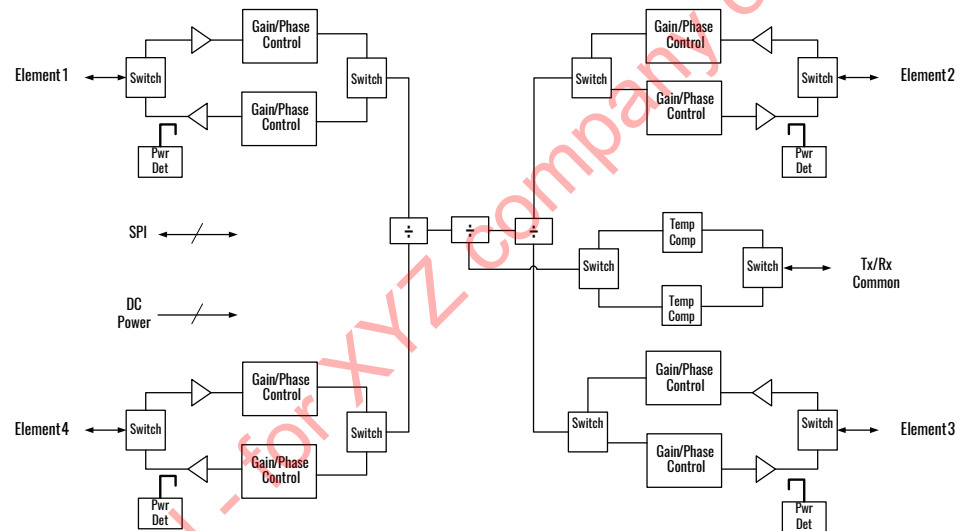


Product Features

- 24.25 - 27.5 GHz operation
- Supports 4 radiating elements
- Tx/Rx half duplex operation
- +14 dBm Tx OP1dB (adjustable)
- +25 dB Tx gain
- +32 dB Rx coherent gain*
- 6.5 dB Rx NF
- -21 dBm Rx IIP3
- 5 bit phase control (LSB=11.25°)
- 4 bit gain control (LSB=1.0 dB)
- Fast beam steering
- Telemetry reporting
- 3.6 x 3.6 mm WLCSP
- +1.8 V AND 2.5 V operation
- 1.8 W DC Tx mode quiescent
- 2.5 W DC Tx mode at P1dB
- 1.3 W DC Rx mode

Block Diagram



Applications

5G communications antenna arrays

General Description

The AWMF-0139 is a highly integrated silicon quad core IC intended for 5G phased array applications. The device supports four Tx/Rx radiating elements, includes all requisite beam steering controls for phase and gain control, and operates in half duplex fashion to enable a single antenna to support both Tx and Rx operation. The device provides 25 dB gain and +14 dBm adjustable output power during transmit mode and 32 dB coherent gain, 6.5 dB NF, and -21 dBm IIP3 during receive mode. Additional features include gain compensation over temperature, temperature reporting, Tx power telemetry, and fast beam switching using on-chip beam weight storage registers. The device features ESD protection on all pins, operates from +1.8 V and +2.5 V supplies, and is packaged in a 3.6 x 3.6 mm WLCSP (wafer level chip scale package) for easy flip chip installation in planar phased array antennas.