

# CLR250 Single-Chip 802.11n USB Client.



## Dual Band High Performance 3x3 802.11n with Transmit Beam Forming

Celeno's CLR250 incorporates all the key components required to meet the needs of the growing WiFi multimedia home networking market. The powerful CLR250 USB WiFi Client is a highly integrated chip combining 802.11n MAC, baseband and radio. These unique features make the CLR250 ideal for cost sensitive, high performance Telco and Retail applications such as WiFi enabled set top boxes and TVs.

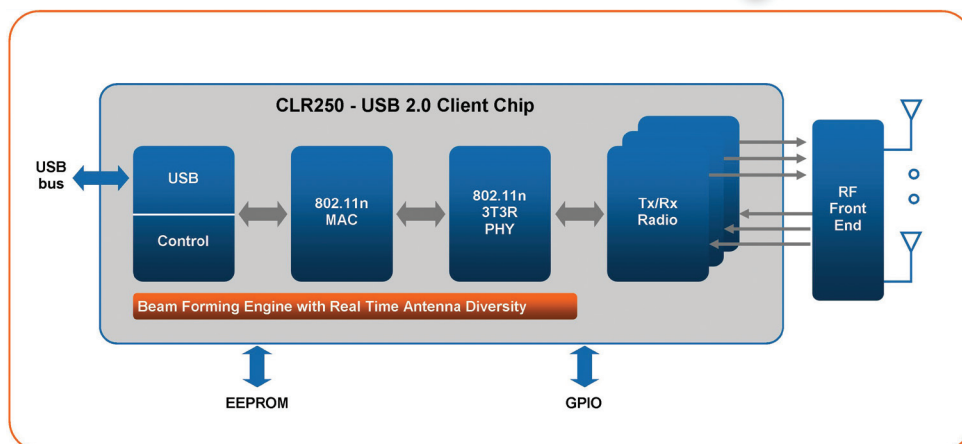
### Benefits

- **Cost effective USB client architecture**
- **High performance**
  - Transmit Beam Forming
  - Up to 3 spatial streams
  - Efficient DMA engine and HW accelerators for minimum host load

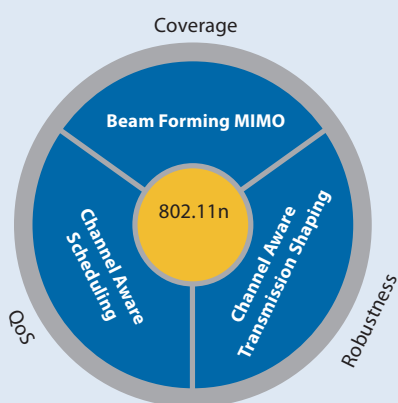


### Applications

- Wireless enabled set top boxes
- Wireless TV for over the top content
- Multi room gaming
- Media players and streamers



### Celeno OptimizAIR™ Technology



Powered by the OptimizAIR™ technology the Celeno CLR250 delivers multiple, concurrent HD streams to client devices independently of the 802.11n client chipset (even to single stream, single antenna clients).

OptimizAIR™ combines several innovative technologies that work together intricately at all layers to achieve the full-home, robust throughput needed for HD video streaming. These include Transmit Beam Forming MIMO for increased range, Scheduled Access MAC to support multiple clients with the appropriate QoS, channel aware rate selection for zero packet error rate, real time antenna diversity for robustness and interference resiliency with fast channel selection and dynamic 20/40MHz operation. The OptimizAIR™ expert system is driving up the performance by real time packet-by-packet channel estimation for fully channel-aware silicon.

## Features

- **802.11n compliant 3T3R MAC/BB/RF**
  - 2.4GHz / 5GHz Dual Band
  - Up to 3 spatial streams
  - 20MHz/40MHz channel bandwidth
  - 450Mbps PHY data rate
  - WiFi Compliant: WPA2/WMM/WMM Power Save/WPS2
- **Integrated Celeno's OptimizAIR™ technologies suite**
  - Digital beam forming for up to 9 db gain
  - Real-time channel aware adaptive rate selection eliminates retransmission and packet loss
  - Dynamic antenna selection (Antenna diversity)
  - Superior interference immunity:
    - Dynamic 40/20MHz bandwidth utilization
    - Advanced PHY-level interference detection and automatic channel hopping
- **Carrier grade feature set**
  - IGMP snooping, Multicast to Unicast translation and WDS support for seamless IPTV network integration
  - WPS – WiFi Protected Setup for simple setup and security configuration
- **Operating Systems**
  - Linux

## Specifications

Standards	802.11a/b/g/n/d/e/h/i
WiFi	WMM, WMM-PS, WPA, WPA2, WPS2
Encryption	AES, TKIP, WEP64/128
Baseband	3x3
RF	2.4GHz, 4.9GHz – 5.85GHz
Modulations	BPSK, QPSK, 16-QAM, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6
Max PHY Rate	450Mbps
Channel Bandwidth	20MHz, 40MHz
Data Path Interfaces	USB 2.0
Package	Green/RoHS compliant 88 LD QFN (10mmx10mm)
Temperature	-10°~70° C



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