EAST COAST DATACOM, INC.

- PRODUCTS FOR GLOBAL NETWORKS -

Data Communication Equipment
and
Network Latency Emulators

CAT#19-01

Made in USA

Over 25 Years of Innovation

Lifetime Product Support

3-Year Warranty

Custom Products

Over 135 Unique Solutions

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Our Capabilities

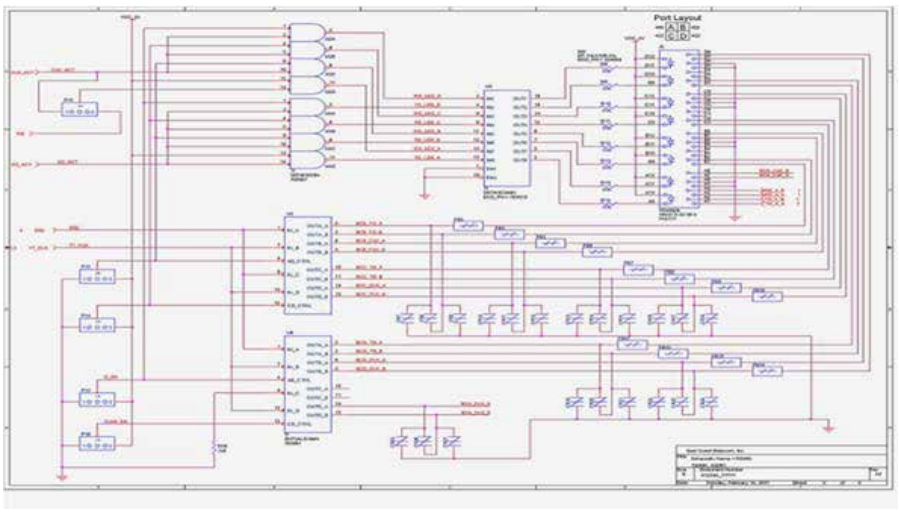
East Coast Datacom, Inc.(ECD) is committed to our customers needs for a quality product. We design to all common commercial design standards. We utilize the latest development tools including OrCAD, Allegro, AutoCAD and a custom written database management system documentation control and inventory management. All designs are to IPC standards and manufactured using ISO 9001/2015 standards.

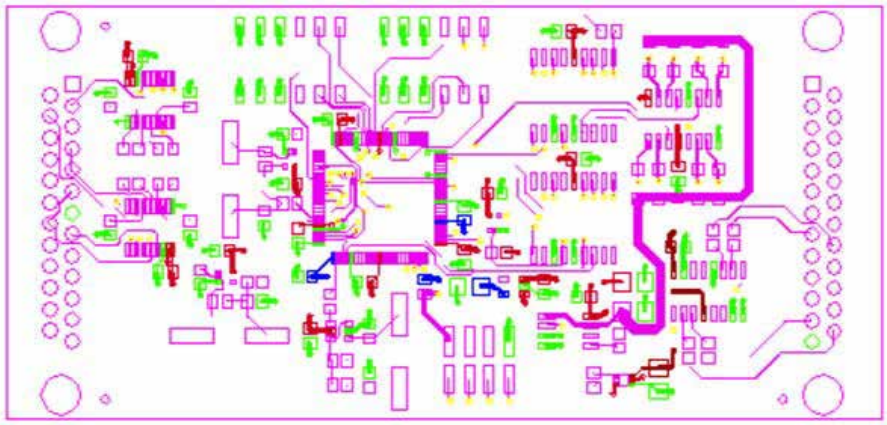
Customer
New Product
Requirement/ Idea
Contact ECDATA.COM

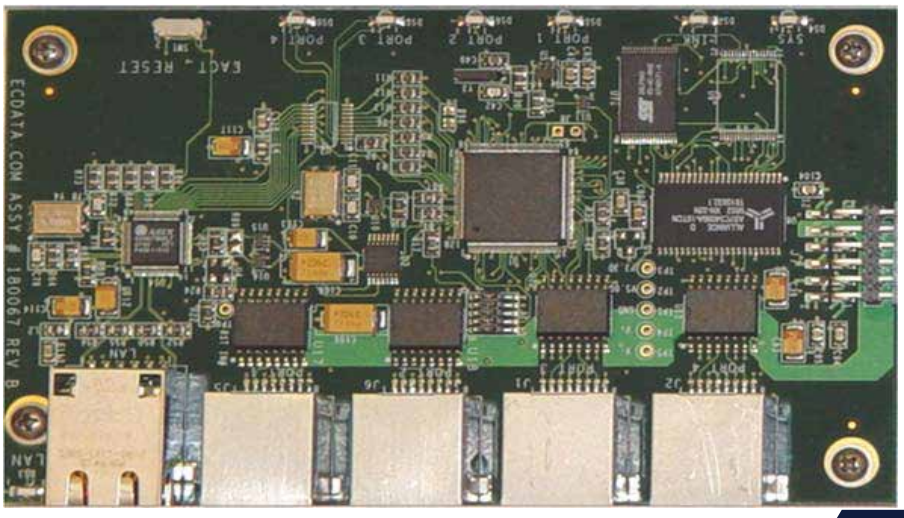
ECData.com Technical Spec Approval, Design Schematic, PC Board & Mechanical, Bill of Materials, Test Spec QA Review

ECData.com Product Prototype Customer Testing approval Documentation, QA Approval Receive Purchase Order For Production, Order Materials

ECData.com Raw Goods Production Product Produced & Tested QA Final Inspection Product Labelled & Boxed Product Shipped







Designed & Produced to IPC Standards

ISO 9001/2015 & Lead Free RoHS Compliant

Network Latency Emulators

WanRaptor™ supports 10/100/1000, 10G, 25G & 40G

- √ COTS Hardware Allows easy expansion of I/O Ports
- √ Precise Delay Emulation
- √ Embedded Design No Software to Install
- √ Any-Port to Any-Port
- √ 10/100/1000, 10G, 25G or 40G WAN Delay Emulation
- √ Copper or Fiber Interfaces
- √ Supports Bridge or Route
- √ Supports Changes On-The-Fly
- √ Supports GUI or REST API
- √ 3 Year Warranty

The new WanRaptor™ Network Emulator is an easy to use, economical test solution to validate your applications in a lab environment by emulating bandwidth, latency, loss and jitter of wide area networks. With the purchase of the Wan Raptor™ you receive a COTS hardware system with embedded software supporting network emulation on 10/100/1000, 10G, 25G and 40G optional interfaces.

The product has an easy to use GUI interface and allows changes On-The-Fly for real time test and result monitoring. Competing products require expensive hardware upgrades or confusing bandwidth license upgrades to support different media types. The WanRaptor™ overcomes those drawbacks in a very economical desktop or rackmount enclosure.

The WanRaptor™ allows the user to easily view packet throughput and packet impairment performance with our intuitive statistics screen in real-time.

The WanRaptor™ is available in a small desktop / portable model, 1U 2-slot PCIe or 2U 6-Slot PCIe model that houses multiple LAN interfaces for any-port to any-port emulation. It is powered by an integrated 90-240V 50/60Hz power supply. The WanRaptor™ has a 3-year warranty.

Part Number: 210000
Model: WanRaptor

https://www.ecdata.com/PDFs/wanraptor.pdf

Network Latency Emulators

PDS-1/10G Portable, Supports 10/100/1000, 10G

- √ COTS Hardware Allows easy expansion of I/O Ports
- √ Precise Delay Emulation
- √ Embedded Design No Software to Install
- √ Fits in a Lap Top Carry Case
- √ 10/100/1000 and 10G WAN Delay Emulation
- √ Copper or Fiber Interfaces
- √ Supports Bridge or Route
- √ Supports Changes On-The-Fly
- √ Supports GUI & REST API
- √ 3 Year Warranty

The PDS-1/10G Portable Network Emulator is an easy to use, economical test solution to validate your applications in a lab environment by emulating bandwidth, latency, loss and jitter of wide area networks. With the purchase of the PDS-1/10G you receive a COTS hardware system with embedded software supporting network emulation on 10/100/1000 or optional 10G interfaces. The product has an easy to use GUI interface and allows changes On-The-Fly for real time test and result monitoring. Try our new REST API as well for emulation control. Competing products require expensive hardware upgrades or confusing bandwidth license upgrades to support different media types. The PDS-1/10G overcomes those drawbacks in a very economical desktop or rackmount enclosure.

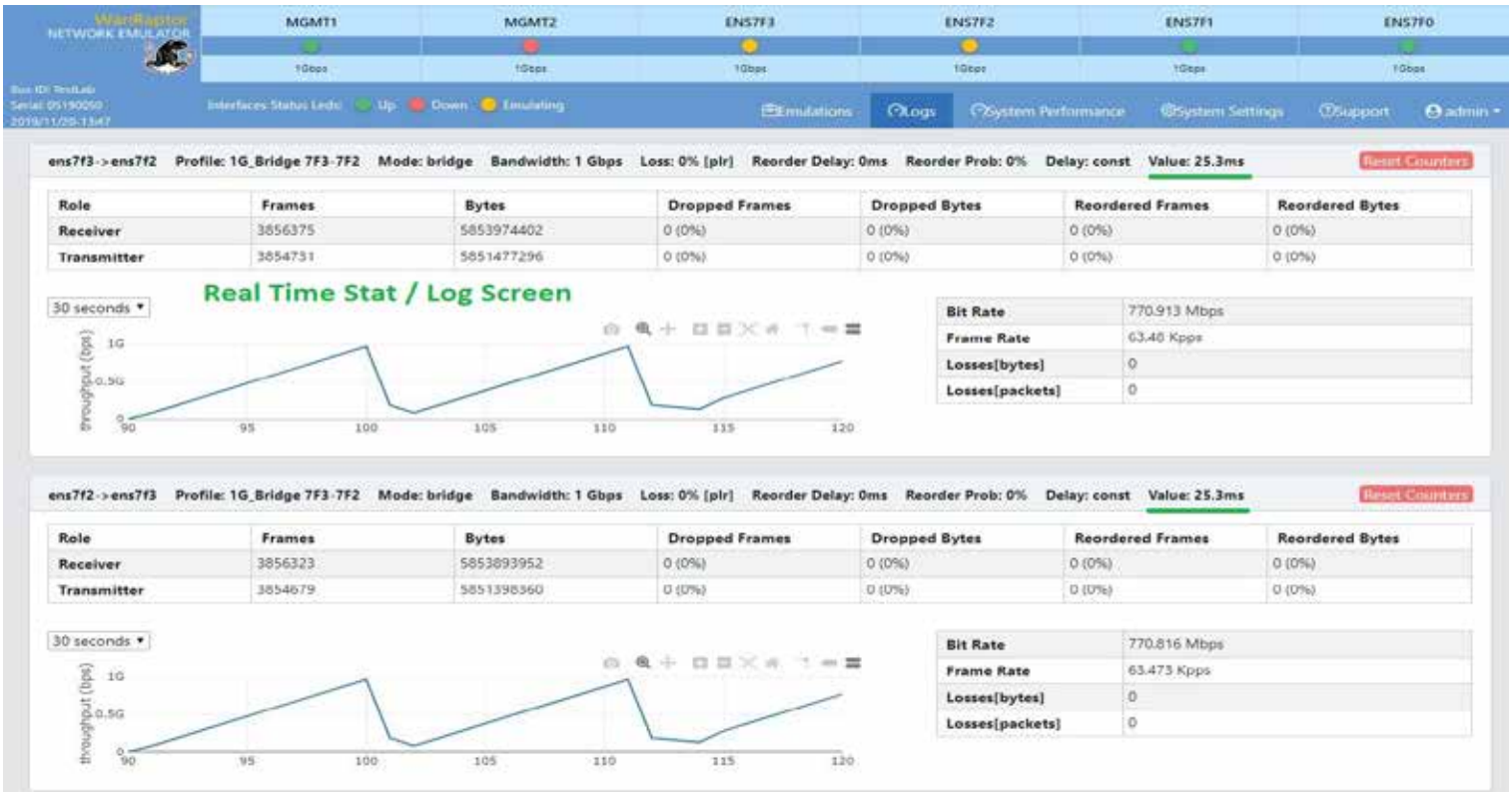
The PDS-1/10G allows the user to easily view packet throughput and packet impairment performance with our intuitive statistics screen in real-time.

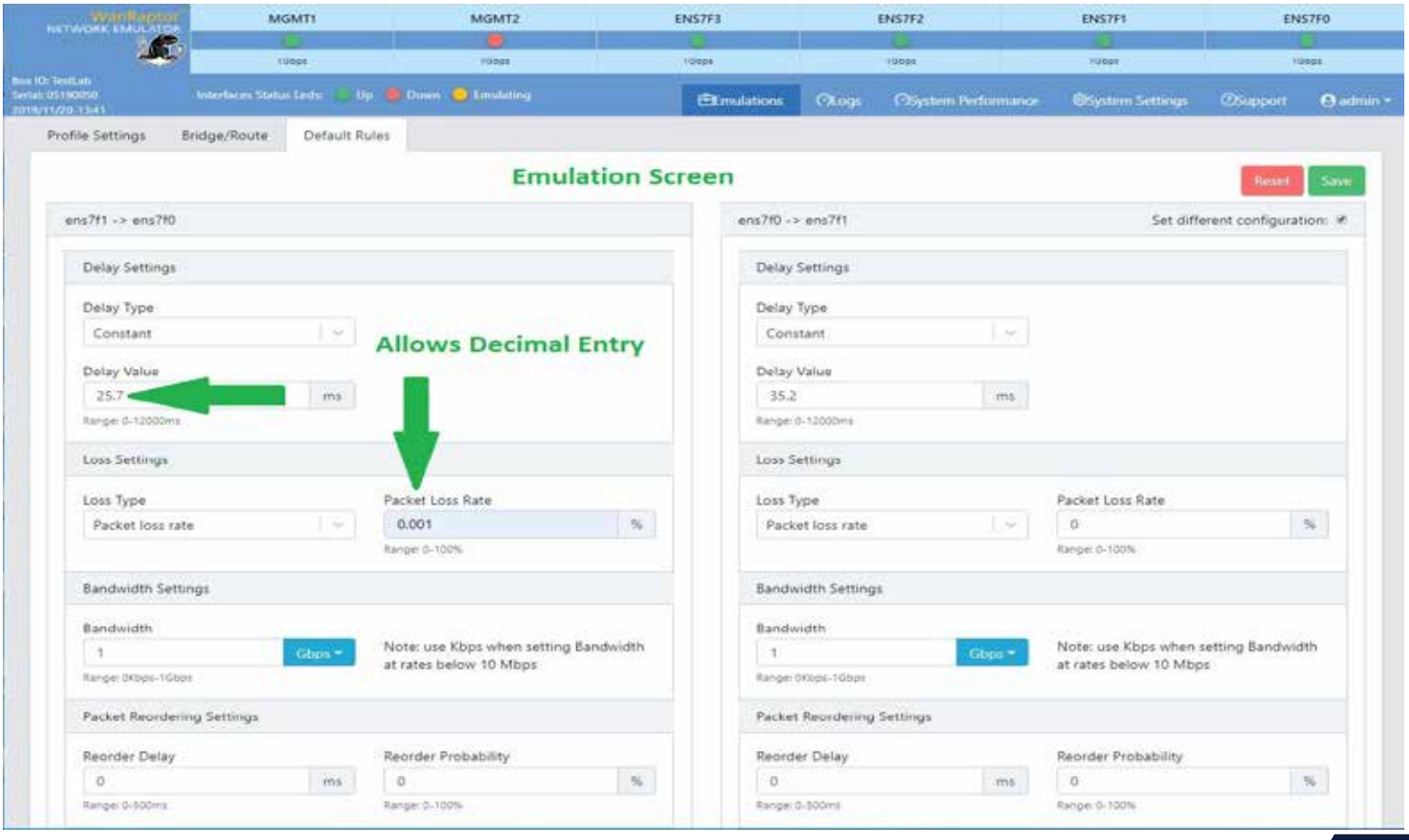
The PDS-1/10G is available in a small desktop / portable model, 1U 2-slot PCIe or 2U 6-Slot PCIe model that houses multiple LAN interfaces for any-port to any-port emulation. It is powered by an integrated 90-240V 50/60Hz power supply. The unit has a 3-year warranty.

Part Number: 234000
Model: PDS-1/10G

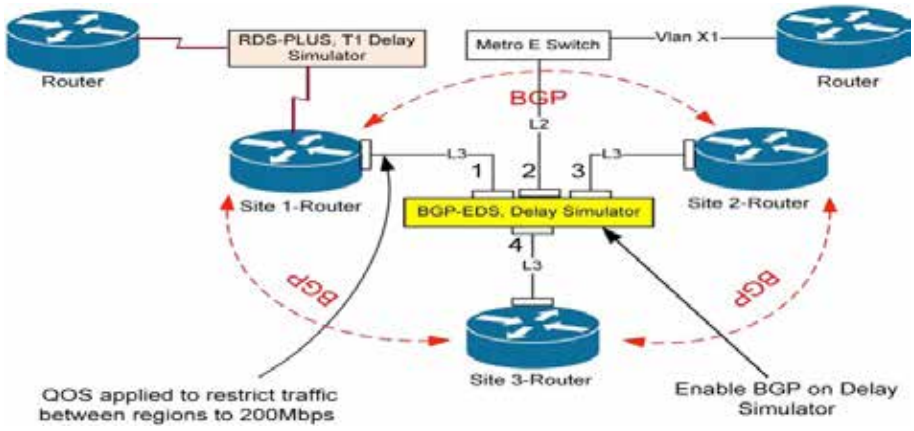
https://www.ecdata.com/PDFs/PDS1.pdf

Network Latency Emulators





Network Delay Simulators



Border Gateway Protocol(BGP) WAN Delay Simulator

- √ Interface: 10/100/1000 or New 10G Support
- √ 8-Ports 1G or 4-Ports 10G
- √ Supports BGP Routing Dynamically ,Embedded BGP Router
- √ Precise Delay Emulation
- √ Creates History Log Files
- √ Multi-User Support
- √ Easy to use GUI
- √ 10/100/1000 MGMT Port
- √ 0 to 8 Seconds of Delay
- √ Constant, Uniform and Roaming Delay, Packet Loss

The Border Gateway Protocol or BGP is at the core of the modern Internet. Large corporate and government enterprise networks are increasing their use of BGP to interconnect different administrative and country specific regions. This geographic span adds further to the complexity of a BGP network when calculating and planning for network latency. Network design engineers need a reliable and cost effective means to test the routers' ability to handle BGP transactions accurately while simulating network latency with their applications.

The BGP-EDS Ethernet delay simulator is a product used to apply traffic rules on packets flowing out of the egress port for the intended packets matching source address and destination address. Dynamic Routing protocols like BGP are used for the route and can be applied to Interior Gateway network as well as an Exterior Gateway Network.

The user can specify the source and destination IP addresses either as a single IP or with the subnet mask (CIDR Addresses) for which the traffic rules apply as a whole. The BGP-EDS system acts as a BGP router by which it chooses the best and valid destination using a best path selection algorithm. Dynamic routing allows the router to take individual routing decisions for a network before routing .

Part Number: 232000
Model: BGP-EDS, 4-8 Ports

https://www.ecdata.com/images/pdfs/BGP-EDS.pdf

Network Delay Simulators

RDS-PLUS supports Serial Data & Telco *NEW HSSI*

- √ Serial & Telco Interfaces
- √ 1.2k to 51.85Mbps Rates
- √ Precise Delay Emulation
- √ No Software to Load
- √ Easy to use GUI or Serial
- √ Bi-Directional Buffers
- √ 0 to 4 Seconds of Delay
- √ Burst Error Insertion
- √ 511 BERT Generator—Can be used between two RDSPLUS's for Link 511 Testing
- √ Status LED's Each Port
- √ 3 Year Warranty & Support
- √ NEW HSSI cards

The RDS-PLUS is the best Serial Data and TELCO delay simulator on the market with an exceptional price. It is a true industry work horse utilized by all government and contracting agencies.

The Router Delay Simulator Plus (RDS+) allows users to test and stage critical equipment for reliable network operation while simulating network delays. The RDS+ provides a realistic simulation of physical network behavior with respect to time delays and bit errors. It supports user rates of 1.2k up to 52Mbps while providing delays from zero to 8 round trip.

By using the RDS+ in place of or in series with a real link (WAN) a wide variety of error conditions can be introduced under controlled and testable conditions.
The RDS+ has two data port interfaces that support LVDS, RS-232, RS-422, RS-530, V.35, X.21, DS1/E1, TTL, HSSI, DS3, E3, or STS-1.

The RDS+ can introduce Random and/or Burst errors into the data stream. These two error types can be used independently or in a combined fashion.

The RDS+ is configured via a standard RS-232 serial port or an optional GUI 10/100 LAN module. The user has no software to load as all configuration data is within the RDS+.

Part Number: 175000
Model: RDS-PLUS

https://www.ecdata.com/PDFs/rds+.pdf

Network Delay Simulators

UDC-RDS supports Low or High Speed Serial Data

- √ Serial Interface Support
- √ 300bps to 3.073Mbps Rates
- √ Precise Delay Emulation
- √ No Software to Load
- √ Easy to use Dip Switches
- √ Bi-Directional Buffers
- √ 0 to 1 Second of Delay Each Direction
- √ Standalone or Rackmount
- √ 90-240VAC or DC Power
- √ Status LED's Each Port
- √ 3 Year Warranty & Support

The UDC-RDS allows users to test/stage critical low data rate testing of DCE or DTE equipment while simulating network delay times. The unit provides a realistic simulation of physical network behavior with respect to time delays and clock rates. The unit supports user data rates of 300bps up to 1.024Mbps while providing delays from zero to 1 second each path.

By using the UDC-RDS in place of or in series with a real data link (WAN) a wide variety of error conditions can be introduced under controlled and testable conditions.

The unit has two data port interfaces that support RS-232, RS-422/449, RS-530, V.35, HSSI, LVDS and X.21. The data interfaces can be mix and matched where applicable, such as a V.35-to-RS-530 connection. The UDC-RDS also allows the user to pass or force control signals. The control signals are also delayed along with the user data.

The unit is configured via accessible front panel dip switches and is available in a stand-alone or rack mount chassis. The user has no software to load as all configuration is within the UDC-RDS. The model is available in two models for internal clocking or external clocking.

Part Number: Various
Model: See web site

https://www.ecdata.com/PDFs/UDC-RDS_low_speed.pdf
https://www.ecdata.com/PDFs/UDC-RDS_high_speed.pdf

Automatic A/B Switch

A/B Switch Supports Contact Closure Remote Switching

- √ Remote A/B Switching
- √ Supports RS-530 Data/ Clock or any V.11 Signals
- √ Switch Via Contact Closure
- √ Common and Ports A or B
- √ Secure Switching, Reliable
- √ Defaults to Part A on Power Loss
- √ Data Rates to 2.048Mbps
- √ All Wires & Power are Surge Protected
- √ Active Port LED Status
- √ Operates on Single 5VDC Power
- √ 3 Year Warranty & Support

The A/B Switch allows secure and safe switching between RS-530 or any V.11 compliant computer or data ports. The unit supports switching 4-wires of user data traffic from the common port to Ports A or Port B. All switching is accomplished with dry contact positive latching relays for years of dependable service. In the event of local power failure, the A/B Switch will default to Port A and keeps on working.

The switching between Port A to Port B are accomplished with a remote device that applies a positive or negative voltage to the A/B Switch via the RS-232 RJ45 port.

The front panel has three status LED's that present the user with Port A or Port B active status. A power LED is also present to indicate that the A/B Switch has power applied.

The A/B Switch is housed in a sturdy metal enclosure and operates on a simple reliable 5V DC power supply.

The A/B Switch has a three year warranty and a 24 hour turnaround on warranty repairs.

Part Number: Various
Model: See web site

https://www.ecdata.com/images/pdfs/a-b-switch.pdf

Interface Converters

UDC-IC Converter & Other Interface Converters

- √ Data Rates to 52Mbps
- √ Interchangeable Cards
- √ Fully EIA Compliant
- √ DCE or DTE Cards available
- √ Easy to use and configure
- √ 8 LED's for each user port
- √ Control Signal Force/Pass
- √ Standalone or Rack Mount
- √ 110/220VAC or DC Input
- √ UL, CSA, CE, FCC, RoHS

We manufacture one of the largest lines of interface converters on the market covering low to high end interface powered to full compliance to interface standards voltage levels. The UDC-IC is our top selling, highest quality product capable of supporting any serial interface.

The UDC-IC allows the user to purchase a single product to convert interfaces between any combination of RS-232, RS-422/449, RS-530, V.35, X.21, HSSI, EIA-644 LVDS, RS-485, TTL and Current Loop. The unit supports data rates up to 10Mbps.

The UDC-IC has two TTL level interfaces for connecting each data interface. The unit is shipped with any two user specified data interfaces included in the price. Additional data interfaces are sold separately. The individual data interfaces are available in DCE or DTE formats and allows control signal manipulation.

The UDC-IC has status LED's for each attached data interface which allows the user to visually confirm the presence of control signals. The power supply supports 110/220VAC or optional 36-72VDC input.

In addition to our standard Interface Converters we can design custom interface cards for the UDC-IC converter for your most demanding requirement or to fulfill an outdated piece of equipment.

Part Number: Various
Model: See web site

https://www.ecdata.com/interface_converter.html

Digital Sharing Devices

MODEM AND PORT SHARING DEVICES

- √ RS-232, V.35 and X.21
- √ DCE or DTE Support
- √ Sync or Async Support
- √ Internal / External Clocking
- √ Built in Tail Circuit Buffer
- √ Contention: RTS, DCD andSwitch on Data
- √ Anti-Streaming Support
- √ Easy to use and configure
- √ Status LED's for Set-up
- √ Control Signal Force/Pass
- √ Standalone or Rack Mount
- √ 110/220VAC or DC Input
- √ UL, CSA, CE, FCC, RoHS

Our Digital Sharing Devices(DSD) have been in production since 1994 and while we have continued to improve on their functions, they are the work horse for many thousands of users. All of the products are to current international safety standards.

The DSD's provide the network manager with a cost effective means of expanding existing, leased line polled networks without adding computer ports or communications links. With the DSD's, up to eight terminals can share the same port and communications link using the contention and control protocols normally resident in the host hardware and software.

Ideal for either synchronous or asynchronous network environments, the DSD's are protocol transparent at data rates up to 128Kbps. Data arriving at the Master Port is continually broadcast to all Sub-channels. The attached DCE or DTE device that raises the control signal is automatically given control of the DSD until data transmission is complete. Clocking is internal or external and the DSD's support forced control signals when necessary.

Part Number: Various
Model: See web site

https://www.ecdata.com/Products/Digital-Sharing-Devices

Data Broadcast Units

SIMPLEX DATA / TIMING DISTRIBUTION

- √ TTL, RS-232, RS-422, RS-530, V.35, X.21 and HSSI
- √ Receive Data, Clock and Optional Control Signal Broadcast to all Sub-Channel
- √ Sync or Async Support
- √ Redundant Cascade Options
- √ Surge Suppression
- √ Status LED's for Set-up
- √ Ideal for VSAT/HOST CPU Data Broadcasting
- √ Standalone or Rack Mount
- √ 110/220VAC Input
- √ UL, CSA, CE, FCC, RoHS

The industry work horse for many years for simplex data distribution you can rest assured in East Coast Datacom's serial Data Broadcast Units (DBU) for reliability.

The DBU's are an excellent choice for simplex broadcasting of data, clock and control signals. We support TTL, RS-232, V.35, RS-422/449, X.21 and HSSI serial data interfaces.

The Data Broadcast Units support synchronous or asynchronous data from rates as low as 50bps up to 20Mbps. The units are designed for a single or dual input data source and output data on 3 to as many as 16 sub channels for distribution. We also support cascading and redundant cascading depending on the model.

The DBU's are used by many leading Fortune 500 companies, the federal government and the FAA network. The units are also an excellent solution for distributing timing to multiple servers.

Part Number: Various
Model: See web site

https://www.ecdata.com/Products/Data-Broadcast-Units

Network Adapters

SERIAL AND IP NETWORK ADAPTERS / CONVERTERS

- √ RS-232, RS-422, RS-530,V.35, X.21 and Ethernet
- √ SYNC to IP Converter
- √ Async to Sync Converters
- √ 64k Rate Adapters allow low speed Async to high speed sync data transfer
- √ Status LED's for Set-up
- √ Control Signal Force/Pass
- √ Standalone or Rack Mount
- √ 110/220VAC or DC Input
- √ UL, CSA, CE, FCC, RoHS

The Serial Network Adapter product line offers many different options for converting sync and Async data conversion. We support Sync to IP conversion via a proprietary tunneling method for adapting legacy equipment over private IP networks. The user may also work with us to provide a single ended Sync to IP conversion utilizing our packets.

Our other products include Async to sync converts, Async Rate Adapters and Simplex Sync Data Conversion. Our UDC-RA Rate Adapter has the largest selection of features and data interface options than any competing product on the market. All of the products have international safety approvals and are RoHS compliant.

We have produced more than 4000 of these converters and continue to find new interesting problems to solve for our customers.
Our flexible product design allows us to easily modify existing FPGA code for your network requirements.

NEW OPTION:
Constant Clock Adapter for military radio's that drop clock during idle time.

Part Number: Various
Model: See web site

https://www.ecdata.com/serial_network_adapter.html

SERIAL MODEM ELIMINATORS

- √ RS-232, RS-422, V.35, X.21,RS-530 and HSSI
- √ Data Rates: 1.2k to 3.072Mbps, 32 selectable Rates
- √ Serial Interface Cards are Interchangeable
- √ Options for RTS/CTS delay, DSR/DTR per port
- √ Status LED's for Set-up
- √ Control Signal Force/Pass
- √ Standalone or Rack Mount
- √ 110/220VAC or DC Input
- √ UL, CSA, CE, FCC, RoHS

The UDC-ME allows two DTE devices (such as routers) to communicate within proximity of each other. The UDC-ME transmits data bi-directionally at clock rates of 1.2k up to 3.072Mbps between DTE devices. All clocking and signal crossover are provided within the UDC-ME. The unit is equipped with two interface slots that allow a host of serial interface cards to be utilized. The serial interface cards available are RS-232, RS-422/449, RS-530, X.21, V.35 and HSSI. The Serial Interface cards are interchangeable and may be mixed such as RS-232 to V.35 thus eliminating the need for an interface converter or changing expensive serial cards on a DTE device such as a router.

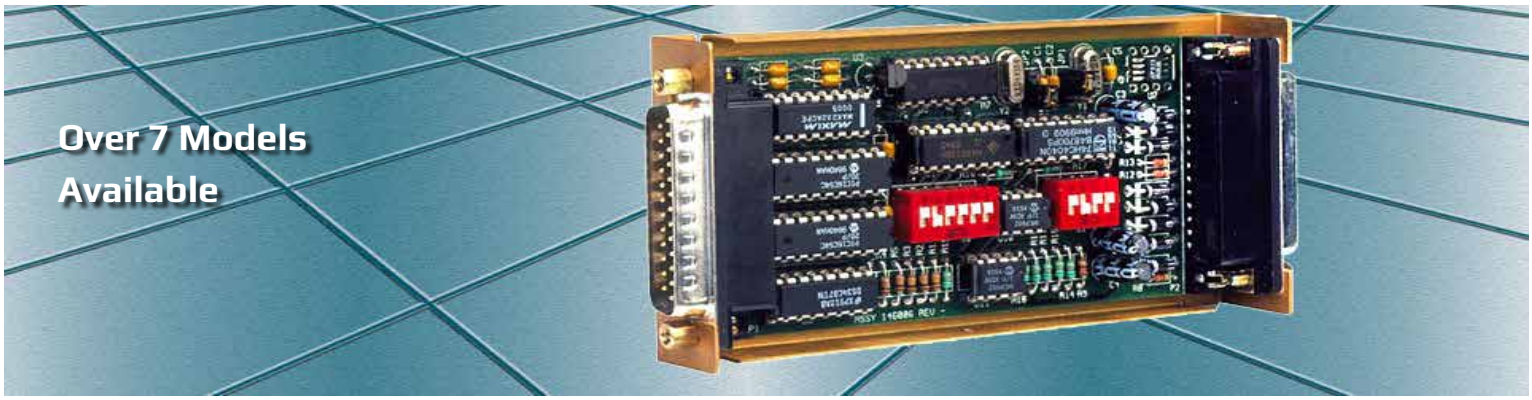
The UDC-ME is also an excellent choice for testing router-torouter connections via the serial ports. Installation is fast and simple by setting the dip switches for Clocking, Carrier Operation and RTS to CTS delay. The unit has status LED's for each attached DTE device which allows the user to visually confirm the presence of clock and control signals.

The UDC-ME is housed in a sturdy metal enclosure and operates on 110/220VAC or optional -48V DC power. Typical MTBF figures are in excess of 150,000 hours of operation.

Part Number: Various
Model: See web site

https://www.ecdata.com/modem_eliminator.html

Tail Circuit Buffers



SERIAL FIFO & TAIL CIRCUIT BUFFERS

- √ RS-232, RS-422, RS-530,V.35 and X.21 Interface Cards
- √ SYNC Rates to 2.048Mbps
- √ User selectable buffer sizes of 1024, 2048, 4096 and 8192 bits
- √ Timing: External via attached DCE devices
- √ Status LED's for Set-up
- √ Standalone or Rack Mount
- √ 110/220VAC or DC Input
- √ UL, CSA, CE, FCC, RoHS

We manufacture several different Tail Circuit Buffers and FIFO buffers depending on your application. Some of our buffers are small while others are large storage / Delay buffers.

Our main Tail-Circuit Buffer is the UDC-FB and it is designed to provide selectable bi-directional buffering between two data circuits that are operating at nominally the same clock rate and are capable of providing clocking as a DCE. In such cases, the timing of the two circuits is not locked to the same timing source, or may be allowed to deviate from a common timing source for a length of time. The UDC-FB meets this need by pro-viding selectable amounts of bi-directional memory from 1,024 bits up to 8,192 bits and supports synchronous clock rates up to 2.048 Mbps.

The data memory is based upon a self-centering FIFO buffer. Upon power-on, a reset, or a prior buffer under-run or over-flow, the buffer will accept and hold all input data until the buffer is half full. At that point, the buffer will be released to output the first data received and will continue input and output through the FIFO at the rate determined by the input and output clocks. Differences in clocking rates on the two interfaces will result in the amount of data queued in the buffer changing over time.

Part Number: Various
Model: See web site

https://www.ecdata.com/tail_circuit_buffer.html

TDM Multiplexers

ASYNC or SYNC TDM MULTIPLEXERS

- √ Single or Dual Composite Ports 8k to 2.048Mbps
- √ Sub-Channel Data Rates: 1.2k to 64k SYNC or ASYNC
- √ Modular Front Load 5U Rack
- √ In-Band Management Port
- √ Configured Local or Remote down line loading
- √ Single or Redundant Dual Power Supplies
- √ 90-240VAC Power

We offer 4 different versions of our popular TDM Multiplexers. With an installed base around the world with the largest financial service company in the world, the Nx-MUX is as reliable as the day is long.

The 16-Port Nx-MUX is a modular TDM Multiplexer designed to support up to sixteen sub-channel ports from 1200bps to 38.4 Kbps in Async format and up to 64Kbps in Sync formats. The unit is designed with single or dual composite ports and variable port rates from 8Kbps to 2.048Mbps in 8k or 64k steps for maximum flexibility. The composite port data interface is software selectable to operate as RS-232, RS-530, V.35, RS-422/449 or X.21.

The sub-channel ports may be individually configured to support flow control of RTS to DCD on a port by port basis or no flow control. The ports also support individual RTS to CTS delays and external TXC timing for DCE to DCE crossover. The data interfaces are RS-232 on 16 ports. In addition, four of the user ports are software selectable to operate as RS-232, RS-530, V.35, RS-422/449 or X.21.

Part Number: Various
Model: See web site

https://www.ecdata.com/subrate_mux-TDM_multiplexer.html

Wan Delay Emulators - Comparisons

Main Features	WanRaptor/PDS	BGP-EDS	RDS-PLUS	UDC-RDS
Latency Set Per Port	0 - 8 sec	0 - 10 sec	0 - 4 sec	0 - 1 sec
Delay Units	Microseconds	Milliseconds	Milliseconds	Milliseconds
Emulation Data Rates	1bps - 40Gbps	300bps - 1 GbE	1.2k - 52M	300bps - 3.072Mbps
Emulation Accuracy	50µs	✕	20µs	✕
Emulation Capacity	8 Ports, 4 Pairs **	16 Ports, Routed	2 Ports, 1 Pair	2 Ports, 1 Pai
Decimal Inputs	✔	1ms	20µs	200µs
Interface	Copper/Fiber	Copper/Fiber	Serial/Telco	Serial
Data Format	UDP / TCP IP, ect	UDP / TCP IP, ect	Sync / Async	Sync
Changes On-The-Fly	✔	✔	✕	✕
Split Speeds	✔	✔	✕	✕
Error Insertion	✔ / BERT	✕	✔ - Full BERT	✕
Jitter	✔	✔	N/A	N/A
Loss	✔	✔	✔	✕
Re-Ordering	✔	✔	N/A	N/A
Duplication	✔	✔	N/A	N/A
Auto Profile Scheduler	✔	✔	✕	✕
Data Logger	✔	✔	✕	✕
Config Port(s)	10/100/1000	10/100	10/100 or SERIAL	Dip Switches
Full Command Line	✕	✕	✔	✕
GUI Support	✔	✔	✔	✕
Multiple Users	✕	✔	✕	✕
Jumbo Frames	✔	✔	N/A	N/A
Clock Source	N/A	N/A	INT/EXT	INTERNAL
Test Interfaces	**WanRaptor**	**BGP-EDS**	**RDS-PLUS**	**UDC-RDS**
10/100/1000	✔	✔	✕	✕
1/10/25/40GbE	✔	Yes - 10GbE	✕	✕
RS-232 or X.21	✕	✕	✔	✔
RS-530/RS-422/V.35	✕	✕	✔	✔
HSSI	✕	✕	✔	✕
EIA-644 LVDS	✕	✕	✔	✕
TTL	✕	✕	✔	✔
T-1/E1	✕	✕	✔	✕
E3/DS3	✕	✕	✔	✕
STS-1	✕	✕	✔	✕

REFERENCE SERIAL PINOUT CHART

FUNCTION	FROM	RS-232	V.35	X.21	R5-530	RS422-449
Chassis GND	--	1	A	1	1	1
DTE Return	--	--	--	--	--	37
DCE Return	--	--	--	--	--	20
TX Data (A,B)	DTE	2	P, S	2, 9	2, 14	4, 22
RX Data (A,B)	DCE	3	R, T	4, 11	3, 16	6, 24
RTS (A,B)	DTE	4	C	--	4, 19	7, 25
Control (A,B)	DTE	--	--	3, 10	--	--
CTS (A,B)	DCE	5	D	--	5, 13	9, 27
DSR (A,B)	DCE	6	E	--	6, 22	11, 29
Signal Gnd	--	7	B	8	7	19
DCD (A,B)	DCE	8	F	--	8, 10	13, 31
Indicate (A,B)	DCE	--	--	5, 12	--	--
Test	DCE	9	HH	--	--	--
Test	DCE	10	FF	--	--	--
TXC (A,B)	DCE	15	Y, AA	--	15, 12	5, 23
RXC (A,B)	DCE	17	V, X	--	17, 9	8, 26
Signal Timing (A,B)	DCE	--	--	6, 13	--	--
LL	DTE	18	L	--	18	10
DTR (A,B)	DTE	20	H	--	20, 23	12, 30
RL	DTE	21	N	--	21	14
RI	DCE	22	J	--	--	15
Ext TXC (A,B)	DTE	24	U, W	--	24, 11	17, 35

All Balanced leads such as 24,11 are shown as “A” lead and “B” lead or +/-