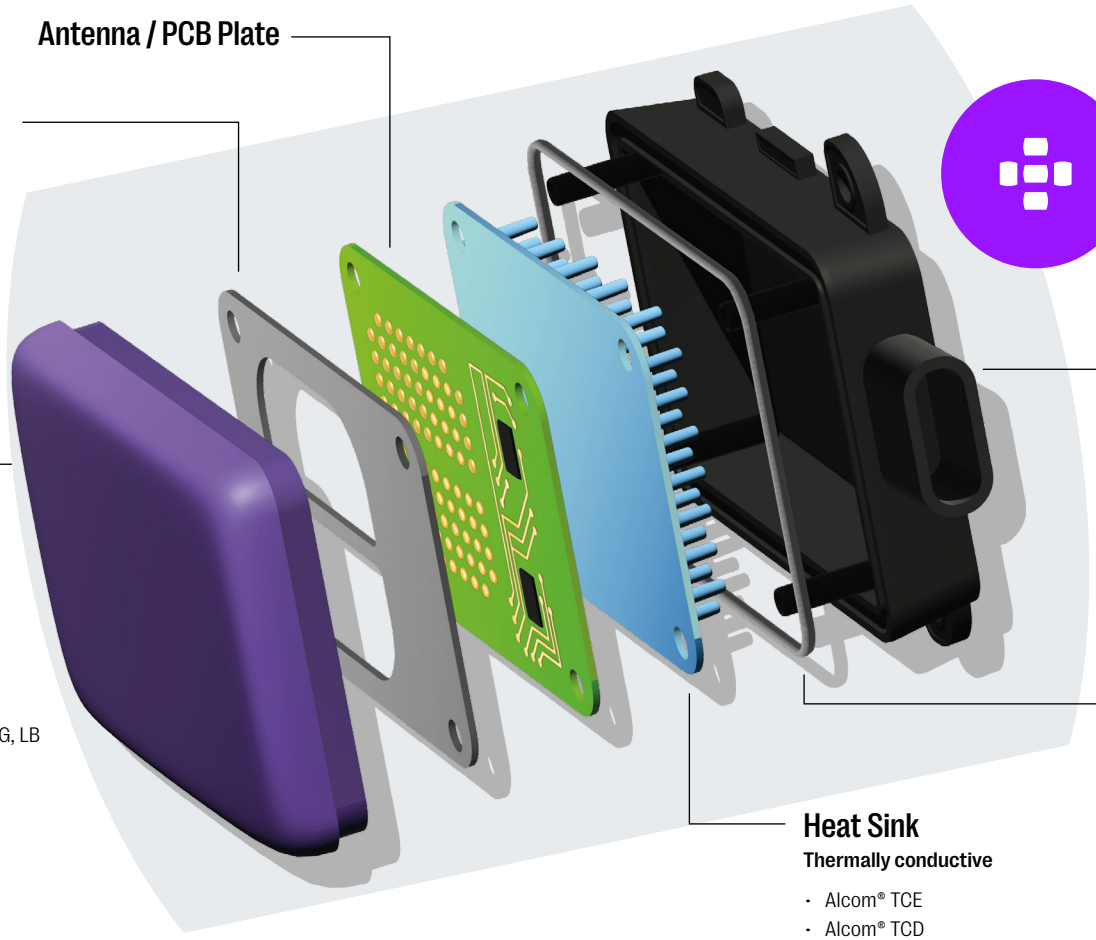


MOCOM

Radar sensors
Solutions for driving assistance systems

When driving cars, we use different driving assistance systems, such as lane change and exit assistance or sensors to detect objects in our blind spot. MOCOM offers the right material solutions for these systems.

To detect the entire vehicle environment and thus operate all automatic driving and parking functions, sensors are part of every modern car. Distributed throughout the vehicles, these make driving more comfortable, efficient, and safe. All assistance systems are based on various sensor systems such as ultrasound, cameras, radar, and lidar.

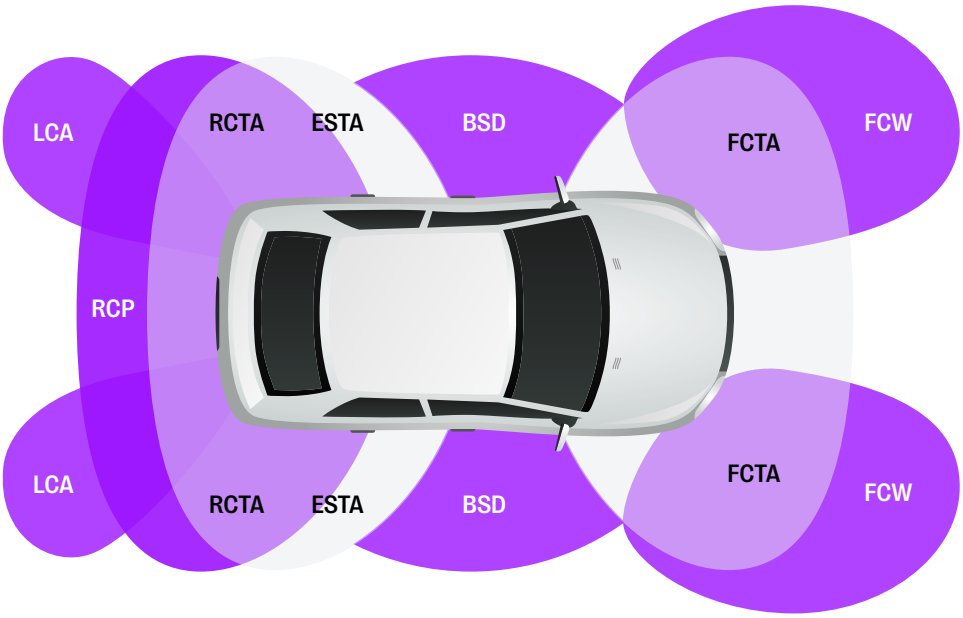
Radar systems, for instance, are used to measure speeds and distances. They scan objects using electromagnetic waves, evaluating the echo of an object and responding if necessary. Thanks to this technology, very precise distance measurements are possible. When dealing with small distances (short range) of up to 100 meters, radars are required, among others, for the lane change assistant. For larger distances (long range) of up to 250 meters, the assistants ensure that the distance is maintained and the emergency braking function is active.

These radars consist of various components for which MOCOM offers material solutions made of plastics, thus improving the recyclability of the final product. At the same time, MOCOM is able to produce the material not only for individual parts but also for an entire component.

MOCOM: Your solution provider

- **Customization** products tailored to your specific requirements
- **Lighweight** improve efficiency, mileage and sustainability
- **Sustainability** broad spectrum of composite materials based on recycled raw materials, including FR type
- **Fire protection** solutions with composite materials that meet different UL94 classifications
- **Support** Individual support by our technical and market experts

Applications and areas of the 77 GHz radar sensors at a glance



Front

BSD – Blind Spot Detection
Detection of objects in the blind spot

FCTA – Front Cross Traffic Alert
Warning of cross traffic at intersections and when parking out

FCW – Forward Collision Warning
Early detection of slower vehicles driving ahead

Rear

LCA – Lane Change Assistant
Detects and warns of approaching vehicles from a distance

RCP – Rear Crash Detection
Detects collision situations and prepares active safety systems

RCTA – Rear Cross Traffic Alert
Warning of reversing cross traffic, moving objects, or objects when backing up

ESTA – Exit Assistant
Exit assistant in unclear situations

Application	Portfolio	Grade	Description	Properties
Radome Radar Transparent 24 - 81 GHz	Alcom® LD, LDDC, LG, LB	Alcom PC 740/4 CC1084-07LD	PC Light Diffusion	ε_r= 2,759, tan δ= 0,006 (@77GHz, @2,3 mm)
		Alcom PC 740/4 UV CC1323-08LG	PC Light Guide	ε_r= 2,725, tan δ= 0,005 (@77GHz, @2,3 mm)
		Alcom LB PC 1000 14073 WT1164-14	PC Light Blocking	ε_r= 2,955, tan δ= 0,006 (@77GHz, @2,3 mm)
	Altech®	Altech PP-H A 2030/100 NC0001-00	PP GF30	ε_r= 2,678, tan δ= 0,013 (@77GHz, @2 mm)
		Altech PP-B A 2030/150 NC0001-00	PP GF30	ε_r= 2,691, tan δ= 0,011 (@77GHz, @2 mm)
		Altech PC B 2010/100 NC0001-00	PC GF10	ε_r= 2,881, tan δ= 0,006 (@77GHz, @2,3 mm)
		Altech PC+ASA A 1000/320 BK0002-00	PC+ASA	ε_r= 2,801, tan δ= 0,008 (@77GHz, @3 mm))
	Altech NXT PP®	Altech NXT PP-H A 2035/450.02 NC0001-00	PP GF35 CP	ε_r= 2,813, tan δ= 0,013 (@77GHz, @2 mm)
Middle Plate Radar Absorbing	Alcom® HP	Alcom HP PBT 2030 SB1099-20	PBT GF30	ε_r= 3,694, tan δ= 0,011 (@77GHz, @1 mm)
	Altech®	Altech PA6 A 2030/109 NC0001-00	PA6 GF30	ε_r= 3,499, tan δ= 0,013 (@77GHz, @2 mm)
	Altech® ECO	Altech PA6 ECO 2030/100 NC0001-00	PA6 GF30 ECO	ε_r= 3,529, tan δ= 0,013 (@77GHz, @2 mm)
Heat Sink Thermally Conductive	Alcom® TCE	Alcom PA66 910/32.1 TCE2 BK1282-10	PA66 TCE	Thermal Conductivity (integral/in plane) = 2,0 / 5,1 W/mK
		Alcom PA66 910/32.1 TCE5 BK1152-08	PA66 TCE	Thermal Conductivity (integral/in plane) =2,0 / 8,0 W/mK
		Alcom PA66 910/32.1 GF8 TCE8 BK0002-00	PA66 TCE	Thermal Conductivity (integral/in plane) = 3,5 / 15,5 W/mK
		Alcom TCE PC 5040 16090 BK0002-00	PC TCE	Thermal Conductivity (integral/in plane) = 5,0 / 10,0 W/mK
	Tedur® TCE	Tedur TCE PPS 5040 16087 BK0002-00	PPS TCE	Thermal Conductivity (integral/in plane) = 5,0 / 5,9 W/mK
	Alcom® TCD	Alcom TCD PA6 5060 FR 16089 NC0001-00	PA6 TCD FR	Thermal Conductivity (integral/in plane) = 1,2 / 1,8 W/mK
		Alcom TCD PA6 5070 18058 BK0003-00	PA6 TCD	Thermal Conductivity (integral/in plane) = 1,2 / 1,8 W/mK
		Alcom TCD PA6 5075 18057 BK0003-00	PA6 TCD	Thermal Conductivity (integral/in plane) = 1,5 / 3,2 W/mK
		Alcom TCD PBT 5065 IM 19011 NC0001-00	PBT TCD	Thermal Conductivity (integral/in plane) = 1,0 / 1,3 W/mK
Sealing Flexible	Alfater XL®	Alfater XL®	TPV	Hardness (Shore) A70-D50
	Alfater XL® ECO	Alfater XL® ECO	TPV ECO	Hardness (Shore) A75-D50I
Back Cover EMI Shielding	Alcom® EMI	Alcom EMI PC+ABS 7565 NC1122-20	PC+ABS EMI	Shielding effectiveness up to 50dB (2 mm)
		Alcom EMI PA6 7575 NC1123-20	PA6 EMI	Shielding effectiveness up to 60dB (2 mm)
		Alcom PA66 910/1.2 CF30	PA66 CF30 EMI	Shielding effectiveness up to 60dB (2 mm)
	Tedur®	Tedur L 9904-1 BK0002-00	PPS EMI	Shielding effectiveness up to 60dB (2 mm)

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