In4073
Embedded Real-Time Systems

System Integration
Example Signal Flow (Classic Filter)

PC

P1

P2

QR (+ comm)

sp
sphi

Filter bank

p

phi
Notes on Filtering

- Integer multiplication is fine on X32
- Classic filtering: trade-off noise vs. phase lag
- Kalman filter instead of filter bank
- Sufficient resolution, especially for gyro bias (b)
- Non-zero angle bias at standstill
- Timing: angle loop is target
Example Signal Flow (Kalman Filter)