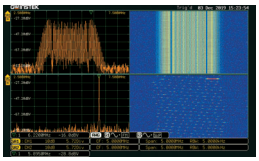
GDS-3000A 系列

1 GHz 數位儲存示波器

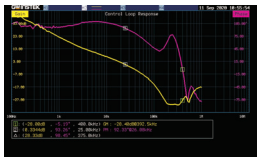
GW INSTEK
Simply Reliable

CE | USB Full Speed | PC Software | Labview Driver | RS-232 | GPIB | Ethernet | PictBridge Compatible

VPO
Visual Persistence Oscilloscope



光譜圖



控制迴路分析

GDS-3000A系列數位示波器，分別具備 1 GHz 的頻寬，高達5 GSa/s即時取樣率與200 M點的記憶長度，讓使用者不會錯過任何待測訊號的細節，並搭配10.2吋超大顯示器提供使用者工作所需的最佳量測儀器。

為了滿足各類型應用需求，GDS-3000A系列搭配包括串列解碼和分析，25 MHz 任意/函數產生器和DVM/頻率計數器等標準配備，標配的雙通道頻譜分析儀可同時觀察兩個通道上的頻譜，可個別設定中心頻率、頻率範圍以及解析度頻寬，更快獲得深入的頻域分析，內建全新的光譜圖 (Spectrogram) 功能提供了相關的頻域成份分析， 簡便的功能操作與優異的運算性能，協助使用者能快速針對其設計中的時域與頻域的信號量測進行除錯。

其電源分析套件可用於電源品質、切換損耗、諧波失真、漣波、湧浪電流、調變分析、安全工作區域、負載瞬態、電源效率、B-H曲線、控制迴路分析、電源供應器抑制比與電源開/關分析等13種電源量測項目，並且內建頻率響應分析 (FRA) APP，藉由控制迴路分析功能，使用者可透過便捷的測試設定更快速，更有效地進行相關設計、校驗、驗證和測試。

GDS-3000A系列內建固緯電子的 GCP-530/1030 (DC to 50 M/100 MHz) 或同類型電流探棒之供應電源插頭，使用者可直接將電流探棒　接內建供應電源插頭即可正常使用，不需額外為電流探棒單獨購買昂貴的電源供應器。

GDS-3000A系列不僅僅是示波器，除了前述功能外，還可選配 1 GSa/s 取樣率16個數位輸入通道的邏輯分析儀，可用於混合訊號分析是市場上具備高性價比示波器的最佳選擇。

特　　點

* 5 GSa/s即時取樣率
* 每通道 200 Mpts 記憶體深度
* 200,000 wfm/s 波形更新率
* 10.2 吋 800 x 480 TFT LCD 顯示
* 490,000分段記憶體與波形搜尋功能優化長記憶體使用效率
* 縮放視窗, 播放/暫停提供快速瀏覽波形
* 38 種自動量測功能
* 高解析度擷取模式
* I^2C/SPI/UART/CAN/LIN串列匯流排觸發與解碼功能
* 雙通道頻譜分析儀(DC to 2.5 GHz)包含光譜圖功能
* 雙通道25 MHz任意波形產生器
* 選配13種電源分析量測項目
* 選配16通道邏輯分析儀(MSO)
* 靈活的遠程控制連接
  (標配: USB/LAN/RS-232; 選配: GPIB)

應 用 範 圍

* 工業界及教育研發實驗室
* 產品訓練及品質保證測試
* 電源供應器及串列匯流排設計
* 系統整合及產品偵錯
* 日常保養及維修服務

產品操作影片　最新活動訊息　產品綜合目錄

規　格

		GDS-3102A	GDS-3104A
VERTICAL	Channels	2 CH+EXT	4 CH+EXT
	Bandwidth	DC to 1 GHz (-3 dB)@50 Ω input impedance; DC to 500 MHz (-3 dB)@1 MΩ input impedance	
	Calculated Rise Time	350 ps	
	Bandwidth Limit	20 MHz/100 MHz/200 MHz/350 MHz[*1]	
	Vertical Resolution	8 bits, (Max.12 bits with Hi Res)	
		For 1 MΩ input impedance : 1 mV[*2] to 10 V/div	
		For 50 Ω input impedance:1 mV[*2] to 1 V/div	
	Input Coupling	AC, DC, GND	
	Input Impedance	1 MΩ// 22 pF approx.	
	DC Gain Accuracy	1 mV : ±5 % full scale ; ≥2 mV : ±3 % full scale	
	Polarity	Normal , Invert	
	Maximum Input Voltage(1 MΩ)	300 Vrms, CAT II	
	Maximum Input Voltage(50 Ω)	5 Vrms	
	Offset Position Range	For 1 MΩ input impedance : 1 mV/div to 20 mV/div : ±1 V; 50 mV/div to 500 mV/div : ±10 V ; 1 V/div to 5 V/div: ±100 V ; 10 V/div: ±1000 V For 50 Ω input impedance : 1 mV/div to 50 mV/div : ±1 V ; 100 mV/div to 1 V/div: ±10 V	
	Waveform Signal Process	+, - x, ÷FFT, User Defined Expression FFT: Spectral magnitude. Set FFT Vertical Scale to Linear RMS or dBV RMS, and FFT Window to Rectangular, Hamming, Hanning or Blackman	
TRIGGER	Source	2 CH model: CH1, CH2, Line , EXT ; 4 CH model: CH1 , CH2 , CH3 , CH4 , Line , EXT	
	Trigger Mode	Auto(Supports Roll Mode for 100 ms/div and slower), Normal, Single	
	Trigger Type	Edge, Pulse Width(Glitch), Video, Pulse Runt, Rise & Fall(Slope),Time out, Alternate, Event-Delay(1 to 65,535 events), Time-Delay (Duration, 4 ns to 10 s), Bus(I^2C,SPI,UART,CAN,LIN)	
	Trigger Holdoff Range	4 ns to 10 s	
	Coupling	AC, DC, LF rej. , HF rej. , Noise rej.	
	Sensitivity	1 div	
EXT TRIGGER	Range	±20 V	
	Sensitivity	DC to 100 MHz Approx. 100 mV ; 100 MHz to 350 MHz Approx. 150 mV	
	Input Impedance	1 MΩ ± 3 % // 22 pF	
HORIZONTAL	Range	1 ns/div to 1000 s/div (1-2-5 increments); ROLL : 100 ms/div to 1000 s/div	
	Pre-trigger	10 div maximum	
	Post-trigger	10,000,000 div max (depend on time base)	
	Accuracy	±5 ppm, about ±2 ppm increase in error per year	
X-Y MODE	X-Axis Input/Y-Axis Input Phase Shift	Channel 1, Channel 3 (for 4 CH model); Channel 2, Channel 4 (for 4 CH model) ±3° at 100 kHz	
SIGNAL ACQUISITION	Real Time Sample Rate	5 GSa/s half channels; 2.5 GSa/s all channels	
	Record Length	Max.200 Mpts/CH	
	Acquisition Mode	Normal, Average, Peak detect, High resolution, Single ; Average: Selectable from 2 to 512, Peak detect: 400 ps	
	Number of Segments	1 to 490,000 maximum	
CURSORS AND MEASUREMENT	Cursors	Amplitude, Time, Gating available; Unit:Seconds(s), Hz(1/s), Phase(degree), Ratio(%)	
	Automatic Measurement	38 sets with indicator: Pk-Pk, Max, Min, Amplitude, High, Low, Mean, Cycle Mean, RMS, Cycle RMS, Area, Cycle Area, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Frequency, Period, RiseTime, FallTime, +Width, -Width, Duty Cycle, +Pulses, -Pulses, +Edges, -Edges, %Flicker, Flicker Idx ,FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF, Phase	
	Cursors Measurement	Voltage difference between cursors (△ V) Time difference between cursors (△ T)	
	Auto Counter	6 digits, range from 2 Hz minimum to the rated bandwidth	
CONTROL PANEL FUNCTION	Autoset	Single-button, automatic setup of all channels for vertical, horizontal and trigger systems, with “Undo Autoset”, “Fit Screen”/ “AC Priority” mode, and “Fine Scale” functions.	
	Save Setup	20 sets	
	Save Waveform	20 sets	
	Save Reference Waveform	4 sets	
POWER MEASUREMENTS (Option)		Power Quality, Harmonics, Ripple, In-rush current, Switching Loss, Modulation, SOA, Transient, Efficiency, B-H curve, Control Loop Response, PSRR, Turn On/Off	
AWG	Channels	2	
	Sample Rate	200 MSa/s	
	Vertical Resolution	14 bits	
	Max. Frequency	25 MHz	
	Waveforms	Sine, Square, Pulse, Ramp, DC, Noise, Sinc, Gaston, Lorentz, Exponential Rise, Exponential Fall, Haversine, Cardiac	
	Output Range	20 mVpp to 5 Vpp, HighZ; 10 mVpp to 2.5 Vpp, 50 Ω	
	Output Resolution	1 mV	
	Output Accuracy	2 % (1 kHz)	
	Offset Range	±2.5 V, High Z; ±1.25 V, 50 Ω	
	Offset Resolution	1 mV	
	Sine	Frequency Range:100 mHz to 25 MHz; Flatness(relative to 1 kHz): ± 0.5 dB < 15 MHz, ±1 dB (15 MHz to 25 MHz); Harmonic Distortion:-40 dBc; Stray(Non-harmonic):-40 dBc; Total Harmonic Distortion: 1 % ; S/N Ratio:40 dB	
	Square/Pulse	Frequency Range:100 mHz to 15 MHz ; Rise/Fall time: <15 ns ; Overshoot: <3 % ; Duty cycle Square:50 % & Pulse:0.4 % to 99.6 % ; Min. Pulse Width:30 ns ; Jitter:500 ps	
	Ramp	Frequency Range:100 mHz to 1 MHz ; Linearity: 1 % ; Symmetry: 0 % to 100 %	
SPECTRUM ANALYZER	Frequency Range	DC to 2.5 GHz(Max.) dual channel with spectrogram (based on advanced FFT). Notice: Frequency which exceeds analog front end bandwidth is uncalibrated	
	Span	1 kHz to 2.5 GHz(Max.)	
	Resolution Bandwidth	1 Hz to 2.5 MHz(Max.)	
	Reference Level	-80 dBm to +40 dBm in steps of 5 dBm	
	Vertical Units	dBV RMS; Linear RMS; dBm	
	Vertical Position	-12 divs to +12 divs	
	Vertical Scale	1 dB/div to 20 dB/div in a 1-2-5 Sequence	
	Display Average Noise Level	1 V/div < -40 dBm, Avg : 16 ; 100 mV/div < -60 dBm, Avg : 16 ; 10 mV/div < -80 dBm, Avg : 16	
	Spurious Response	2nd harmonic distortion < 35 dBc ; 3rd harmonic distortion < 40 dBc	
	Frequency Domain Trace Types	Normal ; Max Hold ; Min Hold ; Average (2 to 256)	
	Detection Methods	Sample ; +Peak ; -Peak ; Average	
	FFT Windows	FFT Factor : Hanning 1.44 ; Rectangular 0.89 ; Hamming 1.30 ; Blackman 1.68	

*1. The tolerance of bandwidth limit is ± 10 %.
*2. The bandwidth is limited to 20 MHz at 2 mV/div or below; The bandwidth is limited to 900 MHz at 5 mV/div

規　格

LOGIC ANALYZER (Option)	Sample Rate	Per Channel 1G Sa/s
	Bandwidth	200 MHz
	Record Length Input Channels	Per Channel 10 M pts (max) 16 Digital (D15 to D0)
	Trigger Type	Edge, Pattern, Pulse Width, Serial bus (I^2C, SPI, UART, CAN, LIN), Parallel Bus
	Thresholds Quad	Settable thresholds for: D0 to D3, D4 to D7,D8 to D11 ,D12 to D15
	Threshold Selections	TTL, CMOS(5 V,3.3 V,2.5 V), ECL, PECL,0 V ,User Defined
	User-defined Threshold Range	±5 V
	Maximum Input Voltage	±40 V
	Minimum Voltage Swing	±250 mV
	Vertical Resolution	1 bit
FREQUENCY RESPONSE ANALYSIS	Frequency Range	20 Hz to 25 MHz
	Input and Output Sources	Channel 1 to 2 for 2 CH model ; Channel 1 to 4 for 4 CH model
	Number of Test Points	10, 15, 30, 45, 90 points per decade selectable for logarithm scale; 2 to 1000 points selectable for linear scale
	Dynamic Range	> 80 dB (typical)
	Test Amplitude	10 mVpp to 2.5 Vpp into 50 Ω, 20 mVpp to 5 Vpp into High-Z, Fixed test amplitude or custom amplitude for each decade
	Test Results	Logarithmic or linear overlaid gain and phase plot, may also overlay with reference plots for cross comparison. Test results saved in csv format for offline analysis
	Manual Measurements	Tracking gain and phase markers
	Plot Scaling	Auto-scaled during test
DISPLAY SYSTEM	TFT LCD Type	10.2" TFT LCD WVGA color display
	Waveform Update Rate	200,000 wfms/sec max.
	Display Resolution	800 horizontal x 480 vertical pixels (WVGA)
	Interpolation	Sin (x)/x
	Waveform Display	Dots, Vectors, Variable persistence(16 ms to 4 s), Infinite persistence,gray and color waveforms
	Display Graticule	8 x 10 divisions
	Display Mode	YT,XY
INTERFACE	RS-232C	DB-9 male connector
	USB Port	USB 2.0 high-speed host port x 1 ; USB high-speed 2.0 device port x 1
	Ethernet Port	RJ-45 connector, 10 M/100 Mbps with HP Auto-MDIX
	VGA Video Port	DB-15 female connector, monitor output for display on VGA monitor
	Optional GPIB Module	Fully programmable with IEEE488.2 compliance
	Go/NoGo BNC	5 V Max/10 mA open collector output
	Kensington Style Lock	Rear-panel security slot connects to standard Kensington-style lock
	Power Supply Receptacles	±12 V/500 mA for current probe usage. 2 sets for 2 CH model; 4 sets for 4 CH model
MISCELLANEOUS	Operating	0 °C to 50 °C, Relative Humidity ≤ 80 % at 40 °C or below ; ≤ 45 % at 41 °C to 50 °C
	Line Voltage Range	AC 100 V to 240 V, 50 Hz to 60 Hz, auto selection. power consumption:100 W
	Multi-Language Menu	Available
	On-Line Help	Available
	Time Clock	Time and date, provide the date/time for saved data
	Internal Flash Disk	800 Mega bytes Single-Level Cell flash memory
	Installed APP	Go/NoGo, DVM, DataLog, Digital Filter, Frequency Response Analyzer, Mask, Mount Remote Disk, Demo
	User Define Key	User can select one of the several different preset functions as shortcut key
DIMENSIONS &	420(W) mm X 253(H) mm X 113.8(D) mm, Approx. 4.6 kg	

* GDS-3000A全系列機種提供三年保固 (LCD顯示器以及測試棒除外)

規格若有局部變更，恕不另行通知！ GDS-3000AID1DS

購　買　資　訊

GDS-3102A 1 GHz, 2通道, 數位儲存示波器
GDS-3104A 1 GHz, 4通道, 數位儲存示波器

附 件 資 訊

Power cord x 1
GTP-501R : 500 MHz 10:1 passive probe for GDS-3102A/3104A (one per channel)

免 費 下 載

PC Software OpenWave software　　**Driver** LabView driver

附 件

DS3A-PWR Power Analysis Software (Free try during warranty)
DS3A-GPIB GPIB Interface (Factory Pre-installed)
DS3A-16LA 16 Channel Logic Analyzer

購 附 件

GTP-033A 35 MHz 1:1 Passive probe
GTP-352R 350 MHz 20:1 Passive probe
GDP-025 25 MHz High voltage differential probe
GDP-050 50 MHz High voltage differential probe
GDP-100 100 MHz High voltage differential probe
GCP-300 300 kHz/200 A Current probe
GCP-500 500 kHz/150 A Current probe
GCP-530 50 MHz/30 A Current probe
GCP-1000 1 MHz/70 A Current probe
GCP-1030 100 MHz/30 A Current probe

GTL-248 GPIB Cable, Double Shielded, 2000 mm
GTL-110 Test lead, BNC to BNC connector
GTL-232 RS-232C cable, 9-pin female to 9-pin female
GTL-246 USB 2.0 cable, A-B type,1800 mm
GRA-443 Rack Adapter Panel
GKT-100 Deskew Fixture
GTP-1501R 1.5 GHz 10:1 Passive probe
GCP-0275 2 MHz / 750 A Current probe
GCP-0550 5 MHz / 500 A Current probe
GCP-2525 25 MHz / 250 A Current probe

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