

Fifth-Generation SoCs for Broadband Wireless

OVERVIEW

BCM85652	MicroWave Modem
BCM985650	Evaluation Kit

FEATURES

Link Robustness

- ECR
- ACM
- Advanced multilevel LDPC and RS FEC
- Maximal Ratio Combining (MRC) and Dual Polarization (XPIC) MRC for extra link robustness and channel diversity notch elimination

High Capacity

- Dual polarization spatial multiplexing MIMO (4 x 4 XPIC-MIMO)
- Full XPIC in a single chip
- Two modem chains
- 112MHz channel on each modem chain
- High QAM modulations up to 4096 QAM
- Channel bonding
- Dual channel on single Baseband (BB) or IF interface
- PLA
- Header compression

APPLICATIONS

- MicroWave Point-to-Point



The MaxLinear BCM8565x is a fifth-generation SoC family for broadband wireless transmission systems. The BCM8565x family brings the most advanced features and performance to the microwave point-to-point industry with high capacity features such as 4 x 4 XPIC MIMO, wide 112MHz channels, high 4096 QAM modulation, and dual channel on a single I/Q or IF AFE interface.

The BCM8565x family supports high integration with two modems (e.g., full XPIC in a single chip), embedded programmable DSP for add-on features and differentiation, multiple high-speed AFE for I/Q and IF interface, auxiliary AFE for RF circuitry and board control, packet fragmentation and header compression, SyncE, and 1588 support.

High link robustness is supported with Enhanced Carrier Recovery (ECR), ACM, advanced multilevel LDPC/RS FEC, MRC and XPIC-MRC, and link protection. An integrated digital tuner replaces the need for an external IF tuner. Improved RF performance is provided with RF circuitry impairments compensation including I/Q imbalances correction, ECR, multi-stage AGC, and Adaptive Digital Predistortion (ADPD).

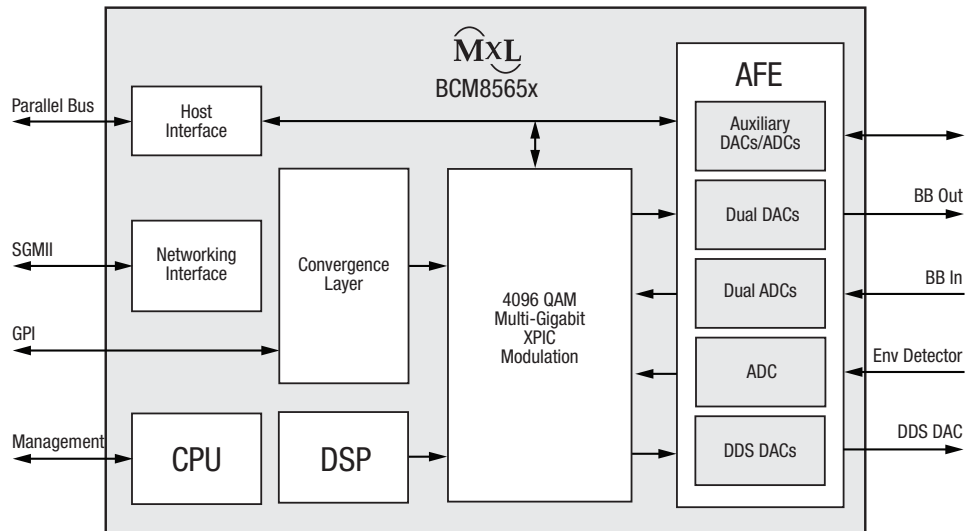
Advanced power saving uses power domains, clock gating, and AVS. The BCM8565x family meets the evolving demands of backhaul networks, and supports hybrid and pure IP networks for 4G cellular networks.



BCM8565x MicroWave Modem

High Integration

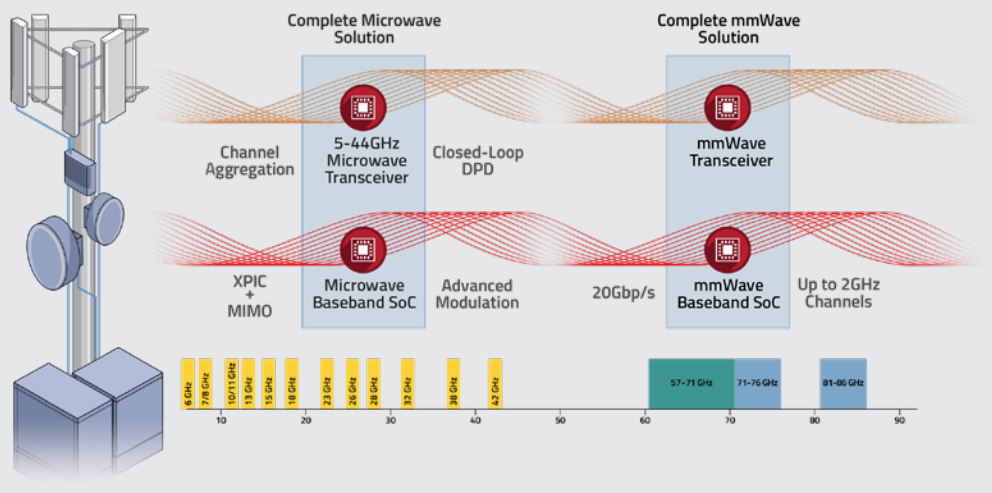
- Integrates significant BOM functionality to support efficient microwave BB system design
- Multiple high-speed Tx DACs and Rx ADCs for BB and direct IF interfaces supporting the connection to IF coax cables with analog signals over 1GHz
- Integrated digital tuner replaces the need for an external IF tuner
- Two fully independent Wideband (WB) modem chains from the service interfaces to the AFE
- IF signal Cross-Connect (XC) support for simple SoC-to-SoC connectivity in advanced multi-SoC applications (e.g., AODU to AODU connectivity in MIMO applications)



BCM8565x Functional Block Diagram

Microwave & mm-Wave Backhaul and Fronthaul

The BCM8565x is part of a complete portfolio of multi-gigabit wireless backhaul and fronthaul solutions. MaxLinear's microwave and millimeter wave transceivers (mm-Wave) and broadband modems support multi-gigabit-per-second data speeds. These complete microwave and mm-Wave solutions enable up to 10Gbps throughput over existing coax. The single-chip, microwave backhaul RF transceivers can receive signals over the entire microwave backhaul frequency spectrum of 5GHz to 44GHz.



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