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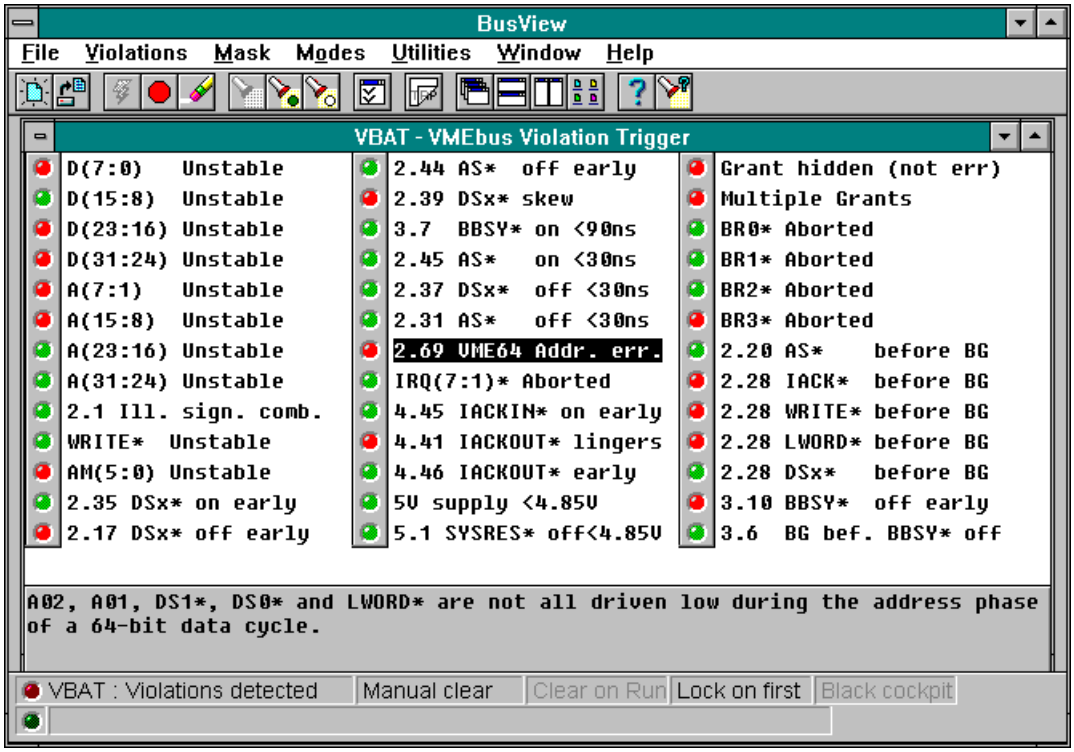
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Find the *Curtiss-Wright / VMETRO VBT-325C* at our website: ***Click HERE***

VBAT64-PB: VME Bus Anomaly Trigger

- **Detects anomalies in the VMEbus arbitration, data transfer (incl. VME64) and interrupt protocols.**
- **Reveals noise and glitches caused by metastability or bus ringing, crosstalk and ground bounce.**
- **Finds errors without knowing what to look for.**
- **Immediately reports errors that may take weeks to find with a logic analyzer.**
- **Hardwired trigger logic automatically recognizes 39 VMEbus violations.**
- **Anomaly trigger output signal to cross-trigger other instruments.**



The VBAT64-PB piggyback module contains a unique piece of hardware, the VBAT (**V**ME **B**us **A**nomaly **T**rigger) which automatically looks for hardware errors in a VMEbus system by watching every bus cycle during actual operation. It has 104 asynchronous rule-based trigger elements that continuously and simultaneously screen all VMEbus signals, looking for 29 different classes of violations of the VMEbus protocol. When a violation is found, a message is written on the "Violation screen" (see figure) and a trigger output signal is generated to cross-trigger the VBT-325 or to trigger an external instrument like an oscilloscope. Also, a detailed explaination that corresponds to rules given in the VMEbus Specifications is available for each violation. This will assist the user understanding and correcting the problem.

TYPES OF ANOMALIES DETECTED

The VBAT can detect a wide range of problems in VMEbus systems, screening for errors in the VMEbus arbitration, data transfer and interrupt protocols as well as dips in the 5V power supply.

The asynchronous nature of VMEbus and the far-from-ideal electrical environment of a heavily loaded backplane can often lead to problems caused by bus ringing, crosstalk, ground-bounce and metastability. This may lead to unstability like glitches or noise on the critical arbitration or strobe signals or even address and data lines that may cause fatal errors like bus hang-ups or data integrity problems. Such errors are immediately reported by the VBAT. Also, design flaws causing violations of the timing requirements given in the VMEbus specifications may be reported.

- **Detects unstable address and data lines.**
- **Reveals illegal comb-inations of control signals.**
- **Finds illegal sequences between control signals.**

- **Checks for timing parameters out of spec.**
- **Reveals arbitration errors.**
- **Detects 5V voltage dips.**

REVEAL INCOMPATIBILITIES BETWEEN BOARD VENDORS

The VBAT helps uncover design errors, manufacturing defects and field-induced flaws in portions of the bus interface circuitry of both VME masters and slaves. It will also uncover a wide variety of hardware problems originating in other parts of a VME board that indirectly causes illegal bus activity. It does this by watching the boards in question during real-world use in the actual system configuration. In this way it can, for example, help determine why a board from a particular manufacturer does not function properly in a system from another manufacturer.

FIND ERRORS IMPOSSIBLE TO DETECT WITH LOGIC ANALYZERS

The asynchronous and edge-sequence-rule based triggering nature of the VBAT allows it to recognize events that cannot be detected using any other instrument. For example, the VBAT automatically recognizes instability on *all* address and data lines *simultaneously*, without the need to be told the correct state of these lines in advance.

CROSS-TRIGGER TO OTHER VME ANALYZER

When a VMEbus violation is found, a cross-trigger signal is sent directly to the VBT-325 carrier board on which the piggyback module is mounted. By selecting "VBAT Violation" as the trigger in the VBT-325 trigger setup, the user will get a trace where bus cycles with violation are marked. For 200MHz timing analysis of the violations see the TIMBAT-PB.

TRIGGER OUTPUT SIGNAL

A trigger output signal is generated within 20-80 ns after a VMEbus violation is found. This may be used to trigger an external instrument like an oscilloscope, for detailed viewing of the signal timing that caused the violation.

ORDERING INFORMATION

For ordering information see Piggyback Ordering Information.

For VBT-325 ordering see VBT-325 ordering information.

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