

QZS-1 Space Service Volume: Characteristics (updated: Nov 2012)

Definitions	Notes
Lower Space Service Volume (also known as 'MEO altitudes'): 3,000 to 8,000 km altitude	QZS-1 signals are available above East-Asia and Oceania Region. Signal-in-Space User Range Error accuracy is 2.6 meters (95 %).
Upper Space Service Volume (also known as 'HEO/GEO altitudes'): 8,000 to 36,000 km altitude	QZS-1 signals received over the limb of the Earth. Accuracies ranging from 10 to 100 meters are feasible (post-processed) depending on receiver sensitivity and local oscillator stability.

Parameters	Value	
User Range Error	2.6 meters (95%)	
Minimum Received Civilian Signal Power	0 dBi RCP antenna at GEO	Reference Off-Boresite Angle
L1 C/A	-185.3 dBW	22 deg
L1C	-185.3 dBW	22 deg
L2 C	-188.7 dBW	24 deg
L5 (I5 or Q5)	-180.7 dBW	24 deg
Signal Availability ¹		
Lower Space Service Volume (MEO)	At least 1 signal	4 or more signals
L1	100% ²	N/A
L2, L5	100% ²	N/A
Upper Space Service Volume (GEO)	At least 1 signal	4 or more signals
L1	≥ 54% ³	N/A
L2, L5	≥ 54% ³	N/A
Note 1: Assumes a nominal, no QZS-1 spacecraft failures and no orbit maneuver. Signal availability at 95% of the areas within the specific altitude.		
Note 2: Assumes user satellites between 20 degrees (East) and 120 degrees (West). (See Attachment Fig.1)		
Note 3: Assumes user satellites between 9 degrees (East) and 99 degrees (West). (See Attachment Fig.2)		

