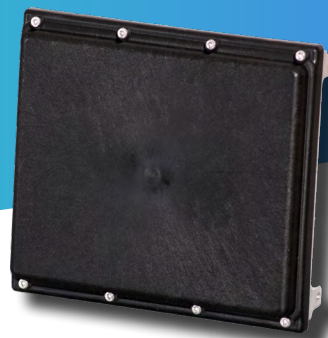


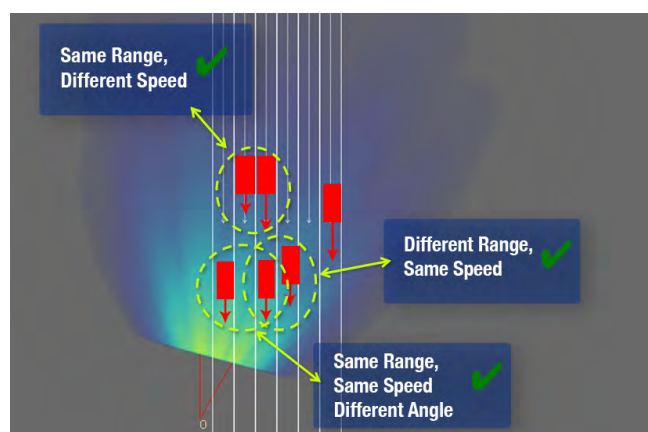
3D Object Tracking Radar

Advanced radar for real-time traffic volume measurement, classification, speed analysis and incident detection.



3D traffic management radar for accurate vehicle counting, speed and classification, lane and on/off ramp monitoring and incident detection. A complete solution to compute and accumulate statistical data including direction, lane, volume, occupancy, average speed, gap, headway and 85th percentile speed.

The innovative forward looking principle enables the radar to detect both approaching and receding traffic up to 160 meters. It covers up to 6 lanes in both directions simultaneously and provides precise volume and classification data for 4+1 classes. (Pedestrian, bicycle, motorbike, passenger car and truck). Range, radial speed, angle, reflectivity and other



parameters of multiple stationary and moving reflectors (targets) are measured simultaneously. Each detection is timestamped and stored with vehicle type information and speed in point. As vehicles are detected over a long period, the driving behaviour can be analysed, which helps mitigating occlusions and increases counting accuracy to approximately 95%.

How it works

The field proven radar projects a single low power microwave beam along the road and detects all objects inside the field of view. The forward firing operation principle, detecting along the road instead of across the road, enables the radar to deliver higher quality speed and occupancy data. In addition, it allows real-time direct measurement of range, speed and azimuth angle (lane position) of all vehicles simultaneously even in complex traffic conditions. The wide detection area enable users to define up to four measurement (counting) lines inside the field of view.

Works in all weather conditions

The robust radar works in adverse conditions and performance is not affected by dirt, smog, fog, sunlight, wind, sandstorms or extreme temperatures. Rain and snow have only small impact on sensor performance and is usually not noticeable due to detection margins and advanced tracking algorithms. IP67 water tight housing enables the radar to be mounted in all environments.

Easy mounting and setup

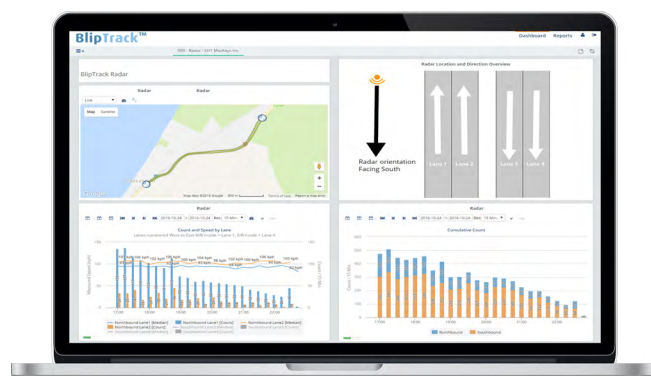
The radar is easily mounted, in a height of 6 meters, on existing road structures and poles without disrupting traffic. No setback is required. Suitable for permanent or temporary installations.

BlipTrack integration and power supply

The radar is integrated and powered through the BlipTrack Bluetooth/WiFi Outdoor sensor, which is either connected to a local permanent or intermittent power supply, such as street lighting or solar power, or an independent power source. The radar is not sold separately. Radar alignment, configuration and updates are handled by remote by BLIP Systems. Live monitoring with automated alarms and recovery handles issues before they escalate into problems.

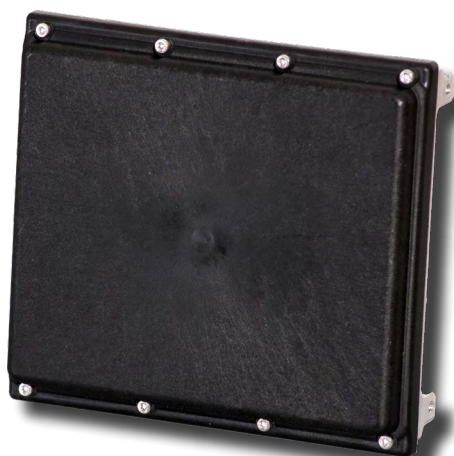
Advanced data analysis and visualization

The data is transmitted in real-time, via Ethernet or mobile broadband, to a secure data warehouse. At network connection loss, data caching is enabled. The data is analysed and presented in BLIP Systems web-based user interface, with graphs and dashboard views. The data can be easily integrated with existing management systems through various data output facilities.



3D Object Tracking Radar

Specifications



Sensor Specifications

Sensor Performance (ver. 29)

- Max. Range on Pedestrian: 50m
- Max. range on Passenger car: 160m
- Min Range: 1.5m
- Range accuracy: Typ. $< \pm 2.5\%$ or $< \pm 0.25\text{m}$ (bigger of) %,m
- Radial Speed Interval: $-68.3 \dots +68.3$ (± 88.8 available) m/s
- Minimum abs. Radial Speed: 0.1 m/s
- Speed accuracy: Typ. $< \pm 0.28$ or $\pm 1\%$ (bigger of) m/s
- Angle Interval: (total field of view) $-6 \dots +6$ (El.); $-18 \dots +18$ (Az.)/IV degree
- Update time: ≤ 50 ms
- Track Initialization time: Typ. 6 ... 10 cycles
- Simultaneously tracked objects: Typ. up to 64

Mechanical (Radar with junction box)

Weight: 512g

Dimensions: 99 x 110 x 60 mm

Sensor Performance (ver. 30)

- Max. Range on Pedestrian: 46m
- Max. range on Passenger car: 105m
- Min Range: 1.5m
- Range accuracy: Typ. $< \pm 2.5\%$ or $< \pm 0.25\text{m}$ (bigger of) %,m
- Radial Speed Interval: $-68.3 \dots +68.3$ (± 88.8 available) m/s
- Minimum abs. Radial Speed: 0.1 m/s
- Speed accuracy: Typ. $< \pm 0.28$ or $\pm 1\%$ (bigger of) m/s
- Angle Interval: (total field of view) $-8 \dots +8$ (El.); $-35 \dots +35$ (Az.)/IV degree
- Update time: ≤ 50 ms
- Track Initialization time: Typ. 6 ... 10 cycles
- Simultaneously tracked objects: Typ. up to 64

Mechanical (Radar with junction box)

Weight: 478g

Dimensions: 85 x 95 x 60 mm

Shared Specifications

Environmental

- Ambient Temperature: -40 to $+85$ degree C
- Shock: 100 gms/ Vibration: 14 gms
- IP: 67V
- Pressure / Transport altitude: 0...10.000 m

General

- Power Supply: 7... 32 V DC 3.7 W
- Frequency Band: 24.0...24.25 GHz
- Bandwidth: < 100 MHz
- Max. Transmit Power (EIRP): 20 dBm
- Interfaces: CAN V2.0b (passive) RS485 half-duplex