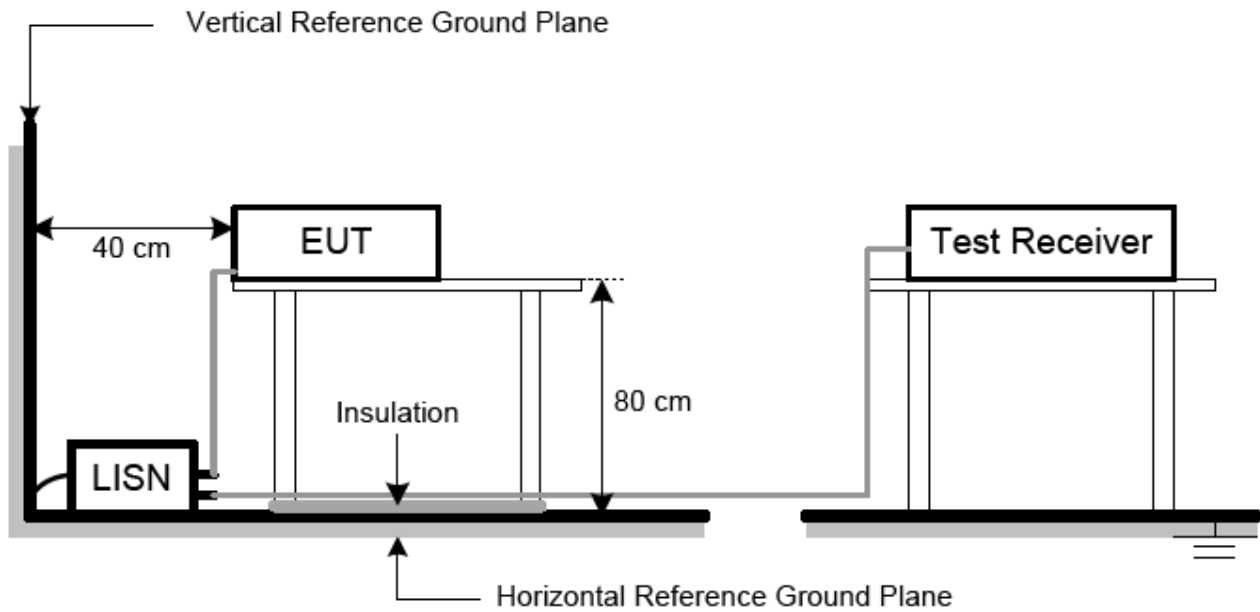


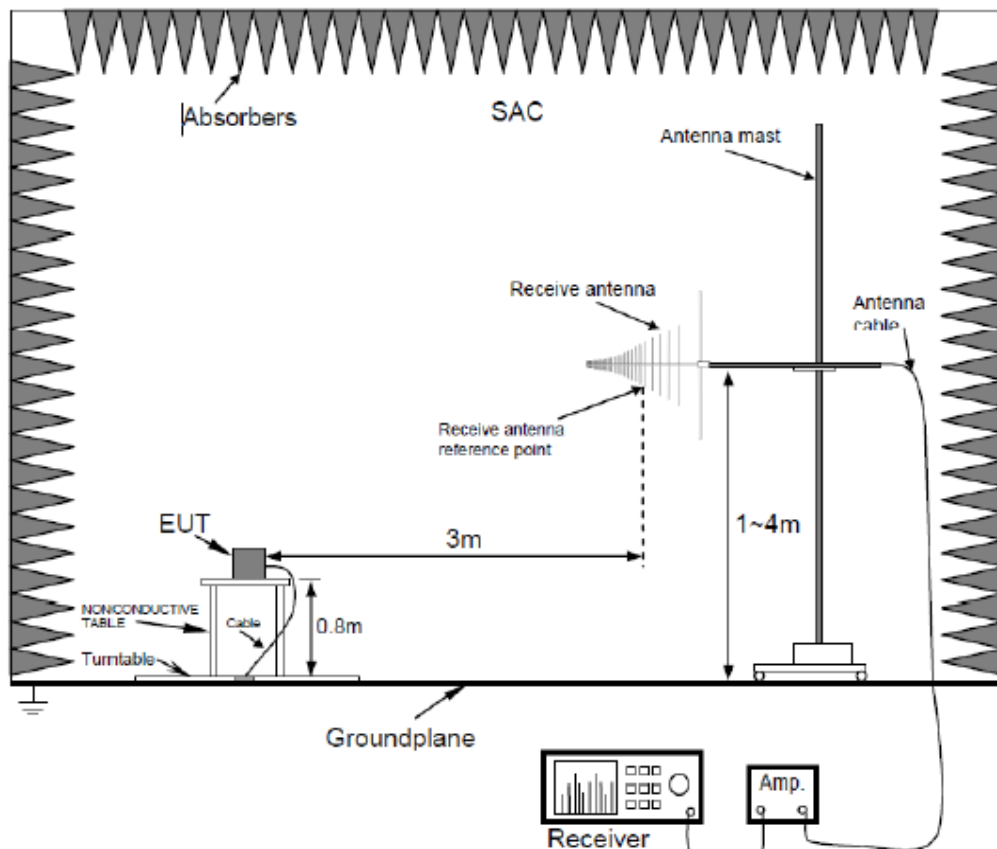
Configuration used for determination 用於特性的配置

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):

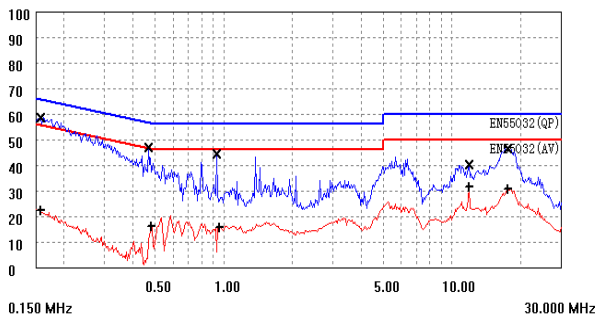
ITEM	QP	AV
L line	-6.9dB	-18.7dB
N line	-5.2dB	-22.3dB

### ※Character Waveform (特性波形):

#### EMI TEST REPORT

Organization: UNIFIVE Operator: F Q EUT: UNOWT3010-050020SA  
 Place: EMI Time: 2023/5/31/16:53 Test equipment: KH3931  
 Detector: PK+AV Test-time[ms]: 30 SN: 310771  
 Limit: EN55032 Transducer(PK/AV): PK / AV JZ: 2,14,1473  
 Remark: 100V L LOAD=2A(2.5R)

Start(MHz) End(MHz) Step(MHz) freq, step  
 0.150 2.000 0.002  
 2.000 10.000 0.010  
 10.000 30.000 0.025 scan result



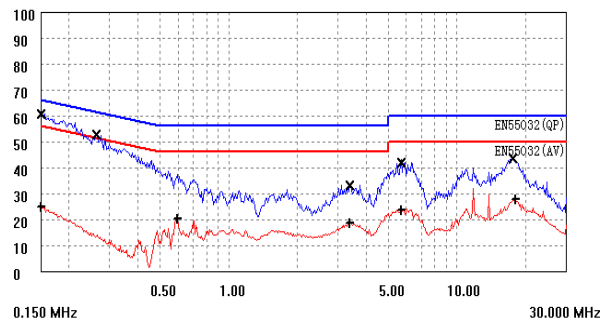
final test

[QP]	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.150	58.6	65.6	-6.9
	0.470	46.8	56.5	-9.8
	0.930	44.2	56.0	-11.8
	11.850	40.4	60.0	-19.6
	17.650	46.7	60.0	-13.3
[AV]	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.150	22.1	55.6	-33.5
	0.482	16.0	46.3	-30.3
	0.956	15.6	46.0	-30.4
	11.850	31.3	50.0	-18.7
	17.650	30.7	50.0	-19.3

#### EMI TEST REPORT

Organization: UNIFIVE Operator: F Q EUT: UNOWT3010-050020SA  
 Place: EMI Time: 2023/5/31/16:59 Test equipment: KH3931  
 Detector: PK+AV Test-time[ms]: 30 SN: 310771  
 Limit: EN55032 Transducer(PK/AV): PK / AV JZ: 2,14,1474  
 Remark: 100V L LOAD=2A(2.5R)

Start(MHz) End(MHz) Step(MHz) freq, step  
 0.150 2.000 0.002  
 2.000 10.000 0.010  
 10.000 30.000 0.025 scan result



final test

[QP]	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.150	60.8	66.0	-5.2
	0.264	52.9	61.3	-8.4
	3.400	32.9	56.0	-23.1
	5.700	42.0	60.0	-18.0
	17.625	43.7	60.0	-16.3
[AV]	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.150	25.0	56.0	-31.0
	0.594	20.2	46.0	-25.8
	3.400	18.4	46.0	-27.6
	5.700	23.7	50.0	-26.3
	18.000	27.7	50.0	-22.3

## 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):

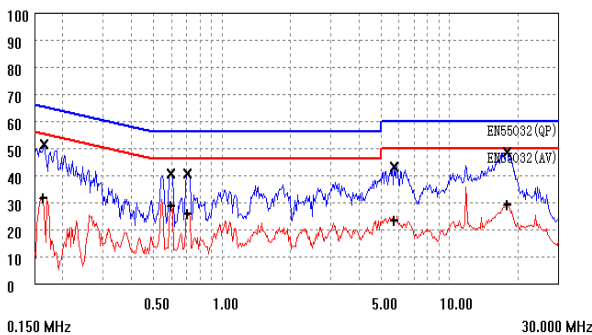
ITEM	QP	AV
L line	-11.6dB	-17.3dB
N line	-11.6dB	-11.3dB

### ※Character Waveform (特性波形):

#### EMI TEST REPORT

Organization: UNIFIVE Operator: F Q EUT: UNOWT3010-050020SA  
 Place: EMI Time: 2023/5/31/17:09 Test equipment: KH3931  
 Detector: PK+AV Test-time(ms): 30 SN: 310771  
 Limit: EN55032 Transducer(PK/AV): PK / AV JZ: 2,15,756  
 Remark: 230V L LOAD=2A(2.5R)

Start(MHz) End(MHz) Step(MHz) freq, step  
 0.150 2.000 0.002  
 2.000 10.000 0.010  
 10.000 30.000 0.025 scan result



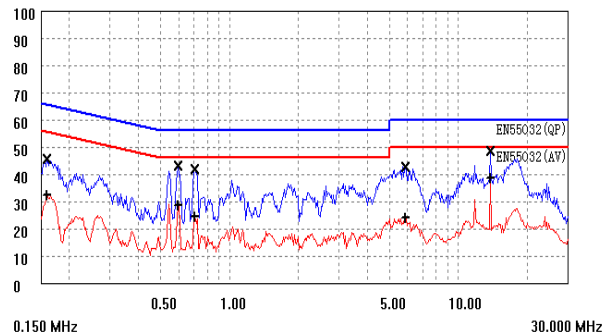
final test

(QP)	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.166	51.6	65.2	-13.5
	0.598	40.7	56.0	-15.3
	0.704	40.7	56.0	-15.3
	5.700	43.1	60.0	-16.9
	17.925	48.4	60.0	-11.6
(AV)	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.164	31.3	55.3	-24.0
	0.598	28.7	46.0	-17.3
	0.704	25.6	46.0	-20.4
	5.700	23.2	50.0	-26.8
	17.900	29.2	50.0	-20.8

#### EMI TEST REPORT

Organization: UNIFIVE Operator: F Q EUT: UNOWT3010-050020SA  
 Place: EMI Time: 2023/5/31/17:04 Test equipment: KH3931  
 Detector: PK+AV Test-time(ms): 30 SN: 310771  
 Limit: EN55032 Transducer(PK/AV): PK / AV JZ: 2,15,753  
 Remark: 230V N LOAD=2A(2.5R)

Start(MHz) End(MHz) Step(MHz) freq, step  
 0.150 2.000 0.002  
 2.000 10.000 0.010  
 10.000 30.000 0.025 scan result



final test

(QP)	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.160	45.6	65.5	-19.9
	0.594	43.2	56.0	-12.8
	0.706	41.7	56.0	-14.3
	5.850	42.5	60.0	-17.5
	13.850	48.4	60.0	-11.6
(AV)	freq(MHz)	lev(dBuV)	Lim(dBuV)	Δ(lev-Lim)
	0.160	32.2	55.5	-23.2
	0.594	28.5	46.0	-17.5
	0.706	24.3	46.0	-21.7
	5.850	23.8	50.0	-26.2
	13.850	38.7	50.0	-11.3

## 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

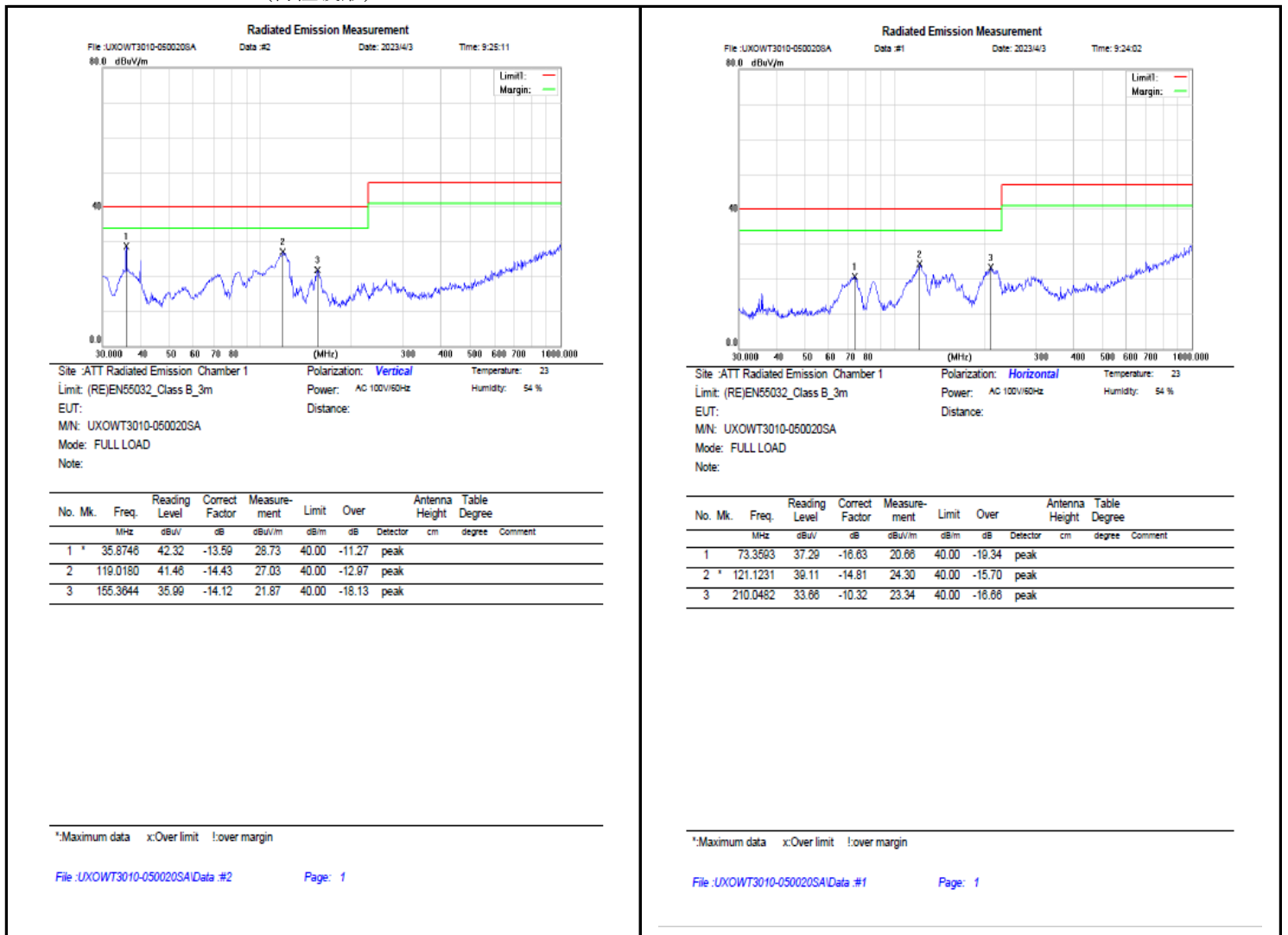
### ※Character Equipment(特性設備) :

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 -11.27dB H line -15.7dB	/ /

### ※Character Waveform (特性波形) :



## 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

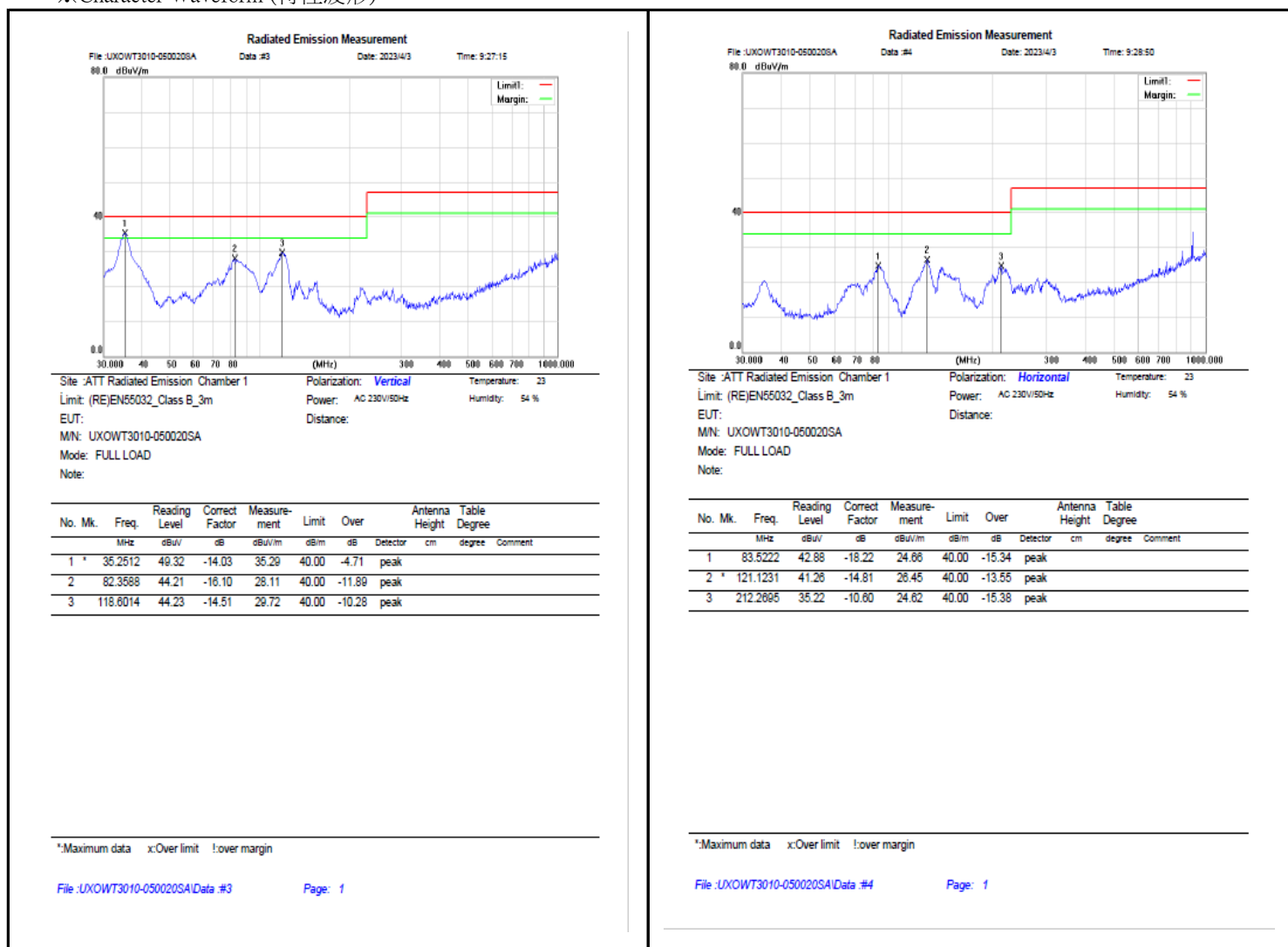
### ※Character Equipment(特性設備) :

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 -4.71dB H line -13.55dB	/ /

### ※Character Waveform (特性波形) :



## 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/230Vac
	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: ±8.0KV	Contact: ±4.0KV
O/P	Full Load	
I/P	100Vac/230Vac	
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	±8.0KV	Criteria B	Criteria A	Pass
Contact Discharge	Mini 25/Point	±4.0KV	Criteria B	Criteria A	Pass
Indirect Discharge(HCP)	Mini 25/Point	±4.0KV	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Front)	Mini 25/Point	±4.0KV	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Left)	Mini 25/Point	±4.0KV	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Back)	Mini 25/Point	±4.0KV	Criteria B	Criteria A	Pass
Indirect Discharge(VCP Right)	Mini 25/Point	±4.0KV	Criteria B	Criteria A	Pass

## ※Character Performance &amp; 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 $\pm 1KV$ ; Line to FG $\pm 2KV$	
O/P	Full load	
I/P	100Vac/230Vac	
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 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



## 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 &amp; 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