

H1 Squeezer Beam/Loop Diagram

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Signals


$$\begin{aligned}
 S_0 &\propto \phi(f_{\text{PSL}}, f_{\text{Main}}) \\
 S_1 &\propto \phi(f_{\text{Main}}, f_{\text{Aux}}) \\
 S_2 &\propto \phi(2\phi_{\text{Sqz}}) \\
 S_3 &\propto \phi(2\phi_{\text{Sqz}} + \phi_{\text{LIGO}}) \\
 S_4 &\propto \phi(L_{\text{SHG}}) \\
 S_5 &\propto \phi(L_{\text{OPO}})
 \end{aligned}$$

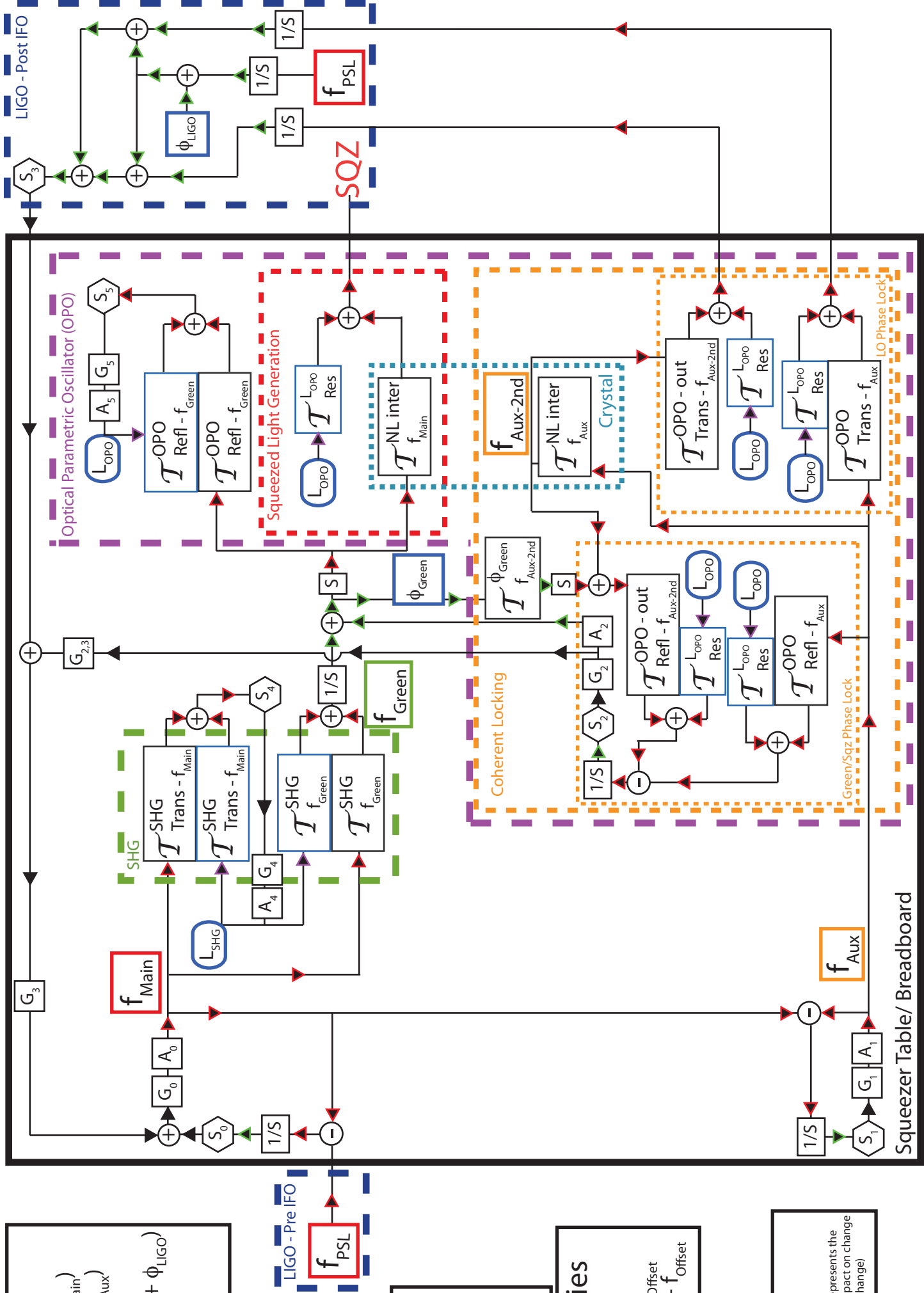
Units

- Electronic
- Frequency
- Phase
- Length

Frequencies

$$\begin{aligned}
 f_{\text{Green}} &= 2f_{\text{Main}} \\
 f_{\text{Aux}} &= f_{\text{Main}} + f_{\text{Offset}} \\
 f_{\text{Aux-2nd}} &= f_{\text{Main}} - f_{\text{Offset}}
 \end{aligned}$$


 This 'Transfer Function' represents the length change and its impact on change in frequency (via phase change)



Squeezer Table/ Breadboard