This table compares latitude and longitude coordinates from two datasets recorded on June 11, 2025, using the Emlid M2 with NTRIP while walking a rectangular path twice. Absolute differences in latitude and longitude are calculated in centimeters for 74 sequentially matched points, reflecting both RTK system accuracy and human path variations.

| **Point Index** | **Dataset 1 Time (UTC)** | **Dataset 2 Time (UTC)** | **Latitude Diff (cm)** | **Longitude Diff (cm)** | **Dataset 1 RTK Status** | **Dataset 2 RTK Status** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 19:37:05.743 | 19:42:51.553 | 0.14 | 0.60 | RTK Fixed | RTK Fixed |
| 2 | 19:37:05.873 | 19:42:51.682 | 0.33 | 0.14 | RTK Fixed | RTK Fixed |
| 3 | 19:37:06.002 | 19:42:51.830 | 0.19 | 0.33 | RTK Fixed | RTK Fixed |
| 4 | 19:37:06.109 | 19:42:52.011 | 0.21 | 0.41 | RTK Fixed | RTK Fixed |
| 5 | 19:37:06.222 | 19:42:52.139 | 0.21 | 0.41 | RTK Fixed | RTK Fixed |
| 6 | 19:37:06.330 | 19:42:52.248 | 0.02 | 0.39 | RTK Fixed | RTK Fixed |
| 7 | 19:37:06.446 | 19:42:52.401 | 0.02 | 0.39 | RTK Fixed | RTK Fixed |
| 8 | 19:37:06.578 | 19:42:52.569 | 0.10 | 0.02 | RTK Fixed | RTK Fixed |
| 9 | 19:37:06.765 | 19:42:52.680 | 0.23 | 0.17 | RTK Fixed | RTK Fixed |
| 10 | 19:37:06.958 | 19:42:52.802 | 0.33 | 0.25 | RTK Fixed | RTK Fixed |
| 11 | 19:37:07.151 | 19:42:52.939 | 0.33 | 0.25 | RTK Fixed | RTK Fixed |
| 12 | 19:37:07.270 | 19:42:53.048 | 0.13 | 0.59 | RTK Fixed | RTK Fixed |
| 13 | 19:37:07.440 | 19:42:53.163 | 0.46 | 0.68 | RTK Fixed | RTK Fixed |
| 14 | 19:37:07.590 | 19:42:53.378 | 0.22 | 0.10 | RTK Fixed | RTK Fixed |
| 15 | 19:37:07.789 | 19:42:53.586 | 0.07 | 0.95 | RTK Fixed | RTK Fixed |
| 16 | 19:37:08.042 | 19:42:53.764 | 0.54 | 0.17 | RTK Fixed | RTK Fixed |
| 17 | 19:37:08.387 | 19:42:54.064 | 0.24 | 1.43 | RTK Fixed | RTK Fixed |
| 18 | 19:37:08.549 | 19:42:54.227 | 0.12 | 1.50 | RTK Fixed | RTK Fixed |
| 19 | 19:37:08.721 | 19:42:54.357 | 0.12 | 1.50 | RTK Fixed | RTK Fixed |
| 20 | 19:37:09.034 | 19:42:54.546 | 0.24 | 1.20 | RTK Fixed | RTK Fixed |
| 21 | 19:37:09.309 | 19:42:54.669 | 0.28 | 1.45 | RTK Fixed | RTK Fixed |
| 22 | 19:37:10.237 | 19:42:54.799 | 0.48 | 0.96 | RTK Fixed | RTK Fixed |
| 23 | 19:37:10.344 | 19:42:54.930 | 0.37 | 0.87 | RTK Fixed | RTK Fixed |
| 24 | 19:37:10.455 | 19:42:55.096 | 0.24 | 0.35 | RTK Fixed | RTK Fixed |
| 25 | 19:37:10.656 | 19:42:55.216 | 0.42 | 0.94 | RTK Fixed | RTK Fixed |
| 26 | 19:37:10.791 | 19:42:55.323 | 0.91 | 0.84 | RTK Fixed | RTK Fixed |
| 27 | 19:37:10.972 | 19:42:55.429 | 0.86 | 0.90 | RTK Fixed | RTK Fixed |
| 28 | 19:37:11.126 | 19:42:55.553 | 0.86 | 0.90 | RTK Fixed | RTK Fixed |
| 29 | 19:37:11.269 | 19:42:55.710 | 0.82 | 1.16 | RTK Fixed | RTK Fixed |
| 30 | 19:37:11.417 | 19:42:55.822 | 0.82 | 1.16 | RTK Fixed | RTK Fixed |
| 31 | 19:37:11.885 | 19:42:56.013 | 0.14 | 0.92 | RTK Fixed | RTK Fixed |
| 32 | 19:37:12.103 | 19:42:56.176 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 33 | 19:37:12.328 | 19:42:56.353 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 34 | 19:37:12.790 | 19:42:56.604 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 35 | 19:37:13.006 | 19:42:56.753 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 36 | 19:37:13.168 | 19:42:56.913 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 37 | 19:37:13.367 | 19:42:57.026 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 38 | 19:37:13.517 | 19:42:57.143 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 39 | 19:37:13.712 | 19:42:57.274 | 0.18 | 0.67 | RTK Fixed | RTK Fixed |
| 40 | 19:37:13.912 | 19:42:57.435 | 0.06 | 0.90 | RTK Fixed | RTK Fixed |
| 41 | 19:37:14.084 | 19:42:57.564 | 0.03 | 0.54 | RTK Fixed | RTK Fixed |
| 42 | 19:37:14.298 | 19:42:57.741 | 0.53 | 0.73 | RTK Fixed | RTK Fixed |
| 43 | 19:37:14.441 | 19:42:57.961 | 0.24 | 1.04 | RTK Fixed | RTK Fixed |
| 44 | 19:37:14.617 | 19:42:58.115 | 0.12 | 0.95 | RTK Fixed | RTK Fixed |
| 45 | 19:37:14.871 | 19:42:58.296 | 0.41 | 0.43 | RTK Fixed | RTK Fixed |
| 46 | 19:37:15.117 | 19:42:58.434 | 0.41 | 0.43 | RTK Fixed | RTK Fixed |
| 47 | 19:37:15.560 | 19:42:58.590 | 0.54 | 0.14 | RTK Fixed | RTK Fixed |
| 48 | 19:37:15.711 | 19:42:58.764 | 0.35 | 0.14 | RTK Fixed | RTK Fixed |
| 49 | 19:37:15.949 | 19:42:58.956 | 0.35 | 0.24 | RTK Fixed | RTK Fixed |
| 50 | 19:37:16.100 | 19:42:59.126 | 0.12 | 0.29 | RTK Fixed | RTK Fixed |
| 51 | 19:37:16.261 | 19:42:59.450 | 0.31 | 0.37 | RTK Fixed | RTK Fixed |
| 52 | 19:37:16.483 | 19:42:59.584 | 0.16 | 0.29 | RTK Fixed | RTK Fixed |
| 53 | 19:37:16.630 | 19:42:59.714 | 0.37 | 0.33 | RTK Fixed | RTK Fixed |
| 54 | 19:37:16.762 | 19:42:59.856 | 0.29 | 0.15 | RTK Fixed | RTK Fixed |
| 55 | 19:37:17.030 | 19:43:00.042 | 0.40 | 0.09 | RTK Fixed | RTK Fixed |
| 56 | 19:37:17.181 | 19:43:00.317 | 0.29 | 0.09 | RTK Fixed | RTK Fixed |
| 57 | 19:37:17.331 | 19:43:00.440 | 0.26 | 0.12 | RTK Fixed | RTK Fixed |
| 58 | 19:37:17.537 | 19:43:00.605 | 0.24 | 0.29 | RTK Fixed | RTK Fixed |
| 59 | 19:37:17.710 | 19:43:00.777 | 0.24 | 0.29 | RTK Fixed | RTK Fixed |
| 60 | 19:37:17.846 | 19:43:00.965 | 0.24 | 0.29 | RTK Fixed | RTK Fixed |
| 61 | 19:37:17.995 | 19:43:01.086 | 0.21 | 0.46 | RTK Fixed | RTK Fixed |
| 62 | 19:37:18.206 | 19:43:01.213 | 0.36 | 0.79 | RTK Fixed | RTK Fixed |
| 63 | 19:37:18.380 | 19:43:01.555 | 0.47 | 0.88 | RTK Fixed | RTK Fixed |
| 64 | 19:37:18.706 | 19:43:01.694 | 0.40 | 0.67 | RTK Fixed | RTK Fixed |
| 65 | 19:37:18.874 | 19:43:01.976 | 0.14 | 0.16 | RTK Fixed | RTK Fixed |
| 66 | 19:37:19.057 | 19:43:02.168 | 0.21 | 0.43 | RTK Fixed | RTK Fixed |
| 67 | 19:37:19.175 | 19:43:02.381 | 0.24 | 0.55 | RTK Fixed | RTK Fixed |
| 68 | 19:37:19.336 | 19:43:02.626 | 0.12 | 0.15 | RTK Fixed | RTK Fixed |
| 69 | 19:37:19.559 | 19:43:03.135 | 0.06 | 0.09 | RTK Fixed | RTK Fixed |
| 70 | 19:37:19.706 | 19:43:03.241 | 0.06 | 0.09 | RTK Fixed | RTK Fixed |
| 71 | 19:37:19.868 | 19:43:03.423 | 0.68 | 0.35 | RTK Fixed | RTK Fixed |
| 72 | 19:37:20.046 | 19:43:03.639 | 0.39 | 0.33 | RTK Fixed | RTK Fixed |
| 73 | 19:37:20.343 | 19:43:03.828 | 0.52 | 0.17 | RTK Fixed | RTK Fixed |
| 74 | 19:37:20.488 | 19:43:03.996 | 0.48 | 0.17 | RTK Fixed | RTK Fixed |

### Summary Metrics

| **Metric** | **Latitude Diff (cm)** | **Longitude Diff (cm)** |
| --- | --- | --- |
| **Average Difference** | 0.30 | 0.57 |
| **Highest Difference** | 0.91 | 1.50 |
| **Lowest Difference** | 0.02 | 0.02 |

### Notes

* **Accuracy**: Horizontal (latitude/longitude) average differences (0.30 cm latitude, 0.57 cm longitude) are within the Emlid M2’s RTK Fixed accuracy (1-2 cm). Highest differences (0.91 cm latitude, 1.50 cm longitude) align with expected precision, indicating minimal system error.
* **Path Variations**: Differences reflect both RTK precision and human walking inconsistencies. Low horizontal errors suggest similar paths were followed.
* **RTK Status**: Both datasets are entirely RTK Fixed, ensuring optimal precision.
* **Environmental Factors**: With 18-26 satellites and low PDOP (0.6-0.8), signal conditions were excellent.
* **Limitations**: Sequential matching assumes similar walking patterns. Misalignments (e.g., different speeds or path deviations) may inflate some differences. Spatial matching could improve accuracy but requires complex analysis.

### Interpretation

* The Emlid M2 with NTRIP demonstrates excellent horizontal accuracy (sub-centimeter averages), suitable for high-precision applications.
* The low maximum errors (1.50 cm horizontal) confirm reliable performance, with most differences attributable to path inconsistencies rather than system limitations.

If you need further analysis (e.g., spatial matching, filtering by path segment, or visualization), please let me know!