



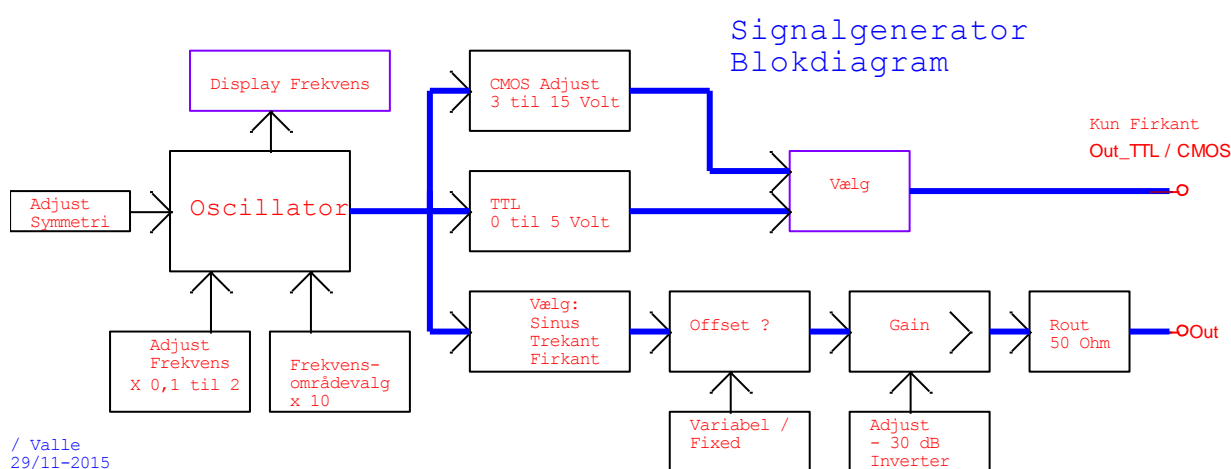
Dette dokument dækker flere typer funktionsgenerator

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Oscillator blokdiagram



I el-lokalet har vi flere forskellige signalgeneratorer. Desværre ikke ens typer. Nogle har frekvensdisplay, andre ikke. Men de har alle flere fælles funktioner.

De kan generere frekvenser, fra få Hz til flere MHz.

Og signalerne kan justeres eller vælges til at være enten sinus-trekant eller firkant. Justerbart dutycycle.

Valg af grundfrekvensområde + variabel.

Flere signaludgange.

TTL = 5 Volt Firkant.

CMOS er 3 til 15 Volt justerbar, firkant

Udgang, der kan vise Sinus, trekant osv.

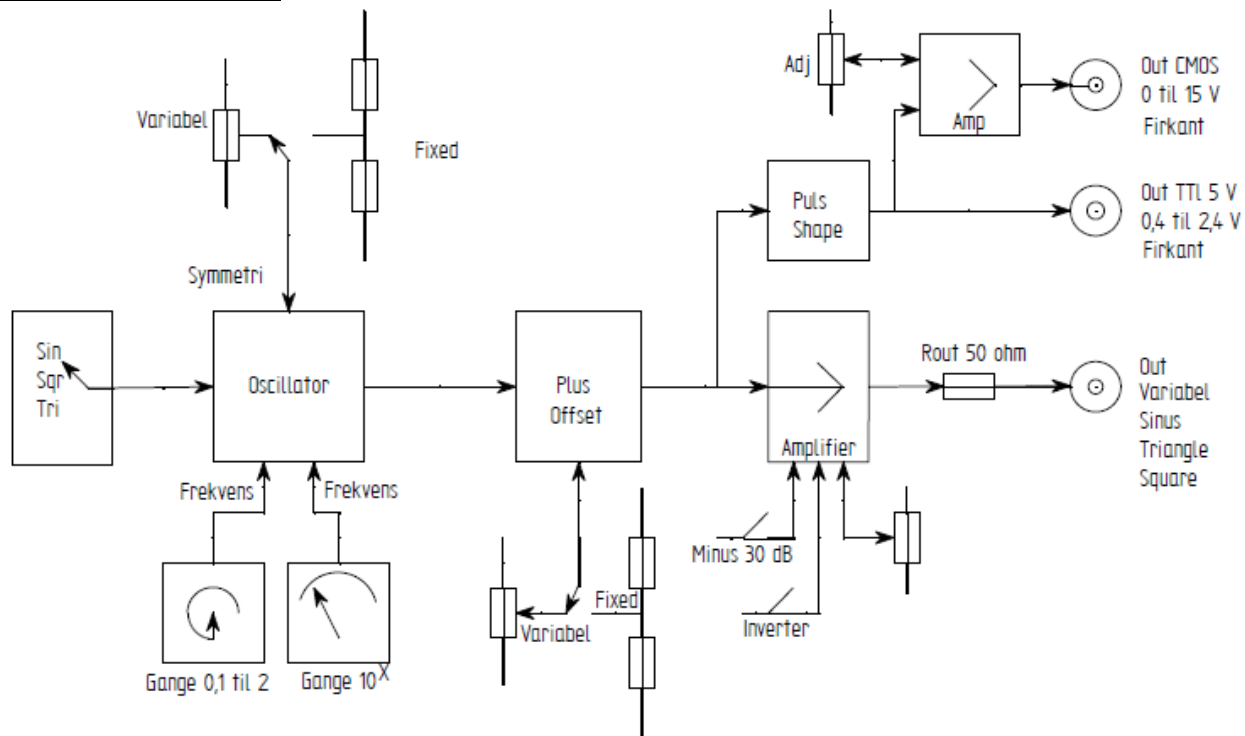
Variabel udgangsspænding, og offset.



Husk altid koble signalet via et T-stykke til et Scoop og derefter videre til kredsløbet.,

Yderligere har vore Wavetek FG3B mulighed for at måle og vise eksterne frekvenser.

Typisk Blokdiagram:



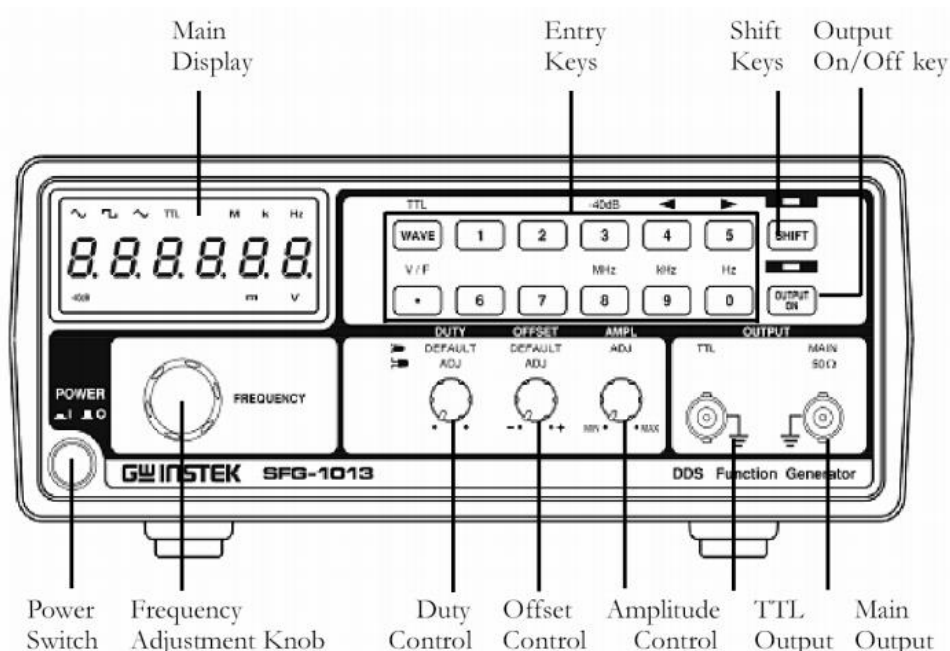
Principdiagram for Oscillator
Valle, nov 2005

Funktionsgenerator Instek SFG-1013



Se Manual: <http://www.mantech.co.za/datasheets/products/SFG-1013%5E1.pdf>

Knappernes funktion:



Ved Start:

Generatoren giver default Sinus, 1,0000 Khz.

Med [Wave] kan man skifte mellem Sinus, Firkant og Trekant.

Frekvensen kan justeres med drejeknappen. Juster Amplitude, og evt. Dutycycle og Offset.

Amplituden kan justeres mellem 2mVpp og 10Vpp ved 50 Ohms belastning.

DutyCycle kan justeres mellem 25% og 75%.

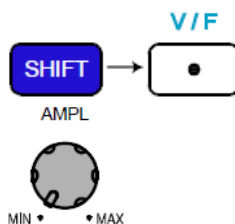
Offset kan justeres -5V til +5V. ved 50 ohms belastning. N(-10V til +10 V uden belastning)

Amplitudevisning



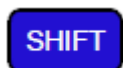
Indstil displayet til Amplitudevisning med

Juster signal-amplituden med (AMPL ADJ)



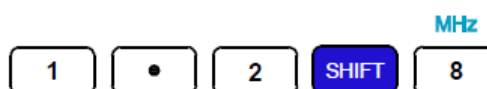
Indstil fast frekvens via keyboard.

Indtast ønsket frekvens



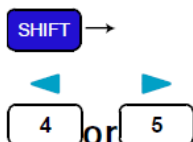
+ [MHz], [KHz] eller [Hz]

Eks: Indstil 1,2 MHz



Edit frekvens-ciffer

Vælg ciffer med



Cifferet blinker, og kan justeres med stor drejeknap.

Output On

For at aktivere output – tryk

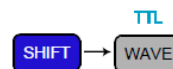


TTL-output

Aktiver først output med



Derefter TTL-output.

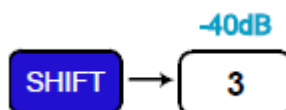


I displayet vises TTL.

Udgangsspænding er $\geq 3V_{pp}$.

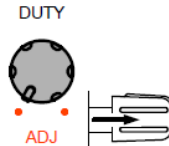
Dæmp 40 dB

[Shift] + [-40dB]





Dutycycle



Offset



Wavetek FG3B



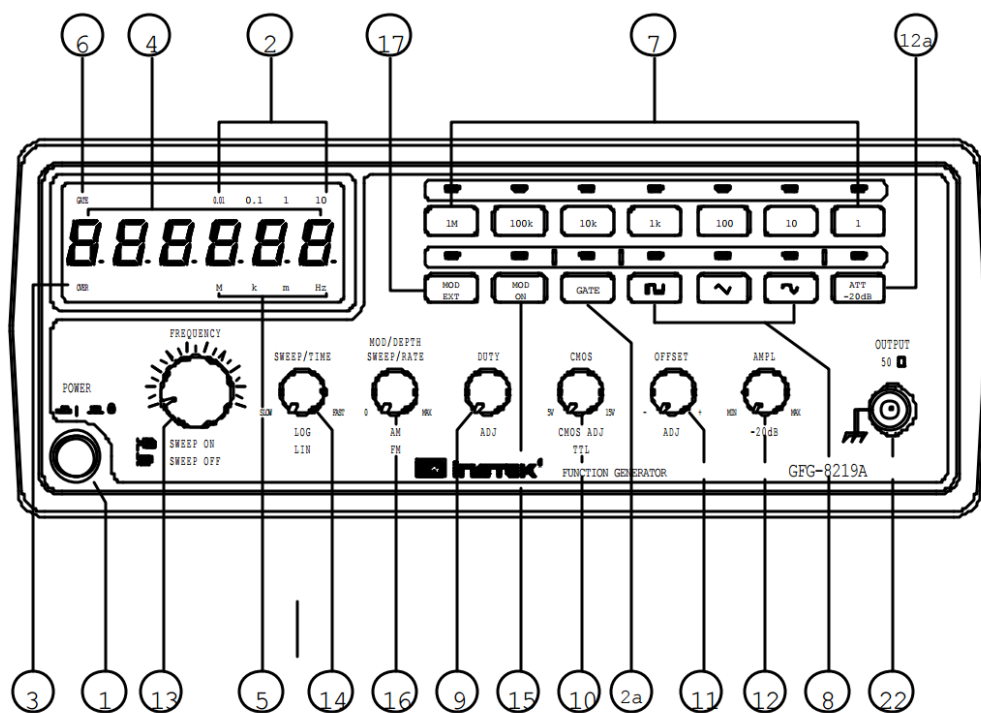
<http://www.engga.uwo.ca/people/adounavis/courses/ece238a/labs/lab2.pdf>

<http://sp.prime-electronics.com.au/DATASHEETS/data/Wavetek/Wavetek%20FG3B%20Function%20Generator.pdf>

GWInstek GFG-8216A



Se: <http://faculty.olin.edu/jmurmiranda/adcf05%5CGFG-8200UM.pdf>



De vigtigste funktioner: (15 og 17 er ikke med på vores model)



FUNCTION GENERATOR-SERIES
INSTRUCTION MANUAL

4. FUNCTION DESCRIPTION

1. Power Switch Connect the AC power, then press power switch.
2. Gate Time Indicator Press the power switch, Gate time indicator will start to flash (the gate time of internal counter is 0.01 second).
- 2a. Gate Time Selector Press this key to change gate time when use external counter mode. The change order is according to 0.01s, 0.1s, 1s,10s cycle by pressing these keys.
3. Over Indicator In the external counter mode, the indicator is illuminated when the output frequency is greater than the range selected.
4. Counter Display Shows the external frequency by $6 \times 0.3''$ green display, and shows the internal frequency by 5×0.3 green display.
5. Frequency Indicator Indicate the current frequency value.
6. Gate Time Indicator Indicate the current Gate time (external. counter mode use only).
7. Frequency Range Selector To select the required frequency range by pressing the relevant push button on the panel as shown in Table 1 and Table 2.
8. Function Selector Press one of the three push buttons to select the desired output waveform.
9. Duty Function Pull out and rotate the knob to adjust the duty cycle of the waveform.
10. TTL/CMOS Selector When push in the knob, the BNC terminal of $\text{\textcircled{20}}$ will output a TTL compatible waveform. If pull out and rotate the knob can adjust the CMOS compatible output (5-15Vpp) from the output of BNC $\text{\textcircled{20}}$.
11. DC Offset Control Pull out the knob to select any DC level of the waveform between $\pm 10V$, turn clockwise to set a positive DC level waveform and invert for a negative DC level waveform.
12. Output Amplitude Control with Attenuation Operation Turn clockwise for MAX. output and invert for a -20dB output. Pull the knob out for an additional 20dB output attenuation.



FUNCTION GENERATOR-SERIES
INSTRUCTION MANUAL

- 12a. 20dB Attenuation Press the knob to adjust a -20dB output.
- 13 MANU/SWEEP Selector and Frequency Adjustment (Sweep On/Off) Press and turn clockwise the knob for MAX frequency and invert for MIN frequency. (Keep the pointer within the scale range on the panel.) Pull out the knob to start the auto sweep operation; the upper frequency limit is determined by the knob position.
- 14 Sweep Time Control and LIN/LOG Selector (1) Rotate the knob clockwise to adjust sweep time for MAX, or invert for MIN. (2) To proceed Linear sweep mode by pushing in the knob, or select LOG sweep mode by pulling out the knob.
15. Control MOD ON/OFF Selector Pull out the knob, the output can be modulated by internal 400Hz Sine wave or an external signal via CVF/MOD in connector ⑳.
16. Sweep Width & Modulation Carrier & AM/FM Selector & FM Selector (1) Sweep width can be controlled from 0 to 1000times. (2) To adjust modulation ratio by turning the knob clockwise for MAX, or invert for MIN. (3) Press the knob to get AM function or pull it out for FM function.
- 17 INT/EXT MOD Selector When press the button once, the indicator will lighten, then the EXT MOD has been selected. Press the key again, the indicator will be off, then INT MOD has been selected.
18. INT/EXT Counter Selector Select internal counter mode (count the frequency of model) or select EXT counter mode for an independent counter (input signal from BNC ⑲).

Kilde: <http://www.testequipmentdepot.com/instek/pdf/GFG-8200UM.pdf>