

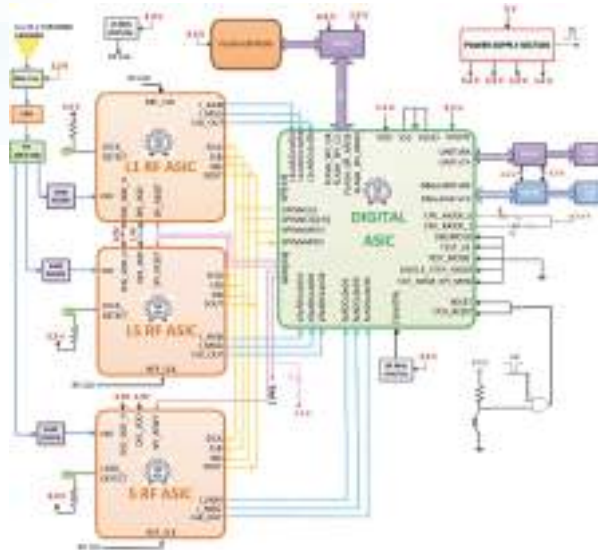


NAVIC Receiver

Objective:

- Indigenous development of Tri-band(L1+L5+S) NavIC receiver ASIC (SPS)
- SAMEER along with Academia(IITB, IITM, IITJ & IIST) is developing NavIC Receiver Chip
- Navigation with Indian Constellation [NAVIC] is an autonomous regional satellite navigation system, that provides accurate real-time positioning and timing services. It covers India and a region extending 1,500 km (930 mi) around it.

TRI-Band Motherboard Block Diagram:



Specifications

Center Frequency/Band	GPS L1(1575.42MHz), NAVIC L5(1176.45MHz) & S(2492.028MHz)
Signal Acquisition Sensitivity	L5 -136dBm , S -139dBm & L1 -136dBm
No of Channels	36
Horizontal Position Accuracy - 3D, 1σ value	10-20 meters
Velocity Accuracy	0.1 m/s
Time Accuracy	25 nsec
Operating Temp	-40 to +125 0C and 90 % RH

Applications:

- NAVIC will guide fishermen and sailors by showing them shortest route
- Marine navigation
- Vehicle tracking
- Disaster situation like flood & earthquakes
- NAVIC will aid the Armed forces in accurately determining their position





NAVIC Receiver

Desktop Receiver



NAVIC Receiver Using Rf+Digital Soc Iit Bombay



DRUVA Test Board-IIT Bombay



DIGITL SOC Test Board IIT-Bombay



TRI-Band Mother Board



Single Band Mother Board

Results:

RF front-end	Fit(MHz)	Fs(MHz)	Average 2D Position error(meters)
MAXIM	3.9	16.368	10
DHRUVA	2.99584	23	10-20
NTLAB 1066	5.84	19.5	30