

TRF7960ATB Operational and Technical Description

The TRF7960ATB Evaluation Module (EVM) allows the software application developer to become familiar with the functionalities of TRF7960 Multi-Standard Fully Integrated 13.56-MHz RFID reader IC with the freedom to develop on the Texas Instruments embedded microcontroller development platform of choice.

The TRF7960ATB module also allows customer-driven antenna tuning with onboard coil and customer-driven antenna form factor design. The module is hardwired for SPI communications, supports slave select and TRF7960 Direct Mode 2 (default), Direct Mode 1, and Direct Mode 0 operations. The user also has access to and full control over the TRF7960 EN2 and EN lines, allowing for design and development of ultralow-power high-frequency (HF) RFID systems. The module has an onboard boost converter which boosts 3.3 VDC to 5 VDC out to TRF7960 IC for +23 dBm (full transmitter power out) operations.

An impedance-matching circuit from $4\ \Omega$ to $50\ \Omega$ is populated on the module, and this is connected to a tuned $50\text{-}\Omega$ antenna circuit that consists of an onboard four-turn coil with series and parallel passive elements (capacitors and a resistor).

Test points are available on the board for checking firmware operations with oscilloscope or logic analyzer, impedance matching, and for attaching an external antenna.

Connection to Texas Instruments microcontroller platforms are made via Samtec EM headers located on the back of the board (connectors P1/RF1 and P2/RF2).