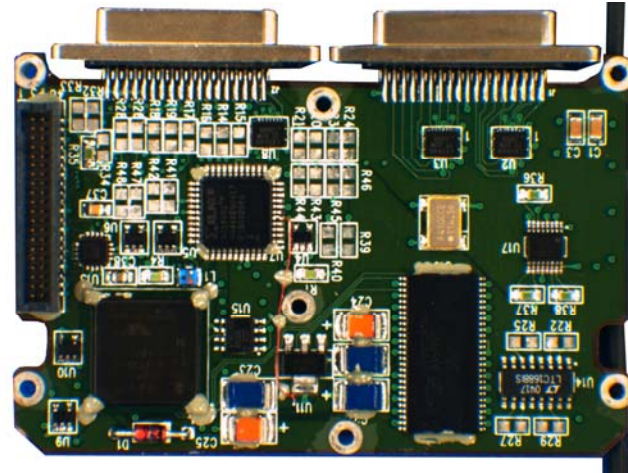


Airborne Telemetry

NetDAS NBM-1553 Dual Channel MIL-STD-1553B Monitor Data Acquisition Products



FEATURES

The NBM-1553 monitors two separate independent MIL-STD-1553 buses and makes user-selected data words available. See the figure below for a block diagram.

The NBM-1553 Bus Monitor Module is a “listen-only” device and does not interfere with normal bus operations. The module design incorporates the DDC ACE-CORE IP in a Virtex-II FPGA, along with the requisite transformers and transceivers that provide a high-level of integration that allows two independent buses to be monitored. Multiple NBM modules may be incorporated into a single NetDAS stack when the number of 1553 buses is greater than two.

The NBM-1553 module can acquire the full spectrum of MIL-STD-1553B data. The user selects the parameters that are to be extracted from any of the 2K unique command words that are available on the 1553B and defines where they should be placed into the PCM output stream (the placement of the words can also automatically be performed by the Vista TEC software package). A command word is defined by a unique combination of its remote terminal address, direction and sub-address. The selection of parameters from each of the two buses is completely independent.

The NBM-1553 module uses a double-buffering mechanism to ensure message coherency – that is, the module will not update the PCM output buffer for a particular message until the complete message has been received and all selected parameters have been identified and no parts of a previously message has been output. The reason for this is that the PCM output and 1553 inputs are asynchronous, and it is possible for parts of a message to have been output when a new message is being processed; failure to adhere to these restrictions could result in pieces of two different messages being output.



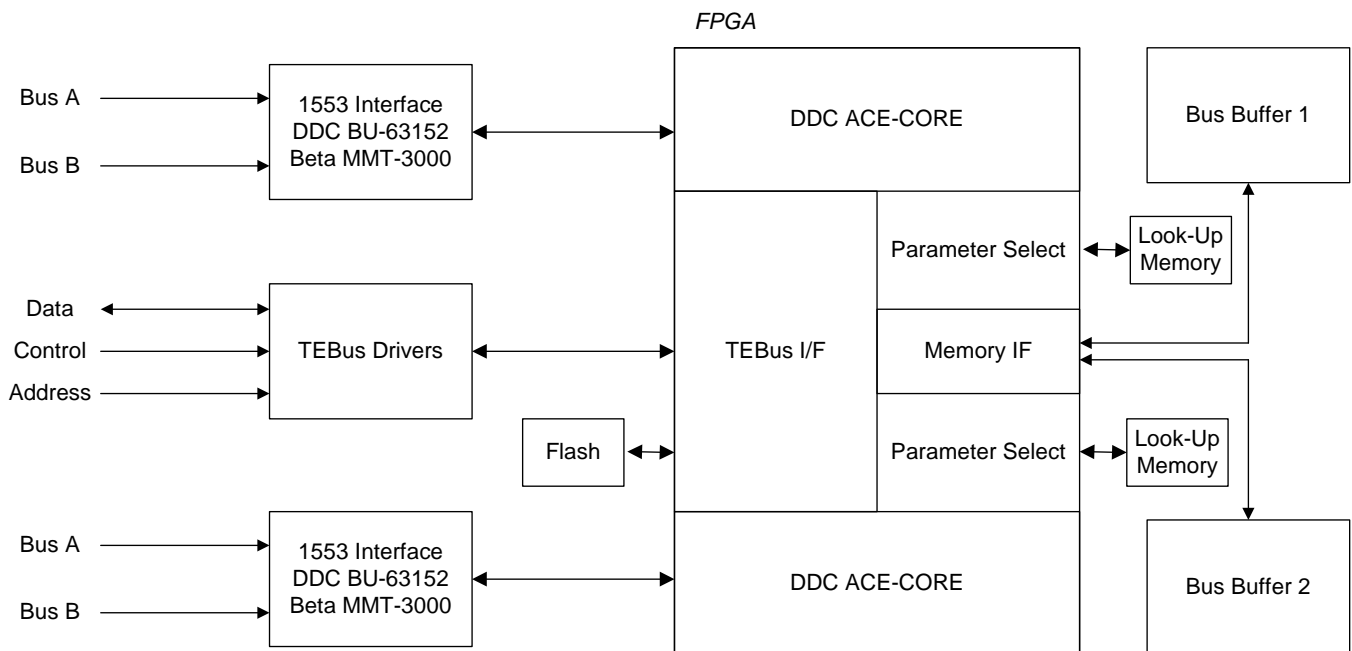
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Along with the stored 1553 data, the NBM-1553 also provides the following information:

- **Message Time:** The NetDAS TEBus backplane provides continuous 1 microsecond time that allows any module to perform application-specific time-tagging functions. For 1553 bus monitoring, the NBM-1553 time tags each message as it is received and makes it available as separate parameters for insertion into the PCM output stream. Each command word has its own unique time word parameters that allow the user to differentiate when each message has been received.
- **Status Bits:** Each message has a unique status word associated that provides the following information:
 - **Overflow:** whether a message has been received multiple times before the last received copy was output.
 - **Stale:** the same copy of a message is being output prior to the receipt of the next.

This information is provided on a message basis rather than a word-by-word basis due to the message-coherency restrictions that ensure that a full message is output prior to an update from the next incoming-message.



SPECIFICATIONS

Input Characteristics

MIL-STD-1553B Bus A & B transformer coupled

Output Characteristics

TEBus Compliant

Memory Buffer Size

64K x 16 (each bus)

Programming

Vista TEC for Setup

Word Selection & Output:

Any Word from any message into any available PCM output word position

Environmental Characteristics

Power:	100 mA @ 3.3V
Temperature:	-40°C to +85°C
Size:	3.5"L x 2.5"D x .375"H
EMC Compliance:	MIL-STD-461E
Environmental:	MIL-STD-801F

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