1. Characters

Strongly steady electro-circuit.

Digital display about frequency &operate conveniently.

6-phases from 0.2Hz-2MHz

Output for empty carry arrive at 5V,600Ω carried will be higher than 2V(sine wave).

Output voltage balance may be adjusted by 2 groups of attenuator every 20dB and 40dB, total 60dB or potentiometer in continuity.

Sine wave of square wave may be chosen to output.

2. Electric appliance nature

1) Frequency range

X1 shift: 0.2Hz-20Hz

X10 shift: 2Hz-200Hz

X100 shift: 20Hz-2KHz

X1K shift: 200Hz-20KHz

X10K shift: 2KHz-200KHz

X100K shift: 20KHz-2MHz

2) Sine wave nature

Output voltage: 5V

Distortion ratio: <0.1% 400Hz-200KHz

<0.5% 50Hz-500KHz

Evenness output:±1.5 decibels (about equal to 1KHz)

3) Square wave nature

Output voltage: > 10V (highest point)

Rising time: <0.25 microseconds (within 200KHz)

Empty occupied ratio: 50%±5% (from 1KHz to 200KHz

4) The nature of output pole

Output impedance :600Ω±10%

Attenuator:-20dB,-40dB and in 60dB series

5) Power wastage

Input voltage: Alternating current 110V or 220V for choice

Power wastage: about 10 watts

6) The size of the outer shell

270mm*225mm*90mm

7) Fittings

Power supply wire: 1 piece

Testing nip: 1 piece

User manual: 1 book

3.Electro-circuit description

1) please read the following written description according to drawing (1)

A. Sine wave message caused by the appliance depends on output wave shape be set

B. The output message will be regulated by te buffer of the machine at first and regulated attenuator has 0-60dB setting range on the 60Ω impedance.

C. Wen family bridge adapted on the main body of the shaking & burning appliance,set the phases used for regulated electric capacity. The buttons set on the board may change frequency within the range.

D. Amortized amplifier is a wo phase direct current amplifier, offer the output pole about low impedance.

E. Because of using non-linearity hearing resistance on minus direction for turning wheel, our machine can do the sine wave shape steadily in no time with the lowest distortion.

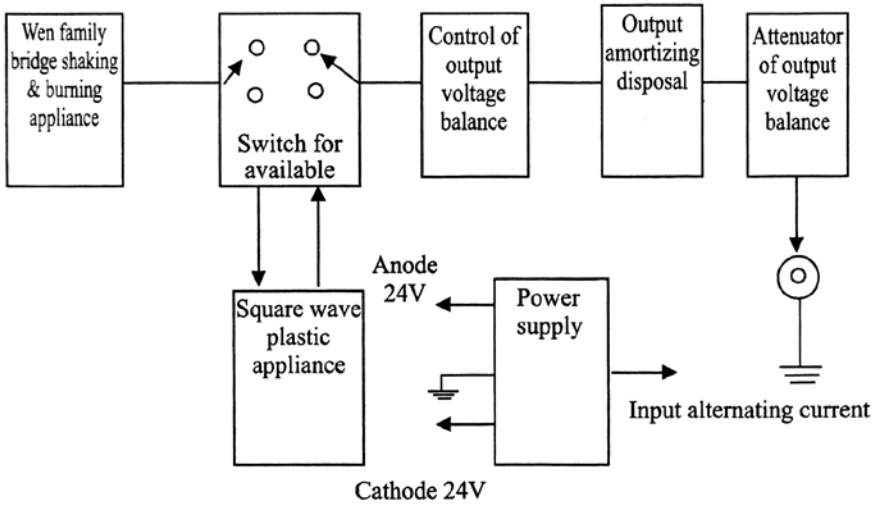
F. Adapt Smith Special integer circuit on square wave integer appliance and high speed rising and descending square wave will be produced.

G. Output pole is push-pull direct current amplifier and can offer low impedance output circuit within DC-1KHz

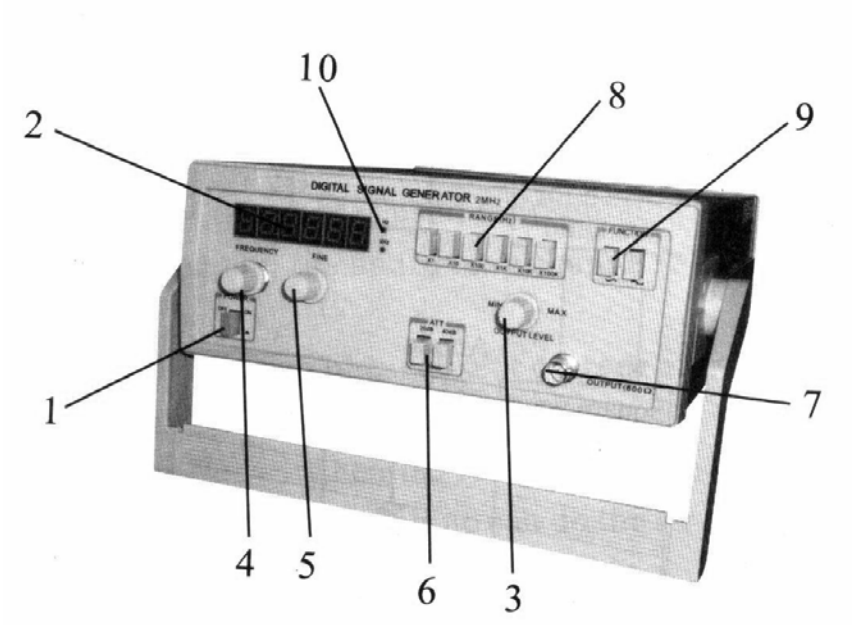
H. Output voltage balance may be adjusted by 2 absolute attenuator every 20dB and 40dB or in 60dB series on 600Ω loads

I. The machine offer ±24V for power supply for choosing alternating current 110V or 220V.because of adapting steady voltage, it can offer steady output within setting range in spite of alternating current unsteady.

4. Operation theory indicated charts



5. Front panel



1. Power switch

   Press the button is on and off at the opposite of operation

2. Frequency display

   Display input frequency

3. Output voltage balance adjustment

   The button may be adjusted with continuity

4. Circumrotate button

   Choose the frequency what you need

5. Frequency accurate adjusted

Using for applying the more accurate frequency

6. Attenuator

20decibel,40 decibel and 60 decibel in series for chose

7. Output ending

Output the setting message from it

8. Frequency range setting

May preset 6 phases

X1 shift: 0.2Hz-20Hz

X10 shift: 2Hz-200Hz

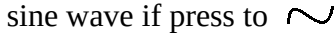
X100 shift: 20Hz-2KHz

X1K shift: 200Hz-20KHz

X10K shift: 2KHz-200KHz

X100K shift: 20KHz-2MHz

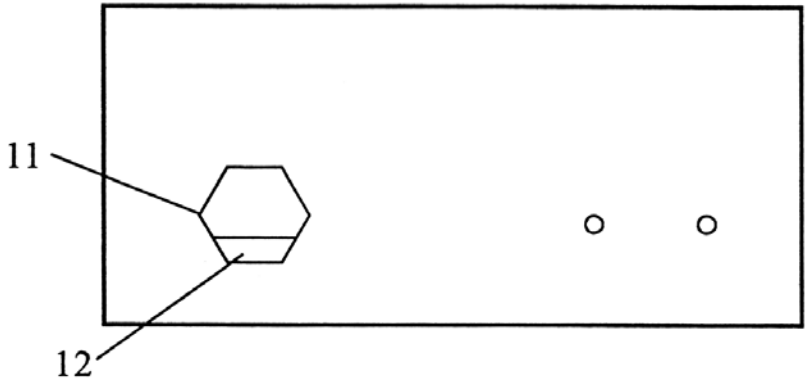
9. Output wave for choice

The machine will display the sine wave if press to 

The machine will display the square wave if press to 

10. The unit of the frequency (Hz and KHz)

6. Back panel



11. Power source of input alternating current

12. Fuse seat

7. Operation indication

1) Turn on the machine

Please confirm whether the voltage setting (11) is right or not before turning on the machine. After checking press(1), frequency display(2) will be on shine and display the correct message for output. It shows that the machine is starting working. Please wait for 3 minutes and make the machine steady and can be put into use.

2) Wave for choice

Output the sine wave if press (9) on the ∼ shift and output the square wave if press on the ⎍ shift.

3) Frequency phase for choice

Press(8) of the buttons and rotate to (4) or (5) according to what your need, the display reading can be shown on(2)

4) Output voltage balance adjustment

The output voltage balance may be adjusted continually by (3), also may be adjusted by maxed (6) of 60dB. The message can be output by socket (7).

8. Using in workshop

1) Sine wave shaking and burning appliance

There are some characters as the message source of the sine wave aas follows:

1.1May test the distortion because of it has low distortion message

1.2May test the frequency width of the amplifier

1.3May test the amplifier maxed adding with the accurate attenuator

1.4 May be regarded as message source about the impedance test the electric bridge

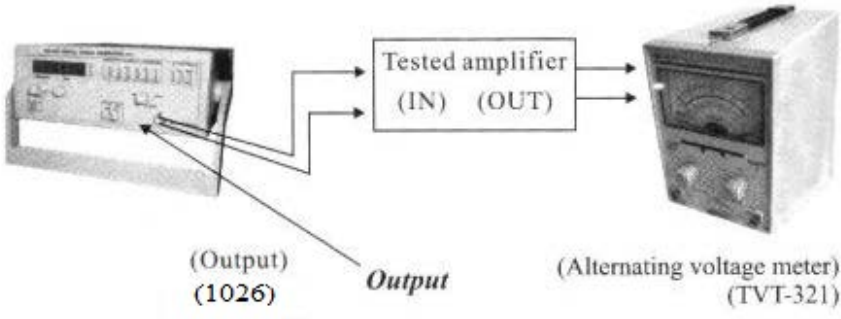
2)Testing the maxed adding about the amplifier

One example of testing the maxed adding about the amplifier:

Connect the machine according to drawing 4 with the tested amplifier, alternating current &voltage meter.

2.1 Adjust the attenuator (6) and the button (3) and find the reading of IV on the alternating voltage meter of the amplifier. Set the output voltage balance stated form 20dB.

2.2 Use another alternating voltage meter to measure the voltage of the input end on the amplifier and calculate the adding amounts.



Drawing 4

Phasic movement testing nature

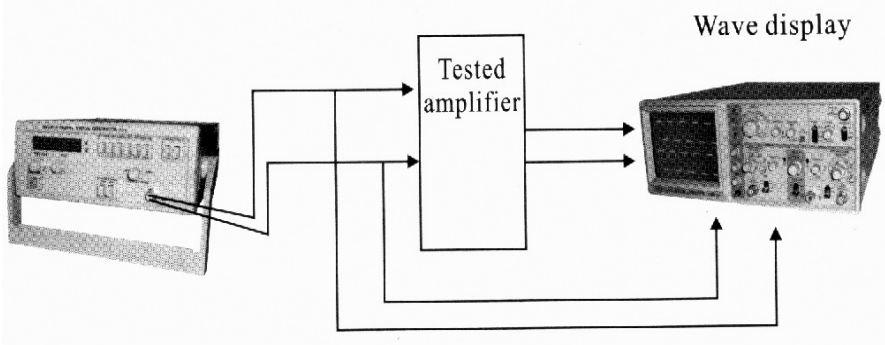
3) Connect this machine into the tested amplifier and wave show appliance according to drawing 5. The wave display will show one beeline like drawing 5A if the message of the amplifier has

not be shown like drawing 5B, display that the message may be distortion. Please decrease output voltage balance to change frequency. Then the beeline change to ellipse shape. You can calculate the phasic float about the amplifier.

Formula: Sin θ =x/X

At first measure the maxed level turning and called"X", the distance between level line and the right ending of the ellipse is called"x"(indicated by drawing 6). Then phase shift angle can be calculated.

Look up the phase shift angle according to the triangle function charts.

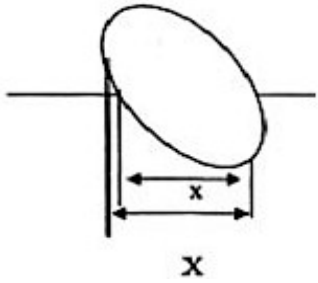


Drawing 5

Graphs shown by wave display appliance					
Angle	0	45	90	135	180
		315	270	225	

Drawing 6

$\sin\theta = x/X$ ***Check of Phase Shift Angle***



4) Message source of square wave

The appliance is of good character of rising and descending as the message source of square wave. The appliance has only 5% drop possibility when the top end is below 50Hz because it has not attached the electric capacity. Various characters will show on the display wave appliance if add to amplifier. Part of procedures will be introduced in subentry.

4.1 please put together according to drawing 7

4.2 press (9) to ⎍, the appliance can be output the square wave frequency

4.3 please change frequency according to you need. Please see the chart 8 if you need have a good idea about output waves and amplifier natures.

(Drawing 7)

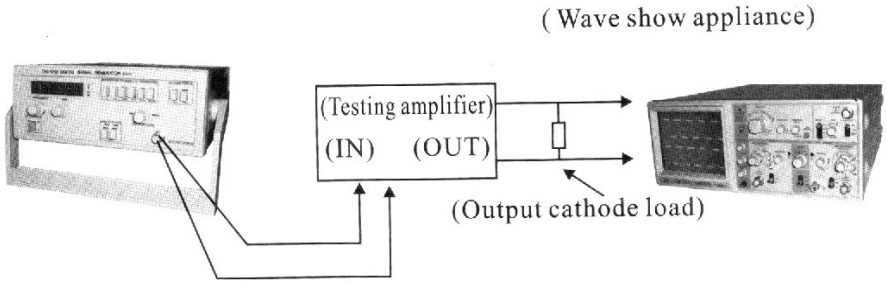


Chart 8

Output waves	Amplifier shown characters	
	Frequency of amplifier is even, the evenness may arrive at 10 times of input frequency	
	Begin declining when the evenness arrive at 10 times of input frequency	
	Decline happened below 10 time of input frequency	
	Arrive at high point is just at the 10 times of input frequency	