

Indian india's autonomous regional navigation satellite system



**ASSIGN
BUSTER**

Indian Regional Navigation Satellite System (IRNSS) is India's autonomous regional navigation satellite system with 3 Geo Stationary Satellites (GEO) and 4 Geo Synchronous Satellites (GSO) and state-of-the-art ground systems. GEO satellites are located at 32.5° E, 83° E and 131.5° E longitude. The remaining GSOs in orbits inclined at 29° with the equator.

Two of the GSOs cross the equator at 55° E and other two are at 111.75° E. IRNSS satellites are identified by their PRN numbers, which range from 1 to 12 with system ID is IRI1 (IRNSS ICD-2014).

The inclination of IRNSS satellites with respect to equator provides coverage in low and higher altitudes near the poles. IRNSS provides Standard Positioning Service (SPS) and Restricted Service (RS) to the users on dual frequencies in L5 (1176.45 MHz) and S1 band (2492.028MHz). Under a Memorandum of Understanding (MoU) with Space Application Centre (SAC), Indian Space Research Organisation (ISRO), Ahmedabad, IRNSS receiver was installed at CBIT, Hyderabad, (17.

39°N, 78.31°E). IRNSS receiver generates data precisely with respect to the internal trigger with a 1 Pulse Per Second (PPS).

The data is stored in two different formats, namely, raw data and NMEA data. Raw data is a binary file that can be converted using an individual software provided by Accord Software Pvt. Ltd.. The two data formats generated by the software are namely, Receiver Independent Exchange (RINEX) and Comma Separated Value (CSV) format. CSV files store the tabular data in a plain text format.

CSV files allows the user to convert the files into different spreadsheet programs(Shafranovich, 2005). The receiver provides several parameters including 3D RMS user position (ECEF), satellite position (elevation, azimuthal in degrees) and signal strength (dB-Hz) in these CSV files. Typical received signal received signal strength (C/N0) is 36 dB-Hz.

i1Give as per our receivers