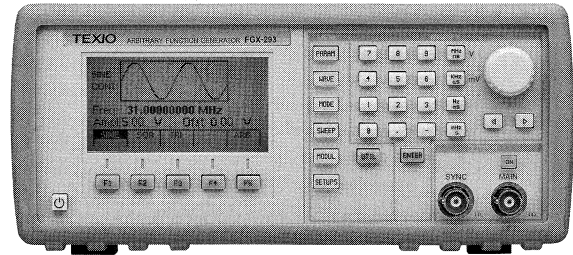


Arbitrary Function Generator

FGX-293 Arbitrary Function Generator

- Wide range of frequency generation from 10μHz up to 31MHz (for sine and square waveform)
- DDS (Direct Digital Synthesizer) method
- High accuracy for frequency: ±25ppm by using DDS method.
- Linear/Log Sweep function
- Duty variable, symmetry variable
- 500K point long size memory for arbitrary waveform
- Sampling rate for arbitrary waveform is max. 50MS/s (20ns) with analog output.
- GP-IB and RS-232C are equipped as standard.



FREQUENCY CHARACTERISTICS (STANDARD WAVEFORMS)		
Sine	10 uHz to 31 MHz	
Square	10 uHz to 31 MHz	
Triangle, Ramp	10 uHz to 500 kHz	
Accuracy	0.0025 % (25 ppm)	
Resolution	10 digits or 1uHz	
ARBITRARY CHARACTERISTICS		
Waveform length	2 points to 500,000 points	
Vertical resolution	12 bits	
Sampling rate	20ns to 50s	
Accuracy	0.0025 % (25 ppm)	
Resolution	4 digits or 10 ps	
OUTPUT CHARACTERISTICS (into 50ohms)		
Amplitude Range	10mV to 10Vp-p	
Resolution	3 digits (1000 counts)	
Amplitude Accuracy	± 1.25% ± 20mV (Amplitude: 1V to 10V)	
	± 2.5% ± 10mV (Amplitude: 10mV to 999mV)	
Flatness(Sine)	0.5 dB at 1MHz	
	1 dB at 20 MHz 2dB at 31MHz	
Offset Range	± 4.5V into 50 ohms, depending on the Amplitude setting	
	Amplitude	Offset
	1.00V to 10.00V	offset1 <= 5 - (Vp-p)/2 (V)
	0.100V to 0.999V	offset1 <= 0.5 - (Vp-p)/2 (V)
Offset Resolution	10 mV (Amplitude >= 1V)	
	1 mV (Amplitude < 1V)	
Offset Accuracy	± 1.25% ± 20mV (Amplitude: 1V to 10V)	
	± 2.5% ± 2mV (Amplitude: 10mV to 999mV)	
Output Impedance	50 ohms	
Output Protection	The main output is protected against short circuit.	
Filters	9 pole Elliptic and 5 pole Bessel filters	
WAVEFORM CHARACTERISTICS		
Harmonic Distortion	0 to 100 KHz: -55 dBc	
	100 KHz to 1 MHz: -45 dBc	
	1 MHz to 15 MHz: -35 dBc	
	15 MHz to 31 MHz: -25 dBc	
Spurious	DC to 1MHz: < -60 dBc	
	1MHz to 31MHz: < -50 dBc	
Square Rise/Fall Time	< 12 ns (10% to 90%) at full amplitude into 50 ohms	
Variable Duty Cycle	20% to 80% to 5 MHz, 40% to 60% up to 20MHz	
Symmetry at 50%	< 1 % (< 5MHz)	
OPERATING MODES		
Continuous	Output continuous at programmed parameters.	
Triggered	Output quiescent until triggered by an internal or external trigger, then one waveform cycle is generated to programmed parameters. The trigger is a rising edge. Up to 10MHz trig rate for ARB waveforms and 5 MHz in DDS mode.	

Gate	Same as triggered mode, except waveform is executed for the duration of the gate signal. (The gate signal is high level.) The last cycle started is completed.	
Burst	2 to 99,999 cycles	
Phase	-360° to +360°, 0.1° resolution	
Trigger Source	Trigger source may be internal, external or manual. Internal trigger rate 0.01Hz-1MHz	
MODULATION CHARACTERISTICS		
Amplitude Modulation	Internal:	0.01Hz-20KHz sine, square or triangle waveform Variable modulation from 0% to 100%.
	External:	5 Vp-p for 100% modulation, 10 kohms input impedance.
Frequency Modulation	Internal:	0.01Hz-20KHz sine wave, square or triangle
	External:	5 Vp-p for 100% deviation, 10 kohms input impedance.
FSK	Internal rate	0.02Hz-1MHz
	External	1MHz max
SWEEP CHARACTERISTICS		
Sweep Shape	Linear and Logarithmic, up or down	
Sweep Time	100 ms to 500 s.	
Sweep trigger	internal, external, continuous or burst	
INPUTS AND OUTPUTS		
Trigger In	TTL compatible. Max. rate: 10MHz (Arb), 5MHz(DDS) Minimum width: 50ns.	
Sync Out	TTL pulse at programmed frequency, 50 ohms source impedance.	
Modulation IN	5 Vp-p for 100% modulation. 10 kohms input impedance. DC to >20 KHz minimum bandwidth. Note: When FSK modulation, the external input connector is "Trigger IN" connector.	
Reference IN-OUT	10 MHz, TTL compatible, input or output, for external unit synchronization.	
GENERAL		
Store memory	50 full panel settings at power-off	
Arbitrary memory	500K points in flash memory	
Dimensions	W: 213 mm x H: 88 mm x D: 300 mm	
Weight	Aprox 3 kg	
Interface		
RS-232	A DB 9-pin male DTE RS-232 interface	
GP-IB	Fully programmable with IEEE488.2 compliance	
Power Source		
Line Voltage Range	90V to 250V / 47Hz to 63Hz	
Power Consumption	40 VA max	
Fuse Rating	T1A, 250V	
Atmospherics		
Ambient Temperature	Within Specifications	10°C to +35°C / 80 % RH
	Operating	0°C to +50°C