



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

Version 1.0

July 2019

© The Government of the Hong Kong Special Administrative Region

The contents of this document remain the property of, and may not be reproduced in whole or in part
without the express permission of the Government of the HKSAR

Version	Details of Change	Effective Date
1.0	Initial Release	30 July, 2019

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. 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	
ftp://ftp.geodetic.gov.hk/rinex2/ YYYY / DDD / site / siteDDdf.YYt .gz	
ftp://ftp.geodetic.gov.hk/rinex2/ YYYY / DDD / site /1s/ siteDDdf.YYd .gz	
ftp://ftp.geodetic.gov.hk/rinex2/ YYYY / DDD / site /5s/ siteDDdf.YYd .gz	
ftp://ftp.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, hklf, hkmw, hknp, hkoh, hkpc, hkqt, hksc, hkst, 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	
ftp://ftp.geodetic.gov.hk/rinex3/YYY/DDD/site/SITE00HKG_R_YYYDDDHMM_01D_tt.rnx.gz ftp://ftp.geodetic.gov.hk/rinex3/YYY/DDD/site/1s/SITE00HKG_R_YYYDDDHMM_01H_01S_MO.crx.gz ftp://ftp.geodetic.gov.hk/rinex3/YYY/DDD/site/5s/SITE00HKG_R_YYYDDDHMM_01H_05S_MO.crx.gz ftp://ftp.geodetic.gov.hk/rinex3/YYY/DDD/site/30s/SITE00HKG_R_YYYDDDHMM_01D_30S_MO.crx.gz	
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: hkcl, hkfn, hkks, hkkt, hkln, hklr, hkmw, hknp, hkoh, hkpc, hkqt, hksc, hkst, 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: 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.