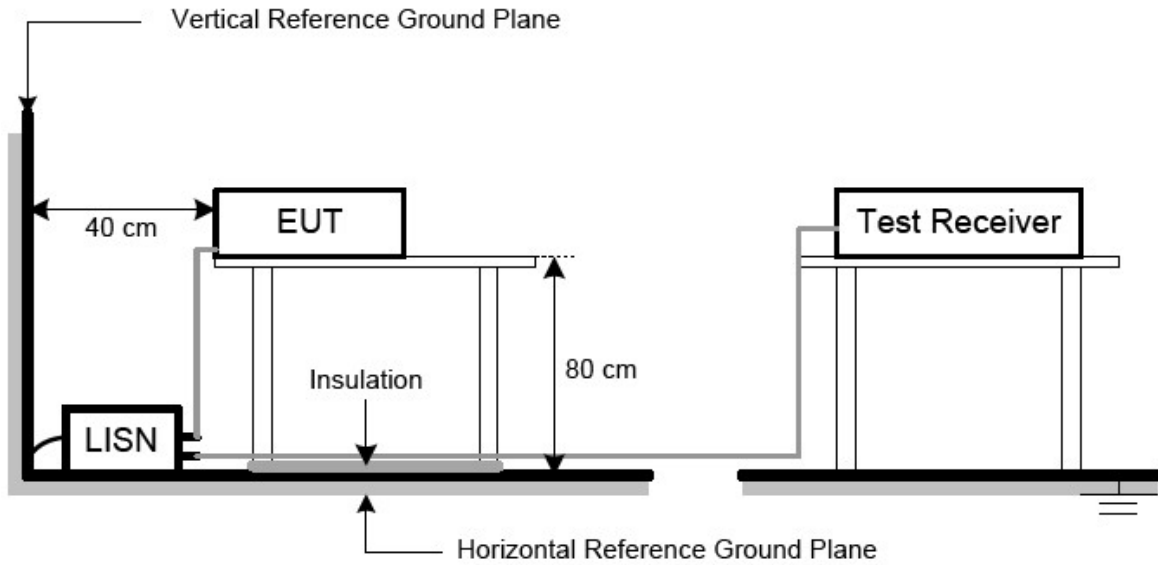
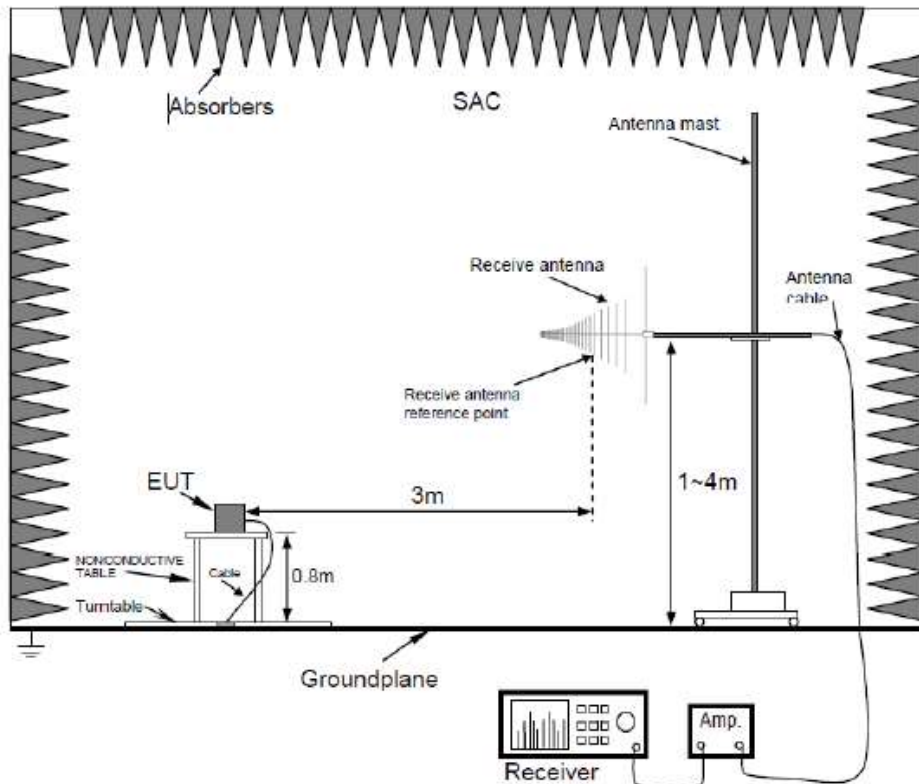


Configuration used for determination 用於特性的配置
EMI 特性 Electro-Magnetic interference characteristics
(1)Conducted Emission



(2)Radiated Emission



Conduction Character (傳導特性)

※Character Condition(特性條件):

1	I/P Voltage(Vac)(輸入電壓)	110Vac
2	I/P Frequency(Hz)(輸入頻率)	60Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備):

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	頻普接收儀	KH3931
2	AC Source(變頻器)	ALL POWER/PG-1005N
3	Character Standard	EN55032 CLASS B

※Character Data(特性數據):

ITEM	QP	AV
Character Result	L line	-9.81dB
	N line	-10.02dB
		-8.36dB

※Character Waveform (特性波形):

Site A9
Limit: (CE)EN55032 Class B(OP)
EUT:
M/N: UNOWT3150-240063SA
Note: SAMPLE 2

No. Mk.	Freq. (MHz)	Reading Level (dBμV)	Factor (dB)	Measurement (dBμV)	Limit (dBμV)	Over (dB)	Detector	Comment
1	0.1888	43.38	9.66	53.04	64.09	-11.05	QP	
2	0.1888	34.54	9.66	44.20	54.09	-9.89	AVG	
3	0.5392	36.56	9.63	46.19	56.00	-9.81	QP	
4	0.5392	22.15	9.63	31.78	46.00	-14.22	AVG	
5	0.8270	34.96	9.65	44.61	56.00	-11.39	QP	
6	0.8270	19.01	9.65	28.66	46.00	-17.34	AVG	
7	2.3961	35.84	9.70	45.54	56.00	-10.46	QP	
8	2.3961	25.16	9.70	34.86	46.00	-11.14	AVG	

Site A9
Limit: (CE)EN55032 Class B(OP)
EUT:
M/N: UNOWT3150-240063SA
Note: SAMPLE 2

No. Mk.	Freq. (MHz)	Reading Level (dBμV)	Factor (dB)	Measurement (dBμV)	Limit (dBμV)	Over (dB)	Detector	Comment
1	0.1885	44.42	9.66	54.08	64.10	-10.02	QP	
2	0.1885	36.08	9.66	45.74	54.10	-8.36	AVG	
3	1.3120	35.10	9.65	44.75	56.00	-11.25	QP	
4	1.3120	20.88	9.65	30.53	46.00	-15.47	AVG	

Conduction Character (傳導特性)

※Character Condition(特性條件):

1	I/P Voltage(Vac)(輸入電壓)	230Vac
2	I/P Frequency(Hz)(輸入頻率)	50Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備):

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	頻普接收儀	KH3931
2	AC Source(變頻器)	ALL POWER/APG-1005N
3	Character Standard	EN55032 CLASS B

※Character Data(特性數據):

ITEM	QP	AV
Character Result	L line	-6.2dB
	N line	-6.05dB

※Character Waveform (特性波形):

Conducted Emission Measurement
Date: #63 Date: 2022/04/13 Time: 下午 02:54:52
Site: A9 Phase: L1 Temperature: 22.5 °C
Limit: (CE)EN55032 Class B(QP) Power: AC 230V/50Hz Humidity: 55.9 %
EUT: UNOWT3150-240063SA Air Pressure: hpa
M/N: UNOWT3150-240063SA
Note: SAMPLE 2

No.	Mk.	Freq. (MHz)	Reading Level (dBuV)	Factor (dB)	Measurement (dB)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1925	44.98	9.66	54.84	63.93	-9.29	QP		
2	0.1925	36.22	9.66	45.88	53.93	-8.05	AVG		
3	0.6040	40.16	9.64	49.80	56.00	-6.20	QP		
4	0.6040	29.62	9.64	39.26	46.00	-6.74	AVG		
5	0.8262	39.48	9.65	49.13	56.00	-6.87	QP		
6	0.8262	22.91	9.65	32.56	46.00	-13.44	AVG		
7	1.0393	40.18	9.66	49.84	56.00	-6.16	QP		
8	1.0393	25.59	9.66	35.25	46.00	-10.75	AVG		
9	1.3189	39.00	9.66	48.66	56.00	-7.34	QP		
10	1.3189	27.35	9.66	37.01	46.00	-8.99	AVG		
11	2.4295	39.14	9.70	48.84	56.00	-7.16	QP		
12	2.4295	28.35	9.70	38.05	46.00	-7.95	AVG		

Receiver: ESCS30 S/N:100392
L.I.S.N: ENV216/100106(2022.03.02)
Cable1: GTK-E-A154-01(2022.01.04)
Cable2: SW/PAD: GTK-E-A407-01(2022.02.19)
Page: 1

Conducted Emission Measurement
Date: #64 Date: 2022/04/13 Time: 下午 02:56:14
Site: A9 Phase: N Temperature: 22.5 °C
Limit: (CE)EN55032 Class B(QP) Power: AC 230V/50Hz Humidity: 55.9 %
EUT: UNOWT3150-240063SA Air Pressure: hpa
M/N: UNOWT3150-240063SA
Note: SAMPLE 2

No.	Mk.	Freq. (MHz)	Reading Level (dBuV)	Factor (dB)	Measurement (dB)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.6444	39.52	9.63	49.15	56.00	-6.85	QP		
2	0.6444	23.38	9.63	33.01	46.00	-12.99	AVG		
3	0.8491	39.60	9.65	49.25	56.00	-6.75	QP		
4	0.8491	26.95	9.65	36.60	46.00	-9.40	AVG		
5	1.1449	40.30	9.65	49.95	56.00	-6.05	QP		
6	1.1449	26.32	9.65	35.97	46.00	-10.03	AVG		
7	1.3687	38.84	9.65	48.49	56.00	-7.51	QP		
8	1.3687	24.97	9.65	34.62	46.00	-11.38	AVG		

Receiver: ESCS30 S/N:100392
L.I.S.N: ENV216/100106(2022.03.02)
Cable1: GTK-E-A154-01(2022.01.04)
Cable2: SW/PAD: GTK-E-A407-01(2022.02.19)
Page: 1

Radiation Character (輻射特性)

※Character Condition(特性條件):

1	I/P Voltage(Vac)(輸入電壓)	110Vac
2	I/P Frequency(Hz)(輸入頻率)	60Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備):

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	頻普接收儀	外面實驗室
2	AC Source(變頻器)	外面實驗室
3	Character Standard	CISPR32 CLASS B

※Character Data(特性數據):

ITEM	peak	QP
Character Result	V line	/
	H line	/

※Character Waveform (特性波形):

Radiated Emission Measurement
Data #441 Date: 2022-4-13 Time: 上午 11:47:47

Site A6
Limit: (RE)EN5032 Class B 3m
EUT: UNOWT3150-240063SA
M/N: UNOWT3150-240063SA
Note: SAMPLE2

No. Mx.	Freq. (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Antenna Height (cm)	Table Degree (degree)	Comment
1	73.4700	42.71	-11.95	30.76	40.00	-9.24	peak		
2	101.5500	44.50	-13.38	31.12	40.00	-8.88	peak		
3	164.4600	39.57	-8.33	31.24	40.00	-8.76	peak		
4 *	186.8700	42.43	-9.80	32.63	40.00	-7.37	peak		

*Maximum data x:Over limit l:over margin ●Reference Only
Receiver: ESR_1 S/N: Spectrum Analyzer: ESR Amplifier: 8447D/2944A08610/2022.03.08
Antenna: VULB9168/251 3m(2021.06.03) SW/PAD:GTX-E-A342-01/2022.04.07 Test Result: **Pass**
Cable1:GTX-E-A344-01/2022.04.07 Cable2:GTX-E-A345-01/2022.04.07 Engineer Signature: Eric Tsai
File :源Data :#441 Page: 1

Radiated Emission Measurement
Data #442 Date: 2022-4-13 Time: 上午 11:48:36

Site A6
Limit: (RE)EN5032 Class B 3m
EUT: UNOWT3150-240063SA
M/N: UNOWT3150-240063SA
Note: SAMPLE2

No. Mx.	Freq. (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Antenna Height (cm)	Table Degree (degree)	Comment
1	162.5700	41.27	-8.19	33.08	40.00	-6.92	peak		
2 *	186.3300	43.07	-9.78	33.29	40.00	-6.71	peak		

*Maximum data x:Over limit l:over margin ●Reference Only
Receiver: ESR_1 S/N: Spectrum Analyzer: ESR Amplifier: 8447D/2944A08610/2022.03.08
Antenna: VULB9168/251 3m(2021.06.03) SW/PAD:GTX-E-A342-01/2022.04.07 Test Result: **Pass**
Cable1:GTX-E-A344-01/2022.04.07 Cable2:GTX-E-A345-01/2022.04.07 Engineer Signature: Eric Tsai
File :源Data :#442 Page: 1

Radiation Character (輻射特性)

※Character Condition(特性條件) :

1	I/P Voltage(Vac)(輸入電壓)	230Vac
2	I/P Frequency(Hz)(輸入頻率)	50Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備) :

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	頻普接收儀	外面實驗室
2	AC Source(變頻器)	外面實驗室
3	Character Standard	CISPR32 CLASS B

※Character Data(特性數據) :

ITEM	peak	QP
Character Result	V line	/
	H line	/

※Character Waveform (特性波形) :

File: #443 Date: 2022-4-13 Time: 上午 11:50:36

Site: A6 Polarization: **Vertical** Temperature: 24.3 °C
 Limit: (RE)EN55032 Class B 3m Power: AC 230V/50Hz Humidity: 57 %
 EUT: Distance: RBW: 120 KHz Air Pressure: hpa
 MN: UNOWT3150-240063SA VSW: 1000 KHz Sweep Time: 300 ms
 Note: SAMPLE2

No. Mk.	Freq. (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Antenna Height (cm)	Table Degree (degree)	Comment
1	79.4100	49.78	-13.04	36.74	40.00	-3.26	peak		
2	79.4100	48.19	-13.04	35.15	40.00	-4.85	QP		
3	86.4300	50.31	-14.43	35.88	40.00	-4.12	peak		
4	86.4300	48.20	-14.43	33.77	40.00	-6.23	QP		
5	116.9400	48.48	-11.30	37.18	40.00	-2.82	peak		
6	116.9400	45.10	-11.30	33.80	40.00	-6.20	QP		
7	182.5500	43.76	-9.62	34.14	40.00	-5.86	peak		
8	182.5500	41.30	-9.62	31.68	40.00	-8.32	QP		

*Maximum data x:Over limit l:over margin *Reference Only
 Receiver: ESR_1 S/N: Spectrum Analyzer: ESR Amplifier: 8447D/2944A08610(2022.03.08)
 Antenna: VULB9168/251 3m(2021.06.03) SW/PAD:GTK-E-A342-01(2022.04.07) Test Result: **Pass**
 Cable1: GTK-E-A344-01(2022.04.07) Cable2:GTK-E-A346-01(2022.04.07) Engineer Signature: Eric Tsai
 File :源Data #443 Page: 1

File: #444 Date: 2022-4-13 Time: 上午 11:53:16

Site: A6 Polarization: **Horizontal** Temperature: 24.3 °C
 Limit: (RE)EN55032 Class B 3m Power: AC 230V/50Hz Humidity: 57 %
 EUT: Distance: RBW: 120 KHz Air Pressure: hpa
 MN: UNOWT3150-240063SA VSW: 1000 KHz Sweep Time: 300 ms
 Note: SAMPLE2

No. Mk.	Freq. (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Antenna Height (cm)	Table Degree (degree)	Comment
1	156.6300	45.96	-8.10	37.86	40.00	-2.14	peak		
2	156.6300	43.78	-8.10	35.68	40.00	-4.32	QP		
3	182.0100	44.08	-9.58	34.50	40.00	-5.50	peak		
4	182.0100	40.69	-9.58	31.11	40.00	-8.89	QP		

*Maximum data x:Over limit l:over margin *Reference Only
 Receiver: ESR_1 S/N: Spectrum Analyzer: ESR Amplifier: 8447D/2944A08610(2022.03.08)
 Antenna: VULB9168/251 3m(2021.06.03) SW/PAD:GTK-E-A342-01(2022.04.07) Test Result: **Pass**
 Cable1: GTK-E-A344-01(2022.04.07) Cable2:GTK-E-A346-01(2022.04.07) Engineer Signature: Eric Tsai
 File :源Data #444 Page: 1

EFT Character (電子脈衝群干擾特性)

※Character Condition(特性條件) :

1	I/P Voltage(Vac)(輸入電壓)	100Vac/230Vac
2	I/P Frequency(Hz)(輸入頻率)	50Hz / 60Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備) :

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	BEST EMC SOLUTION	EMCSOSIN / EFT-S4
2	AC Source(變頻器)	ALL POWER/APG-1005N

※Character Standard(特性標準) :

1	Character Standard	IEC 61000-4-4
EFT Character		
Spec.	1KV	
O/P	Full Load	
I/P	100Vac/60Hz & 230Vac/50Hz	
Burst	15ms/300ms	
Character Duration	1 min	
Pulse Rate:	5KHz/100KHz	

※Character Data(特性數據) 產品類別: Class I

Power Line	Pulse Polarity	Character Voltage	Required Criteria	Complied To Criteria(A,B,C)	Judgement
L	"+" / "-"	1KV	Criteria B	Criteria A	PASS
N	"+" / "-"	1KV	Criteria B	Criteria A	PASS
L-N	"+" / "-"	1KV	Criteria B	Criteria A	PASS
PE	"+" / "-"	1KV	Criteria B	Criteria A	PASS
L-PE	"+" / "-"	1KV	Criteria B	Criteria A	PASS
N-PE	"+" / "-"	1KV	Criteria B	Criteria A	PASS
L-N-PE	"+" / "-"	1KV	Criteria B	Criteria A	PASS

※Character Performance & Result :

- Criteria A: The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- Criteria B: The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- Criteria C: Temporary loss of function is allowed, provided the function self recoverable or can be restored by the operation of controls

ESD Character (靜電干擾特性)

※Character Condition(特性條件) :

1	I/P Voltage(Vac)(輸入電壓)	100Vac/230Vac
2	I/P Frequency(Hz)(輸入頻率)	50Hz / 60Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備) :

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	EMC-PARTNER	PRIMA /ESD61002TB
2	AC Source(變頻器)	ALL POWER/APG-1005N

※Character Standard(特性標準) :

1	Character Standard	IEC 61000-4-2:2001	
ESD Character			
Spec.	Air: ±16.0KV	Contact: ±8.0KV	
O/P	Full Load		
I/P	100Vac/60Hz & 230Vac/50Hz		
Description of Observation:	NO Abnormal Issue		
Performance Criterion:	Manufacturer (According to Standard/Manufacturer)		

※Character Data(特性數據) :

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria(A,B,C)	Judgement
Air Discharge	Mini 10/Point	±16.0KV	Criteria B	Criteria A	PASS
Contact Discharge	Mini 25/Point	±8.0KV	Criteria B	Criteria A	PASS
Indirect Discharge(HCP)	Mini 25/Point				
Indirect Discharge(VCP Front)	Mini 25/Point				
Indirect Discharge(VCP Left)	Mini 25/Point				
Indirect Discharge(VCP Back)	Mini 25/Point				
Indirect Discharge(VCP Right)	Mini 25/Point				

※Character Performance & Result :

- Criteria A: The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- Criteria B: The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- Criteria C: Temporary loss of function is allowed, provided the function self recoverable or can be restored by the operation of controls

Light Surge Character (雷擊特性)

※Character Condition(特性條件) :

1	I/P Voltage(Vac)(輸入電壓)	100Vac/230Vac
2	I/P Frequency(Hz)(輸入頻率)	50Hz / 60Hz
3	Output Load(輸出負載)	Full Load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS

※Character Equipment(特性設備) :

ITEM	Equipment Item(設備)	Model No. / Manufacturer(製造商和型號)
1	EMC-PARTNER	Prima/ SUG61005TAX
2	AC Source(變頻器)	ALL POWER/APG-1005N

※Character Standard(特性標準) :

1	Character Standard	IEC 61000-4-5:1995+ A1:2001
SURGE Character		
Spec.	Line to Line ±2KV ; Line to FG ±4KV	
O/P	Full load	
I/P	100Vac/60Hz & 230Vac/50Hz	
REP.RATE	60 sec	
Description of Observation:	NO Abnormal Issue	
Performance Criterion:	Manufacturer (According to Standard/Manufacturer)	

※Character Data(特性數據) 產品類別: Class I

Character Point	Character Voltage	Polarity	Phase Angle				Required Criteria	Complied To Criteria(A,B,C)	Judgement
			0°	90°	180°	270°			
L-N	2KV	+	OK	OK	OK	OK	Criteria B	Criteria A	PASS
		-	OK	OK	OK	OK	Criteria B	Criteria A	PASS
L-GND	4KV	+	OK	OK	OK	OK	Criteria B	Criteria A	PASS
		-	OK	OK	OK	OK	Criteria B	Criteria A	PASS
N-GND	4KV	+	OK	OK	OK	OK	Criteria B	Criteria A	PASS
		-	OK	OK	OK	OK	Criteria B	Criteria A	PASS
L,N-GND	4KV	+	OK	OK	OK	OK	Criteria B	Criteria A	PASS
		-	OK	OK	OK	OK	Criteria B	Criteria A	PASS

Class II Type : Character L-N Only.

※Character Performance & Result :

- Criteria A: The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- Criteria B: The apparatus continues to operate as intended after te test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, whe the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- Criteria C: Temporary loss of function is allowed, provided the function self recoverable or can be restored by the operation of controls

DIPS Character(周波跌落特性)

※Character Condition(特性條件):

1	I/P Voltage(Vac)(輸入電壓)	100~230Vac
2	I/P Frequency(Hz)(輸入頻率)	50Hz/60Hz
3	Output load(輸出負載)	Full load
4	Ambient Temp.(°C)(環境溫度)	25°C
5	Sample Size(取樣數)	1PCS
6		

※Character Parameters(特性參數):

DIPS Character	
Condition :	According EN61000-4-11 (full load and high line)
	Voltage Dips 100% Redaction 10ms/20ms ; 60% Redaction 200ms/240ms ; 30% Redaction 500 ms/600ms Voltage Interruption : ≥95% ; Redaction 5000ms/6000ms

※Character Data(特性數據):

Character Level	% UT	Reduction (%)	Duration (Periods)	Perform Criteria	Results	Judgement
0		100	0.5/1	B	Criteria A	PASS
40		60	10/12	C	Criteria C	PASS
70		30	25/30	C	Criteria C	PASS
0		100	250/300	C	Criteria C	PASS

※Character Performance & Result :

- Criteria A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- Criteria B:** The apparatus continues to operate as intended after te test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, whe the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test. degradation of performance is however allowed.
- Criteria C:** Temporary loss of function is allowed, provided the function self recoverable or can be restored by the operation of controls