

## DDS Signal Generator 10MHz/50MHz (with Arbitrary Function)

### MFG 2110 / MFG 2150A



#### Features :

- Model MFG 2110 - 0.1Hz to 10MHz
- **Model MFG 2150A - 0.1Hz - 50MHz (With 4 Arbitrary Waveforms)**
- Using direct digital Synthesis (DDS) & AWG technology
- It features high resolution , high accuracy, high stability, Direct input using numerical keys, data can be continuously adjusted using adjusting knobs
- Multi waveforms are suitable for various application areas
- Standard RS -232 interface, it can be connect with PC

#### Technical Specifications

##### Function Waveform

Sine, Square, Triangle, Positive Ramp, Negative Ramp, Random Noise, Sin (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	: 100 Hz or 8digit.
Square	1mHz~5MHz	Long term stability	: 50ppm (0°C~40°C)
Others	1mHz~10KHz	Short term stability	: 1 ppm (after power on and stable.

##### Harmonic Distortions

<20Khz	-60dBc	20KHz~1MHz	1MHz~10MHz	-50dBc
10MHz~20MHz	-40dBc	(50ohm load, 1Vpp output)		-30dBc

##### Signal Characters

Square	: Rise time & fall time	: <25ns
Over Short	: <5%, Asymmetry	: <2% +20ns
Triangle, Ramp	Linearity (KHz)	: <1%.

##### Output

Amplitude:(open circuit)	:2mVpp~20Vpp
	:(<20Mhz)
(50ohm load)	:2mVpp~6Vpp
	:(>20Mhz)
Output impedance	:1mVpp~10Vpp
	:(<20Mhz)
Amplitude Flatness	:1mVpp~10Vpp
	:(<20Mhz)
DC Off set range	:50ohm
	:5%-100%~100%pp

##### Pulse Signal

Output terminal	:ASK Sync out	Level: TTL
Width tw	:10 s<tw<100s	Width resolution 0.5 s.
Periodts	:10 s<ts<100s	

##### Sweep

Sweep Range	:0.1Hz~fmax	Minimum step : 0.1Hz
-------------	-------------	----------------------

##### FSK, PSK

Pulse Width, Period	:10 s~10s
Trigger Mode	: Internal, external, single
Frequency	: 0.1Hz~fmax
PSK Phase Differ	: -360°C~360°C
PSK Carrier Wave Form	

##### Internal Amplitude Modulation

Carrier Wave Form	: Internal wave form
Carrier Frequency	: 1mHz~fmax
Modulation Wave Form	: Internal wave form
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 wave form, 4Vpp modulation signal could achieve 100% modulation depth.		

##### Internal Frequency Modulation

Carrier Wave Form	: Internal wave form
Carrier Wave Form	: 0.1Hz~Fmax
Modulation Wave Form	: Internal wave form
Modulation Frequency	: 100mHz~10Khz.
Stability	: 50ppm
Frequency Shift Range	: 0.1Hz~fmax

##### Internal Phase Modulation

Carrier Wave Form	: Sine, Square
Carrier Frequency	: 0.1Hz~fmax
Modulation Wave Form	: Internal wave form
Modulation Ffrequency	: 100mHz~10Khz.
Stability	: 50ppm
Maximum Phase Shift	: 360°C