I-O 2677C Display Station

Quick Setup & User's Guide

Version 2.51

**Attachment 1 of BMPT Vfg 243/1991
Certificate of Compliance
by Manufacturer or Importer**

We hereby certify that the Equipment

Nomenclature: <u>Terminal, including keyboard</u>   Model No. <u>I-O 2677C</u>

is in compliance with the requirements of BMPT Vfg 243/1991 RFI
suppressed. The normal operation of some equipment (e.g., signal
generators) may be subject to specific regulations. Please observe the notices
in the user's manual.

The marketing and sale of the equipment was reported to the Federal Office
for Telecommunications Permits (BZT). The right to retest this equipment to
verify compliance with the regulation was given to the BZT.

Name of Manufacturer or

Importer: <u>I-O Corporation</u>

Address: <u>2256 South 3600 West, Salt Lake City, Utah 84119</u>

Anhang zur Anlage 1 zur AmtsblVfg 243/1991

**Bescheinigung des
Herstellers/Importeurs**

Hiermit wird bescheinigt, daß der/die/das

<u>Bildschirmgeräte, einschl. Tastatur</u>
(Gerät, Typ, Bezeichnung)

(DIN-VDE-Norm bzw. EN-Norm Bzw.BMPT-AmtsblVfg 243/1991 funk-
entstört ist.

Dem Bundesamt für Zulassungen in der Telekommunikation wurde das
Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur
Überprüfung der Serie auf die Einhaltung der Bestimmungen eingeräumt.

I-O Corporation
<u>2256 South 3600 West, Salt Lake City, Utah 84119</u>
(Name und Anschrift des Herstellers/Importeurs)

PREFACE

I-O Corporation (I-O) is pleased to introduce you to the I-O 2677C Color Display Station. This full-featured, affordable display is well suited to the varied and complex applications found in today's midrange data processing environments. Thank you for your confidence in I-O products.

The first section of this user's guide contains a **QUICK SETUP GUIDE** which provides an easy-to-use setup for the I-O 2677C.

For your convenience, the Quick Setup Guide and Appendix E (Help Screens) have also been translated into German (Deutsch), French (Français), and Spanish (Español).

The following five sections contained in the User's Guide will give you the information needed to get the most from your I-O 2677C Display Station.

1. **INTRODUCTION** - Provides an overview of the I-O 2677C and includes unpacking instructions and device specifications.

2. **INSTALLATION** - Explains the process for installing the I-O 2677C in your work area and connecting it to the host.

3. **CONFIGURATION** - Explains the process of configuring the I-O 2677C options, as well as how to configure the host system to work properly with the I-O 2677C. Also describes the optional setup for an attached printer.

4. **OPERATION** - Provides details of the I-O 2677C features and how to use them, including host directed and local printing capabilities.

5. **PROBLEM RESOLUTION** - Gives a detailed troubleshooting guide.

We have tried to make this user's guide as complete as possible. If you encounter inaccuracies or omissions, please let us know by contacting us at the address and telephone number printed on the back cover of this manual. Thank you.

PREFACE

This manual was prepared by I-O Corporation for use by its customers, dealers, and affiliates. All attempts are made to ensure that the information presented in this manual is correct. However, no liability, expressed or implied, will be assumed by I-O Corporation or its dealers or affiliates for any damage resulting from the use of this information.

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Guía de instalación rápida**

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I-O 2677C Color Display Station

Quick Setup Guide

Version 2.51

Thank you for buying the I-O 2677C Display Station. This Quick Setup Guide is designed to help you get up and running in a short amount of time.

Unpacking

Check the box for freight or water damage. If any damage is evident, please contact the carrier immediately.

Unpack the unit and keyboard from the shipping carton. The following items are included:

- I-O 2677C Display Station
- Swivel base
- Keyboard
- Power cord
- Parallel printer cable
- Auto-terminate twinax V-cable
- I-O 2677C Quick Setup and User's Guide

QUICK SETUP

UNPACKING DIAGRAM
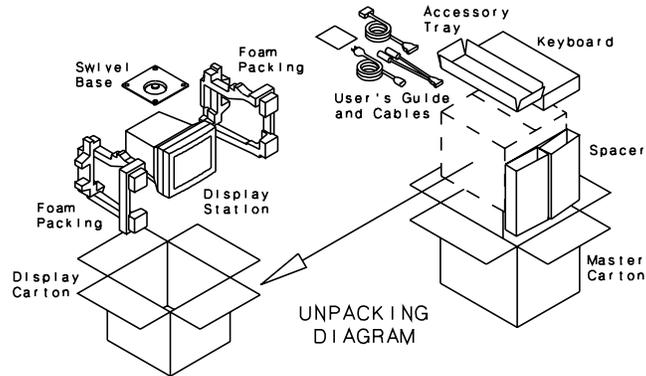
Installation

1. Attach the swivel base to the display unit by inserting the plastic hooks on the swivel base into the slots on the bottom of the display unit, and sliding the swivel base towards the front of the display unit.

2. Connect the keyboard to the Mini-DIN keyboard connector located on the right hand side of the display station. The top of the keyboard cable end connector is flat and marked by an arrow. The arrow must be pointing up when inserting the connector.
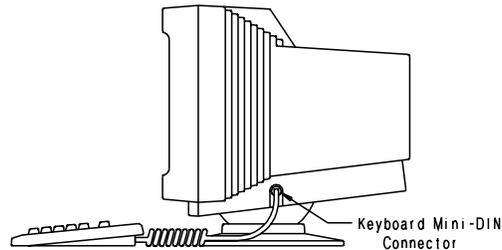
3. Connect the auto-terminate twinax V-cable to the 15-pin "D" connector on the rear panel of the display station.

4. Connect the power cord to the 3-pin NEMA connector on the rear of the display station.

5. Connect the parallel printer cable to the 25-pin "D" connector on the rear panel of the display station, and connect the 36-pin Centronics end to the printer.

> **Warning!** DO NOT connect to a serial RS-232C port on the printer. The I-O 2677C Display Station's 25-pin "D" connector is a parallel printer interface. Connecting RS-232C signals to the printer port will damage the display station.
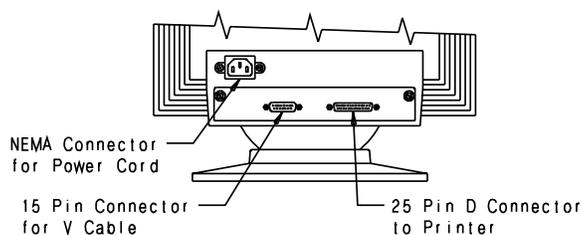
6. Connect the host twinax cable(s) to the auto-terminate V-cable. The V-cable automatically terminates when one cable is attached, and automatically cables through when two cables are attached.

7. Plug the power cord into a grounded power outlet.

> **Danger!** For your personal safety, and the protection of the display station, make sure the display station is properly grounded.

> **Warnung!** Für Ihren persönlichen Schutz und den Schutz der Datensichtstation muss das Gerät ordnungsgemäss geerdet sein.

Configuration

1. Set the "restricted" options by pressing and holding the <Reset> key or the space bar while powering on the display station. A self- test screen is briefly displayed, followed by Setup Screen 1, as shown below. The "restricted" options are indicated by an asterisk (*) to the left of the option.

QUICK SETUP

Warning!   Set the "restricted" options, before running the display station on your host, as factory default settings may conflict with other devices attached to the same twinax cable.

Note: Be sure the host has display and printer devices configured that match the types and cable addresses selected for the "restricted" options. See Chapter 3 of the I-O 2677C User's Guide for further information on host configuration.

```
                              Setup Screen 1

*                        Language:    U.S./Canada (English)
*                     Multinational:  No
*       Terminal session emulation:   3197D
*                         Address:    6
*       Terminal session emulation:   DISABLED
*                         Address:    0
*       Terminal session emulation:   DISABLED
*                         Address:    1
*               Printer emulation:    5224-2
*                         Address:    3
*                     Keyboard ID:    U.S.
                       Type Ahead:    DISABLED
         Screen auto-dim Interval:    5 minutes
                      Ruler Sytle:    +
                 Key-click volume:    HIGH
                    Alarm volume:     HIGH
```

2. Set the non-restricted options to match your needs. These options can also be set at any time by pressing the <Shift><Setup> key. (<Setup> on 122-key keyboards.)

3. Set the printer options on Setup Screen 2 (shown below) to match your printing needs. A different Setup Screen 2 may be shown, depending on which printer emulation has been selected on Setup Screen 1, and which printer is selected on Setup Screen 2.

Printer = Disabled

```
                        Setup Screen 2


Form feed after local screen dump:         YES
                    Character set:          ASCII



SPACE BAR = change value           ENTER = save values
```

Printer = 4214 (Proprinter)

```
                        Setup Screen 2

                   Printer type:   24-PIN PROPRINTER
Form feed after local screen dump:  YES
         Page eject is produced by:  FORM FEED
              Line ending mode:     TRUNCATE
           Front panel override:    NO
               Carriage width:      WIDE
           15-CPI prints with:      17 CPI Native
             Printer is set for:    CONTINUOUS FORMS
                Character set:      C.P. 437
       Downloadable Characters:     Yes
           Command Pass-Thru:       ENABLED
            EBCDIC Delimiters:      50 6C


SPACE BAR = change value           ENTER = save values
```

QUICK SETUP

Printer = 4214 (Epson)

```
                              Setup Screen 2

                    Printer type:    24-PIN EPSON
   Form feed after local screen dump:    YES
           Page eject is producted by:    FORM FEED
                   Line ending mode:    TRUNCATE
                Front panel override:    NO
                     Carriage width:    WIDE
                 15-cpi prints with:    17 CPI Native
                  Printer is set for:    CONTINUOUS FORMS
                      Character set:    C.P. 437
                 Command Pass-Thru:    ENABLED
                  EBCDIC Delimiters:    50 6C


SPACE BAR = change value              ENTER = save values
```

Printer = 3812/5219

```
                              Setup Screen 2


    Form feed after local screen dump:        YES
                       Paper source:        PRINTER DEFAULT
                 Command Pass-Thru:        ENABLED
                  EBCDIC Delimiters:        50 6C



SPACE BAR = change value              ENTER = save value
```

Printer = 5224/5225/5256

```
                      Setup Screen 2

      Form feed after local screen dump:    YES
             Page eject is produced by:     FORM FEED
                    Printer is set for:     CONTINUOUS FORMS
                     Character set:         ASCII
                              CPI:          HOST
                              LPI:          HOST
              Command Pass-Thru:            ENABLED
                EBCDIC Delimiters:          50 6C
      Printer's HEX codes for 10 CPI:
      Printer's HEX codes for 15 CPI:
       Printer's HEX codes for 6 LPI:
       Printer's HEX codes for 8 LPI:
           Printer Initialization String:

 SPACE BAR = change value                   ENTER = save values
```

4.   Exit the setup mode by pressing <Enter> as many times as needed to
     exit. The settings are automatically saved when you exit.

5.   The I-O 2677C will reset itself and again display the self-test screen. A
     system sign-on screen should then appear.

6.   Perform a printer self-test by pressing <Alt><Alt><P> on the keyboard.
     A test pattern should be generated on the attached printer.

Operation

To help utilize the features of the I-O 2677C Display Station, the
following on-line help screens are available:

　　　1.   Screen Functions
　　　2.   Printer Functions
　　　3.   Status Line Indicators

To enter the on-line Help mode, press <Alt><Alt><Help>. Please refer to
Appendix E for details regarding the three on-line Help screens.

QUICK SETUP

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Datensichtstation I-O 2677C

Installationsanleitung

Ausgabe 2.51

Wir danken Ihnen für den Kauf der Datensichtstation I-O 2677C. Mit Hilfe der vorliegenden kurzen Installationsanleitung werden Sie Ihr Gerät schnell in Gebrauch nehmen können.

Auspacken

Bitte sehen Sienach, ob am Karton Transport- oder Wasserschäden sichtbar sind. Wenn ja, sofort das zuständige Transportunternehmen.

Gerät und Tastatur aus dem Versandkarton nehmen. Die folgenden Teile sollten vorhanden sein:

- Datensichtstation I-O 2677C
- Drehuntersatz
- Tastatur
- Stromkabel
- Parallel-Druckerkabel
- Twinax-V-Kabel mit automatischem Endwiderstand
- Installationsanleitung und User's Guide (Gebrauchsanleitung) für die I-O 2677C

INSTALLATIONSANlEITUNG

AUSPACKEN DER DATENSICHTSTATION
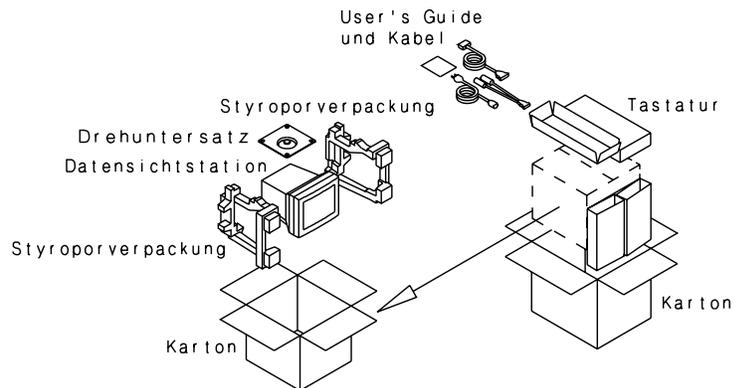
Aufbau

1. Den Drehuntersatz an der Datensichtstation anbringen; hierzu die Plastikhaken am Untersatz in die Schlitze auf der Unterseite der Datensichtstation einführen. Dann den Drehuntersatz nach vorne schieben.

2. Die Tastatur mit dem Mini-DIN-Tastaturanschluß auf der rechten Seite der Datensichtstation verbinden. Die Oberseite des Tastaturkabelsteckers ist flach und durch einen Pfeil gekennzeichnet. Der Pfeil muß bei Kabelanschluß nach oben zeigen.
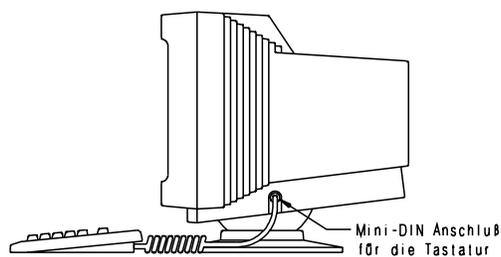
Hinweis: Die drei folgenden Anschlüsse befinden sich auf der Rückseite des Geräts.

3. Das Twinax-V-Kabel mit dem "D"-Anschluß (15 Stifte) verbinden.

4. Das Netzkabel mit dem NEMA-Anschluß (3 Stifte) verbinden.

5. Das Parallel-Druckerkabel mit dem "D"-Anschluß (25 Stifte), und das andere Ende (36 Stifte) mit dem Drucker verbinden.

> **Vorsicht!** NICHT an einen Serienanschluß RS-232C am Drucker anschließen! Der "D"-Anschluß (25 Stifte) der Datensichtstation I-O 2677C ist eine Paralleldrucker-Scnnittstelle. Anschluß von RS- 232C-Signalen an den Druckeranschluß beschädigt die Datensichtstation.
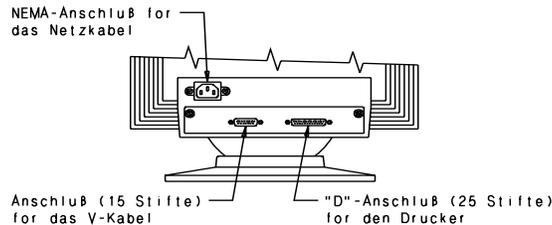
6. Das/die Twinax-Kabel des Hosts mit dem V-Kabel verbinden. Das V-Kabel schließt sich automatisch ab, wenn nur ein Kabel angeschlossen wird, und kabelt bei zwei Kabeln automatisch durch.

7. Das Stromkabel mit einer geerdeten Steckdose verbinden.

> **Warnung!** Für Ihren persönlichen Schutz und den Schutz der Datensichtstation muß das Gerät ordnungsgemäß geerdet sein.

Konfiguration

1. Durch Drücken und Untenhalten der Rückstelltaste <Grdst> oder der Leertaste während des Einschaltens der Datensichtstation werden die Sonderfunktionen festgelegt. Eine Selbsttest-Anzeige erscheint kurz, gefolgt von der unten gezeigten Einstellungs- Anzeige 1 (Konfigurationsmenü 1). Die Sonderfunktionen sind links durch ein sternchen (*) gekennzeichnet.

INSTALLATIONSANlEITUNG

Vorsicht!   Die Sonderfunktionen sollten vor Gebrauch der
Datensichtstation mit dem Host festgelegt werden, da die
vom Hersteller eingestellten Standardwerte möglicherweise
nicht mit anderen an das gleiche Twinax-Kabel
angeschloßenen Geräten funktionieren.

Hinweis: Die konfigurierten Datensichtgeräte und Drucker des Hosts
müssen den für die Sonderfunktionen gewünschten Typen
und Kabeladressen entsprechen. Siehe 3. Kapitel des I-O
2677C User's Guide fürweitere Hinweise zur Konfiguration
des Hosts.

2.   Die Normalfunktionen wie gewünscht festlegen. Diese können auch
jederzeit durch Drücken der Tasten <Shift><Defin> festgelegt werden.
(<Defin> auf der 122-Tasten-Tastatur.)

```
                          Konfigurationsmenü 1

   *                          Sprache:     Austrian/German
   *                     Multinational:     Nein
   *             Logischer Bildschirm:     3197D
   *                          Adresse:     6
   *             Logischer Bildschirm:     Nicht Definiert
   *                          Adresse:     0
   *             Logischer Bildschirm:     Nicht Definiert
   *                          Adresse:     1
   *                 Druckeremulation:     5224-2
   *                          Adresse:     3
   *            Tastaturidentifikation:     Österr/Deutsch
                       Schnelleingabe:     Ausgeschaltet
          Dunkelschaltungs-Intervall:     5 Minuten
                            Linealart:     +
                       Tastaturklicker:     Laut
                     Alarmlautstärke:     Laut

LEERTASTE = Ändern der Werte          TASTE "DAT FREIG" = Werte sichern
```

3.   Die Druckerfunktionen in Einstell-Anzeige 2 (Konfigurationsmenü 2)
wie gewünscht festlegen. Diese Anzeige entspricht der im
Konfigurationsmenü 1 gewählten Druckeremulation.

Drucker = gesperrt

```
                        Konfigurationsmenü 2

Automatischer Formularvorschub nach lokaler Hardcopy:     Ja
                                         Zeichensatz:     C.P. 850




LEERTASTE = Ändern der Werte          TASTE "DAT FREIG" = Werte sichern
```

Drucker = 4214 (Proprinter)

```
                        Konfigurationsmenü 2

                                      Druckertyp:     24-Nadel Proprinter
Automatischer Formularvorschub nach lokaler Hardcopy:     Ja
                       Papiertransport erfolgt durch:     Formularvorschub
                              Zeilenendemodus:     Abbrechen
             Übersteuern der Druckereinstellung:     Nein
                               Wagenbreite:     Breit
                        15-cpi drucken wie:     17 CPI Native
                               Formularart:     Endlosformular
                              Zeichensatz:     C.P. 850
                       Ladbarer Zeichensatz:     Ja
                     Pass Thru - Befehl:     Aktiviert
                   EBCDIC Befehlscode:     50 6C

LEERTASTE = Ändern der Werte          TASTE "DAT FREIG = Werte sichern
```

Deutsch

INSTALLATIONSANlEITUNG

Drucker = 4214 (Epson)

```
                          Konfigurationsmenü 2

                                 Druckertyp:    24-Nadel Epson
   Automatischer Formularvorschub nach lokaler Hardcopy:    Ja
                    Papiertransport erfolgt durch:    Formularvorschub
                            Zeilenendemodus:    Abbrechen
             Übersteuern der Druckereinstellung:    Nein
                             Wagenbreite:    Breit
                        15-cpi drucken wie:    17 CPI Native
                              Formularart:    Endlosformular
                             Zeichensatz:    C.P. 850
                      Pass Thru - Befehl:    Aktiviert
                     EBCDIC Befehlscode:    50 6C


   LEERTASTE = Ändern der Werte        TASTE "DAT FREIG" = Werte sichern
```

Drucker = 3812/5219

```
                          Konfigurationsmenü 2

   Automatischer Formularvorschub nach lokaler Hardcopy:    Ja
                          Papierzuführung:    lt. Druckerdefinition
                      Pass Thru - Befehl:    Aktiviert
                     EBCDIC Befehlscode:    50 6C




   LEERTASTE = Ändern der Werte        TASTE "DAT FREIG" = Werte sichern
```

Drucker = 5224/5225/5256

Konfigurationsmenü 2

Automatischer Formularvorschub nach lokaler Hardcopy:	Ja
Papiertransport erfolgt durch:	Formularvorschub
Formularart:	Endlosformular
Zeichensatz:	C.P. 850
Zeichendichten in CPI:	Host
Zeichendichten in LPI:	Host
Pass Thru - Befehl:	Aktiviert
EBCDIC Befehlscode:	50 6C
Drucker HEX-Code für 10 CPI:	
Drucker HEX-Code für 15 CPI:	
Drucker HEX-Code für 6 LPI:	
Drucker HEX-Code für 8 LPI:	
Drucker-Grundeinstellung:	

LEERTASTE = Ändern der Werte   TASTE "DAT FREIG = Werte sichern

---

Deutsch

4.   Die Eingabe-Taste <Daten Frieg> drücken, bis der Konfigurationen beendet ist. Die festgelegten Funktionen werden bei Beendung automatisch beibehalten.

5.   Die Datensichtstation I-O 2677C führt eine automatische Rückstellung durch und zeigt wieder die Selbsttest-Anzeige. Danach sollte eine System-Sign On-Anzeige sichtbar sein.

6.   Den Selbsttest durch Drücken der Tasten <Alt><Alt><P> durchführen. Der angeschlossene Drucker druckt ein Selbsttestmuster.

Bedienung

Als Hilfe bei der Bedienung der Datensichtstation I-O 2677C können die folgenden on-line-Hilfsanzeigen zu Rate gezogen werden:

1.   Anzeigefunktionen
2.   Druckerfunktionen
3.   Statuszeilen-Anzeige

Hierzu die Tasten <Alt><Alt>< Bed Hilfe> drücken. Siehe Anhang E für weitere Einzelheiten bezüglich dieser drei Anzeigen.

Keine weiteren Hinweise auf dieser Seite.

Station de visualisation I-O 2677C

Guide d'installation rapide

Version 2.51

Nous vous remercions d'avoir acheté une station de visualisation I-O 2677C. Ce "Guide d'installation rapide" a été préparé dans le but de minimiser le temps requis pour l'installation et la mise en marche de la station de visualisation.

Déballage

Lors de la réception de la station de visualisation, vérifiez l'état du carton d'emballage pour détecter tous dégâts causés lors du transport ou par une inondation. En cas de dégâts apparents, veuillez prendre contact immédiatement avec la compagnie de transport.

Retirez l'écran et le clavier du carton d'emballage. Ce dernier doit contenir:

- La station de visualisation I-O 2677C
- Le socle pivotant
- Le clavier
- Le cordon d'alimentation
- Le câble de l'imprimante parallèle
- Le câble V twinax à terminaison automatique
- Le "Guide d'installation rapide" et le "Guide d'utilisation" (User's Guide)

Français

GUIDE D'INSTALLATION RAPIDE

**INSTRUCTIONS DE DEBALLAGE DU
TERMINAL A ECRAN**
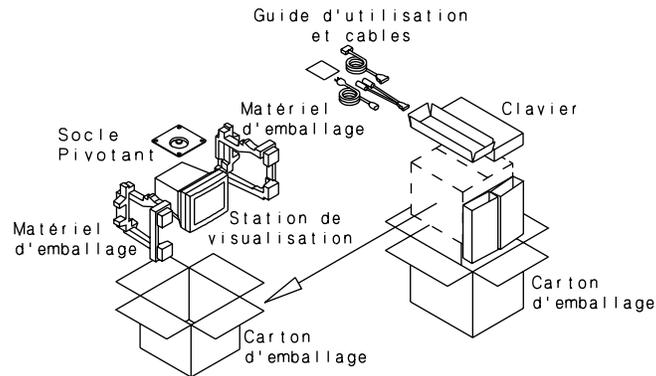
Installation

1. Attachez le socle pivotant à la station de visualisation (moniteur). Pour ce faire, insérez les crochets en plastique du socle pivotant dans les fentes situées sur la partie inférieure de la station de visualisation tout en faisant glisser le socle pivotant vers l'avant.

2. Branchez le clavier au connecteur Mini-DIN situé sur la partie droite de la station de visualisation. La partie supérieure du connecteur du câble du clavier est plate et est identifiée par une flèche. Lors du branchement du connecteur, la flèche doit être orientée vers le haut.
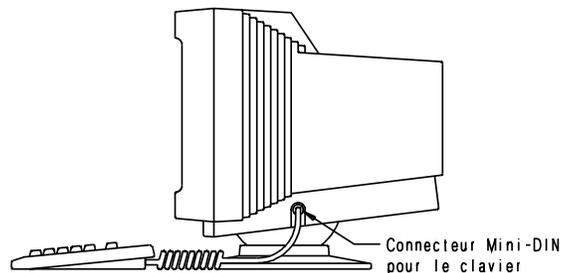
3. Branchez le câble V twinax à terminaison automatique au connecteur "D" à 15 broches situé sur le panneau arrière de la station de visualisation.

4. Branchez le cordon d'alimentation au connecteur NEMA à 3 broches situé sur le panneau arrière de la station de visualisation.

5. Branchez le câble de l'imprimante parallèle au connecteur "D" à 25 broches situé sur le panneau arrière de la station de visualisation. Branchez ensuite le connecteur Centronics à 36 broches à l'imprimante.

   Avertissement!   NE BRANCHEZ PAS le connecteur Centronics du câble au port série RS-232C de l'imprimante. En effet, le connecteur "D" à 25 broches de la station de visualisation I-O 2677C est une interface réservée au branchement de l'imprimante parallèle.

6. Branchez le(s) câble(s) twinax de l'ordinateur principal au connecteur du câble V à terminaison automatique. Le câble V se referme automatiquement si vous ne branchez qu'un seul câble. Par contre, il sert de dispositif de raccordement lorsque vous branchez deux câbles.

Connecteur NEMA réservé au branchement du cordon d'alimentation

Connecteur à 15 broches réservé au branchement du câble V

Connecteur à 15 broches réservé au branchement de l'imprimante parallèle

Français
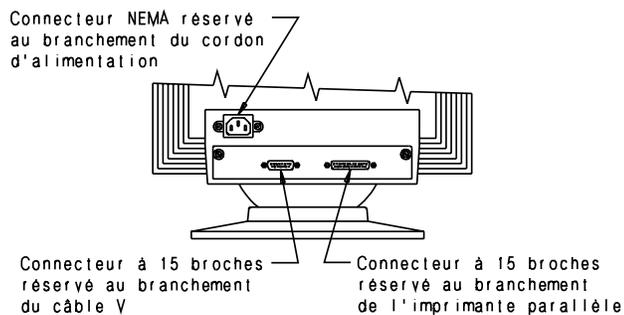
7. Branchez le cordon d'alimentation à une prise de courant mise à la terre.

   Danger!   Pour votre sécurité et pour protéger la station de visualisation, le cordon d'alimentation doit être branché à une prise de courant correctement mise à la terre.

GUIDE D'INSTALLATION RAPIDE

Configuration

1. Réglez les options "restreintes" en mettant la station de visualisation sous tension tout en appuyant sur la touche <Rest> (Réinitialisation) ou sur la barre d'espacement. Des données relatives au test automatique sont brièvement affichées sur l'écran suivies de l'écran de réglage (Installation de l'Ecran 1), comme illustré ci-dessous. Les options "restreintes" sont marquées d'un astérisque (*) placé sur la partie gauche de l'écran.

   Avertissement!   Vous devez régler les options "restreintes" avant d'utiliser votre station de visualisation avec l'ordinateur principal. En effet, les réglages par défaut effectués en usine peuvent être incompatibles avec les autres dispositifs raccordés par le même câble twinax.

   Nota: Vérifiez si les adresses et les types de câbles sélectionnés lors du réglage des options "restreintes" correspondent bien aux adresses et aux types de câbles des imprimantes et des dispositifs de visualisation raccordés à l'ordinateur principal.

GUIDE D'INSTALLATION RAPIDE

```
                         Installation de l'Ecran 1

        *                            Langue:    Canadian French
        *                      Multinaational:    Non
        *        Emulation de session terminale:    3197D
        *                           Adresse:    6
        *        Emulation de session terminale:    Désactivé
        *                           Adresse:    0
        *        Emulation de session terminale:    Désactivé
        *                           Adresse:    1
        *          Emulation de l'imprimante:    Désactivé
        *                           Adresse:    3
        *          Indentification du clavier:    Canadian French
                              Buffer calvier:    Désactivée
         Intervalle de l'intensité de l'écran:    5 minutes
                       Catégorie de regle:    +
               Volume du déclic de toucher:    Haut
                       Volume de l'alarme:    Haut


  BARRE D'ESPACEMENT = Changement de valeur
  ENTRÉE = Sauvegarde des valeurs
```

2. Réglez les autres options (non restreintes) selon votre choix. Vous pouvez réglez ces options à n'importe quel moment. Pour ce faire, appuyez simultanément sur les touches <Shift> et <Config>. Si votre station de visualisation est équipée d'un clavier à 122 touches, appuyez seulement sur la touche <Config>.

3. Réglez les options de l'imprimante de l'écran de réglage 2 (Installation de l'Ecran 2). L'écran de réglage affiché sur votre moniteur correspond à l'émulation d'impression sélectionné par l'intermédiaire de l'écran de réglage 1 (Installation de l'Ecran 1).

Imprimante = Désactivée

```
                       Installation de l'Ecran 2

   Avancmnt page après vidage écran local:    Oui
                       Jeu de caractères:    C.P. 850


  BARRE D' ESPACEMENT = Changement de valeur
  ENTRÉE = Sauvegarde des valeurs
```

Français

GUIDE D'INSTALLATION RAPIDE

Imprimante = 4214 (Proprinter)

```
Installation de l'Ecran 2

                    Type d' imprimate:    Proprinter a 24 aiguilles
Avancmnt page après vidage écran local:   Oui
            Éjection de page produite par: Presentation de Forme
                Mode de fin de ligne:      Tronquage
              Panneau avant avancé:        Non
                Largeur de chariot:        Large
          Impression à 15 cpi comme:       17 CPI Native
       L'imprimante est installée pour:    Pages continues
                   Jeu de caractèrs:       C.P. 850
             Downloadable caractèrs:       Oui
              Exécution de commande:       Activée
                  EBCDIC Delimiters:       50 6C


BARRE D'ESPACEMENT = Changement de valeur
ENTREÉ = Sauvegarde des valeurs
```

Imprimante = 4214 (Epson)

```
Installation de l'Ecran 2

                    Type d' imprimate:    Epson a 24 aiguilles
Avancmnt page après vidage écran local:    Oui
            Éjection de page produite par: Presentation de Forme
                Mode de fin de ligne:      Tronquage
              Panneau avant avancé:        Non
                Largeur de chariot:        Large
          Impression à 15 cpi comme:       17 CPI Native
       L'imprimante est installée pour:    Pages continues
                   Jeu de caractères:      C.P. 850
              Exécution de commande:       Activée
                  EBCDIC Delimiters:       50 6C


BARRE D'ESPACEMENT = Changement de valeur
ENTREÉ = Sauvegarde des valeurs
```

GUIDE D'INSTALLATION RAPIDE

Imprimante = 3812/5219

```
Installation de l'Ecran 2


Avancmnt page après vidage écran local:      Oui
                       Source de papier:      Appel Automatique de Feuille
                 Exécution de command:      Activée
                     EBCDIC Delimiters:      50 6C



BARRE D'ESPACEMENT = Changement de valeur
ENTREÉ = Sauvegarde des valeurs
```

Imprimante = 5224/5225/5256

```
Installation de l'Ecran 2


Avancmnt page après vidage écran local:      Oui
               Éjection de page produite par:      Presentation de Forme
               L'imprimante est installée pour:      Pages continues
                     Jeu de caractères:      C.P. 850
                 Caractéres par pouce:      Système
                    Lignes par pouce:      Système
             Exécution de commande:      Activée
                   EBCDIC Delimiters:      50 6C
   Codes d'imprimante HEX pour 10 CPI:
   Codes d'imprimante HEX pour 15 CPI:
   Codes d'imprimante HEX pour   6 LPI:
   Codes d'imprimante HEX pour   8 LPI:
             Printer Initialization String:



BARRE D'ESPACEMENT = Changement de valeur
ENTREÉ = Sauvegarde des valeurs
```

Français

4. Sortez du mode de réglage en appuyant sur la touche <Entreé> autant de fois nécessaire. Les réglages effectués sont automatiquement sauvegardés lorsque vous sortez du mode de réglage.

5. La station de visualisation I-O 2677C se remet automatiquement en marche et les données relatives au test automatique s'affichent de nouveau à l'écran. Une fois le test automatique terminé, vous pourrez entrer en communication avec le système.

GUIDE D'INSTALLATION RAPIDE

6. Lancez le test automatique de l'imprimante en appuyant simultanément sur les deux touches <Alt> (Alterner) du clavier et sur la touche <P>. L'imprimante imprime alors les données du test automatique.

Utilisation

Les écrans d'assistance en ligne suivants vous permettront d'utiliser toutes les caractéristiques de la station de visualisation I-O 2677C:

1. Fonctions de l'écran
2. Fonctions de l'imprimante
3. Indicateurs de la ligne d'état

Pour entrer en mode d'assistance en ligne, appuyez simultanément sur les touches <Alt>, <Alt> <Aide> du clavier. Veuillez consulter l'Appendice E du "Guide d'utilisation" pour obtenir des informations supplémentaires relatives aux écrans d'assistance en ligne.

Terminal a Color I-O 2677C

Guía de instalación rápida

Versión 2.51

Le agradecemos que haya comprado de la Terminal I-O 2677C. Esta Guía de instalación rápida se ha diseñado para ayudarle a instalar la terminal y a que funcione en el menor tiempo posible.

Desembalaje

Revise la caja por daños de agua o de transporte. Si hay daños evidentes, comuníquese inmediatamente con el transportador.

Saque la unidad y el teclado de la caja de embalaje. El contenido debe ser el siguiente:

- Terminal I-O 2677C
- Base giratoria
- Teclado
- Cable de corriente alterna
- Cable paralelo de la impresora
- Cable V twinax auto terminador
- Guía del usuario y Guía de instalación rápida I-O 2677C

Español

GUÍA DE INSTALACIÓN RÁPIDA

**INSTRUCCIONES DE DESEMBALAJE
DE LA TERMINAL**
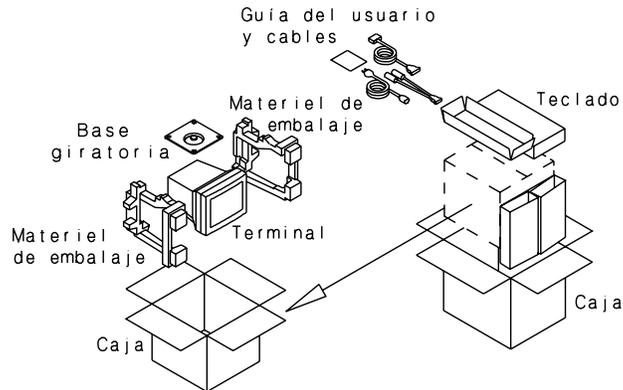
Instalación

1. Conecte la base giratoria a la terminal insertando los ganchos plásticos de la base en las ranuras de la parte inferior de la terminal y deslice la base giratoria hacia el frente de la terminal.

2. Conecte el teclado al conector Mini-DIN, ubicado en el lado derecho de la terminal. La parte superior del extremo del conector del cable del teclado es plano y está marcado con una flecha. La flecha debe indicar hacia arriba cuando realice la conexión.
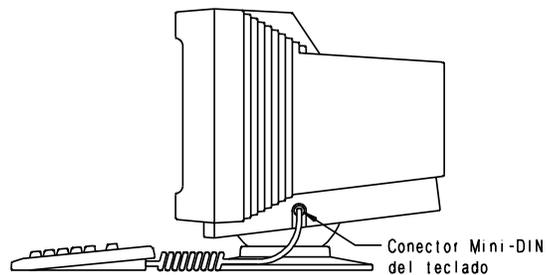
3. Conecte el cable V twinax auto-terminador al conector "D" de 15 contactos en el panel posterior de la terminal.

4. Conecte el cable de corriente alterna al conector NEMA de 3 contactos en la parte posterior de la terminal.

5. Conecte el cable paralelo de la impresora al conector "D" de 25 contactos en el panel posterior de la terminal, también conecte el extremo del cable Centronics de 36 contactos a la impresora.

    ¡Advertencia! NO conecte a un puerto en serie RS-232C de la impresora. El conector "D" de 25 contactos de la terminal I-O 2677C es una interface en paralelo de impresora. Si conecta señales RS-232C al puerto de la impresora dañará la terminal.

Conector NEMA para
el cable de
alimentación

Conector de 15 contactos   Conector D de 25 contactos
para el cable V   para la impresora
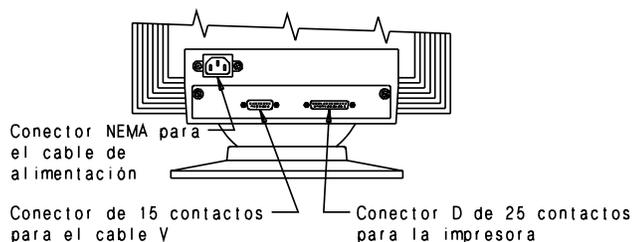
6. Conecte el(los) cables twinax del ordenador al cable V auto terminador. El cable V termina automáticamente cuando conecta un cable y automáticamente permite la conexión de otro dispositivo twinax cuando conecta dos cables.

7. Enchufe el cable de corriente alterna en una toma de corriente con conexión a tierra.

    ¡Peligro!   Para seguridad personal y protección de la terminal, asegúrese de que la terminal está debidamente conectada a tierra.

Español

GUÍA DE INSTALACIÓN RÁPIDA

Configuración

1. Seleccione las opciones "reservadas" pulsando y manteniendo la tecla <Rest> o la barra <Espaciadora> mientras enciende la terminal. Una autoprueba se visualizará brevemente, seguida por la Pantalla 1 de selección, (Pantalla Setup 1) como se muestra abajo. Las opciones "reservadas" se indican con un asterisco (*) al lado izquierdo de la opción.

> **¡Advertencia!** Debe seleccionar las opciones "reservadas" antes de hacer funcionar la terminal en el ordenador, ya que las selecciones predeterminadas pueden ocasionar conflicto con otros dispositivos conectados al mismo cable twinax.

> **¡Nota!** Asegúrese de que el ordenador tiene dispositivos de terminal y de impresión configurados que corresponden a los tipos y a las direcciones de cables que ha seleccionado para las opciones "reservadas". Vea el Capítulo 3 de la Guía del usuario (I-O 2677C User's Guide) para obtener más información sobre la configuración del ordenador.

```
                          Pantalla Setup 1

    *                          Idioma:      L/A Spanish
    *                     Multinacional:    No
    *    Sesión de emulación de la terminal:  3197D
    *                       Dirección:      6
    *    Sesión de emulación de la terminal:   Inhibida
    *                       Dirección:      0
    *    Sesión de emulación de la terminal:  Inhibida
    *                       Dirección:      1
    *                 Impresora emulada:    Inhibida
    *                       Dirección:      3
    *                  ID del teclado:      Habla Español
                         Type-ahead:        Inhibida
       Intervalo de autocontrol de brillo:  5 Minutos
                    Estilo de la regla:     +
       Volumen del ruido de las teclas:     Alto
            Volumen de la alarma:           Alto

 BARRA ESPACIADORA = Cambia el valor     INTRO = Almacena los valores
```

2. Seleccione las opciones "no reservadas" que correspondan a las propias necesidades. Estas opciones pueden también seleccionarse en cualquier momento pulsando la tecla <Shift> (Desplazamiento/ Mayúsculas) <Estbl> (Selección). (<Estbl> (Selección) en los teclados de 122 teclas.)

3. Seleccione las opciones de la impresora en la Pantalla 2 de selección (Pantalla Setup 2, que se muestra abajo) para que correspondan con las necesidades de impresión. Verá la Pantalla 2 de selección diferente, de acuerdo con la emulación seleccionada para la impresora en la Pantalla 1 de selección (Pantalla Setup 1).

Español

GUÍA DE INSTALACIÓN RÁPIDA

Impresora: Inhibida

```
                        Pantalla Setup 2


Alimentación de formularios después de vaciar la pantalla:      Sí
                                  Juego de caracteres:      Usuario Definió



BARRA ESPACIADORA = Cambia el valor        INTRO = Almacena los valores
```

Impresora: 4214 (Proprinter)

```
                        Pantalla Setup 2

                           Tipo de impresora:      Proprinter de 24 agujas
Alimentación de formularios después de vaciar la pantalla:      Sí
                 Expulsión de hoja producida por:      Alimentacion de formulario
                 Modo de terminación de línea:      Truncar
                    Anulación de panel frontal:      No
                          Ancho del carro:      Ancho
                       15-cpi imprimen como:      17 CPI Nativo
             La impresora se ha configurado para:      Formularios continuos
                        Juego de caracteres:      C.P. 850
                       Bajada de caracteres:      Si
                        Comando de pasada:      Activado
   EBCDIC Secuencia del modo Comando de Pasada es:      50 6C


BARRA ESPACIADORA = Cambia el valor        INTRO = Almacena los valores
```

GUÍA DE INSTALACIÓN RÁPIDA

Impresora: 4214 (Epson)

```
                                         Pantalla Setup 2

                        Tipo de impresora:    Epson de 24 agujas
Alimentación de formularios después de vaciar la pantalla:  Sí
                Expulsión de hoja producida por:  Alimentacion de formulario
                   Modo de terminación de línea:  Truncar
                      Anulación de panel frontal:  No
                             Ancho del carro:  Ancho
                        15-cpi imprimen como:  17 CPI Nativo
            La impresora se ha configurado para:  Formularios continuos
                         Juego de caracteres:  Usuario Definió
                          Comando de pasada:  Activado
    EBCDIC Secuencia del modo Comando de Pasada es:  50 6C


BARRA ESPACIADORA = Cambia el valor        INTRO = Almacena los valores
```

Impresora: 3812/5219

```
                                         Pantalla Setup 2


Alimentación de formularios después de vaciar la pantalla:  Sí
                           Fuente del papel:  Valor determinado de la impresora
                          Comando de pasada:  Activado
    EBCDIC Secuencia del modo Comando de Pasada es:  50 6C



BARRA ESPACIADORA = Cambia el valor        INTRO = Almacena los valores
```

Español

GUÍA DE INSTALACIÓN RÁPIDA

Impresora: 5224/5225/5256

```
                        Pantalla Setup 2

Alimentación de formularios después de vaciar la pantalla:  Sí
                        Expulsión de la hoja producida por:  Alimentacion de formulario
                        La impresora se ha configurado para:  Formularios continuos
                                  Juego de caracteres:  Usuario Definió
                                               CPI:  Ordenador
                                               LPI:  Ordenador
                                Comando de pasada:  Activado
        EBCDIC Secuencia del modo Comando de pasada es:  50 6C
              Códigos HEX de la impresora para 10 CPI:
              Códigos HEX de la impresora para 15 CPI:
              Códigos HEX de la impresora para  6 LPI:
              Códigos HEX de la impresora para  8 LPI:
              Códigos inicialización de la impresora:


BARRA ESPACIADORA = Cambia el valor          INTRO = Almacena los valores
```

4. Salga del modo de selección pulsando <Intro> cuantas veces sea necesario para salir. Las selecciones hechas quedan automáticamente guardadas cuando sale del sistema.

5. La terminal I-O 2677C se restablecerá y visualizará de nuevo la autoprueba en la pantalla. Luego verá en la pantalla que el sistema está listo.

6. Ejecute la autoprueba de la impresora pulsando las teclas <Alt><Alt><P>. La impresora conectada al sistema imprimirá un patrón de la prueba.

Operación

Las siguientes pantallas de ayuda en línea están disponibles para utilizar las características de la terminal I-O 2677C:

1. Funciones de la pantalla
2. Funciones de la impresora
3. Indicadores de la línea de estado

Para entrar en el modo de Ayuda en línea, pulse <Alt><Alt><Ayuda>. Por favor consulte el Apéndice E para los detalles acerca de las tres pantallas de Ayuda en línea.

I-O 2677C Display Station

User's Guide

Version 2.51

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1 INTRODUCTION

The I-O 2677C Display Station is a display device that attaches to an IBM host System/36, System/38, or AS/400. Display stations can also be known as terminals, workstations, or video display terminals (VDTs). No matter what the name, they give the access to enter data, run applications, and perform other functions on the host.

The I-O 2677C consists of a display unit (screen and logic unit), and a keyboard. A variety of keyboards are available. Several IBM display station emulations are available. Other features include a high resolution, flicker-free screen, ergonomic design, and resident help screens. All keyboards offer a record/playback feature for frequently used keystrokes. The I-O 2677C also has a host-addressable printer port.

Customer Support

If you are unable to resolve a problem, contact your I-O dealer. The dealer is familiar with your needs, equipment, and software and is trained to provide you with the support needed. Be sure to read this manual, and keep it handy; it is your first level of support should you need any assistance.

Unpacking

The I-O 2677C Display Station and keyboard come packed in a strong shipping container. The keyboard is packaged separately in an outer carton. Inserts provide protection during shipping.

Check the packaging for water or physical damage and notify the carrier immediately if any damage is evident. Carefully remove the items from the box. Keep the original packaging in case the display needs to be moved or shipped. (If, for any reason, the display station is returned for repair, please put additional packing materials in the shipping box to ensure the display station will not be damaged during shipment.)

INTRODUCTION

The shipping container contains the following items:

- I-O 2677C Display Station
- Swivel base
- 102/103-key enhanced or 122-key keyboard
- Power cord (Universal Voltage 100-240V)
- Parallel printer cable
- Auto-terminate twinax "V" cable
- I-O 2677C Quick Setup and User's Guide

Specifications

General

Host Systems: IBM System/36, /38, and AS/400;
                         IBM 5294, 5394, 5494 Remote Controllers;
                         I-O 8294 or 8394, 8349E, 8394Ei, and 8494
                         Remote Controllers

                         Note: The 3487C NonInfoW emulation is not
                                 fully supported by the System/36 and
                                 System/38, and 5294 remote controller.

Display Emulations: IBM 3180, 3196, 3197C, 3197D, 3487C
                         NonInfoW

Number of sessions: Four - (3 display, plus 1 printer)

Languages Supported: 18 - US/Canadian (English), Canadian French,
                         L/A Spanish, Austrian/German, Belgian (Azerty),
                         Danish, Finnish, Swedish, French (Azerty), Italian,
                         Dutch, Norwegian, Portuguese, Spanish, Swiss-
                         French, Swiss-German, UK English, and
                         Multinational

Screen Features: - 15-inch, .28 mm dot pitch, non-flicker, non-
                           glare, color screen
                         - 132-column display with 3197D, 3180 and
                           3487C NonInfoW emulations
                         - Ruler cursor

	- Split screen view of multiple sessions
	- Separate brightness and contrast controls
	- User selectable auto-dim
	- Power saver
	- Status line in words and symbols
	- Diacritic mode indicator
	- Row and column indicator
	- Supports Text Assist Characters and shadow cursor for text applications
Keyboard Features:	- 102/103-key or 122-key available
	- Record/Playback (1,570 keystrokes) with security options
	- Low profile, adjustable slope keyboard meets 30 mm DIN spec
Printer Port:	- Parallel port
	- Host addressable
	- Local screen print
	- IBM 5224, 5225, 5256, 4214 (IBM Proprinter and Epson), and 3812/5219 (HP LaserJet) emulations
Interface:	- 15-pin auto-terminating twinax V-connector for cable to host with automatic cable through
	- Parallel printer cable for connection to 25-pin printer port
	- 6 foot (2 meter) keyboard cable for keyboard connection to 6-pin Mini-DIN keyboard connector
Ergonomics:	- Low emissions; complies with Swedish MPR II standards
	- Manufactured in an ISO 9000 certified plant
	- Flicker-free 75Hz refresh; complies with ISO 9241 part 3 standards
Other Features:	- Selectable printer character tables
	- Printer Code Editor
	- Resident Help screens
	- I-O Command Pass-Thru™
	- Power-on diagnostic tests

INTRODUCTION

      - 180° swivel
      - -5° to +10° tilt
      - Audible alarm
      - Software keylock

Electrical   100 to 240 VAC
auto-ranging
50-60 Hz
Max. 1.3 A

Environmental

Operating temperature:	4° C to 35° C (40° F to 95° F)
Non-operating temperature:	-4° C to 65° C (-40° F to 150° F)
Relative Humidity:	10% to 80% non-condensing

Physical

Dimensions:	14.6" H x 14" W x 15" D (37.1cm H x 35.5cm W x 38.1cm D)
Shipping Weight:	38.5 lbs (17.5 kg) maximum

2 INSTALLATION

This chapter provides instructions for installing the I-O 2677C Display Station and connecting a printer to its printer port.

Installing the Display Station

The display station should be placed in a clean, dust-free area. Be careful not to block any openings on the display station, as it could cause overheating. Do not allow liquids to spill into any of the openings of the display station or on the keyboard, as damage could result.

Danger!   Make sure the power to the display station is off, remove the power cord, and unplug the cord from the electrical supply before connecting any cables. Do not turn power on until all cables are connected.

Warnung! Vergewisseren Sie sich, dass die Datensichtstation ausgeschaltet und die Netzzuleitung entfernt ist bevor irgendwelche Kabel angeschlossen werden. Schalten Sie Gerät nicht wieder ein bevor alle Kabel angeschlossen sind. Zur vollständigen Trennung vom Netz ist der Netzstecker zu ziehen.

Follow the instructions below to connect the keyboard to the display unit and to connect the display station to the host.

1. Attach the swivel base to the display unit by inserting the plastic hooks on the swivel base into the slots on the bottom of the display unit, and sliding the swivel base towards the front of the display unit.

2. Insert the keyboard Mini-DIN connector into the jack on the right hand side of the display station (see Figure 2-1). The top of the keyboard cable end connector is flat and marked by an arrow. The arrow must be on the top of the connector as you are inserting the connector into the display station.

3. Make sure power is OFF on all devices connected to the host twinax cable.
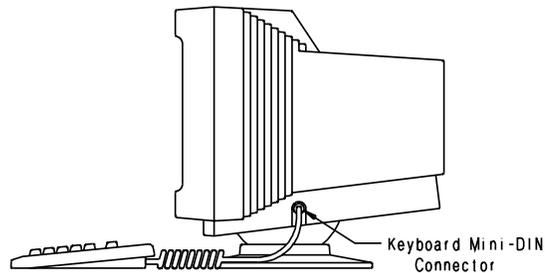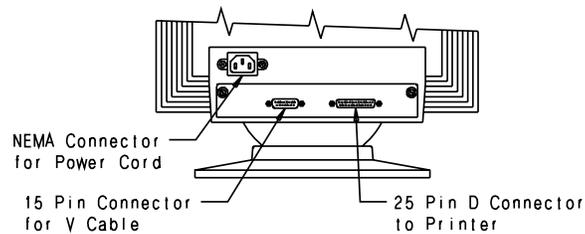
Figure 2-1

4. Attach the "V" cable to the 15-pin connector on the back of the unit (see Figure 2-2).

Figure 2-2

5. Attach the host twinax cable(s) to the V-cable. The V-cable automatically terminates when one cable is attached, and automatically cables through when two cables are attached.

6. The power-on switch for the I-O 2677C Display Station is located on the front of the unit (see Figure 2-4). Make sure the switch is in the "0" (off) position, then insert the power cord into the power socket on the rear of the unit (see Figure 2-3).

7. Plug the power cord into a grounded power outlet that matches the display station's power requirements.

Danger!   For your personal safety, and the protection of the display
station, make sure the display station is properly grounded.

Warnung! Für Ihren persönlichen Schutz und den Schutz der
Datensichtstation muss das Gerät ordnungsegemäss geerdet
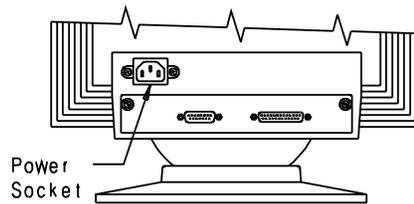sein.

Figure 2-3

8. Before powering on the display station, configure the host for proper
operation with the display station (refer to Chapter 3, Configuration).

9. Power the display station on, and configure it for proper operation (refer
to Chapter 3, Configuration).

Display Station Controls

In addition to the power-on switch, the display station also has contrast
and brightness controls, and a power-on indicator located on the front of
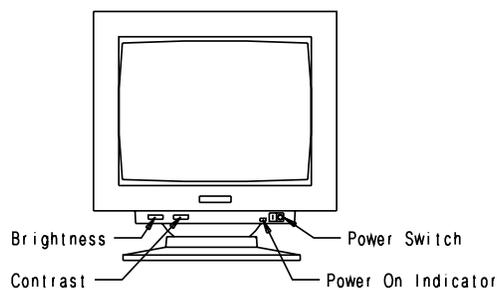the unit (see Figure 2-4).

Figure 2-4

INSTALLATION

Warning!   Aus ergonomischen Grüden wired empfohlen, die Grundfarben Blau und Rot nicht auf dunklem Untergrund zu verwenden (schlechte Lesbarkeit und erhöhte Augenbelastung bei zu geringem Zeichenkontrast wären die Folge).

Connecting a Printer to the Display Station

The I-O 2677C Display Station has a parallel printer port connector located on the back of the unit (see Figure 2-2). It is a host-addressable port, which means that host print jobs can be sent directly to the attached printer. The printer port can also be used to produce a local screen print. The port must be configured on the host as with any other host printer (refer to Chapter 3, Configuration).

The cable used to connect a printer is a standard PC parallel printer cable with a 25-pin male connector on one end, and a 36-pin male connector on the other end.

Warning!   DO NOT connect a serial printer cable's RS-232C connector to the display station's 25-pin connector without using a converter cable. If you do, you will damage the display station. Damage from improper connection to a serial printer is not repairable under the display station's warranty.

Print a self-test on the printer before connecting it to the display station to confirm that the printer is functional. (The printer's user's guide will explain how to do the self-test.)

Follow the instructions below to connect the printer to the display station.

1.   Make sure the display station and printer are powered OFF and unplugged.

2.   Attach the printer cable's 36-pin connector to the parallel port on the printer.

3.   Attach the printer cable's 25-pin connector to the printer port on the display station.

4. Before powering on the printer, configure the host and the display station for proper operation with the printer (refer to Chapter 3, Configuration).

5. Power on the display station (press power switch to "|"), then power on the printer.

6. Press <Alt><Alt><P> on the keyboard to print a display station-generated test pattern.

    This confirms that the display station and printer are communicating. If the test pattern does not print, check the setup options on the display station and printer (refer to Chapter 3), and check the parallel cable for proper connection. Refer to Chapter 5, Problem Resolution, for information regarding possible problems.

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3 CONFIGURATION

This chapter provides instructions for configuring or setting up the I-O 2677C Display Station and an attached printer.

Configuring the Host

Configure the host system for the I-O 2677C Display Station at the appropriate address(es). Choose one of the following display station emulations: 3487C NonInfoW, 3197C, 3197D, 3180, or 3196.

Note: The 3487C NonInfoW emulation does not provide support of InfoWindow functions (such as graphical user interfaces (GUI) or mouse support), but does allow 132-column color display formats, as does the IBM 3487C Display Station. 3487C NonInfoW emulation is not fully supported by the System/36, System/38, or 5294 remote controllers.

   8-color, 132-column application screens are possible with the 3487C NonInfoW emulation, however, this feature is application and host selected.

Configuring the Keyboard on the Host

If using a 102/103-key enhanced keyboard, you must specify the keyboard in the 3197 or 3196 device description on the host. Choose "Keyboard Type = 2. Enhanced" at the bottom of the "Set Device Characteristics" screen in CNFIGSSP on a System/36. On a System/38, specify the workstation controller keyboard (WSCKBD) value as GUSB (Enhanced, US) in the CRTDEVD screen. On an AS/400, the keyboard type is configured automatically.

Note: A 102/103-key keyboard cannot be configured on a IBM 5294 remote controller.

If using a 122-key keyboard, choose "Keyboard Type = 1. 5250" on the "Set Device Characteristics" screen on a System/36. On a System/38 choose WSCKBD = TUSB on the CRTDEVD screen.

CONFIGURATION

Refer to Appendix D, Related Documentation, for a list of IBM manuals that describe the installation and configuration of IBM host systems.

Configuring the Display Station

There are two menu-driven setup screens. The first is used to configure the display station and the second is used to configure the printer (if attached).

To make selections on the setup screens, use the up and down cursor arrow keys to move the highlighted block to the option to be changed, then press the space bar to change the selection. When the selection you want to change appears, use the cursor arrow keys to highlight the next option. Press the <Setup> key on a 122-key keyboard, or the <Shift><Setup> keys on a 102/103-key keyboard to toggle between the two setup screens.

Two types of options appear on the first setup screen: restricted and non-restricted. In most cases, the system operator will set up the restricted options.

Setting the Restricted Options

To access the restricted options, press and hold either the <Reset> key or the spacebar while powering on the display station (press the power-on switch to "|"). A beep will sound, then the power-on indicator will be visible on the front of the display unit (see Figure 2-4). A self-test screen is briefly displayed, then Setup Screen 1 is displayed, as shown on the following page. The restricted options are shown at the top of the Setup Screen (marked by an * to the left of the option).

```
                         Setup Screen 1

*                           Language:    U.S./Canada
*                        Multinational:  No
*           Terminal session emulation:  3197D
*                            Address:     6
*           Terminal session emulation:  DISABLED
*                            Address:    0
*           Terminal session emulation:  DISABLED
*                            Address:    4
*                     Printer emulation: 5224-2
*                            Address:    6
*                         Keyboard ID:   U.S.
                           Type Ahead:   ENABLED
              Screen auto-dim interval:  5 minutes
                          Ruler Style:   +
                     Key-click volume:   HIGH
                         Alarm volume:   HIGH
```

The system operator uses the restricted options to set up the display station on the host system, so check before changing these selections.

The following are restricted options:

Language: US/Canadian (English), Canadian French, L/A Spanish, Austrian-German, Belgian (Azerty), Danish, Finnish, Swedish, French (Azerty), Italian, Dutch, Norwegian, Portuguese, Spanish, Swiss-French, Swiss-German, UK English.

Select the language configured on the host system. The setup screen changes to the language selected.

Multinational: No, Yes

Select "No.", if the host system is not configured for the "base" table of each language (e.g., U.S.B. for U.S. base). Select "Yes" only if the host system is configured for multinational.

Terminal session emulation: 3487C NonInfoW, 3197C, 3197D, 3196, 3180, Disabled

Select the type of IBM display station emulated for the first terminal session. Match the emulation configured on the host. The 3487C NonInfoW, 3197D, or 3180 emulations allow the host to display 132-column data.

CONFIGURATION

Note: The 3487C NonInfoW emulation does not provide support of InfoWindow functions (such as graphical user interfaces (GUI) or mouse support), but does allow 132-column color display formats, as does the IBM 3487C Display Station. 3487C NonInfoW emulation is not fully supported by the System/36, System/38, or 5294 remote controllers.

8-color, 132-column application screens are possible with the 3487C NonInfoW emulation, however, this feature is application and host selected.

Note: When a 102/103-key enhanced keyboard is attached, only the 3487C NonInfoW, 3197 and 3196 emulations are displayed, since only these emulations support the 102/103-key enhanced keyboard.

Address: 0, 1, 2, 3, 4, 5, 6

Select the host cable address for the terminal session indicated above.

Terminal session emulation: 3487C NonInfoW, 3197C, 3197D, 3196, 3180, Disabled

Select the type of IBM display station emulated for the second terminal session. Match the emulation configured on the host.

Address: 0, 1, 2, 3, 4, 5, 6

Select the host cable address for the second terminal session.

Terminal session emulation: 3487C NonInfoW, 3197C, 3197D, 3196, 3180, Disabled

Select the type of IBM display station emulated for the third terminal session. Match the emulation configured on the host.

Address: 0, 1, 2, 3, 4, 5, 6

Select the host cable address for the third terminal session.

CONFIGURATION

Printer emulation: Disabled, 4214, 3812/5219, 5224, 5225, 5256

Select the type of IBM printer to be emulated on the display station's printer port. Choose the same emulation as configured on the host for the printer's cable address. Select "Disabled" if no printer is configured or attached. The local screen print function is operational even if "Disabled" is selected. See Chapter 2, Installation, for information on attaching a printer to the display station.

Address: 0, 1, 2, 3, 4, 5, 6

Select the host cable address for the printer session.

Keyboard ID: U.S., World Trade

Select the type of keyboard: US for United States keyboards or *World Trade* for non-U.S. keyboards.

Setting the Non-Restricted Options

Non-restricted options are used to set up the display station to match your needs. Select the non-restricted options at the same time the restricted options are selected, or access the non-restricted options at any time by pressing <Shift><Setup> on the 102/103-key keyboard or <Setup> on the 122-key keyboard.

Type Ahead: Enabled, Disabled

This local feature is in addition to the host Type Ahead feature available on the AS/400, and Advanced System/36, and allows you to continue typing in data even if the host indicates an inhibit status. 128 keystrokes are buffered when this feature is enabled on the setup screen. "Enabled" activates this feature, and "Disabled" turns it off. When enabled, any keystrokes requiring host action (such as <Reset> and <Attn>) are available without waiting for the display station to be uninhibited, by temporarily turning off Type Ahead, which will empty the buffer.

CONFIGURATION

Screen auto-dim interval (minutes): 5, 10, 20, 60, Disabled

The screen will go blank (except for the status line at the bottom) after the time interval selected. A "¤" symbol appears on the bottom left of the screen. The screen is restored with the next keystroke or when any command is received from the host.

Note: I-O recommends the use of this function is to help prolong the use of the display.

Power Saver Mode: Power saver mode saves 60-70% of the normal power requirements. The power saver mode is automatically entered two hours after the last keystroke is entered. During power saver mode, the display screen is turned off. The screen is restored by pressing any key, or when any command is received from the host. A distinct beeping will acknowledge the action while the screen warms up.

Ruler style: | (vertical), - (horizontal), + (crosshair)

Select the type of ruler to be displayed when the ruler is activated.

Key click volume: Off, Very Low, Low, Medium, High

This choice sets the volume of the key click (the sound made when keys on the keyboard are pressed). This option allows you to select the volume of the keyclick or to disable the keyclick. As you select a volume level, a sample beep will sound to determine comfort.

Alarm volume: Off, Very Low, Low, Medium, High

This is used to attract the user's attention. This option allows you to select the volume of the alarm or to disable the alarm. As you select the volume level, a sample beep will sound to determine comfort.

Setting the Printer Options

Press the <Setup> key on a 122-key keyboard, <Shift><Setup> on a 102/103-key keyboard, or <Alt><Alt><S> on either keyboard to enter setup mode. Then press <Enter> to continue to the second setup screen. This screen is used to set the options for a printer attached to the display

station's printer port. The printer options are non-restricted and can be accessed at any time. The options vary depending on the printer emulation selected on screen one.

Printer Session Disabled

If the printer session is disabled, only two printer options are displayed on Setup Screen 2.

```
                              Setup Screen 2


        Form feed after local screen dump:      YES
                           Character set:       ASCII




     SPACE BAR = change value                ENTER = save values
```

Form feed after local screen dump: Yes, No

Select "Yes" to make the paper advance to the top of a new form after a local (hard copy) screen print. Select "No" if you do not want the paper to advance to the top of a new form.

Character set: U.S. ASCII, Code Page 437 (IBM Extended ASCII - Character Set 2), Code Page 850 (Character Set 2), Roman 8, User-defined

This option allows you to determine which printer character table set to use. Select the character set used by the printer. The switches on the printer may need to be set to agree with the choice. (Refer to the printer's user's guide for the type of table to be selected or the method for setting the printer.) Refer to page 4-23 for information on using the Printer Code Editor to create a user-defined table.

4214 Emulation

The following information describes the selections if 4214 emulation (for IBM Proprinter/Proprinter-emulating, or Quietwriters, or Epson/Epson-emulating printers is selected.

CONFIGURATION

Proprinter

```
                        Setup Screen 2

                    Printer type:   24-PIN PROPRINTER
  Form feed after local screen dump:   YES
           Page eject  is produced by:   FORM FEED
                  Line ending mode:   TRUNCATE
               Front  panel override:   NO
                   Carriage width:   NARROW
               15-cpi prints with:   15 CPI I-O CMD
                Printer is set for:   CONTINUOUS FORMS
                    Character set:   C.P. 437
         Downloadable characters:   NO
               Command Pass-Thru:   ENABLED
                EBCDIC Delimiters:   50 6C


 SPACE BAR = change value              ENTER = save values
```

Epson

```
                        Setup Screen 2

                    Printer type:   24-PIN EPSON
  Form feed after local screen dump:   YES
            Page eject is produced by:   FORM FEED
                  Line ending mode:   TRUNCATE
                Front panel override:   NO
                   Carriage width:   WIDE
               15-cpi prints with:   17 CPI Native
                Printer is set for:   CONTINUOUS FORMS
                    Character set:   C.P. 437
               Command Pass-Thru:   ENABLED
                EBCDIC Delimiters:   50 6C


  SPACE BAR = change value              ENTER = save values
```

Form feed after local screen dump: Yes, No

Select "Yes" to make the paper advance to the top of a new form after a local (hard copy) screen print. Select "No" if you do not want the paper to advance to the top of a new form.

Page eject produced by: Form feed, Multiple line feed

This choice determines what controls the forms length: the host system or the printer. Choose "Form feed" for printer control and "Multiple line feed" for host control.

Line ending mode: Wrap, Truncate

This option determines how to end a line. Wrap prints or wraps around lines that are longer than the paper is wide. Truncate is used to shorten the line and prints whatever will fit on one line and ignores the rest of the information.

Front panel override: Yes, No

The printer's front panel settings will override any commands for CPI, LPI, and print quality sent by the host, when "Yes" is selected. The printer will use the commands from the host, when "No" is selected.

Carriage width: Wide, Narrow

Choose "Wide" for wider 132-column printers. Choose "Narrow" for narrow-carriage 80-column printers.

15 CPI prints with: 15 CPI Native, 15 CPI I-O Cmd, 17 CPI Native,

IBM proprinters cannot print 15 CPI. The I-O display station uses this option to select the method of emulating 15 CPI printing. 15 CPI Native allows the use of preprinted forms, but it should only be selected if the printer supports 15 CPI. The 15 CPI I-O Cmd allows 15 characters per inch to print even though 15 CPI is not supported by the printer. (This selection may slow the printing speed.) 17 CPI Native allows 132-columns to print on an 8 1/2" x 11" page.

CONFIGURATION

Printer is set for: Continuous forms, Cut sheets

Select the type of paper used. If "Cut sheets" is selected, the printer sends a message to the host at the end of each page waiting for a new sheet to be inserted, thus stopping printing after each page. The printer stops until the user has the next sheet of paper inserted and presses <Alt><Alt><Print> to start the printer. If "Continuous Form" is chosen, the printer does not pause after each sheet.

Character Set: Code Page 437 (IBM Extended ASCII-Character Set 2), Code Page 850 (Character Set 2) or User-Defined.

This option allows you to determine which printer character set table to use. Select the character set used by the printer. The switches on the printer may need to be set to agree with the choice. Refer to the printer's user's guide for the type of table to select and method for setting the printer. Refer to page 4-23 for information on using the Printer Code Editor to create a user-defined table.

Note: The User-Defined character set is only available on the Epson emulation.

Downloadable characters: Yes, No

If the attached printer is a Proprinter or printer with Proprinter emulation which supports downloadable characters, select "Yes." If the attached printer does not support downloadable characters, select "No".

Note: The option is only available on the Proprinter or Quietwriter emulation.

Command Pass-Thru: Enabled, Disabled

This feature allows access to all of the built-in features of the printer even if these features are not normally available through the host software by providing a method of placing printer specific sequences into the data sent to the printer, which are "passed through" to the printer. Select "Enabled" for the Command Pass-Thru feature to function. (See Chapter 4, Operation, for more information on Command Pass-Thru™.)

EBCDIC delimiters: 50 6C (&% default)

Delimiters at the beginning and end of a Command Pass-Thru sequence signal the printer to perform the intended function. Designate any two EBCDIC characters as the delimiters. Enter the characters in hexadecimal code.

The default characters are &% (50 6C). You must enter a value for Command Pass-Thru to function. (See Chapter 4, Operation, for information on Command Pass-Thru™.)

3812/5219 Emulation

The following information describes the printer selections if 3812/5219 emulation (for HP LaserJet or Laserjet-type printers) is selected.

```
                              Setup Screen 2


        Form feed after local screen dump:     YES
                         Paper source:     PRINTER DEFAULT
                   Command Pass-Thru:     ENABLED
                    EBCDIC Delimiters:     50 6C




     SPACE BAR = change value            ENTER = save values
```

Form feed after local screen dump: Yes, No

Select "Yes" to make the paper advance to the top of a new form after a local (hard copy) screen print. Select "No" if you do not want the paper to advance to the top of a new form.

Paper source: LaserJet paper bin selection, Printer default

This choice determines the paper source for the printer. Choose "LaserJet paper bin selection" for multiple-bin HP printers. The "Printer default" choice is for printers without multiple bins or optional feeders.

CONFIGURATION

Command Pass-Thru: Enabled, Disabled

This feature allows access to all of the built-in features of the printer even if these features are not normally available through the host software by printing a method of placing printer specific sequences into the data sent to the printer, which are "passed through" to the printer. Select "Enabled" for the Command Pass-Thru feature to function. (See Chapter 4, Operation, for information on Command Pass-Thru™.)

EBCDIC delimiters: 50 6C (&% default)

Delimiters at the beginning and end of a Command Pass-Thru sequence signal the printer to perform the intended function. Enter any two EBCDIC characters in hexadecimal code as the delimiters if Command Pass-Thru is enabled (above). The default characters are &% (50 6C). You must enter a value for Command Pass-Thru to function. (See Chapter 4, Operation, for more information on Command Pass-Thru.)

5224, 5225, or 5256 Emulation

The following information describes the printer selections for 5224, 5225, or 5256 emulation (for most ASCII printers).

```
                         Setup Screen 2


     Form feed after local screen dump:    YES
             Page eject  is produced by:    FORM FEED
                       Printer is set for:    CONTINUOUS FORMS
                         Character set:    ASCII
                                  CPI:    HOST
                                  LPI:    HOST
                   Command Pass-Thru:    ENABLED
                     EBCDIC Delimiters:     50 6C
         Printer's HEX codes for 10 CPI:
         Printer's HEX codes for 15 CPI:
          Printer's HEX codes for 6 LPI:
          Printer's HEX codes for 8 LPI:
             Printer Initialization String:


    SPACE BAR = change value            ENTER = save values
```

Form feed after local screen dump: Yes, No

Select "Yes" to make the printer advance to the top of a new form after a local (hard copy) screen print to the directly attached printer. Select "No" if you do not want the paper to advance to the top of a new form.

Page eject produced by: Form feed, Multiple line feed

This choice determines whether the host system or the printer controls the length of the forms (line per page). Choose "Form feed" for printer control or "Multiple line feed" for host control.

Printer is set for: Continuous forms, Cut sheets

Select the type of paper being used. If "Cut sheets" is selected, the printer sends a message to the host at the page end waiting for a new sheet to be inserted, thus stopping printing after each page. The printer stops until the user has the next sheet of paper ready, and presses <Alt><Alt><Print> to start the printer. If "Continuous Forms" is chosen, the printer does not pause after each sheet.

Character set: User defined, Code Page 850 (Character Set 2), Code Page 437 (IBM Extended ASCII - Character Set 2), U.S. ASCII, Roman 8

This option determines which printer character set table to use. The switches on the printer may need to be set to agree with the choice. (Refer to the printer's user's guide for the type of table to select method for setting the printer.) Refer to page 4-23 for information on using the Printer Code Editor to create a user-defined table.

CPI: 10, 15, Host

This option determines the pitch of the characters in printed output. (The number of characters that can be printed horizontally within an inch.) Select "10", "15", or "Host."

Note: If "Host" is selected, make sure the hex codes for 10 and 15 CPI are typed in. The 5256 emulation will only print 10 CPI, so it cannot use the host CPI commands.

CONFIGURATION

LPI: 6, 8, Host

This option determines the lines per inch for the printed output. (Lines per inch are the number of characters that can be printed vertically within an inch). Select "6", "8" or "Host".

Note: If "Host" is selected, make sure the hex codes for 6 and 8 LPI are typed in. The 5256 emulation will only print 6 LPI so it cannot use the host LPI command.

Printer's hex code for 10 CPI:
Printer's hex code for 15 CPI:
Printer's hex code for 6 LPI:
Printer's hex code for 8 LPI:

The host can change character and line spacing on 5224 and 5225 emulations. Fill in these four options with the printer's "ESC" (escape) codes into hexadecimal format for the printer commands controlling CPI and LPI. Whenever the display station receives a command from the host for LPI or CPI, it will send these hex escape codes to the printer. See the printer's user's guide or the table below for common ESC codes.

Hexadecimal ESC Codes for Printer Setup				
Printer Name & Models	10 CPI	15 CPI	6 LPI	8 LPI
Epson 9-Pin	12 1B 50	0F*	1B 32	1B 30
Epson 24-Pin	12 1B 50	1B 67	1B 32	1B 30
HP LaserJet	1B287331 3048	1B287331 3548	1B 26 6C 36 44	1B 26 6C 38 44
IBM Proprinter	12	0F**	1B 41 00 1B 32	1B 41 09 1B 32
Okidata	1E	1D	1B 36	1B 38

*   Condensed mode = 16.7 CPI
** Condensed mode = 17.1 CPI

Command Pass-Thru: Enabled, Disabled

This feature allows access to all the built-in features of a printer, even if these features are not normally available through the host software by providing a method of placing printer specific sequences into the data sent to the printer which are "passed through" to the printer. Select "Enabled" for the Command Pass-Thru feature to function. (See Chapter 4, Operation, for more information on Command Pass-Thru™.)

EBCDIC delimiters: 50 6C (&% default)

Delimiters at the beginning and end of a Command Pass-Thru sequence signal the printer to perform the intended function. Enter any two EBCDIC characters in hexadecimal code as the delimiters if Command Pass-Thru is enabled (above). The default characters are &% (50 6C). You must enter a value for Command Pass-Thru to function. (See Chapter 4, Operation, for more information on Command Pass-Thru.)

Printer Initialization string: Each time the display station is powered on, it sends an "initialization string" or set of commands to the attached printer, setting modes such as draft, NLQ, etc.

If you want the printer to start up in a particular mode, enter the printer codes (converted to hexadecimal) that control the printer modes (host commands may override).

Saving the Options

Toggle between the setup screens by pressing <Setup> on the 122-key keyboard, <Shift><Setup> on a 102/103-key keyboard, or <Alt> <Alt><S> on either keyboard. When the choices have been made on the setup screens, press <Enter> until the setup screen is exited. The option selections will be saved, even after the display station is powered off.

If any restricted options have been changed, the display station will reset itself and display the self-test screen and then the system sign-on screen. If only non-restricted options have been changed, you are returned to the screen displayed when you entered the setup screen, and the display station does not reset.

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4 OPERATION

Operation of the I-O 2677C Display Station depends on the IBM terminal emulation(s) selected during configuration. The program or application currently running also affects the display station's operation.

Some features such as record/playback, ruler cursor, cursor blink, cursor type, and cursor location are available with any emulation. These features can be activated or changed without entering the Setup Screen by using special shortcut key sequences as displayed on the help screens in Appendix E. To enter the on-line Help mode, press **<Alt><Alt><Help>**. Please refer to Appendix E for details regarding the three on-line Help screens.

To help utilize the features of the I-O 2677C Display Station, the following on-line help screens are available:

1.   Screen Functions
2.   Printer Functions
3.   Status Line Indicators

The display screen is divided into two areas: the user area and the status line. The user area is the main portion of the screen that displays the data entered from the keyboard. The status line displays status information about the display station at the bottom of the screen. To find out what the status line information means, a help screen can be displayed by pressing <Alt><Alt><Help> and then pressing the space bar until the status line help screen appears.

Signing On

After the display station is configured (refer to Chapter 3, Configuration), a sign-on screen will appear (after the self-test) when the display station is powered on. "Display: Ready" should appear in the lower left of the screen and "Printer: Ready" in the lower right (if a printer is attached). If the sign-on screen does not appear or does not indicate "Ready" the system may not be available, or there may be a problem with the configuration. Refer to Chapter 5, Problem Resolution, for further information.

OPERATION

Multiple Sessions

The I-O 2677C Display Station has three terminal sessions and one printer session available. Each session must be assigned a terminal or printer emulation and a unique cable address, or be disabled in the Setup Screen. The display station can then maintain communication with the host on all of the sessions. You can change or "jump" from one session to another as needed. This is helpful when a session is inhibited, as you can jump to another session and work on a different program or application.

To jump between sessions, use the key sequence **<Alt><Jump>** or **<Alt><Alt><J>**. The session number currently running is displayed in the lower left-hand corner of the screen. If a message is linked to a session, the "MSG" prompt at the bottom of the screen identifies the session number for the message.

Screen Formats

The screen format of the display station is determined by the emulation selected as follows:

- 3197C and 3196 emulations: 80 columns x 25 lines

- 3197D, 3180 and 3487C NonInfoW emulations: 80 columns x 25 lines, or 132 columns x 28 lines (host selected)

Note: The 3487C NonInfoW emulation does not provide support of InfoWindow functions (such as graphical user interfaces (GUI) or mouse support), but does allow 132-column color display formats, as does the IBM 3487C Display Station. 3487C emulation is not fully supported by the System/36, System/38, or 5294 remote controllers.

8-color, 132-column application screens are possible with the 3487C NonInfoW emulation, however, this feature is application and host selected.

Split Screen

The I-O 2677C Display Station has split screen capability, which means two sessions can be viewed at once on a single screen. The screen will be "split" to view a two partial or full sessions in a top-to-bottom format.

Use the key sequences **<Alt><a-a>** on 122-key keyboards, or **<Alt><Zoom>** on 102/103-key keyboards, or **<Alt><Alt><Z>**. (On some non-US keyboards, use <Alt><Alt><Y> to activate the split screen).

If the sessions are in 80-column mode, then all 25 lines of both sessions (total of 50 lines) will be displayed on the split screen at the same time. Sessions in 132-column mode display all 28 lines of the active session (the session in which you are working) and 22 lines of the inactive session on the split screen at the same time. The cursor always resides in the active session.

Press either the **<Alt><Forward>** (F10) or **<Alt><Back>** (F9) key sequence to scroll the inactive 132-column session line by line forward or backward to select which 22 lines out of the 28 in the session will be displayed.

Note: When one session is in the 132-column mode and the other session is in the 80-column mode, the characters will appear in 132-column font size.

Changing the Active Screen

The active split screen will display a cursor. To change which split screen session is active, jump between the two sessions using the <Alt><Jump> or <Alt><Alt><J> sequence. The cursor will then move to the active session.

Session Change Within Window

In the split screen mode, either the top or the bottom sessions can be active. Half of the screen the screen is active, and the other half of the screen is non-active. A third session can be displayed in the active portion of the split screen by pressing **<Alt><Alt><W>.** The third session will replace the active session. The previously active session will become the third session and will no longer be displayed. Press **<Alt><Alt><W>** again to swap the sessions back.

OPERATION

Double Cursor Speed

The double cursor spped allows the user to move the cursor two positions at a time in the direction of the left or right. To activate this feature on a 122-key keyboard, press the **<Shift><Left or Right Arrow>** keys. To activate this feature on a 102/103-key keyboard, press the **<Alt><Left or Right Arrow>** keys.

Software Keylock

A software security keylock is provided to prevent unauthorized use of the display station. The display station can be locked or can be assigned a password.

Before a password has been defined, operation will proceed directly to the password entry screen where you will be instructed to "Enter password twice, then press <ENTER> or <RESET> to exit." There are two password prompts on this screen. As the password is entered, asterisks (****) appear to the right of the password. The password can be up to 31 characters in length, and the backspace key can be used to delete the typed characters. Two identical passwords must be received for the software lock to be activated.

After the password has been defined, you are brought up to another screen that instructs you to "Press <I> to lock, <P> to change the password, or <Reset> to abort."

If both password definitions match, the screen enters the lock mode. The screen is blanked and a "key symbol" (ꝺ) will appear on the status line, followed by a password prompt.

Any keystrokes entered after the lock mode is entered will go into the password definition. Once the correct password is entered, the screen will be unlocked.

Note: Powering off the display station will erase the password.

Other Features

Some of the features available on the I-O 2677C Display Station can be
activated or changed using shortcut key sequences as listed below. Most
of these key sequences are also listed on the display station help screens.
Press <Alt><Alt><Help> at any time to view the help screens.

Help Screens: <Alt><Alt><Help>

The help screens contain messages that explain some of the display
station features, such as the local <Alt><Alt> key sequences and status
line information.

Cursor Position Identifier: <Alt><Alt><K>

The cursor position identifier displays the current cursor location by line
and column number in the bottom left corner of the screen. This key
sequence toggles the identifier on and off.

Cursor Blink: <Alt><Alt><X>

This key sequence toggles the local blinking specification between a
blinking or non-blinking cursor. This sequence combines with the host
blinking specification to control cursor blinking.

Note: This option may have no immediate visual effect depending on the
host specifications. Refer to host documentation for further
information.

Cursor Type: <Alt><Alt><Reset>

This key sequence toggles between an underscore or block type cursor.

Extended Display Mode: <Alt><Alt><T>

Press this key sequence to display the field attributes on the current screen.

Manual Screen Dimming: <Alt><Alt><D>

Press this key sequence to immediately dim the screen. Only the status line
on the bottom of the screen and a " ¤ " symbol in the left corner is visible
while the screen is dimmed. The screen is restored with the next keystroke,
or when any command is received from the host.

OPERATION

Note: I-O recommends the use of this feature to help prolong the life of the display.

Keyboard Click: <Alt><Alt><A>

This choice sets the volume of the key click (the sound made when the keyboard keys are pressed). This option allows you to select the volume of the key click or disable the key click. Select a comfortable volume.

Note: The keyboard click cannot be enabled if it is disabled in the setup screen. Select the key click volume in the setup screen first.

Parity Error Indicator: <Alt><Alt><E>

The parity error indicator displays the number of parity errors detected since the display station was powered on (the count rolls over after 99 to 0). These are displayed in the bottom left corner of the screen in place of the row-column indicator. Parity errors usually indicate cabling problems. This key sequence toggles the indicator on and off.

Ruler: <Alt><Alt><R> or <Rule> or <Alt><PgDn>

The ruler feature provides a cursor reference for ease of reading and aligning text on the screen. Choose the ruler type in the setup screen, then press this key sequence to toggle the ruler on and off.

4/8 Color: <Alt><Alt><V>

Press this key sequence to toggle the display between a full (8) color (red, blue, black, green, white, yellow, turquoise, and pink) and 4-color mode. In 4-color mode, the limited color displays green and/or white with blue column separators.

White Cursor: <Alt><Alt><Y>

Press this key sequence to toggle between a white cursor and one that assumes the color of the field it is in.

Software Keylock: <Alt><Alt<I>

This feature either locks the screen to inhibit unauthorized use of the keyboard or to assigns the software keylock password.

Record/Playback Security: <Alt><Alt<Attn>

This feature was designed to prevent unauthorized personnel from obtaining confidential recorded keystrokes. This feature allows the user to select the level of security of the record/playback feature.

Text Assist Characters: <Alt><Jump> on a 122-key keyboard, or <Alt><Home> on 102/103-key keyboard.

When in DisplayWrite/36, TextManagement/38, or OfficeVision/400, pressing this key sequence sends a request to the host to display the text assist characters (line wrap, return, etc.) in the document. (This function is controlled by the host, not the I-O Display Station.)

Using the Keyboard

The 102/103-key enhanced keyboard functions the same as IBM's 102-key enhanced keyboard. It only works with 3487C NonInfoW, 3197C, 3197D, and 3196 display emulations. (Only the 3487C NonInfoW, 3197C, 3197D, and 3196 terminal emulations will be displayed on the Setup Screens. (Only use the enhanced keyboard at addresses that are configured at the host for an enhanced keyboard.)

The 122-key keyboard works with 3180 emulation, as well as the 3487C NonInfoW, 3196, 3197C and 3197D emulations.

<Shift> and <Alt> Keys

The Shift key is used to type upper case letters. On 102/103-key keyboards, Shift also selects the function shown on the very top of the key. For example, to enter the setup screen from the 102/103-key keyboard, you must press and hold the <Shift> key, then press the <Setup> key, since the "Setup" legend is printed on the top of the key.

There are two ways to use the <Alt> key:

- Press and hold the <Alt> key, then press a key to perform the function shown on the front or "face" of the key.

OPERATION

- The <Alt> key is also used for local commands. Press the <Alt> key twice, then press the specified key. For example, to toggle between a block and an underline cursor type, press and release the <Alt> key, then press and release the <Alt> key again, and then press and release the <Reset> key.

Other Keys

Other special function keys available on some or all of the keyboard types are described in the following table.

Keys	Description
Attn	Request the host's attention to select a new activity.
Clear	Blanks all fields on the screen, except for the cursor, the separator line, and the operating status line.
Del	Deletes characters at the cursor location. The character to the right of the cursor shifts over one position to the left.
Dup	Duplicates the last field entry and display an *. Pressing this key, when the cursor is not in an input field causes an **X** to appear on the operating status line. To remove the symbol and unlock the keyboard, press **<Reset>**.
Enter	Transmits information to the host. This key does not change the keyboard shift status, but it does cancel the insert mode.
Erase Input	Erases all input field entries on the screen and moves the cursor to the beginning of the first input field. If the screen has no input field, the cursor moves to row 1, column 1 of the screen, this key clears the screen and moves the cursor to row 1, column 1 of the same screen.
Field -	This key's functions can vary depending on the system. The key function is the same as the Field +, and Field Exit functions, except it is allowed only in numeric-only fields. This key inserts a "-" (minus) sign in the last position of the field. An error will appear if the field is not programmed to accept negative numbers as input.
Field +	Causes the cursor to exit an input field. Null characters are inserted to the end of the field. When this key is pressed in a right adjust field, the data to the left of the cursor shifts to the right and the cursor advances to the next field.
Field Exit	Causes the cursor to exit an input field. Null characters are inserted to the end of the field. When this key is pressed in a right adjust field, the data to the left of the cursor shifts to the right and the cursor advances to the next field.
Hex	This function is available to enter the hexadecimal values for a character. Press the **<Alt><Hex>** keys, then enter the corresponding hexadecimal value. For valid hexadecimal characters, use 1-9 and A-F for the first character and 0-9 and A-F for the second character. **Note:** Do not use "FF".

OPERATION

Keys	Description
Home	Moves the cursor to the first input position on the screen, or row 1, column 1 of the screen. This action is host-dependent.
Insert	Allows a character to be inserted into an existing input field without writing over existing data. If you attempt to insert more characters than nulls, an **X** appears in the operating status line and the keyboard will lock up. If this happens, simply press **\<Reset\>**. The following keys also turns off the insert mode: Attn, Clear, Enter, SysReq, and F1-F24.
Jump	Move from one session to another.
Quit/DvCncl	Stops the printing operation and cancels the printing of the remainder of the file. this key can also be used to end a record/playback sequence.
Reset	This key performs the following functions: • Exits the insert mode and removes the insert mode symbol (^). • Cancels a diacritic-mark key. • Ends help/system request functions. • Cancels a hex key. • Clears operator erros. • Unlocks the keyboard and removes the input-inhibited (**X**) symbol.
Rule	Toggles the rule cursor on and off.
Setup	Enters the setup screen.
Sys Req	Varies on the host system. SysReq can do the following: • Select and start an alternate job. • Notify the host system that the display station is ready to select a new program. • Request that the keyboard be unlocked so data can be entered.
Test	Enters IBM test request from the AS/400 sign-on screen.
Help	Requests host on-line help to: provide an explanation of current error conditions; or help from the system.
\<Alt\> ◄◄/►► \<Shift\> ←/→	Moves the cursor two positions at a time in the direction of the arrow.

Keyboard Mapping

The user can remap the keyboard layout by using AS/400 workstation customization. This feature is only available on displays connected to the AS/400. (Refer to the IBM AS/400 Workstation Customization Guide for more information.)

Record/Playback Feature

The Record/Playback feature allows you to record a sequence of keystrokes for later playback by pressing one of the 24 command (CMD) keys. This is helpful for entering information used most often. A maximum of 1570 keystrokes can be recorded. The display station will remember the recorded sequence even when it's powered off.

Record Past Enter and Play Past Enter are also supported. This feature allows the recording of the Enter key's function, which later will be used in the play mode. In the play mode, playback will play past or beyond Enter and then continues the playback as soon as the host is uninhibited.

Recording Keystroke Sequences

Record a sequence of keystrokes with the following steps:

1. Press the **<Recrd>** key (122-key keyboard) or **<Alt><Recrd>** (102/103-key keyboard) keys to activate the record mode. An "R" appears in the bottom left-hand corner of the screen. The number to the right of the "R" is the remaining number of keystrokes available for recording.

Note: The <Reset> key can be pressed at this point to cancel and exit the record mode.

A CMD key screen appears showing which of the 24 CMD keys is already in use. The highlighted block and the letter "R" in front of the CMD key number means that key already contains a recorded sequence.

2. Press one of the unassigned CMD keys to assign a sequence of keystrokes to it. (Press <Shift> with the CMD key on 102/103-key enhanced keyboards to access CMD keys F13 through F24.) The selected CMD key will be highlighted and the screen will disappear.

OPERATION

Note: If a 90XX error code is shown, a key other than a CMD key was pressed. To clear the error condition, press <Reset>, then continue by choosing a CMD key. Refer to Chapter 5, Problem Resolution, for a description of the error codes.

If a CMD key with a key sequence already assigned to it is chosen, an alarm sounds, and the number next to the "R" increases. The previously recorded key sequence can be left intact or erased. To leave it intact, press **<Recrd>** or **<Alt><Recrd>** to exit record mode, then re-enter the record mode and select a different CMD key. To erase the keystroke sequence assigned to the CMD key, press and hold **<Alt>** key and then the **<Quit>** key

3. Type the keystroke sequence to be recorded, and make note of which sequence is assigned to which CMD key. As you type, the number next to the "R" in the bottom left-hand corner of the screen decreases.

4. When typing is complete, press the **<Recrd>** or **<Alt><Recrd>** keys to save the keystrokes assigned to the CMD key and exit the record mode. An "R*****" will appear briefly while the display station records the keystroke sequence. The recorded keystroke sequence is permanently saved in the memory of the display station (even when it is turned off), until the sequence is manually erased or recorded over.

Notes: The Play, Recrd, Setup keys and local functions (such as the <Alt><Alt> commands), cannot be recorded.

When the Shift key is recorded, it counts as two keystrokes: once when the key is pressed, and once when the key is released.

Recording With a Pause

One or more "pause(s)" can be recorded into the recorded sequence, so that during playback information or a password can be typed in. For example, to get into a word processing document, you may need to type in a user code, then a password, then go into a menu and then choose other menu items. All of this can be recorded on one CMD key by doing the following.

1. Press the **<Recrd>** key or **<Alt><Recrd>** to enter record mode.

2. Choose an unassigned CMD key from the CMD key screen.

3. Enter the sequence to be recorded. then press the **<Pause>** key or **<Alt><Pause>**. A "^" symbol will appear next to the "R" in the bottom left corner of the screen. This shows that the pause is in effect.

4. Type keystrokes which are not to be recorded, then press **<Pause>**, or **<Alt><Pause>** to end the pause function and add it to the recorded sequence.

5. Continue typing the sequence.

6. Press **<Recrd>** or **<Alt><Recrd>** to save the sequence and exit the record mode.

Deleting Keystroke Sequences

To delete a single recorded keystroke sequence assigned to a CMD key, press **<Recrd>** or **<Alt><Recrd>**, then press the CMD key. Press and hold **<Alt>**, and then press the **<Quit>** key.

To delete all keystroke sequences assigned to all CMD key, press **<Recrd>** or the **<Alt><Recrd>** keys. Press the **<Shift>** and **<Erase Input>** keys together or press **<Alt><Recrd>**, then press the **<Alt><ErInp>** keys.

Playing Back Keystroke Sequences

Play back keystroke sequences that have been recorded using the following steps:

1. Position the cursor where the keystroke sequence is to begin.

2. Press the **<Play>** key or **<Alt><Play>**. A "P" appears in the bottom left-hand corner of the screen, the CMD key screen appears with the previously recorded sequences highlighted.

3. Press the CMD key with the assigned keystroke sequence. The keystroke sequence plays back starting at the location of the cursor. When complete, the "P" disappears from the bottom of the screen.

    Note: If a 90XX error code appears, an invalid key or a CMD key was pressed that does not have a recorded keystroke sequence. To clear the error condition, press <Reset> then the correct CMD

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key. Refer to Chapter 5, Problem Resolution, for a description of the error code. You can only exit the play mode by pressing <Play>, <Reset>, or a CMD key that has a recorded keystroke sequence. If any other key is pressed, an error message appears.

Playing Back With a Pause

Play back the keystroke sequence that was recorded with a pause by taking the following steps:

1. Press the **<Play>** key or **<Alt><Play>** keys. The "P" in the status line and the CMD key screen will appear.

2. Press the CMD key with the desired sequence. The playback begins at the position of the cursor. When the playback reaches the pause, a "^" symbol appears next to the "P" in the bottom left corner of the screen. This shows that the pause is in effect.

3. Type in the information (e.g., your password), and press the **<Play>** key or **<Alt><Play>** again. Playback continues to the end of the recorded sequence. If more than one pause is in the recorded sequence, repeat this step.

Record/Playback Security

The record/playback function has three levels of security: Unrestricted Record/Playback, Avoid Non-Display Fields, and Disable Record/Playback. Unrestricted record/playback allows the user to have complete use of the Record/Pause/Playback feature. Avoid Non-Display Fields does not allow the user to record or play in protected fields, such as passwords. Anytime the user tries to record or to play in a protected field, the record or play mode be will exited. Disable Record/Playback allows the user the option of disabling the Record/Playback mode.

Follow the steps below to change the Record/Playback Security options:

1. Enter the Record/Playback Security screen by pressing
    <Alt><Alt><Attn>. The following options will appear (the present
    level is highlighted):

F1	Unrestricted Record/Playback
F2	Avoid Non-Display Fields
F3	Disable Record/Playback
F4	Change Security Password
Enter	Exit

2. Type F1, F2, or F3 to change the security level (any change will require
    entering a password and the recorded keystrokes will be deleted).

3. Press F4 to change only the password. If a password has not be defined,
    enter the desired password twice and press <Enter>. As the password
    keystrokes are typed, asterisks (*) will appear to the right. If a password
    is already defined, enter the old password, then type in the new
    password. Press <Enter> to save the changes.

4. Press **<Enter>** to exit the Record/Playback Security screen and return to
    normal operation.

Note: In the event the password is forgotten, have the system operator
contact I-O Customer Support for assistance.

Using an Attached Printer

The I-O 2677C Display Station has a parallel printer port on the back of the
unit. It is a host-addressable port, which means that host print jobs can be
sent directly to the attached printer. The port must be configured on the host
as with any other host printer.

Local screen prints can also be sent to the printer. Press **<Alt><Alt><O>** to
print the displayed screen, or press **<Alt><Alt><G>** to print only the first 24
lines of the screen. The display station's printer setup options can be
changed to include a form feed at the end of each local screen print.

OPERATION

Other printer options such as the characters per inch, lines per inch, and character sets are found in the Setup Screens defined in Chapter 3, Configuration.

Note: If the printer is configured for host printing, you must stop host printing by pressing <Alt><Alt><Print> before doing a local print. Turn host printing back on by pressing <Alt><Alt><Print> again. <Alt><Alt><O> and <Alt><Alt><P> automatically stops host printing.

To determine whether the display station and printer are communicating, press <Alt><Alt><P>, and a test pattern will print.

Local Printer Commands

The following is a list of key sequences that can be used to send commands directly to the printer from the display station.

Local Screen Print: <Alt><Alt><O>

Prints the displayed screen on the local-attached printer.

Partial Screen Dump: <Alt><Alt><G>

Prints the top 24 lines of the screen from the local-attached printer.

Start or Stop Printer: <Alt><Alt><Print>

Starts or stops host-addressable printing.

Form Feed: <Alt><Alt><F>

This issues a form feed command to the printer advancing the paper to the top of the new form. **Note:** You must stop the printer first.

Line Feed: <Alt><Alt><L>

This issues a line feed command to the printer advancing the paper. **Note:** You must stop the printer first.

Local Test Pattern: <Alt><Alt><P>

This option prints a display station-generated test pattern to confirm that the display station and printer are communicating properly. **Note:** You must stop the printer first.

EBCDIC HEX Print Mode: <Alt><Alt><B>

When in this mode, the printer prints everything in hexadecimal format for problem analysis. To show this function is enabled, the word "Printer" on the status line appears in reverse video.

Printer Code Editor: <Alt><Alt><U>

This feature allow the hex codes of defined characters on the display to be changed to those defined by the printer. Refer to "Printer Code Editor" on page 4-24 for more information.

Cancel Print Job: <Alt><Alt><C>

Cancels the host print job from the keyboard.

Printer Emulations

Select a printer emulation and cable address for the attached printer using the Setup Screen (see Chapter 3, Configuration). The emulation must be the same as that configured on the host for the cable address. Consult with the system operator for more information about the printer emulation choices and how each will perform on your system.

5224, 5225, or 5256 Emulation

The 5224, 5225 and 5256 printer emulations are designed for personal computer-type ASCII parallel printers. The lines per inch (LPI) and characters per inch (CPI) printer setup options must be selected, as discussed in Chapter 3, Configuration.

Note: The 5256 emulation prints only 10 CPI and 6 LPI so it cannot use the host LPI and CPI commands.

OPERATION

4214 Emulation

The 4214 printer emulation is for both IBM Proprinters/Proprinter-type printers, and Epson/Epson-type printers. Select the 4214 emulation for printing both data processing and word processing documents. The printer will respond to host commands for near letter quality (NLQ) and cut sheet feeder bin selection. It will also obey host commands for 5, 10, 12, 15, and 17.1 characters per inch (CPI) and 3, 4, 6, and 8 lines per inch (LPI).

Note: To select 5, 12, or 17.1 CPI and 3 LPI from an RPG program on the System/36, you must have a special IBM feature PRPQ P84073 (feature #5799-BYX) installed on the host.

3812/5219 Emulation

The 3812/5219 emulation is for HP LaserJet or LaserJet-type printers. Normal word processing functions (underlining, bold, super and subscripting, etc.) are all supported, even on small and italic fonts. This emulation can be used for both WP (word processing) and DP (data processing) applications.

Different character styles and pitch are controlled through the IBM typestyle number or font ID. The display station uses the IBM typestyle number to select an HP font from a cartridge. Only the cartridges shown in the Typestyle Reference Chart in Appendix A are supported.

The system operator will specify a default typestyle when configuring the 3812/5219 address on the host system. The default should be the typestyle used most. Select one of the typestyle numbers from the Typestyle Reference Chart in Appendix A with an asterisk "*" or from the following table for the default font ID, then change it as necessary in the WP document or DP document RPG program.

Data Processing

Condensed print and 8 LPI commands do not work in data processing documents, because 3812/5219 printers only understand font ID commands. For DP documents, such as RPG-generated prints, change fonts by specifying the typestyle in the OCL or CL printer statement. Since only certain fonts are accepted by the host in OCL and CL statements, only use the font ID's in the following table or from the Typestyle Reference Chart in Appendix A with an asterisk (*).

Fonts for Data Processing Documents				
Typestyle Number	**Font ID (Hex)**	**Pitch (CPI)**	**Orientation**	**Font**
05	05	10	Landscape	Courier
11	0B	10	Portrait	Courier
12	0C	10	Portrait	Letter Gothic
13	0D	10	Landscape	Letter Gothic
20	14	10	Portrait	Courier
80	50	12	Portait	Prestige Elite
84	54	12	Portraite	Letter Gothic
85	55	12	Landscape	Letter Gothic
86	56	12	Not assigned	
87	57	12	Portrait	Prestige Elite
*91	5B	13.3	Landscape	Line printer, 8 LPI
158	9E	Prop.	Portrait	Times Roman
159	9F	Prop.	Portrait	Bold Times Roman
160	A0	Prop.	Not assigned	
162	A2	Prop.	Portrait	Italic Times Roman
221	DD	16.6	Portrait	Line Printer
222	DE	16.6	Portrait	Line Printer
*223	DF	16.6	Portrait	Line Printer 8 LPI
*225	E1	19.0	Landscape	Line Printer 8 LPI
* The printer prints 8 LPI when these typestyle numbers are selected. This feature permits DP documents to be printed in 8 LPI instead of the usual 6 LPI.				

OPERATION

Word Processing

When a 3812 or 5219 address is configured on the host, a default font ID must be selected. The normal value is 11 (or 0B in hex), which is a 10-pitch font. DisplayWrite/36 may also have a default typestyle number, in most cases number 86, a 12-pitch font. The LaserJet resident font is a 10-pitch font. If typestyle number 86 is used, it will compress to 12-pitch spacing on the printout. Use typestyle number 11 for the correct 10-pitch font.

There are two ways to change fonts for WP documents: select a typestyle within the WP program, or use a font change command in the document.

Your WP program user's guide describes how to change typestyles within the program.

Formatting the Page

The 3812/5219 emulation allows 65 lines at 6 LPI per page for WP documents and 66 lines at 6 LPI per page for DP documents. The HP LaserJet printer allows a maximum of 63 lines at 6 LPI. To print 65 lines, the display station increases line spacing from 6 lines per inch to about 6.25 lines per inch. This small change is not normally noticeable. A similar small change is made to 8 LPI printing. If you get one or two lines at the top of a page, it's usually because the page has been formatted for more lines (either 65 or 66) than the printer is able to print.

The following exact paper sizes in DisplayWrite/36 and OfficeVision/400 are recognized:

Letter Paper:	8.5 x 11 inches
A4 Paper:	210 x 297 millimeters
Legal Paper:	8.5 x 14 inches

Selecting legal or A4 size paper dimensions on the DisplayWrite/36 "Change Page Format" screen causes the printer display window to flash "Legal Paper." Install an HP legal size paper tray in the printer. If paper dimensions different from the above are specified, the paper size is unchanged.

For TextManagement/38, the System/38 does not send paper dimensions to the printer. Instead, it sends a forms message for legal paper to the

controlling workstation assigned to the printer. To change the paper tray, you must do the following:

1. Insert the proper size paper tray, and press the RESET button on the printer.

2. Power the printer off and back on.
3. Release the print job at the host.

The System/38 uses a "Printer Support Facility" that only sends the margins and other document form specifications to a printer when they are different from the previous document or when the printer has been turned off. Either way, the printer must be reset when a different paper tray is installed.

To ensure that a complete set of document specifications is sent by the "Printer Support Facility," it is best to power off the printer and the display station for about five seconds.

You can print 198-column documents at 19 pitch and 8 LPI in landscape orientation on an 8 1/2" x 11" page. This is particularly useful for DP reports. Simply specify the 19-pitch font, typestyle number 225. In DP printing, use this typestyle number as either the default font ID, as described above, or in the OCL or CL statement for the job.

The line format screens in DisplayWrite/36 (Command 20) also permits "Justify," which aligns the right margin. One-Half Justify causes only one-half as much alignment of the right margin. For best results in using justification, change the zone width to 1 (instead of 6).

Envelope Printing

To print envelopes, specify typestyle number 5, landscape orientation, with the first line of the address on line 30 and a left margin of 55. A trial run with a blank sheet of paper will often help identify an error in positioning the address.

Manual Feed: Select the "Envelope Feed" option in the WP program's paper feed selections and a paper size of 11" x 11". The printer will flash "Manual Feed" on the front panel display window. The envelope must be fed manually.

OPERATION

Envelope Tray: Select "Envelope Feed" and a paper size of 7.5" or 9.5" (or 22.0 cm). The printer automatically finds the envelope tray (if installed) and prints from the tray.

Envelope Feeder: Select "Envelope Feed" and a paper width of 7.5" or 9.5" (or 22.0 cm). The printer automatically finds the envelope feeder (if installed) and prints from the feeder.

Note: The printer may eject a blank page after the printing orientation has been changed.

Duplex Printing

Some printer models can print both simplex (single sided) and duplex (double sided). They can print both long edge (landscape) and short edge (portrait) duplex printing.

Place printing commands on the first line of the document to control simplex, landscape duplex, and portrait duplex printing. These commands are similar to font change commands as follows:

> ¬ D0 for simplex printing
> ¬ D1 for landscape duplex printing
> ¬ D2 for portrait duplex printing

Remember to place these commands on the first line of the document. If they are not on the first line, the commands will not become active until the following page. When the printer receives one of the printing commands, it will do all printing in that mode until another printing command is received.

In other words, if the printer is most often in simplex mode and you are printing in duplex mode, be sure to put a simplex command at the end of the document to return the printer to simplex mode. Envelope printing between documents will not change the printer's mode.

For some duplex printing, if the last page is blank on the back side, the information for the last page may remain in the printer until the next printing job is received. To print the last page, take the printer off-line by pressing the ONLINE button, then press the FORM FEED button to print the last page. Put the printer back on-line by pressing the ONLINE button again.

Paper Source Options

The printer Setup Screen of the display station has three selections for controlling paper feed selections on the laser printer. The "default paper source" identifies the standard paper feed.

LaserJet Paper Bin Selection: If the laser printer has two or three paper trays that obey HP LaserJet tray selection commands, select "LaserJet paper bin selection" as the paper source in the display station's Setup Screen. The display station will then convert DisplayWrite/36 or Text Management/38 paper source choices into tray selection commands.

A manual feed command does not exist in the Text Management/38 options, but an envelope feed command puts the printer into a manual feed condition with a "PE" flashing in the window. The printer will accept a full-size sheet of paper and print when "PE" is flashing.

Graphics Printing

The I-O 2677C Display Station will print the same Advanced Printer Functions (APF) and Business Graphics Utility (BGU) graphics as the IBM 4214, 5224, and 5225 printers using All Points Available (APA) bit image graphics. APF and BGU allows you to create, change, store display print, plot charts, and representing repairing data. It also is a method of creating and changing chart formts such as pie charts, bar charts, and line graphcs. This method is for printing continuous patters such as bar codes and logos that come from the twinax host. This method of graphic printing that IBM used before IPDS was developed.

Graphics are printed on IBM System/36, and /38 from the APF and BGU programs and programmer-defined characters using the Load Alternate Character (LAC) command.

The I-O 2677C Display Station implements the LAC command by taking the dot pattern received from the twinax host and then printing that exact dot pattern using the printer's APA bit image graphics at high density 240 dots/inch. This permits the printer to print APF and BGU graphic output using exactly the same spacing as the IBM 4214, 5224, 5225 printers. For more information on BGU, see the BGU User's Guide and Reference.

Note: Graphics printing is supported by the 5224, and 5225 emulations in

10 and 15 CPI and supported by 4214 printers in 10, 12, and 15 CPI.

Printer Code Editor

The Printer Code Editor is used to create a "user-defined" printer character set. The user-defined Printer Code Editor allows the hex codes of defined characters on the display to be changed to those defined by the printer. This feature is available only with 5224, 5225, 5256 and 4214 Epson printer emulations or for local screen prints when the host-addressable printer emulation is "disabled." The example below describes how to change an existing character set to create a user-defined character set.

1. Press **<Alt><Alt><U>** to activate the Printer Code Editor.

    Note: If a user-defined character set has already been created, it appears on the screen. To modify this existing user-defined character set, skip to step 5. To modify one of the factory default character sets to **replace** the current user-defined set, continue with the next step.

2. Press **<Insert>** then press the space bar to scroll through the available character sets until the Code Page 437 appears.

3. Press **<Enter>** to select the character set displayed. The set selected is copied and then named "user defined." If a user defined set already exists, it is overwritten.

4. Move the cursor to the uppercase oblique (Ø) to be changed.

    The character is shown in the lower left corner of the screen as "Ø-4F" which is the EBCDIC character graphic followed by the hexadecimal code that will be sent to the printer (a hyphen is used for a separator).

5. Type in the hex code of the uppercase oblique (Ø) to be printed in place of the "O" (normal character). For this example, the hex code is 9D. (See the printer's user's guide for hex codes to be changed in the table.)

6. Press **<Enter>** to save the change.

7. Make any other changes to the set by repeating steps 5 and 6, and press **<Enter>** to save each change.

8. Press **<Alt><Alt><U>** to exit the Printer Code Editor and save the changes.

9. Enter the Setup Screen restricted options and select the 4214 Epson emulation, 5224, 5225, 5256, or "Disabled" printer emulations (see page 3-2).

10. Enter the Setup Screen non-restricted options, printer setup, and select "User defined" as the printer character set (see Chapter 3, Configuration).

I-O Command Pass-Thru™

The Command Pass-Thru™ feature allows access to all of the built-in features of a printer, even if the features aren't normally available through the host software. Command Pass-Thru provides a method of placing printer-specific command sequences into the data sent to the printer from the host. The display station recognizes these special sequences and "passes the command through" to the printer. The steps below describe how to use Command Pass-Thru™.

1. Find the command for the print feature in the printer's user's guide.

2. Convert the printer command to hexadecimal.

3. Place the EBCDIC delimiters, as defined in the display station setup (refer to page 3-12), in the document at the point where the feature should take effect. This signals the start of the print feature. Enter the beginning printer command, then enter the delimiter again. Do not put spaces between the delimiters and the hexadecimal characters.

4. Move the cursor to the point in the text where the print feature should end. Enter the delimiter, followed by the ending printer command and then the delimiter again, into the document.

Example: If **ESC E** begins bold printing and **ESC F** ends bold printing on the printer, first convert ESC E to the hexadecimal **1B45**

(ESC = 1B and E = 45) and ESC F to **1B46**. And, if the delimiter is the default **&%** (hex 50 6C), then enter the commands as follows:

This is a &%1B45&%bold&%1B46&% word.

to print on the printer as:

This is a **bold** word.

Note: Spaces are not allowed between the delimiter and the hex code.

Only numbers or the letters A F are allowed.

Errors in the I-O Command Pass-Thru™ sequence will cause the display station to ignore the command and printing will resume at

Command	Function
¬E	Sends an ASCII ESC command to the printer
¬TY	Enables true LPI printing
¬TN	Disables true LPI printing
¬I	Ignores all host formatting commands
¬S	Stops ignoring host formatting commands

the point the error occurred.

I-O Command Pass-Thru™ may invalidate horizontal spacing.

Other Printer Commands (3812/5219 printer emulation only)

You can also enter commands into your document that allow you to control true LPI and response to host commands. These commands (shown below) are similar to font change commands.

The ¬E command allows you to send an escape command to the printer to control the printing. For example, **¬E(s3B** would begin bold printing (see your printer's manual for a list of the printer or escape commands).

The printer may compress line spacing to fit 66 lines onto the page. This may be undesirable, such as when using pre-printed forms that must align correctly. In these cases, the ¬TY command prevents the printer from compressing the line spacing.

Use the ¬I and ¬S commands to remove unwanted host commands from a print file. For example, when printing with forms-generating software, the files are recognized by the host as text files and formatted with unwanted carriage returns and line feeds. Placing the ¬I at the end of a line and ¬S at the front of the next line causes the interface to remove the host carriage return and line feed commands and send only the data to the printer.

Diacritic Mode

The I-O 2677C Display Station can send characters with diacritic accents to the display or printer when any diacritic accent symbol key is pressed. Pressing circumflex (^), grave accent (`), tilde ( ), cedilla (¸), diaeresis (¨), acute accent (´), or overcircle (°), on the I-O 2677C enters the diacritic mode and a "ð" appears on the status line.

The cursor will not move, but the scan code which tells the display station to go into diacritic mode is transmitted to the host. When the next valid accent character is pressed, the accented character will display at the cursor position and the cursor will advance a position.

Note: The diacritic mode is a function of the host application, not the I-O 2677C. Refer to the system program manual for more information on how to use the diacritic mode.

Hex Feature

The hex function is used to enter the hexadecimal value for a character. This will allow use of characters that normally do not appear on the keyboard.

To enter the hex code, the <Alt><Hex> keys are pressed. Enter the corresponding hexadecimal value using the alphanumeric keys. This function must be repeated for each hexadecimal value entered. Valid values are 40 through FE.

OPERATION

Note: The hex feature is a function of the host application not the I-O Display Station. Refer to the system program manual for more information on how to use the hex feature.

5 PROBLEM RESOLUTION

This chapter provides information to help analyze and solve common problems with the I-O 2677C Display Station.

Before calling your I-O dealer for assistance, look for the problem in the tables in this chapter and try the suggested actions to solve it. If you still have problems, contact your dealer and have the following information ready:

- Model number (I-O 2677C)

- Serial number located on the back of the unit

- Type of host and/or remote controller

- Date of purchase

- Model of printer (if attached)

- Description of problem and/or error message and diagnostic results

- Emulations selected on setup screen

- Devices configured on host

General Display Station Problems

When the display station is turned on, two beeps will sound followed by a display of the internal self-test results. After a few moments, another beep sounds and the sign-on screen appears.

If you do not hear the final beep, the display station has failed to pass the power-on self tests. Repeat the power-on operation to confirm the failure.

If the display passes the self-test, yet no sign-on screen appears and a message appears at the bottom of the screen, this generally means the display station is functioning, but a problem exists in the cabling, addressing, host configuration, etc.

PROBLEM RESOLUTION

Problem (or Message)	Probable Cause	Action
RAM BAD or ROM BAD message.	Display station requires service.	Contact your I-O dealer or I-O Customer Support.
Status Line not displayed at bottom of screen.	No power to the display station.	Verify that the display station is turned on.
		Verify power to the outlet the display station is plugged into.
		Make sure the power cord is firmly connected to the display station and outlet.
	Contrast or brightness is turned all the way down.	Adjust the contrast or brightness control (located on the front of the bezel). Rotate the thumb wheel control all the way to the left.
	Picture tube has been turned off by the power saver.	Check to see that LED is on. Press any key to continue.
Display: Disabled.	No terminal session enabled on the setup screen.	Enable the appropriate session on the setup screen (restricted options).
Display: Not Ready and *Display:* Ready alternately displayed with repetitive beeps.	Address conflict with other devices on cable or on setup screen.	Correct address conflicts between ALL sessions enabled on the display station and other devices on the same twinax cable.
		Disable any sessions not in use.
		Press and hold the **<Reset>** key while powering on the display station, then press **<T>** to enter the "Twinax Monitor Mode" (See Appendix F). Confirm addresses in use, verify that the twinax line is active, and observe frequency of line errors.

Problem (or Message)	Probable Cause	Action
(Continued)	(Continued)	Verify that all sessions enabled on the display station match devices configured at the host.
	Damaged or improper cabling.	Press and hold the **<Reset>** key while powering on the display station, then press **<T>** to enter the "Twinax Monitor Mode" (see Appendix F) and check for improper termination of the last device on the twinax cable.
NV*ERR displayed on status line.	Non-volatile storage error.	Enter setup screen and make sure all settings are as desired. The NV*ERR error should disappear after exiting setup screen.
R*****	New non-volatile storage is being written.	This is part of normal operation if the message is displayed for only a few seconds. If these occurrences become frequent, contact your I-O dealer or I-O Customer Support.
Display: Not Ready (cursor located in the upper right hand corner).	No communication with host (host not operating or improper or damged cabling).	Press and hold the **<Reset>** key while powering on the display station, then press **<T>** to enter the "Twinax Monitor Mode" (see Appendix F). Verify that the host system is operating. Check for improper termination of a prior device on the twinax cable. Check for damaged or disconnected twinax cable.

PROBLEM RESOLUTION

Problem (or Message)	Probable Cause	Action
Display: Not Ready (cursor located in the upper left hand corner).	Communication configuration on display does not match host.	Verify device emulation on setup and device configurations at the host match.
Display: Ready (but no sign-on screen).	Screen may be dimmed.	Press any key to restore the screen.
	Messages need to be answered at host.	Answer messages at host console.
		Vary device OFF then ON at host.
	Wrong configuration at host.	Verify that the display station is not at an address configured for a printer at the host.
	"Lost" address.	Try another address. The workstation controller may have a "lost" address. (A hard IPL will normally restore the lost address.)
	Damaged cabling.	Check for damaged twinax cable.
Display station "drops off line" (display station is first physical device on the cable).	Improper cabling or termination.	Verify that the device at the end of the cable is properly terminated.
		Verify that a PC emulator card is not terminated at mid-line (check terminate jumpers on the board).
		Verify that the other devices on the cable are correctly cabled through.
	Faulty pigtail.	Verify the pigtail is properly connected to the display and twinax cable. Verify the pigtail is faulty by testing with another pigtail.

Problem (or Message)	Probable Cause	Action
Display station "drops off line" (display station NOT first physical device on the cable.)	Improper cabling or termination.	Perform same actions as above.
		If display station is the last device on the cable, verify that it is properly terminated.
	Wrong configuration at host.	Match device emulation on setup screen and device configured at the host.
	Poor power source. Bad, dirty, or fluctuating AC power.	Line filtering may be necessary.
Display station causes other devices on the cable to drop off line.	Address conflicts.	Correct address conflict between ALL sessions enabled in the display station and other devices on the cable.
		Disable sessions not in use.
	Improper or damaged twinax cabling.	Verify proper cable-through/termination of devices on the cable.
		Check for damaged or improper twinax cabling.
Display screen remains "inhibited" or display screen "locks up."	Application in use or system is not in operation. Application software accessed may be busy.	Make sure the host system is operating correctly.
Display station repeatedly cycles through self-test and "Push the RESET Key for Setup" message appears.	Address conflicts in setup. Two emulations are configured to the same address.	Correct address conflict between ALL sessions enabled in the display station.
Alarm or key click volume too loud or too soft.	Wrong selection in setup screen.	Change setup screen choices. (The changes will not take affect until the setup screen is exited).
Dots on screen or options flashing.	Monochrome emulation chosen on color display.	Emulation needs to be set to a color emulation; 3197C
	4/8 color selected.	Press <Alt><Alt><V> to change the display from 4 to 8 colors.

PROBLEM RESOLUTION

Video Problems

The screen dimming feature of the display station blanks the screen completely, except for the status line. The power saving feature blanks the screen entirely. The screen restores with any keystroke, or when any command is received from the host.

Problem	Probable Cause	Action
Screen blank.	Brightness and/or contrast too low.	Adjust brightness and contrast controls.
	No power to display station.	Verify that power is ON (see General Display Station Problems).
	Display mode is locked.	Unlock the software security keylock (see page 4-4).
	Screen has been dimmed or is in Power Saver mode.	Press any key to restore screen.
Screen displays status line only.	Screen has been dimmed.	Press any key to restore screen.
	Brightness and/or contrast too low.	Adjust brightness and contrast controls.
	Configuration problem with the host.	Verify host and display station configurations match.
Screen is too dark, flickering, or out of focus.	Brightness and/or contrast too low.	Adjust brightness and contrast controls.
		Power OFF the display station and contact your I-O dealer or I-O Customer Support.
Screen distorted, shrunk, tilted, rolling, out of focus, flickering, or vertical/horizontal line only.	Display station requires service.	Power off the display station and contact your I-O Dealer or I-O Customer Support.
Screen makes a singing or crackling sound.	Video circuitry.	Power the display station OFF and ON.

Problem	Probable Cause	Action
Cursor is erratic, double cursor, random characters, or characters are missing.	Faulty keyboard.	Perform the built-in keyboard test (refer to Keyboard Problems section).
	Faulty twinax cabling.	Check for twinax cable problems. (Refer to Appendix F.)
	Configuration does not match host.	Match configuration on host and display station.
Screen will not dim.	Dim function disabled on setup screen.	Press <Alt><Alt><D> to manually dim.
		Enable auto-dim on setup screen.
Cannot get 8-color operation in 3197D emulation.	Host recognizes 3197D as a monochrome terminal.	Configure host and display to 3487C NonInfoW or 3197C emulation.
Cannot get 8-color operation in 3197C or 3487C NonInfoW emulation.	Terminal in 4-color mode.	Press <Alt><Alt><V> to have access to 8-color mode.
Cannot get 132-column display in 3197C emulation.	Host recognizes 3197C as an 80-column emulation.	Configure host and display to 3487C NonInfoW or 3197D emulation.
Cannot get 132-column display in 3487C NonInfoW emulation.	Host does not support 3487C.	Configure host and display to 3180 or 3197D emulation, or change to a host or controller that supports 3487C emulation.
Cannot get 132-column, 8-color display.	Emulation not supported.	Configure host and display to 3487C NonInfoW emulation.

PROBLEM RESOLUTION

Keyboard Problems

As a general rule, keyboard problems fall into four categories:

- Improper configuration
- Stuck or broken keys
- Broken keyboard cable connector (either on the cable or the display station)
- Improper installation of the attached keyboard

On the 102/103-key enhanced keyboard, verify that the host configuration is set for the enhanced keyboard at the indicated address. On a System/36, use the "Set Device Characteristics" option in CNFIGSSP. On a System/38's CRTDEVD, specify "GUSB" in the "Workstation Controller Keyboard" field during configuration.

To help diagnose keyboard problems, perform the built-in keyboard diagnostic test. Press and hold the **<Reset>** key or the spacebar while power-ing on the display station, then press **<K>.** All keys except <Enter> should toggle the display. Press **<Enter>** to return to the setup screen.

Problem	Probable Cause	Action
KEYBOARD BAD or KEYBOARD NOT ATTACHED message.	Problem with the keyboard.	Make sure the keyboard is securely connected to the display station.
		Press all keys on the keyboard to make sure there are no loose keys or sticky keys.
		If the message remains, attach a different keyboard.
	Logic board in display station may not be working correctly.	Try the keyboard with same connection on another display station.
A key repeats without being pressed.	Loose or sticky key.	Firmly depress and release the key (several times, if necessary).
	Missing spring or contact.	Turn off display station and contact your I-O dealer or I-O Customer Support.
Missing keystrokes or keys not working.	Faulty keyboard.	Perform the built-in keyboard test.
		Run IBM verification test on keyboard to isolate failing key. To enter verification test, press <Alt><Test> from the sign-on screen.
Characters other than those typed appear on the screen.	Incorrect host configuration.	Change host configuration (see Chapter 3, Configuration).
	Keyboard has not been programmed.	Power display station OFF and ON allowing it to be programmed with the self-test.

PROBLEM RESOLUTION

Printer Problems

Printer problems usually result from improper cabling, an incorrect address, or incorrect emulation. If the printout does not appear as it should, often the wrong emulation, typestyle number, forms length, or margin in the word processing document has been selected.

Note: The display station requires a standard IBM PC parallel cable (25-pin and Centronics 36-pin parallel connectors) to operate a parallel printer. A parallel to serial converter cable must be connected to the display station if an RS-232C serial printer is used.

Problem (or Message)	Probable Cause	Action
Printer: Disabled (bottom of the screen).	Printer emulation disabled on setup screen.	Select desired emulation in setup screen.
Printer: Not Line Sync (bottom of screen).	Display station not communicating with host.	*If Display: Not Ready* also appears, refer to "Display: Not Ready" in General Display Station Problems.
	Printer not communicating with host.	*If Display: Ready* also appears, answer messages at host console. Vary device OFF then ON at host. Verify the printer is not at address configured for display station at the host.
		Try another address. The workstation controller may have lost the address. (A hard IPL will normally restore the lost address.)
		Press and hold **<Reset>** key while powering on display station, then press **<T>** to enter Twinax Monitor Mode to check address. (See Appendix F.)
		Verify the printer emulation selected in setup and the host configurations match and are compatible to printer.
	Improper or damaged printer cable.	Check and verify printer cable.

PROBLEM RESOLUTION

Problem (or Message)	Probable Cause	Action
Printer: Off Line (bottom of screen).	No "select" signal from the attached parallel printer.	Press the ON-LINE, READY, or SELECT button on the printer.
	Printer not installed properly.	Check printer installation.
	Printer not powered on.	Power on the printer.
	Parallel interface not selected on the printer.	If printer has selectable interface, make sure parallel interface is selected. Refer to the printer's user's guide.
	Proper printer is not connected.	Verify a parallel printer or a converter cable is being used.
	Printer not functioning.	Verify that the printer is operational.
Printer: Stopped (bottom of screen).	Wrong printer setup selection.	For continuous forms, make sure "Cut Sheet" is not selected on the setup screen.
	Printer emulation is in "stopped" mode.	If 5219 emulation is being used, check to see if the data stream being sent down has the correct commands and parameters. Press **<Alt><Alt><Print>** to start printer.
		Check to see that the printer does not have a BEL (format) command being sent to it. Press **<Alt><Alt><Print>** to start printer.
	Printer may be out of paper.	Check the paper tray. Add paper if necessary.

Problem (or Message)	Probable Cause	Action
(Continued)	Printer is off line.	Configure printer to ON LINE status.
	Printer is powered off.	Power on the printer.
	Printer has not accepted any characters for more than 90 seconds.	Check printer connections such as parallel to serial adapters, cabling, etc.
		Check printer for any paper jams.
	Local <Alt><Alt> sequences used from the I-O 2677C are interrupting the emulation. (Refer to Help Screen #2).	Press **<Alt><Alt><Print>** to start printer.
	Cut sheets option has stopped the emulation at the end of a page, so a new sheet may be added.	Remove page and insert a new page. Press **<Alt><Alt><Print>** to start the printer.
Printer: Ready (bottom of the screen). "Printer" in reverse video. Printout appears garbled.	Printer is in EBCDIC hex mode.	Press **<Alt><Alt><B>** to disable hex mode.
Printer: Ready (bottom of screen) but no print-out occurs.	Print job held at host.	If above test prints, check messages at host, spool file at host, printer ID the job if assigned in spool file, then try releasing job in the spool file.
	Faulty connections between display station and printer.	If above test does not print, check that printer is functioning; that cable from display station to printer is not faulty; verify hex codes (5224 and 5225 emulations). Power the display station OFF and ON.

PROBLEM RESOLUTION

Problem (or Message)	Probable Cause	Action
(Continued)	Printer not communicating with the display station.	Press **<Alt><Alt><P>** to send the print test pattern to the printer. This test will verify the display station and printer are communicating.
Printout is erratic. Printer stops after printing some tests, graphics characters printed, lines or paragraphs missing, random characters appear at first of printout.	Faulty or damaged cabling.	Verify that cabling from the display station to the printer is correct and undamaged.
	Wrong settings on parallel to serial cable.	In serial applications using parallel to serial converter cable, verify all serial selections between cable and printer match (i.e., baud rate, parity, stop bits, etc.).
	Wrong printer emulation.	Match the printer emulation selected on the display station to the emulation used by the printer.
	Wrong character set.	Verify that character set in setup screen agrees with printer (Code Page 850, Code Page 437, U.S. ASCII, or Roman 8).
	Possible poor power source.	Check for bad, dirty, or fluctuating AC power. Line filtering may be necessary.
Printer will not compress characters (15 CPI) or line (8 LPI).	5256 emulation selected.	Host will not send compressed commands to a 5256 printer.
	Wrong hex codes on setup screen for 15 CPI.	Verify correct hex codes on setup screen.

Problem (or Message)	Probable Cause	Action
(Continued)	Wrong emulation or configuration.	Match printer emulation on display station and device type configured at host.
	Printer not installed properly or not capable of compressed print.	Verify that printer is set up correctly and can do compressed print.
	Wrong pitch or line spacing commands.	Make sure character pitch or line spacing properly specified for output from host.
	Wrong font/typestyle number.	Make sure correct typestyle number specified. 3812/5219 emulation determines pitch by typestyle number.
	Display station needs to be reinitialized.	Reinitialize the display station by powering it OFF then ON.
The printer's print head moves back and forth but does not print.	User-defined character set selected on setup screen, but not changed in the Printer Code Editor.	Change a character set in the Printer Code Editor, or select another character set in the setup screen.
Printer stops at the end of the page and *Printer: Stopped* appears on screen.	Wrong paper selection on the setup screen.	Choose "Continuous Forms." Do not use "Cut Sheet" if using a sheet feeder.
Forms length errors or incorrect forms alignment.	Wrong page eject selection on the setup screen.	Change page eject method in setup screen, then try sending the print job again.

PROBLEM RESOLUTION

Problem (or Message)	Probable Cause	Action
(Continued)	Wrong forms length for the software.	If "Form Feed" is selected, adjust printer's forms length to agree with software's requirements. If "Multiple Line Feed" is used, check for proper form length commands in software.
While using DisplayWrite/36, the printer prints blank lines between lines, cuts off margins, incorrect, extra blank sheets feed, or the pagination incorrect.	Wrong page length.	Verify correct forms length in document. Make sure your document length doesn't exceed the number of maximum lines. (Maximum number of lines per page for 3812/5219 emulation is normally 65).
	Wrong parameter in document.	Verify correct parameters.
Can't change font (3812/5219 emulation only).	Incorrect typestyle number (font ID) selected.	Verify correct or valid font ID selected. Invalid font IDs are ignored by the printer. Not all typestyles are supported by emulation and/or host.
		Set correct hex value for typestyle (font ID) in OCL or CL printer statement. Use font change command as an option, i.e., ¬QXB.

Problem (or Message)	Probable Cause	Action
Right margin is not correct.	Wrong margin or paper size.	Verify margins and paper size set correctly.
		Select "Yes" on error log option on third screen DisplayWrite/36 print options to enable host to identify problems with document. Host will print additional page if any errors.

IBM Error Codes

IBM error codes are generated by the host system when an error occurs in the application being run, such as using the wrong command key, making the wrong selection from a menu, and so on.

When an error occurs, the keyboard lock and the inhibit indicator, "X", appears and remains at the bottom of the screen. You will also see a four-digit system error code in the left-hand corner of the screen on the error line.

To recover from an error, press **<Reset>** and continue to input information. If you cannot recover from an error condition, contact the system operator.

The table on the following pages describes the error that has occured, as indicated by the error.

PROBLEM RESOLUTION

Error Code	Probable Cause	Action
0000	The Help key was pressed. Either no error code was displayed, or the error was issued by a program that does not support the Help key.	Press **<Reset>** and continue entering information, or refer to previous error and perform action required.
0001	The host or remote workstation control unit is slower than the keystrokes entered. The last character you entered was not recognized.	Press **<Reset>** and continue entering data.
0002	The host system or remote workstation control unit received an invalid key code.	Press **<Reset>** and continue entering data. If the error still occurs, report the problem to your system administrator.
0003	You pressed an invalid key after pressing and holding the <Alt> key.	Press **<Reset>.**
0004	You attempted to enter data into a field that does not allow keyboard input.	Press **<Reset>.**
0005	You attempted to enter data when the cursor was not in an input field. Data cannot be entered in a protected area of the display.	Press **<Reset>.** Move the cursor to a valid input field.
0006	After pressing the SysReq/Attn key, and before pressing the <Enter> key or the <Reset> key, you pressed an invalid key.	Press **<Reset>.**

Error Code	Probable Cause	Action
0007	At least one field on the display requires that you enter data before the display can be changed or moved. (The cursor goes to the first character position of the first mandatory-entry field.)	Press **\<Reset\>** and enter the required data.
0008	Non-alphabetic data was attempted to be entered into an alphabetic field. Valid characters are A-Z, a blank, a comma, a period, and a hyphen.	Press **\<Reset\>** and use valid characters.
0009	Non-numeric data was attempted to be entered into a numeric only field. Valid characters are 0-9, a blank, a comma, a period, and a hyphen.	Press **\<Reset\>** and use valid characters.
0010	Data was entered into a field that will only accept signed numeric data. Valid characters are 0-9.	Press **\<Reset\>** and use valid characters.
0011	Data was entered into the last position of a signed numeric field.	Press **\<Reset\>** and make sure that the data is correct. Exit the field by using the Field -, Field +, or Field Exit keys.
0012	The cursor is either in the last position of the field or there are no spaces in the field.	Press **\<Reset\>**. Correct the field, if necessary. The insert key may not be used to change data or to enter the last character into the field.
0013	After pressing the Insert key, you attempted to leave a field.	Press **\<Reset\>**.

PROBLEM RESOLUTION

Error Code	Probable Cause	Action
0014	A key function was pressed that moves the cursor out of the field. However, the requirements of this mandatory-fill field have not been met. (Mandatory-fill fields must be filled completely or left blank.)	Press **<Reset>**, and enter data to fill all of the field, or move the cursor to the start of the field and use the Field -, Field +, or Field Exit keys to blank out all of the field.
0015	Data was entered in the self-check field. The number and the digit you just entered do not correspond.	Press **<Reset>**, and verify numbers entered. If numbers are valid, but error still occurs, contact your system administrator.
0016	The Field - key was pressed, but you are not in a numeric field.	Press **<Reset>**, and continue to enter data. Press **<Field Exit>** to blank the field.
0017	Field -, Field +, or the Field Exit key have been pressed, but the requirements for this field have not been met. You must fill this field completely or exit the first position of the field.	Press **<Reset>**, and enter data to the end of the field or move the cursor to the start of the field and use one of the field keys to blank out the field.
0018	A data key was used instead of a non-data key.	Press **<Reset>**, and use a non-data key such as a **<Field Exit>** key or an arrow key to leave this field.
0019	The Dup key was pressed, and is not permitted in this field.	Press **<Reset>**, and continue.
0020	An invalid key was pressed.	Press **<Reset>**, and continue by pressing the **<Field +>**, **<Field ->**, or **<Field Exit>** key.
0021	The cursor is positioned in a mandatory enter field. Data must be entered before you can exit the field by pressing the Field -, Field +, or Field Exit key.	Press **<Reset>**, and enter the required data.

Error Code	Probable Cause	Action
0022	A system error occurred when using the Insert or Delete key.	Press <**Reset**>. Verify if the insert or delete function was done properly. If not, correct the field.
0023	The Hex key was pressed, but the keys following were not A-F, or 0-9. This error also occurs when a hexa-decimal code is used in a numeric-only, signed numeric, alpha only, or feature I/O field.	Press <**Reset**>, and continue.
0024	A non-numeric value was entered in a numeric-only field.	Press <**Reset**>, and continue.
0026	The Field - key was pressed to exit a numeric-only field, but last position of the field is not numeric.	Press <**Reset**> and correct the last position of the field.
0027	A key was pressed not used by the display module.	Press <**Reset**>, and continue using valid keys.
0029	Second key pressed during the diacritic mark key function was not a valid combination.	Press <**Reset**>, and enter a valid combination.
0040	The "Data Set Ready" line is inactive, and should be active.	Recovery must be made at the remote control unit.
0042	The "Receive Clock" signal failed.	Recovery must be made at the remote control unit.
0043	The "Data Set Ready" line is active and should be inactive.	Recovery must be made at the remote control unit.
0044	The 30-second communica-tions time-out expired with-out valid data received.	Recovery must be made at the remote control unit.

PROBLEM RESOLUTION

Error Code	Probable Cause	Action
0045	"Data Set Ready" will not activate.	Recovery must be made at the remote control unit.
0050	Either the "Clear to Send" line was inactive while the "Request to Send" line was active or the "Clear to Send" line was active while the "Request to Send" line was inactive.	Recovery must be made at the remote control unit.
0051	The transmit clock signal failed during a transmit operation.	Recovery must be made at the remote control unit.
0052	The remote control unit detected an error.	Recovery must be made at the remote control unit.
0054	The remote control unit received invalid commands from the system during communication.	Recovery must be made at the remote control unit.
0072	The key pressed is not valid in the current area of the screen.	Recovery must be made at the remote control unit.
0097	On-line verification tests not supported by the host program were trying to run.	Press <**Reset**>, and continue to use display module without performing the verification tests.
0099	An error occurred before, after, or during the sign-on.	Press <**Reset**>, and if error occurs again, contact you system administrator.

Record/Playback Error Codes

The following error codes indicate a problem with the Record/Playback feature on a 122-key or 102/103-key keyboard. These codes appear in the bottom left-hand corner of the screen. Remember that local (non-host) commands such as <Alt><Alt><J> cannot be recorded.

PROBLEM RESOLUTION

Error Code	Probable Cause	Action
9001	Recordable keystroke memory is full (There is no room to enter additional keystrokes).	Press **<Reset>**, and then **<Record>** to exit. Erase a recorded keystroke sequence for one or more CMD keys to clear memory for the new keystroke sequence.
9002	The program detected an error in the recorded data, and the contents of that CMD key were automatically erased.	Press the **<Reset>** key.
9003	While performing the Record or Play function, a key other than Alt, Record, Erase Input, Reset, or Shift was pressed before pressing a valid CMD key.	Press **<Reset>** followed by a valid CMD key (one containing a recorded keystroke sequence.)
9004	While performing the Record or Play function, a CMD key was pressed with an Alt key.	Press **<Reset>**, then press only the CMD key.
9007	While recording a keystroke sequence, an invalid sequence key (such as the Play or Setup keys) were pressed. These keys cannot be recorded in a sequence.	Press **<Reset>**, and continue with valid sequences.
9010	During the play function, a CMD key was pressed that does not contain a recorded keystroke sequence.	Press **<Reset>**, then choose the CMD key that contains the required recorded keystrokes. (one containing a recorded keystroke sequence.)
9015	During normal operation, the <Quit> or <Pause> key was pressed.	Press the **<Reset>** key.

Error Code	Probable Cause	Action
9019	While the Record/Play Pause Indicator (^R, ^P) was displayed on the status line, an invalid key was pressed.	Press the **<Reset>** key.
9020	The Record or Play key was pressed while the Record/Playback function was inhibited.	Press **<Reset>**. Refer to the Record/Playback Security feature on page 4-14.
9021	The Record or Play key was pressed in a non-display field when the Record/Playback security level is prohibited.	Press **<Reset>**. Refer to the Record/Playback Security feature on page 4-14.

Split Screen Error Codes

The following error codes indicate a problem with the split screen feature. These codes appear in the bottom left-hand corner of the screen.

Error Code	Probable Cause	Action
9030	The <Jump> key was pressed while in only one session.	Press the **<Reset>** key.
9031	The <Back> or <Fwd> key was pressed when the local scroll function was unavailable.	Press the **<Reset>** key.
9032	The <Zoom> key was pressed while in a one-session display mode or when one or both of the display sessions were in 29 x 132 screen format.	Press the **<Reset>** key.
9033	The print key was pressed while in the split screen mode. There has also been an attempt to print while one or more sessions were in the 29 x 132 screen format.	Press the **<Reset>** key.

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APPENDIX A

Typestyle Reference Chart

IBM Typestyle Numbers for HP LaserJet Fonts

The following tables list the IBM typestyle numbers (font IDs) that the display station uses to select fonts internal to the printer and from HP font cartridges. I-O font change commands for each font are also listed.

Typestyle numbers with an asterisk (*) next to them are acceptable IBM font IDs for device configuration and OCL or CL printer commands (in hexadecimal).

I-O font change commands begin with a logical not (¬), which is upper Shift 6 on U.S. keyboards. The caret (^) symbol may be substituted in non-U.S. applications.

Pitch 19.0 permits 198-columns to be printed in landscape on 8 1/2" x 11" paper.

Proportional fonts cannot be right justified through use of the IBM justify command.

Note: Typestyle number 86 prints the resident 10 CPI Courier font at 12 CPI spacing in portrait (¬QXM). Typestyle number 85 prints the resident 16 CPI Line Printer font at 12 CPI spacing in Landscape (¬QXN). Numbers in parenthesis are alternatives that more closely match the IBM CPI spacing of the font.

APPENDIX A

Hewlett Packard LaserJet Internal Resident Fonts						
Printer Model	**Font**	**Orient**	**Pitch**	**Point Size**	**Type-style No.**	**Font Change Command**
All Models	Courier	P	10	12	*11	¬ QXG
		L	10	12	*5	¬ QXH
Plus & Series II	Line Printer	P	16.66	8.5	*221	¬ QXJ
		L	16.66	8.5	*222	¬QXR
Series II	Line Printer (8LPI)	P	16.66	8.5	*223	¬ QXL
Series II	Line Printer (8LPI)	L	19.0	8.5	*225	¬ QXP
			13.3	8.5	*91	¬ QXK

HP Cartridge Fonts							
				Typestyle No		**Font Change Command**	
Font	**Orient**	**Pitch**	**Point Size**	**Standard**	**Legal**	**Standard**	**Legal**
A Cartridge *Courier 1 (Roman 8 Symbol Set)*							
Courier bold	P	10	12	8	--	¬ QLA	--
	L	10	12	9	--	¬ QLC	--
Courier light	P	10	12	6	--	¬ QLB	--
	L	10	12	7	--	¬ QLC	--
Line Printer light	P	16.66	8.5	*221	--	¬ QLE	--
B Cartridge *TMS Proportional 1 (US ASCII Symbol Set)*							
Helvetica bold	P	Prop.	14.4	175	--	¬ QBA	--
Tms Rmn med	P	Prop.	10	*158	--	¬ QBB	--
Tms Rmn bold	P	Prop.	10	*159	--	¬ QBC	--
Tms Rmn med itl	P	Prop.	10	*162	--	¬ QBD	--
Tms Rmn light	P	Prop.	8	154	--	¬ QBE	--
Line Printer light	L	16.66	8.5	255	--	¬ QBF	--
		19.0	8.5	*225	--	¬ QBG	--

Font	Orient	Pitch	Point Size	Typestyle No.		Font Charge Command	
				Standard	Legal	Standard	Legal
E Cartridge *Letter Gothic (Roman 8, US ASCII Symbol Set)*							
Letter Gothic med	P	12	12	*84	--	¬ QNA	--
	L	12	10	88	--	¬ QND	--
Letter Gothic bold	P	12	10	97	--	¬ QNB	--
	L	12	10	98	--	¬ QNE	--
Letter Gothic med italic	P	12	10	107	--	¬ QNC	--
	L	12	10	108	--	¬ QNF	--
G Cartridge *Legal Elite (US ASCII Symbol Set)*							
Prestige Elite medium	P	12	10	*80	90	¬QGUA	¬QGLA
Prestige Elite bold	P	12	10	82	92	¬QGUC	¬QGLC
Prestige Elite med italic	P	12	10	81	93	¬QGUB	¬QGLB
Prestige Elite medium	P	16.66	7	*222 (252)	227 (253)	¬QGUD	¬QGLD
	L	16.66	7	261 (250)	228 (254)	¬QGUE	¬QGLE
		19.0	7	214	--	¬QGUF	--
Line Draw Set	P	12	12	110	110	¬QGUB ¬QGF	--

APPENDIX A

Font	Orient	Pitch	Point Size	Typestyle No.		Font Charge Command	
				Standard	Legal	Standard	Legal
H Cartridge *Legal Courier (US ASCII Symbol Set)*							
Courier medium	P	10	12	*20	30	¬ QHUA	¬QHLA
Courier bold	P	10	12	22	32	¬ QHUC	¬QHLC
Courier med italic	P	10	12	21	31	¬ QHUB	¬QHLB
Prestige Elite medium	P	16.66	7	*222 (252)	227 (253)	¬ QHUD	¬QHLD
	L	16.66	7	216 (250)	228 (254)	¬ QHUE	¬QHLE
		19.0	7	214	--	¬ QHUF	--
Line Draw Set	P	10	12	40	--	¬ QHF	--
L Cartridge *Courier P&L (Roman 8 Symbol Set)*							
Courier bold	P	10	12	8	--	¬ QLA	--
	L	10	12	9	--	¬ QLC	--
Courier medium italic	P	10	12	6	--	¬ QLB	--
	L	10	12	7	--	¬ QLD	--
Line Printer Medium	P	16.66	8.5	*221	--	¬QLE	--
	L	16.66	8.5	255	--	¬QLF	--
		19.0	8.5	*225	--	¬QLG	--

Font	Orient	Pitch	Point Size	Typestyle No		Font Change Command	
				Standard	Legal	Standard	Legal
M Cartridge *Prestige Elite (Roman 8 Symbol Set)*							
Prestige Elite medium	P	12	10	*87	--	¬QMA	--
	L	12	10	88	--	¬QMD	--
Prestige Elite bold	P	12	10	97	--	¬QMB	--
	L	12	10	98	--	¬QME	--
Prestige Elite med italic	P	12	10	107	--	¬QMC	--
	L	12	10	108	--	¬QMF	--
N Cartridge *Letter Gothic P&L (Roman 8 Symbol Set)*							
Letter Gothic medium	P	12	12	*84	--	¬ QNA	--
	L	12	12	*85	--	¬ QND	--
Letter Gothic bold	P	12	12	94	--	¬ QNB	--
	L	12	12	95	--	¬ QNE	--
Letter Gothic medium italic	P	12	12	104	--	¬ QNC	--
	L	12	12	105	--	¬ QNF	--
Q Cartridge *Memo 1 (Roman 8 Symbol Set)*							
Courier bold	P	10	12	8	--	¬ QQA	--
	L	10	12	9	--	¬ QQE	--
Courier medium italic	P	10	12	6	--	¬ QQB	--
	L	10	12	7	--	¬ QQF	--

Font	Orient	Pitch	Point Size	Typestyle No.		Font Change Command	
				Standard	Legal	Standard	Legal
Letter Gothic med	P	12	12	*84	--	¬ QQC	--
Letter Gothic bold	P	12	12	94	--	¬ QQD	--
R Cartridge *Presentations 1*							
Presentation bold	P	6.5	18	18 (240)	28 (242)	¬ QRUA	¬QRLA
	L	6.5	18	19 (241)	29 (243)	¬ QRUD	¬ QRLD
Presentation bold	P	8.1	16	16 (260)	26 (262)	¬ QRUB	¬ QRLB
	L	8.1	14	17 (261)	27 (263)	¬ QRUE	¬ QRLE
Presentation bold	P	10	14	14	24	¬ QRUC	¬ QRLC
	L	10	14	15	25	¬ QRUF	¬ QRLF
Letter Gothic medium	P	10	14	*12	34	¬ QRUG	¬ QRLG
	L	10	14	*13	35	¬ QRUH	¬QRLH
PCLine bold	P	10	14	36	--	¬ QRJ	--
	L	10	14	37	--	¬ QRK	--
Line Draw	P	10	14	38	--	¬ QRM	--
	L	10	14	39	--	¬ QRN	--

APPENDIX B

Cabling Specifications

This appendix lists the cable specifications for the parallel printer port and the display station connectors.

Printer Port

The I-O 2677C Display Station has a standard IBM PC parallel printer port that utilizes a standard parallel printer cable with 25-pin male connector on one end and a 36-pin Centronics-type male connector on the other end. The display station printer port is a DB25 connector.

WARNING!   DO NOT connect a serial printer cable with an RS-232C connector to the display station's 25-pin connector without using a converter cable. If you do, you will damage the display station. Damage from improper connection to a serial printer is not repairable under the display station's warranty.

APPENDIX B

I-O 2677C Display Station DB25 Printer Port and Cable Connector Pinouts			
Display Station Connector Pin Number	**AT Standard TTL Levels Signal Name**	**Direction of Signal**	**Printer Cable Connector Pin Number**
1	Strobe	To Printer	1
2	Data Bit 0	To Printer	2
3	Data Bit 1	To Printer	3
4	Data Bit 2	To Printer	4
5	Data Bit 3	To Printer	5
6	Data Bit 4	To Printer	6
7	Data Bit 5	To Printer	7
8	Data Bit 6	To Printer	8
9	Data Bit 7	To Printer	9
10	Acknowledge	From Printer	10
11	Busy	From Printer	11
12	P.End (Out of Paper)	From Printer	12
13	Select	From Printer	13
14	Auto Feed	To Printer	14
15	Error	From Printer	32
16	Initialize Printer	To Printer	31
17	Select Input	To Printer	36
18-25	Ground		19, 21, 23, 25, 27, 29, 30, 33

Host Connector

The cable used to connect the display station to the host twinax cable is an auto-terminating, 15-pin V-connector. The 15-pin male connector on the display station has the following

Twinax Cable Pinouts	
Pin Number	**Signal**
1	Shield Ground
2	ITest
3	Shield Ground
4	Shield Ground
5	Shield Ground
6	N/C
7	Y-Phase (IBM "B")
8	Shield Ground
9	Shield Ground
10	Shield Ground
11	Shield Ground
12	Shield Ground
13	Shield Ground
14	B-Phase (IBM "A")
15	Shield Ground

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APPENDIX C
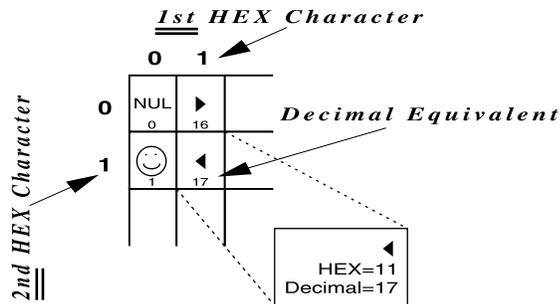
Code Page 850 Symbol Set

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL (0)	► (16)	(32)	0 (48)	@ (64)	P (80)	` (96)	p (112)	Ç (128)	É (144)	á (160)	▓ (176)	└ (192)	ð (208)	Ó (224)	- (240)
1	☺ (1)	◄ (17)	! (33)	1 (49)	A (65)	Q (81)	a (97)	q (113)	ü (129)	æ (145)	í (161)	▒ (177)	┴ (193)	Ð (209)	ß (225)	± (241)
2	☻ (2)	↕ (18)	" (34)	2 (50)	B (66)	R (82)	b (98)	r (114)	é (130)	Æ (146)	ó (162)	▓ (178)	┬ (194)	Ê (210)	Ô (226)	= (242)
3	♥ (3)	‼ (19)	# (35)	3 (51)	C (67)	S (83)	c (99)	s (115)	â (131)	ô (147)	ú (163)	│ (179)	├ (195)	Ë (211)	Ò (227)	¾ (243)
4	♦ (4)	¶ (20)	$ (36)	4 (52)	D (68)	T (84)	d (100)	t (116)	ä (132)	ö (148)	ñ (164)	┤ (180)	─ (196)	È (212)	õ (228)	¶ (244)
5	♣ (5)	§ (21)	% (37)	5 (53)	E (69)	U (85)	e (101)	u (117)	à (133)	ò (149)	Ñ (165)	Á (181)	┼ (197)	ı (213)	Õ (229)	§ (245)
6	♠ (6)	▬ (22)	& (38)	6 (54)	F (70)	V (86)	f (102)	v (118)	å (134)	û (150)	ª (166)	Â (182)	ã (198)	Í (214)	µ (230)	÷ (246)
7	● (7)	↨ (23)	' (39)	7 (55)	G (71)	W (87)	g (103)	w (119)	ç (135)	ù (151)	º (167)	À (183)	Ã (199)	Î (215)	þ (231)	¸ (247)
8	◘ (8)	↑ (24)	((40)	8 (56)	H (72)	X (88)	h (104)	x (120)	ê (136)	ÿ (152)	¿ (168)	© (184)	╚ (200)	Ï (216)	Þ (232)	° (248)
9	○ (9)	↓ (25)	) (41)	9 (57)	I (73)	Y (89)	i (105)	y (121)	ë (137)	Ö (153)	® (169)	╣ (185)	╔ (201)	┘ (217)	Ú (233)	¨ (249)
A	◙ (10)	→ (26)	* (42)	: (58)	J (74)	Z (90)	j (106)	z (122)	è (138)	Ü (154)	¬ (170)	║ (186)	╩ (202)	┌ (218)	Û (234)	· (250)
B	♂ (11)	← (27)	+ (43)	; (59)	K (75)	[(91)	k (107)	{ (123)	ï (139)	ø (155)	½ (171)	╗ (187)	╦ (203)	█ (219)	Ù (235)	¹ (251)
C	♀ (12)	∟ (28)	, (44)	< (60)	L (76)	\ (92)	l (108)	| (124)	î (140)	£ (156)	¼ (172)	╝ (188)	╠ (204)	▄ (220)	ý (236)	³ (252)
D	♪ (13)	↔ (29)	- (45)	= (61)	M (77)	] (93)	m (109)	} (125)	ì (141)	Ø (157)	¡ (173)	¢ (189)	═ (205)	¦ (221)	Ý (237)	² (253)
E	♫ (14)	▲ (30)	. (46)	> (62)	N (78)	^ (94)	n (110)	~ (126)	Ä (142)	× (158)	« (174)	¥ (190)	╬ (206)	Ì (222)	¯ (238)	■ (254)
F	☼ (15)	▼ (31)	/ (47)	? (63)	O (79)	_ (95)	o (111)	⌂ (127)	Å (143)	ƒ (159)	» (175)	┐ (191)	¤ (207)	▀ (223)	´ (239)	(255)

1st HEX Character

	0	1
0	NUL (0)	► (16)
1	☺ (1)	◄ (17)

2nd HEX Character

Decimal Equivalent

HEX=11
Decimal=17
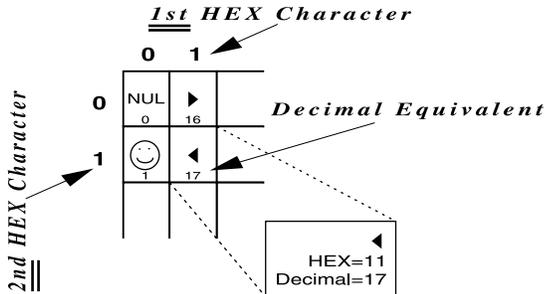
Code Page 437 Symbol Set

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL / 0	▶ / 16	/ 32	0 / 48	@ / 64	P / 80	` / 96	p / 112	Ç / 128	É / 144	á / 160	▦ / 176	└ / 192	⊥ / 208	α / 224	≡ / 240
1	☺ / 1	◀ / 17	! / 33	1 / 49	A / 65	Q / 81	a / 97	q / 113	ü / 129	æ / 145	í / 161	� / 177	⊥ / 193	╤ / 209	ß / 225	± / 241
2	☻ / 2	↕ / 18	" / 34	2 / 50	B / 66	R / 82	b / 98	r / 114	é / 130	Æ / 146	ó / 162	▦ / 178	┬ / 194	╥ / 210	Γ / 226	≥ / 242
3	♥ / 3	‼ / 19	# / 35	3 / 51	C / 67	S / 83	c / 99	s / 115	â / 131	ô / 147	ú / 163	│ / 179	├ / 195	╙ / 211	π / 227	≤ / 243
4	♦ / 4	¶ / 20	$ / 36	4 / 52	D / 68	T / 84	d / 100	t / 116	ä / 132	ö / 148	ñ / 164	┤ / 180	─ / 196	╘ / 212	Σ / 228	⌠ / 244
5	♣ / 5	§ / 21	% / 37	5 / 53	E / 69	U / 85	e / 101	u / 117	à / 133	ò / 149	Ñ / 165	╡ / 181	┼ / 197	╒ / 213	σ / 229	⌡ / 245
6	♠ / 6	▬ / 22	& / 38	6 / 54	F / 70	V / 86	f / 102	v / 118	å / 134	û / 150	ª / 166	╢ / 182	╞ / 198	╓ / 214	μ / 230	÷ / 246
7	● / 7	↨ / 23	' / 39	7 / 55	G / 71	W / 87	g / 103	w / 119	ç / 135	ù / 151	º / 167	╖ / 183	╟ / 199	╫ / 215	τ / 231	≈ / 247
8	◘ / 8	↑ / 24	(/ 40	8 / 56	H / 72	X / 88	h / 104	x / 120	ê / 136	ÿ / 152	¿ / 168	╕ / 184	╚ / 200	╪ / 216	Φ / 232	° / 248
9	○ / 9	↓ / 25	) / 41	9 / 57	I / 73	Y / 89	i / 105	y / 121	ë / 137	Ö / 153	⌐ / 169	╣ / 185	╔ / 201	┘ / 217	θ / 233	∙ / 249
A	◙ / 10	→ / 26	* / 42	: / 58	J / 74	Z / 90	j / 106	z / 122	è / 138	Ü / 154	¬ / 170	║ / 186	╩ / 202	┌ / 218	Ω / 234	· / 250
B	♂ / 11	← / 27	+ / 43	; / 59	K / 75	[/ 91	k / 107	{ / 123	ï / 139	¢ / 155	½ / 171	╗ / 187	╦ / 203	■ / 219	δ / 235	√ / 251
C	♀ / 12	└ / 28	, / 44	< / 60	L / 76	\ / 92	l / 108	| / 124	î / 140	£ / 156	¼ / 172	╝ / 188	╠ / 204	▬ / 220	∞ / 236	ⁿ / 252
D	♪ / 13	↔ / 29	- / 45	= / 61	M / 77	] / 93	m / 109	} / 125	ì / 141	¥ / 157	¡ / 173	╜ / 189	═ / 205	▬ / 221	ø / 237	² / 253
E	♫ / 14	▲ / 30	. / 46	> / 62	N / 78	^ / 94	n / 110	~ / 126	Ä / 142	Pt / 158	« / 174	╛ / 190	╬ / 206	▮ / 222	∈ / 238	■ / 254
F	☼ / 15	▼ / 31	/ / 47	? / 63	O / 79	_ / 95	o / 111	⌂ / 127	Å / 143	ƒ / 159	» / 175	┐ / 191	⊥ / 207	▬ / 223	∩ / 239	/ 255

1st HEX Character

	0	1
0	NUL / 0	▶ / 16
1	☺ / 1	◀ / 17

2nd HEX Character

Decimal Equivalent

HEX=11
Decimal=17

Roman-8 Symbol Set

Includes US ASCII (dec. 1-127) and Roman Extension Symbol Sets

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL (0)	DLE (16)	(32)	0 (48)	@ (64)	P (80)	' (96)	p (112)	(128)	(144)	(160)	‾ (176)	â (192)	Å (208)	Á (224)	þ (240)
1	SOH (1)	DC1 (17)	! (33)	1 (49)	A (65)	Q (81)	a (97)	q (113)	(129)	(145)	À (161)	Ý (177)	ê (193)	î (209)	Ã (225)	þ (241)
2	STX (2)	DC2 (18)	" (34)	2 (50)	B (66)	R (82)	b (98)	r (114)	(130)	(146)	Â (162)	ý (178)	ô (194)	Ø (210)	ã (226)	. (242)
3	ETX (3)	DC3 (19)	# (35)	3 (51)	C (67)	S (83)	c (99)	s (115)	(131)	(147)	È (163)	° (179)	û (195)	Æ (211)	Ð (227)	µ (243)
4	EOT (4)	DC4 (20)	$ (36)	4 (52)	D (68)	T (84)	d (100)	t (116)	(132)	(148)	Ê (164)	Ç (180)	á (196)	å (212)	ð (228)	¶ (244)
5	ENQ (5)	NAK (21)	% (37)	5 (53)	E (69)	U (85)	e (101)	u (117)	(133)	(149)	Ë (165)	ç (181)	é (197)	í (213)	Í (229)	¾ (245)
6	ACK (6)	SYN (22)	& (38)	6 (54)	F (70)	V (86)	f (102)	v (118)	(134)	(150)	Î (166)	Ñ (182)	ó (198)	ø (214)	Ì (230)	— (246)
7	BEL (7)	ETB (23)	' (39)	7 (55)	G (71)	W (87)	g (103)	w (119)	(135)	(151)	Ï (167)	ñ (183)	ú (199)	æ (215)	Ó (231)	¼ (247)
8	BS (8)	CAN (24)	((40)	8 (56)	H (72)	X (88)	h (104)	x (120)	(136)	(152)	´ (168)	¡ (184)	à (200)	Ä (216)	Ò (232)	½ (248)
9	HT (9)	EM (25)	) (41)	9 (57)	I (73)	Y (89)	i (105)	y (121)	(137)	(153)	` (169)	¿ (185)	è (201)	ì (217)	Õ (233)	ª (249)
A	LF (10)	SUB (26)	* (42)	: (58)	J (74)	Z (90)	j (106)	z (122)	(138)	(154)	^ (170)	¤ (186)	ò (202)	Ö (218)	õ (234)	º (250)
B	VT (11)	ESC (27)	+ (43)	; (59)	K (75)	[(91)	k (107)	{ (123)	(139)	(155)	¨ (171)	£ (187)	ù (203)	Ü (219)	Š (235)	« (251)
C	FF (12)	FS (28)	, (44)	< (60)	L (76)	\ (92)	l (108)		(124)	(140)	(156)	~ (172)	¥ (188)	ä (204)	É (220)	š (236)	■ (252)
D	CR (13)	GS (29)	- (45)	= (61)	M (77)	] (93)	m (109)	} (125)	(141)	(157)	Ù (173)	§ (189)	ë (205)	ï (221)	Ú (237)	» (253)
E	SO (14)	RS (30)	. (46)	> (62)	N (78)	^ (94)	n (110)	~ (126)	(142)	(158)	Û (174)	ƒ (190)	ö (206)	ß (222)	Ÿ (238)	± (254)
F	SI (15)	US (31)	/ (47)	? (63)	O (79)	_ (95)	o (111)	▨ (127)	(143)	(159)	£ (175)	¢ (191)	ü (207)	Ô (223)	ÿ (239)	(255)

1st HEX Character

2nd HEX Character

Decimal Equivalent

	0	1
0	NUL (0)	DLE (16)
1	SOH (1)	DC1 (17)

DC1
HEX=11
Decimal=17
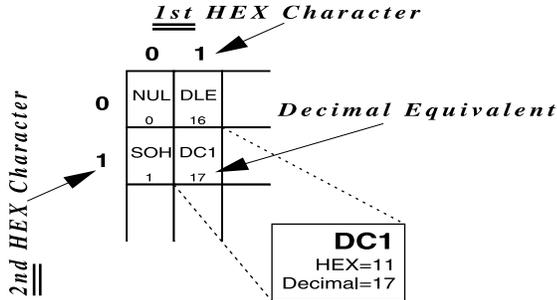
APPENDIX C

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APPENDIX D

Related Documentation

The following documentation may be helpful to you in the installation and operation of the I-O 2677C Display Station.

IBM 5250 Information Display Station Introduction, GA21-9246
Describes the work stations that make up the 5250 information display system and their available functions and features

IBM 5250 Information Display System Planning and Site Preparation Guide, GA21-9337 Information to assist you in planning for the installation, including detailed cabling and switch settings

IBM 5250 Information Display System Functions Reference Manual, SA-21-9247 Describes SNA, SDLC, and Data Streams for 5250 type devices

IBM System/36 Changing Your System Configuration, SC21-9052
Provides instructions and reference information on how to change your system configuration

IBM System/38 Guide to Program Products Installation and Device Configuration, GC21-7775 Provides instructions and reference information on how to change your system configuration

IBM AS/400 Device Configuration Guide, SC21-8106 Provides instructions and reference information on how to change your system configuration

AS/400 Workstation Customization Function Programmers Guide, SC41-0056 Provides insturctions and reference information on how to remap the keyboard on your system

IBM 3197 Model D Display Station User's Guide, GA18-2545
Identifies functions, controls, features, and how to operate the IBM 3197 Model D

IBM 3197 Model C Display Station User's Guide, GA18-2559 Identifies functions, controls, features, and operation of the IBM 3197 Model C

APPENDIX D

IBM 3180 Display Station Model 2 User's Guide, GA21-9469
Identifies functions, controls, features, and operation of the IBM 3180

IBM 3196 Display Station User's Guide, GA18-2482 Identifies functions, controls, features, and operation of the IBM 3196

IBM 4214 Printer Model 2 Operator's Guide, GC31-2581
Identifies functions, controls, features, and operation of the IBM 4214 Mod 2 Printer

IBM 5219 Printer Models D01/D02 Setup Procedures/Operator's Guide, GA34-0054 Provides information on how to setup and operate the IBM 5219 printer and a description of the printer's features and functions

IBM 5224 Printer Operator's Guide, GA34-0092 Identifies functions, controls, features, and operation of the IBM 5224 Printer

IBM 5225 Printer Models 1, 2, 3 and 4 Operator's Guide, GA34-0054
Identifies functions, controls, features, and operation of the IBM 5225 Printer

IBM 5256 Printer Operator's Guide, GA21-9260 Identifies functions, controls, features, and operation of the IBM 5256 Printer

APPENDIX E

The following on-line help screens are available. To enter the on-line Help mode, press <Alt><Alt><Help>.

Help Screen - Screen Functions

Screen Functions

Function   Keystrokes

Cursor Blink, on/off: ALT, ALT, X
Cursor Position, on/off: ALT, ALT, K
Cursor Type, block/underline: ALT, ALT, ERROR RESET
Dim Screen, manually: ALT, ALT, D
Extended Display Mode, on/off: ALT, ALT, T
Help Screens, Local: ALT, ALT, HELP
Jump to Another Session: ALT, ALT, J or ALT-JUMP
Session Change Within Window: ALT, ALT, W
Zoom, on/off: ALT, ALT, Z or a-A or Zoom
Keyboard Click, on/off: ALT, ALT, A
Parity Error Indicator, on/off: ALT, ALT, E
Ruler, on/off: ALT, ALT, R or Rule
Setup Screens: ALT, ALT, S or Setup
4/8 Colors: ALT, ALT, V
White Cursor, on/off: ALT, ALT, I
Password/Lock: ALT, ALT, I
Record/Playback Security: ALT, ALT, ATTN

SPACE BAR = Next help screen   ENTER = Exit help screens

APPENDIX E

Help Screen - Print Functions

Printer Functions

Function	Keystrokes
Cancel Print Job:	ALT, ALT, C
EBCDIC HEX Print Mode:	ALT, ALT, B
Start or Stop Printer:	ALT, ALT, PRINT
Local Screen Print:	ALT, ALT, O
Form Feed:	ALT, ALT, F
Line Feed:	ALT, ALT, L
Test Pattern Print:	ALT, ALT, P
Printer Code Editor:	ALT, ALT, U

SPACE BAR = Next help screen   ENTER = Exit help screens

Help Screen - Status Line Indicators

Status Line Indicators

Indicator		Explanation
Display:	Ready	Display communicating with host system
	Not Ready	Display not communicating with host system
	Disabled	Display has been disabled on the setup screen
^		Insert mode active
↑		Keyboard shift
x		Input inhibited
ð		Diacritic mode active
MSG		Message waiting
Printer:	Ready	Printer communicating with host system
	No Line Sync	Printer not communicating with host system
	Disabled	Printer has been disabled on the setup screen
	Off Line	Attached printer is off-line
	Stopped	Printer has been stopped by operator
Printer:		Printer is in EBCDIC HEX print mode

SPACEBAR = Next help screen   ENTER = Exit help screen

ANHANG E

Die folgenden on-line-Hilfsanzeigen sind erhältlich. Drücken der Tasten
<Alt> <Alt> <Hilfe> bewirkt den Eingang in den Hilfsmodus.

Bedienungshilfe 1 von 3

Bildschirmfunktionen

Funktionen	Tasteneingabe
Cursor Programmgesteuert, ein/aus:	ALT, ALT, X
Cursorposition, ein/aus:	ALT, ALT, K
Cursortyp, Block/Strich:	ALT, ALT, Grdst
Dunkelschaltung, manuell:	ALT, ALT, D
Erweiterte Anzeige, ein/aus:	ALT, ALT, T
Bedienungshilfe:	ALT, ALT, Hilfe
Sprung zum nächsten logischen Bildschirm:	ALT, ALT, J oder ALT-Sprg
Wechseln des log. Bildschirmes im Fenster:	ALT, ALT, W
Split screen, ein/aus:	ALT, ALT, Z oder a-A
Tastaturklicker, ein/aus:	ALT, ALT, A
Paritätsfehler-Anzeige, ein/aus:	ALT, ALT, E
Lineal, ein/aus:	ALT, ALT, R oder Linie
Konfigurationsmenüs:	ALT, ALT, S oder Defin
4/8 Colors:	ALT, ALT, V
White cursor, ein/aus:	ALT, ALT, Y
Passwort/Sperre:	ALT, ALT, I
Aufrahme/Wiedergabe Sicherung:	ALT, ALT, Abruf

LEERTASTE = Nächste Hilfs-Seite
TASTE "DAT FREIG" = Bedienungshilfe verlassen

Deutsch

Bedienungshilfe 2 VON 3

```
                           Druckerfunktionen


   Funktionen                             Tasteneingabe


   Druckauftrag löschen:                  ALT, ALT, C
   EBCDIC HEX Druckmodus:                 ALT, ALT, B
   Drucker, stoppen/starten:              ALT, ALT, Druck
   Bildschirminhalt drucken (lokal):      ALT, ALT, O
   Formularvorschub (Form feed):          ALT, ALT, F
   Zeilenvorschub:                        ALT, ALT, L
   Testmuster drucken:                    ALT, ALT, P
   Drucker-Befehls Editor:                ALT, ALT, U


   LEERTASTE = Nächste Hilfs-Seite
   TASTE "DAT FREIG" = Bedienungshilfe verlassen
```

Bedienungshilfe 3 von 3

```
                          Statusanzeigen

 Anzeige                    Erklärung

 Bildsch:  Bereit       Bildschirm hat Systemverbindung
           Nicht Ber    Bildschirm hat keine Systemverbindung
           Außer Betr   Bildschirm wurde in dem Konfigurationsmenü nicht definiert

 ^                      Einfügemodus aktiv
 ↑                      Tastaturumschaltung
 X                      Eingabe unterdrückt
 ð                      Diakritischer Modus aktiv
 MSG                    Nachricht wartet


 Drucker:  Bereit       Drucker hat  Systemverbindung
           Kein Sync    Drucker hat keine Systemverbindung
           Außer Betr   Drucker wurde in dem Konfigurationsmenü nicht definiert
           Off Line     Angeschlossener Drucker ist Off-Line
           Gestoppt     Drucker wurde vom Bediener gestoppt
 Drucker:               Drucker befindet sich im EBCDIC HEX Druckmodus

 LEERTASTE = Nächste Hilfs-Seite
 TASTE "DAT FREIG" = Bedienungshilfe verlassen
```

APPENDICE E

Les écrans d'assistance en ligne suivants peuvent être affichés sur votre moniteur. Pour entrer en mode d'assistance en ligne, appuyez simultanément sur les touches <Alt>, <Alt> et <Aide> du clavier.

Ecran d'aide 1 de 3

Fonctions de l'ecran

Fonction	Touches
Clignotement de curseur, actif/inactif:	ALT, ALT, X
Position du curseur, actif/inactif:	ALT, ALT, K
Forme du curseur, pavé/souligné:	ALT, ALT, REST
Intensité de l'écran, réglage manuel:	ALT, ALT, D
Mode Affichage étendu, actif/inactif:	ALT, ALT, T
Ecrans d'aide, locaux:	ALT, ALT, AIDE
Changement de session:	ALT, ALT, J ou ALT-SAUT
Changement de session dans la fenêtre:	ALT, ALT, W
Zoom, on/off:	ALT, ALT, Z ou
Déclic du clavier, actif/inactif:	ALT, ALT, A
Indicateur d'erreur de parité, actif/inactif:	ALT, ALT, E
Règle, actif/inactif:	ALT, ALT, R ou TRAIT
Ecrans de configuration:	ALT, ALT, S ou Config, Syst
4/8 Colors:	ALT, ALT, V
White curseur actif/inactif:	ALT, ALT, Y
Verrou par mot de passe:	ALT, ALT, I
Sécurité de Mémorisation/Exécution:	ALT, ALT, ATTN

BARRE D'ESPACEMENT = Ecran d'aide suivant
ENTRÉE = Sortie des écrans d'aide

Français

Ecran d'aide 2 de 3

Fontions de l'imprimante

Fonction	Touches
Annuler l'impression:	ALT, ALT, C
Mode d'impression EBCDIC HEX:	ALT, ALT, B
Mettre en marche ou arreter l'imprimante:	ALT, ALT, IMPR
Impression de l'écran local:	ALT, ALT, O
Avancement de page:	ALT, ALT, F
Avancement de ligne:	ALT, ALT, L
Test d'impression:	ALT, ALT, P
Éditeur de code d'Imprimant:	ALT, ALT, U

BARRE D'ESPACEMENT = Ecran d'aide suivant
ENTRÉE = Sortie des écrans d'aide

Ecran d'aide 3 de 3

Ligne d'etat (en bas de l'écran)

Etat		Explication
Affichage:	Prêt	Affichage en communication avec le système central
	Pas prêt	Affichage ne communique pas avec le système central
	Désactivé	Affichage désactivé sur l'écran de configuration
^		Mode insertion actif
↑		Clavier en majuscule
X		Clavier verrouillé
ð		Mode diacritique actif
MSG		En attente de message
Imprim.:	Prête	Imprimante en communication avec le système central
	Sans ligne	Imprimante ne communique pas avec le système central
	Desactivée	Imprimante desactivée sur l'écran de configuration
	Hors ligne	Imprimante connectée est hors ligne
	Arrêtée	Imprimante arrêtée par l'operateur
Imprim.:		Imprimante est en mode d'impression EBCDIC HEX

BARRE D'ESPACEMENT = Ecran d'aide suivant
ENTRÉE = Sortie des écrans d'aide

APÉNDICE E

Las siguientes pantallas de ayuda en línea están disponibles. Para entrar al modo de ayuda en línea, pulse <Alt><Alt><Ayuda>.

Pantalla de ayunda 1 de 3

Funciones de la pantalla

Funcion	Teclas
Suprlmer Cursor Intermitente, encen./apagado:	ALT, ALT, X
Posición del cursor, encendido/apagado:	ALT, ALT, K
Tipo de cursor, bloque/subrayado:	ALT, ALT, REST
Luminosidad baja de pantalla, manual:	ALT, ALT, D
Visualización de códigos, encendido/apagado:	ALT, ALT, T
Pantallas de ayuda, local:	ALT, ALT, AYUDA
Pasar a otra sesión:	ALT, ALT, J o ALT-SALTO
Cambio de sesión dentro de la ventana:	ALT, ALT, W
Zoom, encendido/apagado:	ALT, ALT, Z or a-A o
Ruido del teclado, encendido/apagado:	ALT, ALT, A
Indicar error de paridad, encendido/apagado:	ALT, ALT, E
Regla, encendido/apagado:	ALT, ALT, R o ESCAL
Pantalla de configuración:	ALT, ALT, S or ESTBL
4/8 Colores:	ALT, ALT, V
Blanco cursor, encendido/apagado:	ALT, ALT, Y
Clave/Bloqueo de pantalla:	ALT, ALT, I
Seguridad/Para Reproducción teclado:	ALT, ALT, ATENC

BARRA ESPACIADORA = Siguiente pantalla
INTRO = Salida de pantallas de ayuda

Español

APÉNDICE E

Pantalla de ayunda 2 de 3

Funciones de la impresora

Funcion	Teclas
Cancelar impresión:	ALT, ALT, C
Modo de impresión EBCDIC HEX:	ALT, ALT, B
Iniciar o parar impresión:	ALT, ALT, IMPR
Impresión de pantalla local:	ALT, ALT, O
Alimentación de formularios:	ALT, ALT, F
Alimentación de línea:	ALT, ALT, L
Prueba de patrón de impresión:	ALT, ALT, P
Editor Códigos Impresora:	ALT, ALT, U

BARRA ESPACIADORA = Siguiente pantalla
INTRO = Salida de pantallas de ayuda

Pantalla de ayunda 3 de 3

Indicadores de estado de linea

Indicador		Explicacion
Terminal:	Lista	Terminal comunicandose con el ordenador
	No lista	Terminal no se comunica con el ordenador
	Inhibida	Terminal inhibida en la pantalla setup
^		Inserte el modo activo
↑		Cambio del teclado
X		Entrada inhibida
ð		Modo diacrítico activado
MSG		Mensaje espera
Impres.:	Lista	Comunicación de impresora con el ordenador
	Sin Línea	La impresora no se comunica con el ordenador
	Inhibida	La impresora se ha inhibido en la pantalla setup
	Fuera de L.	La impresora conectada está fuera de linea
	Parada	El operador ha parado la impresora
Impres.:		La impresora está en el modo de impresión EBCDIC HEX

BARRA ESPACIADORA = Siguiente pantalla
INTRO = Salida de pantallas de ayuda

APPENDIX F

Twinax Monitor Mode

The Twinax Monitor Mode feature of the 2677C Color Display Station was designed to be a simple yet effective twinax line monitoring tool. It has several useful functions, such as:

- Verifying that the cable and host are connected and communicating.
- Determining which host addresses are currently in use, and which are available for use.
- Diagnosing various cabling problems.
- Identifying defective twinax devices, or pigtails.

When the 2677C Color Display Station is operating in Twinax Monitor Mode, it does not communicate with the host, therefore it does not require, nor use, any host addresses. The Twinax Monitor Mode simply monitors, or "listens," to the communications between the host and all active twinax devices on the same cable. The display station's own session addresses are automatically disabled whenever Twinax Monitor Mode is in use, and reactivated upon exiting the Twinax Monitor Mode.

To enter the twinax monitor mode screen, power off the display station press and hold <RESET> until the setup screen appears, then press the <T> key.

Once the Twinax Monitor Mode screens appears, you will see seven columns, numbered 0 through 6, representing the seven possible host addresses. Each column lists a total count for all "Polls" from the host, both "Responses" and "Parity Err" from all active twinax devices, and any "Commands," and "Data" transmissions going across the cable. At the lower, middle portion of the screen are the "FB Err" (first-byte errors), "AB Err" (all-byte errors), and "BF Err" (bad formation errors) total error counts. Also shown is the time, in minutes, that the Twinax Monitor Mode has been running. All of the error counts go from 0 to 65535, and then start back over at 0. A spinning character, at the top of the screen, indicates that the Twinax Monitor Mode is currently running.

To exit the Twinax Monitor Mode, simple press any key. The display station will beep and re-enter the self test diagnostics.

APPENDIX F

Troubleshooting With The Twinax Monitor Mode

Knowing a little about twinax communications and how the Twinax Monitor Mode works can be very useful for troubleshooting various twinax problems. Included below, is a outline for using the Twinax Monitor Mode to diagnose a variety of twinax problems.

As part of the normal twinax communications, all active twinax devices detect a parity errors and automatically report the errors to the host. The Twinax Monitor Mode counts each of the parity errors as they are reported to the host, and displays the results under the "Parity Err" error counts. The Twinax Monitor Mode also has the unique ability to identify three different points at which an error can occur in the transmission. This information is displayed under the "FB Err," "AB Err" and "BF Err" error counts.

First-byte errors are parity errors that occur in the first byte of the transmission. The first byte of a transmission contains the address of the device intended to receive that transmission. If the first byte of a transmission somehow becomes corrupted, then the intended address cannot be determined. Since most parity errors are generated due to faulty conditions, such as a bad cable or twinax device, naturally the first sign of an error is in the first byte of a transmission. This is why first-byte errors are so common.

For example, if only some active addresses are reporting parity errors, while other active addresses are not showing errors, this is most likely some sort of cable problem in between those twinax devices whose addresses are working and the other twinax devices that are reporting parity errors. Cable problems, which are a very common, can result from improper cable termination, excessively "T'd" cables, cables with poor solder joints or corroded connectors, faulty connections, and shorted cables (see figure on next page).

Twinax Host

"T" Connection Fault

Display Station   Display Station   Display Station
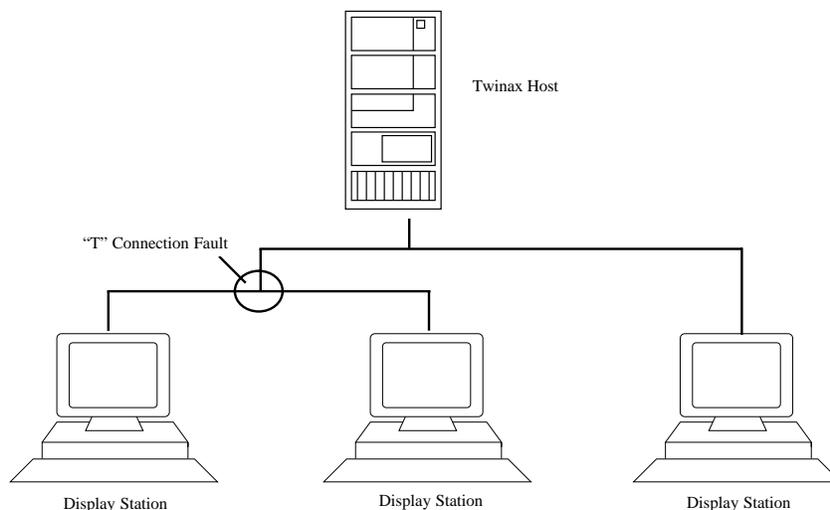
Other problems that the Twinax Monitor Mode can help diagnose are defective twinax devices, and defect pigtails. These sorts of problems would be indicative of the Twinax Monitor Mode reporting parity errors for all of the active addresses of a particular twinax device, while the rest of the twinax devices do not report parity errors for their active addresses.

All-byte parity errors are errors that occur in the transmission at some point after the first byte. Bad formation errors are parity errors that result from the lose of the mid-bit signal transition, and can occur at any time during the transmission. Errors in either of these two categories are usually less frequent. The cause of these errors are usually random noise or glitches caused by power line spikes, or possibly lightning strikes, that occur during the transmission. Other potential sources include a twinax device with a faulty transmitter, and various cable problems.

Other Uses For The Twinax Monitor Mode

The Twinax Monitor Mode can also be useful for determining which host address are available, simple by noting those twinax addresses which are polled, and do not show any responses or other activity.

On some host systems, the user can learn to tell whether an active address is being used by a display or printer. This is because, some systems poll printers at a different rate than they poll displays.

APPENDIX F

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Manufacturer's Three Year Limited Warranty
(United States)

The following warranty applies only to products purchased and operated within the United States.

I-O Corporation (I-O) warrants this product against defects in material and workmanship for a period of three years commencing from date of purchase by the original end-user, when operated and maintained in accordance with I-O's published specifications. I-O's liability shall be limited, at its option and expense, to refund to original end-user the actual amount paid by original end-user or to repair or replace any defective or nonconforming product or part thereof, F.O.B. I-O's authorized repair depot. Original end-user may obtain a replacement product by meeting the terms of the I-O Customer On-Site Exchange Repair Policy in effect at the time of the request.

THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. OTHERWISE, THE PRODUCTS ARE SOLD AS IS WITHOUT FURTHER OBLIGATION OR LIABILITY ON THE PART OF I-O. I-O EXPRESSLY EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, IN NO EVENT SHALL I-O BE LIABLE FOR ANY CLAIMS OR DAMAGE ARISING DIRECTLY OR INDIRECTLY FROM THE FURNISHING OR FAILURE TO FURNISH PRODUCTS, SPARE OR REPLACEMENT PARTS, INFORMATION OR SERVICES HEREUNDER. UNDER NO CIRCUMSTANCES SHALL I-O BE LIABLE IN ANY WAY FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOST BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE AND WHETHER OR NOT BASED ON BREACH OF WARRANTY, CONTRACT, OR NEGLIGENCE.

Warranty

WARRANTY INFORMATION

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Customer On-Site Exchange Repair Policy
Terms, Conditions, and Limitations
Effective May 1, 1994[a]

For products covered by the I-O Corporation (I-O) Manufacturer's Limited Warranty (United States), I-O's Customer On-Site Exchange (COE) Repair Policy provides customers with a replacement unit for a defective product, subject to the following terms and conditions:

Call Customer Support

- If a product fails call I-O Customer Support for assistance at (801) 972-1446.

Verify Product Failure

- I-O will verify the product serial number, warranty coverage and product failure.

* You are responsible for assisting in verifying the product failure.

- When I-O Customer Support verifies a product failure they will issue a Return Merchandise Authorization (RMA) number for the failed product.

Replacement Units

- Replacement units are shipped from I-O's stock of refurbished units, subject to availability.

- Replacement units carry the same warranty as remaining on the original product.

- I-O's COE Repair Policy applies only to warranted product failures. Buyer guarantees payment for non-warranted product repairs or replacement.

Repair Policy

Customer On-Site Exchange Repair Policy

(Continued)

Return Your Failed Unit

- When you return the failed product it must be shipped freight prepaid. Always note the RMA number on the outside of the package.

Install the Replacement Unit

- You are responsible for installing the replacement unit.

- After receiving the replacement unit please call I-O Customer Support if any assistance is required.

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[a] I-O reserves the right to change the terms and conditions of this policy without notice.

Manufacturer's Three Year Limited Warranty
(International)

The following warranty applies only to products purchased or operated outside the United States.

I-O Corporation (I-O) warrants this product against defects in material and workmanship for a period of three years commencing from date of purchase by the original end-user, when operated and maintained in accordance with I-O's published specifications. I-O's liability shall be limited, at its option and expense, to refund to original end-user the actual amount paid by original end-user or to repair or replace any defective or nonconforming product or part thereof, F.O.B. I-O's author ized repair depot. Original end-user may obtain warranty service by meeting the terms of the I-O Return-to-Depot Repair Policy in effect at the time of the request.

THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. OTHERWISE, THE PRODUCTS ARE SOLD AS IS WITHOUT FURTHER OBLIGATION OR LIABILITY ON THE PART OF I-O. I-O EXPRESSLY EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, IN NO EVENT SHALL I-O BE LIABLE FOR ANY CLAIMS OR DAMAGE ARISING DIRECTLY OR INDIRECTLY FROM THE FURNISHING OR FAILURE TO FURNISH PRODUCTS, SPARE OR REPLACEMENT PARTS, INFORMATION OR SERVICES HEREUNDER.   UNDER NO CIRCUMSTANCES SHALL I-O BE LIABLE IN ANY WAY FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOST BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE AND WHETHER OR NOT BASED ON BREACH OF WARRANTY, CONTRACT, OR NEGLIGENCE.

Warranty

WARRANTY INFORMATION

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Return-to-Depot Repair Policy
Terms, Conditions, and Limitations
Effective May 1, 1994a

For products covered by the I-O Corporation (I-O) Manufacturer's Limited Warranty (International), I-O's Return-to-Depot (RTD) Repair Policy provides customers with warranty service for a defective product, subject to the following terms and conditions:

Call Customer Support

- If a product fails call I-O Customer Support for assistance at:

  (801) 972-1446 for all locations outside the United States.

Verify Product Failure

- I-O will verify the product serial number, warranty coverage and product failure.

- You are responsible for assisting in verifying the product failure

- When I-O Customer Support verifies a product failure they will issue a Return Merchandise Authorization (RMA) number to authorize return of the failed product.

Select Your Preferred Repair Location

- I-O's Customer Support Representative will assist you in identifying the nearest I-O authorized repair depot.

- I-O's Customer Support Representative will provide you with an RMA transmittal form referencing the assigned RMA number and the authorized repair depot address.

Repair Policy

Return-to-Depot Repair Policy
(Continued)

Return Your Failed Unit

- Return the failed product to the I-O authorized repair depot previously identified, enclosing the RMA transmittal form. When you return the failed product it must be shipped freight prepaid.

- I-O's RTD Repair Policy applies only to warranted product failures. Buyer guarantees payment for non-warranted product repairs.

Install Your Repaired Unit

- I-O's authorized repair depot will service the faulty unit and return it to you, freight prepaid.

- You are responsible for installing the returned unit.

- After receiving the repaired unit please call I-O Customer Support if any assistance is required.

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[a] I-O reserves the right to change the terms and conditions of this policy without notice.

Manufacturer's Three Year Limited Warranty
(European Area)

The following warranty applies only to products purchased and operated within the European Area.

I-O Corporation (I-O) warrants this product against defects in material and workmanship for a period of three years commencing from date of purchase by the original end-user, when operated and maintained in accordance with I-O's published specifications. I-O's liability shall be limited, at its option and expense, to refund to original end-user the actual amount paid by original end-user or to repair or replace any defective or nonconforming product or part thereof, F.O.B. I-O's authorized repair depot. Original end-user may obtain a replacement product by meeting the terms of the I-O Customer On-Site Exchange Repair Policy in effect at the time of the request.

THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. OTHERWISE, THE PRODUCTS ARE SOLD AS IS WITHOUT FURTHER OBLIGATION OR LIABILITY ON THE PART OF I-O. I-O EXPRESSLY EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, IN NO EVENT SHALL I-O BE LIABLE FOR ANY CLAIMS OR DAMAGE ARISING DIRECTLY OR INDIRECTLY FROM THE FURNISHING OR FAILURE TO FURNISH PRODUCTS, SPARE OR REPLACEMENT PARTS, INFORMATION OR SERVICES HEREUNDER. UNDER NO CIRCUMSTANCES SHALL I-O BE LIABLE IN ANY WAY FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOST BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE AND WHETHER OR NOT BASED ON BREACH OF WARRANTY, CONTRACT, OR NEGLIGENCE.

Warranty

WARRANTY INFORMATION

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Customer On-Site Exchange Repair Policy
Terms, Conditions, and Limitations
Effective June 1, 1997[a]

For products covered by the I-O Corporation (I-O) Manufacturer's Limited Warranty (European Area), I-O's Customer On-Site Exchange (COE) Repair Policy provides original end-users with a replacement unit for a defective product, subject to the following terms and conditions:

Call Customer Support

- If a product fails call I-O Customer Support for assistance at 44(0) 1908 567722.

Verify Product Failure

- I-O will verify the product serial number, warranty coverage and product failure.

- You are responsible for assisting in verifying the product failure.

- When I-O Customer Support verifies a product failure they will issue a Return Merchandise Authorization (RMA) number for the failed product.

I-O Ships Replacement Unit

- Replacement units are shipped from I-O's stock of refurbished units, subject to availability.

- I-O will invoice you for full retail value of the replacement unit upon shipment from I-O.

- Replacement units carry the same warranty as remaining on the original product.

- I-O's COE Repair Policy applies only to warranted product failures. You must pay for non-warranted product repairs or replacement.

Repair Policy

WARRANTY INFORMATION

Customer On-Site Exchange Repair Policy
(Continued)

Return Your Failed Unit

- When you return the failed product it must be shipped freight prepaid. To insure proper tracking always note the RMA number on the outside of the package.

- I-O will issue you a credit (reversing the replacement unit invoice amount) when the failed product is received by I-O.

- If you do not return the failed product (or pay the replacement unit invoice) within 14 calendar days of the date the replacement unit is shipped from I-O, your warranty coverage and service will be suspended on all I-O products you own.

Install the Replacement Unit

- You are responsible for installing the replacement unit.

- After receiving the replacement unit please call I-O Customer Support if any assistance is required.

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[a]   I-O reserves the right to change the terms and conditions of this policy without notice.

GLOSSARY

active session - The host session currently being used, as opposed to an inactive session.

address - The location, such as device or session, where data is entered and stored.

application - A software program.

ASCII (American Standard Code for Information Interchange) - A specific code page commonly used in PC printers and ASCII displays. Systems that link printers to IBM Systems must include a translating device to connect the two codes. (Most IBM systems use EBCDIC).

attribute - A characteristic, such as bold, italic, blinking, underline, etc.

auto configure - Configures a program or system automatically during the initialization process.

blank character - A character that is invisible but occupies a position on the display screen.

buffer - An area in the memory that holds data temporarily.

character - A letter of the alphabet, a number, punctuation mark, or any other symbol that represents information.

character set - A set of alphabetic, numeric, and special characters that may be displayed or printed by the system unit or device.

code page - Set of coded characters often displayed as an array or code table.

column separator - A dot or vertical line used to separate one column in a field from another column. Also used to delineate all the columns of a field.

command keys - The keys on the top row(s) of the keyboard that are used to request a preassigned function of the system.

Command Pass-Thru™- This feature allows access to all built-in features of a printer, even if these features are not normally available through the host software. Printer-specific command sequences are placed into the data sent to the printer from the host. The display station recognizes these sequences and "passes the command through" to the printer.

configuration - Software setup of a computer program or system.

connector - A plug connected to a cable which fastens to a port on the back of a device.

GLOSSARY

CPI (characters per inch) - The number of characters per inch of paper. A measure of "pitch."

cursor - A visual indicator of the position that data entry will occur.

default - The value assumed when no other value is specified.

default setting - The standard setting for a feature which automatically appears unless the user selects a different setting.

delimiter - A character that marks the beginning and/or end of a unit of data.

display screen - A cathode ray tube that is used to display alphanumeric characters.

display station - An input/output device containing a display screen and an attached keyboard. Also known as a terminal.

dot matrix - A text printer that prints a series of dots to create characters.

duplex - Prints on both sides of the paper.

EBCDIC (Extended Binary Coded Decimal Interchange Code) - A standard computer character set used to represent 256 standard characters. IBM systems use EBCDIC coding.

emulation - The duplication or imitation of one device by another device.

FGID (Font Global Identifier) - Font identifier used by IBM to standardize typestyle numbers used globally.

field attributes - Control characters stored in the character buffer in the first character position of a field. These control characters determine the attributes in effect for the field, such as underlining, blinking, reverse video, etc.

field - Defined area in which the same type of information is regularly recorded.

font - (1) A collection of characters of a given typeface and size; (2) Used generically to mean the collection of coded fonts, font character sets, and code pages; (3) A font file that contains characters that must be used in conjunction with a code page file.

form feed - (1) The advancing of a form in the printer to the top of the next page by a code sent to the printer from the computer; (2) The code that causes the advance.

hex (hexadecimal) - A number system with a base of sixteen. Symbols used are digits 0-9 and alpha A-F.

hex transparency - See Command Pass-Thru .

host - The central controlling processing unit in a twinax environment.

HP mode - Third party printer (if compatible) will receive HP Laserjet commands.

IBM mode - Third party printer that will receive IBM Laserjet commands.

intensity - The brightness level used to display characters on the screen.

key click - Keys will make clicking sounds when depressed unless disabled.

landscape - A printing orientation in which the text prints across the length of a page.

LED (light emitting diode) -   A light located on the front of the display station that lights up when the display station is powered on.

line feed - A character code that advances the cursor in the printer to the next line.

LPI (lines per inch) - The number of lines per vertical inch of paper.

pitch - The number of characters per horizontal inch, or positioning intervals of characters in a line of text. See CPI.

portrait - A printing orientation in which the text prints across the width of a page.

power saver mode - Conserves energy by blanking the screen of the display.

PPDS (Personal Printer Data Stream) - A printer programming language for some IBM laser printers.

RAM (Random Access Memory) - A storage device in which data is entered and retrieved in a non-sequential manner.

record/playback - Keyboard macro used to save and play back keystrokes.

scan code - Code used to transmit data from the keyboard to the host.

session - An active connection between the display station and a host system. A session is opened when the user signs on.

set text orientation - Text is printed in a specified orientation regardless of paper size when this command is used.

simplex - Prints only one side of the paper.

status line - A line on the screen that displays information to the operator concerning the processing of the text and the status of the terminal.

GLOSSARY

truncate - Discards or breaks off a part of a number or character string.

twisted pair - A pair of small diameter insulated wires commonly used in telephone cables that are twisted around each other to minimize interference from other wires in the cable.

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DECLARATION OF CONFORMITY

EUROPEAN COMMUNITY COMPLIANCE STATEMENT:

This product is in conformity with the protection requirements of EC Council Directives 72/23/EEC, and 89/336/EEC on the approximation of the laws of the Member States relating to: Standard EN60950 (Safety of Information Technology Equipment); Standard EN50082-1 (Generic Immunity Standard for Residential, Commercial, and Light Industrial Products); and Standard EN55022 (Limits and Methods of Measurement of Radio Interference from Information Technology Equipment).

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

DECLARATION OF CONFORMITY

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