

# Helium™ 100 Communications Processor

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## KEY FEATURES

- ▶ **ATM switching and layer 2/3 processing device**
- ▶ **USB interfaces for external modem applications**
- ▶ **Utopia — 1/2 and ADSL T1.413 interfaces**
- ▶ **Ethernet — 10baseT interface**
- ▶ **Dual ARM RISC processor architecture**

## Product Applications

- DSL modem
- DSL gateway
- Cable modem
- ATM line cards
- ATM access
- ATM SCU/DSU
- Bridging and routing

## Description

Helium 100 is a single-chip, highly-integrated ATM switching and Layer 2/3 processing device. A general purpose RISC Protocol Processor runs higher layer protocols while a high-performance microcoded RISC Network Processor is used for cell and frame handling switching at up to 75 Mbps.

Integrating many common interface functions, Helium 100 is designed for flexible, low-cost, high-functionality, high-performance products. It may be used in a gateway, ATM access device, or USB modem customer premises equipment (CPE) or central office (CO).

Helium 100 contains a network processor that controls the direct connections to Ethernet and USB, as well as physical interfaces for Utopia 1 and 2, HDLC and I.432.

The network processor has 16K of micro-code RAM and a high-speed interface to external SDRAM. This supports both ATM cells and packets, OAM cell handling, policing, shaping and accounting.

The two processors communicate via the inter-processor gateway (IPG).

Helium 100 extends GlobespanVirata's ATOM architecture and runs the complete suite of ATMOS™ software, including support for routing, bridging, signaling, and SNMP Management.

Software flexibility, high integration, and built-in hardware debugging (ICE) support allow rapid product development.

This combination of hardware and software, and Integrated Software on Silicon™ (ISOS™) provides a unique time-to-market advantage.

## Reference Platform

The BD6100 is the development reference platform for Helium 100, providing a wealth of hardware and software debug tools to assist partners in rapid development and deployment of their products. Training, documentation, and support are also available.

## Specifications

### Processors

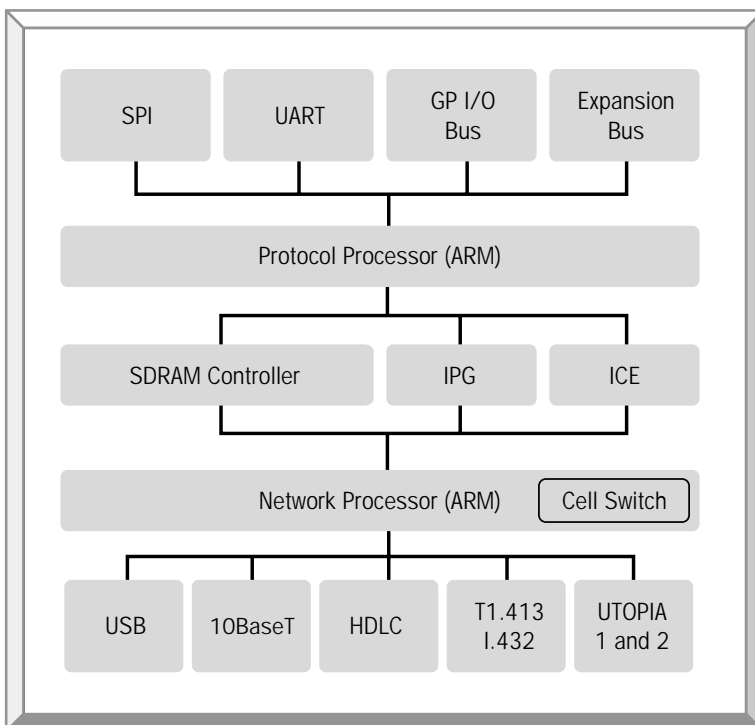
- Protocol Processor (PP) is a 48 MHz ARM7TDMI RISC core, which includes an 8K cache providing:
  - Modem PHY Management (depending on application)
  - Initialization code
  - Soft real-time tasks
- Network Processor (NP) is a 48 MHz ARM7TDMI RISC core with 16K of SRAM performing:
  - Data Transfer Framing Interleaving CRC Generation Switching
  - Hard real-time tasks

### USB

USB 1.1 slave interface — up to 12 Mbps using Control, Interrupt, Bulk, and Isochronous endpoints and transfers.

### 10BaseT Ethernet

Helium 100 contains a 10baseT Ethernet MAC with a low power integrated PHY.



Helium 100 System Interfaces