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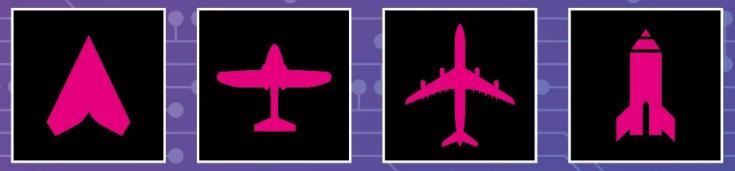
SYSTEM SOLUTIONS

From Single Product to Solution
from Basic Level to Research Level



AI³

Radar – outdoor use under rain

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Goal / Hardware / Test setup

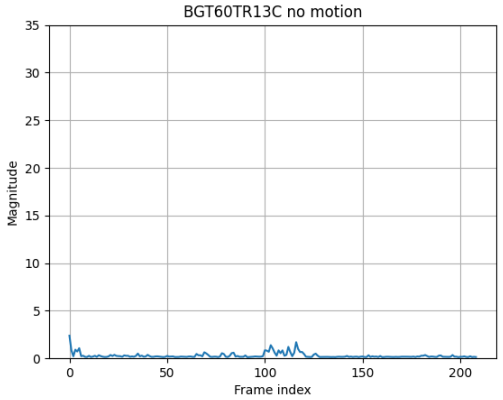
The goal is to evaluate the effect of rain on the radar's sensor values.

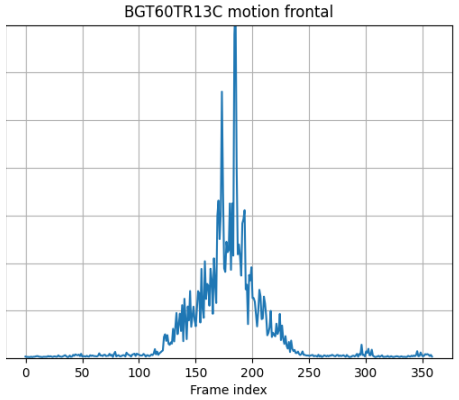
4 sensors are evaluated:
- Infineon BGT60TR13C (60GHz FMCW radar)
- Infineon BGT60LTR11AIP (60GHz Doppler radar)
- Infineon BGT24LTR11 (24GHz Doppler radar) – Sense2GoL Pulse
- MineW ME73MS01 (24GHz FMCW radar)

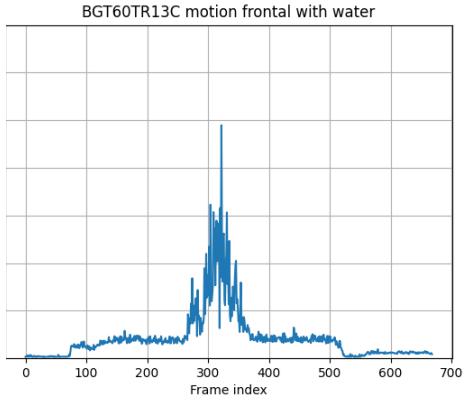
The test setup uses 2 electro-pumps with a water flow (for each) of 280L/hour.
The water spray is at 70cm of the radar sensor.

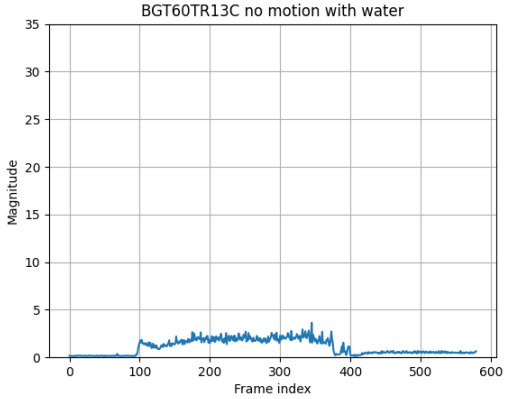
For each sensors, 5 measurements have been made:
- No motion / No water
- Lateral motion at 2m / No water
- Frontal motion (2m -> 1m -> 2m) / No water
- No motion / Water
- Frontal motion (2m -> 1m -> 2m) / Water

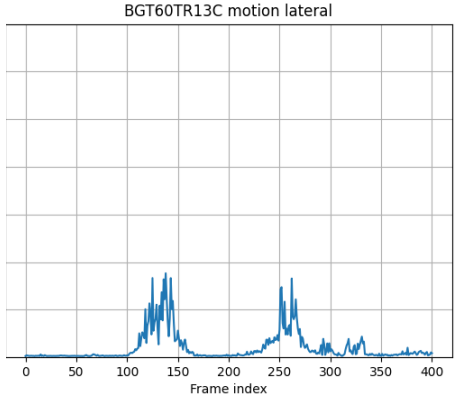
Infineon BGT60TR13C

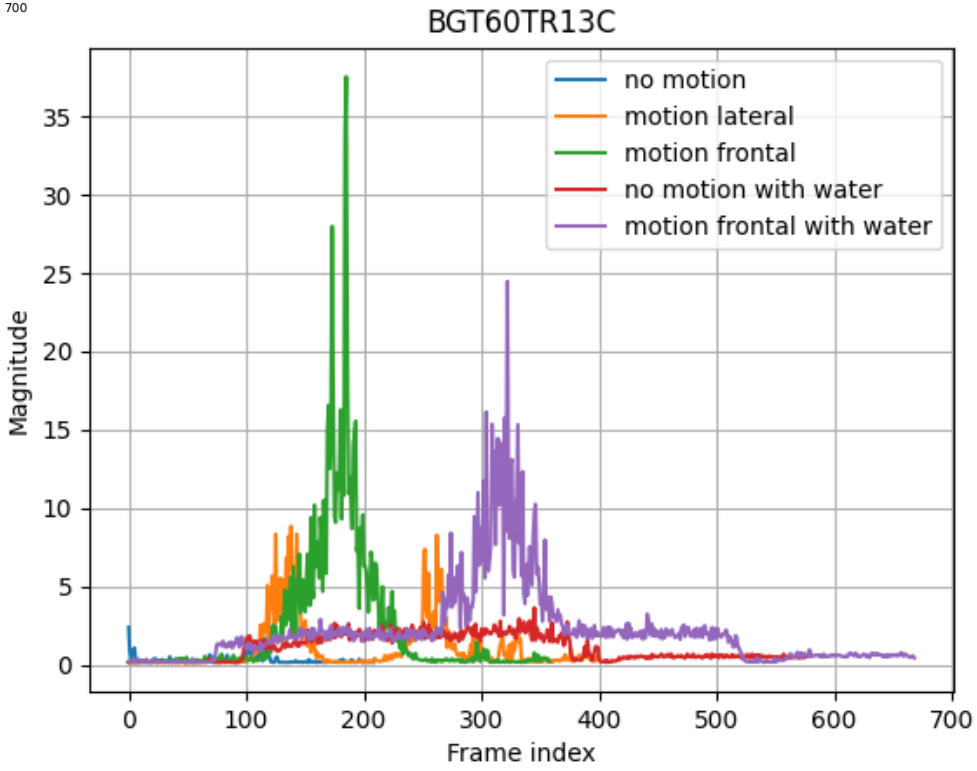




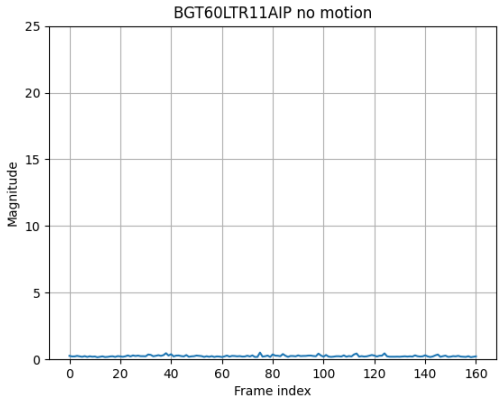


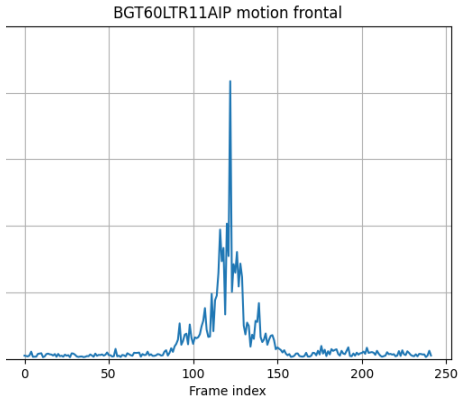


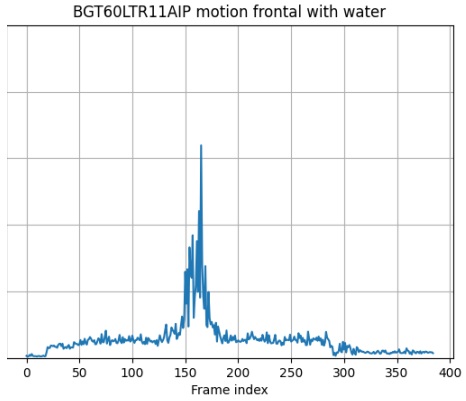


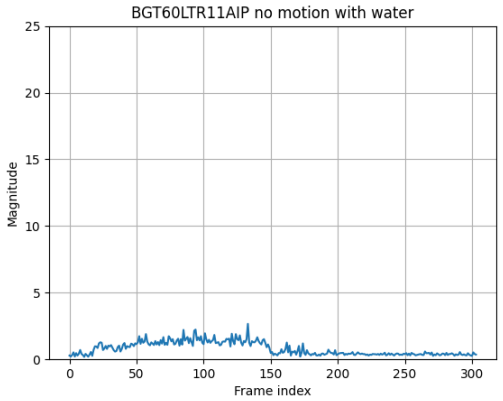


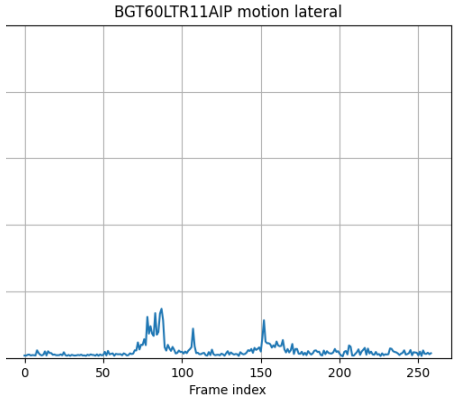
Infineon BGT60LTR11AIP

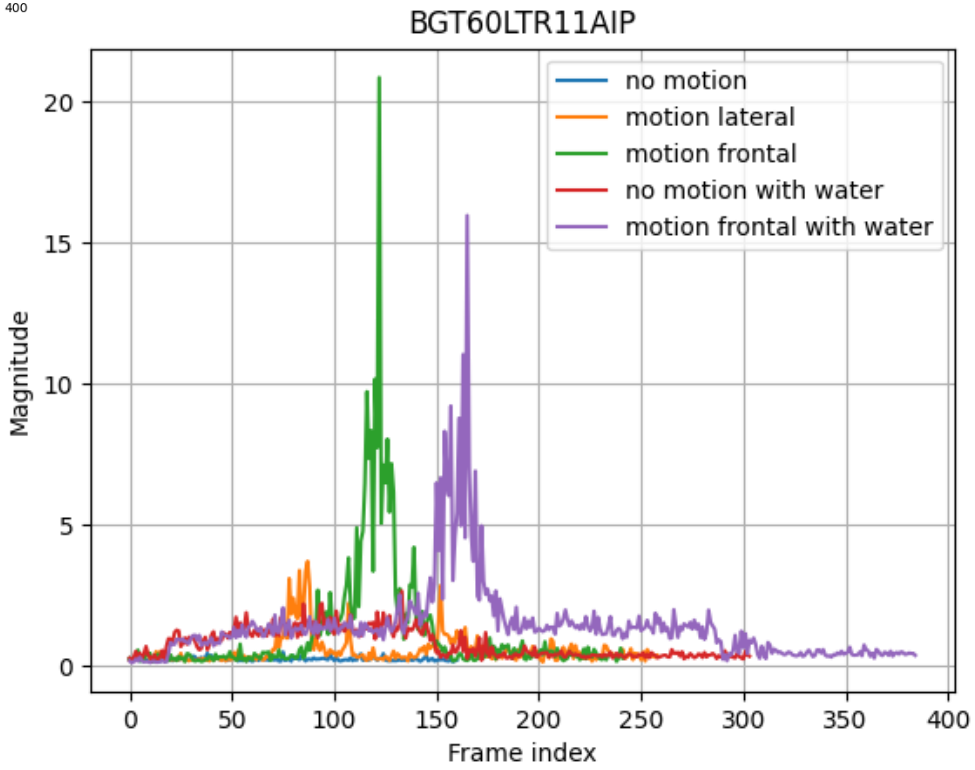




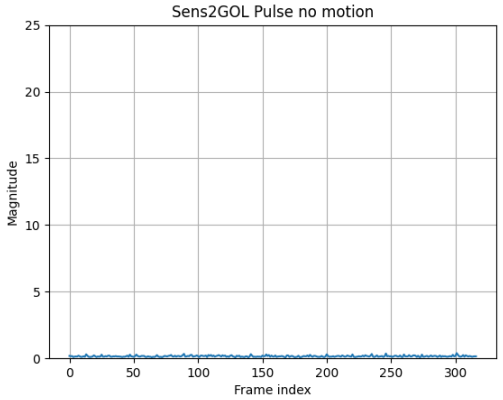


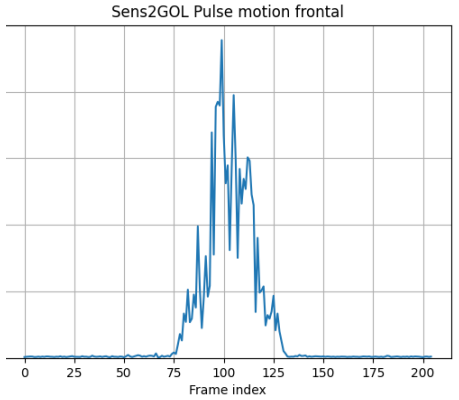


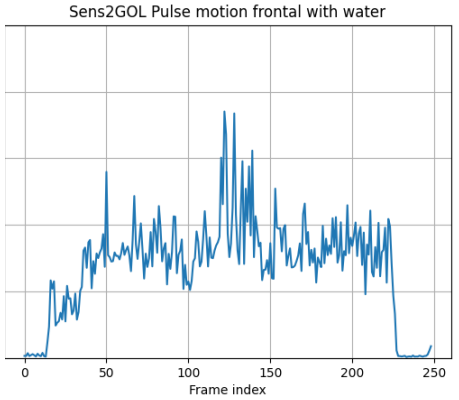


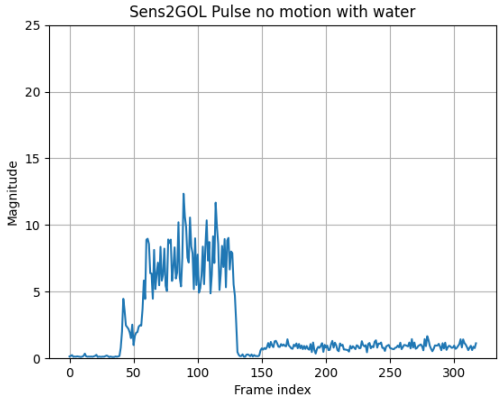


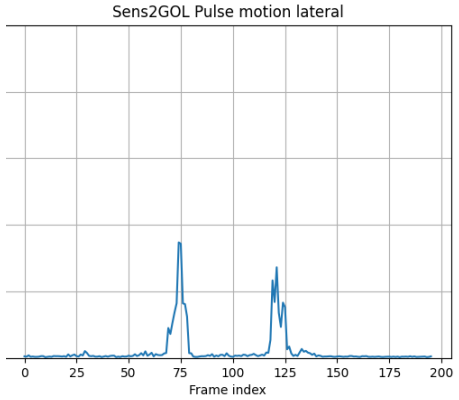
Infineon BGT24LTR11

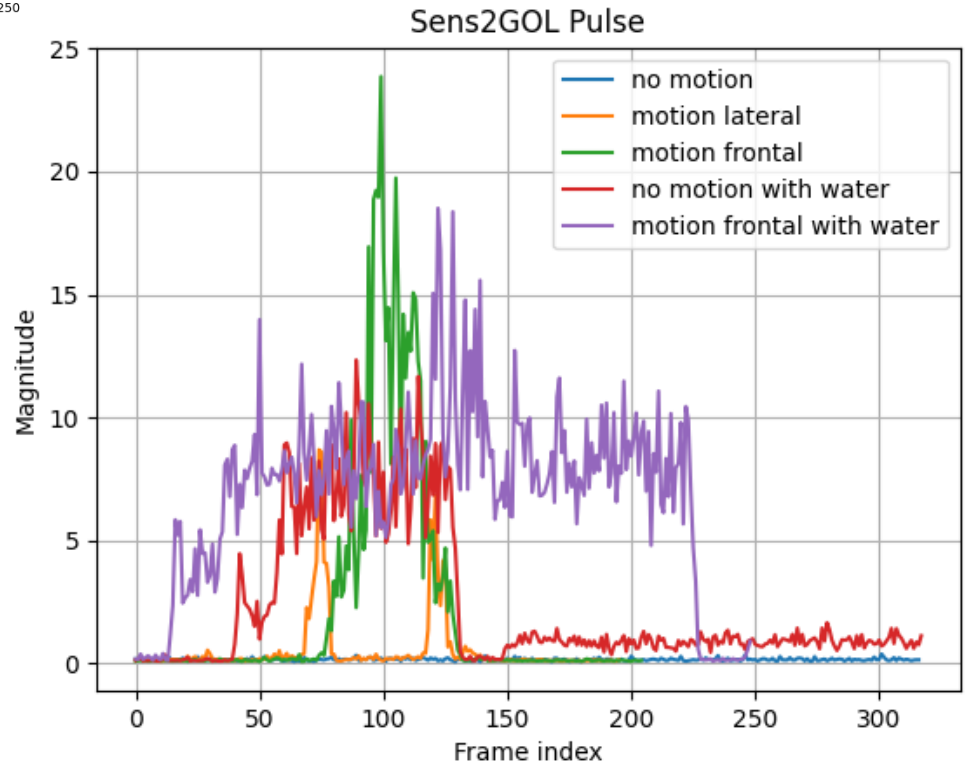




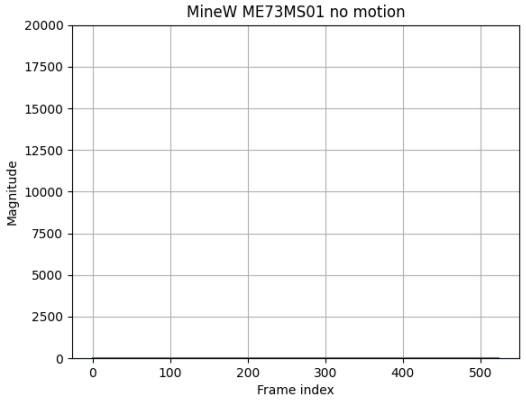


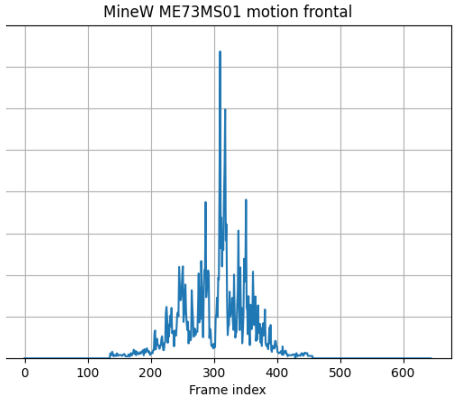


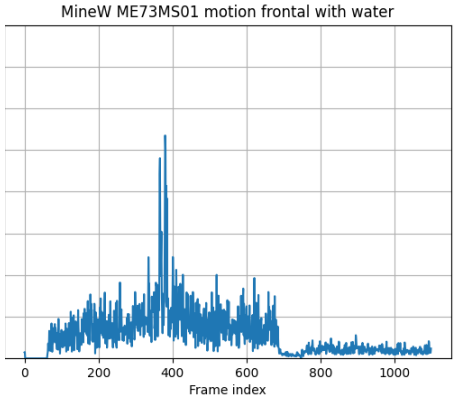


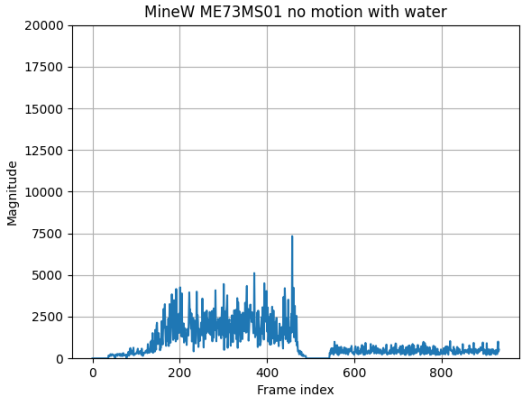


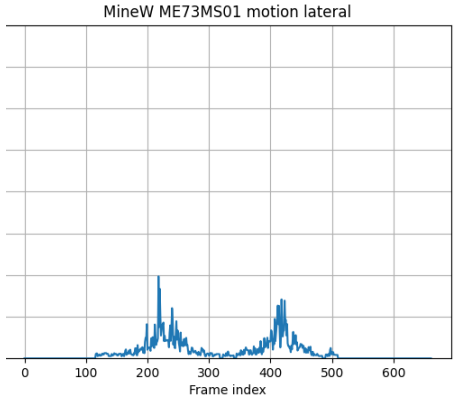
MineW ME73MS01

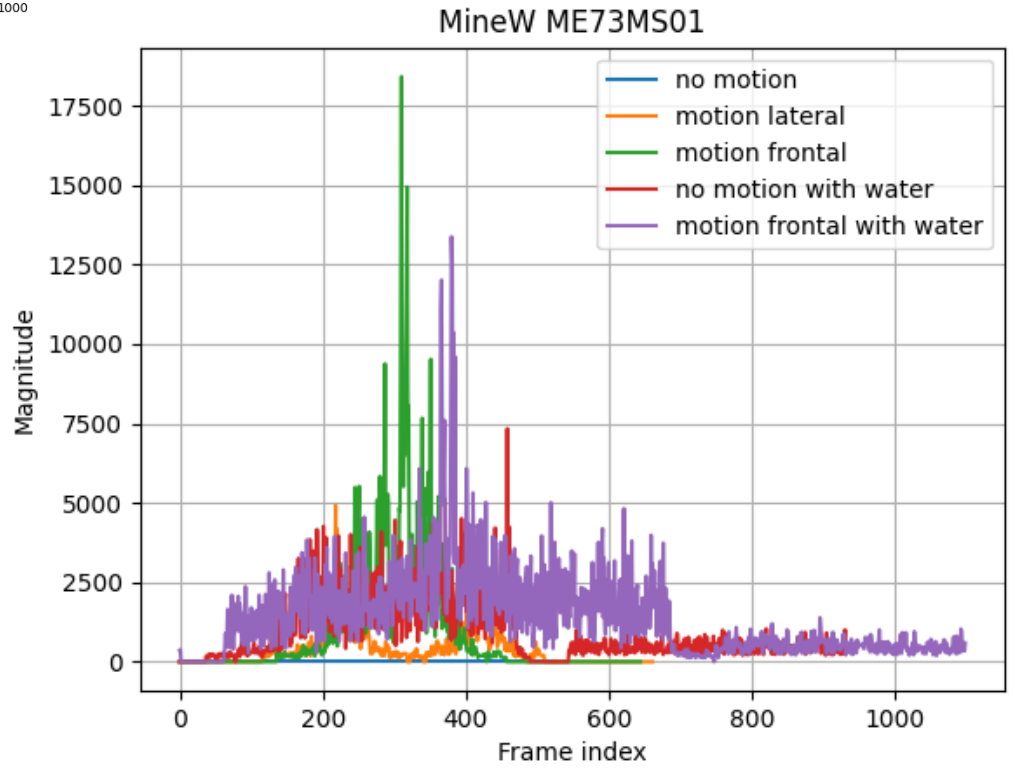




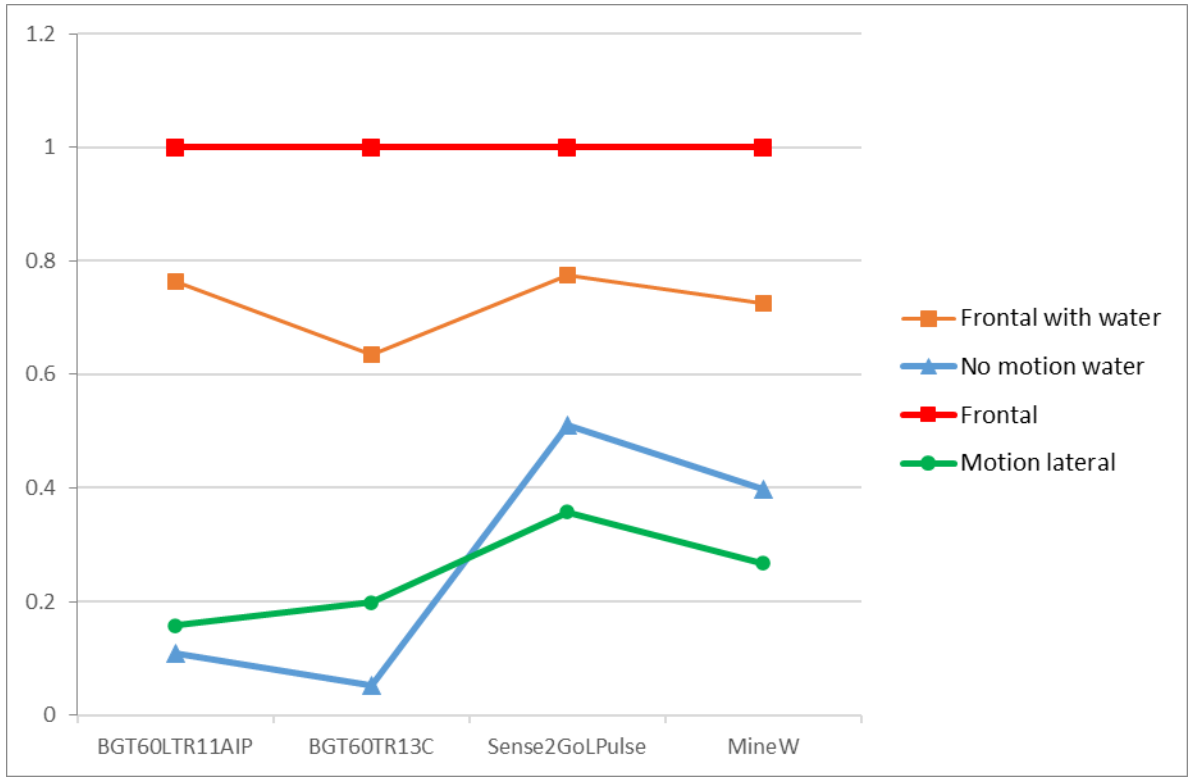








Results



Use frontal 2m -> 1m -> 2m motion as reference (maximum signal).

The orange line is the maximum signal for a frontal motion when water is flowing. The bigger it is, the better.
The smallest attenuation is for BGT60LTR11AIP and Sense2GoLPulse.

The blue line is the maximum signal when water is flowing and no motion. The smaller it is, the better.
The best results are for the BGT60LTR11AIP and the BGT60TR13C.