



15:36:18 02-09-25

## Experiment Information

Parameter	F1	F2
Nucleus	N/A	$^1\text{H}$
Transmitter Frequency (MHz)	N/A	499.86
Sweep Width (Hz)	50	5000
Sweep Width (ppm)	N/A	10.003
Transmitter Offset (Hz)	0	2500
Transmitter Offset (ppm)	N/A	5.0014

## 8.140 - 8.050 ppm

Osc.	$a$	$\phi$ ( $^\circ$ )	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ ( $\text{s}^{-1}$ )	$\eta_2$ ( $\text{s}^{-1}$ )	$\int$
1	$2.2854 \times 10^{-2}$ $\pm 4.461 \times 10^{-4}$	0.2997 $\pm 1.424$	-4.5587 $\pm 1.1825 \times 10^{-3}$	$4.0404 \times 10^3$ $\pm 1.3199 \times 10^{-3}$	8.0831 $\pm 2.6406 \times 10^{-6}$	0.671 53 $\pm 1.2498 \times 10^{-2}$	0.571 38 $\pm 1.3473 \times 10^{-2}$	4.681
2	$4.0523 \times 10^{-2}$ $\pm 6.8991 \times 10^{-4}$	0.488 93 $\pm 0.740 17$	-4.335 $\pm 1.7435 \times 10^{-3}$	$4.0407 \times 10^3$ $\pm 1.9376 \times 10^{-3}$	8.0836 $\pm 3.8762 \times 10^{-6}$	0.884 66 $\pm 6.0578 \times 10^{-3}$	0.833 35 $\pm 6.225 \times 10^{-3}$	7.4671
3	$3.765 \times 10^{-2}$ $\pm 4.1941 \times 10^{-4}$	-0.871 92 $\pm 0.446 66$	-3.5573 $\pm 8.7156 \times 10^{-4}$	$4.0414 \times 10^3$ $\pm 9.9812 \times 10^{-4}$	8.0851 $\pm 1.9968 \times 10^{-6}$	0.669 73 $\pm 4.4895 \times 10^{-3}$	0.546 67 $\pm 4.8607 \times 10^{-3}$	8.9929
4	$2.4054 \times 10^{-2}$ $\pm 2.8918 \times 10^{-4}$	-0.475 73 $\pm 0.818 38$	-3.3271 $\pm 7.8328 \times 10^{-4}$	$4.0417 \times 10^3$ $\pm 8.7877 \times 10^{-4}$	8.0856 $\pm 1.758 \times 10^{-6}$	0.561 13 $\pm 7.2623 \times 10^{-3}$	0.460 19 $\pm 8.3424 \times 10^{-3}$	5.1914

5	$2.4332 \times 10^{-2}$ $\pm 4.3607 \times 10^{-4}$	0.580 73 $\pm 1.4024$	3.3265 $\pm 1.096 \times 10^{-3}$	$4.0483 \times 10^3$ $\pm 1.2414 \times 10^{-3}$	8.0989 $\pm 2.4834 \times 10^{-6}$	0.564 65 $\pm 1.227 \times 10^{-2}$	0.490 45 $\pm 1.3024 \times 10^{-2}$	6.0456
6	$3.7413 \times 10^{-2}$ $\pm 7.0863 \times 10^{-4}$	0.927 09 $\pm 0.703 59$	3.5559 $\pm 1.5715 \times 10^{-3}$	$4.0486 \times 10^3$ $\pm 1.7792 \times 10^{-3}$	8.0994 $\pm 3.5593 \times 10^{-6}$	0.6615 $\pm 6.4409 \times 10^{-3}$	0.650 05 $\pm 6.3789 \times 10^{-3}$	5.7058
7	$4.1216 \times 10^{-2}$ $\pm 7.3529 \times 10^{-4}$	-0.591 47 $\pm 0.766 03$	4.3359 $\pm 1.7928 \times 10^{-3}$	$4.0493 \times 10^3$ $\pm 1.9895 \times 10^{-3}$	8.1009 $\pm 3.98 \times 10^{-6}$	0.901 64 $\pm 6.5262 \times 10^{-3}$	0.791 14 $\pm 6.976 \times 10^{-3}$	8.8304
8	$2.1859 \times 10^{-2}$ $\pm 4.6952 \times 10^{-4}$	-0.303 51 $\pm 1.5258$	4.5601 $\pm 1.2846 \times 10^{-3}$	$4.0496 \times 10^3$ $\pm 1.3782 \times 10^{-3}$	8.1013 $\pm 2.7572 \times 10^{-6}$	0.649 38 $\pm 1.3094 \times 10^{-2}$	0.552 73 $\pm 1.5005 \times 10^{-2}$	4.8104

## 7.300 - 7.050 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$f$
1	$2.9194 \times 10^{-2}$ $\pm 2.5418 \times 10^{-4}$	0.291 55 $\pm 0.501 29$	-7.9082 $\pm 1.2974 \times 10^{-3}$	$3.5396 \times 10^3$ $\pm 1.6924 \times 10^{-3}$	7.0811 $\pm 3.3857 \times 10^{-6}$	0.752 53 $\pm 8.1007 \times 10^{-3}$	0.7039 $\pm 1.0592 \times 10^{-2}$	6.1909
2	$2.9149 \times 10^{-2}$ $\pm 2.4016 \times 10^{-4}$	-0.299 62 $\pm 0.474 86$	-6.9245 $\pm 1.1604 \times 10^{-3}$	$3.5406 \times 10^3$ $\pm 1.546 \times 10^{-3}$	7.0831 $\pm 3.0929 \times 10^{-6}$	0.691 42 $\pm 7.2493 \times 10^{-3}$	0.639 01 $\pm 9.6634 \times 10^{-3}$	5.2611
3	$6.2078 \times 10^{-2}$ $\pm 3.164 \times 10^{-4}$	2.6459 $\pm 0.308 09$	-0.5152 $\pm 9.9359 \times 10^{-4}$	$3.547 \times 10^3$ $\pm 1.1758 \times 10^{-3}$	7.0959 $\pm 2.3523 \times 10^{-6}$	1.0187 $\pm 5.9383 \times 10^{-3}$	0.974 16 $\pm 7.1867 \times 10^{-3}$	13.152
4	$6.2116 \times 10^{-2}$ $\pm 3.1708 \times 10^{-4}$	-2.0729 $\pm 0.310 63$	0.513 59 $\pm 1.005 \times 10^{-3}$	$3.548 \times 10^3$ $\pm 1.1894 \times 10^{-3}$	7.0979 $\pm 2.3795 \times 10^{-6}$	1.0211 $\pm 5.9641 \times 10^{-3}$	0.986 54 $\pm 7.2606 \times 10^{-3}$	9.5635
5	$6.5111 \times 10^{-3}$ $\pm 2.159 \times 10^{-4}$	$5.5519 \times 10^{-2}$ $\pm 1.9934$	-15.82 $\pm 4.4044 \times 10^{-3}$	$3.5481 \times 10^3$ $\pm 6.2669 \times 10^{-3}$	7.0981 $\pm 1.2537 \times 10^{-5}$	0.583 74 $\pm 2.6891 \times 10^{-2}$	0.576 22 $\pm 3.7287 \times 10^{-2}$	1.2918
6	$3.0267 \times 10^{-2}$ $\pm 2.5653 \times 10^{-4}$	1.0966 $\pm 0.484 51$	6.9231 $\pm 1.2173 \times 10^{-3}$	$3.5544 \times 10^3$ $\pm 1.6671 \times 10^{-3}$	7.1108 $\pm 3.3352 \times 10^{-6}$	0.711 49 $\pm 7.6952 \times 10^{-3}$	0.760 16 $\pm 1.0496 \times 10^{-2}$	8.0581
7	$3.0372 \times 10^{-2}$ $\pm 2.721 \times 10^{-4}$	0.170 58 $\pm 0.510 14$	7.9078 $\pm 1.3624 \times 10^{-3}$	$3.5554 \times 10^3$ $\pm 1.822 \times 10^{-3}$	7.1127 $\pm 3.6451 \times 10^{-6}$	0.783 39 $\pm 8.6826 \times 10^{-3}$	0.818 33 $\pm 1.1472 \times 10^{-2}$	5.4801
8	$7.748 \times 10^{-2}$ $\pm 3.4897 \times 10^{-4}$	-0.116 35 $\pm 0.277 71$	-4.3056 $\pm 1.6805 \times 10^{-3}$	$3.5786 \times 10^3$ $\pm 1.576 \times 10^{-3}$	7.1593 $\pm 3.1528 \times 10^{-6}$	1.5316 $\pm 8.3875 \times 10^{-3}$	1.4108 $\pm 9.1709 \times 10^{-3}$	12.793
9	$3.6385 \times 10^{-2}$ $\pm 8.0441 \times 10^{-4}$	1.79 $\pm 3.1973$	-3.2707 $\pm 2.3574 \times 10^{-3}$	$3.5797 \times 10^3$ $\pm 1.8273 \times 10^{-3}$	7.1613 $\pm 3.6557 \times 10^{-6}$	0.597 53 $\pm 2.5557 \times 10^{-2}$	0.648 63 $\pm 2.6356 \times 10^{-2}$	6.0813
10	$9.7472 \times 10^{-3}$ $\pm 3.4373 \times 10^{-4}$	1.5796 $\pm 1.6376$	15.79 $\pm 4.3397 \times 10^{-3}$	$3.5798 \times 10^3$ $\pm 6.8272 \times 10^{-3}$	7.1615 $\pm 1.3658 \times 10^{-5}$	0.823 19 $\pm 3.7994 \times 10^{-2}$	0.942 84 $\pm 4.1489 \times 10^{-2}$	1.6884
11	$2.6412 \times 10^{-2}$ $\pm 1.6782 \times 10^{-3}$	1.1223 $\pm 2.8964$	-3.0362 $\pm 6.1491 \times 10^{-3}$	$3.5799 \times 10^3$ $\pm 6.4472 \times 10^{-3}$	7.1618 $\pm 1.2898 \times 10^{-5}$	0.582 15 $\pm 5.2913 \times 10^{-3}$	0.618 03 $\pm 9.1261 \times 10^{-3}$	6.8054

12	$2.6727 \times 10^{-2}$ $\pm 1.1711 \times 10^{-3}$	$-0.72853$ $\pm 1.9588$	$3.0375$ $\pm 4.2732 \times 10^{-3}$	$3.586 \times 10^3$ $\pm 4.3703 \times 10^{-3}$	$7.174$ $\pm 8.7429 \times 10^{-6}$	$0.57386$ $\pm 6.6403 \times 10^{-3}$	$0.54102$ $\pm 1.1862 \times 10^{-2}$	6.6503
13	$3.5404 \times 10^{-2}$ $\pm 4.0625 \times 10^{-4}$	$-1.6005$ $\pm 2.3275$	$3.272$ $\pm 1.5812 \times 10^{-3}$	$3.5862 \times 10^3$ $\pm 8.4582 \times 10^{-4}$	$7.1744$ $\pm 1.6921 \times 10^{-6}$	$0.57411$ $\pm 1.7051 \times 10^{-2}$	$0.55331$ $\pm 1.7477 \times 10^{-2}$	10.616
14	$7.6377 \times 10^{-2}$ $\pm 3.7322 \times 10^{-4}$	$1.0388$ $\pm 0.31956$	$4.3006$ $\pm 1.7316 \times 10^{-3}$	$3.5873 \times 10^3$ $\pm 1.5725 \times 10^{-3}$	$7.1765$ $\pm 3.146 \times 10^{-6}$	$1.5126$ $\pm 8.37 \times 10^{-3}$	$1.3529$ $\pm 9.1062 \times 10^{-3}$	13.541
15	$3.1181 \times 10^{-2}$ $\pm 2.618 \times 10^{-4}$	$0.28588$ $\pm 0.47997$	$-8.2037$ $\pm 1.2718 \times 10^{-3}$	$3.6185 \times 10^3$ $\pm 1.6881 \times 10^{-3}$	$7.239$ $\pm 3.3771 \times 10^{-6}$	$0.7645$ $\pm 8.0103 \times 10^{-3}$	$0.77816$ $\pm 1.0635 \times 10^{-2}$	6.5374
16	$2.9284 \times 10^{-2}$ $\pm 2.485 \times 10^{-4}$	$-0.33212$ $\pm 0.48711$	$-7.0285$ $\pm 1.2142 \times 10^{-3}$	$3.6197 \times 10^3$ $\pm 1.6667 \times 10^{-3}$	$7.2413$ $\pm 3.3344 \times 10^{-6}$	$0.69267$ $\pm 7.6247 \times 10^{-3}$	$0.74061$ $\pm 1.0495 \times 10^{-2}$	6.9142
17	$2.8696 \times 10^{-2}$ $\pm 3.082 \times 10^{-4}$	$0.46418$ $\pm 0.61907$	$-0.85606$ $\pm 1.2986 \times 10^{-3}$	$3.6258 \times 10^3$ $\pm 1.7408 \times 10^{-3}$	$7.2537$ $\pm 3.4826 \times 10^{-6}$	$0.68127$ $\pm 8.1289 \times 10^{-3}$	$0.62531$ $\pm 1.0885 \times 10^{-2}$	7.5458
18	$3.0239 \times 10^{-2}$ $\pm 4.5897 \times 10^{-4}$	$0.42155$ $\pm 0.86885$	$-0.31913$ $\pm 2.0191 \times 10^{-3}$	$3.6264 \times 10^3$ $\pm 2.6165 \times 10^{-3}$	$7.2548$ $\pm 5.2344 \times 10^{-6}$	$0.90128$ $\pm 1.2717 \times 10^{-2}$	$0.91297$ $\pm 1.6489 \times 10^{-2}$	6.5119
19	$3.0526 \times 10^{-2}$ $\pm 4.5732 \times 10^{-4}$	$7.4402 \times 10^{-2}$ $\pm 0.85513$	$0.31736$ $\pm 1.9752 \times 10^{-3}$	$3.627 \times 10^3$ $\pm 2.5417 \times 10^{-3}$	$7.256$ $\pm 5.0847 \times 10^{-6}$	$0.89796$ $\pm 1.2441 \times 10^{-2}$	$0.88874$ $\pm 1.5968 \times 10^{-2}$	6.6987
20	$2.8493 \times 10^{-2}$ $\pm 3.2036 \times 10^{-4}$	$-3.8619 \times 10^{-3}$ $\pm 0.65172$	$0.85541$ $\pm 1.3814 \times 10^{-3}$	$3.6276 \times 10^3$ $\pm 1.8903 \times 10^{-3}$	$7.2571$ $\pm 3.7817 \times 10^{-6}$	$0.67974$ $\pm 8.6334 \times 10^{-3}$	$0.71678$ $\pm 1.179 \times 10^{-2}$	7.0042
21	$2.8882 \times 10^{-2}$ $\pm 2.3772 \times 10^{-4}$	$0.56554$ $\pm 0.47477$	$7.0285$ $\pm 1.1631 \times 10^{-3}$	$3.6337 \times 10^3$ $\pm 1.554 \times 10^{-3}$	$7.2695$ $\pm 3.1088 \times 10^{-6}$	$0.68954$ $\pm 7.2893 \times 10^{-3}$	$0.64005$ $\pm 9.7107 \times 10^{-3}$	7.1175
22	$3.071 \times 10^{-2}$ $\pm 2.5596 \times 10^{-4}$	$0.23708$ $\pm 0.47975$	$8.2028$ $\pm 1.2576 \times 10^{-3}$	$3.6349 \times 10^3$ $\pm 1.6578 \times 10^{-3}$	$7.2718$ $\pm 3.3166 \times 10^{-6}$	$0.755$ $\pm 7.8595 \times 10^{-3}$	$0.74272$ $\pm 1.0389 \times 10^{-2}$	6.3971

## 5.960 - 5.870 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$\int$
1	$3.1129 \times 10^{-2}$ $\pm 2.5808 \times 10^{-4}$	$-1.3434$ $\pm 0.5199$	$-7.4002$ $\pm 5.1685 \times 10^{-3}$	$2.9494 \times 10^3$ $\pm 5.1273 \times 10^{-3}$	$5.9004$ $\pm 1.0257 \times 10^{-5}$	$3.5669$ $\pm 2.6836 \times 10^{-2}$	$3.5178$ $\pm 2.6477 \times 10^{-2}$	4.2161
2	$3.2188 \times 10^{-2}$ $\pm 2.4375 \times 10^{-4}$	$-5.1237$ $\pm 0.6136$	$-5.6185$ $\pm 5.6379 \times 10^{-3}$	$2.9511 \times 10^3$ $\pm 5.7073 \times 10^{-3}$	$5.9039$ $\pm 1.1418 \times 10^{-5}$	$3.6577$ $\pm 2.6895 \times 10^{-2}$	$3.5992$ $\pm 2.5979 \times 10^{-2}$	4.3098
3	$4.8399 \times 10^{-2}$ $\pm 5.6308 \times 10^{-4}$	$4.7697$ $\pm 0.88673$	$-1.0414$ $\pm 9.8288 \times 10^{-3}$	$2.9557 \times 10^3$ $\pm 1.2958 \times 10^{-2}$	$5.9131$ $\pm 2.5922 \times 10^{-5}$	$4.1828$ $\pm 2.8647 \times 10^{-2}$	$4.7123$ $\pm 3.0131 \times 10^{-2}$	6.1667
4	$4.575 \times 10^{-2}$ $\pm 9.1449 \times 10^{-4}$	$3.2834 \times 10^{-3}$ $\pm 0.53775$	$-2.9273 \times 10^{-2}$ $\pm 7.3934 \times 10^{-3}$	$2.9566 \times 10^3$ $\pm 7.579 \times 10^{-3}$	$5.9148$ $\pm 1.5162 \times 10^{-5}$	$5.0533$ $\pm 4.8146 \times 10^{-2}$	$4.3552$ $\pm 4.731 \times 10^{-2}$	5.69

5	$3.8582 \times 10^{-2}$ $\pm 4.1242 \times 10^{-4}$	-6.0209 $\pm 0.827\,43$	0.93883 $\pm 2.8161 \times 10^{-3}$	$2.9578 \times 10^3$ $\pm 2.8127 \times 10^{-3}$	5.9171 $\pm 5.6269 \times 10^{-6}$	3.5842 $\pm 3.0225 \times 10^{-2}$	3.3479 $\pm 3.3987 \times 10^{-2}$	5.2451
6	$6.3148 \times 10^{-3}$ $\pm 1.7206 \times 10^{-4}$	-3.0221 $\pm 0.700\,13$	1.5172 $\pm 5.7087 \times 10^{-3}$	$2.9583 \times 10^3$ $\pm 4.9031 \times 10^{-3}$	5.9182 $\pm 9.8088 \times 10^{-6}$	1.7394 $\pm 3.1606 \times 10^{-2}$	1.3489 $\pm 3.1177 \times 10^{-2}$	1
7	$3.1556 \times 10^{-2}$ $\pm 2.5119 \times 10^{-4}$	3.1819 $\pm 0.598\,87$	5.6326 $\pm 5.5562 \times 10^{-3}$	$2.9623 \times 10^3$ $\pm 5.5777 \times 10^{-3}$	5.9263 $\pm 1.1159 \times 10^{-5}$	3.622 $\pm 2.7096 \times 10^{-2}$	3.5614 $\pm 2.6433 \times 10^{-2}$	4.2641
8	$3.14 \times 10^{-2}$ $\pm 2.4758 \times 10^{-4}$	-0.36016 $\pm 0.531\,35$	7.4079 $\pm 5.2062 \times 10^{-3}$	$2.9641 \times 10^3$ $\pm 5.1685 \times 10^{-3}$	5.9298 $\pm 1.034 \times 10^{-5}$	3.5693 $\pm 2.6452 \times 10^{-2}$	3.5632 $\pm 2.6537 \times 10^{-2}$	4.2505

## 4.350 - 4.000 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$f$
1	$5.3467 \times 10^{-2}$ $\pm 3.1373 \times 10^{-4}$	-0.37038 $\pm 0.340\,53$	-9.9736 $\pm 3.4392 \times 10^{-3}$	$2.0213 \times 10^3$ $\pm 3.0473 \times 10^{-3}$	4.0437 $\pm 6.0962 \times 10^{-6}$	3.0353 $\pm 2.0717 \times 10^{-2}$	2.7346 $\pm 1.9148 \times 10^{-2}$	7.6981
2	$5.374 \times 10^{-2}$ $\pm 2.2958 \times 10^{-4}$	$-1.2103 \times 10^{-2}$ $\pm 0.247\,88$	-3.837 $\pm 1.7889 \times 10^{-3}$	$2.0274 \times 10^3$ $\pm 1.58 \times 10^{-3}$	4.056 $\pm 3.1608 \times 10^{-6}$	2.22 $\pm 1.0962 \times 10^{-2}$	1.9003 $\pm 9.8405 \times 10^{-3}$	8.5614
3	$5.4659 \times 10^{-2}$ $\pm 2.6951 \times 10^{-4}$	0.66842 $\pm 0.285\,43$	3.8343 $\pm 2.0959 \times 10^{-3}$	$2.0351 \times 10^3$ $\pm 2.4348 \times 10^{-3}$	4.0713 $\pm 4.8709 \times 10^{-6}$	2.2592 $\pm 1.3059 \times 10^{-2}$	2.6052 $\pm 1.5109 \times 10^{-2}$	8.3585
4	$5.5992 \times 10^{-2}$ $\pm 3.6477 \times 10^{-4}$	1.225 $\pm 0.373\,85$	9.9688 $\pm 3.9139 \times 10^{-3}$	$2.0412 \times 10^3$ $\pm 4.2849 \times 10^{-3}$	4.0836 $\pm 8.5722 \times 10^{-6}$	3.2732 $\pm 2.5915 \times 10^{-2}$	3.4268 $\pm 2.5982 \times 10^{-2}$	7.7373
5	$5.6835 \times 10^{-2}$ $\pm 3.2354 \times 10^{-4}$	-1.0027 $\pm 0.322\,31$	-10.386 $\pm 2.9119 \times 10^{-3}$	$2.0641 \times 10^3$ $\pm 3.2626 \times 10^{-3}$	4.1294 $\pm 6.527 \times 10^{-6}$	2.8158 $\pm 1.931 \times 10^{-2}$	3.0447 $\pm 2.0224 \times 10^{-2}$	8.1361
6	$5.6461 \times 10^{-2}$ $\pm 3.2983 \times 10^{-4}$	-0.36076 $\pm 0.334\,41$	-3.4177 $\pm 3.1386 \times 10^{-3}$	$2.0711 \times 10^3$ $\pm 3.4296 \times 10^{-3}$	4.1433 $\pm 6.861 \times 10^{-6}$	2.9223 $\pm 2.0551 \times 10^{-2}$	3.0898 $\pm 2.1091 \times 10^{-2}$	8.0009
7	$5.3247 \times 10^{-2}$ $\pm 2.8223 \times 10^{-4}$	-0.18953 $\pm 0.307\,75$	3.4199 $\pm 2.7606 \times 10^{-3}$	$2.0779 \times 10^3$ $\pm 2.4567 \times 10^{-3}$	4.157 $\pm 4.9147 \times 10^{-6}$	2.7235 $\pm 1.6803 \times 10^{-2}$	2.4252 $\pm 1.5303 \times 10^{-2}$	7.9736
8	$5.4819 \times 10^{-2}$ $\pm 2.7368 \times 10^{-4}$	0.13927 $\pm 0.285\,89$	10.389 $\pm 2.4874 \times 10^{-3}$	$2.0849 \times 10^3$ $\pm 2.1759 \times 10^{-3}$	4.1709 $\pm 4.3531 \times 10^{-6}$	2.6345 $\pm 1.5247 \times 10^{-2}$	2.3188 $\pm 1.3898 \times 10^{-2}$	8.1143
9	$2.9549 \times 10^{-2}$ $\pm 2.6758 \times 10^{-4}$	0.48335 $\pm 0.533\,03$	-7.5424 $\pm 4.1744 \times 10^{-3}$	$2.1359 \times 10^3$ $\pm 4.1972 \times 10^{-3}$	4.2729 $\pm 8.3967 \times 10^{-6}$	2.4348 $\pm 2.5786 \times 10^{-2}$	2.394 $\pm 2.5406 \times 10^{-2}$	4.4943
10	$5.9353 \times 10^{-2}$ $\pm 2.8181 \times 10^{-4}$	0.69109 $\pm 0.270\,61$	-4.2169 $\pm 2.1784 \times 10^{-3}$	$2.1392 \times 10^3$ $\pm 2.1491 \times 10^{-3}$	4.2796 $\pm 4.2993 \times 10^{-6}$	2.5108 $\pm 1.3794 \times 10^{-2}$	2.4459 $\pm 1.3555 \times 10^{-2}$	8.7045
11	$3.0418 \times 10^{-2}$ $\pm 2.4132 \times 10^{-4}$	0.11048 $\pm 0.4582$	-0.90839 $\pm 2.927 \times 10^{-3}$	$2.1425 \times 10^3$ $\pm 2.8995 \times 10^{-3}$	4.2862 $\pm 5.8007 \times 10^{-6}$	2.0666 $\pm 1.8328 \times 10^{-2}$	1.9733 $\pm 1.8025 \times 10^{-2}$	4.8915

12	$3.0265 \times 10^{-2}$ $\pm 2.4853 \times 10^{-4}$	$-0.161\,23$ $\pm 0.474\,88$	$0.908\,94$ $\pm 3.0237 \times 10^{-3}$	$2.1443 \times 10^3$ $\pm 3.201 \times 10^{-3}$	$4.2898$ $\pm 6.4037 \times 10^{-6}$	$2.0516$ $\pm 1.884 \times 10^{-2}$	$2.1198$ $\pm 1.9879 \times 10^{-2}$	4.7372
13	$5.8587 \times 10^{-2}$ $\pm 2.8672 \times 10^{-4}$	$-0.709\,53$ $\pm 0.280\,07$	$4.2176$ $\pm 2.2441 \times 10^{-3}$	$2.1476 \times 10^3$ $\pm 2.3187 \times 10^{-3}$	$4.2964$ $\pm 4.6386 \times 10^{-6}$	$2.5$ $\pm 1.4166 \times 10^{-2}$	$2.5533$ $\pm 1.4533 \times 10^{-2}$	8.7296
14	$2.893 \times 10^{-2}$ $\pm 2.6394 \times 10^{-4}$	$-0.449\,04$ $\pm 0.539\,62$	$7.544$ $\pm 4.1537 \times 10^{-3}$	$2.1509 \times 10^3$ $\pm 4.2223 \times 10^{-3}$	$4.3031$ $\pm 8.447 \times 10^{-6}$	$2.3813$ $\pm 2.5263 \times 10^{-2}$	$2.3874$ $\pm 2.5593 \times 10^{-2}$	4.3423

## 4.000 - 3.640 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$\int$
1	$3.0409 \times 10^{-2}$ $\pm 1.3941 \times 10^{-4}$	$-2.2225 \times 10^{-2}$ $\pm 0.267\,19$	$-9.0815$ $\pm 2.2753 \times 10^{-3}$	$1.8485 \times 10^3$ $\pm 2.3185 \times 10^{-3}$	$3.698$ $\pm 4.6382 \times 10^{-6}$	$3.2162$ $\pm 1.404 \times 10^{-2}$	$3.2435$ $\pm 1.4058 \times 10^{-2}$	4.2375
2	$6.4857 \times 10^{-2}$ $\pm 1.8951 \times 10^{-4}$	$-3.7188 \times 10^{-2}$ $\pm 0.163\,83$	$-7.4213$ $\pm 1.367 \times 10^{-3}$	$1.8501 \times 10^3$ $\pm 1.3732 \times 10^{-3}$	$3.7013$ $\pm 2.7471 \times 10^{-6}$	$3.5339$ $\pm 8.7966 \times 10^{-3}$	$3.509$ $\pm 8.6201 \times 10^{-3}$	8.768
3	$2.8924 \times 10^{-2}$ $\pm 1.3102 \times 10^{-4}$	$-7.1996 \times 10^{-2}$ $\pm 0.279\,45$	$-5.7301$ $\pm 2.3074 \times 10^{-3}$	$1.8518 \times 10^3$ $\pm 2.3612 \times 10^{-3}$	$3.7047$ $\pm 4.7238 \times 10^{-6}$	$3.1209$ $\pm 1.3689 \times 10^{-2}$	$3.1955$ $\pm 1.4036 \times 10^{-2}$	4.0428
4	$2.8286 \times 10^{-2}$ $\pm 1.2557 \times 10^{-4}$	$4.4844 \times 10^{-2}$ $\pm 0.2756$	$5.7303$ $\pm 2.2694 \times 10^{-3}$	$1.8633 \times 10^3$ $\pm 2.2817 \times 10^{-3}$	$3.7276$ $\pm 4.5647 \times 10^{-6}$	$3.0577$ $\pm 1.3178 \times 10^{-2}$	$3.1111$ $\pm 1.3592 \times 10^{-2}$	3.9619
5	$6.4157 \times 10^{-2}$ $\pm 1.8203 \times 10^{-4}$	$7.0066 \times 10^{-5}$ $\pm 0.158\,21$	$7.4213$ $\pm 1.333 \times 10^{-3}$	$1.865 \times 10^3$ $\pm 1.3155 \times 10^{-3}$	$3.731$ $\pm 2.6317 \times 10^{-6}$	$3.4847$ $\pm 8.4537 \times 10^{-3}$	$3.4417$ $\pm 8.3714 \times 10^{-3}$	8.7587
6	$2.9729 \times 10^{-2}$ $\pm 1.3264 \times 10^{-4}$	$-1.6143 \times 10^{-2}$ $\pm 0.264\,24$	$9.0769$ $\pm 2.2386 \times 10^{-3}$	$1.8666 \times 10^3$ $\pm 2.2334 \times 10^{-3}$	$3.7343$ $\pm 4.468 \times 10^{-6}$	$3.1421$ $\pm 1.3391 \times 10^{-2}$	$3.1567$ $\pm 1.3586 \times 10^{-2}$	4.1707
7	$0.122\,91$ $\pm 2.2471 \times 10^{-5}$	$0.362\,13$ $\pm 1.0456 \times 10^{-2}$	$-5.2045$ $\pm 2.143 \times 10^{-5}$	$1.9242 \times 10^3$ $\pm 3.0925 \times 10^{-5}$	$3.8495$ $\pm 6.1868 \times 10^{-8}$	$0.473\,51$ $\pm 1.3478 \times 10^{-4}$	$0.473\,77$ $\pm 1.9439 \times 10^{-4}$	35.507
8	$0.122\,88$ $\pm 2.2331 \times 10^{-5}$	$-0.3631$ $\pm 1.0397 \times 10^{-2}$	$5.2045$ $\pm 2.1297 \times 10^{-5}$	$1.9346 \times 10^3$ $\pm 3.0858 \times 10^{-5}$	$3.8704$ $\pm 6.1733 \times 10^{-8}$	$0.473\,18$ $\pm 1.3393 \times 10^{-4}$	$0.472\,89$ $\pm 1.9394 \times 10^{-4}$	34.3
9	$6.0757 \times 10^{-2}$ $\pm 8.6064 \times 10^{-5}$	$0.367\,11$ $\pm 8.238 \times 10^{-2}$	$-3.3294$ $\pm 6.9246 \times 10^{-4}$	$1.9776 \times 10^3$ $\pm 6.9735 \times 10^{-4}$	$3.9563$ $\pm 1.3951 \times 10^{-6}$	$2.6421$ $\pm 4.2929 \times 10^{-3}$	$2.6425$ $\pm 4.3166 \times 10^{-3}$	8.9057
10	$6.4337 \times 10^{-2}$ $\pm 7.0122 \times 10^{-5}$	$9.9313 \times 10^{-2}$ $\pm 6.1484 \times 10^{-2}$	$-0.946\,95$ $\pm 3.7369 \times 10^{-4}$	$1.98 \times 10^3$ $\pm 3.9201 \times 10^{-4}$	$3.961$ $\pm 7.8424 \times 10^{-7}$	$1.9841$ $\pm 2.3963 \times 10^{-3}$	$2.0168$ $\pm 2.5014 \times 10^{-3}$	10.071
11	$6.4162 \times 10^{-2}$ $\pm 6.8729 \times 10^{-5}$	$-0.157\,74$ $\pm 6.0617 \times 10^{-2}$	$0.947\,53$ $\pm 3.678 \times 10^{-4}$	$1.9819 \times 10^3$ $\pm 3.7469 \times 10^{-4}$	$3.9648$ $\pm 7.4958 \times 10^{-7}$	$1.981$ $\pm 2.3484 \times 10^{-3}$	$1.9449$ $\pm 2.3833 \times 10^{-3}$	9.8531

12	$5.9849 \times 10^{-2}$ $\pm 8.5085 \times 10^{-5}$	$-0.371\,17$ $\pm 8.3232 \times 10^{-2}$	$3.3293$ $\pm 6.9658 \times 10^{-4}$	$1.9842 \times 10^3$ $\pm 7.006 \times 10^{-4}$	$3.9696$ $\pm 1.4016 \times 10^{-6}$	$2.6276$ $\pm 4.2871 \times 10^{-3}$	$2.6197$ $\pm 4.2916 \times 10^{-3}$	8.6584
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### 3.300 - 3.050 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$\int$
1	$5.9442 \times 10^{-2}$ $\pm 1.2113 \times 10^{-4}$	$-0.612\,49$ $\pm 0.120\,19$	$-10.341$ $\pm 1.2743 \times 10^{-3}$	$1.5555 \times 10^3$ $\pm 1.312 \times 10^{-3}$	$3.1118$ $\pm 2.6247 \times 10^{-6}$	$3.338$ $\pm 7.8744 \times 10^{-3}$	$3.4308$ $\pm 8.0711 \times 10^{-3}$	8.1845
2	$5.9573 \times 10^{-2}$ $\pm 9.221 \times 10^{-5}$	$-1.5789$ $\pm 9.1137 \times 10^{-2}$	$-6.9964$ $\pm 6.7656 \times 10^{-4}$	$1.5588 \times 10^3$ $\pm 7.1449 \times 10^{-4}$	$3.1185$ $\pm 1.4294 \times 10^{-6}$	$2.4235$ $\pm 4.2032 \times 10^{-3}$	$2.4845$ $\pm 4.3606 \times 10^{-3}$	8.9014
3	$8.1191 \times 10^{-3}$ $\pm 2.6809 \times 10^{-4}$	$0.188\,27$ $\pm 4.4036$	$-5.4569$ $\pm 2.8763 \times 10^{-2}$	$1.5691 \times 10^3$ $\pm 3.1247 \times 10^{-2}$	$3.139$ $\pm 6.2511 \times 10^{-5}$	$3.4827$ $\pm 8.1882 \times 10^{-2}$	$3.2777$ $\pm 7.4526 \times 10^{-2}$	1.1084
4	$3.0288 \times 10^{-2}$ $\pm 8.0132 \times 10^{-4}$	$0.180\,67$ $\pm 0.915\,68$	$-3.7122$ $\pm 6.722 \times 10^{-3}$	$1.5708 \times 10^3$ $\pm 6.8339 \times 10^{-3}$	$3.1425$ $\pm 1.3672 \times 10^{-5}$	$4.2939$ $\pm 6.0611 \times 10^{-2}$	$4.2272$ $\pm 5.8356 \times 10^{-2}$	3.8927
5	$4.7198 \times 10^{-2}$ $\pm 1.0537 \times 10^{-3}$	$0.508\,77$ $\pm 1.4491$	$-1.7408$ $\pm 1.0679 \times 10^{-2}$	$1.5728 \times 10^3$ $\pm 1.0927 \times 10^{-2}$	$3.1464$ $\pm 2.186 \times 10^{-5}$	$5.2113$ $\pm 5.9461 \times 10^{-2}$	$5.3678$ $\pm 5.8672 \times 10^{-2}$	5.6969
6	$6.1006 \times 10^{-2}$ $\pm 9.2827 \times 10^{-5}$	$0.519\,98$ $\pm 8.9633 \times 10^{-2}$	$7.0005$ $\pm 6.6474 \times 10^{-4}$	$1.5728 \times 10^3$ $\pm 6.5234 \times 10^{-4}$	$3.1465$ $\pm 1.305 \times 10^{-6}$	$2.4474$ $\pm 4.1377 \times 10^{-3}$	$2.3653$ $\pm 4.025 \times 10^{-3}$	8.9988
7	$7.5188 \times 10^{-2}$ $\pm 1.5759 \times 10^{-3}$	$-0.164\,96$ $\pm 0.9544$	$-2.7654 \times 10^{-4}$ $\pm 7.0988 \times 10^{-3}$	$1.5745 \times 10^3$ $\pm 7.2818 \times 10^{-3}$	$3.1499$ $\pm 1.4568 \times 10^{-5}$	$5.7786$ $\pm 5.855 \times 10^{-2}$	$5.6933$ $\pm 5.7434 \times 10^{-2}$	8.857
8	$5.9914 \times 10^{-2}$ $\pm 1.276 \times 10^{-4}$	$-0.354\,24$ $\pm 0.122\,95$	$10.348$ $\pm 1.2821 \times 10^{-3}$	$1.5762 \times 10^3$ $\pm 1.2252 \times 10^{-3}$	$3.1532$ $\pm 2.451 \times 10^{-6}$	$3.3708$ $\pm 8.0004 \times 10^{-3}$	$3.2516$ $\pm 7.6035 \times 10^{-3}$	8.2929
9	$4.6507 \times 10^{-2}$ $\pm 9.4214 \times 10^{-4}$	$-0.961\,27$ $\pm 1.2991$	$1.74$ $\pm 9.6988 \times 10^{-3}$	$1.5763 \times 10^3$ $\pm 9.8903 \times 10^{-3}$	$3.1534$ $\pm 1.9786 \times 10^{-5}$	$5.2376$ $\pm 5.4376 \times 10^{-2}$	$5.2347$ $\pm 5.2723 \times 10^{-2}$	5.6276
10	$3.0201 \times 10^{-2}$ $\pm 6.3223 \times 10^{-4}$	$-0.729\,43$ $\pm 0.879\,33$	$3.7149$ $\pm 6.6163 \times 10^{-3}$	$1.5782 \times 10^3$ $\pm 6.8065 \times 10^{-3}$	$3.1573$ $\pm 1.3617 \times 10^{-5}$	$4.2931$ $\pm 5.0439 \times 10^{-2}$	$4.1882$ $\pm 4.6833 \times 10^{-2}$	3.8851
11	$8.4597 \times 10^{-3}$ $\pm 2.298 \times 10^{-4}$	$-0.821\,82$ $\pm 3.2865$	$5.4736$ $\pm 2.2569 \times 10^{-2}$	$1.5799 \times 10^3$ $\pm 2.4418 \times 10^{-2}$	$3.1608$ $\pm 4.885 \times 10^{-5}$	$3.528$ $\pm 7.2584 \times 10^{-2}$	$3.3619$ $\pm 6.5789 \times 10^{-2}$	1.1563
12	$3.1854 \times 10^{-2}$ $\pm 1.9197 \times 10^{-4}$	$-0.1013$ $\pm 0.346\,29$	$-11.264$ $\pm 5.9821 \times 10^{-3}$	$1.5981 \times 10^3$ $\pm 6.1354 \times 10^{-3}$	$3.197$ $\pm 1.2274 \times 10^{-5}$	$5.3476$ $\pm 3.7086 \times 10^{-2}$	$5.5542$ $\pm 3.9247 \times 10^{-2}$	3.8123
13	$5.9961 \times 10^{-2}$ $\pm 1.3308 \times 10^{-4}$	$1.1588$ $\pm 0.126\,45$	$-7.0303$ $\pm 1.4019 \times 10^{-3}$	$1.6023 \times 10^3$ $\pm 1.4401 \times 10^{-3}$	$3.2054$ $\pm 2.8809 \times 10^{-6}$	$3.5658$ $\pm 9.0404 \times 10^{-3}$	$3.5793$ $\pm 8.927 \times 10^{-3}$	8.0729
14	$2.7315 \times 10^{-2}$ $\pm 1.3147 \times 10^{-4}$	$-1.7815$ $\pm 0.296\,44$	$-2.6085$ $\pm 3.5402 \times 10^{-3}$	$1.6067 \times 10^3$ $\pm 3.6128 \times 10^{-3}$	$3.2142$ $\pm 7.2277 \times 10^{-6}$	$3.756$ $\pm 2.0888 \times 10^{-2}$	$3.79$ $\pm 2.0906 \times 10^{-2}$	3.6406

15	$2.5917 \times 10^{-2}$ $\pm 1.2332 \times 10^{-4}$	0.631 79 $\pm 0.298\ 92$	2.6184 $\pm 3.4787 \times 10^{-3}$	$1.6119 \times 10^3$ $\pm 3.4265 \times 10^{-3}$	3.2247 $\pm 6.8549 \times 10^{-6}$	3.6113 $\pm 1.9782 \times 10^{-2}$	3.5649 $\pm 1.961 \times 10^{-2}$	3.4752
16	$5.7059 \times 10^{-2}$ $\pm 1.2255 \times 10^{-4}$	-1.6804 $\pm 0.123\ 07$	7.0346 $\pm 1.3435 \times 10^{-3}$	$1.6163 \times 10^3$ $\pm 1.2937 \times 10^{-3}$	3.2335 $\pm 2.5882 \times 10^{-6}$	3.4217 $\pm 8.3721 \times 10^{-3}$	3.2829 $\pm 8.0417 \times 10^{-3}$	7.8509
17	$2.7991 \times 10^{-2}$ $\pm 1.6841 \times 10^{-4}$	-0.349 72 $\pm 0.361\ 86$	11.281 $\pm 5.8193 \times 10^{-3}$	$1.6205 \times 10^3$ $\pm 5.8635 \times 10^{-3}$	3.242 $\pm 1.173 \times 10^{-5}$	4.8924 $\pm 3.4167 \times 10^{-2}$	5.0211 $\pm 3.5759 \times 10^{-2}$	3.4379

### 3.000 - 2.560 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$f$
1	$5.9496 \times 10^{-2}$ $\pm 7.7838 \times 10^{-5}$	$7.1039 \times 10^{-2}$ $\pm 7.5611 \times 10^{-2}$	-12.902 $\pm 6.6755 \times 10^{-4}$	$1.3213 \times 10^3$ $\pm 6.5298 \times 10^{-4}$	2.6433 $\pm 1.3063 \times 10^{-6}$	2.6923 $\pm 4.1293 \times 10^{-3}$	2.6283 $\pm 4.0743 \times 10^{-3}$	8.5876
2	$5.9925 \times 10^{-2}$ $\pm 8.17 \times 10^{-5}$	$8.6255 \times 10^{-2}$ $\pm 7.9383 \times 10^{-2}$	-4.4437 $\pm 7.3806 \times 10^{-4}$	$1.3298 \times 10^3$ $\pm 7.185 \times 10^{-4}$	2.6603 $\pm 1.4374 \times 10^{-6}$	2.8466 $\pm 4.555 \times 10^{-3}$	2.7542 $\pm 4.4307 \times 10^{-3}$	8.6568
3	$5.9958 \times 10^{-2}$ $\pm 8.4455 \times 10^{-5}$	0.638 33 $\pm 8.2161 \times 10^{-2}$	4.4375 $\pm 7.6447 \times 10^{-4}$	$1.3386 \times 10^3$ $\pm 7.8798 \times 10^{-4}$	2.678 $\pm 1.5764 \times 10^{-6}$	2.8483 $\pm 4.7203 \times 10^{-3}$	2.9358 $\pm 4.8675 \times 10^{-3}$	8.5635
4	$6.0731 \times 10^{-2}$ $\pm 8.1702 \times 10^{-5}$	0.3384 $\pm 7.756 \times 10^{-2}$	12.901 $\pm 6.9207 \times 10^{-4}$	$1.3471 \times 10^3$ $\pm 7.179 \times 10^{-4}$	2.695 $\pm 1.4362 \times 10^{-6}$	2.7347 $\pm 4.3336 \times 10^{-3}$	2.8267 $\pm 4.4786 \times 10^{-3}$	8.6676
5	0.120 87 $\pm 7.7859 \times 10^{-5}$	-0.735 66 $\pm 3.6931 \times 10^{-2}$	-7.3982 $\pm 3.2191 \times 10^{-4}$	$1.3645 \times 10^3$ $\pm 3.1957 \times 10^{-4}$	2.7298 $\pm 6.3931 \times 10^{-7}$	2.667 $\pm 2.0192 \times 10^{-3}$	2.63 $\pm 2.0038 \times 10^{-3}$	17.856
6	0.122 01 $\pm 7.9326 \times 10^{-5}$	0.861 64 $\pm 3.7153 \times 10^{-2}$	7.3975 $\pm 3.2608 \times 10^{-4}$	$1.3793 \times 10^3$ $\pm 3.3143 \times 10^{-4}$	2.7594 $\pm 6.6305 \times 10^{-7}$	2.691 $\pm 2.0659 \times 10^{-3}$	2.7078 $\pm 2.0794 \times 10^{-3}$	17.723
7	$2.9988 \times 10^{-2}$ $\pm 1.3838 \times 10^{-4}$	0.419 45 $\pm 0.270\ 39$	-15.869 $\pm 4.555 \times 10^{-3}$	$1.4225 \times 10^3$ $\pm 4.408 \times 10^{-3}$	2.8457 $\pm 8.8184 \times 10^{-6}$	5.0452 $\pm 2.7812 \times 10^{-2}$	4.9046 $\pm 2.708 \times 10^{-2}$	3.6713
8	$5.8812 \times 10^{-2}$ $\pm 1.0388 \times 10^{-4}$	1.8315 $\pm 0.102\ 66$	-7.0294 $\pm 1.1639 \times 10^{-3}$	$1.4313 \times 10^3$ $\pm 1.219 \times 10^{-3}$	2.8633 $\pm 2.4386 \times 10^{-6}$	3.4775 $\pm 7.18 \times 10^{-3}$	3.6125 $\pm 7.4596 \times 10^{-3}$	7.9386
9	$2.7485 \times 10^{-2}$ $\pm 1.1357 \times 10^{-4}$	0.622 15 $\pm 0.253\ 43$	-1.9772 $\pm 3.124 \times 10^{-3}$	$1.4364 \times 10^3$ $\pm 3.1931 \times 10^{-3}$	2.8735 $\pm 6.388 \times 10^{-6}$	3.8931 $\pm 1.8722 \times 10^{-2}$	3.9135 $\pm 1.8521 \times 10^{-2}$	3.6174
10	$2.6169 \times 10^{-2}$ $\pm 1.0975 \times 10^{-4}$	0.255 62 $\pm 0.256\ 28$	1.9818 $\pm 3.0727 \times 10^{-3}$	$1.4403 \times 10^3$ $\pm 3.1138 \times 10^{-3}$	2.8814 $\pm 6.2293 \times 10^{-6}$	3.7285 $\pm 1.7949 \times 10^{-2}$	3.7972 $\pm 1.8347 \times 10^{-2}$	3.4874
11	$5.7575 \times 10^{-2}$ $\pm 1.0047 \times 10^{-4}$	-0.171 17 $\pm 9.9692 \times 10^{-2}$	7.0178 $\pm 1.1363 \times 10^{-3}$	$1.4453 \times 10^3$ $\pm 1.0887 \times 10^{-3}$	2.8914 $\pm 2.1781 \times 10^{-6}$	3.5028 $\pm 7.202 \times 10^{-3}$	3.3264 $\pm 6.7593 \times 10^{-3}$	7.8653

12	$3.0528 \times 10^{-2}$ $\pm 1.4362 \times 10^{-4}$	0.345 08 $\pm 0.2736$	15.86 $\pm 4.7007 \times 10^{-3}$	$1.4542 \times 10^3$ $\pm 4.7131 \times 10^{-3}$	2.9092 $\pm 9.4287 \times 10^{-6}$	5.135 $\pm 2.887 \times 10^{-2}$	5.1788 $\pm 2.9185 \times 10^{-2}$	3.7025
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## 2.450 - 2.250 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$\int$
1	$2.9173 \times 10^{-2}$	-1.0124	-11.408	$1.1683 \times 10^3$	2.3372	3.8764	3.9142	3.8444
	$\pm 8.4791 \times 10^{-5}$	$\pm 0.172\,54$	$\pm 2.191 \times 10^{-3}$	$\pm 2.2024 \times 10^{-3}$	$\pm 4.4061 \times 10^{-6}$	$\pm 1.3215 \times 10^{-2}$	$\pm 1.3385 \times 10^{-2}$	
2	$6.0211 \times 10^{-2}$	-0.512 07	-7.1688	$1.1725 \times 10^3$	2.3457	3.7847	3.7652	7.9742
	$\pm 8.3626 \times 10^{-5}$	$\pm 8.262 \times 10^{-2}$	$\pm 1.0076 \times 10^{-3}$	$\pm 1.0109 \times 10^{-3}$	$\pm 2.0224 \times 10^{-6}$	$\pm 6.1192 \times 10^{-3}$	$\pm 6.0367 \times 10^{-3}$	
3	$2.9249 \times 10^{-2}$	0.661 97	-2.9483	$1.1767 \times 10^3$	2.3541	3.1416	3.1409	4.0952
	$\pm 6.95 \times 10^{-5}$	$\pm 0.140\,65$	$\pm 1.4305 \times 10^{-3}$	$\pm 1.44 \times 10^{-3}$	$\pm 2.8807 \times 10^{-6}$	$\pm 8.7589 \times 10^{-3}$	$\pm 8.7229 \times 10^{-3}$	
4	$2.8521 \times 10^{-2}$	-0.6907	2.9483	$1.1826 \times 10^3$	2.3659	3.0774	3.0627	4.0456
	$\pm 6.7784 \times 10^{-5}$	$\pm 0.141\,48$	$\pm 1.4162 \times 10^{-3}$	$\pm 1.4115 \times 10^{-3}$	$\pm 2.8237 \times 10^{-6}$	$\pm 8.5415 \times 10^{-3}$	$\pm 8.5181 \times 10^{-3}$	
5	$6.0113 \times 10^{-2}$	0.525 15	7.1694	$1.1869 \times 10^3$	2.3744	3.769	3.6971	8.0286
	$\pm 8.2521 \times 10^{-5}$	$\pm 8.1829 \times 10^{-2}$	$\pm 9.9866 \times 10^{-4}$	$\pm 9.8173 \times 10^{-4}$	$\pm 1.964 \times 10^{-6}$	$\pm 6.0066 \times 10^{-3}$	$\pm 5.8777 \times 10^{-3}$	
6	$2.9292 \times 10^{-2}$	0.889 15	11.41	$1.1911 \times 10^3$	2.3828	3.8815	3.8274	3.8704
	$\pm 8.3951 \times 10^{-5}$	$\pm 0.169\,67$	$\pm 2.1551 \times 10^{-3}$	$\pm 2.1247 \times 10^{-3}$	$\pm 4.2506 \times 10^{-6}$	$\pm 1.3076 \times 10^{-2}$	$\pm 1.2882 \times 10^{-2}$	

## 2.000 - 1.740 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$\int$
1	0.114 96	1.2616	-6.6249	937.96	1.8764	6.1409	6.1826	13.26
	$\pm 1.3635 \times 10^{-4}$	$\pm 6.9092 \times 10^{-2}$	$\pm 1.3237 \times 10^{-3}$	$\pm 1.3384 \times 10^{-3}$	$\pm 2.6776 \times 10^{-6}$	$\pm 8.1604 \times 10^{-3}$	$\pm 8.1624 \times 10^{-3}$	
2	0.121 71	0.1033	-2.2938	942.31	1.8851	5.9199	5.9098	14.215
	$\pm 1.4164 \times 10^{-4}$	$\pm 6.9142 \times 10^{-2}$	$\pm 1.1982 \times 10^{-3}$	$\pm 1.2128 \times 10^{-3}$	$\pm 2.4262 \times 10^{-6}$	$\pm 7.3477 \times 10^{-3}$	$\pm 7.2181 \times 10^{-3}$	
3	0.122 65	0.5451	2.281	946.87	1.8943	5.9682	5.8742	14.307
	$\pm 1.4328 \times 10^{-4}$	$\pm 6.8152 \times 10^{-2}$	$\pm 1.1924 \times 10^{-3}$	$\pm 1.1817 \times 10^{-3}$	$\pm 2.3641 \times 10^{-6}$	$\pm 7.4094 \times 10^{-3}$	$\pm 7.2224 \times 10^{-3}$	
4	0.118 74	-1.392	6.631	951.19	1.9029	6.2876	6.1951	13.638
	$\pm 1.3851 \times 10^{-4}$	$\pm 6.762 \times 10^{-2}$	$\pm 1.3188 \times 10^{-3}$	$\pm 1.3103 \times 10^{-3}$	$\pm 2.6213 \times 10^{-6}$	$\pm 8.2492 \times 10^{-3}$	$\pm 8.0386 \times 10^{-3}$	



## 1.550 - 1.350 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$f$
1	$2.8851 \times 10^{-2}$	-0.11081	-9.3849	721.2	1.4428	3.9769	3.9606	3.7877
	$\pm 1.1906 \times 10^{-4}$	$\pm 0.22938$	$\pm 2.5595 \times 10^{-3}$	$\pm 2.551 \times 10^{-3}$	$\pm 5.1034 \times 10^{-6}$	$\pm 1.5809 \times 10^{-2}$	$\pm 1.5804 \times 10^{-2}$	
2	$2.9835 \times 10^{-2}$	-0.42154	-7.4032	723.18	1.4468	3.6166	3.4463	4.0138
	$\pm 1.6669 \times 10^{-4}$	$\pm 0.25133$	$\pm 1.6645 \times 10^{-3}$	$\pm 2.0311 \times 10^{-3}$	$\pm 4.0634 \times 10^{-6}$	$\pm 2.3699 \times 10^{-2}$	$\pm 2.2501 \times 10^{-2}$	
3	$2.6458 \times 10^{-2}$	-0.48913	-6.9394	723.65	1.4477	3.5163	3.4638	3.6092
	$\pm 2.0852 \times 10^{-4}$	$\pm 0.5904$	$\pm 4.2347 \times 10^{-3}$	$\pm 4.2445 \times 10^{-3}$	$\pm 8.4914 \times 10^{-6}$	$\pm 6.5831 \times 10^{-3}$	$\pm 9.0942 \times 10^{-3}$	
4	$2.9174 \times 10^{-2}$	-0.61992	-4.9687	725.6	1.4516	3.0836	3.0528	4.0821
	$\pm 8.439 \times 10^{-5}$	$\pm 0.17534$	$\pm 1.5055 \times 10^{-3}$	$\pm 1.5051 \times 10^{-3}$	$\pm 3.0111 \times 10^{-6}$	$\pm 9.2095 \times 10^{-3}$	$\pm 9.0866 \times 10^{-3}$	
5	$2.7929 \times 10^{-2}$	-0.36732	4.9671	735.54	1.4715	3.018	3.0175	3.9168
	$\pm 8.1285 \times 10^{-5}$	$\pm 0.17272$	$\pm 1.4991 \times 10^{-3}$	$\pm 1.5241 \times 10^{-3}$	$\pm 3.049 \times 10^{-6}$	$\pm 9.142 \times 10^{-3}$	$\pm 9.0419 \times 10^{-3}$	
6	$6.3958 \times 10^{-2}$	0.96095	7.1792	737.74	1.4759	4.5358	4.4713	8.0743
	$\pm 1.3863 \times 10^{-4}$	$\pm 0.13603$	$\pm 1.6145 \times 10^{-3}$	$\pm 1.6111 \times 10^{-3}$	$\pm 3.2231 \times 10^{-6}$	$\pm 9.2042 \times 10^{-3}$	$\pm 8.9716 \times 10^{-3}$	
7	$2.6666 \times 10^{-2}$	1.1563	9.3909	739.95	1.4803	3.7929	3.8342	3.5438
	$\pm 1.0624 \times 10^{-4}$	$\pm 0.24033$	$\pm 2.5684 \times 10^{-3}$	$\pm 2.604 \times 10^{-3}$	$\pm 5.2093 \times 10^{-6}$	$\pm 1.5165 \times 10^{-2}$	$\pm 1.5251 \times 10^{-2}$	

## 1.350 - 1.200 ppm

Osc.	$a$	$\phi$ (°)	$f_1$ (Hz)	$f_2$ (Hz)	$f_2$ (ppm)	$\eta_1$ (s <sup>-1</sup> )	$\eta_2$ (s <sup>-1</sup> )	$f$
1	$3.0668 \times 10^{-2}$	-0.72639	-8.501	629.18	1.2587	0.9546	0.95209	5.311
	$\pm 2.921 \times 10^{-5}$	$\pm 5.4759 \times 10^{-2}$	$\pm 1.7314 \times 10^{-4}$	$\pm 2.1489 \times 10^{-4}$	$\pm 4.299 \times 10^{-7}$	$\pm 1.0838 \times 10^{-3}$	$\pm 1.3471 \times 10^{-3}$	
2	$6.1335 \times 10^{-2}$	-0.571	-5.2053	632.48	1.2653	1.2033	1.2002	11.458
	$\pm 3.4931 \times 10^{-5}$	$\pm 3.2753 \times 10^{-2}$	$\pm 1.2722 \times 10^{-4}$	$\pm 1.4739 \times 10^{-4}$	$\pm 2.9485 \times 10^{-7}$	$\pm 7.9647 \times 10^{-4}$	$\pm 9.219 \times 10^{-4}$	
3	$3.0384 \times 10^{-2}$	6.2694 $\times 10^{-2}$	-1.909	635.77	1.2719	1.3344	1.3325	5.5273
	$\pm 3.7897 \times 10^{-5}$	$\pm 7.2258 \times 10^{-2}$	$\pm 3.1017 \times 10^{-4}$	$\pm 3.4846 \times 10^{-4}$	$\pm 6.9711 \times 10^{-7}$	$\pm 1.9284 \times 10^{-3}$	$\pm 2.1692 \times 10^{-3}$	
4	$3.0468 \times 10^{-2}$	-1.0508 $\times 10^{-2}$	1.9092	639.59	1.2795	1.3375	1.3368	4.8956
	$\pm 3.8034 \times 10^{-5}$	$\pm 7.2143 \times 10^{-2}$	$\pm 3.1061 \times 10^{-4}$	$\pm 3.4872 \times 10^{-4}$	$\pm 6.9763 \times 10^{-7}$	$\pm 1.9329 \times 10^{-3}$	$\pm 2.1752 \times 10^{-3}$	
5	$6.1414 \times 10^{-2}$	0.54413	5.2056	642.89	1.2861	1.2049	1.2019	11.542
	$\pm 3.5298 \times 10^{-5}$	$\pm 3.3175 \times 10^{-2}$	$\pm 1.2852 \times 10^{-4}$	$\pm 1.4793 \times 10^{-4}$	$\pm 2.9593 \times 10^{-7}$	$\pm 8.033 \times 10^{-4}$	$\pm 9.2596 \times 10^{-4}$	

6	$3.0729 \times 10^{-2}$	0.7457	8.501	646.18	1.2927	0.95703	0.95275	6.2876
	$\pm 2.9461 \times 10^{-5}$	$\pm 5.5039 \times 10^{-2}$	$\pm 1.7343 \times 10^{-4}$	$\pm 2.156 \times 10^{-4}$	$\pm 4.3133 \times 10^{-7}$	$\pm 1.0888 \times 10^{-3}$	$\pm 1.3505 \times 10^{-3}$	

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Estimation performed using NMR-EsPy.

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For more information:



<https://foroozandehgroup.github.io/NMR-EsPy>



<https://github.com/foroozandehgroup/NMR-EsPy>



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