

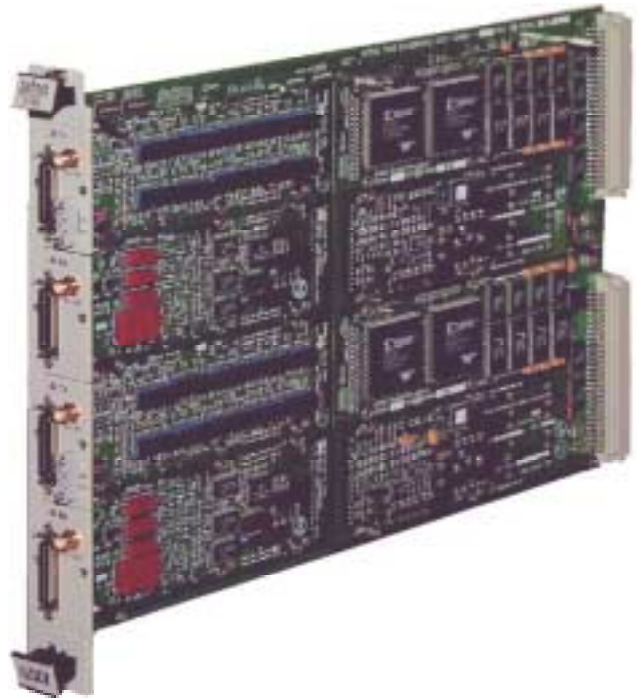
VXI Serial Bus Emulator Model 2108

This product is manufactured by Talon Instruments and exclusively distributed by Racal Instruments, Inc.

The 2108 was designed to provide a test tool that can be easily programmed to emulate a wide range of serial buses in automated test applications. A second goal was to provide the design engineer with an interactive tool for development of a new serial bus, or modification of a standard serial bus. These goals were accomplished in the Model 2108.

The 2108 is preprogrammed with standard encoding and formatting schemes which allow the user to quickly emulate the most common serial buses. For modified or custom interfaces, programming is accomplished through an interactive software development package which can be mastered in minutes. For those with extremely complex tasks, the 2108 provides programming to the "bit" level using "micro code".

Each transmit/receive module is coupled to the front panel via a UUT interconnect module. The interconnect modules are software configurable to support multiple signal types. Custom interconnect modules can be quickly and easily developed to meet the user's requirements.



Modular Design

The Model 2108 is a register based VXI module which provides for the fastest possible communication between the unit and the VXI controller. This allows data to be transferred in a continuous mode if required.

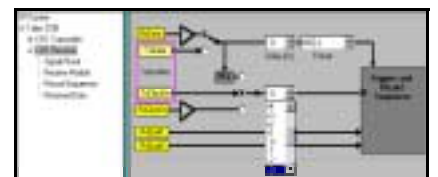
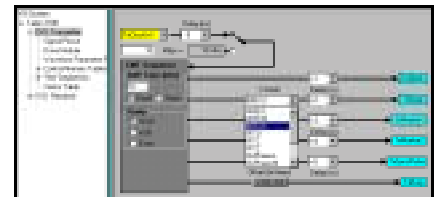
The Model 2108 baseboard houses 1-4 serial channels and associated UUT I/O interconnect modules. Each channel may be a transmitter or receiver and is addressed as an independent instrument. Adjacent transmitters and receivers may be operated as a bi-directional bus.

Development Environment Software

The Model 2108 is shipped with *VXIplug&play* Win95,98 & NT compatible drivers. Included with the Model 2108 is an additional software package titled the 2108 Development Environment. This graphical software provides the user a means to program set-up instructions, download and upload data and interactively execute test routines. The test files generated may be saved for downloading and executing by the Plug&Play drivers using any standard Windows based test program.

Included is a Serial Logic Analyzer application, which is used to view recorded data. It provides for searching by trigger number or pattern. Users may define templates to aid in

aligning and reading data streams. The software is excellent as a design tool for simulating new designs of custom or modified buses in the development lab.



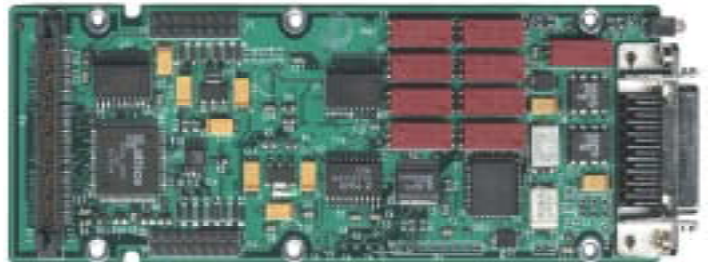
2108TX Transmitter

The 2108TX Transmitter features data rates from 5 Kbps to 200 Mbps using internal or external clocks. It has software selectable data formats for the most used NRZ, Biphasic or AMI formats. In addition users may program the 2108TX to inject errors, parity, or PRBS data. The two 4 Mbit memories may be used in a ping-pong operation to continually output data while reloading new data from the VXI controller.



Transmitter Interconnect Modules

The Transmitter interconnect modules provide the user with drivers to meet the electrical requirements of the UUT. Variable voltage drivers may be programmed to meet a wide range of signal levels from ECL to +/- 15V in 20mV increments. In addition, drivers may be programmed as bi-polar, differential or trinary. Custom modules are available if off-the-shelf modules do not meet the user's requirements.



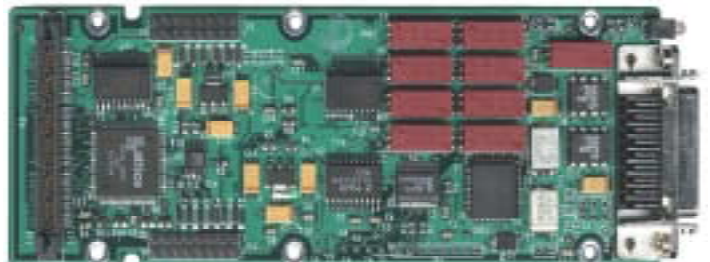
2108RX Receiver

The 2108RX Receiver records data at rates from 5 Kbps to 200 Mbps using internal or external clocks. It features clock recovery logic to sync to external clocks or data. Data capture or transmitter triggering may be initiated using 16 levels of 32 bit trigger patterns. The trigger compare logic provides for operations such as command/response or pre & post data capture based on the received data. The VXI controller may continually offload recorded data using the two 4 Mbit memories in a ping-pong operation.



Receiver Interconnect Modules

The Receiver Interconnect Modules provide for the physical connection to the UUT. The voltage detection range may be set as high as -15V to +15V with standard modules. Signal types may be programmed as bi-polar or differential. Software selectable impedance is provided. Data rates to 200 Mbps are supported. Custom modules will be provided in those cases where standard modules do not meet the user's requirements.



SPECIFICATIONS

2108 (VXI Base Board)

Size
XI single slot, C-size
Channels per card
1 to 4, transmit (output) or receive input)

2108Tx (Transmit Module)

Bit Rate
5 kB/s to 200 MB/s
Memory Depth
8 MB/s or partition as two 4 MB Banks
Internal Clock
5 KHz to 200 MHz
Accuracy: 50 ppm
Resolution: 4 digits
Jitter: 30 ps rms (typical)
External Reference: Yes (20 MHz)
External Clock
5 kHz to 200 MHz
Programmable Sync
Yes
Error Insertion
Yes
Delay Adjustment
+/- 10 ns in 1 ns steps
(Data, Strobe, Clock out, Clock in, Markers, Sync, Error)
Auxiliary Signals
2 Marker or Envelope Signals (Out)
Internal Clock (Out)
Data Strobe (Out)
2 General Purpose Output Flags (Out): TTL
2 General Purpose Input Flags (In): TTL

2108Rx (Receive Module)

Bit Rate
5 kB/s to 200 MB/s
Memory Depth
8 Mbits or partition as two 4 Mbit Banks
Internal Clock
5 kHz to 200 MHz
Accuracy: 50 ppm
Resolution: 4 Digits
Jitter: 30 ps rms, typ
External Reference: Yes (20 MHz)
External Clock
5 kHz to 200 MHz
Delay Adjustment
+/- 10 ns in 1 ns Steps
(Data, Clock)

Auxiliary Signals (Prog)
2 Qualifier Signals (In)
Auxiliary Signals (TTL)
Selected Clock (Out)
Sampled Data (Out)
Waiting for Trigger Flag (Out)
Receiver Busy Flag (Out)
Trigger Valid (Out)
Trigger Number (Out)
Input Triggering
16 Sequential Levels
Trigger Values
up to 64 bits
Active Trigger Conditions
up to 16
Clock Recovery:
5 kHz to 200 MHz

UUT Interconnect Modules

UUT interconnect modules provide the physical interface between the transmitter/receiver modules and the UUT. Various options are available to support different serial bus requirements. Contact the factory if you have special requirements not met by any of the standard modules.

TX01, High Voltage Output Module

Data Out
Bipolar, Differential, Trinary/Error
Other Outputs
Bipolar, Differential
High Level Voltage
-15 V to +15 V
Low Level Voltage
-15 V to +15 V
Source/Sink Current
50 mA
Voltage Swing:
20 V max
Output Impedance
Selectable 15 or 50 ohm
Slew Rate
Programmable 0.15V/nsec to 1 V/nsec
Threshold resolution
20 mV
Threshold accuracy
50 mV
Data Rate
100 MHz max
External Clock 1
+/- 15 V Bipolar/Differential (≤ 50 MHz)

External Clock 2
ECL (≤ 200 MHz)

TX02, High Speed Output Module

Data Out
Bipolar, Differential, Trinary/Error
Other Outputs
Bipolar, Differential
High Level Voltage
-1 V to +8 V
Low Level Voltage
-3 V to +6 V
Source/Sink Current:
50 mA
Voltage Swing
9 V max
Output Impedance
50 ohm
Slew Rate:
>1.5 V/ns
Threshold resolution
20 mV
Threshold accuracy
50 mV
Data rate
200 MHz max
External Clock 1
+/- 10V Bipolar/Differential (≤ 100 MHz)
External Clock 2
ECL (≤ 200 MHz)

RX01, High Voltage Input Module

All Inputs
Bipolar or Differential
Voltage Detection Range
Common Mode +/-15 V
Bipolar .8 V to 30 V
Differential .4 V to 15 V
Input Impedance:
Selectable 100 k or 100 ohm
Data Clock Rate
50 MB/s max

RX02, High Speed Input Module

All Inputs
Bipolar or Differential
Voltage Detection Range
Common Mode +/- 10 V
Bipolar 8 V to 20 V
Differential .4 V to 10 V
Input Impedance
Selectable 100 k or 100 ohms
Data Rate: 200 MB/s max