

The VMX-0100, 2Mbps ~30 Channel E1, Add-Drop Multiplexer provides full range of POTS (voice) and digital data services to subscribers located at different locations, requiring to interconnect and establish a voice and data network over E1 links. The VMX-0100 is a simple, yet powerful E1 Channel Bank for connecting and integrating analog communication equipment with digital E1 services. It has two E1 ports and it supports full cross-connect between E1 ports and voice/data physical ports. The multiplexer can provide the E1 stream path protection by using the LPC Card. The VMX-0100 has an effective, Windows based "Network Management System", which may be used for configuring the system, subsequent remote monitoring and management of the inter-connected systems in the network. An extensive set of alarms, for easy maintenance are provided in the system.

**VMX-0100**

## SALIENT FEATURES

- Provides variety of Voice interfaces which includes E&M (2W & 4W), FXO, FXS, Loop I/C, Loop O/G and Hotline.
- Provides variety of Data interfaces which includes 64kbps G.703 Data, Low bit rate asynchronous/synchronous data with V.24, V.35, V.11 and X.21 interfaces.
- Supports ISDN Digital Subscriber Line (IDSL).
- Supports Nx64 synchronous Data, with  $N_{max}=30$ .
- Supports Software Download.
- Web Browser Interface (HTTP 1.1) for System Management.
- Provides 18, 3-party conferencing channels out of which 8 conferences can be 4 party.
- Fully programmable voice & data ports locally or remotely through Network Management System.
- Comprehensive test & diagnostics features.
- Loop protection feature for increased Network availability.
- Optional redundant DC-DC converter.
- Alarm History and Status LEDs.

## APPLICATIONS

- 4 wire E&M and FXS/FXO Remote Subscriber Extension.
- SCADA (Supervisory Control And Data Acquisition) and Add-Drop Multiplexer in chain Networks e.g. for Railways, Gas Pipelines.
- Data Circuits for PRS (Public Reservation System) / FOIS (Freight Operations Information System) etc.
- Terminal Multiplexer for SDH Networks.
- Leased Lines over IDSL Interface.

## S P E C I F I C A T I O N S

# VMX-0100

### SYSTEM PARAMETERS

Aggregate Interface	ITU-T G.703 E1
Maximum Voice/Data Ports	40
Configurable Voice Data Ports	30
Modularity	4 channels per card

### AGGREGATE INTERFACE

No. of Interfaces	2
Conformity (Electrical)	ITU-T G.703
Frame Structure	As per ITU-T G.704, CRC4
Signaling	Channel Associated Signaling
Bit Rate	2048 Kbps $\pm$ 50 ppm
Nominal Impedance	120 $\Omega$ balanced or 75 $\Omega$ unbalanced
Line Code	HDB3

### VOICE INTERFACES E&M (4W) INTERFACE

Coding	A-law as per ITU-T G.711
Nominal impedance	600 $\Omega$ at input and output ports
VF Parameters	As per ITU-T. G.712
Tx Level	-14dBr to + 1.0dBr adjustable in steps of 0.1 dB
Rx Level	-11dBr to +4.0dBr adjustable in steps of 0.1dB

### E&M (2W) INTERFACE

Coding	A-law as per ITU-T G.712
Nominal impedance	600 $\Omega$ at input and output ports
VF Parameters	As per ITU-T. G.713
Tx Level	-11dBr to + 4.0dBr adjustable in steps of 0.1 dB
Rx Level	-15dBr to +0.0dBr adjustable in steps of 0.1dB

### LOOP INCOMING

Open loop resistance	More than 10 K $\Omega$
Closed loop resistance	Constant current sink of 20mA
Line reversal detection	Provided
Trunk Offering	Provided
Dial Pulse speed	8-12pps
VF Spec	Same as for 2W, E&M

### LOOP OUTGOING

Max Loop resistance	800 $\Omega$
Battery reversal capability	Provided
Trunk Offering Detection	Provided
Blocking	Provided with reverse potential
Dial Pulse speed	8 -12 pps
VF specs	Same as for 2W, E&M

### FXS INTERFACE/HOTLINE

Dial Pulse Speed	8-12 pps
VF Specs	Same as for 2W, E&M

### DATA INTERFACE SPECIFICATIONS

<b>IDSL</b>	
Interface	2B1Q/ U Interface as per ITU-T G.961
Bit Rate	64Kbps/128Kbps
Features	Optional remote power feed

### 64 KBPS G.703 DATA

Interface	Co-directional as per ITU-T. G.703
Nominal Input Impedance	120 $\Omega$
Return Loss at Input ports	$\geq$ 12dB for 4 KHz – 13 KHz $\geq$ 18 dB for 13 KHz – 256 KHz $\geq$ 14dB for 256 KHz – 384 KHz

### LOW SPEED DATA INTERFACE

Interface	V.24/ V.11/ X.21/V.35
Application	Point to point/ Multi-drop
Rates Supported	1200, 2400, 4800, 9600 and 19200 Kbps
Modes Supported	Synchronous/ Asynchronous

### 'NX64' HIGH SPEED SYNCHRONOUS DATA INTERFACE

Value of N	1-30
Conformity	V.11/V.35
Mode	Synchronous
Basic Bit Rate	64 Kbps

### Nx64, G.703/ Fractional E1 Interface

No. of Interfaces per board	2
<b>Value of N</b>	1-30
Conformity (Electrical)	ITU-T G.703
Frame Structure	As per ITU-T G.704, CRC4
Bit Rate	2048 Kbps $\pm$ 50 ppm

### CLOCK SYNCHRONIZATION

Synchronization Source	Internal clock, External clock, timing derived from incoming HDB3 link (loop Timed)
External Clock Input	As per ITU-T G.703 120 $\Omega$ balanced

### NMS

Functions Supported	System Configuration System Alarms System Statistics
<b>Work station / OS</b>	Pentium III PC, Windows NT/98
Interface Protocols	RS 232 / RJ-45 10 BaseT Ethernet TCP/IP, UDP, HTTP 1.1, SNMPv2 *

### MECHANICAL

Size Sub Rack	Height : 265.0 mm Width : 483.0 mm
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Min. Loop resistance	1200 $\Omega$
Battery reversal capability	Provided
Ring voltage	75 V rms $\pm$ 5V
Ring Frequency	17-25 Hz
Dial Pulse Speed	8-12 pps
VF Specs	Same as for 2W, E&M

Depth : 260.0 mm.

**FXO INTERFACE**

Open loop resistance	More than 10 K $\Omega$
Closed loop resistance	Constant current sink of 20mA

Specifications subject to change without notice.

**ENVIRONMENTAL**

Meets all specs	0° C to + 50° C
Operational	-5° C to +55° C
Storage	-5° C to +60° C
Humidity	95% max. at 35° C

**POWER SUPPLY**

Nominal Input Voltage	-48V DC
Range	-40V to 60V

\* Under Development

**031105**

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