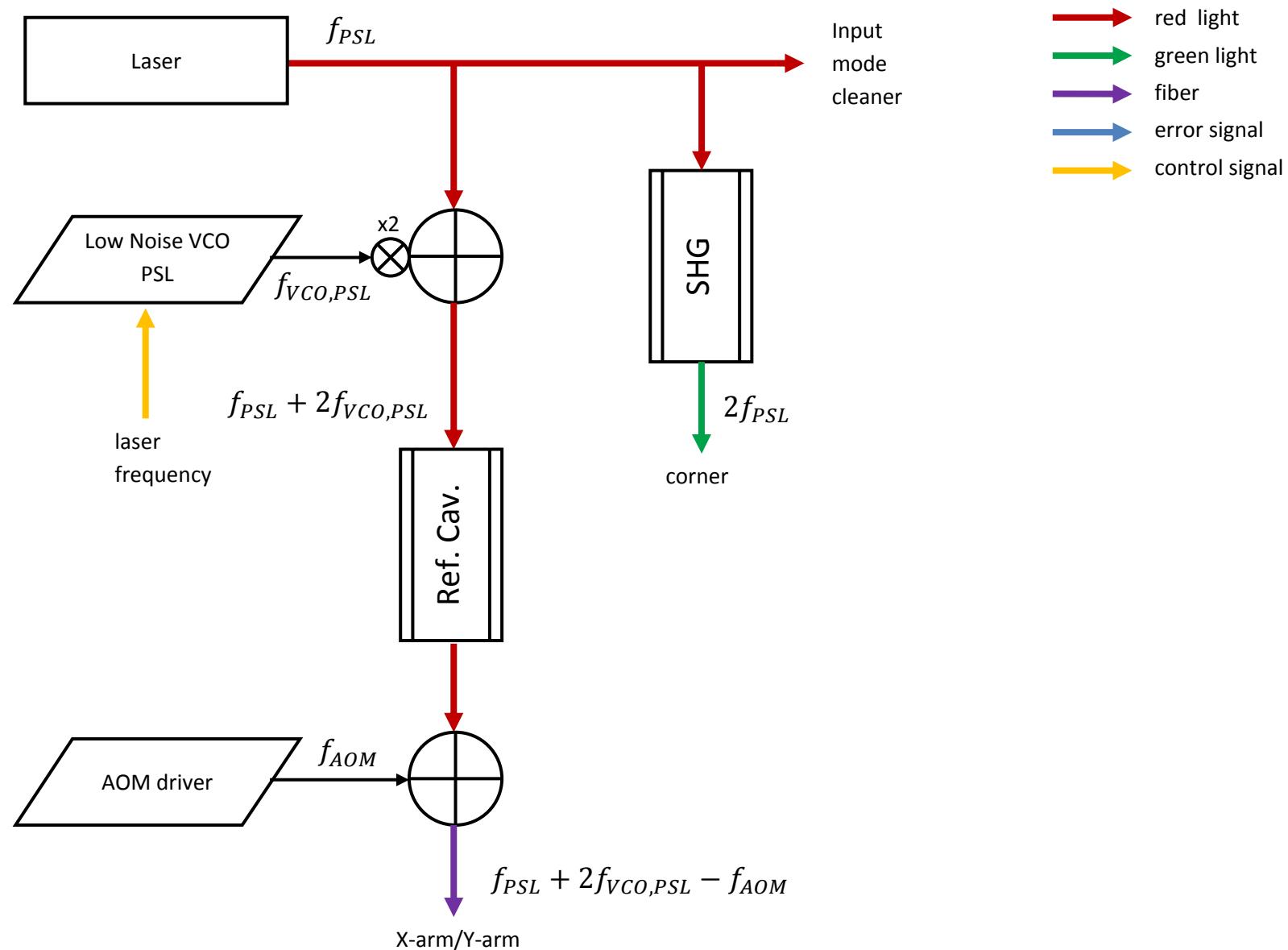


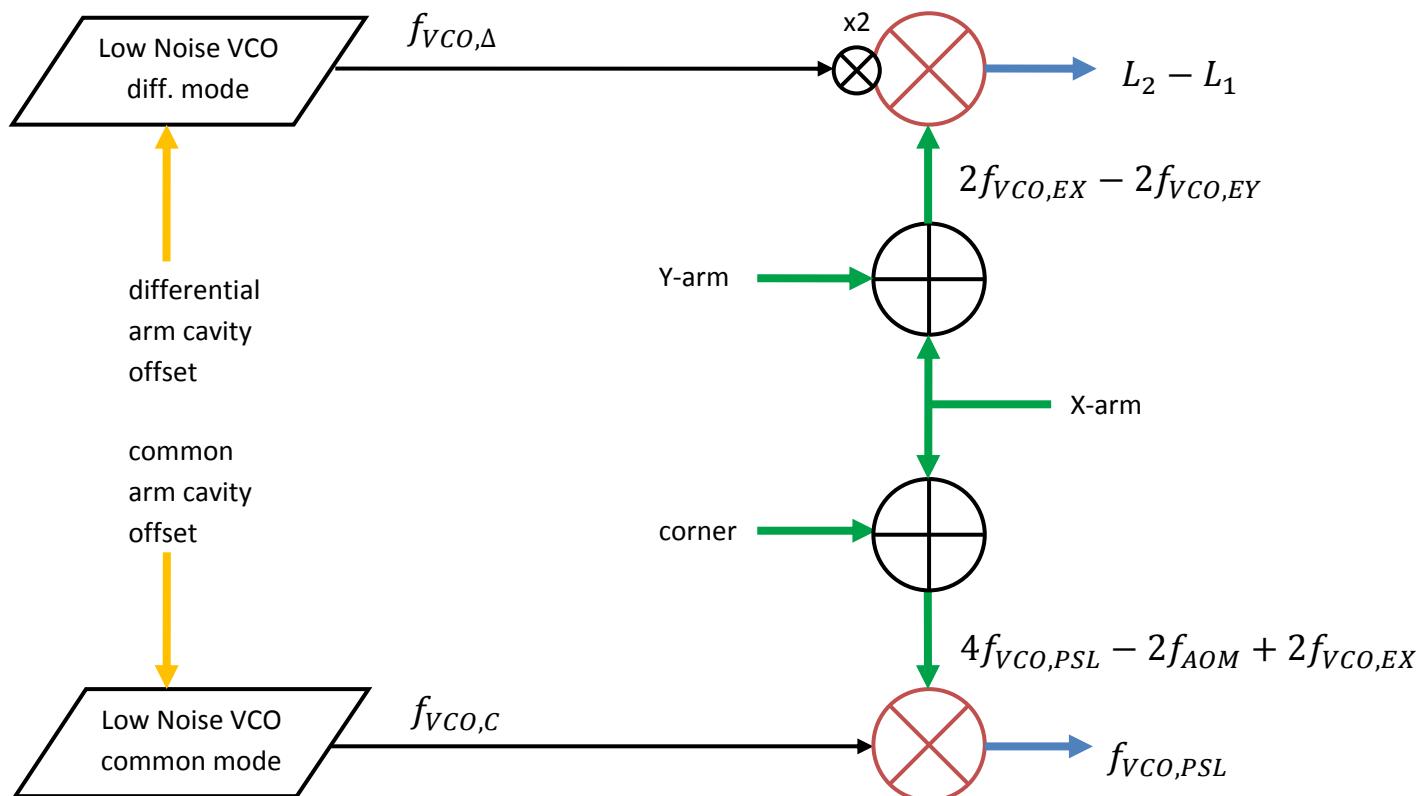
Frequency	Equations	Nominal (MHz)
Laser towards mode cleaner (1064 nm)	$f_{PSL}$	zero point: 0.000
Low noise VCO at PSL	$f_{VCO,PSL}$	79.400
In transmission of reference cavity	$f_{REF} = f_{PSL} + 2f_{VCO,PSL}$	158.800
AOM at fiber launch	$f_{AOM}$	158.800
Fiber at end stations	$f_{PSL} + 2f_{VCO,PSL} - f_{AOM}$	0.000
Low noise VCO at X-end station	$f_{VCO,EX}$	39.475
Light of X-end station laser (1064 nm)	$f_{PSL} + 2f_{VCO,PSL} - f_{AOM} + f_{VCO,EX}$	39.475
Light of X-end station laser (532 nm)	$2f_{PSL} + 4f_{VCO,PSL} - 2f_{AOM} + 2f_{VCO,EX}$	78.950
Low noise VCO at Y-end station	$f_{VCO,EY}$	39.475
Light of Y-end station laser (1064 nm)	$f_{PSL} + 2f_{VCO,PSL} - f_{AOM} - f_{VCO,EY}$	-39.475
Light of Y-end station laser (532 nm)	$2f_{PSL} + 4f_{VCO,PSL} - 2f_{AOM} - 2f_{VCO,EY}$	-78.950
Light after SHG in corner (532 nm)	$2f_{PSL}$	0.000
Interference X-arm/corner	$4f_{VCO,PSL} - 2f_{AOM} + 2f_{VCO,EX}$	78.950
Interference Y-arm/corner	$4f_{VCO,PSL} - 2f_{AOM} - 2f_{VCO,EX}$	-78.950
Interference X-arm/Y-arm	$2f_{VCO,EX} - 2f_{VCO,EY}$	157.900
Common mode low noise VCO	$f_{VCO,C} = 2f_{VCO,EX} + \Delta f_C$	
Differential mode low noise VCO	$f_{VCO,D} = 2f_{VCO,EX} + 2f_{VCO,EY} + 2\Delta f_D$	
Demodulated common mode	$4f_{VCO,PSL} - 2f_{AOM} - \Delta f_C$	
Demodulated differential mode	$-2\Delta f_D$	

## PSL

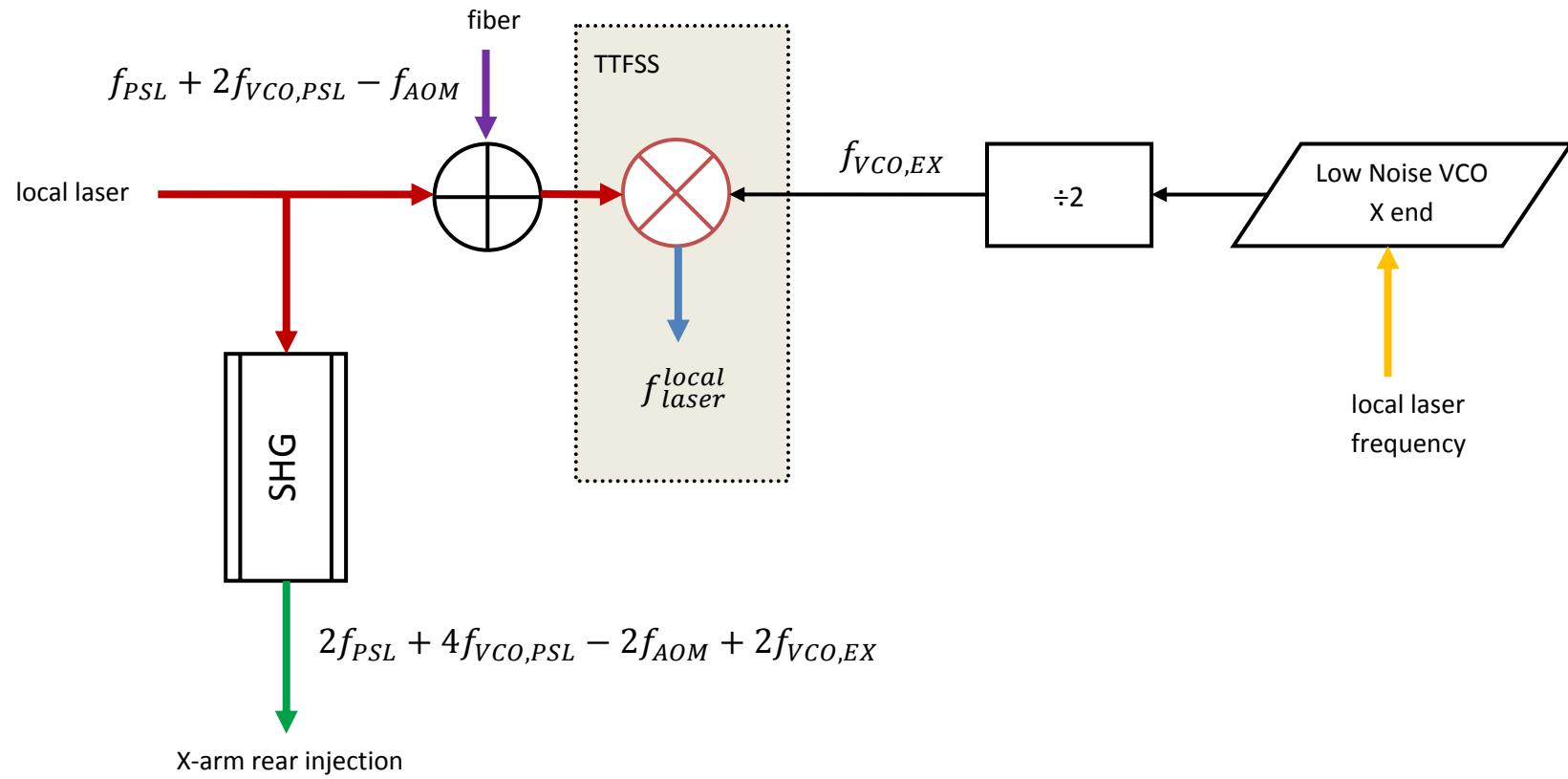


## Corner ALS

- red light
- green light
- fiber
- error signal
- control signal



## X-End Station



- red light
- green light
- fiber
- error signal
- control signal