

# Set RTX – RTK Offset

RTX broadcasts in ITRF 2008 (current epoch) and receiver transforms to 2005 epoch

- If customer wants to work in a Trimble Access project using the state plane NAD83 datum, they have 2 options:
  - Use the RTX to RTK offset
    - Requires you to shoot in a point with RTK and RTX before you can shoot in and apply the offset
    - This may not be the best option for some customers since they may not be using RTK in this particular setup
  - o Use a Site calibration
    - You must have control data (in terms of NAD83(some epoch)) loaded in your project beforehand
    - Perform a site calibration
- A 3<sup>rd</sup> option would be to work in the same datum as the RTX corrections
  - Work will need to be performed before going out into the field.
  - Convert the project data to ITRF2008 before loading onto a data collector, then when you use RTX there would be no transformation.
  - Use the HTDP tool from NGS to transform the coordinates
    - http://www.ngs.noaa.gov/TOOLS/program\_descriptions.html#HTDP

## In this paper we will be describing RTX to RTK offset in easy steps

#### **Click on Settings**



## Click on Survey Styles



#### Create new Style and name it RTX

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| RTX                       |  |        |
|                           |  |        |
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| <b></b>                   | No survey PDOP:1.5                           |        |
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#### **Rover** option



Change Broadcast format RTX (SV)

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| Survey          | type:              | Broadcast format: |        |
| RTK             | ▼                  | RTX (SV)          | ▼      |
| Elevatio        | n mask:            |                   |        |
| 10°             | •                  |                   |        |
| PDOP m          | nask:              |                   |        |
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| Ante            | nna                |                   |        |
| Type:           |                    |                   |        |
| R10             | Internal           | ▼                 | 1/3    |
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Select your antenna type, accept and store

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| Nam             | e                    |         | Size   | Modified      | Locatio    |
| FF              | PRN                  |         | 2kb    | 4/28/2015     | \Trimble   |
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| RE              | ES RTK 8             | εL      | 2kb    | 4/28/2015     | \Trimble 📟 |
| R1              | ſĸ                   |         | 2kb    | 7/13/2015     | \Trimble   |
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## **General Survey**



#### Start new job

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#### Give it a name and select parameters



#### Measure



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#### Select RTX survey style



#### Measure points



## Select tectonic plate



#### Click on Satellite to check status



#### After 30 minutes it will converge



#### Start Measuring





#### Store RTX point

| MyMobiler                     |                |
|-------------------------------|----------------|
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| 📎 Measure points 🛛 🔊 🕛        | ? — ×          |
| Point name: Code:             | 97%            |
| RTX 🕨 👔 🕨                     | 73%            |
| Method:                       | <i>🍂</i> 13    |
| Topo point                    | h 💥            |
| Antenna height (Uncorrected): |                |
| 6.562sft                      | <b>9</b> 0.302 |
| Measured to:                  | Map            |
| Bottom of quick release       | Menu           |
| Time so far: Epochs re        |                |
| 0m57s 0                       | Favorites      |
| R10                           | Switch to      |
| RTX H:0.07sft V:0.13sft 🗸 🗸   |                |
| Esc eBubble Options           | Store          |
|                               |                |

#### Start measuring an RTK point



#### Store the RTK point

![](_page_4_Picture_7.jpeg)

Once you have at least one RTX point and One RTK shot you can do RTX – RTK offset or Site Calibration.

From the RTK measure menu you will see the options below

![](_page_4_Figure_10.jpeg)

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From the RTX measure menu select

| MyMobiler                   |                       |
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| <u>File Edit View Tools</u> |                       |
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| Measure                     | - <b>&gt; ●</b> ? - × |
| Measure points              |                       |
| Measure codes               |                       |
| Site calibration            | _                     |
| <u>R</u> TX - RTK Offset    |                       |
|                             |                       |
|                             |                       |
|                             |                       |
| No survey PD0               | DP:2.1                |
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RTX – RTK Offset

![](_page_5_Picture_3.jpeg)

Hit Calc to select the RTX and RTK shots

| MyMobil           | ler                  |              |            |                    |
|-------------------|----------------------|--------------|------------|--------------------|
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| 1 @~ F            | RTX Offset           |              | <b>→ !</b> | ? – X              |
| RTK pc            | pint:                | Code:        |            | 95%                |
| ?                 | •                    | ?            |            |                    |
| RTX po            | pint:                | Code:        |            | <i></i> 13         |
| ?                 |                      | ?            |            |                    |
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|                   | Nos                  | urvey PDOP:  | 2.1        |                    |
| Esc               | Nono                 |              |            |                    |
|                   | None                 |              |            |                    |

Select your RTK shot (Labeled RTK)

| MyMobil     | ler                  |          |              |          |          |               | <b>X</b> |
|-------------|----------------------|----------|--------------|----------|----------|---------------|----------|
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|             | Select a             | point    |              | -        | <b>)</b> | ? –           | - ×      |
| F K N       | lame                 |          | Code         |          |          |               | 95%      |
|             | RTK                  |          |              |          |          |               | 43       |
| <u>F TX</u> |                      |          |              |          |          | 42            | 13       |
|             |                      |          |              |          |          | 7             |          |
|             |                      |          |              |          |          | 9             | 2        |
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| ?           |                      |          | ?            |          |          | Me            | nu       |
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Select RTX shot (Labeled RTX)

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| I IK N                                    | lame                 |           | Code    |       |            |                    |
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You will see that the H and V precision has been calculated

| MyMobiler            |                    |            |                    |
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| RTK point:           | Code:              |            | 95%                |
| RTK 🕨                | ?                  |            | 67%                |
| RTX point:           | Code:              |            | 🍂 13               |
| RTX                  | ?                  |            |                    |
|                      |                    |            |                    |
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| Esc None             |                    |            | Apply              |

![](_page_6_Picture_0.jpeg)

## And your offset has been measured

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| 🖗 R                | RTX Offset         |                 | <b>→</b> | ? — X              |
|                    |                    |                 |          | 95%                |
| <sub>∫</sub> Offse | ət                 |                 |          | 6/%                |
| Slope              | dist:              | ΔΧ:             |          | <i></i> 14         |
| 5.35               | 5sft               | 2.050sft        |          |                    |
| ΔΥ:                |                    | ΔΖ:             |          | <b></b>            |
| -4.9               | 16sft              | 0.555sft        |          | <b>Y</b> (         |
| Data               | :I_                |                 |          | <u>М</u> ар        |
|                    |                    |                 |          | M <u>e</u> nu      |
| Base               | point:             |                 | 0/2      | F <u>a</u> vorites |
| Ľ                  |                    |                 | Z^*      | Switch to          |
|                    | No                 | survey PDOP:1.9 |          |                    |
| Esc                | None               |                 |          | Apply              |
|                    |                    |                 |          |                    |

Click apply to apply the offset then hit enter to confirm the changes

![](_page_6_Picture_5.jpeg)

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