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GDS-3000A Specifications

The specifications apply when the GDS-3000A series is powered on for at least 30 minutes under +20°C~+30°C.

GDS-3352A	Channels	2 + Ext
	Bandwidth	DC ~ 350MHz (–3dB) @50Ω/1MΩ input impedance
	Rise Time	1ns (calculated)
	Bandwidth Limit	20MHz/100MHz/200MHz*
GDS-3652A	Channels	2 + Ext
	Bandwidth	DC ~ 650MHz (–3dB) @ 50Ω input impedance DC ~ 500MHz (–3dB) @1MΩ input impedance
	Rise Time	535ps (calculated)
	Bandwidth Limit	20MHz/100MHz/200MHz/300MHz*
GDS-3354A	Channels	4 + Ext
	Bandwidth	DC ~ 350MHz (–3dB) @50Ω/1MΩ input impedance
	Rise Time	1ns (calculated)
	Bandwidth Limit	20MHz/100MHz/200MHz*
GDS-3654A	Channels	4 + Ext
	Bandwidth	DC ~ 650MHz (–3dB) @50Ω input impedance DC ~ 500MHz (–3dB) @1MΩ input impedance
	Rise Time	535ps (calculated)
	Bandwidth Limit	20MHz/100MHz/200MHz/300MHz*

* The tolerance of bandwidth limit is ±10%.

Vertical Sensitivity	Resolution	8 bits (Max.12bits with Hi Res) For 1MΩ input impedance: 1mV*~10V/div For 50Ω input impedance: 1mV*~1V/div
	Input Coupling	AC, DC, GND
	Input Impedance	1MΩ// 22pF approx.
	DC Gain Accuracy	1mV: ±5% full scale ≥2mV: ±3% full scale
	Polarity	Normal & Invert
	Maximum Input Voltage	For 1MΩ input impedance: 300Vrms, CAT II For 50Ω input impedance: 5Vrms max.
	Offset Position Range	For 1MΩ input impedance: 1mV/div ~ 20mV/div :±1V; 50mV/div ~ 500mV/div: ±10V 1V/div ~ 5V/div : ±100V; 10V/div : ±1000V For 50Ω input impedance: 1mV/div ~ 50mV/div:±1V; 100mV/div ~ 1V/div : ±10V
	Waveform Signal Process	+, -, ×, ÷, 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	CH1, CH2, CH3**, CH4**, Line, EXT
	Trigger Mode	Auto (supports Roll Mode for 100ms/div and slower), Normal, Single
	Trigger Type	Edge, Pulse Width(Glitch), Video, Pulse Runt, Rise & Fall(Slope), Timeout, Alternate, Event-Delay(1~65535 events), Time-Delay(Duration, 4ns~10s), Bus (UART, I2C, SPI, CAN, LIN)
	Holdoff range	4ns to 10s
	Coupling	AC, DC, LF rej., Hf rej., Noise rej.
	Sensitivity	1div
External Trigger	Range	±20V
	Sensitivity	DC ~ 100MHz Approx. 100mV 100MHz ~ 350MHz Approx. 150mV
	Input Impedance	1MΩ±3%~22pF

*: The bandwidth is limited to 20MHz at 1mV/div and 2mV/div.
**: For 4CH models only.

Horizontal	Time base Range	1ns/div ~ 1000s/div (1-2-5 increments) ROLL: 100ms/div ~ 1000s/div
	Pre-trigger	10 div maximum
	Post-trigger	10,000,000 div maximum.
	Time base Accuracy	±5 ppm, about ±2ppm increase in error per year

Signal Acquisition	Real Time Sample Rate	5GSa/s half channels; 2.5GSa/s all channels
	Record Length	Max. 200Mpts /CH
	Acquisition Mode	Normal, Average, High Resolution, Peak Detect, Single
	Peak Detection	400ps (typical)
	Average	Selectable from 2 to 256
	Number of Segments	1 to 490,000 maximum
X-Y Mode	X-Axis Input	Channel 1, Channel 3 (for 4CH models)
	Y-Axis Input	Channel 2, Channel 4 (for 4CH models)
	Phase Shift	±3° at 100kHz
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(ΔV) Time difference between cursors(ΔT)
	Auto counter	6 digits, range from 2Hz 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 Measurement (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	General	
	Channels	2
	Sample Rate	200MSa/s
	Vertical Resolution	14 bits
	Max. Frequency	25 MHz
	Waveforms	Sine, Square, Pulse, Ramp, DC, Noise Sinc, Gaussian, Lorentz, Exponential Rise, Exponential Fall, Haversine, Cardiac
	Output Range	20 mVpp to 5 Vpp, HighZ; 10 mVpp to 2.5 Vpp, 50Ω
	Output Resolution	1mV
	Output Accuracy	2% (1 kHz)
	Offset Range	±2.5 V, HighZ; ±1.25 V, 50 Ω
	Offset Resolution	1mV
	Sine	
	Frequency Range	100 mHz to 25 MHz
	Flatness (relative to 1 kHz)	±0.5 dB < 15MHz; ±1dB 15MHz~25MHz
	Harmonic Distortion	-40 dBc
	Stray (Non-harmonic)	-40 dBc
	Total Harmonic Distortion	1%
	S/N Ratio	40 dB
	Square/Pulse	

	Frequency Range	Square: 100 mHz to 15 MHz
	Rise/Fall Time	< 15ns
	Overshoot	< 3 %
	Duty Cycle	Square: 50% Pulse: 0.4% to 99.6%
	Min. Pulse Width	30ns
	Jitter	500 ps
	Ramp	
	Frequency Range	100 mHz to 1MHz
	Linearity	1%
	Symmetry	0 to 100%
Spectrum Analyzer	Frequency Range	DC~2.5GHz Max, dual channel with spectrogram (based on Advanced FFT). Notice: Frequency which exceeds analog front end bandwidth is uncalibrated
	Span	1kHz~2.5GHz (Max.)
	Resolution Bandwidth	1Hz~2.5MHz (Max.)
	Reference Level	-80dBm to +40dBm in steps of 5dBm
	Vertical Units	dBV RMS; Linear RMS; dBm
	Vertical Position	-12divs to +12divs
	Vertical Scale	1dB/div to 20dB/div in a 1-2-5 Sequence
	Displayed Average Noise Level	1V/div ← -40dBm, Avg :16 100mV/div ← -60dBm, Avg :16 10mV/div ← -80dBm, Avg :16
	Spurious Response	2nd harmonic distortion < 35dBc 3rd harmonic distortion < 40dBc
	Frequency Domain Trace Types	Normal; Max Hold; Min Hold; Average (2 ~ 256)
	Detection Methods	Sample; +Peak; -Peak; Average
	FFT Windows	FFT Factor: Hanning 1.44 Rectangular 0.89 Hamming 1.30 Blackman 1.68
Logic Analyzer (Option)	Sample Rate	1GSa/s
	Bandwidth	200MHz
	Record Length	Per Channel 10M points (max)
	Input Channels	16 Digital (D15 - D0)
	Trigger type	Edge, Pattern, Pulse Width, Serial bus (I2C, SPI, UART, CAN, LIN), Parallel Bus
	Thresholds Quad	Settable thresholds for: D0-D3, D4-D7, D8-11, D12-15
	Threshold selections	TTL, CMOS(5V,3.3V,2.5V), ECL, PECL,0V ,User Defined
	User-defined Threshold Range	±5V
	Maximum Input Voltage	±40 V
	Minimum Voltage Swing	±250 mV
	Vertical Resolution	1 bit
Frequency Response Analyzer	Frequency Range	20Hz to 25MHz
	Input and Output Sources	Channel 1 ~ 2 for 2CH models Channel 1 ~ 4 for 4CH models
	Number of Test Points	10, 15, 30, 45, 90 points per decade selectable for logarithm scale; 2 ~ 1000 points selectable for linear scale
	Dynamic Range	> 80dB (typical)
	Test Amplitude	10mVpp to 2.5Vpp into 50Ω, 20mVpp to 5Vpp 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	TFT LCD Type	10.2" TFT LCD WVGA color display
	Display Resolution	800 horizontal × 480 vertical pixels (WVGA)

	Interpolation	Sin(x)/x
	Waveform Display	Dots, vectors, variable persistence (16ms~4s), infinite persistence, gray or color waveforms.
	Waveform Update Rate	200,000 waveforms per second, maximum
	Display Graticule	8 x 10 divisions
	Display Mode	YT, XY
Interface	USB Port	USB 2.0 High-speed host port X1, USB High-speed 2.0 device port X1
	Ethernet Port (LAN)	RJ-45 connector X1, 10/100Mbps with HP Auto-MDIX
	Go-NoGo BNC	5V Max/10mA open collector output X1
	Power Supply Receptacles	±12V / 600mA for current probe use. Two sets of power supply receptacles for 2CH models; Four sets of power supply receptacles for 4CH models.
	RS232C	DB-9 male connector X1
	VGA Video Port	DB-15 female connector X1, monitor output for display on VGA monitor
	Optional GPIB Module	Fully programmable with IEEE488-2 compliance
	Kensington Style Lock	Rear-panel security slot connects to standard Kensington-style lock.
Miscellaneous	Multi-language menu	Available
	Operation Environment	Temperature: 0°C to 50°C. Relative Humidity ≤ 80% at 40°C or below; ≤ 45% at 41°C ~ 50°C.
	On-screen help	Available
	Time clock	Time and Date, Provide the Date/Time for saved data
	Internal Flash Disk	800M 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.
	Line Voltage range	AC 100V ~ 240V, 50Hz ~ 60Hz, auto selection. power consumption:100W
	Weight	Approx. 4.6kg
	Dimensions	420mm(W)X 253mm(H)X 113.8mm(D)