AWRL6844: Intruder Detection Testing

TI Information – Selective Disclosure

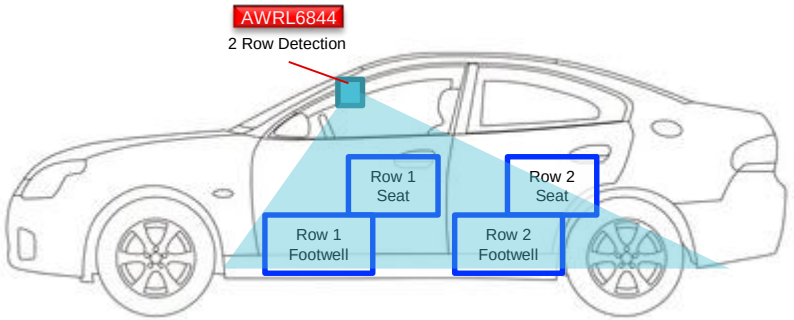
Texas Instruments

Overview – AWRL6844

Intruder detection testing shows that AWRL6844 enables high accuracy detection to reliably discern when there has been a breach into a vehicle

Featured Data in following slides:

- Test setup details
- Performance and detection results, overhead front mount

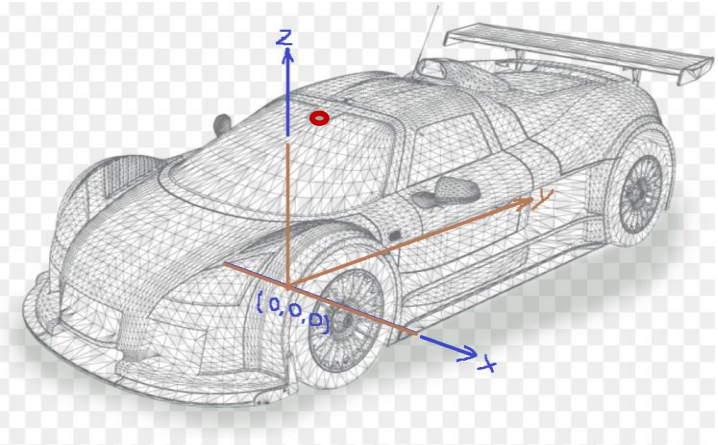


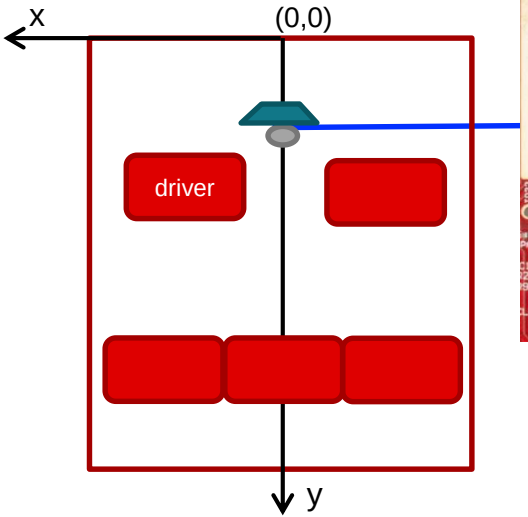
TI Information – Selective Disclosure

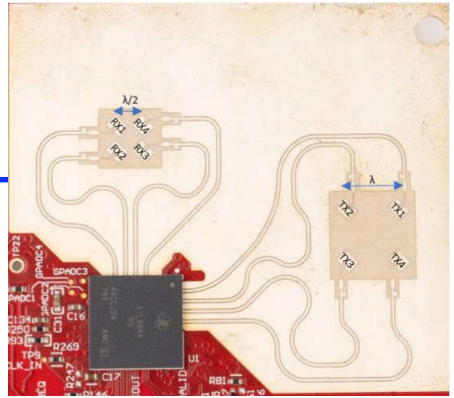
Texas Instruments

Mounting position – Front mount

- The sensor is mounted at (x = 0, y = 0m, z = 1m) and rotated 60 degrees to face the floor.







TI Information – Selective Disclosure

Texas Instruments

Chirp Configuration Details

Chirp parameters and system performance	Values	Units
Starting frequency	57	GHz
Ramp slope	60.0	MHz/us
Number of samples per chirp	128	#
Number of burst	1	#
Sampling frequency	1.25	MHz
Idle time	7	us
Ramp end time	63	us
Chirp accumulation	0	#
Burst period	1400	us
Valid sweep bandwidth	6144.1	MHz
Frame duration	100	ms
Maximum range, Rmax	1.25	m
Range resolution	2.44	cm

TI Information – Selective Disclosure

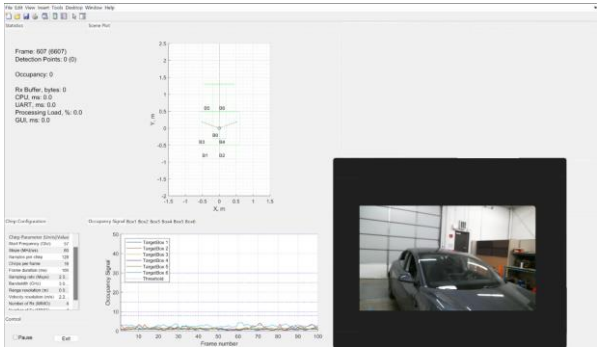
Texas Instruments

Intruder Detection Performance – AWRL6844 Front Mount

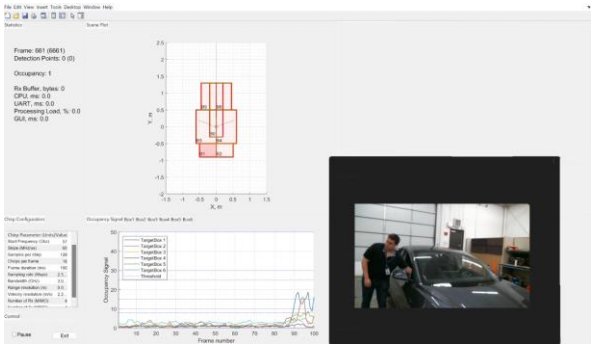
	Test Case	Detection Rate
Driver Side	Front window, take from dashboard	90%
	Front window, take from seat	100%
	Front window, take from floor	100%
	Rear window, take from seat	100%
	Rear window, take from floor	90%
Passenger Side	Front window, take from dashboard	90%
	Front window, take from seat	100%
	Front window, take from floor	100%
	Rear window, take from seat	100%
	Rear window, take from floor	100%

Texas Instruments

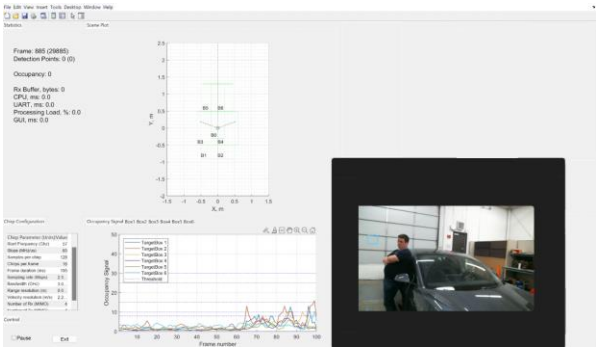
Intruder Detection Test Snapshots



No intruder present, zones all clear



Intruder reaching into car dashboard area, triggering intruder alert



Person leaning on car and no false alarms

TI Information – Selective Disclosure

Texas Instruments