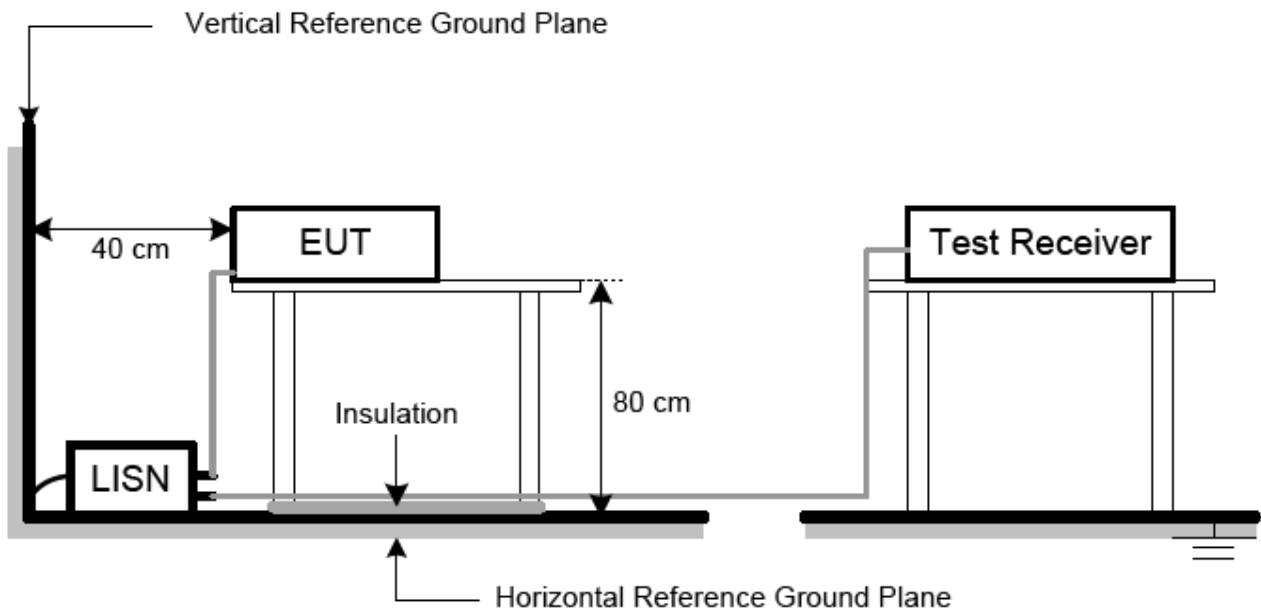
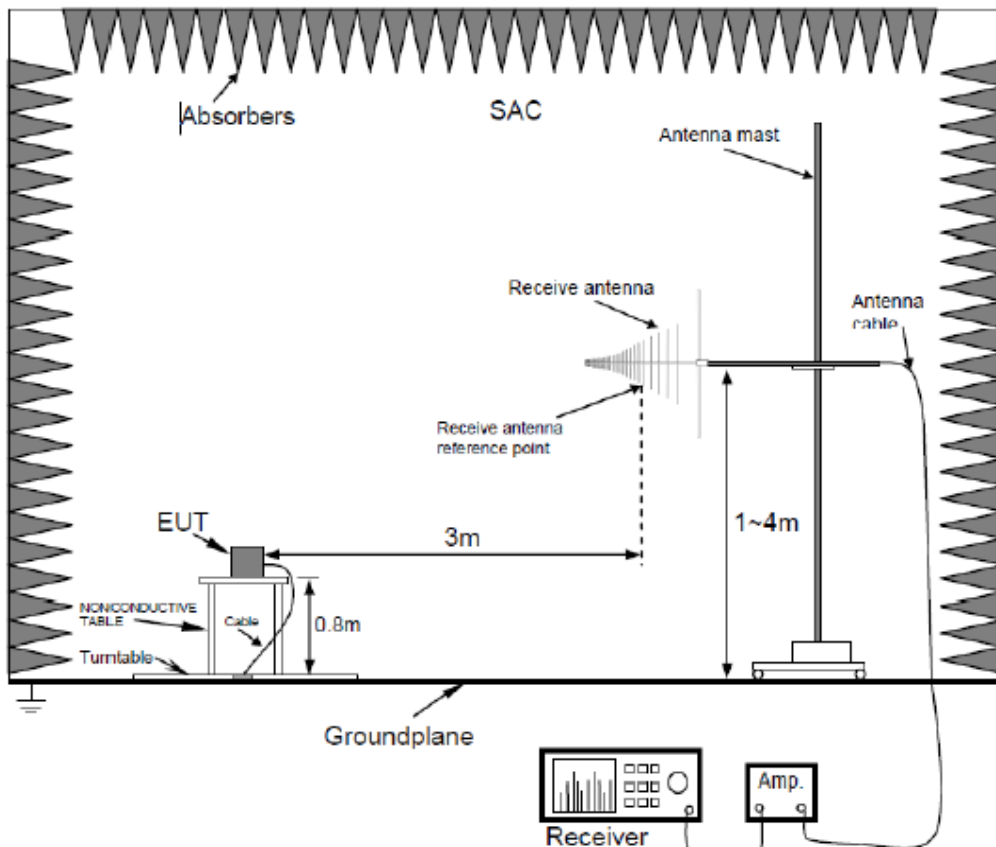


Configuration used for determination 用於特性的配置
 EMI 特性 Electro-Magnetic interference characteristics
 (1)Conducted Emission



(2)Radiated Emission



Conduction Character (傳導特性)

※Character Condition(特性條件):

1	I/P Voltage(Vac)(輸入電壓)	100Vac
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

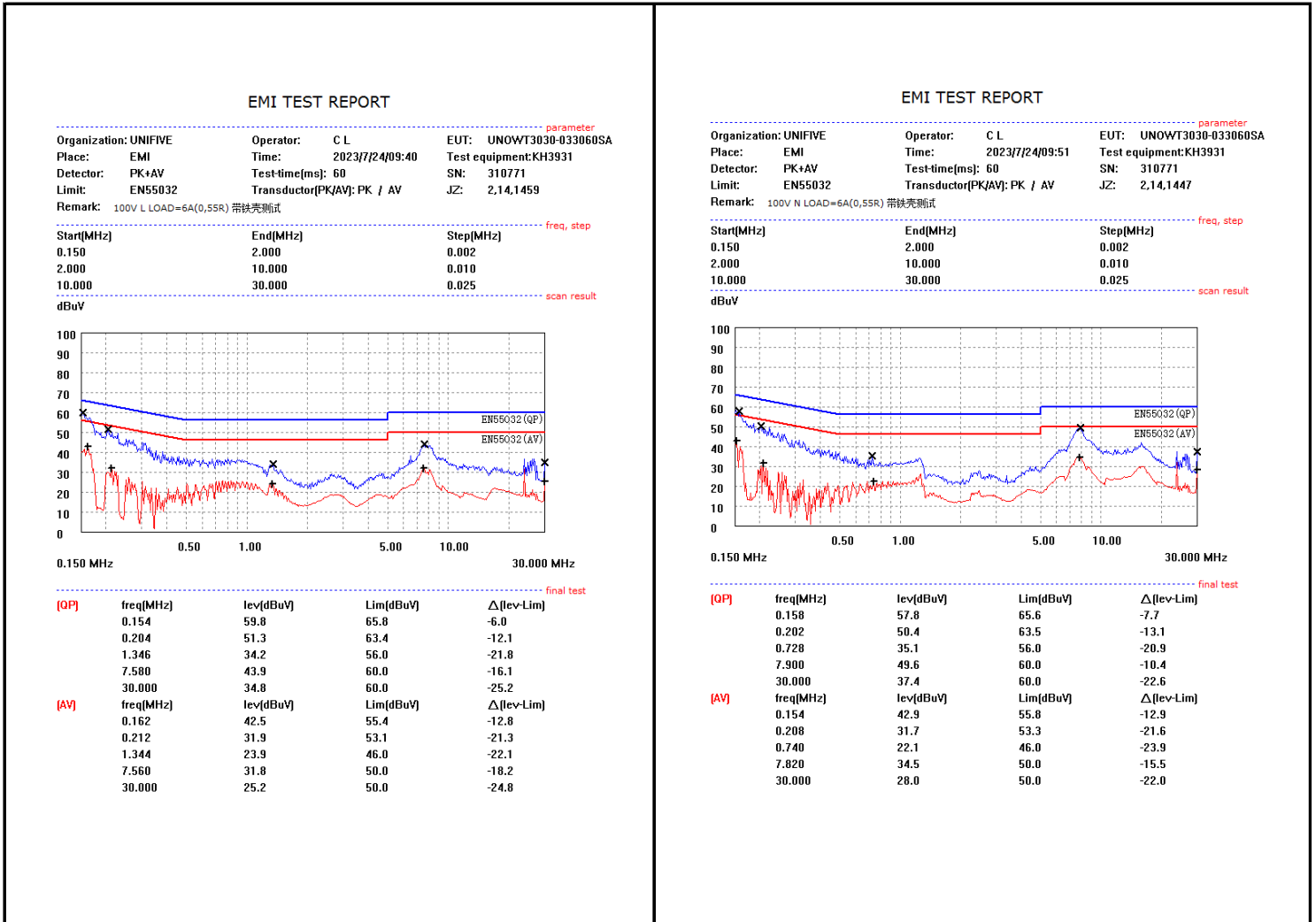
※Character Equipment(特性設備):

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/APG-1005N
3	Character Standard	EN55032 CLASS B

※Character Data(特性數據):

ITEM	QP	AV
Character Result	L line -6.0dB N line -7.7dB	-12.8dB -12.9dB

※Character Waveform (特性波形):



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	CISPR32 CLASS B

※Character Data(特性數據):

ITEM	QP	AV
Character Result	L line -8.9dB N line -5.8dB	-13.7dB -11.5dB

※Character Waveform (特性波形):

EMI TEST REPORT

Organization: UNIFIVE Operator: C L EUT: UNOWT3030-033060SA
 Place: EMI Time: 2023/7/24/10:25 Test equipment: KH3931
 Detector: PK+AV Test-time(ms): 60 SN: 310771
 Limit: EN55032 Transducer(PK/AV): PK / AV JZ: 2.14,1440
 Remark: 230V L LOAD=6A(0.55R) 帶鉄壳測試

Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025

freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
0.150	57.1	66.0	-8.9
0.250	48.3	61.8	-13.5
1.304	33.7	56.0	-22.3
9.990	50.2	60.0	-9.8
30.000	36.2	60.0	-23.8

freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
0.164	38.4	55.3	-16.9
0.226	28.9	52.6	-23.7
1.338	22.7	46.0	-23.3
9.990	36.3	50.0	-13.7
30.000	26.4	50.0	-23.6

EMI TEST REPORT

Organization: UNIFIVE Operator: C L EUT: UNOWT3030-033060SA
 Place: EMI Time: 2023/7/24/10:01 Test equipment: KH3931
 Detector: PK+AV Test-time(ms): 60 SN: 310771
 Limit: EN55032 Transducer(PK/AV): PK / AV JZ: 2.14,1443
 Remark: 230V N LOAD=6A(0.55R) 帶鉄壳測試

Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025

freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
0.156	58.9	65.7	-6.8
0.276	48.0	60.9	-12.9
1.228	36.9	56.0	-19.1
9.960	54.2	60.0	-5.8
30.000	36.1	60.0	-23.9

freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
0.162	35.2	55.4	-20.1
0.266	20.9	51.2	-30.4
1.242	25.9	46.0	-20.1
10.050	38.5	50.0	-11.5
30.000	26.2	50.0	-23.8

Radiation Character (輻射特性)

※Character Condition(特性條件):

1	I/P Voltage(Vac)(輸入電壓)	100Vac
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	廠外部實驗室
2	AC Source(變頻器)	廠外部實驗室
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: UNS\UNB\WT3030-033060SA Data #3 Date: 2023/7/21 Time: 14:32:12

Site: ATT Radiated Emission Chamber 2 Polarization: Vertical Temperature: 23
 Limit: (RE)CISPR32 class B 3m Power: AC 100V/60Hz Humidity: 52 %
 EUT: Distance:
 MN: UNS\UNB\WT3030-033060SA
 Mode: FULL LOAD
 Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
	MHz	dBuV	dB	dBuV/m	dBm	dB	cm	degree
1 *	35.2512	40.28	-9.07	31.19	40.00	-8.81	peak	
2	97.1148	35.80	-13.58	22.22	40.00	-17.78	peak	
3	119.4381	37.37	-12.48	24.89	40.00	-15.11	peak	

*Maximum data x:Over limit !:over margin

File: UNS\UNB\WT3030-033060SA\Data #3 Page: 1

File: UNS\UNB\WT3030-033060SA Data #4 Date: 2023/7/21 Time: 14:33:34

Site: ATT Radiated Emission Chamber 2 Polarization: Horizontal Temperature: 23
 Limit: (RE)CISPR32 class B 3m Power: AC 100V/60Hz Humidity: 52 %
 EUT: Distance:
 MN: UNS\UNB\WT3030-033060SA
 Mode: FULL LOAD
 Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
	MHz	dBuV	dB	dBuV/m	dBm	dB	cm	degree
1	163.7550	35.98	-14.16	21.82	40.00	-18.18	peak	
2 *	209.3129	37.29	-9.86	27.43	40.00	-12.57	peak	
3	261.0583	33.83	-8.89	27.14	47.00	-19.86	peak	

*Maximum data x:Over limit !:over margin

File: UNS\UNB\WT3030-033060SA\Data #4 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	廠外部實驗室
2	AC Source(變頻器)	廠外部實驗室
3	Character Standard	CISPR32 CLASS B

※Character Data(特性數據) :

ITEM		peak	QP
Character Result	V line	-9.9dB	/
	H line	-11.99dB	/

※Character Waveform (特性波形) :

Radiated Emission Measurement
File: UNS\UNB\WT3030-033060SA Data: #6 Date: 2023/7/21 星期 Time: 14:36:37

Site: ATT Radiated Emission Chamber 2
Limit: (RE)CISPR32 class B 3m
EUT:
MN: UNS\UNB\WT3030-033060SA
Mode: FULL LOAD
Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBm	Over dB	Antenna Height cm	Table Degree	Comment
1 *	30.3173	41.77	-11.67	30.10	40.00	-9.90			peak
2	35.4993	39.29	-9.31	29.98	40.00	-10.02			peak
3	85.5977	38.34	-11.22	27.12	40.00	-12.88			peak

*:Maximum data x:Over limit !:over margin

File: UNS\UNB\WT3030-033060SA\Data: #6 Page: 1

Radiated Emission Measurement
File: UNS\UNB\WT3030-033060SA Data: #5 Date: 2023/7/21 星期 Time: 14:35:19

Site: ATT Radiated Emission Chamber 2
Limit: (RE)CISPR32 class B 3m
EUT:
MN: UNS\UNB\WT3030-033060SA
Mode: FULL LOAD
Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBm	Over dB	Antenna Height cm	Table Degree	Comment
1	88.6524	40.70	-17.63	23.07	40.00	-16.93			peak
2 *	211.5285	38.03	-10.02	28.01	40.00	-11.99			peak
3	256.5211	35.04	-6.73	28.31	47.00	-18.69			peak

*:Maximum data x:Over limit !:over margin

File: UNS\UNB\WT3030-033060SA\Data: #5 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 (KV)	Required Criteria	Complied To Criteria(A,B,C)	Judgement
L	"+"/"-"	1.0KV	Criteria B	Criteria A	Pass
N	"+"/"-"	1.0KV	Criteria B	Criteria A	Pass
L-N	"+"/"-"	1.0KV	Criteria B	Criteria A	Pass
PE	"+"/"-"	1.0KV	Criteria B	Criteria A	Pass
L-PE	"+"/"-"	1.0KV	Criteria B	Criteria A	Pass
N-PE	"+"/"-"	1.0KV	Criteria B	Criteria A	Pass
L-N-PE	"+"/"-"	1.0KV	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: $\pm 8.0KV$	Contact: $\pm 4.0KV$	
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	$\pm 8.0KV$	Criteria B	Criteria A	Pass
Contact Discharge	Mini 25/Point	$\pm 4.0KV$	Criteria B	Criteria A	Pass
Indirect Discharge(HCP)	Mini 25/Point	$\pm 4.0KV$	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Front)	Mini 25/Point	$\pm 4.0KV$	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Left)	Mini 25/Point	$\pm 4.0KV$	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Back)	Mini 25/Point	$\pm 4.0KV$	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Right)	Mini 25/Point	$\pm 4.0KV$	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

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 ±1KV ; Line to FG ±2KV	
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 (KV)	Polarity	Phase Angle				Required Criteria	Complied To Criteria(A,B,C)	Judgement
			0°	90°	180°	270°			
L-N	1KV	+	OK	OK	OK	OK	Criteria B	Criteria A	Pass
		-	OK	OK	OK	OK	Criteria B	Criteria A	Pass
L-GND	2KV	+	OK	OK	OK	OK	Criteria B	Criteria A	Pass
		-	OK	OK	OK	OK	Criteria B	Criteria A	Pass
N-GND	2KV	+	OK	OK	OK	OK	Criteria B	Criteria A	Pass
		-	OK	OK	OK	OK	Criteria B	Criteria A	Pass
L,N-GND	2KV	+	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 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 is 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 B	Pass
70		30	25/30	C	Criteria B	Pass
0		100	250/300	C	Criteria B	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

Radiated Radio-Frequency Electromagnetic Field Immunity Character (IEC61000-4-3) (RS特性)

※Character Condition(特性條件) :

1	I/P Voltage(Vac)(輸入電壓)	100Vac
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	廠外部實驗室
2	AC Source(變頻器)	廠外部實驗室

※Character Standard(特性標準) :

RS TEST DATA						
Freq.Range(MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform Criteria	Results	Judgment
80MHz-1000MHz	Vertical/Horizontal	1V(rms) AM Modulated 1000Hz, 80%	Front	A	A	PASS
			Back			
			Left			
			Right			

Conducted Disturbances Induced by Radio-Frequency Field Immunity Character (IEC61000-4-6) (CS特性)

※Character Condition(特性條件)：

1	I/P Voltage(Vac)(輸入電壓)	100Vac
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	廠外部實驗室
2	AC Source(變頻器)	廠外部實驗室

※Character Standard(特性標準)：

CS TEST DATA					
Test Ports (Mode)	Freq.Range(MHz)	Field Strength	Perform Criteria	Results	Judgment
Input/Output AC. Power Port	0.15-80MHz	3V(rms) AM Modulated 1000Hz, 80%	A	A	PASS

Power Frequency Magnetic Field Immunity Character (IEC61000-4-8) (PFMF特性)

※Character Condition(特性條件) :

1	I/P Voltage(Vac)(輸入電壓)	100Vac
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	頻普接收儀	廠外部實驗室
2	AC Source(變頻器)	廠外部實驗室

※Character Standard(特性標準) :

Magnetic Field Immunity					
Test Ports (Mode)	Frequency(Hz)	Field Strength	Perform Criteria	Results	Judgment
X Orientation	50/60	1A/m	A	A	PASS
Y Orientation			A	A	PASS
Z Orientation			A	A	PASS