

Draft

Issues and Recommendations on L1C/B Signal Interoperability



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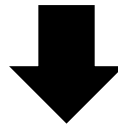


[Feedback to the QZSS L1C/B proposal for RTCM 3 MSM]

- The exact timing of L1C/A and L1C/B depends on the receiver design, and it is not guaranteed that the timing between L1C/A and L1C/B is consistent between satellites.
- Since L1C/B is a signal with BOC added from L1C/A, the timing may be shifted and the amount depends on the receiver (FW) design.

[In Addition..]

- The feedback is a carrier phase issue, but it may also occur with codes. (there have been cases of this occurring between GPS and QZS)
- Due to this bias, it may be impossible to double-differentiate between L1C/A and L1C/B not only between QZS and GPS, but also between QZSs.



[Proposal]

Based on the feedbacks we received at the previous WG, We propose to use the phase lagged by 90 degrees from L1C(D) as the reference signal for L1C/A and L1C/B.



- The revised part in the RTCM document is the QZSS L1 band reference signal in Table 3.5-73.
- We are considering notations 1) through 4), but would appreciate your feedback.

Table 3.5-73 Reference Signal for Phase Alignment

System	Frequency Band	Frequency [MHz]	Reference Signal (RINEX Observation Code)
GPS	L1	1575.42	L1C
	L2	1227.60	L2P
	L5	1176.45	L5I
GLONASS	G1	1602+k*9/16	L1C
	G2	1246+k*7/16	L2C
Galileo	E1	1575.42	L1B
	E5A	1176.45	L5I
	E5B	1207.140	L7I
	E5(A+B)	1191.795	L8I
	E6	1278.75	L6B
SBAS	L1	1575.42	L1C
	L5	1176.45	L5I
QZSS	L1	1575.42	L1C
	L2	1227.60	L2S
	L5	1176.45	L5I
BeiDou	B1	1561.098	L2I
	B2	1207.140	L7I
	B3	1268.52	L6I
NavIC/IRNSS	L5	1176.45	L5A

- 1) L1S (90° phase lag)
 - 2) L1S +90° phase lag
 - 3) 90° phase lag from L1S
 - 4) Other