



**READ ME FIRST!!**

**9480 & 4284**

**MULTIPLE PROTOCOL**

**“ALL IN ONE”**

**INTEGRATED ACCESS DEVICE**

**PRODUCT / RELEASE NOTES**

**RELEASE 7.2**

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## Important Safety Instructions



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

When installing, operating, or maintaining this equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- Read and understand all instructions.
- Follow all warnings and instructions marked on this product.
- For information on proper mounting instructions, consult the User's Manual provided with this product.
- The telecommunications interface should not leave the building premises unless connected to telecommunication devices providing primary and secondary protection.
- This product should only be operated from the type of power source indicated in the User's Manual.
- This unit is intended to be powered from either –48 V DC or AC voltage sources. See User's Manual before connecting to the power source.
- The –48 V DC input terminals are only provided for installations in Restricted Access Areas locations.
- Do not use this product near water, for example, in a wet basement.
- Never touch uninsulated wiring or terminals carrying direct current or leave this wiring exposed. Protect and tape wiring and terminals to avoid risk of fire, electric shock, and injury to service personnel.
- To reduce the risk of electrical shock, do not disassemble this product. Service should be performed by trained personnel only. Opening or removing covers and/or circuit boards may expose you to dangerous voltages or other risks. Incorrect re-assembly can cause electric shock when the unit is subsequently used.
- For a unit intended to be powered from –48 V DC voltage sources, read and understand the following:
  - This equipment must be provided with a readily accessible disconnect device as part of the building installation.
  - Ensure that there is no exposed wire when the input power cables are connected to the unit.
  - Installation must include an independent frame ground drop to building ground. Refer to User's Manual.



This symbol is marked on the 4284, adjacent to the ground (earth) area for the connection of the ground (earth) conductor.

- This Equipment is to be Installed Only in Restricted Access Areas on Business and Customer Premises Applications in Accordance with Articles 110-16, 110-17, and 110-18 of the National Electrical Code, ANSI/NFPA No. 70. Other Installations Exempt from the Enforcement of the National Electrical Code May Be Engineered According to the Accepted Practices of the Local Telecommunications Utility.
- For a unit equipped with an AC Wall Plug-In Unit, read and understand the following:
  - Use only the Astrodyne Part # SPU15A-111 48v power supply adapter with this product.
  - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
  - Do not staple or otherwise attach the power supply cord to the building surfaces.
  - Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.
  - The socket outlet shall be installed near the equipment and shall be readily accessible.
  - The Wall Plug-In unit may be equipped with a three-wire grounding type plug, a plug having a third (grounding) pin. This plug is intended to fit only into a grounding type power outlet. Do not defeat the safety purpose of the grounding type plug.
  - Do not allow anything to rest on the power cord. Do not locate this product where the cord may be abused by persons walking on it.
  - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    - a) When the power supply cord or plug is damaged or frayed.
    - b) If liquid has been spilled into the product.
    - c) If the product has been exposed to rain or water.
    - d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by qualified technician to restore the product to normal operation.
    - e) If the product has been dropped or the cabinet has been damaged.
    - f) If the product exhibits a distinct change in performance.

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## Save These Instructions

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## IMPORTANT !!

USER DOCUMENTATION IS AVAILABLE AT OUR WEB SITE.

Documentation:	<a href="http://www.trdcusa.com">http://www.trdcusa.com</a>
Sales:	<a href="mailto:sales@trdcusa.com">sales@trdcusa.com</a>

The **9480** is initially configured by attaching the unit to a serial console via an adapter that uses the secondary interface on the DB25 connector. This adapter is removed before the **9480** is attached to the Network Element. As a minimum, the IP parameters require configuration to allow subsequent use of the telnet console.

The **4284** has the objective of keeping the hardware costs to a minimum. One ramification of this goal is that once port #4 is configured and restored to service, the serial console is no longer available. Removing port #4 from service via the telnet console will not allow the serial console port to immediately be usable. To enable the serial console port to be usable, either power cycle the 4284, or do a software reboot from the telnet console. A message will be output to both the serial and telnet consoles for the administrator to key-in Control-C within 5 seconds on either console. If this is not done, the serial console port will again be unavailable after the 5 second window. Please note that port #4 is automatically removed from service while the serial console is enabled. When port #4 is restored to service by the administrator either from the telnet console or the serial console, the serial console port is once again no longer available.

## 1 INTRODUCTION

The 4284 and 9480 are designed for those situations where only one or a few ports are needed. They provide an inexpensive manner to provide protocol mediation and diversity. The units may be direct powered or via the 10/100 LAN interface using 802.3af Power over Ethernet.

For detailed information on this product, reference the User's Manual.

## 2 PRODUCT FEATURES

The **9480** and **4284** are Multiple Protocol Inter-Networking devices with enhanced vertical services. The 9480 is a single port device, and the 4284 has four ports. Each port may be synchronous, or asynchronous with rates up to 115.2 kbps. Popular protocols such as asynchronous, various Bi-Synchronous variants, HDLC, SDLC, X.25, and E2A are all supported interchangeably on a per port basis. In addition, vertical services for X.25 typically found on Embedded Network Processors have been incorporated. This allows the **9480 / 4284** to directly mediate X.25 to individual circuits over TCP/IP connections.

Consult the User's manual for a complete enumeration of the features..

### 3 RELEASE CHANGES

#### 3.1 RELEASE 7.2 ERRATA

This release corrects minor inadvertent messages issued on the OA&M console. There is no operational impact of this release.

#### 3.2 RELEASE 7.1 ERRATA

- Support added for Optional Facility Throughput class specification on SVC virtual circuits. At least one AMA device has been identified that requires explicit throughput class negotiation. All of the X.25 specification throughput classes are supported. These are 75 through 48000 BPS. Unless needed, this option should always be set to **NONE**. The syntax of the option is as follows:

**Syntax: port <#> VC=<range> [ svctclass=< NONE | Throughput > ]**

- The X.25 Optional Facility for SVC window sizes is corrected. This is an optional feature of a SVC call request and is generally only used during extended address negotiation; and now for throughput class negotiation. Previously, it would advertise the LAPB window for both transmit and receive. It now correctly specifies the administered VC transmission window for TX and the entire LAPB window for RX.
- The X.25 Optional Facility for SVC packet sizes has been enhanced to include 512 and 1024 packet sizes. Generally, large packet sizes are only used on PVC connections. This change would only be relevant for CCITT interfaces where extended addressing is used; or now when the throughput class is negotiated.

#### 3.3 RELEASE 6.1 ERRATA

- Support for TACACS+ RADIUS servers is added. Two servers are supported, a primary and a secondary. Non-standard TCP ports are fully supported. Each server may be individually enabled. The syntax is as follows:

**Syntax: tac < PRI | SEC > [ ipaddr=<IP Address> ]  
[ port=<TCP Port> ]  
[ key="Encryption Key" | NONE ]  
[ ENABLE ]  
[ DISABLE ]**

- The BANNER page has been enhanced up to 24 lines of 80 characters each. Previously it was 10 lines. The syntax is changed as follows:

**Syntax: banner [clear] [L#="Line # Message"]**

#### 3.4 RELEASE 5.1 ERRATA

- The DBRESET command was not deleting the X25PAD configuration, the TSR configuration, the DNS PDD configuration, and the Banner configuration. All these have been corrected.

- Four forwarding groups were added to the PADFWD option for an X.25 VC. These are:
  - GRP1 --> Forwards on ESC, BEL, ENQ, NAK.
  - GRP2 --> Forwards on DEL, CAN, DC2
  - GRP3 --> Forwards on ETX, EOT
  - GRP4 --> Forwards on HT, LF, VT, FF.
- The PADFWD VC option allows multiple forwarding conditions to be applied. Setting a forwarding condition aggregates into the PADFWD option. In order to clear, the PADFWD, the forwarding condition of NONE is used (e.g. port 1 vc=1-7 padfwd=none).
- A correction is implemented to the TCP that prevents the potential for some additional packets at connection teardown.

### 3.5 RELEASE 4.6 ERRATA

- The X25PAD verify report of the maximum packet size (VCPKT) was not presented correctly for sizes of 256 and 512 octets. The operation was correct but the report was incorrect. The report is corrected in this release.
- This release incorporates 202T modem subnetwork support of the REDAC protocol. This allows the virtual network to exist as a subnetwork of a 202T modem network.
- The 64K (65536) baud rate has been added as an acceptable option. This was requested by a customer for international network elements.

### 3.6 RELEASE 4.5 ERRATA

- The Record Boundary Preservation ( RBP ) API used for X.25 virtual circuits over TCP has been enhanced to support higher protocol layers that depend on the Q. bit. This support allows the Eriksson Message Transfer Protocol (MTP) to be used for AMA, and other operation system, processing. Other API selections for an X.25 VC still default to the X.29 interpretation of the Q. bit as required by the PAD functionality. API selection remains on a per VC basis.

### 3.7 RELEASE 4.4 ERRATA

- The console timeout has semantic changes where the number of units specified is now in minutes. This was formerly seconds. The valid range is 1 through 255 minutes, or approximately 4 hours and 15 minutes.
- The PVCSTLNK option for X.25 PVCs has been enhanced to switch the DCD lead as the (B)X.25 link layer is controlled. The net effect is a true emulation of a dynamic modem connection. This operation only applies for a physical DCE connection to the network element.

### 3.8 RELEASE 4.3 ERRATA

- The NORTEL XFER protocol is now supported via the X25PAD PAD API. Since the NORTEL XFER protocol does not have unique forwarding conditions, the forward should be based on the timer only and approximately 3 ticks.

### 3.9 RELEASE 4.2 ERRATA

- The embedded snoop command now performs case conversion on all commands and arguments.
- The rvcrstlnk option has been enhanced such that the BX.25 link enters a disconnect mode when an IP connection has not been made. The BX.25 link is then restarted when the IP connection is subsequently made.
- A port configured for (B)X.25 will now enter disconnect mode when taken out of service. The port will respond with a DM where previously it was merely silent. If the link was active when the port was removed from service, it will send a DISC prior to entering disconnect mode.

### 3.10 RELEASE 4.1 ERRATA

- An advanced hysteresis algorithm has been incorporated for DTE ports that are connected to long 202T chains with residual noise. This enhancement is limited to E2A connections at this time.
- The “Carrier” display on the “Verify Port” report for a DTE port has been removed. Carrier is a DCE option.
- Configuration of a port as DTE automatically sets the port as “Permanently Active”, and also sets the operation of the DTR lead (after suitable cabling) to be always asserted.
- The **9480 / 4284** supports (B)X.25 lframe passwords per BX.25 Issue 3. These may be enabled on a per link basis.

**Syntax:**

```
port <port#> x25pass=<OFF | DFLT | “Password String”>
port <port#> x25xid=<XID Link ID >
```

At the present time, only AMA processing is supported for this BX.25 feature. The AMA option uses passwords in their normal rotation. The default AMA link ID is ‘4’. This is the standard value. Setting the **x25pass** to the **DFLT** value will also set the link ID to its default value. It is noted that this feature is used primarily with PVCs.

- The operation of a PVC upon connection from a TCP/IP endpoint has been made an option.

**Syntax:**

```
port <port#> pvcrest=<ON | OFF>
```

- The PVC may be RESET per standard operation, or the RESET may be inhibited. Some network elements cannot tolerate a RESET on their PVC. The default is to have the RESET issued upon each connection.
- A rather unique feature has been added to the **9480 / 4284**. This feature is not found on any other (B)X.25 device. The option provides that the entire (B)X.25 link be restarted upon a TCP/IP connection to a PVC.

**Syntax:**

```
Port <port#> pvcrstlnk=<ON | OFF>
```

When enabled (ON), the feature operates as follows:

- ❑ When no TCP/IP connection is present to a PVC, the (B)X.25 stays in disconnect mode.
- ❑ When a TCP/IP connection is made to the PVC, the (B)X.25 link is restarted. Each PVC is reset (or not) depending on the pvcreset option for that PVC.
- ❑ When the TCP/IP connection is dropped, the (B)X.25 link is again placed into disconnect mode.

This feature allows craft personnel with multiple AMA interfaces to see the active interface as “green” on their system board. Interfaces that are not currently active show up as “Red”.

- The (B)X.25 built-in snoopers has been enhanced with additional on-demand buffering to capture large flows without over-runs.

### 3.11 RELEASES PRIOR TO 4.1

Contact [support@trdcusa.com](mailto:support@trdcusa.com) with specific questions on releases older than 4.1.

## 4 INSTALLATION ADDENDUM

### 4.1 OBTAINING INFORMATION FROM TELECOMP R&D

Load modules for all the TeleComp R&D products are obtained by sending email to [support@trdcusa.com](mailto:support@trdcusa.com). All other documentation, including release notes, user manuals, “white-papers”, etc. can be accessed on the TeleComp R&D web site and downloaded for your use.

To insure that the correct version of the binary load modules have been retrieved and has not been corrupted during the transmission process, the UNIX® **sum** command can be used.

On some hosts, the “-s” flag must be used with the **sum** command. On X86 linux hosts, the **-sysv** flag must be used with the **sum** command.

Key-in **sum** < name of load module file>.

The values returned must match the numbers shown below:

For example:

Key-in: **sum -sysv dt\_94xx.7.2**

Response: **13103 2127 dt\_94xx.7.2**

### 4.2 DATABASE CONVERSIONS

When moving from one release or version to the next, the database is usually automatically converted. Therefore, **do not attempt** to perform a **backup** on an earlier release/version and then do a **reload** on the new release/version. The database structures may not be the same. For safety reasons, do a **backup** on the earlier release/version in case you need to revert back to this release/version. Then upgrade to the new release/version, and do a backup again which will now be the converted database for use with this release/version. Backups and restores should only be used with the same release/version, not across releases or versions.

### 4.3 SOFTWARE REGISTRATION

The **9480 / 4284** must be registered when it is upgraded with new software. The **9480 / 4284** will continue to operate without registration, but **user ports cannot be placed into service until registration is complete**. See the User’s Manual for the registration procedure.

### 4.4 UTILITIES

The current version of the upgrade, backup, and reload utilities are 18.4 respectively. The getinfo, devrep, and setreg utilities have a current revision level of 1.2 respectively. All of the utilities are available by contacting [support@trdcusa.com](mailto:support@trdcusa.com). Please note that the TCP port for the console is 1023.

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#### **4.5 POWER**

The **9480 / 4284** may be powered via -48VDC directly, or via an AC power adapter. In addition, the devices support 802.3af Power over Ethernet. Should a new unit not illuminate it's power LED, review that the power connections.

### **5 DOCUMENTATION**

The current version of the User manual, and this release letter, may be downloaded from the support area of <http://www.trdcusa.com>. The **4000XA**, **4180**, **4280**, **4281**, **4284**, and **9480** now share a common user manual.

## 6 HARDWARE WARRANTY

The warranty period for hardware shall be ninety (90) days from the date of shipment from TeleComp R&D or a designated manufacturer. Replacements and repairs are guaranteed for the longer of the remaining original warranty period or 30 days.

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### **7.5 LIMITED WARRANTY**

Manufacturer warrants that (a) the SOFTWARE will perform substantially in accordance with the accompanying written materials for a period of ninety (90) days from the date of shipment from TeleComp R&D or a designated manufacturer. Software support is limited to the hours of 9 AM to 5 PM ET Monday through Friday excluding TeleComp R&D observed holidays. Other coverage and extended warranty may be purchased at additional cost. Any implied warranties on the SOFTWARE are limited to ninety (90) days. Some states/jurisdictions do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you.

Manufacturer's and its suppliers' entire liability and your exclusive remedy shall be, at Manufacturer's option, either (a) return of the price paid, or (b) repair or replacement of the SOFTWARE that does not meet this Limited Warranty and which is returned to Manufacturer with a copy of your receipt. This Limited Warranty is void if failure of the SOFTWARE has resulted from accident, abuse, or misapplication. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

### **7.6 NO OTHER WARRANTIES**

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## 9 AUTHOR

Comments and Questions regarding this document or the products covered within this document should be addressed to the author Angel Gomez via email at [angel@trdcusa.com](mailto:angel@trdcusa.com) or via telephone at 386-754-5700.

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