septentrio

mosaic

Your positioning cornerstone

TU Delft – Workshop GNSS

27 June 2019

www.septentrio.com

A leading developer of high-end GNSS receivers

- A Team of 100 GNSS and navigation-experts
- 19 years of uninterrupted innovation in GNSS

Founded in 2000

- Spun off from IMEC
- Major contributor to the Galileo program

Owns the complete product development cycle

- From A to Z in-house
- Researched, designed and made in Europe

Global presence

- Customers all over the world
- Across all industries and applications

Septentrio in Confidence

Automation
Marine
Offshore Operations
Port Operation
Construction
Mining
Logistics
Rail
Autonomous
Precision Agriculture
Automation
Survey and Mapping
Survey & GIS
Mapping
UAV
Scientific/Reference
Timing
Scientific
Reference Network Station

AsteRx-U

- Rugged construction
- Heading capable
- Robust for MC and Marine applications

Altus NR3

- Lightweight & Portable
- Suitable as base station e.g. Real time RTK UAV's
- Extensive web-interface, runs on any device

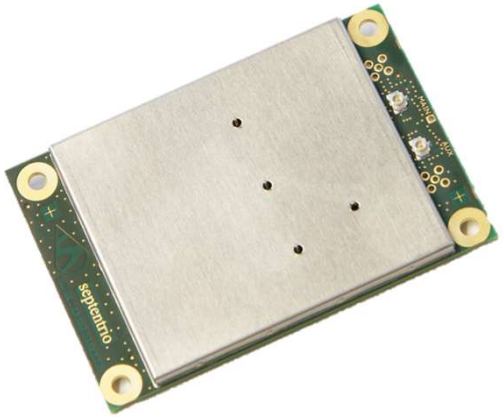
PolaRx5/5e

- Tracks all visible GNSS signals
- NTRIP client, server and caster
- Provides unaltered data

OEM

AsteRx-m2/m2a

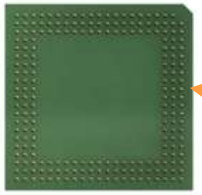
- Light and compact
- Low-power
- Seamless UAS integration



AsteRx4

- Full featured and future proof
- Scalable and flexible
- Dual antenna

Mosaic: High performance GNSS receiver in a module

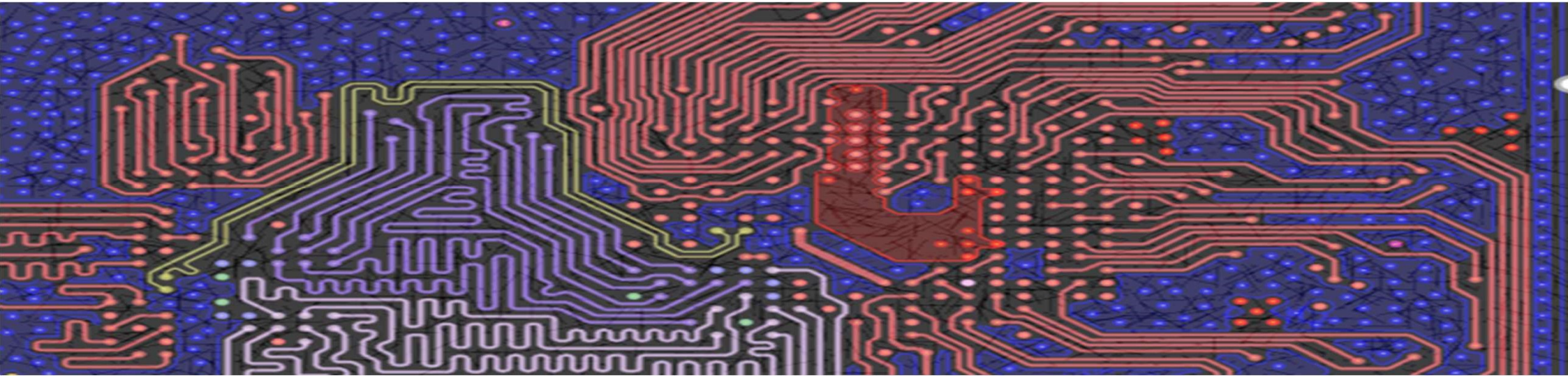


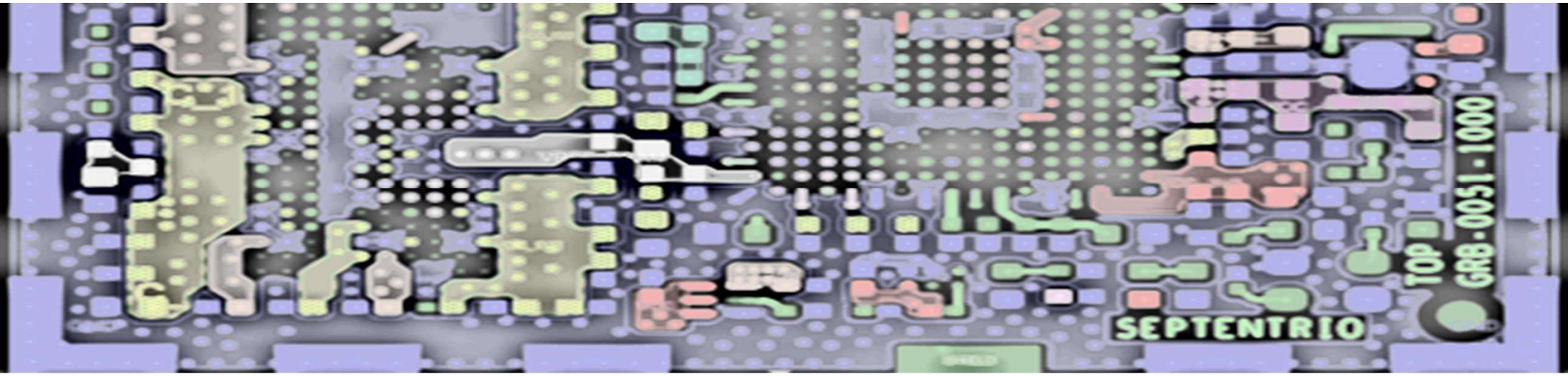
SMT (surface mount) solderable
LGA (Land Grid Array)
FR4 PCB technology

4 chips

- S-QB5 Asic
- S-GR4 Asic
- CPU i.MX6ULL
- Memory

Compact form factor
31x31mm – 7g





GNSS

GPS/GAL/GLO/BDS/QZSS/Navic

L1,L1C,L2C,L2P,L5/E1,E5a,E5b,AltBoc,**E6**/L1,L2,L3/B1i,
B1C,B2a,B2i,**B3**/L1,L1C,L2C,L5,**L6**/L5

On module L- band

Septentrio interference mitigation

Tools (Rx tools, Geotags, ppsdk...)

Interfaces

4 LVTTL COM ports

USB device

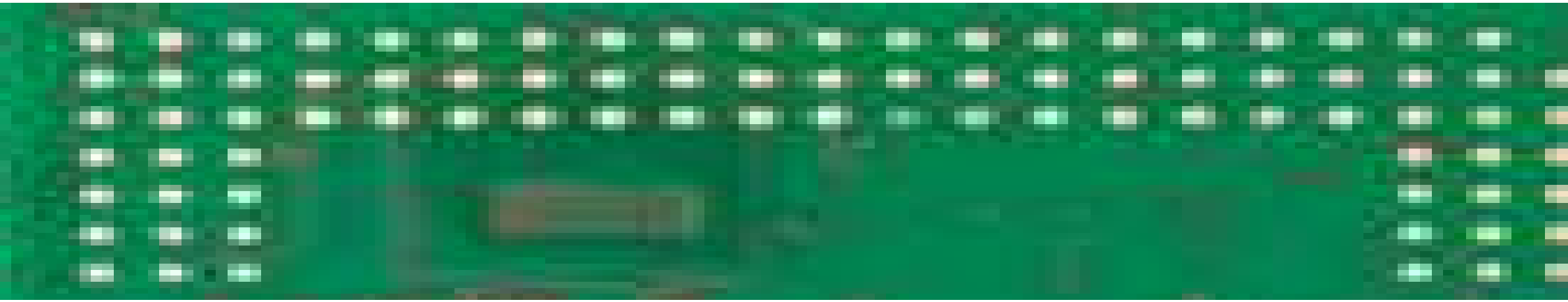
Ethernet

4-bit SDIO for SD Card logging

3 Events

1 xPPS

…



Easy Integration

Basic application: **no** external components needed, no antenna circuitry needed,
common terminals on outer rows for economic pcb routing

Advanced application:
Ethernet phy, mass storage card can be added directly

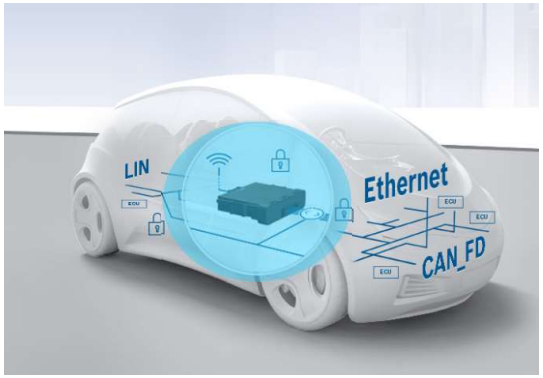
SWAP

3,3V +/- 5%
700mW typical
31x31X4mm
7g

Dev kit

Easy plug & play to evaluate

Applications



Dependable industrial solution in difficult environments?

Integrity & error reporting?

Supported signals/Constellations?

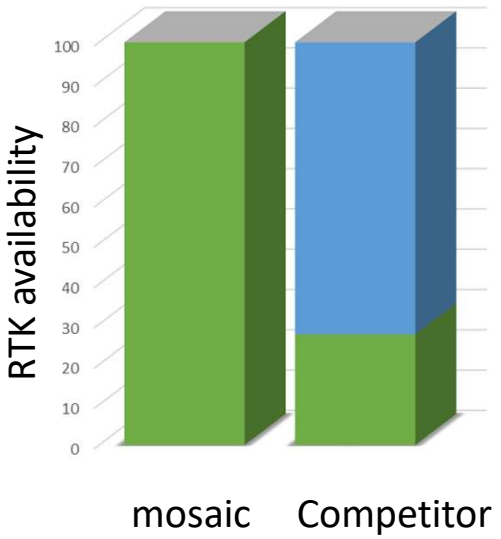
Interference mitigation/Anti spoofing?

High update rates-low latency?

Performance under shock & vibration?

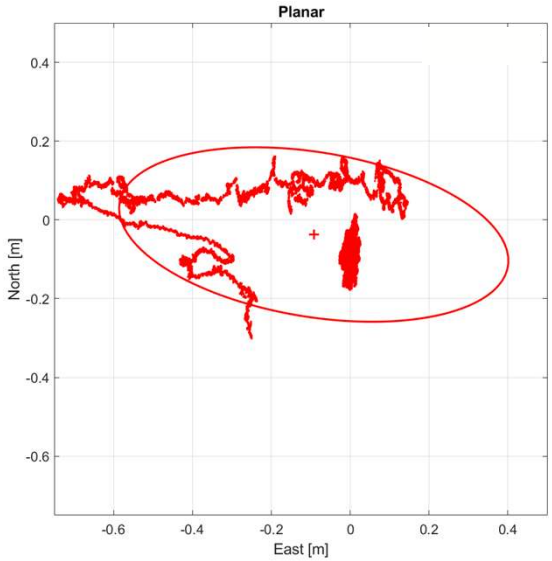
Cycle slips?

Static Positioning

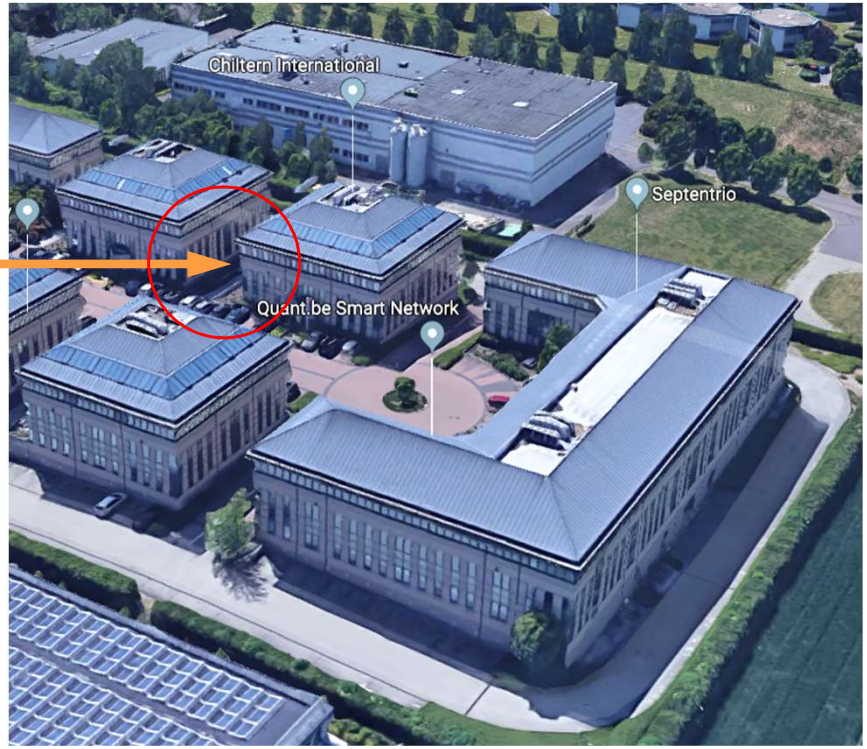


RTKFixed

RTKFloat : 72.5%

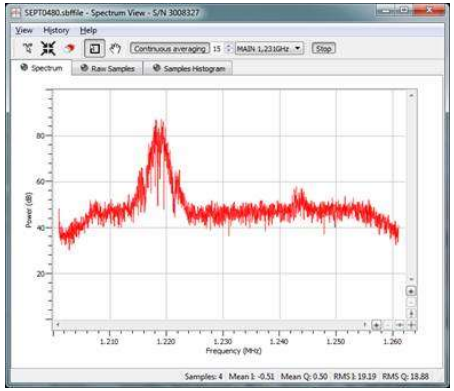


in between buildings

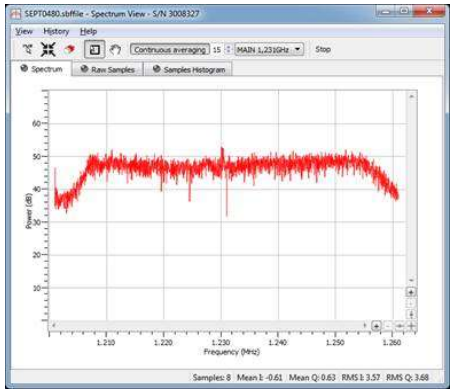


- Startup in difficult conditions results in > 1hour time to RTK Fix
- Error in RTKFloat severely underestimated

AIM+ Advanced Interference Mitigation



Without AIM+



Active AIM+

Septentrio in Confidence

Dependable industrial solution!

- Supported signals/Constellations ✓
- Integrity & error reporting ✓
- Cycle slips ✓
- Interference mitigation/Anti spoofing ✓
- High update rates – low latency ✓
- Performance under shock & vibration ✓

Thank you

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