

GRS-6052A/6032A

**FEATURES**

- \* GRS-6052A : DC~50MHz Bandwidth, 100MSa/s, 2kW/CH x 2
- GRS-6032A : DC~30MHz Bandwidth, 100MSa/s, 2kW/CH x 2
- \* Equivalent Time Sampling of 500MSa/s max.
- \* Acquire Mode : Peak Detect, Envelop, Persistence
- \* Pre-Trigger Function 0 ~ 10 div
- \* ROLL Mode to 100s/div
- \* Waveform SAVE/RECALL 10 sets (REF0~REF9)
- \* Averaging Function (2 ~ 256)
- \* Smoothing Function ON/OFF
- \* Max. Sweep Rate 10ns/div
- \* ALT-MAG Function (x5, x10, x20)
- \* Cursor Readout Function:  $\Delta V$ ,  $\Delta T$ ,  $1/\Delta T$
- \* Panel Setting SAVE/RECALL 10 sets (M0~M9)
- \* VERT Mode Triggering
- \* RS-232C Interface

SPECIFICATIONS			
	GRS-6052A 50MHz, 100MSa/s, 500MSa/s (ETS)	GRS-6032A 30MHz, 100MSa/s, 500MSa/s (ETS)	
<b>CRT</b>			
Type and Acceleration	6-inch CRT , 10kV	6-inch CRT , 2kV	
ILLUM	Front panel control	Front panel control	
Z-axis Input	Sensitivity : at least 5V Polarity : positive going input decrease intensity Max. input voltage:30V(DC+ACpeak) Input Impedance :approx. 33k $\Omega$	Sensitivity : at least 5V Polarity : positive going input decrease intensity Max. input voltage:30V(DC+ACpeak) Input Impedance :approx. 47k $\Omega$	
<b>VERTICAL SYSTEM</b>			
Deflection Coefficient and Accuracy	1mV ~ 2mV/div $\pm 5\%$ , 5mV ~ 20V/div $\pm 3\%$ , 14 steps in 1-2-5 sequence	1mV ~ 2mV/div $\pm 5\%$ , 5mV ~ 20V/div $\pm 3\%$ , 14 steps in 1-2-5 sequence	
Variable Continuous Bandwidth (-3dB)	2.5 : 1 ~ min. 50V/div 1mV ~ 2mV/div: DC~7MHz 5mV ~ 20V/div: DC~50MHz	2.5 : 1 ~ min. 50V/div 1mV ~ 20mV/div: DC~7MHz 5mV ~ 20V/div: DC~30MHz	
Vertical Mode	CH1, CH2, DUAL (ALT or CHOP)	CH1, CH2, DUAL (ALT or CHOP)	
Chopper Frequency	Approx. 250kHz	Approx. 250kHz	
Sum or Difference	CH1+CH2, CH1-CH2	CH1+CH2, CH1-CH2	
Invert	CH2	CH2	
Input Impedance	1M $\Omega$ $\pm 2\%$ /approx. 25pF	1M $\Omega$ $\pm 2\%$ /approx. 25pF	
Input Coupling	AC, DC, GND	AC, DC, GND	
Input Voltage	Max. 400V(DC+ACpeak)	Max. 400V(DC+ACpeak)	
<b>HORIZONTAL SYSTEM</b>			
Sweep Time	0.2 $\mu$ s/div ~ 0.5s/div, 20 steps	0.2 $\mu$ s/div ~ 0.5s/div, 20 steps	
Variable Continuously Accuracy	2.5 : 1 up to 1.25s/div (uncal.) $\pm 3\%$ , $\pm 5\%$ at x5/ x10MAG. $\pm 8\%$ at x 20MAG	2.5 : 1 up to 1.25s/DIV (uncal.) $\pm 3\%$ , $\pm 5\%$ at x5/ x10MAG. $\pm 8\%$ at x 20MAG	
Sweep Magnification	x5, x10, x20	x5, x10, x20	
Max. Sweep Time	20ns/div (10ns/div uncal)	50ns/div (10ns~40ns/div uncal)	
ALT-MAG Function	Yes	Yes	
HOLD-OFF Time	Variable	Variable	
<b>TRIGGER</b>			
Trigger Mode	AUTO, NORM, TV	AUTO, NORM, TV	
Trigger Source	VERT, CH1, CH2, LINE, EXT	VERT, CH1, CH2, LINE, EXT	
Trigger Coupling	AC, HFR, LFR	AC, HFR, LFR	
Trigger Slope	"+" or "-" polarity	"+" or "-" polarity	
ALT Trigger	Yes	Yes	
Indicator Trigger LED	Yes	Yes	
TV Sync. Separator	TV-V(-), TV-H(-)	TV-V(-), TV-H(-)	
Trigger Sensitivity	GRS-6052A    20Hz ~ 5MHz GRS-6032A    20Hz ~ 2MHz	5MHz ~ 40MHz	40MHz ~ 50MHz
	CH1, CH2	1.5 div	2.0 div
	VERT-MODE	3.0 div	3.5 div
	EXT	800mV	1V
External Trigger Input	TV sync. pulse more than 1 DIV or 200mV (EXT) Input impedance :Approx. 1M $\Omega$ //25pF (AC coupling) Max. input voltage :400V (DC + AC peak)		
<b>X-Y OPERATION</b>			
Input	X-axis : CH1 ; Y-axis : CH2	X-axis : CH1 ; Y-axis : CH2	
Sensitivity	1mV/div ~ 20V/div	1mV/div ~ 20V/div	
Bandwidth	X-axis : DC ~ 500kHz (-3dB)	X-axis : DC ~ 500kHz (-3dB)	
X-Y Phase Shift	<3 $^\circ$ from DC ~ 50kHz	<3 $^\circ$ from DC ~ 50kHz	
<b>DIGITAL STORAGE</b>			
Acquisition Digitizer	8 bit ADC x 2	8 bit ADC x 2	
Max. Sampling Rate	500MSa/s for equivalent time sampling 100MSa/s for normal sampling	500MSa/s for equivalent time sampling 100MSa/s for normal sampling	

## Rear Panel



SPECIFICATIONS		
<b>Storage Bandwidth</b>	Single shot: DC ~ 25MHz Repetitive: DC ~ 50MHz ± 5div	Single shot: DC ~ 25MHz Repetitive: DC ~ 30MHz ± 5div
<b>Dynamic Range</b>		
<b>Memory Length</b>		
<b>Acquisition Memory</b>	2k words/CH x 2, 1k words/CH (equivalent)	2k words/CH x 2, 1k words/CH (equivalent)
<b>Save REF Memory</b>	1k words/CH x 10 with back-up memory (REF0~REF9)	1k words/CH x 10 with back-up memory (REF0~REF9)
<b>Display Memory</b>	1k words/CH x 4 waveform (max.)	1k words/CH x 4 waveform (max.)
<b>Sweep Time</b>	Equivalent: 0.2 μs/div ~ 0.5 μs/div Normal Sample: 1 μs/div ~ 0.1s/div Roll: 0.2s/div ~ 100s/div x 5, x 10, x 20	Equivalent: 0.2 μs/div ~ 0.5 μs/div Normal Sample: 1 μs/div ~ 0.1s/div Roll: 0.2s/div ~ 100s/div x 5, x 10, x 20
<b>Sweep Magnification</b>	10ns/div	10ns/div
<b>Max.Sweep Time</b>	DOTS, LINEAR	DOTS, LINEAR
<b>MAG Interpolation</b>	Yes	Yes
<b>ALT-MAG Function</b>	Sample, Peak detect (>25ns), Envelop. Persist, Average (2~256)	Sample, Peak detect (>25ns), Envelop. Persist, Average (2~256)
<b>Acquire Mode</b>	Auto, Norm, Single, Single-roll, Roll, X-Y, Run/Stop	Auto, Norm, Single, Single-roll, Roll, X-Y, Run/Stop
<b>Operation Mode</b>	Dot joint ON/OFF selectable	Dot joint ON/OFF selectable
<b>Smoothing Function</b>	Pre-trigger 0 ~ 10div in 0.02div steps	Pre-trigger 0 ~ 10DIV in 0.02div steps
<b>Pre-Trigger</b>	X-axis: CH1 Y-axis: CH2	X-axis: CH1 Y-axis: CH2
<b>X-Y Operation</b>	DC~50MHz(-3dB)	DC~30MHz(-3dB)
<b>Storage Bandwidth</b>	H: 100points/div; V: 25points/div;	H: 100points/DIV; V: 25points/div;
<b>Display Resolution</b>	X-Y: 25 x 25 points/div	X-Y: 25 x 25 points/div
<b>Waveform SAVE/RECALL</b>	10 sets (REF0~REF9)	10 sets (REF0~REF9)
<b>Panel Setting SAVE/RECALL</b>	10 sets (M0 ~M9)	10 sets (M0 ~M9)
READOUT & CURSOR		
<b>Cursor Measurement</b>	ΔV, ΔT, 1/ ΔT	ΔV, ΔT, 1/ ΔT
<b>Readout Intensity</b>	Adjustable	Adjustable
OUTPUT SIGNAL		
<b>CH1 Signal Output</b>	Voltage : approx. 20mV/div (with 50Ω terminated) ; Bandwidth : 50Hz ~ 5MHz	
<b>Calibrator Output</b>	Voltage : 0.5V±3% ; Frequency : approx. 1kHz, square wave	
INTERFACE		
RS-232C		
POWER SOURCE		
AC 100V/120V/230V±10%, 50/60Hz		
DIMENSIONS & WEIGHT		
275(W) x 130(H) x 370(D) mm; Approx. 8.5kg		

## ORDERING INFORMATION

**GRS-6052A** 50MHz Digital Storage + Analog Oscilloscope  
**GRS-6032A** 30MHz Digital Storage + Analog Oscilloscope

### ACCESSORIES :

User manual x 1, Power cord x 1,  
 GTP-060A-4 : 60MHz ( 10 : 1/1 : 1 ) Switchable Passive Probe (one per channel)

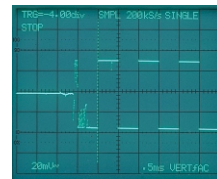
### OPTIONAL ACCESSORIES

**GTC-001** Instrument Cart, 450(W) x 430(D)mm (120V Input Socket)  
**GTC-002** Instrument Cart, 330(W) x 430(D)mm (120V Input Socket)  
**GTL-110** Test Lead, BNC-BNC Heads  
**GTL-232** RS232C Cable, 9-pin Female to 9-pin, Null Modem for Computer

### FREE DOWNLOAD

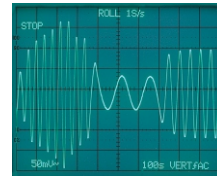
PC Software Remote Control Software

## DIGITAL MODE FUNCTIONS



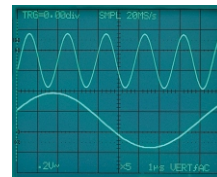
**Pre-Trigger**

GRS-6000A Series provide Pre-Trigger function, which allows user to observe Pre-Trigger waveform up to 10 divisions ahead of the trigger point.



**ROLL Mode**

The low-speed transient event of the input signal could be viewed easily under ROLL Mode. The waveform will roll on from right to the left to show the updated input signal all the time.



**ALT-MAG**

With ALT-MAG function, the user could expand the waveforms by 5, 10, or 20 times for a more detailed waveform observation. Both original waveforms and expanded waveforms could be shown on the screen at the same time.