PeakTech®
1007 / 1014 / 1016

Operating Manual

SAFETY PRECAUTION

SAFETY CONSIDRATIONS

The **PeakTech** Direct Digital Synthesis Function Generator has been designed and tested according to EN61010-1:2001 and EN61326:1997.

SAFETY PRECAUTIONS
SAFETY NOTES

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. The manufacturer assumes no liability for the customer's failure to comply with these requirements.

BEFORE APPLYING POWER

Verify that the product is set to match the available line voltage is installed.

SAFETY SYMBOLS


Caution, risk of electric shock


Earth (ground) terminal


Equipment protected throughout by double insulation or reinforced insulation


Caution (refer to accompanying documents)


Equipment complies with current EU directives


Protective earth (ground) terminal


Chassis terminal


Indoor use only

DO NOT SUBSTITUTE PARTS OR MODIFY INSTRUMENT

Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification to the instrument. Return the instrument to a qualified dealer for service and repair to ensure that safety features are maintained.

INSTRUMENTS WHICH APPEAR DAMAGED OR DEFECTIVE SHOULD BE MADE INOPERATIVE AND SECURED AGAINST UNINTENDED OPERATION UNTIL THEY CAN BE REPAIRED BY QUALIFIED SERVICE PERSONNEL.

Table of Content

1. Introduction

1.1 General

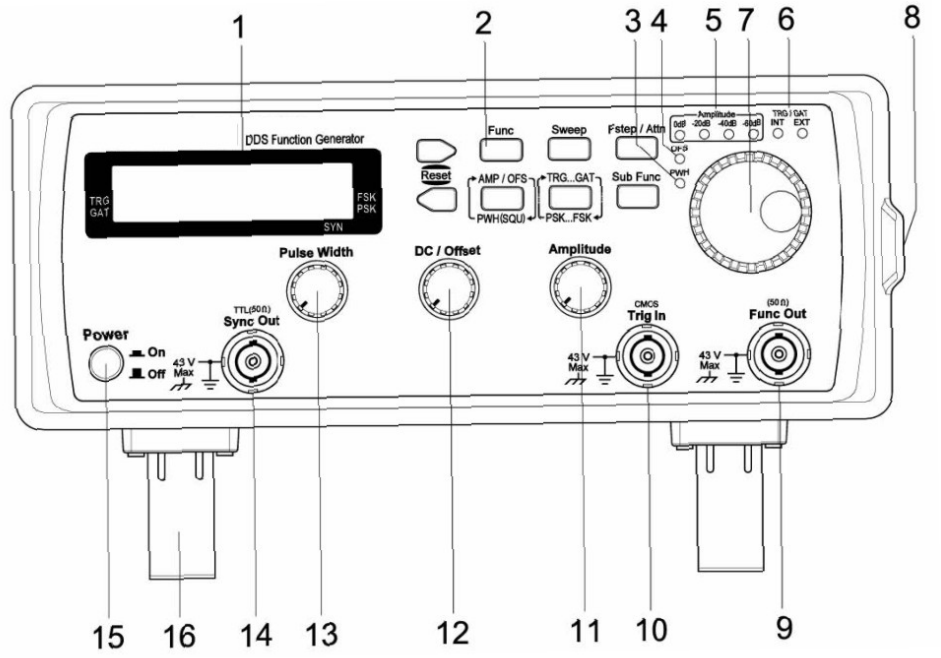
The PeakTech® 1007 / 1014 / 1016 series is a high-performance direct digital synthesize (DDS) function generator with very low noise and distortion. Combined with the DDS technology, the FG700S/F series can output high accuracy and stable frequency to meet your test requirement of precision and accuracy. The build-in trigger/gate function allows you to control the waveform generation by internal or external. Also, the PSK and FSK modulation gives you the ability to generate such waveform for experiment or communication purpose. The FG700F series comes with AM/FM module and frequency counter to make the function of this product more comprehensive.

1.2 Key Features

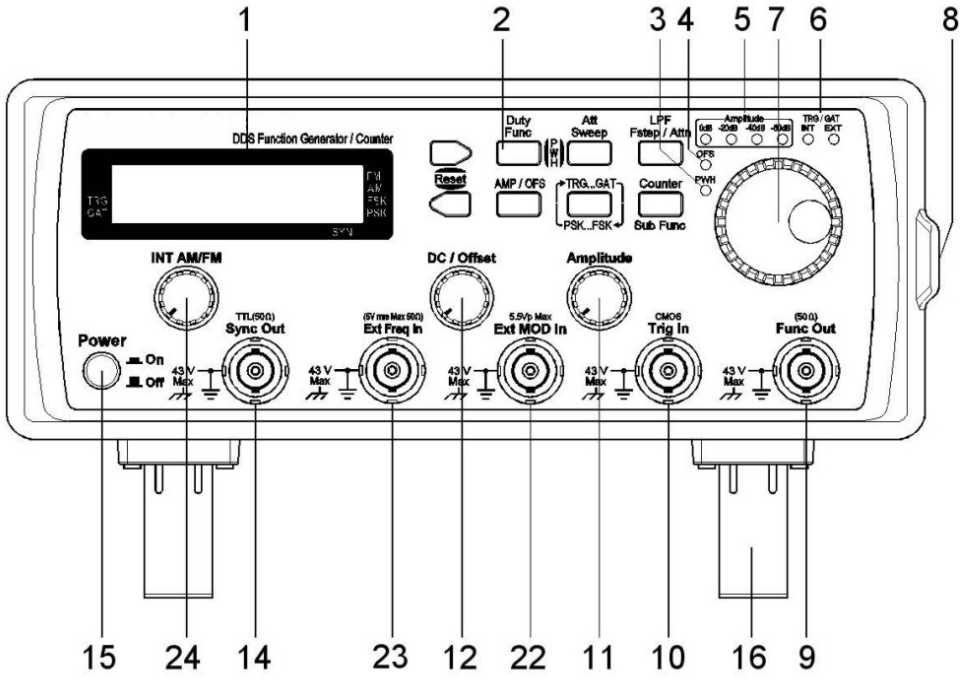
- Direct digital synthesize multi-function generator
- Sine, square, triangle, pulse, DC, synchronize and ramp up/ramp down output (only P 1014 / 1016)
- Ultra low noise and low distortion (down to 1mV peak signal)
- PSK and FSK modulation
- Digital setting of linear or logarithm sweep function
- Trigger and gate function
- AM/FM module (only P 1014 / 1016)
- Frequency counter (only P 1014 / 1016)

1.3 Physical Description

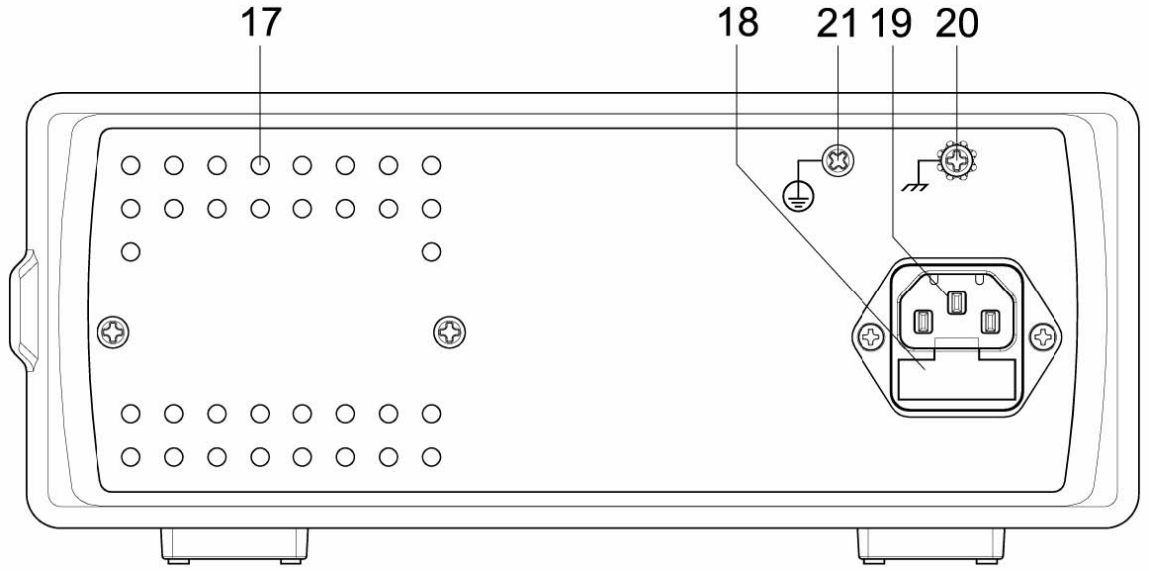
PeakTech® 1007 Front Panel



PeakTech® 1014 / 1016 Front Panel



Rear Panel



1	Liquid Crystal Display
2	Keypad
3	Square Wave Pulse Width Adjustment On/Off Indicator
4	Output Offset On/Off Indicator
5	Output Amplitude Attenuation Range Indicator
6	External/Internal indicator of Trigger/Gate or PSK/FSK
7	Rotary with Push Button
8	Handle
9	Function Output BNC Connector (50Ω output impedance)
10	External input BNC Connector for Trigger/Gate and PSK/FSK (CMOS level)
11	Amplitude Adjustment Knob
12	DC/Offset Adjustment Knob

13	Square Wave Pulse Width Adjustment Knob
14	Sync Output Connector (TTL level with 50Ω output impedance)
15	Power Switch
16	Adjustable Feet
17	Air Ventilation Holes
18	Power-line Fuse Holder
19	Power-line AC Input Socket
20	Chassis Terminal
21	Protective Earth (Ground) Terminal
22	External Modulation Input (5.5Vp Max.) for AM/FM Function
23	External Frequency Input (5Vrms Max. @ 50Ω) for Frequency Counter Function
24	Internal AM/FM Adjustment Knob

1.4 Specification

PeakTech® 1007 Output Characteristics

a.	Frequency Range	Sine, Square, Pulse and Sync Output : Triangle :	 100mHz ~ 8MHz 100mHz ~ 1MHz
b.	Frequency Resolution	100mHz or 6 digits display	
c.	Output Impedance	50Ω ±5%	
d.	Amplitude	1mV to 20Vp-p (open-circuit) 0.5mV to 10Vp-p (into 50Ω load)	
e.	Amplitude Resolution	2~3 digits, 1mV min (depending on the attenuation)	
f.	Amplitude Accuracy	Typical 1% test at 1KHz 9Vp-p sine @ 50Ω load	
g.	Output Attenuation	0, -20, -40 and -60 dB	
h.	FUNC_OUT Self Protection	FUNC_OUT short circuit protection Reverse voltage protection below 20Vpeak	
i.	DC Offset and DC Output	±10V at open-circuit, ±5V at 50Ω load	
j.	DC Output Resolution	2 digits, ±1mV min (depending on the attenuation)	
k.	DC Output Accuracy	1% ±5 counts	
l.	Sine Wave Harmonic Distortion	DC ~ 100KHz < -55dBc typical 100KHz to 1MHz < -45dBc typical 1MHz ~ 8MHz < -35dBc typical	
m.	Spurious (non harmonic)	DC ~ 1MHz < -55dBc typical	
n.	Total Harmonic Distortion	DC ~ 100KHz < 0.3%	
o.	Square Wave	rise / fall time ≤ 12nS for 10Vp-p @ 50Ω load overshoot < 5% of Vp for 10Vp-p @ 50Ω load	

p.	Pulse (analogue control)	Frequency range : Amplitude : Duty cycle :	100mHz ~ 8MHz 0 ~ 10V / 0 ~ -10V / ±10V 100mHz ~ 6MHz : 20% to 80% 6MHz ~ 8MHz : 40 % to 60%
q.	Triangle Wave Linearity	99% up to 100KHz	
r.	Sweep (Linear / Logarithm)	Start frequency, stop frequency and sweep step setting	
		Sweep type :	up, down and up-down
s.	Sync Output	Frequency range : Output level : Output impedance	100mHz ~ 8MHz low level ≤0.6V @ 50Ω high level ≥1V @ 50Ω 50Ω

Modulation Characteristics

a.	FSK	Function Frequency range Internal rate Source	Sine, Square or Triangle 100mHz ~ 8MHz 400Hz / 1000Hz Internal / External
b.	PSK	Function Frequency range Phase setting Internal rate Source	Sine, Square or Triangle 100mHz ~ 8MHz 0.0000 to 360.0 degree 400Hz / 1000Hz Internal / External

Trigger/Gate Characteristics

a.	Trigger	Source Main frequency setting	Manual (rotary push) / External: 100mHz ~ 100KHz
b.	Gate	Source Main frequency setting	Manual (rotary push) / External: 100mHz ~ 8MHz

General Characteristics

a.	Power Source	AC 115V / 230V (on request) ±10%, 50Hz / 60Hz
b.	Temperature	0ºC ~ 40ºC (Operation) -20ºC ~ 70ºC (Storage)
c.	Relative Humidity	up to 80%
d.	Dimension	95mm (H) x 235mm (W) x 280mm(D)
e.	Weight	3kg
f.	Accessories	AC power cord, operating manual

PeakTech® 1014 / 1016 Output Characteristics

a.	Frequency Range	Sine, Square, Pulse and Sync Output : Triangle : Ramp Up, Ramp Down :	100mHz ~ 10MHz (P 1014) 100mHz ~ 20MHz (P 1016) 100mHz ~ 1MHz 100mHz ~ 20KHz
b.	Frequency Resolution	100mHz or 6 digits display	

c.	Output Impedance	50Ω ±5%		
d.	Amplitude	1mV to 20Vp-p (open-circuit) 0.5mV to 10Vp-p (into 50Ω load)		
e.	Amplitude Resolution	3 digits, 1mV min (depending on the attenuation)		
f.	Amplitude Accuracy	Typical 1% test at 1KHz 9Vp-p sine @ 50Ω load		
g.	Output Attenuation	0, -20, -40 and -60 dB		
h.	FUNC_OUT Self Protection	FUNC_OUT short circuit protection Reverse voltage protection below 20Vpeak		
i.	DC Offset and DC Output	±10V at open-circuit, ±5V at 50Ω load		
j.	DC Output Resolution	3 digits, ±1mV min (depending on the attenuation)		
k.	DC Output Accuracy	1% ±5mV		
l.	Sine Wave Harmonic Distortion	DC ~ 100KHz < -55dBc typical 100KHz to 1MHz < -45dBc typical 1MHz ~ **MHz < -35dBc typical		
m.	Spurious (non harmonic)	DC ~ 1MHz < -55dBc typical		
n.	Total Harmonic Distortion	DC ~ 100KHz < 0.3%		
o.	Square Wave	rise / fall time □ 12nS for 10Vp-p @ 50Ω load overshoot < 5% of Vp for 10Vp-p @ 50Ω load		
p.	Pulse (digital control)	Frequency range	200mHz ~ 20KHz 20KHz ~ 200KHz	
		Amplitude	0 ~ 10V / 0 ~ -10V / ±10V	
		Duty cycle	200mHz ~ 20KHz	1uS ~ 4.995S
			20KHz ~ 200KHz	1uS ~ 494.9uS
q.	Triangle Wave Linearity	99% up to 100KHz		
r.	Sweep (Linear / Logarithm)	Start frequency, stop frequency and sweep step setting		
		Sweep type :	up, down and up-down	
s.	Sync Output	Frequency range	100mHz ~ 10MHz (P 1014) 100mHz ~ 20MHz (P 1016)	
		Output level	low level ≤0.6V @ 50Ω high level ≥1V @ 50Ω	
		Output impedance	50Ω	

Modulation Characteristics

a.	AM	Function Modulation ratio Source Internal source External source	Sine or Triangle 0% ~ 100% Internal/External 400Hz/1000Hz Sine Wave Max. 5.5Vpeak any waveform
b.	FM	Function Frequency range Peak deviation Source Internal source External source	Sine, Suqare or Triangle 100mHz ~ 10KHz 4 ~ 5% of Max. frequency Internal/External 400Hz/1000Hz Sine Wave Max. 5.5Vpeak any waveform
c.	FSK	Function Frequency range Internal rate Source	Sine, Square or Triangle 100mHz ~ 10MHz (P 1014) 100mHz ~ 20MHz (P 1016) 400Hz / 1000Hz Internal / External
d.	PSK	Function Frequency range Phase setting Internal rate Source	Sine, Square or Triangle 100mHz ~ 10MHz (P 1014) 100mHz ~ 20MHz (P 1016) 0.0000 to 360.0 degree 400Hz / 1000Hz Internal / External

Trigger/Gate Characteristics

a.	Trigger	Source Main frequency setting	Manual (rotary push) / External 100mHz ~ 100KHz
b.	Gate	Source Main frequency setting	Manual (rotary push) / External 100mHz ~ 10MHz (P 1014) 100mHz ~ 20MHz (P 1016)

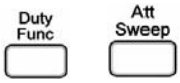
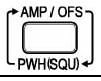
Frequency Counter

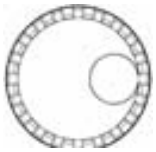
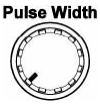
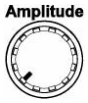
a.	Range	2Hz to 100MHz
b.	Accuracy	±5 counts
c.	Resolution	7 digits or (99.9999)
d.	Low pass filter	Manual activate
e.	Timebase accuracy	50MHz ±25 ppm (23.5 ±5 ˚C) or TCXO optional
f.	Input Attenuation	0dB, 20dB
g.	Sensitivity	2Hz ~ 50MHz/-20dBm @ 50Ω typical 50MHz ~ 80MHz/-10dBm @ 50Ω typical 80MHz ~ 100MHz/-5dBm @ 50Ω typical

General Characteristics

a.	Power Source	AC 115V / 230V (on request) ±10%, 50Hz / 60Hz
b.	Temperature	0ºC ~ 40ºC (Operation); -20ºC ~ 70ºC (Storage)
c.	Relative Humidity	up to 80%
d.	Dimension	95mm (H) x 235mm (W) x 280mm(D)
e.	Weight	3kg
f.	Accessories	AC power cord, operating manual

2. Operation
2.1 Keypad and Knob Description

Key and knob	Function
	Right Key a. Change to the next selection. b. In frequency editing, the frequency will x10 if the cursor is off. c. In frequency editing, the cursor goes to right position if the cursor is on.
	Function Key (P 1007) a. Select the function output of sine, square, triangle or DC.
	Function Key (P 1014 / 1016) a. Select the function output of sine, square, triangle, DC, ramp up or ramp down.
	Sweep Key (P 1007) a. Enter the sweep menu to select and set the linear or logarithm frequency sweep.
	Sweep Key/Counter Attenuation Key (P 1014 / 1016) a. Enter the sweep menu to select and set the linear or logarithm frequency sweep. b. In counter mode, select the attenuator on/off of the external counter input.
	Both Key Pressed Simulteniously (P 1014 / 1016) a. Enter the pulse width duty adjustment of square wave and adjust by rotary.
	Frequency Step/Attenuation Key (P 1007) a. Enter the attenuation menu to change the output attenuation. b. Enter the frequency step menu to select and set the frequency step function.
	Frequency Step/Attenuation Key/Counter LPF Key (P 1014 / 1016) a. Enter the attenuation menu to change the output attenuation. b. Enter the frequency step menu to select and set the frequency step function. c. In counter mode, select the low pass filter on/off.
	Left Key a. Change to the previous selection. b. In frequency editing, the frequency will /10 if the cursor is off. c. In frequency editing, the cursor goes to left position if the cursor is on.
	Amplitude/Offset/Pulse Width Display Key (P 1007) a. Select the display of amplitude, offset and pulse width of square wave.
	Amplitude/Offset Key (P 1014 / 1016) Select the display of amplitude and offset.
	Trigger/Gate and PSK/FSK key a. Enter the trigger/gate menu to select and set the trigger/gate function. b. Enter the PSK/FSK menu to select and set the PSK/FSK function.
	Sub Function Key (P 1007) a. Enter the sub function menu to select and set the sync output, pulse width of square wave and offset function.
	Sub Function/Counter Key (P 1014 / 1016)) a. Enter the sub function menu to select and set the sync output, pulse width of square wave, offset, AM, FM and counter function.

	Rotary with Push button a. Change to the next selection when turning clockwise. b. Change to the previous selection when turning counterclockwise. c. In frequency editing, turn clockwise to increase the frequency setting. d. In frequency editing, turn counterclockwise to decrease the frequency setting. e. When the cursor shows up in frequency editing, press the rotary push button to cancel the cursor. f. In rotary push trigger/gate function, press the rotary push button to generate trigger/gate signal manually.
	Pulse Width Adjustment Knob (P 1007) a. Adjust the pulse width of the square wave.
	DC/Offset Adjustment Knob a. Adjust the DC level if the function output is set to DC. b. Adjust the offset level if the output offset is on.
	Pulse Width Adjustment Knob a. Adjust the amplitude of the function out.
	Internal AM/FM Adjustment Knob (P 1014 / 1016) a. Adjust the internal AM/FM modulation factor output.

2.2 Opening Screen

Connect the power cord and turn on the function generator.

***PeakTech* 1007**

***PeakTech* 1014 / 1016**

a. Press the and together to reset the function generator. This reset function sets the function generator to default of 1kHz sine wave output at 20dB attenuation amplitude.

b. To turn off the beep of the keypad, please press AMP / OFS PWH(SQU) and TRG...GAT PSK...FSK keys together for P 1007.

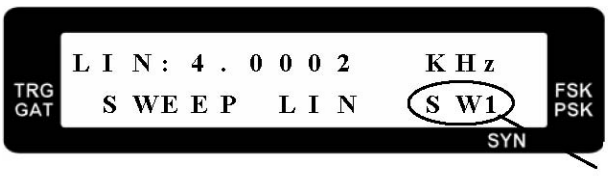
c. To turn off the beep of the keypad, please press AMP / OFS and TRG...GAT PSK...FSK key together for P 1014/1016.

Warning

Please make sure that the correct power rating feeds to the function generator. If the higher voltage (230V) feeds to 115V version of function generator, the chance of damage the function generator may happen and the fuse will blow. Please use the following rating of fuse for replacement.

115V version function generator:	0.5A/250V fuse (slow blow)
230V version function generator:	250mA/250V fuse (slow blow)

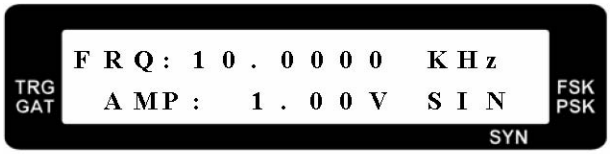
2.3 Setting Group Name

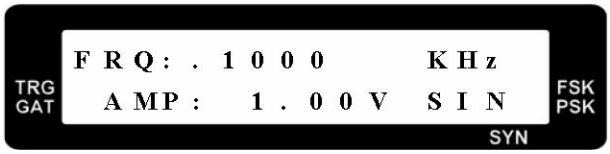


The setting group name is to show which parameter is set currently. For example, SW1 sets the sweep mode of linear or logarithm, SW2 sets the type of sweep and SW3 sets the sweep start frequency, etc.

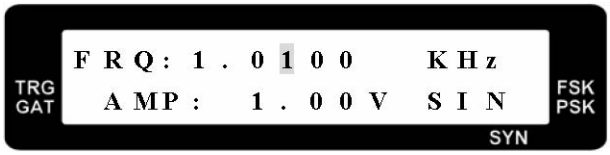
2.4 Adjust Frequency

a. When the cursor does not appear on the LCD, use ▷ and ◁ key to adjust frequency x10 and /10.





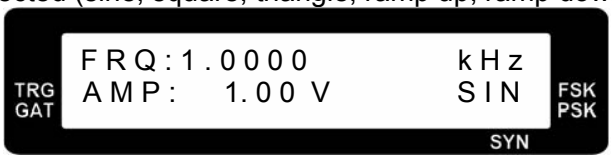
b. Adjust the  to make the cursor appear and to change the frequency, use ▷ or ◁ key to change the cursor position right or left. To cancel the cursor, please press the rotary button.



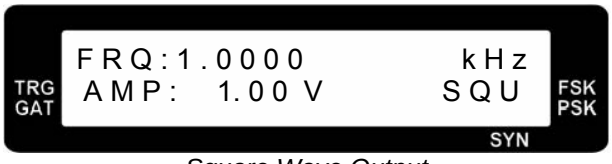
2.5 Select Waveform

a. In PeakTech® 1007, press the Func key to select output waveform. There are four waveforms to be selected (**sine, square, triangle** and **DC**).

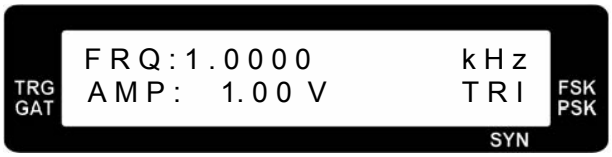
b. In PeakTech® 1014 / 1016, press the Duty Func key to select output waveform. There are six waveforms to be selected (sine, square, triangle, ramp up, ramp down and DC).



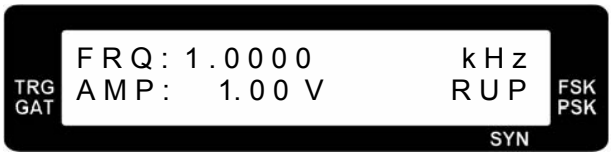
Sine Wave Output



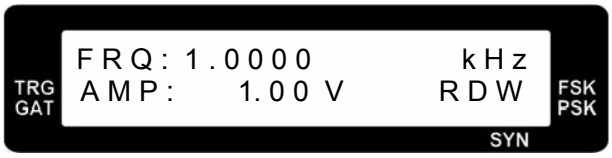
Square Wave Output



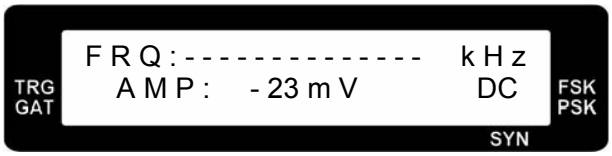
Triangle Wave Output



Ramp Up Output



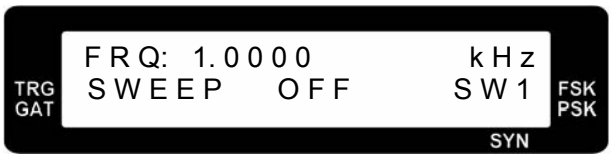
Ramp Down Output



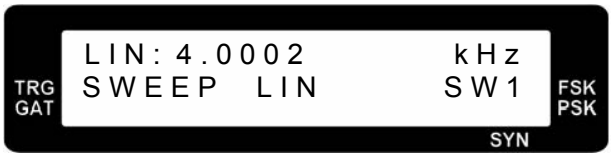
DC Function Output

2.6 Frequency Sweep

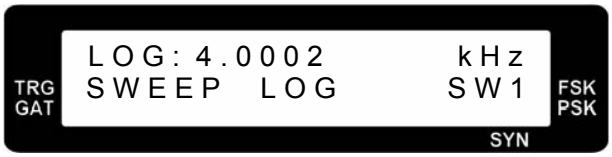
a. Press the Sweep or Att Sweep key to enter the sweep selection menu. Use , key or to select linear or logarithm frequency sweep.



Frequency Sweep Off



Linear Frequency Sweep

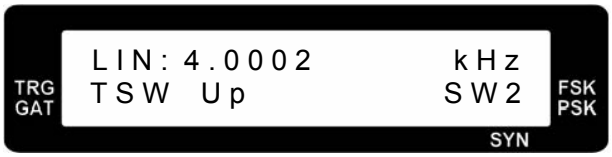


Logarithm Frequency Sweep

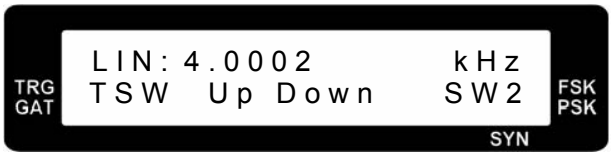
b. When linear or logarithm is selected, press the Sweep or Att Sweep key to select the **type of**

sweep, sweep start frequency, sweep stop frequency and **sweep step frequency or ratio**.

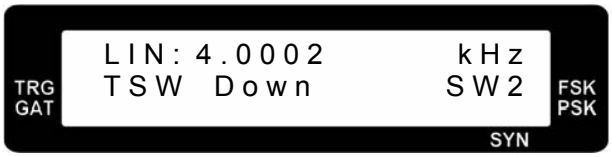
Use the  ,  key or  to select the desired sweep type or frequencies.



Type of Sweep : Up



Type of Sweep : Up/Down



Type of Sweep : Down

Sweep Start Frequency Setting

Sweep Stop Frequency Setting

Linear Sweep Step Frequency Setting

Logarithm Sweep Step Ration Setting

The actual logarithm sweep step ratio is calculated by following equation:

$$\text{Actual Ratio} = \frac{F_{n+1}}{F_n} = 1 + \frac{\text{Setting Ratio Step Sweep Logarithm}}{1000}$$

For Example, if the logarithm sweep step ratio setting is set to 5 and the F_n is 1000Hz, the actual ratio is the following:

$$\text{Actual Ratio} = 1 + \frac{5}{1000} = 1.005$$

The F_{n+1}, F_{n+2} and F_{n+3} are the following:

F_{n+1} = Actual Ratio × F_n = 1.005 ×1000Hz = 1005Hz

F_{n+2} = Actual Ratio × F_{n+1} = 1.005 ×1005Hz = 1010.025Hz

F_{n+3} = Actual Ratio × F_{n+2} = 1.005 ×1010.025Hz = 1015.075125Hz

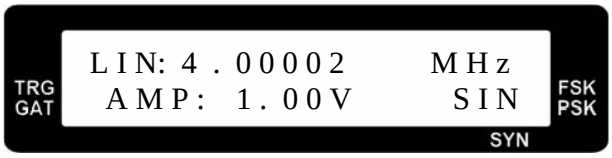
Note : The maximum value of the logarithm sweep step ratio setting is 10.0 and the minimum value of the logarithm sweep step ratio setting is 0.0001.

Linear Sweep Time Setting

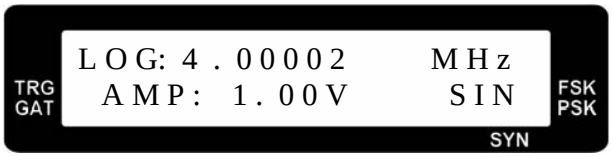
Logarithm Sweep Time Setting

The sweep time sets the delay time between two frequencies step. It is set from 1 to 1000. The higher value will put longer delay of two frequencies step.

c. After finishing the linear or logarithm sweep setting, the , key or can be used to select sine, square, triangle, ramp up or ramp down (P 1014 / 1016) output waveform.



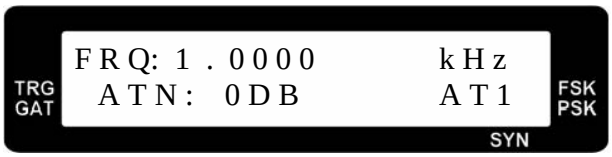
Linear Sweep



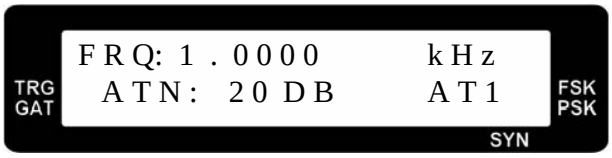
Logarithm Sweep

2.7 Output Attenuation

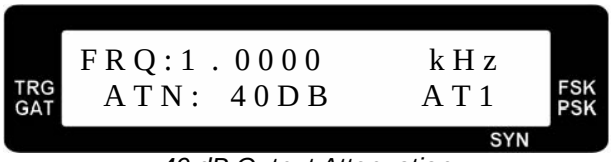
a. Press the Fstep / Attn or LPF Fstep / Attn key once to enter the attenuation select menu. Use the , key or to select the output attenuation of **0, 20, 40**and **60 dB**. The corresponding amplitude indicator will show the current output attenuation setting.



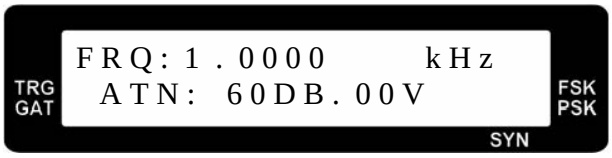
0 dB Output Attenuation



20dB Output attenuation



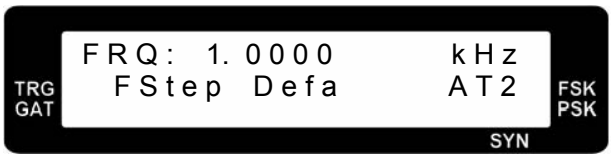
40 dB Output Attenuation



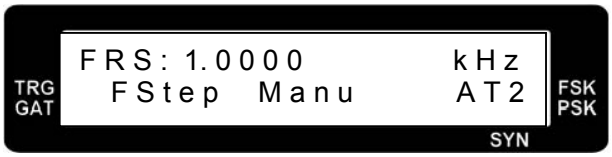
60 dB Output Attenuation

2.8 Rotary Frequency Step Setting

a. Press the Fstep / Attn or LPF Fstep / Attn key twice to enter the frequency step setting menu. Use the , key or to select the **default** or **manual** frequency step of rotary up/down adjustment.



Default Frequency Step



Manual Frequency Step

b. When frequency step sets to manual, press the Fstep / Attn key again to adjust the frequency step setting. Use the , key or to adjust this setting.

Note : Once the frequency step is set to manual, the output frequency can be controlled by the , key or .

2.9 Amplitude, Offset and Square Wave Pulse Width Display

a. At P 1007, press the 

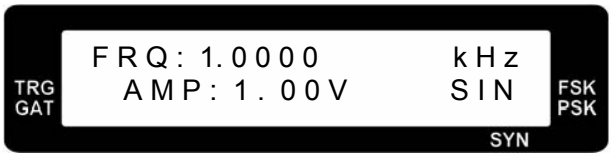
key to show the amplitude, offset and pulse width of the square wave.

b. At P 1014 / 1017, press the 

key to show the amplitude, offset.

c. To adjust the amplitude, please turn the 

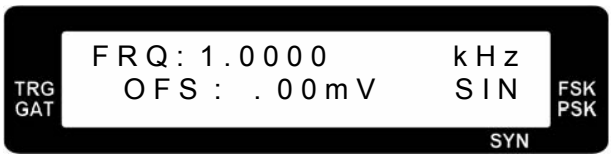
knob.



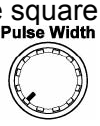
Amplitude Display

d. To adjust the DC offset, please make sure the DC offset is set to on in the sub function menu (SB3). Turn the 

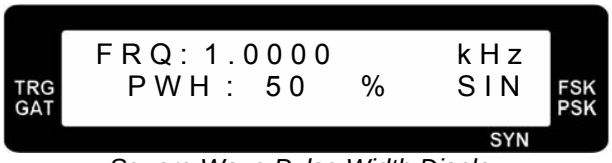
knob to adjust.



Offset Display

e. To adjust the pulse width at P 1007, please select the square waveform first and set the pulse width on in sub function menu (SB2). Turn the 

knob to adjust.



Square Wave Pulse Width Display

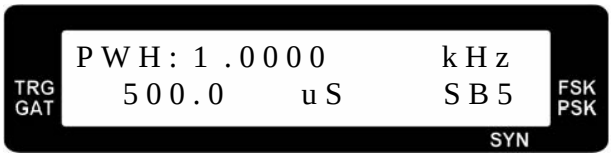
Note : The square wave pulse width display can be seen only if the square wave pulse width adjustment is turned on in sub function.

f. The pulse width display value will show below or over if the pulse width is under or above the following values at P 1007:

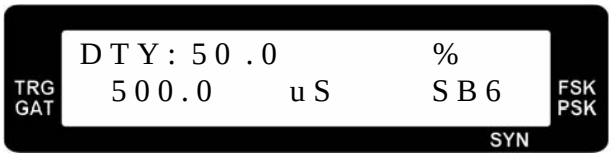
Frequency Range / Display Shows	0.1Hz ~ 5.99999MHz	6.00000MHz ~ 8.00000MHz
BELOW	< 18%	< 34%
OVER	> 81%	> 75%

g. To adjust the pulse width at P 1014 / 1016, please select the square wave first and set the pulse width on in the sub function menu (SB4). Press the Counter / Sub Func key to select SB5 menu to set the pulse width frequency. Use the , key or to set the frequency. Then, press the Counter / Sub Func key the select SB6 menu for the pulse width duty setting. Also, use the , key or to set the duty.

h. To quickly enter the pulse width duty setting, please press the Duty Func and Att Sweep key simultaneously.



Pulse Width Frequency Setting



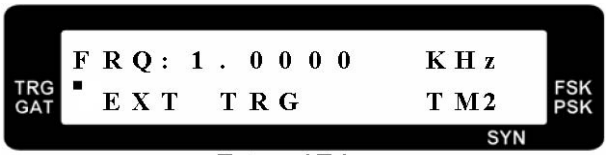
Pulse Width Duty Setting

2.10 Trigger/Gate

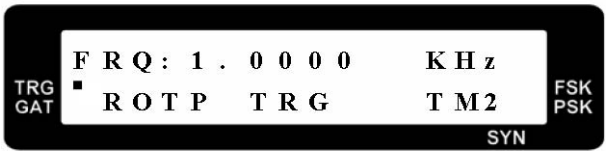
a. Press the TRG...GAT / PSK...FSK key to enter the trigger / gate selection menu.

b. Use the , key or to select **external trigger, rotary push trigger, external gate** and **rotary push gate**. The corresponding internal or external indicator will show up.

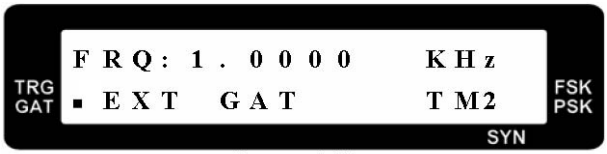
Trigger / Gate Off



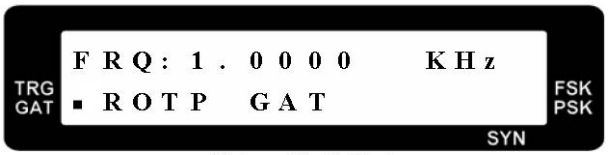
External Trigger



Rotary Push Trigger



External Gate



Rotary Push Gate

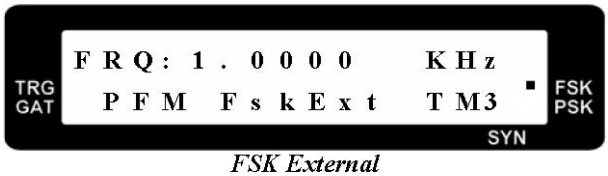
2.11 Phase-Shift Keying (PSK) and Frequency-Shift Keying (FSK) Modulation

a. Press the 

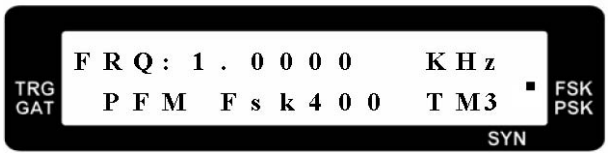
key twice to enter the PSK/FSK modulation selection menu.

b. Use the  ,  key or  to select **PSK 1KHz, PSK 400Hz, PSK external, FSK 1KHz, FSK 400Hz** and **FSK external**. The corresponding internal or external indicator will show up.

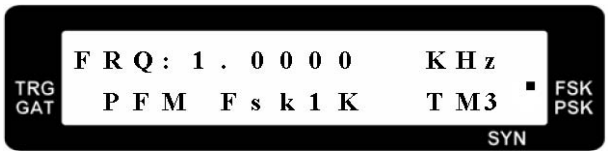
PSK / FSK Off



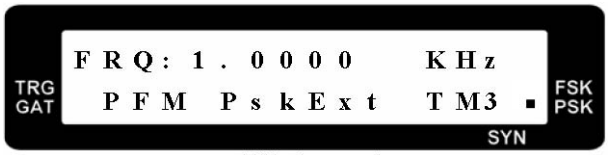
FSK External



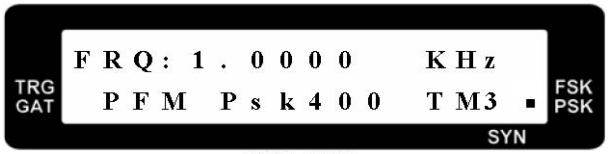
FSK 400Hz



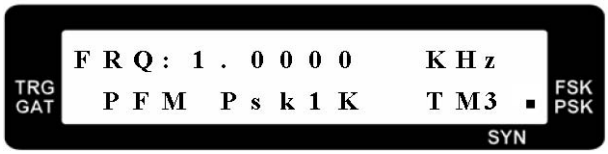
FSK 1KHz



PSK External



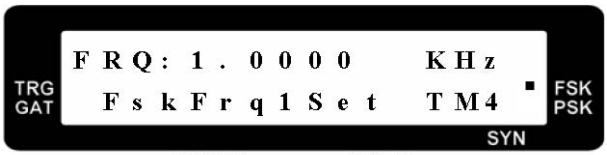
PSK 400Hz



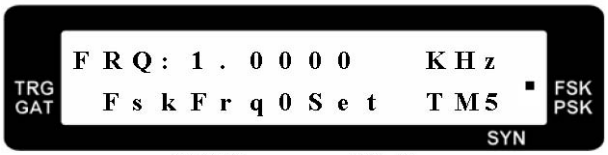
PSK 1KHz

c. If FSK turns on, press the 

key to enter the FSK frequency register 1 and frequency register 0 setting menu. Use the  ,  key or  to set the desired FSK frequencies.



FSK Frequency 1 Setting

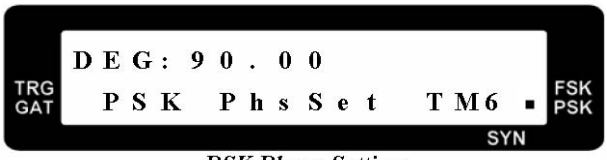


FSK Frequency 0 Setting

Note : The FSK frequency register 1 setting range is from 12.0Hz to maximum output frequency of the function generator or 12.000MHz. The FSK frequency register 0 setting range is from 0.100Hz to maximum output frequency of the function generator or 12.0000MHz.

d. If PSK turns on, press the TRG...GAT / PSK...FSK key to enter the PSK phase setting menu.

Use the , key or to set the desired PSK phase.



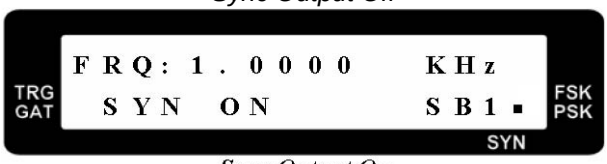
PSK Phase Setting

2.12 Sub Function

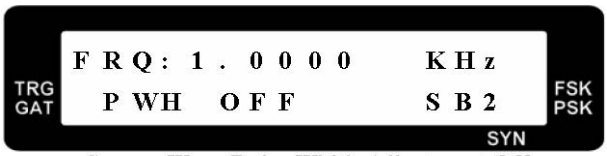
a. At P 1007, press the Sub Func key to select **sync output on/off, square wave pulse width adjustement on/off** and **output offset on/off.**

Use the , key or to select the desired on/off setting.

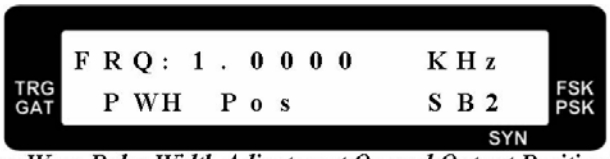
Sync Output Off



Sync Output On



Square Wave Pulse Width Adjustment Off

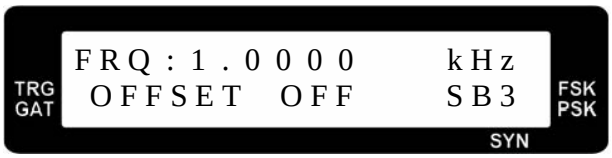


Square Wave Pulse Width Adjustment On and Output Positive Pulse

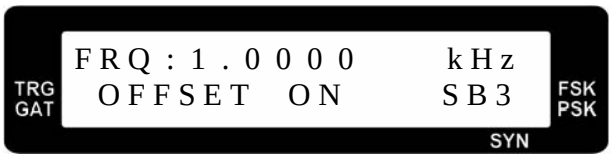
Square Wave Pulse Width Adjustment On and Output Negative Pulse

Square Wave Pulse Width Adjustment On and Output Positive and Negative Pulse

Note : The square wave pulse width adjustment on/off selection will show up in the sub function only if the output select to square wave. If the pulse width adjustment is on, the pulse width indicator will show up.



Output Offset Off

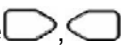


Output Offset On

Note: If the output offset is on, the offset indicator will show up.

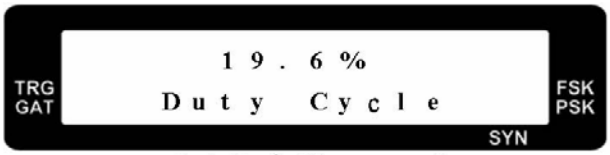
b. At P 1014 / 1016, press 

key to select **counter display and setting, sync output on/off, output offset on/off, AM on/off, square wave pulse width adjustment on/off, pulse width frequency setting, pulse width duty setting and FM on/off.**

Use the  key or  to select the desired on/off setting.

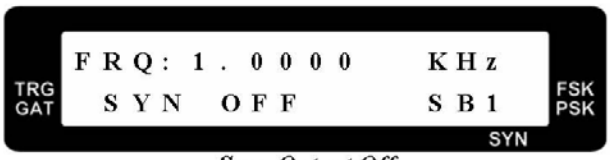
Counter Display and Attenuator / LPF Setting

Note : Use the Att Sweep *key to set the attenuator on/off (+/-). Use the* LPF Fstep / Attn *key to set the low pass filter on/off (+/-).*

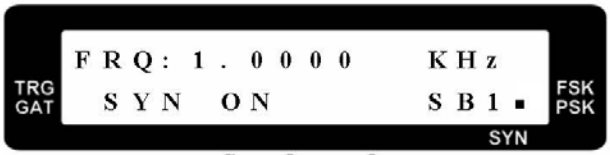


Duty Cycle Measurement

Note : Use the Duty Func *key measure the duty cycle of the external input signal.*



Sync Output Off

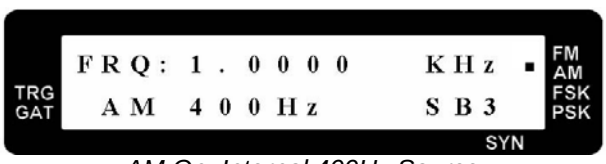


Sync Output On

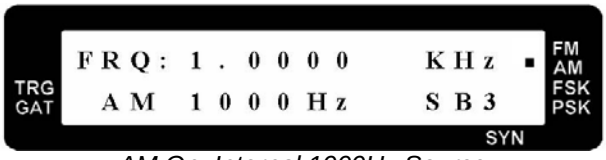
Output Offset Off

Output Offset On

AM Off



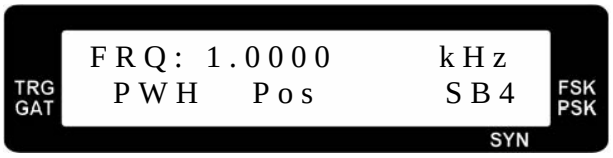
AM On, Internal 400Hz Source



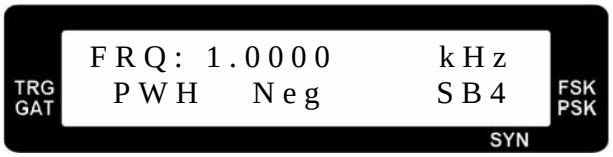
AM On, Internal 1000Hz Source

AM On, External Source

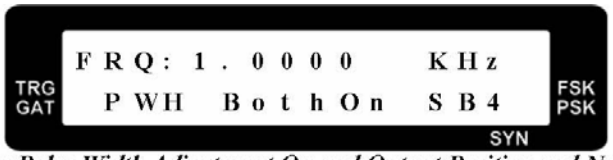
Square Wave Pulse Width Adjustment Off



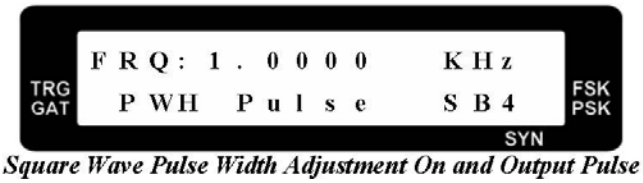
Square Wave Pulse Width Adjustment On and Output Positive Pulse



Square Wave Pulse Width Adjustment On and Output Negative Pulse

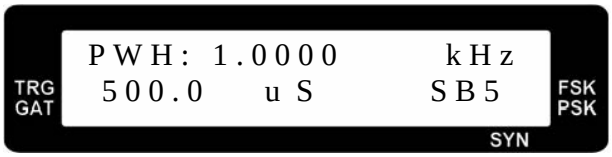


Square Wave Pulse Width Adjustment On and Output Positive and Negative Pulse

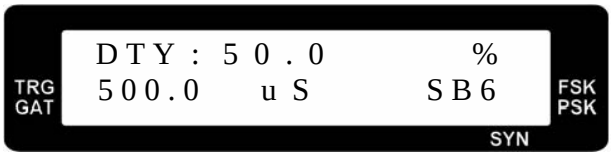


Square Wave Pulse Width Adjustment On and Output Pulse

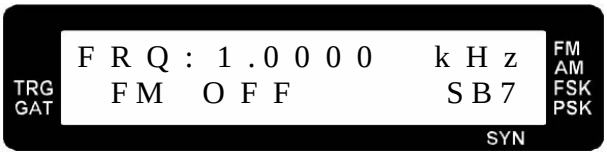
Note : The square wave pulse width adjustment on/off selection will show up in the sub function only if the output select to square wave. If the pulse width adjustment is on, the pulse width indicator will show up.



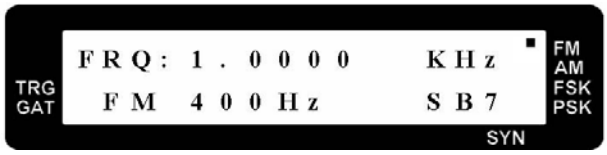
Pulse Width Frequency Setting



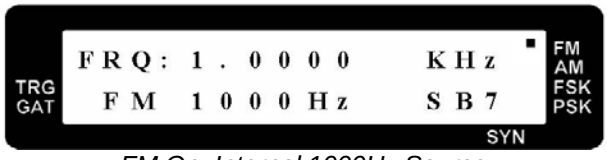
Pulse Width Duty Setting



FM Off



FM On, Internal 400Hz Source



FM On, Internal 1000Hz Source

FM On, External Source

2.13 Notice of Operating

a. For Waveform Measurement :

- The PeakTech® 1007 / 1014 / 1016 Func Out output impedance is 50Ω, so the oscilloscope input impedance must be matched to 50Ω. Use the coaxial cable for characteristic impedance 50Ω in connecting with PeakTech® 1007 / 1014 / 1016 Func Out and oscilloscope input terminal.
- Minimizing the cable length and cable stray capacitance is very important for the best performance.
- Because the function generator output is a wideband signal, every connecting path including the transmitter or receiver, must be impedance matched to 50Ω, in order to avoid the reflection from load and the undesired testing results.

b. Output Voltage Definition :

- For PeakTech® 1007 / 1014 / 1016 output impedance is 50Ω, if the load is greater enough than 50Ω, it will result in the load voltage drop equal to the open circuit of the function generator output, approximately. If the load is 50Ω, the load voltage drop is equal to one half of the open circuit of the function generator output voltage.

c. For Small Signal Output :

- For small signal output, it is suggested to add the attenuator, for example: -20 dB, to the function generator output, and adjust the desired output level. This is the method for getting the best signal / noise ratio.

d. For Large Signal Output :

- In general, the function generator output is 20Vp-p in open circuit, and the output current is limited to less than 100mA. For high voltage and high current output in special applications, the external power amplifier is needed.