
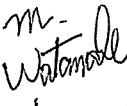
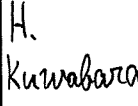


HWS300/ME

EVALUATION DATA

型式データ

DWG No. A231-53-01/ME		
APPD	CHK	DWG
 24/feb/'06	 24. Feb.'06	 24. Feb.'06

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※ 他項目の測定方法、特性データは標準品を参照下さい。

Other evaluation method and characteristics refer to EVALUATION DATA of standard model HWS300.

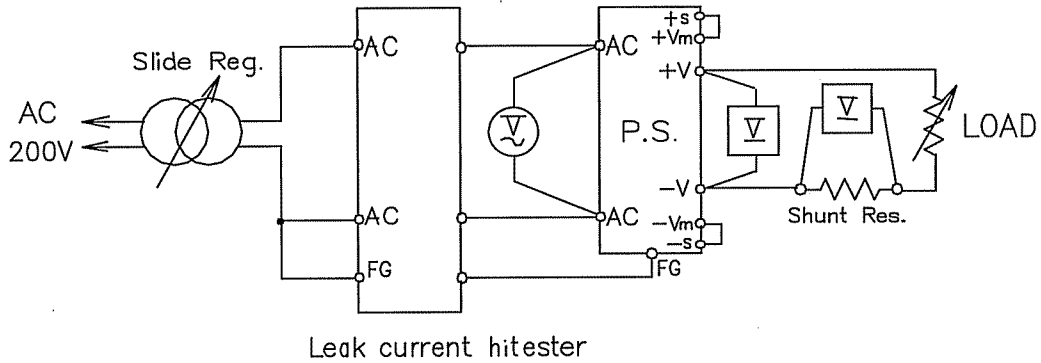
使用記号 Terminology used

	Definition	
Vin	..... 入力電圧	Input voltage
Vout	..... 出力電圧	Output voltage
Iin	..... 入力電流	Input current
Iout	..... 出力電流	Output current
Ta	..... 周囲温度	Ambient temperature
f	..... 周波数	Frequency
FG	..... フレームグラウンド	Frame GND

1. 測定方法 Evaluation Method

1.1 測定回路 Circuit used for determination

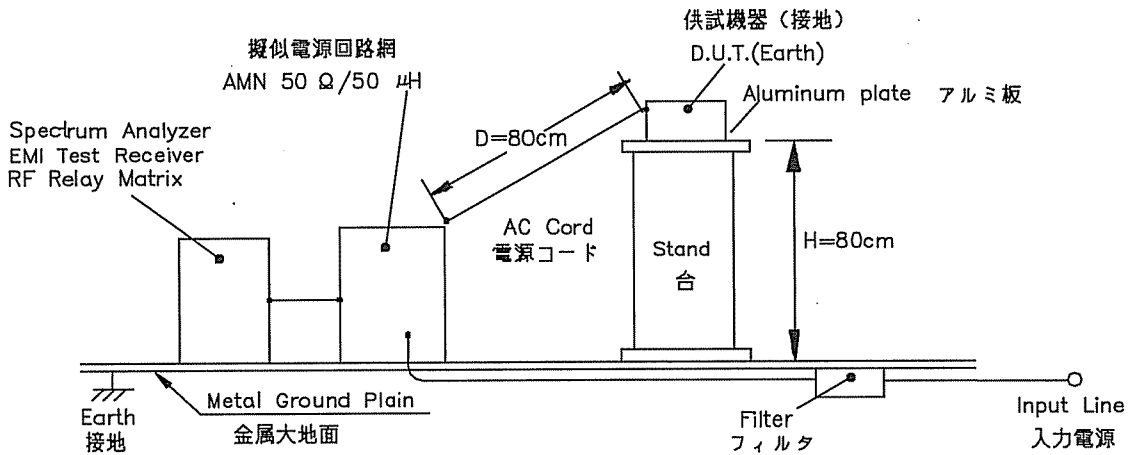
(1)リーク電流特性 Leakage current characteristics



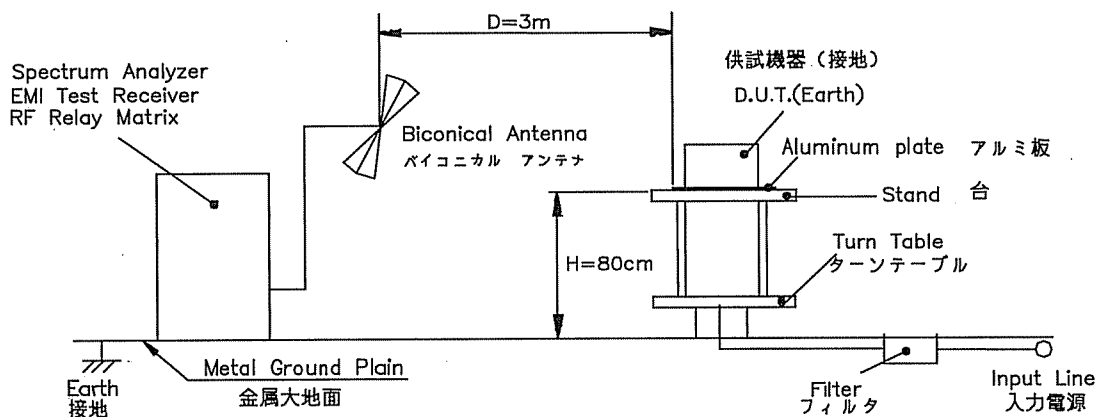
NOTE : Range used --- AC (For HIOKI MODEL 3156)

(2) EMI 特性
Electro-Magnetic Interference

(a) 雑音端子電圧 (帰還ノイズ)
Conducted Emission Noise



(b) 雑音電界強度 (輻射ノイズ)
Radiated Emission Noise



1.2 使用測定機器 List of equipment used

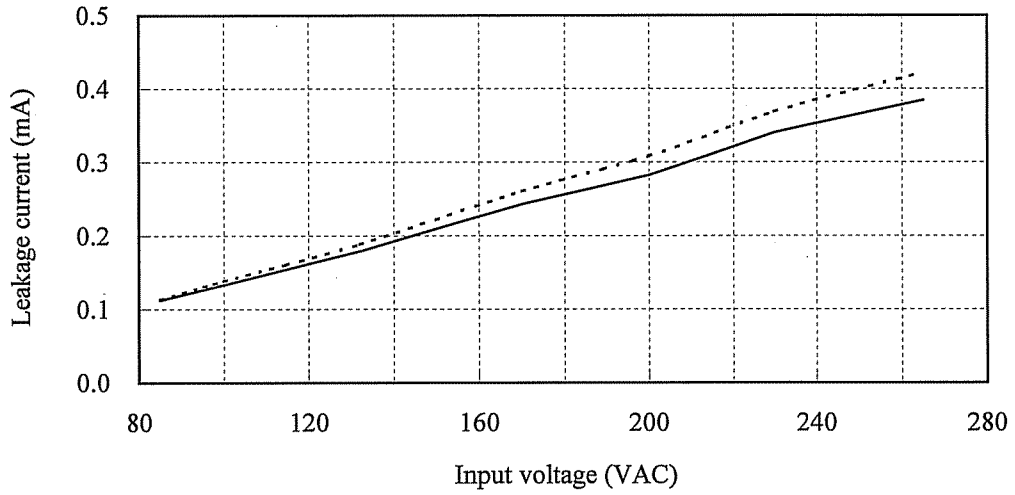
	EQUIPMENT USED	MANUFACTURER	MODEL NO.
1	LEAK CURRENT HITESTER	HIOKI	3156
2	SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSA
3	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESHS10
4	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESVS10
5	RF RELAY MATRIX	ROHDE & SCHWARZ	PSU
6	AMN	KYORITSU DENSHI	KNW-242
7	ANTENNA(BICONICAL ANTENNA)	SCHWARZBECK	BBA9106
8	CVCF	KIKUSUI	PCR-4000L
9	SLIDE REGULATOR	MATSUNAGA	SD-2650
10	SHUNT RESISTOR	YOKOGAWA ELECT.	2215
11	DYNAMIC DUMMY LOAD	TAKASAGO	FK-600L
12	DIGITAL MULTIMETER	AGILENT	34970A

2.1 リーク電流特性

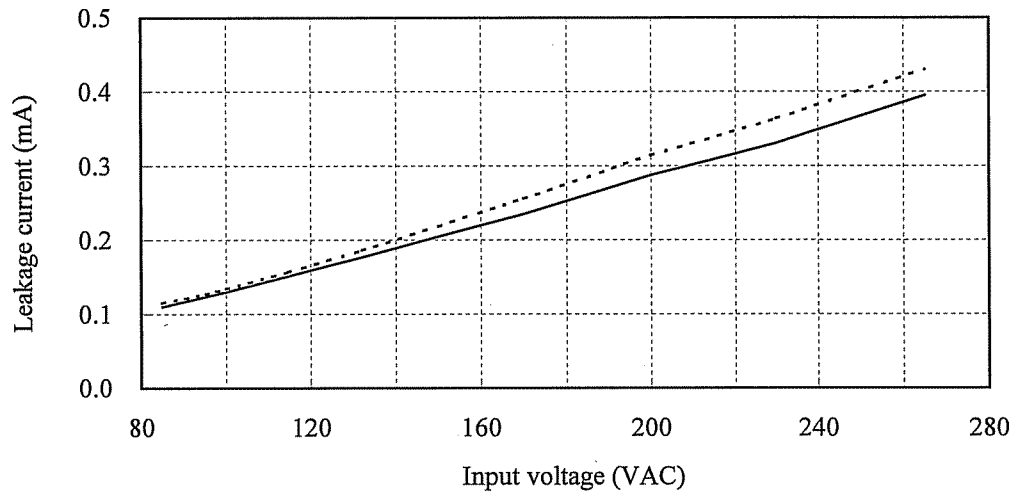
Leakage current characteristics

Conditions Iout : 0 % -----
 100 % ————
 Ta : 25 °C
 f_(ACin) : 60 Hz
 Equipment used : MODEL 3156
 (HIOKI)

12V



24V



2.2 EMI 特性

Electro-Magnetic Interference characteristics

Conditions Vin : 100VAC

Iout : 100%

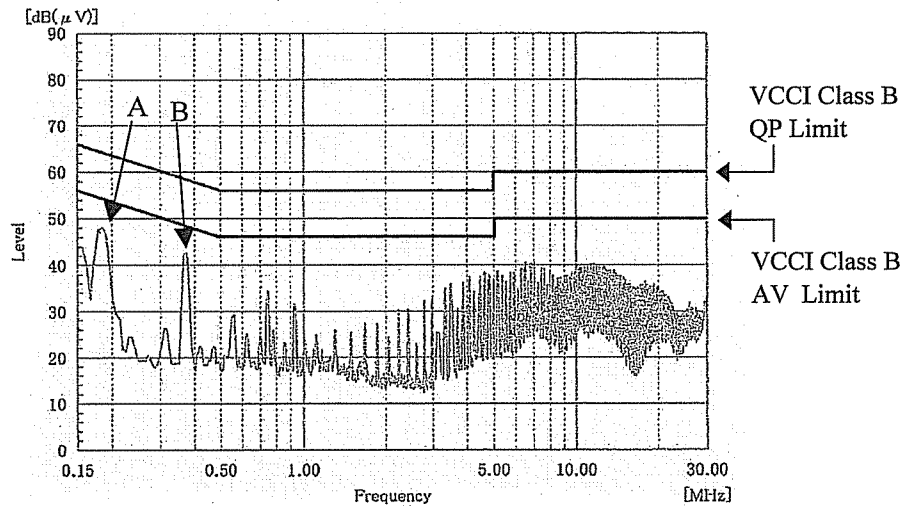
(a) 雑音端子電圧

Conducted Emission

12V

Point A (185kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	64.2	47.7
AV	54.2	47.6

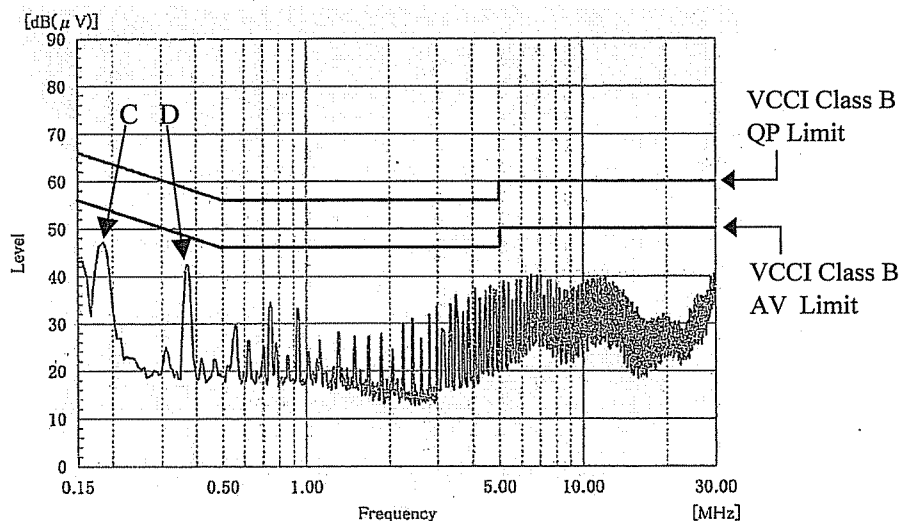
Point B (371kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	58.5	42.3
AV	48.5	42.2



Phase : N

Point C (185kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	64.2	46.6
AV	54.2	46.5

Point D (371kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	58.5	41.8
AV	48.5	41.8



Phase : L

EN55011-B,EN55022-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55022-B are same as its VCCI class B.

2.2 EMI 特性

Electro-Magnetic Interference characteristics

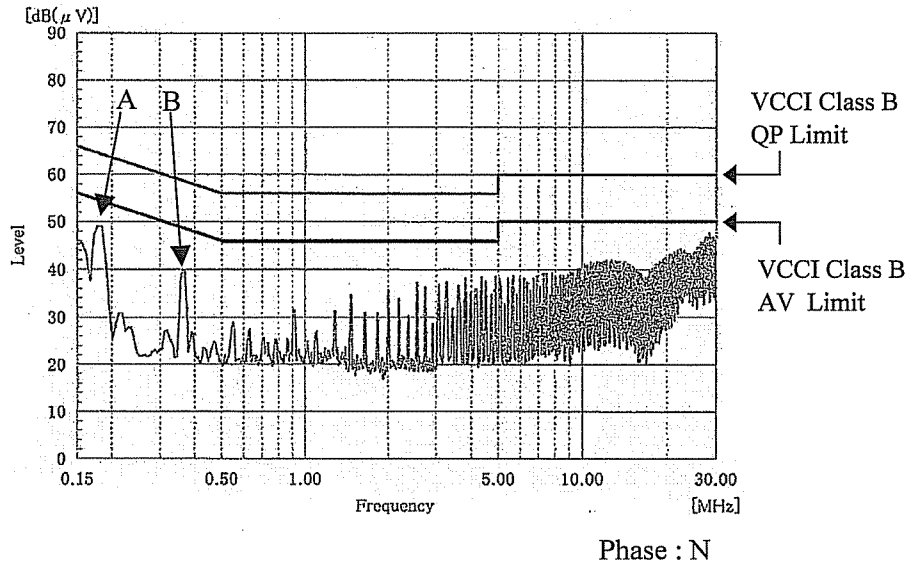
Conditions Vin : 100VAC
Iout : 100%

(a) 雑音端子電圧 Conducted Emission

24V

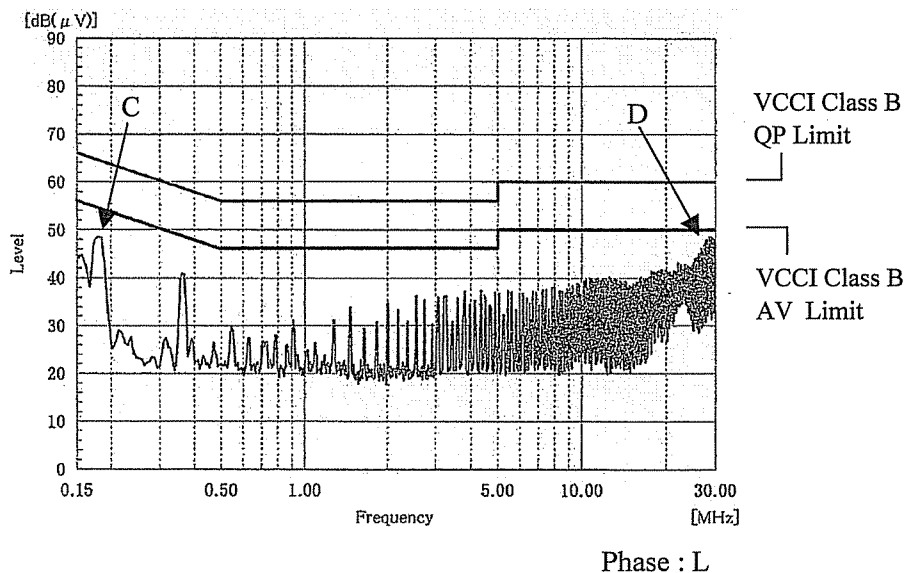
Point A (181kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	64.4	49.1
AV	54.4	48.5

Point B (362kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	58.7	40.5
AV	48.7	40.4



Point C (181kHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	64.4	48.3
AV	54.4	48.2

Point D (28.4MHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	60.0	45.7
AV	50.0	43.7



EN55011-B,EN55022-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55022-B are same as its VCCI class B.

2.2 EMI 特性

Electro-Magnetic Interference characteristics

Conditions Vin : 100VAC

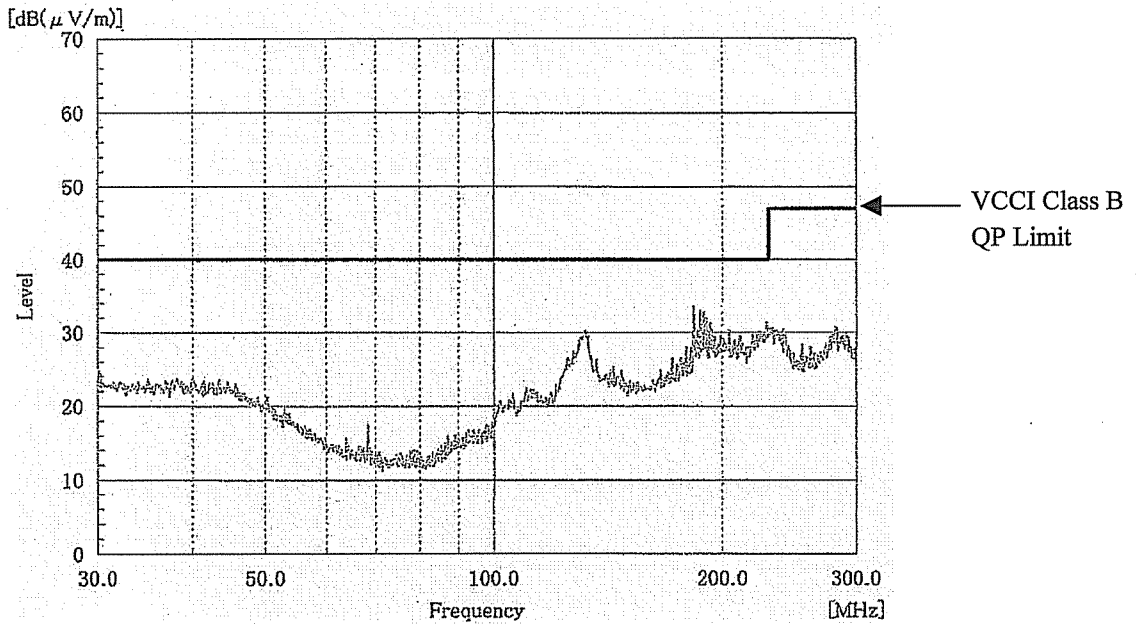
Iout : 100%

(b) 雑音電界強度

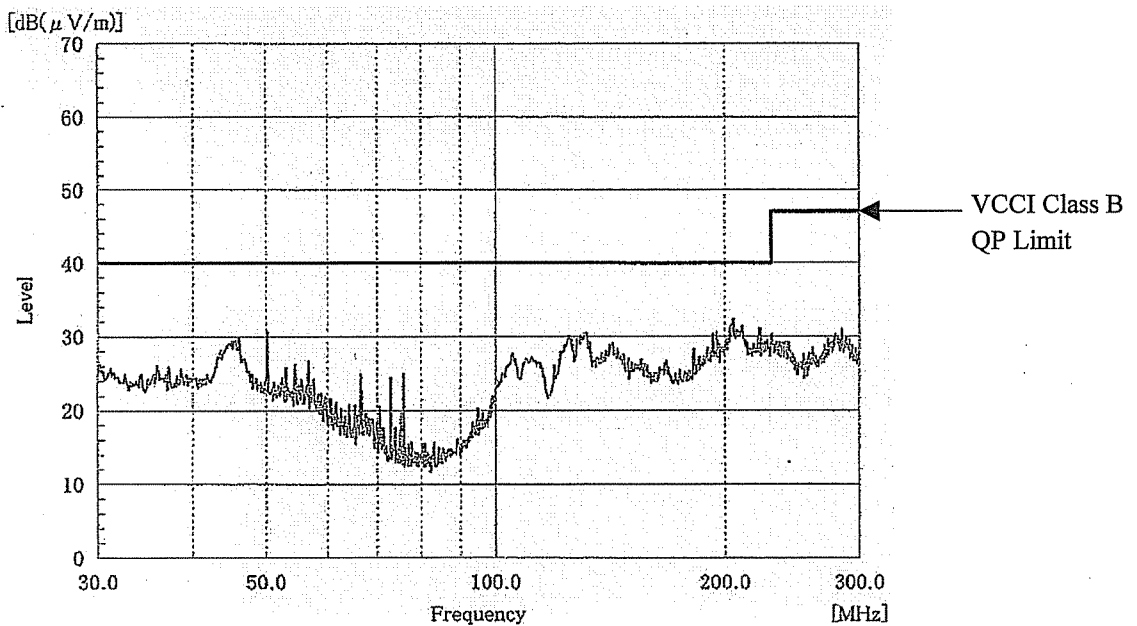
Radiated Emission

12V

HORIZONTAL



VERTICAL



EN55011-B,EN55022-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55022-B are same as its VCCI class B.

2.2 EMI 特性

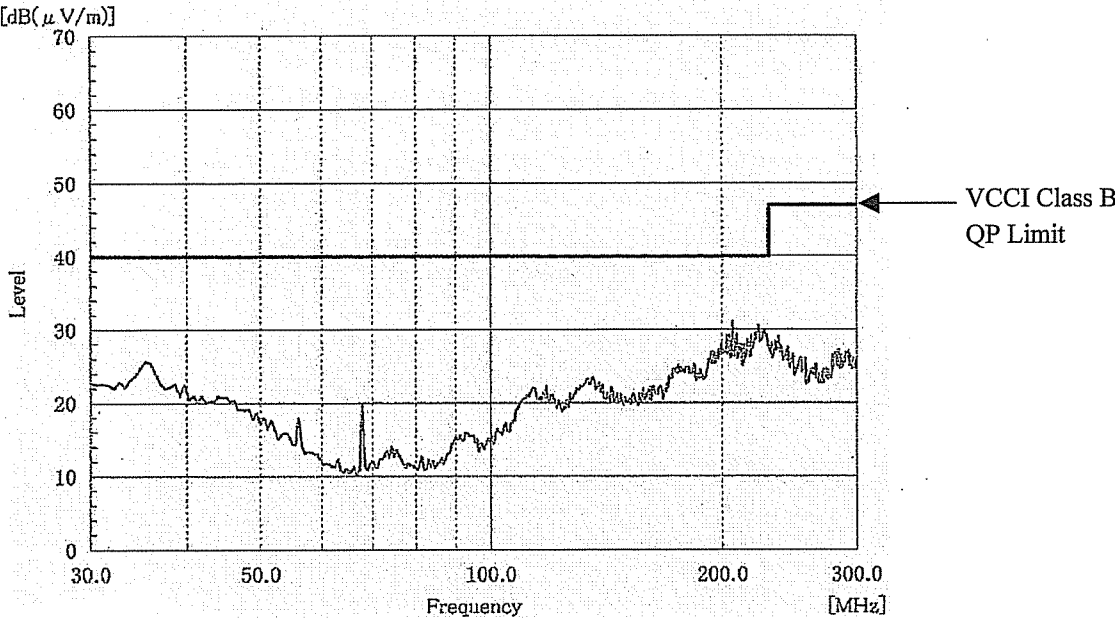
Electro-Magnetic Interference characteristics

Conditions Vin : 100VAC
Iout : 100%

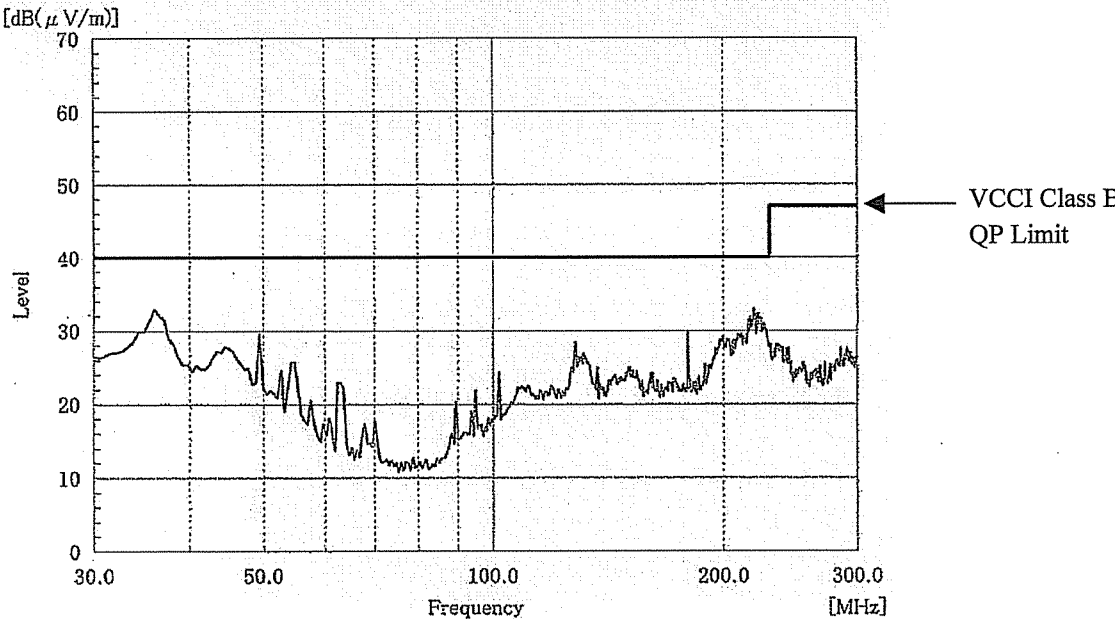
(b) 雑音電界強度
Radiated Emission

24V

HORIZONTAL



VERTICAL



EN55011-B,EN55022-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55011-B,EN55022-B are same as its VCCI class B.

2.3 入力電圧変化・変動、フリッカ

Input voltage changes, Input voltage fluctuations and flicker

Conditions Vin : 230 VAC

Ta : 25 °C

24V

(1) 入力電圧変化・変動 (IEC61000-3-3)

Input voltage changes and Input voltage fluctuations

限度値 LIMIT

結果 RESULTS

1)相対的な定常状態の電圧変化 dc は、3.3%以下でなければならない。

The relative steady - state voltage change dc, shall not exceed 3.3%.

dc : 0.000 %

2)最大の相対的電圧変化 dmax は、4%以下でなければならない。

The maximum relative voltage change dmax, shall not exceed 4%.

dmax : 0.023 %

3)電圧変化の間の d(t) の値は、500msを超える時間で3.3%以下でなければならない。

The value of d(t) during a voltage change shall not be exceed 3.3% for more than 500ms.

OK

(2) フリッカ (IEC61000-3-3)

Flicker

(2)-1 短時間フリッカ Short term flicker(Pst)

限度値 LIMIT

結果 RESULT

1)Pstの値は、1.0以下でなければならない。

The value of Pst shall not be greater than 1.0.

Pst : 0.011

観測 Observation : 10[min.]

(2)-2 長時間フリッカ Long term flicker(Plt)

限度値 LIMIT

結果 RESULT

1)Pltの値は、0.65以下でなければならない。

The value of Plt shall not be greater than 0.65.

Plt : 0.011

観測 Observation : 12/12(Pst)

観測時間 Observation period : Pst 10[min.]
Plt 2[hr.]