



APOGEE LABS

AL1150

MULTIFUNCTION NETWORK GATEWAY



FEATURES

- Standards based Multiservice over Packet (MSoP)
- Low latency transmission over packet based networks
 - Superior Flat Line response
 - Four programmable multi-function I/O ports
- Enables Multiple TDMoIP (CESoIP) & LAN services
- Enables Analog & Digital data acquisition services
 - Integrated Loopbacks, BERT and Alarms
- Managed via Embedded Web Server and SNMP

HIGH PERFORMANCE, LOW LATENCY

Apogee Labs specializes in facilitating high performance, low latency services over packet based networks. Apogee Labs also provides reliable, high quality products for low latency E1/T1 (CESoIP), video and data acquisition (TMOIP) services. These products enable transport of high quality voice (E1/T1), video and telemetry signals over Ethernet, IP-based or MPLS networks

MULTIPLE SERVICES OVER PACKET BASED NETWORKS

The AL1150 is a standards compliant network processor enabling transparent, low latency, bi-directional transfer of almost any type of digital and analog signals over Ethernet, IP-based and MPLS networks. The AL1150 is a single platform Ethernet (LAN), Circuit Emulation (CESoIP), Video and Data acquisition (TMOIP, SCADA) service solutions. Flexible, multi-function interfaces enable the network processor without physical reconfiguration to be used in many different applications, where high performance and low latency are required, minimizing capital (CapEx) and operational (OpEX) expenses.

The AL1150 provides IP Network Processing for up to four independent digital and analog signal sources. Each multi-function port can be independently configured for voice (E1/T1 CESoIP), Video, and Analog or Digital Data acquisition (TMOIP) services.

LAN & NETWORK INTERFACES

The AL1150 is equipped with both optical and electrical network interfaces all supporting 10/100/1000 Mbps Ethernet. Three Ethernet interfaces connected via a managed Ethernet switch provides flexible installation and interconnection options, as well as superior QoS capabilities.

SPECIFICATIONS

NUMBER OF USER CONFIGURABLE I/O

- 4 multi-service ports

CONNECTOR TYPES

- BNC & RJ-45
- Impedance: 75Ω (unbalanced); 110Ω (balanced)

TELECOM

- E1/T1 (CESoIP) (PWE3)

DIGITAL DATA ACQUISITION FORMAT SUPPORT

- TTL, ECL, RS-232 and RS-422 (TMoIP)
- Impedance: 50Ω and 75Ω
- Data Rate: Up to 50 Mbps per port

IRIG TIMING

- Analog format (1, 10 & 100 KHz)
- Input Signal Level: 0.2Vp-p min; 10Vp-p max
- Output Signal Level: 3Vp-p (50Ω); 10Vp-p (25Ω)
- Input Impedance: Hi-Z, 600Ω, 50Ω
- Output Impedance: 25Ω, 50Ω, 600Ω

ANALOG DATA ACQUISITION & VIDEO

- Baseband Analog Signals (TMoIP)
- Signal Level: 5Vp-p max
- Impedance: 50Ω & 75Ω
- Bandwidth: Up to 10 MHz
- Video data rates: 5Mbps to 200 Mbps (user configurable)
- Video processing latency: 1ms to 10ms

SIGNAL PROCESSING

- Processing Latency <1ms
- Protocols supported: PVD Compensation: 1-100ms
- Packet Size: up to 1500 bytes

REMOTE MANAGEMENT

- Built-in web based GUI and SNMPv2 and v3

ETHERNET SERVICE PORTS & NETWORK INTERFACE

- One pluggable SFP module. 100/1000Base-X
- Two RJ45. 10/100/1000Base-T

MAINTENANCE

- An onboard BERT generator allows remote testing.
- Supported patterns include 2^{11-1} and 2^{15-1}

PHYSICAL DIMENSIONS

- 1RU, 1/2-width 19". Two units fit in a 19" 1RU rack space (H x W x D) 1.75" x 8.50" x 10.00"

ENVIRONMENTAL CONDITIONS

- Operating Temperature: 0 to 50°C (32 to 122°F)
- Storage Temperature: -40 to 70°C (-40F to 158°F)
- Relative Humidity: 5% to 90% non-condensing

POWER

- 100-240 VAC (47-63 Hz); 25W

APPLICATION NOTE

The AL1150 is a field configurable multi-service access system enabling simultaneous transmission of Telemetry (TMoIP), IRIG, T1/E1 (CESoIP) and video services over packet based networks without any changes to the hardware. Telemetry signals from Aircraft and Ground Sensors are required to be transmitted to the Telemetry Ground Station for Recording and Processing. The AL1150 is a network access enabled data acquisition system, co-located with antenna systems, and other analog and digital telemetry data receiving sensors for airborne and ground instrumentation. Provisioned multicast connections ensure delivery at the Telemetry Ground Station and the Recording/Processing centers where the original telemetry signals are directly recorded, and recovered by the AL1150 terminals.

The AL1150 is capable of providing transmission of IRIG timing signals along with telemetry data and other services for data time stamping purpose. The system can be configured for "Flat-line" response ensuring that all services from one AL1150 transmit location will arrive at the destination at the same time with the shortest end to end latency. Additionally the AL1150 provides intercom and telecom services as T1/E1 carriers, as well as very low latency video transmission capabilities for range and mission surveillance. The video signals may be transmitted in loss-less or compressed form featuring processing latencies between (1ms-10ms).

Real-time transmission of telemetry data from its source location to one or multiple destinations... either short distances through a LAN or longer distances through a WAN or ISP.

