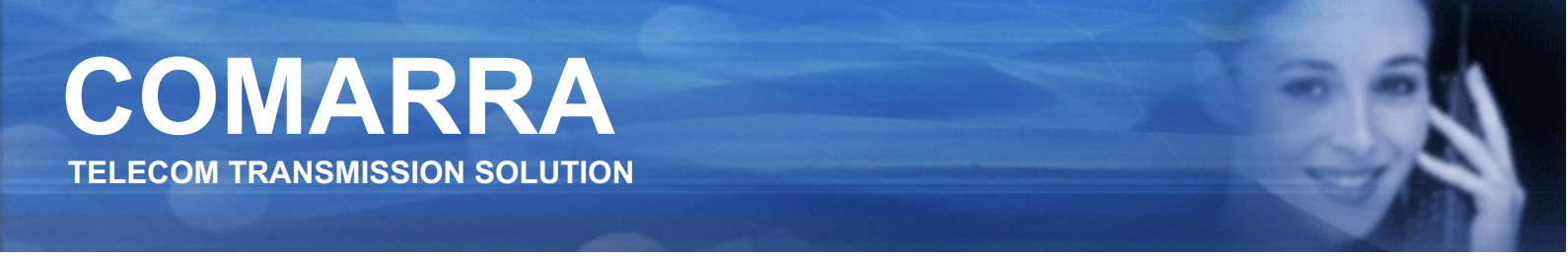

64 Port E1 / T1
Digital Access Cross Connect Switch
32 Port E1 / T1
Monitoring Groomer

Product Brochure & Data Sheet

COMARRA

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Description: In the Digital Access Cross Connect (DACS) Mode

The VCL-MegaConnect™, 64 E1 / T1 Digital Cross Connect Switch, is a E1 / T1 digital cross-connect switch, which presents its user an easy to use, yet a sophisticated platform to cross-connect up to 64, E1 ports. The VCL-MegaConnect™, 64 E1 / T1 Digital Cross Connect Switch offers full cross-connect functionality to cross-connect, and / or aggregate DS-0s, "n"x64Kbps consecutive data channels and, fractional E1 / T1 channels to full E1 / T1 channels, between the 64 E1 / T1 Ports.

The VCL-MegaConnect™, 64 E1 / T1 Digital Cross Connect Switch, occupies only a 6U high rack-space, and is a complete 19-inch stand-alone unit that provides connectivity for up to 64 E1 / T1 ports. The unit operates on a -48VDC input power-supply (AC input adapter is optional for AC mains operation).

The system is supplied with an easy to use Windows (95, 98, Me, XP) Graphical User Interface that provides the USER a complete control to prepare multiple configuration "*maps*" and store them as easy to read data files. It may also accessed using CLI (Command Line Interface) through a Serial (COM) Port of a PC using HyperTerminal text commands. Dry contact relay alarms are also available at rear of the system to connect the system to external audio and visual alarms outputs.

The VCL-MegaConnect™, 64 E1 / T1 Digital Cross Connect Switch also has a TCP - IP Access feature which allows the DACS to be connected on a TCP - IP network (10/100 Base Interface) for remote access for configuration and monitoring using Telnet.

The VCL-MegaConnect™, 64 E1 / T1 Digital Cross Connect Switch can also be ordered for special non - Intrusive (Hi-Z) monitoring applications in which E1 / T1 ports can be connected to monitoring/billing equipment for non-obtrusive monitoring of live traffic or signaling, required by billing servers etc.

64 Port E1 / T1 Digital Access Cross Connect

32 Port E1 / T1 Monitoring GROOMER

In the Monitoring Mode

In the monitoring mode the GROOMER provides the user a total of 32, E1 / T1 Ports. 30, E1 / T1 Ports shall connect to the "Live Traffic" E1 / T1 links which are to be MONITORED, NON-INTRUSIVELY (Hi-Z) in both Transmit and Receive directions.

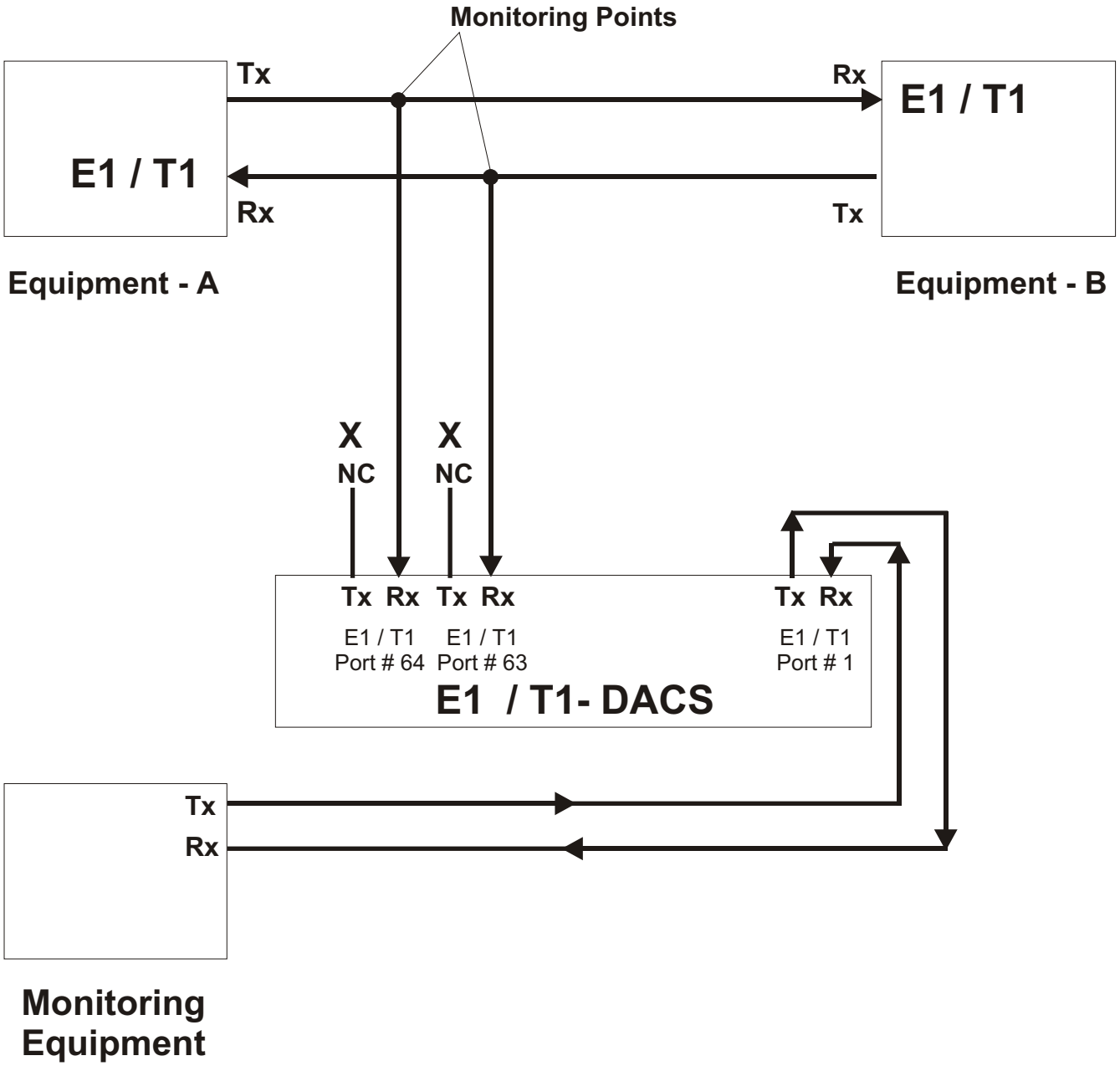
2, E1 / T1 Ports shall connect to the MONITORING EQUIPMENT, such as billing servers etc.

The GROOMER (E1 / T1 Monitoring DACS) is capable of monitoring a -20dBdsx (0.3Volt Pulse) E1 / T1 signal through a Hi-Z path, without in any way disturbing the live E1 / T1 traffic that is required to be monitored. The E1 / T1 connector(s) shall be RJ45 and a "Y" cable is provided (included) to connect E1 / T1 GROOMER equipment to the E1 / T1 Ports that are required to be monitored.

The user shall have the full flexibility to choose and select upto a maximum of 30 time-slots (to be monitored in BOTH Transmit and Receive direction), through the internal TSI non-blocking switch, from any of the 30 E1 / T1 ports that are required to be monitored.

Non - Intrusive Monitoring Application

Bi-directional Monitoring

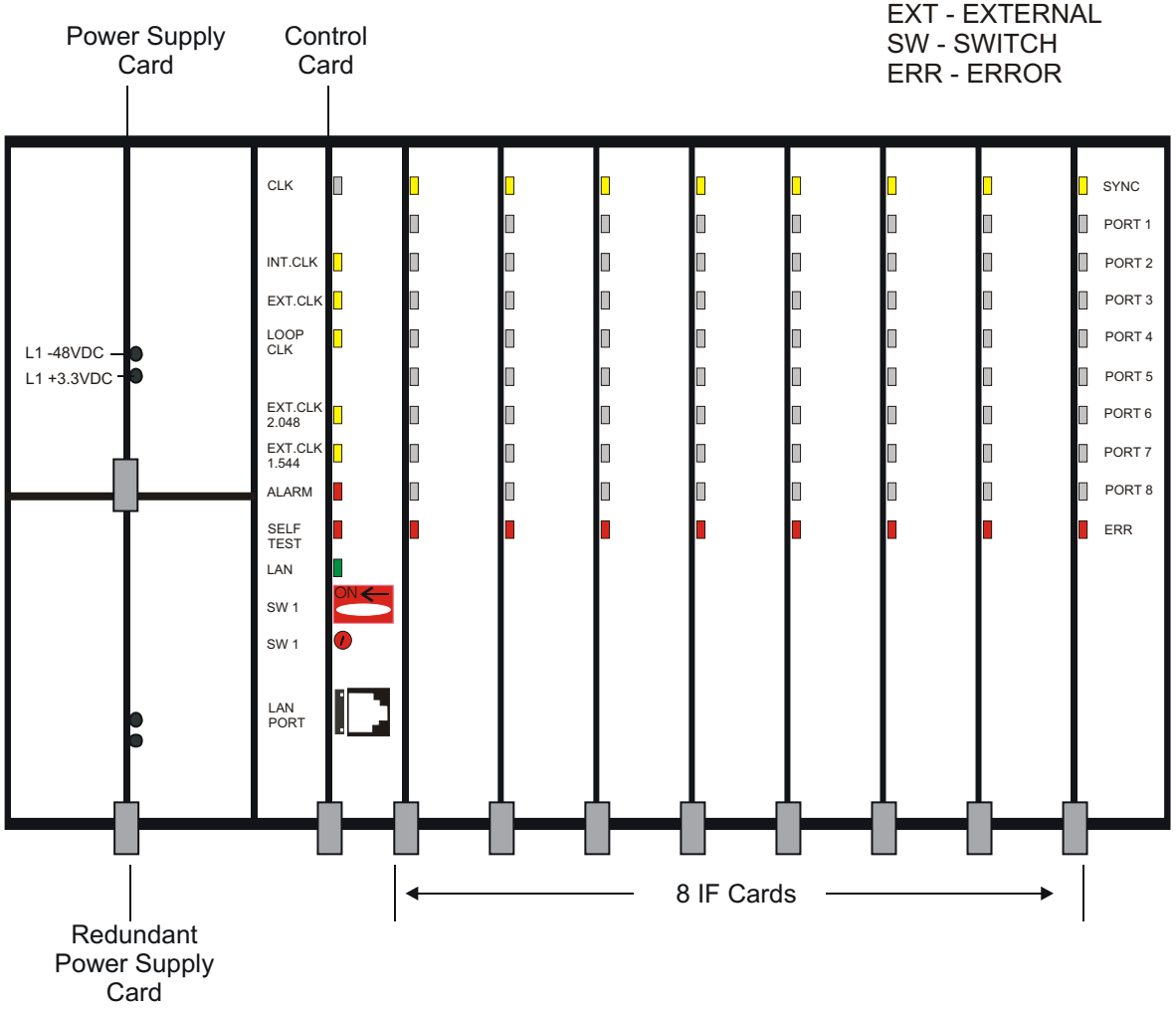


To monitor an E1 / T1 link in both directions, the USER will need to connect TWO high impedence E1 / T1, RX pairs of the DACS, i.e. use 2, Hiz E1 / T1 ports, in order to monitor ONE live E1 / T1 Port in BOTH Tx and Tx directions. A “Y” cable is provided with the equipment to achieve this.

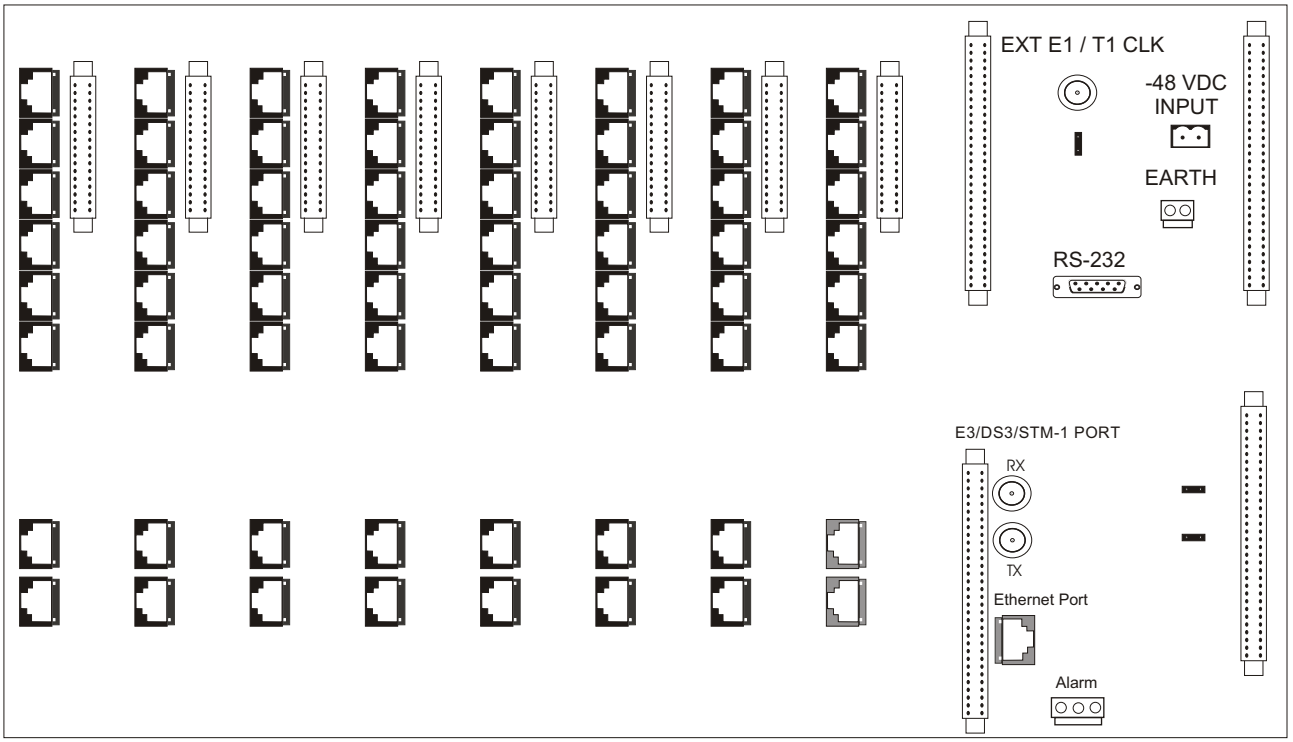
64 Port E1 / T1 DACS, 32 Port E1 / T1 Monitoring Groomer

Front View

CLK - CLOCK
INT - INTERNAL
EXT - EXTERNAL
SW - SWITCH
ERR - ERROR



Rear View



Indications and Alarm Monitoring

- Loss of incoming signal at any E1 / T1 Port
- Configuration Error Alarm
- Clock Status
- 1 to 8 E1 / T1 Ports LED indicators to indicate the status of each E1 / T1 Port
- +3 Volts Power Supply
- -48VDC present
- Configuration Error

Programmable Features:

- Specifying the priority sequence for clock selection.
- Enabling or disabling E1 / T1 Ports (masking) of the E1 / T1 Ports that are not in use.
- Creating a cross - connect between E1s at DS-O level (Single time-slot level) using the Windows based, easy to use GUI.
- Telnet interface for remote programming.

Status Monitoring

- Clock Selection
- Status of alarms.
- Enabled / Disabled status of E1 / T1 Ports.
- Monitoring of the VCL-MegaConnect status and configuration.

64 Port E1 / T1 DACS, 32 Port E1 / T1 Monitoring Groomer

Technical Specifications -

Equipment

E1 Port (shall connect to the MONITORING EQUIPMENT):

Connector:	RJ-45
Impedance:	120 Ohms
Pulse Shape Compliance:	G.703
Signal Pulse:	3.0 Volt - as per G.703
Framing:	G.704
Number of E1 Ports :	4

Monitored E1 Port (shall connect to the equipment that is to be MONITORED):

Connector:	RJ-45 - with “Y” Cable
Impedance:	Hi-Z for NON-INTRUSIVE MONITORING
Compliance:	G.703
Framing:	G.704
Compliance (for Hi-Z Monitoring)	G.772
Receive Signal Senstivity:	Upto -20dBdsx (0.3 Volt Pulse)
Number of E1 Ports - to connect to the Monitored Equipment:	Minimum 2 E1 Ports Maximum 30 E1 Ports Incremental in multiples of 4 E1 Ports.

T1 Port (shall connect to the MONITORING EQUIPMENT):

Connector:	RJ-45
Impedance:	100 Ohms
Pulse Shape Compliance:	G.703, T1.102 Bellcore
Signal Pulse:	3.0 Volts
Framing:	SF (D4/F12), ESF (F24)
Line Code	AMI, B8ZS
Number of T1 Ports :	4

Monitored T1 Port (shall connect to the equipment that is to be MONITORED):

Connector:	RJ-45 - with “Y” Cable
Impedance:	Hi-Z for NON-INTRUSIVE MONITORING
Compliance:	G.703 T1.102 Bellcore
Framing:	SF (D4/F12), ESF (F24)
Compliance (for Hi-Z Monitoring)	G.772
Receive Signal Senstivity:	Upto -20dBdsx (0.3 Volt Pulse)
Number of T1 Ports - to connect to the Monitored Equipment:	Minimum 2 T1 Ports Maximum 30 T1 Ports Incremental in multiples of 4 T1 Ports.

Power Supply:

Power Supply:	-48VDC (-40VDC to -60VDC)
Power-Supply:	Redundant (1+1 Protected)
Power Consumption:	28.8 Watts (maximum).

64 Port E1 / T1 DACS, 32 Port E1 / T1 Monitoring Groomer

Chassis:

6U High

19-inch rack-mounting shelf.

E1 Interface

Line Rate	E1 (2.048 Mbps ± 50 bps)
Available Time-Slots	1-31
Framing	G.704
Electrical	G.703
Jitter	G.823
Impedance	120 Ohm
Connector	RJ-45 (F)

T1 Interface

Line Rate	T1 (1.544 Mbps ± 50 bps)
Available Time-Slots	1-24
Framing Structure	as per ITU(CCITT) G.704
Framing Options	SF (D4/F12), ESF (F24) (Selectable)
Line Coding	AMI, B8ZS (Selectable)
Electrical	ITU-T G.703
Jitter	ITU-T G.823, ITU-T 1.431
Impedance	100 Ohm
Connector	RJ-45 (F)

Time-slot selection:

ANY-TO-ANY through an internal, best byte, non-blocking TSI Switch.

Clock:

Internal	AT&T TR62411, Telcordia GR-1244-CORE Stratum 3, Stratum 4, Enhanced and Stratum 4, ETSI ETS 300 011, ITU-T G.813 Option 1
Loop-Timed	
External	75 Ohms - 2.048 Mhz - 1.544 Mhz

64 Port E1 / T1 DACS, 32 Port E1 / T1 Monitoring Groomer

Management And Control:

Serial Management Port (RS232) - COM Port
10/100 BaseT for Remote Management over a LAN.
10/100 BaseT Telnet over a TCP-IP Network.

Command Language:

Command Line Interface (english text commands)
Windows based GUI (optional).

CORE SYSTEM: All items of the CORE SYSTEM must be ordered and are being offered in a single head as the CORE SYSTEM:

a) 19-Inch Chassis.
b) Control Card and TSI with serial and LAN Management Ports.
c) 2 x -48VDC Input Power-Supply Card(s) for REDUNDANT OPERATION.
d) AC to -48VDC DC Converter for Universal AC Mains Input
(if required to connect the equipment on AC Mains).
e) GUI - Configuration Software.
f) User Manual.

INTERFACE CARDS (includes 3 meter "Y" cables):

g) 8 Port E1 / T1 Card and "Y" Cables provides 8 E1 / T1 interfaces to connect to and MONITOR NON-INTRUSIVELY (through an internal Hi-Z path) 4 E1 / T1 circuits in BOTH Transmit and Receive directions.

Technical specification are subject to change without notice.
Revision 06. March 12th, 2006

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64 Port E1 / T1 DACS, 32 Port E1 / T1 Monitoring Groomer