



Data Dictionary for Hong Kong Satellite Positioning Reference Station Network (SatRef) GNSS Raw Data (RINEX Format)

Version 1.1

January 2023

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Version	Details of Change	Effective Date
1.0	Initial Release	30 July, 2019
1.1	<ul style="list-style-type: none">● Change of domain name from ftp.geodetic.gov.hk to rinex.geodetic.gov.hk● Use of HTTPS and FTPS protocol● Suspension for the use of FTP protocol	11 January, 2023

1. RINEX Products

Data Type	Data Length	Epoch Interval	RINEX 2 Format	RINEX 3 Format
Observation	1 hour	1 second	Yes	Yes
Observation	1 hour	5 seconds	Yes	Yes
Observation	1 day	5 seconds	Yes	Nil
Observation	1 day	30 seconds	Yes	Yes
Navigation	1 day	---	Yes	Yes
Meteorological	1 day	1 minute	Yes	Yes
Auxiliary Tilt Sensor	1 day	1 minute	Yes	Nil

2. Protocols

- **HTTPS** : HyperText Transfer Protocol Secure
- **FTPS** : File Transfer Protocol Secure
 Hostname: rinex.geodetic.gov.hk
 Login Type: anonymous (no username and password are required).

3. Data Path and File Name

- All observation data files are in Hanataka-compressed* format.
- All date and time are in UTC.
- Data path and file name structures are listed below.

File path and file name for RINEX 2	
rinex.geodetic.gov.hk/rinex2/ YYYY/DDD/site/siteDDdf.YYt .gz	
rinex.geodetic.gov.hk/rinex2/ YYYY/DDD/site/1s/siteDDdf.YYd .gz	
rinex.geodetic.gov.hk/rinex2/ YYYY/DDD/site/5s/siteDDdf.YYd .gz	
rinex.geodetic.gov.hk/rinex2/ YYYY/DDD/site/30s/siteDDdf.YYd .gz	
Variables	Description
YYYY	<ul style="list-style-type: none"> ● Year in 4 digits (e.g. 2019)
YY	<ul style="list-style-type: none"> ● Year in 2 digits (e.g. 19)
DDD	<ul style="list-style-type: none"> ● Day of year in 3 digits (001 to 366)
site	<ul style="list-style-type: none"> ● 4 characters site code in lower case ● The 18 SatRef CORS: hkcl, hkfn, hkks, hkkt, hklm, hklt, hkmw, hknp, hkoh, hkpc, hkqt, hksc, hksl, hkss, hkst, hktk, hkws, t430 ● CORS operated by Marine Department: kyc1

1s, 5s, 30s	<ul style="list-style-type: none"> 1, 5 and 30 seconds data rate
f	<ul style="list-style-type: none"> Daily file: 0 Hourly file: a to x (0hr to 23hr) in lower case
d	<ul style="list-style-type: none"> Hanataka-compressed* RINEX observation data
t	<ul style="list-style-type: none"> Type of data (in lower case) <ul style="list-style-type: none"> n = GPS navigation message data g = GLONASS navigation message data m = meteorological data a = auxiliary tilt sensor data
.gz	<ul style="list-style-type: none"> GZIP compressed file extension
File path and file name for RINEX 3	
<p>rinex.geodetic.gov.hk/rinex3/YYY/DDD/site/SITE00HKG_R_YYYDDDHMM_01D_tt.rnx.gz</p> <p>rinex.geodetic.gov.hk/rinex3/YYY/DDD/site/1s/SITE00HKG_R_YYYDDDHMM_01H_01S_MO.crx.gz</p> <p>rinex.geodetic.gov.hk/rinex3/YYY/DDD/site/5s/SITE00HKG_R_YYYDDDHMM_01H_05S_MO.crx.gz</p> <p>rinex.geodetic.gov.hk/rinex3/YYY/DDD/site/30s/SITE00HKG_R_YYYDDDHMM_01D_30S_MO.crx.gz</p>	
Variables	Description
site, SITE	<ul style="list-style-type: none"> 4 characters site code in directory in lower case 4 characters site code in file name in upper case The 18 SatRef CORS: <ul style="list-style-type: none"> hkcl, hkfn, hkks, hkkt, hklm, hklt, hkmw, hknp, hkoh, hkpc, hkqt, hksc, hksl, hkss, hkst, hktk, hkws, t430 CORS operated by Marine Department: kyc1
00	<ul style="list-style-type: none"> Monument and receiver numbers (always 00)
HKG	<ul style="list-style-type: none"> 3 characters ISO Country code (HKG = Hong Kong)
R	<ul style="list-style-type: none"> Indicates data from receiver
YYYY	<ul style="list-style-type: none"> Year in 4 digits (e.g. 2019)
DDD	<ul style="list-style-type: none"> Day of year in 3 digits (001 to 366)
HH	<ul style="list-style-type: none"> Hour of day in 2 digits (00 to 23)
MM	<ul style="list-style-type: none"> Minute of hour in 2 digits (always 00)
01D	<ul style="list-style-type: none"> One day file period
01H	<ul style="list-style-type: none"> One hour file period
01S, 05S, 30S	<ul style="list-style-type: none"> 1, 5 and 30 seconds data rate
MO	<ul style="list-style-type: none"> Mixed observation data file
tt	<ul style="list-style-type: none"> Type of data (in upper case) <ul style="list-style-type: none"> CN = BDS Compass navigation message data

	EN = Galileo navigation message data RN = GLONASS navigation message data GN = GPS navigation message data JN = QZSS navigation message data MM = Meteorological data
.rnx	● RINEX format file
.crx	● Hanataka-compressed* RINEX observation data
.gz	● GZIP compressed file extension

* **Remarks:**

1. Hanataka-compressed format is developed by Yuki Hatanaka of Geospatial Information Authority of Japan (GSI). Please visit GSI website <http://terras.gsi.go.jp/ja/crx2rnx.html> for details and download RNXCMP software for compression/restoration of RINEX observation files.