*LIGO Laboratory / LIGO Scientific Collaboration*

LIGO-T1300883-v1 Advanced LIGO 10/21/2013

Nominal ALS Frequencies

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LIGO Scientific Collaboration

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of the LIGO Laboratory.

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The nominal frequency of the PSL/IMC VCO and the fiber AOM driver is 79'200'000 Hz. The AOM drive is provided by an RF source and is fixed. All ALS VCOs (EX/EY, COMM, DIFF) are set to a nominal frequency of 78'920'000 Hz.

| **Nominal ALS frequencies at 532 nm** | | |
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| **Location** | **Frequency (Hz)** | **Comment** |
| Fiber | –79'200'000 x 4 | Downshift |
| PSL | –79'200'000 x 4 | downshift, laser relative to ref. cav. |
| EX laser | –78'920'000 + fiber | relative downshift |
| EY laser | +78'920'000 + fiber | relative upshift |
|  | | |
| COMM VCO | +78'920'000 |  |
| DIFF VCO | +78'920'000 |  |
|  | | |
| Beat EX/laser | –78'920'000 | fiber - PSL + EX laser |
| Beat EY/laser | +78'920'000 | fiber - PSL + EY laser |
| Beat EY/EX | +157'840'000 | EY laser - EX laser |
|  | | |
| EX invariant | 0 | fiber - PSL + EX laser + COMM VCO |
| EY invariant | 0 | fiber - PSL + EY laser - COMM VCO |
| DIFF invariant | 0 | EY laser - EX laser - DIFF VCO |