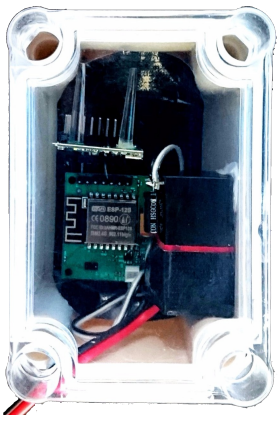
Powering IoT Devices

(Preliminary) mmW2411
People Counting mmWave Radar System with 24GHz Radar

Features

- Real-time people tracking scan range in 2x5m^2
- High accurate counting over 90%
- Background adaptation to obstacle elimination
- No camera recording no violation of privacy
- Hidden installation see-through thin ceilings

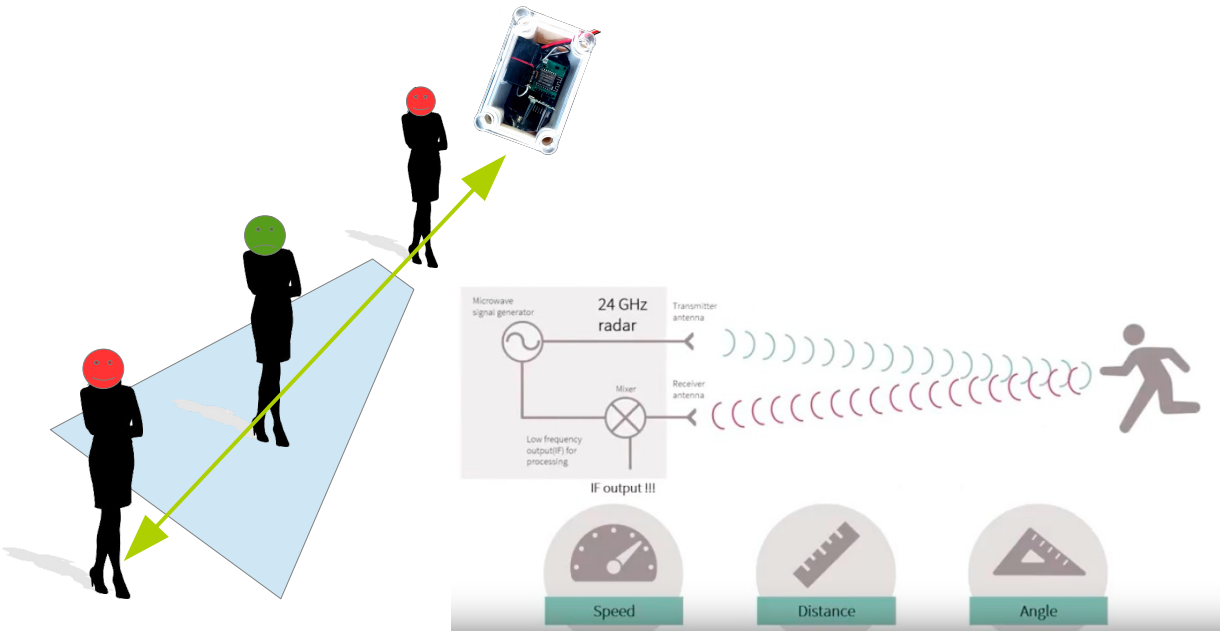


MmW2411 Radar Module

System Context

- King City people tracking & counting algorithm
- Infineon mmWave radar 24GHz
- Embedded central processing unit for radar tracking calculation
- Networking option:
  Ethernet port 10/100, Wi-Fi, NB-IoT
- DC or PoE power with 1W

MIoT People Counting mmWave Radar System, powered by a high-resolution 24GHz radar, is a high accurate and real time people tracking machine for the industrial and commercial use. The 24GHz radar is originated from the blind spot detection function of a general automotive. This commercial version mmW2411 tracks the human bodies in the maximum range of 10 meters, and reports the object presence and the in-out count towards the radar. Non human is eliminated.



Operation of this mmWave tracking system is to send the continuous radar signal out and to measure the frequency & phase difference of the bounced back signal when it hits any object. The motion frequency tells whether the object is static, or it is a living human. The system records the history and present the track of any moving human bodies with the exact position, angle and the motion speed.

Advantage of mmW2411 over the conventional stereo cameras is the higher accuracy approx. 90% in the open field, a larger scan range up to 10 meters and the detection of the flow direction with the single object. mmWave can see through a thin ceiling wall that is to allow the hidden installation.

Specifications

Radar	24GHz millimeter wave 1 transmit and 1 receive channel in doppler or FMCW mode Transmission power 6dBm typical & 10dBm maximum (typically one-tenth of some conventional Wi-Fi router) Safe radar to achieve ISO26262 Automotive Safety Integrity Level (ASIL B) Safe radar power far below FCC EIRP limit of 55dBm
Scan range	2x5m^2 oriented, FOV 120º maximum range 10 meters practically
Scan object	human body above 1 meter typically the flow direction of the single object towards the radar non-human elimination
Scan method	the differential motion speed and phase of the objects in the maximum frame rate (FMCW chirp time) of 1.5ms
Networking option	mmW2411E : Ethernet port 10/100 mmW2411W : Wi-Fi 2.4GHz mmW2411N : NB-IoT
Power input	DC jack 5V 0.5A or PoE power with 1W
Server requirement	similar specification as Dell 3670, prefer SSD as the OS drive
Software API	customized reports in HTTP in the programmable interval of 1 second typically
Module	water splash proof case, plastic 60mm(W) x 90mm(L) x 60mm(H) weight approx. 200g
Operating conditions	-10ºC to +40ºC, humidity 95% or less