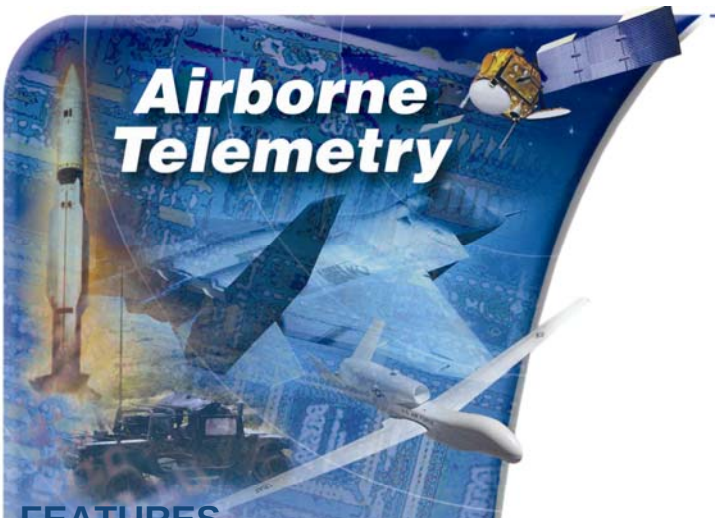


IntelliBus Overview

Telemetry Products

FEATURES

- **Automatic Configuration Control**
- **High Speed 15 Mbps Communication Bus**
- **Modular Design with Integral Signal Conditioning**
- **Small Size, Light Weight, Low Cost**
- **Military and Commercial Applications**
- **Up to 255 IBIMs, 509 Channels per NIC Interface, 2 Interfaces per NIC Module**
- **Resolution to 16 Bits**
- **Accuracy ± 0.5% Standard over all Environments**
- **(for High Accuracy, consult Factory)**
- **System Programming via Vista TEC**
- **Standalone System Integrated with Larger NetDAS Data Acquisition Systems**
- **PC Compatible**

L3 communications
Telemetry & RF Products

Excellence You Can Measure

INTELLIBUS ADVANTAGES

- Reduction in Mechanical and Electrical Installation Costs
- Reduction in Wire Bundle Fabrication Costs
- Weight Reduction
- Reduction in Support Costs
- Improved Data Management
- Easily Adapts to Changing Requirements
- Improved Data Accuracy/Less Noisy Data
- Increased Diagnostic Capability

DESCRIPTION

IntelliBus is a high-speed network bus that allows multiple sensors to be controlled on a single shared communications link, resulting in reduced complexity, cost and weight in the installation of a data acquisition system. A typical IntelliBus system consists of a Network Interface Controller (NIC), and 1 to 255 strategically located IntelliBus Interface Modules (IBIM) that connect directly to sensors.

OVERVIEW

IntelliBus was originally conceived by Boeing to reduce the complexity associated with a distributed data acquisition system. L-3 Telemetry-East has signed a license with Boeing to become a premier developer and marketer of IntelliBus products. With the addition of IntelliBus components and capabilities to its family of products, L-3 Telemetry-East offers the widest variety of system configurations and capabilities to meet any data acquisition requirement.

SYSTEM ARCHITECTURE

An IntelliBus System/Network consists of three primary components:

- The IntelliBus itself, which consists of communication and power signals.
- The NIC (Network Interface Controller) controls all communication on the IntelliBus, including configuration and data acquisition functions.
- The IBIMs which interface directly to the sensors, provide any need excitation, and provide data back to the NIC on demand. The IBIMs are small enough to locate near their associated sensors, and light enough to be permanently installed in a prototype or production vehicle.

INTELLIBUS SPECIFICATIONS

- Bus Features

Rate:	Up to 15 MHz
Signals:	Data In/Out ±, 28V, Rtn

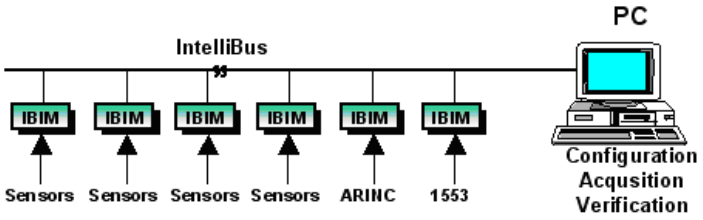
- IBIM Characteristics

Power:	5 Watts Typical
Temperature:	-40°C to +80°C
Size (Typical):	1.25 x 2.5 x 2.0 inches
EMC Compliance:	MIL-STD-461E
Environmental Compliance:	MIL-STD-810E
Weight (Typical):	0.8 lb.

- NIC Characteristics

Form Factor:	PCI or PMC (Mezzanine)
Number of IntelliBus Networks per NIC:	2 PCI V2.2 Compliant

PC Based IntelliBus System



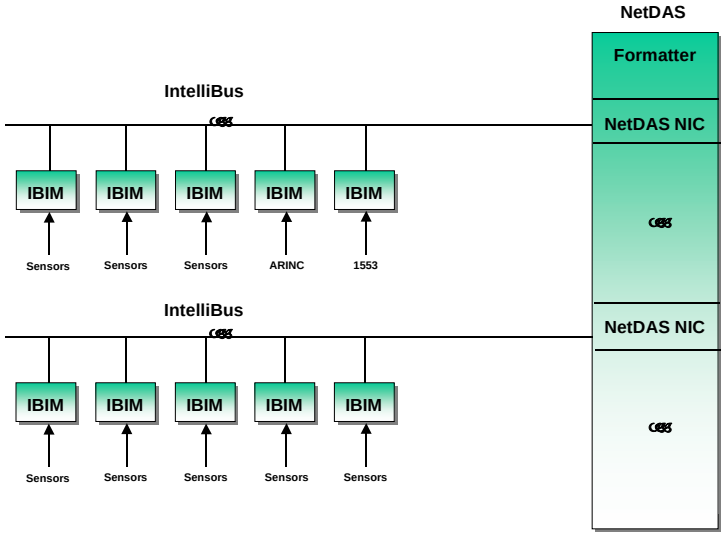
In this configuration, the IBIMs are connected to a NIC that is installed in a PC or other computer system. The NIC is downloaded with a schedule that is used to sample data from the various IBIMs at a specific intervals. The NIC is offered in either a PCM form factor for installation in a standard PCI, or in a PMC (mezzanine) form factor that allows the module to reside on a carrier card that confirms to the form factor to the host system, such as VME Compact PCI, or NetDAS.

INTEGRATED INTELLIBUS/NETDAS SYSTEM

When the IntelliBus system and the L-3 Telemetry NetDAS system are used together, an extremely versatile and powerful system is created. Using the NetDAS family of signal conditioners and bus monitors for sensors which are clustered in the same area, and using the IntelliBus IBIMs for those hard to reach sensors allows a maximum in flexibility and economy.

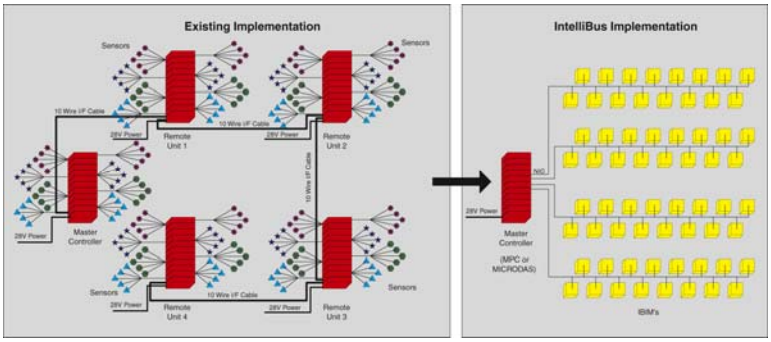
One or more NIC's can be installed in the NetDAS unit to control those IBIMs connected to the IntelliBus.

Integrated IntelliBus Segment



In an integrated data acquisition system, one or more NIC cards are installed into one or more NetDAS systems, depending upon the location of the applicable sensors. In this configuration, the NetDAS NIC is responsible for interfacing to the IBIMs and the internal bus. Sampling of data from the IBIMs is the responsibility of the master unit, which contains the overall schedule for acquiring data from all of the various input sources (sensors, buses).

Overview



IntelliBus Programming Software

IntelliBus programming and configuration management, whether in a standalone or integrated system configuration, is available through the use of Vista TEC, the latest software development of L-3 Communications Telemetry-East.

Vista TEC provides the following programmable functions:

- Measurement Definition Management
- End-to-End Calibration
- Automatic Telemetry Frame Format Population
- Relational Database
- Airborne Hardware Setup
- Ground Hardware setup and Control – Ground Systems and Telemetry Receivers
- Project Manager
- Alarm Detection and Event Reporting and Logging
- Real-Time Data Archiving
- Real-Time Algorithm Processing
- Software Packet and Frame Decommutator
- Real-time Data Displays
- Data Distribution
- Avionics Bus Management and Analysis
- Applications Programming Interface (API / SDK)
- Post-Processing Application (e.g. Matlab) Interface

Vista TEC is implemented on Microsoft Windows NT or UNIX platforms. In addition, the Vista TEC plug-in is downward scalable for operation on the current Windows operating systems: 95, 98, ME 2000 and XP.

www.L-3Com.com/te

L-3 communications Telemetry-East

L-3 Communications Telemetry-East
1515 Grundy's Lane
Bristol, PA 19007
Tel: 267-545-7000
Fax: 267-545-0100

L-3 communications Telemetry-West

L-3 Communications Telemetry-West
9020 Balboa Avenue
San Diego, CA 92123-3507
Tel: 858-694-7500, 800-351-8483
Fax: 858-279-0693

Printed in USA / QN-0215A-IntelliBus Overview.wrd/July 2004