# ORION TELECOM NETWORKS INC.

# VCL-CB,™ iDSL DSLAM

## Product Brochure & Data Sheet

**Headquarters: Phoenix, Arizona**

Orion Telecom Networks Inc.

20100, N 51st Ave, Suite B240,
Glendale AZ 85308
**Phone:** +1 480-816-8672
**Fax:** +1 480-816-0115
E-mail: sales@oriontelecom.com
**Website:** http://www.oriontelecom.com

**Regional Office: Miami, Florida**

**Orion Telecom Networks Inc.**

4000 Ponce de Leon Blvd. Suite 470,
Coral Gables, FL 33146 U.S.A.
**Phone:** 1-305-777-0419,
**Fax:** 1-305-777-0201
**E-mail:** sales@oriontelecom.com
**Website:** http://www.oriontelecom.com

# Product Overview

iDSL access solution   provides up to 15 iDSL (ISDN, Digital Subscriber Line) ports, each port supporting data @ 64/128Kbps on a single twisted pair - terminating at the customer  premises on a ISDN "U" interface or  V.35 interface @ 128 kbps, 10/100 BaseT routers . The transmission range  is up to 5 Km. on a 0.4 (26AWG) twisted copper pair. These pairs  are multiplexed at the ISP / Telco to a 2Mbps, G.703, G.704  E1 link. The iDSL lines uses ISDN "U" interface technology with 2B1Q encoding for transmission on twisted pairs.

At the Central Office / ISP Premises,  the iDSL  interface card  will plug directly into the VCL-CB chassis (common equipment)  to deliver 128Kbps, 2 wire data from the customer premises into a channelized E1.  Time-slot selection and management is available.

**The VCL-CB™, E1 (Common Equipment) consisting of the following components:**

- E1,  Control Cards ,
- 19" Shelf 3U High (sub-rack)
- Connectorized Backplane (3 U High) and
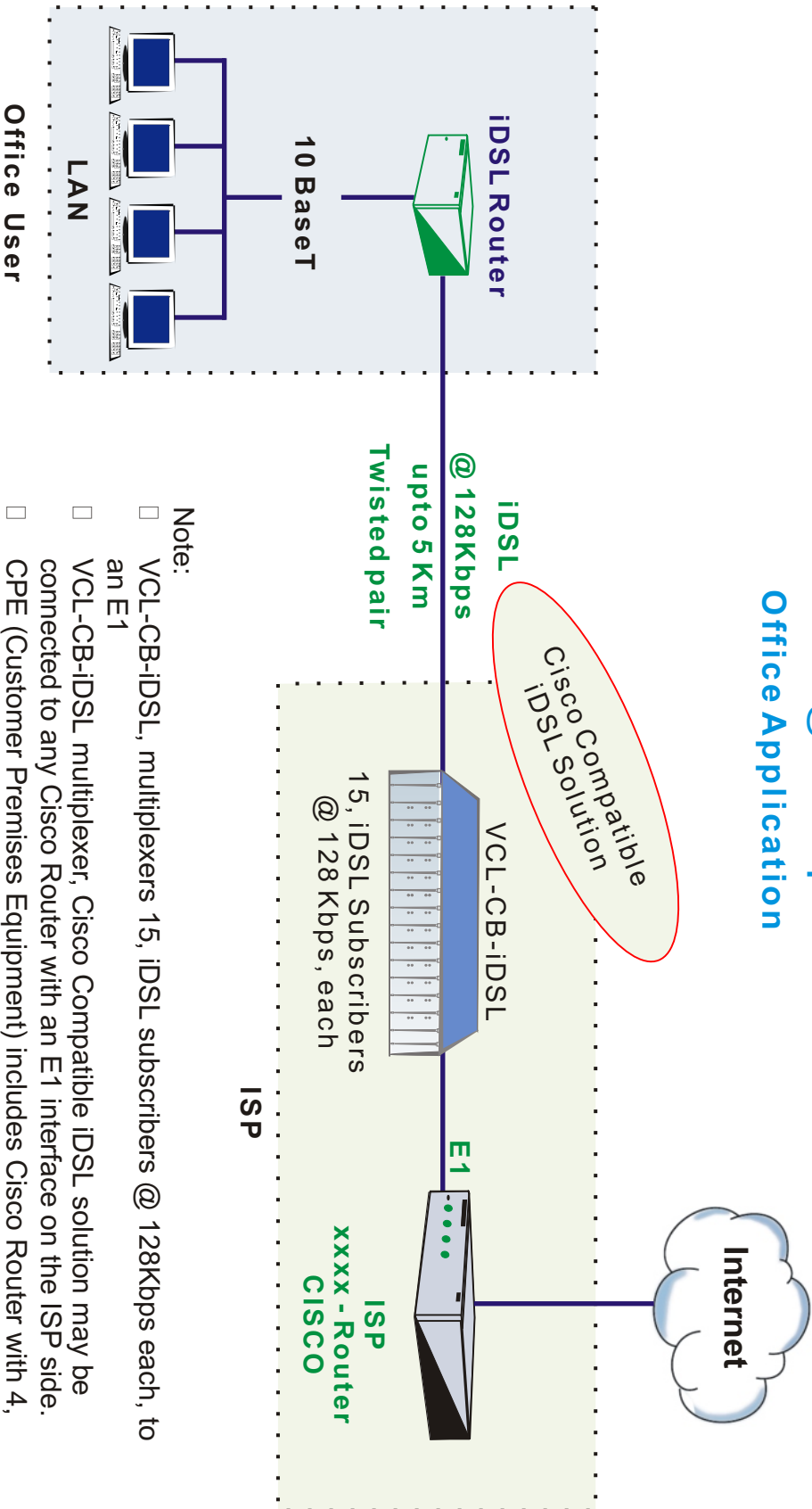- 48VDC Input Power Supply Card

## The Central Office / ISP Premises interface equipment includes the following cards:

Central Office / ISP premises iDSL modem card - part number VCL-CB-080 (used with the VCL-CB Common Equipment) can be used to deliver data @ 128 Kbps to a customer premises up to a distance of 5 Km. , on a ordinary 0.5 mm twister copper pair.

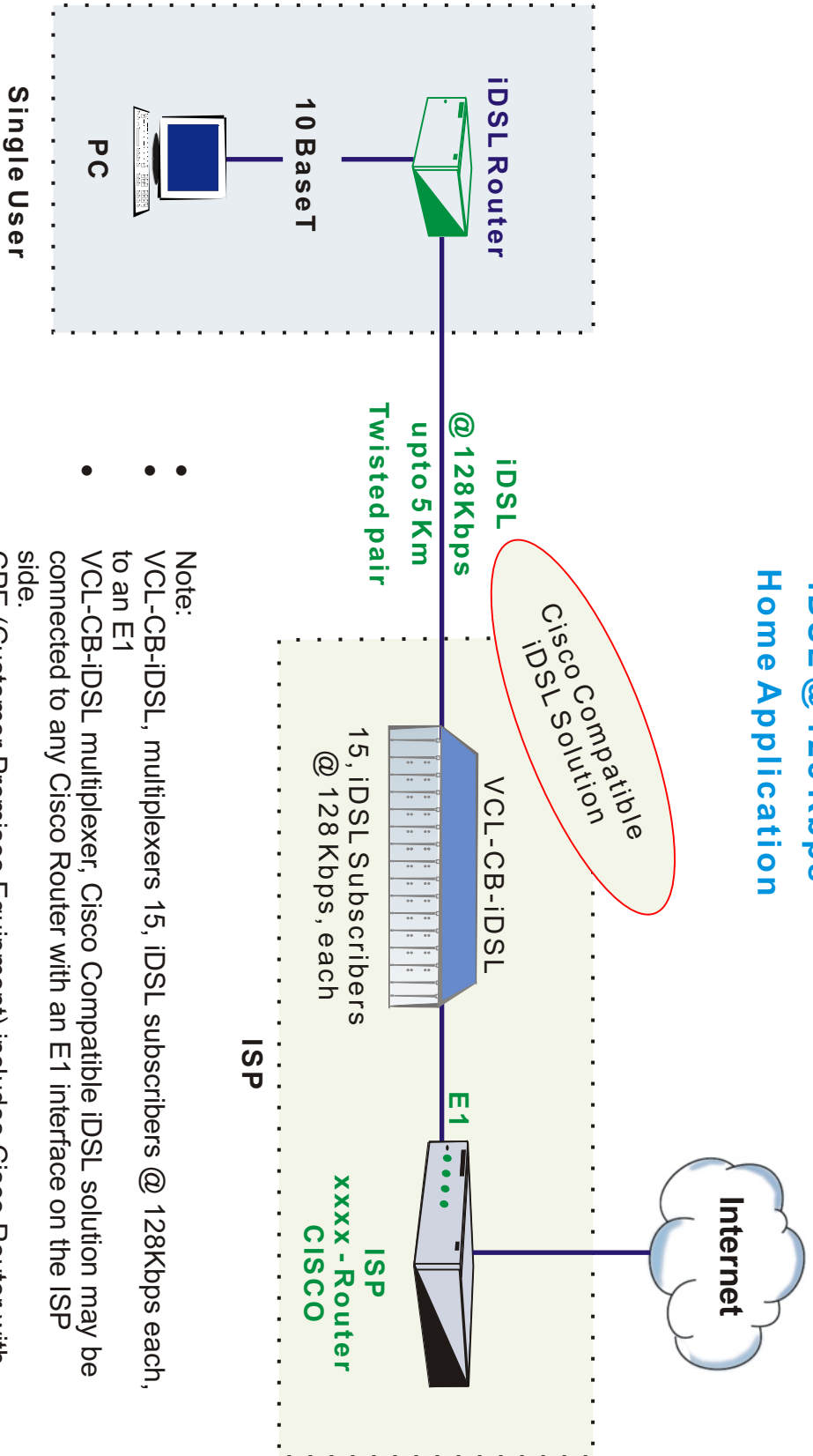| Sr. # | Part # | Product Description of the Use Configurable Units | Qty. |
|-------|--------|--------------------------------------------------|------|
| 1. | VCL-CB-080 | iDSL Modem Card, Central Office / ISP Multiplexer Side - transports 128Kbps on a single twisted copper  pair upto 5Km. | 1 to 15 |

# VCL-CB iDSL Multiplexer Solution

## iDSL @ 128 Kbps
## Office Application

**Office User**

**LAN**

**10 BaseT**

**iDSL Router**

**iDSL @ 128Kbps upto 5 Km Twisted pair**

Cisco Compatible iDSL Solution

15, iDSL Subscribers @ 128 Kbps, each

**VCL-CB-iDSL**

**ISP**

**E1**

**ISP xxxx - Router CISCO**

**Internet**

Note:

- □ VCL-CB-iDSL, multiplexers 15, iDSL subscribers @ 128kbps each, to an E1

- □ VCL-CB-iDSL multiplexer, Cisco Compatible iDSL solution may be connected to any Cisco Router with an E1 interface on the ISP side.

- □ CPE (Customer Premises Equipment) includes Cisco Router with 4, 10base interfaces for PC/LAN connectivity in VCL-CB-iDSL Package

# VCL-CB iDSL Multiplexer Solution

## iDSL @ 128 Kbps
## Home Application



**Single User**

PC

10 BaseT

iDSL Router

iDSL
@ 128Kbps
upto 5 Km
Twisted pair

Cisco Compatible
iDSL Solution

VCL-CB-iDSL

15, iDSL Subscribers
@ 128 Kbps, each

ISP

E1

ISP
xxxx - Router
CISCO

Internet

Note:

- VCL-CB-iDSL, multiplexers 15, iDSL subscribers @ 128Kbps each, to an E1
- VCL-CB-iDSL multiplexer, Cisco Compatible iDSL solution may be connected to any Cisco Router with an E1 interface on the ISP side.
- CPE (Customer Premises Equipment) includes Cisco Router with 4, 10base interfaces for PC/LAN connectivity in VCL-CB-iDSL Package

## iDSL - ISDN DSL Specifications

| | |
|---|---|
| "U" Interface | Meets ANSI T1.601-1992 requirements |
| Line Rate | 160 Kbits/s |
| Frame Format | 2B as per CCITT Rec.1.430 |
| Line Code | 2B1Q as per CCITT Rec.G.961 |
| Accepted Line Attenuation | 42dB at 40 Khz |
| Pulse Shape | As per CCITT Rec.G.961 |
| Multiplexer Emulation | LT Emulation |
| Customer Premises Equipment | NT Emulation |
| Impedance | 135 Ohms at 40KHz |

## Customer Premises Desktop User Interfaces:

**Customer Premises Desktop Interfaces - Option # 1:**
**(V.35 interface @ 128Kbps)**

Our CO / ISP side iDSL Modem cards - part # VCL-CB-080 may be used with our V.35, baseband modem - Part # VCL-CB-090 (customer premises desk top equipment with V.35 Interface @ 128Kbps).

Customer Side / Remote / Side Desk-Top Equipment: Provides 128Kbps data transmission rate on a twisted pair upto 5KM from the VCL-CB, Installation Site: Customer Interface - V.35 data interface @ 128Kbps

Power Supply 110VAC-220VAC, 50Hz/60Hz, UL and CE Approved.

Ordering Information: Part # VCL-CB-090 (desk-top customer premises equipment with V.35 interface @ 128Kbps).

Optional Accessories:
V.35 Data Interface Cable (with male / female M34 connector)

**Customer Premises Desktop Interfaces - Option # 2:**
**(10BaseT Ethernet - with IP Protocol Routing Functionality)**

Our CO / ISP side iDSL Modem cards - part # VCL-CB-080 may be used with our customer premises equipment with a 10BaseT Interface. Part # VCL-CB-095 - customer premises desk top equipment with 10BaseT Interface - IP Protocol Routing Functionality. (Firewall Protection - Optional).

Customer Side / Remote / Side Desk-Top Equipment: Provides 128Kbps data transmission rate on a twisted pair upto 5KM from the VCL-CB, Installation Site: Customer Interface - 10BaseT Ethernet Interface with IP Protocol Routing Functionality. The 10BaseT Interface may be directly connected to a 10BaseT Network Interface Card installed on a PC, or to to a HUB to connect a complete customer LAN to the network.

Power Supply 110VAC-220VAC, 50Hz/60Hz, UL and CE Approved.

Ordering Information: Part # VCL-CB-095 (desk-top customer premises equipment with 10BaseT interface).

Maximum Distance : 5KM (4 miles) on 0.5 mm twisted Pan. Distance may vary with cable gauge

For distance using various cable guages please refer to chart below.

| Distance in Kms. (Miles) | | | | |
|---|---|---|---|---|
| Data Rate (Kbps) | Wire Gauge (AWG/mm) | | | |
| | 19 (.9mm) | 22 (.6mm) | 24 (.5mm) | 26 (.4mm) |
| 128 | 17.4 (10.8) | 11.6 (7.2) | 8.1 (5.0) | 5.5 (3.4) |

## PROTECTION

Central Office Terminal and Remote Terminal are protected against power surges and transients occurring from lightning and electric induction as per CCITT Rec. Table I/K-20 towards line side

## Clock Synchronization

| Synchronization Sources | Internal Clock or timing derived From the E1 HDB3 link (Loop-Timed) |
|---|---|
| External Clock Input | As per ITU (CCITT) Rec G.703 |
| Default Option | Internal Clock |

## Power Supply

| Input DC voltage | -48V DC (nominal) |
|---|---|
| Range of Input | -40V to -60V DC |
| Input Voltage Reversal Protection | Provided |

## Environmental

| Cooling | Natural, Convection cooling |
|---|---|
| Temperature | 0°C to 50°C, Ambient |

## Mechanical Specification

| Rack Mounting | Standard 19 inch DIN rack |
|---|---|
| Height | 3U (133.33 mm) |
| Depth | 292 mm |
| Width | 483 mm |
| Weight | 7.50 Kgs. |

# Notes :

Technical specification are subject to change without notice.
Windows is the registered Trademark of Microsoft Corporation, USA.
All brand names and trademarks are the property of their respective owners.
Revision 04, 1st July, 2005.

**Headquarters: Phoenix, Arizona**

Orion Telecom Networks Inc.

20100, N 51st Ave, Suite B240,
Glendale AZ 85308
**Phone:** +1 480-816-8672
**Fax:** +1 480-816-0115
E-mail: sales@oriontelecom.com
**Website:** http://www.oriontelecom.com

**Regional Office: Miami, Florida**

**Orion Telecom Networks Inc.**

4000 Ponce de Leon Blvd. Suite 470,
Coral Gables, FL 33146 U.S.A.
**Phone:** 1-305-777-0419,
**Fax:** 1-305-777-0201
**E-mail:** sales@oriontelecom.com
**Website:** http://www.oriontelecom.com