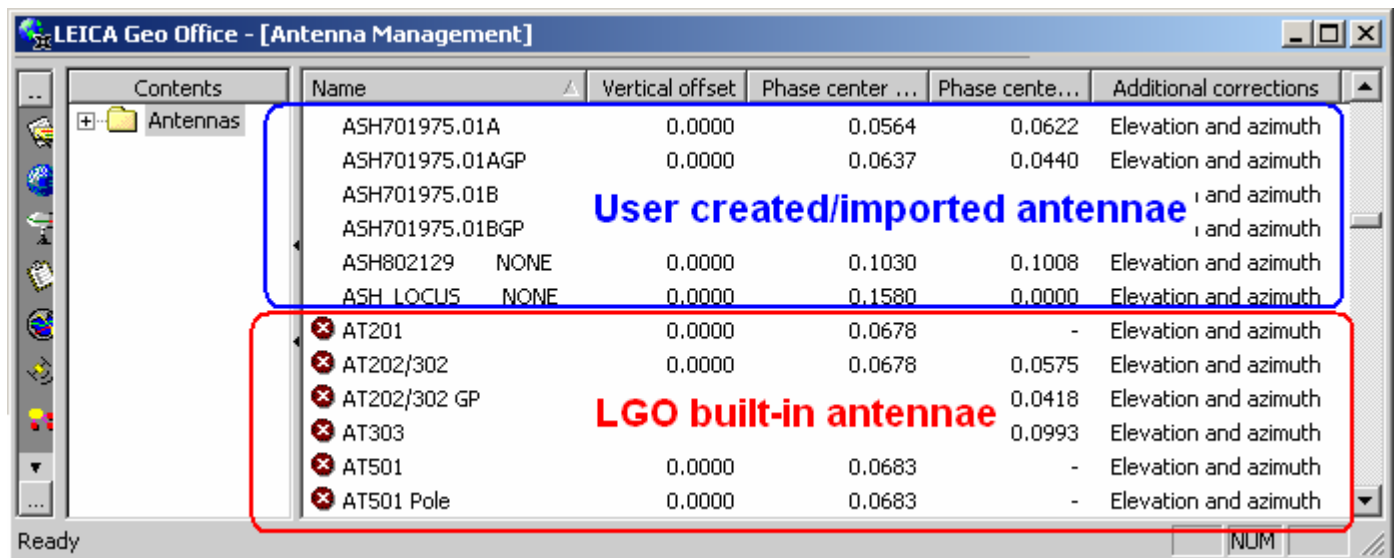


Using NGS Relative Antenna Calibration File in GNSS Baseline Processing

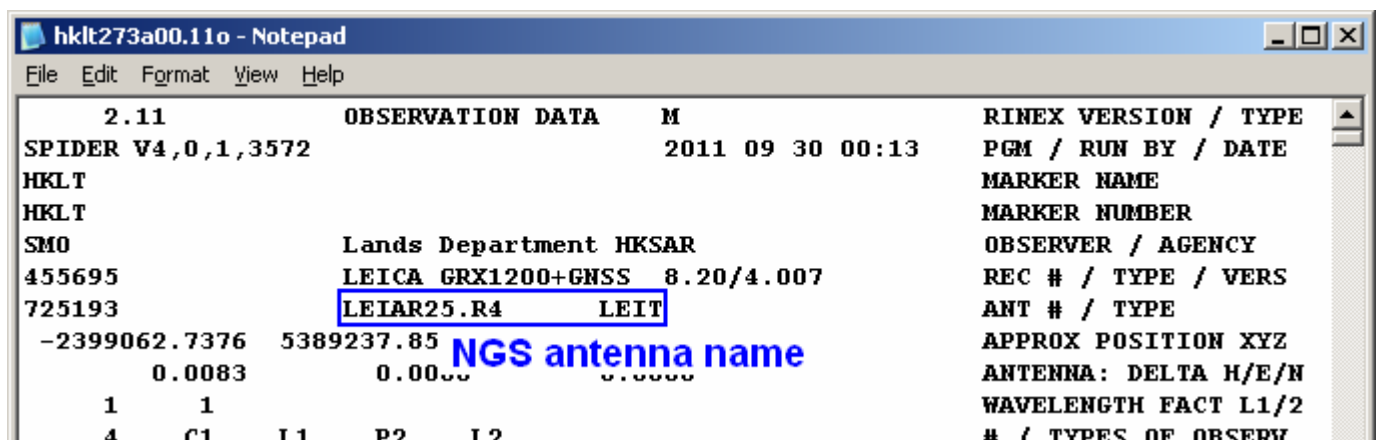
1. Geodetic Survey Section adopts National Geodetic Survey (NGS) antenna name in SatRef's RINEX data file. All users using SatRef's reference station are recommended to import NGS relative antenna calibration file from <http://www.ngs.noaa.gov/ANTCAL/main.jsp> for baseline processing.

This document demonstrates how to import NGS relative antenna calibration file to Leica Geo Office (LGO).

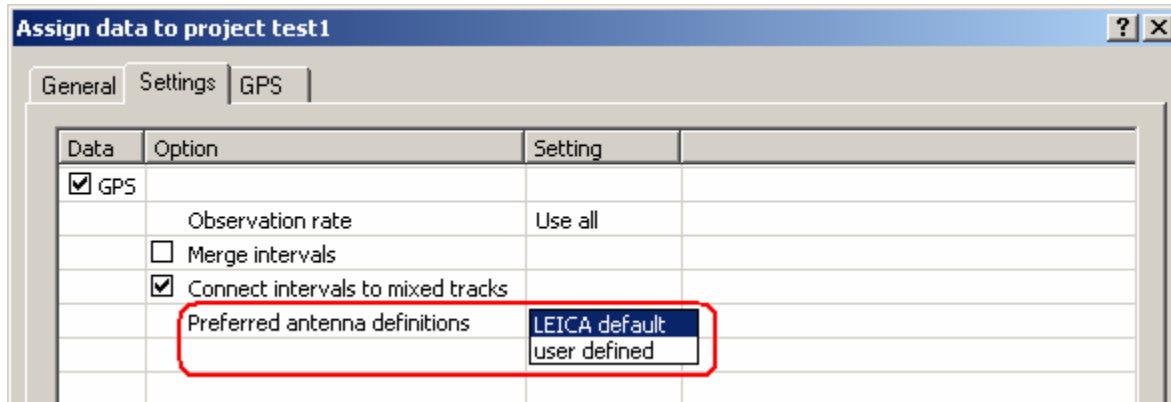
2. Understand the antennae in LGO.



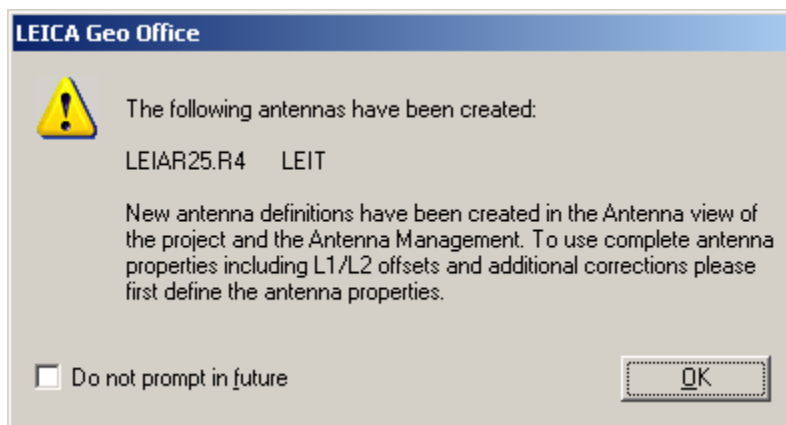
3. Select all [Ctrl+A] and delete. All user created/imported antennae will be deleted and LGO built-in antennae remain.
4. Import an observation RINEX file from SatRef.



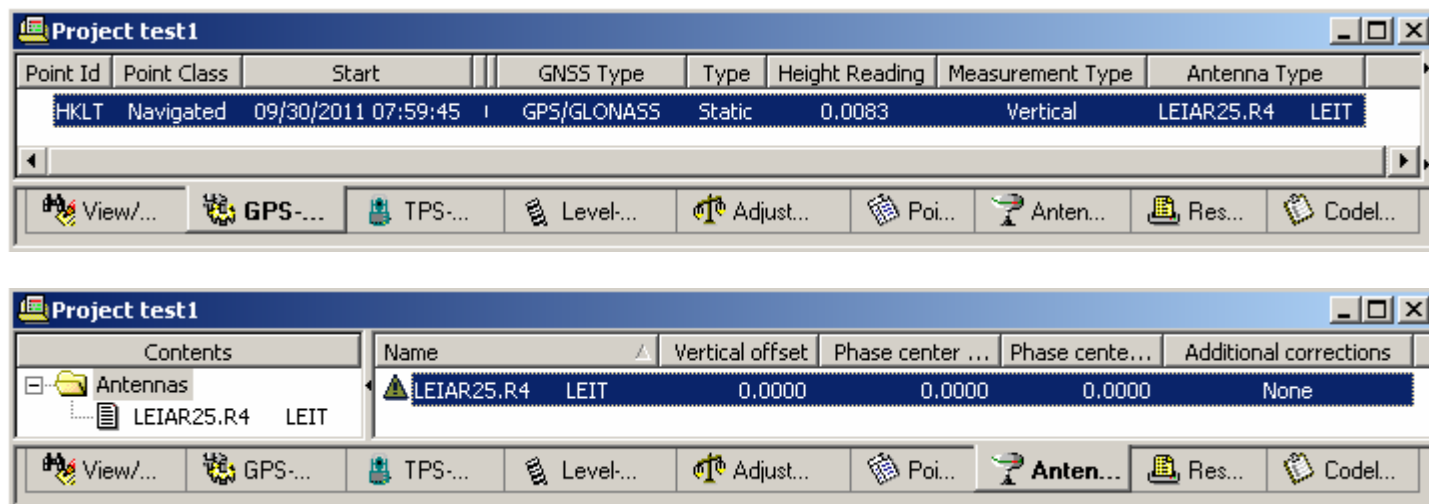
5. Note there is a setting “Preferred antenna definitions”. You are recommended to choose “user defined”.

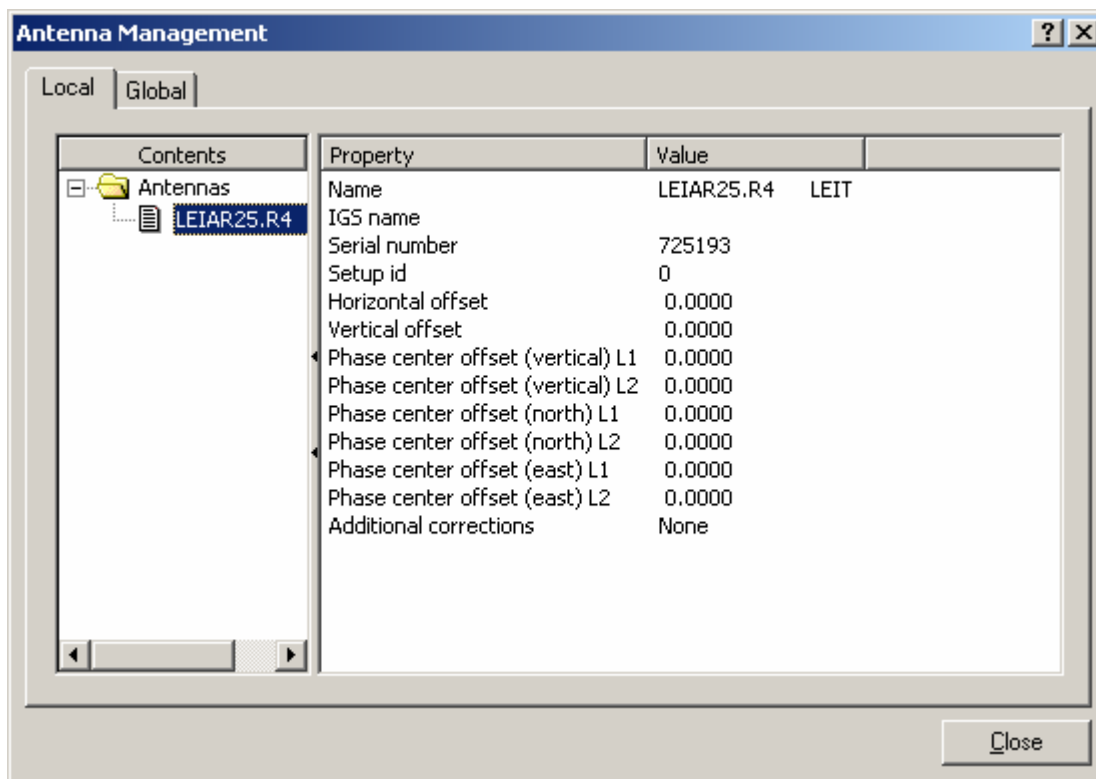


6. A warning is popup. You will not see this again if you have ticked “Do not prompt in future”

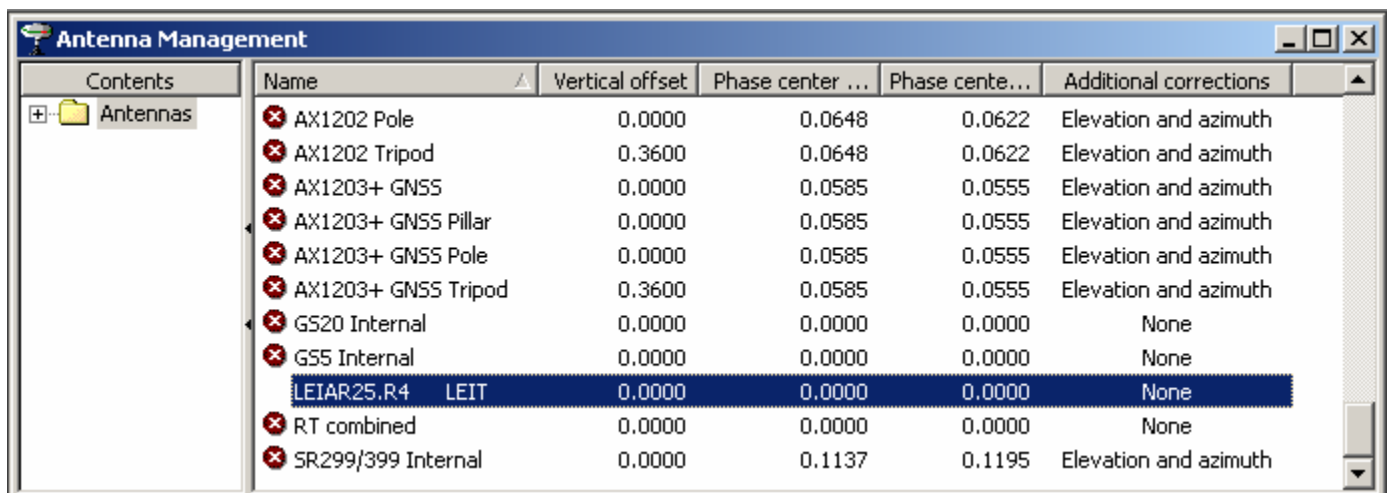


7. A new antenna “LEIAR25.R4 LEIT” is created without any phase offset correction. If you continue the processing, you will get a discrepancy as much as 0.15m in the height result.






8. You must delete the incorrect antenna “LEIAR25.R4 LEIT”, otherwise all new imported SatRef’s data will use this incorrect phase centre offset and additional corrections. Select all [Ctrl+A] and delete.




9. Browse NGS website <http://www.ngs.noaa.gov/ANTCAL/main.jsp> and then click “Composite Relative Calibrations ANTINFO (old NGS format)”



Antenna Calibrations

- NGS Home
- About NGS
- Data & Imagery
- Tools
- Surveys
- Science & Education



Links
[ANTCAL Home](#)
[FAQ](#)

Individual Absolute Calibrations

- 3SNAVIGATION
- ALTUS Positioning Systems
- AeroAntenna
- Allen Osborne Associates
- Antcom Corporation
- Ashtech
- DataGrid International
- Gutec AB
- Hemisphere GPS
- Javad
- Leica
- Macrometer
- Magellan Professional
- Micro Pulse
- NavCom
- NavXperience
- NovAtel
- Sensor Systems
- Septentrio Satellite Navigation
- Sokkia
- Spectra Precision
- Stonex
- Topcon
- Trimble

This page lists NGS Absolute Antenna Calibrations and appear on all the data used when processing NAD 83(2011,MA11) data different from earlier. For more information, visit <http://geodesy.noaa.gov>

If you are processing NAD 83(CORS96, R) data, Antenna Calibrations available.

Please consult the NGS website for the use of Absolute Calibrations.

Do you have a suggestion?

Composite Absolute Calibrations

- ANTEX (new IGS format)
- ANTINFO (old NGS format)

Composite Relative Calibrations

- [ANTINFO \(old NGS format\)](#)

References

- ANTEX format information
- ANTINFO format information

http://www.ngs.noaa.gov/ANTCAL/LoadFile?file=ant_info.003 - Windows Internet Explorer

http://www.ngs.noaa.gov/ANTCAL/Load

File Edit View Favorites Tools Help

★ Favorites http://www.ngs.noaa.gov/ANTCAL/LoadFile?file=ant...

```

<ant_info.003> <TYP:REL SRC:NGS-Database> <CBL-11/09/27=347>

ANTENNA ID      DESCRIPTION      DATA SOURCE (# OF TESTS) YR/MO/DY
[north] [ east] [ up ]
[90] [85] [80] [75] [70] [65] [60] [55] [50] [45] | AVE = # in average
[40] [35] [30] [25] [20] [15] [10] [ 5] [ 0] | L1 Offset (mm)
[north] [ east] [ up ] | L1 Phase at
[90] [85] [80] [75] [70] [65] [60] [55] [50] [45] | Elevation (mm)
[40] [35] [30] [25] [20] [15] [10] [ 5] [ 0] | L2 Offset (mm)
| L2 Phase at
| Elevation (mm)

NONE NONE NGS ( 0) 99/10/04

0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
ACC2G1215A_XT_1 NONE ACTIVE L1/L2 GPS, 2.6", label top->N NGS ( 2) 09/09/15
1.1 1.6 22.1
0.0 0.5 1.1 1.8 2.5 3.2 3.8 4.2 4.5 4.5
4.4 4.0 3.5 2.6 1.5 0.1 -1.4 0.0 0.0

```

Done Internet 100%

10. Save the webpage as txt file.

LoadFile.txt - Notepad

File Edit Format View Help

```

<ant_info.003> <TYP:REL SRC:NGS-Database> <CBL-11/09/27=347>

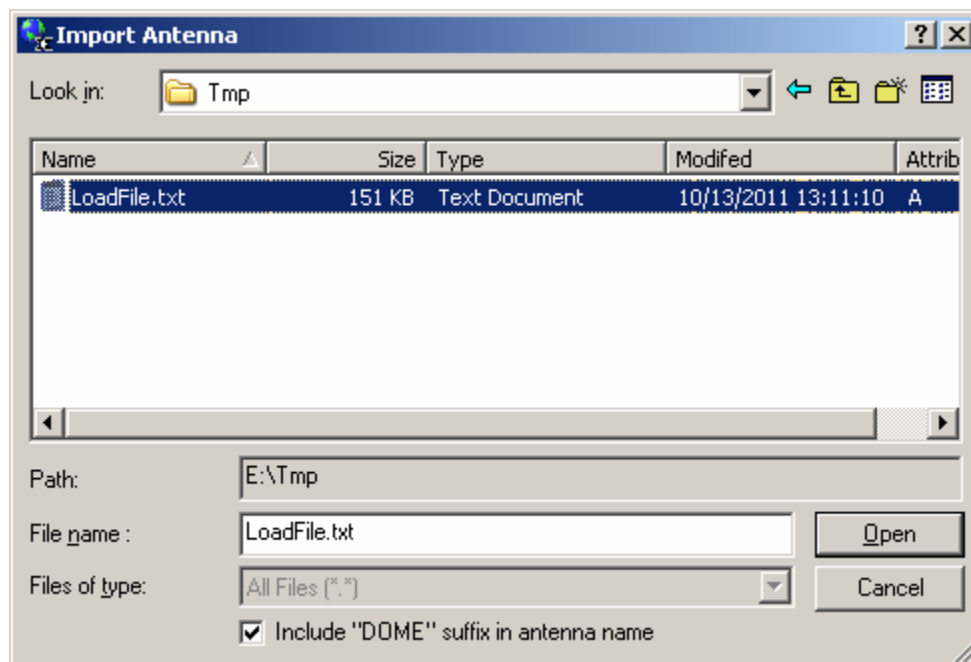
ANTENNA ID      DESCRIPTION      DATA SOURCE (# OF TESTS) YR/MO/DY
[north] [ east] [ up ]
[90] [85] [80] [75] [70] [65] [60] [55] [50] [45] | AVE = # in average
[40] [35] [30] [25] [20] [15] [10] [ 5] [ 0] | L1 Offset (mm)
[north] [ east] [ up ] | L1 Phase at
[90] [85] [80] [75] [70] [65] [60] [55] [50] [45] | Elevation (mm)
[40] [35] [30] [25] [20] [15] [10] [ 5] [ 0] | L2 Offset (mm)
| L2 Phase at
| Elevation (mm)

NONE NONE NGS ( 0) 99/10/04

```

Ln 1, Col 1

11. Import the antenna file to LGO.



12. You will get the antenna with correct phase centre offset and additional corrections.

Name	Vertical offset	Phase center ...	Phase cente...	Additional corrections
LEIAR25.R3 LEIT	0.0000	0.1722	0.1678	Elevation and azimuth
LEIAR25.R3 NONE	0.0000	0.1760	0.1688	Elevation and azimuth
LEIAR25.R3 SCIS	0.0000	0.1931	0.1672	Elevation and azimuth
LEIAR25.R3 SCIT	0.0000	0.1851	0.1668	Elevation and azimuth
LEIAR25.R4 LEIT	0.0000	0.1732	0.1636	Elevation and azimuth
LEIAR25.R4 NONE	0.0000	0.1752	0.1639	Elevation and azimuth
LEIAR25.R4 SCIS	0.0000	0.1860	0.1619	Elevation and azimuth
LEIAR25.R4 SCIT	0.0000	0.1935	0.1614	Elevation and azimuth
LEIAS10 NONE	0.0000	0.0800	0.0753	Elevation and azimuth
LEIAT202-GP NONE	0.0000	0.0567	0.0536	Elevation and azimuth
LEIAT302-GP NONE	0.0000	0.0567	0.0536	Elevation and azimuth

Antenna properties [?] [X]

General | Additional corrections

Name: LEIAR25.R4 LEIT Horizontal offset: 0.0 m

IGS name: LEIAR25.R4 LEIT Vertical offset: 0.0 m

Serial number:

Setup id: 0 ☐ L1 only

Phase center offsets

	L1	L2
Vertical:	0.1732 m	0.1636 m
North:	0.0008 m	-0.0006 m
East:	-0.0004 m	-0.0001 m

Corrections: Elevation and azimuth

OK Cancel

Antenna properties [?] [X]

General | Additional corrections

Elevation interval: 5

Azimuth interval: 360

Frequency: L1 + L2

Zenith angle

Azim...	L1/L2	0	5	10	15	20	25	30	35	40	45	50
0	L1	0.0	1.2	3.1	5.5	7.8	10.0	11.8	13.0	13.5	13.3	12.5
0	L2	0.0	-0.2	-0.2	-0.2	-0.1	0.0	0.2	0.3	0.3	0.3	0.3

OK Cancel