

**MFG-2103, MFG-2105, MFG-2110, MFG-2120,
MFG-2140, MFG-2150**

DDS Function Generator



Specifications:

- Function waveform
 - Sine, square, triangle, positive, ramp.
 - Negative ramp, random noise, Sin (x) / x, index up, index down.
- Waveform
 - Memory length 8K (8192) points.
 - Sample rate, 10Msa/s.
 - Vertical resolution 8 bits.
 - Off line protect memory four 8K waveform.
- Frequency characters
 - Sine: 1mHz ~ fmax, Maximum resolution: 100uHz or 8 digit.
 - Square: 1mHz ~ 5MHz, Long term stability: 50ppm (0°C ~ 40°C).
 - Others: 1mHz ~ 10KHz, Short term stability: 1ppm (after power on and stable).
- Harmonic distortions
 - 20kHz, -60dBc, 20kHz ~ 1MHz, 1MHz~10Mhz, -50dBc, 10MHz ~ 20MHz, -40dBc (50Ω load, 1Vpp output), -30dBc.
- Signal characters
 - Square
 - Rise time and fall times < 25ns.
 - Over shot < 5%.
 - Asymmetry < 2% + 20ns.
 - Triangle, ramp, linearity (1KHz) < 1%.
 - Rise of fall time: 120ns.
- Output
 - Amplitude:
 - (Open circuit): 2mVpp ~ 20Vpp (< 20MHz), 2mVpp ~ 6Vpp (> 20Mhz).
 - (50Ω load): 1mVpp ~ 10Vpp (< 20MHz), 1mVpp ~ 10Vpp (> 20Mhz).
 - Output impedance:
 - Amplitude flatness: 50Ω.
 - DC offset range: 5% - 100% ~ 100%Vpp.
- Sweep
 - Sweep range: 0.1Hz~fmax.
 - Minimum step: 0.1Hz.
- FSK, PSK
 - Pulse width, period: 10us ~ 10s.
 - Trigger mode: Internal, external, single.
 - Frequency: 0.1Hz ~ fmax.
 - PSK phase differ: -360°C ~ 360°C.
- Internal amplitude modulation

- Carrier waveform: Internal waveform.
- Carrier frequency: 1MHz ~ fmax.
- Modulation waveform: Internal waveform.
- Modulation frequency: 100mHz ~ 20KHz.
- Stability of modulation frequency: 50ppm.
- Depth of modulation: 0% ~ 120%.
- External amplitude
 - Input impedance: 1k.
 - Modulation depth: When output signal is 1Vpp sine waveform, 4Vpp modulation signal could achieve 100% modulation depth.
- Internal frequency modulation
 - Carrier waveform: Internal waveform .
 - Carrier frequency: 0.1MHz ~ fmax.
 - Modulation waveform: Internal waveform.
 - Modulation frequency: 100mHz ~ 20KHz.
 - Stability: 50ppm.
 - Frequency shift range: 0.1Hz ~ fmax.
- Internal phase modulation
 - Carrier waveform: Sine, square.
 - Carrier frequency: 0.1Hz ~ fmax.
 - Modulation waveform: Internal waveform.
 - Modulation frequency: 100mHz ~ 10KHz.
 - Stability: 50ppm.
 - Maximum phase shift: 360°C.

Features:

- Using direct digital synthesis (DDS) technology. It features high resolution, high accuracy, high stability, superb price / performance direct input using numerical keys, data can also be continuously adjusted using adjusting knobs.
- Multi-waveforms are suitable for various application areas standard RS-232 interface, it can connect with PC series 21xxA has arbitrary waveform.

Model Number	MFG - 2103	MGF - 2105	MFG - 2110	MFG - 2120	MFG - 2140	MFG□- 2150
Frequency	Up to 3 MHz	Up to 5 MHz	Up to 10 MHz	Up to 20 MHz	Up to 40 MHz	Up to 50 MHz



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