The DUT described herein provides the vehicle side Ultra Wide Band (UWB) interface to the Smart-key. The DUT communicates to the Smart-key via RF signal on the UWB spectrum channel 2 (3.9936 GHz Center, 499.2 MHz 3dB Bandwidth). The emission is a pulsed (damped wave) transmission with a fixed packet as demonstrated in the test report. The EUT employs an integral PCB trace antenna (shovel shaped).

The DUT relays messages received from the Smart-key and communicates with the RFA base station module via LIN.

The DUT is an always-hot, always connected to battery module and receives power via battery and ground pins. The circuit consists of a main microprocessor and UWB microprocessor powered by a LIN SBC IC. LIN SBC IC provides private LIN interface to the vehicle and a 3.3V power supply to main microprocessor and UWB microprocessor.

DUT module communicates with the Smart-key module to execute time-of-flight calculations to authenticate Smart-key position. The main microprocessor is responsible for configuring the UWB microprocessor, managing communications between the RFA and Smart-key modules, managing the power states of the module, and diagnostic functions.