

6050-1

USB PD 單組輸出自動測試系統



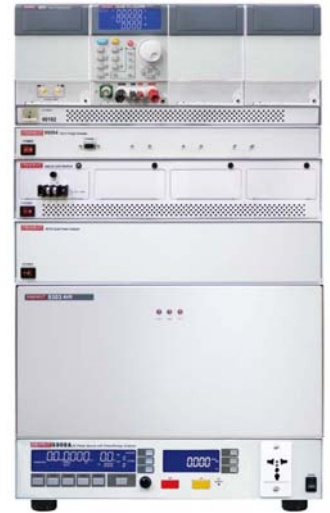
基本版



標準版



加值版



完整版

特 性

- 可依產品測試需求，選擇所需要的設備配置版本（基本版 / 標準版 / 加值版 / 完整版）
- 除了支援USB PD，亦同時支援QC2.0 / QC3.0 / PE+ / PE+2.0
- 極高性價比，全功能模組化設計之測試系統
- Windows 7 以上（含）的作業環境
- 開放性架構軟體平台
 1. 支援相關硬體擴充
 2. 測試項目編輯功能
 3. 測試程式編輯功能
 4. 統計分析報表編輯功能
 5. 線上儀控功能
 6. 使用者權限設定
 7. 支援 Bar Code Reader

6050 USB PD ATE 測試系統

USB PD測試項目與設備配置表

測試項目	儀器設備							
	5302A AC Source	9922-R QC Controller	99094 QC Controller	3310F DC Load	4031-PD Timing & Noise	4015A Power Meter	5060 OVP Source	5303 AVR
USB PD 特性測試 USB PD Performances								
USB PD Source / Sink Profile	✓	✓	✓	✓				
USB PD Power Data Object (PDO)	✓	✓	✓	✓				
正向電壓轉變 Positive Voltage Transitions	✓	✓	✓	✓	✓			
負向電壓轉變 Negative Voltage Transitions	✓	✓	✓	✓	✓			
硬體復歸狀態 Hard Reset	✓	✓	✓	✓	✓			
USB纜線拔除試驗 USB Type C Cable unplug	✓		✓	✓	✓			
輸出特性測試 Output Performances								
輸出電壓 Output Voltage	✓	✓	✓	✓				
輸出電流 Output Current	✓	✓	✓	✓				
動態負載 Dynamic Load (Vpeak +/-)	✓	✓	✓	✓	✓			
平均效率 Average Efficiency	✓	✓	✓	✓				
漣波電壓 Ripple Voltage	✓	✓	✓	✓	✓			
輸入特性測試 Input Characteristics								
輸入有效值電流 Input RMS Current	✓	✓	✓	✓		✓		
輸入頻率 Input Frequency	✓	✓	✓	✓		✓		
輸入功率 Input Power	✓	✓	✓	✓		✓		
無載功率 No Load Power Consumption	✓	✓	✓	✓		✓		
輸入功率因素 Input Power Factor	✓	✓	✓	✓		✓		
輸入電源暫降 Input Voltage Sag	✓	✓	✓	✓	✓	✓		
電流諧波 Current Harmonics	✓	✓	✓	✓		✓		
輸入湧浪電流 Input Inrush Current	✓	✓	✓	✓		✓		✓
調變測試 Regulation Tests								
電源調變 Line Regulation	✓	✓	✓	✓				
負載調變 Load Regulation	✓	✓	✓	✓				
組合調變 Combine Regulation	✓	✓	✓	✓				
時序與暫態特性測試 Timing & Transient								
開機時間 Turn ON (Set-Up) Time	✓	✓	✓	✓	✓			
關機時間 Turn OFF (Hold-Up) Time	✓	✓	✓	✓	✓			
上升時間 Rise Time	✓	✓	✓	✓	✓			
下降時間 Fall Time	✓	✓	✓	✓	✓			
保護特性測試 Protection Tests								
短路保護 Short Circuit	✓	✓	✓	✓				
過電壓保護 OV Protection	✓	✓	✓	✓			✓	
過電流保護 OC Protection	✓	✓	✓	✓				
過功率保護測試 OP Protection	✓	✓	✓	✓				

USB PD 測試項目與設備配置表

測試項目	6050 USB PD 測試系統快選表			
	6050-1-A 基本版	6050-1-B 標準版	6050-1-C 加值版	6050-1-D 完整版
USB PD 特性測試 USB PD Performances				
USB PD Source / Sink Profile	●	●	●	●
USB PD Power Data Object (PDO)	●	●	●	●
正向電壓轉變 Positive Voltage Transitions		●	●	●
負向電壓轉變 Negative Voltage Transitions		●	●	●
硬體復歸狀態 Hard Reset		●	●	●
USB 纜線拔除試驗 USB Type C Cable unplug		●	●	●
輸出特性測試 Output Performances				
輸出電壓 Output Voltage	●	●	●	●
輸出電流 Output Current	●	●	●	●
動態負載 Dynamic Load (Vpeak +/-)		●	●	●
平均效率 Average Efficiency	●	●	●	●
漣波電壓 Ripple Voltage		●	●	●
輸入特性測試 Input Characteristics				
輸入有效值電流 Input RMS Current	●	●	●	●
輸入頻率 Input Frequency	●	●	●	●
輸入功率 Input Power	●	●	●	●
無載功率 No Load Power Consumption	●	●	●	●
輸入功率因素 Input Power Factor	●	●	●	●
輸入電源暫降 Input Voltage Sag	▲	●	●	●
電流諧波 Current Harmonics			●	●
輸入湧浪電流 Input Inrush Current				●
調變測試 Regulation Tests				
電源調變 Line Regulation	●	●	●	●
負載調變 Load Regulation	●	●	●	●
組合調變 Combine Regulation	●	●	●	●
時序與暫態特性測試 Timing & Transient				
開機時間 Turn ON (Set-Up) Time		●	●	●
關機時間 Turn OFF (Hold-Up) Time		●	●	●
上升時間 Rise Time		●	●	●
下降時間 Fall Time		●	●	●
保護特性測試 Protection Tests				
短路保護 Short Circuit	●	●	●	●
過電壓保護 OV Protection				●
過電流保護 OC Protection	●	●	●	●
過功率保護測試 OP Protection	●	●	●	●

▲ 僅提供輸入 Input Voltage Sag 能力

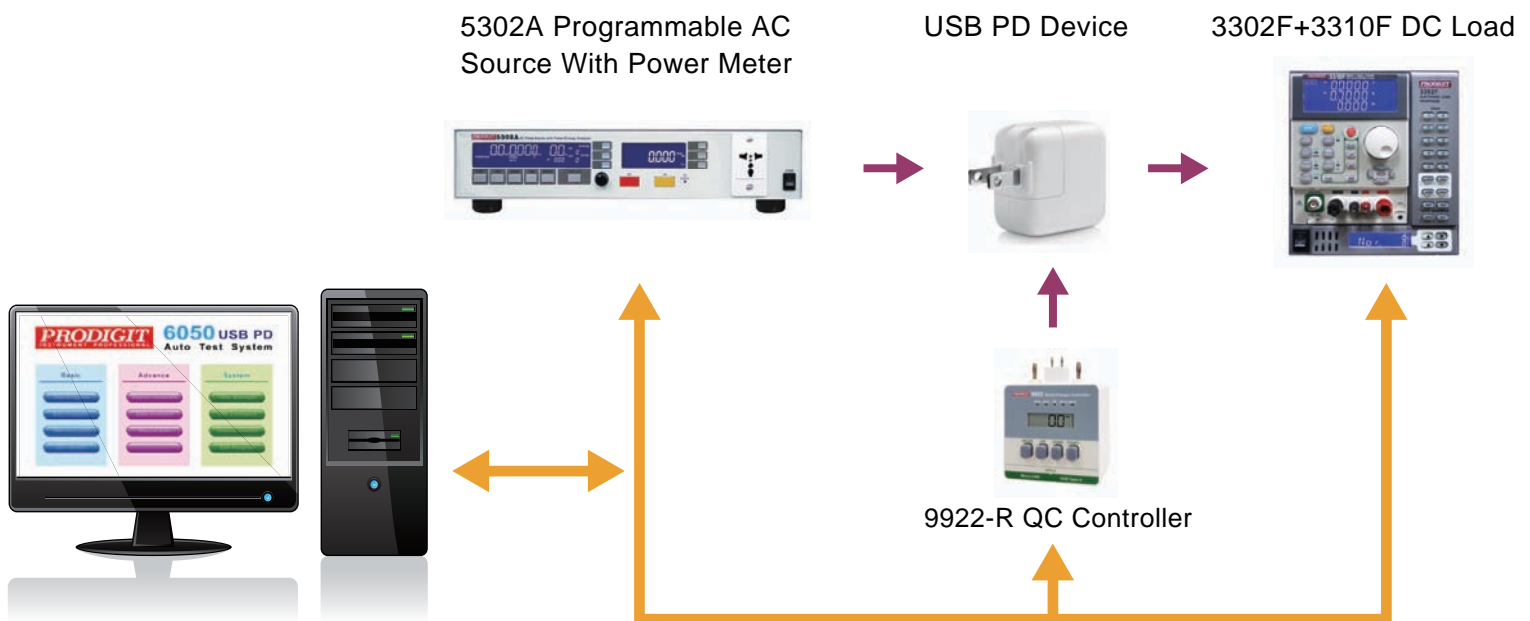
6050-1-A 單組輸出 USB PD基本版單組測試系統架構組成如表所示只需 5302A AC Source, 3302F + 3310F 系列及9922-R Quick Charge Controller 即可。組成圖示如下



3302F + 3310F DC Load

5302A AC Source (含 Power Meter)

6050-1-A 系統方塊圖



6050-1-A Single Channel Test System Configuration

6050-1-A 基本版可測試項目如下表

USB PD 特性測試 USB PD Performances
USB PD Source / Sink Profile
USB PD Power Data Object (PDO)

輸出特性測試 Output Performances
輸出電壓 Output Voltage
輸出電流 Output Current
平均效率 Average Efficiency

調變測試 Regulation Tests
電源調變 Line Regulation
負載調變 Load Regulation
組合調變 Combine Regulation

輸入特性測試 Input Characteristics
輸入有效值電流 Input RMS Current
輸入頻率 Input Frequency
輸入功率 Input Power
無載功率 No Load Power Consumption
輸入功率因素 Input Power Factor

保護特性測試 Protection Tests
短路保護 Short Circuit
過電流保護 OC Protection
過功率保護測試 OP Protection

6050-1 基本版設備配備表

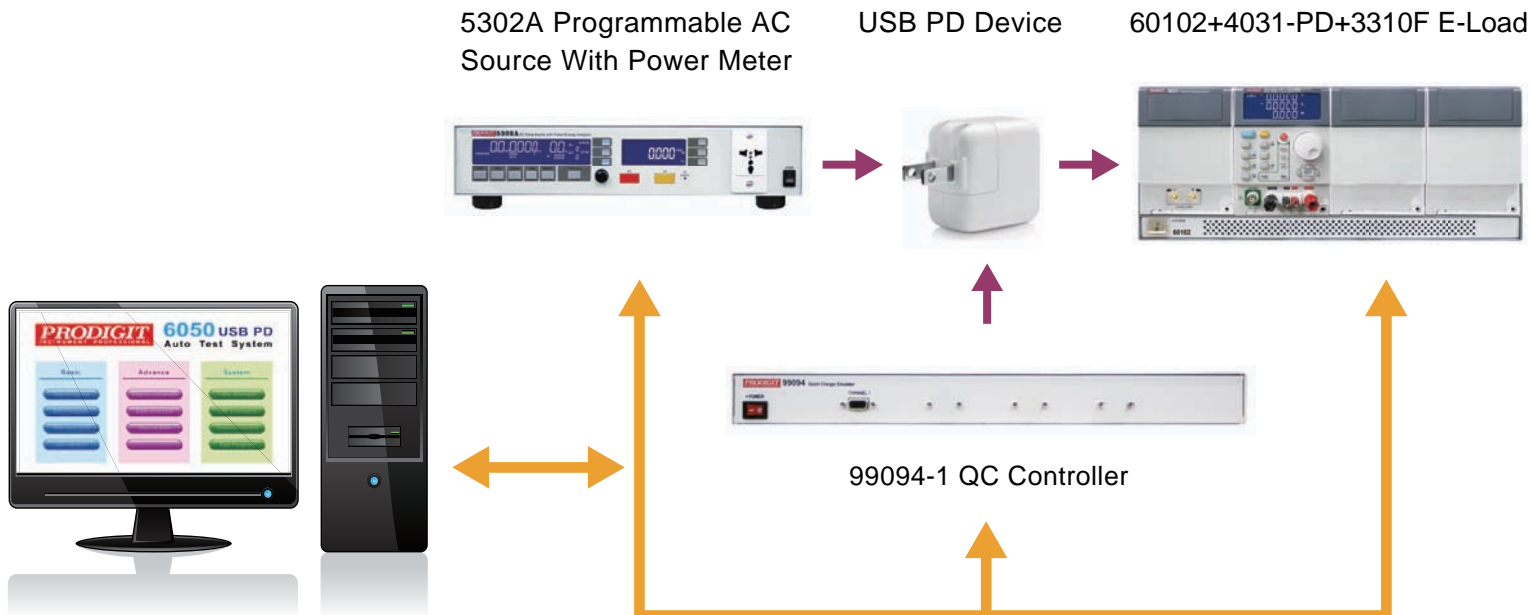
6050-1-A 基本版設備配備表	
設備名稱型號	數量
5302A AC Power Source with Power / Energy Analyzer	1
3302F 1CH Mainframe	1
3310F 60V/30A/150W DC Load Module	1
9922-R Quick Charger Controller with RS-232	1
6050 系統軟件	1
系統控制器 System Controller (PC)	1
CP-104EL-A 1:4 高速 RS-232 界面卡	1
Uport 1410 USB to RS-232 4 Port For Note Book	0
系統規格表 (PC or Note Book)	
CPU	i5-3470(3.2GHz) or faster
SRAM	256KB
DRAM	4GB or higher
Hard Driver	500GB or higher
CD-ROM	40X or faster
Monitor	22"
KeyBoard	101 Keys
I/O	Mouse/Print Port
System Interface	RS-232
System I/O	1:4 or 1:8 High Speed RS-232 Card
○ 系統裝置使用 Note Book 時應選用此介面	

OS : Windows 7.0 以上版本

6050-1-B標準版（基本版 + USB PD 特性及時序與暫態測試 + 輸出入特性）增加 4031-PD Timing & Noise Meter 與 99094-1 即可增加USB PD 特性及時序與暫態測試及輸出入特性等測試。組成圖示如下



6050-1-B 標準版系統方塊圖



6050-1-B Single Channel Test System Configuration

6050-1-B標準版增加 4031-PD及 99094-1可增加測試項目如下表橙色區塊

USB PD 特性測試 USB PD Performances	
正向電壓轉變	Positive Voltage Transitions
負向電壓轉變	Negative Voltage Transitions
硬體復歸狀態	Hard Reset
USB 纜線拔除試驗	USB Type C Cable unplug

時序與暫態特性測試 Timing & Transient	
開機時間	Turn ON (Set-Up) Time
關機時間	Turn OFF (Hold-Up) Time
上升時間	Rise Time
下降時間	Fall Time

輸出特性測試 Output Performances	
動態負載	Dynamic Load (Vpeak +/-)
漣波電壓	Ripple Voltage

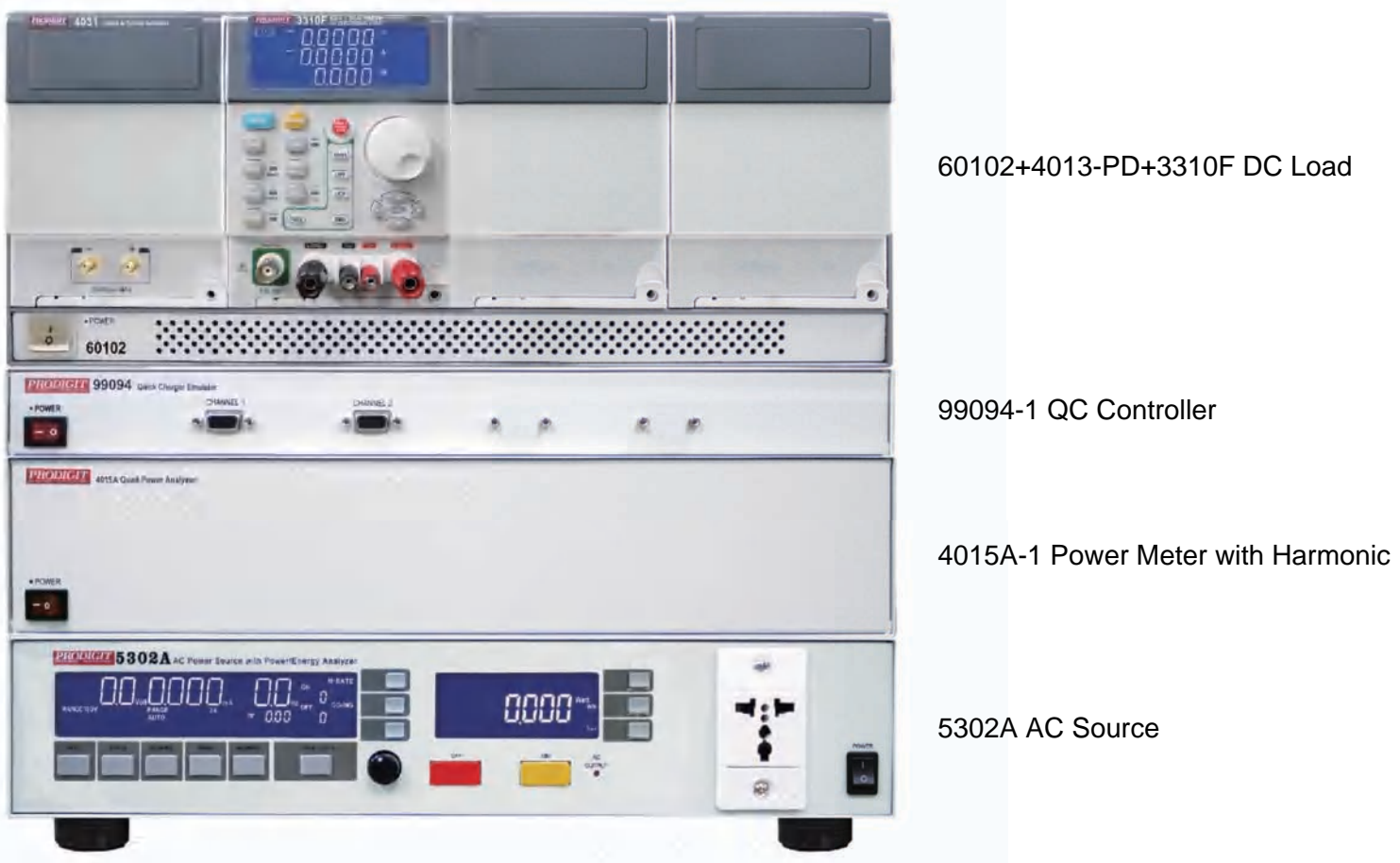
輸入特性測試 Input Characteristics	
輸入電源暫降	Input Voltage Sag

6050-1-B 標準版設備配備表

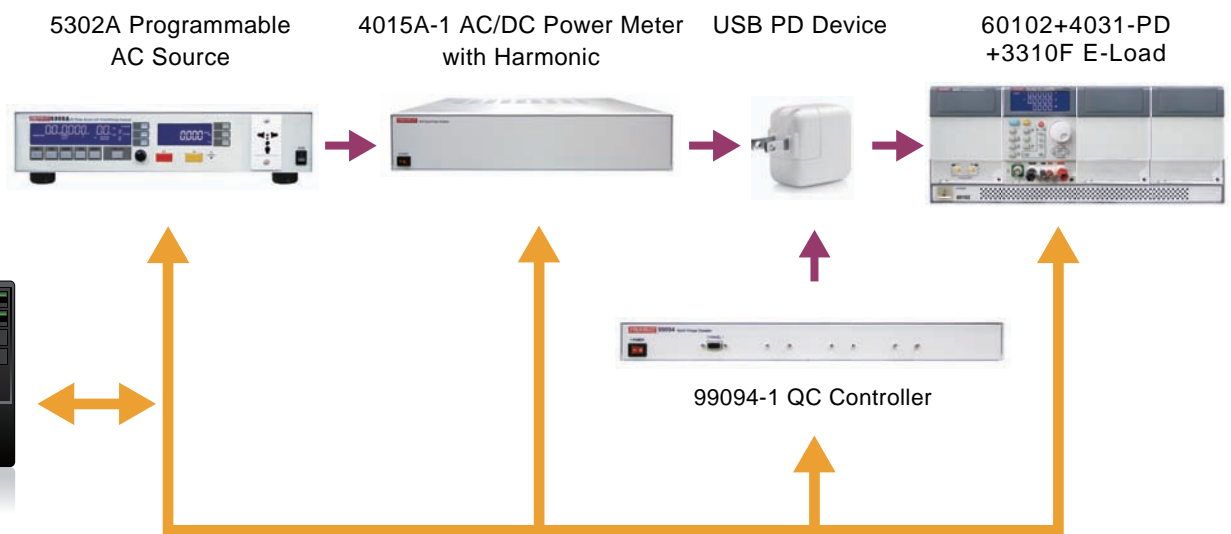
6050-1-B 標準版設備配備表	
設備名稱型號	數量
5302A AC Power Source with Power/Energy Analyzer	1
60102 2CH Mainframe; Ch1 為 4031-PD, Ch2 為 3310F	1
3310F 60V/30A/150W DC Load Module	1
4031-PD Timing & Noise Meter for PD	1
99094-01 Quick Charger Controller (單 Channel)	1
6050 系統軟件	1
系統控制器 System Controller (PC)	1
CP-104EL-A 1:4 高速 RS-232 界面卡	1
Uport 1410 USB to RS-232 4 Port For Note Book	0
系統規格表 (PC or Note Book)	
CPU	i5-3470(3.2GHz) or faster
SRAM	256KB
DRAM	4GB or higher
Hard Driver	500GB or higher
CD-ROM	40X or faster
Monitor	22"
KeyBoard	101 Keys
I/O	Mouse / Print Port
System Interface	RS-232
System I/O	1:4 or 1:8 High Speed RS-232 Card
○ 系統裝置使用 Note Book 時應選用此介面	

OS : Windows 7.0 以上版本

6050-1-C 加值版(標準版+輸入電流諧波) 增加 4015A-1即可增加電流諧波Harmonics 測試。
組成圖示如下



6050-1-C 加值版系統方塊圖



6050-1-C Single Channel Test System Configuration

6050-1-C 加值版增加 4015A-1可增加測項目如下表綠色區塊

輸入特性測試 **Input Characteristics**

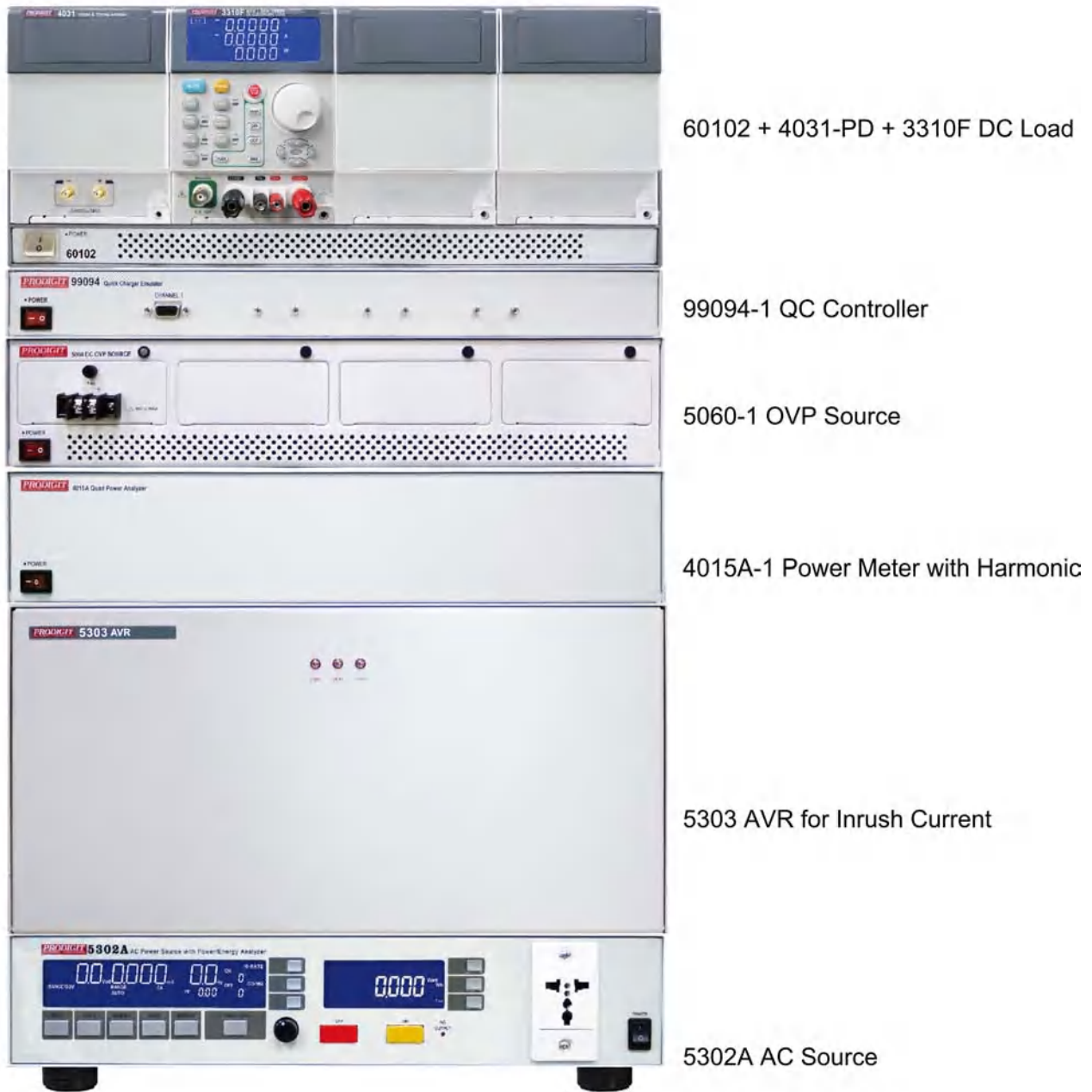
電流諧波 Current Harmonics

6050-1-C 加值版設備配備表

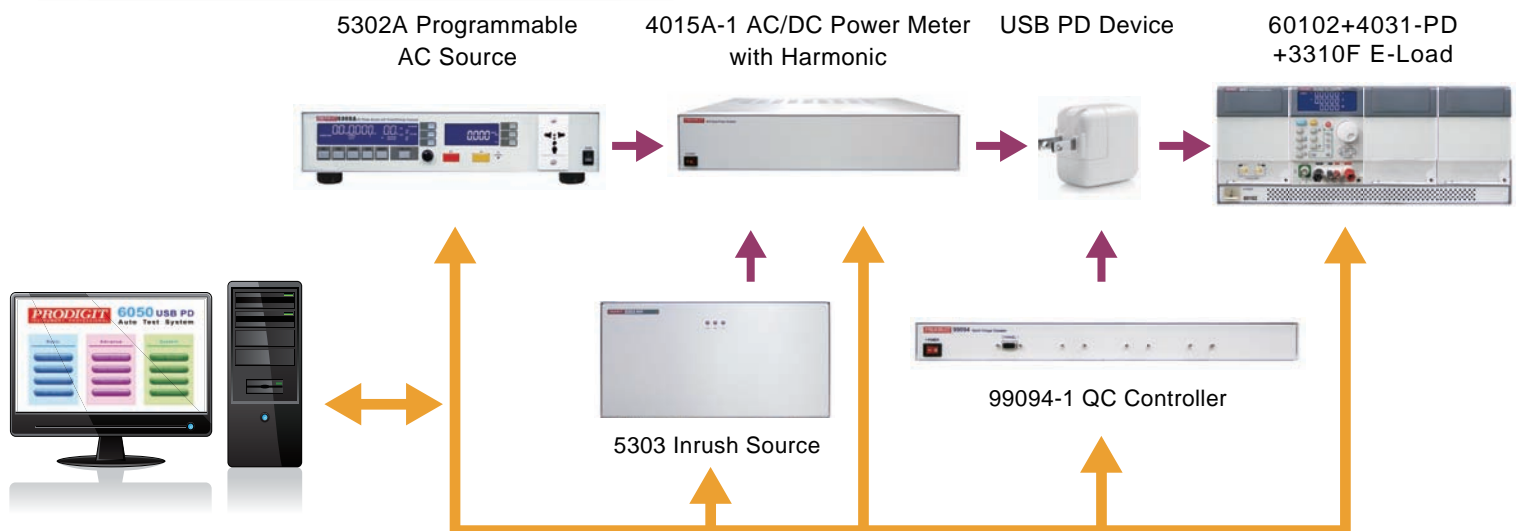
6050-1-C 加值版設備配備表	
設備名稱型號	數量
5302A AC Power Source with Power/Energy Analyzer	1
60102 2CH Mainframe; Ch1 為 4031-PD, Ch2 為 3310F	1
3310F 60V/30A/150W DC Load Module	1
4031-PD Timing & Noise Meter for PD	1
4015A-1 Power Meter with Harmonic (單 Channel)	1
99094-1 Quick Charger Controller (單 Channel)	1
6050 系統軟件	1
系統控制器 System Controller (PC)	1
CP-104EL-A 1:4 高速 RS-232 界面卡	1
Uport 1410 USB to RS-232 4 Port For Note Book	0
系統規格表 (PC or Note Book)	
CPU	i5-3470(3.2GHz) or faster
SRAM	256KB
DRAM	4GB or higher
Hard Driver	500GB or higher
CD-ROM	40X or faster
Monitor	22"
KeyBoard	101 Keys
I/O	Mouse / Print Port
System Interface	RS-232
System I/O	1:4 or 1:8 High Speed RS-232 Card
○ 系統裝置使用 Note Book 時應選用此介面	

OS : Windows 7.0 以上版本

6050-1-D 完整版 (標準版 + 輸入湧浪電流 + 過電壓保護) 增加 5303及 5060-1即可增加輸入湧浪電流 Input Inrush Current 及過電壓保護測試。組成圖示如下



6050-1-D 完整版系統方塊圖



6050-1-D Single Channel Test System Configuration

6050-1-D 完整版增加 5303及 5060-1可增加測項目如下表

輸入特性測試 Input Characteristics

輸入湧浪電流 Input Inrush Current

保護特性測試 Protection Tests

過壓保護 OV Protection

6050-1-D 完整版設備配備表

6050-1-D 完整版設備配備表	
設備名稱型號	數量
5302A AC Power Source with Power/Energy Analyzer	1
60102 2CH Mainframe; Ch1 為 4031-PD, Ch2 為 3310F	1
3310F 60V/30A/150W DC Load Module	1
4031-PD Timing & Noise Meter for PD	1
4015A-1 Power Meter with Harmonic (單 Channel)	1
5060-1 OVP Source (單 Channel)	1
5303 3KVA AVR	1
99094-1 Quick Charger Controller (單 Channel)	1
6050 系統軟件	1
系統控制器 System Controller (PC)	1
CP-104EL-A 1:4 高速 RS-232 界面卡	1
Uport 1410 USB to RS-232 4 Port For Note Book	0
系統規格表 (PC or Note Book)	
CPU	i5-3470(3.2GHz) or faster
SRAM	256KB
DRAM	4GB or higher
Hard Driver	500GB or higher
CD-ROM	40X or faster
Monitor	22"
KeyBoard	101 Keys
I/O	Mouse / Print Port
System Interface	RS-232
System I/O	1:4 or 1:8 High Speed RS-232 Card
○ 系統裝置使用 Note Book 時應選用此介面	

OS : Windows 7.0 以上版本

5302A AC Power Source with Power/Energy Analyzer規格簡表及可適用之功能列表

Model		5302A AC Power Source with Power / Energy Analyzer
適用測試功能		
1. 輸入有效值電流 Input RMS Current 2. 輸入頻率 Input Frequency 3. 輸入功率 Input Power 4. 無載功耗 No Load Power Consumption 5. Input Power Factor 6. 輸入電源暫降 Input Voltage Sag 7. 線性調整率 Line Regulation 8. 可編成電壓開關機 (ON / OFF) 角度 (0~360度)		
規格 (Specifications)		
Power Rating	270VAmax	
Voltage Rating	10~150Vrms / 160~300Vrms	
Current Rating	2.0Arms / 1.0Arms	
Frequency	40~70Hz	
Triac Mode	Leading / Trailing Edge	
Angle(ON/OFF)	0~360°	
PQT <IEC 61000-4-11 >	DIP, Interrupt, Variation	
Measurements		
ACV meter(Vrms)	150V / 300V	
ACA meter(Arms)	10mA / 20mA / 200mA / 2000mA (Auto range for AC Source) / 200A(for Inrush)	
ACW meter	1.5W / 3W / 6W / 30W / 60W / 300W / 600W	
DCW meter	Same as 3310F series	
PF meter	±0.01~1.00	
Frequency meter	40~70 Hz	
Interface	RS-232	
External AC Source	300Vrms / 2A / 600VA	

For USB PD Sag

Duration Time	Dip Voltage (Vin=110Vac/60Hz)			Dip Voltage (Vin=230Vac/50Hz)		
	25%	50%	100%	25%	50%	100%
0.5 Cycle	S	S	S	S	S	S
1 Cycle	S	S	S	S	S	S
5 Cycle	S	R	R	S	R	R
10 Cycle	S	R	R	S	R	R

* S 表示輸出須符合規格

* R 表示輸出可自動回復至5V輸出

Table 1 – Preferred test level and durations for voltage dips

Class ^a	Test level and durations for voltage dips (t_s) (50 Hz/60 Hz)				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0 % during ½ cycle	0 % during 1 cycle	70 % during 25/30 ^c cycles		
Class 3	0 % during ½ cycle	0 % during 1 cycle	40 % during 10/12 ^b cycles	70 % during 25/30 ^c cycles	80 % during 250/300 ^c cycles
Class X ^b	X	X	X	X	X

^a Classes as per IEC 61000-2-4; see Annex B.

^b To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.

^c "25/30 cycles" means "25 cycles for 50 Hz test" and "30 cycles for 60 Hz test".

Table 2 – Preferred test level and durations for short interruptions

Class ^a	Test level and durations for short interruptions (t_s) (50 Hz/60 Hz)
Class 1	Case-by-case according to the equipment requirements
Class 2	0 % during 250/300 ^c cycles
Class 3	0 % during 250/300 ^c cycles
Class X ^b	X

^a Classes as per IEC 61000-2-4; see Annex B.

^b To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.

^c "250/300 cycles" means "250 cycles for 50 Hz test" and "300 cycles for 60 Hz test".

Table 3 – Timing of short-term supply voltage variations

Voltage test level	Time for decreasing voltage (t_d)	Time at reduced voltage (t_s)	Time for increasing voltage (t_i) (50 Hz/60 Hz)
70 %	Abrupt	1 cycle	25/30 ^b cycles
X ^a	X ^a	X ^a	X ^a

^a To be defined by product committee.

^b "25/30 cycles" means "25 cycles for 50 Hz test" and "30 cycles for 60 Hz test".

3310F DC E-Load規格簡表及可適用之功能列表

Model	3310F DC E-Load	
適用測試功能		
1. 輸出電壓 Output Voltage	5. 平均效率 Average Efficiency	
2. 輸出電流 Output Current	6. 短路保護 Short Circuit	
3. 動態負載 Dynamic Load	7. 過電流保護 OC Protection	
4. 效率 Efficiency	8. 過功率保護 OP Protection	
規格 (Specifications)		
Power	150W	
Current	30A	
Voltage	60V	
Constant Current Mode		
Range	0 ~ 3A	0 ~ 30A
Constant Resistance Mode		
Range	2 ~120KΩ	0.02Ω ~ 2Ω
Constant Voltage Mode		
Range	0 ~ 6V	0 ~ 60V
Constant Power Mode		
Range	0 ~ 15W	0 ~ 150W
Dynamic Mode		
Timing		
Thigh & Tlow	0.050~9.999 / 99.99 / 999.9 / 9999mS	
Resolution	0.001 / 0.01 / 0.1 / 1mS	
Slew rate	2.0 ~ 125mA/uS	20 ~ 1250mA/uS
Accuracy	± (5% of Setting) ±10uS	
Measurement		
Voltage Read Back		
Range (5 Digital)	6V	60V
Current Read Back		
Range (5 Digital)	3A	30A
Resolution	0.0001A	0.001A
Current Monitor	FULL SCALE 10V	
Current Programming Input	FULL SCALE 10V	
Programmable Short	BUILT-IN	
Load ON Voltage	0.1 ~ 25V	
Accuracy	1% of (Setting + Range)	
Load OFF Voltage	0 ~ 25V	
Accuracy	0.025% of (Setting + Range)	
Typical Short Resistance	0.02Ω	
Maximum Short Current	30 A	
Operating range		
Temperature	0~+40°C	
Humidity	20~85%rh	

9922-R 規格簡表敘述及可適用之功能列表

Model		9922-R Quick Charge Controller
適用測試功能		
1. USB PD Source / Sink Profile 2. USB PD Power Data Object (PDO) 3. USB PD Output Voltage Change		
規格		
Support Quick Charge	QC2.0, QC3.0, PE+, PE+2.0, USB PD 2.0	
Terminal of Charger	micro USB, USB Type C	
Input Power	5V, 150mA	

99094-1 規格簡表敘述及可適用之功能列表

Model		99094-1 Quick Charge Controller
適用測試功能		
1. USB PD Source / Sink Profile 2. USB PD Power Data Object (PDO) 3. USB PD Output Voltage Change 4. USB 纜線拔除試驗 USB Type C Cable Unplug		
規格		
No. of Test Channel	1	
Support Quick Charge	QC2.0, QC3.0, PE+, PE+2.0, USB PD	
Terminal of Charger	D-sub 15Pin for ChxA, ChxB	

4031-PD 規格簡表敘述及可適用之功能列表

Model		4031-PD Noise & Timing Analyzer Module	
適用測試功能			
1. 正向電壓轉變 Positive Voltage Transitions 2. 負向電壓轉變 Negative Voltage Transitions 3. 硬體負規狀態 Hard Reset 4. USB 纜線拔除試驗 USB Type C Cable Unplug 5. 漣波電壓 Ripple Voltage 6. 動態負載 Dynamic Load Vpeak +/- 量測		7. 輸入電源暫降 Input Voltage Sag 8. 開機時間 Turn ON(Set-Up) Time 9. 關機時間 Turn OFF(Hold-Up) Time 10. 上升時間 Rise Time 11. 下降時間 Fall Time	
規格 (Specifications)			
No. of input channel		1	
Timing Measurement		Ripple Measurement	
Set-up / Hold-up / Rise / Fall Time		Band Width	0 ~ 100 KHz
Voltage range	0 ~ 10 / 30 Vdc	Voltage range	0 ~ 10/30 Vdc
Current range	*(1/4F.S.)/(F.S.) Adc	Measurement range	0 ~ 0.4/1 Vp-p
Timing range	1 Sec/2 Sec/4 Sec/8 Sec/16 Sec	Resolution	0.001/0.01V
Resolution	1 uS/2uS/4uS/8uS/16uS	Current range	*(1/4F.S.)/(F.S.) Adc
Vth1 / Vth2		Measurement range	*(1/8F.S.)/(1/2F.S.) Ap-p
Voltage range	5% ~ 95% of reading	Resolution	0.001/0.01A
Resolution	0.01 V/0.01V, 0.001A/0.01A	Accuracy	±5% of (Reading + Range)
Accuracy	±2% of (Reading + Range)	Sampling Rate	100KHz
Noise Measurement		Update Rate	50~1000 mS
Low Pass Filter	up to 20 MHz	Resolution	1mS
Voltage range	0.6 / 3Vp-p	Dimming Measurement	
Resolution	1mV	Band Width	100KHz
Accuracy	±2% OF reading + 5mV	Current range	*(1/8F.S.)/(1/2F.S.) Adc
Over Shoot Measurement		Resolution	0.001/0.01A
Band Width	0 ~ 100 KHz	Accuracy	±5% of (Reading + Range)
Voltage range	0 ~ 10 / 30 Vdc	Sampling Rate	100KHz
Measurement range	0 ~ 10 / 30 Vdc	Update Rate	50~1000 mS
Resolution	0.01 Vdc	Resolution	1mS
Current range	*(1/4F.S.)/(F.S.) Adc	Frequency range	10Hz~35KHz
Measurement range	*(1/4F.S.)/(F.S.) Adc	Resolution	1Hz
Resolution	0.001 / 0.01A	Accuracy	±1% of (Reading + Range)
Accuracy	±1% of (Reading + Range)	Duty(Ton) Range	3uS~90mS
Sampling Rate	100KHz	Resolution	1uS
Update Rate	50~1000 mS	Accuracy	±1% of (Reading + Range)
Resolution	1mS		
Vpeak Measurement		USB PD Timing Measurement	
Vpeak+/Vpeak-		PVT/NVP/Hard Reset/Output Voltage Falling Time	
Band Width	0 ~ 100 KHz	Va/Vb/Vc/Vd	
Voltage range	0 ~ 10/30 Vdc	Voltage range	0 ~ 10/30 Vdc
Measurement range	0 ~ 10/30 Vdc	Resolution	0.01 V
Resolution	0.01Vdc	Accuracy	1% of (Reading + Range)
Accuracy	±1% of (Reading + Range)	Timing range	3 Sec
Sampling Rate	100KHz	Resolution	10 uS
Update Rate	50~1000 mS		
Resolution	1mS		

4015A-1 規格簡表敘述及可適用之功能列表

Model	4015A-1 Power Meter			
No. of Input Channel		1		
適用測試功能				
1. Current Harmonic				
規格				
ACV meter (Vrms)	Range	15V / 0.001V, 30V / 0.001V, 50V / 0.01V 150V / 0.01V, 300V / 0.01V, 500V / 0.1V		
	Accuracy	±0.1% of (Reading + Range)		
ACA meter (Arms)	Range	20mA / 0.001mA, 500mA / 0.01mA, 10A / 1mA 50mA / 0.001mA, 2A / 0.1mA, 20A / 1mA 200mA / 0.01mA, 5A / 0.1mA, 200A peak / 0.01A		
	Accuracy	±0.1% of (Reading + Range) ±2% of (Reading + Range, for Inrush)		
ACW meter	Range	0.3W / 0.01mW 0.75W / 0.1mW 3W / 0.1mW 7.5W / 1mW 30W / 1mW 75W / 1mW 150W / 10mW 300W / 10mW	0.6W / 0.01mW 1.5W / 0.1mW 6W / 0.1mW 15W / 1mW 60W / 1mW 150W / 10mW 300W / 10mW 600W / 10mW	1W / 0.1mW 2.5W / 0.1mW 10W / 1mW 25W / 1mW 100W / 10mW 250W / 10mW 500W / 10mW 1000W / 0.1W
	Accuracy	±0.1% of (Reading + Range)		
DCV	Range	Same as AC		
	Accuracy	Same as AC		
DCA	Range	Same as AC		
	Accuracy	Same as AC		
DCW	Range	Same as AC		
	Accuracy	Same as AC		
PF meter	Range	±0.001~1.000 / 0.001		
	Accuracy	1% of (Reading + Range, Corresponds to V and A)		
Frequency meter	Range	40~70 / 0.1Hz		
	Accuracy	± 0.1 Hz		
V/A	Number	1~50 th / Same as ACV, ACA meter		
Harmonic	Accuracy	±0.5% of (Reading + Range)		
V/A THD	Range	0%~255% / 0.001%		
	Accuracy	±0.5% of (Reading + Range)		
Inrush Delay/Period		0~100ms		
Low Pass Filter(V & A)		50KHz		
Interface		RS-232		

5303 規格簡表敘述及可適用之功能列表

Model	5303 AVR
適用測試功能	
1. Input Inrush Current	
規格	
Power Rating	3KVA
Maximum Capacity	CF > 7
Input Voltage Rating	230Vrms +/- 10%
Output Voltage Rating	230,264,277Vrms Selectable
Accuracy	±2.5Vrms
Interface	RS-232 remote control only

5060-1 規格表及可適用之功能列表

Model	5060-1 OVP Source
適用測試功能	
1. 過電壓保護 Over Voltage Protection	
規格	
Power Rating	80W ^{*1}
Voltage range	0~20V / 40V
Resolution	0.001V
Current range	0~4A / 2A
Resolution	0.1mA
Ton Step time	0~6.5 Sec.
Resolution	0.1 mSec.
Slew rate	0.02V / uS
Protection	OCP, OTP

*1 The maximum power apply for 1 Sec. at 50% duty cycle.

訂 購 方 式



基本版

6050-1-A

USB PD 單組自動測試系統



標準版

6050-1-B

USB PD 單組自動測試系統



加 值 版

6050-1-C

USB PD 單組自動測試系統



完 整 版

6050-1-D

USB PD 單組自動測試系統