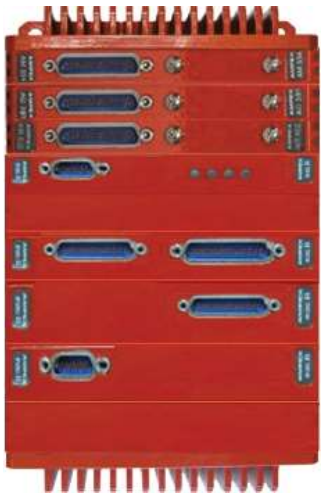
AMux™ 1000 Data Acquisition Unit

Features



- Ethernet Data Acquisition Unit (DAU)
- IRIG 106 Chapter 10 Packet Format
- Modular, Expandable and Flexible I/O Options
- Gigabit Ethernet Output Interface
- Fast Ethernet Control Interface
- Built-in Gigabit Ethernet Port
- Compatible with miniR® 700 and AMux™ I/O Modules
- Supports TCP, UDP and Multicast UDP Output Modes
- Conduction-cooled Flight-rated Proven Enclosure

Standards-Based Network Multiplexer

The new AMux1000 is a P3I update to the original AMu700 with the same SWaP (Size, Weight, and Power), but with dramatic increases in throughput speed and user configuration flexibility. The system updates include a new Intel ATOM CPU, new multiplexer, higher speed interfaces, the Ampex ACCE Management Software, and full backwards compatibility to the existing I/O module interfaces. This provides existing users compatibility with their existing data interfaces from the Ampex miniR700, AMux 600 & AMux 700 Multiplexers. The DAU is a network multiplexer using the IRIG106 Chapter 10 packet and stream format. The unit timestamps data received over any supported interface and creates a single network output stream over Ethernet, using either a dependable TCP/IP connection or versatile UDP/IP packet stream. When UDP is used, the AMux can use multicast addressing for even greater versatility. The new AMux1000 can be configured with a new PCIe I/O interfaces for higher-speed channels to be released, and/or an additional PCIe CPU. The base DAU unit now includes Gigabit Ethernet and the Power Filter as standard. Future enhancements will include option for configuring a Radiation Tolerant (RT) watchdog monitor for new space applications and custom interfaces to meet unique customer requirements.

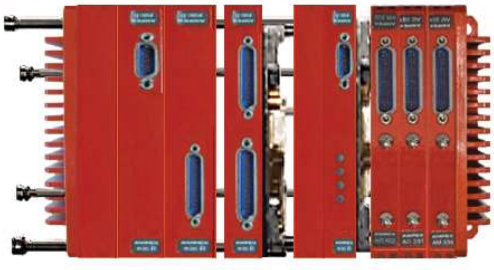
Data Interfaces/Format

- ***IRIG-106 Chapter 10 packet format***
- ***Network acquisition as well as output interfaces***
- ***SD Video, MPEG2 and MPEG4***
- ***HD Video, both H.264/AVC and Motion JPEG2000***
- ***IntelliBus® interface***
- ***Variety of AMux I/O Modules: PCM, UART, Analog, and Avionics buses***

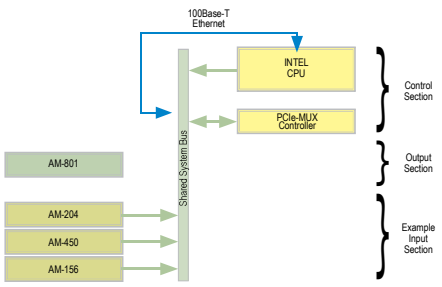
Configurable and Reconfigurable

Building on the modularity of the miniR 700v2 recorder, the AMux 1000 DAU base system includes the CPU control unit, the PCIe multiplex module with a dedicated timecode input, the Gigabit Ethernet port, and an AM-801 Gigabit Ethernet output module. Additional input modules may be added -- with a limit of seven to nine input modules, depending on the power and performance required of each. Time can be supplied using IRIG-B or HAVE QUICK time into the PCIe-MUX module, or over the network using NTP or IEEE1588 PTP. Power filter and hold-up modules are also available to meet the needs of a wide range of environments. Optional GPS with AM-901 Module.

While achievable throughput of the system will vary depending on the number and characteristics of the inputs, the system is rated to provide a usable payload throughput of 1,000 MBits/sec, limited by the capability of AM-801 output module to accurately deliver data with no loss of packets.



Modular, Configurable, Expandable



System Block Diagram

Typical Input Module
(AM-204: MIL-STD-1553)

AMux™ 1000 Data Acquisition Unit

Specifications[1]

Environmental Specifications†*

Altitude		70,000 ft
Temperature	Operating	-40 C to +71C
	Non-operating	-56°C to +80°C
Humidity (Relative)		0% to 100%
Random Vibration		14 grms.
Shock†		20 g (11ms)
EMI		To MIL-STD-461D†
Power		To MIL-STD-704A†

*Operational Specifications**

Sustained I/O data rate	up to 1,000 MBits/Second

Software Configuration

Web-browser service running on base Ethernet port

†*Complete MIL-STD-461D, MIL-STD-704A, MIL-STD-810D,test report results available on request; tested for rotary wing, multi-engine turboprops, and supersonic jet aircraft.*

Dimensions	*W x H x L*	*Weight*	*Power Consumption*
Base system	4.25" x 3.54" x 3.98"	39 oz. TBR	22W @ 28VDC
	108mm x 80mm x 108mm	1100g	(Nominal)
I/O modules	4.25" x 3.12" x 0.454"‡	5.3 oz. (typical)	Up to 10W
	108mm x 80mm x 11.5mm	150g	(Module dependent)
		100 Watt Power Supply	

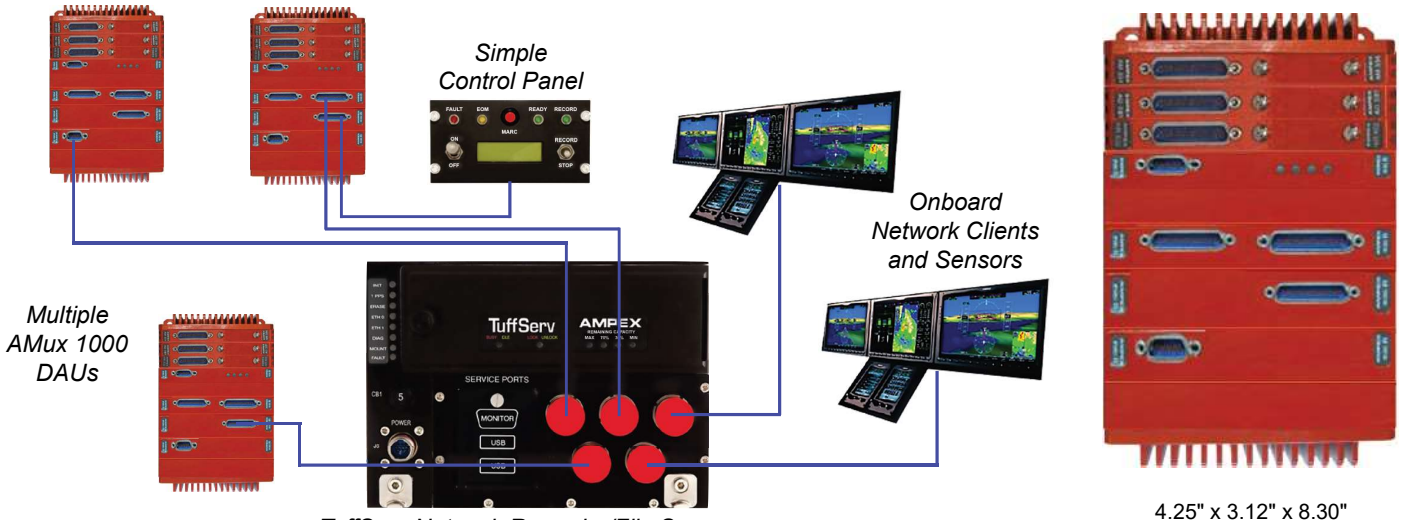
‡ (Some I/O modules are double or triple thick.)

Built-in Interfaces ††

MUX	Base Unit	10/100 Base-T Ethernet, RS232/422, 28VDC Power, GigE 1Gbps
PCIe	Mux Adapter	IRIG-B, discrete control/indicator, HAVE QUICK, GPS via AM-901 Module , Power Filter
AM-801	Gigabit Ethernet	1000Base-T Gigabit Ethernet output
CX-011	capacitor Module	28VDC Power (Optional)

†† See "Available Interface Modules for Ampex miniR and AMux" for a complete listing of additional data interfaces available.

Note: There are two input module carrier frames used for modules within the miniR recorder family; the AMux 700 DAU supports the slightly larger flat-sided variant, as shown.



Multiple AMux 1000 DAU application using TuffServ 480GE Recorder

[1] Specifications subject to change without notice.

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