



**EN3211**  
**Broadband Access Network Controller IC**

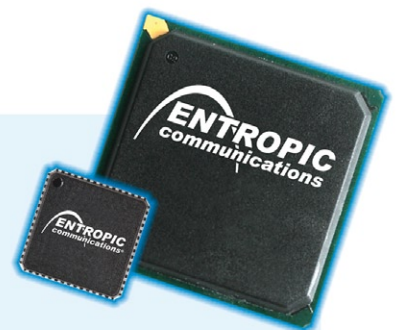
Entropic continues to advance coaxial based Access networks with the EN3211 Broadband Access Network Controller IC, the second generation of Entropic's successful c.LINK® Access Network controller chip. The EN3211 enables point to multi-point distribution of broadband access services delivering Video On Demand (VOD), Voice Over IP (VOIP), data and IP television (IPTV) to Multi Dwelling Units (MDUs) and homes with FTTx (Fiber to the basement or Fiber to the curb). Based on Entropic's c.LINK® protocol, the EN3211 uses existing coaxial cables and does not require new wiring or modifications to existing wiring.

With the explosion of the deep fiber outlay to curb and basement for broadband deployment, cable operators can now deploy c.LINK® Access technology as the last few hundred meters solution to provide advanced broadband services over existing coaxial cable.

The EN3211 combines increased host interface flexibility with reduced power consumption and lower system integration costs. Working together with EN1011 coaxial network interface, the chipset operates at radio frequencies from 800 Mhz to 1500 Mhz. This enables channels to be stacked resulting in more than a gigabit per second of data to be delivered on a single coax.

The EN3211 offers added interface flexibility and lower power consumption making it ideal for cost sensitive high performance embedded applications at the media conversion and network server or gateway head end. Through the standard GMII/MII port, the EN3211 can be configured to operate as an equivalent Ethernet PHY device with no additional host connections. Coupled with PCI interfaces, the EN3211 is designed to support a variety of host processors.

The enhanced feature set also includes support for parameterized QoS and packet aggregation - facilitating an increased data rate. In addition, the EN3211 manages VLAN and multicast filtering support for advanced applications like IPTV distribution. Supports up to 63 clients on a single channel with >175Mbps throughput and is compatible with the new c.LINK® Access EN3230 client solution.



#### **SOLUTION DETAILS**

The c.LINK® chipset is a two-chip set:

- EN1011: Coaxial Network Interface
- EN3211: Coaxial Network Controller

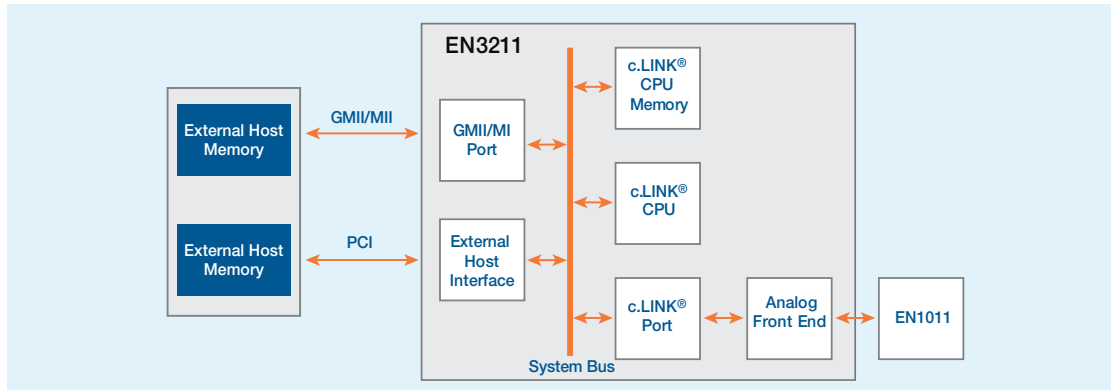
#### **APPLICATION**

- Last 600M high speed services over coax

#### **BENEFITS**

- Create a point to multipoint network to provide video, voice and data services
- Better than a 1Gbps of PHY rate over coaxial cable
- Reliably accesses and distributes digital video content, VOIP, data and IPTV
- Enables self install CPEs
- Supports low cost deployment of services to Multi Dwelling Units (MDUs) & Single Family Units (SFUs)

## SYSTEM BLOCK DIAGRAM



## FEATURES

- Fully integrated c.LINK® MAC/PHY for coaxial networks
- Hardware DES encryption for network privacy
- Improved MAC efficiency with packet aggregation
- Interfaces
  - Industry standard media independent interfaces MII & GMII
  - PCI v2.2
- 50 Mhz channel with throughput up to 200Mbps
- Master/Slave device mode
- 16/32 bit data
- 16-24 bit address
- Synchronous or Asynchronous clock
- Slave operation
- Operating Modes
  - PCI
  - GMII/MI only (PHY mode)
- Compatibility
  - IEEE 802.1p
  - VLAN/Multicasting support with IGMP snooping
  - SNMP
- Network Characteristics
  - Rate adaptation from 20 to 250 Mbps
  - Constant delay and low latency networks
  - TDMA/TDD fully coordinated MAC, no collisions
  - Frequency selection for efficient bandwidth utilization
  - Supports up to 63 clients for one c.LINK® Access Network Controller node
  - Packet aggregation support for increased data rate
  - Prioritized and Parameterized Quality of Service (QoS)
  - Centralized network management and control
  - Flexible and smart CPE admission control
- Electrical and Physical Characteristics
  - 3.3 V I/O, PCI Interface (3.3V/5.0V)
  - 1.2V, 1.8V, 3.3V (power supply)
  - 1.5 W (max) power consumption
  - 324 PBGA

## PRODUCT REFERENCE INFORMATION

NUMBER	DESCRIPTION
EN1010	Coaxial Network Interface RFIC - Commercial Temperature
EN1011	Coaxial Network Interface RFIC - Industrial Temperature
EN3211	Second Generation Access Network Controller IC - Industrial Temperature
EN3230	Second Generation Access Client IC - Commercial Temperature
EN93230 MDK	EN3230-based Manufacturer's Development Kit
EN93200 SDK	EN3211 and EN3230-based Software Development Kit



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