

1 Objective in Establishing the Council

With advances in electronic technologies and increasing informatization in the home, IT equipment, including electronic office equipment, such as PCs and facsimiles, have become increasingly popular. This kind of equipment often emits electronic interference over a wide range of frequencies resulting from the digital technology utilized in them. Depending on its level, interference with radio and television can occur, and this problem of radio interference has gained attention.

The International Special Committee on Radio Interference (CISPR) of the International Electrotechnical Commission (IEC) has been discussing radio interference since 1979. In September 1985, recommendations regarding "Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment" were made in Publication 22. In the U.S., the Federal Communications Commission (FCC) has been instituting regulatory measures since 1981.

In Japan, the Telecommunications Technology Council prepared technical standards regarding limits and methods of measurement of electronic interference caused by information processing equipment in accordance with the CISPR recommendations. These standards were submitted to the Ministry of Posts and Telecommunications (now Ministry of Public Management, Home Affairs, Posts and Telecommunications) on December 2, 1985. In response, the Ministry of Posts and Telecommunications requested industries in related electronics fields to cooperate in preventing electronic interference, one step being the implementation of the standards of the Telecommunications Technology Council.

In conjunction with these activities, relevant electronics industries gave serious consideration to this problem of electronic interference from information technology equipment, as well as to its appropriate countermeasures. In view of the importance of this problem, four relevant organizations decided to implement voluntary control measures as soon as possible.

On December 19, 1985, the four organizations - the Japan Electronic Industry Development Association (JEIDA)*, the Japan Business Machine Makers Association (JBMA)**, the Electronic Industries Association of Japan (EIAJ)*, and the Communications Industry Association of Japan (CIAJ) - jointly established the Voluntary Control Council for Interference by Information Technology Equipment (VCCI), hereafter referred to as "the Council," to cope with radio interference problems arising from personal computers, facsimiles and other electronic equipment.

The Council not only invites members of the Japanese organizations listed above to cooperate in this voluntary effort, but also seeks the cooperation of overseas participants in the voluntary control by industry concerning radio interference. Companies and organizations interested in participating in these voluntary controls are invited to do so by becoming a member of the Council.

* The Japan Electronic Industry Development Association (JEIDA) and the Electronic Industries Association of Japan (EIAJ) merged to become the Japan Electronics and Information Technology Industries Association (JEITA) in November 2000.

** The Japan Business Machine Makers Association (JBMA) changes to the Japan Business Machine and Information System Industries Association (JBMAI) in April 2002.

2 Mission

The mission of this Council is contribute to the healthy development of Japan's information society by establishing voluntary control for electromagnetic emissions from information technology equipment, such as computers, telecommunication products and electronic office products so that they won't disrupt other electronic products, including radios and television sets.

3 Scope

3.1 Scope of Application

The Voluntary Control applies to the Information Technology Equipment (ITE) to be shipped for the domestic market in Japan.

3.2 Definition of ITE

ITE refers to equipment with a rated power supply voltage not exceeding 600V, which has a primary function of one or a combination of the following functions-entry, storage, display, retrieval, transmission, processing, switching or control of data and of telecommunication messages - and which may be equipped with one or more terminal ports typically operated for information transfer. However, these regulations shall not apply to the following types of equipment:

- (1) Equipment which is subject to, or under review of being subject to other standards or laws equivalent in objective to these regulations in Japan, even if it fits under the definition above for ITE. This includes all radio equipment with primary functions of radio transmission and reception as stipulated in Radio Law or in-vehicle ITEs, and equipment stipulated in the Electrical Appliance and Material Safety Law, such as household electrical appliances, radio and television broadcast receivers.
- (2) ITE in telecommunication centers (ITE only used in buildings controlled by telecommunication carriers).
- (3) Control units designed to be used in industrial plants where the data processing function is a secondary function.
- (4) Testing and measuring instruments designed to be used for Industrial, Scientific, and Medical purposes where the data processing function is a secondary purpose (ISM equipment).
- (5) ITE whose power consumption is 6 nW or less.

4 Membership to the Council

Companies and organizations that support the objectives of the Council and wish to participate and cooperate in voluntary controls are required to first become a member of the Council. Such companies and organizations should first submit a "Membership Application" form to the Council Secretariat.

After the Council receives the "Membership Application" form and approves it, the applicant must remit payment of the membership admission fee and annual membership fee for each fiscal year (April through March). Moreover, for members who participate from or after October (second half of the fiscal year), the first year annual membership fee shall be half the following amount.

(1) Admission fee **50,000 JPY**

(2) Annual membership fee:

Rank A (Regular Members) **805,000 JPY**

Companies whose executives are appointed chairman, vice-chairmen, or similar ranking officers at the three industry organizations (JEITA, JBMIA, CIAJ) as well as companies submitting 70 or more Conformity Verification Reports in a year.

Rank B (Regular Members) **405,000 JPY**

Companies submitting 10 or more Conformity Verification Reports in a year.

Rank C (Regular Members) **205,000 JPY**

Companies submitting less than 10 Conformity Verification Reports in a year.

Rank D (Supporting Members) **105,000 JPY**

Companies not submitting any Conformity Verification Reports.

Note:

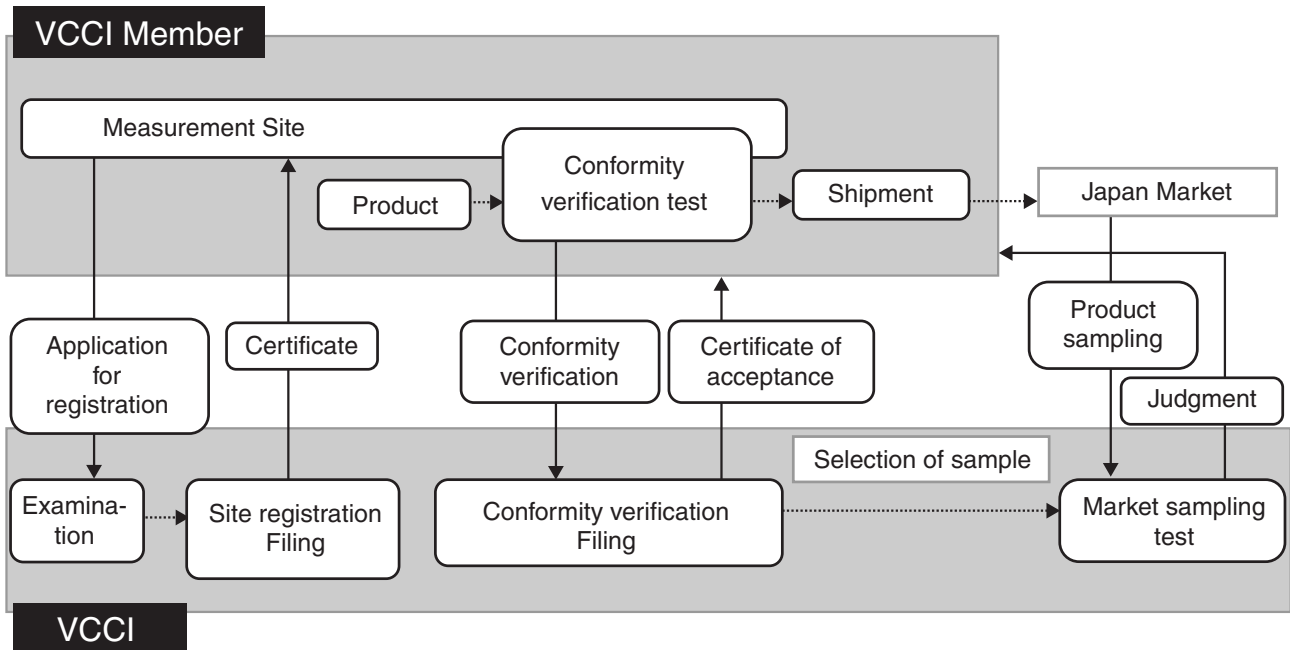
- Consumption tax (5%) is imposed for domestic members and overseas members who has agents in Japan.
- The admission procedure takes about one week (from receipt of Membership Application to issuance of an invoice of necessary fees).
- The fixed bank charge of 5,000 JPY is included in the annual membership fee.

The Council publishes and provides the following material to members:

- (1) Agreement of Voluntary Control Council for Interference by Information Technology Equipment.
- (2) "VCCI Dayori," a quarterly journal of VCCI

5 Outline of Voluntary Control

The Voluntary Control measures are based on rules concerning "limits and measurement of radio interference originating from ITE" and "Technical Standards" implemented by the Council. Member manufacturers voluntarily control radio interference of their ITE to be shipped to the Japanese market. The flow of how the Voluntary Control measures are implemented is as follows.



5.1 Categorization of ITE

ITE is divided into two categories, denoted Class B ITE and Class A ITE.

- Class B ITE

Class B ITE is equipment that satisfies the Class B ITE disturbance limits. It is intended primarily for use in the domestic environment and may include:

- (1) Equipment, with no fixed place of use; for example, portable equipment powered by built-in batteries.
- (2) Telecommunication terminal equipment powered from a telecommunication network.
- (3) A personal computer or portable word processors, as well as peripheral equipment connected to it.
- (4) Facsimile equipment

Note:

A domestic environment is an environment where broadcast radio and television receivers might be used within a distance of 10m from the ITE concerned, in other words, a residential environment.

- Class A ITE

Class A ITE is equipment that satisfies the Class A ITE disturbance limits but not the Class B ITE disturbance limits.

5.2 Confirmation of Compliance

The member manufacturers should verify that their ITE products conform to the permissible tolerance of the technical requirements established by the Council.

The member manufacturers are required to verify technical requirement conformity and submit a report as indicated below.

(1) Confirmation of Compliance with Technical Standards

The member manufacturers should perform conformity verification tests on their ITE products to confirm that their ITE products meet the technical requirements established by the Council. Conformity verification tests shall be performed at measurement facilities, which are accredited and registered according to item 6 below.

(2) Registration of Compliance

The member manufacturers performing conformity verification testing of their ITE product(s) should present a "Conformity Verification Report," using the specified form to the Council for its approval prior to shipment of the ITE products.

Note:

It takes about one week to issue a electrical/written verification of acceptance of the "Conformity Verification Report."

5.3 Labeling Units

ITE for which the member manufacturer has filed a conformity verification report shall designate the fact using a label for Class A ITE and a mark/logo for Class B ITE.

The Council has specifications concerning the use of the label and mark/logo in catalogs and instruction manuals. Member manufacturers should place the labels and marks for their respective ITEs in a manner which is easily visible and in accordance to these specifications.

(1) Class A ITE shall have the following message on a visible location on each product.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

Translation:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take corrective actions. VCCI-A

(2) Registered Class B ITE shall have the following label in a visible location on each product:



6 Registration of Measurement Facilities

The Measurement Facilities for Product Conformance Verification Test are needed to register VCCI, depend on "Rules for Registration of Measurement Facilities" by receive examination.

It requires about three months.

But the registration of measuring facilities which are accredited by Laboratory Accreditation Bodies are required less than one month, because of no Examination.

7 Market Sampling Test

The Council conducts sampling tests for the purpose of checking conformity to the technical requirements of ITE products being sold on the market. The tests are conducted to maintain impartial activities and are done in accordance with "Regulations for Market Sampling Test." Members have an obligation to comply with these tests and to pay expenses for tests and other related expenses incurred.

8 Technical Requirements

The Council shall establish limits on and methods of measurement of electronic interference caused by ITE, in accordance with the technical requirements of the recommendations of the Telecommunication Technology Committee.

[Limits]

(1) Class A ITE

- ① Conducted disturbance at mains ports (radio frequency voltage induced across the supply terminals) shall not exceed the following levels.

Frequency range	Limits	
	Quasi-peak	Average
150kHz ~ 500kHz	79dB	66dB
500kHz ~ 30MHz	73dB	60dB

Note 1 : 1 μ V is regarded as 0 dB.

Note 2 : If the average limits are met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

Note 3 : The lower limit shall apply at the transition frequency.

- ② Conducted disturbance at communication ports shall not exceed the following levels. The measurements shall comply with either the voltage limits or the current limits.

Frequency range	Voltage limits		Current limits	
	Quasi-peak	Average	Quasi-peak	Average
150kHz ~ 500kHz	97 ~ 87dB	84 ~ 74dB	53 ~ 43dB	40 ~ 30dB
500kHz ~ 30MHz	87dB	74dB	43dB	30dB

Note 1 : For voltage limits, 1 μ V is regarded as 0 dB. For current limits, 1 μ A is regarded as 0 dB.

Note 2 : The limits shall decrease linearly with the logarithm of the frequency in the range of 150kHz ~ 500kHz.

Note 3 : If the average limits are met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
 Note 4 : Conversion coefficient for voltage limits and current limits shall be $20 \log_{10} 150 = 44$ dB.
 Note 5 : The above limits are applied to newly submitted products manufactured in and after April 2010.

③ Quasi-peak levels of radiated disturbance shall not exceed the following levels at a distance of 10 m.

Frequency range	Quasi-peak
30MHz ~ 230MHz	40dB
230MHz ~ 1000MHz	47dB

Note 1 : The lower limit shall apply at the transition frequency.

Note 2 : Measurements shall basically be taken at a distance of 10 m. However, measurements at 3 m or 30 m shall be acceptable if the measurement facility has been registered according to Council regulations at those distances.

If the measurement distance is 3 m, then 10 dB shall be added to the above limit.

If the measurement distance is 30 m, then 10 dB shall be subtracted from the above limit.

Note 3 : 1µV/m is regarded as 0 dB.

④ Average and peak levels of radiated disturbance shall not exceed the following levels at distance of 3 m.

Frequency range	Average limit	Peak limit
1 ~ 3GHz	56dB	76dB
3 ~ 6GHz	60dB	80dB

Note 1 : The lower limit shall apply at the transition frequency.

Note 2 : 1µV/m is regarded as 0 dB.

Note 3 : The above limits are applied to newly submitted products manufactured in and after April 2010.

(2) Class B ITE

① Conducted disturbance at mains ports (radio frequency voltage induced across the supply terminals) shall not exceed the following levels.

Frequency range	Limits	
	Quasi-peak	Average
150kHz ~ 500kHz	66 ~ 56dB	56 ~ 46dB
500kHz ~ 5MHz	56dB	46dB
5MHz ~ 30MHz	60dB	50dB

Note 1 : 1µV is regarded as 0 dB.

Note 2 : The limits, expressed in dB, shall decrease linearly with the logarithm of the frequency in the range of 150kHz ~ 500kHz.

Note 3 : If the average limits are met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

Note 4 : The lower limit shall apply at the transition frequency.

- ② Conducted disturbance at communication ports shall not exceed the following levels. The measurements shall comply with either the voltage limits or the current limits.

Frequency range	Voltage limits		Current limits	
	Quasi-peak	Average	Quasi-peak	Average
150kHz ~ 500kHz	84 ~ 74dB	74 ~ 64dB	40 ~ 30dB	30 ~ 20dB
500kHz ~ 30MHz	74dB	64dB	30dB	20dB

- Note 1 : For voltage limits, 1 μ V is regarded as 0 dB. For current limits, 1 μ A is regarded as 0dB.
 Note 2 : The limits shall decrease linearly with the logarithm of the frequency in the range of 150kHz ~ 500kHz.
 Note 3 : If the average limits are met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
 Note 4 : Conversion coefficient for voltage limits and current limits shall be $20 \log_{10} 150=44$ dB.
 Note 5 : Tentatively, for high-speed services with high spectrum density in the frequency range of 6 ~ 30MHz, the limit shall be relaxed 10dB. However, this relaxation shall be limited to common mode disturbance converted from transmission signal in the cable.
 Note 6 : The above limits are applied to newly submitted products manufactured in and after April 2010.

- ③ Quasi-peak levels of radiated disturbance shall not exceed the following levels at a distance of 10 m.

Frequency range	Quasi-peak
30MHz ~ 230MHz	30dB
230MHz ~ 1000MHz	37dB

- Note 1 : The lower limit shall apply at the transition frequency.
 Note 2 : Measurements shall basically be taken at a distance of 10 m. However, measurements at 3 m or 30 m shall be acceptable if the measurement facility has been registered according to Council regulations at those distances.
 If the measurement distance is 3 m, then 10 dB shall be added to the above limit.
 If the measurement distance is 30 m, then 10 dB shall be subtracted to the above limit.
 Note 3 : 1 μ V/m is regarded as 0 dB.

- ④ Average and peak levels of radiated disturbance shall not exceed the following levels at distance of 3 m.

Frequency range	Average limit	Peak limit
1 ~ 3GHz	50dB	70dB
3 ~ 6GHz	54dB	74dB

- Note 1 : The lower limit shall apply at the transition frequency.
 Note 2 : 1 μ V/m is regarded as 0 dB.
 Note 3 : The above limits are applied to newly submitted products manufactured in and after April 2010.

9 Activities

- (1) To formulate and amend basic policies regarding the voluntary controls for electromagnetic emissions from information technology equipment.
- (2) To arbitrate between member organizations and contact/coordinate with government and relevant agencies.
- (3) To receive and maintain Conformity Verification Reports and to issue the Certificate of Acceptance as part of voluntary control activities.
- (4) To conduct market sampling tests (tests are consigned to non-profit third party testing agencies).
- (5) To research the Technical Requirements, present the results and to enact and revise them.
- (6) To educate EMC engineers in order to enhance overall EMC measurement technique.
- (7) To study EMC trends abroad, and to study and promote MRA.
- (8) To help promote VLAC.
- (9) To disseminate relevant information to users among the general public, and promote acceptance to relevant manufacturers.
- (10) To handle other necessary matters regarding voluntary control.

Voluntary Control Council for Interference by Information Technology Equipment (VCCI)

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