

L1C/Bに対応するRINEX3.04改定案



Quasi-Zenith Satellite System

1. Satellite number
2. Observation Code
3. SV Health

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内閣府 宇宙開発戦略推進事務局

RINEX (OBS) : Satellite numbers

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Time (corr)	=	Time(r)	-	dT(r)
PR (corr)	=	PR (r)	-	dT(r)*c
phase (corr)	=	phase (r)	-	dT(r)*freq

Table 1: Observation Corrections for Receiver Clock Offset

3.4 Doppler

The sign of the doppler shift as additional observable is defined as usual: Positive for approaching satellites.

3.5 Satellite numbers

Starting with RINEX Version 2 the former two-digit satellite numbers nn are preceded by a one-character system identifier s as shown in Figure 1.

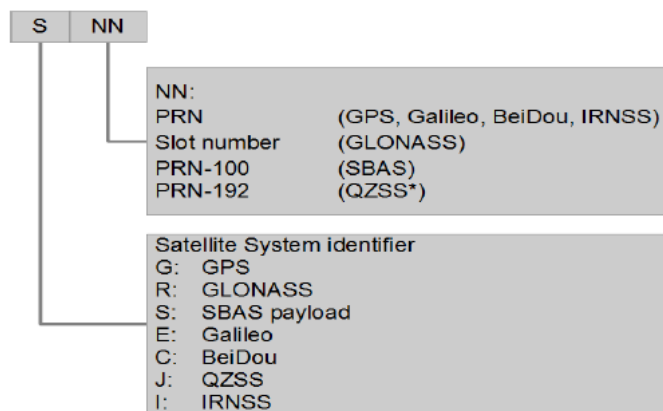


Figure 1: Satellite numbers and Constellation Identifiers

*) For detailed definition of QZSS, please refer the section 9.12)

The same satellite system identifiers are also used in all header records when appropriate.

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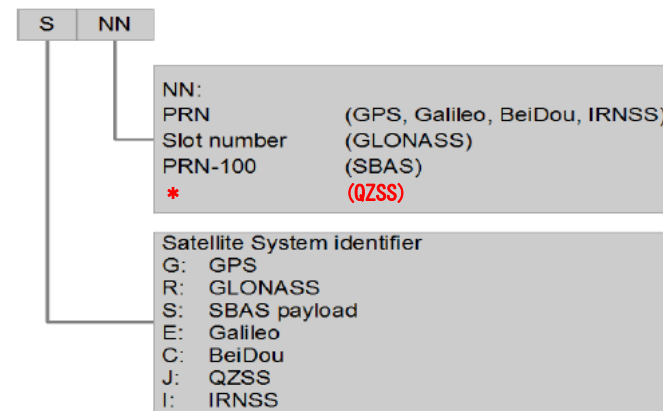


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RINEX (OBS) : QZSS PRN to RINEX Satellite Identifier

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with GPS Block III. See Appendix Table A23 and related notes to convert each signal's aligned phase observations back to raw satellite phase.

RINEX Signal ID	Standard PNT Signals and Centimeter Level Augmentation (LEX/L6D) (PRN-192)	Sub-meter Level Augmentation (L1-SAIF/L1S) (PRN-182)	Centimeter Level Augmentation for Experiments (L6E) (PRN-202)	Positioning Technology Verification Service (L5S) (PRN Code)
J01	193	183		
J02	194	184	204	196
J03	195	185	205	200
J04	196	186	206	
J05	197	187	207	
J06	198	188	208	
J07	199	189	209	197
J08	200	190	210	
J09	201	191	211	

Table 31: QZSS PRN to RINEX Satellite Identifier

In RINEX 3.04 all QZSS signals are identified the using the standard PRN numbering conventions i.e. Jxx and the Sxx identifier has been dropped. All QZSS signals are identified in RINEX 3.04 as J01-J09 as shown in Table 31.

QZSS Block I satellites have replaced the L1-SAIF signal with the L1S signal. For QZSS Block I observations prior to the introduction of the L1S signal, the observation codes "1Z" refer to tracking of the "L1-SAIF" signal. Similarly, the "6S", "6L", "6X" observation codes refer to tracking of the LEX data channel, LEX pilot channel, and combined LEX pilot+data tracking prior to the introduction of the L61 signal on QZSS Block I.

QZSS Block II satellites broadcast the L1S signal. The L1S signal broadcasts the Sub-Meter-Level Augmentation Service (SLAS) correction data using PRN 183-191. In a RINEX observation file the signal ID of L1S is: broadcast prn-182, yielding J01, J02,...J09. QZSS Block II satellites also broadcast the L5S signal. The L5S signals broadcasts the Positioning Technology Verification Service (PTVS) correction data using PRN, 196, 200, 197. PTVS

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RINEX Signal ID	Standard PNT Signals(exclude L1C/B) and Centimeter Level Augmentation (LEX/L6D) (PRN-192)	Standard PNT Signal (L1C/B)	Sub-meter Level Augmentation (L1-SAIF/L1S) (PRN-182)	Centimeter Level Augmentation for Experiments (L6E) (PRN-202)	Positioning Technology Verification Service (L5S) (PRN Code)
J01	193		183		
J02	194		184	204	196
J03	195		185	205	200
J04	196	203	186	206	
J05	197	204	187	207	
J06	198		188	208	
J07	199	205	189	209	197
J08	200	206	190	210	
J09	201		191	211	

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QZSS Block I satellites have replaced the L1-SAIF signal with the L1S signal. For QZSS Block I observations prior to the introduction of the L1S signal, the observation codes "1Z" refer to tracking of the "L1-SAIF" signal. Similarly, the "6S", "6L", "6X" observation codes refer to tracking of the LEX data channel, LEX pilot channel, and combined LEX pilot+data tracking prior to the introduction of the L61 signal on QZSS Block I.

QZSS Block II satellites broadcast the L1S signal. The L1S signal broadcasts the Sub-Meter-Level Augmentation Service (SLAS) correction data using PRN 183-191. In a RINEX observation file the signal ID of L1S is: broadcast prn-182, yielding J01, J02,...J09. QZSS Block II satellites also broadcast the L5S signal. The L5S signals broadcasts the Positioning Technology Verification Service (PTVS) correction data using PRN, 196, 200, 197. PTVS

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RINEX (OBS) : QZSS Observation Codes

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GNSS System	Freq. Band / Frequency	Channel or Code	Observation Codes			
			Pseudo Range	Carrier Phase	Doppler	Signal Strength
QZSS	L1 / 1575.42	C/A	C1C	L1C	D1C	S1C
		L1C (D)	C1S	L1S	D1S	S1S
		L1C (P)	C1L	L1L	D1L	S1L
		L1C (D+P)	C1X	L1X	D1X	S1X
		L1S/L1-SAIF	C1Z	L1Z	D1Z	S1Z
	L2 / 1227.60	L2C (M)	C2S	L2S	D2S	S2S
		L2C (L)	C2L	L2L	D2L	S2L
		L2C (M+L)	C2X	L2X	D2X	S2X
	L5 / 1176.45 *(Block I Signals) **(Block II L5S Signals)	I *	C5I	L5I	D5I	S5I
		Q *	C5Q	L5Q	D5Q	S5Q
		I+Q *	C5X	L5X	D5X	S5X
		L5D **	C5D	L5D	D5D	S5D
		L5P **	C5P	L5P	D5P	S5P
	L6 / 1278.75 *(Block I LEX Signals) **(Block II Signals)	L5(D+P) **	C5Z	L5Z	D5Z	S5Z
		L6D *,**	C6S	L6S	D6S	S6S
		L6P *	C6L	L6L	D6L	S6L
		L6(D+P) *	C6X	L6X	D6X	S6X
		L6E **	C6E	L6E	D6E	S6E
	L6(D+E) **	C6Z	L6Z	D6Z	S6Z	

Table 8 : RINEX Version 3.04 QZSS Observation Codes

Note: RINEX 1Z signal coding is used for both the initial Block I L1-SAIF signal and the updated L1S signal. L6D is the "code 1" of the L61(Block I) and L62 (Block II) signals, L6P is the "code 2" (or pilot) signal of the L61(Block I) signal and L6E is the "code 2" of the L62(Block II) signal as specified in IS-QZSS-L6. See section 9.12 and Table 31 for QZSS PRN to RINEX identifier coding.

RINEX Version 3.04 20

GNSS System	Freq. Band / Frequency	Channel or Code	Observation Codes			
			Pseudo Range	Carrier Phase	Doppler	Signal Strength
QZSS	L1 / 1575.42	C/A	C1C	L1C	D1C	S1C
		C/B	C1B	L1B	D1B	S1B
		L1C (D)	C1S	L1S	D1S	S1S
		L1C (P)	C1L	L1L	D1L	S1L
		L1C (D+P)	C1X	L1X	D1X	S1X
	L2 / 1227.60	L1S/L1-SAIF	C1Z	L1Z	D1Z	S1Z
		L2C (M)	C2S	L2S	D2S	S2S
		L2C (L)	C2L	L2L	D2L	S2L
	L5 / 1176.45 *(Block I Signals) **(Block II L5S Signals)	L2C (M+L)	C2X	L2X	D2X	S2X
		I *	C5I	L5I	D5I	S5I
		Q *	C5Q	L5Q	D5Q	S5Q
		I+Q *	C5X	L5X	D5X	S5X
		L5D **	C5D	L5D	D5D	S5D
	L6 / 1278.75 *(Block I LEX Signals) **(Block II Signals)	L5P **	C5P	L5P	D5P	S5P
		L5(D+P) **	C5Z	L5Z	D5Z	S5Z
		L6D *,**	C6S	L6S	D6S	S6S
		L6P *	C6L	L6L	D6L	S6L
		L6(D+P) *	C6X	L6X	D6X	S6X
	L6E **	C6E	L6E	D6E	S6E	
	L6(D+E) **	C6Z	L6Z	D6Z	S6Z	

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RINEX (NAV) : QZSS Data Record Description

RINEX Version 3.04 Appendix

A31

A 12 GNSS Navigation Message File – QZSS Data Record Description

TABLE A12 QZSS NAVIGATION MESSAGE FILE – QZSS DATA RECORD DESCRIPTION		
NAV. RECORD (Columns 61-80)	DESCRIPTION	FORMAT
SV / EPOCH / SV CLK	<ul style="list-style-type: none"> - Satellite system (J), Satellite PRN-192 - Epoch: Toc - Time of Clock year (4 digits) - month, day, hour, minutes, seconds - SV clock bias (seconds) - SV clock drift (sec/sec) - SV clock drift rate (sec/sec²) 	A1,I2, 1X,I4, 5(1X,I2), 3D19.12 *)
BROADCAST ORBIT - 1	<ul style="list-style-type: none"> - IODE Issue of Data, Ephemeris - Crs (meters) - Delta n (radians/sec) - M0 (radians) 	4X,4D19.12
BROADCAST ORBIT - 2	<ul style="list-style-type: none"> - Cuc (radians) - e Eccentricity - Cus (radians) - sqrt(A) (sqrt(m)) 	4X,4D19.12
BROADCAST ORBIT - 3	<ul style="list-style-type: none"> - Toe Time of Ephemeris (sec of GPS week) - Cic (radians) - OMEGA (radians) - CIS (radians) 	4X,4D19.12
BROADCAST ORBIT - 4	<ul style="list-style-type: none"> - i0 (radians) - Crc (meters) - omega (radians) - OMEGA DOT (radians/sec) 	4X,4D19.12
BROADCAST ORBIT - 5	<ul style="list-style-type: none"> - IDOT (radians/sec) - Codes on L2 channel (fixed to 2, see IS-QZSS-PNT 4.1.2.7) - GPS Week # (to go with TOE) Continuous number, not mod(1024)! - L2P data flag set to 1 since QZSS does not track L2P 	4X,4D19.12
BROADCAST ORBIT - 6	<ul style="list-style-type: none"> - SV accuracy (meters) (IS -QZSS-PNT, Section 5.4.3.1) which refers to: IS GPS 200H Section 20.3.3.3.1.3 use specified equations to define nominal values, N = 0-6: use $2^{(1-2N/2)}$ (round to one decimal place i.e. 2.8, 5.7 and 11.3) , N= 7-15-use $2^{(N-2)}$, 8192 specifies use at own risk - SV health (bits 17-22 w 3 sf 1) (see IS-QZSS-PNT 5.4.1) 	4X,4D19.12

IS-QZSS-PNTの該当箇所を
読みだしているだけなので、変更なし

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