Autoliv 77GHz Multi Mode Radar

A compact, cost-effective and high-performance driving assistance system combining medium- and long-range detection

Autoliv, one of the leading automotive radar system suppliers, has developed a new radar configuration. Instead of installing two radar systems, one for long range and another for medium range, the 77GHz Multi Mode Radar combines both. By expanding the detection area of the radar, Autoliv significantly reduces the cost of safety equipment.

The system integrates two electronic boards including Texas Instruments’ microcontroller and automotive vision processor. The radio-frequency (RF) board is manufactured with an asymmetric structure using a hybrid PTFE/FR4 substrate and is equipped with planar antennas.

The radar uses Infineon’s 77GHz SiGe monolithic microwave integrated circuit (MMIC) as its high-frequency transmitter and receiver. The RF dies are packaged in the latest version of eWLB, the fan-out wafer level package developed and manufactured by Infineon. The transmitter and receiver are connected to a dual power amplifier and to a waveform generator from Infineon.

Based on a complete teardown analysis of the Autoliv Multi Mode Radar, the report provides bill-of-material (BOM) and manufacturing cost of the radar sensor and a comparison with the Bosch MRR and Delphi RACam.

A complete physical analysis and manufacturing cost estimation of Infineon’s MMICs is available in a separate report.
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