

GX310 & GX320 10 MHz and 20 MHz DDS Function Generators with built-in 100 MHz frequencymeter



Laboratory generators – measurement instruments: multi-function, innovative, stand-alone tools!

- Frequency range from 0.001 Hz to 10 MHz (GX310) or 20 MHz (GX320)
- DDS technology with frequency accuracy of ± 20 ppm
- Stable frequency adjustment to the nearest digit
- Simultaneous display of signal parameters (Vdc, Vrms or Vpp, waveform, etc...)
- Large LCD screen (125x45mm) with main display on 5 digits 20mm high
- "LOGIC signal" function for direct adjustment of the high and low levels
- LIN or LOG sweep, triangle or sawtooth, with adjustable duration from 10ms to 100s
- Internal and external AM & FM modulation, GATE, BURST, FSK and PSK functions (GX320)
- Adjustable phase synchronization of several generators in cascade configuration (GX320)
- 60Vdc – 40Vac protected inputs and outputs
- 100 MHz frequencymeter, CAT I - 300V
- Automatic "closed casing" calibration on front panel
- Storage of 15 complete instrument configurations (GX320)
- Versions programmable via USB link with standard SCPI protocol

GX310 and GX320 laboratory function generators

Technical specifications	GX310	GX320
MAN-MACHINE INTERFACE		
Display	LCD (125 x 45 mm) – Adjustable brightness – Frequency display on 5 digits 20mm high	
Controls on front panel	19 direct-access controls (9 backlit and adjustable) – 1 Main Out On/Off key – 1 digital encoder wheel	
Adjustment of signal parameters	Continuous by encoder, automatic Frequency and Level ranges, selection of increment digit (F,P,N...)	
BNC output terminals on front panel	TTL & Sweep Out outputs	TTL, Sweep, Clock and Synchro outputs
BNC input terminals on front panel	VCF In input	VCG, Gate, Clock and Synchro inputs
Continuous signal generation		
Frequency		
Frequency range	0.001 Hz to 10.000 MHz (10 ranges)	0.001 Hz to 20.000 MHz (11 ranges)
Resolution / accuracy	5-digit display – resolution from 1 mHz to 1 kHz depending on frequency range ± 20 ppm for F>10kHz, ± 30 ppm for F<10kHz	
Long-term drift	± 5 ppm / year	
Temperature coefficient	± 20 ppm / °C	
Amplitude		
Voltage levels	1 mV to 20.0 Vpp with open circuit in 3 automatic ranges – 3-digit Vpp or Vrms display – Max. resolution 1 mV	
Flatness	<5% pour 1 mHz< F<10 MHz, and ± 0.5 dB typically up to 20 MHz (GX320) (for a level of 0.1 Vpp to 20 Vpp)	
Vdc offset	± 10 Vdc with open circuit – accuracy ± 5% ± 5mV	
Impedance / Protection	50Ω ± 3% / Protection against short-circuits and external voltages up to 60 Vdc or 40 Vac	
Signal waveform		
Sine	Distortion < 0.05 % typically for f < 50kHz, and harmonics < -41 dBc for 50 kHz < f < 1 MHz	
Triangle (max. frequency 2 MHz)	Linearity error < 1% max at 200 kHz – Duty cycle 10-90% for F < 1 kHz and 30-70% for F < 10 kHz	
Square & "LOGIC"	Rise time < 10 ns (< 7 ns typ.) – Duty cycle 10-90% for F < 200 kHz and 20-80% for F < 1 MHz	
TTL output	Rise time < 10 ns (< 5 ns typ.) – Max. admissible load > 10 TTL loads	
Frequency sweep		
Modes	LIN (linear) or LOG (logarithmic)	
"INT" internal sweep	"Sawtooth" or "Triangle" mode – Unlimited excursion between "F Start" & "F Stop" (256 steps) Adjustable sweep time from 10 ms to 100 s	
"EXT" external sweep	Output of sweep signal on BNC "Sweep Out" – Level 3.5 V approx., impedance 10 kΩ approx. Sweep by signal < 15 kHz, amplitude ± 10 V – VCF IN input impedance 10 kΩ approx.	
Modulation (GX320 only)		
Internal AM modulation	Modulation by a sine signal with a frequency of 1 kHz – Modulation percentage 20 % or 80 %	
External AM modulation	Modulation by signal < 5 kHz, amplitude ± 10 V for modulation from 0 to 100% (VCG IN input)	
Internal FM modulation	Modulation by a sine signal with a frequency of 1 kHz – Unlimited excursion between "F Start" & "F Stop"	
External FM modulation	Modulation by a signal with a frequency < 15 kHz – Amplitude ± 10 V (VCG IN input)	
SHIFT K function (GX320 only)		
Internal FSK	Switching between "F Start" & "F Stop" by a square signal with a frequency of 1 kHz	
External FSK	Switching between "F Start" & "F Stop" by a TTL signal with a max. frequency of 1 MHz (VCG IN input)	
Internal PSK	Phase switching by a square signal with a frequency of 1 kHz – adjustable over ± 180° (resolution 1°)	
External PSK	Phase switching by a TTL signal with a frequency < 1 MHz (VCG IN input) – adjustable over ± 180° (resolution 1°)	
Burst function (GX320 only)		
Internal BURST	1 to 65,535 pulses – Pulse train period from 10 ms to 100 s	
External BURST	1 to 65,535 pulses – Synchro/Period by a TTL signal with a frequency < 1 MHz (VCG IN input)	
Gate function (GX320 only)		
External GATE	Validation of the AC component of "Main Out" by a TTL signal with a frequency < 2 MHz (GATE IN input)	
Synchro function (GX320 only)		
Set-up of several GX320 in cascade	Maximum frequency of signals generated 100 kHz – Adjustment of phase shift over ± 180° (resolution 1°)	
External frequencymeter		
Measurement range	5 Hz to 100 MHz	
Accuracy	± 0.05 % + 1 digit	
Sensitivity	50 mVrms for F < 30 MHz, 60 mVrms for 30 MHz < F < 80 MHz, 90 mVrms beyond	
Input impedance	1 MΩ, 22 pF approx.	
Safety / Max. measurable voltage	CAT I, 300V / 300 Vrms from 5 Hz to 5 kHz	
General specifications		
Configuration memories (GX320)	Storage/recall of 15 complete instrument configurations	
Communication interface	"USB A/B" link for the programmable versions	
Mains power supply	230 V ± 10 % (or 115 V ± 10 %) – 50/60 Hz – 20 VA max. – Removable lead	
Safety / EMC	Safety as per IEC 61010-1 (2001) – EMC as per EN 61326-1 (2004)	
Mechanical specifications	227 (L) x 130 (H) x 190 (P) – Weight 2.8 kg	
Warranty / Origin	3 years – France	

DT GX310/GX320 – Ed01 03/2009
Specifications subject to modifications

References for ordering

GX310: 10 MHz function generator
GX310 P: 10 MHz programmable function generator
GX320: 20 MHz function generator
GX320-P: 20 MHz programmable function generator

State at delivery

1 function generator
 1 mains power lead
 1 CD-ROM containing:
 Operating manual in 5 languages,
 FR+GB programming manual,
 Labwindows CVI / LabView drivers,
 1 USB A/B lead (programmable versions)



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For information and ordering

