

The core 940-0132 modular radio solution implements an 802.11b/g/n WLAN transceiver, based on a Broadcom BCM4390 SOIC (System on Integrated Circuit). The WLAN transceiver is supported by an integrated Power Amplifier (PA) and Low Noise Amplifier (LNA). All of the radio functions use an on-module 37.4 MHz Temperature Compensated Crystal Oscillator (TCXO) as the station frequency reference. The radio is supported by an on-chip ARM Cortex processor. An additional on-module 32 kHz oscillator is used for low-power operation of the on-chip integrated microcontroller. The WLAN transceiver section is based on a direct-conversion vector (I-Q) transmitter and receiver architecture. The local oscillator is generated at the carrier frequency and phase-locked to the 37.4MHz TCXO. The transmitter signal is routed to the internal PA and amplified by the internal PA. The WLAN receive section is fully realized in the SOIC. The transceiver is supplemented by an on-module Transmit/Receive (T/R) switch and Selection Diversity (SD) Switch. The selection diversity switch is used to select the strongest signal on a per-packet basis. The consequent transmissions upon reception are applied to that same selected antenna, until it changes state in response to a stronger receive signal on the opposite antenna. A band pass filter is included in the transmit/receive path between the BCM4390 and the antenna terminal, inserted between the T/R switch and SD switch.

The radio transceiver and station reference (37.4 MHz TCXO) power supplies are provided by on-module voltage regulators.

The radio transceiver settings are controlled by the manufacturer and cannot be altered by an end-user or module integrator due to the fact that they are only changeable in the manufacturer's source code. This makes the radio transceiver settings inaccessible once the code is compiled into its binary executable form and programmed on to the radio module, in accordance with FCC KDB594280 D01.