



Installation Instructions

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ControlNet Communication Interface Card

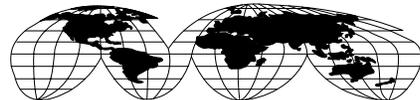
Catalog Number 1784-KTCX15

To the Installer

This document describes how to install and use the 1784-KTCX15 ControlNet™ communication interface card.



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If you are connecting the card directly to a ControlNet network, you also need to read:

- ControlNet Tap Installation Instructions, publication 1786-5.7
- ControlNet Cable Planning and Installation Manual, publication 1786-6.2.1

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this document we use notes to make you aware of safety considerations:



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss.

Attention statements help you to:

- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is critical for successful application and understanding of the product.

Introducing the 1784-KTCX15 Communication Interface Card

The KTCX15 Communication Interface card lets a 16-bit ISA- or 32-bit EISA-compatible computer communicate directly with other ControlNet products.

About the Application Software

The Allen-Bradley standard application programming interfaces (APIs) are INTERCHANGE™, WIntelligent LINX™, and RSLinx™ software from Rockwell Software Inc. Contact your local Rockwell Automation sales representative or distributor for further information.

Compliance to European Union Directives

If this product bears the  marking, it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2EMC - Generic Emission Standard, Part 2 - Industrial Environment
- EN 50082-2EMC - Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests.

For specific information required by EN 61131-2, see the appropriate sections in the following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines for Noise Immunity, publication 1770-4.1
- Automation Systems Catalog, publication B111

Allen-Bradley



ATTENTION: This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Handling the Card



ATTENTION: The card uses CMOS technology, which is highly sensitive to electrostatic discharge (ESD). ESD may be present whenever you are handling the card. Handling a card without any ESD protection can cause internal circuit damage that may not be apparent during installation or initial use. A grounding wrist strap has been shipped with the card and is to be worn during the installation procedure. Instructions for use of the strap are found on the back of its package.



Take these precautions to guard against ESD damage:

- Before handling the card, be sure to wear the provided static strap and touch a grounded object to discharge any built-up static charge.
- Avoid touching the backplane connector or interface connector pins located on the card.
- If the card is not in use, store it in the anti-static clamshell that the card was shipped in.

Important: Remember, a computer with ac power disconnected is *not* a grounded object.

You are now ready to configure your card.

Configuring the Card Hardware

Before you install the card inside your computer, you must set the card's physical addresses for the:

- ROM I/O expansion area of the host processor's system memory—so the card and the host computer can exchange data through the dual-port interface. This is the **base memory address**.
- host processor's I/O map—so the card's I/O devices can receive commands from the host computer. This is the **base I/O space address**.

You can have as many as four KTCX15 cards in one computer as long as each card has different base memory and base I/O space addresses.

To configure these addresses, you set switches on the card. The card comes factory-set with these default addresses:

Address Type	Address Setting (hex)
base memory	D000:0000
base I/O space memory	220

Important: When deciding which addresses to use, remember that each card in your computer must have a *unique* base memory address and a *unique* base I/O space memory address. If another card in the host computer is using one or both of the factory-set addresses, you must change a card's switch settings to an available address.

If you are:	go to:
changing addresses on the card	"Selecting the Base Memory Address Location" on page 6
using the factory-set addresses	"Installing the Card" on page 16

Selecting the Base Memory Address Location

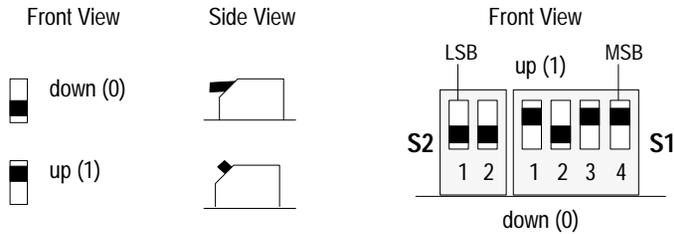
The host computer and the card exchange data via a dual-port interface. The dual-port interface is 16 Kbytes long and it begins at the specified base memory address location.

The card comes set to memory address D000:0000. You may find that this selected memory address has been allocated to other interface cards or expansion memory cards you have installed in your computer system. If this occurs, change the switch settings to an available memory address.

To select a new base memory address:

1. Pick an available address from the ROM I/O adapters area of the host computer's memory. Be sure to choose a block that is 16 Kbytes long.
2. Use Worksheet A to select a new memory address for the card.
3. Use Worksheet B to determine the proper switch settings.

Follow this guide to properly set your switches.



4. Fill in Worksheet C after you've determined your switch settings.
5. Follow the instructions that begin on page 11.

Specifications

The operating parameters describe the environment within the KTCX15 slot. Refer to the documentation for your computer for environmental requirements. The card should not exceed those specifications.

General Specifications

Characteristic	Value
Power Requirements	5V dc, 640mA Maximum
Conductor	Category 2

Environmental Specifications

	Operating	Nonoperating
Slot Temperature	0 to 50° C (32 to 122° F)	-40 to 85° C (-40 to 185° F)
Humidity	5 to 95% without condensation	5 to 95% without condensation
Vibration	10 to 150 Hz, constant .012 in displacement 10 to 150 Hz, constant 2.0G acceleration	not applicable
Shock	30G peak/11 ms	50G peak/11 ms

Agency Certification

(when product or packaging is marked)

- Class 1, Division 2 Groups A, B, C, D
- marked for all applicable directives
- APPROVED

Approbation d'utilisation dans des emplacements dangereux par la CSA

La CSA certifie les produits d'utilisation générale aussi bien que ceux qui s'utilisent dans des emplacements dangereux. **La certification CSA en vigueur est indiquée par l'étiquette du produit** et non par des affirmations dans la documentation à l'usage des utilisateurs.

Exemple d'étiquette de certification d'un produit par la CSA



Pour satisfaire à la certification de la CSA dans des endroits dangereux, les informations suivantes font partie intégrante de la documentation ce produit industriel de contrôle certifié par la CSA.

- Cet équipement convient à l'utilisation dans des emplacements de Classe 1, Division 2, Groupes A, B, C, D, ou ne convient qu'à l'utilisation dans des endroits non dangereux.
- Les produits portant le marquage approprié de la CSA (c'est à dire, Classe 1, Division 2, Groupes A, B, C, D) sont certifiés à l'utilisation pour d'autres équipements où la convenance de combinaison (application ou utilisation) est déterminée par la CSA ou le bureau local d'inspection qualifié.

Important: Par suite de la nature modulaire du système de contrôle programmable, le produit ayant le taux le plus élevé de température détermine le taux d'ensemble du code de température du système de contrôle d'un programmable dans un emplacement de Classe 1, Division 2. Le taux du code de température est indiqué sur l'étiquette du produit.

Taux du code de température



Le taux du code de température est indiqué ici

Les avertissements suivants s'appliquent aux produits ayant la certification CSA pour leur utilisation dans des emplacements dangereux.



AVERTISSEMENT: Risque d'explosion —

- La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Classe 1, Division 2.
- Couper le courant ou s'assurer que l'emplacement est désigné non dangereux avant de remplacer les composants.
- Avant de débrancher l'équipement, couper le courant ou s'assurer que l'emplacement est désigné non dangereux.
- Avant de débrancher les connecteurs, couper le courant ou s'assurer que l'emplacement est reconnu non dangereux. Attacher tous connecteurs fournis par l'utilisateur et reliés aux circuits externes de cet appareil à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens permettant aux connexions de résister à une force de séparation de 15 Newtons (3,4 lb. - 1,5 kg) appliquée pendant au moins une minute.
- Afin d'éviter tout risque d'explosion, s'assurer que l'emplacement est désigné non dangereux avant de changer la batterie.

Le sigle CSA est la marque déposée de l'Association des Standards pour le Canada.

Worksheet A Base memory allocation worksheet

Base Memory Address (hex)	Host Computer Assignments	Your System
0000:0000–7000:FFFF	512K Read/Write Memory on System Board	
8000:0000–9000:FFFF	128K Read/Write Memory Expansion in I/O Channel	
A000:0000–	Video Buffer	
A400:0000–		
A800:0000–		
AC00:0000–		
B000:0000–		
B400:0000–		
B800:0000–		
BC00:0000–		
C000:0000–	Expansion Card Area (area available for KTCX15 memory addresses)	
C400:0000–		
C800:0000–		
CC00:0000–		
D000:0000–		Factory Default
D400:0000–		
D800:0000–		
DC00:0000–		
E000:0000–F000:FFFF	128K ROM Reserved on System Board	

Worksheet B
KTCX15 switch settings

Base Memory Addr (hex)	Switch Settings	Base Memory Addr (hex)	Switch Settings
C000:0000	<p>up (1) down (0)</p>	D000:0000 factory set default address & recommended setting	<p>up (1) down (0)</p>
C400:0000	<p>up (1) down (0)</p>	D400:0000	<p>up (1) down (0)</p>
C800:0000	<p>up (1) down (0)</p>	D800:0000	<p>up (1) down (0)</p>
CC00:0000	<p>up (1) down (0)</p>	DC00:0000	<p>up (1) down (0)</p>

Worksheet C
Your base memory address

Record the base memory address for the KTCX15 card:

Card: _____

Slot number: _____

Using default address: yes no

If no, new memory address: _____

up (1)
down (0)

CSA Hazardous Location Approval

CSA certifies products for general use as well as for use in hazardous locations. **Actual CSA certification is indicated by the product label** as shown below, and not by statements in any user documentation.

Example of the CSA certification product label



To comply with CSA certification for use in hazardous locations, the following information becomes a part of the product literature for this CSA-certified industrial control product.

- This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or non-hazardous locations only.
- The products having the appropriate CSA markings (that is, Class I Division 2, Groups A, B, C, D), are certified for use in other equipment where the suitability of combination (that is, application or use) is determined by the CSA or the local inspection office having jurisdiction.

Important: Due to the modular nature of a programmable control system, the product with the highest temperature rating determines the overall temperature code rating of a programmable control system in a Class I, Division 2 location. The temperature code rating is marked on the product label as shown.

Temperature code rating



← Look for temperature code rating here

The following warnings apply to products having CSA certification for use in hazardous locations.



WARNING: Explosion hazard —

- Substitution of components may impair suitability for Class I, Division 2.
- Do not replace components unless power has been switched off or the area is known to be non-hazardous.
- Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Do not disconnect connectors unless power has been switched off or the area is known to be non-hazardous. Secure any user-supplied connectors that mate to external circuits on this equipment by using screws, sliding latches, threaded connectors, or other means such that any connection can withstand a 15 Newton (3.4 lb.) separating force applied for a minimum of one minute.
- Batteries must be changed only in an area known to be non-hazardous.

CSA logo is a registered trademark of the Canadian Standards Association.

Interpreting the Status Indicators on the KTCX15

The status indicators on the card give you information about the card and the network when you're connected via the BNC connectors. Table B outlines the states and explains what each state means to you and the action you should take, if any, to correct that state.

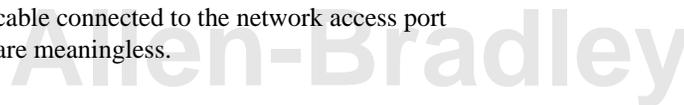
Table B
ControlNet status interpretation

- steady – indicator is on continuously in the defined state.
- alternating – the two indicators alternate between the two defined states at the same time (applies to both indicators *viewed together*). The two indicators are always in opposite states, out of phase.
- flashing – the indicator alternates between the two defined states (applies to each indicator *viewed independent* of the other). If both indicators are flashing, they must flash together, in phase.

A and B	Cause:	Action:
off	no power	none or power up
steady red	faulted unit	cycle power or reset unit If fault persists, contact your Rockwell Automation representative or distributor.
alternating red/green	self-test	none
alternating red/off	incorrect node configuration	check network address and other ControlNet configuration parameters
off	channel disabled	program network for redundant media, if required
steady green	normal operation	none
flashing green/off	temporary errors	none; unit will self-correct
	node is not configured to go on line	make sure the configuration keeper node is present and working ①
flashing red/off	media fault	check media for broken cables, loose connectors, missing terminators, etc.
	no other nodes present on network	add other nodes to the network
flashing red/green	incorrect network configuration	cycle power or reset unit
		If fault persists, contact your Rockwell Automation representative or distributor.

① The configuration keeper node is the node responsible for distributing ControlNet configuration data to all nodes on the network.

Important: When you have a cable connected to the network access port (NAP), the LEDs are meaningless.



Selecting the Base I/O Space Address Location

The host addresses I/O devices on the card by using their I/O space address. The host addresses individual devices through registers that have addresses based on the I/O space base address. The registers are 2 bytes long.

The card comes set to base I/O space address 220. You may find that this selected address has been allocated to other interface cards or expansion memory cards you have installed in your computer system. If this occurs, change the switch settings to an open address.

Important: When selecting configuration settings, check for conflicts with other interface cards and system memory. If there is a conflict, the system will not operate properly.

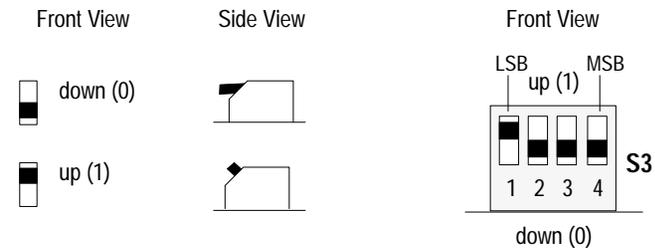
To select a new base I/O space address:

1. Pick an available address from the I/O map area of the host computer's memory. Be sure to choose a block that is 2 bytes long.

Important: Each card requires 2 bytes of I/O space.

2. Use Worksheet D to select a new base I/O space address for the card (i.e., to determine the switch settings for the new address).

Follow this guide to properly set your switches:

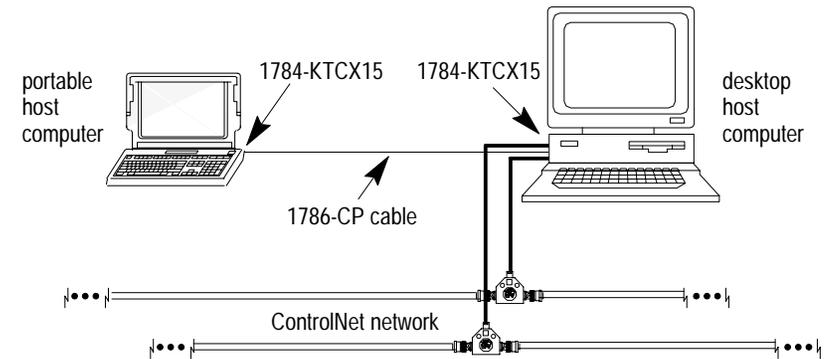


3. Fill in Worksheet E after you've determined your switch settings.
4. Follow the instructions that begin on page 11.

Worksheet D
KTCX15 switch settings

Base I/O Address (hex)	Switch Settings	Base I/O Address (hex)	Switch Settings
200 <i>potential device conflict: game port</i>	up (1) down (0)	300 <i>potential device conflict: prototype cards</i>	up (1) down (0)
220 factory-set default address & recommended setting	up (1) down (0)	320 <i>potential device conflict: HDD</i>	up (1) down (0)
240	up (1) down (0)	340	up (1) down (0)
260	up (1) down (0)	360	up (1) down (0)
280	up (1) down (0)	380 <i>potential device conflict: SDLC</i>	up (1) down (0)
2A0	up (1) down (0)	3A0 <i>potential device conflict: SDLC</i>	up (1) down (0)
2C0 <i>potential device conflict: EGA</i>	up (1) down (0)	3C0 <i>potential device conflict: EGA</i>	up (1) down (0)
2E0 <i>potential device conflict: GPIB</i>	up (1) down (0)	3E0	up (1) down (0)

Figure 6
Connecting a portable host computer to ControlNet through a desktop host computer



Connecting the Card Directly to the ControlNet Network

To connect the card directly to a ControlNet network as shown below, follow the instructions in these publications:

- ControlNet Tap Installation Instructions, publication 1786-5.7
- ControlNet Cable Planning and Installation Manual, publication 1786-6.2.1

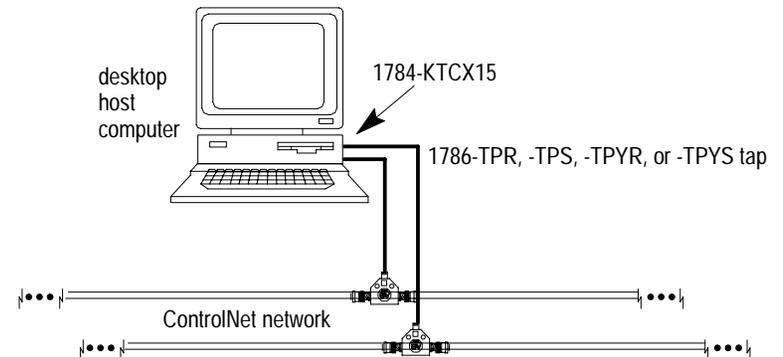
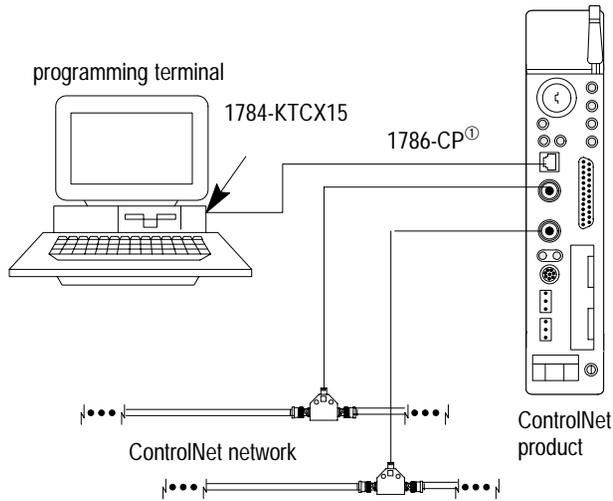


Figure 5
Connecting a portable host computer to a ControlNet network through a programmable controller or an I/O adapter



① The 1786-CP cable can be plugged into any ControlNet product's NAP to provide programming capability on the ControlNet network. A programming terminal connected through this cable is counted as a node and must have a unique address.



ATTENTION: If you connect the product to a cable system that does not support redundant media, connect the tap dropline to the BNC connector labeled channel A. Channel B is left open.

If the cable system is redundant, connect the product such that all devices on the network use the same cable for the same channel. That is, all channel A connectors connect to one cable; all channel B connectors connect to the other.

Worksheet E
Your base I/O space address

Record the base I/O space address for the KTCX15 card:

Card: _____

Slot number: _____

Using default address: yes no

If no, new I/O space address: _____

up (1)

down (0)

Setting the Card's Switches



ATTENTION: When setting the switches, be sure to avoid touching other components on the card.

1. Follow the card handling instructions on page 4.
2. Remove the card from the anti-static clamshell.

Important: When selecting configuration settings, check for conflicts with other interface cards and system memory. If there is a conflict, the host computer will not operate properly.

You must find a way to disable caching and shadow memory for at least the 16K of memory space occupied by each card. This can usually be accomplished through your CMOS setup program and/or memory manager, and must be done *before* running applications with the KTCX15 cards.

3. If you are using the card's **default memory address setting**, go to step 4.

If you are setting a **new base memory address**, set the switches to the up or down position to reflect the selected address from Worksheet C.

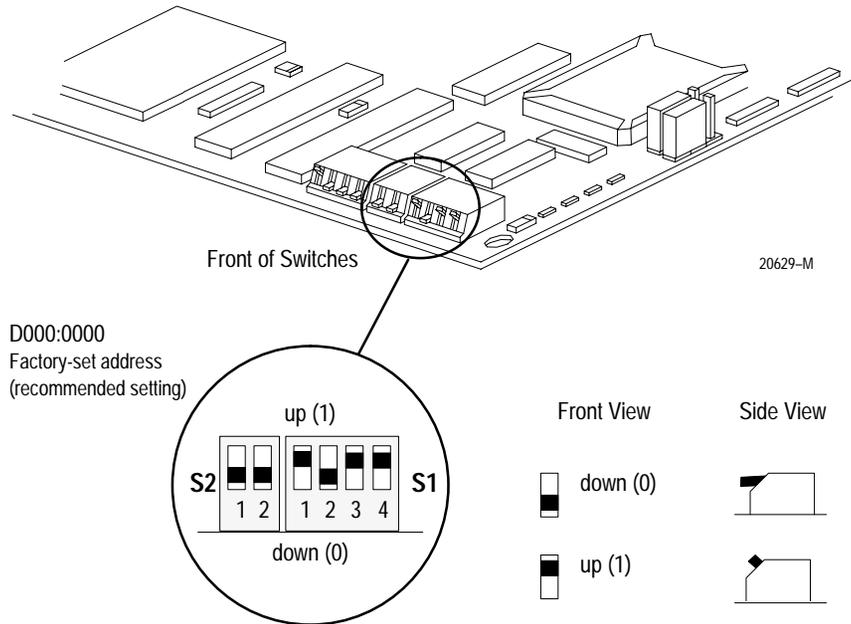


Table A shows the wiring for the cable.

Table A
Wiring for 1786-CP connector cable

Connector 1		
Wire Number	Signal Mnemonic	Signal Name
1	ISO-GND	Isolated Ground
2	N.C.	No Connection
3	PTTX-H	Transmit Data High
4	PTTX-L	Transmit Data Low
5	PTRX-L	Receive Data Low
6	PTRX-H	Receive Data High
7	N.C.	No Connection
8	ISO-GND	Isolated Ground

Connector 2		
Wire Number	Signal Mnemonic	Signal Name
1	ISO-GND	Isolated Ground
2	N.C.	No Connection
3	PTRX-H	Receive Data High
4	PTRX-L	Receive Data Low
5	PTTX-L	Transmit Data Low
6	PTTX-H	Transmit Data High
7	N.C.	No Connection
8	ISO-GND	Isolated Ground

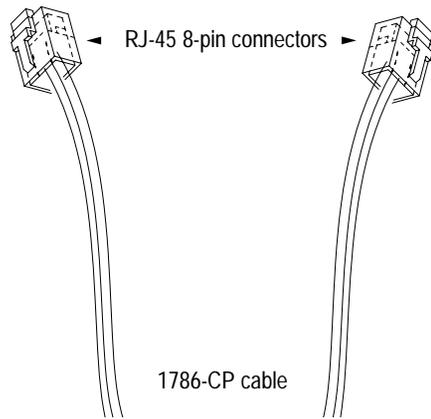
Important: If you are using a non-redundant cabling system, all ControlNet devices must be on the same channel, channel A.

Connecting to a Device on the ControlNet Network

By using the card's RJ-45 connector (known as the network access port or NAP), you can connect the card to a ControlNet network, without a tap, through a programmable controller, I/O adapter, or another KTCX15 card (Figure 5 and Figure 6).

The 1786-CP cable (Figure 4) connects a portable host computer to another computer; it has two RJ-45 8-pin connectors.

Figure 4
1786-CP cable

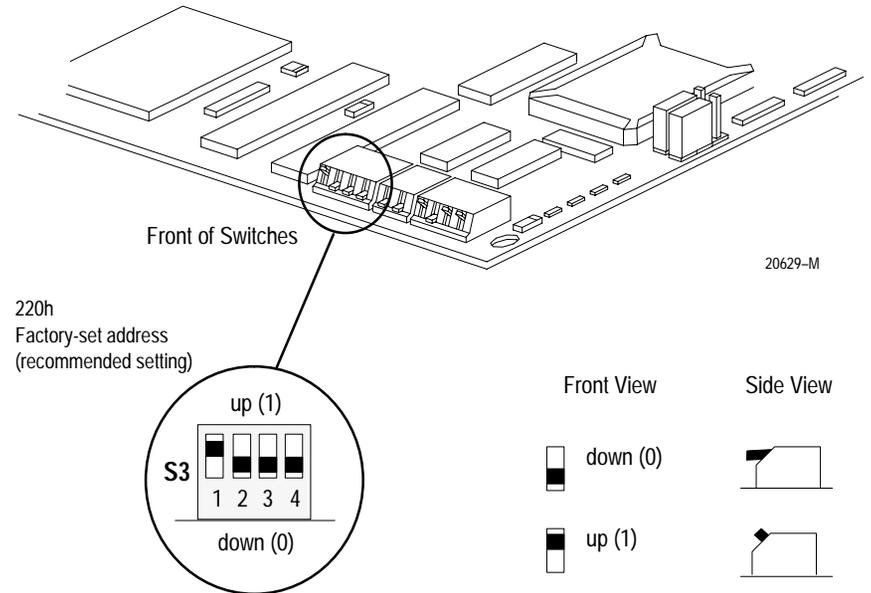


ATTENTION: Use the **1786-CP** cable when connecting a programming terminal to the network through the network access port (NAP); using another cable could result in possible network failures or product damage.



4. If you are using the card's **default base I/O space address setting**, go to the next section, Installing the Card Inside the Computer.

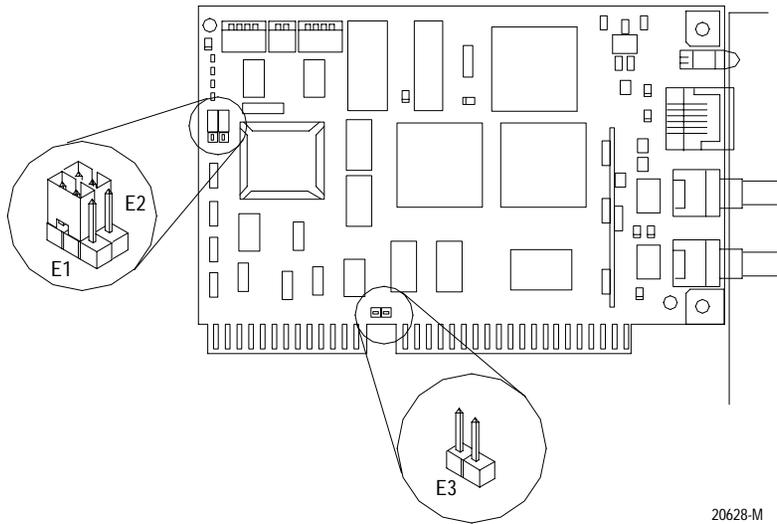
If you are setting a **new base I/O space address**, set the switches to the up or down position to reflect the selected address from Worksheet E.



About the Jumpers

Important: When you receive your card, the jumpers are in the default positions, as shown in Figure 1. Do **not** alter these positions. See Figure 2 for an explanation of these jumpers.

Figure 1
KTCX15 jumpers



20628-M

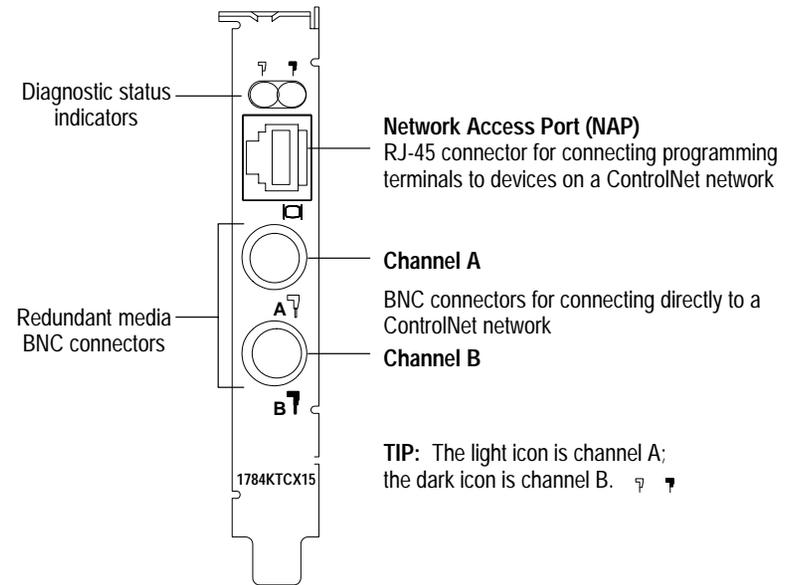
Connecting the Card

After you have installed the card, you can connect it:

- to a device already connected to the ControlNet network (page 24)
- directly to a ControlNet network, which requires a tap (page 27)

Figure 3 shows the card connector.

Figure 3
KTCX15 card connector



ATTENTION: Do not use the card to connect to more than one network at a time. Attempting to connect to a second network will cause your communication system to operate erratically.

See page 28 for information about status indicators. Indicators diagnose only redundant media BNC connections.

5. Press any key.

You see a window similar to this one:

```

MSDOS a:\KTCINSTNT.EXE

Success...Hard resetting card
Success...Starting cards processor
Success...Attempting to locate DualPort address...
      Found at 0Xd0000
Success...Searching for version mailbox
      bootcode version: 2.1 3/17/97
      Serial#: 2222 <8AE>
      Main Code Version 99.60 4/29/97
Success...Testing Mail Boxes
Waiting...Soft Resetting the KTCX15 as network
      address ID8. Press any key.
    
```

6. Press any key. You see a similar message:

Waiting... Setting KTCX to online. Press any key.

7. Press any key.

You see a similar message:

Success... Setting KTCX to online. KTCX LEDs should show flashing red.
 Waiting... Setting KTCX to offline. Press any key.

Flashing red LEDs indicate that the card can communicate on a network, if it's connected to a network.

8. Press any key.

You see a similar message:

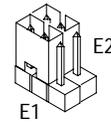
Success... Setting KTCX to offline. KTCX LEDs should show flashing green.
 Waiting... Resetting KTCX. Press any key.

Alternate green and red LEDs indicate that your card reset successfully.

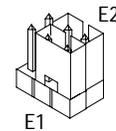
If this test fails, make certain that you are not connected to a network.
 Contact your local Rockwell Automation sales representative or distributor,
 or Rockwell Automation Technical Support at (440) 646-6800.



Figure 2
Series B Jumper Explanations



Use these jumper positions for:
 – normal card operation
 – field flash upgrade of the card's main code



Use these jumper positions for field flash upgrade of the card's boot code.

IMPORTANT: All other E1 and E2 jumper combinations are illegal. Unknown card operation will result.



When installed, use this jumper to latch certain address lines that some 286 and older machines may not latch.

If you have this computer:	then:
286-based or older	you may need to install this jumper
386-based or newer	these address lines are <i>usually</i> latched in the computer and, thus, the jumper is not usually required

Installing the Card Inside the Computer

Important: Before you install the card, make sure you know how to configure the computer's options, e.g., disabling cache memory, memory manager, and shadowing of memory, and that you know how to install hardware in your computer. Consult your computer's documentation for specific information.

To install the card, you need to:

- access to the computer's expansion slots
You need a Phillips-head or a flat-head screwdriver, depending on your system.
- insert the card into the computer

Accessing the Computer's Expansion Slots

To install the card, you must access the computer's expansion slots. Follow these general steps, or refer to your computer's user guide for more explicit instructions.

1. Power down the host computer by turning off the power switch.
2. Remove the computer's cover.
3. Select a vacant 16- or 32-bit expansion slot.
Important: The card will function only in a 16- or 32-bit ISA/EISA expansion slot.
4. Remove the slot's expansion cover by loosening the screw on the back (rear bracket) of the computer.

Running the KTCX15 Card Installation Check Utility in Windows NT

To make sure you have installed the card properly, run the installation check utility. Follow these steps:

1. Place the utility disk in drive A of the host computer.

If you are running the utility software from another drive, use the appropriate drive letter.

2. From the Windows NT Start Menu, select RUN.

The Run dialog box appears.

3. Type the path and command to run the utility.

a:\ktcinstnt 8 (where 8 is the network address you've selected)

4. Click OK.

You see a window similar to this one:

```
MSDOS a:\KTCINSTNT.EXE

ControlNet 1784-KTCX15 Card
Installation Check Utility
Version 1.x, MMM DD, YYYY, hh:mm:ss
Copyright 1997 by Allen-Bradley Company

Success... Copying KTCLDSRV.SYS to System Directory
Success... Registering Service with Service Manager
Success... MacID 0X008 <8> IOBase:0X220
Success... Starting Device KTCLDSRV
Success... Opening driver KTCLDSRV

Working... Make sure card is not connected
Press any key.
```

Important: Make sure that the card is not connected to a network.

7. Press any key.

You see:

```
Succeeded Setting KTCX to online. KTCX LEDs should show flashing red.
```

Flashing red LEDs indicate that the card can communicate on a network, if it's connected to a network.

If this test fails, contact your local Rockwell Automation sales representative or distributor, or Rockwell Automation Technical Support at (440) 646-6800.

```
Waiting.. Setting KTCX to offline. Press any key.
```

The utility takes the card off of the network.

8. Press any key

You see:

```
Succeeded Setting KTCX to offline. KTCX LEDs should show flashing green.
```

Flashing green LEDs indicate that the card successfully made the transition from online to offline, i.e., from simulating network communication to operating independently.

If this test fails, contact your local Rockwell Automation sales representative or distributor, or Rockwell Automation Technical Support at (440) 646-6800.

```
Waiting.. Resetting KTCX. Press any key.
```

The utility re-initializes the card.

9. Press any key.

You see:

```
Succeeded Resetting KTCX. KTCX LEDs should alternate green and red.
Test of KTCX's basic functionality succeeded. Installation successful.
```

Alternate green and red LEDs indicate that your card reset successfully.

If this test fails, contact your local Rockwell Automation sales representative or distributor, or Rockwell Automation Technical Support at (440) 646-6800.

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Inserting the Card

To insert the card inside the computer:

1. Follow the card handling instructions on page 4.
2. Make sure you have correctly set all of the switches on the card.
3. Insert the card into the edge connector and tighten the expansion slot screw.
4. Turn on the computer to make sure it comes up correctly.

If the computer:	then:
powers up	go to step 5
hangs up	you probably have a memory or I/O conflict You should <ul style="list-style-type: none"> • change switch settings and cycle power, or • remove all other cards and try again If you are still unsuccessful, contact your local Rockwell Automation sales representative or distributor, or Rockwell Automation Technical Support at (440) 646-6800.

5. Replace the CPU cover (when computer comes up correctly).

Running the KTCX15 Card Installation Check Utility in DOS or WIN95

To make sure you have installed the card properly, run the installation check utility. Follow these steps:

1. Place the utility disk in drive A of the host computer.

If you are running the utility software from another drive, use the appropriate drive letter.

If you are using WIN95:

- a. From the Windows 95 Start Menu, select RUN.
The Run dialog box appears.
- b. Type the path and command to run the utility.
a:\ktcinst 8 (where 8 is the network address you've selected)
- c. Click OK.

If you are using DOS or a DOS window in WIN95:

- a. At the DOS prompt, type:
a:\ktcinst 

You see a screen/window similar to this one:

```

1784-KTCX15 Card Installation Check Utility
Version 1.xx DD-MMM-YY
Copyright 1997 Allen-Bradley Company, Inc.

Usage: KTCINST NetworkAddress [IOaddress]
NetworkAddress= KTCX Network Address, in hex
IOaddress = KTCX I/O base address (Default 220), in hex
In order to run the KTCX installation utility, you must specify the
network address and the I/O address, if other than 220.

For a network address of 3 and I/O address of 260, type the following:
KTCINST 3 260
For a network address of 2 and I/O address of 220, (default) type the
following:
KTCINST 2

c:\

```

2. Type:

a:\ktcinst 8  (where 8 is the network address you've selected)

You see:

Warning.. Make sure that the card is not connected to a network. Press any key.

3. Press any key.

You see a similar message:

Succeeded Make sure that the card is not connected to a network.
Succeeded Hard resetting KTCX.

4. Recheck the I/O address if hard resetting fails.

Succeeded I/O Address: 220, Dual Port Address: D000:0000
Are these your intended address settings? [y/n]

5. Press **Y** for yes or **N** for no.

You see a similar message:

Boot code version: 1.3 8/20/96, Serial #: 20 (14)
Main code version: 99.65 4/29/97
Succeeded Testing dual-port interface.

If this test fails, contact your local Rockwell Automation sales representative or distributor, or Rockwell Automation Technical Support at (440) 646-6800.

Waiting.. Soft resetting KTCX as network address 8. Press any key.

The utility initializes the network media access controller.

6. Press any key.

You see a similar message:

Succeeded Soft resetting KTCX as network address 8.

If this test fails, make certain that you are not connected to a network.
Contact your local Rockwell Automation sales representative or distributor,
or Rockwell Automation Technical Support at (440) 646-6800.

Waiting.. Setting KTCX to online. Press any key.

The utility tests the card's ability to connect to the network.