



u-blox M8 Asset tracking use case

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Product Strategy
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Confidential



u-blox M8

Most popular u-blox GNSS receiver



Support all available L1 signals



Concurrent reception of 3 GNSS

- High position availability
- High position accuracy in difficult conditions



Available in many form factors, including:

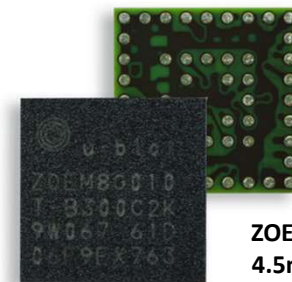
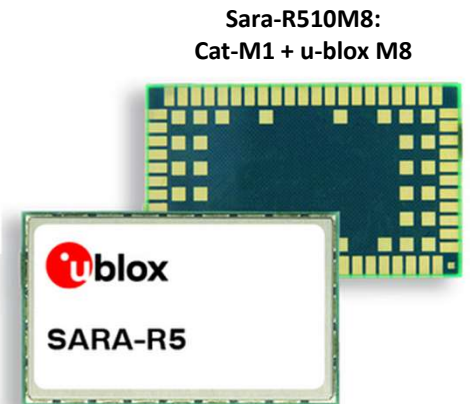
- small footprints (ZOE)
- modules combining cellular modem and **standalone** GNSS receiver (SARA-Rx)



Concurrent usage of GNSS receiver and cellular modem



MAX form factor



ZOE form factor:
4.5mm x 4.5mm

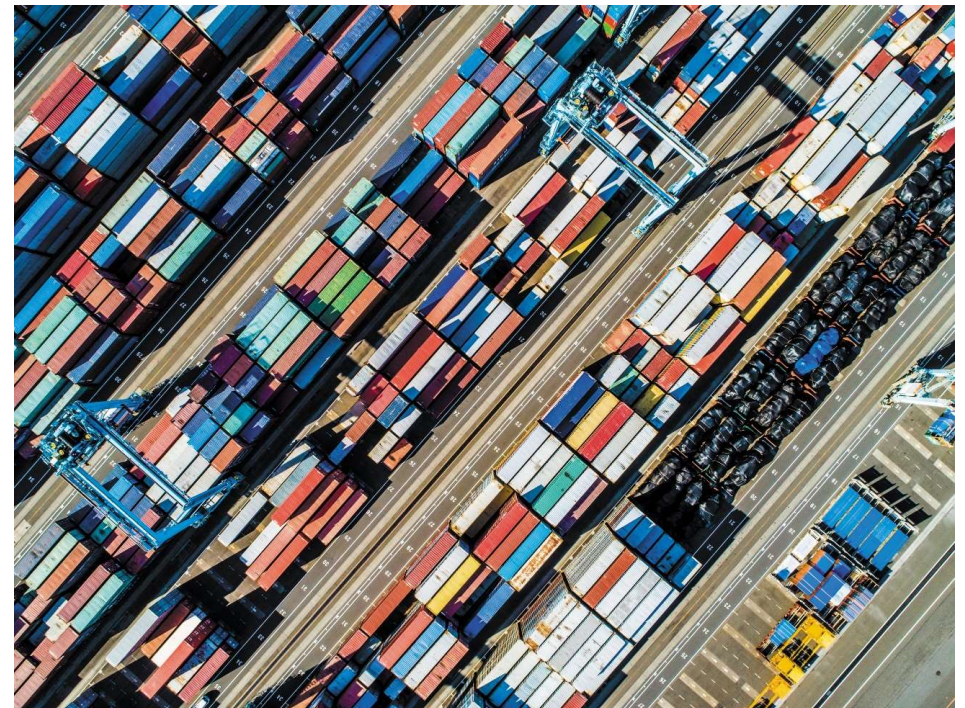
Asset tracking applications

Typical use cases



u-blox GNSS receivers frequently adopted in asset tracking applications, mostly with LTE connectivity

- Typical required accuracy:
 - 10m to 50m range
- 1 to 12 positions / day
 - Most frequent use case: 6 positions / day
 - Position immediately transmitted to the cloud, in most cases
- Weak signals / small antennas rather frequent



Asset tracking applications

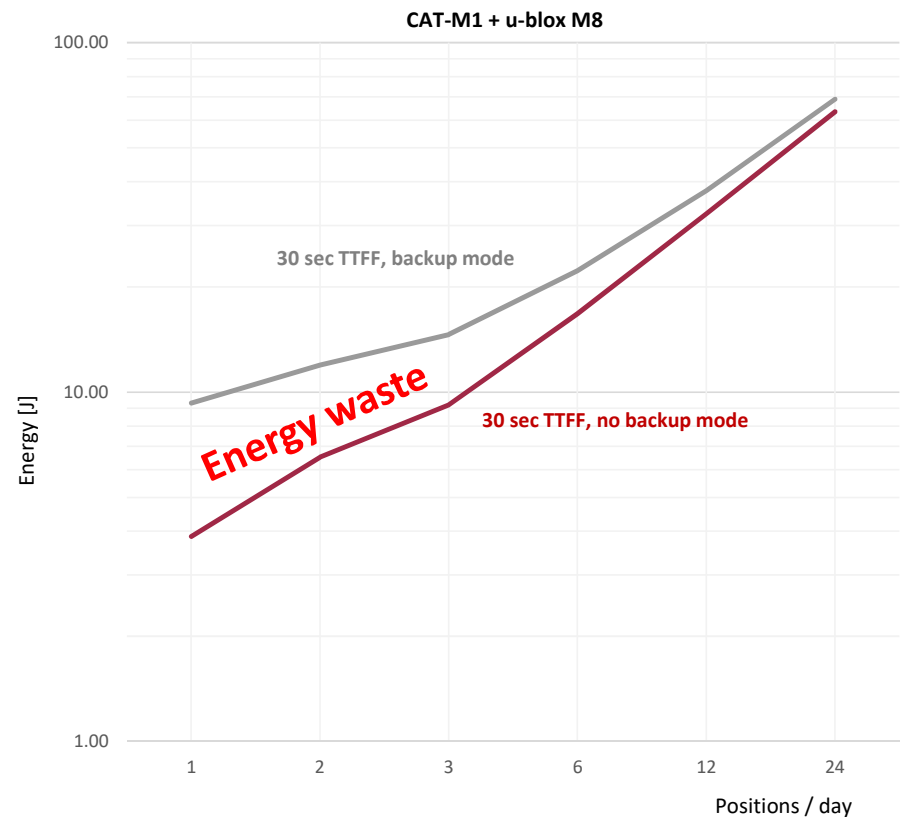
Common mistakes

u-blox GNSS receivers usage not always power optimized

- Ephemeris validity: 4 hours max
- Real time clock not accurate anymore after about two hours

6 positions / day or less → **coldstart** every time, even from backup mode

u-blox M8 often maintained in backup mode while not in use for no reason, wasting energy



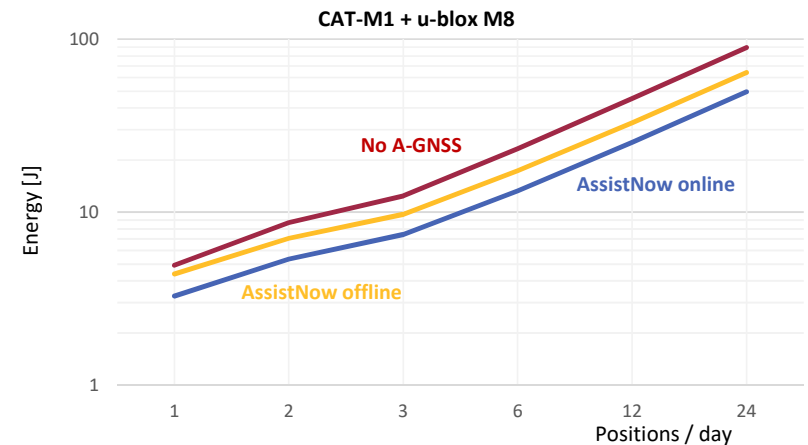
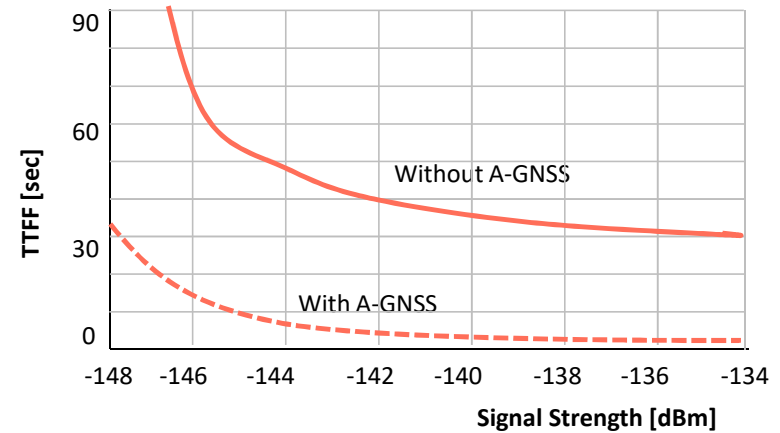
Asset tracking applications

u-blox M8 power optimization strategies



u-blox M8 power consumption very limited with optimal GNSS Assistance strategy

- AssistNow online (ephemeris) or offline (extended ephemeris) services greatly reduce TTF
- AssistNow online help dealing with weak signals
- Use AssistNow offline to minimize data download
- Application energy drastically reduced if optimal Assisted-GNSS strategy is used (factor 2 or more)
- Use standalone GNSS solutions (vs. cellular with integrated GNSS) to minimize power consumption



IloT applications

Power efficient connectivity solution



IloT applications may be based on cellular connectivity or on more power efficient connectivity solutions

- GNSS receiver power budget contribution:
 - limited in LTE based applications
 - larger when combined with Sigfox or LoRa
- u-blox future possible approaches to power reduction:
 - ultra low-power GNSS receivers
 - pseudo-ranges transmission and Cloud assistance / processing



**Thank you
for your attention**