

# VCCI DAYORI

No.131      2019.1

## Contents

New Year's Greetings	Keiichi Kawakami	..... 1
Accreditation of University Engineering Education Programs	Makoto Oya	..... 3
Committee Activities		..... 5
● Steering Committee		..... 5
● Technical Subcommittee		..... 6
● International Relations Subcommittee		..... 6
● Market Sampling Test Subcommittee		..... 7
● Education Subcommittee		..... 8
● Public Relations Subcommittee		..... 9
● Registration Committee for Measurement Facility		..... 9
● Report on Committee Activities: List of Acronyms		..... 10
15th instalment		
EMC Standards of IEC 61000-2 (Environment) Series		
Prepared by TC77	Masamitsu Tokuda	..... 12
Report on Survey at Persian Gulf countries		..... 17
Report on 2018 IEEE EMC Symposium		..... 21
Report on International symposium and exhibition on electromagnetic compatibility (EMC EUROPE 2018)		..... 29
Report on Visit to China International Industry Fair (CIIF)		..... 34
Status on FY2018 Market Sampling Tests		..... 39
Status on FY2017 Market Sampling Tests		..... 40
Secretariat Dayori		..... 42
● VCCI Membership Registry (May - July 2018)		..... 42
● VCCI Schedule for FY 2018		..... 43
● Status of Compliance Test Notifications (V-2 + VCCI 32-1)		..... 44
● Status of Compliance Test Notifications (VCCI 32-1)		..... 45
● Registration Status of Measurement and Other Facilities		..... 46
Contents of VCCI Dayori No.127 - No.130		..... 48

# New Year's Greetings

President, VCCI Council  
**Keiichi Kawakami**



I offer my sincere wishes for a Happy New Year to you all.

Last October CEATEC JAPAN 2018, one of the world's largest CPS/IoT exhibitions, set forth the theme of "Interconnect Societies and Collaborate for the Future." In IoT Town, an exhibition area organized by the host, companies from various industries exhibited concrete visions of societies using artificial intelligence (AI) and big data. The targeted *Society 5.0 = Super-smart Society* is a society that provides goods and services when and as needed. It elaborately responds to various needs, provides high-quality services to everyone, overcomes differences in various human attributes such as age, sex, region, and language, and enables people to live richly and comfortably.

In the midst of increasingly severe global competition, IT and electronics industries, which have close relationships with the VCCI Council, are expected to exert their acquired skills to contribute to the resolution of issues in this nation—an advanced country in terms of social issues—while also solving global issues by building platforms that realize *Society 5.0*.

The VCCI Council have been working for 33 years since the establishment of the former Voluntary Control Council for Interference by Information Technology Equipment (VCCI) to prevent problems caused by electromagnetic interference from information technology equipment and to represent the interests of the domestic consumers who use electronic and electric devices. I profoundly thank related government offices and organizations as well as the members of the VCCI Council for their support and collaboration in helping to achieve wide recognition of the VCCI mark and the VCCI technical standards, which conform to the CISPR international standard.

CISPR 32 Version 2, which was issued in March 2015, is the international standard on emissions of multimedia devices. In Japan, a corresponding recommendation was submitted to the Information and Communications Council of MIC in December 2015. The multimedia EMC standard integrates the separate standards for information technology equipment and AV equipment. In November 2016, the VCCI Council issued and enforced a new VCCI Council Operation Standard conforming to this new international standard. Parallel operation of the new and old operation standards ends in March 2019. I think council members are migrating to the new standard smoothly.

The voluntary regulation of the VCCI Council has depended from its establishment on three major activities: appropriate conformity assessment by the members, fair market sampling tests, and a measurement facility registration system. In addition to seminars and educational activities in domestic industrial technology centers,

we have periodical opinion exchange sessions with overseas industrial associations and accreditation bodies to achieve international collaborative relations. In 2018, we held an exhibition in CEATEC JAPAN 2018 in which we expanded the number of members. In the accompanying VCCI international forum, the EU, China, and South Africa reported on their statuses. Also, we held a workshop in China aiming to increase awareness of the new standard, and many people participated.

With the cooperation of stakeholders, we will contribute to the realization of a clean radio wave environment—infrastructure of the CPS/IoT society—by appropriately responding to innovative changes and social implementation of technologies, such as CPS/IoT, which use radio waves. This way, we will continue to make VCCI Council activities beneficial to the members of the VCCI Council and consumers of this nation.

I ask your continued understanding and support for the VCCI Council, and hope that 2019 will be a year of great progress in the society and economy of Japan.

# Accreditation of University Engineering Education Programs

Makoto Oya

When I was asked to contribute an article, I considered that VCCI handles conformance certification and accreditation of electronic and electric devices, while JABEE (Japan Accreditation Board for Engineering Education), for which I recently named an evaluator, handles certification and accreditation of engineering education programs of universities. Both are certifying or accrediting something—thus, I decided on the title of this article based on this somewhat roundabout reasoning.

Unlike my brother, who is a former NHK employee specializing in broadcast, communication, electricity, and electronics, I have specialized in the development of computer software. I joined Hitachi, Ltd. after graduating from university. Then, for 30 years I designed and developed software platform products such as OS and middleware and engaged in business planning and promotion in this field. Meanwhile, other than making and selling software, I worked on international and industrial standardization, conformance tests, interoperability tests, and conformance certification/ accreditation of software interfaces and protocols. I also worked with people from other companies in standardization bodies such as ISO/IEC, OMG, and DOPG. After 30 years with Hitachi, I became a university professor and engaged in research and education for 15 years at Hokkaido University and the Shonan Institute of Technology. I retired from the universities last year, and now I am a board member of a software and system development company in Yokohama.

In addition to my long-standing dream of not just making products but conducting basic research, there was a stronger reason for moving to a university. In Hitachi, I used to take the liberty of repeatedly saying to university professors, "Send us students who have learned more useful things." And they would often reply, "Then, you should do it." Thus, from the time I moved to Hokkaido University, besides pursuing my own research, I worked to educate students so that they could contribute to society as advanced engineers in the future. To realize this in a university, you have to enrich the content of education with an eye on social demands and provide education for fostering student's abilities in design, planning, team work, and communication. The quality assurance of education, which MEXT advocates, is also important.

I have engaged in the accreditation of universities' engineering education programs in JABEE for 10 years. JABEE is an institution that examines and certifies the educational contents of technological subjects and courses (education programs) in advanced education institutions such as universities or technical colleges. Accreditation target fields are diverse. They include not only electricity and electronics, communication, and information, but also mechanics, civil engineering, architecture, chemistry, material engineering, and agriculture. Currently, 175 schools and 506 education programs have been certified.

One way of certifying the quality of industrial products is to directly test and examine manufactured products to certify the products themselves. If this is difficult, another way is to certify a factory (or a part of a factory or a specific piece of equipment) by examining the design of the product and the methods of production and testing. In the case of a university, graduates are "products", but they cannot be judged by directly testing and examining the overall technological competence of individuals. Thus, we certify the university equivalent to "factory" methods. In other words, we certify and accredit the education programs.

JABEE accreditation criteria define the following as capabilities that students must gain before graduation. (For more accurate information, see the home page of JABEE.): (a) ability to consider a matter from multiple points of view, (b) understanding of the impact of technology on society and nature and the responsibility of engineers, (c) knowledge of mathematics and natural science as well as the ability to use it, (d) specialized knowledge in the concerning field and the ability to use it, (e) designing ability for responding to social demands, (f) communication capabilities including the ability to write a logical article and the ability to make a verbal presentation, (g) ability to spontaneously continue learning, (h) ability to do jobs in an organized manner, (i) capabilities for doing jobs in a team.

To gain a JABEE accreditation, an education program (subjects or courses) is required to prepare and implement a curriculum that provides the opportunity to gain all of (a) to (i). The JABEE accreditation criteria have been defined through coordination with international institutions to ensure international equivalence. In order to foster internationally-competitive true engineers, industry and academia must cooperate to reform engineering education using JABEE as a tool. I hope this article has contributed to your understanding.



Makoto Oya

1972 to 2003: Hitachi, Ltd.

2003 - 2005: Graduate School of Information Science and Technology, Hokkaido University

2005 - 2017: Information Engineering, faculty of Engineering, Shonan Institute of Technology

Current titles: Outside board member of Computer Institute of Japan, Ltd., educational board member of Information Processing Society, JABEE evaluator, Doctor of engineering

## Committee Activities

### ● Steering Committee

Date	September 19, and October 17, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1 Handling of the scope of technical standards (draft)</li> <li>● Agenda item 2 Proposal of EMC Sapporo &amp; APEMC 2019 Tutorial (draft)</li> <li>● Agenda item 3 New members from July through September</li> </ul>
Continuing agenda items	
Decisions and reported items	<ul style="list-style-type: none"> <li>● Agenda item 1 Approved</li> <li>● Agenda item 2 Approved</li> <li>● Agenda item 3 Approved</li> <li>● Reported item 1 Activity reports for the period from July to September were made by each dedicated subcommittee (Technical, International Relations, Market Sampling Test, Education, Public Relations)</li> <li>● Reported item 2 Status report regarding secretariat work (member entry and withdrawal trends, the number of compliance verification reports, income and expenditure, etc.)</li> <li>● Reported item 3 Report on 2018 Joint IEEE EMC &amp; APEMC Symposium</li> <li>● Reported item 4 CEATEC 2018 VCCI booth</li> <li>● Reported item 5 Holding of VCCI International Forum 2018</li> <li>● Reported item 6 Holding of VCCI Shanghai Workshop</li> </ul>

● Technical Subcommittee

Date	September 04, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1 On the Technical Subcommittee's planned activities for FY 2018</li> <li>● Agenda item 2 Review of three CDV documents prepared for discussion on the revision of CISPR 32</li> <li>● Agenda item 3 Verification results of the CISPR 32 Ed.2.0 maintenance cable layout</li> <li>● Agenda item 4 Verification of the impact of the connected pair wire on the measurement result in the case of 2W or 4W measurement with trans-type 8W AAN</li> <li>● Agenda item 5 Impact on conformity verification tests arising from the intended frequency and spurious emission related to the intended frequency emitted from an MME that has a built-in radio function (WPT, RFID)</li> <li>● Agenda item 6 Guidelines on the handling, application, and scope of technical standards</li> <li>● Agenda item 7 Considerations on the calibration of free space antenna factors</li> <li>● Agenda item 8 Proposal for inclusion of VHF-LISN in the CISPR standards</li> </ul>
Continuing agenda items	<ul style="list-style-type: none"> <li>● Agenda item 2</li> <li>● Agenda item 3</li> <li>● Agenda item 4</li> <li>● Agenda item 5</li> <li>● Agenda item 6</li> <li>● Agenda item 7</li> <li>● Agenda item 8</li> </ul>
Decisions and reported items	<ul style="list-style-type: none"> <li>● Reported item On the Technical Subcommittee's activities conducted in FY 2018</li> <li>● Reported item Report on 2018 IEEE EMC Symposium</li> <li>● Reported item Report on EMC EUROPE 2018</li> </ul>

● International Relations Subcommittee

Date	August 29, September 27, and October 11, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1 International Forum</li> <li>● Agenda item 2 Investigation into trends in world EMC standards</li> </ul>
Continuing agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1</li> <li>● Agenda item 2</li> <li>● Agenda item 3 Summary of the results of a global survey</li> </ul>
Decisions and reported items	<ul style="list-style-type: none"> <li>● Reported item 1 FY 2018 International Forum was held on Friday, October 19 at CEATEC JAPAN with invited lecturers from EU, Australia, and South Africa.</li> <li>● Reported item 2 A report has been made available (Members only &gt;EMC Regulation Research &gt; Quick report on an EMC Research) on the meetings held during the visits to GSO of Saudi Arabia and ESMA of UAE in July, which were made as part of a global survey.</li> </ul>

● Market Sampling Test Subcommittee

Date	September 6, and October 11, 2018	
Agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1</li> <li>● Agenda item 2</li> <li>● Agenda item 3</li> <li>● Agenda item 4</li> <li>● Agenda item 5</li> </ul>	<p>Action on "Failed" cases in FY 2017</p> <p>Action on "Failed – tentative" cases in FY 2018</p> <p>Document examination</p> <p>Preferential treatment</p> <p>Visits to Shanghai Workshop and three testing laboratories</p>
Continuing agenda items	<ul style="list-style-type: none"> <li>● Agenda item 2</li> </ul>	<p>Two "Failed—tentative" cases in FY 2018 were explained. Both are waiting for investigation by members.</p>
Decisions and reported items	<ul style="list-style-type: none"> <li>● Agenda item 1</li> <li>● Agenda item 3</li> <li>● Agenda item 4</li> <li>● Agenda item 5</li> </ul>	<p>Action status was reported on two cases out of three that were determined "Failed" in FY 2017, and they were resolved. Details are provided in VCCI DAYORI. (See page 36 of this issue.)</p> <p>Results on 12 document examinations were reported, among which 11 cases passed. We are waiting for answers to the findings on one case.</p> <p>Two applications for preferential treatment were approved, and they passed without examination.</p> <p>An overview was reported and approved on the presentation material that will be used in the Shanghai VCCI workshop and the three testing laboratories to be visited during the same period.</p>



● Education Subcommittee

Date	September 27 and 28, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1 Holding of 38th meeting on Basic EMI Measurement Techniques</li> <li>● Agenda item 2 Considerations related to reviewing textbooks for education and training planned for FY 2018</li> <li>● Agenda item 3 Coordination meeting with the lecturer and hands-on trainer on the EMI measurement techniques for frequencies over 1 GHz</li> </ul>
Continuing agenda items	<ul style="list-style-type: none"> <li>● Agenda item 2</li> </ul>
Decisions and reported items	<ul style="list-style-type: none"> <li>● Agenda item 1 38th Basic EMI Measurement Techniques was held on October 5 with 23 participants. Survey results from participants show that they were satisfied.</li> <li>● Agenda item 2 Regarding the preparation of education and training textbooks for FY 2018, two textbooks (on EMI measurement techniques for frequencies over 1 GHz and boosting of the level of the EMI measurement technique) were completed. One textbook is yet to be prepared. Education and training will be conducted in an organized manner.</li> <li>● Agenda item 3 A coordination meeting was held with the lecturer and hands-on trainer on the EMI measurement techniques for frequencies over 1 GHz. Hands-on training steps were reviewed along with the textbook. This educational training is scheduled on November 29 and 30.</li> </ul>

● Public Relations Subcommittee

Date	September 7 and October 12, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Agenda item 1 Survey on overseas exhibitions</li> <li>● Agenda item 2 CEATEC 2018</li> <li>● Agenda item 3 Year 2019 desk calendar</li> <li>● Agenda item 4 Change of the design of the signboard at Akihabara Station.</li> <li>● Agenda item 5 Planned activities for FY 2019</li> </ul>
Continuing agenda items	<ul style="list-style-type: none"> <li>● Agenda item 5</li> </ul>
Decisions and reported items	<ul style="list-style-type: none"> <li>● Agenda item 1 There was a report on the survey of China International Industry Fair (CIIF). (See page 34.)</li> <li>● Agenda item 2 We participated in CEATEC 2018, and received answers to our questionnaire from 299 participants.</li> <li>● Agenda item 3 The 2019 desktop calendar has been completed. We will hand them out in exhibitions and symposiums.</li> <li>● Agenda item 4 The design was changed from October 2018.</li> </ul>

● Registration Committee for Measurement Facility

Date	July 23, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Reviewed the results of deliberations by the Measurement Facility Examination WG and concluded as follows.</li> </ul>
Decisions	<p>Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 17 companies</p> <p style="padding-left: 40px;">Radiated EMI measuring facilities: 7</p> <p style="padding-left: 40px;">Mains ports conducted EMI measuring facilities: 8</p> <p style="padding-left: 40px;">Telecommunication ports conducted EMI measuring facilities: 3</p> <p style="padding-left: 40px;">Radiated EMI measurement facilities above 1 GHz: 6</p> <p style="padding-left: 40px;">Applications returned with comments: None</p> <p style="padding-left: 40px;">Applications carried over to the next meeting: None</p>
Date	September 10, 2018
Agenda items	<ul style="list-style-type: none"> <li>● Reviewed the result of deliberations by the Measurement Facility Examination WG and concluded as follows.</li> </ul>
Decisions	<p>Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 26 companies</p> <p style="padding-left: 40px;">Radiated EMI measuring facilities: 10</p> <p style="padding-left: 40px;">Mains ports conducted EMI measuring facilities: 11</p> <p style="padding-left: 40px;">Telecommunication ports conducted EMI measuring facilities: 12</p> <p style="padding-left: 40px;">Radiated EMI measurement facilities above 1GHz: 15</p> <p style="padding-left: 40px;">Applications returned with comments: None</p> <p style="padding-left: 40px;">Applications carried over to the next meeting: None</p>

## ● 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
APLAC	Asia Pacific Laboratory Accreditation Corporation
AQSIQ	General Administration of Quality Supervision , Inspection and Quarantine of the People's Republic of China
BSMI	Bureau of Standards, Metrology and Inspection
CALTS	Calibration Test Site
CB	Certification Body
CB	Competent Body
CCC	China Compulsory Product Certification
CD	Committee Draft
CDN	Coupling Decoupling Network
CDNE	Coupling Decoupling Network for Emission
CDV	Committee Draft for Vote
CEMC	China Certification Center for Electromagnetic Compatibility
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
DAF	Dual Antenna Factor
DC	Document for Comment
DoC	Declaration of Conformity
DOW	Date of Withdrawal
DTI	Department of Trade and Industry
DUT	Device Under Test
ECANB	EC Association of Notified Bodies
Ecma	Ecma International
EICTA	European Information, Communications and Consumer Electronics Technology Industry Association
EMCC	Electro Magnetic Compability Conference
EMCAB	Electromagnetic Compatibility Advisory Bulletin
EMF	Electromagnetic Field
EMF	Electromotive Force
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 Standards
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IS	International Standard
ISM	Industrial Scientific and Medical
ITE	Information Technology Equipment
LCL	Longitudinal Conversion Loss
MME	Multimedia Equipment
MOU	Memorandum of Understanding
MP (法)	Magnetic Probe
MRA	Mutual Recognition Agreement/Arrangement

Abbreviation	Full Name
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
R&TTE	Radio & Telecommunications Terminal Equipment
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
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

15th instalment

# **EMC Standards of IEC 61000-2 (Environment) Series Prepared by TC77**

Masamitsu Tokuda

## **1. Foreword**

The EMC standards defined by TC77 (77th subcommittee: Provides EMC standards) of IEC (International Electrotechnical Commission) have the numbering scheme of the IEC 61000 series, consisting of part 1 (general) through part 9 (miscellaneous) <sup>1-5)</sup>.

This article introduces the standard specified by the IEC 61000-2 series, which defines environmental standards.

## **2. Standards of IEC 61000-2 (environment) series**

Table 1 lists the standards of the IEC 61000-2 (environment) series prepared by TC77 and its SCs. The TC77 parent subcommittee prepares IEC TR 61000-2-3, which provides information on various phenomena related to conduction and radiation that are not related to the power source frequency, and IEC TR 61000-2-5, which categorizes electromagnetic phenomena in various environments based on the data provided by IEC TR 61000-2-3. IEC TR 61000-2-3 has not been revised since the first issue of 1992, but IEC TR 61000-2-5 was revised to version 3 in 2017. The domestic version of IEC TR 61000-2-5 was issued as TR C 0008:1997 (TR: Technical Report) based on the first issue of 1995, but it was abolished in 2003.

Table 1 IEC 61000-2 (environment) series standards prepared by TC/SC77 (1) [as of October 2018]

International standard [Latest version]	Prepared by	Name of standard	Domestic TR (year-month of abolishment) [Corresponding international standard]
IEC TR 61000-2-1 [Ed.1.0: 90-05]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 1: Description of the environment - Electromagnetic environment for low-frequency conducted disturbances and signaling in public power supply systems	TR C 0012:1999 (04-05) [IEC TR 61000-2-1:90 (IDT)]
IEC 61000-2-2 [Ed.2.2: 18-05]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 2: Compatibility levels for low-frequency conducted disturbances and signaling in public low-voltage power supply systems (explanation available)	TR C 0013:1999 [04-05] [IEC 61000-2-2:90 (IDT)]
IEC TR 61000-2-3 [Ed.1.0: 92-09]	TC77	Electromagnetic compatibility–Part 2: Environment–Section 3: Description of the environment - Radiated and non-network-frequency-related conduction phenomena	—
IEC 61000-2-4 [Ed.2.0: 02-06]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances (explanation available)	TR C 0024:2002 [05-11] [IEC 61000-2-4:94 (MOD)]
IEC TR 61000-2-5 [Ed.3.0: 17-01]	TC77	Electromagnetic compatibility–Part 2: Environment–Section 5: Description and classification of electromagnetic environments (explanation available)	TR C 0008:1997 (03-12) [IEC TR 61000-2-5:95 (IDT)]

IDT (Identical) MOD (Modified)

Table 1 IEC 61000-2 (environment) series standards prepared by TC/SC77 (2) [as of October 2018]

International standard [Latest version]	Prepared by	Name of standard	Domestic TR (year-month of abolitionment) [Corresponding international standard]
IEC TR 61000-2-6 [Ed.1.0: 95-09]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 6: Assessment of the emission levels in the power supply of industrial plants as regards low-frequency conducted disturbances	TR C 0009:1997 (03-08) [IEC TR 61000-2-6:95 (IDT)]
IEC TR 61000-2-7 [Ed.1.0: 98-01]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 7: Low frequency magnetic fields in various environments	—
IEC TR 61000-2-8 [Ed.1.0: 02-11]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 8: Voltage dips and short interruptions on public electric power supply systems with statistical measurement results	—
IEC 61000-2-9 [Ed.1.0: 96-02]	SC77C	Electromagnetic compatibility–Part 2: Environment–Section 9: Description of HEMP environment - Radiation disturbances	TR C 0030:2004 (09-04) [IEC 61000-2-9:96 (IDT)]
IEC 61000-2-10 [Ed.1.0: 98-11]	SC77C	Electromagnetic compatibility–Part 2: Environment–Section 10: Description of HEMP environment - Conducted disturbances	TR C 0031:2004 (09-04) [IEC 61000-2-10:98 (IDT)]
IEC 61000-2-11 [Ed.1.0: 99-10]	SC77C	Electromagnetic compatibility–Part 2: Environment–Section 11: Classification of HEMP environments	—
IEC 61000-2-12 [Ed.1.0: 03-04]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 12: Compatibility levels for low-frequency conducted disturbances and signaling in public medium-voltage power supply systems	—
IEC 61000-2-13 [Ed.1.0: 05-03]	SC77C	Electromagnetic compatibility–Part 2: Environment–Section 13: High-power electromagnetic (HPEM) environments - Radiated and conducted	—
IEC TR 61000-2-14 [Ed.1.0: 06-12]	SC77A	Electromagnetic compatibility–Part 2: Environment–Section 14: Overvoltages on public electricity distribution networks	—

IDT (Identical) MOD (Modified)

SC77A, which provides standards for low-frequency phenomena related to power source frequencies of power supply systems, has made many of the IEC 61000-2 (environment) series standards. First, IEC TR 61000-2-1 explains electromagnetic environments related to low-frequency conducted disturbances that exist in power supply systems. In Japan, TR C 0012:1999 has been issued based on the first version of IEC TR 61000-2-1 issued in 1990. Next, standards IEC 61000-2-2 (public low-voltage power supply systems), IEC 61000-2-4 (power supply systems in industrial plants), and IEC 61000-2-12 (public medium-voltage power supply systems), which define low-

frequency conducted disturbances that exist in power supply systems and compatibility levels for signals such as power line communication signals, attracted attention from the standpoint of protecting power line communication used for smart meters, and have been discussed in WG8 (description of the electromagnetic environment ) of SC77A for a long time. Especially, compatibility levels for public low-voltage power supply systems were preferentially considered in Ed.2.2 in 2018. In Japan, TR C 0013:1999 was issued based on the first version of IEC 61000-2-2 issued in 1990. Also, TR C 0024:2002 was issued based on the first version of IEC 61000-2-4 issued in 1994. In addition to these, SC77A issued many standards of the IEC 61000-2 series as shown in Table 1. Other than the EC 61000 series, another important document that SC77A prepares is IEC TR 60725 (Consideration of reference impedances and public supply network impedances for use in determining the disturbance characteristics of electrical equipment having a rated current  $\leq 75$  A per phase), the latest version of which (Ed.3.0) was issued in June 2012.

SC77C, which provides EMC standards related to transient phenomena of high-power electromagnetic fields, also makes the IEC 61000-2 series standards. There are IEC 61000-2-9 (radiated disturbance) and IEC 61000-2-10 (conducted disturbance), which define electromagnetic environments resulting from a strong electromagnetic pulse (HEMP: High-altitude ElectroMagnetic Pulse) caused by a nuclear explosion at a high altitude. For these, TR C 0030:2004 (radiated disturbance) and TR C 0031:2004 (conducted disturbance) were issued in Japan. There is also IEC 61000-2-13, which defines radiated and conducted disturbances in HPEM (High Power ElectroMagnetics) that is intentionally generated in a frequency band higher than HEMP.

[References]

- 1) EMC Electromagnetic Environmental Studies Handbook (head of the editing committee: Risaburo Sato) References EMC common standards and stipulations (editing chief examiner: Masamitsu Tokuda), Mimatsu (publisher), Maruzen (publisher), pp.88-110, 2009.9.
- 2) Edited by the IEEJ Dedicated Committee for Investigating Noise Immunity in Electronic and Electrical Equipment (Chair: Masamitsu Tokuda): Handbook for Testing and Engineering Noise Immunity in Electronic and Electrical Equipment, Kagaku Gijutsu Shuppan (publisher), Maruzen (publisher), pp.31-32, pp.54-55, 2013.4.
- 3) Masamitsu Tokuda: I. International organizations for EMC standardization and EMC standards, special feature "World EMC standards and stipulations" (FY 2018 edition), Japan Management Association, p.2-12, 2018.4.
- 4) IEC, EMC Zone, Basic EMC Publications, IEC 61000 Structure  
[http://www.iec.ch/emc/basic\\_emc/basic\\_61000.htm](http://www.iec.ch/emc/basic_emc/basic_61000.htm)
- 5) IEC Guide 107: Electromagnetic compatibility - Guide to the drafting of electromagnetic compatibility publications  
<https://webstore.iec.ch/publication/7518>
- 6) JIS standards related to EMC  
jjishb200707-70





### Masamitsu Tokuda

- 1967 Graduated from Electronics Engineering Department of Hokkaido University
- 1969 Joined NTT, assigned to the Electrical Communications Laboratories
- 1987 Leader of EMC Study Group, NTT Telecommunication Networks Laboratories
- 1996 Professor of Electric Engineering Department, Kyushu Institute of Technology
- 2001 Professor of Electronic Communication Department, Musashi Engineering University
- 2010 Professor emeritus of Tokyo City University  
Visiting co-researcher of the Graduate School of Frontier Sciences, The University of Tokyo

#### Major prizes received

- 1986 Merit award – IEICE  
(on the design theory and evaluation method for optical fiber cables)
- 1997 Information communication merit award by MPT  
(on EMC technology development)
- 2003 Industrial standard merit award by the minister of METI
- 2004 IEICE fellow
- 2007 Promoted to IEEE fellow

# Report on Survey at Persian Gulf countries

International Relations Subcommittee

On March 27, 2018, a WTO/TBT notification was issued to solicit public comments on the GCC (Gulf Cooperation Council) draft EMC technical rules, and comments were submitted (on May 26) from VCCI International Relations Subcommittee. We visited GSO to get answers on these comments directly from GSO (GCC Standardization Organization) to gain an overview of the requirements on the technical regulations and their impact. We also surveyed the latest regulation conditions.

Through the introduction of VCCI Council activities, we also established a relationship with Emirates Authority for Standardization and Metrology (ESMA), which is an institution of United Arab Emirates (UAE). This is a report of our survey on the safety conditions in UAE and the latest movements of EMC regulations in this region. This visit to ESMA was a joint visit with JEITA.

We conducted this survey as part of the 2018 overseas regulations survey project of the VCCI International Relations Subcommittee. We do not guarantee the accuracy of the all information included in this report. Please check with the regulation authorities for the most accurate information.

## 1. Visit to GCC Standardization Organization (GSO)

Visit to: GSO

Date and time: 13:00 to 16:00 on Tuesday, July 10, 2018

Attendee: GSO

H.E. Mr. Saud N. Al-Khusaibi: Secretary General

Mr. Ibrahim Al-Hashaf: Acting Head of Notification

Mr. Basem Salameh: Conformity Specialist

VCCI

Mr. Yukio Uchida: Chairman of International Relations Subcommittee (Panasonic Corporation)

Mr. Kazuyuki Hori: Vice-chairman of International Relations Subcommittee (Sony Corporation)

Ms. Yoko Inagaki: Program Manager (VCCI Council)

### ① Enforcement date, moratorium provision and duration

Undecided yet.

A moratorium of at least six months is guaranteed as a GSO policy, which is the same as explained in the previous visit. The proposed one-year moratorium will be accepted.

A GSO working group plans to discuss technical regulations on EMC, low-voltage devices, machines, RoHS, etc. in September. If an agreement is reached in this working group, final approval will be made by a meeting

of the board of directors. Representatives of impacted individual countries will attend that meeting. The next meeting is scheduled during October to November, and the technical regulations may be approved in that meeting in the earliest case.

② Products subject to the regulations

Undecided yet.

However, they plan to determine products subject to the regulations in two steps. They will consider home electronics (white goods) in the first step and IT devices in the second step.

③ Domestic standards

The latest versions of the international standards are applied.

④ Relationship with the technical regulations for low-voltage devices

They do not plan to revise the technical regulations on low-voltage devices to modify or delete EMC requirements. Instead, they plan to add notes to the EMC technical regulations to invalidate EMC requirements included in technical regulations on low-voltage devices.

⑤ Display

They plan not to require the display of the notified body (NB) ID, which is required in the current technical regulations on low-voltage devices. Therefore, manufacturer ID will probably be not required, which would have been possibility required by List (1) of the items subject to the technical regulations on low-voltage devices and by the EMC technical regulations. These specifics will probably be covered by a QR code.

⑥ Others

For technical regulations on low-voltage devices, they plan to extend the scope of List (2) of the items subject to regulations. The issuance of List (1) of the items subject to regulations seems to have low priority.



Office of Secretary General of Saud N. Al-Khusaibi



GSO (GCC Standardization Organization)

## 2. Visit to Emirates Authority for Standardization and Metrology (ESMA)

Visit to: ESMA

Date and time: 11:00 to 13:30 of Thursday, July 12, 2018

Attendee: ESMA

Dr. Yousef Alsaadi: Director of Technical Legislations

Ms. Hana Mohamed Al Kokhardi: Acting Head of Internal Conformity Affairs

Mr. Khaled Abdul Majeed: Standardization Engineer

JEITA

Mr. Yasukazu Tsubuko

Local subsidiary

Sony Middle East and Africa FZE

Mr. Shigenari Sakakibara: Head of Customer Service

Mr. Balaji Kannan: Manager, Customer Service

Mr. Kozo Kawakita: Panasonic Marketing Middle East & Africa FZE

Mr. Ryuji Nakatani: Director, Customer Service Division

Ms. Fides Enriquez: Assistant Manager, Customer Service Division

VCCI

Mr. Yukio Uchida: Chairman of International Relations Subcommittee (Panasonic Corporation)

Mr. Kazuyuki Hori: Vice-chairman of International Relations Subcommittee (Sony Corporation)

Ms. Yoko Inagaki: Program Manager (VCCI Council)

<Quick report>

① Enforcement schedule of GCC EMC technical regulations in UAE and existence of UAE-specific requirements

- Enforcement date, moratorium provision and duration

Undecided yet. This is the same as the answer from GSO.

- Products subject to the regulations

Items subject to regulations will be specified.

They will consider home electronics (white goods) in the first step and IT devices in the second step. The schedule is undecided. These are the same as the answers from GSO.

- Deviations for UAE

Undecided yet. Any deviation of a GCC affiliate country will be listed in an annex to the technical regulations.

② Reference information

Together with JEITA, we exchanged information on the marking requirement in the Emirates Conformity Assessment Scheme (ECAS) of the UAE safety regulations.

As background for this marking requirement, there was a fatal accident caused by an uncertified product. They decided to let users know of certificates of different models so that users will know by marks whether products are certified before buying them. The marks will let a user know prior to buying a product if a product subject to ECAS certification has actually obtained certification.



ESMA reception room



ESMA (Emirates Authority for Standardization and Metrology)

# Report on 2018 IEEE EMC Symposium

Steering Committee, Technical Subcommittee

This is a report on 2018 IEEE International Symposium on Electromagnetic Compatibility, Signal and Power Integrity.

Location: Long Beach Convention & Entertainment Center, California, USA

Period: Monday, July 30 to Friday, August 3, 2018

Attendees: Mr. Shinichi Okuyama, Technical Subcommittee member (Chief of VHF-LISN WG, NEC Platforms, Ltd.)

Mr. Akira Oda, Executive Director (VCCI Council)

Mr. Masahiro Hoshino, Secretary General (VCCI Council)

Mr. Toshiki Shimasaki, Vice Technical Manager (VCCI Council)

Ms. Yoko Inagaki: Program Manager (VCCI Council)

## I. Overview of IEEE EMC 2018

The purpose of attending the symposium was to present a paper that the VCCI Council submitted and to collect information by attending technical sessions, workshops, and tutorials.

Countries and regions that attended the symposium: 28, presented papers: 114 (three from Japan (Tokin, Hitachi, and VCCI Council), presentations in workshops: 35 (zero from Japan), presentations in tutorials: 85 (one from Japan), special session presentations: 15 (zero from Japan), poster session presentations: 23 (zero from Japan). The country that presented the greatest number of papers was the U.S. (55), followed by China (11) and Italy (9).

### 1. Presentation of a paper from the VCCI Council

- Title: Investigation on Difference of Radiated Emission Measurement Reproducibility between Two EUTs at International RRT by using CMAD as a Terminating Device for AC Mains Cable  
(VHF-LISN WG: Chief Okuyama, Subcommittee members Kuwabara and Osabe, and Secretariat Muramatsu)
- Presenter: Mr. Okuyama, Technical Subcommittee member
- Paper overview In the international round robin test (RRT) that confirmed the effect of the AC power cable termination device for realizing the CISPR SC-I/WG2's improvement of the correlativity of the radiated emission measurement site, it was found that the degree of the improvement differs depending on the EUT in the case of common mode absorbing devices (CMAD). This paper presents some analysis and measurement as additional verification for

the international RRT, and shows as a result that site correlativity improvement by CMAD is reduced when an interfering wave current in the conductor of an AC power cable returns through another conductor in the AC power cable (e.g. protection earth (PE)).

- Q&A:

(1) Movement for future VHF-LISN standardization

=> Currently, CISPR SC-A&I/JAHG 6 discusses some addition to basic standards of CISPR 16-1-4 and CISPR 16-2-3.

(2) Necessity of termination devices for 300 MHz to 1 GHz

=> Impact of AC power cables on radiated emission is expected in frequencies lower than 300 MHz. Frequencies of 300 MHz or higher are not considered at present.

## **2. Overview of the keynote, workshops, tutorials, technical sessions, and exhibitions**

(1) Keynote

- Title: The art and engineering of antenna near-field measurements and diagnostics: History, Fundamentals and Future

The keynote presented, with some test cases, the current status of measurement using antennas, flat surface scan measurement in near-fields, and the effectiveness of analysis by simulations. One result of research at UCLA, which the presenter belongs to, was the introduction of the RapidScat antenna that was actually mounted on a space shuttle.

(2) Workshops and tutorials

① Basic EMC measurement

- Title: Basic Measurement Sites, Methods, and Associated Errors

This paper introduced emission and immunity measurement facilities and common test standards. Especially, it provided a short explanation of the difference between IEC 61000-4-20, 21, and 22 and CISPR 16-1-4, which specify measurement facilities for GTEM, RVC, and FAR. The cost can be reduced significantly by providing a margin in measurement results and reducing the uncertainty of measurements.

- Title: CISPR 35 -Tests and Levels

CISPR 35 was issued in August 2016, and the paper mainly explained its differences from CISPR 20 and 24. We asked a question on the latest edition (2014) and the previous edition (2005) of IEC61000-4-5 (surge test), and the answer was that CISPR 35 Ed.1.0 refers to IEC61000-4-5 (2005). However, there are many related ongoing discussions.

② EMC DESIGN AND TEST OF MODERN WIRELESS DEVICES

- Title: The 5G New Radio – Implications for EMC and Antenna Testing

The 5G uses frequency bands of 28 GHz and 39 GHz, so that the upper limits of test frequencies are 90 GHz and 200 GHz. Beams of antennas are variable, and this requires some consideration when searching for the peaks of interfering waves. Testing may be very time consuming.

(3) Technical sessions

① EMC Measurement Techniques – 1

- Title: Far-Field Pattern Measurement and Simulation of VHF Antenna at 60 MHz for Europa Clipper mission

The presentation explained the measurement and simulation of a linearly polarized VHF folded dipole array antennas operating at 60 MHz for Europa Clipper mission for NASA's future. The antenna evaluation was conducted using a GPS-enabled drone to measure the distance from the linearly-polarized-wave VHF folded-dipole antenna. The simulation results aligned well with measurements.

② Test Facilities and Standards

- Title: Ground loops during site validation of anechoic rooms below 30 MHz

Site calibration for 30 MHz or less cannot ignore the impact from ground loops. This paper explained some methods to avoid ground loops. This paper serves as a very useful reference for the planning of experiments conducted by the antenna calibration and site evaluation working group of the VCCI Council.

(4) Exhibition

There were exhibitions from 113 companies (four companies from Japan). We found many exhibitions related to measurement facilities. There were also exhibitions from laboratory accreditation bodies ANAB, A2LA, and NVLAP which have signed MOUs with the VCCI Council. Additionally, EMC SAPPORO, which is scheduled next year, was introduced.



Presentation in the technical session by Mr. Okuyama, Technical Subcommittee member



Exhibition floor of the symposium



The Long Beach Convention & Entertainment Center



## II. Report on meeting with NVLAP

Date and time: 13:00 to 14:00 on Tuesday, July 31, 2018

Location: Long Beach Convention & Entertainment Center

Attendees: NVLAP: Mr. Bradly W. Moore, Program Manager

Ms. Amanda McDonald, Program Manager

VCCI: Mr. Okuyama, Technical Subcommittee member (Chief of VHF-LISN WG)

Executive Director Mr. Oda, Secretary General Mr. Hoshino, Vice Technical Manager

Mr. Shimasaki, Program Manager Ms. Inagaki

Overview: We used the occasion of the IEEE EM to have a face-to-face meeting with NVLAP, which has an MOU agreement with the VCCI Council, to exchange the latest conditions and opinions.

### Minutes

#### 1. Explanation of the latest status from the VCCI Council

- Material: VCCI Update (Aug. 2018)

Executive Director Mr. Oda gave an overview of various VCCI projects and explained the status of migration to the latest standards.

#### 2. Latest information from NVLAP

- Material: NVLAP NEWS (June 2018)

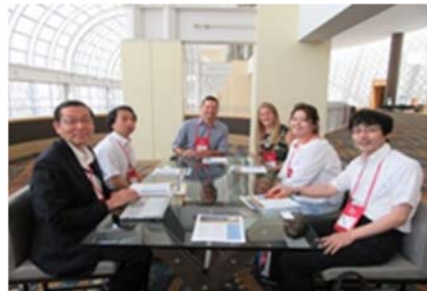
NVLAP explained that there are 57 accredited laboratories registered in compliance with VCCI standards, and that only new standards have been supported from November 2017. With the revision of ISO/IEC 17025, which is the international standard on the general requirements on the capabilities of testing laboratories and calibration laboratories, NVLAP have been conducting accreditation based on ISO/IEC 17025:2017 from April. NVLAP attends meetings of ILAC and APLAC.

#### 3. Exchange of opinions

We reconfirmed the relationships between the old operation standard (V-2), old technical reference (V-3), new operation standard (VCCI 32-1), and new technical reference (VCCI-CISPR 32). Parallel operation of the old and new standards ends in March 2019; so, only the new standards will be effective from April 2019. We both confirmed that the MOU with NVLAP will be updated next year.



NVLAP exhibition booth



Meeting

### III. Report on meeting with ANAB

Date and time: 15:30 to 16:00 on Tuesday, July 31, 2018

Location: Long Beach Convention & Entertainment Center

Attendees: ANAB: Mr. Randy Long, Accreditation Manager

VCCI: Mr. Okuyama, Technical Subcommittee member (Chief of VHF-LISN WG)

Executive Director Mr. Oda, Secretary General Mr. Hoshino, Vice Technical Manager Mr. Shimasaki, Program Manager Ms. Inagaki

Overview: We used the occasion of the IEEE EM to have a face-to-face meeting with ANAB, which has an MOU agreement with VCCI Council, to exchange the latest conditions and opinions.

#### Minutes

##### 1. Explanation of the latest status from the VCCI Council

###### - Material: VCCI Update (Aug. 2018)

Executive Director Mr. Oda gave an overview of the various VCCI projects and explained the status of migration to the latest standards.

##### 2. Explanation of the status from ANAB

With the revision of ISO/IEC 17025, which is the international standard on the general requirements on the capabilities of testing laboratories and calibration laboratories, ANAB is busy migrating the corresponding standard from ISO/IEC 17025:2005 to ISO/IEC 17025:2017.

##### 3. Main points in the exchange of opinions

ANAB asked us if testing laboratories conformance to ISO/IEC 17025:2017 was mandatory according to the VCCI operation standard, and we answered that it was not a mandatory requirement. ANAB also asked us how we will respond when they want to know about facility accreditation by VCCI. We agreed that we would exchange information after reviewing the documents that had been sent last year. We both confirmed that the MOU with ANAB would be updated next year.



ANAB exhibition booth

#### IV. Report on meeting with A2LA

Date and time: 16:00 to 17:00, Wednesday, August 1, 2018

Location: Long Beach Convention & Entertainment Center

Attendee: A2LA: Ms. Megan Riebau, EMC Program Manager

VCCI: Mr. Okuyama, Technical Subcommittee member (Chief of VHF-LISN WG)

Executive Director Mr. Oda, Secretary General Mr. Hoshino, Vice Technical Manager Mr. Shimasaki, Program Manager Ms. Inagaki

Overview: We used the occasion of the IEEE EM to have a face-to-face meeting with A2LA, which has an MOU agreement with the VCCI Council, to exchange the latest conditions and opinions.

#### Minutes

##### 1. Explanation of the latest status from the VCCI Council

###### - Material: VCCI Update (Aug. 2018)

Executive Director Mr. Oda gave an overview of various VCCI projects and explained the status of migration to the latest standards.

##### 2. Explanation of the latest status from A2LA

###### - Material: A2LA Status Update (July 2018)

Based on presentation materials, Ms. Megan Riebau explained the current certification situation, latest topics, training courses, and so forth. There are 115 accredited laboratories for VCCI standards, and 40 accredited laboratories for VCCI-CISPR 32, both of which increased from the last year.

##### 3. Main points in the exchange of opinions

We told her that our VCCI DAYORI provides details on the results of market sampling tests and it is posted on the web site. We confirmed that the acceptance of applications based on the old V-3 technical reference will be terminated at the end of March 2019. We both confirmed that the MOU with A2LA will be updated next year.



Meeting



A2LA exhibition booth

## V. Report on meeting with ITI

Date and time: 17:30 to 19:00 of Thursday, August 2, 2018

Location: Long Beach Convention & Entertainment Center

Attendees: ITI: Mr. Richard Worley (OELL) (ITI TC5 Vice-chairman)

Mr. Jack Coady (Schneider Electric), Mr. Dave Arden (HP),

Mr. Sarah Delaney (Teradata), Mr. John Flavin (Teradata),

Mr. Jim Knighten (Teradata), Mr. Jeff Evans (Intel),

Mr. Dave Crawford (Logitech), Mr. John Fessler (Lexmark),

Mr. Zach Kratzer (Lexmark), Mr. Keith Hardin (Lexmark),

Mr. John Mass (IBM), Mr. Monrad Monsen (Oracle) (13 attendees)

VCCI: Mr. Okuyama, Technical Subcommittee member (Chief of VHF-LISN WG)

Executive Director Mr. Oda, Secretary General Mr. Hoshino, Vice Technical Manager Mr. Shimasaki, Program Manager Ms. Inagaki

Overview: We have a face-to-face meeting at the IEEE EMC every year with ITI, which is an association of the computer industry of the United States and which also accounts for a large portion of the overseas members of the VCCI Council. During this symposium also, they allocated a time frame in an ITI meeting to exchange opinions with us.

### Minutes

#### 1. Explanation of the latest status from the VCCI Council

- Material: VCCI Update (Aug. 2018)

Executive Director Mr. Oda gave an overview of various VCCI projects and explained the status of migration to the latest standards.

#### 2. Exchange of opinions

The International Relations Subcommittee of the VCCI Council surveys regulations and operation standards of different countries and holds an International Forum in October every year. This year, we invited South Africa, EU, China, and Australia. We invited the GCC (Gulf Cooperation Council) last year. Furthermore, the VCCI Council visited the GCC (page 14) this year to exchange opinions. Presentation materials of the forum and articles on different visits will be posted on the VCCI Council web site.



Meeting with ITI

## VI. Impressions

We fulfilled our objectives of presenting papers and having meetings with different accreditation bodies and ITI. Our general impression on the symposium as a whole was that there were many workshops and tutorials on EMC and SI/PI that address new technologies such as smart grid, IoT, and 5G. Among the countries in Asia, China presented the greatest number of papers, followed by Korea and then Japan. We consider that we must continue to promote the submission of papers with an eye on movements in the academic society.

The VCCI Council will actively participate in the IEEE EMC every year and continue to exchange opinions and information with ITI TC5 and different accreditation bodies.



Exhibition floor of the symposium

# Report on International symposium and exhibition on electromagnetic compatibility (EMC EUROPE 2018)

Technical Subcommittee

This is a report on the international symposium and exhibition on electromagnetic compatibility (EMC EUROPE 2018).

Location: Beurs van Berlage Amsterdam Conference Centre,  
Amsterdam, the Netherlands

Period: Monday, August 27 to Thursday, August 30, 2018

Attendees: Mr. Shinichi Okuyama, Technical Subcommittee member (Chief of VHF-LISN WG, NEC Platforms, Ltd.)

Masaru Yoshihara, Technical Subcommittee member (committee member of antenna calibration and site evaluation WG, Riken Environmental System Co., Ltd.)

Hidenori Matsumura, Technical Manager (VCCI Council)

## 1. Overview of EMC EUROPE 2018

The purpose of attending the symposium was to present a paper that the VCCI Council submitted and to collect information by attending technical sessions, workshops, and tutorials.

Countries and regions that attended the symposium: 34, presented papers: 149 (15 from Japan), presentations in workshops/tutorials: 20 (zero from Japan), poster session presentations: 40 (two from Japan). Germany presented the most papers (35) followed by the Netherlands (24), France (20), and Japan (17).

## 2. Presentation of a paper from the VCCI Council

### ① Presentation of a paper related to VHF-LISN WG

-Title: Influence of Disturbance Current Mode on Correlation between Radiation Test Sites Using VHF-LISN and CMAD

(Subcommittee members Okuyama, Kuwabara, and Osabe, and Secretariat Muramatsu)

- Presenter: Mr. Okuyama, Technical Subcommittee member

- Session name: EMC Standards and Interlaboratory Comparison

- Overview of the paper: As an additional validation to the international RRT conducted from 2013 to 2014, we re-validated the effect of termination devices with different modes of electric current flowing along the power line of EUT. As a result, we found that a device that defines

the output impedance of the power network is effective to improve the reproducibility of the test results of radiated emission from power lines.

- There were questions on why we did not use CDNE-M (which was used in the previous international RRT), on the future standardization of VHF-LISN, and on the range of the frequencies of impedance specified by VHF-LISN.

As for not using CDNE-M in our evaluation, we explained that we wanted to align with the AMN impedance specification used for the measurement of conducted emission; so, we evaluated radiated emission using VHF-LISN, which has the same termination impedance. As for the future standardization of VHF-LISN, the CISPR-A subcommittee, which defines basic standards in the CISPR 16 series, and the CISPR-I subcommittee, which makes standards related to multimedia device products, have started discussions in CISPR SC-A&I/JAHG6 about standardizing VHF-LISN in the CISPR 16 series. As for the range of impedance frequencies specified by VHF-LISN, we explained that the upper frequency limit is 300 MHz.

② Presentation of a paper related to antenna calibration and site evaluation working group

- Title: Free-Space Factor Calibration of Hybrid Antenna

(Subcommittee members Yoshihara, Shimano, and Miura, and Secretariat Muramatsu)

- Presenter: Mr. Yoshihara, Technical Subcommittee member
- Session name: Antennas and Co-site Interference
- Overview of the paper: For a typical hybrid antenna used for the measurement of radiated emission of 30 MHz to 1 GHz, we obtained the antenna factor in a free space by the three-antenna method at the height of 10 m from the ground. Then, we compared the antenna factor with that of a quasi-free space. The result confirmed that the error of the antenna factors is within  $\pm 1.0$  dB with the free space conditions of the antenna height being 10 m, the antenna distance being 8 m, and vertical polarization. However, for the frequency range of 30 to 50 MHz, we found that there is a ground effect at the height of 10 m. So, we conducted the three-antenna method using a time domain function to remove ground reflection by gating. The resulting error was 1.7 dB in 30 MHz. This measurement error varies with different positions of gating, so we need to study more about getting the antenna factor using the time domain function.
- There was a question as to whether an absorber was placed on the ground plane for the evaluation. We explained that we did not place an absorber on the ground plane because the measurement was done at the height of the antenna at which we confirmed the free space condition.

### 3. Overview of the keynote, workshops, tutorials, technical sessions, and exhibitions

#### (1) Keynote

- Title: Keynote Kevin Weijers

The keynote did not directly relate to EMC subject matter, but it was very interesting: How we can translate a pure thought to an effective experience.

Today, many people are spending most of the time reading and responding to emails. The keynote described what experiences you can have when you abandon that action, based on the experience of the presenter.

#### (2) Workshop & Tutorial

##### ① Understanding for Education in EMC Engineering

This lecture explained causes of occurrences of emitted EMI to the audience of researchers and students. The lecture included an explanation of basics on how an electric current generates a loop, a return path, and a common mode (CM) current using an experimental circuit. It also included some examples of actual wave interference phenomena.

#### (3) Special Sessions

##### ① EMC Standards and Interlaboratory Comparison

- Title: Inconsistency in CISPR 16-1-1 performance tests for disturbance analyzers

Concerning CISPR 16-1-1, the presenter reported issues on the measurement of click noise using QP detection based on actual measurements and indicated countermeasures for the issues. In answer to a question, it was noted that this is planned to be proposed for the next revision of CISPR 16-1-1.

##### ② EMC Standards and Interlaboratory Comparison

Title: Design of a Reference Device for Surge Immunity Interlaboratory Comparison

An inter-laboratory comparison (ILC) is an effective tool for evaluating a testing laboratory's capabilities. However, it is difficult to make a standard surge immunity instrument for ILC. This presentation reported details and issues related to the creation of a standard instrument to be used for the surge immunity tests.

##### ③ Special Session on Conducted EMI / Low Frequency EMI

Title: Evaluation of Numerical Methods for the Simulation of Real Test Facilities for Low-Frequency Magnetic Fields Measurements

There was a presentation about OATS and SAC test facilities for low-frequency magnetic field measurement. The presentation reported the results of a round robin test showing how two properties (specific conductivity  $\kappa$  and relative permeability  $\mu r$ ) of a material on the



ground plane have an impact on magnetic field measurement of a low-frequency band of 1 MHz or less. It was reported that the conductivity parameters of a material on the ground plane have a significant impact on the magnetic coupling to the reception antenna and eventually to the feeding point voltage.

#### ④Special Session on Power Quality and EMC

- Title: Modal S-Parameter Estimation of EUT Connection of Conducted Disturbance Measurement System

There was a presentation about the estimation of the S-parameter of the EUT connection of a conducted disturbance measurement system. The presentation proposed a method for getting the S parameter of an AC-SMA adapter. Higher frequencies have more significant impacts. Especially at a high frequency, you cannot ignore the impact on the S-parameter arising from structural differences of the input/output ports of the EUT connection. It was reported that, when estimating EUT connection properties, a small structural difference of the input/output ports may have a big impact on the S-parameter, especially at high frequencies.

#### ⑤EMC in Communication Systems

- Title: Statistical Characteristics of Radiation Noise from LED Lamps and Its Effect on Wireless Medical Telemeters

The presentation reported the analysis results of APD measurements of a case in which a telemeter for receiving patient's heartbeat in a hospital does not work normally due to radiated noise from an LED lamp. An interesting video was shown in which the telemeter screen becomes completely dark when an LED lamp is brought close to it.

#### (4) Exhibition

There were booths from 26 companies (zero from Japan), most of which were related to measurement facilities. There was also a booth for EMC SAPPORO & APEMC 2019, which will be held next year.

## 4. Impressions

We presented research results of the VCCI Council in an international symposium. We achieved our objectives through active discussion during the presentation.

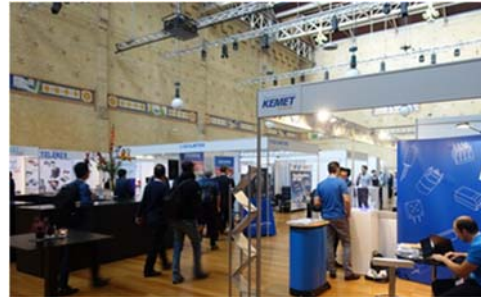
In IEEE EMC in August and this time's EMC Europe, we were able to indicate to a large audience issues related to current measurement methods and the effectiveness of VHF-LISN, which is expected to be contributory to international standardization in years to come. We made a presentation on antenna calibration methods following up on last year's presentation, by which

we were able to show our efforts and develop our presence.

EMC EUROPE 2019 next year will be held in Barcelona, Spain. The VCCI Council will continue to study issues related to measurement methods, actively submit papers to symposiums based on experiments and their evaluation results, and exchange opinions and information with knowledgeable parties.



Entrance of the symposium room



Exhibition floor



Presentation  
(Mr. Okuyama, Technical Subcommittee member)



Presentation  
(Mr. Yoshihara, Technical Subcommittee member)

# Report on Visit to China International Industry Fair (CIIF)

Public Relations Subcommittee

Name of fair: China International Industrial Fair (CIIF)

URL :<http://www.ciif-expo.com/en/>  
<http://icts.ciif-expo.com>

Host: Ministry of Industry and Information Technology  
National Development and Reform Commission  
Ministry of Commerce  
Ministry of Science and Technology  
Chinese Academy of Sciences  
Chinese Academy of Engineering  
China Council for the Promotion of International Trade  
United Nations Industrial Development Organization  
Shanghai Municipal People's Government

Sponsor: China Machinery Industry Federation

Host: Donghao Lansheng (Group) Co., Ltd.

Period: Wednesday, 19 September to Sunday, 23 September, 2018

Location: National Exhibition and Convention Center (Shanghai)  
ICTS was held at Upper Level Halls / 4F (16m Layer) 7.2 Hall.

Participants: Yasushi Hirakawa, Public Relations Subcommittee member (NEC Platforms, Ltd.)  
Masateru Tagami, Secretariat (VCCI Council)  
Naoko Hori, Secretariat (VCCI Council)

Exhibition area: Approx. 280,000 square meters (Halls 1 to 8 of the National Exhibition and Convention Center)  
\* ICTS was at Hall 7.2.

Booths: 2,665 companies (Quick report of 2018)  
\* Reference: In 2017, about 2,600 companies (28 countries and regions) participated, among which 170 were at ICTS.

Total visitors: Approx. 174,000 (Quick report of 2018)  
\* Reference: In 2017, there were 178,000 visitors (83 countries and regions)

## 1. Purpose of the visit

Chinese company members are increasing in recent several years, and they are now the third most numerous of VCCI overseas members, following the United States and Taiwan (Figure 1). Thus, we visited the fair aiming to raise awareness of VCCI among Chinese companies with a view to our participation in an exhibition in China

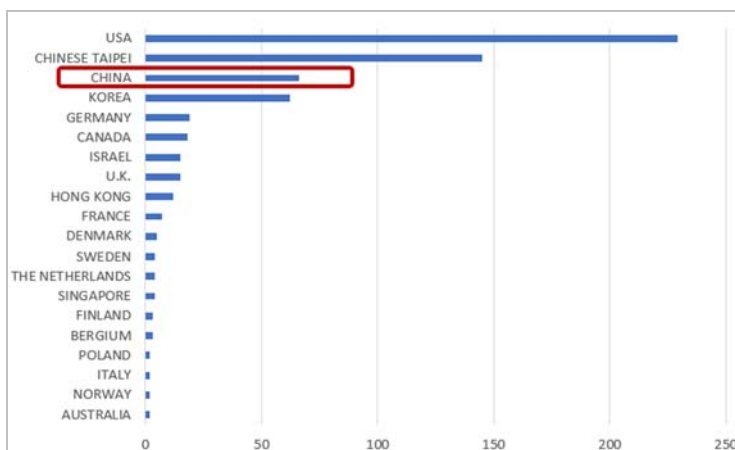


Figure 1: Numbers of VCCI overseas members

(Source data: Member information on VCCI home page)

The China International Industrial Fair that we visited this time and EMC China in October are candidate fairs that we will hold booths in next year. By visiting the fair, we were able to directly gain knowledge about the site (location and access), participating companies and organizations, types of visitors, the degree of congestion (degree of popularity), the layout, and seminars. We were also interested to see how many non-VCCI-member Chinese companies participated in the exhibition.

## 2. Overview of the fair

The China International Industrial Fair (CIIF) is jointly hosted by the Ministry of Industry and Information Technology, National Development and Reform Commission, Ministry of Commerce, Ministry of Science and Technology, Chinese Academy of Sciences, Chinese Academy of Engineering, China Council for the Promotion of International Trade, United Nations Industrial Development Organization, and Shanghai Municipal People's Government. It is sponsored by the China Machinery Industry Federation, and operated by Donghao Lansheng (Group) Co., Ltd. The fair is an international total trade show that exhibits the close integration of equipment production and "informatization and industrialization" to promotes transactions in this field. The fair is held every autumn in Shanghai, and the 20th fair was held this year.

With the effort of *specialization, marketing, internationalization, and branding* that continued from 1999, the fair acquired a certification from The Global Association of the Exhibition Industry (UFI) and is now an international industrial brand fair. As such, it has become highly influential in the equipment production industry of China. Therefore, as the host describes it, the fair is an important window into the Chinese industry that is open to the world, and the fair has also become a platform for economic trade and interaction.

The CIIF consists of nine theme shows: MWCS (Metalworking and CNC Machine Tool Show), IAS (Industrial Automation Show), EPTES (Environmental Protection Technology & Equipment Show), ICTS (Information & Communication Technology Show), ES (Energy Show), NEAS (New Energy Auto Show), RS (Robotics Show), STIS (Scientific & Technological Innovation Show), and NMIS (New Material Industry Show). The CIIF is a very large exhibition with a total exhibition area of about 280,000 m<sup>2</sup>, booths of over 2,600 companies, over 270 dedicated media companies, and over 170,000 business visitors.

In this visit, we mainly concentrated on ICTS (Hall 7.2), which is related to VCCI.



Entrance of the CIIF exhibition area and the site layout

### 3. Exhibitors and visitors

We do not know the country-by-country numbers of CIIF exhibitors, but naturally it is clear the most of them are Chinese companies.

Overall, most of the exhibitions were related to factory automation solutions and industrial robots like those of Industry 4.0.

It was difficult to gain an accurate count of the number of companies and organizations that handle products subject to VCCI voluntary control in the ICTS exhibition area that we visited, but there were many booths that exhibited server computers, tablets, projectors, and smart home IoT devices.

We were able to conduct public relations activities with several companies that handle MME devices. We asked if they know about VCCI, explained VCCI activities, explained about the conditions and possibility of exporting products to Japan, and handed out brochures on how to gain VCCI membership.

Most of the visitors are from Asia, especially over 80% seemed to be from China, although there were visitors from around the world including Europe and the United States. All in all, there were very few ordinary people among the visitors and many of the visitors were R&D or business people.



Explanation of VCCI activities and interview in the MME exhibition booth

#### 4. Expected publicity effect of running a booth and actions to be taken

At the China International Industrial Fair (CIIF), we expected the Information & Communication Technology Show (ICTS) to be the exhibition that most relates to VCCI. However, most of the exhibitions were about communication infrastructures or production management solutions such as 5G communication, factory management systems, and smart grids. MME hardware was mostly treated just as devices and terminals being used.

However, it remains true that MME hardware is widely used and the above business fields will be on the increase in years to come. Because VCCI recognition among exhibitors was not high, some effect is expected from public relations activities in this exhibition. Furthermore, there were a very large number of visitors overall (including those visiting other exhibition themes) and there were very few non-business visitors, which may enable us to employ very effective publicity activities when approaching non-member companies.

During the visit, we met Ms. Ivy Lu, ICTS Dept. Manager of CIIF, and introduced the Japan VCCI Council to her. She said that we would be very welcome if we wish to participate in the exhibition. At the moment, it seems likely that participating in the exhibition may only have a limited publicity effect. But looking to the future, there seem to be good reasons for the VCCI Council to participate in Chinese exhibitions.

The Public Relations Subcommittee regards the CIIF, as well as Taiwan, as good venues for overseas VCCI public relations activities. We will study the kinds of exhibitions and publicity that suit different exhibition fairs with a view to running booths in the future.

## 5. Impressions

The China International Industrial Fair (CIIF) was enormous. The area of the site was large. There were two floors, each having eight similar halls circularly arranged. It was not easy to get to one of the nine theme halls. If we want to participate in the exhibition, we will need to donate sufficient time to survey the site and plan a smooth procedure for carrying in equipment and other preparation tasks.

Because of the large crowds, it took a long time to get to the site from the station and to check in. (One reason may be that website registration is not possible from outside China.) The congestion seems to have been caused by officials conducting strict baggage inspections around the station nearest to the site and by the largely restricted access path for the control of the flow of people. The congestion may have also been heightened because it was just before the National Day of China. Our activity plan must include a sufficient margin of time.

On the other hand, the Chinese market is full of energy and will certainly develop in every field, and thus gathers many visitors from the world. The CIIF seems to be one of the possible venue candidates for our publicity activities. We feel that, in order to raise awareness of the VCCI with overseas companies, we must consider participation in the CIIF together with other exhibitions as part of continued public relations activities that match movements of the world market.



Reference: RS (Robotics Show) Hall 7.1

# Status on FY2018 Market Sampling Tests

Market Sampling Test Subcommittee

As of October 31, 2018

Planned number of Market Sampling Tests	Loan-based		45		100					
	Purchase-based		55							
Sampling test Grand total	Selected	Cancelled (unrealized shipment, etc.)	Owner's consent pending	Testable samples	Test completed	Judgment awaited	Judgment			
							Passed	Failed - tentative		
								Finally passed	Finally failed	Pending
<b>Grand total</b>	73	3	3	67	56	15	39	-	-	2
<b>Previous month grand total</b>	42	1	6	35	15	12	3	-	-	-

<b>Loan-based testing total</b>	36	3	3	30	23	5	17	-	-	1
1 <sup>st</sup> Quarter	12	1	-	11	11	-	10	-	-	1
2 <sup>nd</sup> Quarter	12	2	-	10	8	1	7	-	-	-
3 <sup>rd</sup> Quarter	12	-	3	9	4	4	-	-	-	-
4 <sup>th</sup> Quarter	-	-	-	-	-	-	-	-	-	-

<b>Purchase-based testing total</b>	37	-	-	37	33	10	22	-	-	1
1 <sup>st</sup> Quarter	18	-	-	18	18	-	17	-	-	1
2 <sup>nd</sup> Quarter	6	-	-	6	5	1	4	-	-	-
3 <sup>rd</sup> Quarter	13	-	-	13	10	9	1	-	-	-
4 <sup>th</sup> Quarter	-	-	-	-	-	-	-	-	-	-

Final Result

Passed	Failed	Pending
39	-	2

Document inspection	Selected	Cancelled (withdrawal, etc.)	Owner's consent pending	Inspectable samples	Pre-check completed	Judgment awaited	Judgment completed	Judgment	
								Cleared	Problems identified
	26	-	1	25	24	4	20	19	1



# Status on FY2017 Market Sampling Tests

Market Sampling Test Subcommittee

As of October 31, 2018

Planned number of Market Sampling Tests	Loan-based		45		100					
	Purchase-based		55							
Sampling test Grand total	Selected	Cancelled (unrealized shipment, etc.)	Owner's consent pending	Testable samples	Test completed	Judgment awaited	Judgment			
							Passed	Failed - tentative		
								Finally passed	Finally failed	Pending

Loan-based testing total	53	8	-	45	45	-	41	3	1	-
1 <sup>st</sup> Quarter	12	3	-	9	9	-	8	-	1	-
2 <sup>nd</sup> Quarter	12	2	-	10	10	-	9	1	-	-
3 <sup>rd</sup> Quarter	22	3	-	19	19	-	18	1	-	-
4 <sup>th</sup> Quarter	7	-	-	7	7	-	6	1	-	-

Purchase-based testing total	55	-	-	55	55	-	51	2	2	-
1 <sup>st</sup> Quarter	20	-	-	20	20	-	18	1	1	-
2 <sup>nd</sup> Quarter	6	-	-	6	6	-	5	1	-	-
3 <sup>rd</sup> Quarter	19	-	-	19	19	-	18	-	1	-
4 <sup>th</sup> Quarter	10	-	-	10	10	-	10	-	-	-

Final Result

Passed	Failed	Pending
97	3	-

Document inspection	Selected	Cancelled (withdrawal, etc.)	Owner's consent pending	Inspectable samples	Pre-check completed	Judgment awaited	Judgment completed	Judgment	
								Cleared	Problems identified
	41	1	-	40	40	-	40	38	2

Company name	SAC Corp.
Model/Type	Mobile Display PASOMONI10
Measurement Result	Radiated EMI measurement Ver.: 13.3dB excess at 213.0MHz, Hor. 11.9dB excess at 960.0MHz
Cause, measures (to be) taken and actions for the prevention of the recurrence	<p><b>Cause:</b> Original test report for registration shows that the product has passed. However it failed at the sampling test for the sold product. The test laboratory used for conformance verification test is not registered to VCCI. It is presumed that the original test itself had some flaws.</p> <p><b>Measure(to be) taken:</b> Could not find Outsourcing company to develop alternative new product.</p> <p><b>Measures to take on stocked and shipped products:</b> Stop the shipment of the product. Notify this matter on his WEB to recall the product and to refund.</p> <p><b>Prevention:</b> Execute the conformance verification test at the VCCI registered test laboratory and confirm its contents.</p>

Company name	LASTAR Inc.
Model/Type	HDMI + USB HDBASE T over CAT5 Extender 29510/89510
Measurement Result	Radiated EMI measurement Ver.: 12.8dB excess at 742.5MHz, Conducted EMI Measurement AV.: 3.6dB excess at 0.396MHz
Cause, measures (to be) taken and actions for the prevention of the recurrence	<p><b>Cause:</b> Product passed with two AC adaptors for both Tx and Rx units. However, for marketing purpose, the AC adaptor of Rx side is deleted. Even though this equipment is for business use only, registered as class B.</p> <p><b>Measure(to be) taken:</b> Change from metal housing to aluminum housing, remove the aluminum foil from the inside face of the housing, and use less EMI shielding tape. And attach ferrite cores to some interface cables in the system. Change the class from B to A.</p> <p><b>Measures to take on stocked and shipped products:</b> Not sold in Japan.</p> <p><b>Prevention:</b> Improve EMC design process to insure products comply, i.e. pay special attention to cables and product class.</p>

## Secretariat Dayori

### ● VCCI Membership Registry (August - October 2018)

#### New Members

Membership	Member No.	Company Name	Country
Regular	3922	Ecomott Inc.	JAPAN
Regular	3927	KASHIMA ELECTRONICS INC.	JAPAN
Regular	3942	ITC Co., Ltd.	JAPAN
Regular	3943	Fusion Technology Co., Ltd.	JAPAN
Regular	3892	WALT DISNEY PARKS RESORTS U.S., INC.	USA
Regular	3902	BULL SAS	FRANCE
Regular	3912	XILINX, INC.	USA
Regular	3920	Guangdong Chuntex Elite Electronic Technology Co., Ltd	CHINA
Regular	3921	Microchip	ISRAEL
Regular	3924	Lanner Electronics Inc.	CHINESE TAIPEI
Regular	3925	Pismo Labs Technology Limited	HONG KONG
Regular	3926	LINKFLOW Co., Ltd.	KOREA
Regular	3930	McDowell Signal Processing, LLC (dba McDSP)	USA
Regular	3931	RetailNext, Inc.	USA
Regular	3933	Garland Technology	USA
Regular	3936	eze System, Inc.	USA
Supporting	3937	Hokkaido Research Organization, Industrial Research Institute	JAPAN
Supporting	3928	NTREE Co., Ltd.	KOREA
Supporting	3929	Bay Area Compliance Laboratories Corp. (Kunshan)	CHINA
Supporting	3940	Beijing Boomwave Test Service Co., Ltd.	CHINA
Supporting	3941	Shenzhen POCE Technology Co., Ltd.	CHINA
Supporting	3944	CETECOM, Inc.	USA

## Change of Company Name

Membership	Member No.	Company Name	Country	Former Company Name
Regular	3308	KAGA MICRO SOLUTION CO., LTD.	JAPAN	Micro Solution CO., LTD.
Regular	3475	Genband Japan GK	USA	GENBAND US LLC
Supporting	240	TUV SUD Japan Ltd.	JAPAN	TUV SUD Zacta Ltd.
Supporting	3647	GRG Metrology & Test (Shenzhen) Co., Ltd.	CHINA	Compliance Certification Services (Shenzhen) Inc.
Supporting	3928	NTREE Co., Ltd.	KOREA	NTREE Testing Laboratory Co., Ltd.

**Request :** In case of any change in your company name, please kindly advise VCCI. Use the "Notice of Change" at VCCI Website.

## Withdrawal Members

Membership	Member No.	Company Name	Country
Regular	312	MINATO HOLDINGS. INC	JAPAN
Regular	1614	IWATSU MANUFACTURING CO., LTD.	JAPAN
Regular	3757	The Hand Ltd.	JAPAN
Regular	3796	ANZON CORP.	JAPAN
Regular	2214	Azimuth Systems, Inc.	USA
Regular	2559	Optica Technologies Inc.	USA

## ● VCCI Schedule for FY 2018

<b>April</b> <ul style="list-style-type: none"> <li>• Exhibition at TECHNO FRONTIER</li> </ul>	<b>May</b> <ul style="list-style-type: none"> <li>• Measurement engineer course "The basic technique of EMI measurement"</li> </ul>	<b>June</b> <ul style="list-style-type: none"> <li>• Exhibition at COMPUTEX TAIPEI</li> <li>• Measurement engineer course "The basic of electromagnetic waves, EMI measurement technique below 1 GHz"</li> <li>• Release VCCI Dayori No.129</li> </ul>
<b>July</b> <ul style="list-style-type: none"> <li>• VCCI Business Reporting Meeting</li> <li>• Release Annual Report</li> </ul>	<b>August</b>	<b>September</b> <ul style="list-style-type: none"> <li>• Release VCCI Dayori No.130</li> </ul>
<b>October</b> <ul style="list-style-type: none"> <li>• Exhibition at CEATEC JAPAN</li> <li>• VCCI International Forum</li> <li>• Measurement engineer course "The basic technique of EMI measurement"</li> </ul>	<b>November</b> <ul style="list-style-type: none"> <li>• Measurement engineer course "The basic of electromagnetic waves, EMI measurement technique below 1 GHz"</li> <li>• Measurement engineer course "The EMI measurement technique above 1 GHz"</li> </ul>	<b>December</b> <ul style="list-style-type: none"> <li>• Measurement engineer course "The level up of EMI measurement technique"</li> <li>• Release VCCI Dayori No.131</li> </ul>
<b>January</b> <ul style="list-style-type: none"> <li>• VCCI Technical Symposium</li> </ul>	<b>February</b> <ul style="list-style-type: none"> <li>• Measurement engineer course "The uncertainty of EMI Measurement Instrumentation"</li> </ul>	<b>March</b> <ul style="list-style-type: none"> <li>• Release VCCI Dayori No.132</li> </ul>

● Status of Compliance Test Notifications (V-2+VCCI 32-1)  
(July 2018 ~ September 2018)

					April 2018			May 2018			June 2018		
			Class A	Class B	Class A	Class B	Total	Class A	Class B	Total	Class A	Class B	Total
Computer	Server	Super Computer, Server, etc.	A 2	a 2	17	3	20	40	7	47	23	1	24
	Tabletop type	WS, Desk-top PCs, etc.	B 2	b 2	2	28	30	3	13	16	0	6	6
	Portable type	Note PCs, Tablet PCs, etc.	C 2	c 2	0	25	25	1	20	21	0	24	24
	Others	Office Computer, Wearable computers, etc.	E 2	e 2	6	2	8	5	1	6	3	3	6
Peripherals/Terminals Equipment	Storage Device	HDD, SSD, USB Memory, Media drives, etc. Disk drives, NAS, DAS, SAN, etc.	G 2	g 2	10	24	34	29	22	51	7	23	30
	Printer	Printer (Compound equipment included), etc.	H 2	h 2	6	8	14	2	6	8	4	11	15
	Display	CRT displays, Monitor, projector, etc.	J 2	j 2	17	45	62	8	60	68	7	86	93
	Input/Output Device (excluding Auxiliary Memory, Printer, Display)	Image scanners, OCR, etc.	M 2	m 2	2	8	10	1	4	5	3	1	4
	General Purpose Terminal	Display control terminals, etc.	N 2	n 2	1	0	1	0	2	2	0	0	0
	Exclusive Terminal	POS, Terminal for Financial and Insurance use, etc.	Q 2	q 2	9	6	15	8	1	9	11	0	11
	Other Peripherals Equipment	Others (PCI cards, Graphics cards, Mouse, Keyboard, etc.)	R 2	r 2	7	18	25	13	30	43	16	31	47
Audio visual equipment	Broadcast receivers	Television, Radio, Tuner, Video recorder, Set-top Boxes, etc.	K 2	k 2	0	1	1	0	1	1	0	0	0
	Audio equipment	Speaker, Amplifier, IC recorder, MP3 player, Headsets, etc.	L 2	l 2	0	7	7	0	11	11	0	5	5
	Video/Camera equipment	Digital video cameras, Web cameras, Network cameras, Video players, Photo frames, Digital-camera, etc.	I 2	i 2	7	7	14	2	7	9	12	12	24
	Others	Other Audio visual equipment	P 2	p 2	1	2	3	2	1	3	1	1	2
Copying Machine/Compound	-	Copying Machine/Compound equipment, etc.	S 2	s 2	0	0	0	3	1	4	0	5	5
Communications Equipment	Terminal equipment	Mobilephone, Smartphone, PHS telephones	T 2	t 2	0	0	0	0	1	1	0	6	6
		Telephone Equipment (PBX, FAX, Key Telephone System, etc.), Cordless telephones	U 2	u 2	0	1	1	1	2	3	2	3	5
	Network related equipment	Network Channel Terminating Equipment (Modem, Digital Transmission Equipment, DSU, TA, etc.)	V 2	v 2	2	0	2	1	0	1	10	0	10
		LAN Equipment (Router, HUB, etc.), Switching-node, etc.	W 2	w 2	45	10	55	35	13	48	58	7	65
Others	Other Communications Equipment	X 2	x 2	33	8	41	24	12	36	19	5	24	
Entertainment and educational equipment	Electronic stationeries	Electronic dictionaries, Electronic book readers, etc.	D 2	d 2	0	3	3	0	0	0	0	0	0
	Electronic toys	Game machines, Game pads, Toy drones, etc.	Y 2	y 2	0	2	2	0	1	1	10	1	11
	Lighting control equipment for entertainment	Lighting control equipment for entertainment	Z 2	z 2	0	0	0	0	0	0	0	0	0
	Others	Others (Navigator, etc.)	F 2	f 2	0	2	2	0	0	0	0	0	0
Others		O 2	o 2	19	9	28	15	0	15	13	5	18	
Total				184	219	403	193	216	409	199	236	435	

● Status of Compliance Test Notifications (VCCI 32-1)  
(July 2018 ~ September 2018)

					April 2018			May 2018			June 2018		
			Class A	Class B	Class A	Class B	Total	Class A	Class B	Total	Class A	Class B	Total
Computer	Server	Super Computer, Server, etc.	A 2	a 2	16	3	19	31	7	38	21	1	22
	Tabletop type	WS, Desk-top PCs, etc.	B 2	b 2	1	21	22	3	13	16	0	6	6
	Portable type	Note PCs, Tablet PCs, etc.	C 2	c 2	0	17	17	0	17	17	0	21	21
	Others	Office Computer, Wearable computers, etc.	E 2	e 2	3	2	5	5	1	6	3	2	5
Peripherals/Terminals Equipment	Storage Device	HDD, SSD, USB Memory, Media drives, etc. Disk drives, NAS, DAS, SAN, etc.	G 2	g 2	2	20	22	18	9	27	3	10	13
	Printer	Printer (Compound equipment included), etc.	H 2	h 2	4	8	12	2	5	7	1	8	9
	Display	CRT displays, Monitor, projector, etc.	J 2	j 2	11	30	41	5	47	52	7	44	51
	Input/Output Device (excluding Auxiliary Memory, Printer, Display)	Image scanners, OCR, etc.	M 2	m 2	2	7	9	0	3	3	3	1	4
	General Purpose Terminal	Display control terminals, etc.	N 2	n 2	1	0	1	0	0	0	0	0	0
	Exclusive Terminal	POS, Terminal for Financial and Insurance use, etc.	Q 2	q 2	7	4	11	7	1	8	7	0	7
	Other Peripherals Equipment	Others (PCI cards, Graphics cards, Mouse, Keyboard, etc.)	R 2	r 2	5	15	20	9	25	34	10	19	29
Audio visual equipment	Broadcast receivers	Television, Radio, Tuner, Video recorder, Set-top Boxes, etc.	K 2	k 2	0	1	1	0	1	1	0	0	0
	Audio equipment	Speaker, Amplifier, IC recorder, MP3 player, Headsets, etc.	L 2	l 2	0	2	2	0	8	8	0	5	5
	Video/Camera equipment	Digital video cameras, Web cameras, Network cameras, Video players, Photo frames, Digital-camera, etc.	I 2	i 2	6	7	13	2	6	8	11	12	23
	Others	Other Audio visual equipment	P 2	p 2	1	2	3	2	0	2	1	1	2
Copying Machine/Compound	-	Copying Machine/Compound equipment, etc.	S 2	s 2	0	0	0	1	1	2	0	2	2
Communications Equipment	Terminal equipment	Mobilephone, Smartphone, PHS telephones	T 2	t 2	0	0	0	0	0	0	0	3	3
		Telephone Equipment (PBX, FAX, Key Telephone System, etc.), Cordless telephones	U 2	u 2	0	1	1	1	2	3	2	3	5
	Network related equipment	Network Channel Terminating Equipment (Modem, Digital Transmission Equipment, DSU, TA, etc.)	V 2	v 2	2	0	2	1	0	1	8	0	8
		LAN Equipment (Router, HUB, etc.), Switching-node, etc.	W 2	w 2	22	8	30	20	12	32	32	6	38
Others	Other Communications Equipment	X 2	x 2	33	5	38	24	9	33	14	5	19	
Entertainment and educational equipment	Electronic stationeries	Electronic dictionaries, Electronic book readers, etc.	D 2	d 2	0	3	3	0	0	0	0	0	0
	Electronic toys	Game machines, Game pads, Toy drones, etc.	Y 2	y 2	0	1	1	0	0	0	10	1	11
	Lighting control equipment for entertainment	Lighting control equipment for entertainment	Z 2	z 2	0	0	0	0	0	0	0	0	0
	Others	Others (Navigator, etc.)	F 2	f 2	0	2	2	0	0	0	0	0	0
Others		O 2	o 2	3	8	11	6	0	6	11	5	16	
Total				119	167	286	137	167	304	144	155	299	

## ● 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 registering members 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 2018 – September 2018)

R: Field strength measuring facility C: Mains Port Conducted interference measuring facility T: Communication Port

Conducted interference measuring facility G: Radiated EMI measurement facilities above 1GHz

Company name	Equipment name	3 m	10 m	30 m	Dark 3m	Dark 10m	Registration number	Effective date	Location	Contact to:
福島県ハイテクプラザ	電波暗室	-	-	-	○	-	R-20042	2021/7/22	福島県郡山市待池台1-12	024-959-1738
福島県ハイテクプラザ	電波暗室	-	-	-	-	-	G-20048	2021/7/22	福島県郡山市待池台1-12	024-959-1738
宮崎県工業技術センター	電磁環境試験棟電波暗室	-	-	-	○	-	R-20044	2021/7/22	宮崎市佐土原町東上那珂 16500-2	+86 21 6176 5666 ext 111
宮崎県工業技術センター	電磁環境試験棟電波暗室	-	-	-	-	-	C-4965	2021/7/22	宮崎市佐土原町東上那珂 16500-2	+86 21 6176 5666 ext 111
地方独立行政法人 岩手県工業技術センター	大型電波暗室	-	-	-	○	○	R-20049	2021/7/22	岩手県盛岡市北飯岡2丁目4-25	019-635-1115
地方独立行政法人 岩手県工業技術センター	大型電波暗室	-	-	-	-	-	G-20052	2021/9/9	岩手県盛岡市北飯岡2丁目4-25	019-635-1115
地方独立行政法人 岩手県工業技術センター	大型電波暗室	-	-	-	-	-	C-20035	2021/9/9	岩手県盛岡市北飯岡2丁目4-25	019-635-1115
地方独立行政法人 岩手県工業技術センター	大型電波暗室	-	-	-	-	-	T-20034	2021/9/9	岩手県盛岡市北飯岡2丁目4-25	019-635-1115
地方独立行政法人 岩手県工業技術センター	EMI シールド室	-	-	-	-	-	C-20034	2021/9/9	岩手県盛岡市北飯岡2丁目4-25	019-635-1115
地方独立行政法人 岩手県工業技術センター	EMI シールド室	-	-	-	-	-	T-20033	2021/9/9	岩手県盛岡市北飯岡2丁目4-25	019-635-1115
Compliance Certification Services Inc.	CCS Tainan Open Site 5	-	○	-	-	-	R-20045	2021/9/9	No.8,Jiucengling, Xinhua Dist., Tainan City	+886-6-5802201
Compliance Certification Services Inc.	CCS Tainan Chamber A	-	-	-	○	-	R-20046	2021/9/9	No.8,Jiucengling, Xinhua Dist., Tainan City	+886-6-5802201
Compliance Certification Services Inc.	966 Chamber	-	-	-	-	-	G-20049	2021/9/9	No.8,Jiucengling, Xinhua Dist., Tainan City	+886-6-5802201
Compliance Certification Services Inc.	CCS Conducted Test Site	-	-	-	-	-	C-20033	2021/9/9	No.8,Jiucengling, Xinhua Dist., Tainan City	+886-6-5802201
Compliance Certification Services Inc.	CCS Conducted Test Site	-	-	-	-	-	T-20032	2021/9/9	No.8,Jiucengling, Xinhua Dist., Tainan City	+886-6-5802201
Audix Technology (WuJiang) Co., Ltd.	Audix WuJiang No.2 3m Semi-anechoic chamber	-	-	-	○	-	R-20051	2021/9/9	No.1289, Jiangxing East Road, The Eastern Part of Wujiang Economic Development Zone, JiangSu, China	+86-0512-63403993-1063

Company name	Equipment name	3 m	10 m	30 m	Dark 3m	Dark 10m	Registration number	Effective date	Location	Contact to:
Spectrum Research & Testing Laboratory Inc.	Spectrum Research & Testing Laboratory Inc.	-	-	-	-	-	G-20053	2021/9/9	No.167, Ln. 780, Shan-Tong Rd., Ling 8, Shan-Tong Li, Chung-Li District, Taoyuan City, Taiwan	+886-3-498-7684



## Contents of VCCI Dayori No.127 - No.130

### No.127 2018.1

New Year Greetings	President of VCCI Council	Keiichi Kawakami	1
Living in a country side		Koji Komiyama	3
Committee Activities			6
● Board of Directors			6
● Steering Committee			6
● Technical Subcommittee			6
● International Relations Subcommittee			7
● Market Sampling Test Subcommittee			7
● Education Subcommittee			8
● Communication Subcommittee			8
● Measurement Facility Registration Committee			9
● LIST OF ABBREVIATIONS used in Committee			9
Activities section			10
Serial Article – 11			
Basic EMC standards developed by CISPR		Masamitsu Tokuda	12
Report on 2017 IEEE EMC Symposium			14
Report on EMC EUROPE 2017 Angers, France			26
Status on FY2017 Market Sampling Test Operations			30
Report from the Secretariat			31
● List of Members (August 2017 ~ October 2017)			31
● VCCI Events Calendar			32
● State of Conformance Report Submitted for FY2017 (V-2+VCCI32-1)			33
● State of Conformance Report Submitted for FY2017 (VCCI 32-1)			34
● State of Registration of Measurement Facilities			35
Contents of VCCI Dayori No.123 - No.126			36

### No.128 2018.4

What is "media influence"?		Tomokazu Makino	1
Committee Activities			3
● Steering Committee			4
● Technical Subcommittee			4
● International Relations Subcommittee			4
● Market Sampling Test Subcommittee			5
● Education Subcommittee			6
● Communication Subcommittee			6
● Measurement Facility Registration Committee			7
● LIST OF ABBREVIATIONS used in Committee			7
Activities section			7
Serial Article – 12			
EMC product family standards developed by CISPR		Masamitsu Tokuda	10
Report on the 35th REDCA General Assembly Meeting			16
"EMC Workshop" VCCI Seminar Report			20
Report on VCCI International Forum 2017			23
VCCI Council About Public Advertisement			27
Status on FY2017 Market Sampling Test Operations			29
Report from the Secretariat			30
● List of Members (November 2017 ~ January 2018)			30
● VCCI Events Calendar			31
● State of Conformance Report Submitted (V-2+VCCI 32-1)			32
● State of Conformance Report Submitted (VCCI 32-2)			33
● State of Registration of Measurement Facilities (Newly registered or renewed)			34

### No.129 2018.7

My Memories of Prof. Yokoshima		Shinobu Ishigami	1
Committee Activities			4
● Board of Directors			4
● Steering Committee			5
● Technical Subcommittee			6
● International Relations Subcommittee			6
● Market Sampling Test Subcommittee			7
● Education Subcommittee			8
● Communication Subcommittee			9
● Measurement Facility Registration Committee			9
● LIST OF ABBREVIATIONS used in Committee			9
Activities section			10
Serial Article – 13			
Common Standards for EMC Relating to the Environment for the Residential, Trade, Industry, and Other Fields		Masamitsu Tokuda	12
Report on the 2018 Technical Symposium			17
Status on FY2017 Market Sampling Test Operations			21
Report from the Secretariat			22
● List of Members (February 2018 ~ April 2018)			22
● VCCI Events Calendar			24
● State of Conformance Report Submitted (V-2+VCCI 32-1)			25
● State of Conformance Report Submitted (VCCI 32-2)			26
● State of Registration of Measurement Facilities (Newly registered or renewed)			27

### No.130 2018.10

My Research Activities		Masanori Ishii	1
Committee Activities			4
● Board of Directors			4
● Board of Councillors			4
● Steering Committee			5
● Technical Subcommittee			6
● International Relations Subcommittee			7
● Market Sampling Test Subcommittee			8
● Education Subcommittee			9
● Public Relations Subcommittee			10
● Measurement Facility Registration Committee			11
● Report on Committee Activities: List of Acronyms			12
14th instalment			
Structure of the IEC 61000 Series of EMC Standards			
Made by TC77			
		Masamitsu Tokuda	14
Report on the 2018 Joint IEEE EMC & AP EMC Symposium			18
Participation Report on the FY 2018 Monthly VCCI Seminar for Information and Communications			22
Report on COMPUTEX TAIPEI 2018			24
Report on the FY 2017 Business Report Meeting			29
Report on the VCCI Seminar			34
Status of FY 2018 Market Sampling Tests			35
Secretariat Dayori			36
● VCCI Membership Registry (May - July 2018)			36
● VCCI Schedule for FY 2018			37
● Status of Compliance Test Notifications (V-2 + VCCI 32-1)			38
● Status of Compliance Test Notifications (VCCI 32-1)			39
● Registration Status of Measurement and Other Facilities			40

## Before putting down a pen

---

I play baseball on weekends and holidays.

Well, it is not really that cool. As a coach of a boy's baseball team, I actually play catch trying hard to jump at wild pitches.

Playing with many children, I have become aware that there are no two children of the same personality.

There may be a child who can concentrate when someone is talking, and another who cannot concentrate; one who can line up in order, and another who wanders; one who is calm, and another who is restless; one who is quick, and another who is slow; ...

There is no end to it. It is surprising how these various character attributes combine to form a distinct personality different from anyone else.

This seems natural when I look back on the time when I was an elementary school student, but why do I feel it marvelous now?

Come to think of it, the high school examinations filter children to gather students of relatively similar personalities. Collage students are separated into diffident groups majoring in science, humanities, art, and athletics. Then, except for those who remain in

universities, students enter the job market to become business people. These layers of filters gather similar personalities in each workplace. It is very natural that you are surprised at the diversity of children if you look at them from a uniform society.

Thinking about it, coaches of a boy's baseball team are also unique personalities compared to company colleagues—not as unique as the children of course, because they have gained an adult's discretion. Thus, I am spending exciting times with surprises and new discoveries, although not as exciting as I felt when I was a child.

So, I became aware of the uniformity of business people through weekend activities. People of the same industry are of the same kind, with some differences depending on the company culture. Everyday life is not very surprising when surrounded by many people of the same type. This may be suitable when we join forces on a project. But I feel it is a drawback when giving birth to something new. Diversity may be important now for Japan.

(K.K.)

---

Unauthorized duplication and republication is prohibited.



**VCCI** Dayori

**No.131 (2019.1)**

Not for sale

Published on: December 20, 2018

Edited and published by: VCCI Council

Address: NOA Bldg, 7th Floor, 3-5 Azabudai 2-chome,  
Minato-ku Tokyo 106-0041

TEL: 03-5575-3138

FAX: 03-5575-3137

<http://www.vcci.jp>