

## Celeno's standards-based reference design, powered by the CL1300 Wi-Fi® solution and H.264 technology, enables Full HD whole-home video distribution

Consumers appreciate the benefits of Wi-Fi connectivity, particularly the convenience it brings to everyday life. Delivering HD video connectivity over ubiquitous Wi-Fi technology enables CE manufacturers to extend the portability and flexibility of wireless home networking to the HDTV viewing experience.

The Celeno reference design provides a convenient and easy way for manufacturers to design wireless HD technology into consumer electronics and A/V devices. Based on Wi-Fi radio and real time, low-latency H.264 encoder/decoder technologies, the reference design enables Full HD video delivery from multiple CE devices (e.g., DVD recorders, Gaming consoles, set top boxes, A/V equipment, personal computers, and Wireless HDMI adapters) to flat panels and digital displays.

### The Wi-Fi + H.264 approach

Celeno promotes a standards-based home networking solution. The advantages are clear:

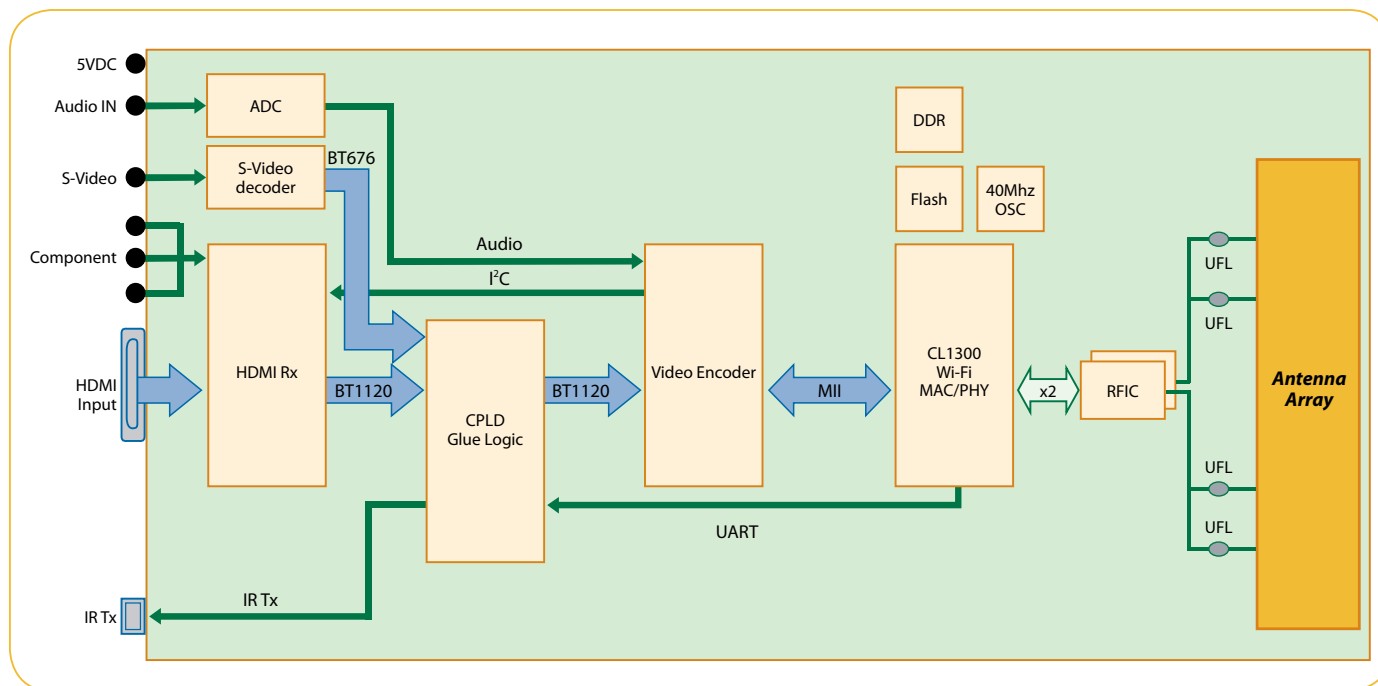
- Wi-Fi and H.264 video decoding are technologies included in a growing number of connected TV models. Re-using the technologies for wireless HDMI streaming can effectively reduce the overall bill of materials.
- Supports convergence towards a single WLAN home network distributing premium TV entertainment from multiple sources: e.g., Internet, service providers or A/V CE devices

### The Celeno Wi-Fi Advantage

- Whole home coverage without dead spots
- Low latency, Full HD solution
- Superior interference immunity and trouble-free co-existence with neighboring systems
- Real time adaptive encoding based on channel properties
- Future proof, cost effective, standards-based Wi-Fi and H.264 approach

### Applications

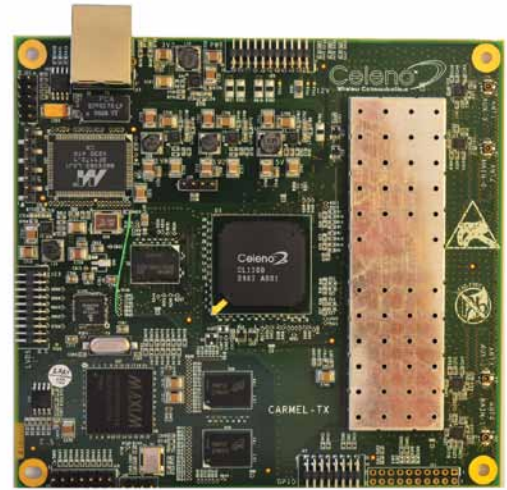
- Portable thin TV
- Aftermarket wireless HDMI adaptors
- A/V wireless base station
- Wire-free multi-room DVR
- PC/Laptop display mirroring
- Gaming consoles and multi-room gaming



## Reference Designs Highlights

- **HDMI module for TV integration**
  - 125mm x 110mm
  - HDMI and IR serial interfaces
- **LVDS transmitter module**
  - 125mm x 135mm
  - Video/LVDS 7.1, I<sup>2</sup>S Audio and IR serial interfaces
  - RGB/YUV configurable
- **Package includes:**
  - Schematics, Gerbers, BOM, Firmware and antenna layout
  - Design recommendations for TV integration

"Carmel" LVDS module Reference Design



## Specifications

### Wireless HDMI Evaluation Kit

Interfaces	Transmit: HDMI 1.3, Component, S-Video Receive: HDMI 1.3
Video resolution	1080p30, 1080i, 720p60 and SD resolutions
Typical throughput over air	10Mbps – 20Mbps
Encryption	HDCP 2.0
Encoding	H.264 high profile
Audio	PCM
Frequency band	4.9 – 5.85 GHz
Radio	802.11a,n
Antennas	4-elements array (2 discrete elements on receiver)
IR repeater	Back Channel for IR messages over Wi-Fi IR blaster function
Video-Radio QoS	Encoder real time adaptation to channel available throughput
Radio resiliency	<ul style="list-style-type: none"> <li>• Implicit digital transmit beam forming</li> <li>• Antenna diversity</li> <li>• Real time, channel-aware scheduling and rate selection</li> <li>• Interference detection and channel hopping</li> </ul>



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