



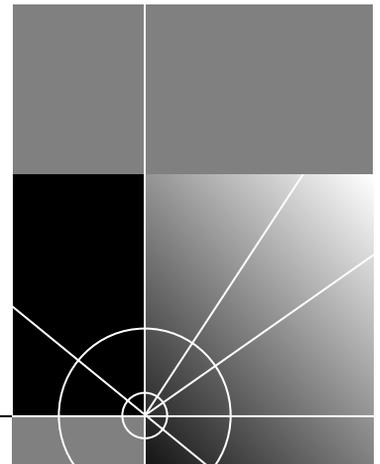
Visitor and Community Network Access Concentrator

INSTALLATION GUIDE

Version 2.0

<http://www.3com.com/>

Part No. DIA3CV1100-02
Published July 2000



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A **PRODUCT SPECIFICATION**

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VISITOR AND COMMUNITY NETWORK ACCESS CONCENTRATOR INSTALLATION GUIDE

About This Guide

This guide contains information about the following:

- System Overview
- VCN Access Concentrator Functionality
- Operational Controls
- Safety Precautions
- Preparing the Site for the VCN Access Concentrator
- Installing the VCN Access Concentrator
- Powering Up the Ethernet Switch
- Powering Up the VCN Access Concentrator



The NCU (Network Concentration Unit) name has been changed in Release II and is referred to as Visitor and Community Network Access Concentrator.

For more information, see *the Visitor and Community Network Access Concentrator Service Manual*. VCN System documentation and software can be obtained from the site: <http://support.3com.com>.

Look there under Broadband Access where you will be able to select `Download Software Or Find Documentation`.

To download documentation, select `Find Documentation` and select the product family Visitor and Community Network System.

To download software, select `Download Software`; click `public area`, and select the product family Visitor and Community Network System.

System Overview

The Visitor and Community Network provides fast Internet connectivity and fast corporate access to end-users of up to 10 Mbps full duplex, over an existing cabling infrastructure and supports all Plain Old Telephone Services (POTS).

The Visitor and Community Network System serves the following applications:

- Multiple Dwelling Units (MDU)
 - MDUs include apartment houses and hotels.

The customers that benefit include tenants and hotel guests who receive Internet services and use e-mail over much more convenient connections than currently possible. Business travelers can access corporate intranets at faster speeds. IT service providers and hotel operators can expand end-user services (video, virtual gaming, etc.) in conjunction with billing services without forfeiting POTS revenues. NSPs and ISPs benefit by expanding service boundaries to E-commerce and local network applications.
- Multiple Tenant Units (MTU)
 - MTUs comprise mainly office complexes.

In MTU application existing LAN infrastructure can be extended to 4 kilo feet to locations currently lacking LAN cabling through the Visitor and Community Network system.

VCN Access Concentrator Functionality

The function of the VCN AC is to combine data and analog voice in the direction of the VCN APs (VCN Access Point) and to split voice and data in the direction from the VCN APs. Analog voice (telephone) is routed to the analog PBX. Data is transferred to the Ethernet Switch. The VCN AC allows simultaneous transfer of voice and data, up to 10 Mbps, on each telephone extension line.



The VCN AC works with the SuperStack II Switch 1100 and 3300.

Operational Controls

Figure 1 and Figure 2 show the VCN AC LED indicators and connectors on the front and back panels.

Figure 1 VCN Access Concentrator Front Panel

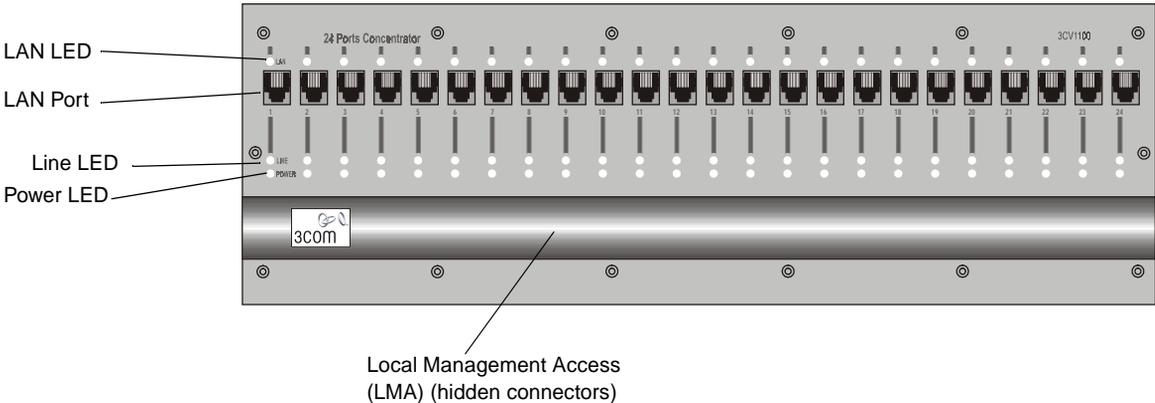


Figure 2 VCN Access Concentrator Back Panel

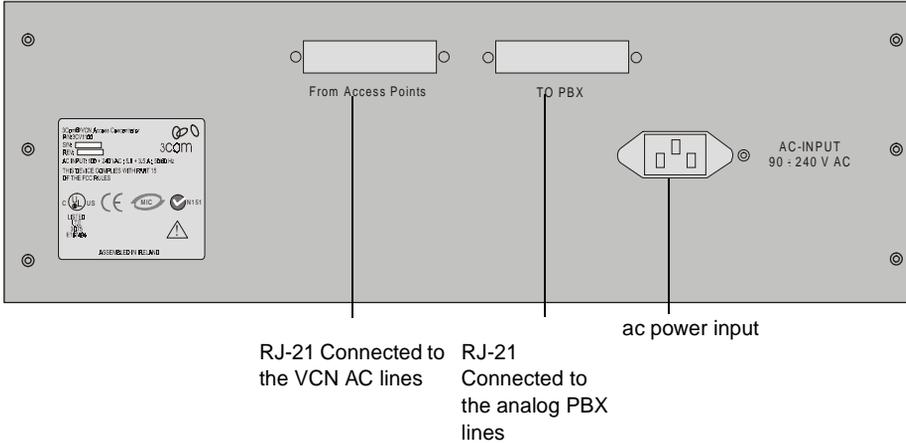


Table 1 describes the front panel VCN AC indicators and connectors.

Table 1 VCN AC Front Panel LEDs and Connectors

Item	Type	State	Used to
LAN	LED	Green	Indicate connection of the VCN AC to the Ethernet Switch.
LAN	RJ-45 port	-	Connect the VCN AC to the Ethernet Switch.
Line	LED	OFF	Indicate VCN AC is not connected to the line.
		Flashing Green	Indicate data transmission over the VDSL line.
Power	LED	OFF	Indicate that the VCN AC is not powered.
		Orange	Indicate that the power-on self-test failed if LED remains orange for more than 30 seconds.
		Green	Indicate that the unit is functional.
Local Management Access (LMA)	4-pin MiniDin connectors (hidden)	-	Connect ASCII terminal for monitoring and troubleshooting. The cover must be removed to attain access to the hidden connectors. Refer to the Visitor and Community Network Access Concentrator for details about troubleshooting, monitoring and downloading software.

Safety Precautions

Please follow these precautions before installing the Visitor and Community Network Access Concentrator:



WARNING: Do not plug in, turn on or attempt to operate an obviously damaged unit.



CAUTION: All servicing should be undertaken ONLY by qualified service personnel. There are no user serviceable parts inside the unit.



WARNING: Be sure to unplug the power supply cord from the wall socket **before** attempting to remove and/or replace the power supply.



CAUTION: Do not operate the unit in location where the maximum ambient temperature exceeds 40 degrees C.



CAUTION: Ensure that the chassis ventilation openings in the unit are not obstructed.



CAUTION: The power supply provided for automatic selection of either 100-120 VAC or 200-240 VAC, 60/50 Hz, as indicated on the safety label adjacent to the power inlet. Ensure that the available voltage supply at the mains is within one of these two ranges.

Précautions de Sécurité



AVERTISSEMENT: Si l'unité est visiblement endommagée NE PAS la brancher au secteur, ni tenter de la mettre en fonction.



ATTENTION: Toute intervention sera effectuée **UNIQUEMENT** par un personnel qualifié. L'unité ne comporte pas de pièces à remplacer par l'utilisateur.



AVERTISSEMENT: Assurez vous que vous avez bien débranché le câble d'alimentation électrique de la prise de courant **AVANT** d'essayer de démonter le bloc d'alimentation.



ATTENTION: Ne pas faire fonctionner l'unité dans un endroit où la température ambiante dépasse 40 degrés C.



ATTENTION: Vérifiez que les ouvertures de ventilation du châssis ne sont pas obturées.



ATTENTION: Le bloc d'alimentation sélectionne automatiquement la tension d'entrée (soit 100-120 V soit 200-240 V, alternatif 60/50 Hz) comme indiqué sur l'étiquette de sécurité apposé à côté de la prise. Assurez-vous que la tension disponible au secteur se trouve dans la plage appropriée.

Sicherheitsvorkehrungen



WARNUNG: Schließen Sie die Einheit unter keinen Umständen an das Stromnetz an, schalten diese ein oder versuchen diese zu benutzen, wenn die Einheit klar erkennbar beschädigt ist.



VORSICHT: Alle Wartungsdienste sollten nur von qualifiziertem Wartungspersonal durchgeführt werden. Die Einheit enthält keine Teile, die der Benutzer selbst warten kann.



WARNUNG: Ziehen Sie den Stromstecker aus der Steckdose, bevor Sie die Energieversorgung entfernen und/oder austauschen.



VORSICHT: Bedienen Sie die Einheit nicht, wenn die Temperatur am Standort 40 Grad C übersteigt.



VORSICHT: Gewährleisten Sie, daß die Ventilationsöffnungen des Chassis der Einheit nicht blockiert sind.

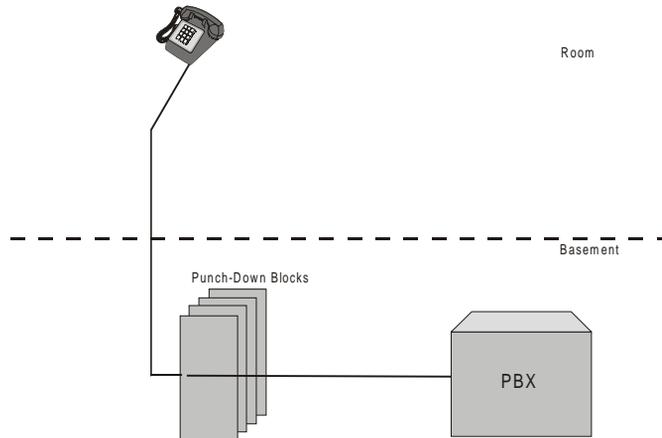


VORSICHT: Die Energieversorgung wählt automatisch entweder 100-120 V WS oder 200-240 V WS, 60/50 Hz, wie auf dem Sicherheitsaufkleber neben der Energiezufuhr angegeben. Gewährleisten Sie, daß die vorhandene Stromleistung des Hauptstromnetzes innerhalb eines dieser möglichen Bereiche liegt.

Preparing the Site for the VCN Access Concentrator

The punch-down block that connects POTS terminals to a PBX is known as the PBX punch-down block. Figure 3 displays the infrastructure before the Visitor and Community Network system is installed.

Figure 3 Before the VCN Access Concentrator is Installed



Before installing the VCN AC in the communications room, perform the following tasks:

- 1 Install the VCN AP punch-down block in addition to the existing punch-down block.
- 2 Install a rack for the VCN AC.



CAUTION: Installation should be performed only by a qualified technician

The VCN AP punch-down block, which carries both data and voice, can be connected to an optional patch panel, which connects the circuits between the VCN AC and punch-down blocks.

If there is no patch panel, the VCN AC unit connects directly to the VCN AC punch-down block and VCN AP punch-down blocks.

The VCN AC unit should be installed at the PBX punch-down block location, usually in the basement or wiring closet of a building.

The unit is installed in a 19-inch rack along with the Ethernet switch and an optional patch panel.

There are two methods for installing the Visitor and Community Network system:

- With a patch panel.
- Without a patch panel.

Installing the VCN Access Point Punch-down Block with a Patch Panel

To install the VCN AP punch-down block when there is a patch panel, perform the following steps:

- 1 Select the wire pairs according to their position in the RJ-11 telephone connector in the rear of the VCN AP. The two outside wires comprise the outer wire pair and the two inside wires comprise the inner wire pair, as shown in Figure 4 and Figure 5.



Where there is only one telephone line in a room, the two wires are connected to the inner wire pair of the phone connector shown in Figure 4 and Figure 5. The outer wire pair of the phone connector is not used.

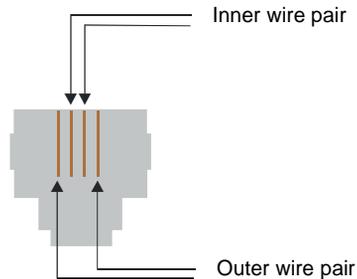
- The inner wire pair carries both voice and digital data.

- The outer wire pair carries only voice.

Figure 4 VCN Access Point Rear Panel



Figure 5 The Four Wires of the Telephone Cable



- 2 Disconnect the punch-down Krone connector for the inner wire pair from the PBX punch-down block.

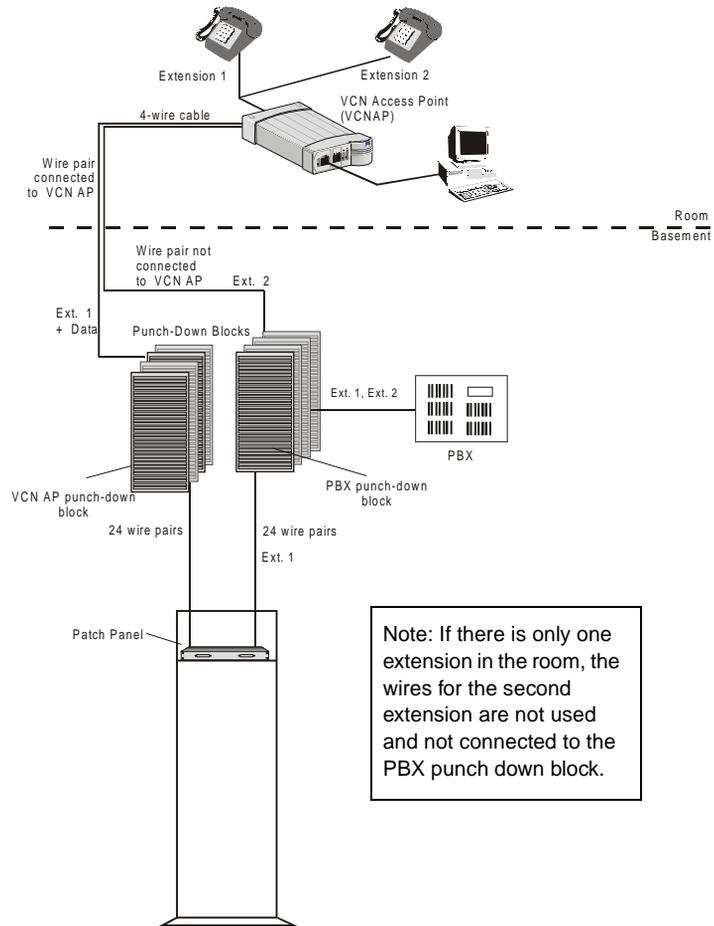


The outer wire pair remains connected to the PBX punch-down block since it will not carry data.

- 3 Connect the Krone connector of the inner wire pair to the new VCN AP punch-down block, which has been added.
- 4 Connect another punch-down Krone connector from the VCN AP punch-down block to the back of the patch panel.
- 5 Connect an additional punch-down Krone connector from the patch panel to the PBX punch-down block to carry voice transmissions of the inner wire pair to the PBX.
- 6 Repeat step 1 through step 5 for up to 24 telephone lines.

Figure 6 shows the resulting infrastructure.

Figure 6 VCN Access Point Punch-Down Block Installation with a Patch Panel



The installed patch panel must have 48 wire connectors - 2 for each port.

**Installing the VCN
Access Point
Punch-Down Block
Without a Patch
Panel**

To install the VCN AP punch-down block in the absence of a patch panel, perform the following steps:

- 1 Select the wire pairs according to their position in the RJ-11 telephone connector in the rear of the VCN AP. The two outside wires comprise the

outer wire pair and the two inside wires comprise the inner wire pair, as shown in Figure 7 and Figure 8.



Where there is only one telephone line in a room, the two wires are connected to the inner wire pair of the phone connector shown in Figure 7 and Figure 8. The outer wire pair of the phone connector is not used.

- The inner wire pair carries both voice and digital data.
 - The outer wire pair only carries voice.
- 2 Disconnect the punch-down Krone connector for the inner wire pair from the PBX punch-down block.



The outer wire pair remains connected to the PBX punch-down block since it will not carry data.

Figure 7 VCN Access Point Rear Panel

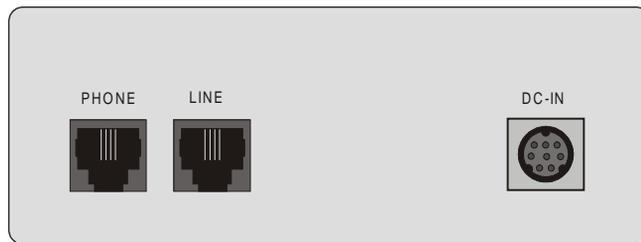
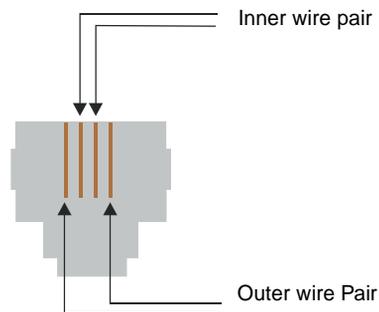
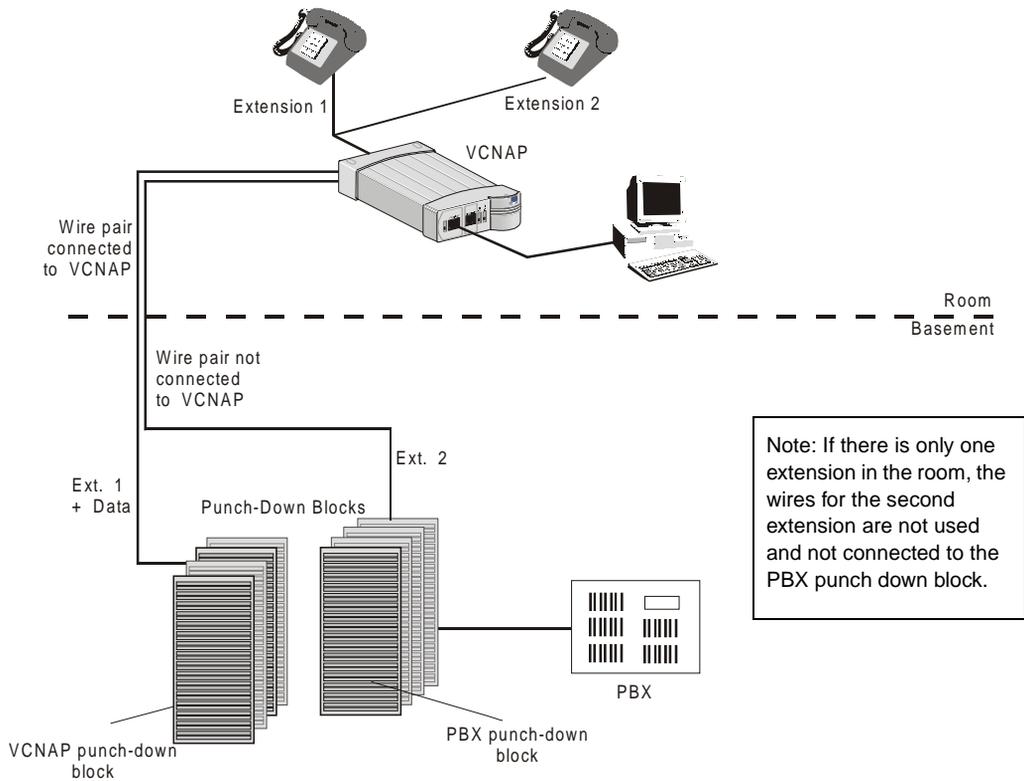


Figure 8 The Four Wires of the Telephone Cable



- 3 Connect the punch-down Krone connector of the inner wire pair to the added VCN AP punch-down block. Refer to Figure 9.

Figure 9 VCN Access Point Punch-down Block Installation without a Patch Panel



4 Repeat step 1 through step 3 for up to 24 telephone lines.



The VCN AP and PBX punch-down blocks must each have an RJ-21 connector.

Installing the VCN Access Concentrator

Before installing the VCN AC make sure that:

- The unit is accessible and can be connected easily.
- Cabling is away from:
 - Sources of electrical noise such as radios, transmitters and broadband amplifiers
 - Power lines and fluorescent lighting fixtures
- Water or moisture cannot enter the case of the unit.
- Air-flow is not restricted around the unit or through the vents in the side of the switch. Make sure you provide a minimum of 2.5 cm (1 inch) clearance between the Ethernet switch and the VCN AC
It is recommended to have a ventilated or air conditioned room.
- The VCN AC is within cable reach of both the patch panel and the Ethernet switch for which the unit is to be attached.

Mounting the VCN Access Concentrator in the 19-inch Rack

Table 2 lists the accessories needed for mounting the VCN AC in the 19-inch rack.

Table 2 The VCN Access Concentrator Accessory Set

No.	Part	Quantity
1	VCN AC unit	1
2	19-inch brackets	2
3	Handles	2
4	Screws for handles	4
5	Screws for brackets	8

In addition to the VCN AC unit, you will find a box containing the cable kit needed to install the VCN AC.

Table 3 lists the cable kit parts.

Table 3 The Cable Kit

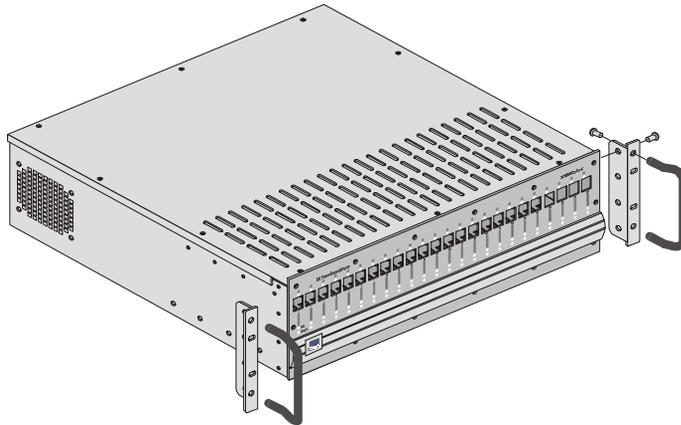
No.	Part	Quantity
1	Power Cord	1
2	UTP CAT-5 Patch Cords	24
3	Flat cables (1.5 m each) with RJ-21 connectors	2

To mount the VCN AC:

- 1 Insert one handle into the two outermost bracket holes as shown in Figure 10.

Ensure that the handle is pointing outward from the unit.

Figure 10 Fitting a Bracket for Rack Mounting



- 2 Tighten the handle from the rear with the two screws enclosed for this purpose, using a number 3 Phillips screwdriver (not supplied).
- 3 Repeat steps 1 and 2 for the second handle.
- 4 Match the four holes of the bracket to the four mounting holes on one side of the VCN AC, as shown in Figure 10.
- 5 Using the four screws enclosed for this purpose, screw the bracket to the VCN AC unit.
- 6 Repeat steps 4 and 5 for the second bracket.



CAUTION: You must use the screws supplied with the mounting brackets. Damage caused to the unit by using incorrect screws invalidates your warranty.

- 7 Insert the VCN AC into the 19-inch rack and secure with two suitable screws on each side (not provided).

Ensure that ventilation holes are not obstructed.

Connecting Cables to the Rack Via Patch Panel

The process of connecting cables to the rack varies depending on whether or not a patch panel is used. The procedure of connecting the punch-down blocks to the patch-panel is described in “Preparing the Site for the VCN Access Concentrator” on page 10.

Back Panel Connections



To connect the back panel of the VCN AC, use the 2 flat cables with RJ-21 connectors supplied with the VCN AC.

To connect the VCN AC to the patch-panel, perform the following steps:

- 1 Connect the RJ-21 connector labeled “From Access Points” at the back of the VCN AC to the “From Access Points” connector on the front of the patch panel using one of the 50-pin twisted pair flat cables.
- 2 Connect the RJ-21 connector labeled “TO PBX” at the back of the VCN AC to the “TO PBX” connector on the front of the patch panel using the second 50-pin twisted pair flat cable.

Front Panel Connections

Refer to “Preparing the Site for the VCN Access Concentrator” on page 10 before connecting the VCN AC to the Ethernet switch through the front.

Figure 11 displays the rack after it has been wire connected.

Figure 11 Patch Panel and the Ethernet Switch Connected to the VCN Access Concentrator

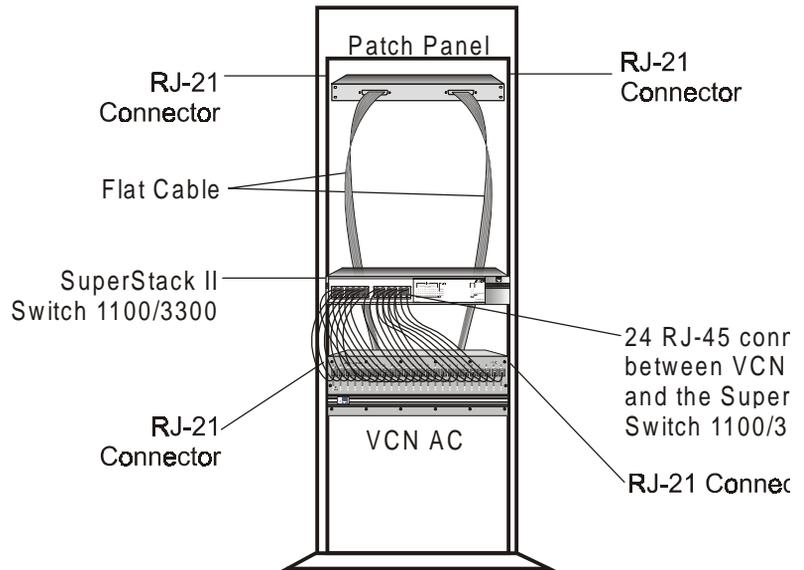
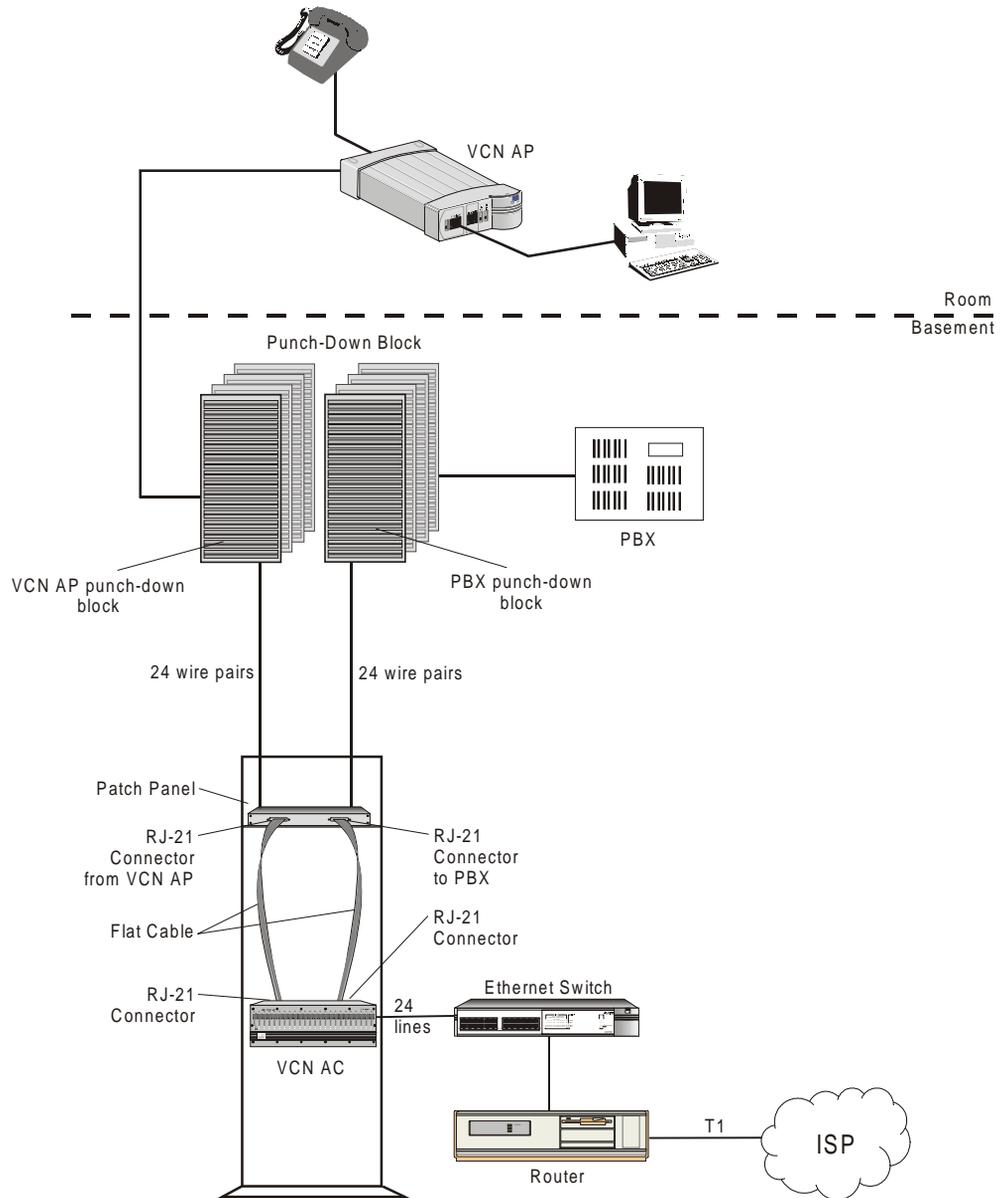


Figure 12 shows all the connections in the network.

Figure 12 VCN Access Concentrator Installed with a Patch Panel

Using RJ-45 connector terminated cables, connect the VCN AC LAN ports to the Ethernet switch.

If your switch is the SuperStack II 1100 or 3300, connect to the front panel ports. If your switch is not the SuperStack II 1100 or 3300, follow the procedures for your switch.

Note on Insertion of Line Cards in the VCN Access Concentrator

Note the following:



The card in VCN AC slot 1 provides central management and is different from the remaining cards. This card has a factory installed MAC address and must not be inserted in any slot other than slot 1.

Connecting Cables to the Rack Without a Patch Panel

This section describes how to connect the rack without a patch panel. The VCN AC connects directly to the VCN AP and PBX punch-down blocks at the back with RJ-21 connectors.

Back Panel Connections

Perform the following steps to connect the VCN AC to the punch-down blocks.

- 1 Connect one RJ-21 flat cable to the VCN AP punch-down block through the RJ-21 connector labeled "FROM VCN AP".
- 2 Connect the other RJ-21 flat cable to the PBX punch-down block through the RJ-21 connector labeled "TO PBX".



To connect the back panel of the VCN AC, use the 2 flat cables with RJ-21 connectors supplied with the VCN AC.



The pin assignments of the two RJ-21 connectors at the back of the VCN AC must match the pin assignments of the RJ-21 connectors of the two punch-down blocks.

To correctly align the RJ-21 connectors on the VCN AC and the punch-down blocks, see Table 4.

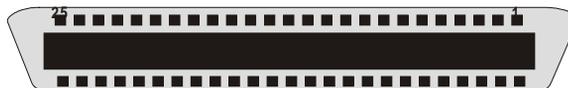
Table 4 Pin Assignment for the RJ-21 Connector

VCN AC Port No.	First Pin	Second Pin
1	1	26
2	2	27
3	3	28
4	4	29

Table 4 Pin Assignment for the RJ-21 Connector (continued)

VCN AC Port No.	First Pin	Second Pin
5	5	30
6	6	31
7	7	32
8	8	33
9	9	34
10	10	35
11	11	36
12	12	37
13	13	38
14	14	39
15	15	40
16	16	41
17	17	42
18	18	43
19	19	44
20	20	45
21	21	46
22	22	47
23	23	48
24	24	49

Figure 13 depicts the pin numbering scheme on the female RJ-21 connectors which are used on both the "TO PBX" and the "From Access Points" ports on the VCN AC.

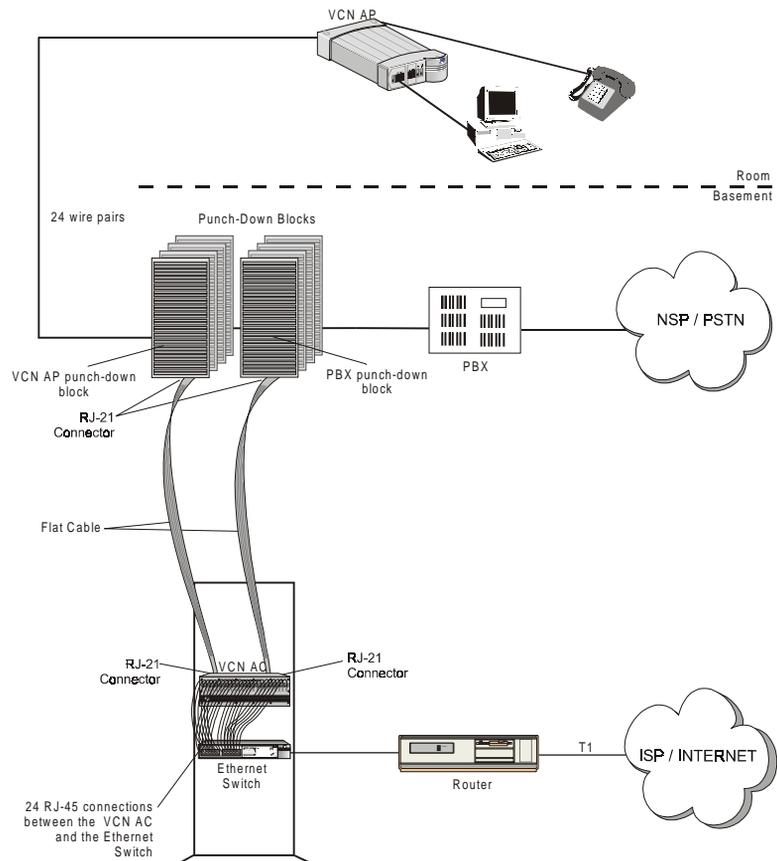
Figure 13 Female RJ-21 Connector

Front Panel Connections

Refer to “Preparing the Site for the VCN Access Concentrator” on page 10 before connecting the VCN AC to Ethernet switch through the front.

Figure 14 displays the infrastructure after the VCN AC has been installed without a patch panel.

Figure 14 The VCN Access Concentrator Unit Installed Without a Patch Panel



Using RJ-45 connector terminated cables, connect the VCN AC LAN ports to the Ethernet switch.

If your switch is the SuperStack II 1100 or 3300, connect to the front panel ports. If your switch is not the SuperStack II 1100 or 3300, follow the procedures for your switch.

Mounting the Ethernet Switch

For instructions on mounting and powering-up the SuperStack II Switch 1100, see the *SuperStack II Switch 1100/3300 User Guide*.

If your switch is not a SuperStack II 1100 or 3300, follow the procedures for your switch.

Configuring the Ethernet Switch for the VCN Access Concentrator

This section describes the procedure for configuring the Ethernet switch.

Sequence of Configuration

The following is the sequence of configuration actions:

- 1 Define the desired VLANs, if any, on your switch.
- 2 Define the MAC addresses for all of the 24 VCN AC ports and all APs attached to the AC.
- 3 Connect the VCN AC.



Defining the VLANs after the VCN AC and AP MAC addresses may make some of the addresses inaccessible.



The default VCN AC VLAN for management is VLAN 1 tagged.



If MAC addresses are not defined before the VCN AC is connected, the switch will flood the entire network with the initial messages sent through the VCN AC, since the destination addresses are unknown.



Not more than one VCN AC may be connected to a switch.

The remainder of this section describes the procedure for defining MAC addresses for the VCN AC and VCN APs.

Inserting MAC Addresses for VCN Access Concentrator Ports

Detailed instructions are presented here for both manual and automated procedures for the SuperStack II 1100 and 3300 Ethernet switches.

General guidance is provided for non-SuperStack switches.

Procedures for a non-SuperStack Switch

Automated procedures for non-SuperStack switches are not available. For a non-SuperStack switch, the Manual Procedures for SuperStack II 1100/3300 serve as a general outline for manual MAC address insertion, but the user follows the detailed instructions in the non-SuperStack

switch user guide. Implement the MAC addresses listed in Table 5 for the VCN AC. Repeat the procedure to define the MAC addresses of the 24 VCN APs attached to the VCN AC. Start with the lowest VCN AP MAC address of 00-C0-DA-40-80-19 and assign addresses for up to 24 VCN APs consecutively.

Manual Procedures for SuperStack II 1100/3300

Enter every one of the 24 VCN AC port MAC addresses through the SuperStack II web management interface.

Refer to the SuperStack® II Switch Management Guide, and follow the instructions in the section “Inserting Permanent Entries” for the Switch Database dialog. You will need to use a web browser on the computer connected to the switch.



Insert the VCN AC port MAC addresses before connecting the VCN AC to the Ethernet switch.

To manually insert a MAC address for an VCN AC port:

- 1** From the *Port Filter* list box, select a port for the entry. Ignore the *VLAN Filter* list box.
- 2** In the *Enter MAC Address* field, enter the MAC (Ethernet) address for the port.
- 3** From the *Select Action Type* list box, select *Insert*.
- 4** Click the *Apply* button.
The Display Database Entries table displays the new entry.
- 5** Repeat steps 1 through 4 for every port.



The Display Database Entries table is not automatically updated with the new entry.

To update the table:

- 1** From the *Select Action Type* list box, select *Display All*.
- 2** Click the *Apply* button.

Table 5 lists the MAC addresses in hexadecimal format.

Repeat the procedure to define the MAC addresses of the 24 VCN APs. Start with the lowest VCN AP MAC address of 00-C0-DA-40-80-19 and assign addresses consecutively.

Table 5 VCN AC Port and VCN AP MAC Addresses

VCN AC Port No.	MAC Address	VCN AP No.	MAC Address
1	00-C0-DA-40-80-01	1	00-C0-DA-40-80-19
2	00-C0-DA-40-80-02	2	00-C0-DA-40-80-1A
3	00-C0-DA-40-80-03	3	00-C0-DA-40-80-1B
4	00-C0-DA-40-80-04	4	00-C0-DA-40-80-1C
5	00-C0-DA-40-80-05	5	00-C0-DA-40-80-1D
6	00-C0-DA-40-80-06	6	00-C0-DA-40-80-1E
7	00-C0-DA-40-80-07	7	00-C0-DA-40-80-1F
8	00-C0-DA-40-80-08	8	00-C0-DA-40-80-20
9	00-C0-DA-40-80-09	9	00-C0-DA-40-80-21
10	00-C0-DA-40-80-0A	10	00-C0-DA-40-80-22
11	00-C0-DA-40-80-0B	11	00-C0-DA-40-80-23
12	00-C0-DA-40-80-0C	12	00-C0-DA-40-80-24
13	00-C0-DA-40-80-0D	13	00-C0-DA-40-80-25
14	00-C0-DA-40-80-0E	14	00-C0-DA-40-80-26
15	00-C0-DA-40-80-0F	15	00-C0-DA-40-80-27
16	00-C0-DA-40-80-10	16	00-C0-DA-40-80-28
17	00-C0-DA-40-80-11	17	00-C0-DA-40-80-29
18	00-C0-DA-40-80-12	18	00-C0-DA-40-80-2A
19	00-C0-DA-40-80-13	19	00-C0-DA-40-80-2B
20	00-C0-DA-40-80-14	20	00-C0-DA-40-80-2C
21	00-C0-DA-40-80-15	21	00-C0-DA-40-80-2D
22	00-C0-DA-40-80-16	22	00-C0-DA-40-80-2E
23	00-C0-DA-40-80-17	23	00-C0-DA-40-80-2F
24	00-C0-DA-40-80-18	24	00-C0-DA-40-80-30

Every VCN AC and attached VCN APs have the same set of 48 MAC addresses.

The VCN AC connects to the Ethernet switch from the front. Connect the VCN AC and the Ethernet switch with up to 24 RJ-45 connections, one

for each port. All ports use the UTP CAT 5 patch cords supplied with the VCN AC.



The MAC addresses differ only in the 2 lowest order numbers. After the first address is entered, the user needs to change only the two right-most numbers while entering each address.

Automated Procedures for SuperStack II 1100/3300

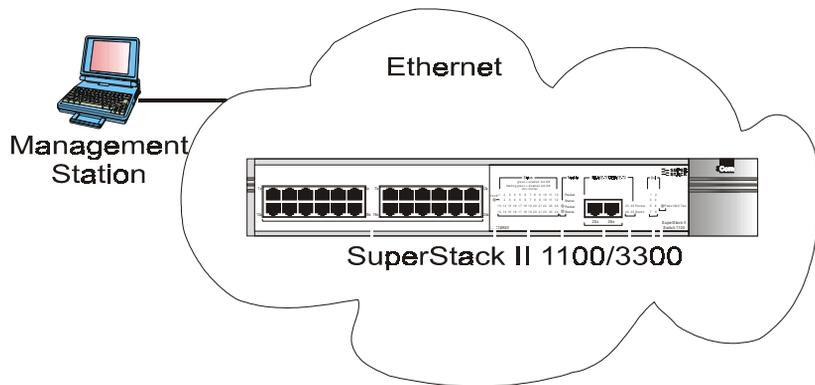
The automated procedure uses the ConfApp application fetched from the 3Com web site <http://support.3com.com>. For information on how to obtain the software refer to page 5. Use a PC with one of the following Microsoft operating systems:

- Windows 95
- Windows 98
- Windows 2000
- Windows NT4

Download the ConfApp application from the web site into your PC.

Connect your PC to any IP-based network to which the switch is connected. Figure 15 shows the station connected to an Ethernet containing the SuperStack II switch.

Figure 15 Connection of Management Station

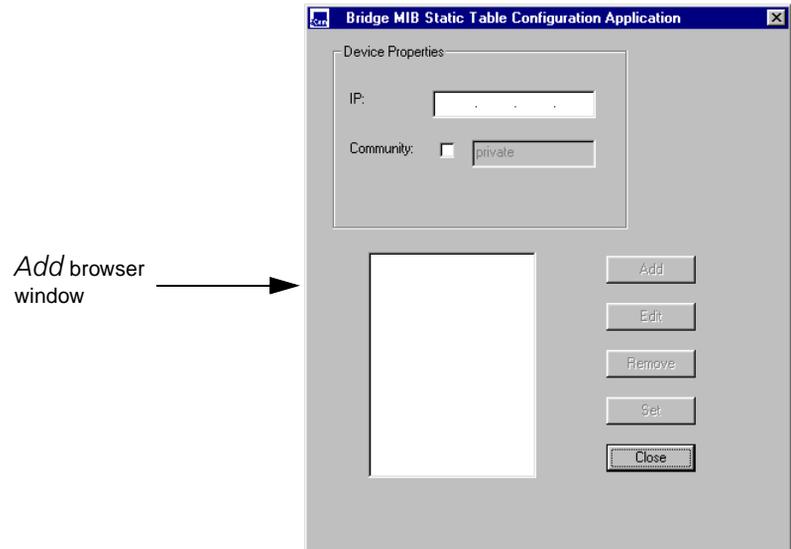


To install VCN AC and VCN AP addresses at one or more SuperStack II 1100/3300 switches, perform the following steps:

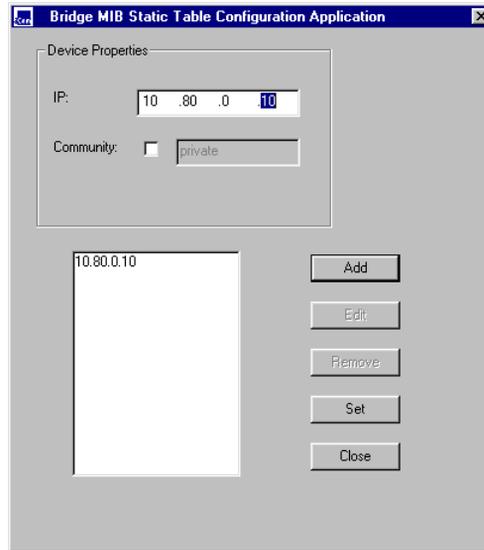
- 1 Run the ConfApp application; do one of the following:
 - Double click the *ConfApp* icon in the Windows desktop.
 - Double click *ConfApp.exe* in its folder displayed under My Computer.
 - Select *Start > Run*; type the *ConfApp.exe* path followed by **ConfApp.exe** and press <Enter>.

The *ConfApp* screen appears (Figure 16).

Figure 16 ConfApp Screen



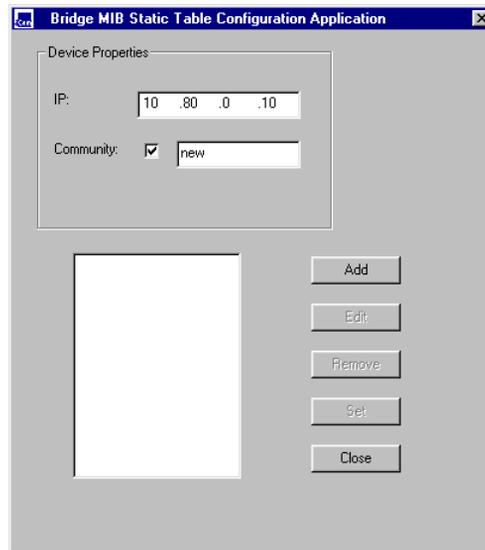
- 2 To select a switch, type the switch <IP address> in the *IP* data field. The address appears in the *Add* browser window (Figure 17).

Figure 17 Entering the Switch Address

- 3** Click the *Community* checkbox to enable changing the *Community* data field if a non-default <Community value> applies.
 - a** Type the <Community value> in the *Community* data field to enter a non-default value. See Figure 18.



The default Community value is private.

Figure 18 Community Parameter

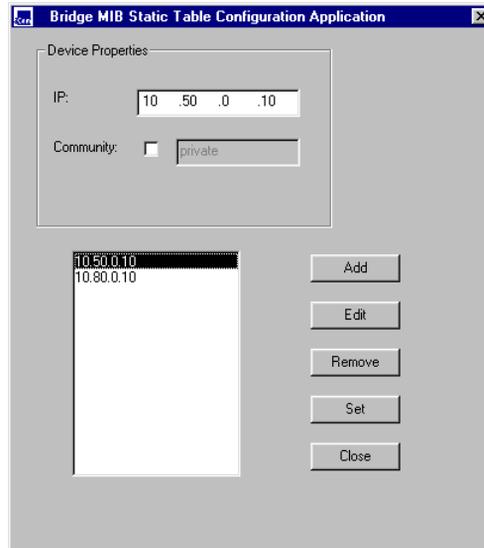
- 4** To be able to install the VCN AC and VCN AP MAC addresses, click *Add*.



If the IP address is invalid, it appears red in the Add browser window.



*To delete an erroneous IP address, select the address in the Add browser window and click *Remove*. See Figure 19.*

Figure 19 Removing Wrong Address

To configure additional SuperStack II switches, repeat step 2 through step 4.

- 5 After all switches have been selected, click *Set*. Clicking *Set* configures switches with valid VCN AC and VCN AP IP addresses.

Switches corresponding to invalid IP addresses are not configured with the VCN AC and VCN AP MAC addresses. Error messages appear in the ConfApp screen when a *Set* operation is attempted for invalid IP addresses. Similarly, attempting to *Set* a switch which is not connected to a VCN AC results in the same error messages.

For each wrong switch address the following message appears:

```
Error Setting the agent.
```

Click *OK* to close the message.

At the end of the entire *Set* operation the following message appears to inform that the set operation is complete and that switches at invalid addresses are not configured:

```
End of Setting.
Agents from red lines were not set!
```

Erroneous switch addresses appear in red at the end of the *Set* operation.

Click *OK* to close the message.

If there are no errors at the end of the entire *Set* operation, the following message appears:

```
All agents were set successfully.
```

Click *OK* to close the message.

More switch addresses can be entered in the menu after each set operation. Previously used addresses can be removed by selecting them and clicking *Remove*. You can execute any number of set operations.

When you are finished, click *Close*.

Powering Up the Ethernet Switch

For instructions on powering-up the SuperStack II Switch 1100/3300, see *the SuperStack II Switch 1100/3300 User Guide*.

For other switches, see the corresponding user guide

Powering Up the VCN Access Concentrator

The VCN AC does not have a power switch. It is powered-up once the power cord is plugged into the back of the VCN AC and to the mains.

Proper Selection of Power Cord

Review the following instructions for proper selection of the power cord for this unit:



CAUTION: Use only the power cord supplied with this unit.

If power cord(s) were not supplied with the unit, select as follows:

- **For units installed in the USA and Canada:** Select a flexible, three-conductor power cord that is UL-listed and CSA certified, with individual conductor wire size of #18 AWG, and with maximum length of 4.5 meters. The power cord termination should be MEMA Type 5-15P (three prong earthing) at one end and IEC appliance inlet coupler at the other end.

The following types are acceptable: SV, SVE, SVO, SVT, SVTO, SVTOO, S, SE, SO, SOO, ST, STO, STOO, SJS, SJE, SJO, SJOO, SJT, SJTOO, SP-3, SPE-3, SPT-3, G, W.

- For units installed in all other countries: Select ONLY a flexible, three-conductor power cord, approved by the cognizant safety organization of your country. The power cord must be type HAR (harmonized), with individual conductor wire size of 0.75 sq.mm. The power cord termination should be a suitably-rated earthing-type plug at one end and IEC appliance inlet coupler at the other end. Both of the power cord terminations must carry the certification label (mark) of the cognizant safety organization of your country.

Selection Du Cable D'alimentation

Examinez les instructions suivantes pour sélectionner le câble d'alimentation de l'unité.



ATTENTION: *Utilisez seulement le câble d'alimentation fourni avec l'unité.*

Au cas où un câble d'alimentation n'a pas été fourni avec l'unité, sélectionnez le câble selon les instructions suivantes:

- **Pour les unités installées aux USA et au Canada:** Sélectionner un câble flexible, à trois conducteurs qui se trouve dans la liste UL et est certifié CSA; le diamètre de chaque conducteur doit être #18 AWG, d'une longueur maximale de 4,5 mètres. Le câble doit être équipé de prise MEMA Type 5-15P (masse triple) à une extrémité et prise d'appareil IEC à l'autre extrémité.

Chacun des types suivants est acceptable: SV, SVE, SVO, SVT, SVTO, SVTOO, S, SE, SO, SOO, ST, STO, STOO, SJ, SJE, SJO, SJOO, SJT, SJTOO, SP-3, SPE-3, SPT-3, G, W.

- **Pour les unités installées dans d'autres pays** Sélectionner UNIQUEMENT un câble flexible, à trois conducteurs, approuvé par l'organisme approprié de sécurité. Le câble électrique DOIT ÊTRE de Type HAR (Harmonisé), le diamètre de chaque conducteur doit être de 0,75 mm². Une extrémité du câble doit être équipée d'une prise avec mise à la masse appropriée IEC, l'autre d'une prise d'accouplement. Les deux extrémités du câble doivent comporter les marques de l'organisme de sécurité du pays correspondant.

Richtige Auswahl des Stromkabels

Lesen Sie die nachstehenden Anweisungen zur Auswahl des Stromkabels für diese Einheit genauestens.



VORSICHT: *Verwenden Sie ausschließlich die Stromkabel, die mit dieser Einheit geliefert werden.*

Falls KEIN(E) Stromkabel mit der Einheit geliefert wurden, wählen Sie unter den nachstehend genannten Möglichkeiten aus:

- **Für Einheiten, die in den U.S.A. und Kanada installiert werden:**
Wählen Sie ein flexibles drei-phasiges Stromkabel mit individueller Kabeldrahtgröße der Nr. 18 AWG und mit einer maximalen Länge von 4,5 Metern. Das Kabel muß in der IL-Liste geführt werden und von CSA zugelassen sein. Das Kabel sollte an einem Ende mit einem Stecker des Typs MEMA 5-15P (drei-polige Erdung) ausgestattet sein und am anderen Ende mit einem IEC Gerätestecker.

Die folgenden Typen sind akzeptierbar: SV, SVE, SVO, SVT, SVTO, SVTOO, S, SE, SO, SOO, ST, STO, STOO, SJ, SJE, SJO, SJOO, SJT, SJTOO, SP-3, SPE-3, SPT-3, G, W.

- **Für Einheiten, die in anderen Ländern installiert werden:** wählen Sie AUSSCHLIESSLICH ein flexibles, drei-phasiges Stromkabel, das in Ihrem Land durch die zuständige Organisation für Sicherheitsbestimmungen genehmigt ist. Das Stromkabel MUSS vom Typ HAR (harmonisiert) mit einer individuellen Größe von 0,75 mm² sein. Das Kabel sollte mit einem geeigneten Stecker mit Erdung an einem Ende ausgestattet sein und mit einem IEC Gerätestecker am anderen Ende. Beide Kabelenden müssen einen Zulassungsaufkleber der zuständigen Organisation für Sicherheitsbestimmungen Ihres Landes aufweisen.

Troubleshooting

Power-on Self Test (POST)

When the VCN AC is powered-up, each port of the VCN AC starts immediately the power-on self test (POST) sequence; the POWER LED turns orange. If the VCN AC is not powered, the power LED remains OFF. Check the power connections to ensure that the unit is connected to an ac power source.

The power-on self test runs individually for each VCN AC port and it verifies that every component of the port is fully functional. The power-on self test lasts for 30 seconds, during which time the power LED is orange. If the power-on self test is successfully completed, the power LED for each port turns green. If the power-on self test detected a port failure, the power LED of that port remains orange. In this case, contact your supplier.

Check the front panel LEDs to determine each port's status during the POST as presented in Table 6.

Table 6 Determining the VCN AC Port Status During the 30-second Self Test

State	LAN	Line	Power	Notes
Off	Off	Off	Off	VCN AC is not connected to a power source or failed.
Power-on	On	Off	Orange	
Port failure	Off/On	Off/On	On in Orange	More than 30-seconds since power-on.

The normal VCN AC port status are presented in Table 7.

Table 7 Normal VCN AC Port Status

	LAN State	Line State	Power State
If a port is connected	Green	Green	Green
If a port is not connected	Off	Off	Off

Using Front Panel LEDs to Solve Problems

Use the front panel LEDs to determine the status of a VCN AC port after POST.

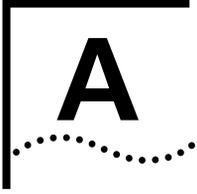
Table 8 VCN AC Port LED Indications following POST

Problem	Solution
The port power LED remains Off after power connection	Check the main power cable connections. Plug in the power cable if necessary.
The power LED remains orange for longer than 30 seconds.	A hardware fault has been detected at this port. Power the VCN AC off and then on. If the problem persists, contact your supplier.
The LINE LED is not green	Check the line connection. If the line connections are appropriate, the local modem is not functioning. Power the VCN AC off and then on. If the problem persists, contact your supplier.

Table 8 VCN AC Port LED Indications following POST

Problem	Solution
The LAN LED is off	<p>Check the Ethernet cable. The problem could be in the VCN AC or in the Ethernet switch.</p> <ol style="list-style-type: none">1 Check that the RJ-45 cable between the VCN AC and the Ethernet switch is connected.2 If the Ethernet LED is still off, replace the RJ-45 cable.3 If after the cable has been replaced, the VCN AC Ethernet LED is still off, use an alternative port.4 If, after the cable has been replaced, the Ethernet switch Ethernet LED is off, use an alternative port on the switch.5 If the problem persists, contact your supplier.





PRODUCT SPECIFICATION

Line Data Rate	up to 10 Mbps, symmetric.
Range	Up to 4000 ft
Cabling	CAT1 to CAT5
Voice	Dial Tone, Toll Quality, PBX features support
Power requirements	
Mains	110W for 110V (steady state, full traffic) 120W for 220V (steady state, full traffic) 90-240 VAC, 47-60 Hz, 120 W.
Standards Compliance	
Safety	UL 1950 C-UL, FCC/ICES EN60950
EMC	FCC 47 CFR part 15, Class A AS/NZS 3548 VCCI Class A CISPR22 Class A CAN/CSA-CISPR22 Class A
Ethernet	IEEE 802.3, 802.1q 1536 bytes maximum frame length
Private Branch Exchange (PBX)	Analog
Management Interface	1 RS-232 port on each CO Card
Agency Certifications	UL, C-UL
Environmental	
Operating Temperature	0°- 60°C
Relative humidity	95% non-condensing

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GLOSSARY

- ac** Alternating Current. Electric current that reverses its direction of flow periodically according to frequency measured in hertz, or cycles per second.
- CO** Central Office. A card in the VCN AC chassis; the card provides an Ethernet port and an LMA port; another name for the Line Card (LC).
- EMC** Electromagnetic compatibility
- HDLC** High-level Data Link Control. HDLC is a bit oriented, synchronous protocol that applies to the data-link message packaging layer (layer 2 of the ISO/OSI model) for computer communications. messages are transmitted in units called frames, which contain differing amounts of data but which must be organized in a particular way.
- Hz** Abbreviation for hertz, electrical cycles pr second.
- ID** Identifier used for the management login procedure.
- ISP** Internet service Provider. A business that supplies Internet connectivity services to individuals, businesses and other organizations within a local area.
- IT** Information Technology
- Krone connectors** Connectors on patch cords used to connect or jumper patch panels
- LAN** Local Area Network. A group of computers and other devices dispersed over a relatively limited area and connected by a communications link that enables every device to interact with any other on the network.
- LED** Light Emitting Diode. A semi-conductor device that converts electrical energy into light, used, for example, for the activity lights on the VCN AC and VCN AP units and appears in green or orange.
- LMA** Local Management Access.

- MAC** Media Access Control. A protocol that defines the way workstations gain access to transmission media, most widely used in reference to LANs. For IEEE LANs, the MAC layer is the lower sublayer of the data link layer protocol.
- MAC address** An address used by the MAC data link sublayer protocol.
- Mbaud** Megabaud
- Mbps** Megabits per second.
- MiniDIN** A connector which connects the VCN AC to the Local Management Interface.
- NA** Not Applicable. Wherever this appears, it means that the specified condition is irrelevant for the case mentioned.
- NAT** Network Address Translation. The process of converting between IP addresses used within an Intranet or other private network and Internet IP addresses. This approach makes it possible to use a large number of addresses within the local Intranet without depleting the limited number of available numeric Internet IP addresses.
- NAU** Network Access Unit. In this case it is the unit installed in a room which enables both voice and high speed data services simultaneously on the existing telephone line. Another name for the VCN AP.
- NCU** Network Concentration Unit. Another name for the VCN AC.
- NSP** Network Service Provider
- POTS** Plain Old Telephone Service. Basic dial telephone connections to the public switched network, without any added features or functions.
- Vac** Volts Alternating Current. The measure of the peak-to-peak voltage swing of an electrical signal.
- VCN** Visitor and Community Network. The system that deploys the VCN Access Concentrator and the VCN Access point(s).
- VCN AC** VCN Access Concentrator, formerly called NCU.
- VCN AP** VCN Access Point, formerly called NAU.
- Vdc** Voltage of direct current.

VDSL Very high bit rate Digital Subscriber Line. The data line which connects the VCN AC to the VCN AP unit. Operates at a rate of 1-10 Mbps.

3COM CORPORATION LIMITED WARRANTY

This warranty applies to customers located in the United States, Australia, Canada (except Quebec), Ireland, New Zealand, U.K., and other English language countries, and countries for which a translation into the local language is not provided

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3Com warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for the following length of time from the date of purchase from 3Com or its authorized reseller:

Ninety (90) days

3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

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3Com warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from 3Com or its authorized reseller. 3Com warrants the media containing software against failure during the warranty period. No updates are provided. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable 3Com published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. 3Com makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the 3Com software product documentation or specifications as being compatible, 3Com will make reasonable efforts to provide compatibility, except where the non compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with 3Com's published specifications or User Guide.

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In addition to the Hardware Warranty and Software Warranty stated above, 3Com warrants that each product sold or licensed to Customer on and after January 1, 1998, that is date sensitive will continue performing properly with regard to such date data on and after January 1, 2000, provided that all other products used by Customer in connection or combination with the 3Com product, including hardware, software, and firmware, accurately exchange date data with the 3Com product, with the exception of those products identified at 3Com's Web site, <http://www.3com.com/products/yr2000.html>, as not meeting this standard. If it appears that any product that is stated to meet this standard does not perform properly with regard to such date data on and after January 1, 2000, and Customer notifies 3Com before the later of April 1, 2000, or ninety (90) days after purchase of the product from 3Com or its authorized reseller, 3Com shall, at its option and expense, provide a software update which would effect the proper performance of such product, repair such product, deliver to Customer an equivalent product to replace such product, or if none of the foregoing is feasible, refund to Customer the purchase price paid for such product.

Any software update or replaced or repaired product will carry a Year 2000 Warranty for ninety (90) days after purchase or until April 1, 2000, whichever is later.

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Customer must contact a 3Com Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from 3Com or its authorized reseller may be required. Products returned to 3Com's Corporate Service Center must be preauthorized by 3Com with a Return Material Authorization (RMA) number or User Service Order (USO) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. Responsibility for loss or damage does not transfer to 3Com until the returned item is received by 3Com. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after 3Com receives the defective product.

3Com shall not be responsible for any software, firmware, information, or memory data of Customer contained in, stored on, or integrated with any products returned to 3Com for repair, whether under warranty or not.

Dead- or Defective-on-Arrival. In the event a product completely fails to function or exhibits a defect in materials or workmanship within the first forty-eight (48) hours of installation but no later than thirty (30) days after the date of purchase, and this is verified by 3Com, it will be considered dead- or defective-on-arrival (DOA) and a replacement shall be provided by advance replacement. The replacement product will normally be shipped not later than three (3) business days after 3Com's verification of the DOA product, but may be delayed due to export or import procedures. The shipment of advance replacement products is subject to local legal requirements and may not be available in all locations. When an advance replacement is provided and Customer fails to return the original product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement product, at list price.

ADDITIONAL SERVICES

Telephone Support, with coverage for basic troubleshooting only, will be provided for ninety (90) days from the date of purchase, on a commercially reasonable efforts basis. Telephone support is available from 3Com only if Customer purchased this product directly from 3Com, or if Customer's reseller is unable to provide telephone support. Please refer to the Technical Support appendix in the user guide for telephone numbers.

3Com's Web and Bulletin Board Service are available at no charge, and provide software and firmware upgrades, a bug list, and technical information about 3Com products.

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GOVERNING LAW

This Limited Warranty shall be governed by the laws of the State of California, U.S.A. excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.

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(408) 326-5000
January 15, 2000

EMC STATEMENTS

FCC CLASS A VERIFICATION STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at the user's own expense.

Changes or modifications not expressly approved by 3Com could void the user's authority to operate this equipment.

CSA STATEMENT

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

VCCI STATEMENT

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective action.

EMC DIRECTIVE COMPLIANCE STATEMENT

This equipment was tested and found to conform to the Council Directive 89/336/EEC for electromagnetic compatibility. Conformity with this Directive is based upon compliance with the following harmonized standards:

- EN 55022 Limits and Methods of Measurement of Radio Interference
- EN 50082-1 Electromagnetic Compatibility Generic Immunity Standard: Residential, Commercial, and Light Industry

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case you may be required to take adequate measures.

AUSTRALIAN COMPLIANCE

This product conforms to the EMC Frameworks and meets the Class A limits of AS3548.

SAFETY STATEMENT

LOW VOLTAGE DIRECTIVE COMPLIANCE

This equipment was tested and found to conform to the Council Directive 72/23/EEC for safety of electrical equipment. Conformity with this Directive is based upon compliance with the following harmonized standard:

- EN 60950 Safety of Information Technology Equipment

