide-Bandgap Semiconductors

Tsuyoshi Funaki

In recent years, power-electronics applications have been spreading rapidly amidst the proliferation of carbon neutrality and renewable energy. In particular, the commercialization of high-voltage unipolar power devices due to wide-bandgap semiconductors such as SiC and GaN has enabled high-efficiency, high-frequency switching operations in high-voltage applications that were difficult in conventional Si bipolar power devices. Additionally, power converters are becoming increasingly miniaturized while featuring higher performance. At the same time, however, these high-speed switching elements are posing new challenges to EMC.

Because SiC MOSFET and GaN HEMT can be toggled on and off at high speed, their dv/dt and di/dt values are larger, promoting the unnecessary generation of electromagnetic noise through parasitic circuit components. Research involving actual comparisons of inverters between Si devices and power devices based on wide-bandgap semiconductors has shown significant increases in common-mode conducted noise during switching[1]. This is the context behind reported cases where designs had to be creatively reworked to comply with standards for automotive equipment such as CISPR 25.

Additionally, high dv/dt values in power devices based on wide-bandgap semiconductors have led to increased common-mode current through cables and heat sinks, and higher radiated noise has also been observed[2]. For this reason, it is essential to consider EMC from the initial stages of circuit-board and enclosure design. Designs will need to account for compliance with international standards such as CISPR 32 (applying to industrial and information equipment) and IEC 61800-3 (targeting motor drives) for each type of target equipment.

These challenges require creative solutions that address both circuit implementation and control. Rather than simply inserting EMI filters as symptomatic measures, more effective solutions include low-inductance structures that reduce parasitic inductance inside modules, layouts that symmetrize parasitic components to suppress common-mode current generation, and impedance-balanced design of circuit boards. Solutions are not limited to component implementations; creative packaging techniques might also work to suppress noise sources.

In the area of control, dv/dt control using active gate drivers and switching-waveform optimization has been garnering much attention. We can expect to achieve both high efficiency and low noise by optimizing the loss/noise balance rather than by simply lowering switching speed. Additionally, the joint use of techniques such as random modulation and spread spectrum enables the suppression of peak values within standard-imposed limits. Recently, there have been advancements in research on real-time optimization tailored to operating conditions using AI-powered drive control, which is expected to be an effective countermeasure in the future.

Going forward, power electronics will inevitably play a central role in social infrastructure spanning a variety of fields such as power conditioners for EVs and renewable energy, power supplies for AI data centers, and DC power-distribution systems. While power devices based on wide-bandgap semiconductors will be our trump card for achieving high efficiency and miniaturization, such devices will also dramatically increase the difficulty of EMC design. A design philosophy focused on harmony with electromagnetic environments in addition to efficiency and reliability will be the determining factor in the success of sustainable social implementations of power electronics. To achieve this, not only do we need to conduct R&D on individual technologies such as materials, circuits, and control; we must be actively involved in international standardization activities. The purpose of standardization is not only regulatory compliance, but also to provide a common language to safely implement technological advancements in society. By actively incorporating the knowledge of Japanese researchers and engineers into international standards, we will build a globally competitive technical foundation to power our future energy society.

References

[1] D. Han, S. Li, Y. Wu, W. Choi, and B. Sarlioglu, "Comparative Analysis on Conducted CM EMI Emission of Motor Drives: WBG versus Si Devices," IEEE Trans. IE, vol. 64, no. 10, pp. 8353-8363, 2017.

[2] B. Zhang and S. Wang, "A Survey of EMI Research in Power Electronics Systems With Wide-Bandgap Semiconductor Devices," IEEE JESTPE, vol. 8, no. 1, pp. 626-643, 2020.

Tsuyoshi Funaki

Profile

1991 Graduated from the Department of Electrical Engineering, School of Engineering, Osaka University

1993 Completed the Master's Program in Electrical Engineering, Graduate School of Engineering, Osaka University

1994 Withdrew from the Doctoral (PhD) Program before completion

Activities as Professor of Engineering

1994 Assistant Professor at Osaka University

2001 Lecturer at Osaka University

2002 Assistant Professor at Kyoto University

2008 Professor at Osaka University

Committee Activities

● Steering Committee

Date	July 16 and September 17, 2025	
Agenda items	● Agenda item 1	Selection of the Chair and nomination of Vice Chair of the Steering Committee
	● Agenda item 2	Approval of the Chairs of the Technical Subcommittee and Education Subcommittee
	● Agenda item 3	New members (June to August)
Decisions and reported items	● Agenda item 1	Approved
	● Agenda item 2	Approved
	● Agenda item 3	Approved
	● Reported item 1	Activity reports for the period from June to August were made by the dedicated subcommittees (Technical, International Relations, Market Sampling Test, Public Relations, Education, and Measurement Facilities).
	● 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 the 21st and 22nd Council and 59th Board meetings
	● Reported item 4	IEEE EMC+SIPI 2025: business trip report
	● Reported item 5	Report on the EMC Europe 2025 symposium (quick report)
	● Reported item 6	Report on participation in TECHNO-FRONTIER 2025 (draft)
	● Reported item 7	Report on the FY 2024 business report meeting
	● Reported item 8	Report on the VCCI seminar as the 2025 info-communication promotion month event for MIC

● Technical Subcommittee

Date	July 29, 2025	
Agenda items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3 ● Agenda item 4 ● Agenda item 5	Technical Subcommittee's planned activities for FY 2025 Activities for the standardization of mains-cable termination conditions Antenna-height-scan verification during pre-scan measurements in radiated-emission measurements above 1 GHz Verification and RRT of the voltage/current conversion ratio of improved transformer-coupled AANs Verification of NSA measurement methods that use hybrid antennas
Continuing agenda items	● Agenda items 1, 2, 3, 4, and 5	
Decisions and reported items	● Reported item 1 ● Reported item 2	Presentation of two papers at IEEE EMC+SIPI 2025 (period: August 18 to 22) Presentation of a paper at the EMC Europe 2025 symposium (period: September 1 to 5)

● International Relations Subcommittee

Date	July 9 and September 10, 2025	
Agenda items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3	Survey of Trends in World EMC Regulations Preparations for lectures at VCCI's 40th anniversary Deliberation on overseas surveys
Continuing agenda items	● Agenda item 2 ● Agenda item 3	Committee assistance with lectures at VCCI's 40th anniversary (translation of presentation materials)
Decisions and reported items	● Reported item 1	Survey of Trends in World EMC Regulations: Updating of EU information on July 9

● Market Sampling Test Subcommittee

Date	July 10 and September 11, 2025
Agenda items	● Agenda item 1 Market sampling test reports ● Agenda item 2 Document inspection report ● Agenda item 3 Revision to the guide to handling failed-tentative results ● Agenda item 4 Draft guidance document on rules for market sampling test
Continuing agenda items	● Agenda item 4
Decisions and reported items	● Agenda item 1 For the FY 2025 sampling tests, up to 46 products were selected and tested, and judgments were passed for 20 products. One product judged "pending ('failed-tentative' survey in progress)" in FY 2024 was subsequently judged to have passed. ● Agenda item 2 For document inspections for FY 2025, 35 documents were selected, and inspections were completed for 25 documents. ● Agenda item 3 Proposed corrections to parts of the guide to handling failed-tentative results were mostly approved.

● Public Relations Subcommittee

Date	July 4 and September 3, 2025
Agenda items	● Agenda item 1 Report on participation in TECHNO-FRONTIER 2025 ● Agenda item 2 Booth design for future TECHNO-FRONTIER exhibitions ● Agenda item 3 CEATEC 2025 ● Agenda item 4 2026 desktop calendar ● Agenda item 5 2024 Business Report Meeting
Continuing agenda items	● Agenda item 2 Options for additional fees: Pay for either a two-wall (corner) booth, or a three-wall booth with options to improve visibility of broadcast videos (additional fees expected); estimates for each option must be checked. ● Agenda item 3 Booth design, items to be distributed, etc.
Decisions and reported items	● Agenda item 1 We reported on our participation in the exhibition (see page 18). ● Agenda item 4 The 2026 desktop calendar design is complete. This is planned to be distributed at CEATEC in October. ● Agenda item 5 The Chair reported on our FY 2024 activities at the Business Report Meeting held on July 16.

● Education Subcommittee

Date	July 28 and September 11, 2025
Agenda items	● Agenda item 1 Status of preparations for FY 2025 education and training ● Agenda item 2 Textbook revisions in FY 2025 ● Agenda item 3 Results of FY 2025 education and training ● Agenda item 4 Deliberation on planned activities for FY 2026
Continuing agenda items	● Agenda items 1, 2, 3, and 4
Decisions and reported items	● Agenda item 1 - Upon soliciting participation in "The basic technique of EMI measurement" (held on October 3), the target number of participants was reached, and we are now preparing to hold the event. - We have begun soliciting participation in "The basic of electromagnetic waves, EMI measurement technique" (classroom lectures: December 4 to 5, hands-on training at KEC: December 11 to 12) and "The basic of electromagnetic waves, EMI measurement technique" (classroom lectures: December 4 to 5, hands-on training at TELEC: December 18 to 19). The target number of participants has been reached for hands-on training at TELEC, but not yet for KEC. - We have begun soliciting participation in "The level up of the EMI measurement technique" (held on January 30, 2026) and "The EMI measurement instrumentation uncertainty (MIU)" (held from February 5 to 6, 2026). ● Agenda item 2 - For "The EMI measurement instrumentation uncertainty (MIU)", textbooks were revised due to the incorporation of "MIU using a hybrid antenna" in guidance documents. ● Agenda item 3 - For "The basic of electromagnetic waves, EMI measurement technique" (classroom lectures: July 3 to 4, hands-on training at JQA: July 10 to 11), classroom lectures were held in hybrid format (both online and face to face). Hands-on training was held face to face. There were 14 attendees, who received completion certificates. ● Agenda item 4 - For FY 2026, we are planning to hold the following four courses: (1) The basic technique of EMI measurement (planned to be held in the first and second halves of the fiscal year) (2) The basic of electromagnetic waves, EMI measurement technique (planned to be held in the first and second halves of the fiscal year) (3) The level up of the EMI measurement technique (planned to be held in the second half of the fiscal year) (4) The EMI measurement instrumentation uncertainty (MIU) (planned to be held in the second half of the fiscal year)

● Registration Committee for Measurement Facilities

Date	July 14, 2025
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-ports-conducted emission measurement facilities: 7 Wired-telecommunication-port-conducted emission measurement facilities: 9 Radiated emission measurement facilities above 1 GHz: 13 Applications returned with comments: None Applications carried over to the next meeting: None
Date	September 8, 2025
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): 26 companies Radiated emission measurement facilities below 1 GHz: 15 AC-mains-ports-conducted emission measurement facilities: 13 Wired-telecommunication-port-conducted emission measurement facilities: 13 Radiated emission measurement facilities above 1 GHz: 9 Applications returned with comments: None Applications carried over to the next meeting: None

● Report on Committee Activities: List of Acronyms

Abbreviation	Full name
AAN	Asymmetric Artificial Network
AMN	Artificial Mains Network
ANSI	American National Standards Institute
APD	Amplitude Probability Distribution
APAC	Asia Pacific Accreditation Corporation
BSMI	Bureau of Standards, Metrology and Inspection
CALTS	Calibration Test Site
CB	Certification Body
CCC	China Compulsory Product Certification
CD	Committee Draft
CDN	Coupling Decoupling Network
CDNE	Coupling Decoupling Network for Emission
CDV	Committee Draft for Vote
CEN	European Committee for Standardization
CENELEC	European Committee for Electro Technical Standardization
CISPR	International Special Committee on Radio Interference
CMAD	Common Mode Absorbing Device
CQC	China Quality Certification Center
CSA	Classical (Conventional) Site Attenuation
CSA	Canadian Standards Association
DC	Document for Comment
DoC	Declaration of Conformity
DOW	Date of Withdrawal
DTI	Department of Trade and Industry
Ecma	Ecma International
EMCC	Electro Magnetic Compatibility Conference
EMCAB	Electromagnetic Compatibility Advisory Bulletin
EMF	Electromagnetic Field
ETSI	European Telecommunication Standards Institute
EUANB	European Union Association of Notified Bodies
EUT	Equipment Under Test
FAR	Fully Anechoic Room
FDIS	Final Draft International Standard
GB	guo jia biao zhun (National Standard of China)
GSO	Gulf Cooperation Council Standardization Organization
ICES	Interference-Causing Equipment Standard
IS	International Standard
ISM	Industrial Scientific and Medical
ITE	Information Technology Equipment
LCL	Longitudinal Conversion Loss
MIC	Ministry of Information and Communication
MME	Multimedia Equipment
MOU	Memorandum of Understanding
MP	Magnetic Probe

Abbreviation	Full name
MRA	Mutual Recognition Agreement/Arrangement
NCB	National Certification Body
NICT	National Institute of Information and Communications Technology
NIST	National Institute of Standards and Technology
NP	New Work Item Proposal
NSA	Normalized Site Attenuation
OFDM	Orthogonal Frequency Division Multiplex
PAS	Publicly Available Specification
PLT	Power Line Telecommunication
RBW	Resolution Band Width
REF	Reference
RRA	Radio Research Agency
RRT	Round Robin Test
RSM	Reference Site Method
RVC	Reverberation Chamber
SAC	Semi Anechoic Chamber
SDPPI	Semangat Disiplin Profesional Procuktif Integritas
S/N	Signal to Noise ratio
TF	Task Force
TG	Tracking Generator
UPS	Uninterruptible Power Supply
VBW	Video Band Width
VHF-LISN	Very High Frequency-Line Impedance Stabilization Network
VSWR	Voltage Standing Wave Ratio
WG	Working Group
WP	Working Party

5th instalment

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

Amemiya EMC Consulting Representative
Fujio Amemiya

1. Introduction

In the fourth instalment of this series, I concluded my story of how we solved the problem of strong audible noise generated by the intrusion of television broadcast signals in the (then) new mini telephone, Type-701P. This time, for *My First Encounter with EMC* (part 3), let us fast-forward to a more advanced age in the digitization of telephones. This story takes place during the prototyping of an electronic telephone that could display phone numbers on a screen and play weather forecasts, the time, and other audio information through the telephone speaker with a push of the push-button dial.

2. Background to *My First Encounter with EMC*

In late March, 1977, the department I belonged to, the Customer Premises Developmental Research Department of NTT's Musashino ECL, was relocated to the Yokosuka ECL, whose building had been expanded. The Telephone Laboratory was included in the move, and everybody aside from my team, which handled call quality, was transferred to the Yokosuka ECL. From here on, the focus of my research moved away from electronic telephones to the research commercialization of telephones (then called "digital telephones") connecting to the communication network that would later be known as the ISDN (Integrated Service Digital Network).

One day, I witnessed a surprising phenomenon while conducting basic experiments relating to digital telephones. Next to my lab bench was an R&D group conducting their own experiment on the electronic telephone whose functionality I described earlier. Right after the TV receiver (using indoor-antenna reception) in the nearby rest area was powered on, the audio information (time information, I recall) output by the electronic telephone's speaker was somehow coupled onto the TV receiver's audio output. I remember everyone there being shocked - they looked at each other with expressions saying, "How the heck did that happen?"

Then, we hung up the telephone (ending the call), which stopped the interference with the TV, but upon reconnecting and returning the telephone speaker to its previous state (receiving time information), the same thing happened again. That confirmed for us that the telephone was causing the phenomenon. There was a huge commotion as everyone realized they had to figure out the underlying cause and how to address it - fast!

My (then) supervisor decided to set up an emergency committee to start investigating the cause and discussing countermeasures as soon as possible. I was asked to join the committee and help find a solution due to my extensive experience with telephone EMC issues at Musashino ECL, and the high likelihood that this issue would recur in future digital telephones.

3. Why did the TV receiver output audio received by the telephone in speaker-reception mode?

At the time we encountered this issue, TV broadcast signals used AM (amplitude modulation) for video and FM (frequency modulation) for audio, unlike TV signals today. For this reason, I realized I urgently needed to figure out why the telephone emitted FM electromagnetic waves, and why they were emitted only at the frequency band used by the TV broadcast signals. At the committee, I proposed that we urgently needed to investigate the following three questions and consider possible countermeasures:

(a) Does the same phenomenon occur on all TV channels?
(b) Does the volume of noise from the telephone's radio interference differ depending on the TV channel where that noise occurs?
(c) Why does the electronic telephone in question emit FM waves?

After some discussion, the committee agreed that the electronic-telephone group would investigate (a) and (b), and that I would investigate (c), and we promptly got to work. I unfurled a detailed circuit diagram of the electronic telephone on my desk and began considering why the telephone's internal circuitry (mainly the call circuit) caused FM modulation during operation in speaker-reception mode. I could not imagine that the telephone had a circuit causing FM modulation, and only grew more baffled by the key points of the mechanism of interference and detection by the TV resulting in the coupled output.

Here's what I roughly remember of what the inquiry into (a) and (b) had found so far:

(a): The same phenomenon was not occurring in all TV channels.

(b): The volume of TV audio output containing interference was not constant, but variable.

Meanwhile, regarding (c), I had considered all kinds of possibilities as to why the telephone was emitting high-frequency FM waves at 100 to 200 MHz as audible signal information in speaker-reception mode. Unfortunately, all I could report at our first committee meeting was that I had not been able to explain the emission mechanism.

We debated on what to do for some time, but could not reach any conclusions. We decided to all take home and think on the information we learned from the day's investigations, and resume our debate later. After this meeting, I grew intrigued by two potential keys to solving our problem: Why were high-frequency waves above 100 MHz generated inside the telephone? And, by what mechanism were these high-frequency waves FM-modulated inside the telephone? I dwelled on these questions even after I got home. Going back to the basics of FM modulation, I started thinking the only possible cause of the FM-wave emission was that either the L or C value of the LC circuit was fluctuating based on the speaker's audio output. That was when it hit me: maybe when the speaker's carbon paper and voice coil vibrated in response to audio output in the magnetic field from the speaker's magnet, the voice coil's inductance (L) fluctuated according to changes in the audio signal, causing the FM modulation. I was convinced this must be what was happening. I also realized that the source of the high frequencies of 100 to 200 MHz could be the clock frequency (or one of its harmonics) of the digital circuit used for the dial-monitor function.

These realizations were only speculations arrived at by pondering these questions to myself, so before I could forget, I noted down the following points I felt had to be reported for further discussion at the committee:

1. Could the high-frequency signal above 100 MHz interfering with the TV broadcast signal be the clock frequency (or one of its harmonics) of the digital signal used in the telephone's dial-monitor circuit?
2. Is this high-frequency signal also being induced on the signal wires connecting the telephone's circuit board and speaker, generating FM due to fluctuations in reactance (L) caused by the speaker's voice coil vibrating in response to the speaker's audio output?
3. If this FM-modulated signal is emitted by the telephone and interferes with the frequency band of the TV broadcast signals' audio channel: Would the signal be demodulated similarly to the original TV broadcast signals' audio information and output as noise from the TV's audio channel?

Days later, I reported these three speculations to the committee as the results of my inquiry. The other committee members were shocked, saying, "It's well known that capacitors on the order of μF are installed on the two wires leading to the speaker to suppress hum and other noise induced from outside the telephone. But, in this case, is the issue that high-frequency noise in the TV broadcast signals' audio frequency band is being generated inside the telephone? And, that the audible signal output from the speaker is acting as the modulation information, causing this noise to be FM-modulated and emitted externally?"

I responded, "I'm sure of it," and proposed that given the anticipated advances in telephone functionality, we would need to add more criteria to our checklists when conducting research commercialization on future electronic and digital telephones. These criteria would be informed by the full context of our inquiry into what caused this noise interference with the TV, and the resulting countermeasures. I recall this proposal being met with unanimous agreement.

4. Summary

To sum up the issue of audible information output from the electronic telephone in speaker-reception mode being coupled onto the TV receiver's output:

(a) The circuit necessary for displaying dialed numbers when using the push-button dial emitted high-frequency noise within in the audio band of TV broadcasts.
(b) This high-frequency noise was induced on the wires leading from the telephone's printed circuit board to the speaker. When the speaker output audio information, this noise was FM-modulated by changes in reactance (L) according to vibrations in the speaker's voice coil, and emitted to the surroundings.
(c) When these emitted waves caused interference in channels receiving the TV's audio frequency band, audible signals received by the telephone speaker were detected and simultaneously output by the TV receiver.

That was the conclusion we reached.

At a subsequent committee meeting, I proposed a countermeasure: to insert capacitors with good high-frequency characteristics at both ends of the lead wires connecting the telephone's printed circuit board and speaker. After procuring and inserting the capacitors, we found that the TV receiver's speaker had indeed stopped outputting the audible sound information. I still remember how we all cheered at that!

Suspecting that this EMC issue was extremely likely to occur in future digital telephones I was working on, I requested that we document the full process of our inquiry to share with others, in addition to updating our checklists. I remember that not only my supervisor, but everyone involved readily agreed. Having completed my support work on this EMC issue in the electronic telephone, I went back to doing R&D on digital telephones.

5. Afterword

For the fifth instalment of this series, I presented *My First Encounter with EMC* (part 3), a detailed account of how we diagnosed and solved an issue in an electronic telephone in development at the time: that when the telephone speaker received time and weather-forecast information, the audio information was coupled onto the speaker output of a nearby TV receiver.

The next instalment hearkens back to the time I spent churning out prototypes for the research commercialization of digital telephones. Standard telephones had to meet a certain level of functionality and performance even in poor electromagnetic environments. To achieve this, I would often go out equipped with a prototype digital telephone, a portable exchange simulator, and various measuring instruments to conduct field tests around AM-radio and shortwave-broadcast stations. I plan to recount the full story as *My First Encounter with EMC* (part 4).

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 the FY 2024 Business Report Meeting

Steering Committee

Here is an overview of the Business Report Meeting, which was held as usual following the previous year.

Note that the exchange meeting was postponed due to other events planned for November, such as a commemorative ceremony for the VCCI Council's 40th anniversary falling on December 2025.

1. Date and time: 15:00-16:20 July 16 (Wed), 2025
2. Venue: Conference room 6D-4, Kikai Shinko Kaikan 6F
3. Participants: 25 (including membership applicants, Steering Committee members from various companies, and Subcommittee Chairs)
4. Presenters: Akira Oda, Executive Director of VCCI Council - FY 2024 business report
   Masayuki Abe, FY 2024 Chair of the Steering Committee (Hitachi, Ltd.)
   Shinichi Okuyama, FY 2024 Chair of the Technical Subcommittee (NEC Platforms)
   Kazuo Ura, member of the International Relations Subcommittee (Casio Computer)
   Ryuichi Kobayashi, Chair of the Market Sampling Test Subcommittee (NTT Advanced Technology)
   Jiro Iizuka, Chair of the Public Relations Subcommittee (Oki Electric Industry)
   Shinichi Okuyama, FY 2024 Chair of the Education Subcommittee (NEC Platforms)
   (Presenters reported on FY 2024 activities in the aforementioned order.)

After the presentations, VCCI President Mr. Hirai awarded letters of commendation to FY 2024 Steering Committee members and Subcommittee Chairs.

VCCI President Mr. Hirai with FY 2024 Steering Committee members and Subcommittee Chairs

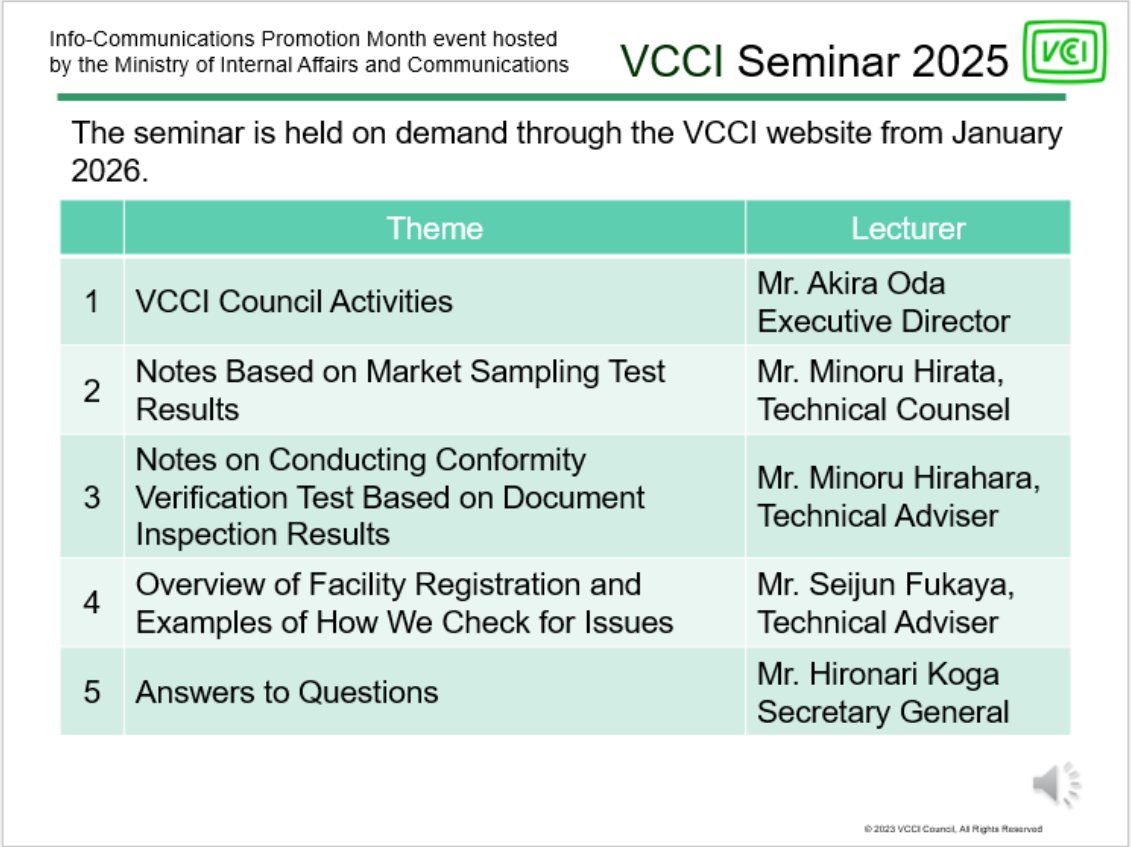
Report on the VCCI seminar as the 2025 Info-Communication Promotion Month Event for MIC

Steering Committee

VCCI participated in the Info-Communication Promotion Month event for the Ministry of Internal Affairs and Communications by posting the following introductory videos on the VCCI website to those who requested to view them. These videos were made available for about two weeks for the convenience of event participants (viewers). (Number of viewing applicants: 100)

Event period: July 18 (Fri) to 31 (Thu) (in video format on the VCCI website)

	Theme	Lecturer
1	VCCI Council Activities	Akira Oda, Executive Director
2	Notes Based on Market Sampling Test Results	Minoru Hirata, Technical Counsel
3	Notes on Conducting Conformity Verification Test Based on Document Inspection Results	Minoru Hirahara, Technical Adviser
4	Overview of Facility Registration and Examples of How We Check for Issues	Seijun Fukaya, Technical Adviser
5	Answers to Questions	Hironari Koga, Secretary General



Note: The English versions of these videos will be viewable from January 2026.

Report on Participation in TECHNO-FRONTIER 2025

Public Relations Subcommittee

This is a report on the TECHNO-FRONTIER 2025 exhibition.

Exhibition name: Sub-exhibition for technologies related to EMC and noise countermeasures, TECHNO-FRONTIER 2025
Exhibition period: July 23 (Wed) to 25 (Fri), 2025
Number of exhibitor companies: 442
Actual number of visitors: 28,926
Venue: West Exhibition Halls, Tokyo Big Sight

1. Purpose of participation

TECHNO-FRONTIER is a mechatronics and electronics exhibition sponsored by the Japan Management Association for manufacturing engineers to promote development and create markets. The exhibition is made up of 22 sub-exhibitions. The VCCI Council participated in a sub-exhibition for technologies related to EMC and noise countermeasures so that engineers could gain a deeper understanding of VCCI.

2. On the VCCI Council's participation in a sub-exhibition for technologies related to EMC and noise countermeasures

This was Japan's one and only specialist technology exhibition, gathering the latest products and technologies related to EMC and noise countermeasures in one place. The exhibition featured everything from components and materials for electromagnetic noise countermeasures to measurement instrumentation, measurement facilities, and consulting services.

This exhibition, which provided comprehensive solutions to electromagnetic noise including the latest trends in standards and product designs and example countermeasures covering basic to applied levels, proved essential to industry associates, earning high acclaim from engineers in Japan and overseas.

3. Details of participation

We provided documents such as for VCCI enrollment, and played introductory videos to the VCCI Council on three types of panels.

● Materials
- Introduction to VCCI Council (triple-folded pamphlet)
- Information on VCCI enrollment
- Annual Report 2023
- Guide to VCCI Council's education and training
- Scope of the international standard CISPR 32

The VCCI Council booth

●Panels
- Do you know this mark?
- Japanese electromagnetic regulations
- History of the VCCI Council

● Introductory videos
Three themes: "Do you know this mark?", "Acquiring the VCCI mark", and "Scope of VCCI" (approx. 7 minutes)

●Number of booth visitors
About 60 people visited our booth. Among these, 53 gave us business cards and were given novelty goods in return. Days later, we sent emails thanking them for their attendance.

4. Impressions
At past TECHNO-FRONTIER exhibitions, all sub-exhibitions were held in the East Exhibition Halls. This time, however, sub-exhibitions were divided between the East and West Exhibition Halls, and sub-exhibitions for technologies related to EMC and noise countermeasures were held in the West Exhibition Halls on the fourth floor. As a result, visitors who were mainly interested in other sub-exhibitions had less opportunity to visit the sub-exhibition for technologies related to EMC and noise countermeasures, resulting in a decline in visitors compared to last year.

Due to the nature of the exhibition, many of the visitors were engineers, and many already knew of VCCI. We received questions about trends in VCCI's standards and VCCI's activities such as education and training seminars.

We plan to continue participating in exhibitions because they provide both useful PR opportunities for the VCCI Council's activities and the VCCI mark, and valuable spaces to communicate directly with visitors.

IEEE EMC+SIPI 2025: Business Trip Report

Steering Committee and Technical Subcommittee

This is a report on the 2025 IEEE International Symposium on Electromagnetic Compatibility, Signal & Power Integrity (EMC+SIPI 2025).

- Venue: Raleigh Convention Center, Raleigh, North Carolina, USA
- Period of participation: August 18 (Mon) to 21 (Thu), 2025
- Period of symposium: August 18 (Mon) to 22 (Fri), 2025
- Participants: Fuminori Kanahara and Kunihiro Osabe, members of the Technical Subcommittee;
  Akira Oda, Executive Director of VCCI Council;
  Hironari Koga, Secretary General;
  Yoko Inagaki, Program Manager

I. Overview of IEEE EMC+SIPI 2025

The purpose of attending the symposium was to present papers submitted by the VCCI Council and to collect information by participating in technical sessions and observing exhibitions.

Number of papers and other presentations at the symposium: 140 technical papers, 152 workshop and tutorial presentations, and 24 experiments and demonstrations

Symposium participants: 1,014 from 30 countries; by industry: industrial and product sectors (64%), government agencies (9%), educational institutions (6%), consultants (7%), students (7%), other (7%)

90 companies exhibited (including the accreditation bodies A2LA and ANAB), which was on par with last year.

Entrance to the Raleigh Convention Center

1. Papers presented by the VCCI Council

- Paper presented by Fuminori Kanahara, member of the Technical Subcommittee
- Date and time: 9:00-9:30 August 20 (Wed)
- Session name: Technical Paper Session: EMC Measurements – Emissions
- Paper title: Estimation of the Phase Center Position of a Hybrid Antenna for Radiated Emission Measurement
- Authors: Fuminori Kanahara (Sony Global Manufacturing & Operations),
  Akira Murakami (e-OHTAMA), Kunihiro Osabe (VCCI Council), Nobuo Kuwabara (Kyushu Institute of Technology),
  Hidenori Muramatsu (VCCI Council)
- Presenter: Fuminori Kanahara (VCCI Council and Sony GM&O)
- Presentation overview: For hybrid antennas used for radiated-emission measurement, phase-center correction was introduced in CISPR 16-2-3 Edition 4.2. The antenna phase center is a parameter specific to each frequency, and standards require that this parameter be obtained from antenna manufacturers, calculated based on antenna structure, or measured in practice. It has been demonstrated that the phase center can be measured by adjusting the antenna's center of rotation to a position at which the phase does not change. However, because this method is impractical for obtaining the phase center for each frequency, a method was considered for estimating the phase center across the antenna's entire frequency band (30 to 1000 MHz).
- Presentation Q&A: Mr. Zhong Chen of ETS Lindgren made a comment introducing a method developed in the past known as the "Complex Normalize Method". According to this method, measurements are performed on the antenna at multiple heights in a typical measurement environment. Based on the measurement results, including the phase at each height, equations are used to derive the phase center mathematically. Mr. Zhong Chen stated that this method might be more convenient than physically moving the antenna.
- Presenter impressions: I believe this presentation, which expands on the approach described in CISPR 16-1-6 based on phase changes caused by antenna rotation, demonstrates an efficient method of estimating the phase center. However, there are operational issues in applying phase-center corrections to actual emission measurements, so I hope this will be discussed further. Thanks to feedback from the audience, I was able to learn things that could not be confirmed in the preliminary investigation.

- Paper presented by Kunihiro Osabe, member of the Technical Subcommittee
- Date and time: 10:30-11:00 August 20 (Wed)
- Session name: Technical Paper Session: EMC Measurements – Emissions
- Paper title: Impact on Radiated Emission with EUT Mains Cable Termination by Balanced VHF-LISN
- Authors: Kunihiro Osabe (VCCI Council), Nobuo Kuwabara (Kyushu Institute of Technology),
  Hidenori Muramatsu (VCCI Council)
- Presenter: Kunihiro Osabe (VCCI Council)
- Presentation overview: This paper evaluates the impact of mains-cable termination by using balanced VHF-LISNs on radiated-emission characteristics based on round-robin test data. This presentation discussed the validity of the paper, including the basis for using balanced VHF-LISNs as termination devices.

- Presentation Q&A:

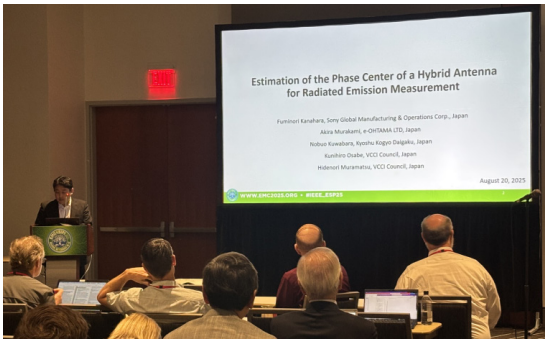
Q: Why is it acceptable for VHF-LISN specifications to only be regulated up to 300 MHz?

A: In our experience, inter-site correlation issues have not been observed at values of 300 MHz or above.

Q: Is there any equipment that uses unbalanced VHF-LISNs?

A: In the event that PLT is used at 30 MHz or above, for example bands up to 80 MHz, unbalanced VHF-LISNs might be used as termination devices.

- Presenter impressions: I believe this presentation attracted much interest, having been given just after the approval of national voting results for the FDIS (Final Draft International Standard) of the international standards document CISPR 16-1-4 Edition 5. CISPR 16-1-4 Edition 5 will add VHF-LISNs as AC mains-cable termination devices. Two questions were from expert members actively involved in CISPR, so I hope this paper is impactful in advancing deliberations on introducing VHF-LISNs into radiated-emission-measurement standard CISPR 16-2-3, which have now begun as the next step in standardization.



Presentations by Subcommittee members Kunihiro Osabe and Fuminori Kanahara at the Technical Paper session

2. Keynote presentation
- Date and time: 8:30-9:30 August 19 (Tue)
- Session name: Keynote
- Title: The Convergence of EMC and Signal/Power Integrity Engineering
- Presenter: Christian Schuster (IEEE Fellow), Ph.D.
- Affiliation: Hamburg University of Technology, Germany
- Presentation overview and impressions: This keynote speech concerned how the optimization of signal integrity (SI) and power integrity (PI) via digital signal processing is becoming commonplace in product design and development. This digital signal processing is being performed in response to increases in packing density, data rate, and capacity, the complexity of inter-circuit connections, and increases in operating power. The presenter discussed the potential of using methods of seeking optimal operation of functionality that speeds up data-signal processing and raises output level (the purpose of SI and PI) to solve EMC issues. The presenter went on to assert that greater convergence would be essential to incorporating SI and PI in future product EMC design.

  Among EMC issues, approaches to immunity countermeasures in particular seem to largely align with the goals of speeding up signal processing and reducing error rates. Emissions, however, seem to require compliance with legal and regulatory limits in many cases, requiring SI and PI processing from a perspective that is separate from functional optimization.

3. Main topics of attended workshop and tutorial sessions
- Date and time: 8:30-12:00 August 18 (Mon)
- Session name: EMC Regulations and Standards – Past, Present and Future
- Topics & Speakers
  - (1) "Historical Overview of EMC Regulations and Standards", Henry Benitez, USA
  - (2) "EMC Overview of FCC Regulations", William Graff, USA
  - (3) "An update of Automotive Emissions Standards being developed by CISPR/D – A review of CISPR 12, CISPR 36, and CISPR 25 by CISPR/D", Craig Fanning, USA
  - (4) "Role of Accreditation Bodies", Janneth Marcelo, NVLAP/NIST
  - (5) "CISPR H and CISPR A", Andy Griffin, Cisco, USA
  - (6) "CISPR I – CISPR 32/35", Andy Griffin, Cisco, USA
- Presentation overview: This workshop featured six presentations covering historical events relating to EMC, the accreditation of EMC testing laboratories, wireless-equipment certification systems, and the status of deliberations on EMC standards in CISPR. Among these, topic (1) discussed the historical events relating to EMC standardization since the discovery of Faraday's Law in 1831. Topic (5) concerned the status of deliberations on EMC standards in CISPR relating to the common standard IEC 61000-6-3. The presentation explained the deliberations on allowable disturbance values for radio-equipped products, mainly wireless power transfer (WPT), and allowable disturbance values and measurement-site evaluation methods for frequencies above 1 GHz, especially 6 GHz to 40 GHz. There was also a detailed explanation of the VCCI-led proposal to standardize VHF-LISNs as mains-cable termination devices.

- Date and time: 13:30-17:30 August 20 (Wed)
-Tutorial session name: Tutorial on Machine Learning
-Title: "Compressed Sensing for EMC Applications"
- Presenter: Zhong Chen/ETS-Lindgren, USA

A session was held on machine learning relating to SI and PI, which were topics of this symposium's keynote speech. Among the discussed EMC challenges was a presentation titled "Compressed Sensing for EMC Application" which discussed the use of the compressed sensing (CS) technique and described a proposed measurement-site evaluation method CMF SVSWR for frequencies from 18 to 40 GHz.

4. Key paper presentations attended at the technical paper session
- Date and time: 10:30-12:00 August 19 (Tue)
- Session name: Applications of AI and Optimization Algorithms

Give that the keynote speech covered the topic of further integrating EMC and SI/PI, we attended this session hoping the presentations would also be relevant to EMC challenges.

- Paper title: Multi-Objective Inverse Optimization of High-Speed Interconnects using Cascaded Deep Neural Network
- Authors: Yicheng Zhang[1], Ling Zhang[1], Hyunwook Park[2], Bo Pu[3], Xiao-Ding Cai[4], Chulsoon Hwang[2], Bidyut Sen[4], Jun Fan[2], Er-Ping Li[1], James Drewniak[2]
  [1] Zhejiang University, China
  [2] Missouri University of Science and Technology, USA
  [3] DetoolIC Technology, China
  [4] Cisco Inc., USA
- Presenter: Yicheng Zhang
- Presentation overview: This paper proposes a method of optimizing high-speed signal-circuit connections based on a cascaded deep neural network (DNN) structure. The abstract states that characteristic impedance, insertion loss, and far-end crosstalk (FEXT) can be efficiently optimized. In other words, the paper proposes a potential optimization of the array structures of multilayer printed circuit boards and their installed chip components. Unfortunately, however, tests of the procedure and validity of this method did not touch on EMC-related optimization. This paper stayed within the scope of SI and PI.

- Session name: Applications of AI and Optimization Algorithms
- Paper title: USB 3.0 IBIS-AMI Model Construction using Measurement and Neural Network
- Authors: Jiahuan Huang[1], Wenchang Huang[1], Muqi Ouyang[1], Hank Lin[2], Bin-Chyi Tseng[2], Chulsoon Hwang[1]
  [1] Missouri University of Science and Technology, USA
  [2] ASUSTek Computer Inc., Taiwan
- Presenter: Jiahuan Huang
- Presentation overview: This paper was presented in the same session as the preceding paper. The paper appears to cover a method of modeling high-speed signal analysis. The method uses neural networks to estimate I/O buffer characteristics (such as voltage and current characteristics, and rising and falling waveforms) based on motherboard USB 3.0 output characteristics. Unfortunately, this paper did not mention EMC issues, either.

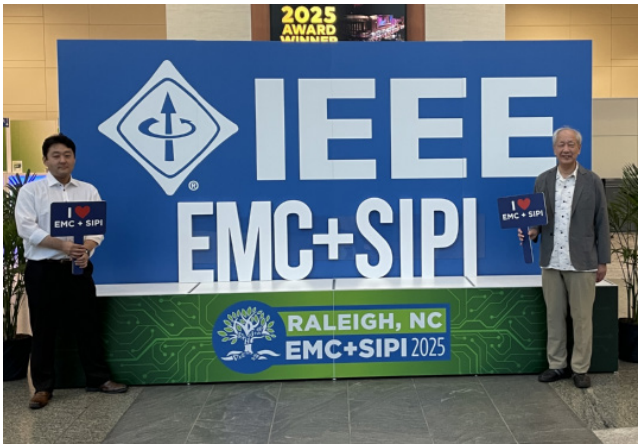
- Date and time: 8:30-12:00 August 21 (Thu)
- Session name: EMC Measurements: Design Related
- Paper title: A Numerical Investigation Comparing Boresighting and Linear Scanning Methods for EMC Emissions Measurements
- Authors: Yibo Wang[1], Zhong Chen[1]
  [1] ETS-Lindgren, USA
- Presenter: Yibo Wang
- Presentation overview: For this paper, a simulation was used to compare boresighting and linear scanning methods in radiated-emission measurements above 1 GHz. For equipment with complex radiation patterns, boresighting methods were demonstrated to capture the true peak more accurately, and reduce the effects of antenna characteristics and reflection off the ground. When using high-gain antennas in particular, linear scanning methods could result in underestimates of up to 6 dB, confirming the effectiveness of boresighting methods.

- Date and time: 13:30-16:30 August 21 (Thu)
- Session name: EMC Measurements: Immunity and Shielding
- Paper title: Effect of Chamber Loading in Reverberation Chamber Testing
- Authors: Leela Manepalli[1], Nitin Parsa[1], Hui Zhou[1], Varittha Sanphuang[1], Yuqing Tang[1], Ronald Missier[1], Aaron Verellen[2], Alberto Jimenez[2], Alexander Foreman[2]
  [1] Ford Motor Company, USA
  [2] Vitesco Technologies, USA
- Presenters: Leela Manepalli, Aaron Verellen
- Presentation overview: This paper demonstrates the importance of forward chamber loading factor (FCLF) for immunity testing of large EUTs using reverberation chambers. According to ISO 11452-11, FCLF can be set to 1. However, because actual measurements yield significant disparities in maximum and minimum received power values, under-testing might occur unless FCLF is taken into consideration.
  The paper states that measurement at multiple antenna positions and balancing could enable more accurate testing.

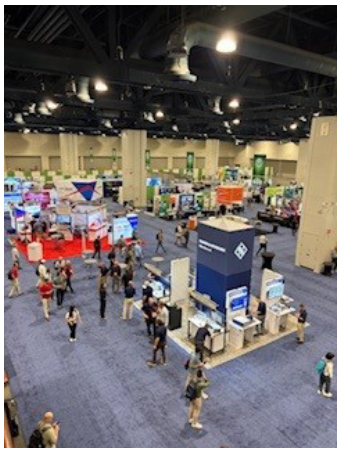
5. Impressions

This year's symposium was held at a convention center in Raleigh, the capital of North Carolina.

One topic of the symposium's keynote speech was the convergence of SIPI and EMC, so we attended a few sessions related to SIPI in addition to our usual focus on sessions about EMC issues we were familiar with. However, not much of the content was directly related to EMC in a significant way. As we mentioned regarding the keynote speech, content relating SIPI to EMC specifically would have been more informative.



In front of the IEEE EMC+SIPI 2025 sign



Exhibition hall for sponsoring companies

II. Report on meeting with A2LA

Date and time: 12:00-12:30 August 20 (Wed), 2025
Venue: Academic conference room, Exhibit Hall
Participants: A2LA: Ms. Megan McConnell, Electrical Program Manager
VCCI: Akira Oda, Executive Director; Hironari Koga, Secretary General; Yoko Inagaki, PM

Objective: A2LA (American Association for Laboratory Accreditation) has signed an MOU with VCCI. Both parties took IEEE EMC+SIPI 2025 as an opportunity to exchange reports on their latest status and opinions in a face-to-face meeting.

Agenda:

1. Speech from the VCCI Council on their latest news
 - Document: VCCI Update (Aug. 2025)

Mr. Akira Oda gave an overview of VCCI's activities and the latest news, focusing on the following topics:

- Appointment of Hiroyuki Osaki as Head Councilor and Shinobu Ishigami as Councilor, trends in numbers of members, overseas members, and registrations of product conformity, market sampling test results, latest publications and revisions to guidance documents, International Forum, VCCI's 40th founding anniversary
- List of A2LA-accredited testing laboratories currently registered with VCCI

2. Speech from A2LA on their latest news

Ms. Megan McConnell gave a speech on A2LA's latest accreditation status and latest topics. Latest accreditation trends show that A2LA's accreditation portfolio extends beyond electronics departments to those related to biobanking based on ISO 20387. 168 sites are accredited as testing laboratories in compliance with the VCCI Rules. Of these, 146 sites comply with the VCCI-CISPR 32 Technical Requirements.

In July 2025, A2LA opened a new office in Boulder, Colorado, USA.

At the A2LA exhibition venue

III. Report on meeting with ANAB

Date and time: 14:00-14:30 August 21 (Thu), 2025

Venue: Academic conference room, Exhibit Hall

Participants: ANAB: Mr. Randy Long, Associate Director of Accreditation

VCCI: Akira Oda, Executive Director; Hironari Koga, Secretary General; Yoko Inagaki, PM

Objective: ANAB (ANSI National Accreditation Board) has signed an MOU with VCCI. Both parties took IEEE EMC+SIPI 2025 as an opportunity to exchange reports on their latest status and opinions in a face-to-face meeting.

Agenda:

1. Speech from the VCCI Council on their latest news
 - Document: VCCI Update (Aug. 2025)

 Mr. Akira Oda gave an overview of VCCI's activities and the latest news, focusing on the following topics:

 - Appointment of Hiroyuki Osaki as Head Councilor and Shinobu Ishigami as Councilor, trends in numbers of members, overseas members, and registrations of product conformity, market sampling test results, latest publications and revisions to guidance documents, International Forum, VCCI's 40th founding anniversary
 - List of ANAB-accredited testing laboratories currently registered with VCCI

2. Speech from ANAB on their latest news

 The organization's operational systems are currently being refurbished to enhance security-related business operations, aiming for completion within 2025.

3. Main opinion exchange

 Although cases of nonconformities have been reported in the VCCI Council's market sampling tests, of the testing laboratories handling such cases, none in the past 9 years have been ANAB-accredited testing laboratories. The FY-2023 nonconformity rate was relatively larger than usual, but no major nonconformities were found. At this stage, the affiliated countries of VCCI members do not include South Africa.

At the ANAB exhibition venue

IV. Report on meeting with NVLAP

Date and time: 12:00-12:30 August 18 (Mon), 2025

Venue: Academic conference room, Ballroom C

Participants: NVLAP: Ms. Amanda McDonald, Program Manager
Ms. Janneth I. Marcelo, Program Manager
VCCI: Akira Oda, Executive Director; Hironari Koga, Secretary General; Yoko Inagaki, PM

Objective: NVLAP (National Voluntary Laboratory Accreditation Program) has signed an MOU with VCCI. Both parties took IEEE EMC+SIPI 2025 as an opportunity to exchange reports on their latest status and opinions in a face-to-face meeting.

Agenda:

1. Speech from the VCCI Council on their latest news
 - Document: VCCI Update (Aug. 2024)

 Mr. Akira Oda gave an overview of VCCI's activities and the latest news, focusing on the following topics:

 - Appointment of Hiroyuki Osaki as Head Councilor and Shinobu Ishigami as Councilor, trends in numbers of members, overseas members, and registrations of product conformity, market sampling test results, latest publications and revisions to guidance documents, International Forum, VCCI's 40th founding anniversary
 - List of NVLAP-accredited testing laboratories currently registered with VCCI

2. Speech from NVLAP on their latest news
 - NVLAP is an organization within NIST (National Institute of Standard and Technology) under the US Department of Commerce. The report described changes to the organizational structure, including the position of Chief (the PM of EMC and telecommunications will not change). Of the Japanese testing laboratories related to EMC and telecommunications, 10 have been accredited by NVLAP. Recently, the accreditation of Chinese testing laboratories has been on a downward trend. IAF (International Accreditation Forum) and ILAC (International Laboratory Accreditation Cooperation), two large organizations for ensuring the reliability and conformity of the international accreditation system, plan to merge into one organization by 2026. NVLAP is a member of the three institutions ILAC, APLAC, and IAAC.

At the NVLAP meeting venue

Status on FY 2025 Market Sampling Tests

Market Sampling Test Subcommittee

As of September 30, 2025

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	46	2	39	21	21	0	0	0

Loan-based testing total		46	2	39	21	21	0	0	0
Term (breakdown)	1st Quarter	23	2	21	21	21	–	–	–
	2nd Quarter	23	–	18	–	–	–	–	–
	3rd Quarter	–	–	–	–	–	–	–	–
	4th Quarter	–	–	–	–	–	–	–	–

FY 2025 total	Passed	Failed	Pending
	21	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	43	–	35	34	25	25	–

Report from the Secretariat

● List of Members (July 2025 - September 2025)

New members

Membership	Member No.	Company name	Country or region
Regular	4458	NETWORK CONSULTING Co., Ltd.	JAPAN
Regular	4462	SteeRetail Co., Ltd.	JAPAN
Regular	4449	Qingdao Hisense Medical Equipment Co., Ltd.	CHINA
Regular	4450	DEEPX Co., Ltd.	KOREA
Regular	4452	Nexthop Systems Inc.	USA
Regular	4453	Thermal Control Technology (Shenzhen) Co., Ltd.	CHINA
Regular	4455	Zhejiang Cenlak Technology Co., Ltd.	CHINA
Regular	4456	SHINCEN TECHNOLOGY CO., LTD	CHINA
Regular	4457	ASTI GLOBAL INC., TAIWAN	TAIWAN
Regular	4460	DONGGUAN SENMAI ACOUSTIC TECHNOLOGY CO., LTD	CHINA
Regular	4461	Shenzhen KTC Commercial Display Technology CO., LTD.	CHINA
Regular	4465	Bastille Networks, Inc.	USA
Supporting	4454	CCIC-CSA International Certification Co., Ltd. Kunshan Branch	CHINA
Supporting	4459	DT&C VINA., JSC	VIETNAM

Company name change

Membership	Member No.	Company name	Country or region	Old company name
Regular	1278	NTT WEST, Inc.	JAPAN	NIPPON TELEGRAPH AND TELEPHONE WEST CORPORATION
Regular	1303	NTT EAST, Inc.	JAPAN	NIPPON TELEGRAPH AND TELEPHONE EAST CORPORATION
Regular	3280	impact mirAI Inc.	JAPAN	impactTV. INC
Regular	3506	NORITAKE ITRON CORPORATION	JAPAN	/NORITAKE ITRON CORPORATION
Regular	338	Intel Corporation	USA	Intel K.K.
Regular	1498	Penguin Solutions Corporation (DE)	USA	Stratus Technologies, Inc.
Regular	3639	Matterport LLC	USA	Matterport, Inc.
Regular	3652	TP-Link Systems Inc.	USA	TP-Link Corporation Limited
Regular	4256	Mech-Mind Robotics Technologies Co., Ltd.	CHINA	Mech-Mind Robotics Technologies Ltd.
Regular	4450	DEEPX Co., Ltd.	KOREA	DEEPX

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

● FY 2025 Schedule of VCCI Events and Training Seminars

April	May •COMPUTEX TAIPEI	June •Release VCCI Dayori No. 157
July •TECHNO-FRONTIER 2025	August •Release Annual Report	September •Release VCCI Dayori No. 158
October •CEATEC 2025	November •Event celebrating VCCI's 40th founding anniversary November 28	December •Release VCCI Dayori No. 159
January	February •Technical Symposium	March •Release VCCI Dayori No. 160

● Status of Registration of Product Conformity

July 2025 – September 2025 (Product names are examples and are not limiting)

Classification of MME (Product types are not limited to only the following examples.)				Classification code		July 2025			August 2025			September 2025		
				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	45	2	47	52	6	58	30	1	31
		Stationary	Workstation, Desktop PC, etc.	B 2	b 2	8	16	24	6	14	20	1	11	12
		Portable	Laptop PC, Tablet PC, etc.	C 2	c 2	1	35	36	1	19	20	0	33	33
		Other computers	Wearable computers, Wearable device, Smart watch, Smart glass, etc.	E 2	e 2	0	2	2	1	2	3	0	9	9
	Peripheral / Terminal	Memory device	HDD, SSD, USB Memory, Media drive, Disk device, NAS, DAS, SAN, etc.	G 2	g 2	19	18	37	13	20	33	5	14	19
		Printer device	Printer including multifunction machine, etc. (portable)	H 2	h 2	7	2	9	2	3	5	0	3	3
		Display device	CRT display, Monitor, Projector, etc.	J 2	j 2	14	51	65	6	73	79	8	47	55
		Other I/0 devices	Image scanner, OCR, Pen tablet, Stylus pen, etc.	M 2	m 2	0	4	4	1	2	3	1	2	3
		General purpose terminal	Display controller terminal, etc.	N 2	n 2	3	2	5	2	60	62	2	1	3
		Special purpose terminal	POS, Terminal for finance, insurance, etc.	Q 2	q 2	5	1	6	2	2	4	6	2	8
		Other peripheral	PCI Card, Graphics Card, Mouse, Keyboard, Cradle, etc.	R 2	r 2	8	60	68	3	28	31	13	34	47
		Copying machine/ Multifunction copying machine	Copying machine, Multifunction copying machine, etc. (Stationary)	S 2	s 2	1	2	3	0	2	2	0	2	2
	Communications equipment	Terminal equipment	Mobile phone, Smart phone, PHS phone, etc.	T 2	t 2	0	0	0	0	2	2	0	9	9
			Telephone device such as PBX, FAX, Key telephone systems, Cordless phone, etc.	U 2	u 2	0	1	1	0	2	2	0	1	1
		Network-related equipment	Communication line connecting device including Modem, Digital transmission unit, DSU, TA, Media converter, etc.	V 2	v 2	3	3	6	3	0	3	5	0	5
			LAN-related device, including Router, HUB, etc. Local switch, etc.	W 2	w 2	62	10	72	38	23	61	99	17	116
		Other communication equipment	Other communication equipment	X 2	x 2	9	5	14	9	5	14	13	13	26
Broadcast receiver equipment			TV, Radio, Tuner, Video recorder, Set-top box, etc.		k 2		0	0		4	4		2	2
Audio equipment			Speaker, Amplifier, IC recorder, Digital audio player, Headset, DTM, AI speaker, etc.	L 2	l 2	1	4	5	0	6	6	0	14	14
Video equipment		Video equipment	Digital video camera, Web camera, Network camera, Video player, Photo frame, Digital camera, Drive recorder, etc.	I 2	i 2	5	4	9	9	5	14	1	9	10
		Other video equipment	VR goggles, Scan converter, etc.	P 2	p 2	0	2	2	1	0	1	0	0	0
Entertainment lighting control equipment			Entertainment lighting control equipment, etc.	Z 2	z 2	0	0	0	0	1	1	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	2	2	0	1	1
		Electronic toy	Game console, Game pad, toy drone, etc.	Y 2	y 2	0	4	4	0	5	5	0	2	2
		Other Entertainment / Education equipment	Navigator, AI robot, etc.	F 2	f 2	1	0	1	1	1	2	0	0	0
	Other MME		MME other than the above	O 2	o 2	9	7	16	4	2	6	10	5	15
Total						201	235	436	154	289	443	194	232	426

● 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 (July 2025- September 2025)

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
FORCE Technology	Room 6- Aarhus	-	-	-	-	-	T-20203	July 13, 2028	Agro Food Park 13, DK-8200, Aarhus N, Denmark
MRT Technology (Suzhou) Co., Ltd.	WJ-AC1	-	-	-	-	✓	R-20253	July 13, 2028	Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, China
DEKRA Testing and Certification Co., Ltd.	FS-CB01	-	-	-	-	-	T-20208	July 13, 2028	No. 6, Lane 75, Wenlin St., Linkou Dist., New Taipei City, Taiwan, R.O.C.
DEKRA Testing and Certification Co., Ltd.	FS-CB01	-	-	-	-	-	C-20207	July 13, 2028	No. 6, Lane 75, Wenlin St., Linkou Dist., New Taipei City, Taiwan, R.O.C.
Huawei Technologies Co., Ltd.	No. 3 RE test site in Dongguan (10 m chamber 2#)	-	-	-	-	-	G-20244	July 13, 2028	No. 1, Gaoxiong Avenue, Songshan Lake Sci. & Tech. Industry Park, Dongguan, Guangdong, P.R.C
Huawei Technologies Co., Ltd.	No. 3 RE test site in Dongguan (10 m chamber 2#)	-	-	-	-	✓	R-20252	July 13, 2028	No. 1, Gaoxiong Avenue, Songshan Lake Sci. & Tech. Industry Park, Dongguan, Guangdong, P.R.C
Huarui 7layers High Technology (Suzhou) Co., Ltd.	Shielded room-SR14	-	-	-	-	-	C-20208	July 13, 2028	Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui, Province, People's Republic of China
Huarui 7layers High Technology (Suzhou) Co., Ltd.	Shielded room-SR14	-	-	-	-	-	T-20213	September 7, 2028	Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui, Province, People's Republic of China
Element Materials Technology Warwick Ltd.	Laboratory 5	-	-	-	-	-	T-20209	September 7, 2028	Unit E, Hedon Road, South Orbital Trading Park, Hull, United Kingdom
Element Materials Technology Warwick Ltd.	Laboratory 7	-	-	-	-	-	T-20210	September 7, 2028	Unit E, Hedon Road, South Orbital Trading Park, Hull, United Kingdom
BTL Inc.	CB25	-	-	-	-	✓	R-20257	September 7, 2028	No. 85, Ln. 298, Wengong 1st Rd., Guishan Dist., Taoyuan City 333001, Taiwan
3C Test Ltd	Anechoic Chamber 4	-	-	-	-	-	C-20210	September 7, 2028	Silverstone Technology Park, Silverstone Circuit, Northamptonshire, United Kingdom
TÜV SUD Asia Ltd., Taiwan Branch	Chamber A	-	-	-	✓	-	R-20254	September 7, 2028	(Rear Building) No. 31, Dinghu Road, Guishan District, Taoyuan City, R.O.C. Taiwan

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
TÜV Rheinland Taiwan Ltd.	Conducted Room (EMC Test Room)	-	-	-	-	-	C-20209	September 7, 2028	No. 458-18, Sec. 2, Fenliao Rd., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
TÜV Rheinland Taiwan Ltd.	Conducted Room (EMC Test Room)	-	-	-	-	-	T-20211	September 7, 2028	No. 458-18, Sec. 2, Fenliao Rd., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
TÜV Rheinland Taiwan Ltd.	966 Semi-Anechoic Chamber B	-	-	-	-	-	G-20245	September 7, 2028	No. 458-18, Sec. 2, Fenliao Rd., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
TÜV Rheinland Taiwan Ltd.	966 Semi-Anechoic Chamber B	-	-	-	✓	-	R-20255	September 7, 2028	No. 458-18, Sec. 2, Fenliao Rd., Linkou Dist., New Taipei City 244, Taiwan, R.O.C.
CSA Group Test and Certification Singapore Pte. Ltd (EMC)	Conducted Emission Room-telecommunication (wired) port	-	-	-	-	-	T-20212	September 7, 2028	7 Science Park Drive, #01-21/24, GENEO, Singapore
Jiangsu Electronic Information Product Quality Supervision & Inspection Institute	RES10	-	-	-	✓	✓	R-20256	September 7, 2028	No.100, Jinshui Road, Wuxi, Jiangsu, P.R.China
キヤリアエンジニアリング株式会社	#505 電波暗室	-	-	-	-	-	T-20207	September 7, 2028	静岡県富士市蓼原336番地

R: Radiated EMI measurement facilities below 1GHz
C: AC-mains-ports-conducted EMI measurement facilities
T: Telecommunication-port-conducted EMI measurement facilities
G: Radiated EMI measurement facilities above 1GHz

Contents of VCCI DAYORI No. 155 to 158

No.155 2025.1

No.156 2025.4

No.157 2025.7

No.158 2025.10

Closing words

Did you see the 2025 World Athletics Championships held in Tokyo this past September?

Over the course of about ten days, top-class athletes gathered from around the world to face off in the fiercest of competition. This was the first time the Championships were held in Japan in 34 years, the last time being in 1991. I watched all kinds of events on TV, and each of them was an absolute thrill. I got so fired up seeing Japanese and world records being broken, and Japanese athletes battling it out against world champions. The post-event interviews with athletes in particular brought a tear to my eye. They filled me with optimism and drive to do better myself!

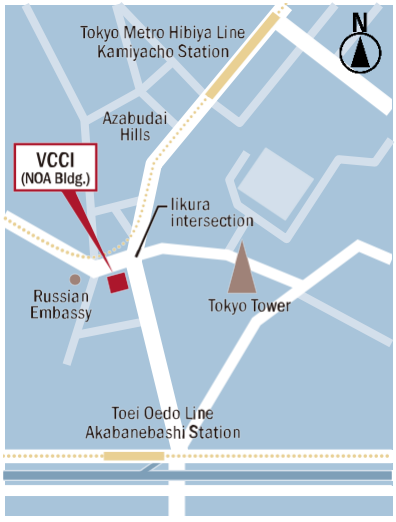
I was also struck by something other than the events themselves - the beautiful inner cityscape. The competitive-walking and marathon tracks encircled the National Stadium, with live broadcasts showcasing Tokyo's beautiful scenery including the gingko trees lining Meiji Jingu Gaien, the Imperial Palace, and Tokyo Station. While I don't live in Tokyo, seeing all that inspired me to take a walk around the area someday.

I was also deeply impressed by the Championships' main venue, the New National Stadium. It was apparently designed by the renowned architect Kengo Kuma. I hadn't heard of him before, but he'd been celebrated for his bold, unique designs both in Japan and overseas. When I looked him up, I learned that he had created many works of architecture all over the country. Among these were the Kadokawa Musashino Museum and Nihondaira Yume Terrace, which I myself had visited without knowing that Mr. Kuma was the architect.

For my upcoming trip to Tottori, I'm secretly planning to visit another of Mr. Kuma's creations, Takahama Café, near the Tottori sand dunes. Should you have the opportunity, dear readers, I suggest you check out his work!

The Championships, the cityscape, and the one-of-a-kind architecture reminded me what fun new thrills and discoveries can add to our everyday lives. They convinced me that life can be endlessly joyful when we pursue stimulation while cherishing our finer sensibilities. I hope I can continue to savor every meal and drink in good company while treasuring life's little discoveries.

(T.S.)



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