



Data Dictionary
for
GNSS Real Time Raw Data Stream

Version 2.1

October 2021

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Version	Details of Change	Effective Date
1.0	Initial Release.	1 Dec, 2017
2.0	<ul style="list-style-type: none"> a. MSM4 is replaced by MSM5 format for Trimble NetR9 data stream. b. GAL, QZSS observation data are included for Trimble NetR9 data stream. c. Leica Spider is replaced by Leica GR50 to generate <i>[SITE_32]</i> data stream. d. Ephemerides data are included for Leica GR50 data stream. e. Omitted Message Type 1013, 1029, 1030 and 1033 of Geo++ GNSmart data stream are included. 	17 Jul, 2018
2.1	<ul style="list-style-type: none"> a. Minor content update 	27 Oct, 2021

[RTCM Standard 10410.0 Networked Transport of RTCM via Internet Protocol \(NTRIP Version 1.0\)](#) is used for data transmission

Mountpoint *		[SITE]	[SITE_32]
Protocol used in Raw Data :		RTCM Standard 10403.1 (RTCM 3.1)	RTCM Standard 10403.2 (RTCM 3.2)
Multiple Signal Messages (MSM) Type used :		N / A	MSM5
Source from :		Geo++ GNSmart	Leica GR50
Satellite Systems included:	GPS, GLO	√	
	GPS, GLO, BDS, GAL, QZSS		√
Message Types:	1004	Extended L1 & L2 GPS RTK Observables	√
	1006	Stationary RTK Reference Station ARP with Antenna Height	√
	1008	Antenna Descriptor & Serial Number	√
	1012	Extended L1 & L2 GLONASS RTK Observables	√
	1013	System Parameters	√
	1019	GPS Ephemerides	√
	1020	GLONASS Ephemerides	√
	1029	Unicode Text String	√
	1030	GPS Network RTK Residual Message	√
	1033	Receiver and Antenna Descriptors	√
	1042	BDS Ephemerides	√
	1044	QZSS Ephemerides	
	1045	GAL F/NAV Ephemerides	√
	1046	GAL I/NAV Ephemerides	
	1075	GPS MSM5 Full GNSS Pseudoranges, PhaseRanges, Doppler and CNR	√
	1085	GLONASS MSM5 Full GNSS Pseudoranges, PhaseRanges, Doppler and CNR	√
	1095	GAL MSM5 Full GNSS Pseudoranges, PhaseRanges, Doppler and CNR	√
	1115	QZSS MSM5 Full GNSS Pseudoranges, PhaseRanges, Doppler and CNR	
1125	BDS MSM5 Full GNSS Pseudoranges, PhaseRanges, Doppler and CNR	√	
1230	GLONASS L1 and L2 Code-Phase Biases	√	

*[SITE] represents the 4-char of site code (e.g. HKSC, HKTK, HKOH etc.)