VCCI DAYORI

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Contents

Contribution

EMC Standardization In the Field: 40 Years of Experimental Data and International Cooperation

Toshio Chiyojima

My first encounter with EMC was in 1980, my third year at the company, when I worked on ESD countermeasures for rack-mounted minicomputer for industrial process control using TTL ICs. Malfunctions were occurring at around 250 V of static electricity, and after some trial and error, we addressed them using measures such as interface-cable shield processing. Due to subsequent technological advancements, microprocessors and personal computers appeared on the scene, along with rising demand for product development to comply with electromagnetic-interference regulations such as those of the FCC in the US or the VDE in Germany. After the founding of VCCI, I remember struggling a great deal to make our company's products conform to VCCI standards.

My involvement in standardization activities began with my participation in the Electromagnetic Interference and Immunity countermeasures technical committee of Japan Electronic Industry Development Association (JEIDA). After that, I was involved in considerations regarding the IEC 61000-4 series of the basic immunity standards as chief examiner of the Conducted Immunity Working Group. For example, for conducted-disturbance immunity tests under IEC 61000-4-6, we confirmed through experimentation that CDN configurations (1:1 configurations for both interference injection and termination) caused flattening of frequency characteristics, and this was reflected in the standards through IEC SC77B experts.

From the 1980s onward, advancements in digital technologies accelerated, expanding digitalization of analog processing to consumer electronics, thus improving performance and production efficiency. In 2001, even CISPR began serious efforts to unify standards for AV and IT equipment. Subcommittees E (in charge of AV equipment) and G (in charge of IT equipment) were integrated to create a new subcommittee, I, in charge of multimedia equipment. In 2003, I attended my first CISPR international conference, held in Jeju Island, South Korea. From here on, the development of CISPR 32 (which integrated CISPR 13 and 22), and CISPR 35 (which integrated CISPR 20 and 24) began in earnest.

There was a debate on what classifications to use in CISPR 32. It was suggested that equipment obtainable on the market be defined under Class B based on Part 15B of the US FCC standards, but this was not deemed appropriate because even business servers were being sold online at the time. In the end, the classification system used in CISPR 22 was retained.

Meanwhile, criteria for determining malfunctions for each product function became a major focus of CISPR 35. We once tried suggesting strict criteria for scanning and printing functions so that our products would stand out from the competition, but international coordination demanded compromise, and we eventually accepted a partial relaxation of the criteria.

We also suggested at Multimedia EMC technical committee of the Japan Electronics and

Information Technology Industries Association (JEITA), in cooperation with the Association of Musical Electronics Industry (AMEI), that human intervention be allowed in the event of malfunction due to the special characteristics of MIDI interfaces. This suggestion made its way into the first edition of CISPR 35.

The first editions of CISPR 32 and CISPR 35 were published in 2012 and 2016 respectively. During the formulation of CISPR 35, it took time for us to deliberate on in-band judgment criteria and relevant provisions for broadcast-receiver tuner ports. The road to publication of the standards was also riddled with twists and turns. For example, our draft was rejected in the FDIS stage when a requirement was added for radiated electromagnetic fields of 30 V/m for station-building communication facilities. Even now, issues are still being identified and maintenance activities are being conducted accordingly.

The second edition of CISPR 32 incorporated a new stipulation to exclude peak-detector measurements at or above 1 GHz for radiation caused by electrical-discharge phenomena. Through an experiment commissioned by the Electromagnetic Compatibility Conference Japan (EMCC) from 2015 to 2018 to prove that electrical-discharge noise from paper conveyance by scanners and printers did not influence radio communication, the influence on various radio-communication systems was investigated. Based on the knowledge gained from this experiment, we proposed appropriate limits on APD (amplitude probability distribution) for the third edition of CISPR 32. These results were announced at IEEE EMC Sapporo in 2019, and were adapted by IEICE into an English-language paper. Through these experiences, including the citing of our paper as an academically substantiated basis for a proposal, I was struck by the effectiveness of academic research in standardization.

Up until now, I have consistently conducted my activities based on my belief in "field-led proposals based on experimental data". In no way do I deserve sole credit for the achievements made through these initiatives. These achievements were made thanks to the tremendous efforts of those at JEITA, VCCI, EMCC, AMEI, and other relevant parties. I am deeply grateful to you all for your continued support and cooperation.

Going forward, I aim to create clear standards with no room for misinterpretation, and to continue making proposals based on my knowledge from the field.

Toshio Chiyojima

March 1977	Graduated from the Department of Electronic Engineering, School of Engineering, Tohoku University
April 1977	Joined Panafacom Limited
December 1987	PFU Limited (post-merger with USAC Electronic Industrial)
April 2010 to December 2020	EMC Center, PFU Technoconsul Limited
March 2021 to July 2023	Panasonic Automotive Systems Co., Ltd.
January 2024 to present	National Institute of Information and Communications Technology

Received awards such as the IEC 1906 Award (2016) and Electromagnetic Compatibility Conference Japan Award (2020)
Presently serving as an expert member of CISPR SC-I and member of the CISPR I Working Group of the Radio Wave Utilization Environment Committee

Committee Activities

● Council

Date	June 25, 2025
Agenda items	● Agenda item 1 FY 2024 business report ● Agenda item 2 FY 2024 settlement of accounts (draft) ● Agenda item 3 Selection of councilors, directors, and auditors (draft) ● Agenda item 4 Selection of Head Councilor
Decisions and reported items	● Agenda item 1 Approved ● Agenda item 2 Approved ● Agenda item 3 Approved ● Agenda item 4 Approved ● Reported item 1 FY 2025 business plan ● Reported item 2 FY 2025 budget

● Board

Date	June 10 and 25, 2025
Agenda items	● Agenda item 1 FY 2024 business report (draft) ● Agenda item 2 FY 2024 settlement of accounts (draft) ● Agenda item 3 Selection of members of the Registration Committee for Measurement Facilities ● Agenda item 4 Revision of accounting auditors' compensation ● Agenda item 5 Calling of the ordinary board meeting ● Agenda item 6 Selection of representative of the board of directors, and others
Decisions and reported items	● Agenda item 1 Approved ● Agenda item 2 Approved ● Agenda item 3 Approved ● Agenda item 4 Approved ● Agenda item 5 Approved ● Agenda item 6 Approved

● Steering Committee

Date	May 28 and June 18, 2025	
Agenda items	● Agenda item 1	Topics of the 58th board meeting "FY 2024 business report (draft)", "FY 2024 settlement of accounts (draft)"
	● 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 the VCCI International Forum 2025
	● Reported item 4	Report on participation in the APEMC 2025 Taipei Taiwan Symposium
	● Reported item 5	Report on the joint conference between BSMI, CTCA, and VCCI
	● Reported item 6	49th REDCA meeting: Business trip report
	● Reported item 7	Report on participation in COMPUTEX TAIPEI 2025

● Technical Subcommittee

Date	May 15, 2025	
Agenda items	● Agenda item 1	Technical Subcommittee's planned activities for FY 2025
	● Agenda item 2	Activities for the standardization of mains-cable termination conditions
	● Agenda item 3	Study of the scope of exclusion for emission from EUTs with wireless functionality
	● Agenda item 4	Verification and RRT of the voltage/current conversion ratio of improved transformer-coupled AANs
	● Agenda item 5	Verification of NSA measurement methods that use hybrid antennas
	● Agenda item 6	VCCI Tutorial held at APEMC 2025 Taipei Taiwan Symposium
Continuing agenda items	● Agenda items 1, 2, 3, 4, and 5	
Decisions and reported items	● Agenda item 6	Tutorial held on May 19 at APEMC 2025 Taipei Taiwan Symposium to introduce the status of VCCI's management of CISPR 32 Ed.2.0 in Japan, and initiatives for next term's revision to the CISPR 32 standard

● International Relations Subcommittee

Date	April 9, May 14, and June 11, 2025	
Agenda items	● Agenda item 1	Survey of Trends in World EMC Regulations
	● Agenda item 2	Preparations for lectures at VCCI's 40th anniversary
	● Agenda item 3	Structural revisions to committees
	● Agenda item 4	VCCI Dayori manuscript "Report on EMC-Regulations Survey at the South Korean National Radio Research Agency (RRA)" (draft)
	● Agenda item 5	VCCI Dayori manuscript "Report on the VCCI International Forum 2025" (draft)
Continuing agenda items	● Agenda item 1	Decision to publish details of the next update to the Survey of Trends in EMC Regulations (next scheduled update: July 11)
	● Agenda item 2	Committee assistance with lectures at VCCI's 40th anniversary (translation of presentation materials)
Decisions and reported items	● Agenda item 3	Starting next fiscal year, Chairs and Vice-Chairs will serve for two years, and regular-member companies will take turns offering a new Chair and Vice-Chair.
	● Agenda item 4	Approved
	● Agenda item 5	Approved

● Market Sampling Test Subcommittee

Date	April 10, May 8, and June 12, 2025	
Agenda items	● Agenda item 1	Summary of FY 2024 market sampling test reports
	● Agenda item 2	Summary of FY 2024 document inspection reports
	● Agenda item 3	Policy for FY 2025 market sampling tests
	● Agenda item 4	Notes on commissioned testing
	● Agenda item 5	Handling market sampling tests relating to VHF-LISNs
	● Agenda item 6	Status of FY 2025 market sampling tests and document inspections
Decisions and reported items	● Agenda item 1	A report was made summarizing the FY 2024 market sampling tests. 65 products were selected and tested, and judgments were passed for 64 products. The judgment of 1 failed-tentative product will be carried over to FY 2025. Note that judgments were completed for 66 products, including two "failed-tentative" products selected in FY 2023 that failed to meet the standards in FY 2024.
	● Agenda item 2	A report was made summarizing the FY 2024 document inspections. 52 products were selected, of which document inspections were completed for 50 products, excluding those that were discontinued.
	● Agenda item 3	The draft policy for FY 2025 market sampling tests was deliberated on and approved.
	● Agenda item 4	Notes on performing market sampling tests were deliberated on and approved. The notes were also approved to be sent to commissioned testing laboratories.
	● Agenda item 5	Due to the issuance of VHF-LISN guidance documents, a policy for handling market sampling tests was deliberated on and approved.
	● Agenda item 6	In the FY 2025 market sampling tests, selection of up to 23 products is underway. A judgment was finalized for 1 product being investigated as "failed-tentative" since FY 2024. Up to 14 products have been selected for document inspections, and document inspections were completed for 5 products following preliminary screening.

● Public Relations Subcommittee

Date	May 9 and June 6, 2025
Agenda items	● Agenda item 1 Report on participation in COMPUTEX TAIPEI 2025 ● Agenda item 2 Booth construction for exhibitions in Japan ● Agenda item 3 TECHNO-FRONTIER 2025 ● Agenda item 4 Novelty gifts ● Agenda item 5 Overseas exhibitions other than COMPUTEX TAIPEI
Continuing agenda items	● Agenda item 3 Follow-up deliberations on draft booth designs, distributed materials, novelty gifts, and so on ● Agenda item 5 Follow-up deliberations on whether to exhibit in mainland China, where our member count is increasing
Decisions and reported items	● Agenda item 1 Report on participation (see page 24) ● Agenda item 2 We have changed our booth-construction company. It was reported that construction fees are not expected to differ significantly from last year's booth-construction company. We will request the draft booth design from the aforementioned company for TECHNO-FRONTIER 2025 in July after the booth position has been finalized. ● Agenda item 4 Novelty gifts not created by the Public Relations Subcommittee are also scheduled to be distributed at future exhibitions.

● Education Subcommittee

Date	May 9, 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
Continuing agenda items	● Agenda items 1, 2, and 3
Decisions and reported items	● Agenda item 1 - The following four training sessions have been established and scheduled for FY 2025: (1) The basic technique of EMI measurement [held once in each half of the fiscal year; held twice total] (2) The basic of electromagnetic waves, EMI measurement technique [held once in the first half and twice in the second half of the fiscal year] (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 (MIU) [held once in the second half of the fiscal year] ● Agenda item 2 - Regarding textbook revision work for "The basic technique of EMI measurement" and "The basic of electromagnetic waves, EMI measurement technique", revisions were applied to the new guidance documents, and completed based on last fiscal year's questionnaire results. - "The basic of electromagnetic waves, EMI measurement technique" (classroom lectures: July 3 to 4, hands-on training: July 10 to 11): For the first time, classroom lectures will be held in a hybrid format combining online (livestream) and face-to-face formats, so equipment is being prepared accordingly. ● Agenda item 3 - "The basic technique of EMI measurement" (held on June 13) was held in online (livestream) format, with certificates of attendance given to all 10 attendees.

● Registration Committee for Measurement Facilities

Date	April 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): 19 companies Radiated emission measurement facilities below 1 GHz: 11 AC-mains-ports-conducted emission measurement facilities: 8 Wired-telecommunication-port-conducted emission measurement facilities: 7 Radiated emission measurement facilities above 1 GHz: 16 Applications returned with comments: None Applications carried over to the next meeting: None
Date	May 26, 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): 16 companies Radiated emission measurement facilities below 1 GHz: 10 AC-mains-ports-conducted emission measurement facilities: 12 Wired-telecommunication-port-conducted emission measurement facilities: 10 Radiated emission measurement facilities above 1 GHz: 9 Applications returned with comments: None Applications carried over to the next meeting: None
Date	June 16, 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): 15 companies Radiated emission measurement facilities below 1 GHz: 12 AC-mains-ports-conducted emission measurement facilities: 8 Wired-telecommunication-port-conducted emission measurement facilities: 8 Radiated emission measurement facilities above 1 GHz: 11 Applications returned with comments: None Applications carried over to the next meeting: None

4th instalment

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

Amemiya EMC Consulting Representative
Fujio Amemiya

1. Introduction

In the third instalment of this series, *My First Encounter with EMC* (part 2) (about considering countermeasures and shielding), I described our work on countermeasures to solve an EMC problem occurring in the (then) new mini telephone (Type-701P). This problem consisted of strong audible noise being output from the phone, making calls difficult. To prevent the intrusion of TV broadcast signals from entering the telephone, we shielded the phone cord and curled cord, as well as the telephone housing. This was the very first method we adopted, but it took time to consider and discuss how to apply the shielding and to what housing, and whether perfect shielding was possible in the first place. For this reason, as I touched on in the third instalment, we put the telephone shielding countermeasures on hold, and proceeded to the phase-2 consideration topic "countermeasures targeting the telephone's internal electronic circuits and their printed circuit boards". We decided that if necessary, we would reconsider how much shielding would be needed based on the results of these considerations.

In this fourth instalment, I will continue my story, *My First Encounter with EMC* (part 2) (about considering countermeasures and circuits), by discussing this next phase of considerations on the new mini telephone's electronic circuits and printed circuit boards. Namely, I will discuss the process by which we suppressed the noise output from the phone's receiver, thus achieving good call functionality.

2. Studying countermeasures to prevent the intrusion of strong audible noise into the telephone

(1) Discussion prior to starting the study

The countermeasure study I will discuss here concerns the dialing, ringing, and call circuits inside the telephone, and the printed circuit boards on which these circuits were mounted. First, I spread out a complete circuit diagram of the telephone (A3 blueprint copy) on my desk. I then drew in the demarcations between the handset and base set circuits, and the connection points at both ends of the curled cord and telephone cord. After that, it was easy enough to check the mounting state of the circuit inside the base set and the status of the connection between the curled cord and telephone cord. However, I had some difficulty cross-checking the mounting state of the circuit inside the handset with the circuit diagram. I had to meticulously cross-check the high-density circuit mounted on the printed circuit boards and the telephone's circuit diagram while using a magnifying glass to check the call-circuit IC pin numbers and wiring pattern. This was a preliminary task required to begin

studying countermeasures against the intrusion of TV broadcast signals (phase 2). In this phase, I remember staring at the diagram on my desk, filled with anticipation and apprehension as we began candidly brainstorming potential countermeasures to alleviate (and if possible, eliminate) the intruding noise, giving reasons for proposing each draft countermeasure.

During this discussion, I figured that because TV broadcast signals could enter the telephone in a variety of ways, we would be considering the following two points:

1. TV broadcast signals entering the telephone could also infiltrate the call-circuit IC, and would no doubt be detected by the circuit elements in that IC. However, wouldn't the output level of audible noise differ depending on which circuit element detected the signals?
2. Why would the detected audible-noise component reach a level that masks the caller's voice signal and be sent to the other party on the call?

Thus ensued a rather long discussion of these two points with the other PT members. I began by stating my belief that the key to this noise-intrusion countermeasure lay in the fact that the telephone user's call signal was so perfectly masked by the intruding noise as to be incomprehensible to the other party. Then, I gave my reasoning, summing up the following results of my own study:

(a) Past telephones (such as the Type 600) used carbon transmitters, so the signal generated by the input voice did not need to be amplified, and could be sent at its original level to the phone circuit. However, in the new mini telephone, which used an electromagnetic transmitter, when the caller's voice was input into the transmitter to be sent to the other party, the resulting voice signal had an extremely low voltage. To send this signal to the telephone's call circuit and successfully establish a call, the voltage would need to be amplified in the transmitter circuit in the call-circuit IC to a level determined by the telephone-transmission standards.

(b) If the TV broadcast signals' 60-Hz component entered the transmission circuit in the call signal's IC and was detected as external noise, the caller's voice signal would likely be superimposed on that noise signal, degrading the transmission signal's S/N. If the level of this detected noise-signal was stronger than the caller's voice signal sent from the telephone's transmitter, wouldn't the caller's voice signal be masked by the noise signal, leading to extremely serious impacts on the call?

(c) The 60-Hz component of the TV broadcast signals detected in the aforementioned step 2 would likely travel through the 2-wire/4-wire conversion circuit (sidetone circuit) in the call-circuit IC, causing strong audible-noise output from the user's telephone receiver.

(d) Therefore, I believe the key to solving this problem lies in the signal component after detection of the TV broadcast signals entering the transmitter-connection terminals of the call-circuit IC. If my hypothesis is true, we could connect, say, capacitors with good high-frequency characteristics to both input terminals for the signal from the transmitter of the call-circuit IC. If by doing so, we are able to shunt TV broadcast signals with a 60-Hz audible component much stronger than the transmission signal input from the transmitter, this might help solve this noise-intrusion problem.

Looking back, my hypothesis and proposed countermeasure were so specific that our brainstorming went on for some time afterwards (I'll spare you the details). However, no other specific draft countermeasures were proposed in that time, so we eventually decided to go on site (to the Tokyo Bureau of Communications) to check the effectiveness of my proposed countermeasure.

(2) On countermeasures to prevent the intrusion of TV broadcast signals into the transmitter-connection terminals of the call-circuit IC

To check the effectiveness of my aforementioned countermeasure, we first went to Musashino ECL's materials room stocked with common measuring instruments, parts, and materials used in R&D. We procured several types of capacitors, considering the capacity difference in capacitors with good high-frequency characteristics, and began cutting their lead wires to the shortest possible length for connection to the transmitter-connection terminals (IC pins) of the call-circuit IC. (Note: At the time, it was difficult to get ahold of chip capacitors. Even if we could, we decided it was too difficult for amateurs to connect them to the pin terminals of the call-circuit IC mounted on the printed circuit board, so we gave up on that idea.)

After that, we headed to the Tokyo Bureau of Communications. After removing the handset housing (case) of the telephone that was outputting strong audible noise, we made a bridge connection across the transmitter-connection terminals of the call-circuit IC using our capacitors and checked the reduction in audible noise level. For this, we used bamboo tweezers (we avoided metal tweezers due to the potential risk of the human body functioning as an antenna when holding them) to place both terminals of the capacitor in contact with the input terminals for the IC transmission signal. Lo and behold! The humming noise output from the telephone handset had dropped significantly. I still vividly remember the joy and surprise of that moment. All the PT members on the scene cheered, "We did it!" When brought to the ear, the receiver's humming noise was much softer, but still faintly audible, so we proceeded to try out each of the capacitors we brought to test the results at different capacity values. We found that the audible noise output was mostly eliminated, and that there was a rough range of capacitor capacity limits at which the noise did not interfere with calls. We also found that the shorter the capacitor's connected lead wires, the greater the effect.

3. The rest of the story

Based on the results of our study at the Tokyo Bureau of Communications, we held discussions and coordinated with the implementation team at the Telephone Laboratory. Because it would take a long time to change (redesign) the wiring pattern of this telephone handset's printed circuit board, which had many electronic circuits, and because this telephone was still in its on-site testing stage, we agreed with the implementation team to urgently discuss a workaround to the problem. Based on the results, we installed small, thin strip-type capacitors on the transmission-signal input terminals for the call-circuit IC, which were on the underside of the call-circuit IC mounting position on the printed circuit board. These strip-type capacitors' shape and dimensions were mostly equivalent to the bottom of the IC, and the material and thickness of the dielectric were determined based on the capacity of the required capacitor. As a result, even when TV broadcast signals from Tokyo Tower entered directly through the upper-floor balcony of the Tokyo Bureau of Communications, we confirmed that we were able to provide dialing, ringing, and call functionality without issue.

This project of installing the new strip-type capacitor was only a stopgap measure for us to start on-site testing in earnest. Afterwards, we formulated technical documents for a commercial model of the telephone, applying the results of our on-site testing, and held discussions with the research-commercialization department and product-commercialization department. (I don't know the details, but among these were considerations for a finalized version of the countermeasure using the strip-type

capacitor.) Finally, our new mini telephone was commercialized, and the Type-701P was deployed nationwide under the nickname "mini push-button dial phone".

4. Afterword

In this fourth instalment, I concluded my story of how we addressed the audible noise caused by the intrusion of TV broadcast signals, severely impacting calls in the new mini telephone.

In the fifth instalment, I plan to discuss an issue caused by telephone EMC emission, which occurred in an electronic-telephone prototype. This prototype featured both a dial-monitoring function for displaying the dialed number when pushing the push-button dial, and a function for playing information such as time announcements and weather forecasts on a speaker. I will recount how we found the cause and solution to that issue as part 3 of *My First Encounter with EMC*.

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 VCCI International Forum 2025

International Relations Subcommittee

We at the VCCI Council provide information to our members on the status of countries and regions enacting or discussing EMC regulations. As part of our effort to deliver and explain the latest news to our members as fast as possible, we have been holding International Forums on the topic every year.

This year's International Forum was held in on-demand format from March 24 to March 28, 2025. Even when holding the event online, we aimed to disseminate information and approach all of our Japanese and overseas members as usual.

For this year's International Forum, we invited guest speakers from Taiwan (BSMI), Malaysia (SIRIM), and the US, and gave presentations on regulatory trends in various countries and regions.

[Invited countries and presentation topics]

- Taiwan: Latest EMC regulatory trends in Taiwan
- Malaysia: Status of EMC implementation in Malaysia
- US: Overview of draft revisions to ANSI C 63.4

There were 166 applicants to attend the speeches, mostly member manufacturers and testing laboratories in Japan (133 Japanese members and 33 overseas members (Taiwan, South Korea, the US, China, Czechia, Canada, the UK, and Germany)), which drew a total of 686 accesses by viewers.

We received extremely helpful feedback through our questionnaire such as: "displayed presentation materials matched our viewing language, making things very easy to understand", and "The speeches by expert authorities and representatives from various countries and regions were a valuable learning experience. Thank you for hosting such wonderful speeches." We were pleased to hear that Forum participants found our provided information useful.

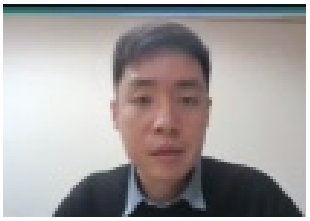
We also received requests such as: "The on-demand format was so helpful. Please consider leaving these videos up for a bit longer for a more flexible viewing experience."

VCCI's International Relations Subcommittee plans to continue holding these International Forums, selecting topics according to members' wishes and attracting more participants. If you would like to request a presentation by a certain country or region, or request a certain topic, please contact the VCCI Secretariat.

VCCI International Forum 2025 Program

・ Greeting from Chairman of VCCI International Relations Sub-committee;
Mr. Yukio UCHIDA, Panasonic Operational Excellence Co., Ltd.

No.	Theme	Lecturer
1	Greeting & Overview of VCCI Council	Mr. Akira ODA Director, VCCI Council
2	Latest Trends in Taiwan's EMC Regulations	Mr. LEE, Yuan-Chun Technical Specialist Bureau of Standards, Metrology and Inspection (BSMI)
3	EMC implementation in Malaysia	Mr. ZARISMAIL, Abd Rahman Head of RFEMCT Testing Services Department SIRIM QAS International Sdn Bhd
4	Draft ANSI C63.4:202? a review	Mr. Andy GRIFFIN Chair of ANSI C63.4 WG Cisco Systems



Mr. LEE, Yuan-Chun
(Taiwan)

Mr. ZARISMAIL, Abd Rahman
(Malaysia)

Mr. Andy GRIFFIN
(U.S.A.)

49th REDCA Meeting: Business Trip Report

Steering Committee

Date and time	:	9:00-17:00 May 14 (Wed), 9:00-12:30 May 15 (Thu), 2025
Venue	:	The Botanique Hotel, Czech Republic
Participants	:	About 120 members and observers from Europe, the US, Canada, and Japan, participating both face to face and online (about 220 in total) Chairperson: Mr. Holger Bentje Secretariat: Mr. Nick Hooper, Assistant Secretariat: Mr. Neil Bonter
Participants on business:		Akira Oda (Executive Director), Yoko Inagaki (Program Manager)
Reference	:	REDCA membership (as of June 5, 2025) of 303 organizations (regular members and observers) Regular members : 298 organizations (of which 15 are Japanese members) Observers : 8 organizations (of which 2 are Japanese (Ministry of Internal Affairs and Communications, etc.))

1. Introduction

The Radio Equipment Directive Compliance Association (REDCA) was formed based on the requirements of Radio Equipment Directive 2014/53/EU, and holds biannual general meetings for members on radio equipment compliance with EEA (European Economic Area) regulations and technical standards. These meetings also address compliance in countries that have signed mutual recognition agreements such as EU countries, the US, Canada, Japan, New Zealand, and Australia.

As a member of REDCA, the VCCI Council stays abreast of the latest trends in European regulations and market surveillance status, and has been participating in these meetings since 2011 to disseminate this information to VCCI members.

2. Overview of operations

A report on REDCA operations stated that REDCA's financial status was sound and membership fees were reasonable. REDCA's member count, shown earlier in this document, has increased to 12 organizations.

3. Reports from each organization

3.1 Update from the EU Commission

(a) Cybersecurity policy

This policy targets internet-connected radio equipment. The RED cybersecurity regulations based on the CRA (Cyber Resilience Act) for the purpose of network protection, user privacy, and protection against monetary fraud will be applied from August 1, 2025.

Three baseline harmonized standards (EN 18031-1, EN 18031-2, and EN 18031-3) were created by CEN/CELENEC based on CRA. Originally, the standards' publication deadline was September 30,

2023, but after an extension requested by the institution creating the standards, the standards were published on October 2, 2024. The EU Commission posted these standards on OJEU on January 28, 2025.

Conformity evaluations to which none of these harmonized standards apply must be accredited by an accreditation body.

Notes on the scope of the European Radio Equipment Directive Article 3(3) (Cybersecurity), for reference:

- Internet-connected radio equipment shall not interfere with networks or network functionality, shall not abuse network resources, and shall not cause intolerable degradation of services.
- Internet-connected radio equipment shall implement measures ensuring the protection of users' and subscribers' personal information and privacy.
- Internet-connected radio equipment shall support certain functionality ensuring protection from unauthorized acts.

(b) RED harmonized standards

The committee has decided on the following harmonized standards regarding the latest HS:
EN 18031-1, EN 18031-2, EN 18031-3

(c) Common Charger Directive

A guidance document for interpreting the Common Charger Directive was released on May 7, 2024:
"Guidance for the Interpretation of the Common Charger Directive"

Regarding wireless chargers, in response to standardization requests received on February 26, 2025, the European Commission plans to perform standardization by March 4, 2027.

(d) RRS (reconfigurable radio systems)

RRS can cause interference with software control of radio parameters. For this reason, this new initiative puts Article 3(3)(i) and/or Article 4 into effect, and guarantees that software installed on radio equipment and devices on the market fully complies with all applicable requirements of RED. The European Commission launched an independent, year-long fact-finding survey in August 2024 to help evaluate the effects of these standards.

(e) Refurbished products (repaired products that guarantee good-as-new quality)

When refurbished imported products are put on the EU market, they must conform to EU rules. This could be a problem for old products. This consideration might be incorporated into the next revision to the NFL (new Legislative Framework).

3.2 IEC/CISPR update

A report was given on the status of CISPR and SC77A/B activities.

- IEC 61000-4-2:2025 Ed.3.0 was published on March 7, 2025.
- CISPR 32 Ed.3.0 and CISPR 35 Ed.2.0 are expected to be released as international standards around December 2026.
- The draft CISPR 32 Ed.3.0 does not mention wireless power transfer, but does mention MME with wireless functionality.

3.3 Report from ADCO RED (Administrative Co-operation Working Group)

Since the last REDCA meeting, ADCO RED has been held once (for the 28th time from March 11 to 13, 2025).

- Refurbished products
  Issues include definition, traceability, identification, responsibility, conformity with standards.
- Draft revisions to the RED Guide were released before this summer, and comments were collected from the public. Meetings on these revisions will be held from summer onward.
- Specific numbers from the market survey were not published this time.
- Some products have vulnerability issues, such as usernames and passwords remaining set to "admin".

3.4 Update on MRA activities from the USA

- Japan-USA MRA
  In the USA, ten accreditation bodies are registered (two more than six months ago). These accreditation bodies participate in MIC MRA workshops once a year.
- The FCC is working with TCBs (telecommunications certification bodies) to consider draft rules for strengthening requirements and oversight of testing laboratories and accreditation bodies to build a more secure and resilient supply chain for communication equipment. The next meeting is planned to be held on May 22, 2025.

3.5 ETSI Update

- The following issues are being considered as factors delaying the citation of harmonized standards:
  - Difference between tolerance and measurement uncertainty
  - Handling of alternative test methods (such as open-site testing and semi-anechoic chambers) (the idea that there ought to be one test method)
  - Handling of cases where environmental conditions stipulated in the standards differ from conditions on environments where products are used

3.6 Update on Japan Radio Regulations

- There have been fewer cases of conformity certification, but the rate of accreditations by MRA increased by about 40% in 2023.
- For Japanese 5G systems, the 4.9-GHz band was added in September 2024.
- Of the frequency bands used by TPMS (Tire Pressure Monitoring System) and RKE (Remote Keyless Entry) in automobiles, the 433-MHz band is used in Europe, America, China, and South Korea, but has not been used in Japan. This band became usable in February 2025.
- The results of the FY 2024 trial-purchase tests and test-report reviews were reported. Points of non-conformity include transmission power, carrier-sense functionality, measuring-instrument calibration, and test conditions.
- There was a presentation on the MIC MRA Workshop 2025 held in Japan in March 2025.

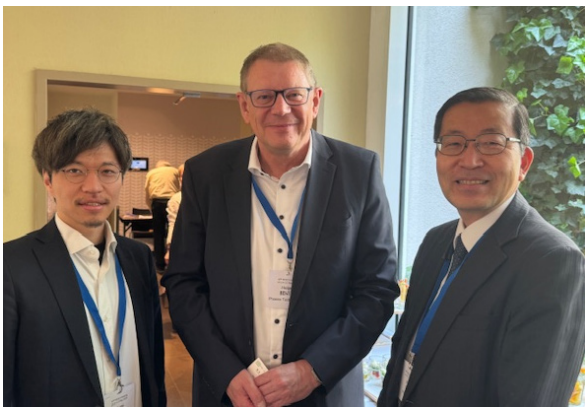
4. Next meeting

The next meeting is planned to be held in the third week of November 2025.

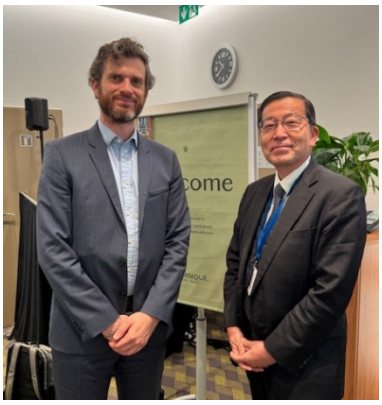
<Impressions>

In Europe, cybersecurity regulations will finally be launched in August. European market surveillance has extracted issues regarding vulnerabilities in communication equipment. A report was given on topics presently being discussed regarding current issues in the standards (such as the handling of refurbished products and reconfigurable radio systems, and wireless power transfer). This meeting was a meaningful opportunity to identify future regulatory trends.

We were also able to take this opportunity to greet the newly appointed members of the EU commission.



REDCA Chairperson: Mr. Holger Bentje



EU commission: Mr. Alexis BASIAUX

REDCA Assistant Secretariat: Mr. Neil Bonter

Report on APEMC 2025 Taipei Taiwan Symposium

Steering Committee/Technical Subcommittee

VCCI held a Tutorial at this fiscal year's APEMC 2025 Taipei Taiwan to report the status of VCCI's management of CISPR 32 Ed.2.0 in Japan and initiatives toward next term's revisions to CISPR 32. The Technical Subcommittee presented its submitted papers at the Award Poster Competition Sessions and Oral Sessions, and participated in the Symposium to gather information by attending Keynote speeches, Tutorials & Workshops, Oral Sessions, and Poster Sessions.

Venue	: Taipei International Convention Center, TICC, Taipei Taiwan
Event period	: May 19 (Mon) to 23 (Fri), 2025
Participation period	: May 19 (Mon) to 22 (Thu), 2025
Participants	: Yoshiharu Akiyama (member of the Registration Committee for Measurement Facilities) (NTT Advanced Technology) Shinichi Okuyama (Chair of the Technical Subcommittee) (NEC Platforms) Nozomi Miyake (member of the Technical Subcommittee) (NEC) Kunihiro Osabe (member of the Technical Subcommittee), Akira Oda (Executive Director), Hironari Koga (Secretary General), Minoru Hirata (Counselor), Hidenori Muramatsu (Counselor), Hirohito Shigemitsu (General Affairs Dept. Manager), Seijun Fukaya (Adviser) (VCCI Council)

Overview of the symposium

This year's program consisted of 5 Keynote speeches, 8 Tutorial Sessions, 7 Workshop Sessions, 10 Special Sessions, 23 Oral Sessions, 26 Poster sessions, and the Exhibition.

216 papers were submitted, of which 163 were adopted, resulting in a 75% adoption rate. Of the adopted papers, 75 (46%) were from Taiwan and 41 (25.2%) were from Japan. Other countries submitting papers included Singapore, China, South Korea, the US, Germany, Thailand, and Poland. A total of 16 countries and regions submitted papers.

On May 19, the VCCI Council's Steering Committee held a Tutorial Session titled "Operation State of CISPR 32 Ed.2.0 in Japan and Explanation of the Guidance Toward the Next Revision of CISPR 32". The Tutorial Session was presented in parts, as shown in the following section.

At the Award Poster Competition Sessions on May 20 and the Oral Sessions on May 22, Ms. Miyake presented papers submitted by the VCCI Council. As a result of the Award Poster Competition, VCCI won the Popular Poster Prizes award, whose winner was selected by votes from participants.

1. Tutorial

Date and time : May 19 (Mon), 2025

Number of attendees : 20

№	Themes	Presenter
TS-D1 1	Operation state of CISPR 32 Ed.2.0 in the VCCI Council	The VCCI Council Akira Oda
TS-D1 2	Points to note from content analysis of market sampling test results and document review of test reports (analysis of the trend of non-conformities)	The VCCI Council Minoru Hirata
TS-D1 3	Analysis of the results of deliberations on measurement facilities (analysis of the trend of comments)	The VCCI Council Seijun Fukaya
TS-D1 4	Explanation of the guidance (issued in 2024) toward the next revision of CISPR 32 "Guidance for calculation of measurement instrumentation uncertainty on radiated emission measurement with a hybrid antenna"	The VCCI Council Shinichi Okuyama
TS-D1 5	Explanation of the guidance (issued in 2024) toward the next revision of CISPR 32 "Guidance for performing radiated emission measurement in the condition of EUT mains cable terminated with balanced VHF-LISN"	The VCCI Council Kunihiro Osabe

2. Papers submitted by the VCCI Council

(1) Presented papers relating to the Conducted Emission WG

- Paper title : "Experimental evaluation of Transformer-Type AANs Specified by Figure G.3 in CISPR 32 for Conducted Emissions due to Conversion from Differential Mode to Common Mode"
- Presenter : Nozomi Miyake (member of the Technical Subcommittee)
- Session name : Award Poster Competition Sessions (May 20, 2025) and EMC Measurements and Instrumentation Ⅳ (May 22, 2025)
- Paper overview : The theoretical value of 8-line transformer-type AANs' voltage/current conversion ratio is 44 dBΩ as stipulated in CISPR 32 Ed.2.0 Figure G.3. However, in the common mode converted from differential mode, the voltage/current conversion ratio fluctuates depending on fluctuations in the common-mode impedance of the EUT. This paper proposes an improvement to 8-line transformer-type AANs, and shows that the voltage/current conversion ratio remains at 44 dBΩ for the common mode converted from the differential mode despite fluctuations in the common-mode impedance of the EUT.

3. Keynote overview

(1) Keynote 1

- Title : New Breakthroughs and Outlook on Heterogeneous Integration Technology
- Presenter : Dr. Chen-Hua Douglas Yu
- Affiliation : Taiwan Semiconductor Manufacturing Company Ltd., Taiwan
- Overview : TSMC's 3DFabric technology platforms, including CoWoS, InFO, and SoIC, were established to enable 5G, HPC (High Performance Computing), AI/ML (artificial intelligence/machine learning), and the latest generative AI. This presentation gave an outlook on the latest major developments in the field, as well as heterogeneous integration (a technology for incorporating multiple different types of semiconductor chips in one package).

(2) Keynote 2

- Title : The Future of Heterogeneous Integration
- Presenter : Dr. Madhavan Swaminathan
- Affiliation : Center for Heterogeneous Integration of Micro Electronic Systems, USA
- Overview : The age of AI demands advances in hardware and efficiency in software. AI hardware platforms are expected to become highly complex, creating the need for heterogeneous integration. This presentation discussed these technologies in detail.

(3) Keynote 3

- Title : New Era Packaging Technologies
- Presenter : Dr. CP Hung
- Affiliation : ASE Group, Taiwan
- Overview : Ball Grid Array (BGA) and Flip-Chip (FC), which offer a variety of structures, exist to meet the demand for high-performance chiplets. This presentation discussed groundbreaking technologies such as BGA, FOCoS, and 2.5D/3D packages essential to the latest-generation AI servers, data centers, and 5G, as well as the need for high-precision, effective layouts.

(4) Keynote 4

- Title : Modeling for EMC: From Physics to AI
- Presenter : Dr. Christian Schuster
- Affiliation : Hamburg University of Technology, Germany
- Overview : This presentation focused on the modeling aspect of EMC engineering, covering the generation and use of models, as well as predicting and mitigating phenomena caused by EMC. The presentation also discussed the regular "physics-based" approach and the new "data-based" and "AI-based" approaches. Dr. Schuster, a specialist in the field of modeling for EMC, explained using examples that this field differs from the standardization and measurement fields, but shares some of the same concepts behind EMC. He concluded by saying that Physics and AI/ML can coexist.

4. Oral Sessions overview

(1) U-31: Antenna and Wave Propagation I

- Title : HMSIW Antenna Design with Metasurface Structure for Reducing Antenna Length by Controlling EMF Leakage
- Presenter : Mr. Chia-Mei Peng and 6 others
- Affiliation : Department of Communications Engineering, Feng Chia University, Taichung City, Taiwan
- Overview : The presenter reported on the development of a wide-band, high-gain, compact half-mode-substrate-integrated-waveguide (HMSIW) hexagonal-cavity antenna with an aperture slot. This prototype antenna covers the 5G frequency range of 23.93 GHz to 25.34 GHz, and in these frequency bands, the half-power beam width is 18 to 20 degrees with a gain of 11 dBi. Compared to the original antenna, the total length is one wavelength (10.8 mm) smaller, and the antenna is 18% smaller overall. The antenna gain was reported to be 1 dBi greater.
- Impressions : Of the five papers in this session, four were presented by Taiwanese university affiliates. These papers concerned the results of research at frequency ranges exceeding 100 GHz targeting 5G, 6G, and Beyond 6G. While some areas were not entirely relevant to EMC, we were impressed by Taiwan's dynamism in the information and communications field.

(2) WE-C1: EMC Measurement and Instrumentation I

- Title : Using the Poynting Method to Analyze the Antenna Noise Interference of Notebook Computer
- Presenter : Dr. Chung-Hao Huang and 3 others
- Affiliation : Chung Yuan Christian University, Taiwan
- Overview : In system design, noise emitted by platforms has significant effects on the antennas of wireless modules (such as Bluetooth and Wi-Fi), so reducing such noise levels is an important factor of system integration. In particular, electromagnetic emission (EMI) from CPU, SSD, memory, and other configuration elements directly impacts antenna signal-reception quality. For this reason, a study was conducted analyzing noise received by antennas, the noise's relationship with platform noise received by different antennas in the same environment, and the effects of such noise on antenna characteristics. The study reportedly found that optimization using Poynting-vector analysis to evaluate relationships among noise from antennas and product platforms in product development was important to reducing product development costs and accelerating development (shortening development time).
- Impressions : This presentation also recognized the importance of EMC quality in system design, and gave us a firsthand experience of the advancements in Taiwan's IT-equipment manufacturing industry.

5. Exhibition

Exhibition period: May 20 (Tue) to 22 (Thu), 2025

The exhibition was held at the Exhibition Hall of the APEMC 2025 Taipei Taiwan Symposium venue, featuring EMC-related exhibits by 22 companies from Japan and overseas.

Among the exhibits were many Taiwanese testing laboratories, several of which were registered testing facilities of the VCCI Council.

6. Impressions

At this year's VCCI Council Tutorial and paper presentations, we reported the status of our management of CISPR 32 Ed.2.0 and verification and other initiatives toward next term's revisions to CISPR 32. This resulted in many technical questions and comments from the audience. Many testing laboratories registered as VCCI measurement facilities visited those booths, which also attracted many visitors.

Our next sessions are planned for May 4 to 7, 2026 at APEMC 2026 in Kuala Lumpur, Malaysia. The 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.

Tutorial presentation

Presenters and affiliates at the Tutorial held by the VCCI Council

Paper presentation

Best Paper Award Finalist

Popular Poster Prizes award

Report on Participation in COMPUTEX TAIPEI 2025

Public Relations Subcommittee

Exhibition name	: COMPUTEX TAIPEI 2025
URL	: https://www.computextaipei.com.tw/en/index.html
Sponsor	: Taiwan External Trade Development Council (TAITRA) Taipei Computer Association (TCA)
Exhibition period	: May 20 (Tue) to 23 (Fri), 2025
Venue	: Two venues: Taipei Nangang Exhibition Center Halls 1 & 2 (TaiNEX 1 & 2)
Participants	: Jiro Iizuka (Chair of the Public Relations Subcommittee) (Oki Electric Industry) Takuya Yamazaki (Vice-Chair of the Public Relations Subcommittee) (Hitachi, Ltd.) Hironari Koga (Secretary General of the VCCI Council) Hirohito Shigemitsu (General Affairs Dept. Manager of the VCCI Council) Naoko Hori (Secretariat of the Public Relations Subcommittee)
Scale of exhibition	: About 1,400 participating companies with about 4,800 booths
Number of visitors	: 86,521 (from 152 countries and regions) (reference: 2024: 85,000; 2023: 47,000)

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. VCCI took this great opportunity to hold a booth in the "InnoVEX area", largely populated by startups, to conduct PR and raise awareness of VCCI's role and activities, and invite new Taiwanese ICT vendors to become VCCI members. 149 Taiwanese companies are VCCI Council members (as of May 2025).

2. Exhibition

- InnoVEX area, 4F, Taipei Nangang Exhibition Center Hall 2 (TaiNEX 2)

3. Report on the VCCI Council exhibit

Angela Lin has actively support VCCI's PR activities as an interpreter and on-site presenter. She also prepared the following materials (Taiwanese, Japanese, and English) and gave explanations at the booth, distributing the materials along with various novelty gifts.

- Introduction to the VCCI Council (triple-folded pamphlet)
- Do you know this mark? (Taiwanese)
- VCCI standards chart
- Examples of displaying the VCCI mark on products

4. This year's activities and results

4.1 Overview of the COMPUTEX TAIPEI 2025 exhibition

This exhibition, the largest of its kind in Asia, was themed around the concept of "Next AI". It was held in Taipei Nangang Exhibition Center Hall 1 (TaiNEX 1) and Hall 2 (TaiNEX 2), and consisted of the following three topics:

- AI & Robotics
- Next-Gen Tech
- Future Mobility

During the four-day period of the exhibition, 86,521 ICT buyers and industry affiliates attended from 152 countries and regions across the world including Japan, the US, South Korea, Vietnam, and India. The InnoVEX area (4F, Hall 2), where VCCI held its 10-year anniversary celebration among other events, was 12.5% bigger than last year. 24 countries and 450 startups participated in the exhibition (50 companies more than last year).

Those invited to give keynote speeches included the NVIDIA founder and CEO, and the CEOs and Vice Presidents of Qualcomm, Foxconn, MediaTex, and NXP. There was even a surprise appearance by the President of Taiwan. Industry partners from a variety of fields were invited, giving perspectives on the advancing AI ecosystem and highlighting Taiwan's importance in global technology and supply chains.

4.2 VCCI's public relations activities

We provided pamphlets in Taiwanese, English, and Japanese, and distributed materials such as guides to VCCI and standards charts along with novelty mesh pouches and notepads. We made presentations in Taiwanese through our on-site interpreter to help Taiwan IT vendors better understand VCCI. We approached attendees, asking, "Do you know the VCCI mark?", and to those who showed interest and those who approached us themselves, we explained the details in our pamphlets and the purpose of the VCCI mark. For ease of understanding, we brought materials showing examples of the VCCI mark displayed on products to accompany our explanations. We received business cards from those who showed active interest, so that we could follow up with them later.

We also visited about 60 companies' (largely startups') booths exhibiting hardware on all four floors of Halls 1 and 2, and actively approached attendees, distributing novelty gifts (leather-style multi-purpose pouches) and giving explanations.

4.3 Reception and results of VCCI's public relations activities

This year's VCCI booth was near the fourth-floor event space in Hall 2. Because we were assigned a spot where traffic could not flow smoothly due to the pillars in the venue, we decided to actively go and visit startups ourselves.

We visited about 60 companies' booths, and found that many companies were either certified under or aware of CE and FCC regulations. Some companies responded that they would refer to our information when potentially joining or registering with VCCI in the future, taking into account the fees involved and the intentions of their parent companies. Companies considering expansion to Japan told us that they would consider joining or registering with us.

4.4 Other

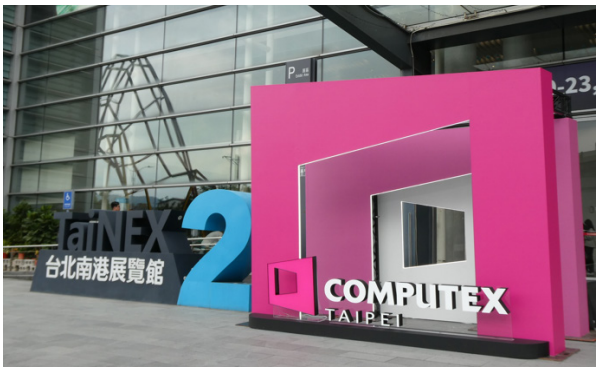
We displayed posters on a wall of our booth, taking this excellent opportunity to explain VCCI and the VCCI mark to attendees. One poster explained the VCCI mark in Taiwanese, while others showcased VCCI's activities over the past 40 years along with worldwide trends. Also, by exhibiting at the Japan booth, we were able to exchange information with university affiliates acting as liaisons between Japanese and Taiwanese companies. In addition to making direct contact with vendors, we believe that approaching individuals and organizations supporting vendors considering expansion to Japan will be worth considering in our future PR activities.

5. Impressions

Because the Computex Taipei exhibition is growing and attracting more attention every year, it is an effective way to promote ourselves to many startup vendors face to face in a short period. Going forward, we will consider participating in Computex Taipei and other exhibitions while continuing our global PR activities. Our committee members will also discuss creating materials such as pamphlets showing the benefits of joining VCCI to promote ourselves more effectively at our booths.

VCCI booth

Visiting other booths



In front of the exhibition venue

Report on the EMC Technical Exchange Meeting Between BSMI, CTCA, and VCCI

- Date and time : 14:00-17:30 May 23 (Fri), 2025
- Venue : Taipei Avery Business Center (Minsheng flagship store), Taipei City
- Participants : Mr. H.C.Hsieh : Deputy Director General of BSMI
  Mr. Y.H.Lai : Director General of CTCA
  Mr. Y.C.Lee : Section Chief of BSMI
  Mr. Jerry Huang : Principal of ETC
  Mr. Chen Po Yu : Engineer of TERTEC
  and 19 others

  VCCI Council : Shinichi Okuyama (Chair of the Technical Subcommittee) (NEC Platforms)
  Nozomi Miyake (member of the Technical Subcommittee) (NEC)
  Kunihiro Osabe (member of the Technical Subcommittee)
  Akira Oda (Executive Director),
  Hironari Koga (Secretary General),
  Minoru Hirata (Technical Counselor),
  Hidenori Muramatsu (Technical Counselor),
  Hirohito Shigemitsu (General Affairs Dept. Manager),
  Yoko Inagaki (PM)

- Details : As was the case last year, Taiwan's BSMI and CTCA's affiliates held a technical exchange meeting with the VCCI Council. The agenda is shown in the following table.

Agenda of the EMC technical exchange meeting

Content	Speaker
Opening Remarks	1. Mr. H.C.Hsieh, Deputy Director General of BSMI 2. Mr. Akira ODA, Director of VCCI 3. Mr. Y.H.Lai, Director General of CTCA
Difference between VCCI 32-1-L:2024 and current VCCI technical requirement	Mr. Kunihiro Osabe VCCI
VCCI 32-1-L: 2024 GUIDANCE FOR PERFORMING RADIATED EMISSION MEASUREMENT IN THE CONDITION OF EUT MAINS CABLE TERMINATED WITH BALANCED VHF-LISN	Mr. Kunihiro Osabe VCCI
Experimental evaluation of Transformer-Type AANs Specified by Figure G.3 in CISPR 32 for Conducted Emissions due to Conversion from Differential Mode to Common Mode	Ms. Nozomi Miyake VCCI (NEC)
Management for merging products-battery energy storage system, and electric vehicle charging system	Mr. Yuan-Chun LEE, Section Chief, BSMI
Overview of EMC Testing for Electric Vehicle Charging Equipment	Mr. Jerry Huang, Principal of ETC
EMC Testing Experience and Practices for Power Conversion Systems	Mr. Chen Po Yu, Engineer of TERTEC
Q&A	

At the end, we deliberated on the holding of the next technical exchange meeting. Mr. Oda suggested we have the next meeting in one or two years because the third edition of CISPR 32 was scheduled to be published around the end of 2026. We decided to discuss when to schedule the event period over the next six months.

Note: BSMI : Bureau of Standards, Metrology and Inspection
CTCA : Chinese Testing and Certification Association

Mr. H.C.Hsieh, Deputy Director General of BSMI

Mr. Y.H.Lai, Director General of CTCA

Mr. Akira ODA, Director of VCCI

Commemorative photo of the
EMC technical exchange meeting

Results of FY 2024 Market Sampling Tests

Market Sampling Test Subcommittee

As of June 13, 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	65	0	65	65	63	1	1	0

Loan-based testing total		65	0	65	65	63	1	1	0
Term (breakdown)	1st Quarter	20	–	20	20	19	–	1	–
	2nd Quarter	12	–	12	12	12	–	–	–
	3rd Quarter	18	–	18	18	17	1	–	–
	4th Quarter	15	–	15	15	15	–	–	–

"Failed – tentative" in FY 2023	Target samples	Passed	Failed	Pending
	2	0	2	0

FY 2024 total (Including "Failed – tentative" from FY2023)	Passed	Failed	Pending
	64	3	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	52	2	50	50	50	48	2

Status on FY 2025 Market Sampling Tests

Market Sampling Test Subcommittee

As of June 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	23	1	17	0	0	0	0	0

Loan-based testing total		23	1	17	0	0	0	0	0
Term (breakdown)	1st Quarter	23	1	17			—	—	—
	2nd Quarter								
	3rd Quarter								
	4th Quarter								

FY 2025 total	Passed	Failed	Pending
	0	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	—	17	11	5	5	—

Report from the Secretariat

● List of Members (April 2025- June 2025)

New members

Membership	Member No.	Company name	Country or region
Regular	4436	Yanekara Co., Ltd.	JAPAN
Regular	4437	Acenetworks Co., Ltd.	JAPAN
Regular	4441	NRS Corporation	JAPAN
Regular	4442	Cool.revo Inc.	JAPAN
Regular	4443	Panasonic Projector & Display Corporation	JAPAN
Regular	4448	Totalizator Engineering Limited	JAPAN
Supporting	4439	Nippon Environment Amenity Co., Ltd.	JAPAN
Regular	4429	Kuori Oy	FINLAND
Regular	4430	Motivair Corporation	USA
Regular	4431	Equus Computer Systems, Inc.	USA
Regular	4433	Shenzhen Bmorn Technology Co., Ltd.	CHINA
Regular	4435	Tianji Zhigu (HUBEI) Information Technology Co., Ltd.	CHINA
Regular	4445	Moka Technology (Guangdong) Co., Ltd.	CHINA
Regular	4446	Noble Tree Co., Ltd.	KOREA
Regular	4447	PHOTOFAST CO., LTD.	TAIWAN
Regular	4451	Tenstrorrent AI ULC	CANADA
Supporting	4432	CSA Group Test and Certification Singapore Pte. Ltd (EMC)	SINGAPORE
Supporting	4434	Guangzhou Jingce Testing Technology Co., Ltd.	CHINA
Supporting	4440	SONY EMCS (MALAYSIA) SDN. BHD.	MALAYSIA*
Supporting	4444	Huarui 7layers High Technology (Suzhou) Co., Ltd.	CHINA

* Country where we previously had no members

Company name change

Membership	Member No.	Company name	Country or region	Old company name
Regular	37	Toshiba Corporation	JAPAN	Toshiba Infrastructure Systems & Solutions Corporation
Regular	460	JBCC Corporation	JAPAN	JB Advanced Technology Corporation
Regular	1646	Mitsubishi Electric Digital Innovation Corporation	JAPAN	Mitsubishi Electric Information Network Corporation
Regular	4124	WiSECURE Inc.	JAPAN	WiSECURE Technologies
Regular	4343	RICOH PFU COMPUTING Co., Ltd.	JAPAN	Ricoh Industrial Solutions Inc.
Supporting	1398	Mitsubishi Electric Applied Refrigeration Systems co.,ltd	JAPAN	RAKURYOU TECHNICA CO., LTD.
Regular	560	Hirsch Secure, Inc.	USA	Identiv, Inc.
Regular	1011	ASUSTeK COMPUTER INC.	TAIWAN	ASUSTek Computer Inc.
Regular	2912	WINS Technet Co., Ltd.	KOREA	Wins Co., Ltd.
Regular	4273	NZXT, Inc. (Taiwan Office)	TAIWAN	NZXT Inc.
Regular	4314	Dynatrong Materials Incorporation	TAIWAN	Dynaview Technology Corporation
Supporting	2709	BTL Inc. (Dongguan)	CHINA	BTL Inc.
Supporting	4021	Bureau Veritas LCIE China Company Limited	CHINA	BUREAU VERITAS ADT (SHANGHAI) CORPORATION

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 (Scheduled for November 28)	December •Release VCCI Dayori No. 159
January	February •Technical Symposium (plan)	March •Release VCCI Dayori No. 160

● Status of Registration of Product Conformity

April 2025 – June 2025 (Product names are examples and are not limiting)

Classification of MME (Product types are not limited to only the following examples.)				Classification code		January 2025			February 2025			March 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	27	2	29	30	2	32	24	0	24
		Stationary	Workstation, Desktop PC, etc.	B 2	b 2	0	13	13	2	14	16	6	14	20
		Portable	Laptop PC, Tablet PC, etc.	C 2	c 2	1	69	70	0	43	43	2	34	36
		Other computers	Wearable computers, Wearable device, Smart watch, Smart glass, etc.	E 2	e 2	8	2	10	4	6	10	6	1	7
	Peripheral / Terminal	Memory device	HDD, SSD, USB Memory, Media drive, Disk device, NAS, DAS, SAN, etc.	G 2	g 2	9	21	30	1	23	24	9	12	21
		Printer device	Printer including multifunction machine, etc. (portable)	H 2	h 2	4	3	7	5	7	12	0	5	5
		Display device	CRT display, Monitor, Projector, etc.	J 2	j 2	3	88	91	10	68	78	12	53	65
		Other I/0 devices	Image scanner, OCR, Pen tablet, Stylus pen, etc.	M 2	m 2	0	2	2	2	4	6	1	6	7
		General purpose terminal	Display controller terminal, etc.	N 2	n 2	0	0	0	3	0	3	0	2	2
		Special purpose terminal	POS, Terminal for finance, insurance, etc.	Q 2	q 2	2	0	2	0	1	1	4	2	6
		Other peripheral	PCI Card, Graphics Card, Mouse, Keyboard, Cradle, etc.	R 2	r 2	9	37	46	7	29	36	2	41	43
		Copying machine/ Multifunction copying machine	Copying machine, Multifunction copying machine, etc. (Stationary)	S 2	s 2	2	2	4	1	2	3	0	0	0
	Communications equipment	Terminal equipment	Mobile phone, Smart phone, PHS phone, etc.	T 2	t 2	0	4	4	0	5	5	0	4	4
			Telephone device such as PBX, FAX, Key telephone systems, Cordless phone, etc.	U 2	u 2	0	4	4	2	0	2	2	1	3
		Network-related equipment	Communication line connecting device including Modem, Digital transmission unit, DSU, TA, Media converter, etc.	V 2	v 2	15	0	15	1	0	1	3	3	6
			LAN-related device, including Router, HUB, etc. Local switch, etc.	W 2	w 2	47	16	63	28	17	45	33	8	41
		Other communication equipment	Other communication equipment	X 2	x 2	14	3	17	8	5	13	8	12	20
Broadcast receiver equipment			TV, Radio, Tuner, Video recorder, Set-top box, etc.		k 2		2	2		2	2		0	0
Audio equipment			Speaker, Amplifier, IC recorder, Digital audio player, Headset, DTM, AI speaker, etc.	L 2	l 2	3	1	4	0	5	5	3	1	4
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	12	17	3	9	12	7	12	19
		Other video equipment	VR goggles, Scan converter, etc.	P 2	p 2	0	0	0	1	0	1	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	0	0
		Electronic toy	Game console, Game pad, toy drone, etc.	Y 2	y 2	0	1	1	0	13	13	0	2	2
		Other Entertainment / Education equipment	Navigator, AI robot, etc.	F 2	f 2	0	0	0	0	0	0	0	0	0
	Other MME		MME other than the above	O 2	o 2	8	2	10	6	2	8	4	3	7
Total						157	284	441	114	257	371	127	216	343

● 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 2025- June 2025)

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
Suzhou Dongdian Testing Service Co., Ltd.	10 m Chamber	-	-	-	-	✓	R-20236	Apr. 13, 2028	Phase II, No. 16 Runsheng Road, Suzhou Industrial Park ,Suzhou , China
Shenzhen Haiyun Standard Technical Co., Ltd.	Haiyun EMI test site	-	-	-	✓	-	R-20243	Apr. 13, 2028	No. 110,111,112,113,115,116 block B, Jinyuan business building, No. 302, Xixiang Avenue, Laodong community, Xixiang street, Bao'an District, Shenzhen, P.R. China
Shenzhen Haiyun Standard Technical Co., Ltd.	Haiyun RE (above 1 GHz) test site	-	-	-	-	-	G-20236	Apr. 13, 2028	No. 110,111,112,113,115,116 block B, Jinyuan business building, No. 302, Xixiang Avenue, Laodong community, Xixiang street, Bao'an District, Shenzhen, P.R. China
Shenzhen Haiyun Standard Technical Co., Ltd.	Haiyun CE test site	-	-	-	-	-	C-20198	Apr. 13, 2028	No. 110,111,112,113,115,116 block B, Jinyuan business building, No. 302, Xixiang Avenue, Laodong community, Xixiang street, Bao'an District, Shenzhen, P.R. China
Shenzhen Global Test Service Co., Ltd.	Radiated emission above 1 GHz	-	-	-	-	-	G-20235	Apr. 13, 2028	Building 7, 202, Creative Park, No. 98 Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, China
Shenzhen Global Test Service Co., Ltd.	Radiated emission below 1 GHz	-	-	-	✓	-	R-20244	Apr. 13, 2028	Building 7, 202, Creative Park, No. 98 Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, China
MRT Technology (Suzhou) Co., Ltd.	WJ-SR5	-	-	-	-	-	C-20201	Apr. 13, 2028	Building 1, No. 1 Xingdong Road, Wujiang, Suzhou, Jiangsu, China
MRT Technology (Suzhou) Co., Ltd.	WJ-SR5	-	-	-	-	-	T-20201	Apr. 13, 2028	Building 1, No. 1 Xingdong Road, Wujiang, Suzhou, Jiangsu, China
MRT Technology (Suzhou) Co., Ltd.	WJ-AC1	-	-	-	-	-	G-20239	Apr. 13, 2028	Building 1, No. 1 Xingdong Road, Wujiang, Suzhou, Jiangsu, China
MRT Technology (Suzhou) Co., Ltd.	WJ-AC2	-	-	-	✓	-	R-20247	Apr. 13, 2028	Building 1, No. 1 Xingdong Road, Wujiang, Suzhou, Jiangsu, China
MRT Technology (Suzhou) Co., Ltd.	WJ-AC2	-	-	-	-	-	G-20238	Apr. 13, 2028	Building 1, No. 1 Xingdong Road, Wujiang, Suzhou, Jiangsu, China
MRT Technology (Suzhou) Co., Ltd.	TW-AC1	-	-	-	✓	-	R-20251	May 25, 2028	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C)

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
MRT Technology (Suzhou) Co., Ltd.	TW-AC1	-	-	-	-	-	G-20243	May 25, 2028	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C)
MRT Technology (Suzhou) Co., Ltd.	TW-SR2	-	-	-	-	-	C-20203	May 25, 2028	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C)
MRT Technology (Suzhou) Co., Ltd.	TW-SR2	-	-	-	-	-	T-20206	May 25, 2028	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C)
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Chamber E	-	-	-	✓	-	R-20248	May 25, 2028	Room 101, Building 2, No. 4, Information Road, Songshan Lake, Dongguan, Guangdong, China
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Chamber E	-	-	-	-	-	G-20240	May 25, 2028	Room 101, Building 2, No. 4, Information Road, Songshan Lake, Dongguan, Guangdong, China
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Shielding Room F	-	-	-	-	-	C-20202	May 25, 2028	Room 101, Building 2, No. 4, Information Road, Songshan Lake, Dongguan, Guangdong, China
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Shielding Room F	-	-	-	-	-	T-20202	May 25, 2028	Room 101, Building 2, No. 4, Information Road, Songshan Lake, Dongguan, Guangdong, China
テュフズードジャパン株式会社	10 m法電波暗室 No. 1	-	-	-	✓	✓	R-20245	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 1	-	-	-	-	-	G-20237	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 1	-	-	-	-	-	C-20200	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 1	-	-	-	-	-	T-20200	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 2	-	-	-	✓	✓	R-20250	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 2	-	-	-	-	-	G-20242	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 2	-	-	-	-	-	C-20204	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	10 m法電波暗室 No. 2	-	-	-	-	-	T-20205	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	3 m法電波暗室	-	-	-	✓	-	R-20249	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	3 m法電波暗室	-	-	-	-	-	G-20241	May 25, 2028	山形県米沢市八幡原5-4149-7
テュフズードジャパン株式会社	3 m法電波暗室	-	-	-	-	-	C-20205	May 25, 2028	山形県米沢市八幡原5-4149-7

Company name	Equipment name	3m	10m	30m	Dark 3m	Dark 10m	Registration number	Effective date	Location
テュフズードジャパン株式会社	3 m法電波暗室	-	-	-	-	-	T-20204	May 25, 2028	山形県米沢市八幡原5-4149-7
FORCE Technology	Room 6- Aarhus	-	-	-	-	-	C-20197	May 25, 2028	Agro Food Park 13, DK-8200 Aarhus, Denmark
Shenzhen Haiyun Standard Technical Co., Ltd.	Haiyun CE test site at Wired network ports	-	-	-	-	-	T-20198	May 25, 2028	No. 110,111,112,113,115,116 block B, Jinyuan business building, No. 302, Xixiang Avenue, Laodong community, Xixiang street, Bao'an District, Shenzhen, P.R. China
Kiwa Netherlands B.V.	Kiwa Netherlands B.V.	-	-	-	-	-	C-20206	Jun. 15, 2028	Wilmersdorf 50, 7327 AC Apeldoorn, The Netherlands

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

Closing words

Lower-back pain and stretches

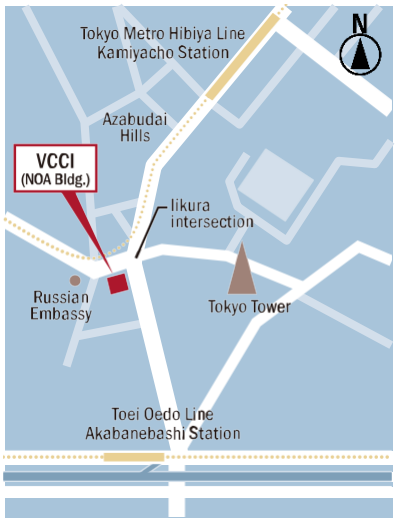
Lower-back pain is a familiar health problem that most of us have experienced at least once. It can range from temporary to chronic, and its causes are equally diverse. In this day and age, causes include desk work, long hours of smartphone use, and lack of exercise, which put strain on the lower back that goes unnoticed until it results in pain.

Back in junior high school, I remember having lower-back pain for the first time while doing human-pyramid gymnastics at a sports festival. The pain was so incapacitating that I couldn't stand up, and I had to lie down in the nurse's office. I was a little embarrassed by the experience. This event led to a long series of visits to an osteopathic clinic. At first, I thought these clinics were for senior citizens, and found the acupuncture and massage sessions a painful ordeal, but over time, I felt the pain diminish. As the years went by, however, I started to feel that my recovery was slowing, and I'd have sudden pangs just bending down to pick up a tennis ball.

Lower-back pain has a variety of causes. According to books on the topic, not only bad posture and muscle imbalance, but even stress can be relevant factors. Sitting for long periods and working in awkward poses can cause pain by straining the lower-back muscles and lumbar discs. Personally, I've found that just sitting deeply in a chair and straightening my spine seems to reduce the strain on my lower back. Exercises for prevention are also important. Maintaining a daily routine of stretches and light exercise can improve muscle flexibility and strength, helping to support the lower back. Ever since I began doing simple stretches every morning, I've noticed that both my mood and my lower-back pain have improved.

Fatigue, headaches, and gastrointestinal issues such as diarrhea and constipation can also be caused by psychological stress. Symptoms like breathlessness and palpitations are said to be caused by temporary stress-related spasms in the coronary artery. Likewise, it seems plausible that some types of lower-back pain and stiff shoulders might be caused by lack of blood flow in the muscles worsened by problems in brain function due to psychological stress. I believe that so long as I move my body in moderation, I can keep my lower-back pain at bay, so I'll be back to my stretches tomorrow.

(K.K)



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