How to use RTKCONV to convert files: BINEX to RINEX Ver.3.02

Software: RTKLIB 2.4.2 b11.

Goal for this tutorial

• Convert BINEX data to RINEX data

RTKLIB 2.4.2 http://www.rtklib.com/

RTKLIB 2.4.2 manual <u>http://www.rtklib.com/prog/manual_2.4.2.pdf</u>

RINEX 3.02 (The Receiver Independent Exchange Format, Version 3.02) <u>ftp://igs.org/pub/data/format/rinex302.pdf</u>

Convert BINEX to RINEX

• Open RTKCONV application inside RTKLIB



Input data

TKCONV ver.2.4.2	
▼ Time Start (GPST) ? ▼ Time End (GPST) ? ▼ Interval 2016/11/23 • 0:00:00 • 2016/11/23 • 23:59:59 • 1 ▼ s	Unit 24 H
RTCM, RCV RAW or RINEX OBS ?	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxe_24h_1123_0000_00.binex_	• BINEX file
Output Directory Format	BINEX IIIC
EINEX	
RINEX OBS/NAV/GNAV/HNAV/QNAV/LNAV and SBS	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24b_1123_0000_0.obs	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.nav	• RINEX Observation data
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1125_0000_00.gna	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.hna	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_0.qnav	 RINEX Navigation data
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.lnav	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.sbs	
	?
Plot Process Options Convert	Exit 3

TKCONV ver.2.4.2
✓ Time Start (GPST) ? ✓ Time End (GPST) ? ✓ Interval Unit 2016/11/23 • 0:00:00 • 2016/11/23 • 23:59:59 • 1 • 24 H
RTCM, RCV RAW or RINEX OBS ? data points
C:+Users+Tokura+Desktop+teqc_mingw_64+jaxa_24n_1123_0000_00.binex ▼ E
RINEX OBS/NAV/GNAV/HNAV/QNAV/LNAV and SBS
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.obs
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.nav
C:¥Users¥Toku Check (select) these boxes (at least OBS file is required)
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.qnav
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.lnav
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.sbs
?
Plot Process Options Convert Exit
Set the output data (Next slide)

Settings 2. RTKCONV → Options (Output data)

Options			×	
RINEX Version 3.02	Station ID	0000	RINEX Name	Set Ver. 3.02
RunBy/Obsv/Agency				*for multiple constellations and
Comment				multiple frequencies
Maker Name/#/Type				
Rec #/Type/Vers				
Ant #/Type				
Approx Pos XYZ	0.0000	0.0000	0.0000	Salact the catallite systems
Ant Delta H/E/N	0.0000	0.0000	0.0000	included in the original data
Scan Obs Types		Iono Corr 🔲 Time	e Corr 🔽 Leap Sec	included in the original data
Satellite Systems			Excluded Satellites	Set the output data details
Observation Types		30A3 • Debot	C02	(Next slide)
		🗸 L5/L3 🔽 L6 🔽	L7 🔽 L8 Mask	
Option	Debug OFF		<u>C</u> ancel	
			Select t	he Observation Frequencies included
1				in the original data
Select the Observa	ation types in	cluded in the	e original data	
				•

C: Code, L: Carrier, D: Doppler, S: C/N_0

Settings 2. RTKCONV → Options → Mask

	A 19 Refe	rence Code a	nd Phase Ali	gnment by C	constellation a	nd Frequency Band
Select the observation codes included in the	TABLE A19					
Select the observation codes included in the	Reference Code and Phase Alignment by Frequency Band				ency Band	
original data *Example for multi-frequency receiver	System	Frequency Band	Frequency [MHz]	Signal	RINEX Observation Code	Phase Correction applied to each observed phase to obtain aligned phase.
Signal Mask 🔀						original(as issued by the SV) + Δφ)
GPS	GPS	L1	1575.42	C/A	LIC	None (Reference Signal)
▼ 1C □ 1P □ 1W □ 1Y □ 1M □ 1N □ 1S □ 1L				L1C-D	L1S	+¼ cycle
				L1C-P	L1L	+¼ cycle
I 2C I 2D I 2S I 2L I 2X I 2P I 2W I 2Y I 2M I 2N				L1C-(D+P)	LIX	+¼ cycle
				P Z tracking		+ ¹ / ₄ cycle
				Z-tracking Codeless	LIW	+ ¹ / ₄ cycle
		L2	1227.60	C/A	L2C	For Block II/IIA/IIR – None;
		See Note 1				For Block IIR- M/IIF/III
						-¼ cycle
						See Note 2
_ 5I _ 5Q ₩ 5X _ 6A _ 6B _ 6C _ 6X _ 6Z				Semi-	L2D	None
				codeless		
				L2C(M)	L2S	-¼ cycle
0755				L2C(L)	L2L	-¼ cycle
				L2C(M+L) P	L2X L2P	- ¼ cycle
				r	L2r	Signal)
51 50 🔽 5X 🗆 6S 🗆 6L 🗆 6X				Z-tracking	L2W	None
			1176.45	Codeless	L2N	None
BeiDou		LS	1176.45	1	LSI	None (Reference
				0	1.50	-¼ cycle
				I+Q	L5X	Must be aligned to L5
SBAS	GLONASS	G1	1602+k*9/16	C/A	L1C	None (Reference
Cancel						Signal)
			1046-140-14	Р	L1P	+¼ cycle
		G2	1246+k*7/16	C/A	L2C	None (Reference

ftp://igs.org/pub/data/format/rinex302.pdf
A34~

TKCONV ver.2.4.2	
▼ Time Start (GPST) ? ▼ Time End (GPST) ? ▼ Interval	Unit
2016/11/23 0:00:00 2016/11/23 23:59:59 1 s 24	H
RTCM, RCV RAW or RINEX OBS ?	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.binex	E
Output Directory Format	
I BINEX	
RINEX OBS/NAV/GNAV/HNAV/QNAV/LNAV and SBS	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.obs	E
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.nav	E
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.gnav	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.hnav	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.qnav	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.lnav	
C:¥Users¥Tokura¥Desktop¥teqc_mingw_64¥jaxa_24h_1123_0000_00.sbs	
	?
Plot Process Options Convert Ex	dt