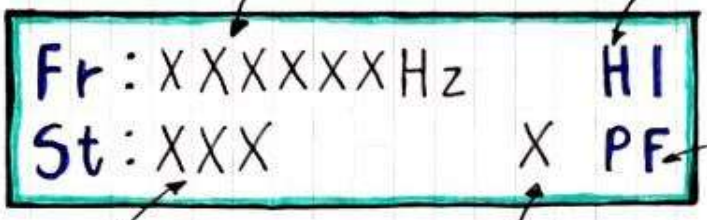
SUPER SQUARE WAVES GENERATOR

10/2024

INDICATIONS ON THE DISPLAY + USAGE OF INTERFACE

- SWITCH2 = toggle between operational settings (NCO → PWM → Servo)

NCO - NUMERICALLY CONTROLLED OSCILLATOR



Actual frequency output

Selected Oscillator
- HI: HFINTOSC (Ø ÷ 16MHz)
- LO: MFINTOSC (Ø ÷ 31'250Hz) (Ø ÷ 15625 in LO)

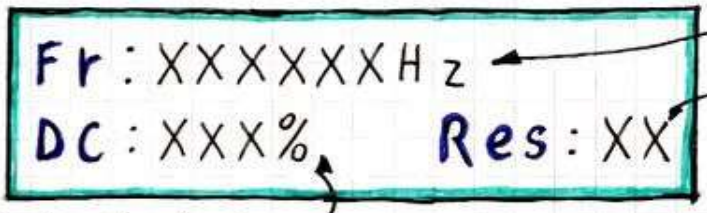
Mode:
FD = Fixed (50%) Duty cycle
PF = Pulse Frequency (slightly variable duty)

Increment/Decrement per Encoder rotation (Steps)

Value visible only in PF mode: it's the N1PWS value from NCO1CLK register: Output pulse Width

- ENCODER ROTATION: Sets the output frequency
- ENCODER PUSH: Switch between frequency steps
- POTENTIOMETER: Change duty cycle in PF mode
- SWITCH0: Toggle between Oscillator (HI/LO)
- SWITCH1: Toggle between Mode (FD/PF)

PWM - PULSE WIDTH MODULATION



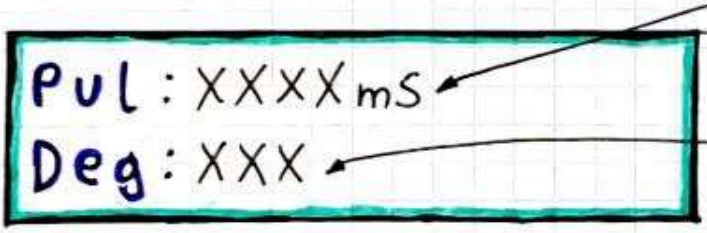
Actual frequency outputs

Number of bits of duty resolution available for the selected frequency

Duty Cycle Percent (calculated on the high pulse)

- ENCODER ROTATION: Set the outputs frequency
- POTENTIOMETER: Change duty cycle

SERVO CHECK



Duration of high-level pulse (1500ms → servo at center position)

Supposed angle servo could move at selected pulse value

- ENCODER ROTATION: Set pulse value/degrees
- ENCODER PUSH: Set pulse at 1500 mS → Servo at center
- SWITCH0: Set pulse at 600mS
- SWITCH1: Set pulse at 2400mS

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