

FUNCTION GENERATOR FG-1025



INTRODUCTION

FG-1025 function/arbitrary Waveform Generator adopts DDS technique into its design and is capable of generating accurate and stable waveforms with the resolution down to $1\mu\text{Hz}$. It is a type of function / arbitrary waveform generator with high performance-price ratio and multiple functions packed just into one instrument. The output is accurate, stable and pure with minimum distortion. The square wave offered is high in frequency and has a very fast rising and falling edges. Superb technical specifications, easy-to-use operating panel and humanized graphic display are all perfectly combined into FG 1025 model, making it possible to get your work done faster and more efficiently, and it is a versatile solution for your needs at present and in the future.

GENERAL SPECIFICATIONS

- 25 MHz (or 5 MHz) pulse waveform with adjustable rise & fall time and duty cycle.
- 125Msa/s sample rate and 14-bit vertical resolution.
- 6-digit high precision meter that is compatible with TTL level signal
- Standard dual channels with independent output mode
- 1M (or 8K) arbitrary wave form memory and 48 waveforms non-volatile storage.
- Multiple modulation types : AM, FM, PM, ASK, FSK, PSK, PWM.

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

- Powerful software available to use in PC.
- 4.3 inch high-resolution TFT color display
- Standard Interfaces : USB Host, USB Device, optional Lan.
- Dual channels can be applied at the same time or independently : internal/external modulation, internal/external. Manual trigger.
- Support frequency sweep and burst output
- Ease-of-use multipurpose knob and numeric keypad

Note : FG-1025 in not equipped with LAN port.

Type	FG - 1025
Channel	Dual
Max. Frequency	25MHz
Sample Rate	125MSa/s
Waveforms	Sine, Square, Pulse, Ramp, Noise, DC, Arbitrary
Working Modes	Gated, Continuous, Modulation, Sweep, Burst
Modulation Types	AM, FM, PM, ASK, FSK, PSK, PWM

Waveform Characteristics	
Sine Wave	
Frequency Range	1 μ Hz~25MHz
Resolution	1 μ Hz
Accuracy	90 days: \pm 50ppm, 1 year: \pm 100ppm (18°C~28°C)
Harmonic Distortion (Typical Value)	Test Condition: utput power 0dBm
	DC ~ 100kHz - 60dBc
	100kHz ~ 1MHz - 50dBc
	1MHz ~ 25MHz - 35dBc

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

Total Harmonic Distortin (Typical)	DC ~ 20kHz, 1Vpp<0.2%
Spurious Signal (Non-Harmonic Typical)	DC ~ 1MHz, <-70dBc
	1MHz ~ 5MHz, <-40dBc
	5MHz ~ 25MHz, <-50dBc
Phase Noise (Typical)	1kHz Offset : -105dBc/Hz
	10kHz Offset : -115dBc/Hz
	100kHz Offset : -125dBc/Hz

Square	
Frequency Range	1μHz ~ 5MHz
Resolution	1μHz
Rise / Fall Time	< 24ns (typical value, 1kHz, 1Vpp)
Overshoot (Typical)	< 2%
Symmetry (below 50% Duty Cycle)	1% of period +4ns
Jitter (Typical)	1ns+ 100ppm of period
Ramp	
Frequency Range	1μHz ~ 400kHz
Resolution	1μHz
None - linearity	<0.1% of Peak out (Typical, 1kHz, 1Vpp, 100% Symmetry)
Symmetry	0.0% to 100.0%

Pulse	
Frequency Range	500μHz ~ 5MHz
Resolution	1μHz
Pulse Width	40ns ~2000s

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

Lead / Tail Time	20ns ~ 2ms (typical 24ns)
Overshoot (Typical)	2%
Jittering (Typical Value)	1ns+ 100ppm of period

Gaussian Noise	
Bandwidth	Bandwidth 25MHz (03dB) Typical Value

DC Offset	
Range (Peak Value AC+DC)	±5V 50Ω
	±10V (High Impedance)
Offset Precision	±(1% of offset setting)+0.5% of amplitude +5mV)

Arbitrary Waveform Characteristics	
Frequency Range	1μHz ~ 5MHz
Resolution	1μHz
Waveform Length	2 ~ 8k point
Vertical Resolution	14bits (including Sign)
Sample Rate	215MSa/s
Min. Rise / Fall Time	35ns, Typical
Jitter (RMS, Typical)	15ns+100ppm
Non-volatile Memory	48 waveform

Output Characteristics	
Amplitude Range	0 ~ 1MHz : 1mVpp ~ 10Vpp: 10MHz ~ 60MHz : 1mVpp ~ 5Vpp (50Ω)
	0 ~ 10MHz : 2mVpp ~ 20Vpp: 10MHz ~ 60MHz : 2mVpp ~ 10Vpp (High Impedance)

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

Accuracy (1kHz Sinewave)	$\pm(1\%$ of amplitude setting value ± 2 mVpp)
Amplitude Flatness (Relative to 1kHz Sine, 1Vpp/50 Ω)	<100kHz 0.1dB
	100kHz ~ 25MHz 0.2dB

Waveform Output	
Impedance	50 Ω Typical
Insulation	Max.42Vpk to earth
Protection	Short-circuit Protection, All Front BNC Output Only

Modulation Type	
AM	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal / External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arbitrary
Modulating Frequency	2mHz ~ 50kHz
Modulating Depth	0% ~ 120%

FM	
Carrier Wave	Sine, Square, Ramp, Arbitrary
Source	Internal / External
Modulating Waveforms	Sine Wave, Square Wave, Ramp Wave, Noise, Arbitrary Wave
Modulating Frequency	2mHz ~ 50kHz
Frequency Deviation	1 μ Hz ~ 12.5MHz

PM	
-----------	--

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal / External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arbitrary
Modulation Frequency	2mHz ~ 50kHz
Phase Offset	0° ~ 360°

ASK

Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal / External
Modulating Waveforms	Square Wave of 50% duty cycle
Modulation Frequency	2mHz~100kHz

FSK

Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Source	Internal / External
Modulating Waveforms	Square Wave of 50% duty cycle
Modulation Frequency	2mHz ~ 100kHz

PWM

Carrier Waveforms	Pulse
Source	Internal / External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arbitrary
Modulation Frequency	2mHz ~ 50kHz
Phase width Deviation	0% ~ 49.99% of pulse width

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

Frequency Sweep	
Carrier Waveforms	Sine, Square, Ramp, Arbitrary
Mode	Linear, Logarithmic
Sweep Time	1ms ~ 500s $\pm 0.1\%$
Trigger Source	Internal / External / Manual

Burst	
Waveforms	Sine, Square, Ramp, Pulse, Noise, Arbitrary
Type	Counted (1 ~ 50000 Cycle), Infinite, Gated
Start Phase	$-360^\circ \sim +360^\circ$
Internal Period	1 μ s ~ 500s $\pm 1\%$
Gated Source	External Trigger
Trigger Source	Internal, External, Manual

Sync Output	
Output Level	TTL-Compatible
Output Frequency	1 μ Hz ~ 25MHz
Output Impedance	50 Ω , Typical
Coupling	DC

Connectors on the Rear Panel	
Modulation Input	± 5 Vpk full scale
	20k Ω Input Impedance
10MHz Input/output Frequency Rang	10MHz ± 500 Mz
10MHz Input/output Level Rang	TTL Compatible

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

10MHz Input/output Impedance	10K Ω (input) / 50 Ω (output), Typical, input DC Coupling, output AC coupling
Lock Time	<2s, Typical
External Trigger	TTL - Compatible
Trigger Input	
Input Level	TTL - Compatible
Slope	Rise or Fall, selectable
Pulse Width	>100ns
Input Impedance	>10K Ω , DC-Coupled
Latency	Sweep < 500us, Typical
	Sweep < 500us, Typical

Trigger Output	
Level	TTL - Compatible to 50 Ω
Pulse Width	>400ns, Typical
Output Impedance	50 Ω , Typical
Max. Frequency	1MHz

Frequency Meter	
Input Level	TTL-Compatible
Input Frequency Range	100mHz ~ 200MHz
Accuracy	\pm 51ppm
Resolution	6bit/s
Coupling	DC, AC

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

General Specifications

Display

Display Type	4.3inch, TFT color LCD
Display Resolution	480 Horizontal x 272 Vertical

Power

Power Voltage	100 ~ 240 VAC, 45 ~ 440 Hz, CAT II
Power Consumption	<40W
Fuse	2A, T-Level, 250V

Environment

Temperature Range	Operation: 10°C ~ +40°C
	Non Operating: -20°C ~ +60°C
Cooling Method	Forced Fan cooling
Humidity Range	+35°C : ≤90% relative humidity
	+35°C ~ +40°C, ≤60% relative humidity
Altitude	Operation: Up to 3000 meters
	Non Operating: Up to 15000 meters

Machine Specifications

Size	305mm × 230mm × 93mm
Net Weight	3.10kg (Packing not include)
	4.10kg (Packing Include)

ACCESSORIES:-

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com

Type	FG - 1025(Dual Channels)
Standard Accessories	Power cable (applicable for the country/region of destination), 1pc
	USB cable, 1pc
	BNC cable (1 meter) 2pcs
	Users manual, 1pc
	CD disk, 1pc
Optional	LAN port for FG - 1025

Note: There may be any change in specification due to continuous R & D without notice.

VJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

Dr. Baldev Singh Marg 28/147 Civil Lines, Roorkee-247667 Distt. Haridwar, Uttarakhand

Phone No.: 01332 – 272509, 7579200827

E-Mail : vijayantatechologies@gmail.com, vijaielectronics1965@gmail.com