

User Manual



Declaration

General Safety Summary

To Avoid Fire or Personal Injury

- Use proper power line

 - Ground the instrument.

 - Observe all the ratings of the terminal

 - Do not operate without Covers

 - Avoid circuit or wire exposed
-

- **Do not operate with suspected failures**

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Safety Terms and Symbols



Hazardous
Voltage



Refer to the
Instructions



Protective
Earth
Ground



Earth
Ground

DANGER

WARNING

CAUTION

Symbols on the product



WARNING: Warning statements indicate the conditions or practices that could result in injury or loss of life.



CAUTION: Caution statements indicate the conditions or practices that could result in damage to this product or other property.



Introduction of SDG1000 Series

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Note

SIGLENT

Catalogue

SIGLENT

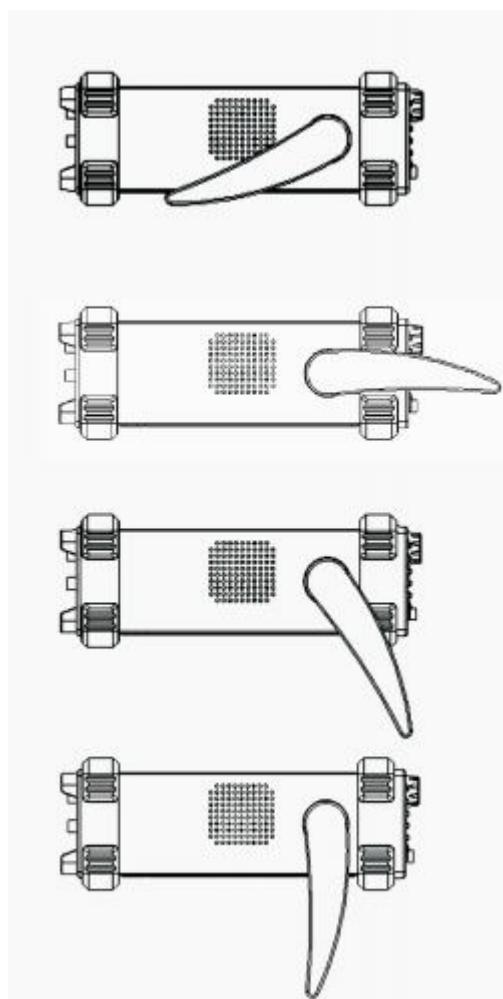
1. Getting Started

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1.1. General Inspection

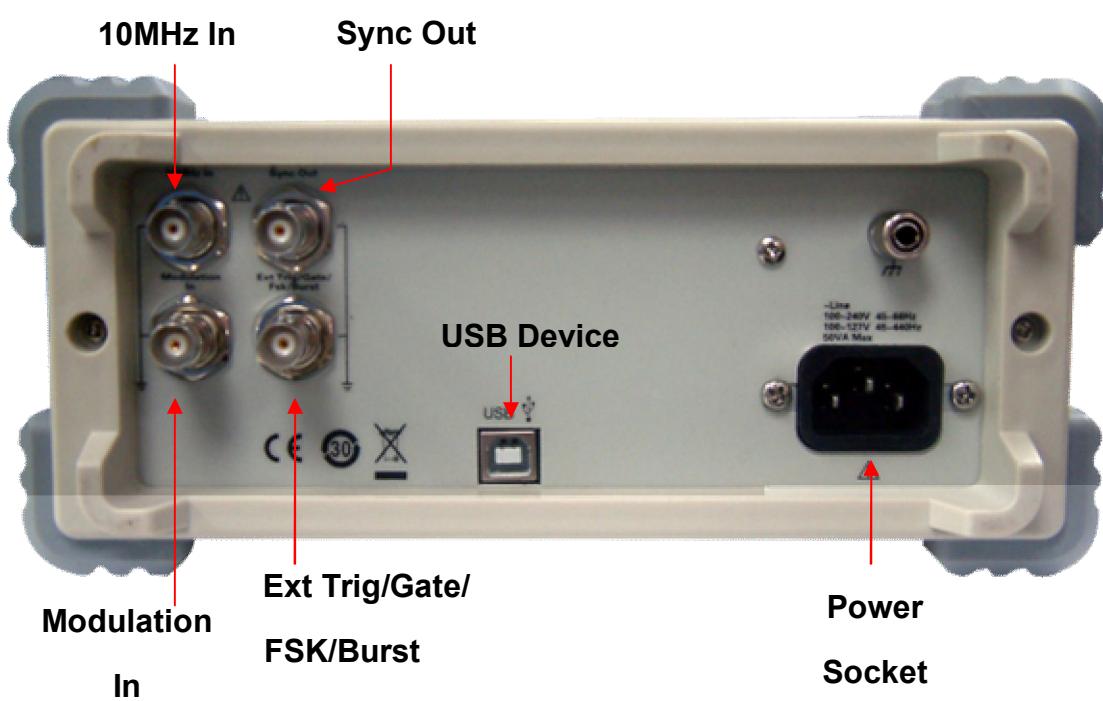
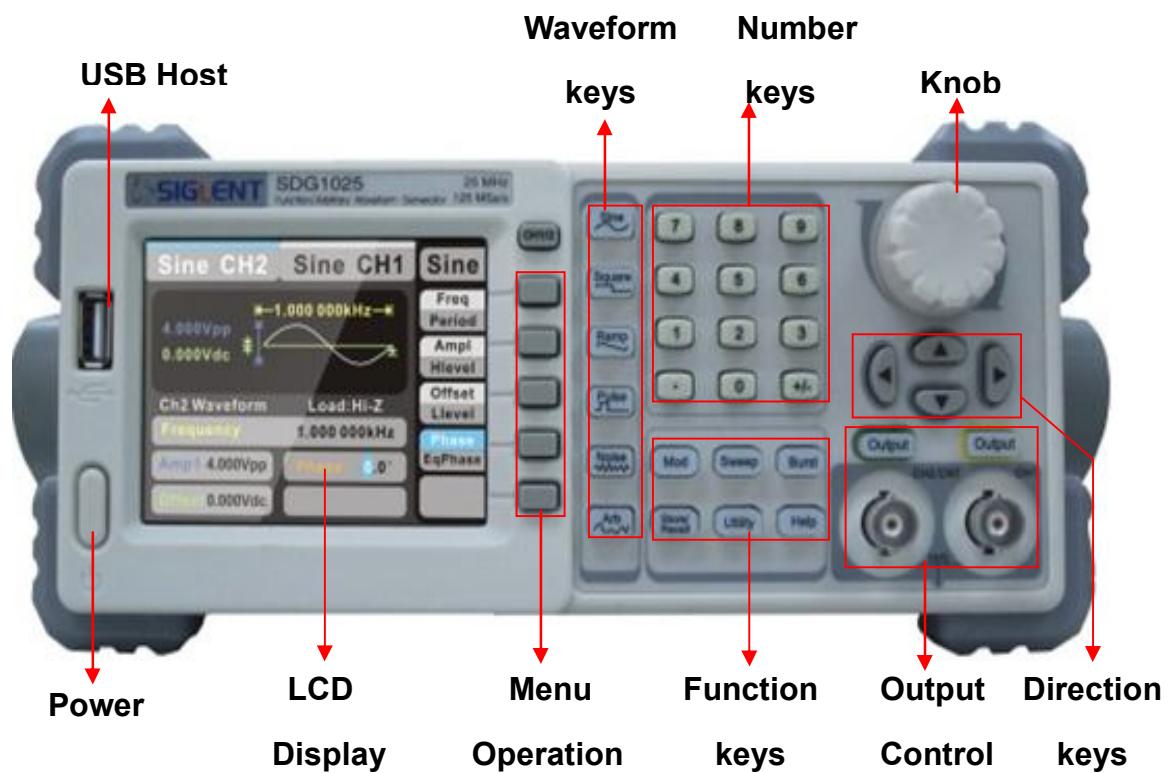
- 1. Inspect the shipping container for damage.**
 - 2. Check the accessories.**
 - 3. Inspect the instrument.**
-

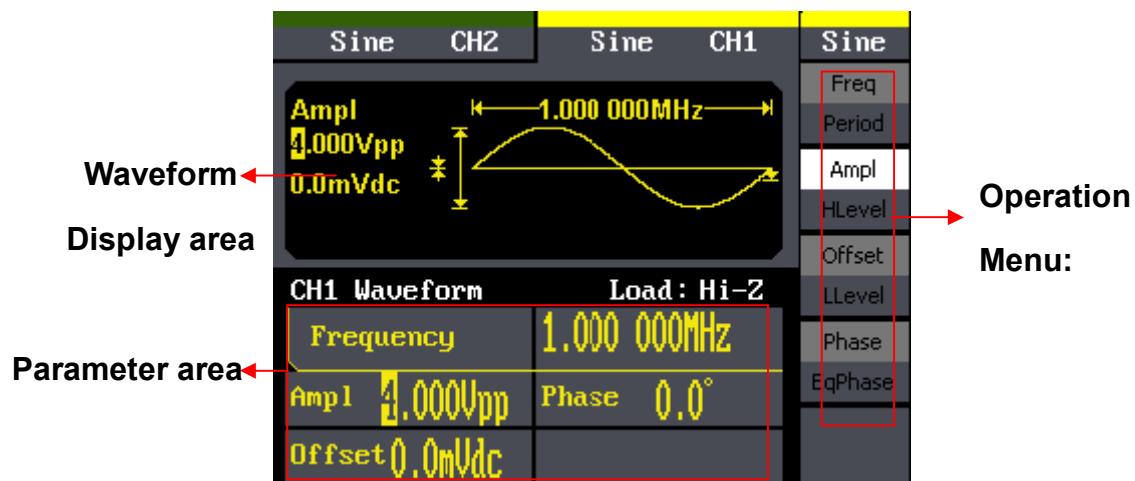
1.2. Handle Adjustment



1.3. The Front/Rear Panel

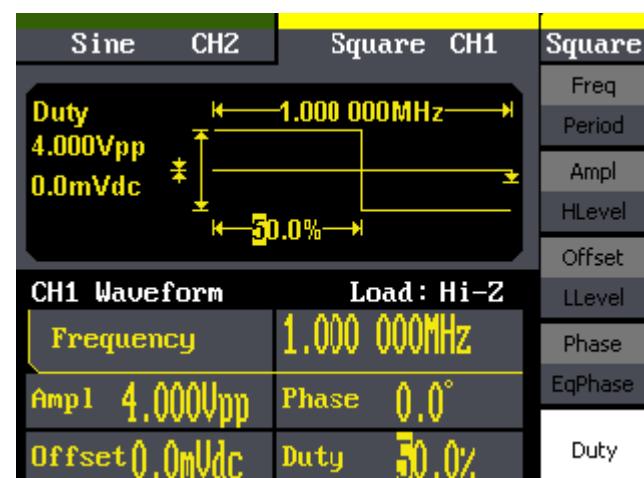
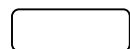
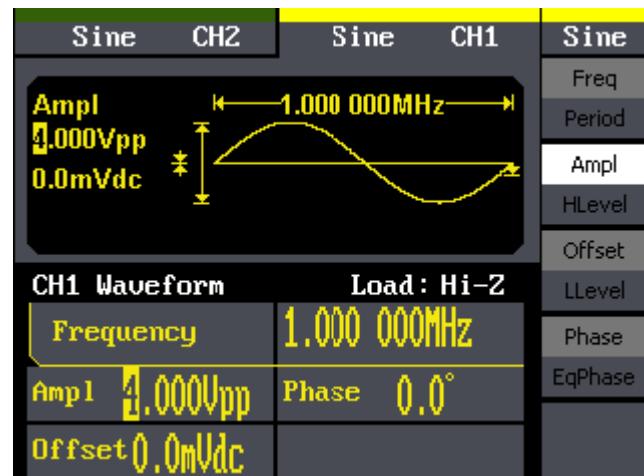


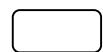
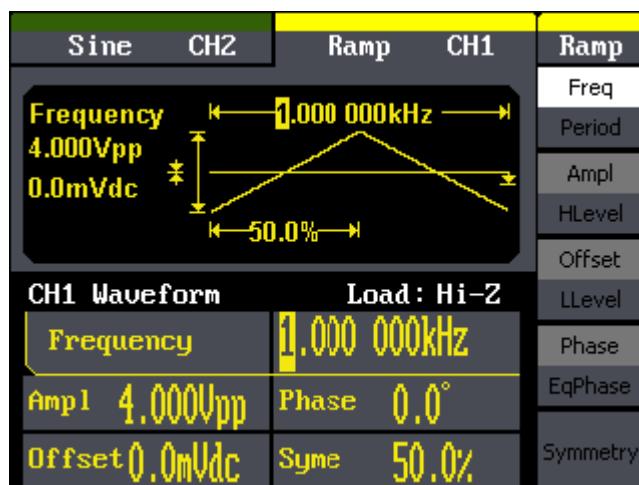
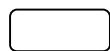


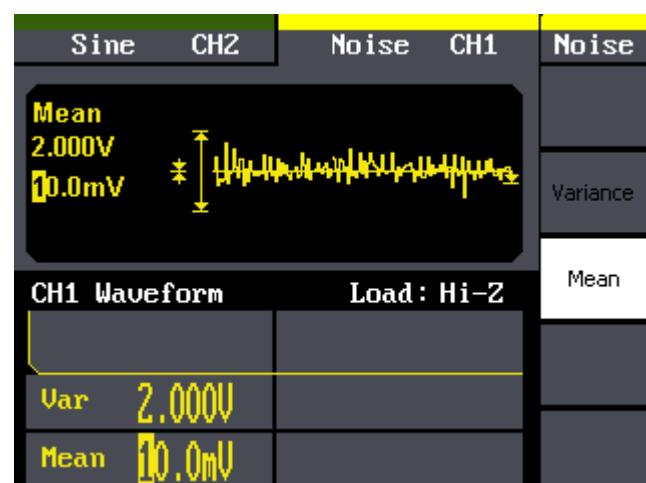
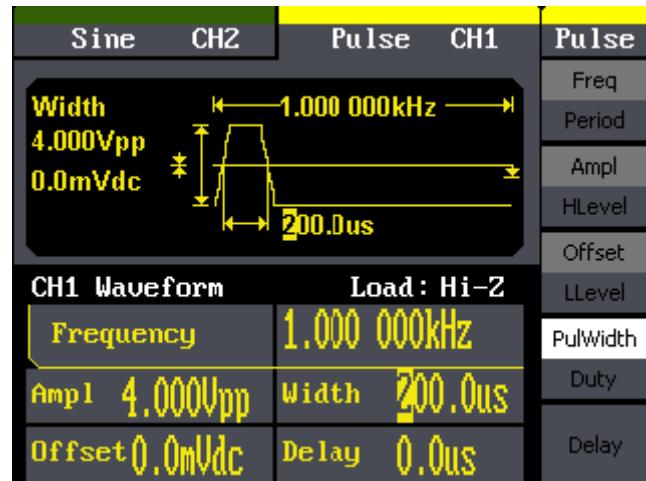


1.4. To Set a Waveform

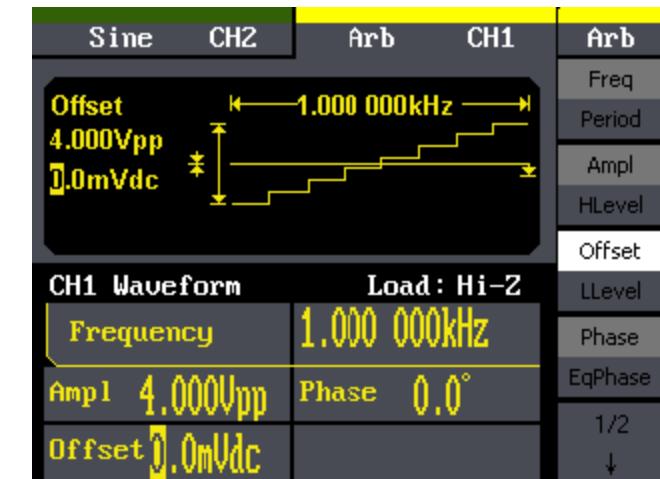






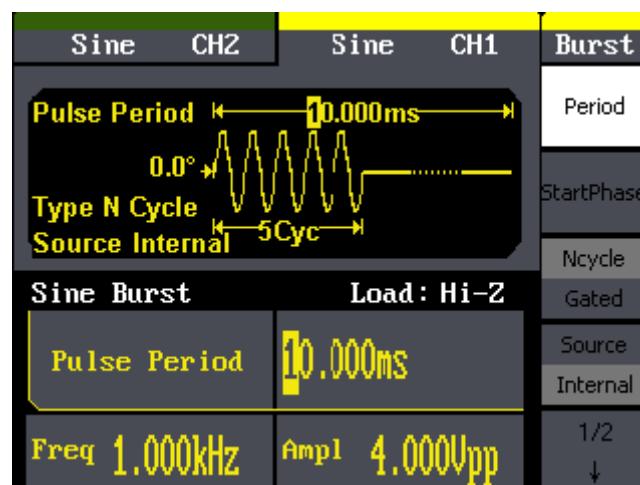
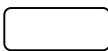


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1.5. To Set Modulate/Sweep/Burst

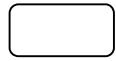
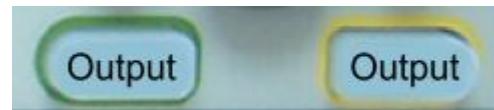




Term Explanation

Burst:

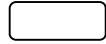
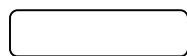
1.6. To Set Output



1.7. To Use Digital Input



1.8. To Use Store/Utility/Help Function

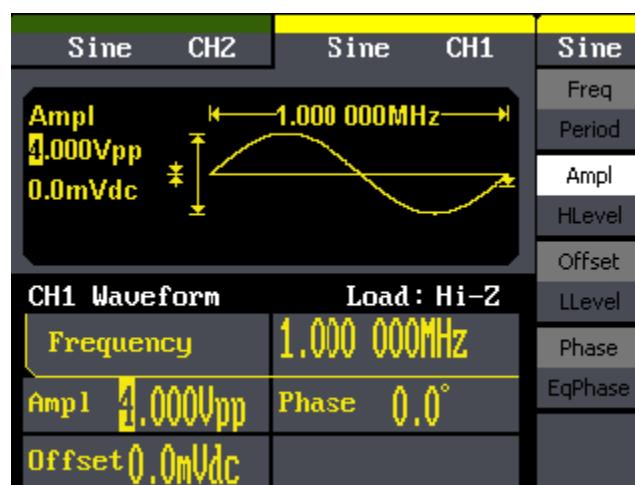


2. Operating Your Generator

- ([Sine](#))
- ([Square](#))
- ([Ramp](#))
- ([Pulse](#))
- ([Noise](#))
- ([Arb](#))
- ([Mod](#))
- ([Sweep](#))
- ([Burst](#))
- ([Store/Recall](#))
- ([Utility](#))
- ([Help](#))
-

You are suggested to read this chapter carefully so as to understand SDG1000 Series Generator's versatile waveform setting functions and more operation methods.

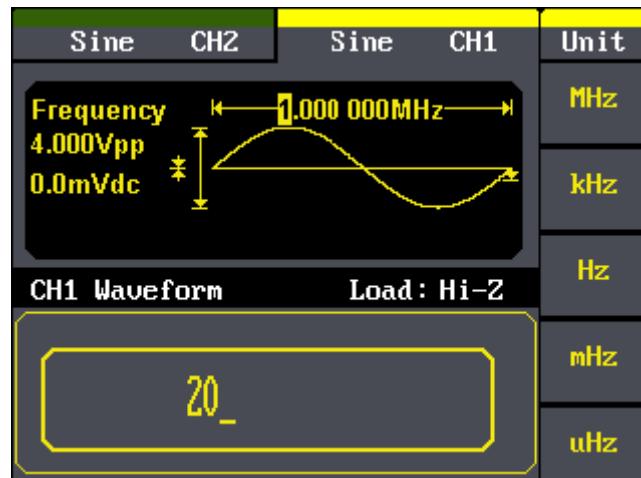
2.1. To Set Sine Signals



Sine
Freq
Period
Ampl
HLevel
Offset
LLevel
Phase
EqPhase

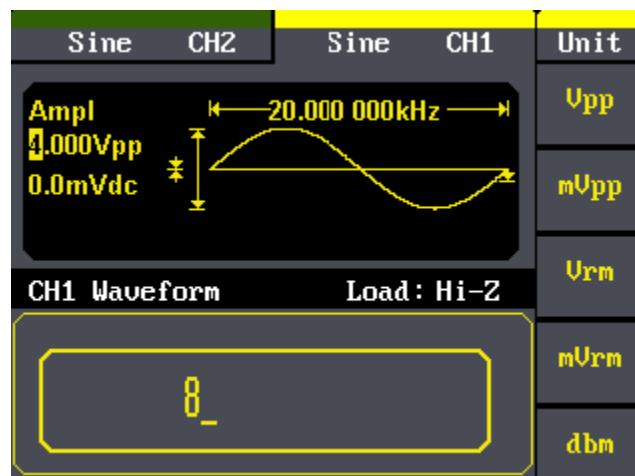
Function menu	Setting	Explanations

To Set the Output Frequency/Period

**Instruction**

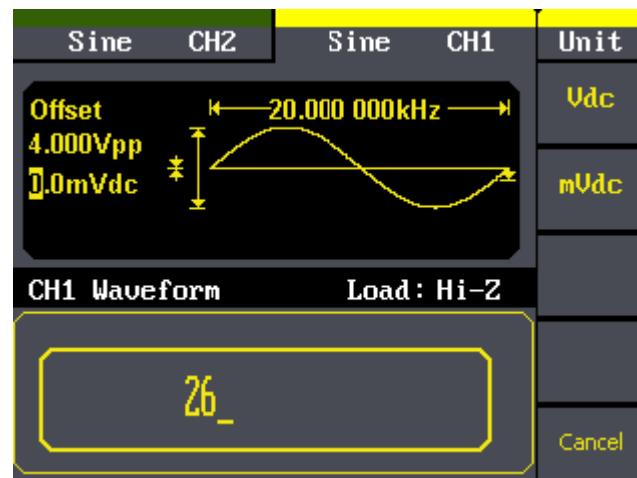
To Set the Output Amplitude



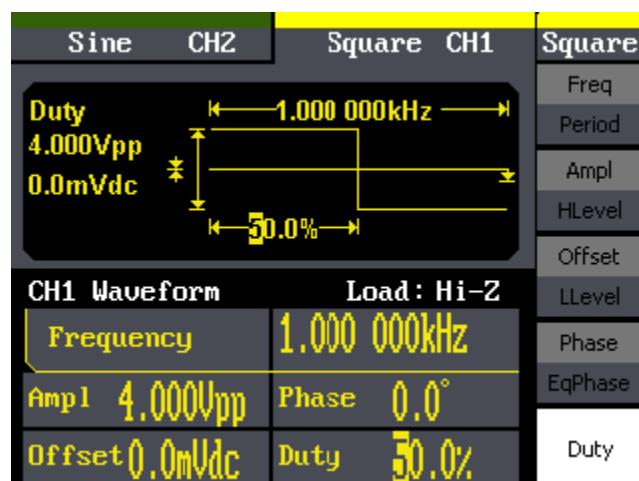
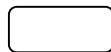


To Set the Output Offset





2.2. To Set Square Signals



Square

Freq

Period

Ampl

HLevel

Offset

LLevel

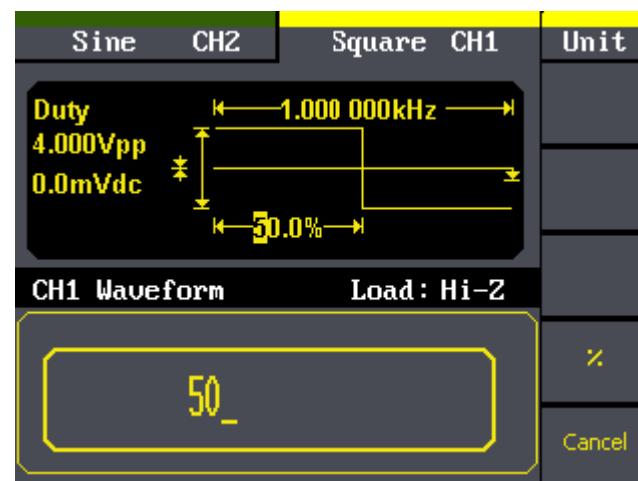
Phase

EqPhase

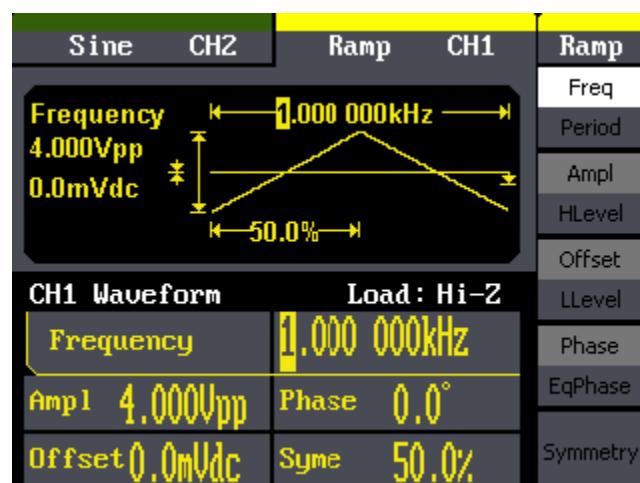
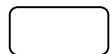
Duty

Function Menu	Settings	Explanation

Term Explanation:**Duty Cycle:****To Set the Duty Cycle**



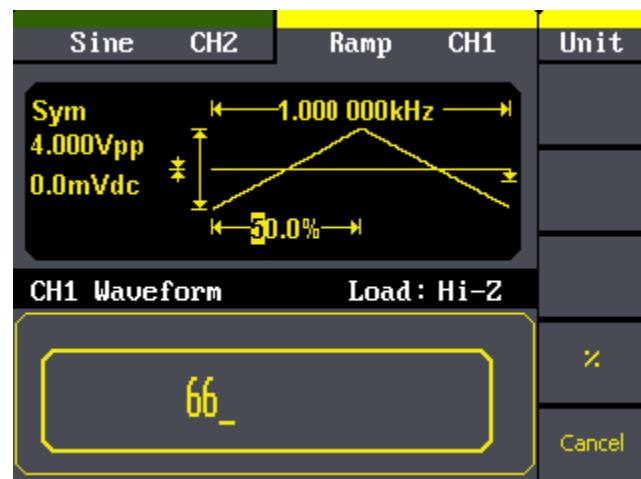
2.3. To Set Ramp Signals



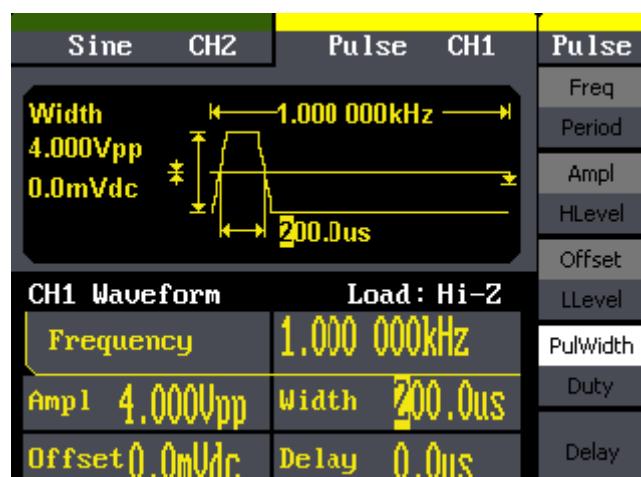
Ramp
Freq
Period
Ampl
HLevel
Offset
LLevel
Phase
EqPhase
Symmetry

Function Menu	Settings	Explanation

Term Explanation:**Symmetry:****Input Range:****To Set the Symmetry**

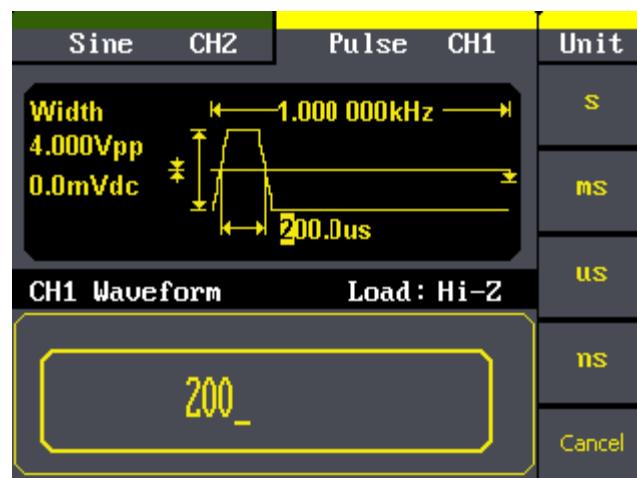


2.4. To Set Pulse Signals



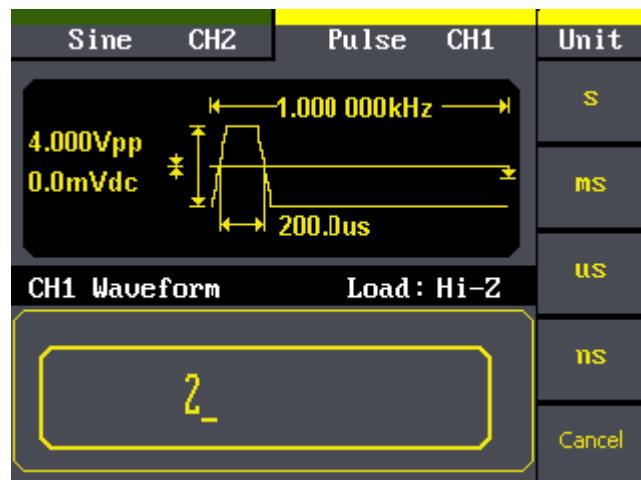
Pulse	Function Menu	Settings	Explanation
Freq			
Period			
Ampl			
HLevel			
Offset			
LLevel			
PulWidth			
Duty			
Delay			

Term Explanation:**Pulse Width:****To Set the Pulse Width**

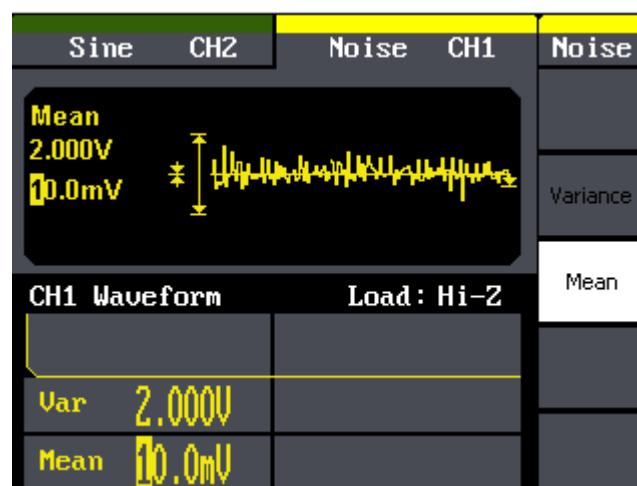


To Set the Delay





2.5. To Set Noise Signals





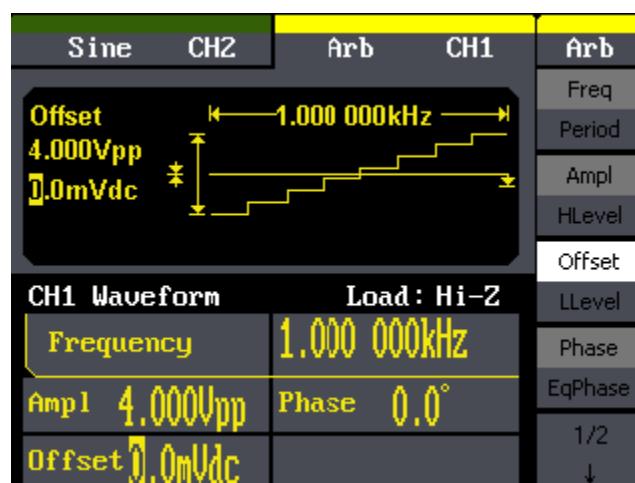
Variance

Mean



Function Menu	Settings	Explanation

2.6. To Set Arbitrary Signals



Arb
Freq
Period
Ampl
HLevel
Offset
LLevel
Phase
EqPhase
1/2
↓

Function Menu	Settings	Explanation

Arb
↑
2/2
Load
Wform

Function Menu	Settings	Explanation

To select the built-in Arbitrary Waveform

Function Menu	Settings	Explanation



Arb
Common
Math
Project
Winfun()
Triangle
Select

Function Menu	Settings	Explanation

StairUp	StairDn	StairUD	PPulse
NPulse	Trapezia	UpRamp	DnRamp

ExpFall	ExpRise	LogFall	LogRise
Sqrt	Root3	X^2	X^3
Sinc	Gussian	Dlorentz	Haversine
Lorentz	Gauspuls	Gmonpuls	Tripuls

Function Menu	Settings	Explanation
		=

Cardiac	Quake	Chirp	TwoTone
SNR			

Function Menu	Settings	Explanation

Hamming	Hanning	Kaiser	Blackman
GaussWin	Triang	Harris	Bartlett
Tan	Cot	Sec	Csc
Asin	Acos	Atan	ACot

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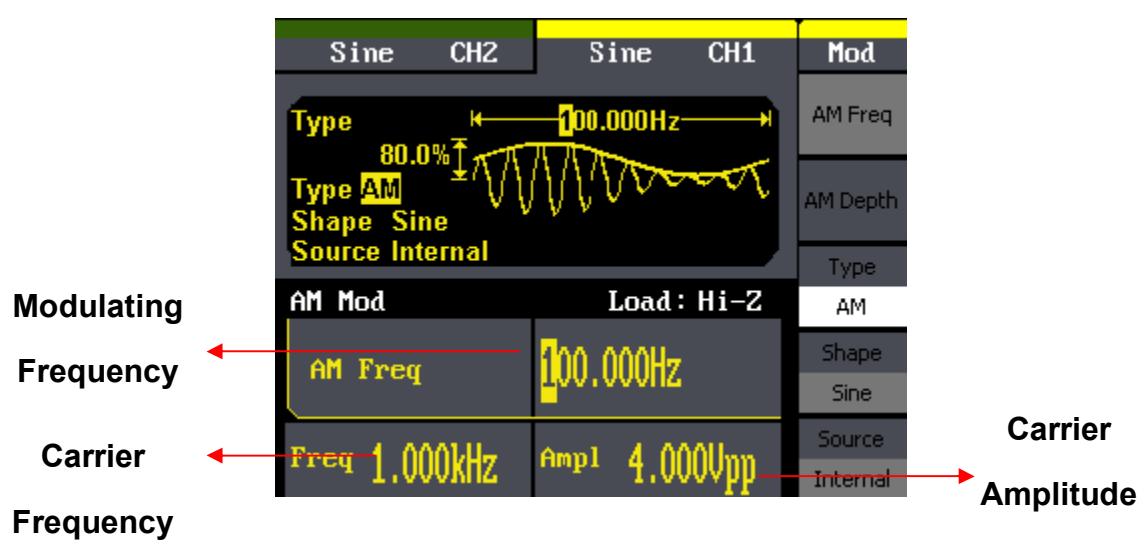
Sine	CH2	Arb	CH1	Arb
222	CLK	SDA		Stored
WAVE1	DNRAMP02	DNRAMP	EXP_FALL	Wforms
UPRAMP	SDS00007			

CH1 Waveform Load: Hi-Z

Frequency	1.000 000kHz
Amp1	4.000Vpp
Offset	0.0mVdc

Cancel Select

2.7. To Generate the Modulated Waveform

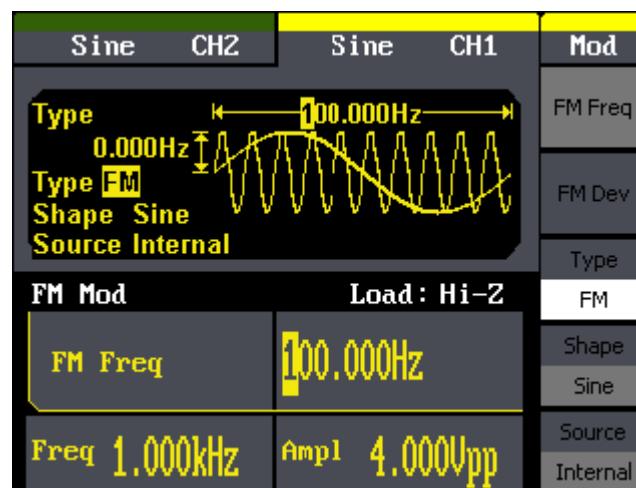


AM

Function Menu	Settings	Explanation
AM Freq		
AM Depth		
Type		
AM		
Shape		
Sine		
Source		
Internal		

Term Explanation**Modulation Depth**

-
- %
-

FM

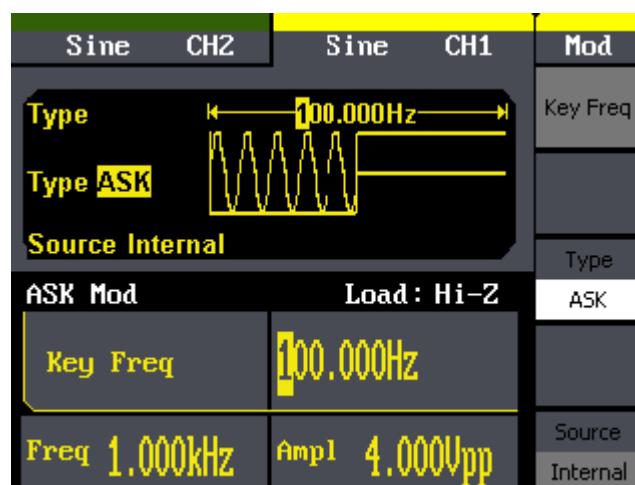


Mod	Function Menu	Settings	Explanation
FM Freq			
FM Dev			
Type			
FM			
Shape			
Sine			
Source			
Internal			

Term Explanation

Frequency Deviation

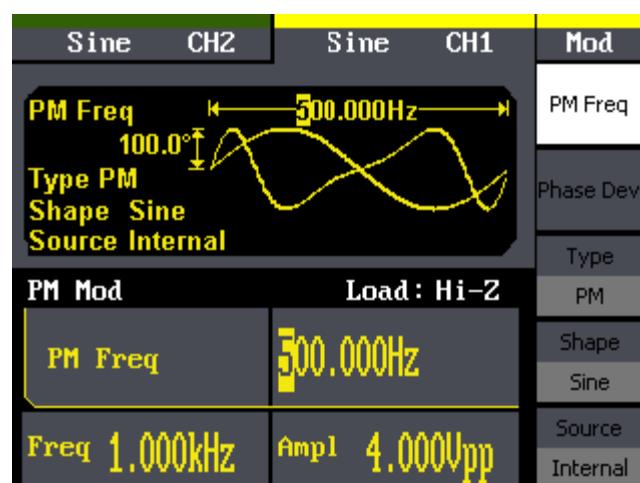
- 100 •

ASK

Function Menu	Settings	Explanation
Mod		
Key Freq		
Type		
ASK		
Source		
Internal		

FSK

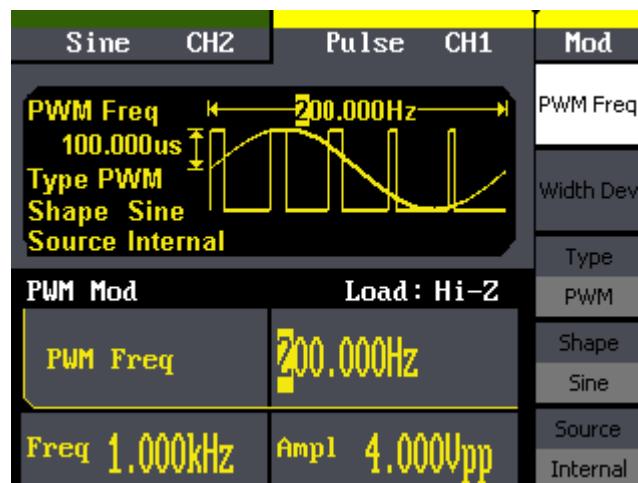
Mod	Function Menu	Settings	Explanation
Key Freq			
Type			
FSK			
Hop Freq			
Source			
Internal			

PM

Mod	Function Menu	Settings	Explanation
PM Freq			
Phase Dev			
Type			
PM			
Shape			
Sine			
Source			
Internal			

PWM

SIGLENT



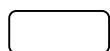
Mod	Function Menu	Settings	Explanation
PWM Freq			
Width Dev			
Type			
PWM			
Shape			
Sine			
Source			
Internal			

DSB-AM



Mod	Function Menu	Settings	Explanation
DSB Freq			
Type			
DSB-AM			
Shape			
Sine			
Source			
Internal			

2.8. To Generate Sweep



Sweep
SwpTime
StopFreq
FrqSpan
StartFreq
MidFreq
Source
Internal
1/2
↓

Function Menu	Settings	Explanation

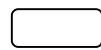
Sweep

Frequency Setting

Sweep
2/2
↑
Trig Out
Off
Linear
Log
Direction
↑

Function Menu	Settings	Explanation
	↑	
	↓	

2.9. To Generate Burst



Sine CH2	Sine CH1	Burst
Pulse Period 0.0° Type N Cycle Source Internal	0.000ms 5Cyc	Period StartPhase Ncycle Gated
Sine Burst	Load: Hi-Z	Source Internal
Pulse Period	10.000ms	1/2
Freq 1.000kHz	Ampl 4.000Vpp	↓

Set the N-Cycle Burst

Burst
Period
StartPhase
Ncycle
Gated
Source
Internal
1/2
↓

Function Menu	Settings	Explanation

Burst Period**Start Phase**

N-Cycle/Gated

Function Menu	Settings	Explanation

Cycles

●

●

Delay**Set the Gated Burst**

Burst
StartPhase
Ncycle
Gated
Polarity
Negative

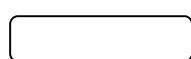
Function Menu	Settings	Explanation

2.10. To Store and Recall

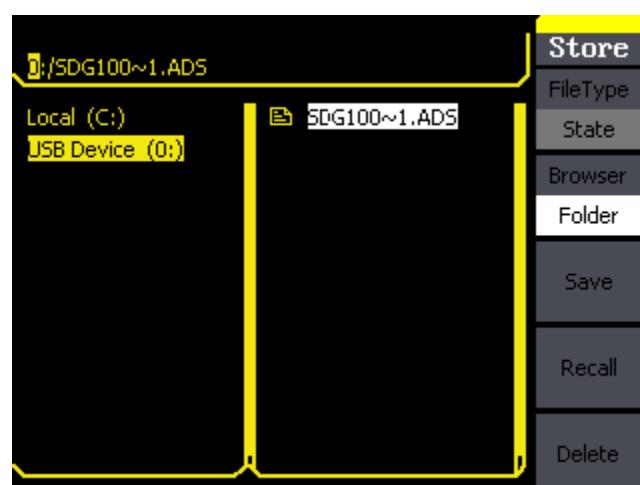


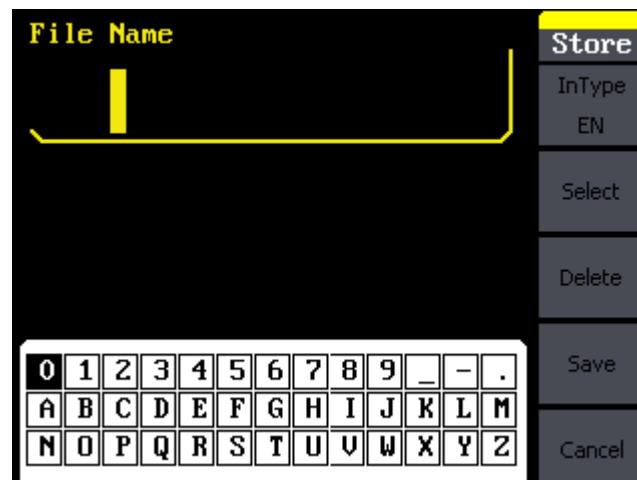
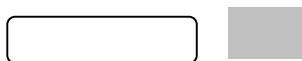
About the browser

To Save the Instrument State



To Use USB Storage

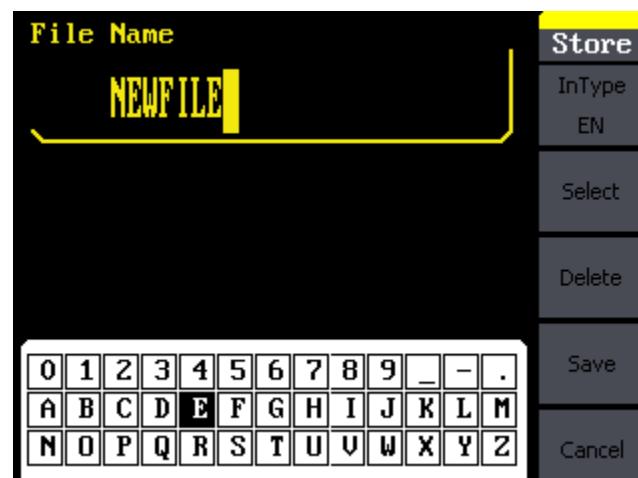


Note:**To Save a File**

Store
InType
EN
Select
Delete
Save
Cancel

Function Menu	Settings	Explanation

1. English Input



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SIGLENT

Function Menu	Settings	Explanation
Util		
↑ 2/2		
System		
Test/ Cal		
EditInfo		
Update		

To Set the DC Output



DC Offset

To Shift into the Arbitrary Waveform Output



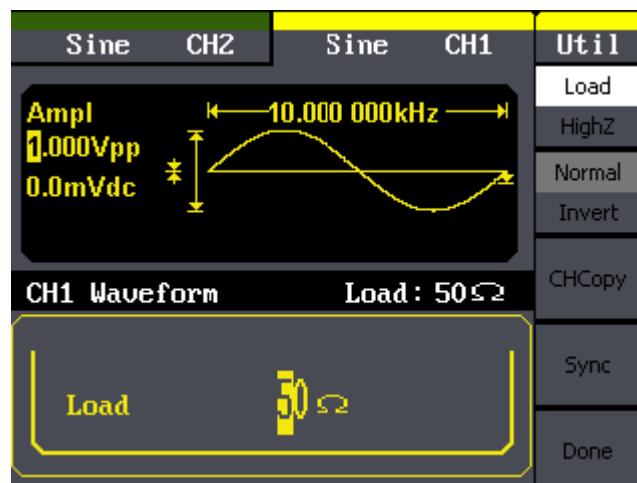
To Set IO



To Set Output Parameter



1. To Set the Output Load



Instruction

2. To Set the Invert Waveform



3. To Set the Sync Output

- 100 •

To measure the frequency

Util
Freq
Period
PWidth
NWidth
Duty
RefFreq
TrigLev
Setup

Function Menu	Settings	Explanation

Util
Mode
AC
HFR
Off
Default
Done

Function Menu	Settings	Explanation

To Set the System

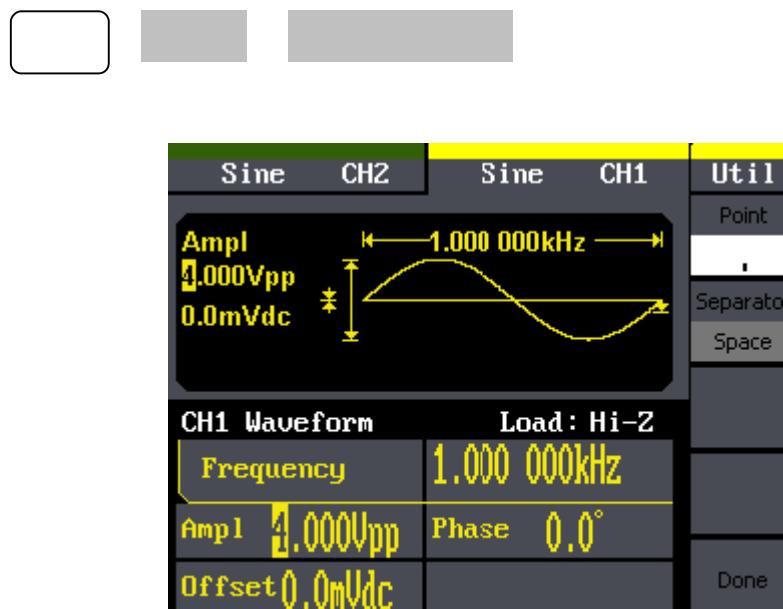


Util
Number
Format
Language
English
PowerOn
Default
Set to Default
1/2
↓

Function Menu	Settings	Explanation

Util
↑
2/2
Beep
On
ScrnSvr
15min
CLKSource
Internal
Done

Function Menu	Settings	Explanation

Key points:**Power On****Beep****1. Set the Format**

Util
Point

Separator
Space

Done

Function Menu	Settings	Explanation
	:	



Frequency | 1.000,000kHz



Frequency | 1,000.000kHz



Frequency | 1.000000kHz



Frequency | 1,000000kHz



Frequency | 1.000 000kHz



Frequency | 1,000 000kHz

2. Language Setup

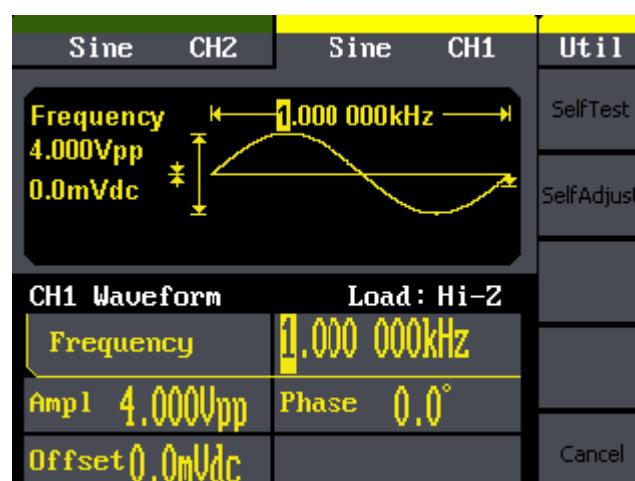


3. To Return to Default Setting



Output	Default
Modulation	Default
	%
Sweep	Default
Burst	Default
Trigger	Default

2.12. Test/Cal



Util
SelfTest
SelfAdjust
Cancel

Function Menu	Settings	Explain

SelfTest

Sine
ScrTest
KeyTest
LEDTest
Cancel

Function Menu	Settings	Explain

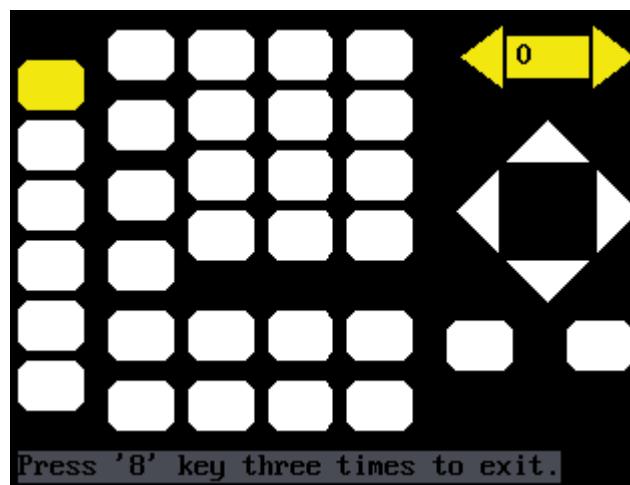
1. Scr Test

Press '7' key to continue,
Press '8' key to exit.

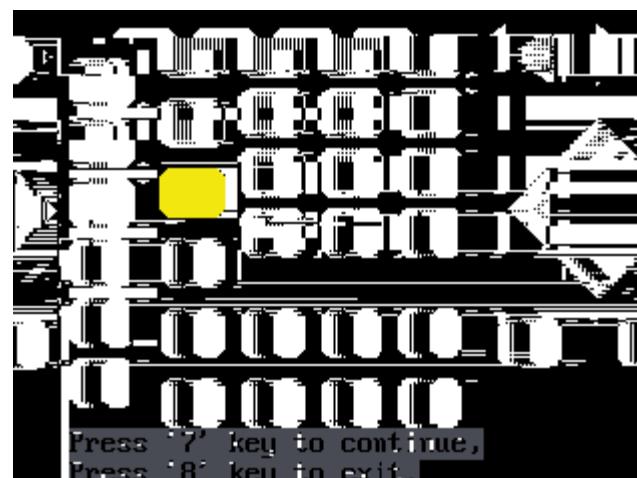
2. Key Test

Note:

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-
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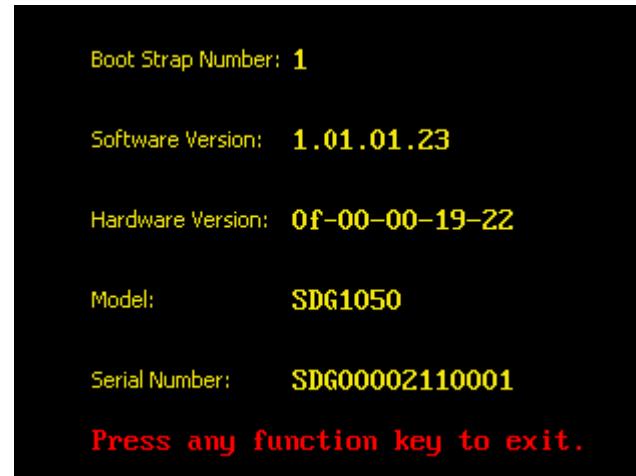


3. LED Test



SelfCal

2.13. Edition Information



Edition Information introduce

Boot-strap No:

Software version:

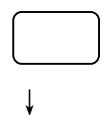
Hardware version:

Model:



Serial No:

2.14. Updating Firmware



Note

2.15. How to Use the Built-in Help System



Help	
↑	
↓	
Select	
Cancel	

Function Menu	Settings	Explanation
↑		
↓		

Help
↑
↓
Select
Cancel

3. Application and Examples

- ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

3.1. Example 1: Generate a Sine Wave

➤ Steps:

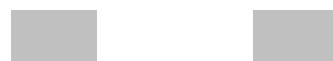
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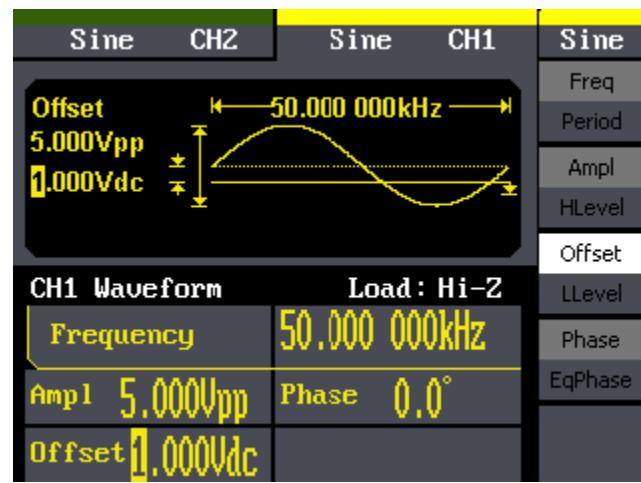


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3.2. Example 2: Generate a Square Wave

➤ Steps:

-



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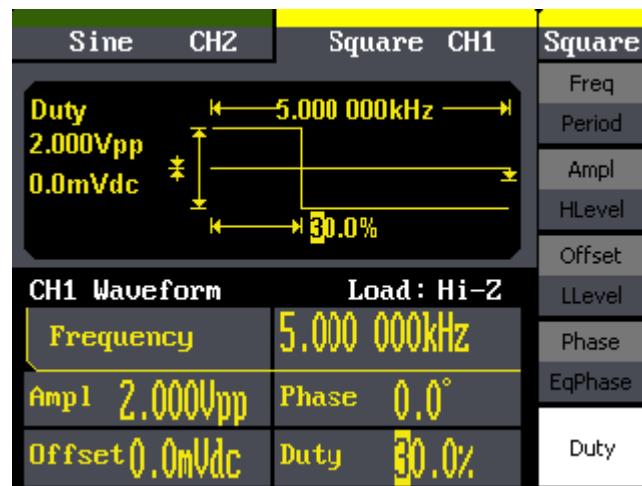


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3.3. Example 3: Generate a Ramp Wave

➤ Steps:

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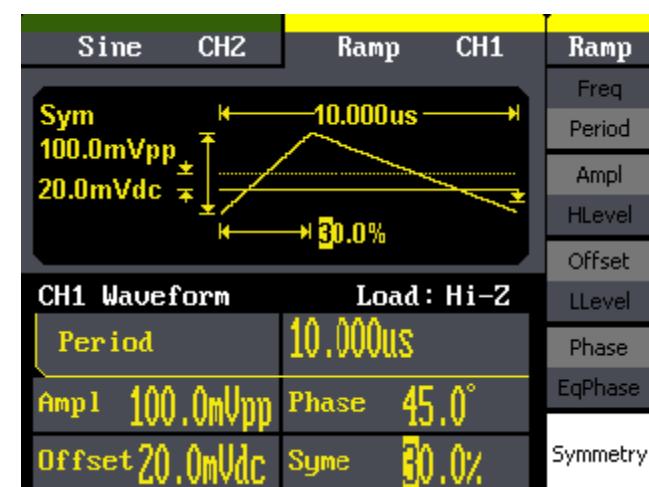


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3.4. Example 4: Generate a Pulse Wave

➤ Steps:

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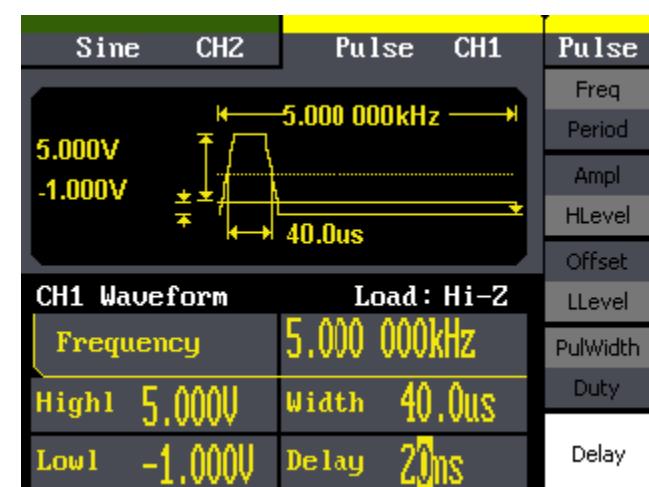


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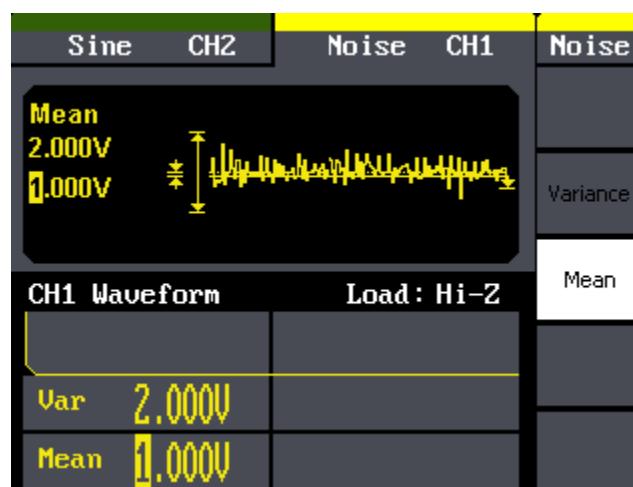
3.5. Example 5: Generate a Noise Wave

➤ Steps:

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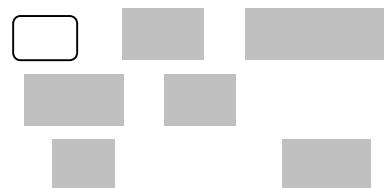
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3.6. Example 6: Generate an Arbitrary Wave

➤ **Steps:**

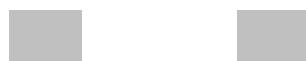
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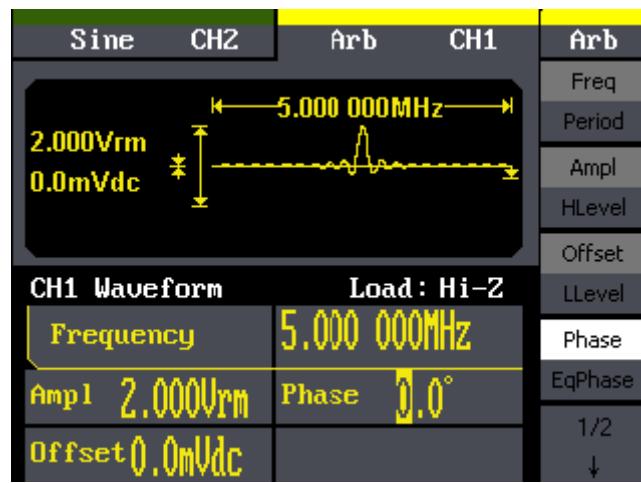


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3.7. Example 7:Generate a Sweep Linear Wave

➤ Steps:

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3.8. Example 8:Generate a Burst Wave

➤ **Steps:**

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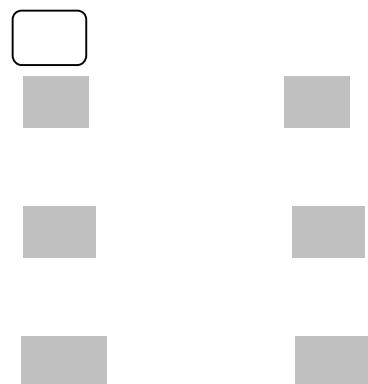


Sine CH2	Sine CH1	Burst
Pulse Period ← 3.000ms →		Period
0.0°		StartPhase
Type N Cycle		Ncycle
Source Internal ← 5Cyc →		Gated
Sine Burst	Load: Hi-Z	Source
Pulse Period 3.000ms		Internal
Freq 10.000kHz	Ampl 1.000Vpp	1/2 ↓

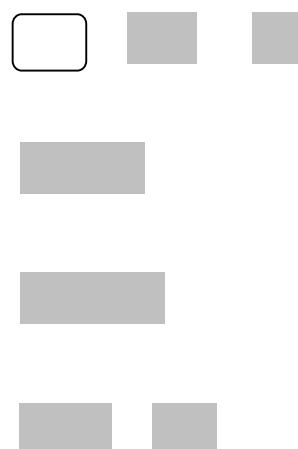
3.9. Example 9: Generate an AM Wave

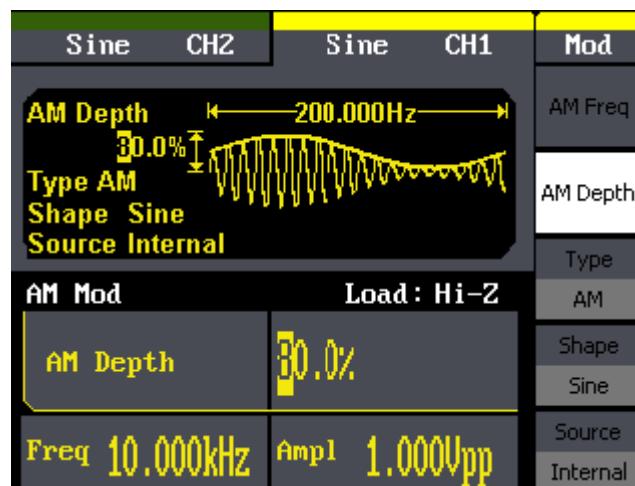
➤ Steps:

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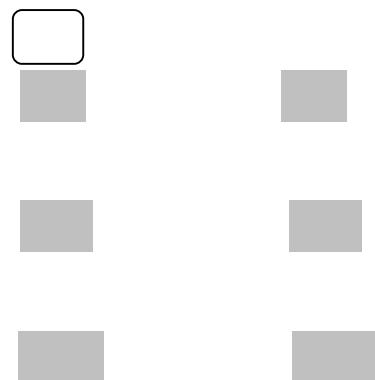




3.10. Example 10: Generate a FM Wave

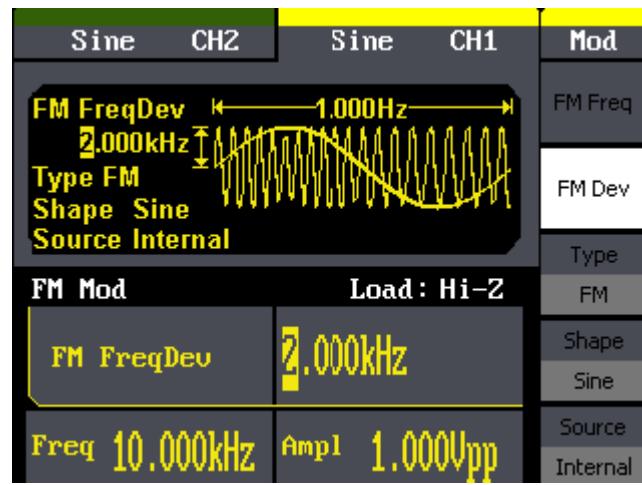
➤ Steps:

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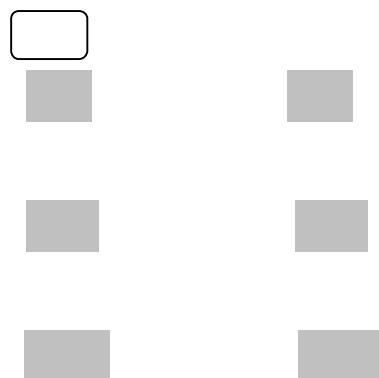




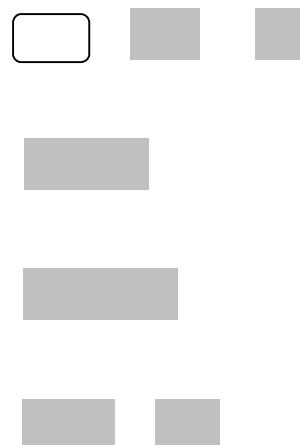
3.11. Example 11:Generate a PM Wave

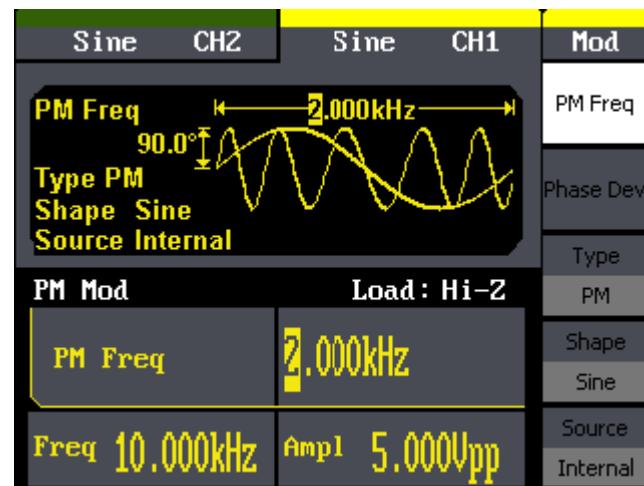
➤ Steps:

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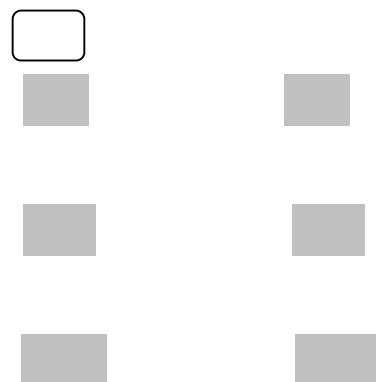




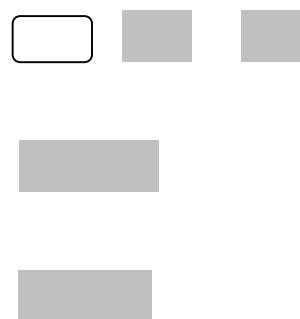
3.12. Example 12:Generate a FSK Wave

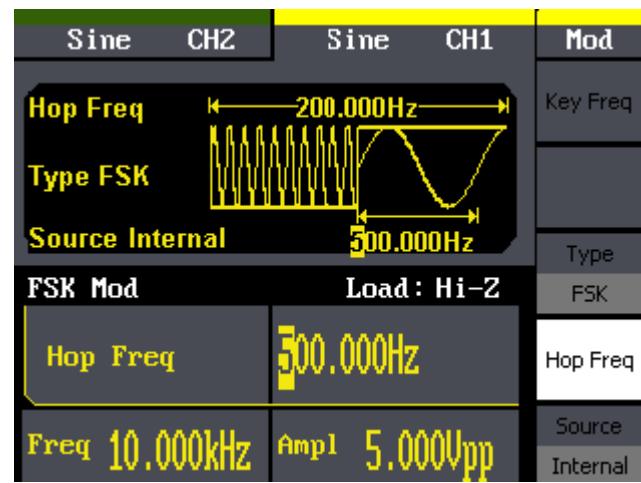
➤ Steps:

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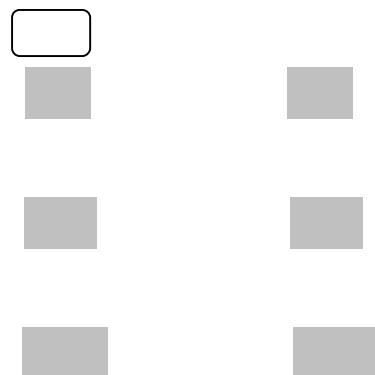




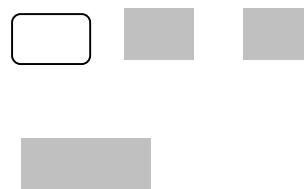
3.13. Example 13:Generate an ASK Wave

➤ Steps:

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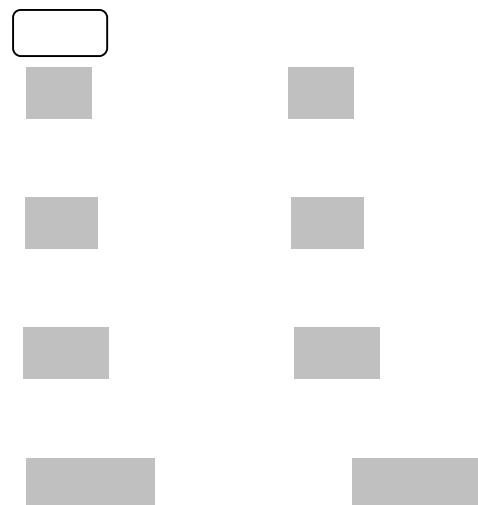




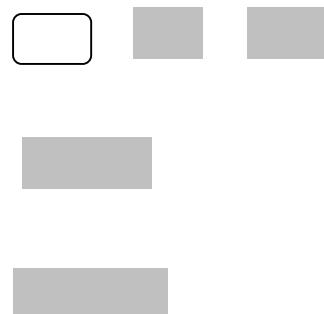
3.14. Example 14: Generate a PWM Wave

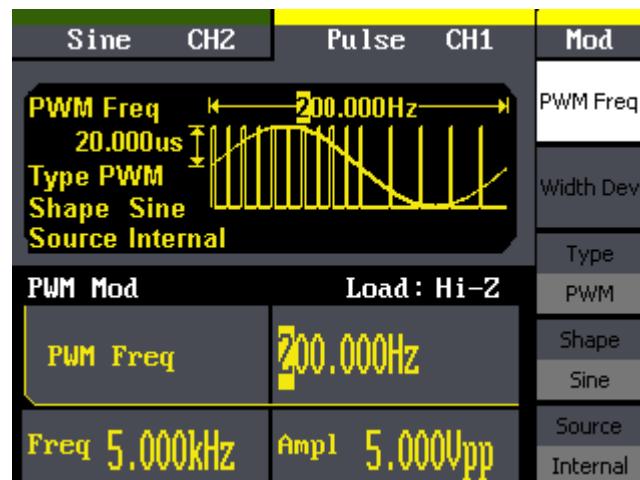
➤ Steps:

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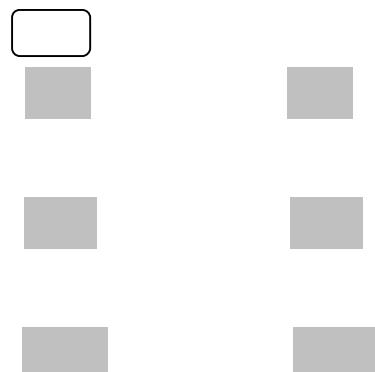




3.15. Example 15: Generate a DSB-AM Wave

➤ Steps:

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4. Troubleshooting

General Inspecting

- 1. Inspect the shipping container for damage**

- 2. Inspect the whole instrumc□ e**

Troubleshooting

- 1. After the waveform generator is powered on, the screen remains dark, please do the following steps:**

- 2. If there is no signal wave output after setting the parameters, please do as following steps:**

5. Service and Support

Maintain summary

SIGLENT

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SIGLENT

SIGLENT

SIGLENT



Contact SIGLENT

6. Appendix

Appendix A: Accessories

SDG1000 Series Function/ Arbitrary Waveform Generator Accessories:

Standard Accessories:

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Optional Accessories:

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Appendix B: Daily Maintain and Cleaning

Daily Maintain



CAUTION:

Cleaning



WARNING:

SIGLENT
