

# 高階類比量測系統

## Advanced Analog Measurement System

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### 系統簡介:

The advanced analog measurement system can be used for most analog IC and power management IC measurements, such as ADC, DAC, amplifier circuit, high speed digital circuit, DC-DC Converter, and AC-DC Converter, etc. Moreover, several LabVIEW-based programs can help obtain the measurement parameters, such as INL, DNL, SNDR, THD in ADC measurement, and Efficiency, line regulation, load regulation in DC-DC Converter measurement.

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### 儀器圖片:



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## 儀器設備型號:

### 一、 儀器型號及規格簡介：

#### Analog IC

1. 資料產生器 Pattern Generator (Agilent 81250/E4861B/E4832A): 1 kHz-3.35 GHz
2. 頻譜分析儀 Spectrum Analyzer (Agilent N9030A): 3 Hz – 26 GHz
3. 訊號產生器 Signal Generator (R&S SMA100B): 8 kHz – 12.75 GHz
4. 訊號產生器 Signal Generator (Anritsu MG3642A): 125 kHz-2.08 GHz
5. 低失真訊號產生器 Low Distortion Signal Generator (SRS DS360): 10 mHz -  
200 kHz
6. 任意波形產生器 Arbitrary Waveform Generator (Agilent 33522A, Keysight 33622A)
7. 邏輯分析儀 Logic Analyzer (Agilent 16962A/16911A): up to 2 GHz
8. 高頻示波器 Oscilloscope (Keysight DSAV134): DC – 13 GHz
9. 數位電表 Multimeter (Agilent 3458A): 8.5 digit
10. 網路分析儀 Network Analyzer (Agilent 4395A): 10 Hz – 500 MHz
11. 低頻頻譜分析儀 FFT Spectrum Analyzer (SRS SR785): DC-102.4 kHz bandwidth,  
-90 dB dynamic range
12. 電源供應器 Power Supply (Agilent E3631A) x4

13. 精密型電源供應器 Power Supply (Agilent N6761A) x3
14. 帶通濾波器 Bandpass Filter (TTE Chebyshev KC7 series) : 100 kHz, 200 kHz, 500 kHz, 1 MHz, 2 MHz, 5 MHz, 10 MHz, 20 MHz, 35 MHz, 45 MHz, 50 MHz, 70 MHz, 100 MHz, 200 MHz, 500 MHz

### Power Management IC

1. 電源供應器 Power Supply (Agilent E3631A) x4: 6 V,  $\pm 25$  V
2. 高壓電源供應器 High-Voltage Power Supply (Agilent 6655A): 120 V, 4 A
3. 高壓電源供應器 High-Voltage Power Supply (Chroma 62050H-600S): 600 V, 8.5 A
4. 高壓電源供應器 High-Voltage Power Supply (Glassman WX1R1000): 1000 V, 1 A
5. 高壓電源供應器 High-Voltage Power Supply (Chroma 62060D-600): 600V, 40A, 6kW
6. 低雜訊電源供應器 Low-Noise Power Supply (Keysight B2962A):  $\pm 210$  V,  $\pm 3$  A
7. 交流電源供應器 AC Power Supply (Chroma 61504): 300 VAC, 8.5 A
8. 電子負載 Electronic Load (Chroma 63102A/63106A/63108A/63110A)
9. 高速電子負載 High-speed Electronic Load (Keisoku Giken ELS-304)
10. LCR 表 LCR Meter (Agilent E4980A): 20 Hz -2 MHz
11. 數位電表 Multimeter (Agilent 34411A): 6.5 digit
12. 晶片級紅外線熱顯像儀 IR Camera (Flir SC5650): 3um resolution

13. 電源分析儀 Power Analyzer (Yokogawa WT1600)

14. 電流波形分析儀 Current Waveform Analyzer (Keysight CX3324A)

15. 示波器及光隔離高壓探棒(Tektronix MSO68B, Tektronix TIVP1): 1 GHz Bandwidth,  
±500V input range

16. 阻抗分析儀 Impedance Analyzer (Keysight E4991B): 1 MHz – 1 GHz

### **量測服務內容:**

#### **(1)主要量測元件及電路 :**

Analog-to-Digital Converter, Digital-to-Analog Converter, Amplifier, PLL, DC-DC Converter, AC-DC Converter, Impedance Measurement (Capacitor, Inductor, Transformer)

#### **(2)量測範圍 :**

##### **Analog-to-Digital Converter**

(i)Analog input signal: 0.1Hz - 6GHz,

THD: -95dBm (depend on signal generator and band-pass filters)

(ii)Clock signal: 1kHz~3.35GHz

(iii)Digital output signal:  $\leq$  2GHz

##### **Digital-to-Analog Converter**

(i)Digital input signal: 1k-3.35GHz, 16 Channels

(ii)Clock signal: 1kHz - 3.35GHz

(iii)Output signal: 3Hz - 26.5GHz

**(3)量測參數：**

(i)Data converters: SNDR, INL, DNL, THD, SFDR,etc.

(ii)DC-DC Converter: Efficiency, Load Transient, Line/Load Regulation.

(iii)Amplifier: Open-loop gain/phase, Noise Density, PSRR, CMRR